OPEN YOUR DOORS *to* BERNER

QUALITY PRODUCTS

AIR DOORS

FOR THE COMMERCIAL/ INDUSTRIAL INDUSTRY

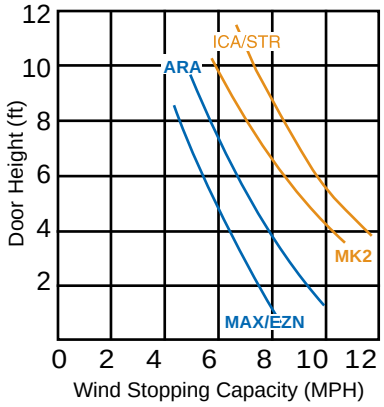
BERNER™ INTERNATIONAL CORP.

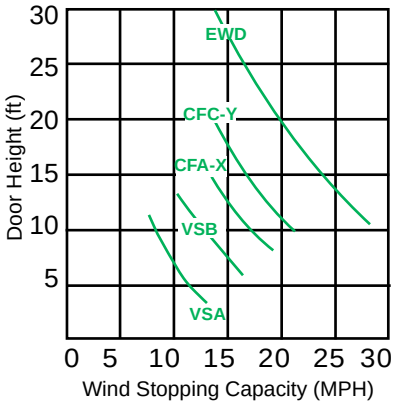
800-245-4455
www.airdoors.com

	E-ZONE - EZN	MAXAIR - MAX	AURA - ARA	STAR - STR	MARK II - MK2	IN-CEILING - ICA	VSA	VSB	CFA	CFX (Belt Drive)	CFC	CFY (Belt Drive)	EWD	FS
RECOMMENDED MAXIMUM MOUNTING HEIGHT														
Environmental Separation	8’			10’	10’	10’	12’	14’	16’		20’		30’	
Insect Control	7’			9’	8’	8’	10’	12’	14’		18’		28’	16’
Pass Thru/Drive-Up	●	●												
Conveyor	●	●		●			●							
Shopping Cart	●	●		●			●							
Cooler Door	●						●							
Commercial Entry	●	●	●	●	●	●								
Service Door	●			●		●	●							
Shipping/Receiving							●	●	●	●	●	●	●	●
Railroad/Automotive									●	●	●	●	●	
STANDARD LENGTH TO *(custom lengths available)*	6’	10’	5’	6’	10’	6’	12’	12’	16’	16’	16’	16’	16’	12’
HEAT OPTIONS														
Unheated	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Electric		●	●	●	●	●	●	●	●	●	●	●		
Steam/Hot Water		●			●	●	●	●	●	●	●	●	●	
Indirect Gas							●	●	●	●	●	●		
Direct Gas									●	●	●	●	●	

This chart represents the most cost effective way to protect your opening.

Wind Resistance Charts

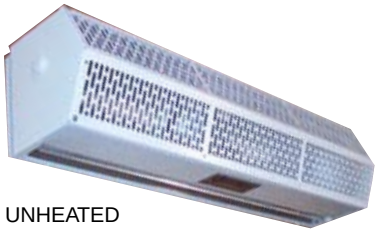




www.airdoors.com
800-245-4455

PROTECTION UP TO 8'

BASIC



UNHEATED

- 8½" high x 8" deep
- Single or variable speed
- White powder coated or stainless steel cabinet
- Quiet operation

for outdoor use
single speed unheated models only

E-ZONE AIR DOOR
Made in the USA

DELUXE

UNHEATED, ELECTRIC, STEAM or HOT WATER HEAT

- 7½" high x 13½" deep
- 10-speed digital programmable controller
- Satin anodized aluminum exterior (natural or bronze)
- Stainless or custom color

MAXAIR AIR DOOR
Made in the USA

ELEGANT

UNHEATED or ELECTRIC HEAT

- 11" high x 24" deep
- Three speed
- White powder coated finish
- Custom colors available

AURA AIR DOOR
Made in the USA

PROTECTION UP TO 10'

BASIC

UNHEATED or ELECTRIC HEAT

- 14¼" high x 13" deep
- Single or three speed
- White aluminum or stainless steel housing

for outdoor use
single speed unheated models only

STAR AIR DOOR
Made in the USA

DELUXE

UNHEATED, ELECTRIC, STEAM or HOT WATER HEAT

- 12¼" high x 22" deep
- Three-speed
- Satin anodized aluminum exterior (natural or bronze)
- Stainless or custom color

for outdoor use
unheated models only

MARK AIR DOOR
Made in the USA

RECESS MOUNTED

UNHEATED, ELECTRIC, STEAM or HOT WATER HEAT

- 15" high x 26" deep
- Factory installed digital programmable controller
- White aluminum bottom access panel
- Powder coated inlet screen

IN-CEILING AIR DOOR
Made in the USA

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com

PROTECTION UP TO 12’

UNHEATED, ELECTRIC, STEAM,
HOT WATER or INDIRECT GAS HEAT

- 15” high x 18” deep
- Single speed
- Gray powder coated finish with aluminum inlet screen
- 1/2 hp motors
- Stainless or custom colors

for outdoor use unheated models only

VSA
AIR DOOR
Made in the USA

PROTECTION UP TO 14’

UNHEATED, ELECTRIC, STEAM,
HOT WATER or INDIRECT GAS HEAT

- 15” high x 18” deep
- Single speed
- Gray powder coated finish with aluminum inlet screen
- 1 hp motors
- Stainless or custom colors

for outdoor use unheated models only

VSB
AIR DOOR
Made in the USA

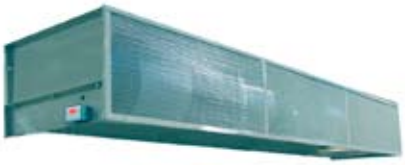
PROTECTION UP TO 16’

UNHEATED, ELECTRIC, STEAM, HOT WATER
INDIRECT GAS or DIRECT GAS HEAT

- 21” high x 32¼” deep
- Single speed
- Gray powder coated finish
- Split cabinet construction
- CFA - Direct Drive
- CFX - Belt Drive
- Stainless or custom colors

CFA/CFX
AIR DOOR
Made in the USA

PROTECTION UP TO 20’



UNHEATED, ELECTRIC, STEAM, HOT WATER
INDIRECT GAS or DIRECT GAS HEAT

- 21” high x 32¼” deep
- Single speed
- Gray powder coated finish
- Split cabinet construction
- CFC - Direct Drive
- CFY - Belt Drive
- Stainless or custom colors

CFC/CFY
AIR DOOR
Made in the USA

PROTECTION UP TO 30’

UNHEATED, STEAM, HOT WATER or DIRECT GAS HEAT

- 39” high x 30” deep
- Belt Drive
- 1750 RPM T.E.F.C motor
- Gray powder coated finish
- Stainless or custom colors

EWD
AIR DOOR
Made in the USA

INSECT CONTROL

UNHEATED

- 33½” high x 30” deep
- Direct driven single-speed
- Gray powder coated finish

FS
AIR DOOR
Made in the USA

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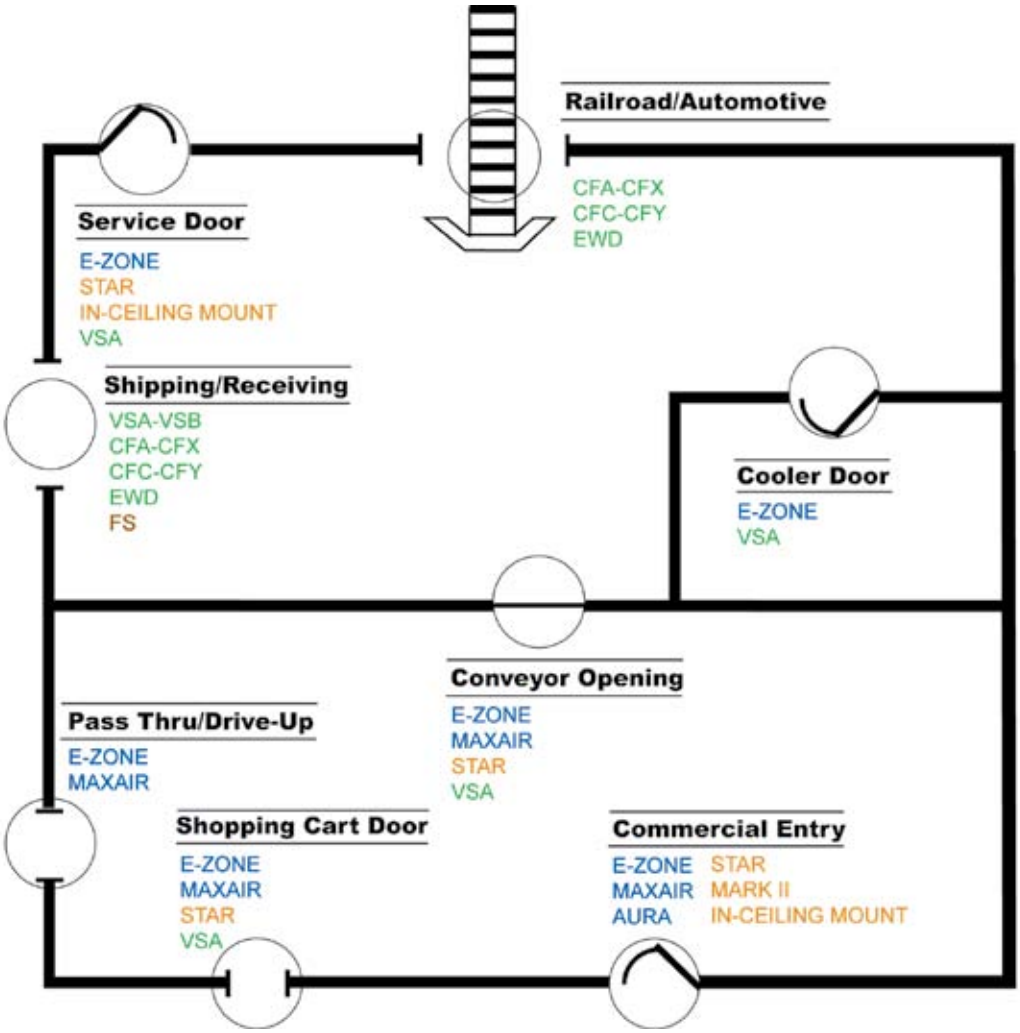
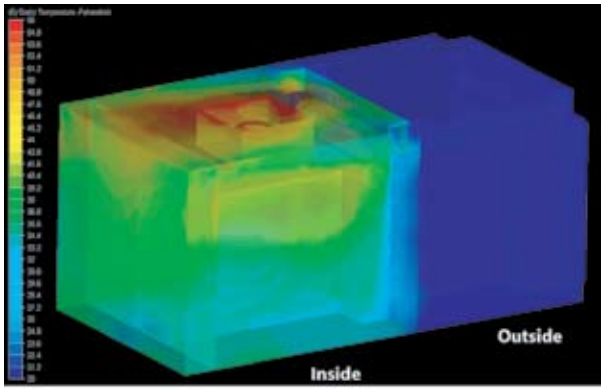
AIR DOOR APPLICATIONS

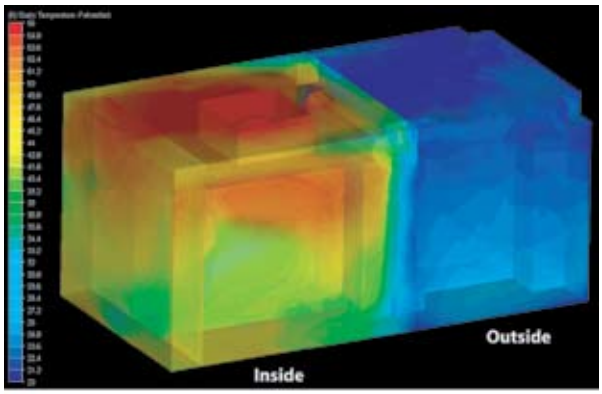
Berner offers the most complete line of air doors available. No matter what your door needs may be, Berner has models accommodating 30" - 192" wide openings including service doors, shipping doors, customer entry doors, drive-up windows and cooler doors.



AIR CURTAIN VS. VESTIBULE PERFORMANCE



VESTIBULE ONLY SIMULATION
Color Represents Temperature
Red = Warm Temperature, Blue = Cool Temperature



UNHEATED AIR CURTAIN ONLY SIMULATION
Color Represents Temperature
Red = Warm Temperature, Blue = Cool Temperature

Visit our website at www.berner.com to view our research summary.

OTHER QUALITY PRODUCTS AVAILABLE FROM BERNER INTERNATIONAL ...

AIR ENTRANCE SYSTEM

An aesthetically pleasing solution for high traffic entrance ways.

This innovative entrance provides a recirculated air seal, through concealed duct work, effectively creating a barrier between indoor and outdoor temperature conditions. Open access, safety and energy efficiency are created out of thin air with Berner Air Entrance System.

DIRECT GAS-FIRED DOOR HEATERS

Ideal solution for facilities with negative air pressure.

The Berner Gas-Fired Door Heater solves the problem of drafts or cold air from entering industrial buildings. Engineered for versatility, the door heater can be mounted at any angle between horizontal and vertical to satisfy most applications.

POSI-FLOW FABRIC AIR DIFFUSERS

Improve Air Dispersion

Posi-Flow Air Diffusion Ducts transfer and evenly distribute air to a room or an entire building in the most economical and efficient way. Tubing is used as a direct replacement for traditional sheet metal duct. Posi-Flow is installed in areas with open ceilings and is used for supply air only.

STRIP DOORS

The economical solution to energy control.

Berner Strip Doors are made of clear PVC material that retains its flexibility even in extremely cold conditions. These doors can be used to contain airborne contaminants, flying insects, and odors. They are an inexpensive way to hold back conditioned air for both customer and employee comfort.

PSL-100 JUNE, 2012

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania
800-245-4455
724-658-3551
www.berner.com

BERNER™ INTERNATIONAL CORP.

Saving Energy and Creating Healthy, Comfortable Environments

No.: DS-434
Date: October, 2005

SITE APPLICATION SURVEY

To determine the appropriate air curtain selection, please fill in the following information.

PROTECTION TYPE:

○ Climate Control ○ Insect Control ○ Both

OPENING TYPE:

○ Retail/Commercial Entry ○ Concessions
○ Drive Up Window ○ Dock/Delivery
○ Patio Opening ○ Conveyor
○ Cooler/Freezer ○ Service/Delivery
○ Interior Opening _____
○ Other _____

OPENING LOCATION:

○ EXTERIOR OPENING
  ○ Installed Indoors
  ○ Installed Outdoors
  Windstopping Protection:
  ○ 5-10 mph ○ 10-15 mph ○ Other ____ mph

○ INTERIOR OPENING
  (Little or no outside winds)
  Through draft (mph) or temperature difference between doorways ___ mph _____ °F

NEGATIVE PRESSURE:

○ NO
○ YES approximate negative _____ FPM

POSITION OF AIR CURTAIN:

○ Horizontal Mount (Top of Opening)
○ Vertical Mount (On one or both sides of opening)
Not recommended for commercial applications

TYPE OF MOUNTING:

○ Top Mount (Ceiling suspension rods)
○ Wall Mount ○ Other _____

VOLTAGE SELECTION:

○ 120/1/60 ○ 208/1/60 ○ 240/1/60
○ 208/3/60 ○ 240/3/60 ○ 480/3/60
○ 600/3/60 ○ Other

HEAT:

○ None ○ Hot Water
○ Electric ○ Indirect Gas Heat
○ Steam ○ Direct Gas Heat

SUBMITTED BY
COMPANY
DATE

PROJECT NAME
PROJECT CONTACT
ADDRESS
STATE ZIP
PHONE
FAX
E-MAIL

SPECIAL NOTES: _____

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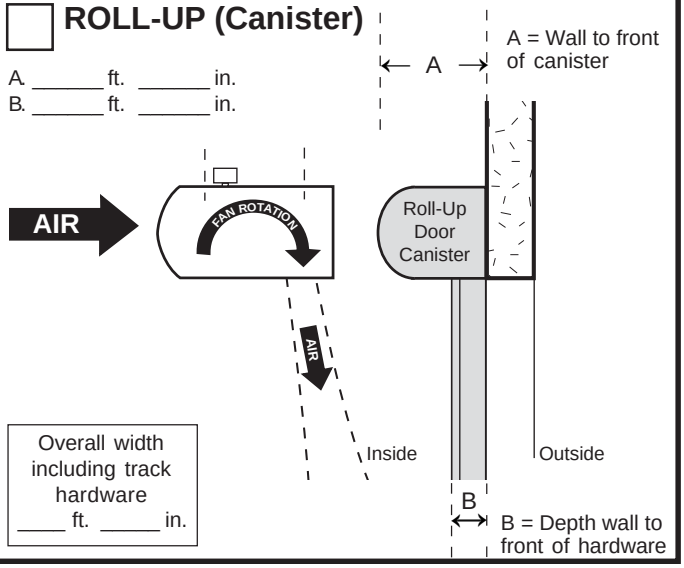
MADE IN U.S.A.

Check appropriate door type. Please fill in as much dimensional information as possible.

DOOR WIDTH _____ ft. _____ in. DOOR HEIGHT _____ ft. _____ in.

☐ ROLL-UP (Canister)

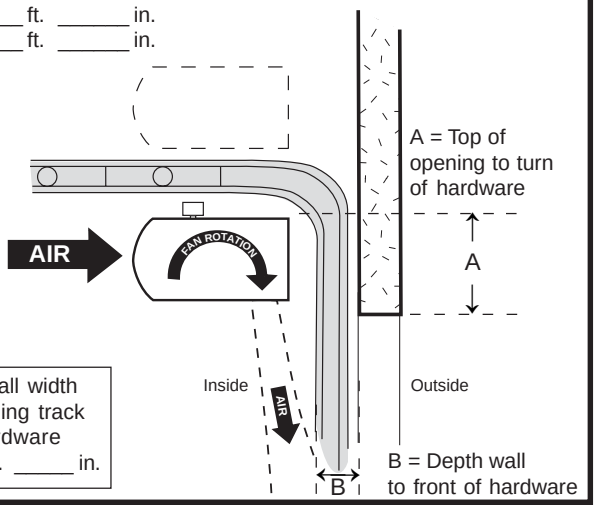
A. _____ ft. _____ in.
B. _____ ft. _____ in.



Overall width including track hardware
____ ft. _____ in.

☐ ROLL BACK (Garage Style)

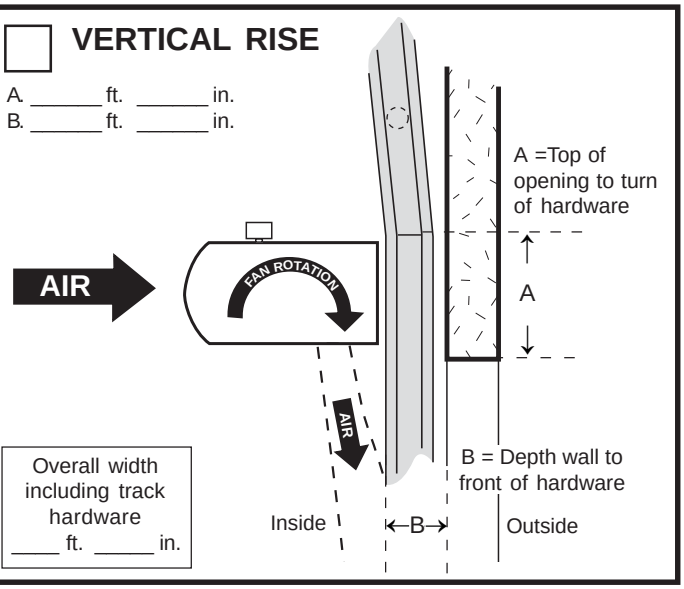
A. _____ ft. _____ in.
B. _____ ft. _____ in.



Overall width including track hardware
____ ft. _____ in.

☐ VERTICAL RISE

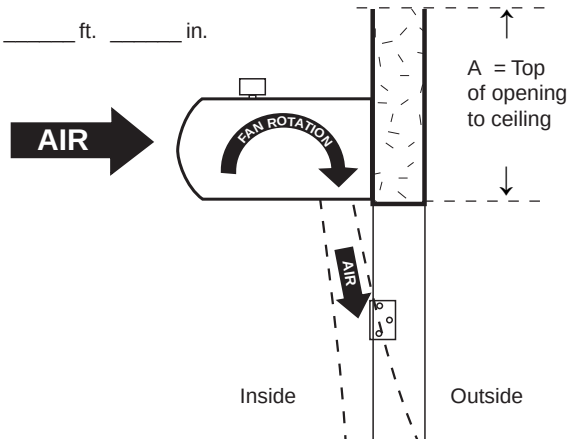
A. _____ ft. _____ in.
B. _____ ft. _____ in.



Overall width including track hardware
____ ft. _____ in.

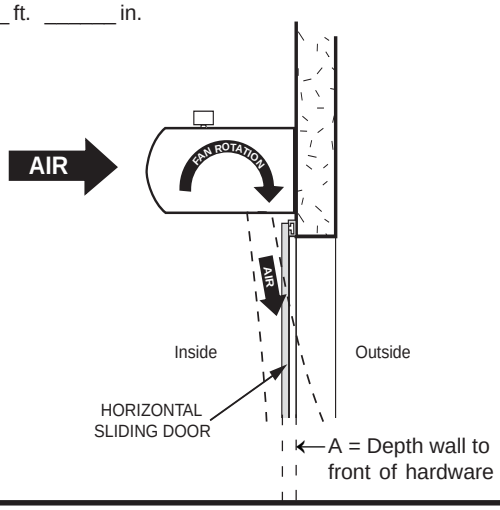
☐ SWING DOOR

A. _____ ft. _____ in.



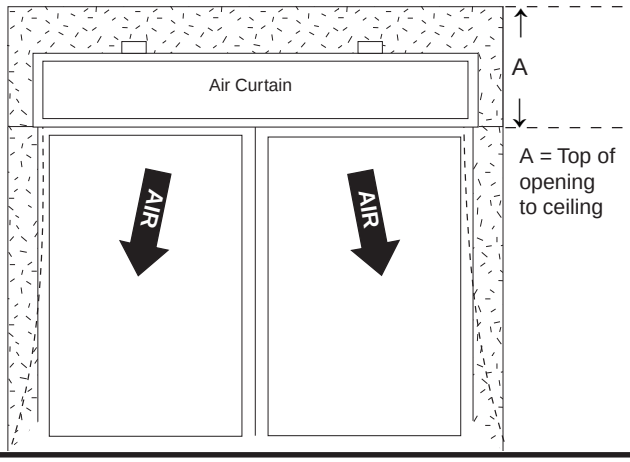
☐ SLIDING-ROLLING DOOR

A. _____ ft. _____ in.



☐ AUTOMATIC BI-PARTING

A. _____ ft. _____ in.



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MADE IN U.S.A.

No.: DS-450
Date: September, 2011

BERNER INTERNATIONAL CORP.

DRIVE-THRU UNIT
Ambient and Electric
Data Sheet

STANDARD FEATURES

- Compact and light-weight
- "No Tool" filter removal (patent pending)
- "Mount Anywhere" bracket system (patent pending)
- Powder coated extruded aluminum exterior cabinet
- 6' plug-in type power cord
- Two position selector switch (unheated)
- Three position selector switch (heated)
- One year parts warranty
- Crafted with Pride in the USA

UNHEATED DRIVE-THRU UNIT DATA

MODEL	Nozzle Width (in)	Max. Velocity (fpm)	Avg. Outlet Velocity (fpm)	Air Volume (scfm)	# Motor(s) @ hp	Power Rating (kW)	Outlet Velocity Unif. (%)	Net Wgt. (lbs)	Ship Wgt. (lbs)
DTU1018AA	18"	2800	1050	135	1 @ 1/12	.06	76.0	11	13
DTU2026AA	26"	2800	1050	200	1 @ 1/12, 1 @1/20	.1	79.0	16	18

ELECTRIC HEATED DRIVE-THRU UNIT DATA

MODEL	Nozzle Width (in)	Max. Velocity (fpm)	Avg. Outlet Velocity (fpm)	Air Volume (scfm)	# Motor(s) @ hp	Power Rating (kW)	Outlet Velocity Unif. (%)	Electric Capacity (kW)	Temp Rise (°F)	Net Wgt. (lbs)	Ship Wgt. (lbs)
DTU1018EA	18"	2800	1050	135	1 @ 1/12	.06	76.0	2	47	12	14
DTU2026EA	26"	2800	1050	200	1 @ 1/12, 1 @1/20	.1	79.0	2	31	18	19

POWER SUPPLIES/MOTOR AMP DRAWS

	DTU1018AA	DTU2026AA	DTU1018EA	DTU2026EA
VOLTS	120	120	120	120
PHASE	1	1	1	1
HERTZ	60	60	60	60
AMPS	1.6	2.2	18.3*	18.9*

* Power cord requires 20 amp receptacle.

VELOCITY PROJECTION

Distance from Nozzle (in)	1	36
Core Velocity (fpm)	1622	783

Sound level measured 10' (3m) from the unit in free field:
1 motor: **51.5 dBA**
2 motors: **52.0 dBA**

for outdoor use
unheated only

Berner reserves the right to alter specifications without prior notice.

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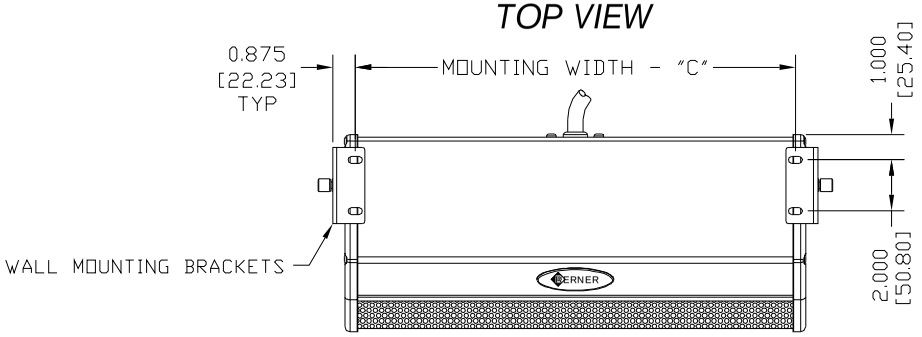
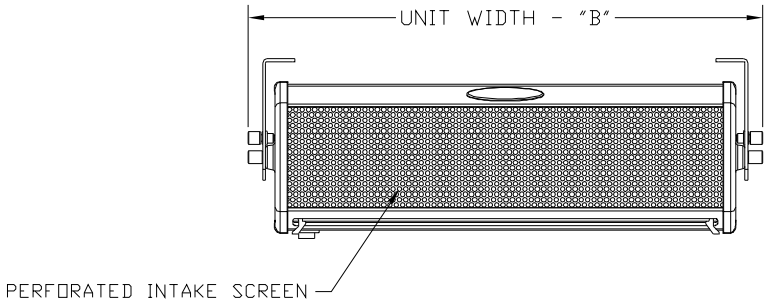
MADE IN U.S.A.

DRIVE THRU UNIT

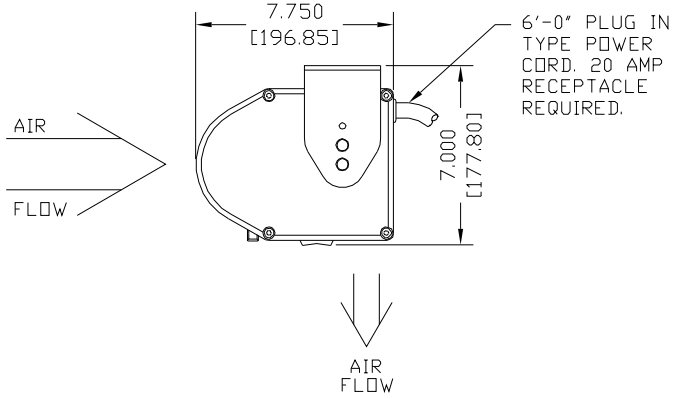
TOP VIEW



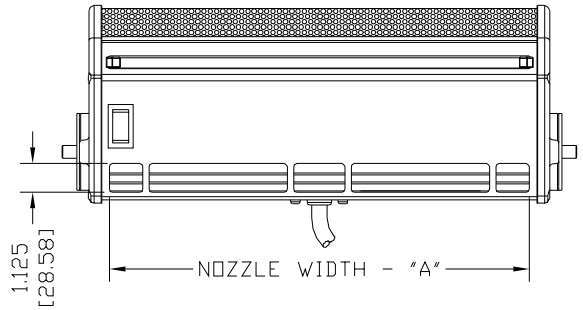
FRONT VIEW



END VIEW



BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS IN INCHES [CENTIMETERS].

MODEL	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"
DTU1018	16.500 [41.91]	20.125 [51.12]	17.250 [43.82]
DTU2026	24.500 [62.23]	28.125 [71.43]	25.250 [64.14]

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	DTUW0012	TITLE:	BERNER DRIVE THRU AIR CURTAIN
DATE	14MAY2010		
BY	D.Johnson		
REPLACES	10DEC08		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

No.: DS-463
Date: October, 2011

E-ZONE-EZN
Ambient - Single Speed
Data Sheet

For Door Heights To 8' (environmental separation) and 7' (insect control)

STANDARD FEATURES

- 8 ½" high x 8" deep
- 1/5 hp direct driven motor(s)
- Aluminum air directional vanes
- White powder coated or stainless steel cabinet
- Wall mounting plate
- Threaded inserts for top mounting
- Aluminum cross-flow blower wheels
- Five year parts warranty
- Crafted with Pride in the USA

						Lab Data					
WHITE POWDER COATED	**STAINLESS STEEL**	**Unit Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
EZN1036A	EZN1036A-SS	36.06	3600	1465	1172	1786	1020	.32	92	1 @ 1/5	35
EZN1042A	EZN1042A-SS	42.06	3000	1370	1096	1773	1188	.32	93	1 @ 1/5	38
EZN1048A	EZN1048A-SS	48.06	2800	1805	1444	1768	1360	.32	94	1 @ 1/5	42
EZN1060A	EZN1060A-SS	59.56	3100	1950	1560	1689	1656	.32	95	1 @ 1/5	49
EZN1072A	EZN1072A-SS	72.81	3600	3026	2421	1725	2031	.32	95	1 @ 1/5	56

POWER SUPPLIES/MOTOR AMP DRAWS					
Volts	120	208	240	110*	220*
Phase	1	1	1	1	1
Hertz	60	60	60	50	50
Amps per Motor	3.4	1.7	1.7	2.8	1.4

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION Model EZN1036A			
Distance from Nozzle (ft)	2	3	4
Core Velocity (fpm)	2260	1930	1728

Sound level measured 10' (3m) from the unit in free field:
1 motor: **54dBA**

for outdoor use

ANSI/NSF 37
Air Curtain Fans for Customer Entry
12CSFor EPH certification,
maximum mounting height is 7'

Berner reserves the right to alter specifications without prior notice.

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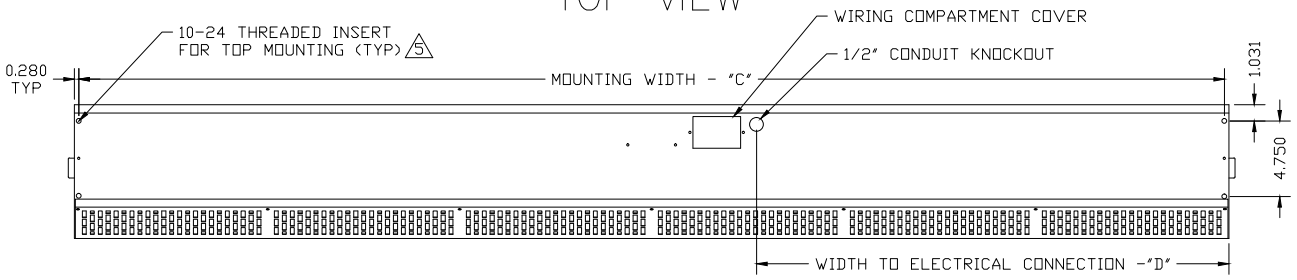
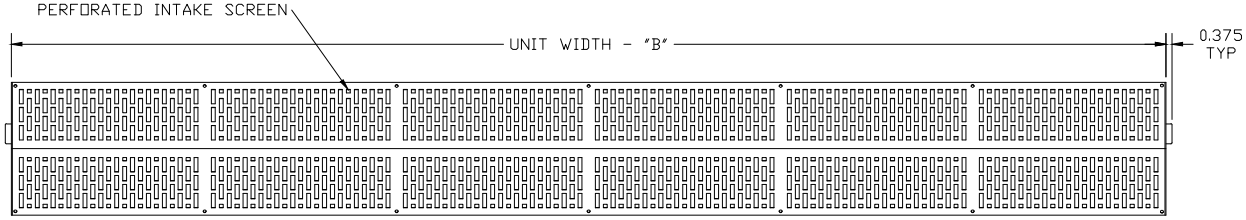
MADE IN U.S.A.

EZN
E—Zone
AMBIENT SYSTEM
SINGLE SPEED

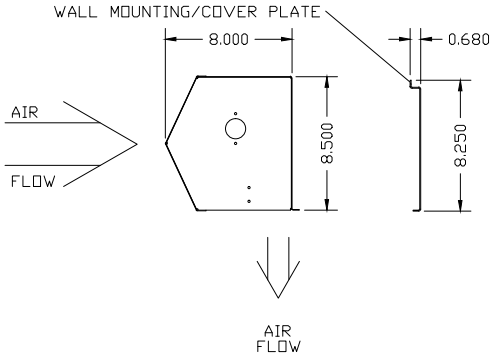
TOP VIEW



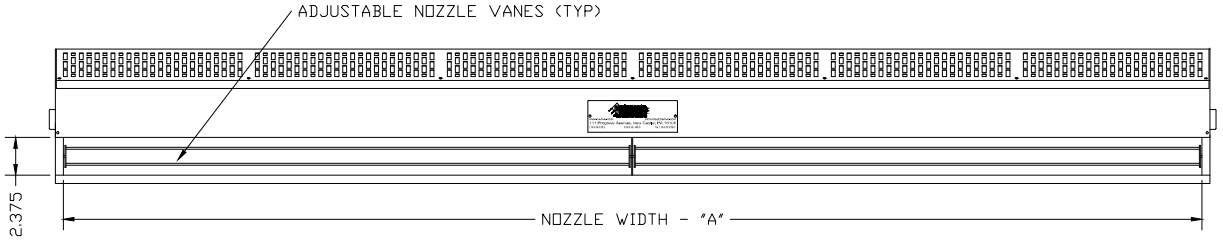
FRONT VIEW



END VIEW



BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF C.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS IN INCHES [CENTIMETERS].

MODEL	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	ELECTRIC WIDTH "D"
EZN1036A	34.62 [87.95]	36.01 [91.47]	35.50 [90.17]	11.43 [29.05]
EZN1042A	40.62 [103.17]	42.01 [106.70]	4138 [105.10]	17.06 [43.33]
EZN1048A	46.62 [118.41]	48.01 [121.95]	47.50 [120.65]	17.12 [43.50]
EZN1060A	59.11 [147.60]	59.55 [151.26]	58.98 [149.80]	23.18 [58.88]
EZN1072A	71.37 [181.28]	72.75 [184.79]	72.25 [183.52]	29.50 [74.93]

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	B
DWG. NO.	EZNT0012	TITLE:	BERNER MODEL EZN AIR CURTAIN AMBIENT SYSTEM
DATE	27SEP11		
BY	B. Peffer		
REPLACES	25FEB2011		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

No.: DS-464
Date: October, 2011

E-ZONE-EZR
Ambient - Variable Speed
Data Sheet

For Door Heights To 8' (environmental separation) and 7' (insect control)

STANDARD FEATURES

- 8 ½" high x 8" deep
- 1/5 hp direct driven motor(s)
- Variable speed switch
- Aluminum air directional vanes
- White powder coated or stainless steel cabinet
- Wall mounting plate
- Threaded inserts for top mounting
- Aluminum cross-flow blower wheels
- Five year parts warranty
- Crafted with Pride in the USA

						Lab Data					
WHITE POWDER COATED	**STAINLESS STEEL**	**Unit Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
EZR1036A	EZR1036A-SS	36.06	3600	1465	1172	1786	1020	.32	94	1 @ 1/5	35
EZR1042A	EZR1042A-SS	42.06	3000	1370	1096	1773	1188	.32	94	1 @ 1/5	38
EZR1048A	EZR1048A-SS	48.06	2800	1805	1444	1768	1360	.32	94	1 @ 1/5	42
EZR1060A	EZR1060A-SS	59.56	3100	1950	1560	1689	1656	.32	94	1 @ 1/5	49
EZR1072A	EZR1072A-SS	72.81	3600	3026	2421	1725	2031	.32	94	1 @ 1/5	56

POWER SUPPLIES/MOTOR AMP DRAWS					
Volts	120	208	240	110*	220*
Phase	1	1	1	1	1
Hertz	60	60	60	50	50
Amps per Motor	3.4	1.7	1.7	2.8	1.4

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION Model EZN1036A			
Distance from Nozzle (ft)	2	3	4
Core Velocity (fpm)	2260	1930	1728

Sound level measured 10' (3m) from the unit in free field:
1 motor: **54dBA**

Berner reserves the right to alter specifications without prior notice.

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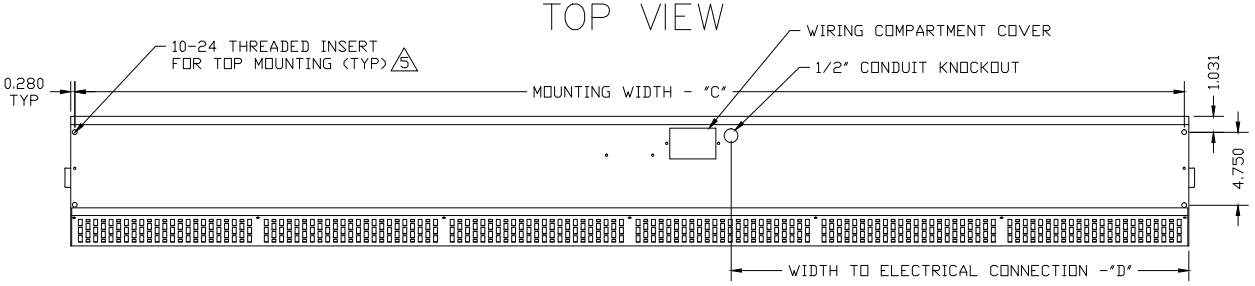
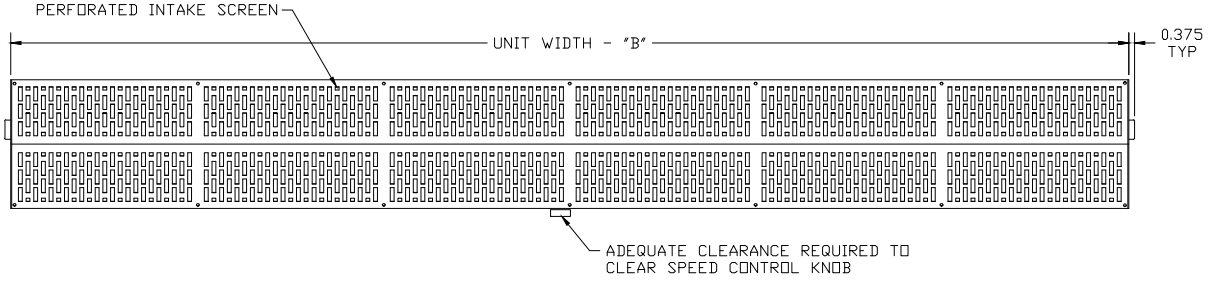
MADE IN U.S.A.

EZR
E—Zone
AMBIENT SYSTEM
VARIABLE SPEED

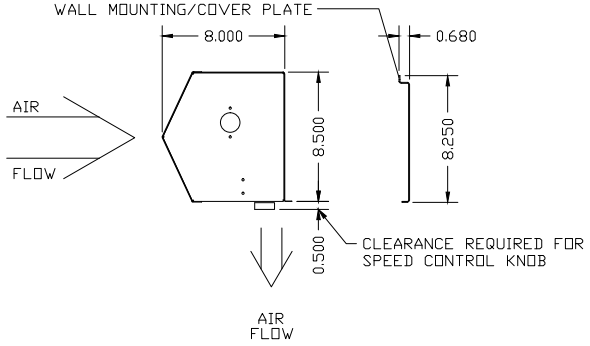
TOP VIEW



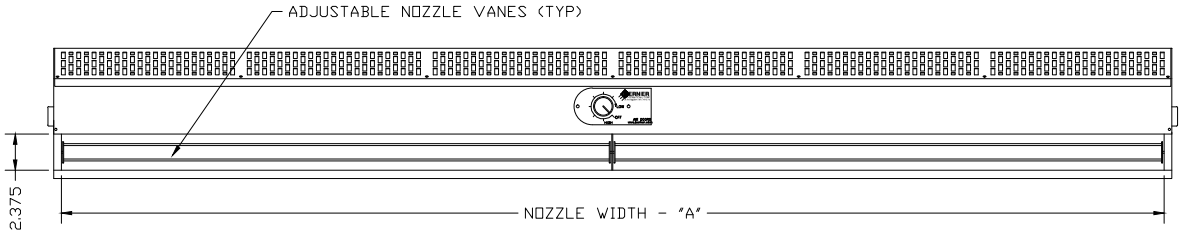
FRONT VIEW



END VIEW



BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF C.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS IN INCHES [CENTIMETERS].

MODEL	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	ELECTRIC WIDTH "D"
EZR1036A	34.62 [87.95]	36.01 [91.47]	35.50 [90.17]	11.43 [29.05]
EZR1042A	40.62 [103.17]	42.01 [106.70]	4138 [105.10]	17.06 [43.33]
EZR1048A	46.62 [118.41]	48.01 [121.95]	47.50 [120.65]	17.12 [43.50]
EZR1060A	59.11 [147.60]	59.55 [151.26]	58.98 [149.80]	23.18 [58.88]
EZR1072A	71.37 [181.28]	72.75 [184.79]	72.25 [183.52]	29.50 [74.93]

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	B
DWG. NO.	EZNT0014	TITLE:	BERNER MODEL EZR AIR CURTAIN AMBIENT SYSTEM
DATE	07JUNE2011		
BY	A.Johnston		
REPLACES	23MAY2011		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

No.: DS-470
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MAXAIR
Ambient
Data Sheet

For Door Heights To 8' (environmental separation) and 7' (insect control)

STANDARD FEATURES

- 7 1/2" high
- 1/5 hp direct driven motor(s)
- Factory installed "Intelliswitch" digital, programmable controller - *see features below*
- Aluminum air directional vanes
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 1/4" threaded inserts for top mounting
- Aluminum cross-flow blower wheels
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES

- Stainless steel or custom color finish

					Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
MAX1030A	28.00	3100	914	731	1777	691	.18	89	1 @ 1/5	33
MAX1036A	35.25	3600	1465	1172	2118	1036	.32	92	1 @ 1/5	38
MAX1042A	41.25	3000	1370	1096	2115	1212	.32	93	1 @ 1/5	43
MAX1048A	47.25	2800	1805	1444	2104	1381	.32	94	1 @ 1/5	48
MAX1060A	59.00	3100	1950	1560	2052	1682	.32	95	1 @ 1/5	57
MAX1072A	72.50	3600	3026	2421	2118	2072	.32	95	1 @ 1/5	64
MAX2084A	84.25	3000	2740	2192	2115	2424	.64	93	2 @ 1/5	86
MAX2096A	96.25	2800	3610	2888	2104	2762	.64	94	2 @ 1/5	96
MAX2120A	119.75	3100	3901	3121	2046	3364	.64	95	2 @ 1/5	114

POWER SUPPLIES/MOTOR AMP DRAWS					
Volts	120	208	240	110*	220*
Phase	1	1	1	1	1
Hertz	60	60	60	50	50
Amps per Motor	3.4	1.7	1.7	2.8	1.4

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Intelliswitch Features:

- Time Delay
- 10 Speed Fan Slection
- On/Off/Auto Operation
- Start/Stop Times
- Low Voltage Control Circuit
- Time Clock
- LED Display
- Lockable Display

VELOCITY PROJECTION *Model MAX1036A*			
Distance from Nozzle (ft)	2	3	4
Core Velocity (fpm)	1824	1509	1292

Sound level measured 10' (3m) from the unit in free field:
1 & 2 motor(s): **54 dBA, 57 dBA**

c UL us

FDA RECOMMENDED

USDA COMPLIANCE

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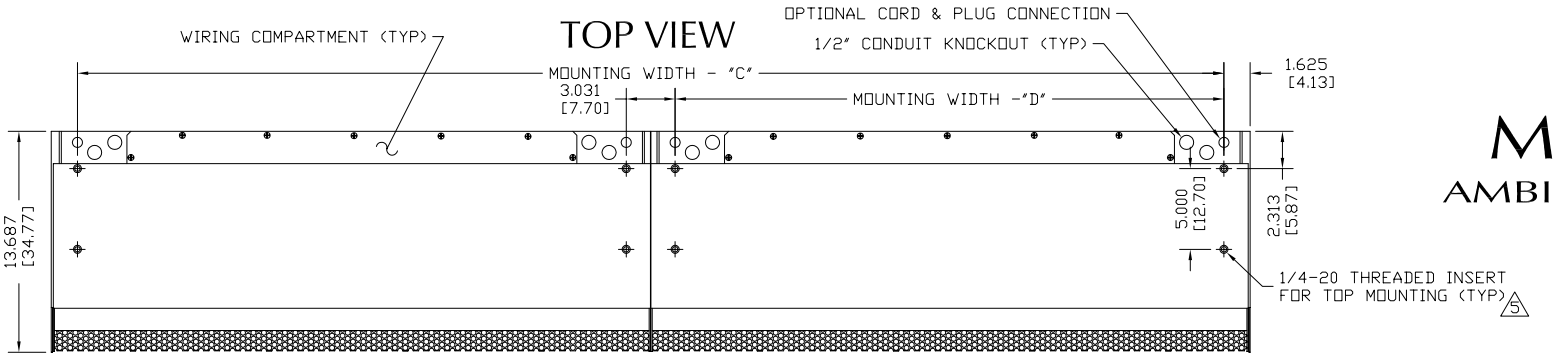
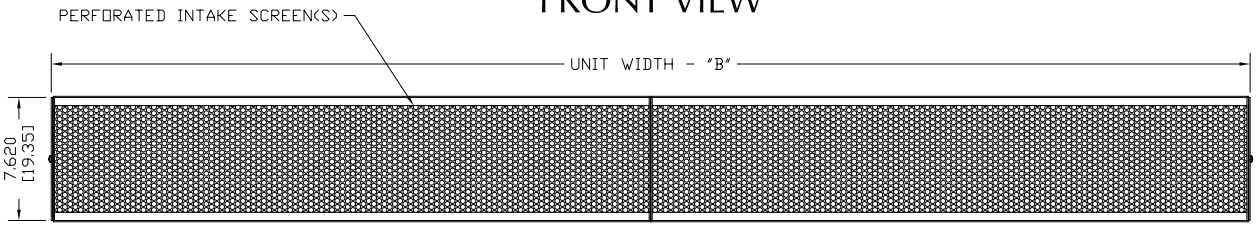
MADE IN U.S.A.

MAXAIR
AMBIENT SYSTEM

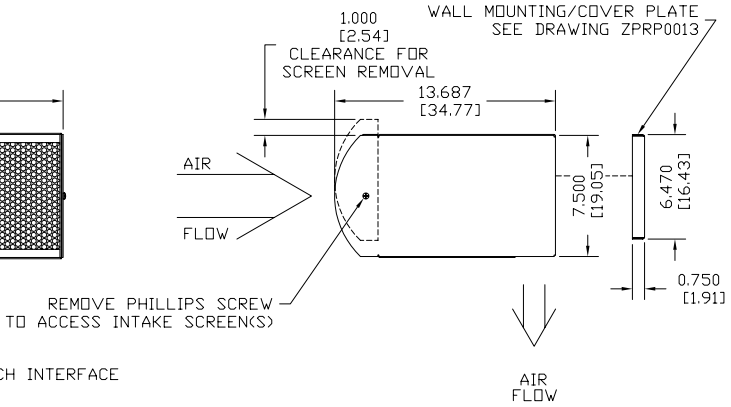
TOP VIEW



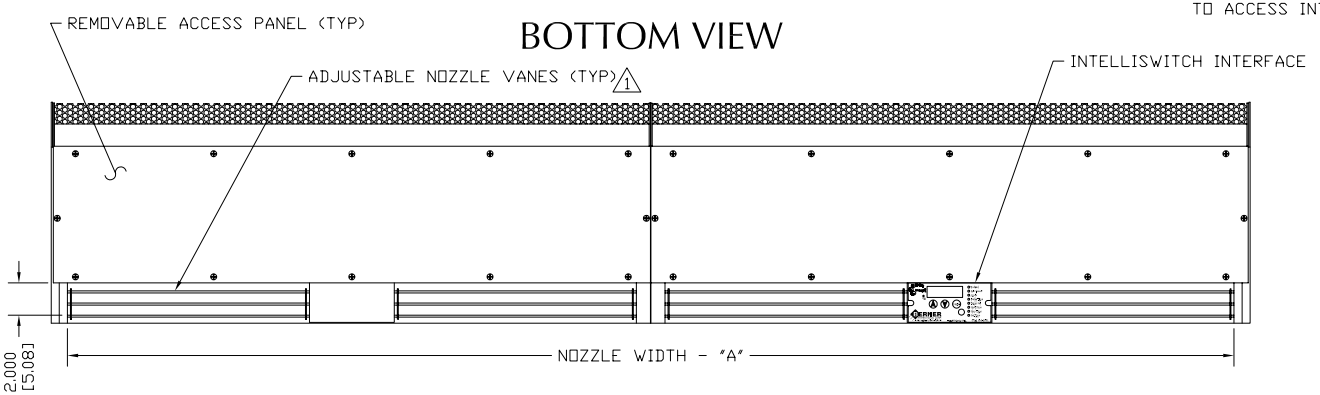
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL 6	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	MOUNTING WIDTH "D"
MAX1030A	28.00 [71.12]	30.00 [76.20]	26.75 [67.95]	-
MAX1036A	35.25 [89.54]	37.25 [94.62]	34.00 [86.36]	-
MAX1042A	41.25 [10478]	43.25 [109.86]	40.00 [101.60]	-
MAX1048A	47.25 [120.02]	49.25 [125.10]	46.00 [116.84]	-
MAX1060A	59.00 [149.86]	61.00 [154.94]	57.75 [146.69]	-
MAX1072A	72.25 [183.59]	74.25 [188.60]	71.00 [180.34]	-
MAX2084A	84.25 [213.00]	86.25 [219.08]	83.00 [210.82]	40.00 [101.60]
MAX2096A	96.25 [244.48]	98.25 [249.56]	95.00 [241.30]	46.00 [116.84]
MAX2120A	119.75 [304.17]	121.75 [309.25]	118.50 [300.99]	57.75 [146.69]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathbb{C}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. LETTER "A" IN MODEL NUMBER DESIGNATES AMBIENT UNIT.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	ZPRR0034
DATE	25JUL07
BY	A.Johnston
REPLACES	23FEB04
BY	A.Johnston

TITLE: BERNER
MODEL MAXAIR AIR CURTAIN
AMBIENT SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-472
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MAXAIR
Electric
Data Sheet

For Door Heights To 8' (environmental separation)

STANDARD FEATURES

- 7 1/2" high
- 1/5 hp direct driven motor(s)
- Factory installed "Intelliswitch" digital, programmable controller - *see features below*
- Aluminum air directional vanes
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 1/4" threaded inserts for top mounting
- Aluminum cross-flow blower wheels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- Helical coil with point suspension of elements for longer life
- Available single or three phase (not all models)
- Easily replaceable heating elements
- Galvanized steel frame
- Thermal protection against overheating

OPTIONAL FEATURES

- Stainless steel or custom color finish
- Reduced kW available (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Electric Capacity (kW)**	**Temp Rise °F**	**Net Wgt (lbs)**
MAX1030E	28.00	3100	914	731	1777	691	.18	89	1 @ 1/5	5.4 or 7.2	24	40.5
MAX1036E	35.25	3600	1465	1172	2118	1036	.32	92	1 @ 1/5	10	30	45.5
MAX1042E	41.25	3000	1370	1096	2115	1212	.32	93	1 @ 1/5	10	26	50
MAX1048E	47.25	2800	1805	1444	2104	1381	.32	94	1 @ 1/5	14.4	33	56
MAX1060E	59.00	3100	1950	1560	2052	1682	.32	95	1 @ 1/5	14.4	28	68.5
MAX1072E	72.50	3600	3026	2421	2118	2072	.32	95	1 @ 1/5	20	30	76.5
MAX2084E	84.25	3000	2740	2192	2115	2424	.64	93	2 @ 1/5	20	26	100
MAX2096E	96.25	2800	3610	2888	2104	2762	.64	94	2 @ 1/5	28.8	33	111.5
MAX2120E	119.75	3100	3901	3121	2046	3364	.64	95	2 @ 1/5	28.8	28	137

POWER SUPPLIES/MOTOR AMP DRAWS					
Volts	120	208	240	110*	220*
Phase	1	1	1	1	1
Hertz	60	60	60	50	50
Amps per Motor	3.4	1.7	1.7	2.8	1.4

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1 & 2 motor(s): **54 dBA, 57 dBA**

HEATER kW/AMP DRAWS					
HEATER kW	**208/1/60**	**240/1/60**	**208/3/60**	**240/3/60**	**480/3/60****
5.4	26.0	22.5	-	-	-
7.2	34.6	30.0			
10.0	48.1	41.7	27.8	24.1	12.0
14.4	69.2*	60.0*	40.0	34.6	17.3
20.0	-	-	55.5*	48.1*	24.1
28.8	-	-	79.9*	69.3*	34.6

*Two circuits required.
** A separate 120/208 or 240 power supply required for motors.

Intelliswitch Features:

- ◆ Time Delay
- ◆ 10 Speed Fan Slection
- ◆ On/Off/Auto Operation
- ◆ Start/Stop Times
- ◆ Thermostat
- ◆ Low Voltage Control Circuit
- ◆ Time Clock
- ◆ LED Display
- ◆ Lockable Display

FDA RECOMMENDED · c UL us · USDA COMPLIANCE

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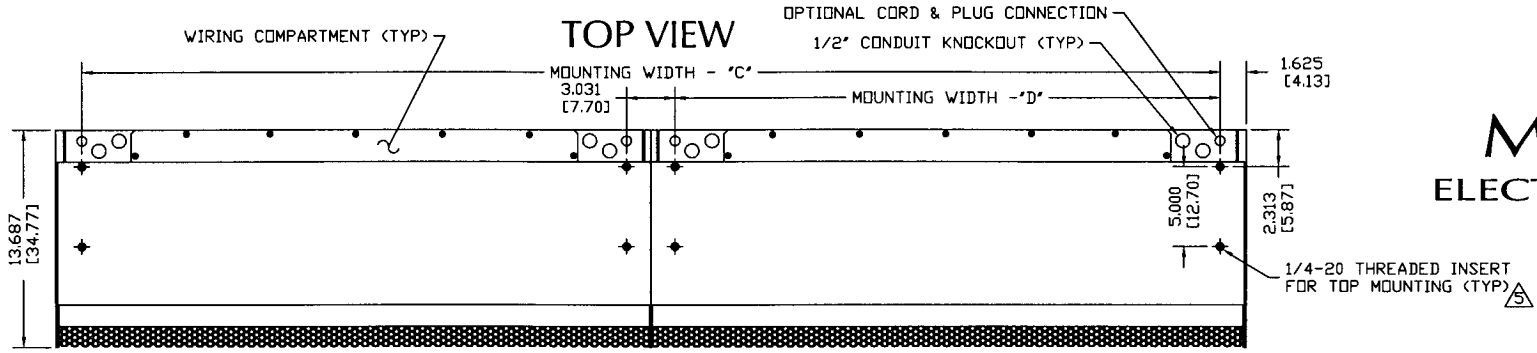
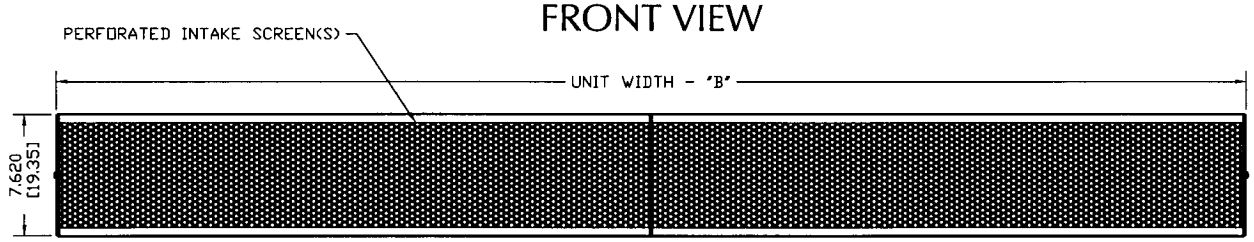
MADE IN U.S.A.

MAXAIR
ELECTRIC HEATED

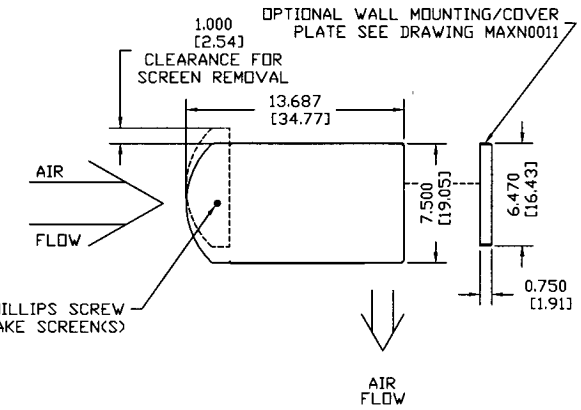
TOP VIEW



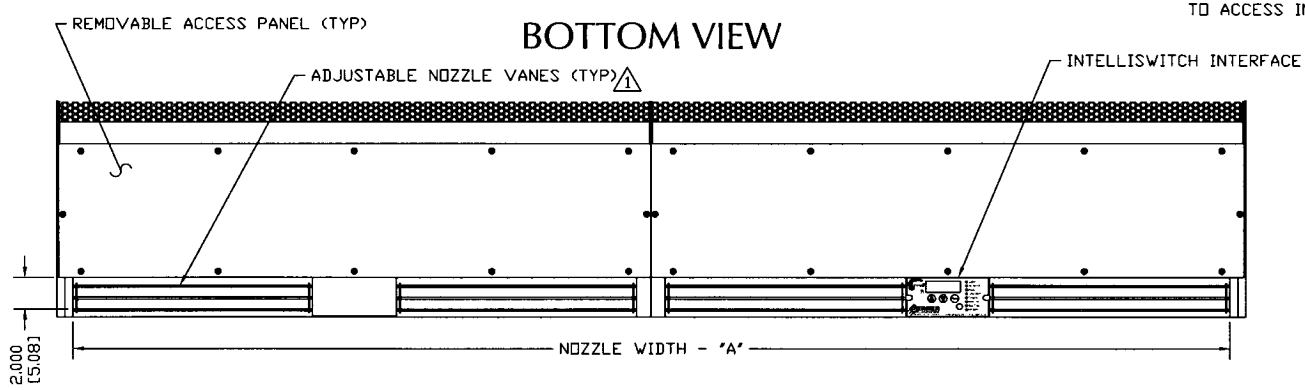
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL 6	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	MOUNTING WIDTH "D"
MAX1030E	28.00 [71.12]	30.00 [76.20]	26.75 [67.95]	-
MAX1036E	35.25 [89.54]	37.25 [94.62]	34.00 [86.36]	-
MAX1042E	41.25 [10478]	43.25 [109.86]	40.00 [101.60]	-
MAX1048E	47.25 [120.02]	49.25 [125.10]	46.00 [116.84]	-
MAX1060E	59.00 [149.86]	61.00 [154.94]	57.75 [146.69]	-
MAX1072E	72.25 [183.59]	74.25 [188.60]	71.00 [180.34]	-
MAX2084E	84.25 [213.00]	86.25 [219.08]	83.00 [210.82]	40.00 [101.60]
MAX2096E	96.25 [244.48]	98.25 [249.56]	95.00 [241.30]	44.00 [111.76]
MAX2120E	119.75 [304.17]	121.75 [309.25]	118.50 [300.99]	57.75 [146.69]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. LETTER "E" IN MODEL NUMBER DESIGNATES ELECTRIC HEATED UNIT.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	ZPRR0036
DATE	23FEB04
BY	A.Johnston
REPLACES	10MAR03
BY	D. Johnson

TITLE: BERNER
MODEL MAXAIR AIR CURTAIN
ELECTRIC HEATED SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA

No.: DS-474
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MAXAIR
Steam/Hot Water Heated
Data Sheet

For Door Heights To 8' (environmental separation)

STANDARD FEATURES
- 7 1/2" high
- 1/5 hp direct driven motor(s)
- Factory installed "Intelliswitch" digital, programmable controller - *see features below*
- Aluminum air directional vanes
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 1/4" threaded inserts for top mounting
- Aluminum cross-flow blower wheels
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- 16 gauge galvanized steel casing
- Factory mounted 5/8" O.D. copper steam/hot water coil
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @ 325 psig dry nitrogen

OPTIONAL FEATURES
- Stainless steel or custom color finish

					Lab Data									
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam: Capacity (mtbu/ hr) [1]**	**Steam Temp Rise °F**	**Hot Water: Capacity (mbu/hr)[2]**	**Hot Water Temp Rise °F**	**Net Wgt (lbs)**
MAX1030*	28.00	3100	914	731	1777	691	.18	89	1 @ 1/5	32.2	43	23.7	32	33
MAX1036*	35.25	3600	1465	1172	2118	1036	.32	92	1 @ 1/5	43.9	39	31.4	28	38
MAX1042*	41.25	3000	1370	1096	2115	1212	.32	93	1 @ 1/5	51.9	39	36.6	28	43
MAX1048*	47.25	2800	1805	1444	2104	1381	.32	94	1 @ 1/5	59.8	40	44.5	30	48
MAX1060*	59.00	3100	1950	1560	2052	1682	.32	95	1 @ 1/5	74.5	41	57.0	31	57
MAX1072*	72.50	3600	3026	2421	2118	2072	.32	95	1 @ 1/5	92.1	41	71.6	32	64
MAX2084*	84.25	3000	2740	2192	2115	2424	.64	93	2 @ 1/5	108.0	41	85.1	32	86
MAX2096*	96.25	2800	3610	2888	2104	2762	.64	94	2 @ 1/5	123.7	41	98.0	33	96
MAX2120*	119.75	3100	3901	3121	2046	3364	.64	95	2 @ 1/5	152.9	42	122.6	33	114

*S = STEAM; W = HOT WATER
Performance data based on high speed.
1 Steam rating based on 70F entering air and 5 psig steam.
2 Hot Water based on 70F entering air and 200F entering water temperature.

POWER SUPPLIES/MOTOR AMP DRAWS					
Volts	120	208	240	110*	220*
Phase	1	1	1	1	1
Hertz	60	60	60	50	50
Amps per Motor	3.4	1.7	1.7	2.8	1.4

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

intelli SWITCH 2

Intelliswitch Features:
- ◆ Time Delay
- ◆ 10 Speed Fan Slection
- ◆ On/Off/Auto Operation
- ◆ Start/Stop Times
- ◆ Low Voltage Control Circuit
- ◆ Time Clock
- ◆ LED Display
- ◆ Lockable Display

Sound level measured 10' (3m) from the unit in free field:
1 & 2 motor(s): **54 dBA, 57 dBA**

FDA RECOMMENDED

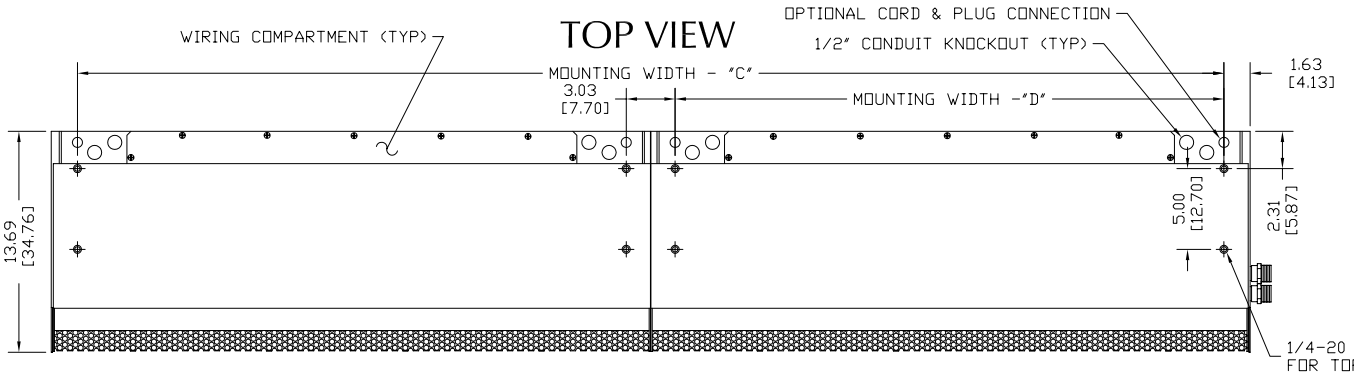
USDA COMPLIANCE

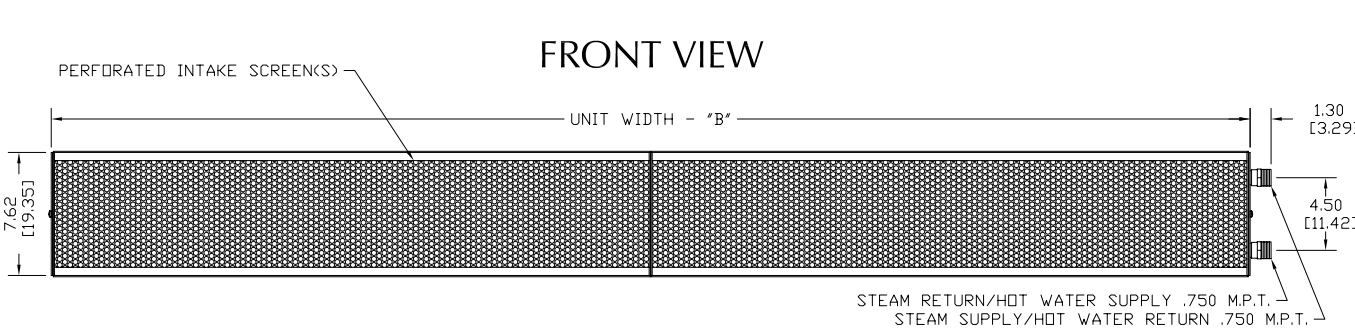
Berner reserves the right to alter specifications without prior notice.

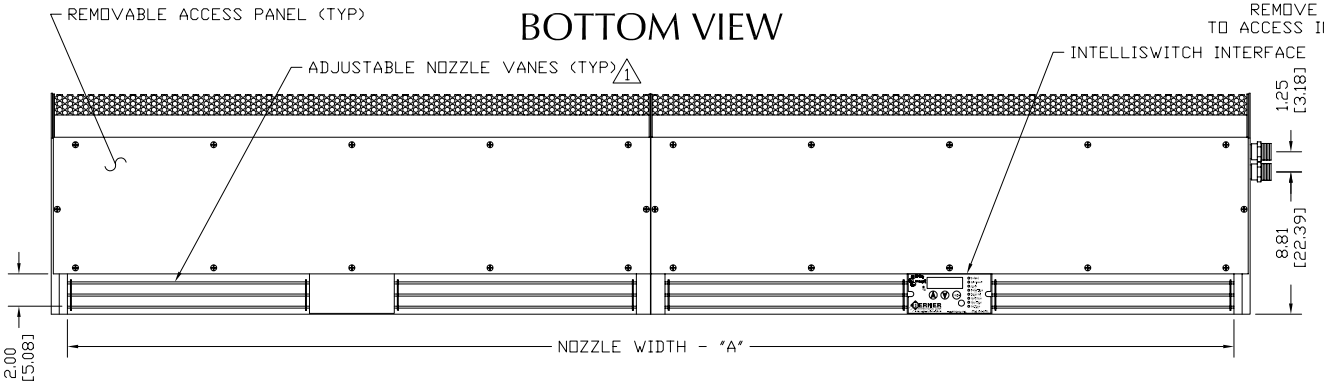
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

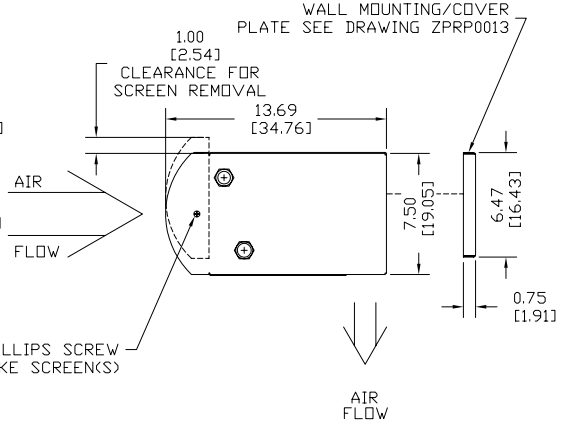
MAXAIR

STEAM/HOT WATER SYSTEM









MODEL 6	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"	MOUNTING WIDTH "D"
MAX1030*	28.00 [71.12]	30.00 [76.20]	26.75 [67.95]	-
MAX1036*	35.25 [89.54]	37.25 [94.62]	34.00 [86.36]	-
MAX1042*	41.25 [10478]	43.25 [109.86]	40.00 [101.60]	-
MAX1048*	47.25 [120.02]	49.25 [125.10]	46.00 [116.84]	-
MAX1060*	59.00 [149.86]	61.00 [154.94]	57.75 [146.69]	-
MAX1072*	72.25 [183.59]	74.25 [188.60]	71.00 [180.34]	-
MAX2084*	84.25 [213.00]	86.25 [219.08]	83.00 [210.82]	40.00 [101.60]
MAX2096*	96.25 [244.48]	98.25 [249.56]	95.00 [241.30]	44.00 [111.76]
MAX2120*	119.75 [304.17]	121.75 [309.25]	118.50 [300.99]	57.75 [146.69]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. REPLACE "*" WITH "S" FOR STEAM OR "W" FOR HOT WATER.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	ZPRR0038
DATE	25JUL07
BY	A.Johnston
REPLACES	23FEB04
BY	A.Johnston

TITLE: BERNER
MODEL MAXAIR AIR CURTAIN
STEAM/HOT WATER SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-270
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MARK II
Ambient
Data Sheet

For Door Heights To 10' (environmental separation) and 8' (insect control)

STANDARD FEATURES
- 1/2 hp three speed motor(s)
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Filter frame (filter sold separately)
- Factory installed fan speed selector switch
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 5/16" threaded inserts for top mounting
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES
- Stainless steel or custom color finish

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
MK21036A	36.75	3977	2262	1470	2121	1346	0.52	91	1 @ ½	65
MK21042A	42.75	4095	2568	1669	1830	1390	0.52	86	1 @ ½	68
MK21048A	48.75	3838	2271	1476	1663	1417	0.52	71	1 @ ½	70
MK22048A	48.75	4166	3194	2076	2241	1896	0.71	92	2 @ ½	95
MK22060A	60.75	3950	3785	2461	2393	2540	1.01	92	2 @ ½	125
MK22072A	74.50	3977	4524	2940	2121	2692	1.04	91	2 @ ½	130
MK22084A	86.50	4095	5136	3338	1830	2780	1.04	86	2 @ ½	140
MK22096A	98.50	3838	4542	2952	1663	2834	1.04	71	2 @ ½	145
MK23096A	98.50	4166	6388	4152	2241	3792	1.56	92	3 @ ½	165
MK23108A	112.25	3977	6786	4411	2121	4038	1.56	91	3 @ ½	170
MK23120A	118.25	3838	6876	4470	1957	4082	1.56	86	3 @ ½	175

Performance data is based on high speed. Consult factory for low speed and medium speed.

POWER SUPPLIES/AMP DRAWS					
VOLTS	120	208	240	110*	220*
PHASE	1	1	1	1	1
HERTZ	60	60	60	50	50
AMPS per MOTOR	7.2	4.0	4.0	6.0	3.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION *Model: MK21036*			
Distance from Nozzle (ft)	3	4	5
Core Velocity (fpm)	1600	1367	1233

Sound level measured 10' (3m) from the unit in free field:
1 motor: Low/Medium/High Speed: **51/54/56 dBA**
2 motors: Low/Medium/High Speed: **54/56/59 dBA**
3 motors: Low/Medium/High Speed: **57/60/62 dBA**
Sound data is not AMCA certified.

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC.

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

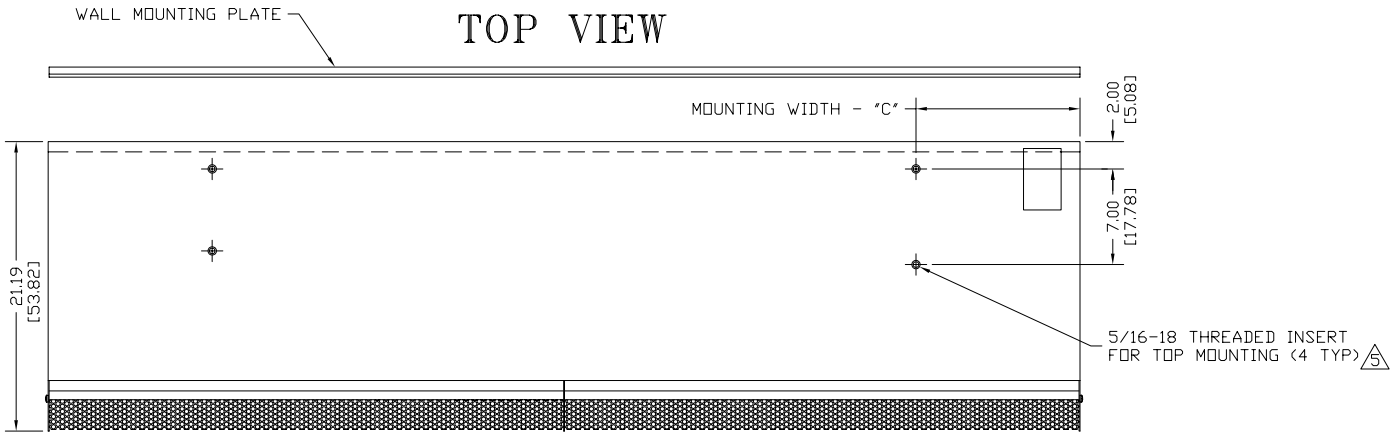
FDA RECOMMENDED — c UL us for outdoor use — USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

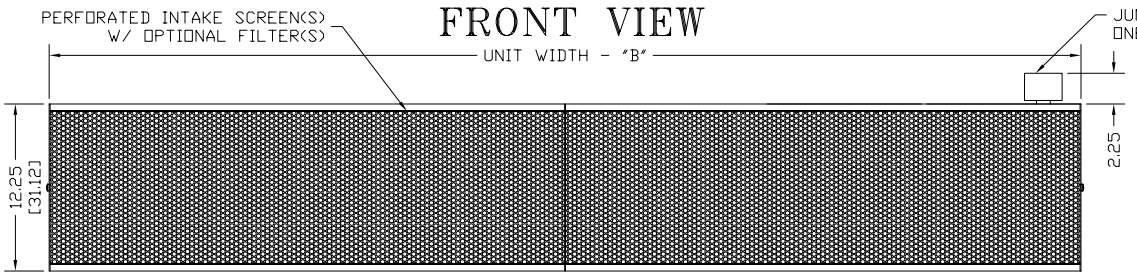
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

MARK II
AMBIENT SYSTEM

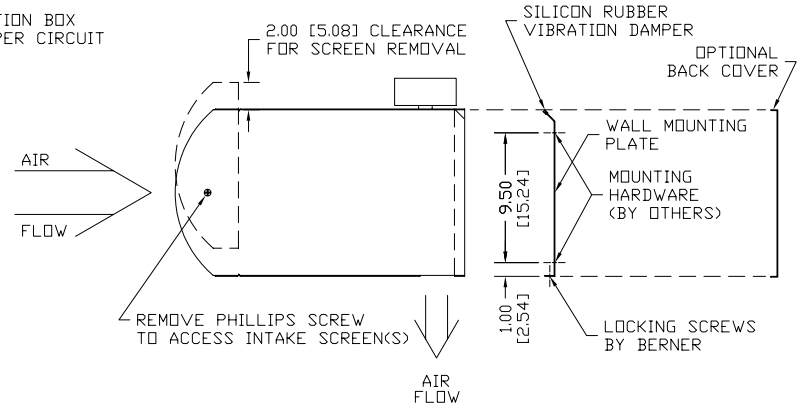
TOP VIEW



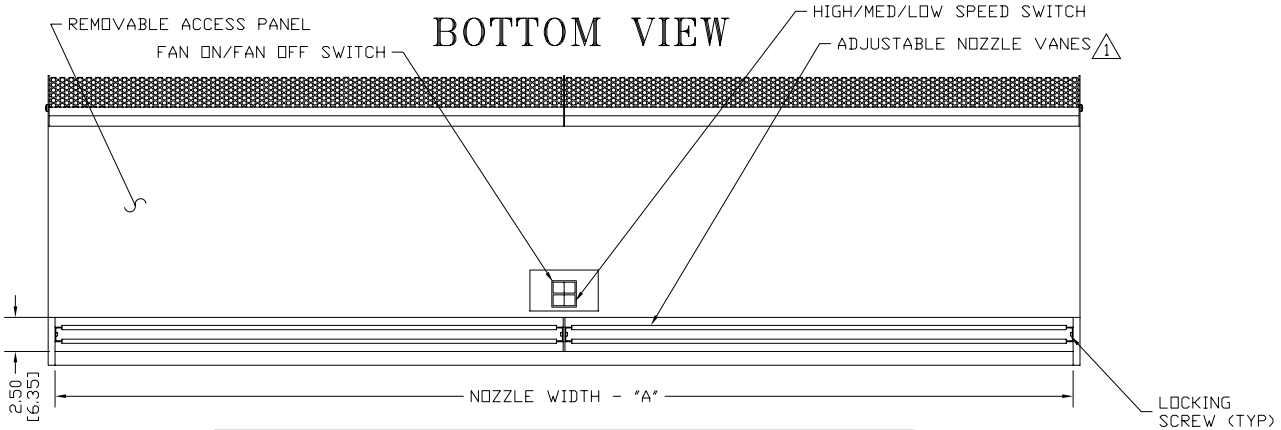
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL 6	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"
MK21036A	36.75 [93.35]	37.75 [95.89]	8.00 [20.32]
MK21042A	42.75 [108.59]	43.75 [111.13]	8.00 [20.32]
MK21048A	48.75 [123.83]	49.75 [126.37]	10.00 [25.40]
MK22048A	48.75 [123.83]	49.75 [126.37]	8.00 [20.32]
MK22060A	60.75 [153.31]	61.75 [156.85]	8.00 [20.32]
MK22072A	74.50 [189.23]	75.50 [191.77]	12.00 [30.48]
MK22084A	86.50 [219.71]	87.50 [217.17]	12.00 [30.48]
MK22096A	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23096A	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23108A	112.25 [285.12]	113.25 [287.66]	27.00 [68.58]
MK23120A	118.25 [300.36]	119.25 [302.90]	27.00 [68.58]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathbb{C}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. LETTER "A" IN MODEL NUMBER DESIGNATES AMBIENT UNIT.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	MINU2854	TITLE: BERNER MODEL MARK II AIR CURTAIN AMBIENT SYSTEM	
DATE	30JAN06		
BY	B. Peffer		
REPLACES	04JAN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-273
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MARK II
Electric Heated
Data Sheet

For Door Heights To 10' (environmental separation)

STANDARD FEATURES
- 1/2 hp three speed motor(s)
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Filter frame (filter sold separately)
- Factory installed fan speed selector switch
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 5/16" threaded inserts for top mounting
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Helical coil with point suspension of elements for longer life
- Available single or three phase (not all models)
- Easily replaceable heating elements
- Galvanized steel frame
- Thermal protection against overheating

OPTIONAL FEATURES
- Stainless steel or custom color finish
- Reduced kW available (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Electric Capacity (kW)**	**Temp Rise (°F)**	**Net Wgt (lbs)**
MK21036E	36.75	3977	2262	1470	2121	1346	0.52	91	1 @ ½	9.5	22	80
MK21042E	42.75	4095	2568	1669	1830	1390	0.52	86	1 @ ½	9.5	22	84
MK21048E	48.75	3838	2271	1476	1663	1417	0.52	71	1 @ ½	9.5	21	86
MK22048E	48.75	4166	3194	2076	2241	1896	0.71	92	2 @ ½	12.5	22	110
MK22060E	60.75	3950	3785	2461	2393	2540	1.01	92	2 @ ½	16.0	22	145
MK22072E	74.50	3977	4524	2940	2121	2692	1.04	91	2 @ ½	19.0	22	160
MK22084E	86.50	4095	5136	3338	1830	2780	1.04	86	2 @ ½	19.0	22	175
MK22096E	98.50	3838	4542	2952	1663	2834	1.04	71	2 @ ½	19.0	21	190
MK23096E	98.50	4166	6388	4152	2241	3792	1.56	92	3 @ ½	25.0	22	205
MK23108E	112.25	3977	6786	4411	2121	4038	1.56	91	3 @ ½	28.5	21	215
MK23120E	118.25	3838	6876	4470	1957	4082	1.56	86	3 @ ½	28.5	22	225

Performance data is based on high speed. Consult factory for low speed and medium speed.

ELECTRIC HEATER DATA*												
MODEL	**kW**	**208V 1Ø**		**240V 1Ø**		**208V 3Ø Amp Draw**			**240V 3Ø Amp Draw**		**480V 3Ø** Amp Draw**	**600V 3Ø** Amp Draw**
		Circuit 1	**Circuit 2**	**Circuit 1**	**Circuit 2**	**Circuit 1**	**Circuit 2**	**Circuit 3**	**Circuit 1**	**Circuit 2**	**Circuit 1**	**Circuit 1**
MK21036E	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
MK21042E	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
MK21048E	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
MK22048E	12.5	20.0	40.1	17.4	34.7	34.7	-	-	30.1	-	15.0	12.6
MK22060E	16.0	-	-	-	-	44.4	-	-	38.5	-	19.2	16.1
MK22072E	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
MK22084E	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
MK22096E	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
MK23096E	25.0	-	-	-	-	34.7	34.7	-	30.1	30.1	30.1	25.1
MK23108E	28.5	-	-	-	-	26.4	26.4	26.4	22.9	45.7	34.3	28.6
MK23120E	28.5	-	-	-	-	26.4	26.4	26.4	22.9	45.7	34.3	28.6

*Reduced kW available. Check wiring diagram supplied with unit for kW and AMP draw if not listed above. For total circuit amp draw, add motor ampdraw to heater amp draw. ** Separate 120V, 208V or 240V single phase circuit required to operate motors.

POWER SUPPLIES/AMP DRAWS					
VOLTS	120	208	240	110*	220*
PHASE	1	1	1	1	1
HERTZ	60	60	60	50	50
AMPS per MOTOR	7.2	4.0	4.0	6.0	3.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

c UL us

FDA RECOMMENDED

USDA COMPLIANCE

Sound level measured 10' (3m) from the unit in free field:
1 motor: Low/Medium/High Speed: **51/54/56 dBA**
2 motors: Low/Medium/High Speed: **54/56/59 dBA**
3 motors: Low/Medium/High Speed: **57/60/62 dBA**
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

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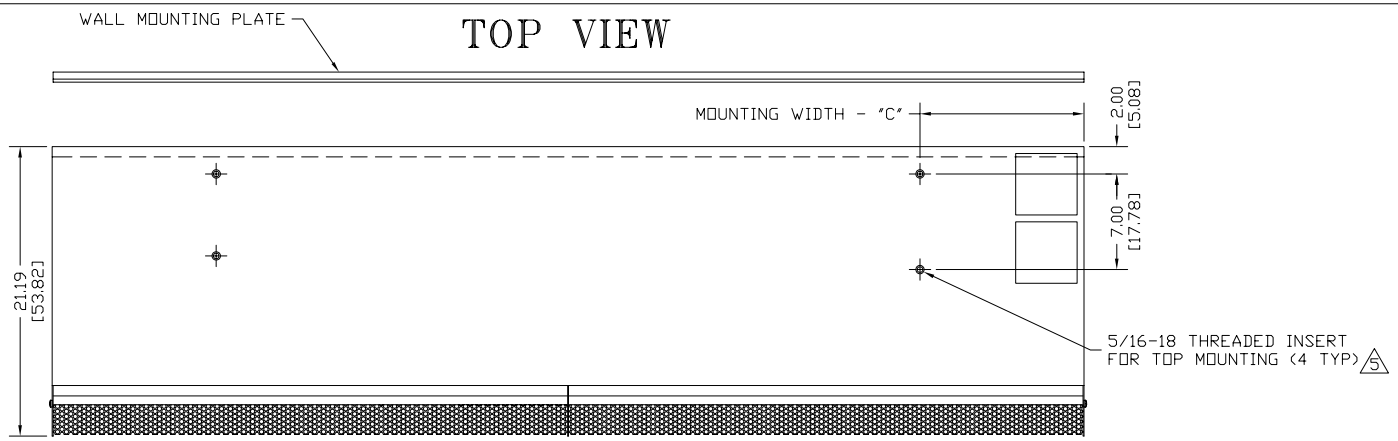
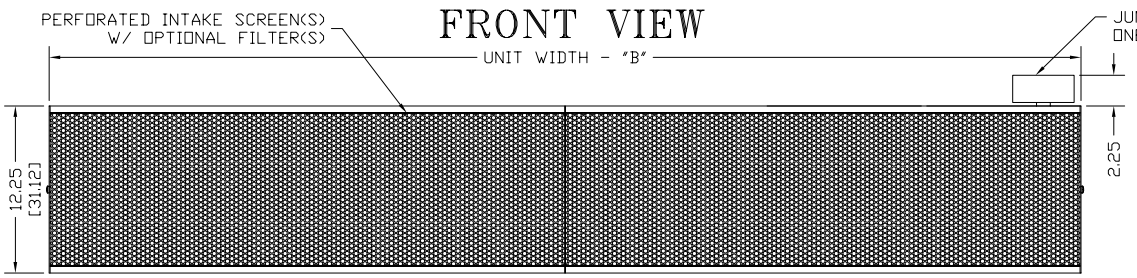
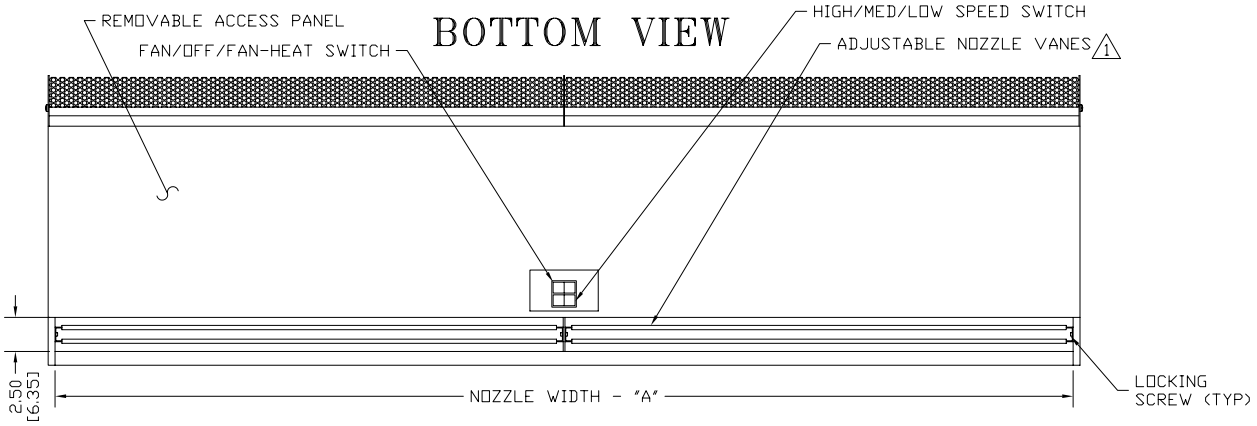
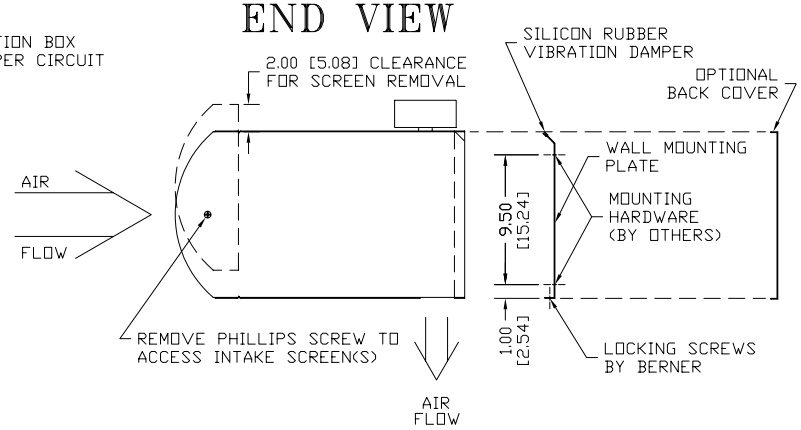
MADE IN U.S.A.

MARK II
ELECTRIC HEATED









MODEL 6	ELECTRIC HEATER OUTPUT KW	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"
MK21036E	9.5	36.75 [93.35]	37.75 [95.89]	8.00 [20.32]
MK21042E	9.5	42.75 [108.59]	43.75 [111.13]	8.00 [20.32]
MK21048E	9.5	48.75 [123.83]	49.75 [126.37]	10.00 [25.40]
MK22048E	12.5	48.75 [123.83]	49.75 [126.37]	8.00 [20.32]
MK22060E	16	60.75 [153.31]	61.75 [156.85]	8.00 [20.32]
MK22072E	19	74.50 [189.23]	75.50 [191.77]	12.00 [30.48]
MK22084E	19	86.50 [219.71]	87.50 [217.17]	12.00 [30.48]
MK22096E	19	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23096E	25	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23108E	25 / 28.5	112.25 [285.12]	113.25 [287.66]	27.00 [68.58]
MK23120E	28.5	118.25 [300.36]	119.25 [302.90]	27.00 [68.58]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. LETTER "E" IN MODEL NUMBER DESIGNATES ELECTRIC HEAT.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	MINU2855	TITLE: BERNER MODEL MARK II AIR CURTAIN ELECTRIC HEATED	
DATE	30JAN06		
BY	B. Peffer		
REPLACES	04JAN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-279
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

MARK II
Steam/Hot Water Heated
Data Sheet

For Door Heights To 10' (environmental separation)

STANDARD FEATURES
- 1/2 hp three speed motor(s)
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Filter frame (filter sold separately)
- Factory installed fan speed selector switch
- Clear anodized aluminum exterior cabinet
- Wall mounting plate and 5/16" threaded inserts for top mounting
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- 16 gauge galvanized steel casing
- Factory mounted 5/8" O.D. copper steam/hot water coil
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @ 325 psig dry nitrogen

OPTIONAL FEATURES
- Stainless steel or custom color finish

					Lab Data									
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam Capacity (mtbu/ hr)[1]**	**Temp. Rise (°F)**	**Hot Water Capacity (mbtu/hr)[2]**	**Temp. Rise (°F)**	**Net Wgt (lbs)**
MK21036*	36.75	3977	2262	1470	2121	1346	0.52	91	1 @ ½	57	34	39	26	80
MK21042*	42.75	4095	2568	1669	1830	1390	0.52	86	1 @ ½	62	37	43	29	84
MK21048*	48.75	3838	2271	1476	1663	1417	0.52	71	1 @ ½	67	39	48	31	86
MK22048*	48.75	4166	3194	2076	2241	1896	0.71	92	2 @ ½	77	34	56	27	115
MK22060*	60.75	3950	3785	2461	2393	2540	1.01	92	2 @ ½	100	33	74	27	150
MK22072*	74.50	3977	4524	2940	2121	2692	1.04	91	2 @ ½	115	36	85	29	160
MK22084*	86.50	4095	5136	3338	1830	2780	1.04	86	2 @ ½	126	38	95	31	175
MK22096*	98.50	3838	4542	2952	1663	2834	1.04	71	2 @ ½	134	43	101	33	185
MK23096*	98.50	4166	6388	4152	2241	3792	1.56	92	3 @ ½	151	37	120	29	205
MK23108*	112.25	3977	6786	4411	2121	4038	1.56	91	3 @ ½	173	36	133	30	215
MK23120*	118.25	3838	6876	4470	1957	4082	1.56	86	3 @ ½	179	37	138	31	225

*S = STEAM; W = HOT WATER
Performance data based on high speed.
1 Steam rating based on 70F entering air and 5 psig steam.
2 Hot Water based on 70F entering air and 200F entering water temperature.

POWER SUPPLIES/AMP DRAWS					
VOLTS	120	208	240	110*	220*
PHASE	1	1	1	1	1
HERTZ	60	60	60	50	50
AMPS per MOTOR	7.2	4.0	4.0	6.0	3.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1 motor: Low/Medium/High Speed: **51/54/56 dBA**
2 motors: Low/Medium/High Speed: **54/56/59 dBA**
3 motors: Low/Medium/High Speed: **57/60/62 dBA**

FDA RECOMMENDED USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

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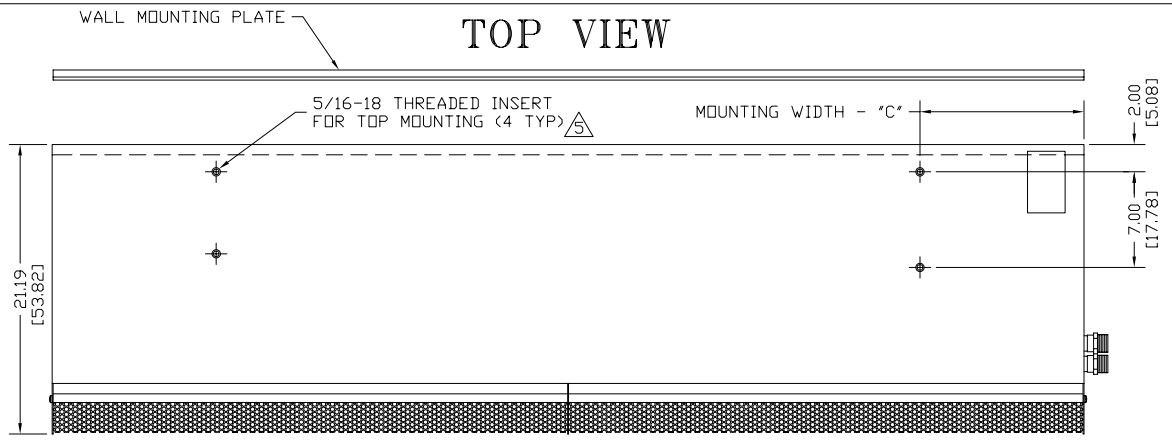
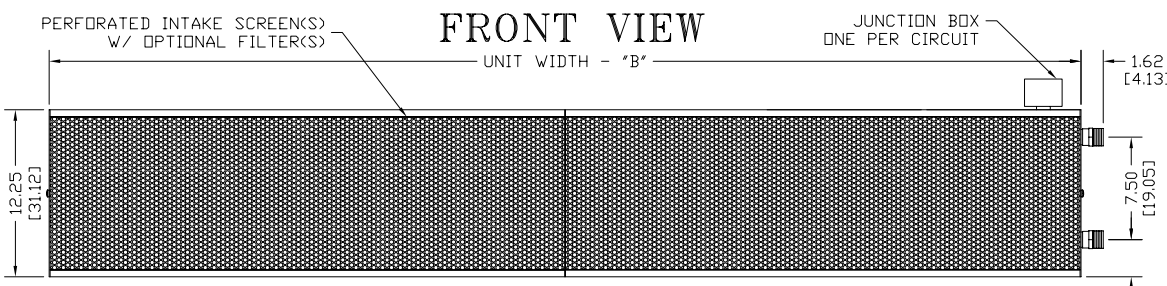
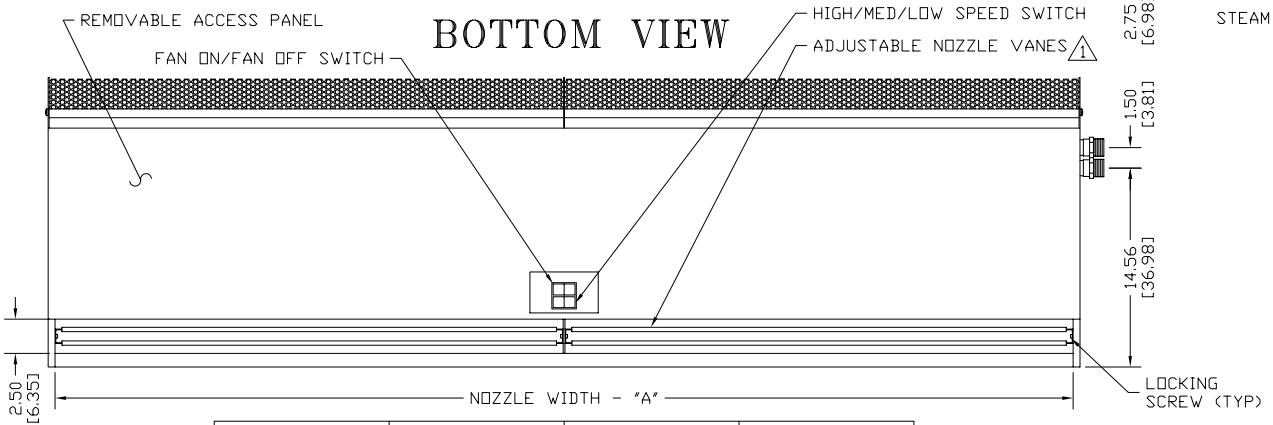
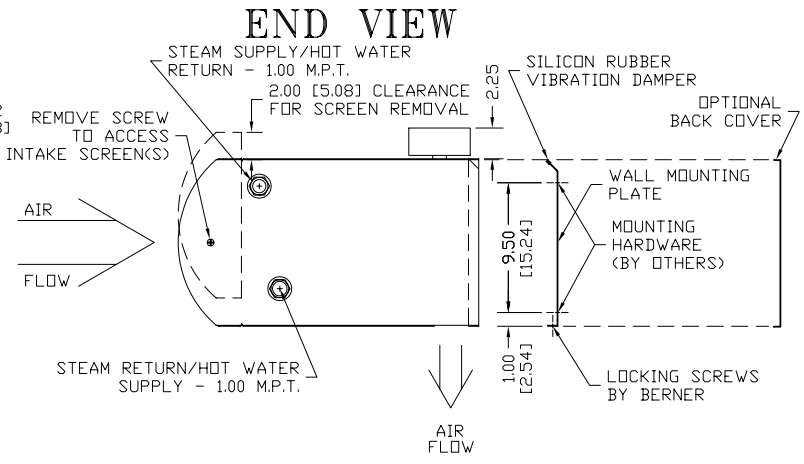
MADE IN U.S.A.

MARK II
STEAM/HOT WATER HEATED









MODEL	NOZZLE WIDTH "A"	UNIT WIDTH "B"	MOUNTING WIDTH "C"
MK21036*	36.75 [93.35]	37.75 [95.89]	8.00 [20.32]
MK21042*	42.75 [108.59]	43.75 [111.13]	8.00 [20.32]
MK21048*	48.75 [123.83]	49.75 [126.37]	10.00 [25.40]
MK22048*	48.75 [123.83]	49.75 [126.37]	8.00 [20.32]
MK22060*	60.75 [153.31]	61.75 [156.85]	8.00 [20.32]
MK22072*	74.50 [189.23]	75.50 [191.77]	12.00 [30.48]
MK22084*	86.50 [219.71]	87.50 [222.25]	12.00 [30.48]
MK22096*	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23096*	98.50 [250.19]	99.50 [252.73]	27.00 [68.58]
MK23108*	112.25 [285.12]	113.25 [287.66]	27.00 [68.58]
MK23120*	118.25 [300.36]	119.25 [302.90]	27.00 [68.58]

* S= STEAM; W= HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	MINU2856	TITLE: BERNER MODEL MARK II AIR CURTAIN STEAM/HOT WATER HEATED	
DATE	30JAN06		
BY	B. Peffer		
REPLACES	04JAN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

BERNER INTERNATIONAL CORP.

MARK II
STEAM/HOT WATER
Performance Data

STEAM									
Steam Coil (1) Row (8) Fins Per Inch									
Same End Supply/Return									
Model	Temp. Rise °F			Capacity mbtu/hr			Condensate lbs/hr		
	High	Med	Low	High	Med	Low	High	Med	Low
MK21036S	34	38	41	57	54	46	59	56	52
MK21042S	37	42	45	62	52	50	65	55	52
MK21048S	39	44	47	67	59	55	70	62	57
MK22048S	34	38	41	77	72	68	81	75	71
MK22060S	33	37	40	100	92	87	105	96	90
MK22072S	36	40	43	115	110	100	120	114	104
MK22084S	38	43	46	126	106	101	131	110	105
MK22096S	43	48	52	134	119	110	140	124	114
MK23096S	37	39	42	151	140	132	158	146	138
MK23108S	36	41	44	173	165	151	181	172	157
MK23120S	37	42	45	179	164	152	186	171	158

Performance based on 70° Entering Air Temperature (E.A.T.) and 5# Steam.
For other steam pressures - see chart on reverse side.
Berner recommends that maximum Leaving Air Temperature (L.A.T.) never exceed 120° F
Berner recommends coils should be supplied by a solenoid valve that energizes only when air curtain is on.

HOT WATER											
Hot Water Coil (1) Row (8) Fins Per Inch											
Same End Supply/Return											
Model	Temp. Rise °F			Capacity mbtu/hr			Leaving Water Temp °F			Water Flow	Drop or Loss
	High	Med	Low	High	Med	Low	High	Med	Low	gpm	ft. wg.
MK21036W	26	28	31	39	37	34	175	176	178	3.1	0.3
MK21042W	29	34	36	43	37	36	175	179	180	3.6	0.4
MK21048W	31	35	38	48	43	40	176	178	180	4.0	0.5
MK22048W	27	29	31	56	52	50	175	177	178	4.6	0.7
MK22060W	27	30	32	74	69	65	175	177	178	6.0	1.2
MK22072W	29	31	34	85	82	75	175	176	178	7.0	1.8
MK22084W	31	37	39	95	81	77	175	179	180	7.8	2.3
MK22096W	33	37	40	101	90	84	174	177	178	8.0	2.6
MK23096W	29	31	33	120	112	106	174	176	177	9.5	3.6
MK23108W	30	32	35	133	127	117	173	174	176	10.0	4.2
MK23120W	31	34	36	138	127	118	173	175	177	10.5	4.7

Performance based on 70°F Entering Air Temperature (E.A.T.) and 200°F Entering Water Temperature (E.W.T.)
Consult factory for other E.A.T., E.W.T. or G.P.M.

Berner reserves the right to alter specifications without prior notice.

Constants For Obtaining Temperature Rise At Various Steam Pressures & Inlet Temperatures

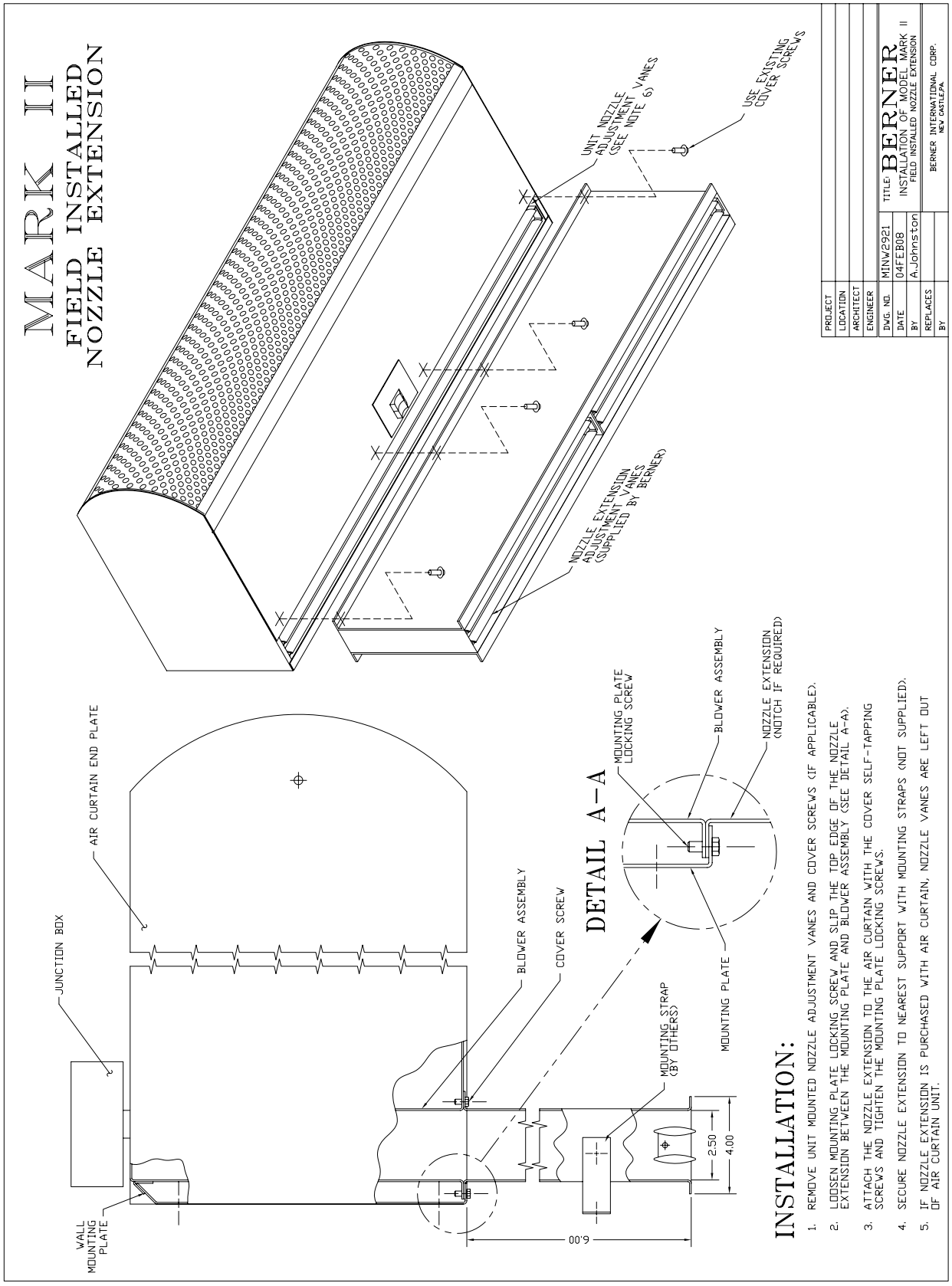
STEAM PRESSURES IN POUNDS PER SQUARE INCH (GAUGE)

ENTERING AIR TEMPERATURE °F	0	2	5	10	15	20	30	40	50	60	80	100	125	150	175	200
-30	1.54	1.59	1.64	1.71	1.78	1.84	1.94	2.02	2.10	2.16	2.25	2.34	2.44	2.52	2.59	2.67
-20	1.48	1.52	1.57	1.65	1.72	1.77	1.87	1.95	2.02	2.08	2.19	2.28	2.37	2.46	2.53	2.59
-10	1.41	1.45	1.51	1.59	1.65	1.71	1.81	1.89	1.96	2.02	2.12	2.21	2.31	2.39	2.46	2.53
00	1.35	1.39	1.45	1.54	1.59	1.65	1.74	1.82	1.89	1.96	2.06	2.15	2.25	2.33	2.40	2.47
10	1.28	1.33	1.38	1.46	1.52	1.58	1.68	1.76	1.83	1.89	2.00	2.09	2.18	2.26	2.34	2.40
20	1.22	1.26	1.31	1.40	1.46	1.52	1.62	1.70	1.77	1.83	1.93	2.02	2.12	2.20	2.27	2.34
30	1.16	1.20	1.25	1.33	1.40	1.46	1.55	1.63	1.70	1.76	1.87	1.96	2.05	2.14	2.21	2.28
40	1.09	1.14	1.19	1.27	1.33	1.39	1.49	1.57	1.64	1.70	1.81	1.89	1.99	2.07	2.15	2.22
45	1.06	1.10	1.16	1.24	1.30	1.36	1.46	1.54	1.61	1.67	1.77	1.86	1.96	2.04	2.12	2.18
50	1.03	1.07	1.13	1.21	1.27	1.33	1.42	1.51	1.58	1.64	1.74	1.83	1.93	2.01	2.08	2.15
55	1.00	1.04	1.10	1.17	1.24	1.30	1.39	1.47	1.54	1.61	1.71	1.80	1.89	1.98	2.05	2.12
60	0.97	1.01	1.06	1.14	1.21	1.26	1.36	1.44	1.51	1.57	1.68	1.77	1.86	1.95	2.02	2.09
65	0.93	0.98	1.03	1.11	1.17	1.23	1.33	1.41	1.48	1.54	1.65	1.74	1.83	1.91	1.99	2.05
70	0.90	0.95	**1.00**	1.08	1.14	1.20	1.30	1.38	1.45	1.51	1.62	1.70	1.80	1.88	1.96	2.02
75	0.87	0.91	0.97	1.05	1.11	1.17	1.27	1.35	1.42	1.48	1.59	1.67	1.77	1.85	1.92	1.99
80	0.84	0.88	0.94	1.01	1.08	1.14	1.24	1.32	1.39	1.45	1.55	1.64	1.74	1.82	1.89	1.96
85	0.81	0.85	0.90	0.98	1.05	1.11	1.20	1.28	1.35	1.41	1.52	1.61	1.71	1.79	1.86	1.93
90	0.78	0.82	0.87	0.95	1.02	1.07	1.17	1.25	1.32	1.38	1.49	1.58	1.67	1.76	1.83	1.89
100	0.71	0.75	0.81	0.89	0.95	1.00	1.11	1.19	1.26	1.32	1.42	1.51	1.61	1.69	1.77	1.83
110	0.65	0.69	0.75	0.82	0.89	0.95	1.04	1.12	1.20	1.26	1.36	1.45	1.55	1.63	1.70	1.77
120	0.59	0.63	0.68	0.76	0.83	0.88	0.98	1.06	1.13	1.19	1.30	1.40	1.48	1.56	1.64	1.71
140	0.46	0.50	0.55	0.63	0.70	0.76	0.85	0.93	1.00	1.07	1.17	1.26	1.35	1.44	1.51	1.58
160	0.33	0.37	0.43	0.50	0.57	0.63	0.73	0.81	0.88	0.94	1.04	1.13	1.23	1.31	1.38	1.45
180	0.20	0.24	0.30	0.38	0.44	0.50	0.60	0.68	0.75	0.81	0.91	1.00	1.10	1.18	1.26	1.32
200	0.08	0.12	0.17	0.25	0.32	0.37	0.47	0.55	0.62	0.68	0.79	0.88	0.97	1.06	1.13	1.20

$T = T^\circ + \triangle t \times C$ T = Temperature at exit T° = Temperature at intake

$\triangle t$ = Temperature rise from data sheet C = Constant from above table

MARK II
Nozzle Extension
Accessories



Berner reserves the right to alter specifications without prior notice.

No.: DS-524
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

AURA
Ambient
Data Sheet

For Door Heights To 8' (environmental separation)

STANDARD FEATURES

- 1/2 hp three speed motor(s)
- Galvanized steel blower wheels & housing
- White aluminum airfoil directional vanes
- Hinged bottom panel for easy access to internal components
- Perforated steel intake grille
- White powder coated finish
- 16 gauge steel base frame and casing
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES

- Black Electro-static powder coated finish or custom color finish

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Average Outlet Velocity (fpm)**	**Air Volume (cfm)**	**Power Rating (kW)**	**Outlet Velocity Uniformity (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
ARA1036A	36.5	3255	1757	1142	1680	1115	0.34	78.5	1 @ ½	111
ARA1042A	42.5	3354	1907	1240	1557	1249	0.37	70.9	1 @ ½	135
ARA1048A	48.5	2958	2107	1369	1838	1685	0.49	77.7	1 @ ½	158
ARA1060A	59.5	3168	2566	1668	1697	1912	0.56	70.7	1 @ ½	185

Performance data is based on high speed.

MOTOR VOLTAGES/AMP DRAW				
VOLTS	120	208/240	110	220
PHASE	1	1	1	1
HERTZ*	60	60	50	50
AMPS per MOTOR	7.2	4	6	3

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION *Model: ARA1036*			
Distance from Nozzle (ft.)	2	3	4
Core Velocity (fpm)	1483	1181	961

Velocity projection based on high speed operation.

Sound level measured 10' (3m) from the unit in free field:
ARA1036 & ARA1042: Low/Medium/High Speed: **55/60/62 dBA**
ARA1048 & ARA1060: Low/Medium/High Speed: **61/65/67 dBA**
Sound data is not AMCA certified.

amca CERTIFIED RATINGS AIR PERFORMANCE AIR MOVEMENT AND CONTROL ASSOCIATION, INC. PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

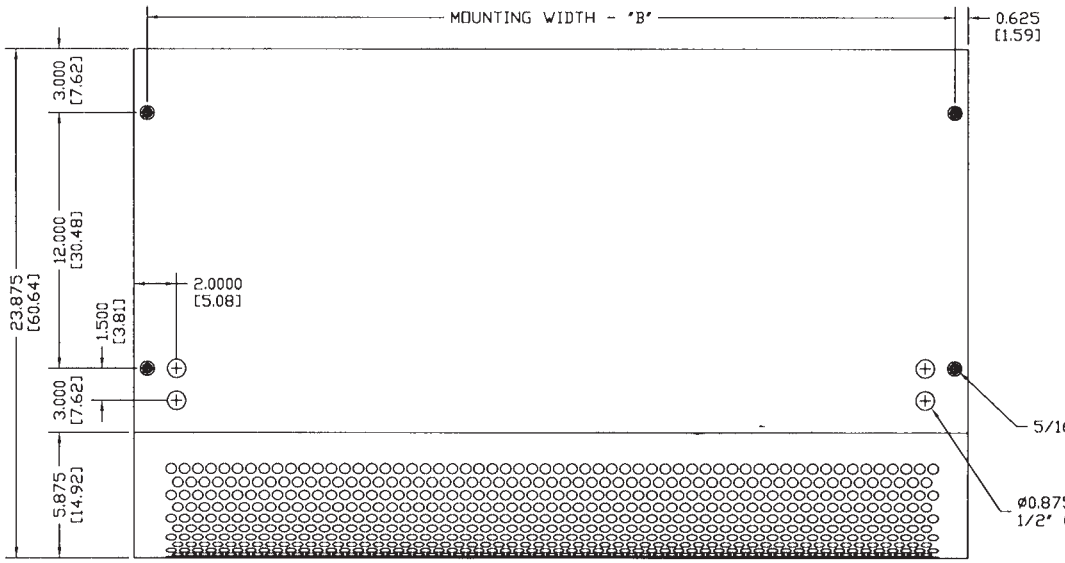
c UL us

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

Signature Series AURA AMBIENT SYSTEM

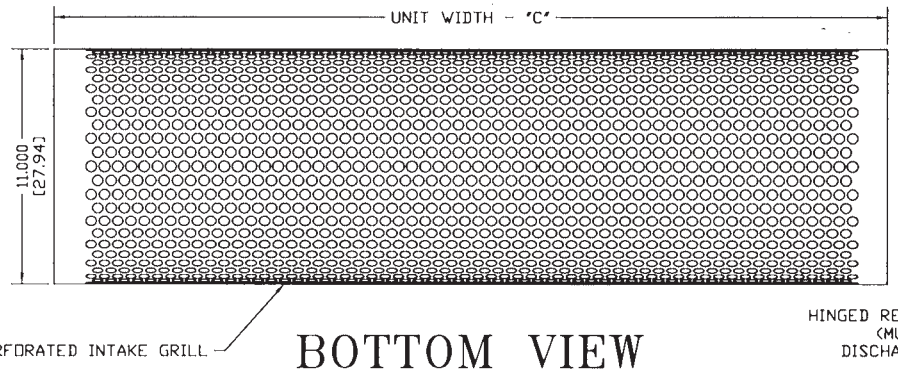
TOP VIEW



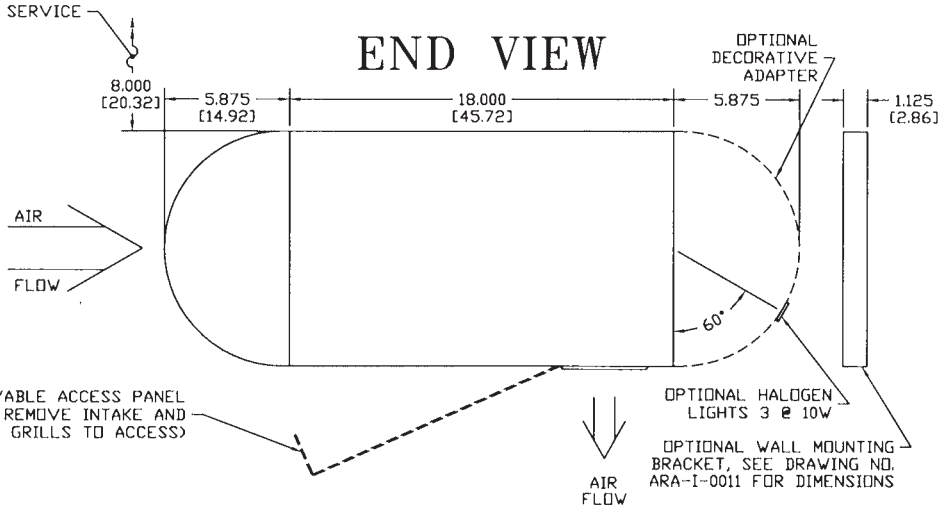
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS INCHES [CENTIMETERS].

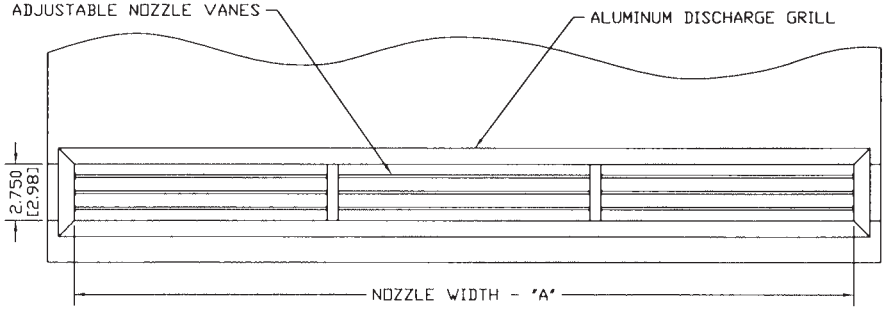
FRONT VIEW



END VIEW



BOTTOM VIEW



TAG	MODEL	NOZZLE WIDTH 'A'	MOUNTING WIDTH 'B'	UNIT WIDTH 'C'
	ARA1036A	36.500 [92.71]	37.750 [95.89]	39.000 [99.06]
	ARA1042A	42.500 [107.95]	43.750 [111.13]	45.000 [114.30]
	ARA1048A	48.500 [123.19]	49.750 [126.37]	51.000 [129.54]
	ARA1060A	59.500 [151.13]	60.750 [154.31]	62.000 [157.48]

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	ARAI0010
DATE	14MAR03
BY	B. Peffer
REPLACES	21MAY01
BY	B. Peffer

TITLE: BERNER
MODEL AURA AIR CURTAIN
AMBIENT SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-525
Date: October, 2011

BERNER INTERNATIONAL CORP.

AURA
Electric Heated
Data Sheet

For Door Heights To 8' (environmental separation)

STANDARD FEATURES
- 1/2 hp three speed motor(s)
- Galvanized steel blower wheels & housing
- White aluminum airfoil directional vanes
- Hinged bottom panel for easy access to internal components
- Perforated steel intake grille
- White powder coated finish
- 16 gauge steel base frame and casing
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Helical coil with point suspension of elements for longer life
- Available single or three phase (not all models)
- Easily replaceable heater elements
- Galvanized steel frame
- Thermally protected against overheating

OPTIONAL FEATURES
- Black Electro-static powder coated finish or custom color finish

REQUIRED ACCESSORIES
- 7 postion rotary cam switch (electric heated models)

					Lab Data						
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Velocity (fpm)**	**Air Volume (cfm)**	**Power Rating (kW)**	**Motor(s) @ hp**	**kW@ MBTU/Hr**	**Temp Rise (°F)**	**Net Wgt (lbs)**
ARA1036E	36.5	3255	1757	1142	1657	1155	0.34	1 @ ½	9 @ 30.7	25	130
ARA1042E	42.5	3354	1907	1240	1557	1249	0.37	1 @ ½	9 @ 30.7	23	145
ARA1048E	48.5	2958	2107	1369	1838	1685	0.49	1 @ ½	12 @ 41.0	23	168
ARA1060E	59.5	3168	2566	1668	1697	1912	0.56	1 @ ½	12 @ 41.0	20	195

Performance data is based on high speed.

HEATER kW/AMP DRAW †									
MODEL	**kW***	**208V 1Ø Circuit 1**	**208V 1Ø Circuit 2**	**240V 1Ø Circuit 1**	**240V 1Ø Circuit 2**	**208V3Ø Circuit 1**	**240V3Ø Circuit 1**	**480V3Ø* * Circuit 1**	**600V 3Ø** Circuit 1**
ARA1036E	9	43.3	-	37.5	-	25.0	21.7	10.8	9.0
ARA1042E	9	43.3	-	37.5	-	25.0	21.7	10.8	9.0
ARA1048E	12	19.2	38.5	16.7	33.3	33.3	28.9	14.4	12.0
ARA1060E	12	19.2	38.5	16.7	33.3	33.3	28.9	14.4	12.0

* Reduced kW available, consult factory.
†For total circuit amp draw add motor amp draw to heater amp draw
**All 480V/600V electric heated systems require 120/208 or 240/1/60 power for motor.

MOTOR VOLTAGES/AMP DRAW				
VOLTS	120	208/240	110	220
PHASE	1	1	1	1
HERTZ*	60	60	50	50
AMPS per MOTOR	7.2	4	6	3

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

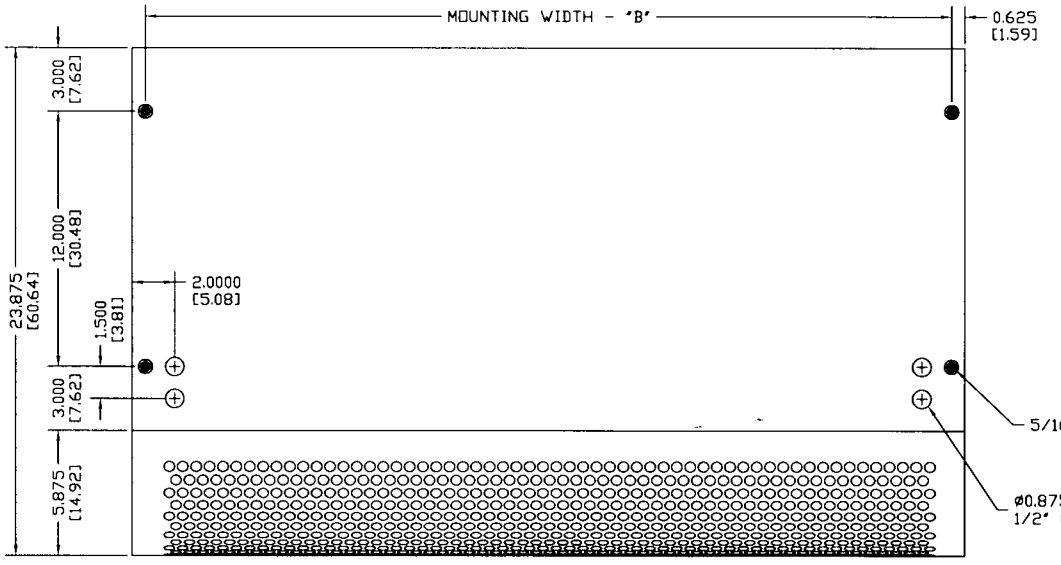
Sound level measured 10' (3m) from the unit in free field:
ARA1036 & ARA1042: Low/Medium/High Speed: **55/60/62 dBA**
ARA1048 & ARA1060: Low/Medium/High Speed: **61/65/67 dBA**
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

Signature Series AURA
ELECTRIC HEATED SYSTEM

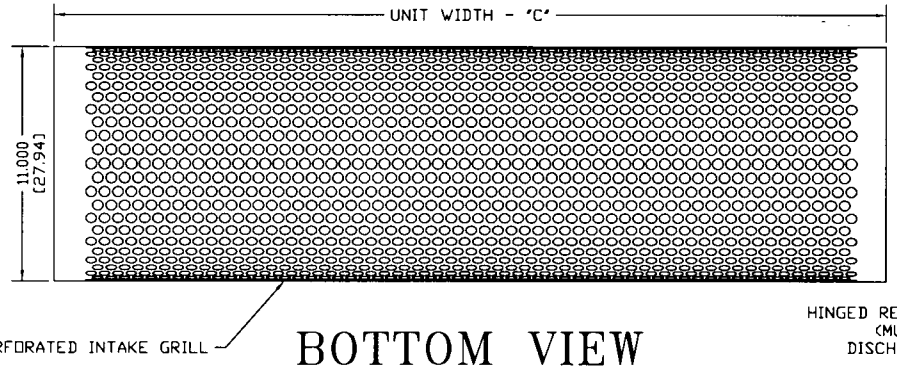
TOP VIEW



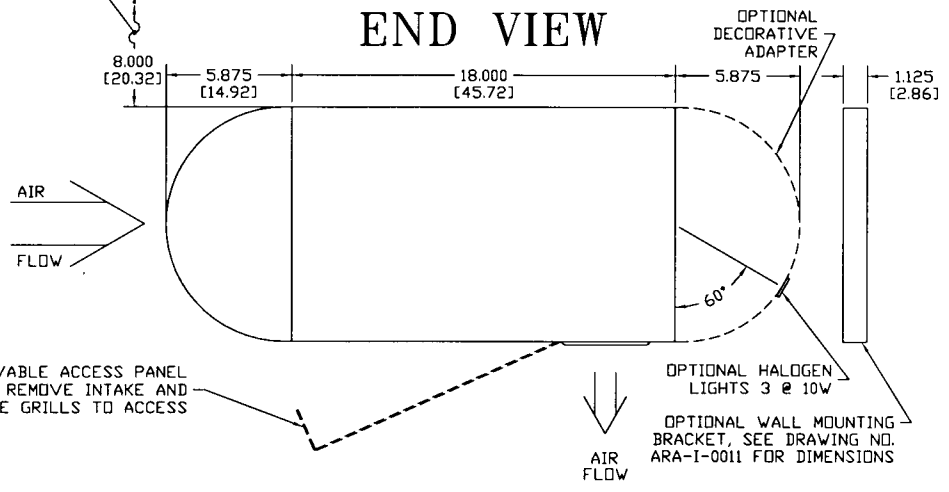
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. DIMENSIONS INCHES [CENTIMETERS].

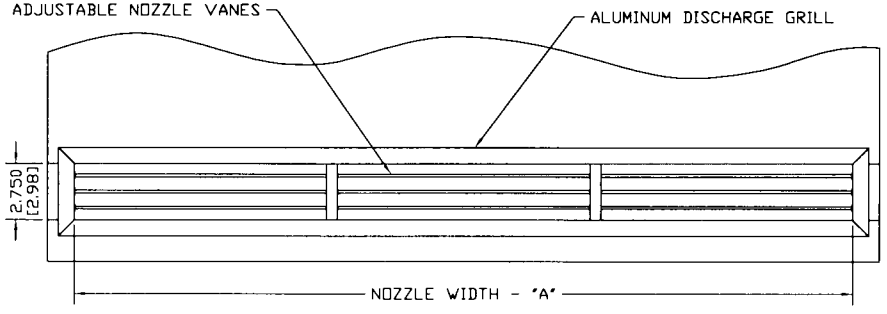
FRONT VIEW



END VIEW



BOTTOM VIEW



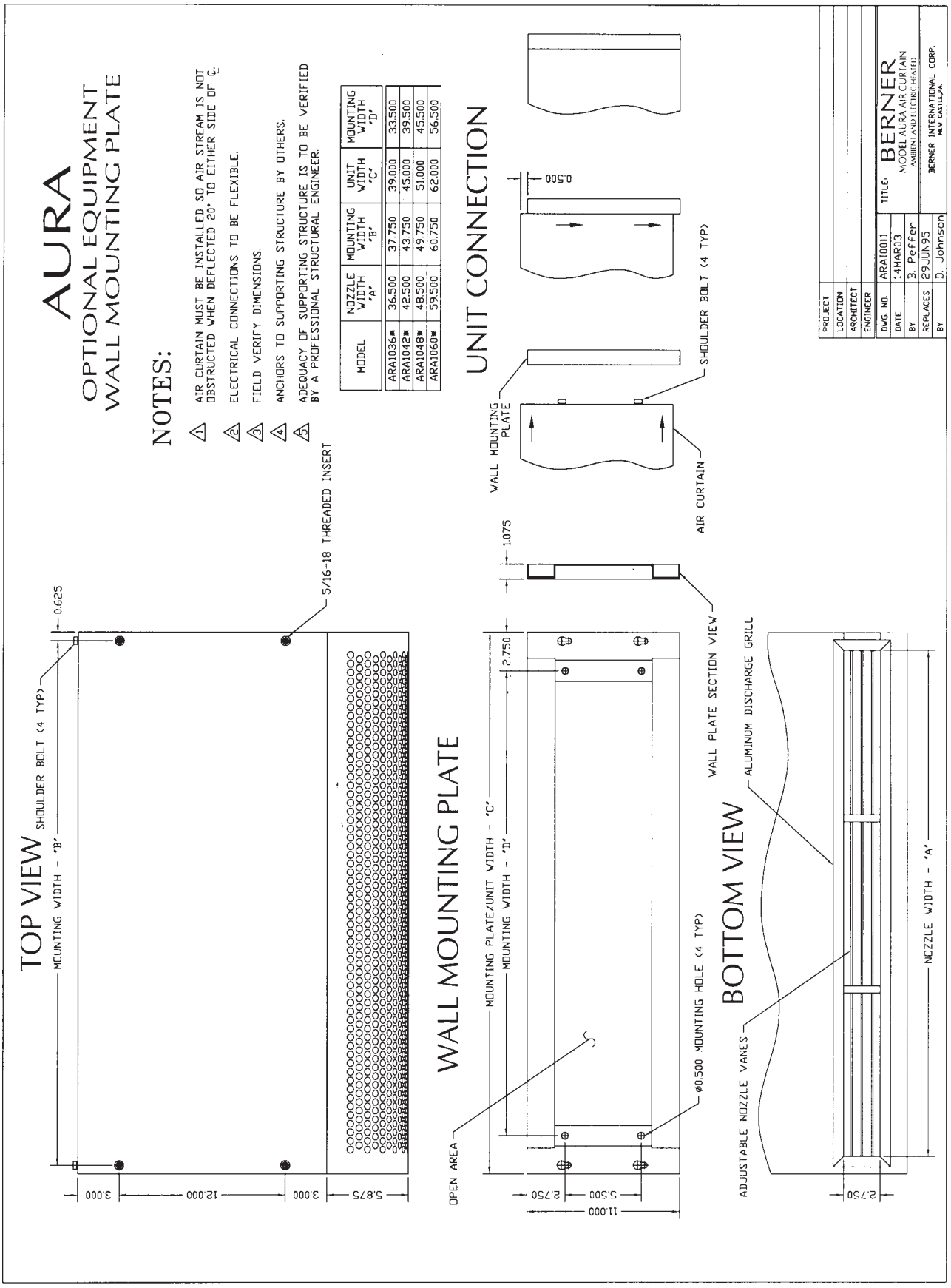
TAG	MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
	ARA1036E	36.500 [92.71]	37.750 [95.89]	39.000 [99.06]
	ARA1042E	42.500 [107.95]	43.750 [111.13]	45.000 [114.30]
	ARA1048E	48.500 [123.19]	49.750 [126.37]	51.000 [129.54]
	ARA1060E	59.500 [151.13]	60.750 [154.31]	62.000 [157.48]

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	ARAL0012
DATE	14MAR03
BY	B. Peffer
REPLACES	210CT98
BY	B. Peffer

TITLE: BERNER
MODEL AURA AIR CURTAIN
ELECTRIC HEATED SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

AURA
Wall Mounting Plate



Berner reserves the right to alter specifications without prior notice.

No.: DS-103
Date: October, 2011

BERNER INTERNATIONAL CORP.

STAR
Single Speed Ambient
Data Sheet

For Door Heights To 10' (environmental separation) and 8' (insect control)

STANDARD FEATURES
- 3/4 hp motor(s)
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Aluminum base frame
- White aluminum housing
- Keyhole slots in backplate for quick wall mounting
- Five year parts warranty
- Crafted with Pride in the USA

						AMCA Certified Lab Data						
MODEL WHITE ALUMINUM	**MODEL STAINLESS STEEL**	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Velocity Unif. (%)**	**Motor(s) @ hp**	**# Fans**	**Net Wgt. (lbs)**
CUSTOMER ENTRY MODELS												
STF1036A	STF1036A-SS	36"	2238	1594	1036	1337	958	.51	81.4	1 @ ¾	2	50
STF1042A	STF1042A-SS	42"	2990	2408	1565	958	978	.33	78.9	1 @ ¾	2	52
STF1048A	STF1048A-SS	48"	1992	1380	897	1011	966	.53	59.4	1 @ ¾	2	53
STF1060A-2*	STF1060A-SS-2*	60"	2673	1014	659	692	977	.31	26.0	1 @ ¾	2	54
STF1060A-3**	STF1060A-SS-3**	60"	2262	2309	1501	1006	1498	.40	70.0	1 @ ¾	3	60
STF1072A	STF1072A-SS	72"	2215	2403	1562	838	1467	.40	62.0	1 @ ¾	3	70
STF2072A	STF2072A-SS	72"	2238	3188	2072	1337	1916	1.02	81.4	2 @ ¾	4	80
SERVICE ENTRY MODELS												
STR1036A	STR1036A-SS	36"	5917	3723	2420	1965	1812	.68	71.9	1 @ ¾	2	50
STR1042A	STR1042A-SS	42"	4418	3545	2304	1716	1752	.75	78.6	1 @ ¾	2	52
STR1048A	STR1048A-SS	48"	3815	2430	1580	1504	1882	.73	54.6	1 @ ¾	2	53
STR1060A*	STR1060A-SS*	60"	2930	1154	750	1225	1817	.74	27.0	1 @ ¾	2	54
STR2060A**	STR2060A-SS**	60"	3963	4277	2780	1805	2726	1.18	74.0	2 @ ¾	3	70
STR2072A	STR2072A-SS	72"	5917	7445	4839	1965	3624	1.36	71.9	2 @ ¾	4	84

*Two blower system **Three blower system
For door widths in excess of 72", combine units

POWER SUPPLIES/AMP DRAWS			
Horsepower	3/4	3/4	3/4
Speed	1	1	1
Volts	120	208/240	480
Phase	1	1	1
Hertz**	50/60	50/60	50/60
Amps per Motor	7.5	3.8	1.8

**Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
STF (2 Fan): **58 dBA**
STF (3 Fan): **60 dBA**
STR (2 Fan): **67 dBA**
STR (2 Fan): **69 dBA**
Sound data is not AMCA certified.

VELOCITY PROJECTION			
Model: STF1036			
Distance from Nozzle (ft)	2	3	5
Core Velocity (fpm)	1555	1011	900
Model: STR1036			
Distance from Nozzle (ft)	3	5	7
Core Velocity (fpm)	2060	1555	1300

amca CERTIFIED RATINGS AIR PERFORMANCE AIR MOVEMENT AND CONTROL ASSOCIATION, INC.

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.
Model STF1072A is not liscensed to bear the AMCA seal.

FDA RECOMMENDED

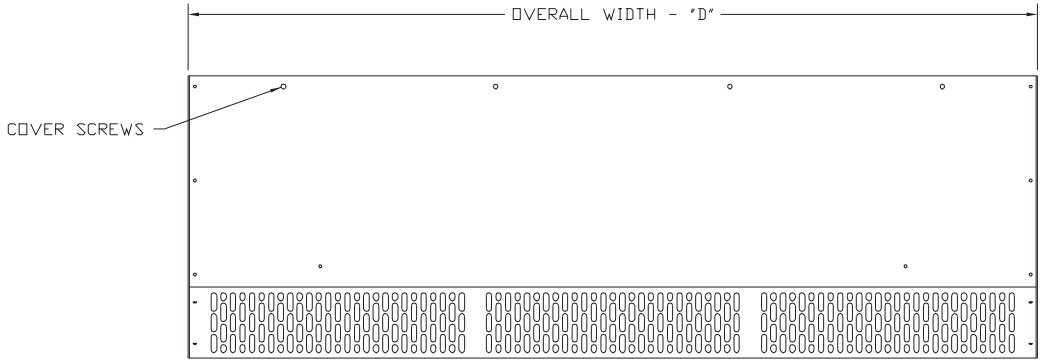
c UL us for outdoor use

USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

TOP VIEW

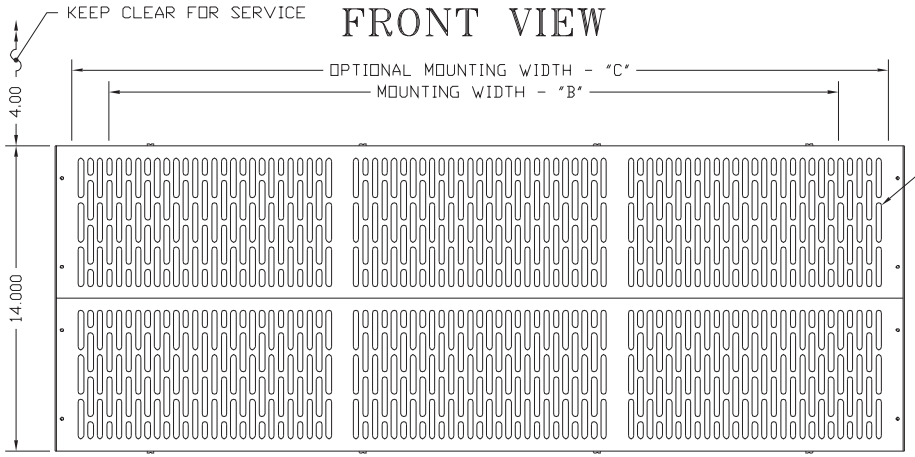


THE STAR AIR DOOR AMBIENT

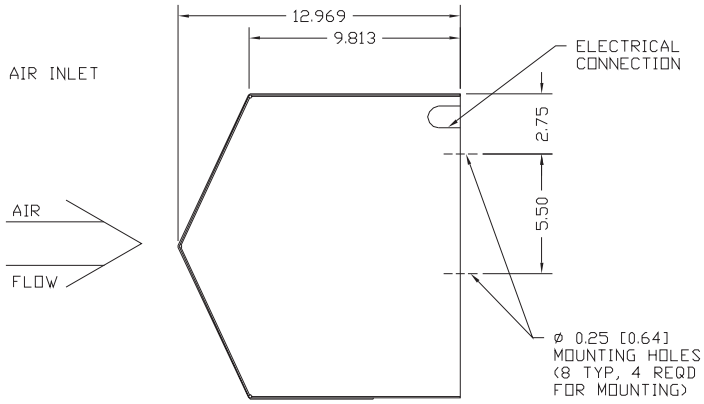
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS ARE TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.

FRONT VIEW

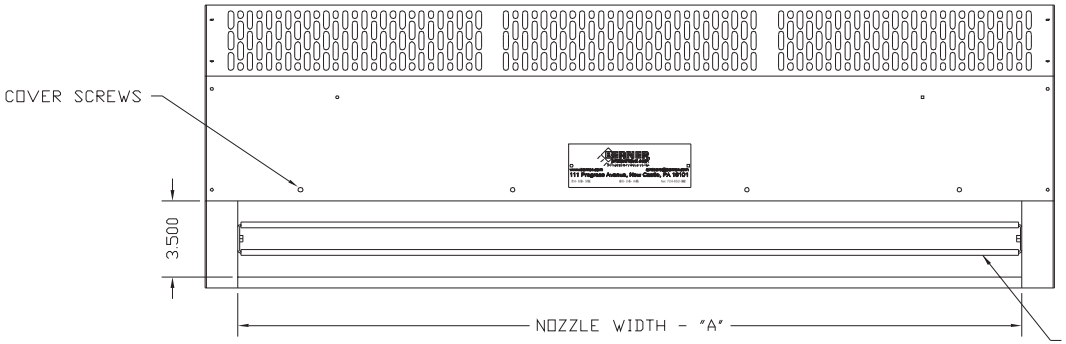


END VIEW



AIRFLOW

BOTTOM VIEW



MODEL	NOZZLE "A"	MOUNTING "B"	MOUNTING "C"	OVERALL "D"
ST*1036A	36.00 [91.44]	33.50 [85.09]	37.50 [95.25]	39.00 [99.06]
ST*1042A	42.00 [106.68]	39.50 [100.33]	43.50 [110.49]	45.00 [114.30]
ST*1048A	48.00 [121.92]	45.50 [115.57]	49.50 [125.73]	51.00 [129.54]
ST*1060A STR2060A	60.00 [152.40]	57.50 [146.05]	61.50 [156.21]	63.00 [160.02]
STF1072A ST*2072A	72.00 [193.04]	69.50 [176.53]	73.50 [186.69]	75.00 [190.50]

REPLACE '*' WITH 'F', 'R' OR 'N' FOR FRONT, REAR OR NSF.
†NSF CERTIFICATION APPLIES TO STN SERIES ONLY.

DWG. NO.	LWAS0064
DATE	30DEC04
BY	A.Johnston
REPLACES	
BY	

TITLE: **BERNER**
MODEL STAR AIR DOOR
AMBIENT

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-109
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

STAR
Three Speed Ambient
Data Sheet

For Door Heights To 10' (environmental separation) and 8' (insect control)

STANDARD FEATURES
- 1/2 hp motor(s)
- Factory installed three speed switch
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Aluminum base frame
- White aluminum housing
- Keyhole slots in backplate for quick wall mounting
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES
- Stainless steel or custom color finish

						AMCA Certified Lab Data						
MODEL WHITE ALUMINUM	**MODEL STAINLESS STEEL**	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Velocity Unif. (%)**	**Motor(s) @ hp**	**# Fans**	**Net Wgt. (lbs)**
STR1036A-3X	STR1036A-3X-SS	36"	5917	3723	2420	1965	1812	.68	71.9	1 @ ½	2	50
STR1042A-3X	STR1042A-3X-SS	42"	4418	3545	2304	1716	1752	.75	78.6	1 @ ½	2	52
STR1048A-3X	STR1048A-3X-SS	48"	3815	2430	1580	1504	1882	.73	54.6	1 @ ½	2	53
STR1060A-3X*	STR1060A-3X-SS*	60"	2930	1154	750	1225	1817	.74	27.0	1 @ ½	2	54
STR2060A-3X**	STR2060A-3X-SS**	60"	3963	4277	2780	1805	2726	1.18	74.0	2 @ ½	3	70
STR2072A-3X	STR2072A-3X-SS	72"	5917	7445	4839	1965	3624	1.36	71.9	2 @ ½	4	84

Performance data is based on high speed.
*Two blower system **Three blower system
For door widths in excess of 72", combine units

POWER SUPPLIES/AMP DRAWS		
Horsepower	1/2	1/2
Speed	3	3
Volts	120	208/240
Phase	1	1
Hertz**	50/60	50/60
Amps per Motor	7.2	4.0

**Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION			
Model: STR1036			
Distance from Nozzle (ft)	3	5	7
Core Velocity (fpm)	2060	1555	1300

Sound level measured 10' (3m) from the unit in free field:
STR (2 Fan): **67 dBA**
STR (2 Fan): **69 dBA**
Sound data is not AMCA certified.

amca CERTIFIED RATINGS AIR PERFORMANCE AIR MOVEMENT AND CONTROL ASSOCIATION, INC. PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

FDA RECOMMENDED c UL us USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

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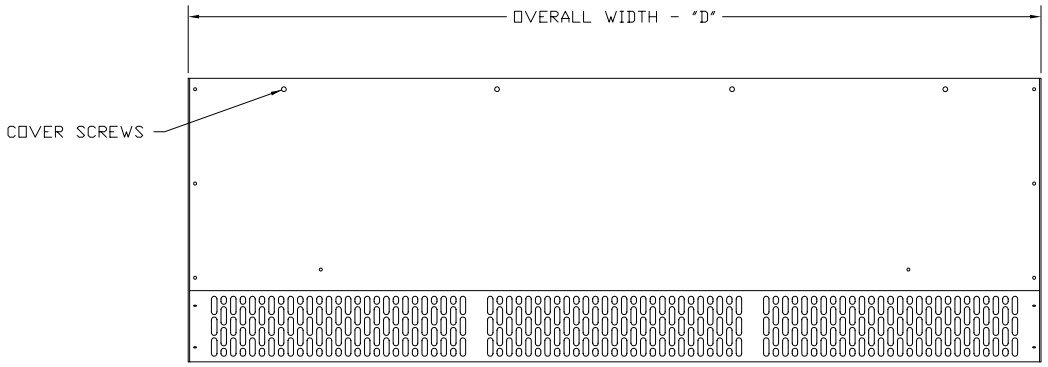
MADE IN U.S.A.

THE STAR AIR DOOR AMBIENT THREE SPEED

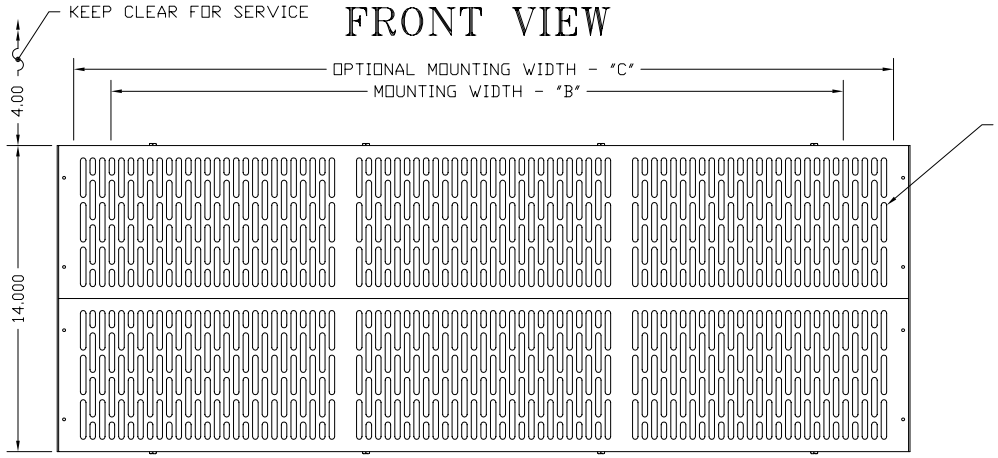
TOP VIEW



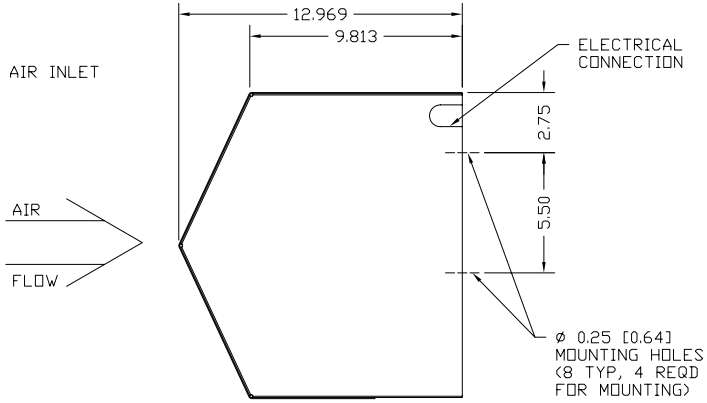
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS ARE TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.

FRONT VIEW

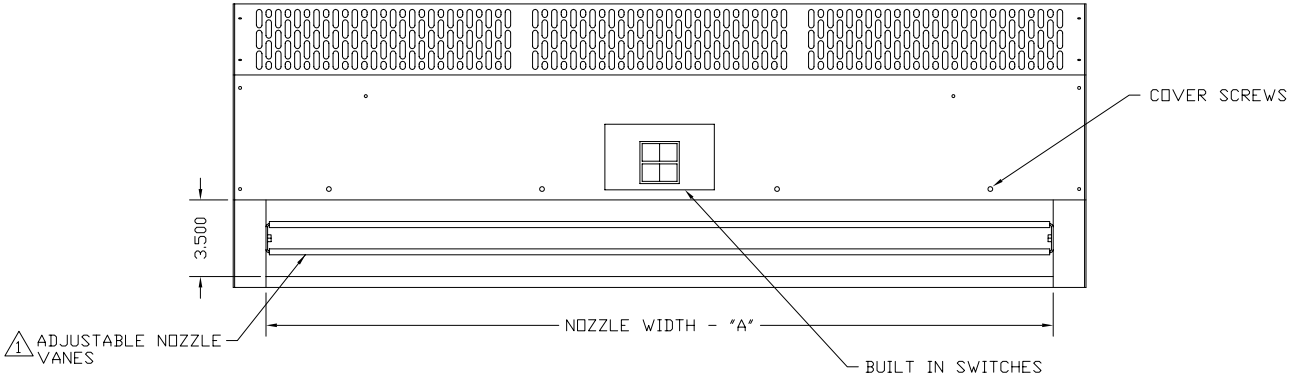


END VIEW



AIRFLOW

BOTTOM VIEW



MODEL	NOZZLE "A"	MOUNTING "B"	MOUNTING "C"	OVERALL "D"
STR1036A-3X	36.00 [91.44]	33.50 [85.09]	37.50 [95.25]	39.00 [99.06]
STR1042A-3X	42.00 [106.68]	39.50 [100.33]	43.50 [110.49]	45.00 [114.30]
STR1048A-3X	48.00 [121.92]	45.50 [115.57]	49.50 [125.73]	51.00 [129.54]
STR2060A-3X	60.00 [152.40]	57.50 [146.05]	61.50 [156.21]	63.00 [160.02]
STR2072A-3X	72.00 [193.04]	69.50 [176.53]	73.50 [186.69]	75.00 [190.50]

DWG. NO.	LWAT0075
DATE	01SEP05
BY	A.Johnston
REPLACES	
BY	

TITLE: BERNER
MODEL STAR AIR DOOR
3-SPEED AMBIENT

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-107
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

STAR
STN Ambient
Data Sheet

For Door Heights To 8' (environmental separation) and 7' (EPH & NSF certification)

STANDARD FEATURES
- 3/4 hp motor(s)
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Aluminum base frame
- White aluminum housing
- Keyhole slots in backplate for quick wall mounting
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES
- Stainless steel or custom color finish

						AMCA Certified Lab Data						
MODEL WHITE ALUMINUM	**MODEL STAINLESS STEEL**	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Velocity Unif. (%)**	**Motor(s) @ hp**	**# Fans**	**Net Wgt. (lbs)**
CUSTOMER ENTRY MODELS												
STN1036A-P	STN1036A-P-SS	36"	5917	3723	2420	1965	1812	.68	71.9	1 @ ¾	2	50
STN1042A-P	STN1042A-P-SS	42"	4418	3545	2304	1716	1752	.75	78.6	1 @ ¾	2	52
STN1048A-P	STN1048A-P-SS	48"	3815	2430	1580	1504	1882	.73	54.6	1 @ ¾	2	53
STN2060A-P*	STN2060A-P-SS*	60"	3963	4277	2780	1805	2726	1.18	74.0	2 @ ¾	3	70
STN2072A-P	STN2072A-P-SS	72"	5917	7445	4839	1965	3624	1.36	71.9	2 @ ¾	4	84

*Three blower system
For door widths in excess of 72", combine units

POWER SUPPLIES/AMP DRAWS			
Horsepower	3/4	3/4	3/4
Speed	1	1	1
Volts	120	208/240	480
Phase	1	1	1
Hertz**	50/60	50/60	50/60
Amps per Motor	7.5	3.8	1.8

**Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION			
Model: STN1036			
Distance from Nozzle (ft)	3	5	7
Core Velocity (fpm)	2060	1555	1300

Sound level measured 10' (3m) from the unit in free field:
STN (2 Fan): **67 dBA**
STN (2 Fan): **69 dBA**
Sound data is not AMCA certified.

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC.

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Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

c UL us — for outdoor use

NSF — 36" & 42" units only

CLASSIFIED UL EPH — ANSI/NSF 37 Air Curtain Fans for Customer Entry 12CS

FDA RECOMMENDED — USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

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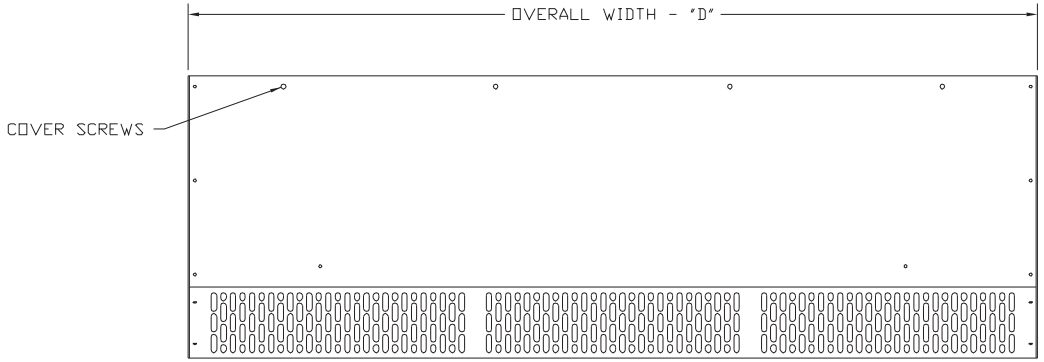
MADE IN U.S.A.

TOP VIEW

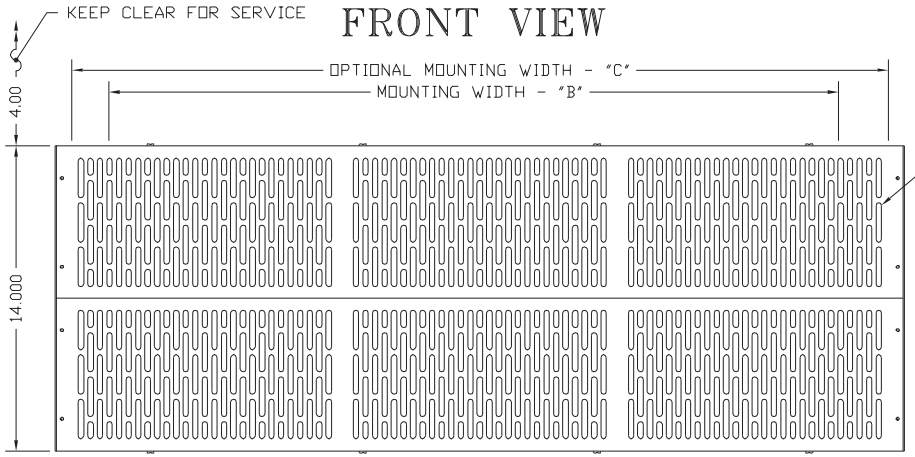


THE STAR AIR DOOR AMBIENT

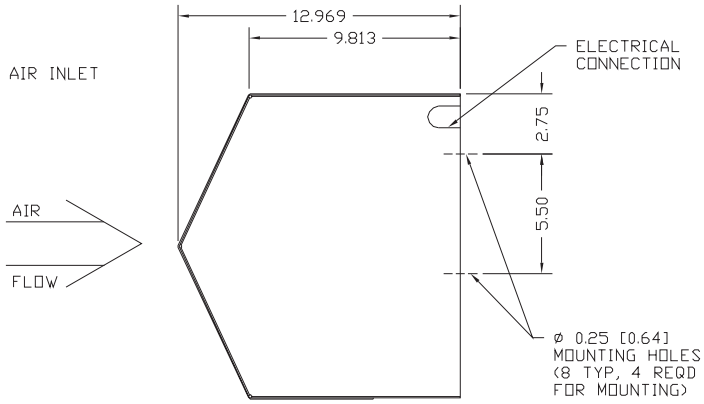
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS ARE TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.

FRONT VIEW

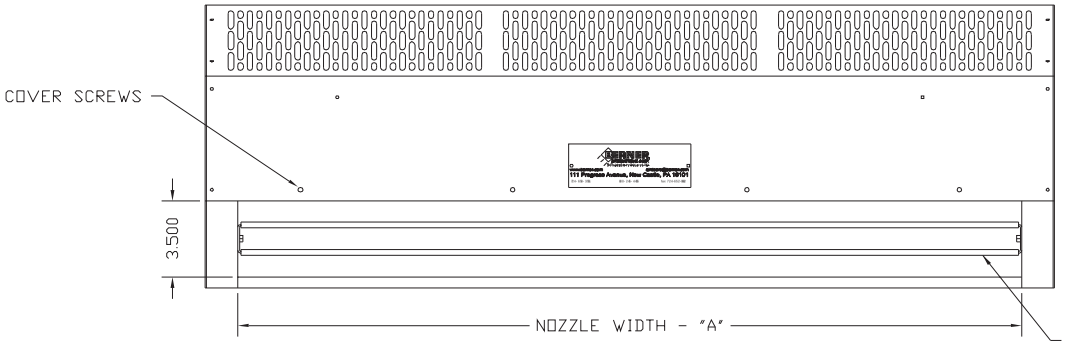


END VIEW



AIRFLOW

BOTTOM VIEW



MODEL	NOZZLE "A"	MOUNTING "B"	MOUNTING "C"	OVERALL "D"
ST*1036A	36.00 [91.44]	33.50 [85.09]	37.50 [95.25]	39.00 [99.06]
ST*1042A	42.00 [106.68]	39.50 [100.33]	43.50 [110.49]	45.00 [114.30]
ST*1048A	48.00 [121.92]	45.50 [115.57]	49.50 [125.73]	51.00 [129.54]
ST*1060A STR2060A	60.00 [152.40]	57.50 [146.05]	61.50 [156.21]	63.00 [160.02]
STF1072A ST*2072A	72.00 [193.04]	69.50 [176.53]	73.50 [186.69]	75.00 [190.50]

REPLACE '*' WITH 'F', 'R' OR 'N' FOR FRONT, REAR OR NSF.
†NSF CERTIFICATION APPLIES TO STN SERIES ONLY.

DWG. NO.	LWAS0064
DATE	30DEC04
BY	A.Johnston
REPLACES	
BY	

TITLE: **BERNER**
MODEL STAR AIR DOOR
AMBIENT

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-122
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

STAR
Single Speed Electric Heated
Data Sheet

For Door Heights To 10' (environmental separation)

STANDARD FEATURES
- 3/4 hp motor(s)
- Factory installed fan/heat switch
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Aluminum base frame
- White aluminum housing
- Keyhole slots in backplate for quick wall mounting
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Helical coil with point suspension of elements for longer life
- Available single or three phase
- Easily replaceable heating elements
- Galvanized steel frame
- Thermal protection against overheating

OPTIONAL FEATURES
- Stainless steel or custom color finish
- Reduced kW available (consult factory)

						Lab Data								
MODEL WHITE ALUMINUM	**MODEL STAINLESS STEEL**	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**# Fans**	**Electric Capacity (kW)**	**Temp Rise °F**	**Net Wgt (lbs)**
CUSTOMER ENTRY MODELS														
STF1036E	STF1036E-SS	36"	2238	1594	1036	1337	958	.51	81.4	1 @ ¾	2	10.0	33	55
STF1042E	STF1042E-SS	42"	2990	2408	1565	958	978	.33	78.9	1 @ ¾	2	10.0	32	56
STF1048E	STF1048E-SS	48"	1992	1380	897	1011	966	.53	59.4	1 @ ¾	2	10.0	33	56
STF1060E-2*	STF1060E-SS-2*	60"	2673	1014	659	692	1009	.33	26.0	1 @ ¾	2	10.0	31	63
STF1060E-3**	STF1060E-SS-3**	60"	2262	2309	1501	1005	1487	.50	70.0	1 @ ¾	3	15.0	32	65
STF1072E	STF1072E-SS	72"	2215	2403	1562	838	1467	.50	62.0	1 @ ¾	3	15.0	32	75
STF2072E	STF2072E-SS	72"	2238	3188	2072	1337	1916	1.02	81.4	2 @ ¾	4	20.0	33	100
SERVICE ENTRY MODELS														
STR1036E	STR1036E-SS	36"	5917	3723	2420	1965	1812	.68	71.9	1 @ ¾	2	10.0	18	52
STR1042E	STR1042E-SS	42"	4418	3545	2304	1716	1752	.75	78.6	1 @ ¾	2	10.0	18	55
STR1048E	STR1048E-SS	48"	3815	2430	1580	1504	1882	.73	54.6	1 @ ¾	2	10.0	18	56
STR1060E*	STR1060E-SS*	60"	2930	1154	750	1225	1817	.74	27.0	1 @ ¾	2	10.0	18	63
STR2060E**	STR2060E-SS**	60"	3963	4277	2780	1805	2726	1.18	74.0	2 @ ¾	3	15.0	18	96
STR2072E	STR2072E-SS	72"	5917	7445	4839	1965	3624	1.36	71.9	2 @ ¾	4	20.0	18	100

* Two blower system **Three blower system For door widths in excess of 72", combine units

ELECTRIC HEATER DATA							
ALUMINUM	**STAINLESS STEEL**	**208/240/1***	**208/3***	**240/3***	**480/3**	**600/3****	**Temp. Rise °F @ kW**
CUSTOMER ENTRY MODELS							
STF1036E	STF1036E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	25° @ 7.5 Kw / 33° @ 10.0 kW
STF1042E	STF1042E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	24° @ 7.5 kW / 32° @ 10.0 kW
STF1048E	STF1048E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	24° @ 7.5 kW / 33° @ 10.0 kW
STF1060E-2	STF1060E-SS-2	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	23° @ 7.5 kW / 31° @ 10.0 kW
STF1060E-3	STF1060E-SS-3	N/A	15.0 kW	15.0 kW	15.0 kW	15.0 kW	32° @ 15.0 kW
STF1072E	STF1072E-SS	N/A	15.0 kW	15.0 kW	15.0 kW	15.0 kW	32° @ 15.0 kW
STF2072E	STF2072E-SS	N/A	15.0 or 20.0 kW	15.0 or 20.0 kW	20.0 kW	20.0 kW	25° @ 15.0 kW / 33° @ 20.0 kW
SERVICE ENTRY MODELS							
STR1036E	STR1036E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1042E	STR1042E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1048E	STR1048E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1060E	STR1060E-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR2060E	STR2060E-SS	N/A	15.0 kW	15.0 kW	15.0 kW	15.0 kW	18° @ 15.0 kW
STR2072E	STR2072E-SS	N/A	15.0 or 20.0 kW	15.0 or 20.0 kW	20.0 kW	20.0 kW	14° @ 15.0 kW / 18° @ 20.0 kW

*Two circuits are required when combined amp draw of motor(s) and heater(s) is greater than 48 amps.
**A separate 120/208 or 240/1 circuit required for the motor.

POWER SUPPLIES/AMP DRAWS			
Horsepower	3/4	3/4	3/4
Speed	1	1	1
Volts	120	208/240	480
Phase	1	1	1
Hertz**	50/60	50/60	50/60
Amps per Motor	7.5	3.8	1.8

**Operation at 50 Hz will generate approximately a 17% reduction in performance.

HEATER AMP DRAWS @ kW						
	208/1	**240/1**	**208/3**	**240/3**	**480/3**	**600/3**
10.0 kW	48.0*	41.7	27.8	24.1	12.0	10
15.0 kW	N/A	62.5*	41.6	36.1	18.0	15.1
20.0 kW	N/A	83.3*	55.1*	48.1*	24.1	20.1

Sound level measured 10' (3m) from the unit in free field:
STF-E: **58 dBA**
STR-E: **67 dBA**

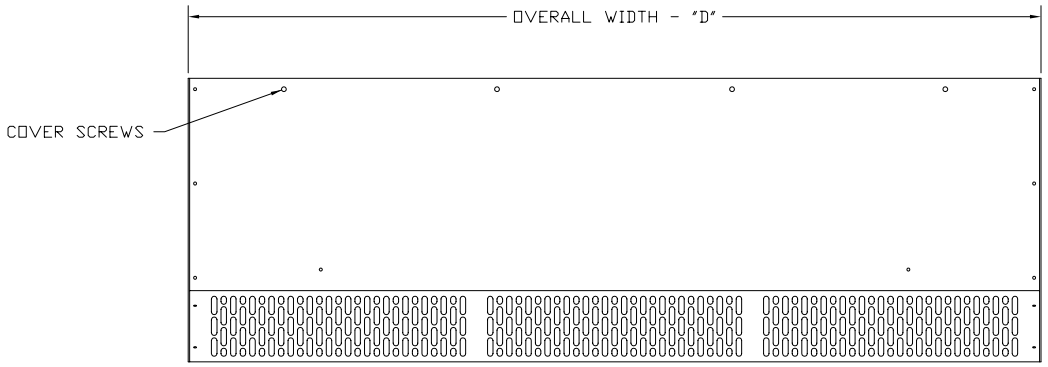
FDA RECOMMENDED · c UL us · USDA COMPLIANCE

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

THE STAR AIR DOOR
ELECTRIC HEATED
SINGLE & THREE SPEED

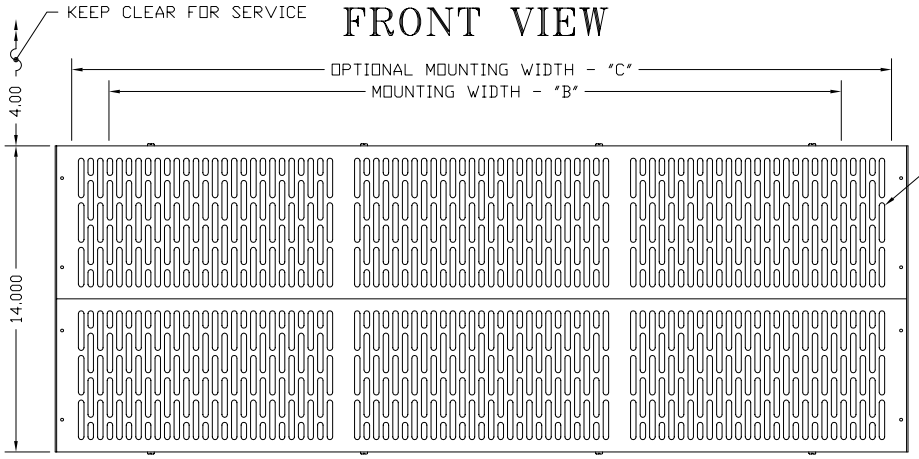
TOP VIEW



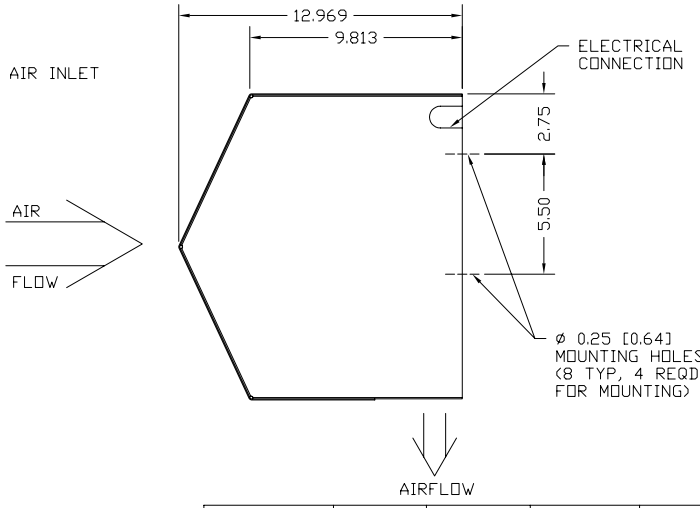
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS ARE TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.

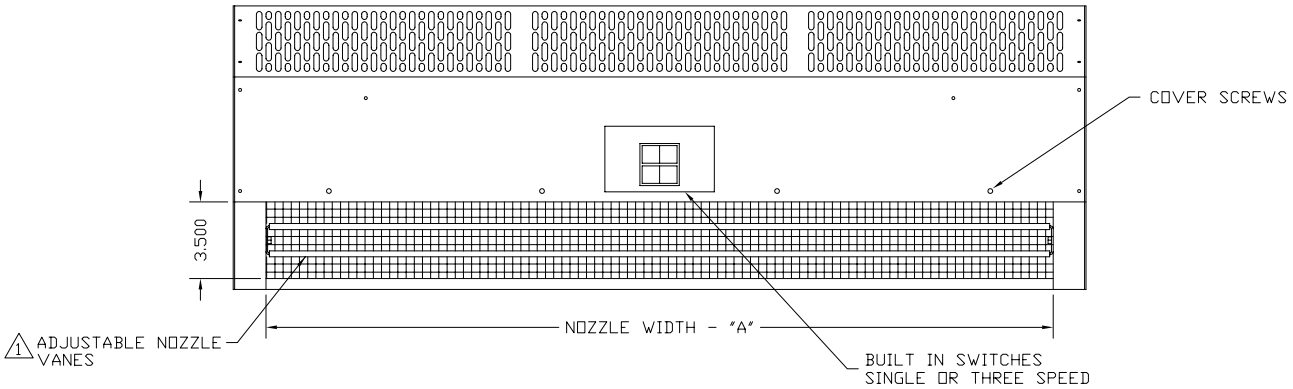
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE "A"	MOUNTING "B"	MOUNTING "C"	OVERALL "D"
ST*1036E†	36.00 [91.44]	33.50 [85.09]	37.50 [95.25]	39.00 [99.06]
ST*1042E†	42.00 [106.68]	39.50 [100.33]	43.50 [110.49]	45.00 [114.30]
ST*1048E†	48.00 [121.92]	45.50 [115.57]	49.50 [125.73]	51.00 [129.54]
STF1060E ST*2060E†	60.00 [152.40]	57.50 [146.05]	61.50 [156.21]	63.00 [160.02]
STF1072E ST*2072E†	72.00 [193.04]	69.50 [176.53]	73.50 [186.69]	75.00 [190.50]

REPLACE '*' WITH 'F' OR 'R' FOR FRONT OR REAR DOOR (SINGLE SPEED ONLY). REPLACE '†' WITH '-3X' FOR 3-SPD (REAR DOOR ONLY)

DWG. NO.	LWAT0076
DATE	01SEP05
BY	A.Johnston
REPLACES	
BY	

TITLE:
BERNER
MODEL STAR AIR DOOR
SINGLE SPEED & 3-SPEED ELECTRIC HEATED

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-126
Date: October, 2011

BERNER INTERNATIONAL CORP.

STAR
Three Speed Electric Heated
Data Sheet

For Door Heights To 10' (environmental separation)

STANDARD FEATURES
- 1/2 hp motor(s)
- Factory installed fan/speed/heat switch
- Galvanized steel blower wheels & housing
- Aluminum airfoil directional vanes
- Aluminum base frame
- White aluminum housing
- Keyhole slots in backplate for quick wall mounting
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Helical coil with point suspension of elements for longer life
- Available single or three phase
- Easily replaceable heating elements
- Galvanized steel frame
- Thermal protection against overheating

OPTIONAL FEATURES
- Stainless steel or custom color finish
- Reduced kW available (consult factory)

						Lab Data								
MODEL WHITE ALUMINUM	MODEL STAINLESS STEEL	Nozzle Width (in)	Max FPM at Nozzle	Max CFM at Nozzle	CFM at Nozzle	Avg. Outlet Vel. (fpm)	Air Volume (scfm)	Power Rating (kW)	Outlet Vel. Unif. (%)	Motor(s) @ hp	# Fans	Electric Capacity (kW)	Temp Rise °F	Net Wgt (lbs)
STR1036E-3X	STR1036E-3X-SS	36"	5917	3723	2420	1965	1812	.68	79.6	1 @ ½	2	10.0	18	52
STR1042E-3X	STR1042E-3X-SS	42"	4418	3545	2304	1716	1752	.75	78.6	1 @ ½	2	10.0	18	55
STR1048E-3X	STR1048E-3X-SS	48"	3815	2430	1580	1504	1882	.73	54.6	1 @ ½	2	10.0	18	56
STR1060E-3X	STR1060E-3X- SS	60"	2930	1154	750	1225	1817	.74	27.0	1 @ ½	2	10.0	18	63
STR2060E-3X	STR2060E-3X-SS	60"	3963	4277	2780	1805	2726	1.18	74.0	2 @ ½	3	15.0	18	96
STR2072E-3X	STR2072E-3X-SS	72"	5917	7445	4839	1965	3624	1.36	71.9	2 @ ½	4	20.0	18	100

ELECTRIC HEATER DATA							
ALUMINUM	STAINLESS STEEL	208/240/1*	208/3*	240/3*	480/3**	600/3**	Temp. Rise °F @ kW
STR1036E-3X	STR1036E-3X-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1042E-3X	STR1042E-3X-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1048E-3X	STR1048E-3X-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR1060E-3X	STR1060E-3X-SS	7.5 or 10.0 kW	7.5 or 10.0 kW	7.5 or 10.0 kW	10.0 kW	10.0 kW	14° @ 7.5 kW / 18° @ 10.0 kW
STR2060E-3X	STR2060E-3X-SS	N/A	15.0 kW	15.0 kW	15.0 kW	15.0 kW	18° @ 15.0 kW
STR2072E-3X	STR2072E-3X-SS	N/A	15.0 or 20.0 kW	15.0 or 20.0 kW	20.0 kW	20.0 kW	14° @ 15.0 kW / 18° @ 20.0 kW

*Two circuits are required when combined amp draw of motor(s) and heater(s) is greater than 48 amps.
**A separate 120/208 or 240/1 circuit required for the motor.

POWER SUPPLIES/AMP DRAWS		
Horsepower	1/2	1/2
Speed	3	3
Volts	120	208/240
Phase	1	1
Hertz**	50/60	50/60
Amps per Motor	7.2	4.0

**Operation at 50 Hz will generate approximately a 17% reduction in performance.

HEATER AMP DRAWS @ kW						
	208/1	240/1	208/3	240/3	480/3	600/3
10.0 kW	48.0*	41.7	27.8	24.1	12.0	10
15.0 kW	N/A	62.5*	41.6	36.1	18.0	15.1
20.0 kW	N/A	83.3*	55.1*	48.1*	24.1	20.1

Sound level measured 10' (3m) from the unit in free field:
STR-E: **67 dBA**

FDA RECOMMENDED | c UL us | USDA COMPLIANCE

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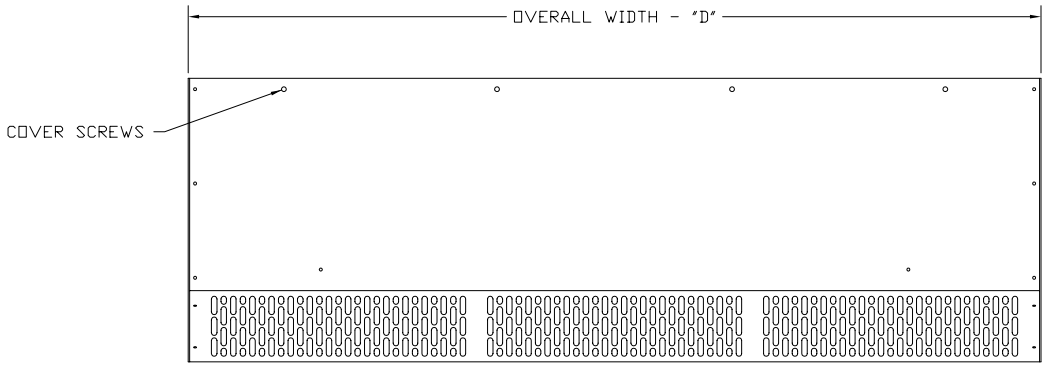
MADE IN U.S.A.

THE STAR AIR DOOR
ELECTRIC HEATED
SINGLE & THREE SPEED

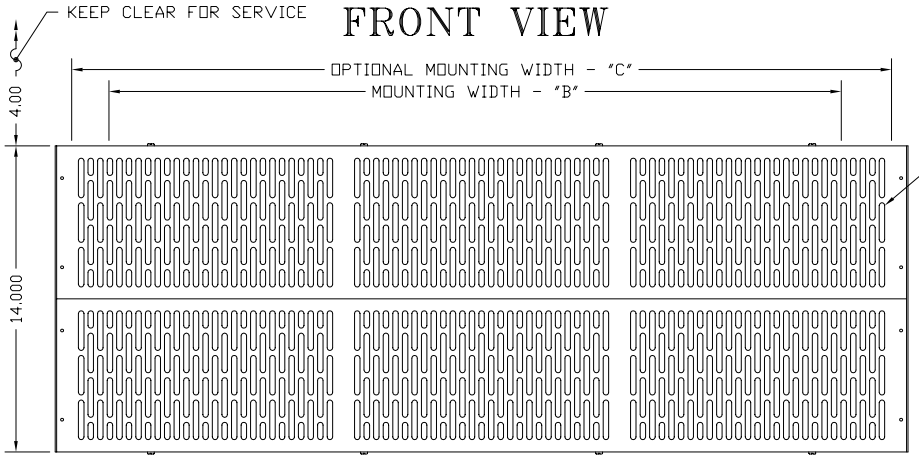
TOP VIEW



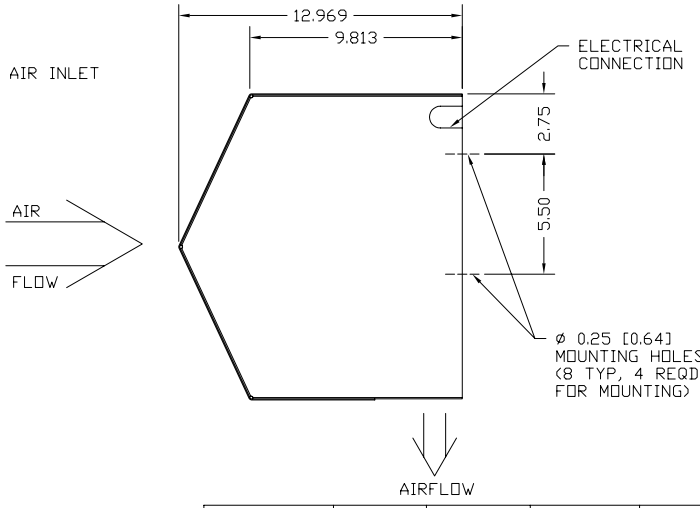
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS ARE TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.

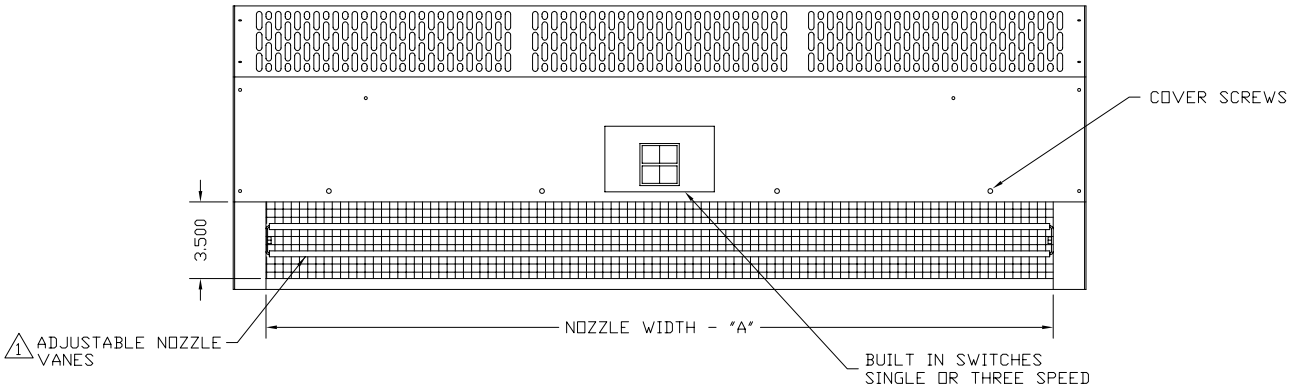
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE "A"	MOUNTING "B"	MOUNTING "C"	OVERALL "D"
ST*1036E†	36.00 [91.44]	33.50 [85.09]	37.50 [95.25]	39.00 [99.06]
ST*1042E†	42.00 [106.68]	39.50 [100.33]	43.50 [110.49]	45.00 [114.30]
ST*1048E†	48.00 [121.92]	45.50 [115.57]	49.50 [125.73]	51.00 [129.54]
STF1060E ST*2060E†	60.00 [152.40]	57.50 [146.05]	61.50 [156.21]	63.00 [160.02]
STF1072E ST*2072E†	72.00 [193.04]	69.50 [176.53]	73.50 [186.69]	75.00 [190.50]

REPLACE '*' WITH 'F' OR 'R' FOR FRONT OR REAR DOOR (SINGLE SPEED ONLY). REPLACE '†' WITH '-3X' FOR 3-SPD (REAR DOOR ONLY)

DWG. NO.	LWAT0076
DATE	01SEP05
BY	A.Johnston
REPLACES	
BY	

TITLE:
BERNER
MODEL STAR AIR DOOR
SINGLE SPEED & 3-SPEED ELECTRIC HEATED

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-235
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSA
Ambient
Data Sheet

For Door Heights To 12' (environmental separation)

STANDARD FEATURES

- ½ hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES

- ½ hp multi-speed motor(s) (consult factory)

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
VSA1036A	36	5166	3933	2556	1728	1512	0.51	87	1 @ ½	80
VSA1042A	42	5550	5042	3278	1551	1583	0.52	89	1 @ ½	86
VSA1048A	48	5292	4816	3130	1366	1594	0.53	78	1 @ ½	91
VSA1060A	66	4800	5180	3367	1049	1530	0.53	74	1 @ ½	102
VSA2060A	66	5292	6560	4264	2010	2931	0.99	85	2 @ ½	148
VSA2072A	72	5166	7865	5112	1728	3024	1.02	87	2 @ ½	157
VSA2078A	78	5166	8521	5538	1633	3095	1.03	87	2 @ ½	163
VSA2084A	84	5550	10085	6555	1551	3166	1.04	89	2 @ ½	168
VSA2096A	99	5292	9631	6260	1366	3188	1.06	78	2 @ ½	178
VSA3096A	99	5292	10866	7063	1857	4332	1.53	88	3 @ ½	218
VSA2108A	108	4800	9324	6061	1190	3124	1.06	74	2 @ ½	221
VSA3108A	108	5166	11798	7669	1728	4536	1.53	87	3 @ ½	261
VSA2120A	117	4800	10360	6734	1049	3060	1.06	74	2 @ ½	228
VSA3120A	117	5166	13109	8521	1604	4678	1.55	87	3 @ ½	268
VSA3132A	132	5292	13243	8608	1484	4760	1.57	78	3 @ ½	289
VSA3144A	144	5292	14447	9391	1366	4782	1.59	78	3 @ ½	303
VSA4144A	144	5166	15730	10225	1728	6048	2.04	87	4 @ ½	343

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	6.5	3.5	3.5	3.5	3.5	1.4	1.0	3.5	3.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROFILE *Model: VSA1036A*			
Distance from Nozzle (ft)	3	6.5	10
(m)	1	2	3
Core Velocity (fpm)	2633	1867	1578
(m/s)	13.38	9.48	8.02
Uniformity (%)	89	93	92

for outdoor use

FDA RECOMMENDED

USDA COMPLIANCE

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **60 dBA, 63 dBA, 65 dBA, 66 dBA**
Sound data is not AMCA certified.

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC.

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

Berner reserves the right to alter specifications without prior notice.

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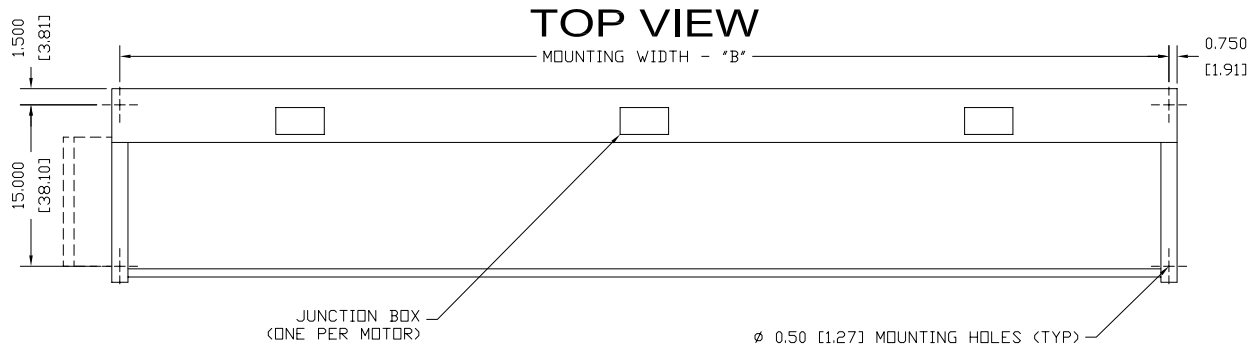
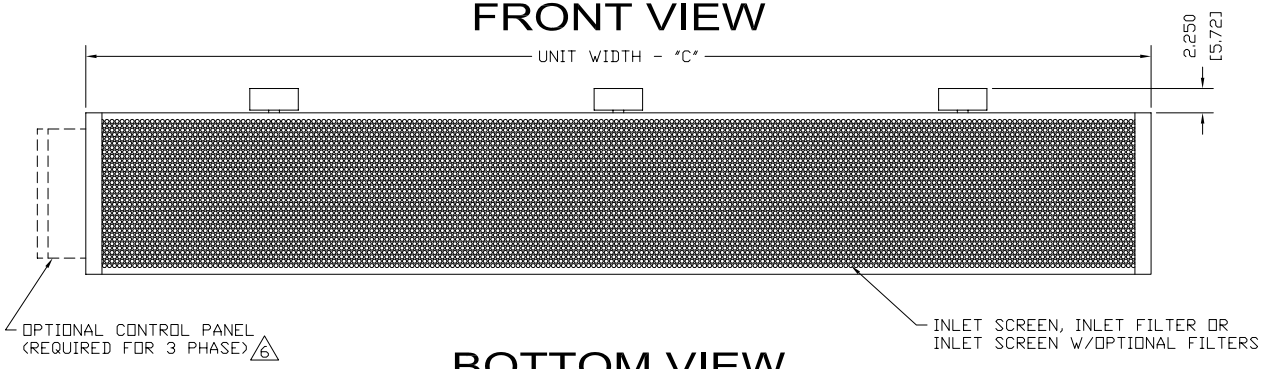
MADE IN U.S.A.

VSA
AMBIENT SYSTEM

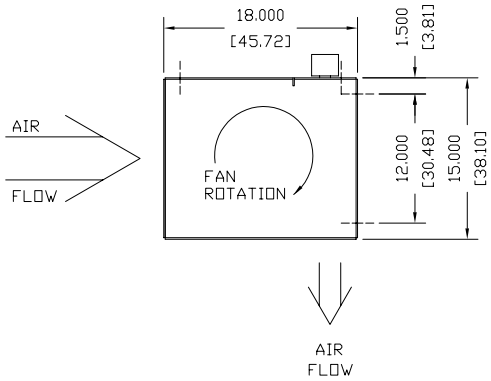
TOP VIEW



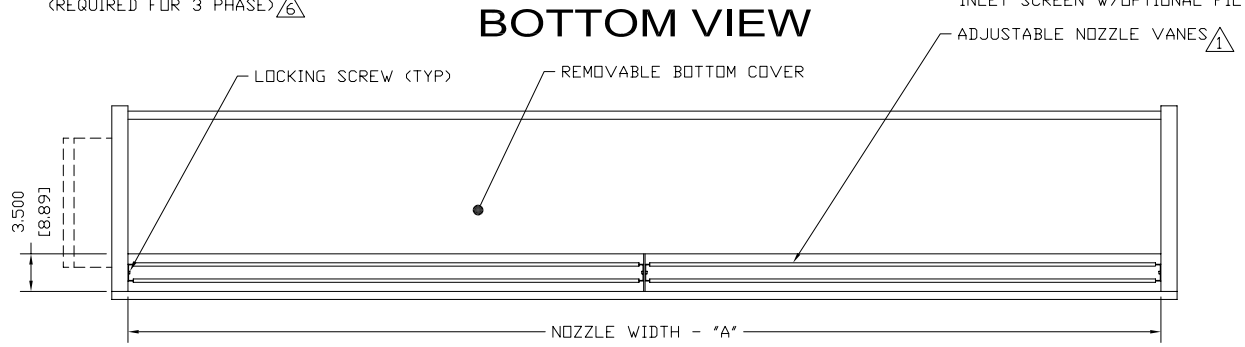
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSA1036A	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSA1042A	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSA1048A	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSA1060A/2060A	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSA2072A	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSA2078A	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSA2084A	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSA2096A/3096A	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSA2108A/3108A	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSA2120A/3120A	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSA3132A	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSA3144A/4144A	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSAV0010	TITLE:	BERNER
DATE	13APR07		MODEL VSA AIR CURTAIN AMBIENT SYSTEM
BY	D. Johnson		
REPLACES			BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY			

BERNER INTERNATIONAL CORP.

VSA STEAM
Same End Supply/Return

MODEL	STEAM PRESSURE (P.S.I.G.)	STEAM CAPACITY (BTU/HR)*	POUNDS CONDENSATE/ HOUR	ENTERING AIR TEMP. (E.A.T.) °F	TEMP. RISE (°F)	LEAVING AIR TEMP. (L.A.T.) °F
VSA1036S	5	56,843	59.2	65	35	100
VSA1042S	5	62,797	65.3	65	36	101
VSA1048S	5	67,278	70.0	65	39	104
VSA1060S	5	76,617	79.7	65	45	110
VSA2060S	5	107,149	111.5	65	34	99
VSA2072S	5	113,679	118.3	65	35	100
VSA2078S	5	119,684	124.5	65	36	101
VSA2084S	5	125,583	130.7	65	36	101
VSA2096S	5	136,562	142.1	65	39	104
VSA3096S	5	159,525	166.0	65	34	99
VSA2108S	5	200,456	208.6	65	59	124
VSA3108S	5	170,492	177.4	65	35	100
VSA2120S	5	146,526	152.5	65	44	109
VSA3120S	5	182,457	189.9	65	36	101
VSA3132S	5	192,916	200.8	65	37	102
VSA3144S	5	201,755	210.0	65	39	104
VSA4144S	5	227,261	236.5	65	35	100

VSB STEAM
Same End Supply/Return

MODEL	STEAM PRESSURE (P.S.I.G.)	STEAM CAPACITY (BTU/HR)*	POUNDS CONDENSATE/ HOUR	ENTERING AIR TEMP. (E.A.T.) °F	TEMP. RISE (°F)	LEAVING AIR TEMP. (L.A.T.) °F
VSB1036S	5	87,418	91.0	65	34	99
VSB1042S	5	96,429	100.3	65	35	100
VSB1048S	5	104,268	108.5	65	38	103
VSB1060S	5	97,573	101.5	65	37	102
VSB2060S	5	163,341	170.0	65	33	98
VSB2072S	5	174,811	181.9	65	34	99
VSB2078S	5	183,916	191.4	65	35	100
VSB2084S	5	192,820	200.7	65	35	100
VSB2096S	5	211,774	220.4	65	38	103
VSB3096S	5	245,013	255.0	65	33	98
VSB2108S	5	178,394	185.6	65	33	98
VSB3108S	5	262,130	272.8	65	34	99
VSB2120S	5	186,113	193.7	65	35	100
VSB3120S	5	280,243	291.6	65	35	100
VSB3132S	5	297,056	309.1	65	36	101
VSB3144S	5	312,544	325.2	65	38	103
VSB4144S	5	349,308	363.5	65	33	98

Performance based on 65°F Entering Air Temperature (E.A.T.) and 5# Steam*

* For other steam pressures - see chart on reverse side.
Berner recommends that maximum Leaving Air Temperature (L.A.T.) not exceed 120°F.
Consult factory for opposite end supply/return data.
Opposite end supply/return required for all vertically mounted units.

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

Constants For Obtaining Temperature Rise At Various Steam Pressures & Inlet Temperatures

STEAM PRESSURES IN POUNDS PER SQUARE INCH (GAUGE)

ENTERING AIR TEMPERATURE °F	0	2	5	10	15	20	30	40	50	60	80	100	125	150	175	200
-30	1.54	1.59	1.64	1.71	1.78	1.84	1.94	2.02	2.10	2.16	2.25	2.34	2.44	2.52	2.59	2.67
-20	1.48	1.52	1.57	1.65	1.72	1.77	1.87	1.95	2.02	2.08	2.19	2.28	2.37	2.46	2.53	2.59
-10	1.41	1.45	1.51	1.59	1.65	1.71	1.81	1.89	1.96	2.02	2.12	2.21	2.31	2.39	2.46	2.53
00	1.35	1.39	1.45	1.54	1.59	1.65	1.74	1.82	1.89	1.96	2.06	2.15	2.25	2.33	2.40	2.47
10	1.28	1.33	1.38	1.46	1.52	1.58	1.68	1.76	1.83	1.89	2.00	2.09	2.18	2.26	2.34	2.40
20	1.22	1.26	1.31	1.40	1.46	1.52	1.62	1.70	1.77	1.83	1.93	2.02	2.12	2.20	2.27	2.34
30	1.16	1.20	1.25	1.33	1.40	1.46	1.55	1.63	1.70	1.76	1.87	1.96	2.05	2.14	2.21	2.28
40	1.09	1.14	1.19	1.27	1.33	1.39	1.49	1.57	1.64	1.70	1.81	1.89	1.99	2.07	2.15	2.22
45	1.06	1.10	1.16	1.24	1.30	1.36	1.46	1.54	1.61	1.67	1.77	1.86	1.96	2.04	2.12	2.18
50	1.03	1.07	1.13	1.21	1.27	1.33	1.42	1.51	1.58	1.64	1.74	1.83	1.93	2.01	2.08	2.15
55	1.00	1.04	1.10	1.17	1.24	1.30	1.39	1.47	1.54	1.61	1.71	1.80	1.89	1.98	2.05	2.12
60	0.97	1.01	1.06	1.14	1.21	1.26	1.36	1.44	1.51	1.57	1.68	1.77	1.86	1.95	2.02	2.09
65	0.93	0.98	1.03	1.11	1.17	1.23	1.33	1.41	1.48	1.54	1.65	1.74	1.83	1.91	1.99	2.05
70	0.90	0.95	**1.00**	1.08	1.14	1.20	1.30	1.38	1.45	1.51	1.62	1.70	1.80	1.88	1.96	2.02
75	0.87	0.91	0.97	1.05	1.11	1.17	1.27	1.35	1.42	1.48	1.59	1.67	1.77	1.85	1.92	1.99
80	0.84	0.88	0.94	1.01	1.08	1.14	1.24	1.32	1.39	1.45	1.55	1.64	1.74	1.82	1.89	1.96
85	0.81	0.85	0.90	0.98	1.05	1.11	1.20	1.28	1.35	1.41	1.52	1.61	1.71	1.79	1.86	1.93
90	0.78	0.82	0.87	0.95	1.02	1.07	1.17	1.25	1.32	1.38	1.49	1.58	1.67	1.76	1.83	1.89
100	0.71	0.75	0.81	0.89	0.95	1.00	1.11	1.19	1.26	1.32	1.42	1.51	1.61	1.69	1.77	1.83
110	0.65	0.69	0.75	0.82	0.89	0.95	1.04	1.12	1.20	1.26	1.36	1.45	1.55	1.63	1.70	1.77
120	0.59	0.63	0.68	0.76	0.83	0.88	0.98	1.06	1.13	1.19	1.30	1.40	1.48	1.56	1.64	1.71
140	0.46	0.50	0.55	0.63	0.70	0.76	0.85	0.93	1.00	1.07	1.17	1.26	1.35	1.44	1.51	1.58
160	0.33	0.37	0.43	0.50	0.57	0.63	0.73	0.81	0.88	0.94	1.04	1.13	1.23	1.31	1.38	1.45
180	0.20	0.24	0.30	0.38	0.44	0.50	0.60	0.68	0.75	0.81	0.91	1.00	1.10	1.18	1.26	1.32
200	0.08	0.12	0.17	0.25	0.32	0.37	0.47	0.55	0.62	0.68	0.79	0.88	0.97	1.06	1.13	1.20

$T = T^{\circ} + \triangle t \times C$ T = Temperature at exit T° = Temperature at intake

$\triangle t$ = Temperature rise from data sheet C = Constant from above table

VSA HOT WATER Same End Supply/Return								
MODEL	ENTERING WATER TEMP. (E.W.T.) °F	LEAVING WATER TEMP. (L.W.T.) °F	WATER FLOW (GPM)	WATER PRESSURE DROP (FT. WG.)	HOT WATER CAPACITY (BTU/HR)	ENTERING AIR TEMP. (E.A.T.) °F	TEMP. RISE (°F)	LEAVING AIR TEMP. (L.A.T.) °F
VSA1036W	180	162	5.5	0.8	49,610	65	30	95
VSA1042W	180	157	4.5	0.5	51,822	65	30	95
VSA1048W	180	151	3.7	0.4	52,359	65	30	95
VSA1060W	180	165	7.0	1.4	50,036	65	30	95
VSA2060W	180	157	8.5	2.0	96,563	65	30	95
VSA2072W	180	154	7.8	1.8	99,783	65	30	95
VSA2078W	180	150	7.0	1.5	101,625	65	30	95
VSA2084W	180	147	6.5	1.3	103,844	65	30	95
VSA2096W	180	153	9.0	2.6	120,650	65	35	100
VSA3096W	180	151	10.0	3.1	141,770	65	30	95
VSA2108W	180	146	7.0	1.6	116,654	65	34	99
VSA3108W	180	149	10.0	3.2	149,993	65	30	95
VSA2120W	180	166	15.0	7.2	100,115	65	30	95
VSA3120W	180	144	8.8	2.7	153,627	65	30	95
VSA3132W	180	151	12.0	4.9	173,231	65	34	99
VSA3144W	180	150	12.5	5.5	181,220	65	35	100
VSA4144W	180	145	11.5	4.8	197,509	65	30	95

VSB HOT WATER Same End Supply/Return								
MODEL	ENTERING WATER TEMP. (E.W.T.) °F	LEAVING WATER TEMP. (L.W.T.) °F	WATER FLOW (GPM)	WATER PRESSURE DROP (FT. WG.)	HOT WATER CAPACITY (BTU/HR)	ENTERING AIR TEMP. (E.A.T.) °F	TEMP. RISE (°F)	LEAVING AIR TEMP. (L.A.T.) °F
VSB1036W	180	162	9.0	1.3	78,686	65	30	95
VSB1042W	180	157	7.2	0.9	81,614	65	30	95
VSB1048W	180	152	6.0	0.6	83,333	65	30	95
VSB1060W	180	150	5.5	0.9	80,206	65	30	95
VSB2060W	180	157	13.0	2.9	149,581	65	30	95
VSB2072W	180	154	12.5	2.7	157,276	65	30	95
VSB2078W	180	151	11.5	2.3	160,976	65	30	95
VSB2084W	180	148	10.5	2.0	163,646	65	30	95
VSB2096W	180	141	8.6	1.4	166,788	65	30	95
VSB3096W	180	152	16.5	4.9	224,660	65	30	95
VSB2108W	180	152	12.0	4.6	162,728	65	30	95
VSB3108W	180	150	16.2	4.8	236,769	65	30	95
VSB2120W	180	147	10.0	3.4	161,449	65	31	96
VSB3120W	180	145	14.0	3.7	241,094	65	30	95
VSB3132W	180	141	13.0	3.2	247,318	65	30	95
VSB3144W	180	137	12.0	2.8	251,155	65	30	95
VSB4144W	180	146	19.0	6.9	313,230	65	30	95

Berner recommends that maximum Leaving Air Temperature (L.A.T.) not exceed 120°F.
Consult factory for opposite end supply/return data.

Berner reserves the right to alter specifications without prior notice.

No.: DS-243
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSA
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 12' (environmental separation)

STANDARD FEATURES
- ½ hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES
- Multi-speed motor(s) (consult factory)

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

Note: Separate 120/1/60 power supply is required for unit heaters.

OPTIONAL HEATER FEATURES
- Stainless steel heat exchanger
- Dry type transformer (120V power for heaters)

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/hr)**	**Total Output (btu/hr)**	**Temp. Rise °F**
VSA1036G	36	5166	3933	2556	1728	1512	0.51	87	1 @ ½	1 @ 100	100	80	49
VSA1042G	42	5550	5042	3278	1551	1583	0.52	89	1 @ ½	1 @ 100	100	80	47
VSA1048G	48	5292	4816	3130	1366	1594	0.53	78	1 @ ½	1 @ 100	100	80	46
VSA1060G	66	4800	5180	3367	1049	1530	0.53	74	1 @ ½	1 @ 100	100	80	48
VSA2060G	66	5292	6560	4264	2010	2931	0.99	85	2 @ ½	1 @ 145	145	116	36
VSA2072G	72	5166	7865	5112	1728	3024	1.02	87	2 @ ½	1 @ 145	145	116	35
VSA2078G	78	5166	8521	5538	1633	3095	1.03	87	2 @ ½	1 @ 145	145	116	35
VSA2084G	84	5550	10085	6555	1551	3166	1.04	89	2 @ ½	1 @ 145	145	116	34
VSA2096G	99	5292	9631	6260	1366	3188	1.06	78	2 @ ½	1 @ 145	145	116	34
VSA3096G	99	5292	10866	7063	1857	4332	1.53	88	3 @ ½	1 @ 200	200	160	34
VSA2108G	108	4800	9324	6061	1190	3124	1.06	74	2 @ ½	1 @ 145	145	116	34
VSA3108G	108	5166	11798	7669	1728	4536	1.53	87	3 @ ½	1 @ 200	200	160	33
VSA2120G	117	4800	10360	6734	1049	3060	1.06	74	2 @ ½	1 @ 145	145	116	35
VSA3120G	117	5166	13109	8521	1604	4678	1.55	87	3 @ ½	1 @ 200	200	160	32
VSA3132G	132	5292	13243	8608	1484	4760	1.57	78	3 @ ½	1 @ 200	200	160	31
VSA3144G	144	5292	14447	9391	1366	4782	1.59	78	3 @ ½	1 @ 200	200	160	31
VSA4144G	144	5166	15730	10225	1728	6048	2.04	87	4 @ ½	1 @ 250	250	200	30

Air performance based on AMCA licensed data from base (unheated) units

WEIGHT CHART

MODEL	Net Wgt. Air Curtain (lbs)	Net Wgt. Duct Transition*	Net Wgt. Heater (lbs)	Ship Wgt. Duct Trans.& Air Curtain (lbs)	Ship Wgt. Heater (lbs)
VSA1036G	80	44	125	155	140
VSA1042G	86	50	125	170	140
VSA1048G	91	56	125	184	140
VSA1060G	102	69	125	214	140
VSA2060G	148	69	130	271	150
VSA2072G	157	82	130	299	150
VSA2078G	163	89	130	315	150
VSA2084G	168	95	130	329	150
VSA2096G	178	108	130	358	150
VSA3096G	218	106	145	405	165
VSA2108G	221	121	130	428	150
VSA3108G	261	119	145	475	165
VSA2120G	228	131	130	449	150
VSA3120G	268	130	145	498	165
VSA3132G	289	146	145	544	165
VSA3144G	303	159	145	578	165
VSA4144G	343	150	225	616	270

*Duct transition is factory attached to air curtain

POWER SUPPLIES/MOTOR AMP DRAWS

VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	6.5	3.5	3.5	3.5	3.5	1.4	1.0	3.5	3.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **60 dBA, 63 dBA, 65 dBA, 66 dBA**

Berner reserves the right to alter specifications without prior notice.

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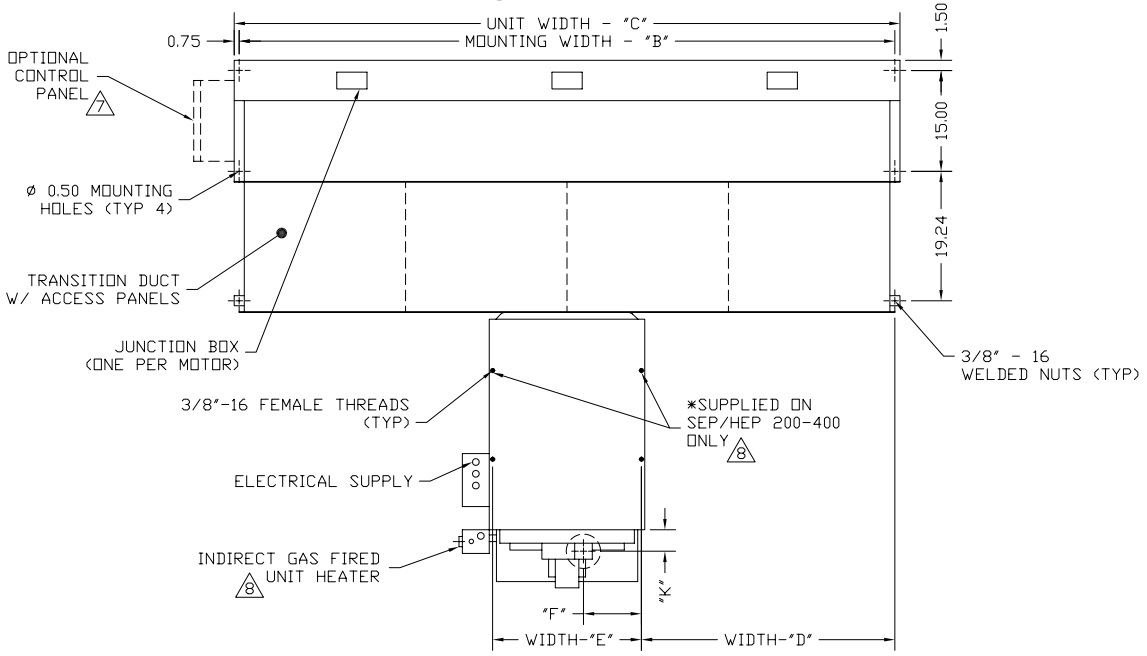
MADE IN U.S.A.

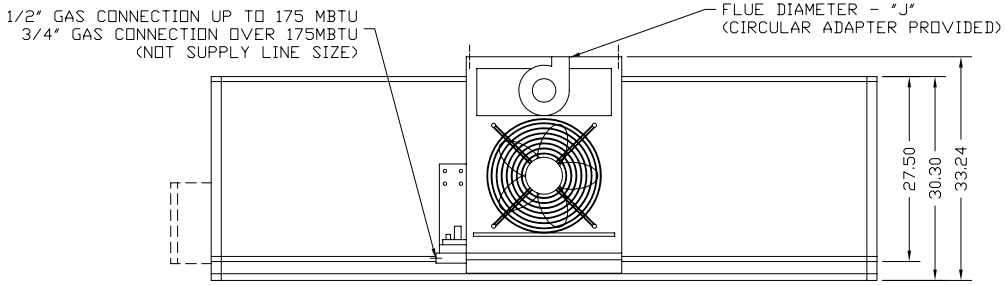
VSA

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

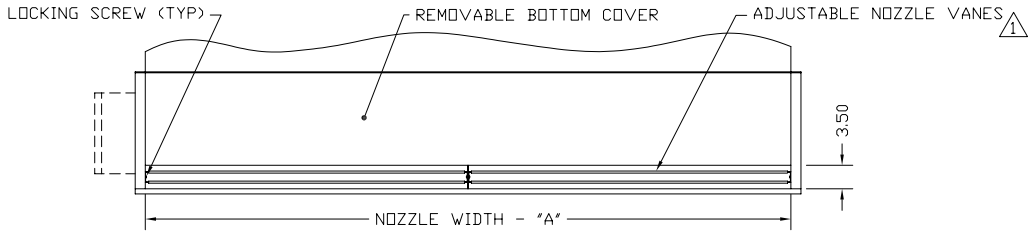
TOP VIEW



FRONT VIEW



BOTTOM VIEW

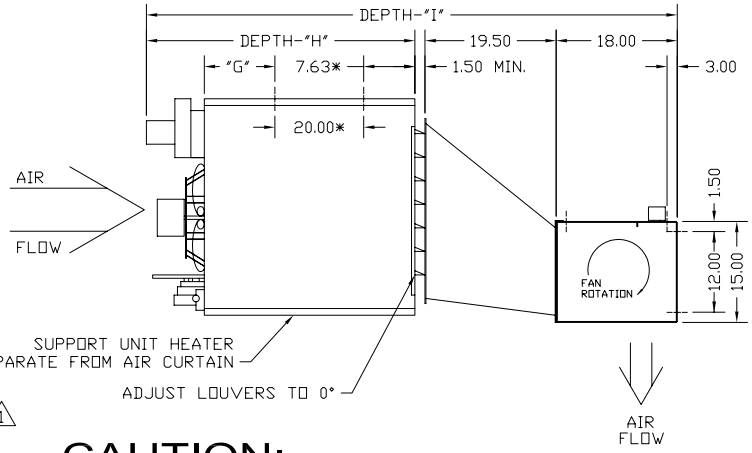


FOR DIMENSIONS SEE DWG. #VSAV0014

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. SEP 200-400 FURNACES HAVE TWO FANS AND FOUR MOUNTING POINTS.
9. DIMENSIONS IN INCHES.

END VIEW



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		
DWG. NO.	VSAV0013	TITLE: BERNER
DATE	13APR07	MODEL VSA AIR CURTAIN
BY	D. Johnson	INDIRECT GAS FIRED – ONE HEATER SYSTEM
REPLACES	–	BERNER INTERNATIONAL CORP.
BY	–	NEW CASTLE,PA.

VSA

POSITIVE INDIRECT GAS
ONE HEATER SYSYEM

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	TOTAL MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	DEPTH "K"
VSA1036G	36.00	37.50	39.00	100	9.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA1042G	42.00	43.50	45.00	100	12.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA1048G	48.00	49.50	51.00	100	15.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA1060G	66.00	67.50	69.00	100	24.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA2060G	66.00	67.50	69.00	145	24.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA2072G	72.00	73.50	75.00	145	27.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA2078G	78.00	79.50	81.00	145	30.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA2084G	84.00	85.50	87.00	145	33.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA2096G	99.00	100.50	102.00	145	40.657	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA3096G	99.00	100.50	102.00	200	39.188	22.125	17.000	3.688	40.000	79.000	5.00	3.25
VSA2108G	108.00	109.50	111.00	145	45.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA3108G	108.00	109.50	111.00	200	43.688	22.125	17.000	3.688	40.000	79.000	5.00	3.25
VSA2120G	117.00	118.50	120.00	145	51.157	19.188	11.375	10.50	39.188	78.188	4.00	3.25
VSA3120G	117.00	118.50	120.00	200	48.188	22.125	17.000	3.688	40.000	79.000	5.00	3.25
VSA3132G	132.00	133.50	135.00	200	55.688	22.125	17.000	3.688	40.000	79.000	5.00	3.25
VSA3144G	144.00	145.50	147.00	200	61.688	22.125	17.000	3.688	40.000	79.000	5.00	3.25
VSA4144G	144.00	145.50	147.00	250	52.688	40.125	17.000	3.688	40.000	79.000	5.00	3.25

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	-
DWG. NO.	VSAV0014	TITLE: BERNER	
DATE	13APR07	MODEL VSA AIR CURTAIN	
BY	D. Johnson	INDIRECT GAS FIRED – ONE HEATER SYSTEM	
REPLACES	-	BERNER INTERNATIONAL CORP.	
BY	-	NEW CASTLE,PA.	

No.: DS-244
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSB
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 14' (environmental separation)

STANDARD FEATURES
- 1 hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES
- Multi-speed motor(s) (consult factory)

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

Note: Separate 120/1/60 power supply is required for unit heaters.

OPTIONAL HEATER FEATURES
- Stainless steel heat exchanger
- Dry type transformer (120V power for heaters)

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/hr)**	**Total Output (btu/hr)**	**Temp. Rise °F**
VSB1036G	36	7567	5760	3744	2738	2396	1.12	87	1 @ 1	1 @ 100	100	80	31
VSB1042G	42	7040	5821	3784	2435	2486	1.12	81	1 @ 1	1 @ 100	100	80	30
VSB1048G	48	7175	7032	4570	2173	2535	1.25	84	1 @ 1	1 @ 100	100	80	29
VSB1060G	66	6886	7231	4700	1668	2433	1.25	72	1 @ 1	1 @ 100	100	80	30
VSB2060G	66	7520	10638	6914	3136	4574	2.07	97	2 @ 1	1 @ 200	200	160	32
VSB2072G	72	7567	11521	7488	2738	4792	2.24	87	2 @ 1	1 @ 200	200	160	31
VSB2078G	78	7040	10811	7027	2575	4882	2.24	81	2 @ 1	1 @ 200	200	160	30
VSB2084G	84	7040	11642	7568	2435	4972	2.24	81	2 @ 1	1 @ 200	200	160	30
VSB2096G	99	7175	14063	9141	2173	5070	2.5	84	2 @ 1	1 @ 200	200	160	29
VSB3096G	99	7520	15441	10037	2942	6865	3.36	88	3 @ 1	1 @ 300	300	240	32
VSB2108G	108	6886	13015	8460	1893	4968	2.5	72	2 @ 1	1 @ 200	200	160	30
VSB3108G	108	7567	17281	11233	2738	7188	3.36	87	3 @ 1	1 @ 300	300	240	31
VSB2120G	117	6886	14461	9400	1668	4866	3.36	72	2 @ 1	1 @ 200	200	160	30
VSB3120G	117	7040	16632	10811	2526	7368	3.36	81	3 @ 1	1 @ 300	300	240	30
VSB3132G	132	7040	18295	11892	2340	7507	3.49	81	3 @ 1	1 @ 345	345	276	34
VSB3144G	144	7175	21095	13711	2173	7605	3.75	84	3 @ 1	1 @ 345	345	276	33
VSB4144G	144	7567	23042	14977	2738	9584	4.48	87	4 @ 1	1 @ 390	390	312	30

Air performance based on AMCA licensed data from base (unheated) units

WEIGHT CHART

MODEL	Net Wgt. Air Curtain (lbs)	Net Wgt. Duct Transition*	Net Wgt. Heater (lbs)	Ship Wgt. Duct Trans. & Air Curtain (lbs)	Ship Wgt. Heater (lbs)
VSB1036G	95	44	125	174	140
VSB1042G	101	50	125	189	140
VSB1048G	106	56	125	203	140
VSB1060G	117	69	125	233	140
VSB2060G	178	68	145	308	165
VSB2072G	187	81	145	335	165
VSB2078G	193	87	145	350	165
VSB2084G	198	94	145	365	165
VSB2096G	208	107	145	394	165
VSB3096G	263	99	270	453	285
VSB2108G	251	120	145	464	165
VSB3108G	306	112	270	523	285
VSB2120G	258	130	145	485	165
VSB3120G	313	121	270	543	285
VSB3132G	334	137	285	589	285
VSB3144G	348	150	285	623	285
VSB4144G	403	150	285	691	310

*Duct transition is factory attached to air curtain

POWER SUPPLIES/MOTOR AMP DRAWS

VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	12.6	6.5	6.5	6.5	6.5	3.2	2.6	6.5	6.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **63 dBA, dBA, dBA, dBA**
Sound data is not AMCA certified.

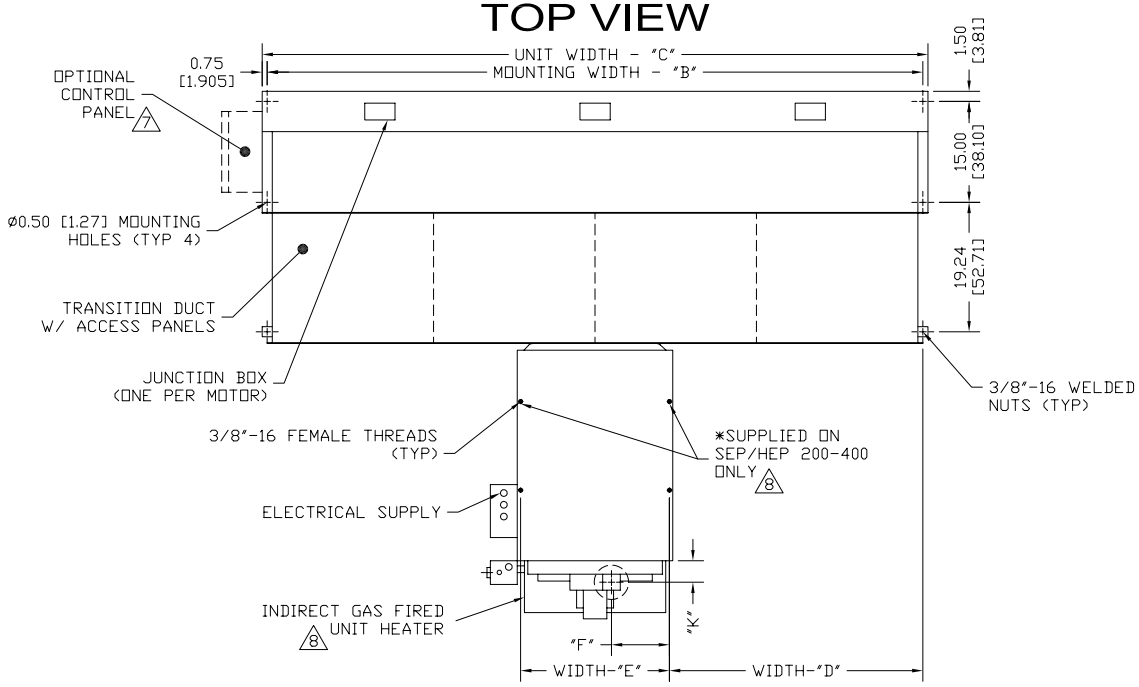
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

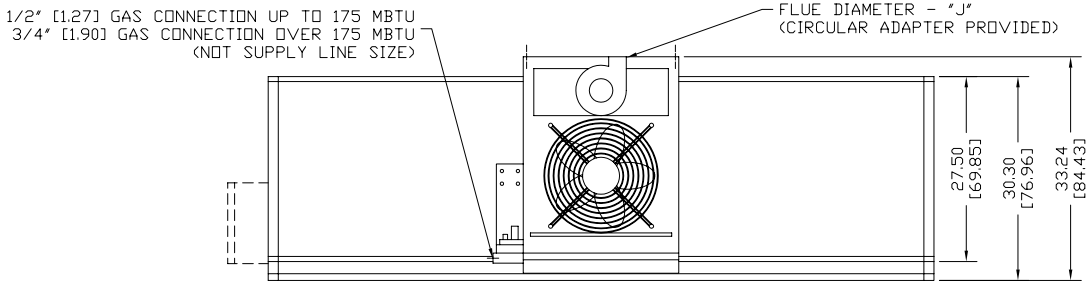
VSB

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

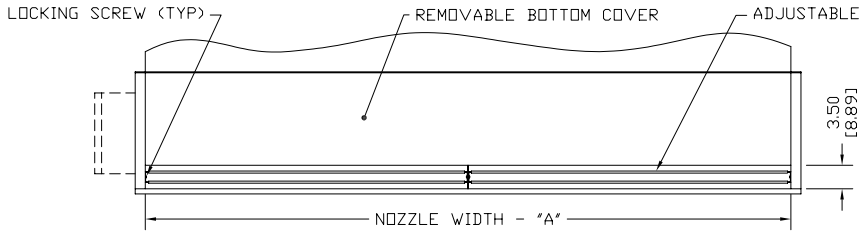
TOP VIEW



FRONT VIEW



BOTTOM VIEW

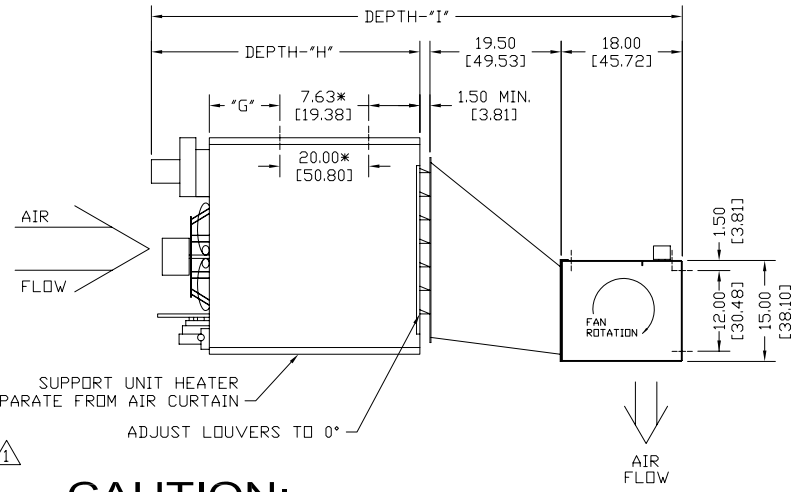


FOR DIMENSIONS SEE DWG. #VSBV0014

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. SEP 200-400 FURNACES HAVE TWO FANS AND FOUR MOUNTING POINTS.
9. DIMENSIONS IN INCHES.

END VIEW



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSBV0013	TITLE:	BERNER
DATE	13APR07		MODEL VSB AIR CURTAIN
BY	D. Johnson		INDIRECT GAS FIRED – ONE HEATER SYSTEM
REPLACES	–		
BY	–		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.

VSB

POSITIVE INDIRECT GAS
ONE HEATER SYSYEM

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	TOTAL MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	DEPTH "K"
VSB1036G	36.00	37.50	39.00	100	9.157	19.188	11.375	11.500	39.188	78.188	4.00	3.25
VSB1042G	42.00	43.50	45.00	100	12.157	19.188	11.375	11.500	39.188	78.188	4.00	3.25
VSB1048G	48.00	49.50	51.00	100	15.157	19.188	11.375	11.500	39.188	78.188	4.00	3.25
VSB1060G	66.00	67.50	69.00	100	24.157	19.188	11.375	11.500	39.188	78.188	4.00	3.25
VSB2060G	66.00	67.50	69.00	200	22.688	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB2072G	72.00	73.50	75.00	200	27.157	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB2078G	78.00	79.50	81.00	200	28.688	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB2084G	84.00	85.50	87.00	200	31.688	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB2096G	99.00	100.50	102.00	200	39.188	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB3096G	99.00	100.50	102.00	300	30.188	40.125	17.000	3.688	40.000	79.000	5.00	3.50
VSB2108G	108.00	109.50	111.00	200	43.688	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB3108G	108.00	109.50	111.00	300	34.688	40.125	17.000	3.688	40.000	79.000	5.00	3.50
VSB2120G	117.00	118.50	120.00	200	48.188	22.125	12.750	11.500	39.188	78.188	5.00	3.25
VSB3120G	117.00	118.50	120.00	300	39.188	40.125	17.000	3.688	40.000	79.000	5.00	3.50
VSB3132G	132.00	133.50	135.00	345	46.688	40.125	17.000	3.688	40.000	79.000	6.00	3.50
VSB3144G	144.00	145.50	147.00	345	52.688	40.125	17.000	3.688	40.000	79.000	6.00	3.50
VSB4144G	144.00	145.50	147.00	390	52.688	40.125	21.875	3.688	40.000	79.000	6.00	3.50

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	-
DWG. NO.	VSBV0014	TITLE: BERNER	
DATE	13APR07	MODEL VSB AIR CURTAIN	
BY	D. Johnson	INDIRECT GAS FIRED – ONE HEATER SYSTEM	
REPLACES	-	BERNER INTERNATIONAL CORP.	
BY	-	NEW CASTLE,PA.	

No.: DS-236
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSB
Ambient
Data Sheet

For Door Heights To 14' (environmental separation) and 12' (insect control)

STANDARD FEATURES

- 1 hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURES

- Two-speed motor(s) (consult factory)

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt (lbs)**
VSB1036A	36	7567	5760	3744	2738	2396	1.12	87	1 @ 1	95
VSB1042A	42	7040	5821	3784	2435	2486	1.12	81	1 @ 1	101
VSB1048A	48	7175	7032	4570	2173	2535	1.25	84	1 @ 1	106
VSB1060A	66	6886	7231	4700	1668	2433	1.25	72	1 @ 1	117
VSB2060A	66	7520	10638	6914	3136	4574	2.07	97	2 @ 1	178
VSB2072A	72	7567	11521	7488	2738	4792	2.24	87	2 @ 1	187
VSB2078A	78	7040	10811	7027	2575	4882	2.24	81	2 @ 1	193
VSB2084A	84	7040	11642	7568	2435	4972	2.24	81	2 @ 1	198
VSB2096A	99	7175	14063	9141	2173	5070	2.50	84	2 @ 1	208
VSB3096A	99	7520	15441	10037	2942	6865	3.36	88	3 @ 1	263
VSB2108A	108	6886	13015	8460	1893	4968	2.50	72	2 @ 1	251
VSB3108A	108	7567	17281	11233	2738	7188	3.36	87	3 @ 1	306
VSB2120A	117	6886	14461	9400	1668	4866	3.36	72	2 @ 1	258
VSB3120A	117	7040	16632	10811	2526	7368	3.36	81	3 @ 1	313
VSB3132A	132	7040	18295	11892	2340	7507	3.49	81	3 @ 1	334
VSB3144A	144	7175	21095	13711	2173	7605	3.75	84	3 @ 1	348
VSB4144A	144	7567	23042	14977	2738	9584	4.48	87	4 @ 1	403

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	12.6	6.5	6.5	6.5	6.5	3.2	2.6	6.5	6.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION *Model: VSB1036*			
Distance from Nozzle (ft)	3	6.5	10
Core Velocity (fpm)	3822	2467	2133
Uniformity (%)	95	85	96

for outdoor use

FDA RECOMMENDED

USDA COMPLIANCE

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC. PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **63 dBA, dBA, dBA, dBA**
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

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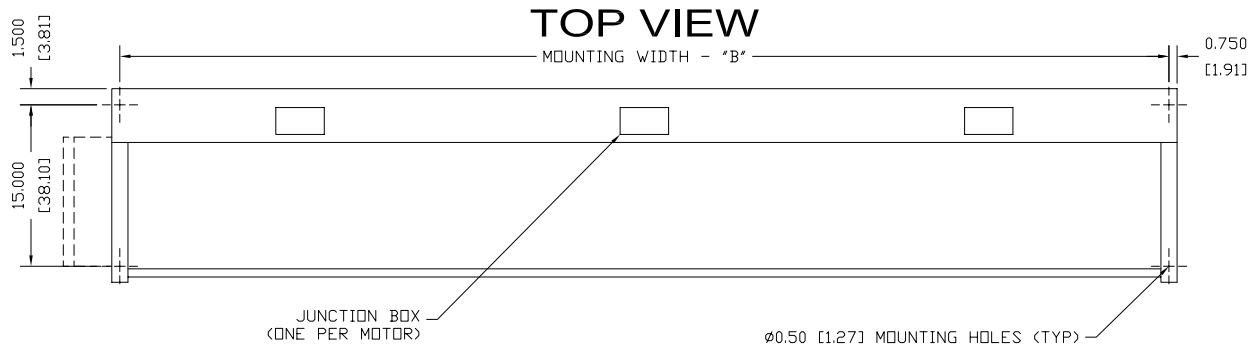
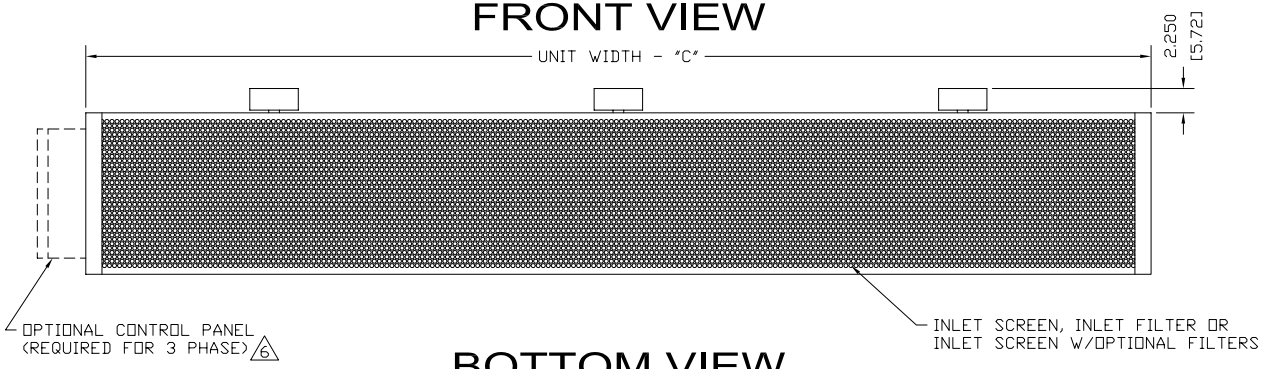
MADE IN U.S.A.

VSB
AMBIENT SYSTEM

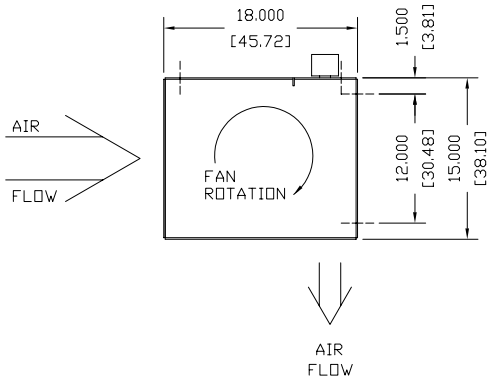
TOP VIEW



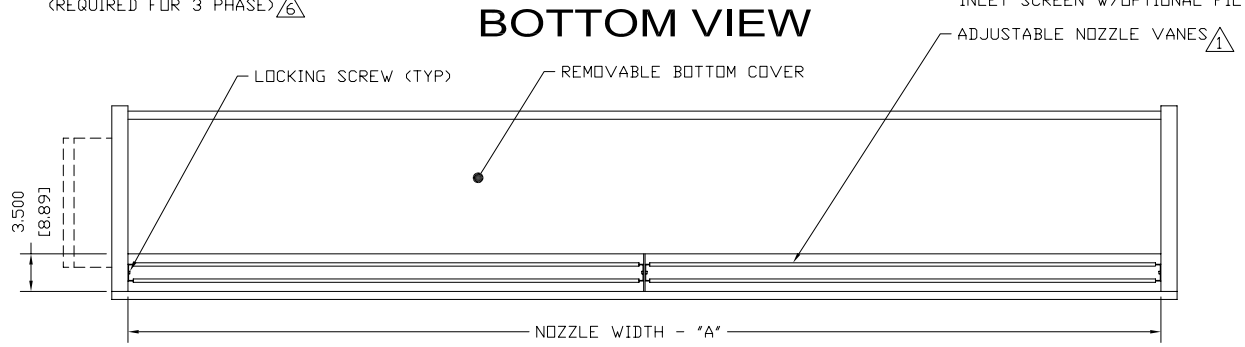
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSB1036A	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSB1042A	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSB1048A	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSB1060A/2060A	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSB2072A	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSB2078A	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSB2084A	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSB2096A/3096A	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSB2108A/3108A	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSB2120A/3120A	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSB3132A	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSB3144A/4144A	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSBV0010	TITLE:	BERNER
DATE	13APR07		MODEL VSB AIR CURTAIN
BY	D. Johnson		AMBIENT SYSTEM
REPLACES			BERNER INTERNATIONAL CORP.
BY			NEW CASTLE,PA.

BERNER™ INTERNATIONAL CORP.

VSA
Electric
Data Sheet

For Door Heights To 12' (environmental separation)

STANDARD FEATURES

- ½ hp single speed motor(s)
- Factory mounted control panel - 24 volt control
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- Helical coil with point suspension of elements
- Available single or three phase
- Galvanized steel frame
- Thermally protected against overheating

OPTIONAL FEATURES

- Reduced kW available (see sheet KW-237)
- ½ hp multi-speed motor(s) (consult factory)

					Lab Data								
Model	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Electric Capacity (kW)**	**Heater Capacity (BTU/hr)**	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSA1036E	36	5166	3933	2556	1728	1512	0.51	87	1 @ ½	14	47,782	29	86
VSA1042E	42	5550	5042	3278	1551	1583	0.52	89	1 @ ½	14	47,782	28	92
VSA1048E	48	5292	4816	3130	1366	1594	0.53	78	1 @ ½	14	47,782	28	97
VSA1060E	66	4800	5180	3367	1049	1530	0.53	74	1 @ ½	14	47,782	29	108
VSA2060E	66	5292	6560	4264	2010	2931	0.99	85	2 @ ½	28	95,564	30	160
VSA2072E	72	5166	7865	5112	1728	3024	1.02	87	2 @ ½	28	95,564	29	169
VSA2078E	78	5166	8521	5538	1633	3095	1.03	87	2 @ ½	28	95,564	28	175
VSA2084E	84	5550	10085	6555	1551	3166	1.04	89	2 @ ½	28	95,564	28	180
VSA2096E	99	5292	9631	6260	1366	3188	1.06	78	2 @ ½	28	95,564	28	190
VSA3096E	99	5292	10866	7063	1551	4332	1.53	88	3 @ ½	42	143,346	30	236
VSA2108E	108	4800	9324	6061	1366	3124	1.06	74	2 @ ½	28	95,564	28	233
VSA3108E	108	5166	11798	7669	1728	4536	1.53	87	3 @ ½	42	143,346	29	279
VSA2120E	117	4800	10360	6734	1049	3060	1.06	74	2 @ ½	28	95,564	29	240
VSA3120E	117	5166	13109	8521	1604	4678	1.55	87	3 @ ½	42	143,346	28	286
VSA3132E	132	5292	13243	8608	1484	4760	1.57	78	3 @ ½	42	143,346	28	307
VSA3144E	144	5292	14447	9391	1366	4782	1.59	78	3 @ ½	42	143,346	28	321
VSA4144E	144	5166	15730	10225	1728	6048	2.04	87	4 @ ½	56	191,128	29	367

Lab tested and heater data based on AMCA licensed data from base (unheated) units

Note: Single phase units have a 14 kW max.

POWER SUPPLIES/MOTOR AMP DRAWS								
VOLTS	208	240	208	240	480	600	220	380
PHASE	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	50	50
AMPS per MOTOR	3.5	3.5	3.5	3.5	1.4	1.0	3.5	3.5

* Operation at 50 Hz will generate approximately a 17% reduction in performance.

Note: See sheet KW-237 for heater amp draws/total load requirements.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **60 dBA, 63 dBA, 65 dBA, 66 dBA**

c UL us

Berner reserves the right to alter specifications without prior notice.

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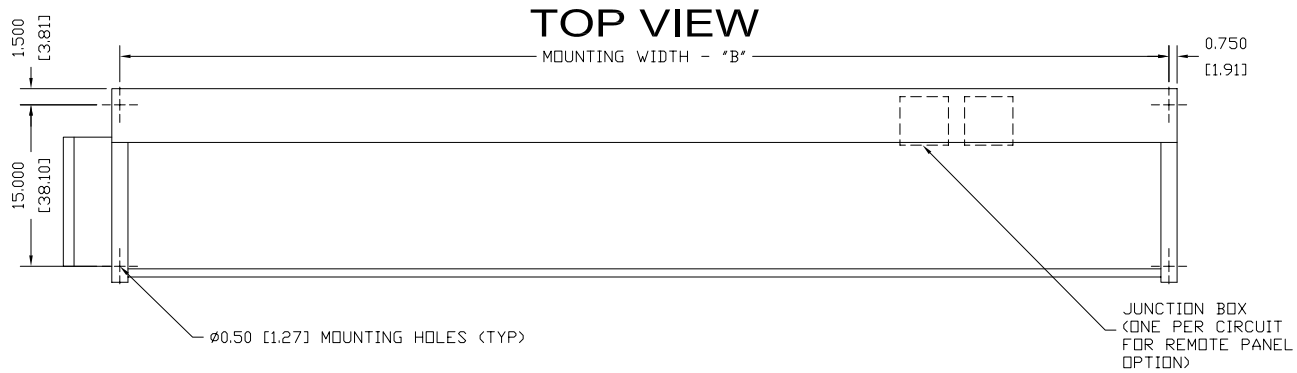
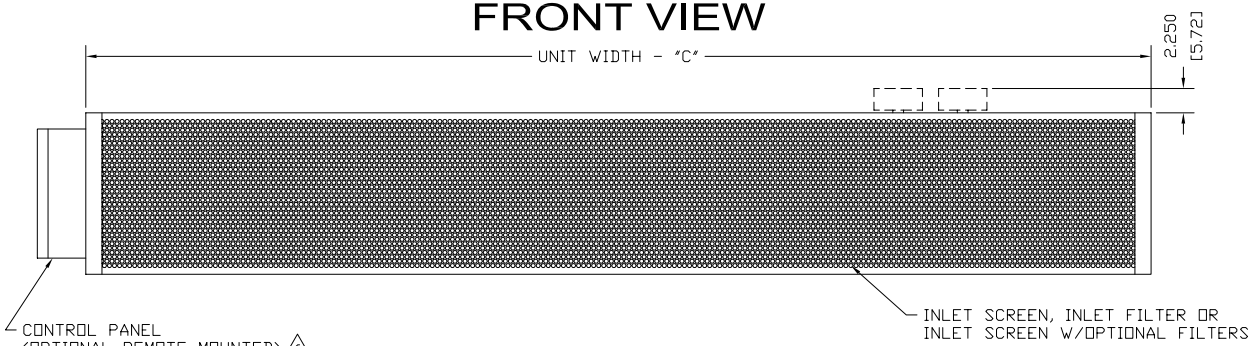
MADE IN U.S.A.

VSA
ELECTRIC HEATED SYSTEM

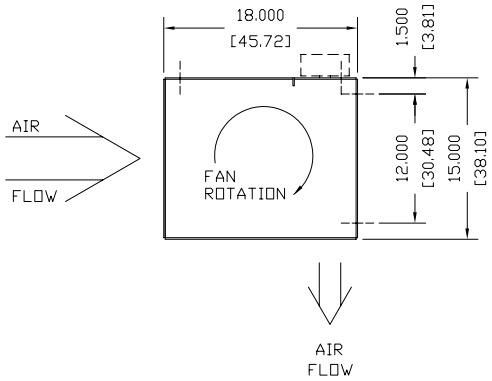
TOP VIEW



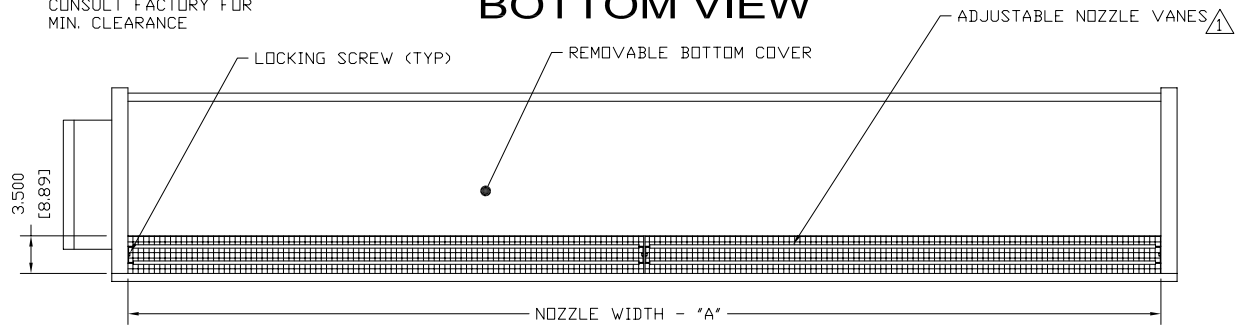
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSA1036E	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSA1042E	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSA1048E	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSA1060E/2060E	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSA2072E	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSA2078E	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSA2084E	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSA2096E/3096E	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSA2108E/3108E	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSA2120E/3120E	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSA3132E	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSA3144E/4144E	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. UNIT MOUNTED CONTROL PANEL STANDARD, REMOTE OPTIONAL.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSAV0011	TITLE:	BERNER
DATE	13APR07		MODEL VSA AIR CURTAIN
BY	D. Johnson		ELECTRIC HEATED SYSTEM
REPLACES			BERNER INTERNATIONAL CORP.
BY			NEW CASTLE,PA.

BERNER™ INTERNATIONAL CORP.

VSB
Electric
Data Sheet

For Door Heights To 14' (environmental separation)

STANDARD FEATURES
- 1 hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Helical coil with point suspension of elements
- Available single or three phase
- Galvanized steel frame
- Thermally protected against overheating

OPTIONAL FEATURES
- Reduced kW available (see sheet KW-237)
- Two-speed motor(s) (consult factory)

					Lab Data								
Model	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Electric Capacity (kW)**	**Heater Capacity (BTU/hr)**	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSB1036E	36	7567	5760	3744	2738	2396	1.12	87	1 @ 1	14	47,782	18	101
VSB1042E	42	7040	5821	3784	2435	2486	1.12	81	1 @ 1	14	47,782	18	107
VSB1048E	48	7175	7032	4570	2173	2535	1.25	84	1 @ 1	14	47,782	17	112
VSB1060E	66	6886	7231	4700	1668	2433	1.25	72	1 @ 1	14	47,782	18	123
VSB2060E	66	7520	10638	6914	3136	4574	2.07	97	2 @ 1	28	95,564	19	190
VSB2072E	72	7567	11521	7488	2738	4792	2.24	87	2 @ 1	28	95,564	18	199
VSB2078E	78	7040	10811	7027	2575	4882	2.24	81	2 @ 1	28	95,564	18	205
VSB2084E	84	7040	11642	7568	2435	4972	2.24	81	2 @ 1	28	95,564	18	210
VSB2096E	99	7175	14063	9141	2173	5070	2.5	84	2 @ 1	28	95,564	17	220
VSB3096E	99	7520	15441	10037	2942	6865	3.36	88	3 @ 1	42	143,346	19	281
VSB2108E	108	6886	13015	8460	1893	4968	2.5	72	2 @ 1	28	95,564	18	263
VSB3108E	108	7567	17281	11233	2738	7188	3.36	87	3 @ 1	42	143,346	18	324
VSB2120E	117	6886	14461	9400	1668	4866	3.36	72	2 @ 1	28	95,564	18	270
VSB3120E	117	7040	16632	10811	2526	7368	3.36	81	3 @ 1	42	143,346	18	331
VSB3132E	132	7040	18295	11892	2340	7507	3.49	81	3 @ 1	42	143,346	18	352
VSB3144E	144	7175	21095	13711	2173	7605	3.75	84	3 @ 1	42	143,346	17	366
VSB4144E	144	7567	23042	14977	2738	9584	4.48	87	4 @ 1	56	191,128	18	427

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	12.6	6.5	6.5	6.5	6.5	3.2	2.6	6.5	6.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **63 dBA, dBA, dBA, dBA**

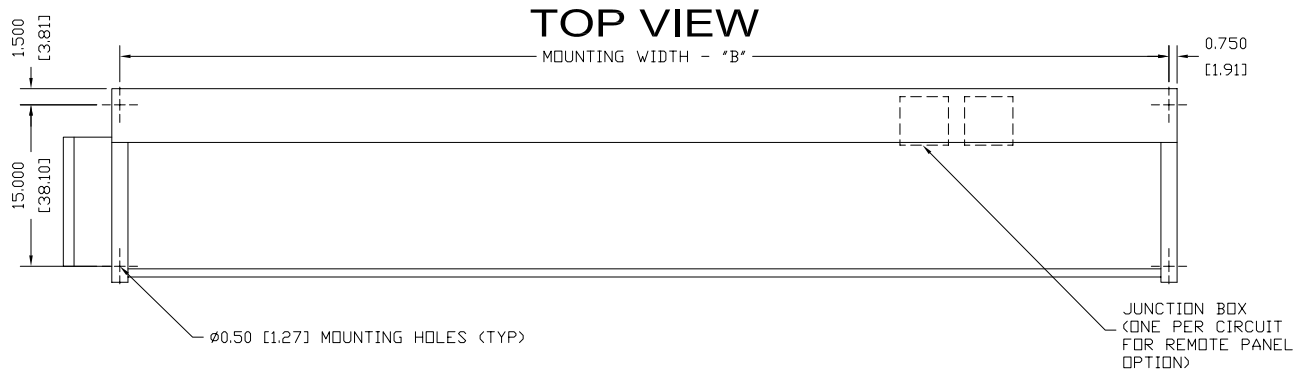
c UL us

Berner reserves the right to alter specifications without prior notice.

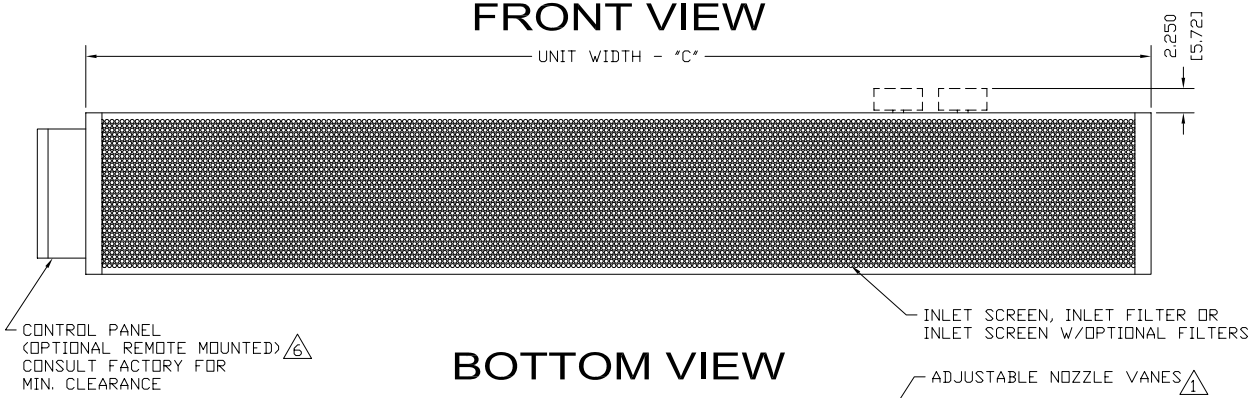
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

VSB
ELECTRIC HEATED SYSTEM

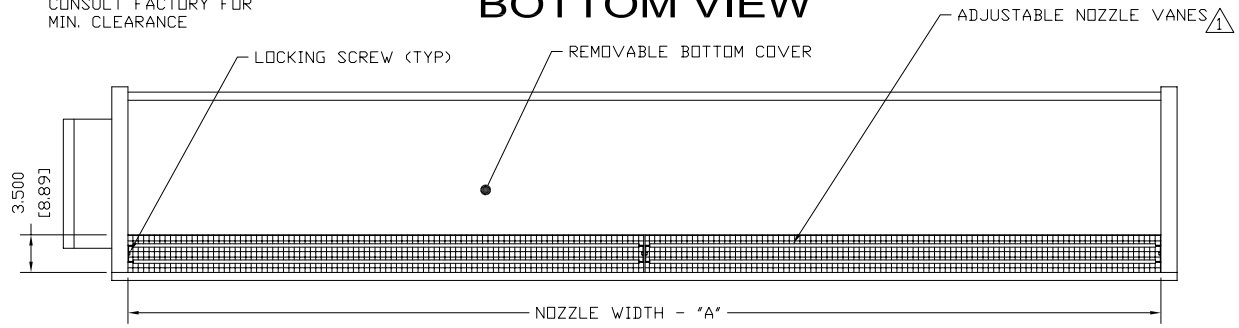
TOP VIEW



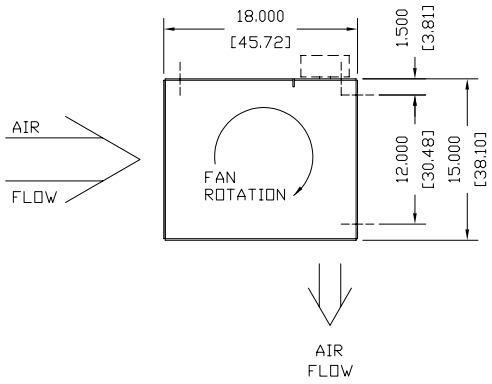
FRONT VIEW



BOTTOM VIEW



END VIEW



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NOTES:

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6. UNIT MOUNTED CONTROL PANEL STANDARD, REMOTE OPTIONAL.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSBV0011	TITLE:	BERNER
DATE	13APR07		MODEL VSB AIR CURTAIN
BY	D. Johnson		ELECTRIC HEATED SYSTEM
REPLACES			BERNER INTERNATIONAL CORP.
BY			NEW CASTLE,PA.

BERNER INTERNATIONAL CORP.

VSA/VSB
Electric Heated
kW's and Amp Draws

kW's AVAILABLE FOR VSA/VSB					
VSA, VSB Models Electric Heated	**# of Motors**	**kW @ 208 - 600/3**			
VSA/VSB1036E	1	14 kW	10 kW	8 kW	6 kW
VSA/VSB1042E					
VSA/VSB1048E					
VSA/VSB1060E					
VSA/VSB 2060E	2	28 kW	20 kW	16 kW	12 kW
VSA/VSB2072E					
VSA/VSB2084E					
VSA/VSB2096E					
VSA/VSB2108E					
VSA/VSB2120E					
VSA/VSB3096E	3	42 kW	30 kW	24 kW	18 kW
VSA/VSB3108E					
VSA/VSB3120E					
VSA/VSB3132E					
VSA/VSB3144E					
VSA/VSB4144E	4	56 kW	40 kW	32 kW	24 kW

HEATER AMP DRAWS FOR SELECTED kW						
Heater kW	**Heater kW Amp Draws**					
	208/1	**240/1**	**208/3**	**240/3**	**480/3**	**600/3**
6 kW	28.9	25.1	16.7	14.5	7.2	6.0
8 kW	38.5	33.5	22.2	19.3	9.6	8.0
10 kW	48.1	41.9	27.8	24.1	12.0	10.0
12 kW	57.7	50.3	33.4	28.9	14.4	12.0
14 kW	67.3	58.7	38.9	33.7	16.8	14.0
16 kW	77.0	67.0	44.5	38.6	19.2	16.0
18 kW	86.6	75.4	50.0	43.4	21.6	18.0
20 kW	96.2	83.8	55.6	48.2	24.0	20.0
24 kW	115.4	100.6	66.7	57.8	28.8	24.0
28 kW	134.7	117.3	77.8	67.5	33.6	28.0
30 kW	144.3	125.7	83.4	72.3	36.0	30.0
32 kW	153.9	134.0	88.9	77.1	38.4	32.0
40 kW	192.4	167.6	111.2	96.4	48.0	40.0
42 kW	202.0	176.0	116.8	101.2	50.4	42.0
56 kW	269.4	234.6	155.7	135.0	67.2	56.0
Amps Per kW	**4.81**	**4.19**	**2.78**	**2.41**	**1.20**	**1.00**

Berner reserves the right to alter specifications without prior notice.

VSA/VSB
Electric Heated
kW, BTU/HR and Temperature Rise

BERNER INTERNATIONAL CORP.

No.: KW-237B
Date: December, 2010

VSA ELECTRIC HEATER kW AND TEMPERATURE RISE - 208-600/3												
Model	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F
VSA1036E*	14	47,782	30	10	34,130	21	8	27,304	17	6	20,478	13
VSA1042E*	14	47,782	28	10	34,130	20	8	27,304	16	6	20,478	12
VSA1048E*	14	47,782	28	10	34,130	20	8	27,304	16	6	20,478	12
VSA1060E*	14	47,782	29	10	34,130	21	8	27,304	17	6	20,478	13
VSA2060E*	28	95,564	31	20	68,260	22	16	54,608	18	12	40,956	13
VSA2072E*	28	95,564	30	20	68,260	21	16	54,608	17	12	40,956	13
VSA2078E*	28	95,564	29	20	68,260	21	16	54,608	17	12	40,956	13
VSA2084E*	28	95,564	28	20	68,260	20	16	54,608	16	12	40,956	12
VSA2096E*	28	95,564	28	20	68,260	20	16	54,608	16	12	40,956	12
VSA3096E*	42	143,346	31	30	102,390	22	24	81,912	18	18	61,434	14
VSA2108E*	28	95,564	29	20	68,260	21	16	54,608	17	12	40,956	13
VSA3108E*	42	143,346	30	30	102,390	21	24	81,912	17	18	61,434	13
VSA2120E*	28	95,564	29	20	68,260	21	16	54,608	17	12	40,956	13
VSA3120E*	42	143,346	29	30	102,390	21	24	81,912	17	18	61,434	13
VSA3132E*	42	143,346	28	30	102,390	20	24	81,912	16	18	61,434	12
VSA3144E*	42	143,346	28	30	102,390	20	24	81,912	16	18	61,434	12
VSA4144E*	56	191,128	30	40	136,520	21	32	109,216	17	24	81,912	13

*For reduced kW, the model number needs to include kW. Example: VSA3132EB-140 for 14 kW heat.

VSB ELECTRIC HEATER kW AND TEMPERATURE RISE - 208-600/3												
Model	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F	Heater kW @ 208-600/3	BTU/HR	AIR TEMP RISE °F
VSB1036E*	14	47,782	19	10	34,130	14	8	27,304	11	6	20,478	8
VSB1042E*	14	47,782	18	10	34,130	13	8	27,304	11	6	20,478	8
VSB1048E*	14	47,782	18	10	34,130	13	8	27,304	10	6	20,478	8
VSB1060E*	14	47,782	19	10	34,130	13	8	27,304	11	6	20,478	8
VSB2060E*	28	95,564	20	20	68,260	14	16	54,608	12	12	40,956	9
VSB2072E*	28	95,564	19	20	68,260	14	16	54,608	11	12	40,956	8
VSB2078E*	28	95,564	19	20	68,260	13	16	54,608	11	12	40,956	8
VSB2084E*	28	95,564	18	20	68,260	13	16	54,608	11	12	40,956	8
VSB2096E*	28	95,564	18	20	68,260	13	16	54,608	10	12	40,956	8
VSB3096E*	42	143,346	20	30	102,390	14	24	81,912	11	18	61,434	9
VSB2108E*	28	95,564	18	20	68,260	13	16	54,608	11	12	40,956	8
VSB3108E*	42	143,346	19	30	102,390	14	24	81,912	11	18	61,434	8
VSB2120E*	28	95,564	19	20	68,260	13	16	54,608	11	12	40,956	8
VSB3120E*	42	143,346	18	30	102,390	13	24	81,912	11	18	61,434	8
VSB3132E*	42	143,346	18	30	102,390	13	24	81,912	11	18	61,434	8
VSB3144E*	42	143,346	18	30	102,390	13	24	81,912	10	18	61,434	8
VSB4144E*	56	191,128	19	40	136,520	14	32	109,216	11	24	81,912	8

*For reduced kW, the model number needs to include kW. Example: VSB3132EB-140 for 14 kW heat.

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Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

No.: DS-239
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSA
Steam Heated
Data Sheet

For Door Heights To 12' (environmental separation)

STANDARD FEATURES

- ½ hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- Factory mounted
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @minimum 325 psig dry nitrogen

OPTIONAL FEATURES

- ½ hp multi-speed motor(s) (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam Capacity (btu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSA1036S	36	5166	3933	2556	1728	1512	0.51	87	1 @ ½	56,843	35	95
VSA1042S	42	5550	5042	3278	1551	1583	0.52	89	1 @ ½	62,797	36	103
VSA1048S	48	5292	4816	3130	1366	1594	0.53	78	1 @ ½	67,278	39	111
VSA1060S	66	4800	5180	3367	1049	1530	0.53	74	1 @ ½	76,617	45	127
VSA2060S	66	5292	6560	4264	2010	2931	0.99	85	2 @ ½	107,149	34	173
VSA2072S	72	5166	7865	5112	1728	3024	1.02	87	2 @ ½	113,679	35	187
VSA2078S	78	5166	8521	5538	1633	3095	1.03	87	2 @ ½	119,684	36	195
VSA2084S	84	5550	10085	6555	1551	3166	1.04	89	2 @ ½	125,583	36	203
VSA2096S	99	5292	9631	6260	1366	3188	1.06	78	2 @ ½	136,562	39	218
VSA3096S	99	5292	10866	7063	1857	4332	1.53	88	3 @ ½	159,525	34	258
VSA2108S	108	4800	9324	6061	1190	3124	1.06	74	2 @ ½	200,456	59	266
VSA3108S	108	5166	11798	7669	1728	4536	1.53	87	3 @ ½	170,492	35	306
VSA2120S	117	4800	10360	6734	1049	3060	1.06	74	2 @ ½	146,526	44	278
VSA3120S	117	5166	13109	8521	1604	4678	1.55	87	3 @ ½	182,457	36	318
VSA3132S	132	5292	13243	8608	1484	4760	1.57	78	3 @ ½	192,916	37	344
VSA3144S	144	5292	14447	9391	1366	4782	1.59	78	3 @ ½	201,755	39	363
VSA4144S	144	5166	15730	10225	1728	6048	2.04	87	4 @ ½	227,261	35	403

Air performance based on AMCA licensed data from base (unheated) units
*Steam rating based on 65F entering air and 5 psig steam return same end.

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	6.5	3.5	3.5	3.5	3.5	1.4	1.0	3.5	3.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **60 dBA, 63 dBA, 65 dBA, 66 dBA**

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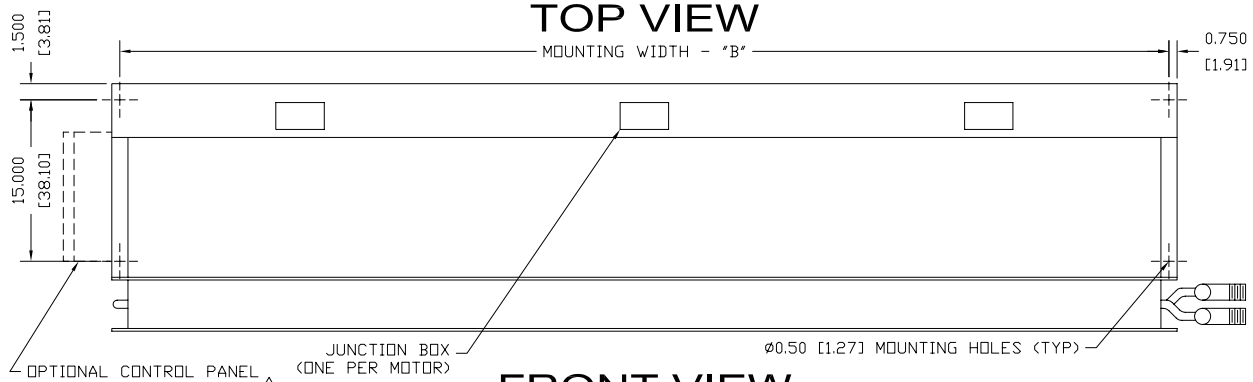
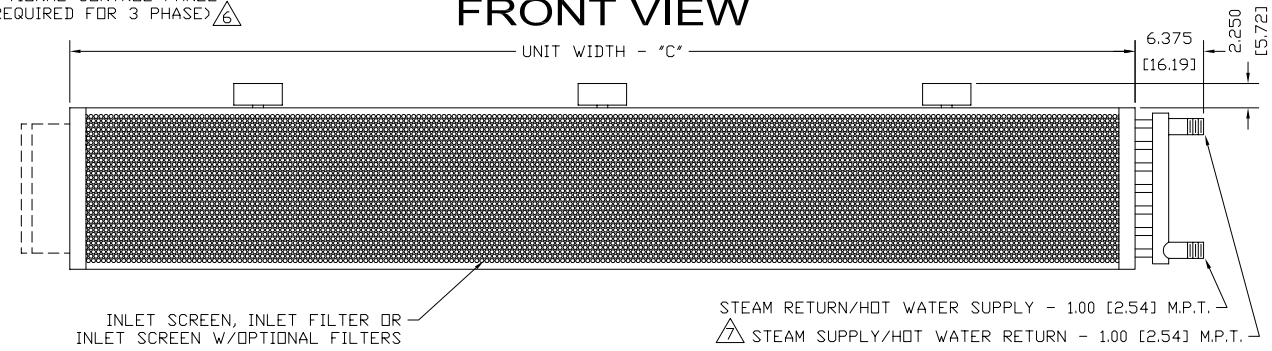
MADE IN U.S.A.

VSA
STEAM/HOT WATER SYSTEM

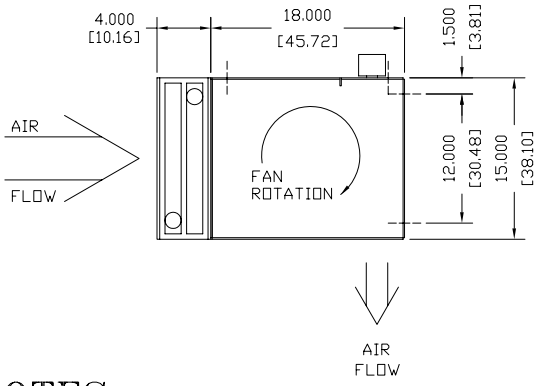
TOP VIEW



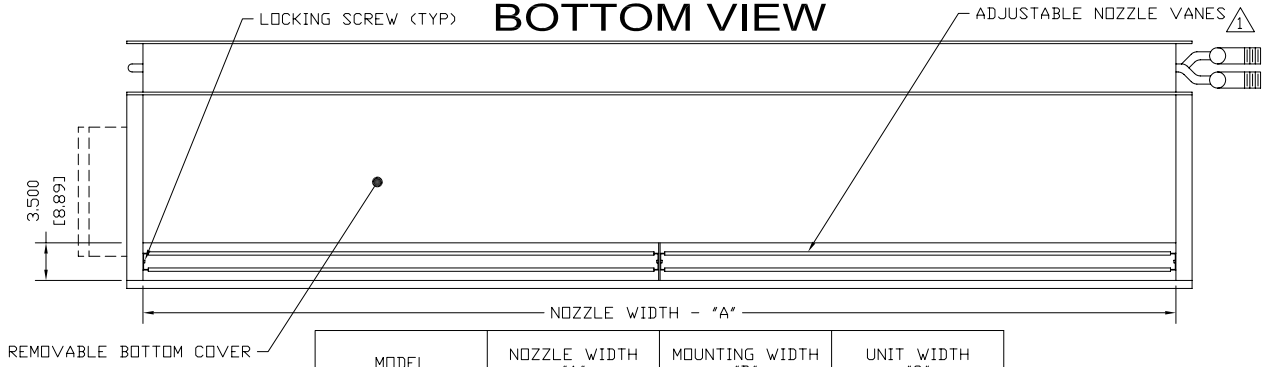
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSA1036*	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSA1042*	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSA1048*	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSA1060*/2060*	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSA2072*	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSA2078*	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSA2084*	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSA2096*/3096*	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSA2108*/3108*	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSA2120*/3120*	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSA3132*	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSA3144*/4144*	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

*- S-STEAM; W-HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSAV0012	TITLE:	BERNER
DATE	15MAY09		MODEL VSA AIR CURTAIN STEAM/HOT WATER SYSTEM
BY	B. Peffer		
REPLACES	04OCT08		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	D. Johnson		

No.: DS-241
Date: October, 2011

BERNER INTERNATIONAL CORP.

VSA
Hot Water Heated
Data Sheet

For Door Heights To 12' (environmental separation)

STANDARD FEATURES
- ½ hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- Factory mounted
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @minimum 325 psig dry nitrogen

OPTIONAL FEATURES
- ½ hp multi-speed motor(s) (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Hot Water Capacity (btu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSA1036W	36	5166	3933	2556	1728	1512	0.51	87	1 @ ½	49,610	30	95
VSA1042W	42	5550	5042	3278	1551	1583	0.52	89	1 @ ½	51,822	30	103
VSA1048W	48	5292	4816	3130	1366	1594	0.53	78	1 @ ½	52,359	30	111
VSA1060W	66	4800	5180	3367	1049	1530	0.53	74	1 @ ½	50,036	30	127
VSA2060W	66	5292	6560	4264	2010	2931	0.99	85	2 @ ½	96,563	30	173
VSA2072W	72	5166	7865	5112	1728	3024	1.02	87	2 @ ½	99,783	30	187
VSA2078W	78	5166	8521	5538	1633	3095	1.03	87	2 @ ½	101,625	30	195
VSA2084W	84	5550	10085	6555	1551	3166	1.04	89	2 @ ½	103,844	30	203
VSA2096W	99	5292	9631	6260	1366	3188	1.06	78	2 @ ½	120,650	35	218
VSA3096W	99	5292	10866	7063	1857	4332	1.53	88	3 @ ½	141,770	30	258
VSA2108W	108	4800	9324	6061	1190	3124	1.06	74	2 @ ½	116,654	34	266
VSA3108W	108	5166	11798	7669	1728	4536	1.53	87	3 @ ½	149,993	30	306
VSA2120W	117	4800	10360	6734	1049	3060	1.06	74	2 @ ½	100,115	30	278
VSA3120W	117	5166	13109	8521	1604	4678	1.55	87	3 @ ½	153,627	30	318
VSA3132W	132	5292	13243	8608	1484	4760	1.57	78	3 @ ½	173,231	33	344
VSA3144W	144	5292	14447	9391	1366	4782	1.59	78	3 @ ½	181,220	35	363
VSA4144W	144	5166	15730	10225	1728	6048	2.04	87	4 @ ½	197,509	30	403

Air performance based on AMCA licensed data from base (unheated) units
*Hot water rating based on 65F entering air and 180F entering water temperature and supply end connections.

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	6.5	3.5	3.5	3.5	3.5	1.4	1.0	3.5	3.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

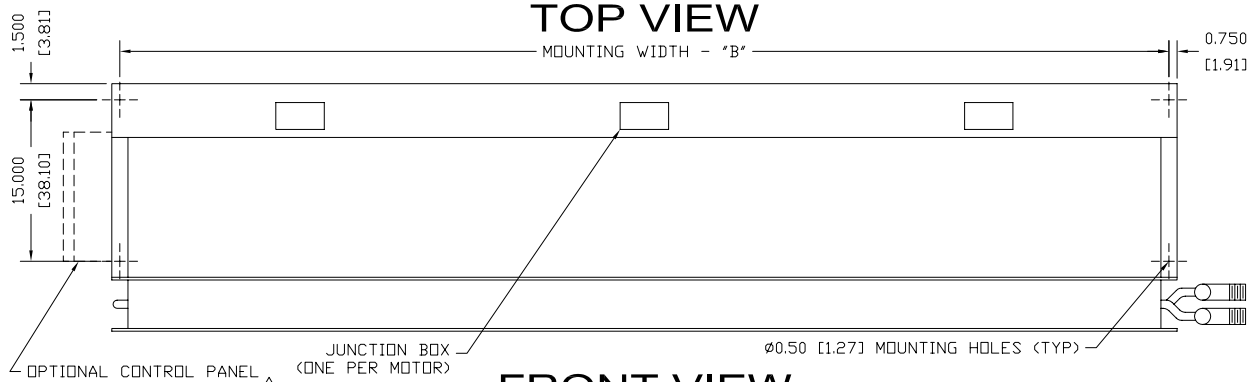
Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **60 dBA, 63 dBA, 65 dBA, 66 dBA**

Berner reserves the right to alter specifications without prior notice.

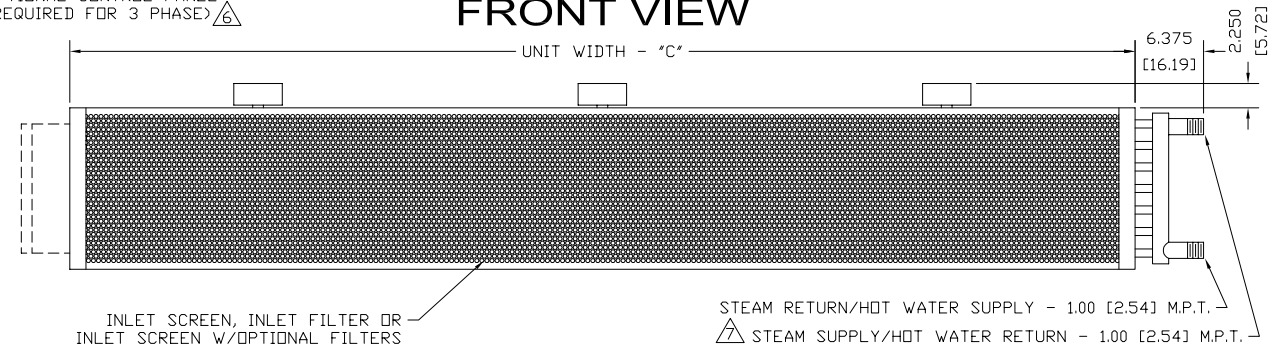
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

VSA
STEAM/HOT WATER SYSTEM

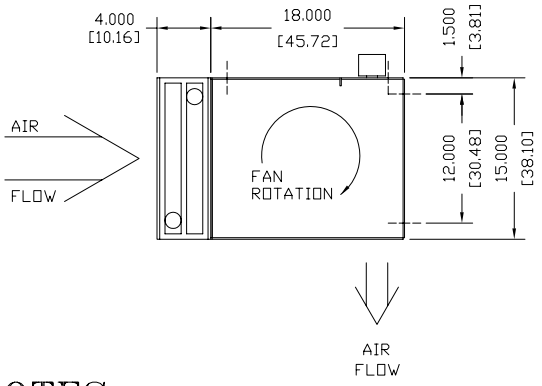
TOP VIEW



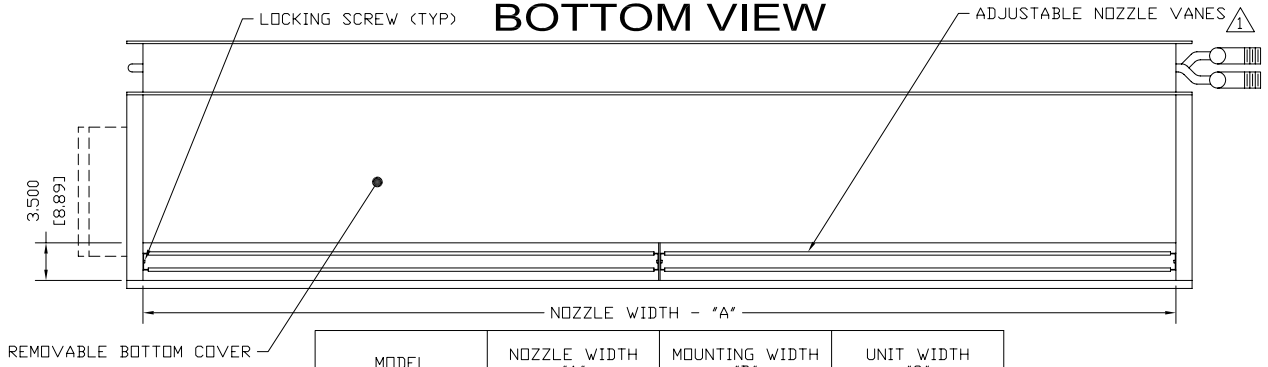
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSA1036*	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSA1042*	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSA1048*	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSA1060*/2060*	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSA2072*	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSA2078*	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSA2084*	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSA2096*/3096*	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSA2108*/3108*	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSA2120*/3120*	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSA3132*	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSA3144*/4144*	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

*- S-STEAM; W-HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSAV0012	TITLE:	BERNER
DATE	15MAY09		MODEL VSA AIR CURTAIN STEAM/HOT WATER SYSTEM
BY	B. Peffer		
REPLACES	04OCT08		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	D. Johnson		

No.: DS-240
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

VSB
Steam Heated
Data Sheet

For Door Heights To 14' (environmental separation)

STANDARD FEATURES

- 1 hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- Factory mounted
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @minimum 325 psig dry nitrogen

OPTIONAL FEATURES

- Two-speed motor(s) (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam Capacity (btu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSB1036S	36	7567	5760	3744	2738	2396	1.12	87	1 @ 1	87,418	34	110
VSB1042S	42	7040	5821	3784	2435	2486	1.12	81	1 @ 1	96,429	35	118
VSB1048S	48	7175	7032	4570	2173	2535	1.25	84	1 @ 1	104,268	38	126
VSB1060S	66	6886	7231	4700	1668	2433	1.25	72	1 @ 1	97,573	37	142
VSB2060S	66	7520	10638	6914	3136	4574	2.07	97	2 @ 1	163,341	33	203
VSB2072S	72	7567	11521	7488	2738	4792	2.24	87	2 @ 1	174,811	34	217
VSB2078S	78	7040	10811	7027	2575	4882	2.24	81	2 @ 1	183,916	35	225
VSB2084S	84	7040	11642	7568	2435	4972	2.24	81	2 @ 1	192,820	35	233
VSB2096S	99	7175	14063	9141	2173	5070	2.5	84	2 @ 1	211,774	38	248
VSB3096S	99	7520	15441	10037	2942	6865	3.36	88	3 @ 1	245,013	33	303
VSB2108S	108	6886	13015	8460	1893	4968	2.5	72	2 @ 1	178,394	33	296
VSB3108S	108	7567	17281	11233	2738	7188	3.36	87	3 @ 1	262,130	34	351
VSB2120S	117	6886	14461	9400	1668	4866	3.36	72	2 @ 1	186,113	35	308
VSB3120S	117	7040	16632	10811	2526	7368	3.36	81	3 @ 1	280,243	35	363
VSB3132S	132	7040	18295	11892	2340	7507	3.49	81	3 @ 1	297,056	36	389
VSB3144S	144	7175	21095	13711	2173	7605	3.75	84	3 @ 1	312,544	38	408
VSB4144S	144	7567	23042	14977	2738	9584	4.48	87	4 @ 1	349,308	33	463

Air performance based on AMCA licensed data from base (unheated) units
*Steam rating based on 65F entering air and 5 psig steam return same end.

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	12.6	6.5	6.5	6.5	6.5	3.2	2.6	6.5	6.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

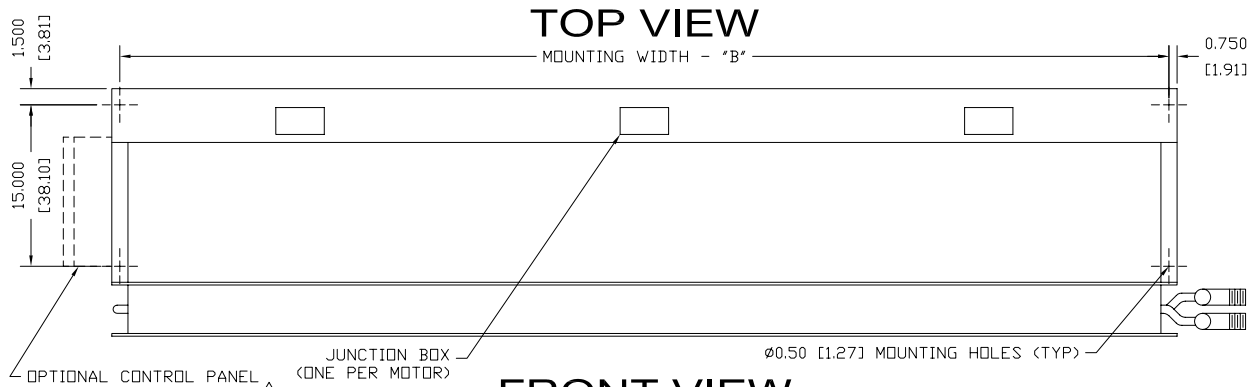
Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **63 dBA, dBA, dBA, dBA**
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

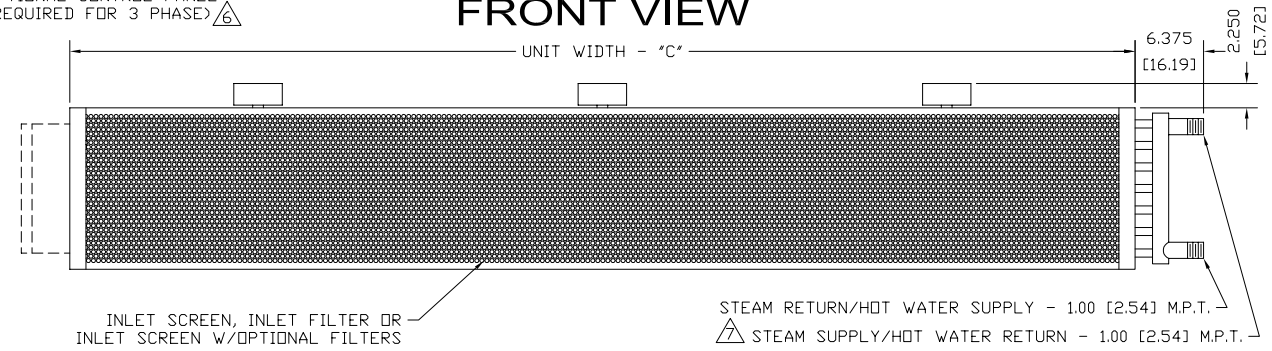
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

VSB
STEAM/HOT WATER SYSTEM

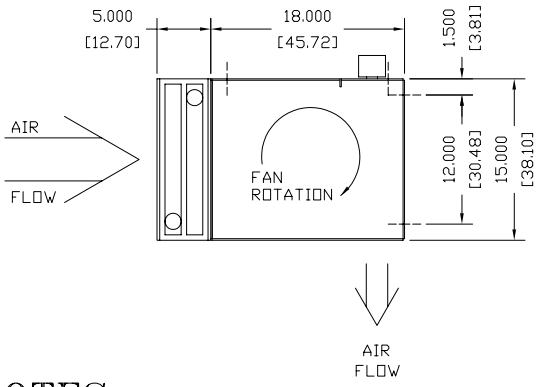
TOP VIEW



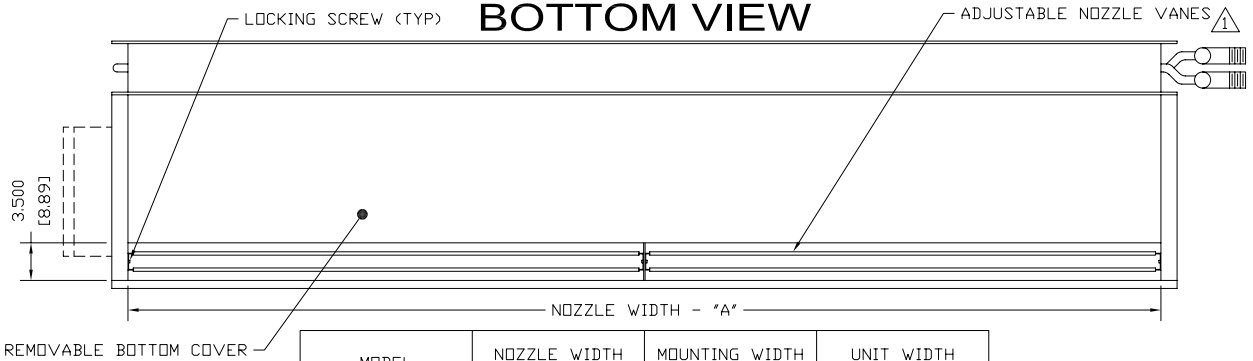
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSB1036*	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSB1042*	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSB1048*	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSB1060*/2060*	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSB2072*	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSB2078*	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSB2084*	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSB2096*/3096*	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSB2108*/3108*	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSB2120*/3120*	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSB3132*	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSB3144*/4144*	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

*- S-STEAM; W-HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSBV0012	TITLE: BERNER MODEL VSB AIR CURTAIN STEAM/HOT WATER SYSTEM	
DATE	15MAY09		
BY	B. Peffer		
REPLACES	13APR07	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	D. Johnson		

No.: DS-242
Date: October, 2011

BERNER INTERNATIONAL CORP.

VSB
Hot Water Heated
Data Sheet

For Door Heights To 14' (environmental separation)

STANDARD FEATURES

- 1 hp single speed motor(s)
- High efficiency, low noise Pro-V Nozzle (patent pending)
- Galvanized steel blower wheels and housing
  Airfoil aluminum air directional vanes
- Powder coated finish with aluminum inlet screen
- 16 gauge aluminized steel cabinet
- ½" mounting holes (wall or top mounting)
- No field assembly required
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- Factory mounted
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @minimum 325 psig dry nitrogen

OPTIONAL FEATURES

- Two-speed motor(s) (consult factory)

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Out. Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Hot Water Cap. (btu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
VSB1036W	36	7567	5760	3744	2738	2396	1.12	87	1 @ 1	78,686	30	110
VSB1042W	42	7040	5821	3784	2435	2486	1.12	81	1 @ 1	81,614	30	118
VSB1048W	48	7175	7032	4570	2173	2535	1.25	84	1 @ 1	83,333	30	126
VSB1060W	66	6886	7231	4700	1668	2433	1.25	72	1 @ 1	80,206	30	142
VSB2060W	66	7520	10638	6914	3136	4574	2.07	97	2 @ 1	149,581	30	203
VSB2072W	72	7567	11521	7488	2738	4792	2.24	87	2 @ 1	157,276	30	217
VSB2078W	78	7040	10811	7027	2575	4882	2.24	81	2 @ 1	160,976	30	225
VSB2084W	84	7040	11642	7568	2435	4972	2.24	81	2 @ 1	163,646	30	233
VSB2096W	99	7175	14063	9141	2173	5070	2.5	84	2 @ 1	166,788	30	248
VSB3096W	99	7520	15441	10037	2942	6865	3.36	88	3 @ 1	224,660	30	303
VSB2108W	108	6886	13015	8460	1893	4968	2.5	72	2 @ 1	162,728	30	296
VSB3108W	108	7567	17281	11233	2738	7188	3.36	87	3 @ 1	236,769	30	351
VSB2120W	117	6886	14461	9400	1668	4866	3.36	72	2 @ 1	161,449	30	308
VSB3120W	117	7040	16632	10811	2526	7368	3.36	81	3 @ 1	241,094	30	363
VSB3132W	132	7040	18295	11892	2340	7507	3.49	81	3 @ 1	247,318	30	389
VSB3144W	144	7175	21095	13711	2173	7605	3.75	84	3 @ 1	251,155	30	408
VSB4144W	144	7567	23042	14977	2738	9584	4.48	87	4 @ 1	313,230	30	463

Air performance based on AMCA licensed data from base (unheated) units
*Hot water rating based on 65F entering air and 180F entering water temperature and supply end connections.

POWER SUPPLIES/MOTOR AMP DRAWS									
VOLTS	120	208	240	208	240	480	600	220	380
PHASE	1	1	1	3	3	3	3	1	3
HERTZ*	60	60	60	60	60	60	60	50	50
AMPS per MOTOR	12.6	6.5	6.5	6.5	6.5	3.2	2.6	6.5	6.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

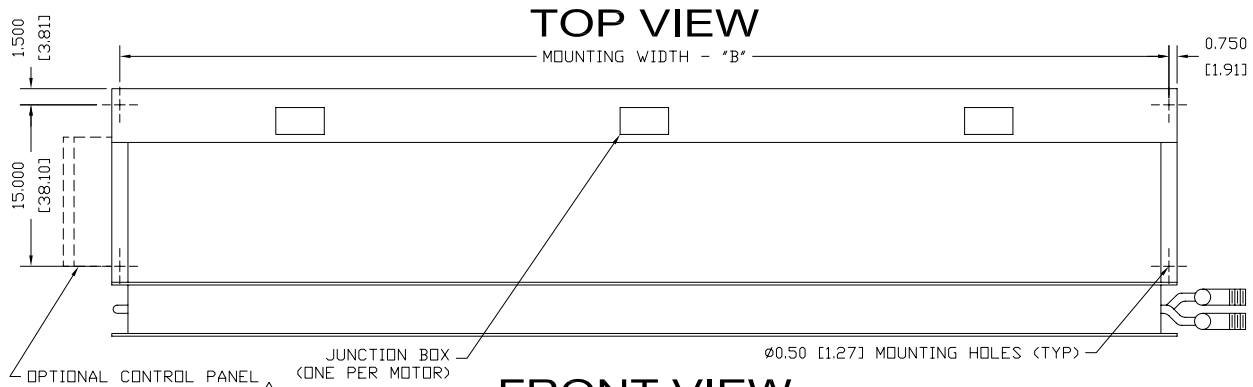
Sound level measured 10' (3m) from the unit in free field:
1, 2, 3 & 4 motor(s): **63 dBA, dBA, dBA, dBA**

Berner reserves the right to alter specifications without prior notice.

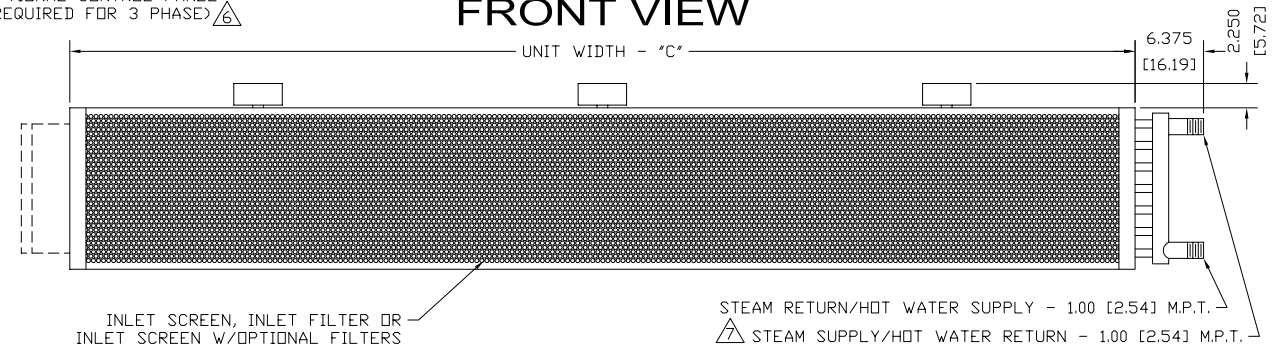
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

VSB
STEAM/HOT WATER SYSTEM

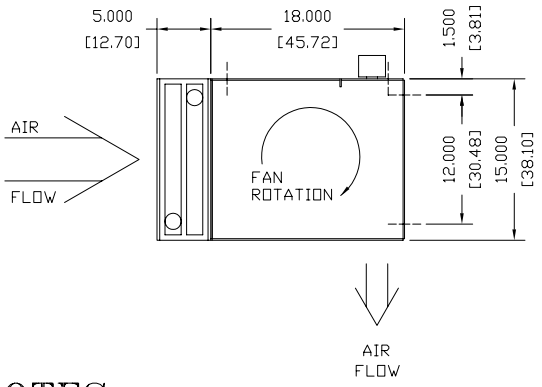
TOP VIEW



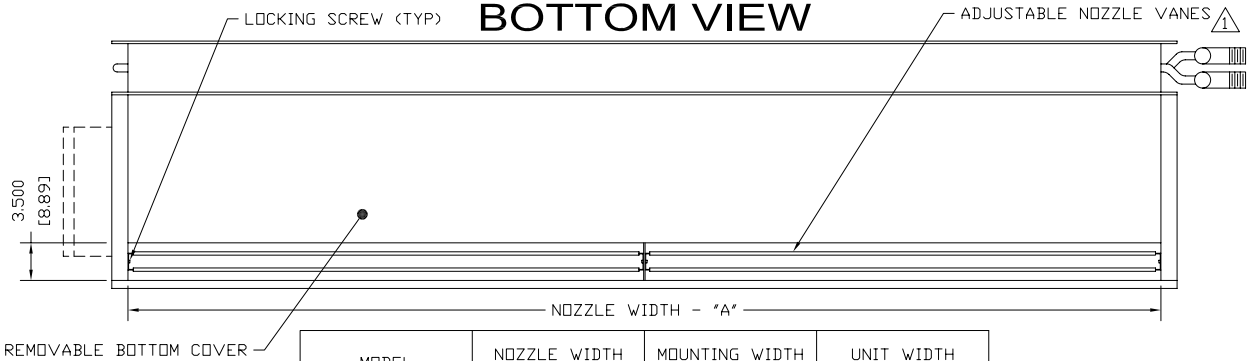
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
VSB1036*	36.00 [91.44]	37.50 [95.25]	39.00 [99.06]
VSB1042*	42.00 [106.68]	43.50 [110.49]	45.00 [114.30]
VSB1048*	48.00 [121.92]	49.50 [125.73]	51.00 [129.54]
VSB1060*/2060*	66.00 [167.64]	67.50 [171.45]	69.00 [175.26]
VSB2072*	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
VSB2078*	78.00 [192.12]	79.50 [201.93]	81.00 [205.74]
VSB2084*	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
VSB2096*/3096*	99.00 [251.46]	100.50 [255.27]	102.00 [259.08]
VSB2108*/3108*	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
VSB2120*/3120*	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
VSB3132*	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
VSB3144*/4144*	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]

*- S-STEAM; W-HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSBV0012	TITLE: BERNER MODEL VSB AIR CURTAIN STEAM/HOT WATER SYSTEM	
DATE	15MAY09		
BY	B. Peffer		
REPLACES	13APR07	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	D. Johnson		

No.: DS-115
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFA
Ambient
Data Sheet

For Door Heights To 16' (environmental separation) and 14' (insect control)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Five year parts warranty
- Crafted with Pride in the USA

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**M otor(s) @ hp**	**Net Wgt. (lbs)**
CFA1060A	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	370
CFA1072A	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	410
CFA1084A	84	4644	10849	7160	2731	6772	3.0	89	1 @ 3	450
CFA1096A	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	550
CFA1108A	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	625
CFA1120A	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	705
CFA1132A	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	750
CFA1144A	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	795
CFA1156A	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	835
CFA2168A	168	5203	24312	16046	3061	15,176	7.0	89	1 @ 5, 1 @ 3	950
CFA2180A	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	1015
CFA2192A	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	1080

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION: *Model CFA1060*			
Distance from Nozzle (ft)	3	8	13
Core Velocity (fpm)	2280	1580	1253

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC. — PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.
Models CFA1084A, CFA1108A, CFA1132A, CFA1156A, and CFA2180A are intended for door heights up to 14'.

Sound level measured 10' (3m) from the unit in free field: **68 dBA**

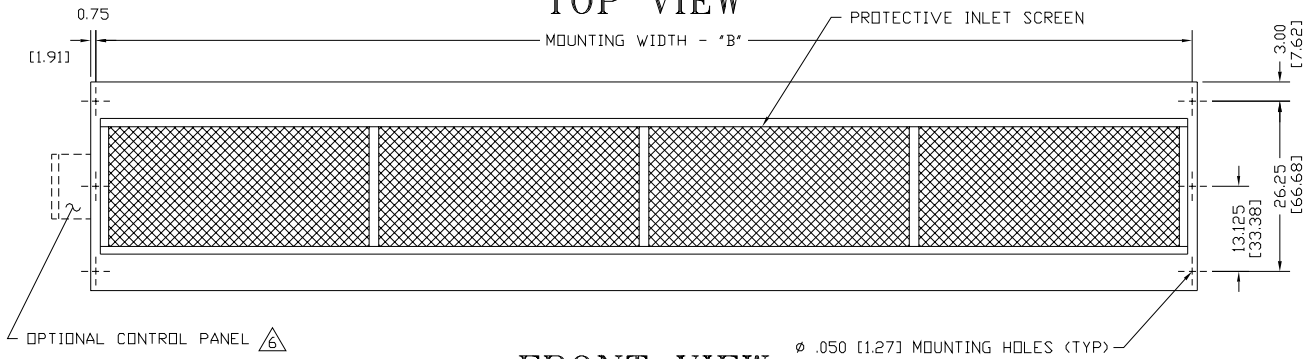
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

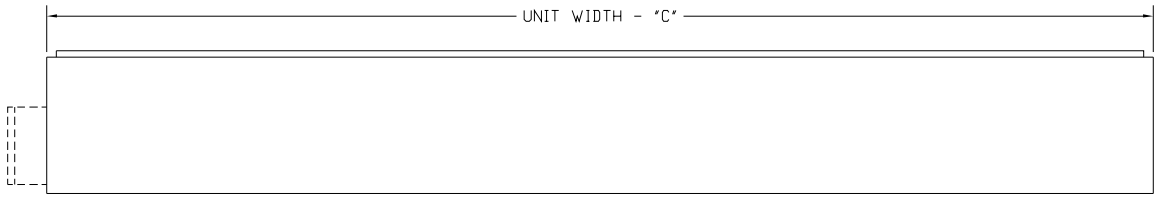
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

CFA
TOP INTAKE AMBIENT SYSTEM

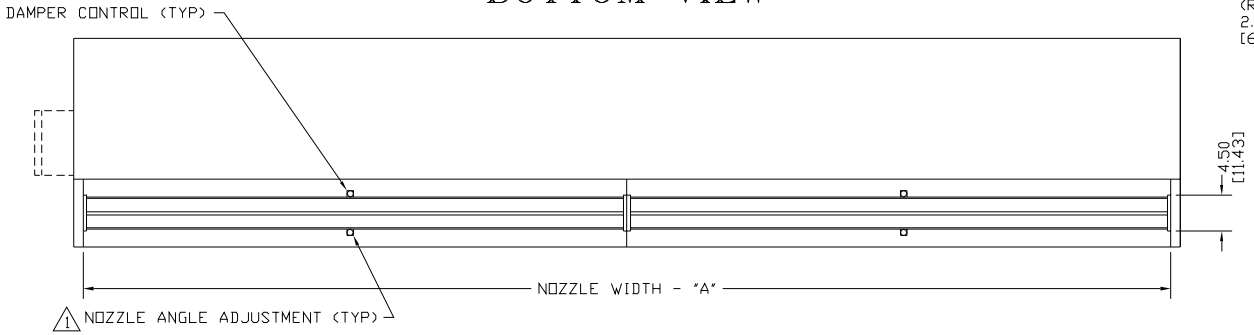
TOP VIEW



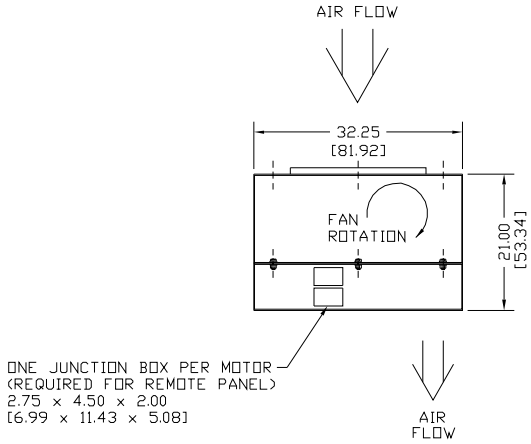
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFA1060A-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFA1072A-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFA1084A-T	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFA1096A-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFA1108A-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFA1120A-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFA1132A-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFA1144A-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFA1156A-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFA2168A-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFA2180A-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFA2192A-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

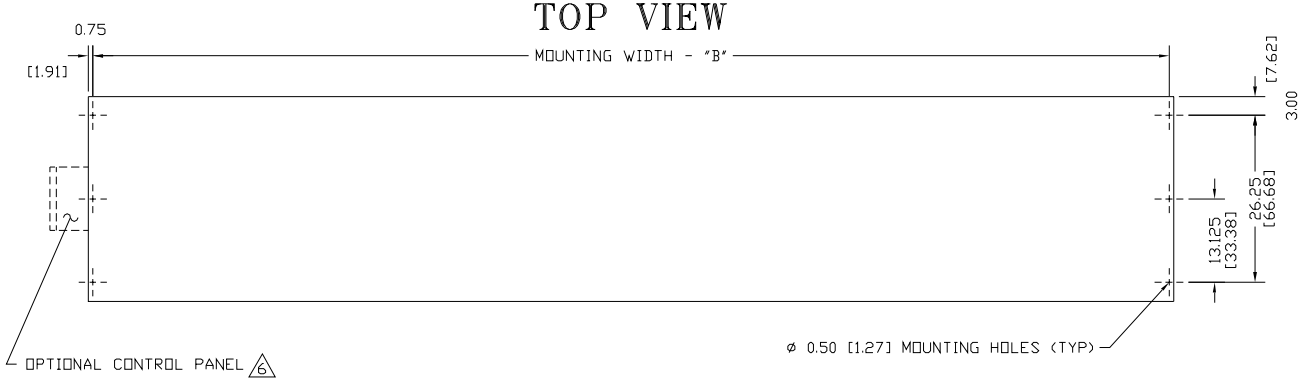
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

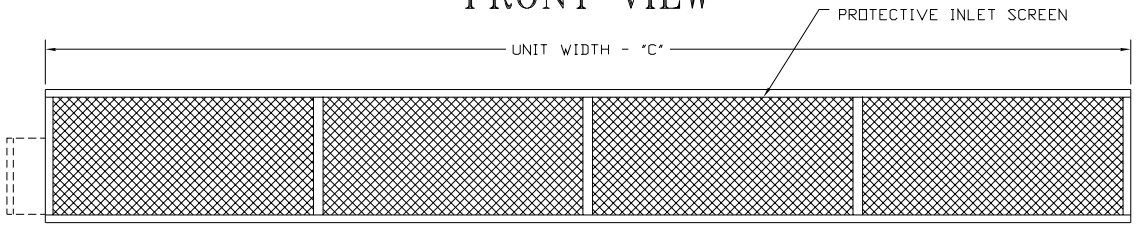
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFAQ3173	TITLE: BERNER MODEL CFA AIR CURTAIN TOP INTAKE AMBIENT SYSTEM	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	21OCT02	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

CFA
FRONT INTAKE AMBIENT SYSTEM

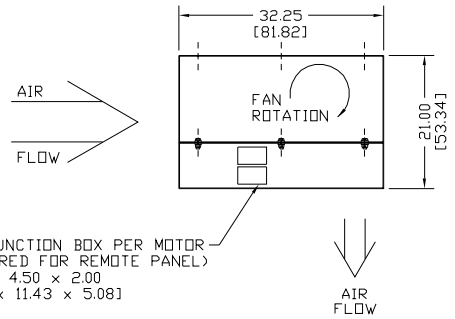
TOP VIEW



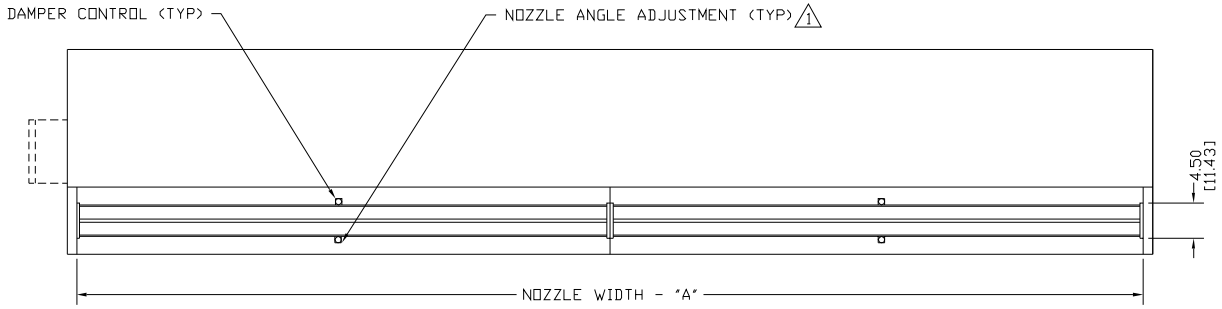
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFA1060A-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFA1072A-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFA1084A-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFA1096A-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFA1108A-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFA1120A-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFA1132A-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFA1144A-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFA1156A-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFA2168A-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFA2180A-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFA2192A-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAQ3174	TITLE: BERNER MODEL CFA AIR CURTAIN FRONT INTAKE AMBIENT SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	21OCT02	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

CFA/CFX STEAM			
Steam Coil (1) Row (10) Fins Per Inch			
Opposite End Supply/Return			
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**Condensate lbs/hr**
CFA/CFX1060S	39	223	232.3
CFA/CFX1072S	39	264	275.3
CFA/CFX1084S	41	298	310.5
CFA/CFX1096S	38	363	378.2
CFA/CFX1108S	38	404	421.4
CFA/CFX1120S	35	471	490.9
CFA/CFX1132S	37	509	530.8
CFA/CFX1144S	38	539	561.3
CFA/CFX1156S	39	569	593.1
CFA/CFX1168S	38	627	653.6
CFA/CFX1180S	39	669	696.7
CFA/CFX1192S	40	772	756.5

Performance based on 70°F Entering Air Temperature (E.A.T.) and 5# Steam*

* For other steam pressures - see chart on reverse side.
Berner recommends that maximum Leaving Air Temperature (L.A.T.) never exceed 120°F.
All coils should be supplied by a solenoid valve that energizes coil only when air curtain is on.

Constants For Obtaining Temperature Rise At Various Steam Pressures & Inlet Temperatures

STEAM PRESSURES IN POUNDS PER SQUARE INCH (GAUGE)

ENTERING AIR TEMPERATURE °F	0	2	5	10	15	20	30	40	50	60	80	100	125	150	175	200
-30	1.54	1.59	1.64	1.71	1.78	1.84	1.94	2.02	2.10	2.16	2.25	2.34	2.44	2.52	2.59	2.67
-20	1.48	1.52	1.57	1.65	1.72	1.77	1.87	1.95	2.02	2.08	2.19	2.28	2.37	2.46	2.53	2.59
-10	1.41	1.45	1.51	1.59	1.65	1.71	1.81	1.89	1.96	2.02	2.12	2.21	2.31	2.39	2.46	2.53
00	1.35	1.39	1.45	1.54	1.59	1.65	1.74	1.82	1.89	1.96	2.06	2.15	2.25	2.33	2.40	2.47
10	1.28	1.33	1.38	1.46	1.52	1.58	1.68	1.76	1.83	1.89	2.00	2.09	2.18	2.26	2.34	2.40
20	1.22	1.26	1.31	1.40	1.46	1.52	1.62	1.70	1.77	1.83	1.93	2.02	2.12	2.20	2.27	2.34
30	1.16	1.20	1.25	1.33	1.40	1.46	1.55	1.63	1.70	1.76	1.87	1.96	2.05	2.14	2.21	2.28
40	1.09	1.14	1.19	1.27	1.33	1.39	1.49	1.57	1.64	1.70	1.81	1.89	1.99	2.07	2.15	2.22
45	1.06	1.10	1.16	1.24	1.30	1.36	1.46	1.54	1.61	1.67	1.77	1.86	1.96	2.04	2.12	2.18
50	1.03	1.07	1.13	1.21	1.27	1.33	1.42	1.51	1.58	1.64	1.74	1.83	1.93	2.01	2.08	2.15
55	1.00	1.04	1.10	1.17	1.24	1.30	1.39	1.47	1.54	1.61	1.71	1.80	1.89	1.98	2.05	2.12
60	0.97	1.01	1.06	1.14	1.21	1.26	1.36	1.44	1.51	1.57	1.68	1.77	1.86	1.95	2.02	2.09
65	0.93	0.98	1.03	1.11	1.17	1.23	1.33	1.41	1.48	1.54	1.65	1.74	1.83	1.91	1.99	2.05
70	0.90	0.95	**1.00**	1.08	1.14	1.20	1.30	1.38	1.45	1.51	1.62	1.70	1.80	1.88	1.96	2.02
75	0.87	0.91	0.97	1.05	1.11	1.17	1.27	1.35	1.42	1.48	1.59	1.67	1.77	1.85	1.92	1.99
80	0.84	0.88	0.94	1.01	1.08	1.14	1.24	1.32	1.39	1.45	1.55	1.64	1.74	1.82	1.89	1.96
85	0.81	0.85	0.90	0.98	1.05	1.11	1.20	1.28	1.35	1.41	1.52	1.61	1.71	1.79	1.86	1.93
90	0.78	0.82	0.87	0.95	1.02	1.07	1.17	1.25	1.32	1.38	1.49	1.58	1.67	1.76	1.83	1.89
100	0.71	0.75	0.81	0.89	0.95	1.00	1.11	1.19	1.26	1.32	1.42	1.51	1.61	1.69	1.77	1.83
110	0.65	0.69	0.75	0.82	0.89	0.95	1.04	1.12	1.20	1.26	1.36	1.45	1.55	1.63	1.70	1.77
120	0.59	0.63	0.68	0.76	0.83	0.88	0.98	1.06	1.13	1.19	1.30	1.40	1.48	1.56	1.64	1.71
140	0.46	0.50	0.55	0.63	0.70	0.76	0.85	0.93	1.00	1.07	1.17	1.26	1.35	1.44	1.51	1.58
160	0.33	0.37	0.43	0.50	0.57	0.63	0.73	0.81	0.88	0.94	1.04	1.13	1.23	1.31	1.38	1.45
180	0.20	0.24	0.30	0.38	0.44	0.50	0.60	0.68	0.75	0.81	0.91	1.00	1.10	1.18	1.26	1.32
200	0.08	0.12	0.17	0.25	0.32	0.37	0.47	0.55	0.62	0.68	0.79	0.88	0.97	1.06	1.13	1.20

$T = T^{\circ} + \triangle t \times C$ T = Temperature at exit T° = Temperature at intake

$\triangle t$ = Temperature rise from data sheet C = Constant from above table

CFA/CFX HOT WATER					
(2) Rows (6) Fins Per Inch					
Opposite End Supply/Return					
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
CFA/CFX1060W	38	220	181	24.0	0.2
CFA/CFX1072W	39	261	179	26.0	0.2
CFA/CFX1084W	41	298	179	29.0	0.3
CFA/CFX1096W	38	372	179	36.0	0.4
CFA/CFX1108W	39	416	178	39.0	0.5
CFA/CFX1120W	37	497	177	45.0	0.7
CFA/CFX1132W	38	532	177	48.0	0.9
CFA/CFX1144W	39	557	176	47.0	0.9
CFA/CFX1156W	41	589	175	49.0	1.0
CFA/CFX2168W	40	655	175	54.0	1.2
CFA/CFX2180W	40	704	175	59.0	1.5
CFA/CFX2192W	40	769	175	64.0	1.8

CFA/CFX HOT WATER					
(2) Rows (6) Fins Per Inch					
Same End Supply/Return					
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
CFA/CFX1060W	41	236	180	24.0	0.9
CFA/CFX1072W	41	279	178	26.0	1.1
CFA/CFX1084W	41	300	172	22.0	0.9
CFA/CFX1096W	41	392	178	36.0	2.3
CFA/CFX1108W	40	429	175	35.0	2.4
CFA/CFX1120W	38	515	176	45.0	3.9
CFA/CFX1132W	39	549	174	44.0	4.0
CFA/CFX1144W	41	582	175	47.0	4.8
CFA/CFX1156W	41	593	170	40.0	3.8
CFA/CFX2168W	41	680	174	54.0	6.8
CFA/CFX2180W	41	706	170	48.0	5.8
CFA/CFX2192W	40	775	171	54.0	7.4

Performance based on 70°F Entering Air Temperature (E.A.T.)
and 200°F Entering Water Temperature (E.W.T.)

* Leaving Water Temperature (L.W.T.)
Consult factory for other E.A.T., E.W.T. or GPM

Berner reserves the right to alter specifications without prior notice.

No.: DS-120
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFA
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES
- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

NOTE: Separate 120/1/60 power supply is required for unit heater(s)

OPTIONAL FEATURES
- Stainless steel heat exchanger (consult factory)
- Dry type transformer - 120V power to heater(s)

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/ hr)**	**Total Output (mbtu/ hr)**	**Temp. Rise °F**
CFA1060G	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	1 @ 230	230	184	31
CFA1072G	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	1 @ 290	290	230	34
CFA1084G	84	4644	10849	7160	2731	6772	3	89	1 @ 3	1 @ 290	290	230	31
CFA1096G	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	1 @ 400	400	312	32
CFA1108G	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	2 @ 230	460	368	35
CFA1120G	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	2 @ 290	580	460	34
CFA1132G	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	2 @ 290	580	460	33
CFA1144G	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	2 @ 290	580	460	33
CFA1156G	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	2 @ 345	690	552	38
CFA2168G	168	5203	24312	16046	3061	15,176	7	89	1 @ 5, 1 @ 3	2 @ 345	690	552	34
CFA2180G	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	2 @ 400	800	624	36
CFA2192G	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	2 @ 400	800	624	32

WEIGHT CHART					
MODEL	**Net Wgt Air Curtain (lbs)**	**Net Wgt Duct Transition**	**Net Wgt Gas Heater(s) (lbs)**	**Ship Wgt Air Curtain (lbs)**	**Ship Wgt Heater (lbs)**
CFA1060G	370	68	225	553	270
CFA1072G	410	82	270	617	285
CFA1084G	450	96	270	681	285
CFA1096G	550	106	285	791	305
CFA1108G	625	120	225	855	270
CFA1120G	705	119	540	979	570
CFA1132G	750	133	540	1043	570
CFA1144G	795	143	540	1113	570
CFA1156G	835	157	570	1177	600
CFA2168G	950	167	570	1312	600
CFA2180G	1015	181	570	1376	610
CFA2192G	1080	215	570	1510	610

*Includes duct transition

MOTOR VOLTAGES/AMP DRAWS					
hp	**208/3/60**	**240/3/60**	**480/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	11.9	5.9
5	17.0	15.8	7.9	15.4	7.7
7½	23.0	21.4	10.7	18.0	9

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field: **68 dBA**

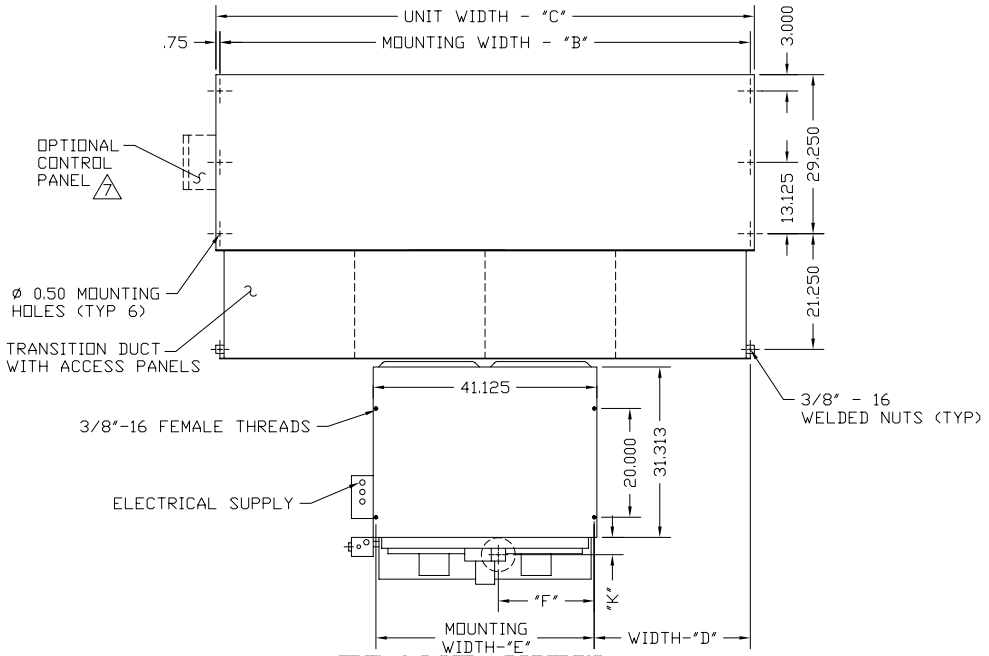
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

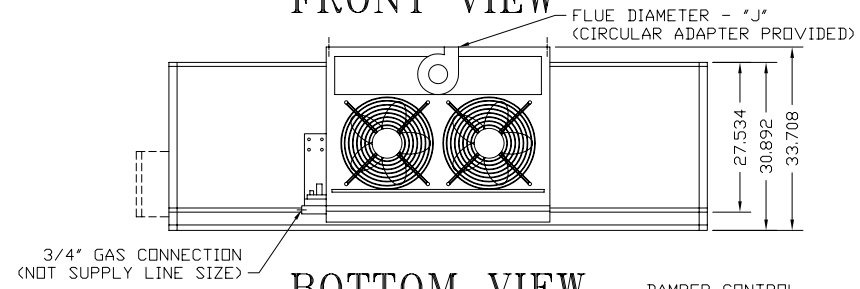
CFA

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

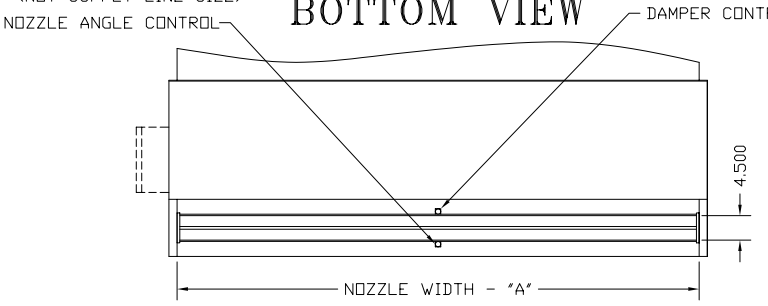
TOP VIEW



FRONT VIEW



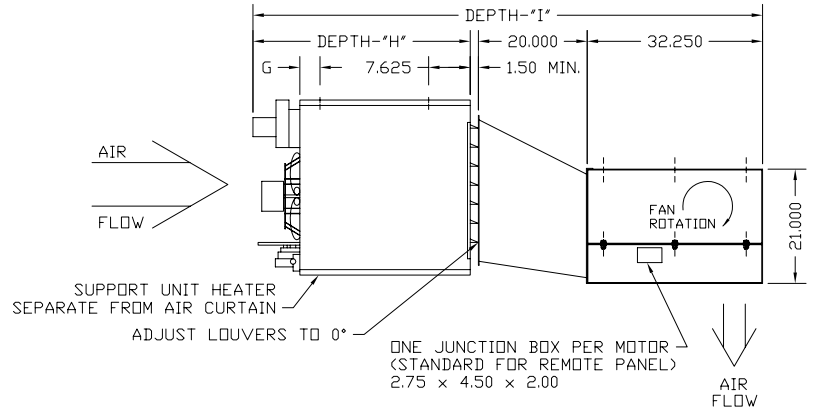
BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathcal{L}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

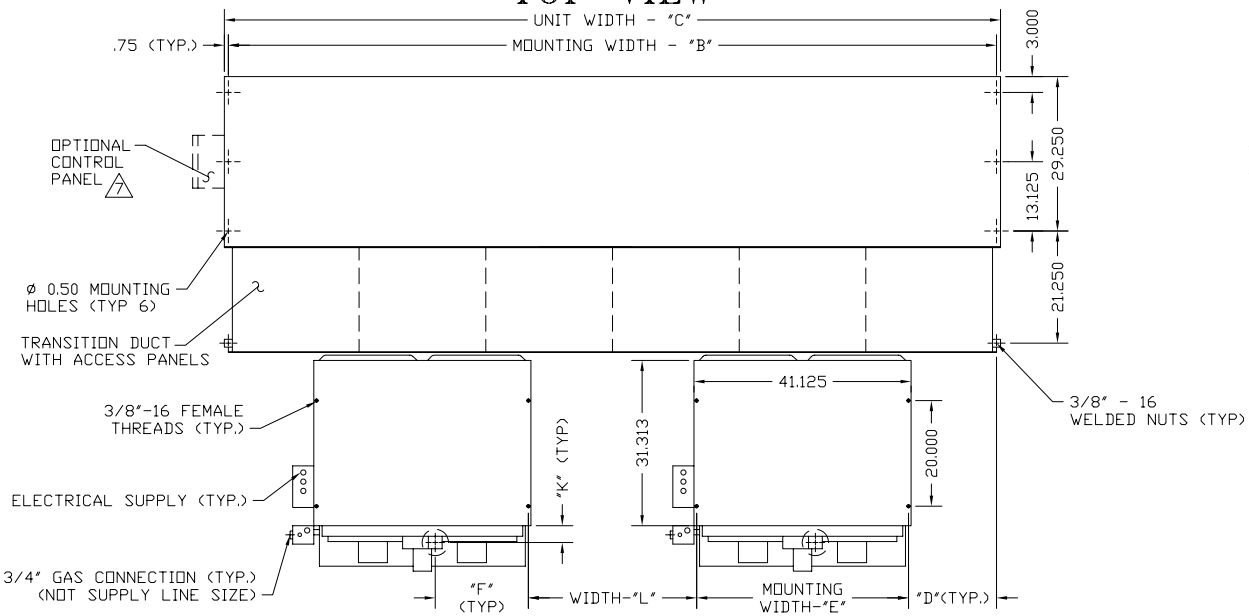
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"
CFA1060G	60.00	61.50	63.00	230	10.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFA1072G	72.00	73.50	75.00	300	16.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFA1084G	84.00	85.50	87.00	300	16.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFA1096G	96.00	97.50	99.00	400	22.6875	40.125	21.625	3.688	41.125	94.875	6.00	3.50

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	B
DWG. NO.	CFAQ3190	TITLE: BERNER MODEL CFA AIR CURTAIN INDIRECT GAS FIRED – ONE HEATER SYSTEM	
DATE	28DEC06		
BY	A.Johnston		
REPLACES	29JUN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

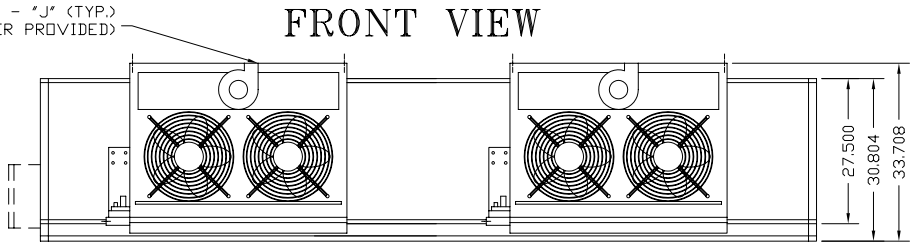
CFA

POSITIVE INDIRECT GAS TWO HEATER SYSTEM

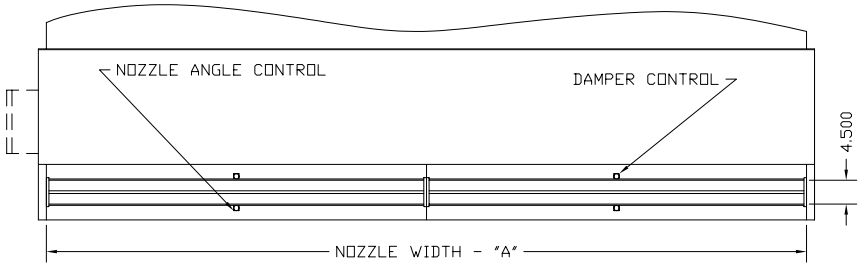
TOP VIEW



FRONT VIEW



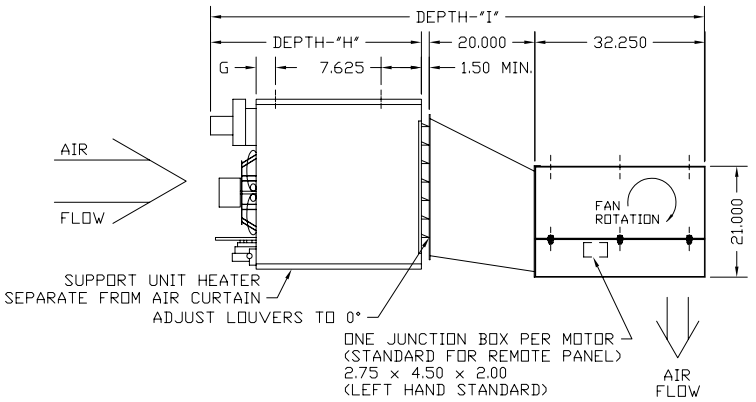
BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFA1108G	108.00	109.50	111.00	2 @ 230	7.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	13.874
CFA1120G	117.00	118.50	120.00	2 @ 300	9.938	40.125	17.00	3.688	40.00	93.750	6.00	3.50	18.375
CFA1132G	132.00	133.50	135.00	2 @ 300	13.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	25.874
CFA1144G	144.00	145.50	147.00	2 @ 300	16.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	31.874
CFA1156G	156.00	157.50	159.00	2 @ 345	19.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	37.874
CFA2168G	168.00	169.50	171.00	2 @ 345	22.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	43.874
CFA2180G	180.00	181.50	183.00	2 @ 400	25.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	49.874
CFA2192G	192.00	193.50	195.00	2 @ 400	28.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	55.874

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			REV. B
DWG. NO.	CFAR3199	TITLE: BERNER	
DATE	28DEC06	MODEL CFA AIR CURTAIN	
BY	A.Johnston	INDIRECT GAS FIRED – TWO HEATER SYSTEM	
REPLACES	29JUN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-120X
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFX
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES
- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

NOTE: Separate 120/1/60 power supply is required for unit heater(s)

OPTIONAL FEATURES
- Stainless steel heat exchanger (consult factory)
- Dry type transformer - 120V power to heater(s)

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/hr)**	**Total Output (mbtu/hr)**	**Temp. Rise °F**
CFX1060G	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	1 @ 230	230	184	31
CFX1072G	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	1 @ 300	300	242	34
CFX1084G	84	4644	10849	7160	2731	6772	3	89	1 @ 3	1 @ 300	300	242	31
CFX1096G	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	1 @ 400	400	312	32
CFX1108G	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	2 @ 230	460	368	35
CFX1120G	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	2 @ 300	600	483	34
CFX1132G	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	2 @ 300	600	483	33
CFX1144G	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	2 @ 300	600	483	33
CFX1156G	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	2 @ 345	690	552	38
CFX1168G	168	5203	24312	16046	3061	15,176	7	89	1 @ 7.5	2 @ 345	690	552	34
CFX1180G	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 7.5	2 @ 400	800	624	36
CFX1192G	192	5352	27937	18439	3148	17,840	8.2	87	1 @ 10	2 @ 400	800	624	32

WEIGHT CHART					
MODEL	**Net Wgt Air Curtain (lbs)**	**Net Wgt Duct Transition**	**Net Wgt Gas Heater(s) (lbs)**	**Ship Wgt & Duct Trans. & Air Curtain* (lbs)**	**Ship Wgt Heater (lbs)**
CFX1060G	370	68	255	553	270
CFX1072G	410	82	280	617	305
CFX1084G	450	96	280	681	305
CFX1096G	550	106	285	791	305
CFX1108G	625	120	225	855	270
CFX1120G	705	119	560	979	610
CFX1132G	750	133	560	1043	610
CFX1144G	795	143	560	1113	610
CFX1156G	835	157	570	1177	600
CFX1168G	950	167	570	1312	600
CFX1180G	1015	181	570	1376	610
CFX1192G	1080	215	570	1510	610

*Includes duct transition

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

Berner reserves the right to alter specifications without prior notice.

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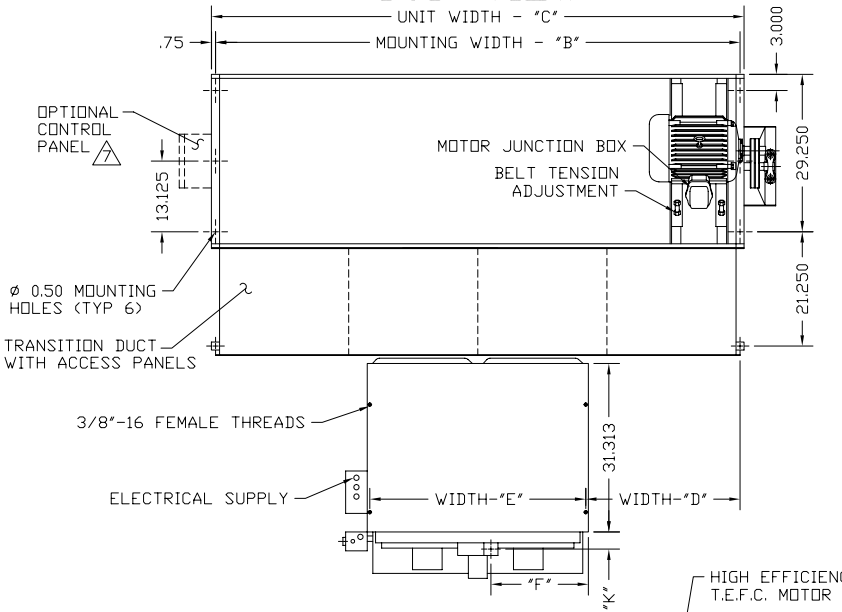
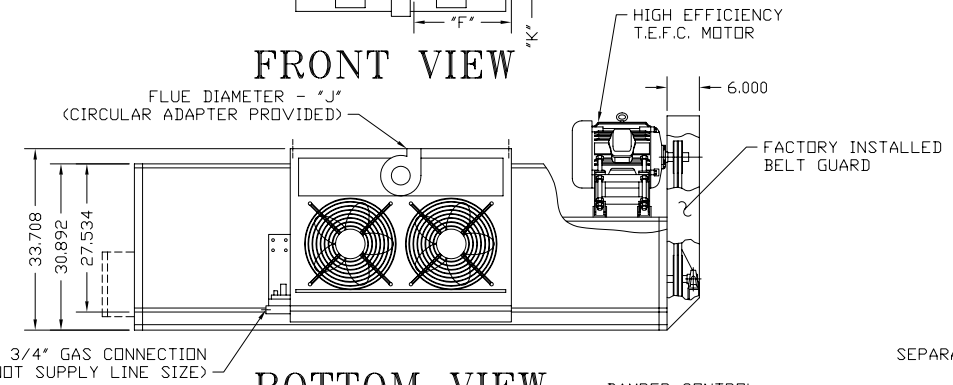
CFX

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

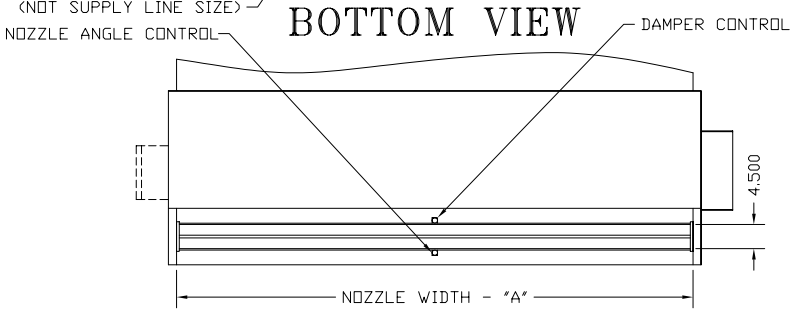
TOP VIEW



FRONT VIEW



BOTTOM VIEW

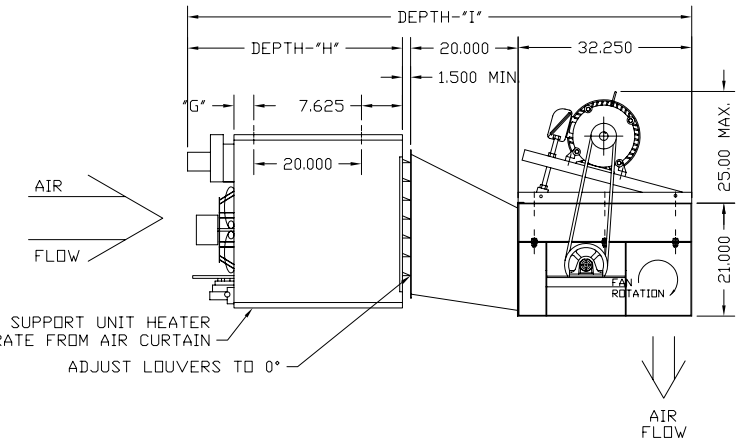


NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW

(BELT GUARD REMOVED)



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

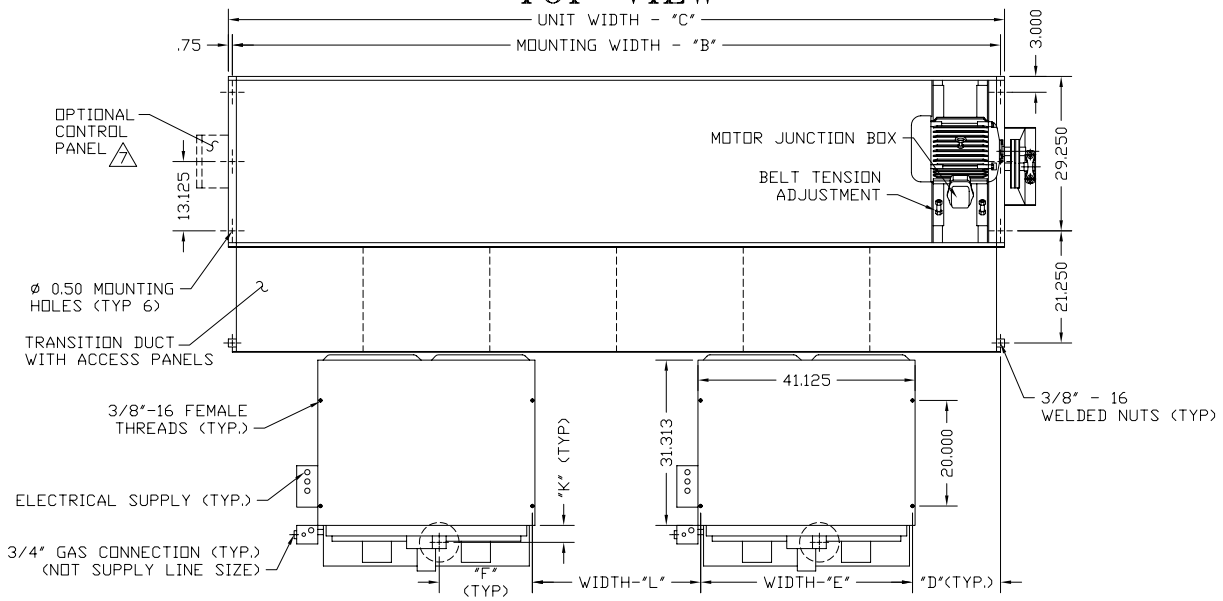
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"
CFX1060G	60.00	61.50	63.00	230	10.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFX1072G	72.00	73.50	75.00	300	16.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFX1084G	84.00	85.50	87.00	300	22.6875	40.125	17.00	3.688	40.000	93.750	6.00	3.50
CFX1096G	96.00	97.50	99.00	400	28.6875	40.125	21.625	3.688	41.125	94.875	6.00	3.50

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	B
DWG. NO.	CFAR3214	TITLE: BERNER MODEL CFX AIR CURTAIN INDIRECT GAS FIRED – ONE HEATER SYSTEM	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	29JUN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

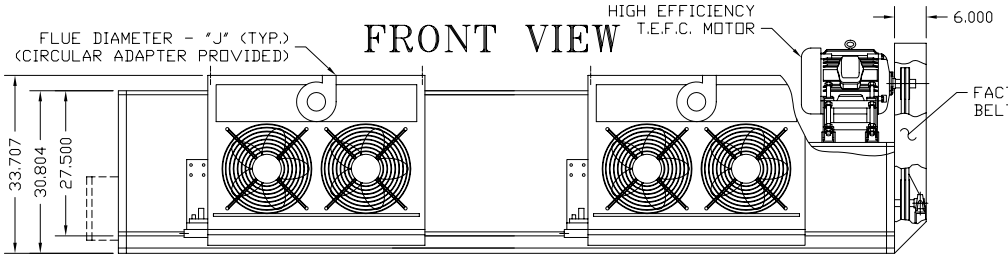
CFX

POSITIVE INDIRECT GAS TWO HEATER SYSTEM

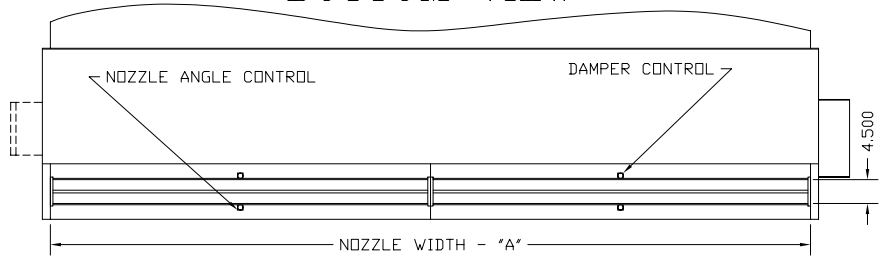
TOP VIEW



FRONT VIEW



BOTTOM VIEW

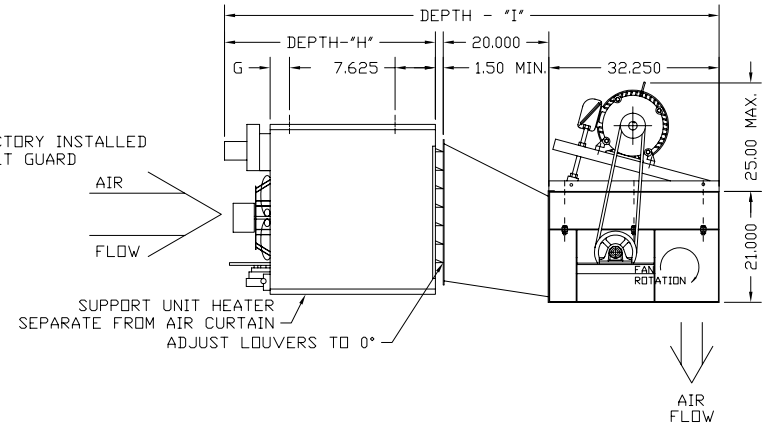


NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW

(BELT GUARD REMOVED)



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFX1108G	108.00	109.50	111.00	2 @ 230	7.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	13.874
CFX1120G	117.00	118.50	120.00	2 @ 300	9.938	40.125	17.00	3.688	40.00	93.750	6.00	3.50	18.375
CFX1132G	132.00	133.50	135.00	2 @ 300	13.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	25.874
CFX1144G	144.00	145.50	147.00	2 @ 300	16.688	40.125	17.00	3.688	40.00	93.750	6.00	3.50	31.874
CFX1156G	156.00	157.50	159.00	2 @ 345	19.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	37.874
CFX1168G	168.00	169.50	171.00	2 @ 345	22.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	43.874
CFX1180G	180.00	181.50	183.00	2 @ 400	25.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	49.874
CFX1192G	192.00	193.50	195.00	2 @ 400	28.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	55.874

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	B
DWG. NO.	CFAR3215	TITLE: BERNER	
DATE	28DEC06	MODEL CFX AIR CURTAIN	
BY	A.Johnston	INDIRECT GAS FIRED – TWO HEATER SYSTEM	
REPLACES	29JUN06	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-323
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFA
Direct Gas Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Tapered transition with access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- Steel cabinet with gray finish
- Adjustable profile plates
- ANSI, FM or IRI Gas Train
- Factory mounted wired control cabinet
- Modulating direct fired burner
- Spark ignited intermittent pilot

OPTIONAL FEATURES

- Filter section

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**# of Heater(s) @ Input (mbtu/hr)***	**Gas Train Size****	**Gas Inlet Pressure Range**	**Temp. Rise °F**
CFA1060D	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	1 @ 233	¾"	1# - 5#	40
CFA1072D	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	1 @ 272	¾"	1# - 5#	40
CFA1084D	84	4644	10849	7160	2731	6772	3	89	1 @ 3	1 @ 294	¾"	1# - 5#	40
CFA1096D	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	1 @ 387	¾"	1# - 5#	40
CFA1108D	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	1 @ 444	¾"	1# - 5#	40
CFA1120D	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	1 @ 544	¾"	1# - 5#	40
CFA1132D	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	1 @ 555	¾"	1# - 5#	40
CFA1144D	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	1 @ 567	¾"	1# - 5#	40
CFA1156D	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	1 @ 641	¾"	1# - 5#	40
CFA2168D	168	5203	24312	16046	3061	15,176	7	89	1 @ 5, 1 @ 3	1 @ 659	¾"	1# - 5#	40
CFA2180D	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	1 @ 698	¾"	1# - 5#	40
CFA2192D	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	1 @ 774	¾"	1# - 5#	40

*Other MBTU/hr available - consult factory **Gas train size is not the gas supply size

WEIGHT CHART				
MODEL	**Air Curtain (lbs)**	**Duct Transition (lbs)**	**Burner Box (lbs)**	**Filter Box (lbs)**
CFA1060D	370	84	255	150
CFA1072D	410	93	255	150
CFA1084D	450	102	255	150
CFA1096D	550	116	340	200
CFA1108D	670	126	340	200
CFA1120D	705	142	510	300
CFA1132D	755	155	510	300
CFA1144D	795	163	510	300
CFA1156D	845	179	595	350
CFA2168D	950	190	595	350
CFA2180D	1015	205	680	400
CFA2192D	1080	215	680	400

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Berner reserves the right to alter specifications without prior notice.

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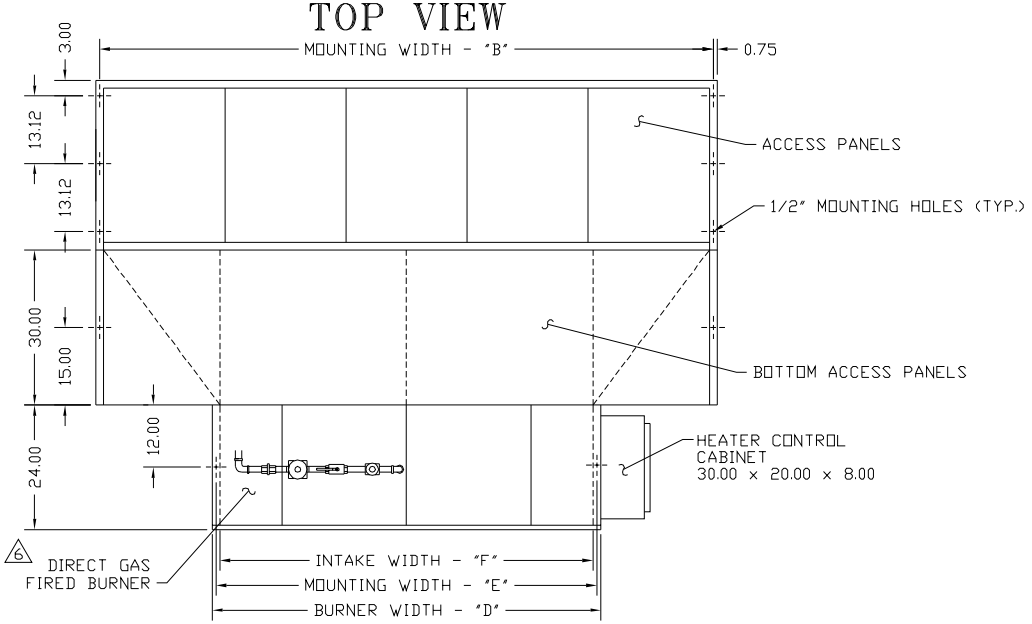
MADE IN U.S.A.

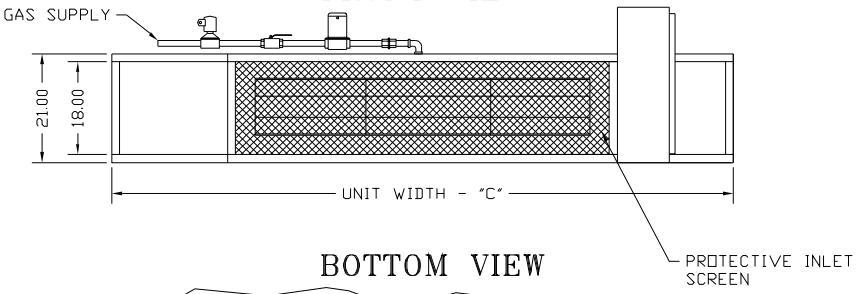
CFA

- DIRECT GAS FIRED HEATER SYSTEM
- DIRECT DRIVE
- FRONT INTAKE

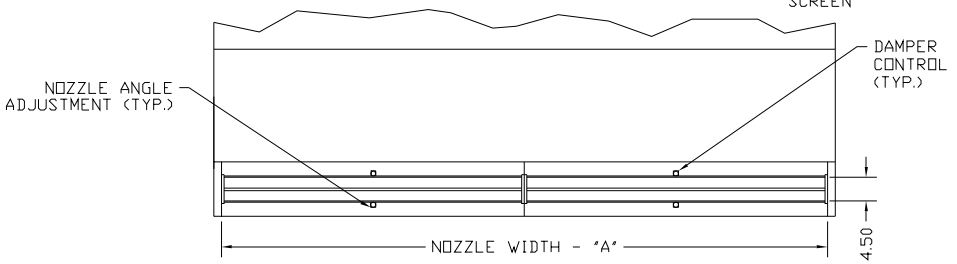
TOP VIEW



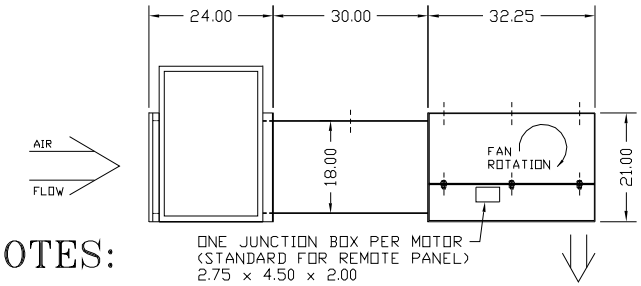
FRONT VIEW



BOTTOM VIEW



END VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathcal{L}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0124	TITLE:	BERNER CFA DIRECT GAS FIRED FRONT INTAKE; DIRECT DRIVE
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07SEPT04		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

CFA

- DIRECT GAS FIRED HEATER SYSTEM
- DIRECT DRIVE
- FRONT INTAKE

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	BURNER WIDTH "D"	MOUNTING WIDTH "E"	INTAKE WIDTH "F"
CFA1060D-F	60.00	61.50	63.00	39.00	37.50	36.00
CFA1072D-F	72.00	73.50	75.00	39.00	37.50	36.00
CFA1084D-F	84.00	85.50	87.00	39.00	37.50	36.00
CFA1096D-F	96.00	97.50	99.00	51.00	49.50	48.00
CFA1108D-F	108.00	109.50	111.00	51.00	49.50	48.00
CFA1120D-F	117.00	118.50	120.00	75.00	73.50	72.00
CFA1132D-F	132.00	133.50	135.00	75.00	73.50	72.00
CFA1144D-F	144.00	145.50	147.00	75.00	73.50	72.00
CFA1156D-F	156.00	157.50	159.00	87.00	85.50	84.00
CFA2168D-F	168.00	169.50	171.00	87.00	85.50	84.00
CFA2180D-F	180.00	181.50	183.00	99.00	97.50	96.00
CFA2192D-F	192.00	193.50	195.00	99.00	97.50	96.00

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	DGFR0124	TITLE: BERNER CFA DIRECT GAS FIRED FRONT INTAKE; DIRECT DRIVE
DATE	29JUN06	
BY	A.Johnston	
REPLACES	07SEPT04	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston	

No.: DS-323X
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFX
Direct Gas Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES
- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Tapered transition with access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Steel cabinet with gray finish
- Adjustable profile plates
- ANSI, FM or IRI Gas Train
- Factory mounted wired control cabinet
- Modulating direct fired burner
- Spark ignited intermittent pilot

OPTIONAL FEATURES
- Filter section

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**# of Heater(s) @ Input (mbtu/hr)**	**Gas Train Size****	**Gas Inlet Pressure Range**	**Temp. Rise °F**
CFX1060D	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	1 @ 581	¾"	1# - 5#	100
CFX1072D	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	1 @ 679	¾"	1# - 5#	100
CFX1084D	84	4644	10849	7160	2731	6772	3	89	1 @ 3	1 @ 735	¾"	1# - 5#	100
CFX1096D	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	1 @ 968	1"	1# - 5#	100
CFX1108D	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	1 @ 1026	1"	1# - 5#	100
CFX1120D	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	1 @ 1359	1"	1# - 5#	100
CFX1132D	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	1 @ 1388	1"	1# - 5#	100
CFX1144D	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	1 @ 1417	1"	1# - 5#	100
CFX1156D	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	1 @ 1602	1½"	1# - 5#	100
CFX1168D	168	5203	24312	16046	3061	15,176	7	89	1 @ 7.5	1 @ 1647	1½"	1# - 5#	100
CFX1180D	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 7.5	1 @ 1744	1½"	1# - 5#	100
CFX1192D	192	5352	27937	18439	3148	17,840	8.2	87	1 @ 10	1 @ 1936	1½"	1# - 5#	100

*Other MBTU/hr available - consult factory **Gas train size is not the gas supply size

WEIGHT CHART				
MODEL	**Air Curtain (lbs)**	**Duct Transition (lbs)**	**Burner Box (lbs)**	**Filter Box (lbs)**
CFX1060D	390	84	255	150
CFX1072D	430	93	255	150
CFX1084D	470	102	255	150
CFX1096D	570	116	340	200
CFX1108D	690	126	340	200
CFX1120D	730	142	510	300
CFX1132D	770	155	510	300
CFX1144D	820	163	510	300
CFX1156D	900	179	595	350
CFX1168D	990	190	595	350
CFX1180D	1035	205	680	400
CFX1192D	1120	215	680	400

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Berner reserves the right to alter specifications without prior notice.

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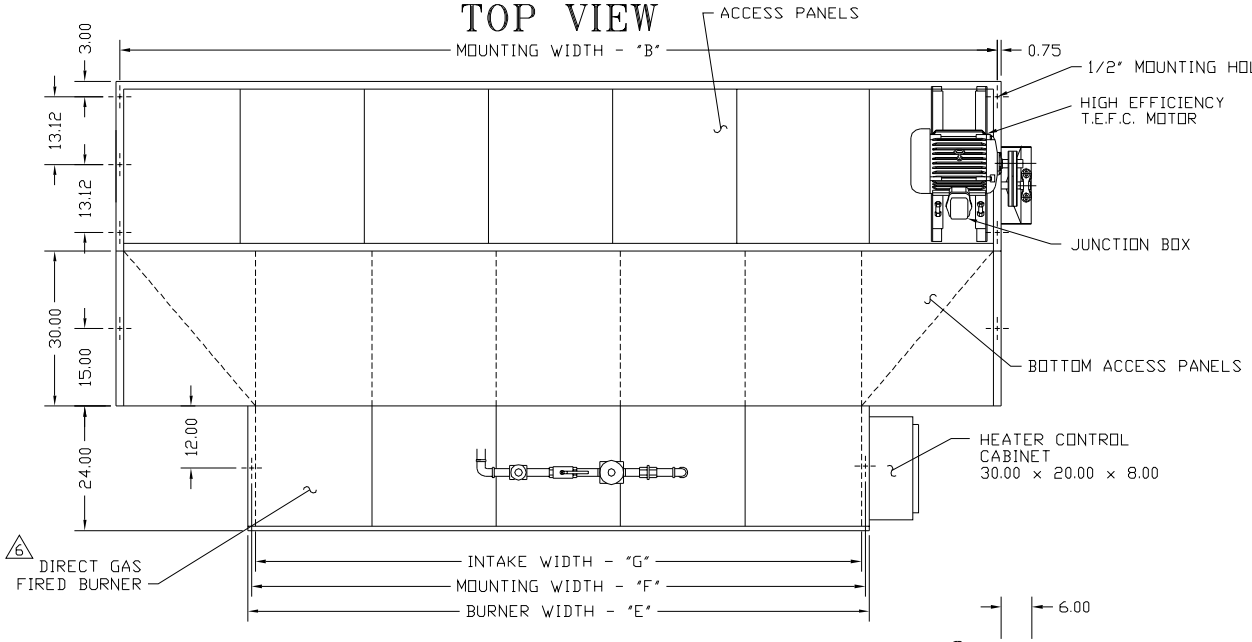
MADE IN U.S.A.

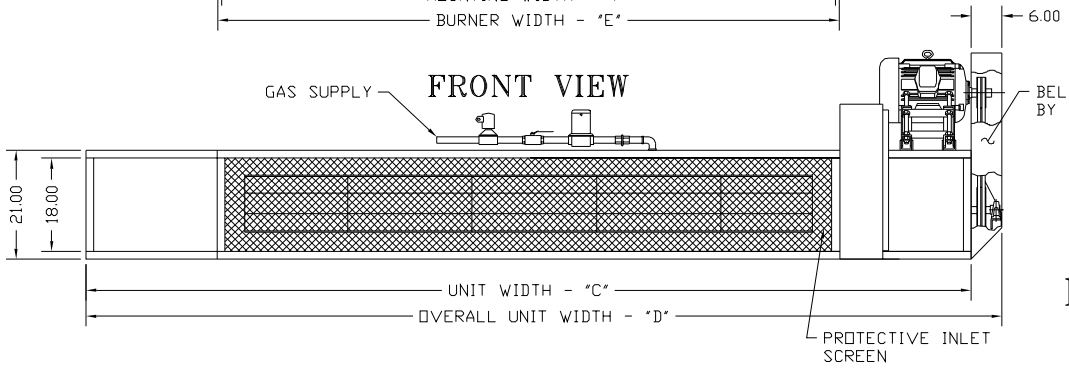
CFX

- DIRECT GAS FIRED HEATER SYSTEM
- BELT DRIVE
- FRONT INTAKE

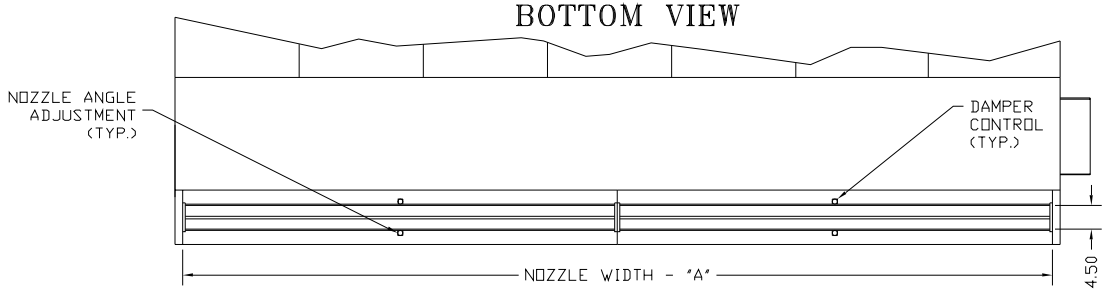
TOP VIEW



FRONT VIEW

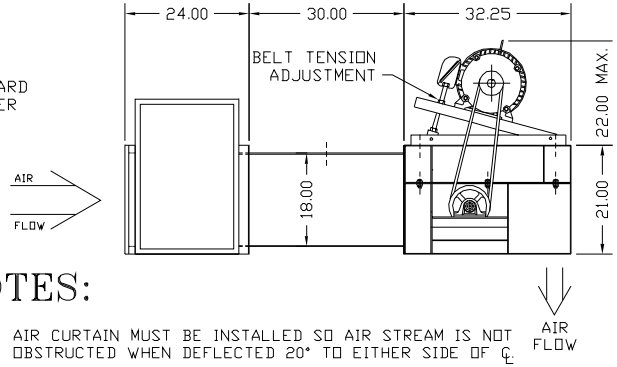


BOTTOM VIEW



END VIEW

(BELT GUARD REMOVED)



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathbb{C}$
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0126	TITLE:	BERNER CFX DIRECT GAS FIRED FRONT INTAKE; BELT DRIVE
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07SEPT04		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

CFX

- DIRECT GAS FIRED HEATER SYSTEM
- BELT DRIVE
- FRONT INTAKE

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"	BURNER WIDTH "E"	MOUNTING WIDTH "F"	INTAKE WIDTH "G"
CFX1060D-F	60.00	61.50	63.00	69.00	39.00	37.50	36.00
CFX1072D-F	72.00	73.50	75.00	81.00	39.00	37.50	36.00
CFX1084D-F	84.00	85.50	87.00	93.00	39.00	37.50	36.00
CFX1096D-F	96.00	97.50	99.00	105.00	51.00	49.50	48.00
CFX1108D-F	108.00	109.50	111.00	117.00	51.00	49.50	48.00
CFX1120D-F	117.00	118.50	120.00	126.00	75.00	73.50	72.00
CFX1132D-F	132.00	133.50	135.00	141.00	75.00	73.50	72.00
CFX1144D-F	144.00	145.50	147.00	153.00	75.00	73.50	72.00
CFX1156D-F	156.00	157.50	159.00	165.00	87.00	85.50	84.00
CFX1168D-F	168.00	169.50	171.00	177.00	87.00	85.50	84.00
CFX1180D-F	180.00	181.50	183.00	189.00	99.00	97.50	96.00
CFX1192D-F	192.00	193.50	195.00	201.00	99.00	97.50	96.00

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0126	TITLE: BERNER CFX DIRECT GAS FIRED FRONT INTAKE; BELT DRIVE	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07SEPT04	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-115X
Date: October, 2011

CFX
Ambient
Data Sheet

For Door Heights To 16' (environmental separation) and 14' (insect control)

STANDARD FEATURES

- Belt driven T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Five year parts warranty
- Crafted with Pride in the USA

					Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg.Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt. (lbs)**
CFX1060A	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	370
CFX1072A	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	410
CFX1084A	84	4644	10849	7160	2731	6772	3	89	1 @ 3	480
CFX1096A	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	550
CFX1108A	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	628
CFX1120A	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	705
CFX1132A	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	750
CFX1144A	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	795
CFX1156A	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	872
CFX1168A	168	5203	24312	16046	3061	15,176	7	89	1 @ 7.5	950
CFX1180A	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 7.5	1015
CFX1192A	192	5352	27937	18439	3148	17,840	8.2	87	1 @ 10	1080

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

Berner reserves the right to alter specifications without prior notice.

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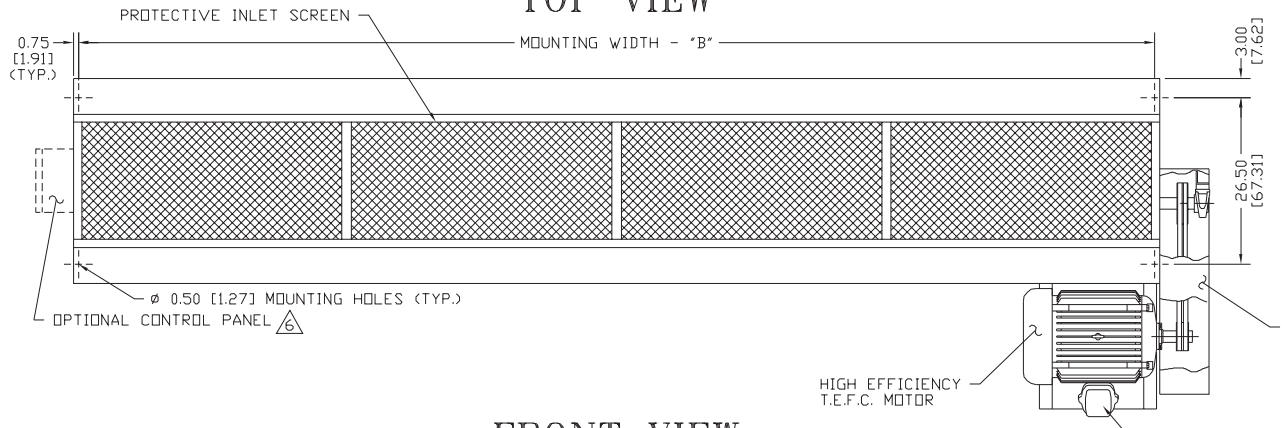
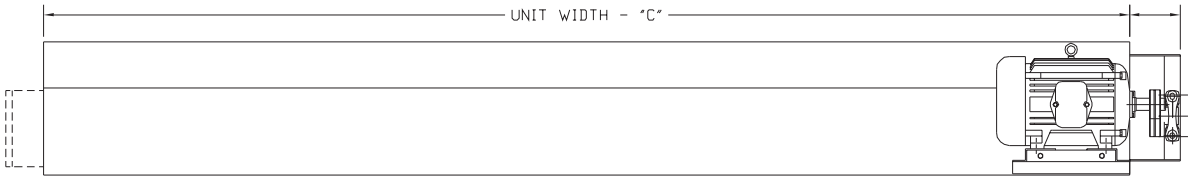
MADE IN U.S.A.

CFX
TOP INTAKE AMBIENT SYSTEM

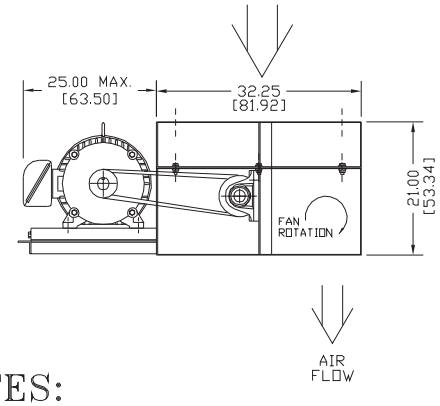
TOP VIEW



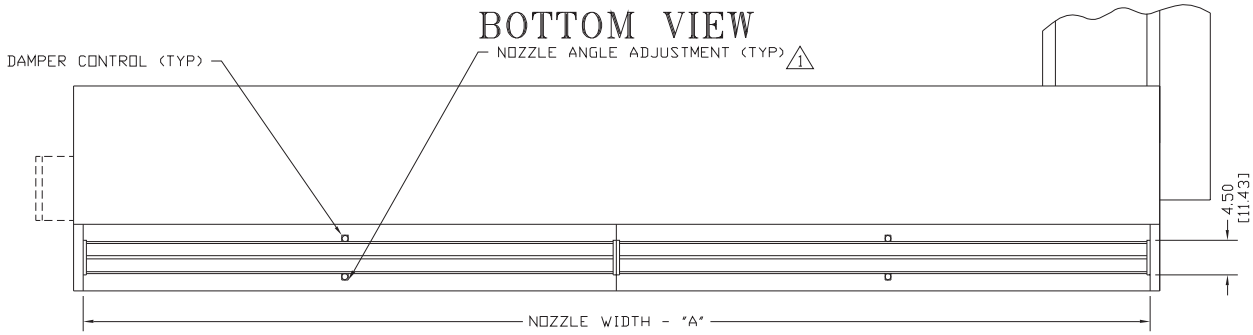
FRONT VIEW



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFX1060A-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFX1072A-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFX1084A-T	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFX1096A-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFX1108A-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFX1120A-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFX1132A-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFX1144A-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFX1156A-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFX1168A-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFX1180A-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFX1192A-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

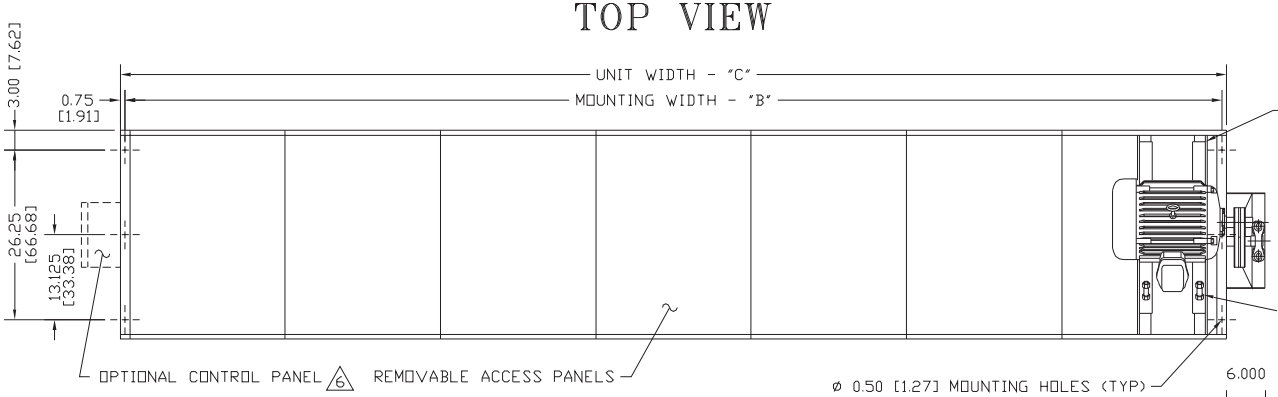
NOTES:

1. AIR DOOR MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

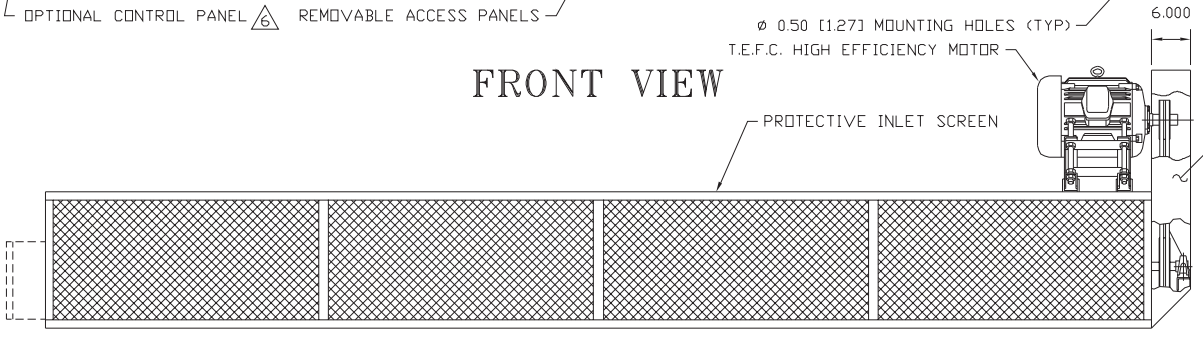
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFAR3205	TITLE: BERNER MODEL CFX AIR CURTAIN TOP INTAKE BELT DRIVE AMBIENT SYSTEM	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07APR03		
BY	B. Peffer	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	

CFX
FRONT INTAKE AMBIENT SYSTEM

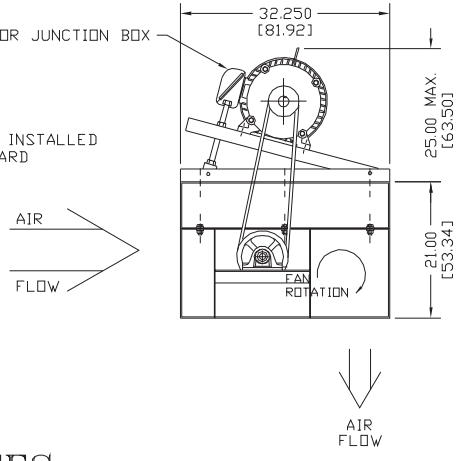
TOP VIEW



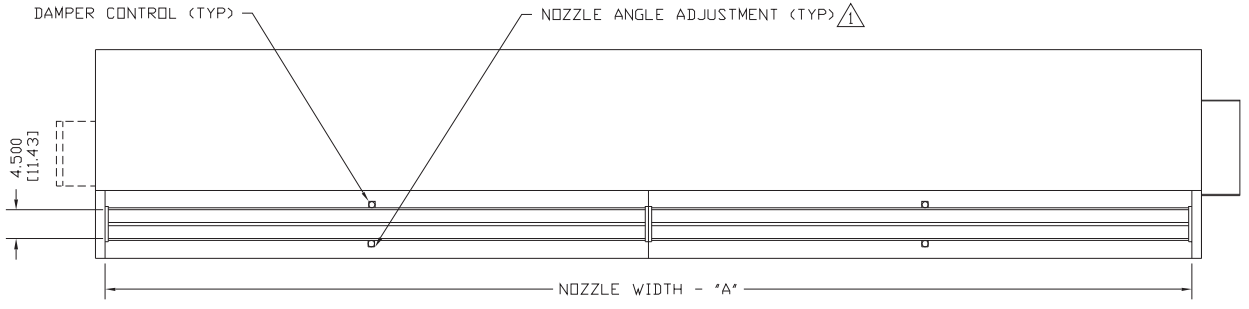
FRONT VIEW



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFX1060A-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFX1072A-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFX1084A-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFX1096A-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFX1108A-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFX1120A-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFX1132A-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFX1144A-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFX1156A-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFX1168A-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFX1180A-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFX1192A-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAR3204	TITLE: BERNER MODEL CFX AIR CURTAIN FRONT INTAKE BELT DRIVE AMBIENT SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	04APR03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-111
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFA
Electric Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- 16 gauge galvanized steel casing
- Factory mounted heating coil(s)
- Power fusing
- Thermally protected-manual & auto reset
- Airflow switch
- Dual relay operation
- Left or right hand mount heater control panel

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Electric Heater Capacity**		**Temp. Rise (°F)**	**Net Wgt. (lbs)**
										(kW)*	**(mbtu/hr)**		
CFA1060E	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	43	147	25	490
CFA1072E	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	50	171	25	555
CFA1084E	84	4644	10849	7160	2731	6772	3	89	1 @ 3	56	191	26	620
CFA1096E	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	71	242	25	745
CFA1108E	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	71	242	25	810
CFA1120E	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	100	341	25	940
CFA1132E	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	2 @ 52	355	25	1005
CFA1144E	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	2 @ 52	355	25	1080
CFA1156E	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	2 @ 55	375	26	1145
CFA2168E	168	5203	24312	16046	3061	15,176	7	89	1 @ 5, 1 @ 3	2 @ 60.5	413	25	1285
CFA2180E	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	2 @ 65	444	25	1405
CFA2192E	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	2 @ 71	485	25	1470

*Other kW heaters available, consult factory.

HEATER kW/AMP DRAWS				
HEATER kW	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**
43	119.4	103.4	51.7	43.1
50	138.9	120.3	60.1	50.2
56	155.4	134.7	67.4	56.2
71	197.1	170.8	85.4	71.3
100	277.6	240.7	120.3	100.4
2 @ 52	2 @ 144	2 @ 125.1	2 @ 62.6	2 @ 52.2
2 @ 55	2 @ 152.7	2 @ 132.3	2 @ 66.2	2 @ 55.2
2 @ 60.5	2 @ 168	2 @ 145.6	2 @ 72.8	2 @ 60.7
2 @ 65	2 @ 180	2 @ 156.4	2 @ 78.2	2 @ 65.3
2 @ 71	2 @ 197.1	2 @ 170.8	2 @ 85.4	2 @ 71.3

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

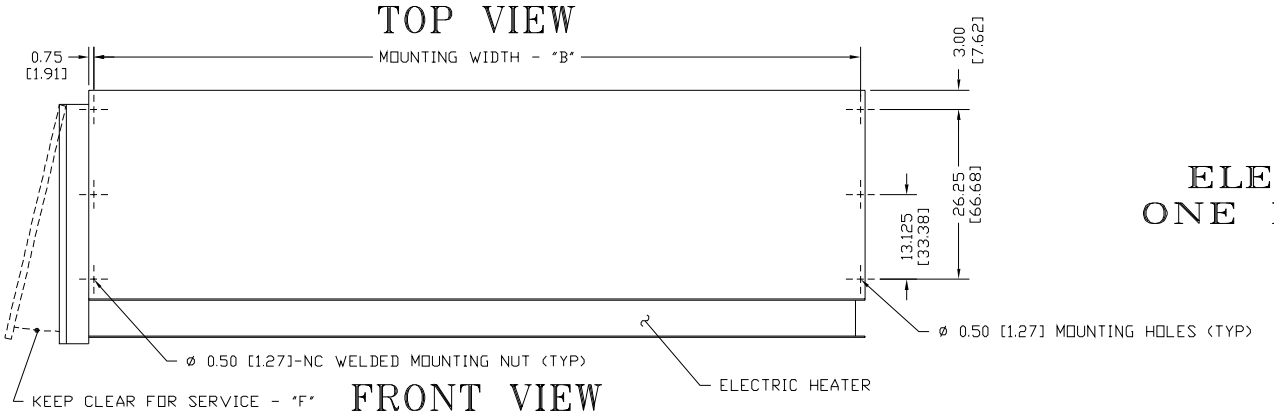
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

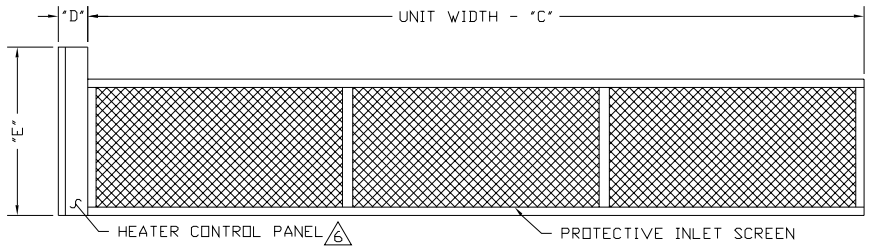
CFA

ELECTRIC HEATED ONE HEATER SYSTEM

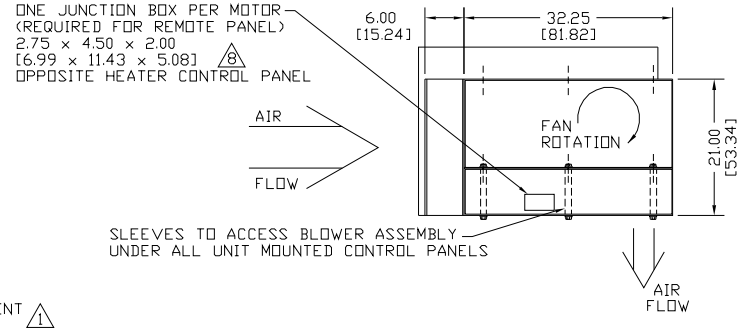
TOP VIEW



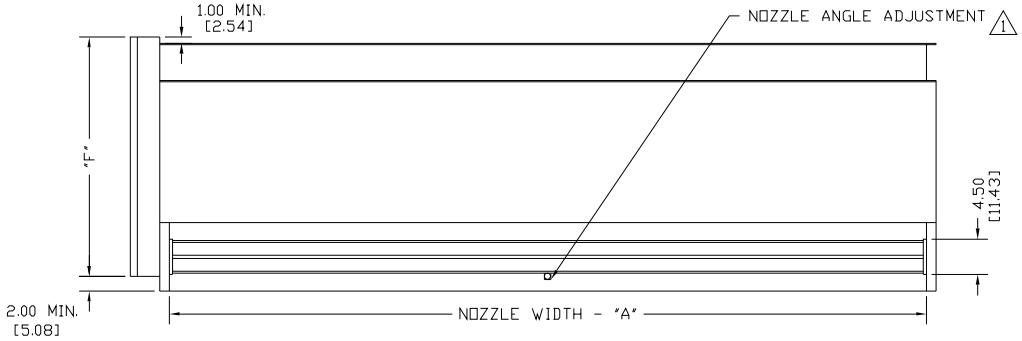
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	HEATER CAPACITY (KW)	HEATER CONTROL PANEL DIMENSIONS BASED ON VOLTAGE 8								
					"D"			"E"			"F"		
					208V	230V	460V	208V	230V	460V	208V	230V	460V
CFA1060E	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	43	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	26.00 [66.04]	26.00 [66.04]	24.00 [60.96]
CFA1072E	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	50	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	26.00 [66.04]	26.00 [66.04]	24.00 [60.96]
CFA1084E	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	56	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	26.00 [66.04]	24.00 [60.96]
CFA1096E	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	71	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]
CFA1108E	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	71	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]
CFA1120E	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	100	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	34.50 [87.63]	34.50 [87.63]	23.50 [59.69]	33.00 [83.82]	33.00 [83.82]	30.00 [76.20]

NOTES:

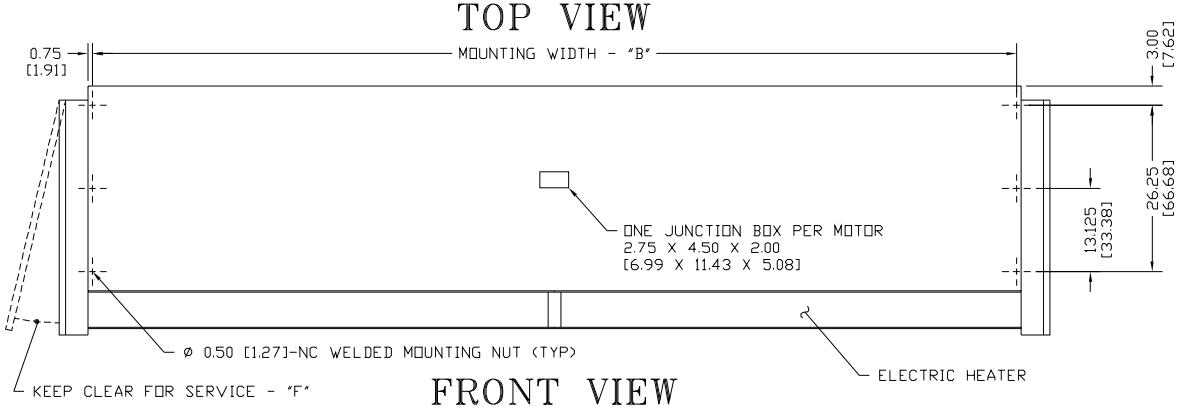
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. HEATER CONTROL PANEL SHOWN LEFT HAND, RIGHT HAND AVAILABLE, PLEASE SPECIFY.
7. HEATER CONTROL PANEL INCLUDES POWER FUSING, AIR FLOW SWITCH, AND CONTROL CIRCUIT TRANSFORMER.
8. TO INCLUDE MOTOR STARTER IN HEATER CONTROL PANEL, ADD 2.50 [6.35] TO "E" AND ADD 2.00 [5.08] TO "F".
9. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFAQ3175	TITLE: BERNER MODEL CFA AIR CURTAIN ELECTRIC HEATED - ONE HEATER SYSTEM	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	19FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

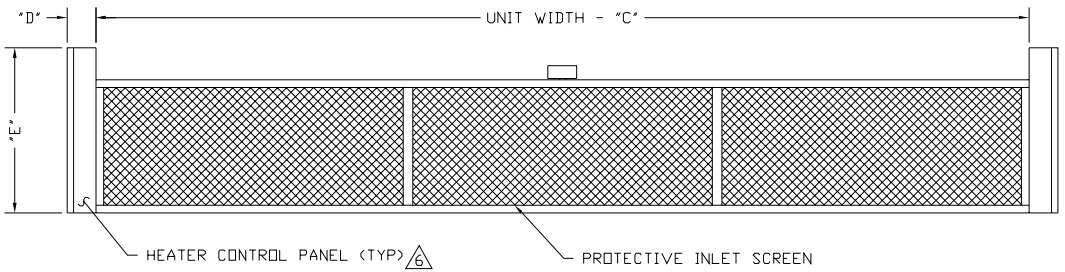
CFA

ELECTRIC HEATED TWO HEATER SYSTEM

TOP VIEW

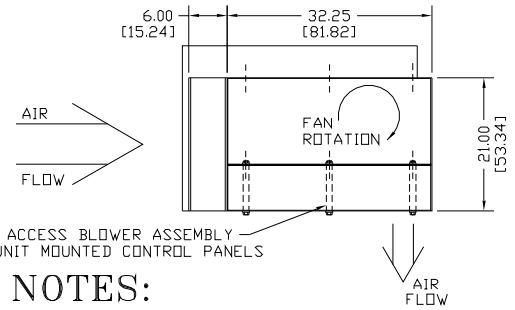


FRONT VIEW

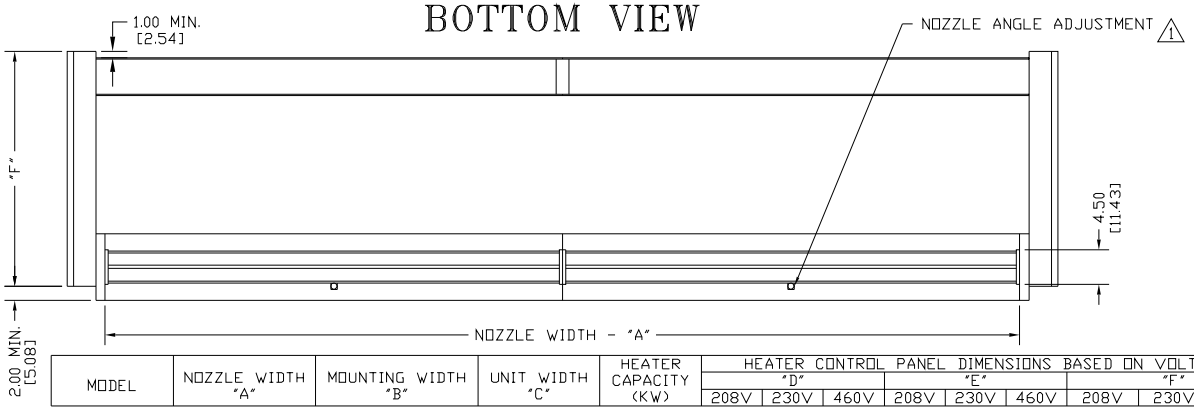


END VIEW

(CONTROL PANEL REMOVED)



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	HEATER CAPACITY (KW)	HEATER CONTROL PANEL DIMENSIONS BASED ON VOLTAGE 8								
					"D"			"E"			"F"		
					208V	230V	460V	208V	230V	460V	208V	230V	460V
CFA1132E	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	2 @ 52	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	31.00 [78.74]	26.00 [66.04]	24.00 [60.96]
CFA1144E	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	2 @ 52	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	31.00 [78.74]	26.00 [66.04]	24.00 [60.96]
CFA1156E	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	2 @ 55	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	26.00 [66.04]	24.00 [60.96]
CFA2168E	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	2 @ 60.5	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	32.00 [81.28]	24.00 [60.96]
CFA2180E	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	2 @ 65	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	32.00 [81.28]	24.00 [60.96]
CFA2192E	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	2 @ 71	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. HEATER CONTROL PANELS REQUIRE LEFT HAND & RIGHT HAND. MOTOR CONTROL IS REMOTE EXCEPT AS IN 8.
7. HEATER CONTROL PANEL INCLUDES POWER FUSING, AIR FLOW SWITCH, AND CONTROL CIRCUIT TRANSFORMER.
8. TO INCLUDE MOTOR STARTER IN HEATER CONTROL PANEL, ADD 2.50 [6.35] TO "E" AND ADD 2.00 [5.08] TO "F".
9. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAQ3177	TITLE: BERNER MODEL CFA AIR CURTAIN ELECTRIC HEATED – TWO HEATER SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	12FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-215
Date: October, 2011

BERNER INTERNATIONAL CORP.

CFA
Steam Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen
- 1 1/2" MPT supply and return

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Steam: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFA1060S	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	223	39	465
CFA1072S	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	264	39	515
CFA1084S	84	4644	10849	7160	2731	6772	3	89	1 @ 3	298	41	565
CFA1096S	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	363	38	680
CFA1108S	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	404	38	730
CFA1120S	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	471	35	865
CFA1132S	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	509	37	920
CFA1144S	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	539	38	975
CFA1156S	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	569	39	1030
CFA2168S	168	5203	24312	16046	3061	15,176	7	89	1 @ 5, 1 @ 3	627	38	1160
CFA2180S	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	669	40	1210
CFA2192S	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	772	40	1345

*Steam rating based on 70F entering air and 5 psig steam.
Based on opposite end supply/return

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

No.: DS-217
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFA
Hot Water Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES
- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen
- 1 1/2" MPT supply and return

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Hot Water: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFA1060W	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	220	38	465
CFA1072W	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	261	39	515
CFA1084W	84	4644	10849	7160	2731	6772	3.0	89	1 @ 3	298	41	565
CFA1096W	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	372	38	680
CFA1108W	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	416	39	730
CFA1120W	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	497	37	865
CFA1132W	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	532	38	920
CFA1144W	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	557	39	975
CFA1156W	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	589	41	1030
CFA2168W	168	5203	24312	16046	3061	15,176	7.0	89	1 @ 5, 1 @ 3	655	40	1160
CFA2180W	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 5, 1 @ 3	704	40	1210
CFA2192W	192	5352	27937	18439	3148	17,840	8.2	87	2 @ 5	769	40	1345

*Hot water rating based on 70F entering air and 200F entering water temperature.
Based on opposite end supply/return. See PD-117 for same end supply/return.

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

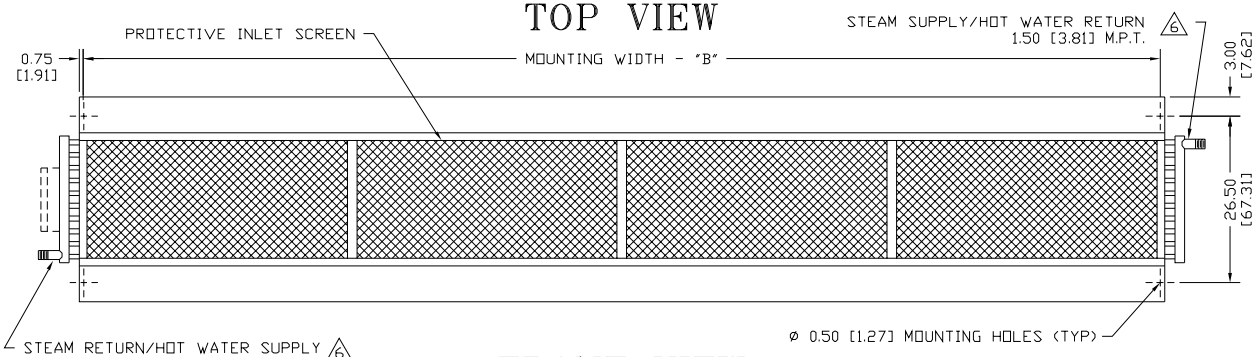
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

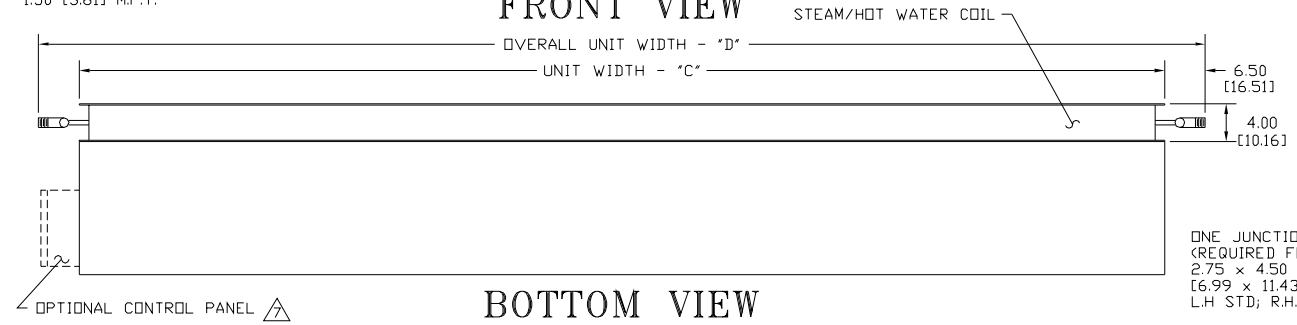
CFA

TOP INTAKE STEAM/HOT WATER OPP. END SUP./RET.

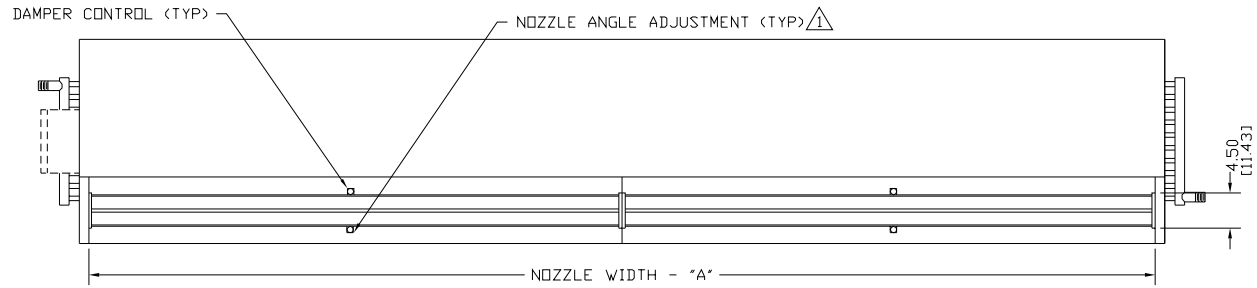
TOP VIEW



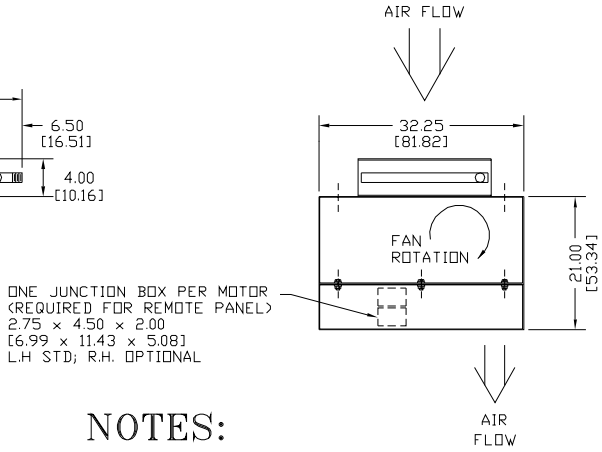
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFA1060*-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFA1072*-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFA1084*-T	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	100.00 [254.00]
CFA1096*-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFA1108*-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFA1120*-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFA1132*-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFA1144*-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFA1156*-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFA2168*-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFA2180*-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFA2192*-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	208.00 [528.32]

*- S-STEAM; W-HOT WATER

NOTES:

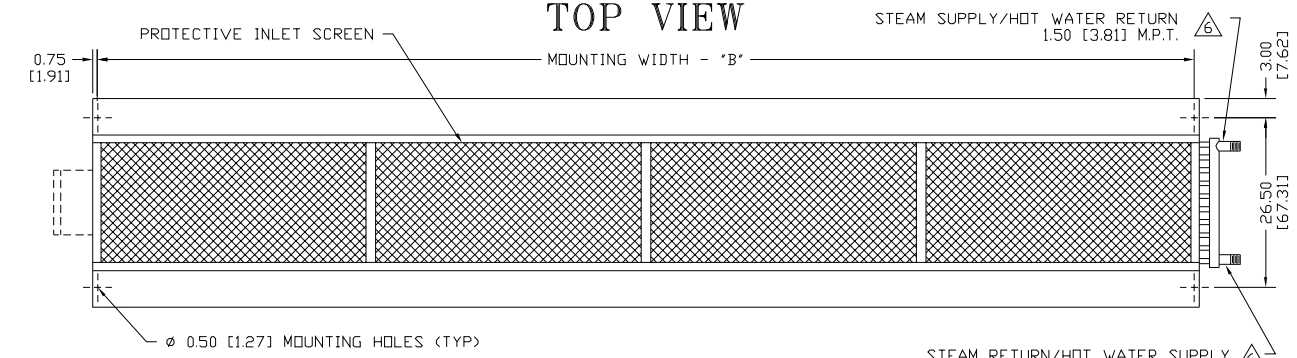
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAQ3178	TITLE: BERNER MODEL CFA AIR CURTAIN TOP INTAKE STEAM/HOT WATER HEATED
DATE	29JUN06	
BY	A.Johnston	
REPLACES	19FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

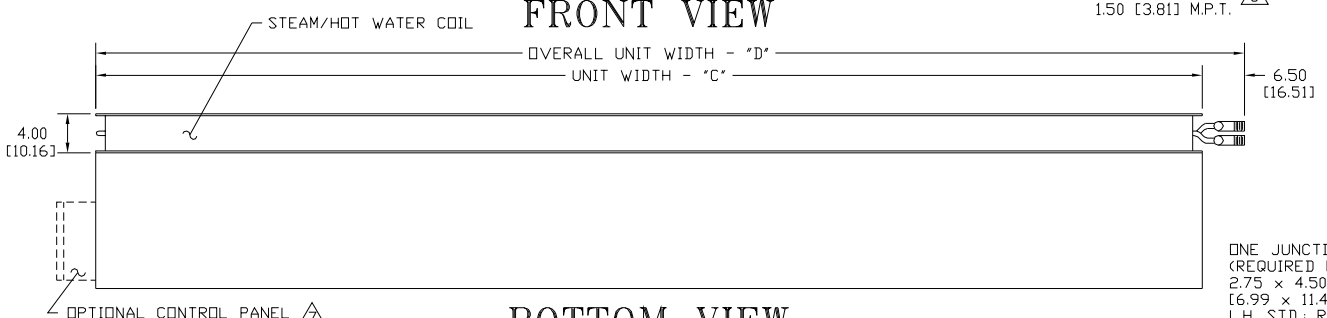
CFA

TOP INTAKE STEAM/HOT WATER SAME END SUP./RET.

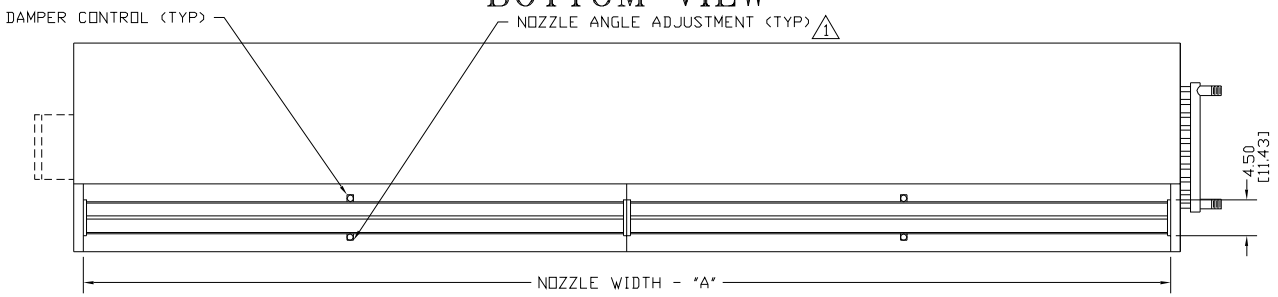
TOP VIEW



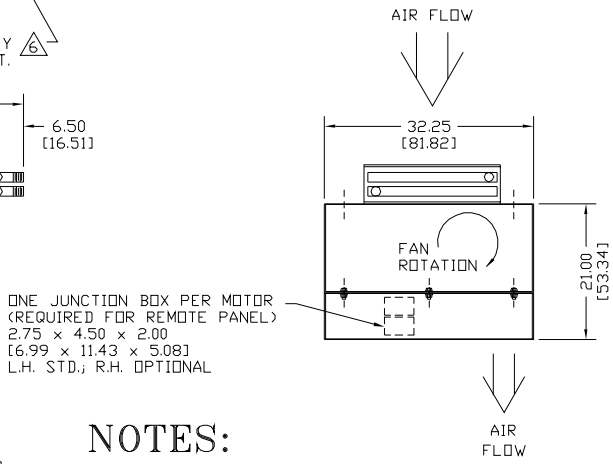
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFA1060*-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFA1072*-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFA1084*-T	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	93.50 [237.49]
CFA1096*-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFA1108*-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFA1120*-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFA1132*-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFA1144*-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFA1156*-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFA2168*-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFA2180*-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFA2192*-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	201.50 [511.81]

*- S-STEAM; W-HOT WATER

NOTES:

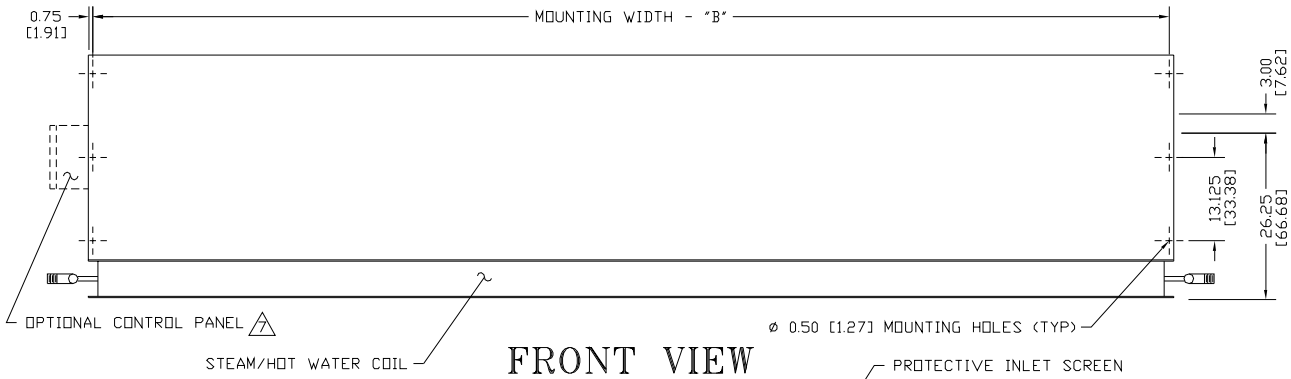
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFAQ3179	TITLE: BERNER MODEL CFA AIR CURTAIN TOP INTAKE STEAM/HOT WATER HEATED	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	19FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

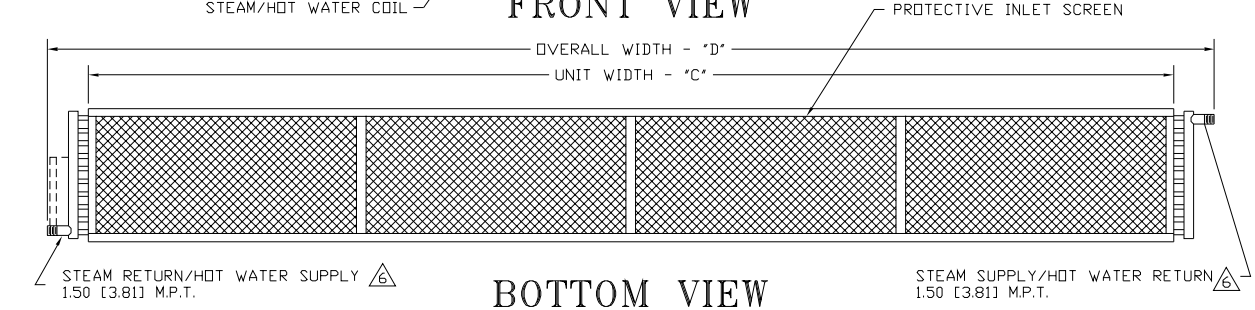
CFA

FRONT INTAKE STEAM/HOT WATER OPP. END SUP./RET.

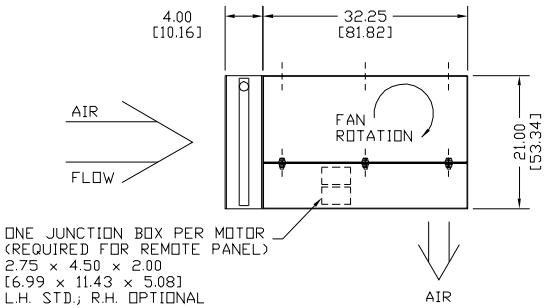
TOP VIEW



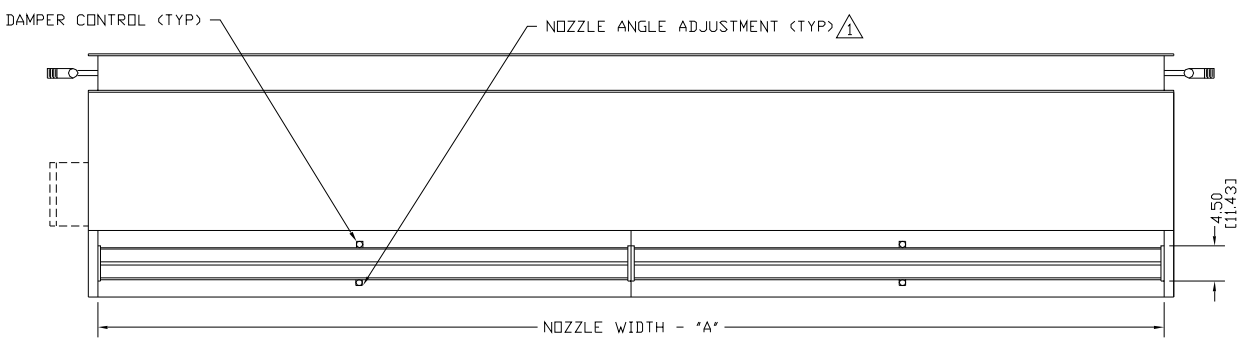
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFA1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFA1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFA1084*-F	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	100.00 [254.00]
CFA1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFA1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFA1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFA1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFA1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFA1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFA2168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFA2180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFA2192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	208.00 [528.32]

*- S-STEAM; W-HOT WATER

NOTES:

FLOW

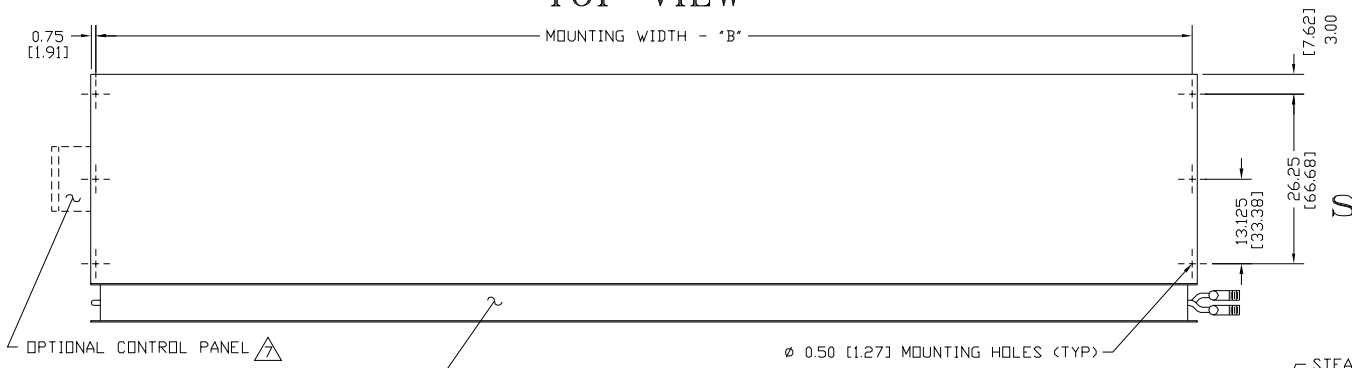
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAQ3181	TITLE: BERNER MODEL CFA AIR CURTAIN FRONT INTAKE STEAM/HOT WATER HEATED
DATE	29JUN06	
BY	A.Johnston	
REPLACES	19FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

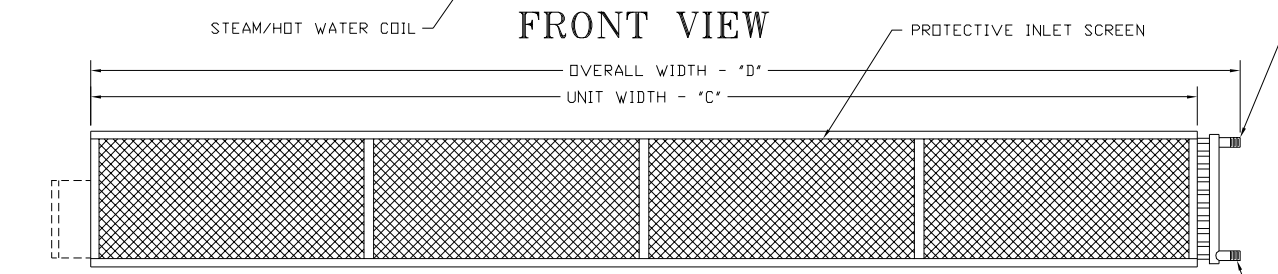
CFA

FRONT INTAKE STEAM/HOT WATER SAME END SUP./RET.

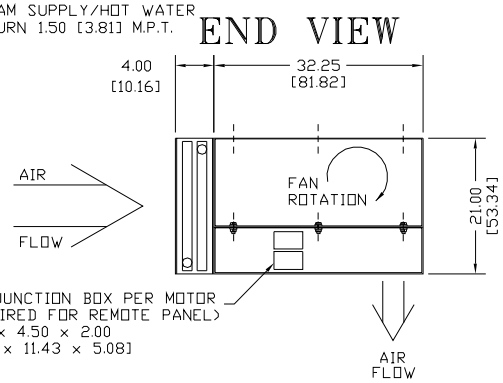
TOP VIEW



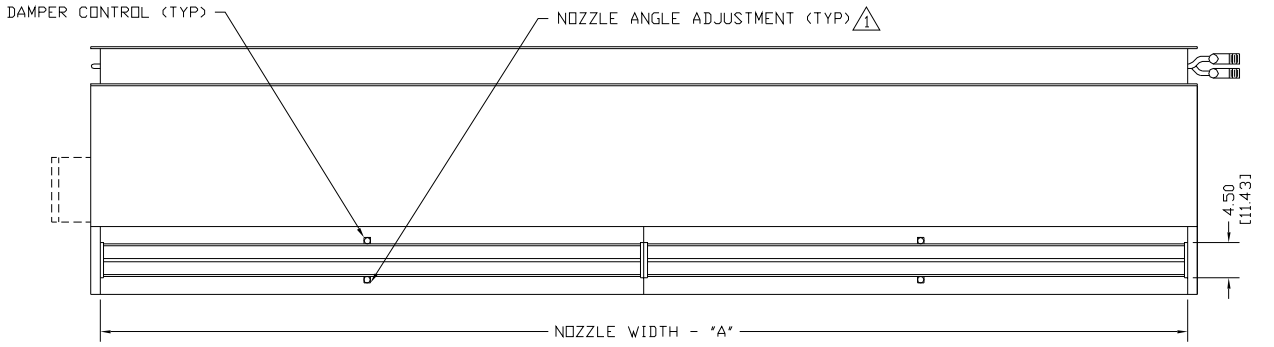
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFA1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFA1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFA1084*-F	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	93.50 [237.49]
CFA1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFA1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFA1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFA1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFA1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFA1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFA2168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFA2180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFA2192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	201.50 [511.81]

*- S-STEAM; W-HOT WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAQ3180	TITLE: BERNER MODEL CFA AIR CURTAIN FRONT INTAKE STEAM/HOT WATER HEATED
DATE	29JUN06	
BY	A.Johnston	
REPLACES	12FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-215X
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFX
Steam Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES

- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen
- 1 1/2" MPT supply and return

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFX1060S	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	223	39	465
CFX1072S	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	264	39	515
CFX1084S	84	4644	10849	7160	2731	6772	3	89	1 @ 3	298	41	598
CFX1096S	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	363	38	680
CFX1108S	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	404	38	780
CFX1120S	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	471	35	865
CFX1132S	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	509	37	920
CFX1144S	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	539	38	975
CFX1156S	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	569	39	1068
CFX1168S	168	5203	24312	16046	3061	15,176	7	89	1 @ 7.5	627	38	1160
CFX1180S	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 7.5	669	40	1273
CFX1192S	192	5352	27937	18439	3148	17,840	8.2	87	1 @ 10	772	40	1345

*Steam rating based on 70F entering air and 5 psig steam.
Based on opposite end supply/return

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

No.: DS-217X
Date: November, 2011

BERNER INTERNATIONAL CORP.

CFX
Hot Water Heated
Data Sheet

For Door Heights To 16' (environmental separation)

STANDARD FEATURES
- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen
- 1 1/2" MPT supply and return

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Hot Water: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFX1060W	60	5145	8585	5666	3302	5359	2.8	89	1 @ 3	220	38	465
CFX1072W	72	5005	10247	6763	2944	6256	2.9	91	1 @ 3	261	39	515
CFX1084W	84	4644	10849	7160	2731	6772	3.0	89	1 @ 3	298	41	598
CFX1096W	96	5352	13969	9219	3148	8920	4.1	87	1 @ 5	372	38	680
CFX1108W	108	5236	15197	10030	3080	9817	4.2	86	1 @ 5	416	39	780
CFX1120W	117	6012	19616	12946	3627	12,526	4.8	87	1 @ 7.5	497	37	865
CFX1132W	132	5602	19875	13117	3296	12,839	4.9	86	1 @ 7.5	532	38	920
CFX1144W	144	5225	19985	13190	3074	13,062	5.4	85	1 @ 7.5	557	39	975
CFX1156W	156	4943	20243	13360	2908	13,388	5.5	84	1 @ 7.5	589	41	1068
CFX1168W	168	5203	24312	16046	3061	15,176	7.0	89	1 @ 7.5	655	40	1160
CFX1180W	180	5143	25170	16612	3025	16,073	7.1	87	1 @ 7.5	704	40	1273
CFX1192W	192	5352	27937	18439	3148	17,840	8.2	87	1 @ 10	769	40	1345

*Hot water rating based on 70F entering air and 200F entering water temperature.
Based on opposite end supply/return. See PD-117 for same end supply/return.

MOTOR VOLTAGES/AMP DRAWS						
hp	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
3	13.1	12.2	6.1	3.2	11.9	5.9
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
68 dBA

Berner reserves the right to alter specifications without prior notice.

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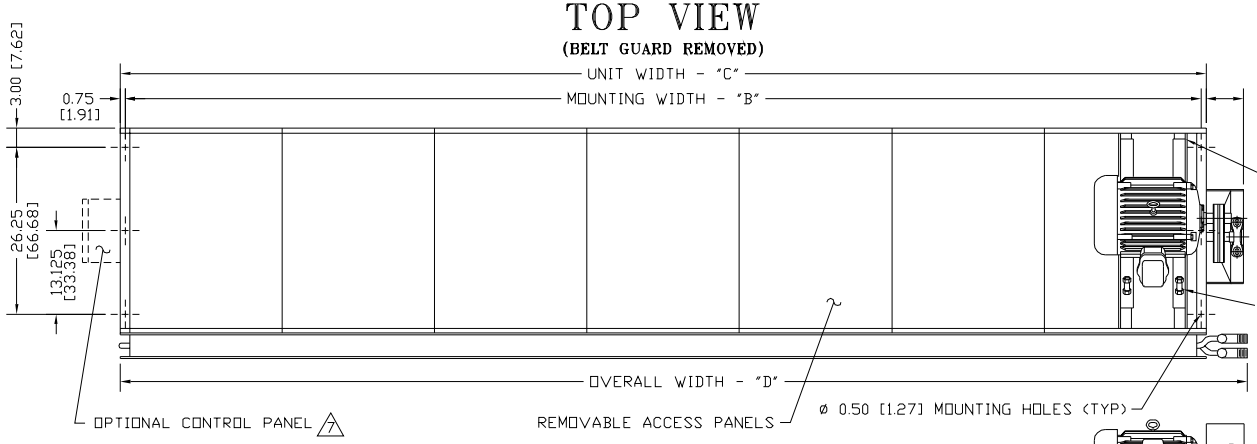
MADE IN U.S.A.

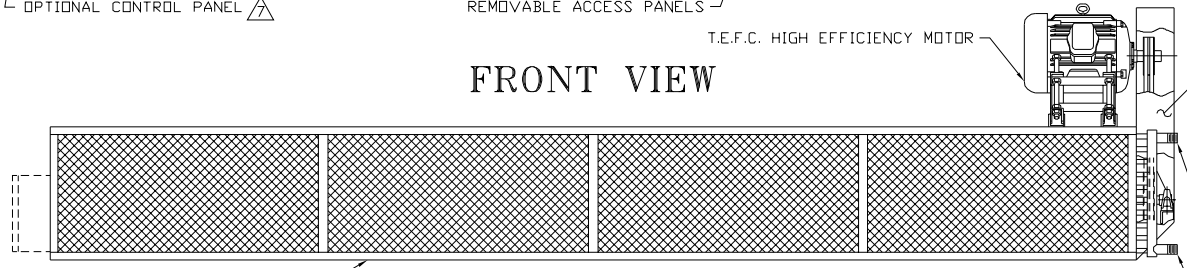
CFX

FRONT INTAKE STEAM/HOT WATER SAME END SUP./RET.

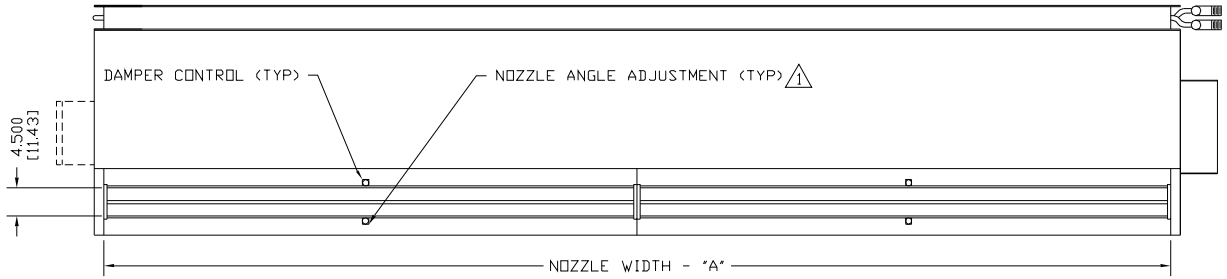
TOP VIEW
(BELT GUARD REMOVED)



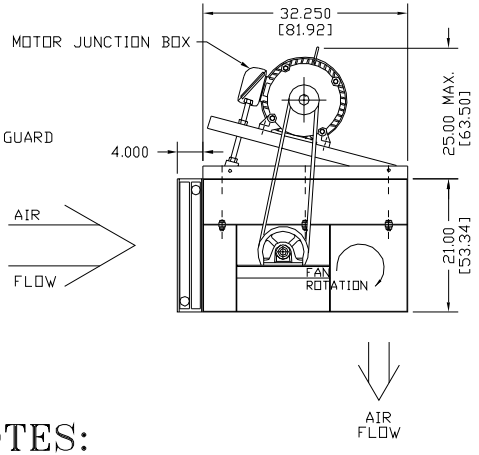
FRONT VIEW



BOTTOM VIEW



END VIEW
(BELT GUARD REMOVED)



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFX1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFX1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFX1084*-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	93.50 [237.49]
CFX1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFX1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFX1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFX1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFX1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFX1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFX1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFX1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFX1192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	210.50 [511.81]

* S - STEAM; W - WATER

NOTES:

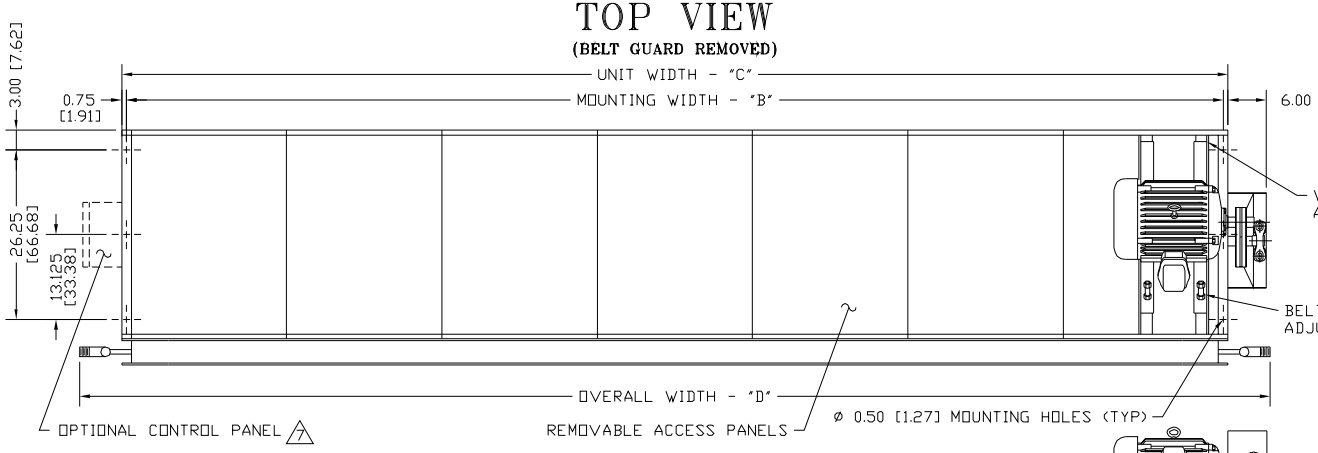
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAR3210	TITLE: BERNER MODEL CFX AIR CURTAIN FRONT INTAKE BELT DRIVE STEAM/HOT WATER
DATE	29JUN06	
BY	A.Johnston	
REPLACES	05MAY03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

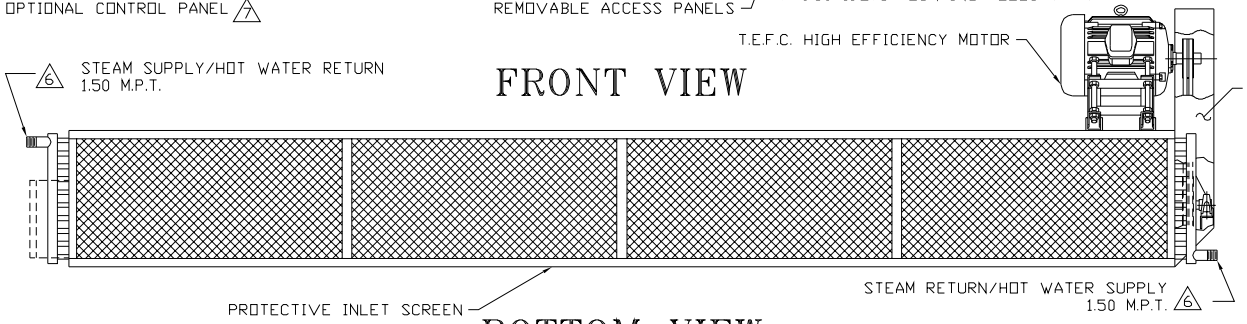
CFX

FRONT INTAKE STEAM/HOT WATER OPP. END SUP./RET.

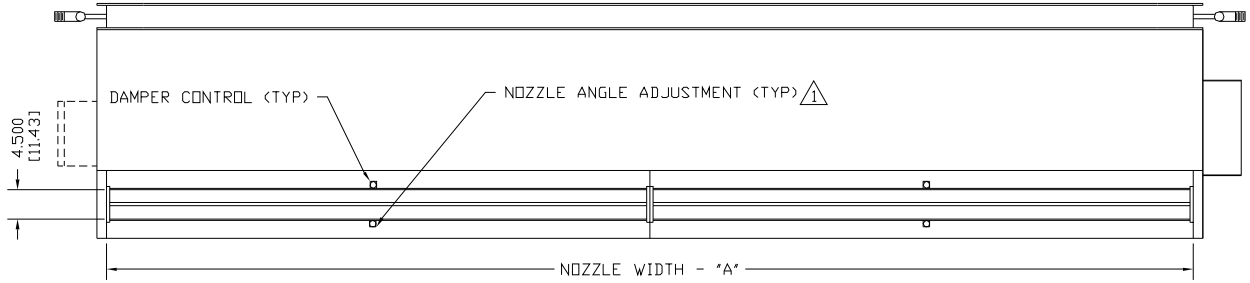
TOP VIEW
(BELT GUARD REMOVED)



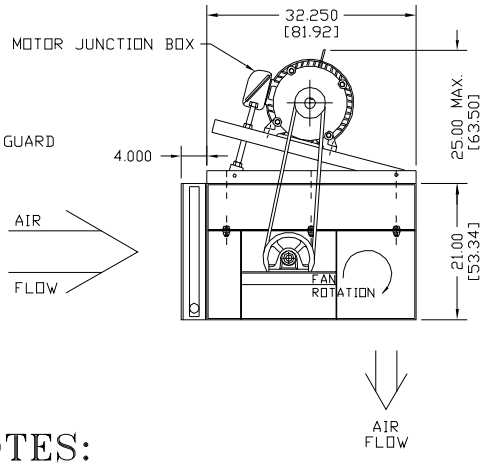
FRONT VIEW



BOTTOM VIEW



END VIEW
(BELT GUARD REMOVED)



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFX1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFX1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFX1084*-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	100.00 [254.00]
CFX1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFX1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFX1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFX1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFX1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFX1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFX1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFX1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFX1192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	217.00 [551.18]

* S - STEAM; W - WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFAR3211	TITLE: BERNER MODEL CFX AIR CURTAIN FRONT INTAKE BELT DRIVE STEAM/HOT WATER
DATE	29JUN06	
BY	A.Johnston	
REPLACES	05MAY03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-116
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Ambient
Data Sheet

For Door Heights To 20' (environmental separation) and 18' (insect control)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Five year parts warranty
- Crafted with Pride in the USA

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg.Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Net Wgt. (lbs)**
CFC1060A**	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	390
CFC1072A	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	435
CFC1084A	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	480
CFC1096A	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	589
CFC1108A	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	634
CFC1120A	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	709
CFC1132A	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	754
CFC1144A	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	835
CFC1156A	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	880
CFC1168A	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	1025
CFC1180A	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	1070
CFC2192A	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	1190

**Performance does not include the effects of the turning vanes

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC. — PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.
Models CFC1084A, CFC1108A, CFC1132A, CFC1156A, and CFC1180A are intended for door heights up to 18'.

VELOCITY PROJECTION: *Model CFC1060*			
Distance from Nozzle (ft)	3	10	17
Core Velocity (fpm)	3027	1967	1500

Sound level measured 10' (3m) from the unit in free field: **73 dBA**

Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

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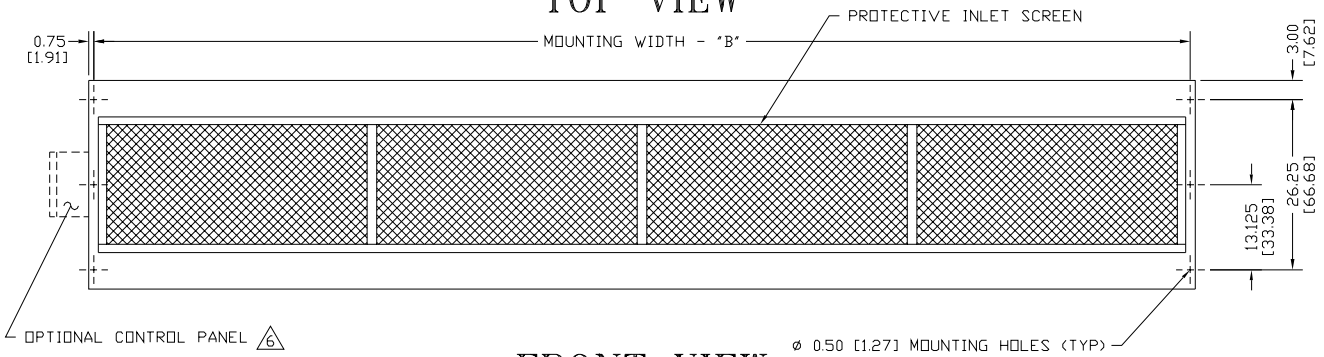
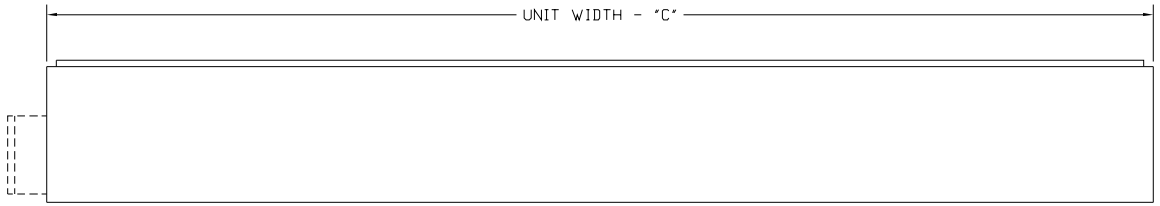
MADE IN U.S.A.

CFC
TOP INTAKE AMBIENT SYSTEM

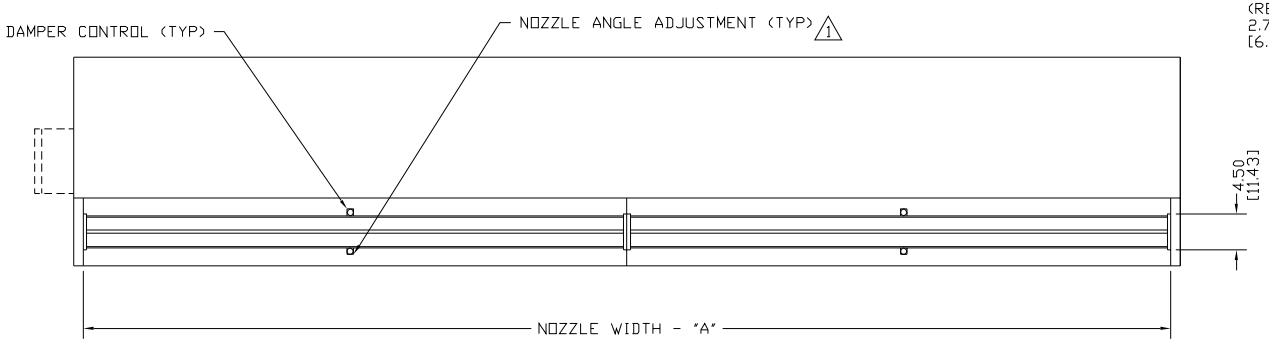
TOP VIEW



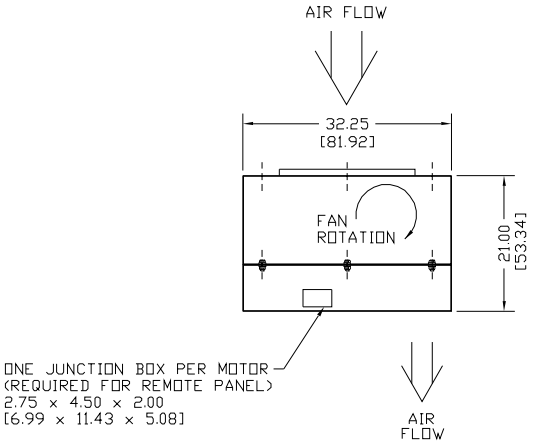
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFC1060A-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFC1072A-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFC1084A-T	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFC1096A-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFC1108A-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFC1120A-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFC1132A-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFC1144A-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFC1156A-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFC1168A-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFC1180A-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFC2192A-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

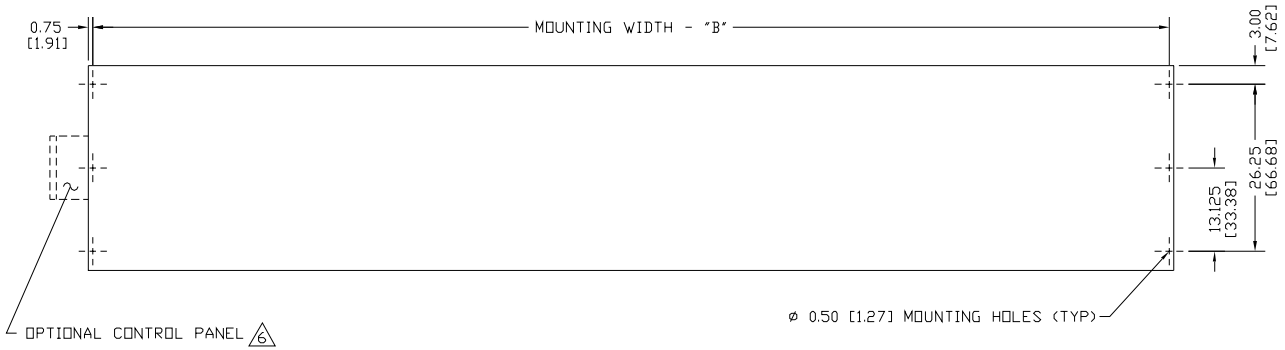
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

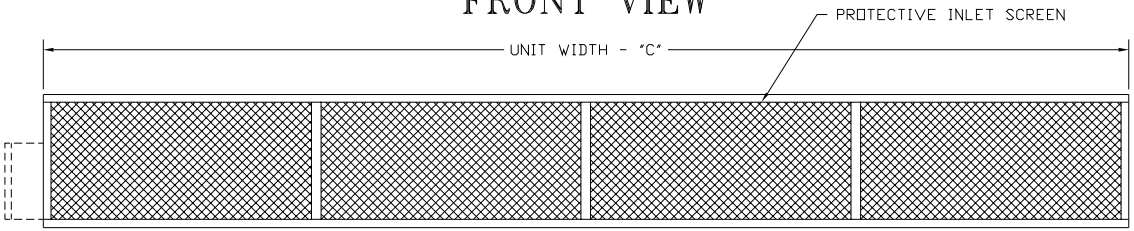
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCQ3182	TITLE: BERNER MODEL CFC AIR CURTAIN TOP INTAKE AMBIENT SYSTEM	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	25NOV02	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

CFC
FRONT INTAKE AMBIENT SYSTEM

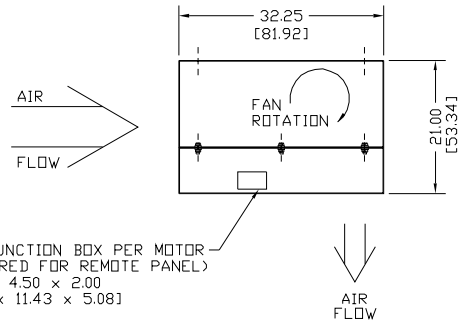
TOP VIEW



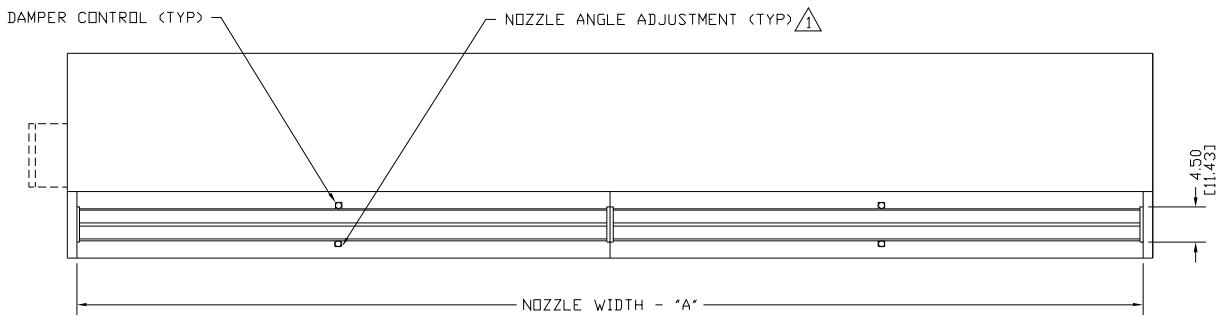
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFC1060A-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFC1072A-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFC1084A-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFC1096A-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFC1108A-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFC1120A-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFC1132A-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFC1144A-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFC1156A-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFC1168A-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFC1180A-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFC2192A-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCQ3183	TITLE: BERNER MODEL CFC AIR CURTAIN FRONT INTAKE AMBIENT SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	25NOV02	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

CFC/CFY HOT WATER						
(2) Rows (6) Fins Per Inch						
Opposite End Supply/Return						
65 °F E.A.T. 180 °F E.W.T.						
Model		**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
CFC1060S	CFY1060S	27	214	160	22.0	1.0
CFC1072S	CFY1072S	29	257	161	27.0	1.5
CFC1084S	CFY1084S	30	293	160	30.0	1.8
CFC1096S	CFY1096S	30	370	161	39.0	3.1
CFC1108S	CFY1108S	30	416	160	43.0	3.8
CFC1120S	CFY1120S	29	491	160	51.0	5.4
CFC1132S	CFY1132S	30	532	160	55.0	6.3
CFC1144S	CFY1144S	30	617	160	64.0	8.6
CFC1156S	CFY1156S	30	660	160	68.0	9.8
CFC1168S	CFY1168S	29	726	159	70.0	10.5
CFC1180S	CFY1180S	30	749	158	69.0	10.3
CFC2192S	CFY1192S	31	773	157	69.0	10.4

CFC/CFY HOT WATER						
(2) Rows (6) Fins Per Inch						
Same End Supply/Return						
65 °F E.A.T. 180 °F E.W.T.						
Model		**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
CFC1060S	CFY1060S	30	241	160	25.0	2.1
CFC1072S	CFY1072S	32	281	160	29.0	2.9
CFC1084S	CFY1084S	33	319	160	33.0	3.9
CFC1096S	CFY1096S	32	397	160	41.0	6.2
CFC1108S	CFY1108S	32	445	160	46.0	8.0
CFC1120S	CFY1120S	31	519	159	51.0	10.0
CFC1132S	CFY1132S	32	552	158	50.0	10.1
CFC1144S	CFY1144S	30	620	155	50.0	10.4
CFC1156S	CFY1156S	30	653	153	49.0	10.3
CFC1168S	CFY1168S	29	709	150	48.0	10.3
CFC1180S	CFY1180S	29	728	148	47.0	10.2
CFC2192S	CFY1192S	30	749	148	47.0	10.5

Performance based on 65°F Entering Air Temperature (E.A.T.)
and 180°F Entering Water Temperature (E.W.T.)

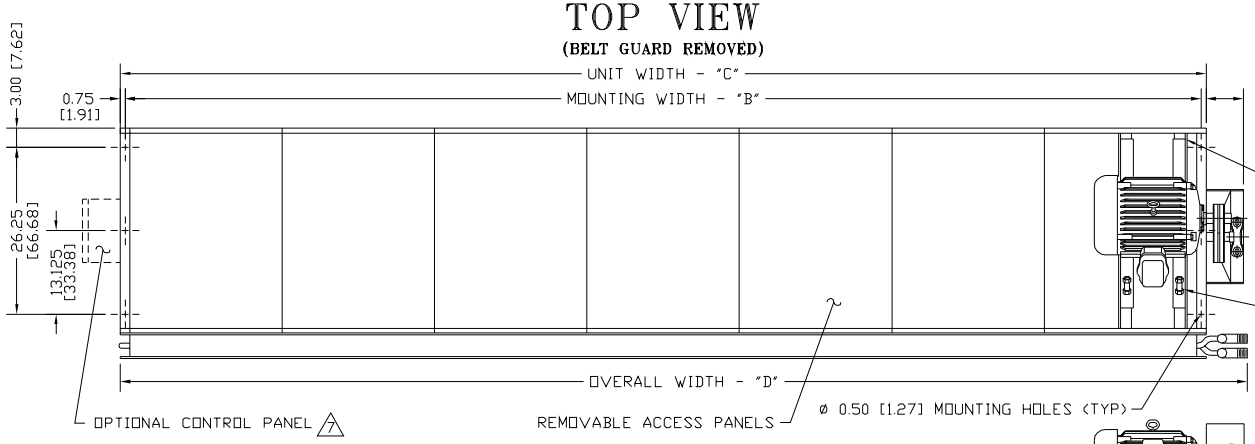
* Leaving Water Temperature (L.W.T.)
Consult factory for other E.A.T., E.W.T. or GPM

Berner reserves the right to alter specifications without prior notice.

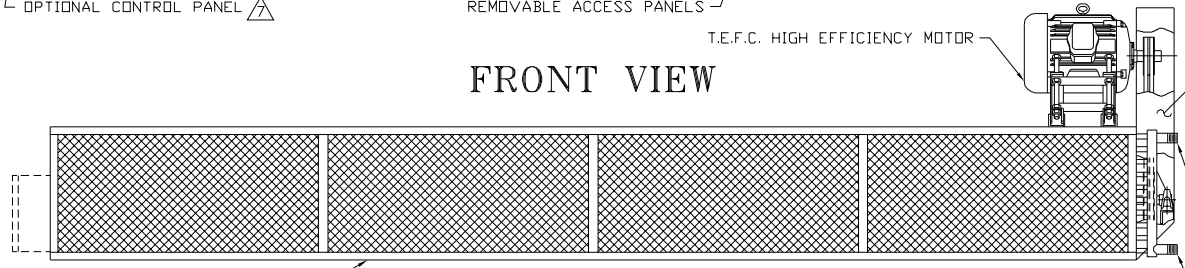
CFY

FRONT INTAKE STEAM/HOT WATER SAME END SUP./RET.

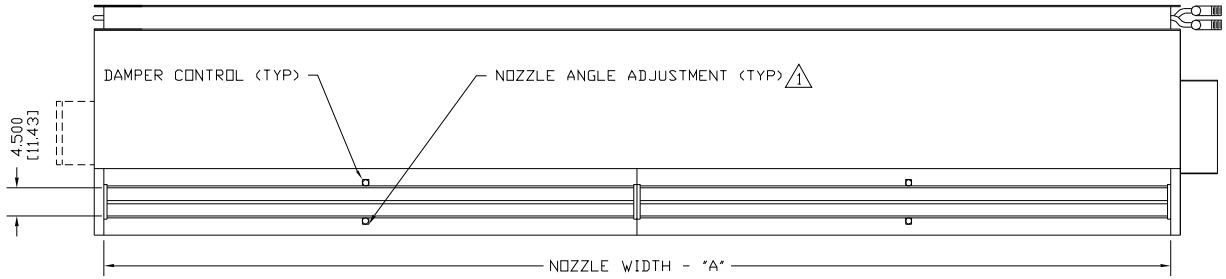
TOP VIEW
(BELT GUARD REMOVED)



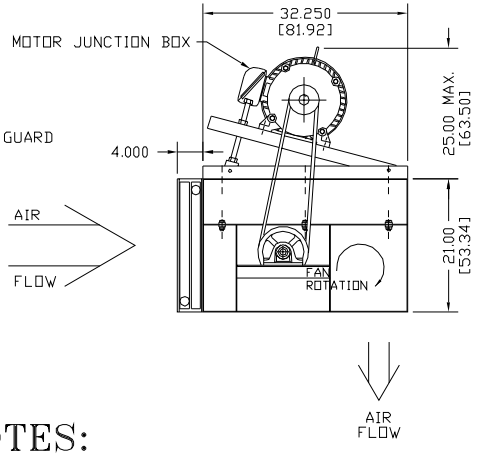
FRONT VIEW



BOTTOM VIEW



END VIEW
(BELT GUARD REMOVED)



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFY1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFY1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFY1084*-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	93.50 [237.49]
CFY1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFY1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFY1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFY1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFY1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFY1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFY1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFY1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFY1192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	210.50 [511.81]

* S - STEAM; W - WATER

NOTES:

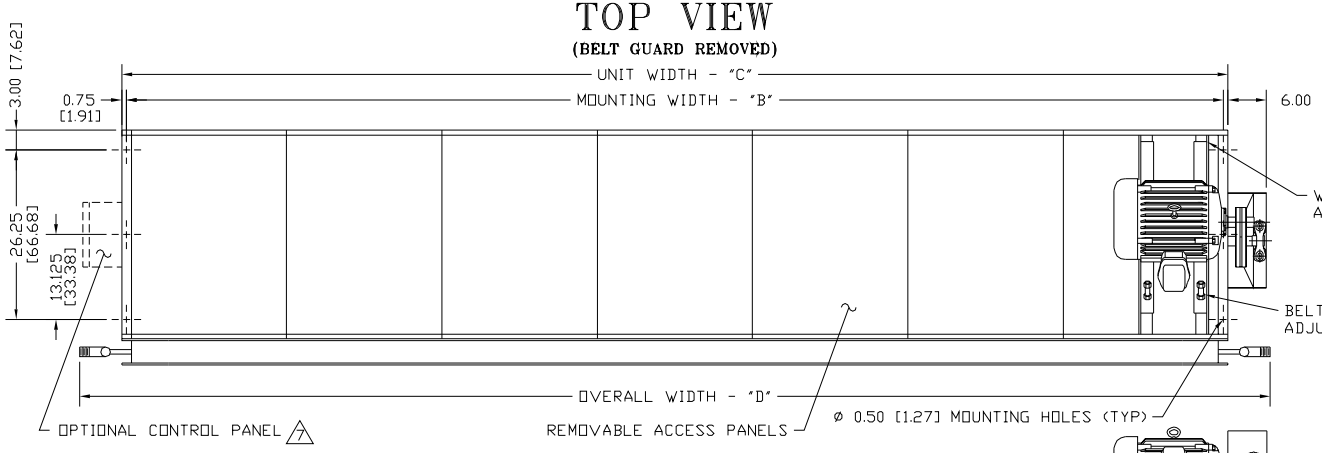
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCR3212	TITLE: BERNER MODEL CFY AIR CURTAIN FRONT INTAKE BELT DRIVE STEAM/HOT WATER
DATE	29JUN06	
BY	A.Johnston	
REPLACES	05MAY03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

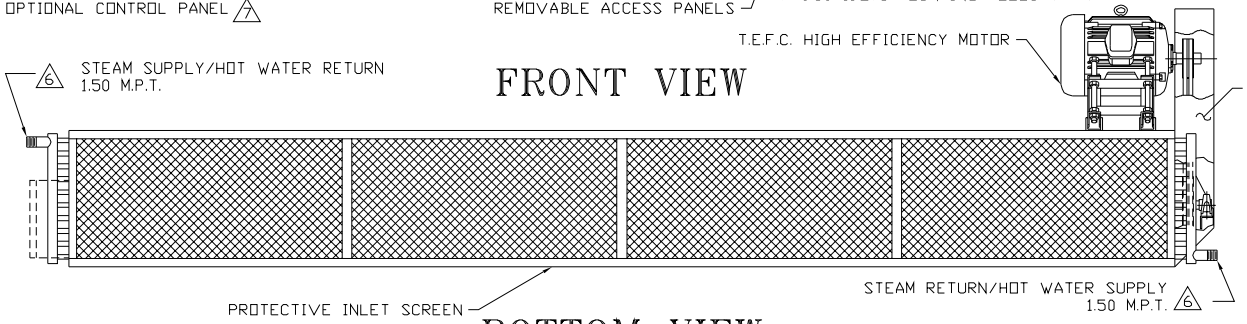
CFY

FRONT INTAKE STEAM/HOT WATER OPP. END SUP./RET.

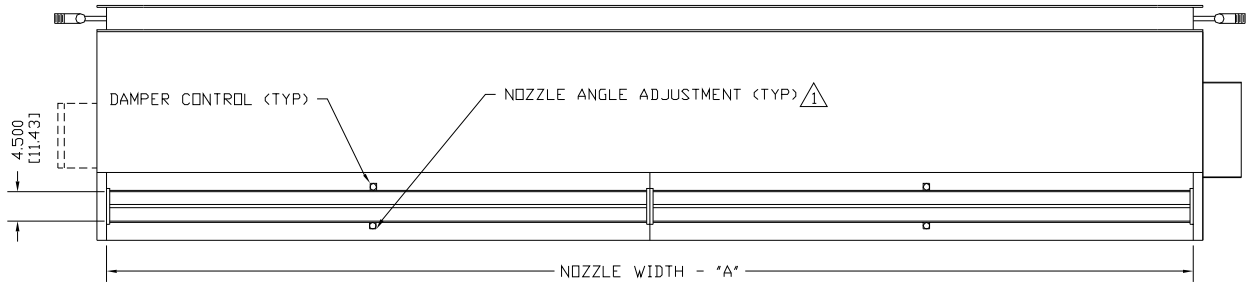
TOP VIEW
(BELT GUARD REMOVED)



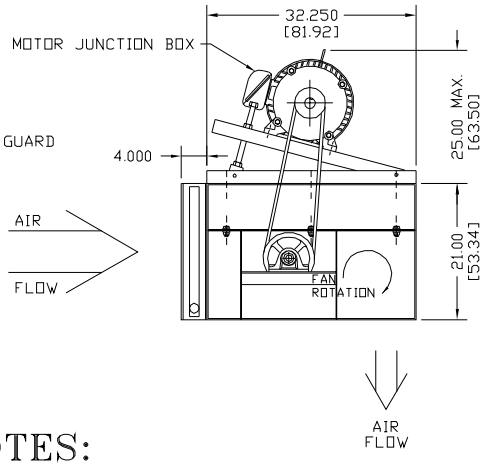
FRONT VIEW



BOTTOM VIEW



END VIEW
(BELT GUARD REMOVED)



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFY1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFY1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFY1084*-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	100.00 [254.00]
CFY1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFY1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFY1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFY1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFY1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFY1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFY1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFY1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFY1192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	217.00 [551.18]

* S - STEAM; W - WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCR3213	TITLE: BERNER MODEL CFY AIR CURTAIN FRONT INTAKE BELT DRIVE STEAM/HOT WATER	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	05MAY03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

No.: DS-125
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES
- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/ hr)**	**Total Output (mbtu/ hr)**	**Temp. Rise °F**
CFC1060G	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	1 @ 345	345	276	34
CFC1072G	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	1 @ 345	345	276	31
CFC1084G	72	6076	13876	9158	3574	8861	4.9	87	1 @ 5	1 @ 345	345	276	29
CFC1096G	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	2 @ 230	460	368	30
CFC1108G	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	2 @ 230	460	368	27
CFC1120G	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	2 @ 345	690	552	33
CFC1132G	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	2 @ 345	690	552	32
CFC1144G	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	2 @ 400	800	624	30
CFC1156G	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	2 @ 400	800	624	29
CFC1168G	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	3 @ 345	1035	828	34
CFC1180G	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	3 @ 345	1035	828	33
CFC2192G	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	3 @ 345	1035	828	33

WEIGHT CHART

MODEL	Net Wgt. Air Curtain (lbs)	Net Wgt. Duct Transition*	Net Wgt. Heater (lbs)	Shipping Wgt. Air Curtain (lbs)*	Shipping Wgt. Heater (lbs)
CFC1060G	390	68	285	573	310
CFC1072G	435	82	285	637	310
CFC1084G	517	87	285	729	310
CFC1096G	599	92	450	821	540
CFC1108G	654	118	450	920	540
CFC1120G	709	143	570	1019	620
CFC1132G	772	150	570	1084	620
CFC1144G	835	157	570	1148	620
CFC1156G	930	164	570	1263	620
CFC1168G	1025	170	855	1377	930
CFC1180G	1107	175	855	1479	930
CFC2192G	1190	181	855	1581	930

*Includes duct transition

MOTOR VOLTAGES/AMP DRAWS

HP	208/3/60	240/3/60	480/3/60	600/3/60	190/3/50*	380/3/50*
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

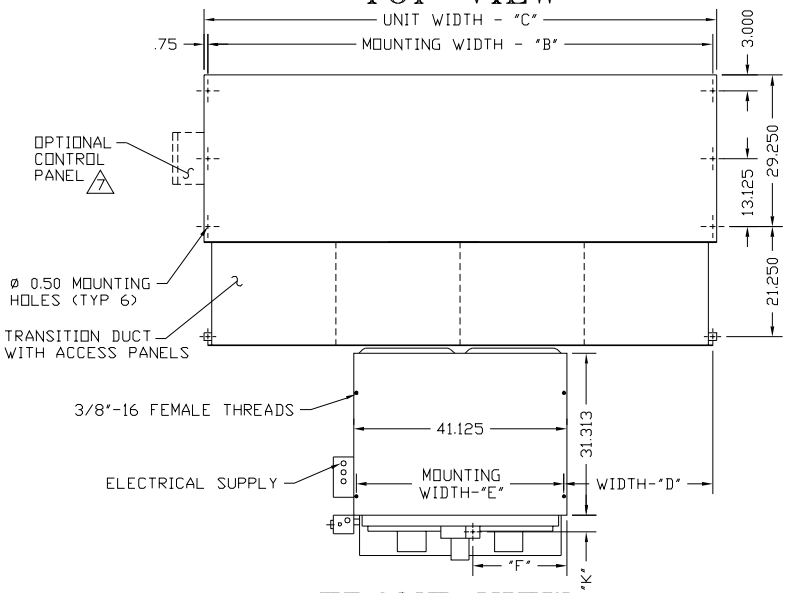
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

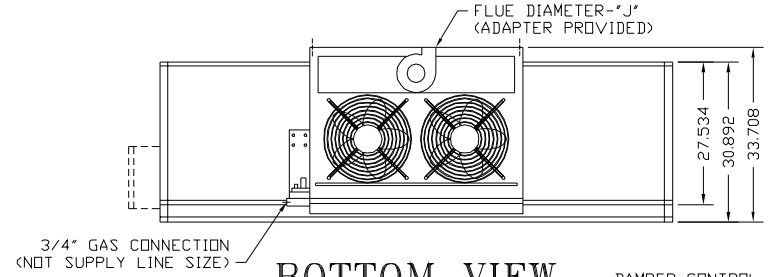
CFC

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

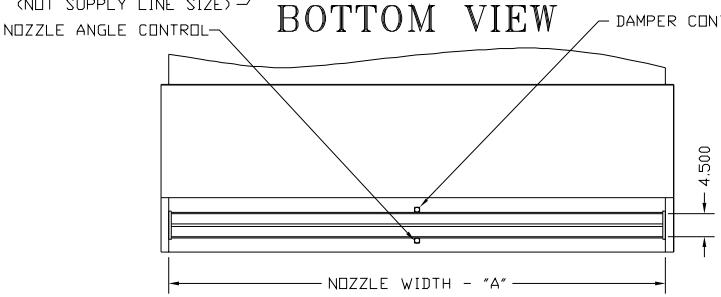
TOP VIEW



FRONT VIEW



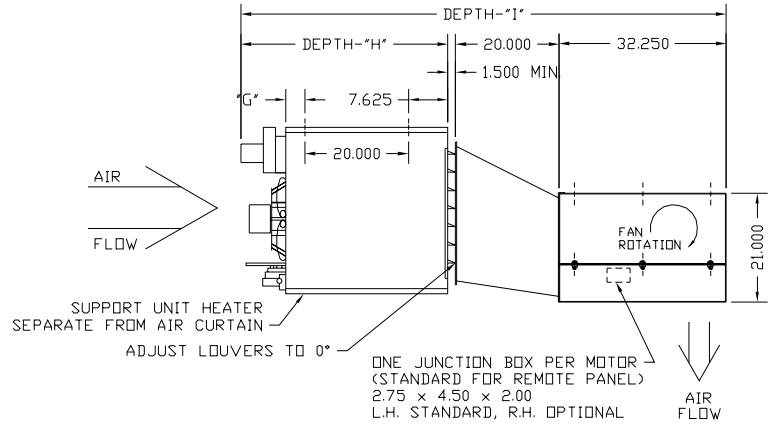
BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathbb{C}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

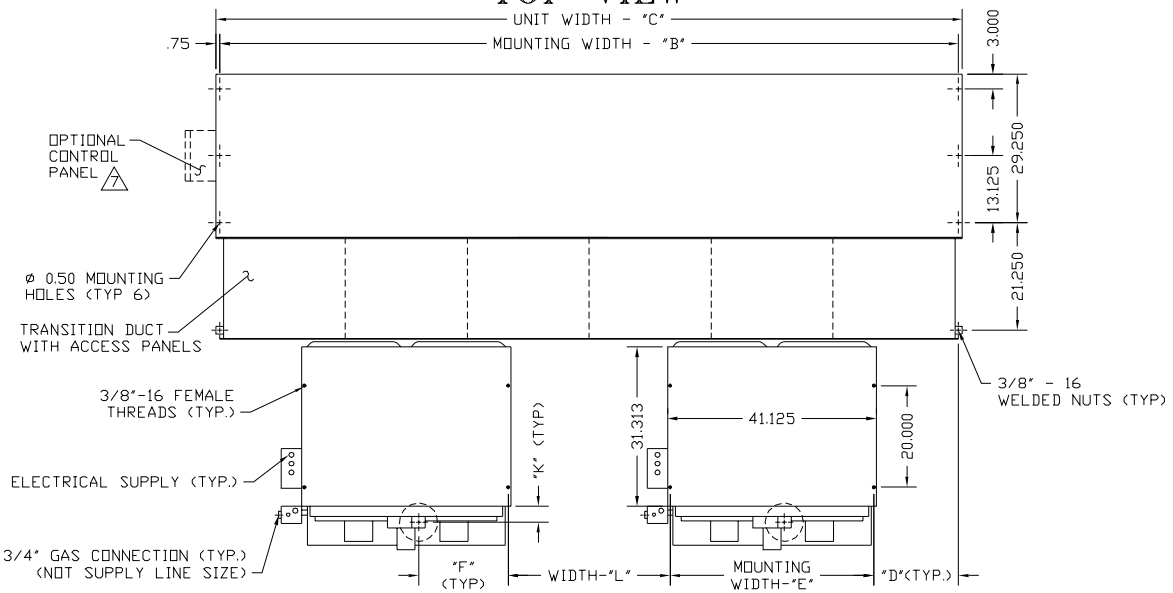
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"
CFC1060G	60.00	61.50	63.00	345	10.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50
CFC1072G	72.00	73.50	75.00	345	16.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50
CFC1084G	84.00	85.50	87.00	345	22.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCR3201	TITLE:	BERNER MODEL CFC AIR CURTAIN INDIRECT GAS FIRED – ONE HEATER SYSTEM
DATE	29JUN06		
BY	A.Johnston		
REPLACES	04APR03		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer		

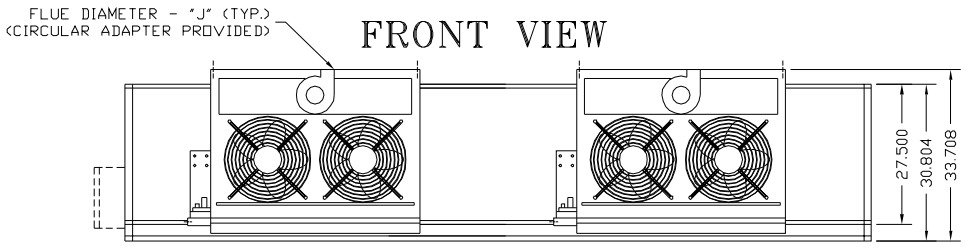
CFC

POSITIVE INDIRECT GAS TWO HEATER SYSTEM

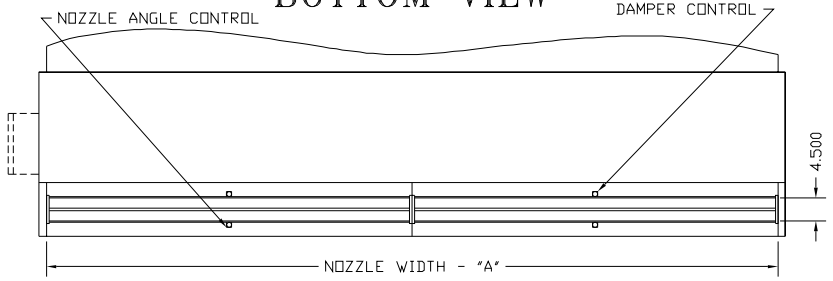
TOP VIEW



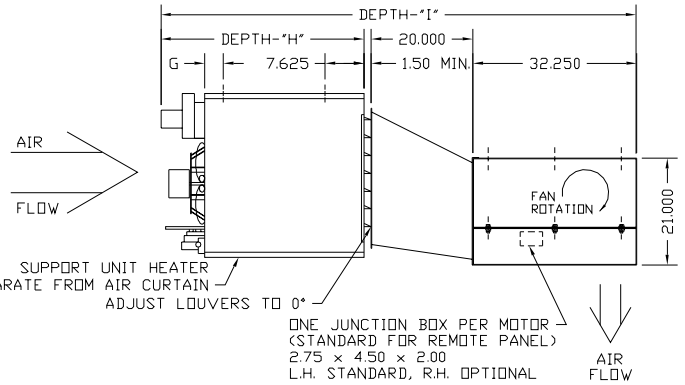
FRONT VIEW



BOTTOM VIEW



END VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

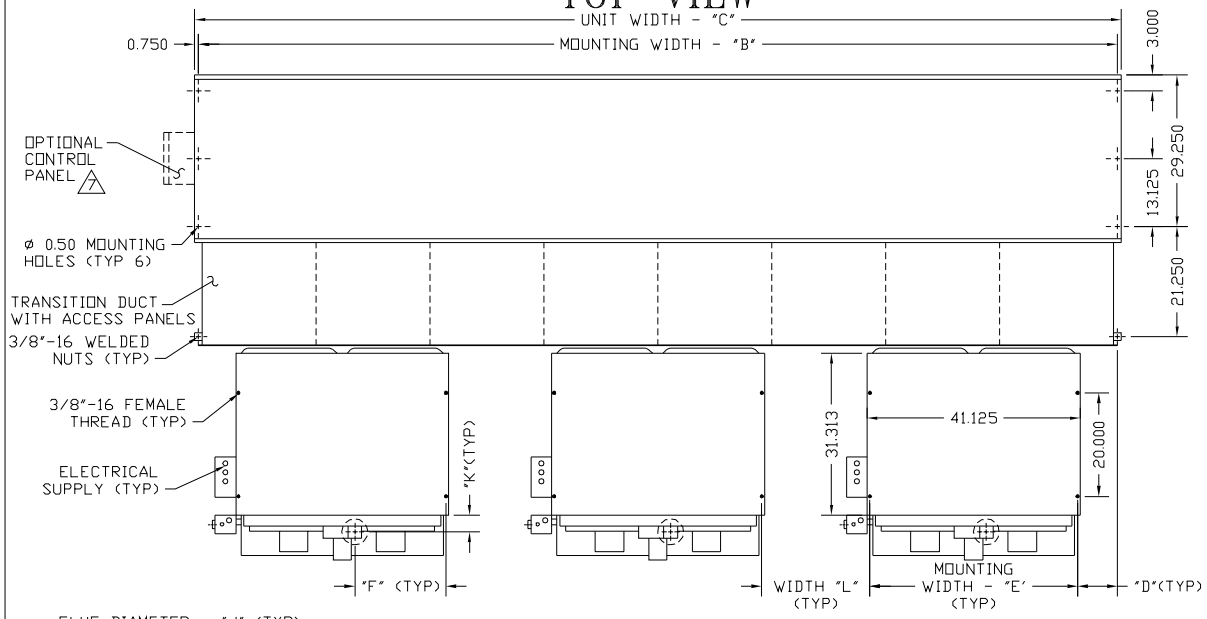
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFC1096G	96.00	97.50	99.00	2 @ 230	4.688	40.125	17.00	3.688	40.00	93.750	5.00	3.50	7.874
CFC1108G	108.00	109.50	111.00	2 @ 230	7.688	40.125	17.00	3.688	40.00	93.750	5.00	3.50	13.874
CFC1120G	117.00	118.50	120.00	2 @ 345	9.938	40.125	17.00	3.688	41.125	94.875	6.00	3.50	18.375
CFC1132G	132.00	133.50	135.00	2 @ 345	13.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	25.874
CFC1144G	144.00	145.50	147.00	2 @ 400	16.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	31.874
CFC1156G	156.00	157.50	159.00	2 @ 400	19.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	37.874

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCR3202	TITLE: BERNER	
DATE	29JUN06	MODEL CFC AIR CURTAIN	
BY	A.Johnston	INDIRECT GAS FIRED - TWO HEATER SYSTEM	
REPLACES	04APR03	BERNER INTERNATIONAL CORP.	
BY	B. Peffer	NEW CASTLE,PA.	

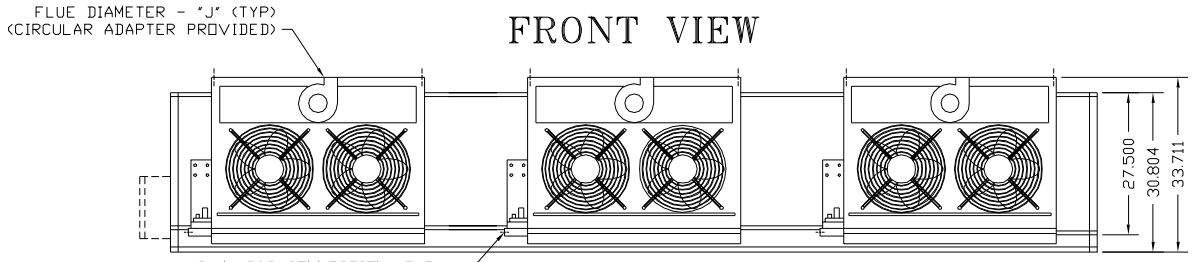
CFC

POSITIVE INDIRECT GAS THREE HEATER SYSTEM

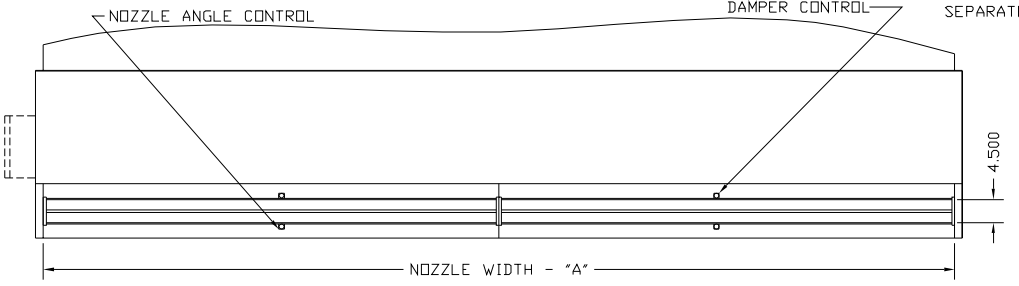
TOP VIEW



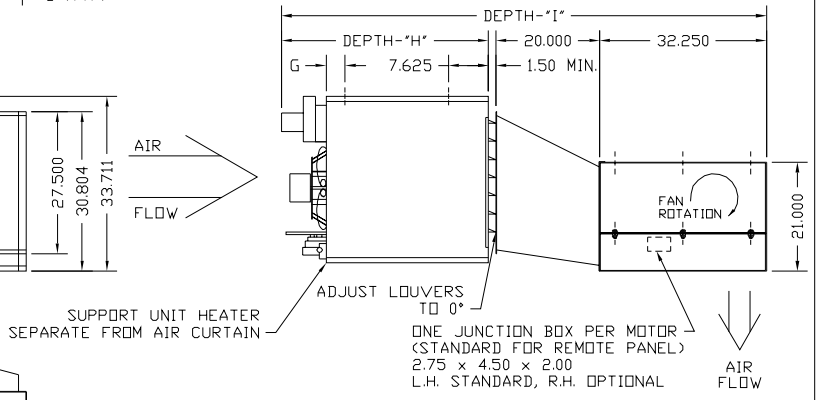
FRONT VIEW



BOTTOM VIEW



END VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.

CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFC1168G	168.00	169.50	171.00	3 @ 345	8.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	15.875
CFC1180G	180.00	181.50	183.00	3 @ 345	10.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	19.875
CFC2192G	192.00	193.50	195.00	3 @ 345	12.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	23.875

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	REV. A
DWG. NO.	CFCR3203
DATE	29JUN06
BY	A.Johnston
REPLACES	04APR03
BY	B. Peffer

TITLE: BERNER
MODEL CFC AIR CURTAIN
INDIRECT GAS FIRED - THREE HEATER SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-125Y
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFY
Positive Indirect Gas Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES
- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Duct transition with bottom access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- CSA approved
- Aluminzed steel heat exchanger
- Spark ignited pilot
- Power venter
- Prewired motor(s) & controls

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Heater(s) @ Input (mbtu/hr)**	**Total Input (mbtu/ hr)**	**Total Output (mbtu/hr)**	**Temp. Rise °F**
CFY1060G	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	1 @ 345	345	276	34
CFY1072G	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	1 @ 345	345	276	31
CFY1084G	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	1 @ 345	345	276	29
CFY1096G	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	2 @ 230	460	368	30
CFY1108G	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	2 @ 230	460	368	27
CFY1120G	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	2 @ 345	690	552	33
CFY1132G	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	2 @ 345	690	552	32
CFY1144G	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	2 @ 400	800	624	30
CFY1156G	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	2 @ 400	800	624	29
CFY1168G	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	3 @ 345	1035	828	34
CFY1180G	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	3 @ 345	1035	828	33
CFY1192G	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	3 @ 345	1035	828	33

WEIGHT CHART

MODEL	Net Wgt. Air Curtain (lbs)	Net Wgt. Duct Transition	Net Wgt. Heater (lbs)	Shipping Wgt. Air Curtain (lbs)*	Shipping Wgt. Heater (lbs)
CFY1060G	390	68	285	573	310
CFY1072G	435	82	285	637	310
CFY1084G	517	87	285	729	310
CFY1096G	599	92	450	821	540
CFY1108G	654	118	450	970	540
CFY1120G	709	143	570	1019	620
CFY1132G	772	150	570	1064	620
CFY1144G	835	157	570	1148	620
CFY1156G	930	164	570	1263	620
CFY1168G	1025	170	855	1377	930
CFY1180G	1107	175	855	1479	930
CFY1192G	1190	181	855	1581	930

*Includes duct transition

MOTOR VOLTAGES/AMP DRAWS

HP	208/3/60	240/3/60	480/3/60	600/3/60	190/3/50*	380/3/50*
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

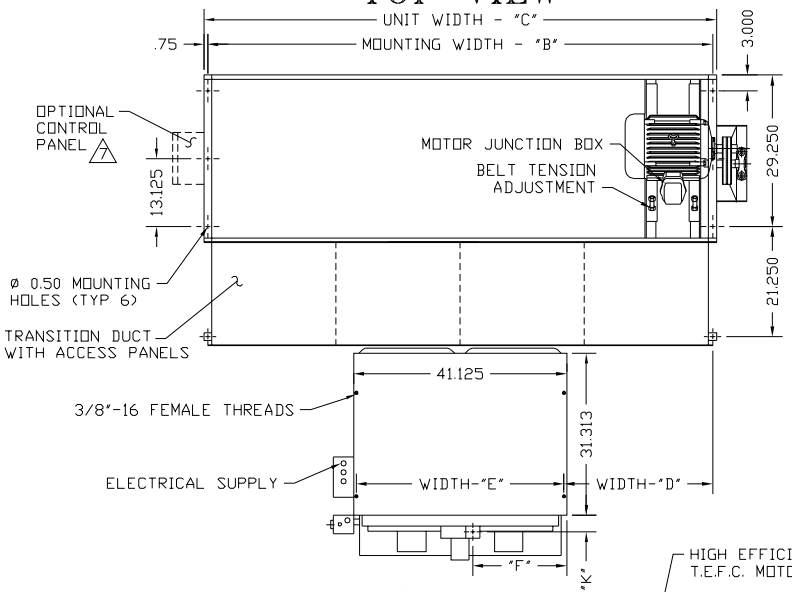
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

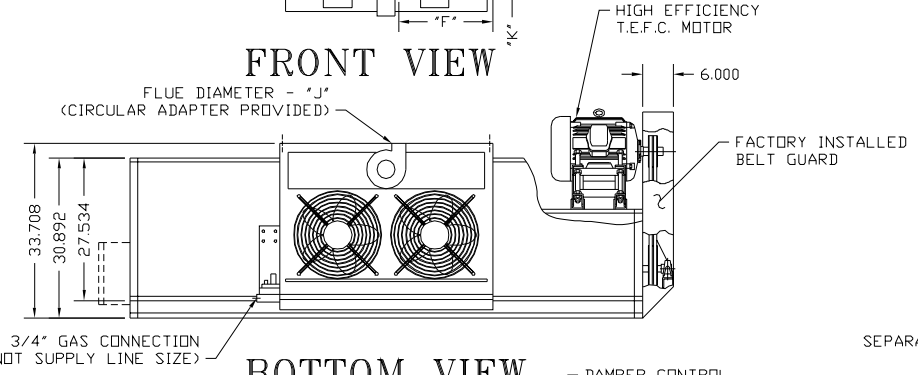
CFY

POSITIVE INDIRECT GAS ONE HEATER SYSTEM

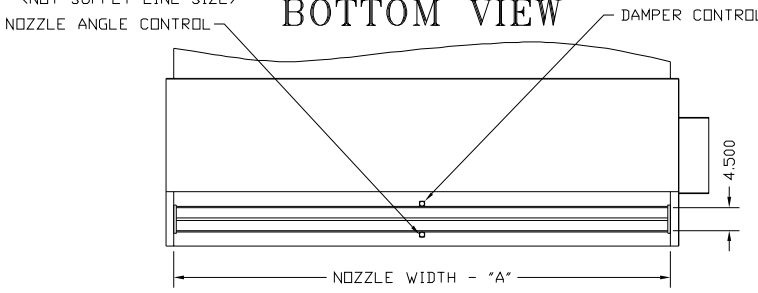
TOP VIEW



FRONT VIEW



BOTTOM VIEW

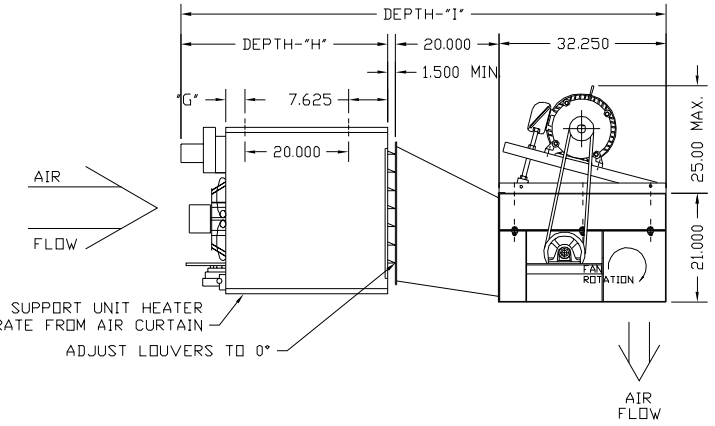


NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPLY PRESSURES HIGHER THAN 0.50 POUND REQUIRE INSTALLATION OF AN ADDITIONAL SERVICE REGULATOR EXTERNAL TO THE UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW

(BELT GUARD REMOVED)



CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

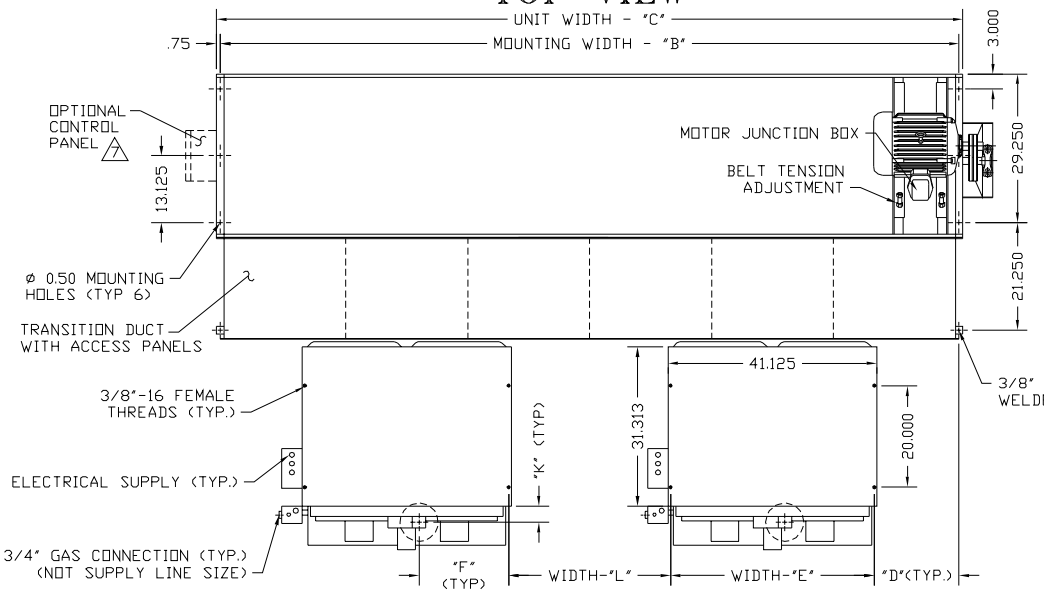
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"
CFY1060G	60.00	61.50	63.00	345	10.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50
CFY1072G	72.00	73.50	75.00	345	16.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50
CFY1084G	84.00	85.50	87.00	345	22.6875	40.125	22.125	3.688	41.125	94.875	6.00	3.50

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCR3216	TITLE:	BERNER MODEL CFY AIR CURTAIN INDIRECT GAS FIRED – ONE HEATER SYSTEM
DATE	29JUN06		
BY	A.Johnston		
REPLACES	06MAY03		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer		

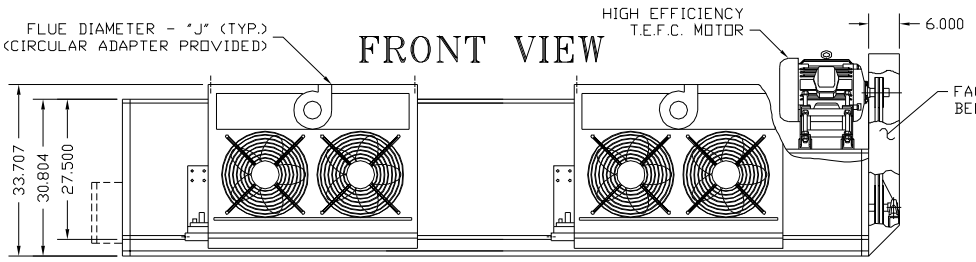
CFY

POSITIVE INDIRECT GAS TWO HEATER SYSTEM

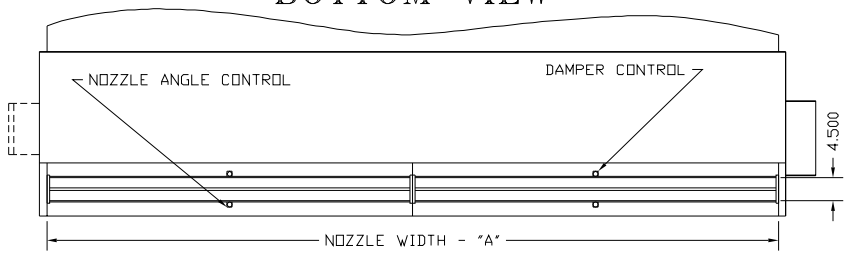
TOP VIEW



FRONT VIEW



BOTTOM VIEW



NOTES:

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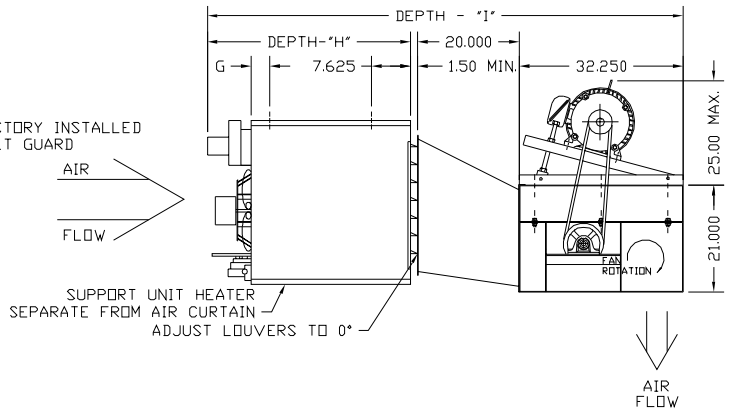
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, & REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES.

END VIEW

(BELT GUARD REMOVED)



CAUTION:

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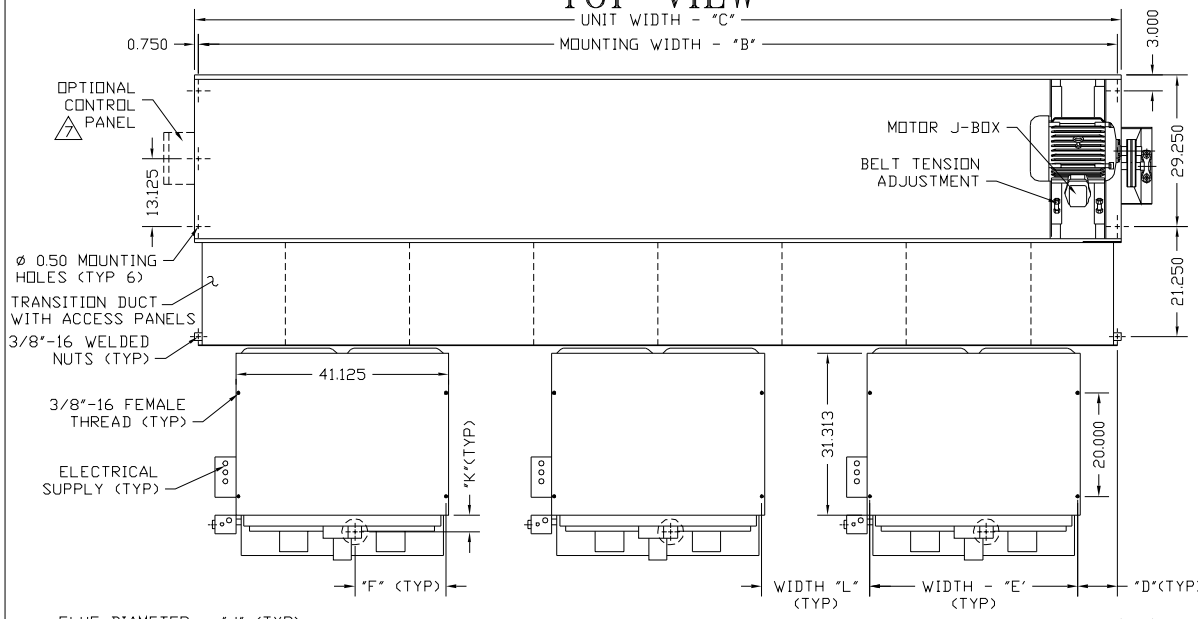
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFY1096G	96.00	97.50	99.00	2 @ 230	4.688	40.125	17.00	3.688	40.00	93.750	5.00	3.50	7.874
CFY1108G	108.00	109.50	111.00	2 @ 230	7.688	40.125	17.00	3.688	40.00	93.750	5.00	3.50	13.874
CFY1120G	117.00	118.50	120.00	2 @ 345	9.938	40.125	17.00	3.688	41.125	94.875	6.00	3.50	18.375
CFY1132G	132.00	133.50	135.00	2 @ 345	13.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	25.874
CFY1144G	144.00	145.50	147.00	2 @ 400	16.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	31.874
CFY1156G	156.00	157.50	159.00	2 @ 400	19.688	40.125	21.625	3.688	41.125	94.875	6.00	3.50	37.874

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCR3217	TITLE:	BERNER
DATE	29JUN06		MODEL CFY AIR CURTAIN
BY	A.Johnston		INDIRECT GAS FIRED - TWO HEATER SYSTEM
REPLACES	06MAY03		BERNER INTERNATIONAL CORP.
BY	B. Peffer		NEW CASTLE,PA.

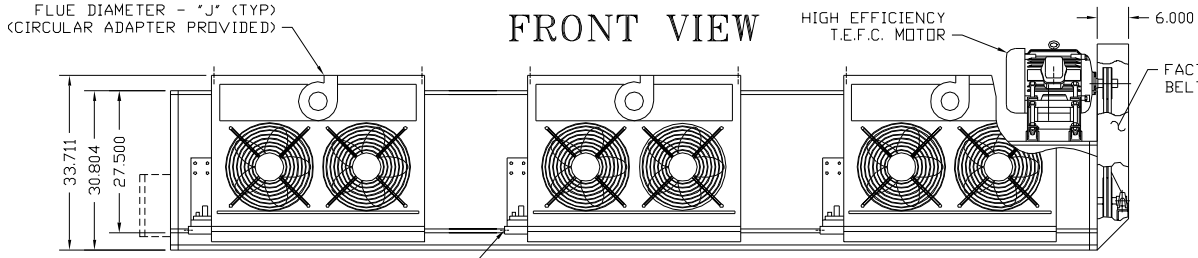
CFY

POSITIVE INDIRECT GAS THREE HEATER SYSTEM

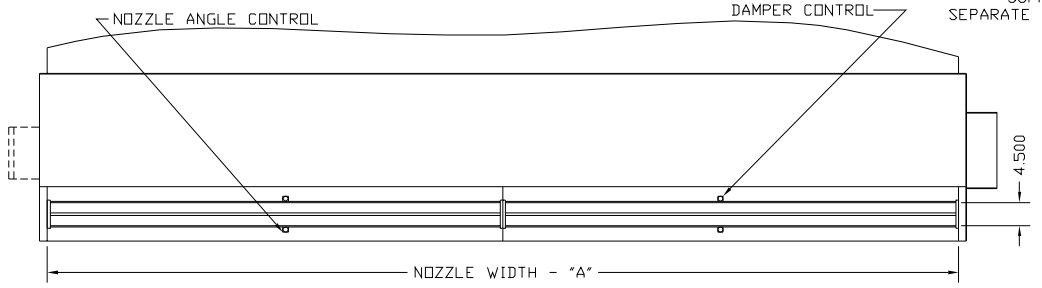
TOP VIEW



FRONT VIEW

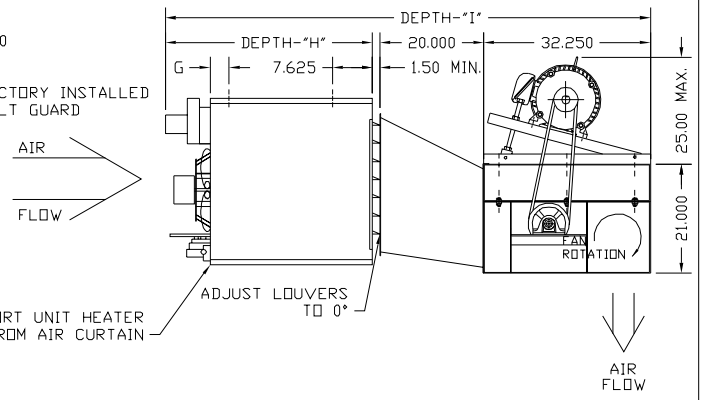


BOTTOM VIEW



END VIEW

(BELT GUARD REMOVED)



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
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CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MBTU INPUT	WIDTH "D"	WIDTH "E"	WIDTH "F"	DEPTH "G"	DEPTH "H"	DEPTH "I"	FLUE "J"	WIDTH "K"	WIDTH "L"
CFY1168G	168.00	169.50	171.00	3 @ 345	8.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	15.875
CFY1180G	180.00	181.50	183.00	3 @ 345	10.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	19.875
CFY1192G	192.00	193.50	195.00	3 @ 345	12.688	40.125	17.00	3.688	41.125	94.875	6.00	3.50	23.875

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	REV. A
DWG. NO.	CFCR3218
DATE	29JUN06
BY	A.Johnston
REPLACES	11NOV04
BY	A.Johnston

TITLE: BERNER
MODEL CFY AIR CURTAIN
INDIRECT GAS FIRED - THREE HEATER SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

No.: DS-324
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Direct Gas Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES
- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Tapered transition with access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES
- Steel cabinet with gray finish
- Adjustable profile plates
- ANSI, FM or IRI Gas Train
- Factory mounted wired control cabinet
- Modulating direct fired burner
- Spark ignited intermittent pilot

OPTIONAL FEATURES
- Filter section

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**# of Heater(s) @ Input (mbtu/hr)**	**Gas Train Size****	**Gas Inlet Pressure Range**	**Temp. Rise °F**
CFC1060D	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	1 @ 321	¾"	1# - 5#	40
CFC1072D	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	1 @ 355	¾"	1# - 5#	40
CFC1084D	72	6076	13876	9158	3574	8861	4.9	87	1 @ 5	1 @ 385	¾"	1# - 5#	40
CFC1096D	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	1 @ 499	¾"	1# - 5#	40
CFC1108D	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	1 @ 549	¾"	1# - 5#	40
CFC1120D	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	1 @ 678	¾"	1# - 5#	40
CFC1132D	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	1 @ 698	1"	1# - 5#	40
CFC1144D	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	1 @ 829	1"	1# - 5#	40
CFC1156D	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	1 @ 870	1"	1# - 5#	40
CFC1168D	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	1 @ 985	1"	1# - 5#	40
CFC1180D	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	1 @ 990	1"	1# - 5#	40
CFC2192D	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	1 @ 998	1"	1# - 5#	40

*Other MBTU/hr available - consult factory **Gas train size is not the gas supply size

WEIGHT CHART				
MODEL	**Air Curtain (lbs)**	**Duct Transition (lbs)**	**Burner Box (lbs)**	**Filter Box (lbs)**
CFC1060D	390	84	255	150
CFC1072D	435	93	255	150
CFC1084D	480	106	340	200
CFC1096D	600	121	425	250
CFC1108D	680	135	510	300
CFC1120D	750	147	595	350
CFC1132D	795	163	680	400
CFC1144D	835	178	765	450
CFC1156D	940	194	850	500
CFC1168D	1025	203	850	500
CFC1180D	1070	213	850	500
CFC2192D	1190	223	850	500

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Berner reserves the right to alter specifications without prior notice.

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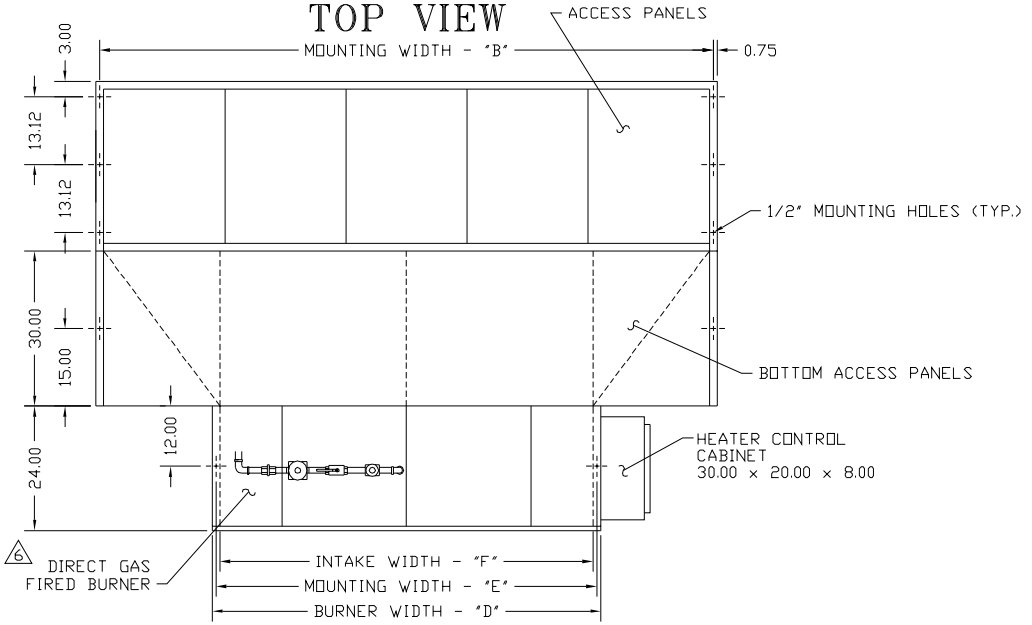
MADE IN U.S.A.

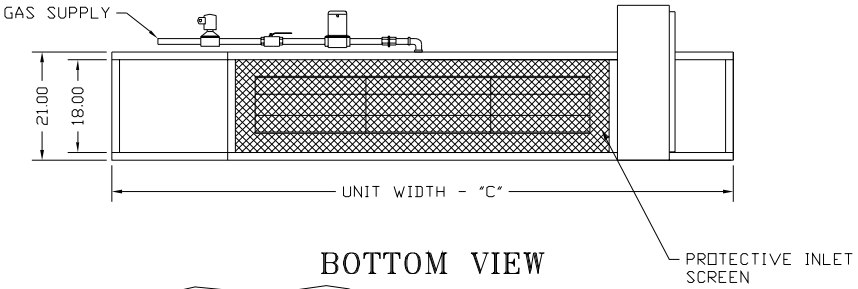
CFC

- DIRECT GAS FIRED HEATER SYSTEM
- DIRECT DRIVE
- FRONT INTAKE

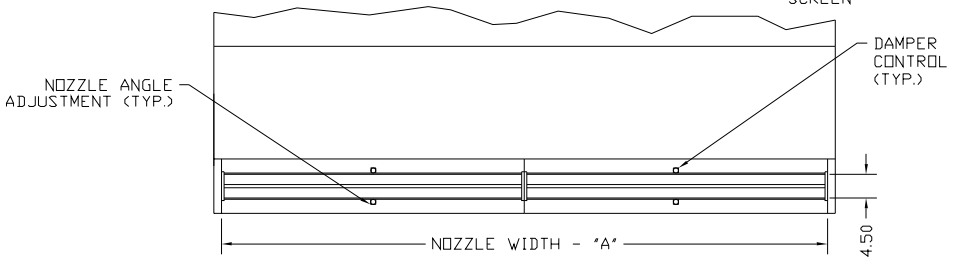
TOP VIEW



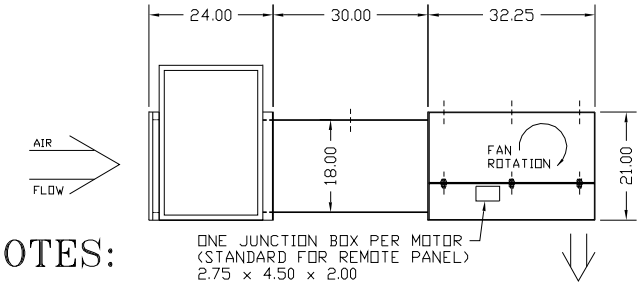
FRONT VIEW



BOTTOM VIEW



END VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathbb{C}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0125	TITLE:	BERNER CFC DIRECT GAS FIRED FRONT INTAKE; DIRECT DRIVE
DATE	29JUN06		
BY	A.Johnston		
REPLACES	7SEPT04		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.Johnston		

CFC

- DIRECT GAS FIRED HEATER SYSTEM
- DIRECT DRIVE
- FRONT INTAKE

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	BURNER WIDTH "D"	MOUNTING WIDTH "E"	INTAKE WIDTH "F"
CFC1060D-F	60.00	61.50	63.00	39.00	37.50	36.00
CFC1072D-F	72.00	73.50	75.00	39.00	37.50	36.00
CFC1084D-F	84.00	85.50	87.00	51.00	49.50	48.00
CFC1096D-F	96.00	97.50	99.00	63.00	61.50	60.00
CFC1108D-F	108.00	109.50	111.00	75.00	73.50	72.00
CFC1120D-F	117.00	118.50	120.00	87.00	85.50	84.00
CFC1132D-F	132.00	133.50	135.00	99.00	97.50	96.00
CFC1144D-F	144.00	145.50	147.00	111.00	109.50	108.00
CFC1156D-F	156.00	157.50	159.00	120.00	118.50	117.00
CFC1168D-F	168.00	169.50	171.00	120.00	118.50	117.00
CFC1180D-F	180.00	181.50	183.00	120.00	118.50	117.00
CFC2192D-F	192.00	193.50	195.00	120.00	118.50	117.00

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0125	TITLE: BERNER CFC DIRECT GAS FIRED FRONT INTAKE; DIRECT DRIVE	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	7SEPT04	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.Johnston		

No.: DS-324Y
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFY
Direct Gas Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES

- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Tapered transition with access panels
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- Steel cabinet with gray finish
- Adjustable profile plates
- ANSI, FM or IRI Gas Train
- Factory mounted wired control cabinet
- Modulating direct fired burner
- Spark ignited intermittent pilot

OPTIONAL FEATURES

- Filter section

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**# of Heater(s) @ Input (mbtu/hr)**	**Gas Train Size****	**Gas Inlet Pressure Range**	**Temp. Rise °F**
CFY1060D	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	1 @ 803	¾"	1# - 5#	100
CFY1072D	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	1 @ 888	1"	1# - 5#	100
CFY1084D	72	6076	13876	9158	3574	8861	4.9	87	1 @ 5	1 @ 961	1"	1# - 5#	100
CFY1096D	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	1 @ 1248	1"	1# - 5#	100
CFY1108D	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	1 @ 1332	1"	1# - 5#	100
CFY1120D	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	1 @ 1694	1½"	1# - 5#	100
CFY1132D	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	1 @ 1730	1½"	1# - 5#	100
CFY1144D	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	1 @ 2072	1½"	1# - 5#	100
CFY1156D	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	1 @ 2268	1½"	1# - 5#	100
CFY1168D	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	1 @ 2463	1½"	1# - 5#	100
CFY1180D	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	1 @ 2475	1½"	1# - 5#	100
CFY1192D	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	1 @ 2496	1½"	1# - 5#	100

*Other MBTU/hr available - consult factory **Gas train size is not the gas supply size

WEIGHT CHART				
MODEL	**Air Curtain (lbs)**	**Duct Transition (lbs)**	**Burner Box (lbs)**	**Filter Box (lbs)**
CFY1060D	415	84	255	150
CFY1072D	460	97	340	200
CFY1084D	505	106	340	200
CFY1096D	625	121	425	250
CFY1108D	775	135	510	300
CFY1120D	810	147	595	350
CFY1132D	830	163	680	400
CFY1144D	870	178	765	450
CFY1156D	1000	194	850	500
CFY1168D	1060	203	850	500
CFY1180D	1105	213	850	500
CFY1192D	1225	223	850	500

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Berner reserves the right to alter specifications without prior notice.

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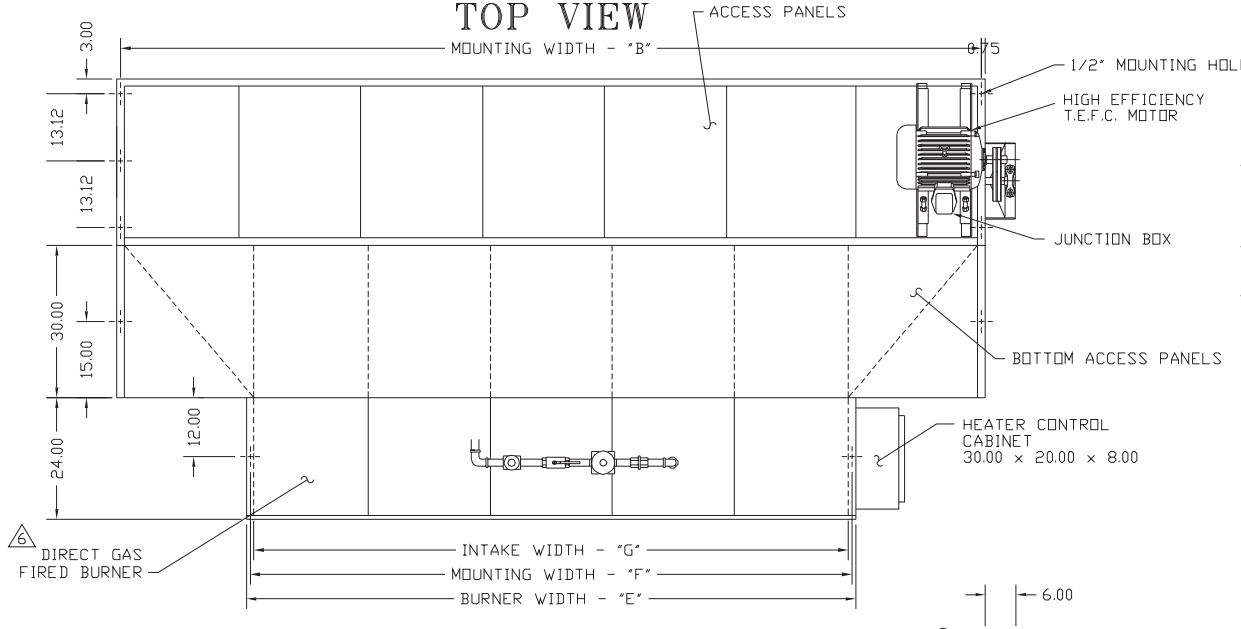
MADE IN U.S.A.

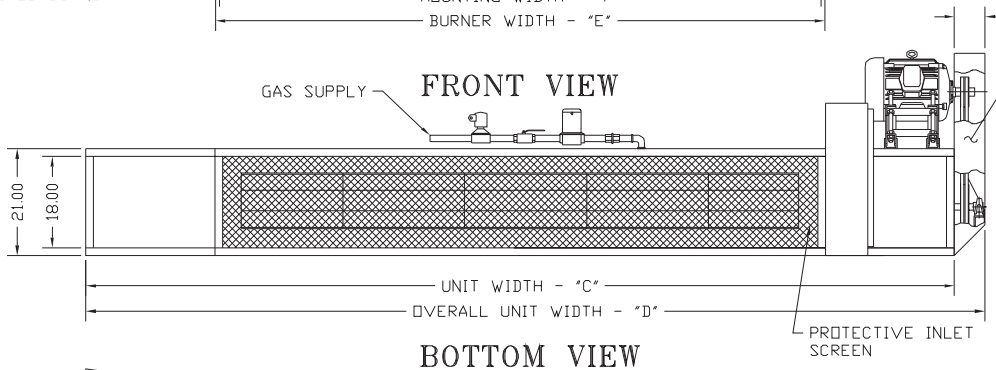
CFY

- DIRECT GAS FIRED HEATER SYSTEM
- BELT DRIVE
- FRONT INTAKE

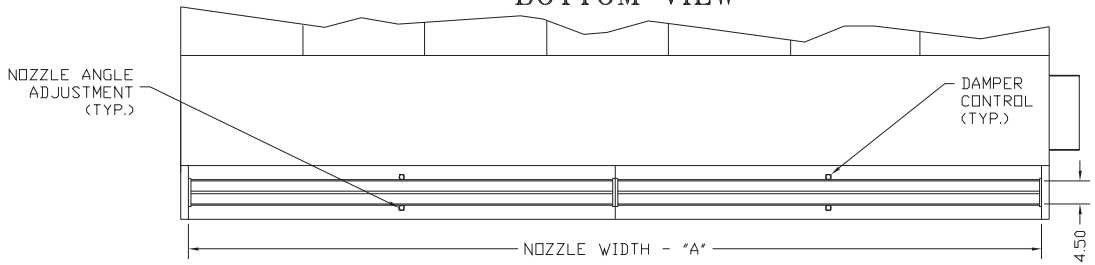
TOP VIEW



FRONT VIEW

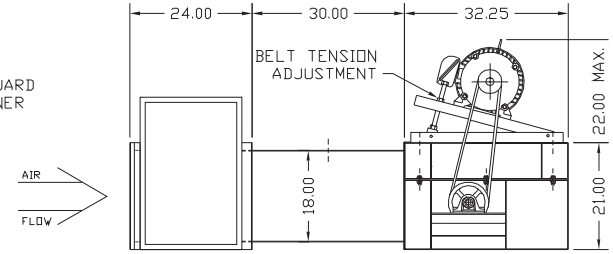


BOTTOM VIEW



END VIEW

(BELT GUARD REMOVED)



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0127	TITLE:	BERNER CFY DIRECT GAS FIRED FRONT INTAKE; BELT DRIVE
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07SEPT04		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.JOHNSTON		

CFY

- DIRECT GAS FIRED HEATER SYSTEM
- BELT DRIVE
- FRONT INTAKE

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"	BURNER WIDTH "E"	MOUNTING WIDTH "F"	INTAKE WIDTH "G"
CFY1060D-F	60.00	61.50	63.00	69.00	39.00	37.50	36.00
CFY1072D-F	72.00	73.50	75.00	81.00	51.00	49.50	48.00
CFY1084D-F	84.00	85.50	87.00	93.00	51.00	49.50	48.00
CFY1096D-F	96.00	97.50	99.00	105.00	63.00	61.50	60.00
CFY1108D-F	108.00	109.50	111.00	117.00	75.00	73.50	72.00
CFY1120D-F	117.00	118.50	120.00	126.00	87.00	85.50	84.00
CFY1132D-F	132.00	133.50	135.00	141.00	99.00	97.50	96.00
CFY1144D-F	144.00	145.50	147.00	153.00	111.00	109.50	108.00
CFY1156D-F	156.00	157.50	159.00	165.00	120.00	118.50	117.00
CFY1168D-F	168.00	169.50	171.00	177.00	120.00	118.50	117.00
CFY1180D-F	180.00	181.50	183.00	189.00	120.00	118.50	117.00
CFY1192D-F	192.00	193.50	195.00	201.00	120.00	118.50	117.00

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATER SEPARATELY FROM UNIT.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	DGFR0127	TITLE: BERNER CFY DIRECT GAS FIRED FRONT INTAKE; BELT DRIVE	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	07SEPT04	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.JOHNSTON		

BERNER™ INTERNATIONAL CORP.

For Door Heights To 20' (environmental separation) and 18' (insect control)

STANDARD FEATURES

- Belt driven T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Five year parts warranty
- Crafted with Pride in the USA

					Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg.Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**M otor(s) @ hp**	**Net Wgt. (lbs)**
CFY1060A	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	390
CFY1072A	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	435
CFY1084A	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	480
CFY1096A	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	589
CFY1108A	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	634
CFY1120A	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	709
CFY1132A	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	754
CFY1144A	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	835
CFY1156A	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	880
CFY1168A	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	1025
CFY1180A	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	1070
CFY1192A	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	1190

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION: *Model CFY1060*			
Distance from Nozzle (ft)	3	10	17
Core Velocity (fpm)	3883	2119	1543

Sound level measured 10' (3m) from the unit in free field:
73 dBA

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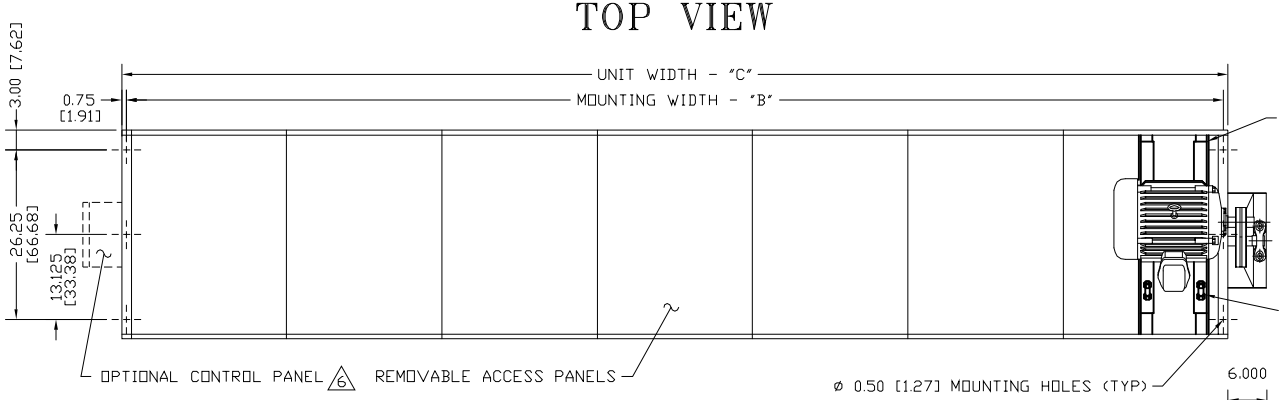
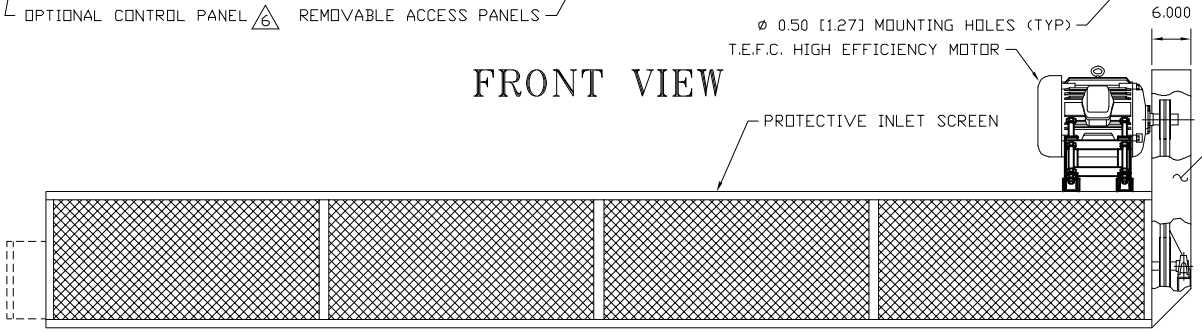
MADE IN U.S.A.

CFY
FRONT INTAKE AMBIENT SYSTEM

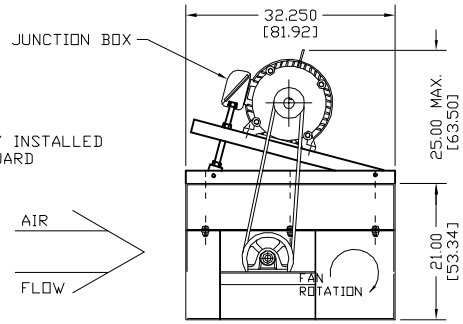
TOP VIEW



FRONT VIEW

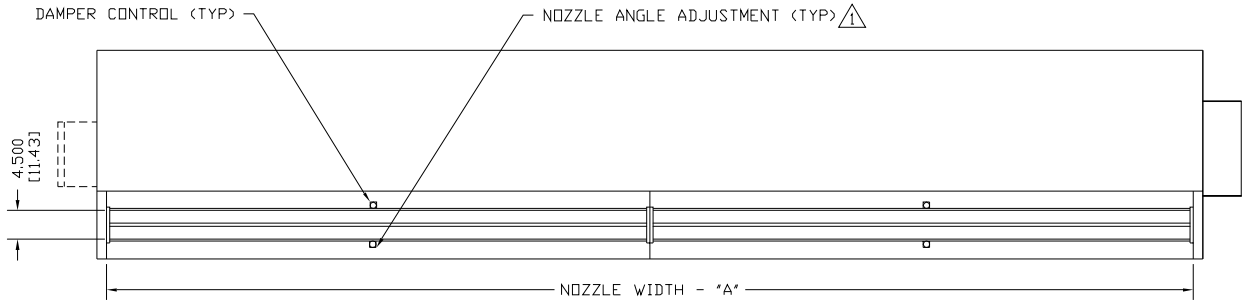


END VIEW
(BELT GUARD REMOVED)



AIR FLOW

BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"
CFY1060A-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]
CFY1072A-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]
CFY1084A-F	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]
CFY1096A-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]
CFY1108A-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]
CFY1120A-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]
CFY1132A-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]
CFY1144A-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]
CFY1156A-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]
CFY1168A-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]
CFY1180A-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]
CFY1192A-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCR3209	TITLE: BERNER MODEL CFY AIR CURTAIN FRONT INTAKE BELT DRIVE AMBIENT SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	05MAY03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-117
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Electric Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- 16 gauge galvanized steel casing
- Factory mounted heating coil(s)
- Power fusing
- Thermally protected-manual & auto reset
- Airflow switch
- Dual relay operation
- Left or right hand mount heater control panel

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Electric Heater Capacity (kW)***	**(mbtu/hr)**	**Temp. Rise (°F)**	**Net Wgt. (lbs)**	**Ship Wgt. (lbs)**
CFC1060E	60	6580	11474	7573	4181	7403	89	1 @ 5	59	201	25	665	770
CFC1072E	72	6549	13114	8655	3852	8186	89	1 @ 5	65	222	25	745	855
CFC1084E	84	6076	13876	9158	3574	8861	87	1 @ 5	71	242	25	825	940
CFC1096E	96	6900	19044	12569	4059	11,500	92	1 @ 7.5	92	314	25	990	1110
CFC1108E	108	6747	20493	13525	3969	12,650	90	1 @ 7.5	102	348	25	1070	1195
CFC1120E	117	7494	24729	16321	4523	15,612	88	1 @ 10	124	423	25	1210	1340
CFC1132E	132	7017	25181	16620	4127	16,080	87	1 @ 10	2 @ 65	444	25	1290	1425
CFC1144E	144	7640	29911	19741	4381	19,100	87	1 @ 15	2 @ 76	519	25	1400	1555
CFC1156E	156	7405	31045	20490	4355	20,055	86	1 @ 15	2 @ 80	546	25	1480	1640
CFC1168E	168	7783	36774	24271	4323	22,700	90	1 @ 15	2 @ 91	618	25	1670	1845
CFC1180E	180	7300	37369	24664	4294	22,814	91	1 @ 15	2 @ 91	618	25	1750	1930
CFC2192E	192	6900	38088	25138	4059	23,000	92	2 @ 7.5	2 @ 92	625	25	1960	2150

Performance data based on high speed.
*Other kW heaters available, consult factory.

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

HEATER kW/AMP DRAWS				
HEATER kW	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**
59	163.8	141.9	71.0	59.2
65	180.4	156.4	78.2	65.3
71	197.1	170.8	85.4	71.3
92	255.4	221.3	110.7	92.4
102	283.1	245.4	122.7	102.4
124	344.2	298.3	149.1	124.5
2 @ 65	2 @ 180	2 @ 156.4	2 @ 78.2	2 @ 65.3
2 @ 76	2 @ 210.9	2 @ 182.9	2 @ 91.4	2 @ 76.3
2 @ 80	2 @ 222.1	2 @ 192.5	2 @ 96.2	2 @ 80.3
2 @ 91	2 @ 251.2	2 @ 217.7	2 @ 108.9	2 @ 91.4
2 @ 92	2 @ 254	2 @ 220.1	2 @ 110.1	2 @ 92.4

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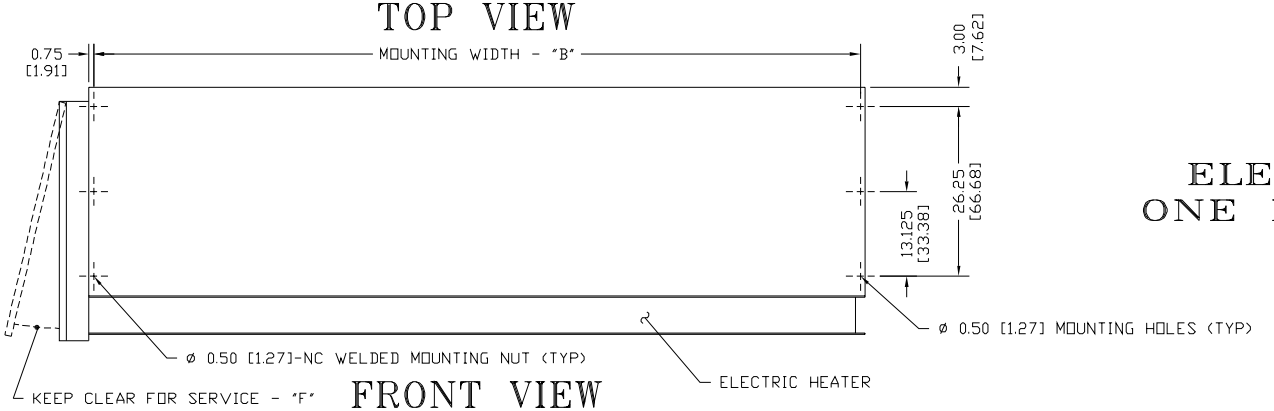
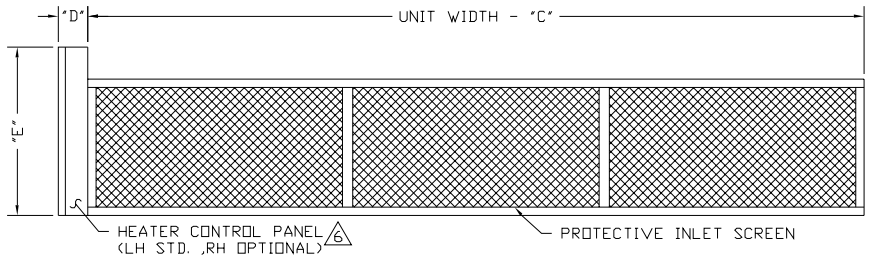
MADE IN U.S.A.

CFC
ELECTRIC HEATED ONE HEATER SYSTEM

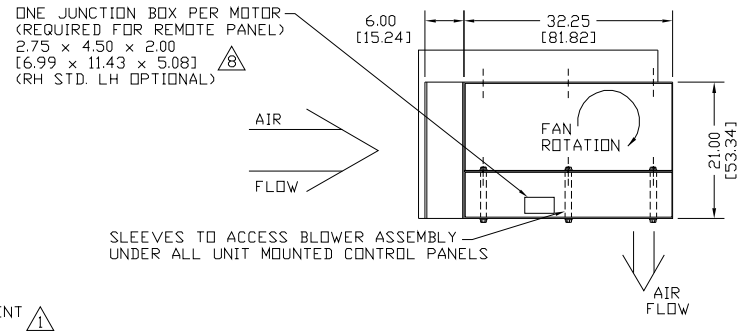
TOP VIEW



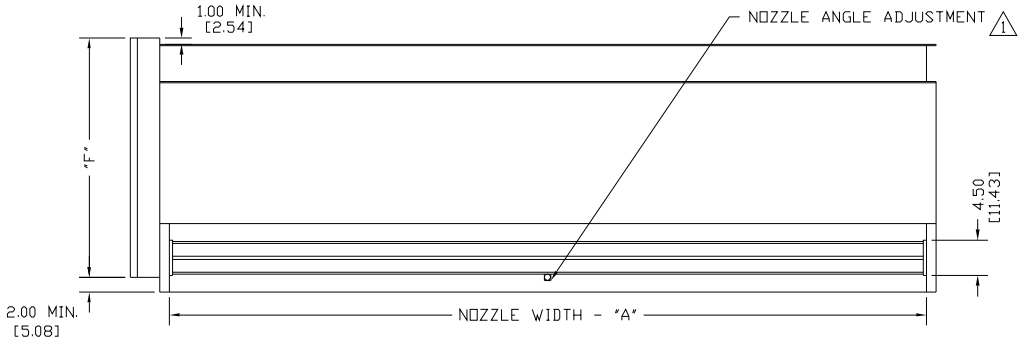
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	HEATER CAPACITY (KW)	HEATER CONTROL PANEL DIMENSIONS BASED ON VOLTAGE 8								
					"D"			"E"			"F"		
					208V	230V	460V	208V	230V	460V	208V	230V	460V
CFC1060E	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	59	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	26.00 [66.04]	26.00 [66.04]	24.00 [60.96]
CFC1072E	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	65	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	26.00 [66.04]	26.00 [66.04]	24.00 [60.96]
CFC1084E	84.00 [213.36]	85.50 [217.17]	87.00 [220.98]	71	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	26.00 [66.04]	24.00 [60.96]
CFC1096E	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	92	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]
CFC1108E	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	102	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]
CFC1120E	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	124	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	34.50 [87.63]	34.50 [87.63]	23.50 [59.69]	33.00 [83.82]	33.00 [83.82]	30.00 [76.20]

NOTES:

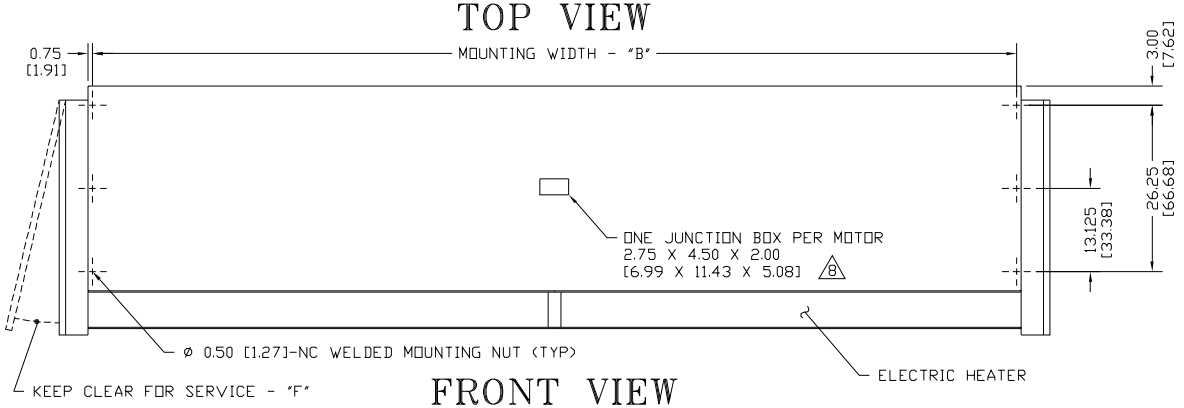
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. HEATER CONTROL PANEL SHOWN LEFT HAND, RIGHT HAND AVAILABLE, PLEASE SPECIFY.
7. HEATER CONTROL PANEL INCLUDES POWER FUSING, AIR FLOW SWITCH, AND CONTROL CIRCUIT TRANSFORMER.
8. TO INCLUDE MOTOR STARTER IN HEATER CONTROL PANEL, ADD 2.50 [6.35] TO "E" AND ADD 2.00 [5.08] TO "F".
9. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCQ3188	TITLE: BERNER MODEL CFC AIR CURTAIN ELECTRIC HEATED - ONE HEATER SYSTEM
DATE	29JUN06	
BY	A.Johnston	
REPLACES	12FEB03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

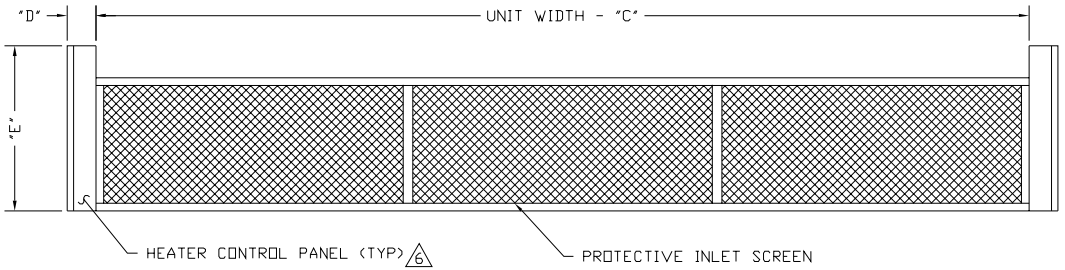
CFC

ELECTRIC HEATED TWO HEATER SYSTEM

TOP VIEW

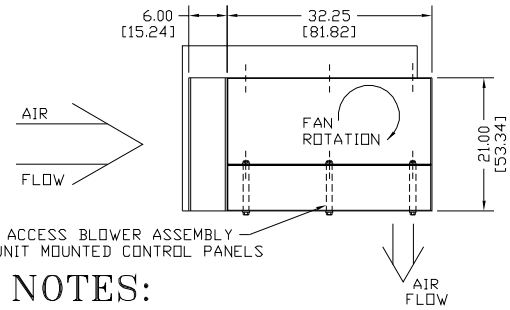


FRONT VIEW

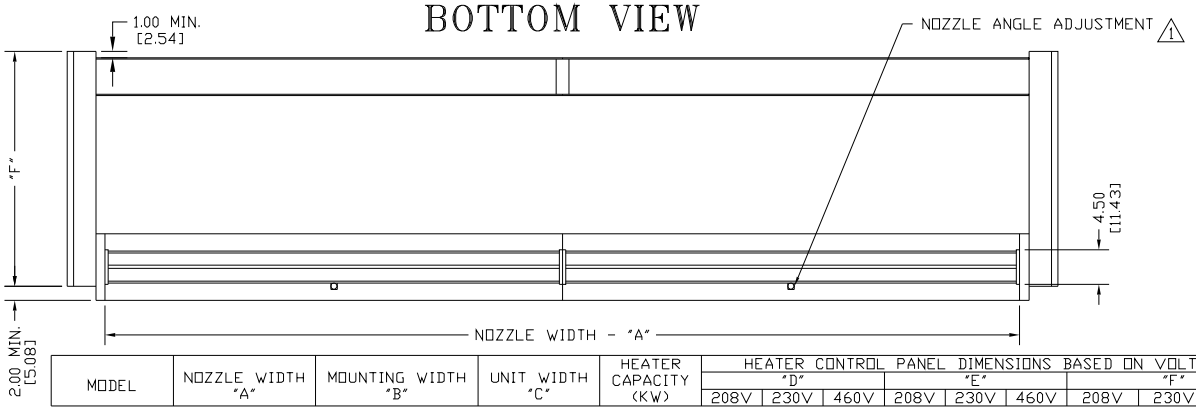


END VIEW

(CONTROL PANEL REMOVED)



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	HEATER CAPACITY (KW)	HEATER CONTROL PANEL DIMENSIONS BASED ON VOLTAGE 8								
					"D"			"E"			"F"		
					208V	230V	460V	208V	230V	460V	208V	230V	460V
CFC1132E	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	2 @ 65	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	31.00 [78.74]	26.00 [66.04]	24.00 [60.96]
CFC1144E	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	2 @ 76	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	31.00 [78.74]	26.00 [66.04]	24.00 [60.96]
CFC1156E	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	2 @ 80	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	26.00 [66.04]	24.00 [60.96]
CFC1168E	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	2 @ 91	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	32.00 [81.28]	24.00 [60.96]
CFC1180E	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	2 @ 91	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	23.50 [59.69]	23.50 [59.69]	23.50 [59.69]	32.00 [81.28]	32.00 [81.28]	24.00 [60.96]
CFC2192E	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	2 @ 92	4.50 [11.43]	4.50 [11.43]	4.50 [11.43]	28.50 [72.39]	23.50 [59.69]	23.50 [59.69]	35.00 [88.90]	32.00 [81.28]	24.00 [60.96]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. HEATER CONTROL PANELS REQUIRE LEFT HAND & RIGHT HAND. MOTOR CONTROL IS REMOTE EXCEPT AS IN 8.
7. HEATER CONTROL PANEL INCLUDES POWER FUSING, AIR FLOW SWITCH, AND CONTROL CIRCUIT TRANSFORMER.
8. TO INCLUDE MOTOR STARTER IN HEATER CONTROL PANEL, ADD 2.50 [6.35] TO "E" AND ADD 2.00 [5.08] TO "F".
9. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCQ3189	TITLE: BERNER	
DATE	29JUN06	MODEL CFC AIR CURTAIN	
BY	A.Johnston	ELECTRIC HEATED - TWO HEATER SYSTEM	
REPLACES	19FEB03	BERNER INTERNATIONAL CORP.	
BY	B. Peffer	NEW CASTLE,PA.	

No.: DS-216
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Steam Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES
- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES
- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @325 psig dry nitrogen

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	**Steam: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFC1060S	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	257	32	485
CFC1072S	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	298	34	540
CFC1084S	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	336	35	595
CFC1096S	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	406	33	735
CFC1108S	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	452	33	790
CFC1120S	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	518	31	905
CFC1132S	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	562	32	960
CFC1144S	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	636	31	1020
CFC1156S	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	680	31	1075
CFC1168S	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	796	33	1235
CFC1180S	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	830	34	1290
CFC2192S	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	864	35	1450

*Steam rating based on 70F entering air and 5 psig steam.
Based on opposite end supply/return

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

Berner reserves the right to alter specifications without prior notice.

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MADE IN U.S.A.

No.: DS-219
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFC
Hot Water Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES

- Direct drive T.E.A.O. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @325 psig dry nitrogen

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Hot Water: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFC1060W	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	256	32	485
CFC1072W	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	298	34	540
CFC1084W	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	338	35	595
CFC1096W	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	419	34	735
CFC1108W	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	466	34	790
CFC1120W	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	533	32	905
CFC1132W	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	586	34	960
CFC1144W	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	666	32	1020
CFC1156W	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	719	33	1075
CFC1168W	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	792	32	1235
CFC1180W	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	835	34	1290
CFC2192W	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	870	35	1450

*Hot water rating based on 70F entering air and 200F entering water temperature.
Based on opposite end supply/return. See PD-118 for same end supply/return.

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

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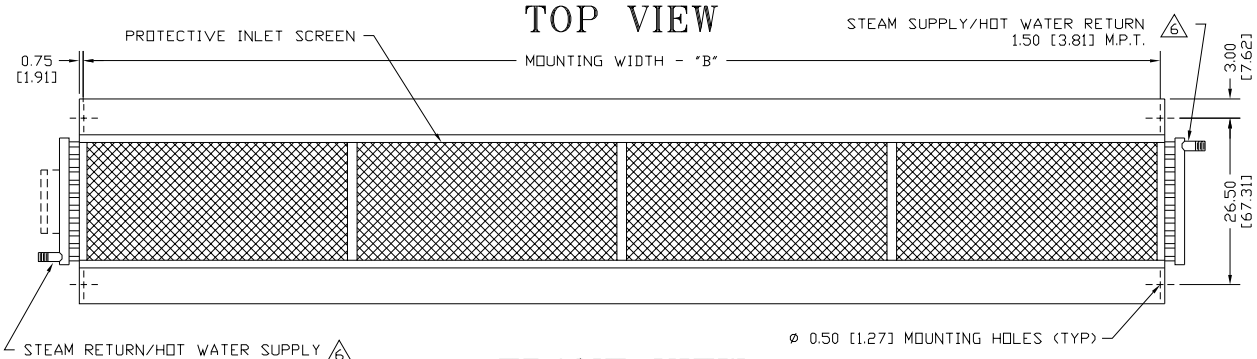
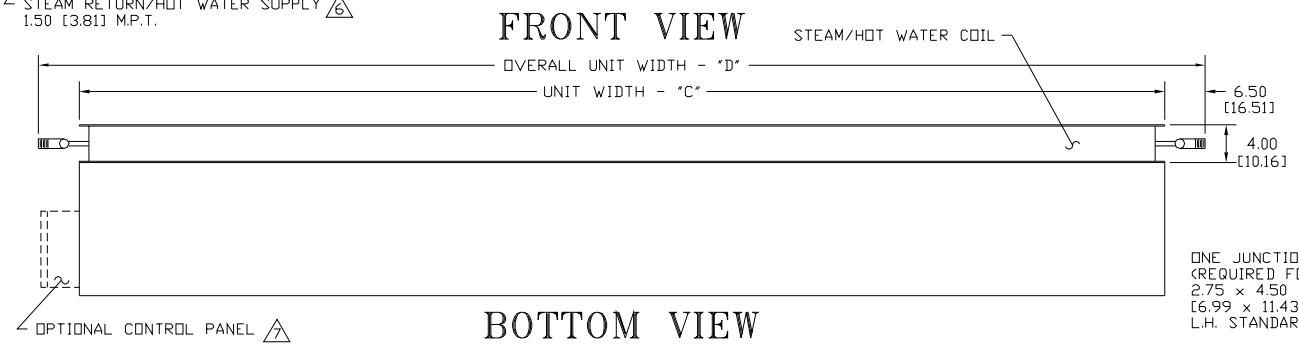
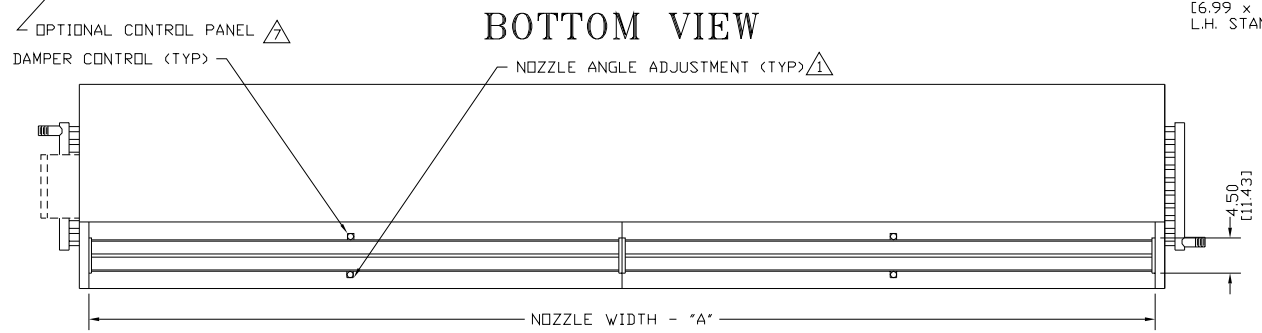
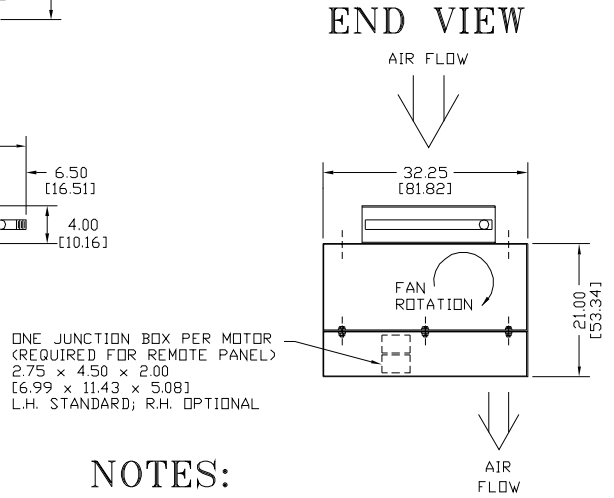
MADE IN U.S.A.

CFC
TOP INTAKE STEAM/HOT WATER OPP. END SUP./RET.









MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFC1060*-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFC1072*-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFC1084*-T	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	100.00 [254.00]
CFC1096*-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFC1108*-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFC1120*-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFC1132*-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFC1144*-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFC1156*-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFC1168*-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFC1180*-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFC2192*-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	208.00 [528.32]

* S- STEAM; W- WATER

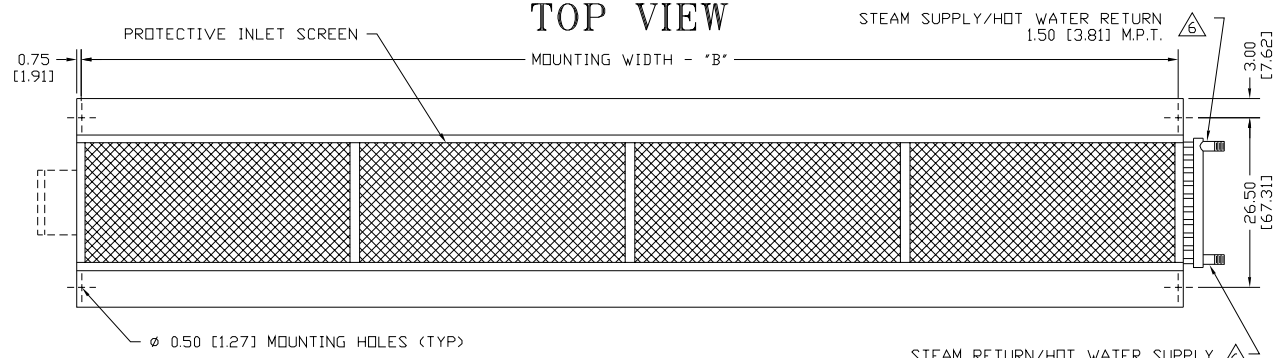
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

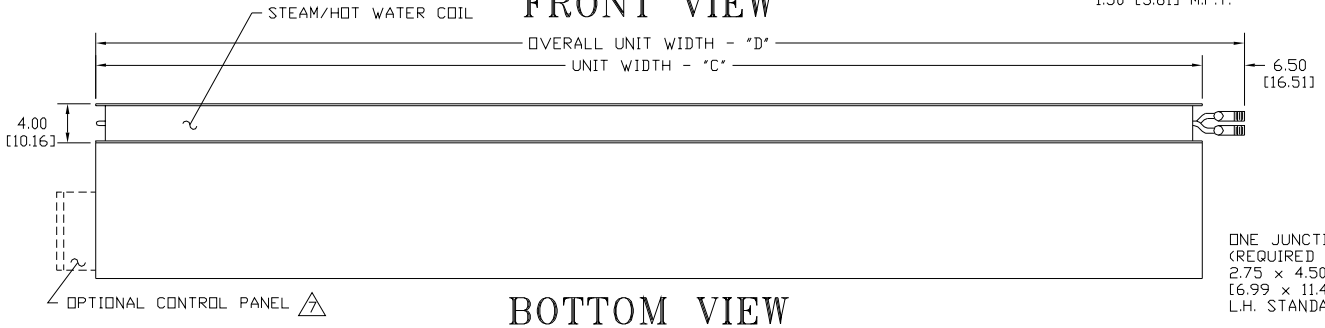
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCQ3184	TITLE: BERNER	
DATE	29JUN06	MODEL CFC AIR CURTAIN	
BY	A.Johnston	TOP INTAKE STEAM/HOT WATER HEATED	
REPLACES	25NOV02	BERNER INTERNATIONAL CORP.	
BY	B. Peffer	NEW CASTLE,PA.	

CFC
TOP INTAKE STEAM/HOT WATER SAME END SUP./RET.

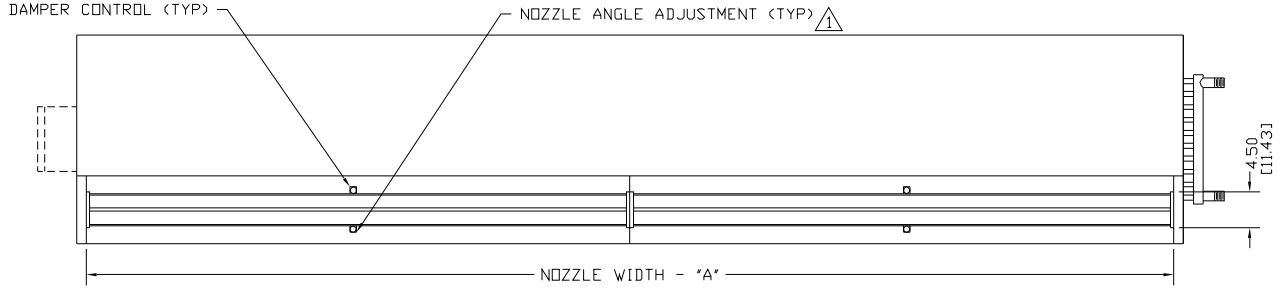
TOP VIEW



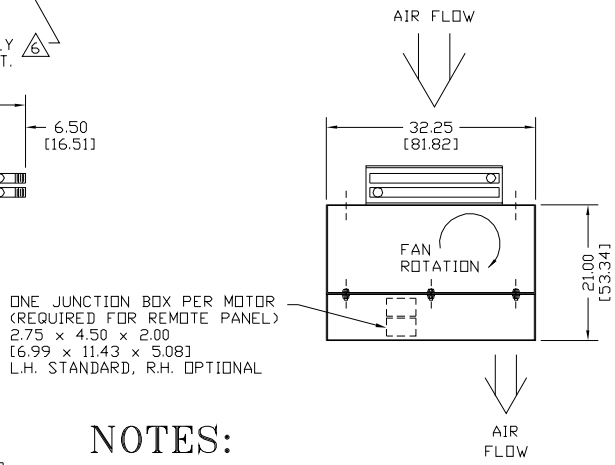
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFC1060*-T	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFC1072*-T	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFC1084*-T	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	93.50 [237.49]
CFC1096*-T	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFC1108*-T	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFC1120*-T	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFC1132*-T	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFC1144*-T	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFC1156*-T	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFC1168*-T	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFC1180*-T	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFC2192*-T	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	201.50 [511.81]

* S- STEAM; W- WATER

NOTES:

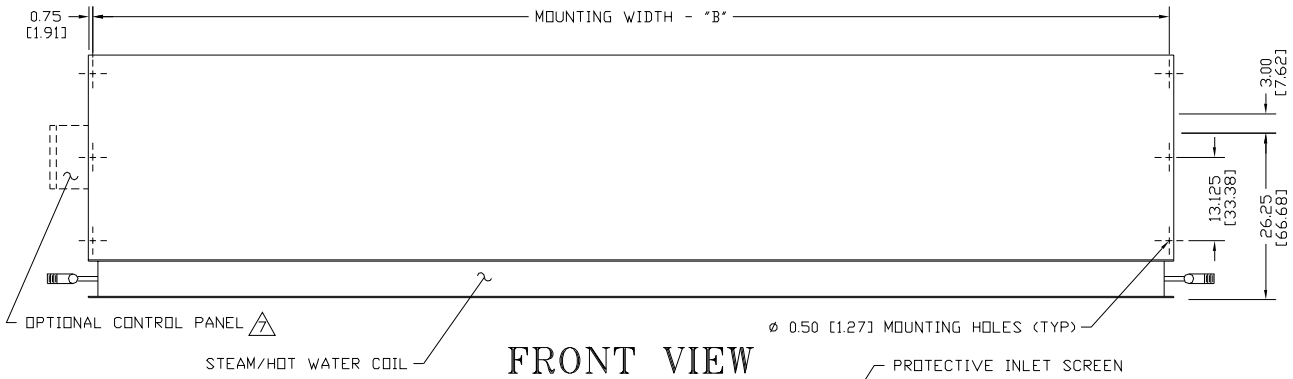
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	CFCQ3185	TITLE: BERNER MODEL CFC AIR CURTAIN TOP INTAKE STEAM/HOT WATER HEATED	
DATE	29JUN06		
BY	A.Johnston		
REPLACES	04APR03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	B. Peffer		

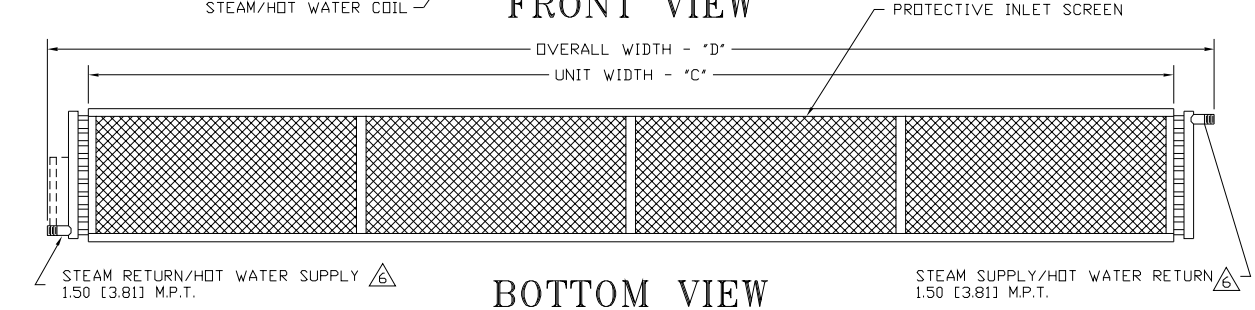
CFC

FRONT INTAKE STEAM/HOT WATER OPP. END SUP./RET.

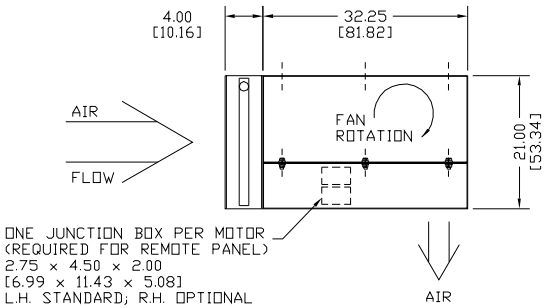
TOP VIEW



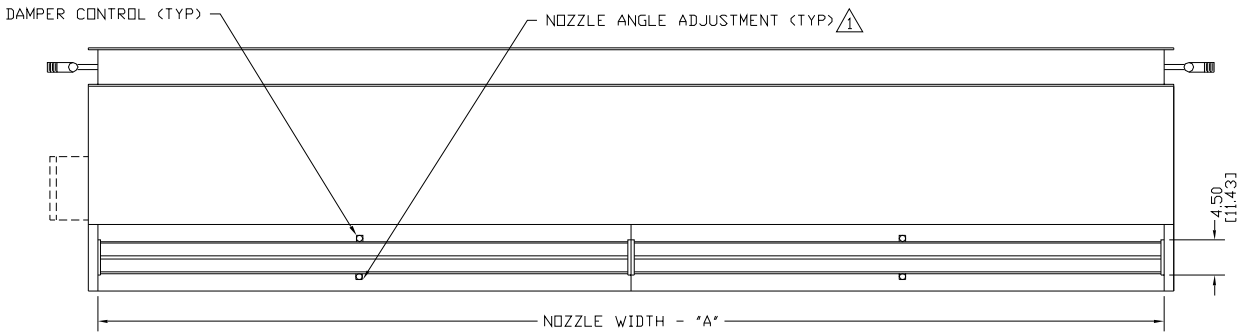
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFC1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	76.00 [193.04]
CFC1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	88.00 [223.52]
CFC1084*-F	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	100.00 [254.00]
CFC1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	112.00 [284.48]
CFC1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	124.00 [314.96]
CFC1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	133.00 [337.82]
CFC1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	148.00 [375.92]
CFC1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	160.00 [406.40]
CFC1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	172.00 [436.88]
CFC1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	184.00 [467.36]
CFC1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	196.00 [497.84]
CFC2192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	208.00 [528.32]

* S- STEAM; W- WATER

NOTES:

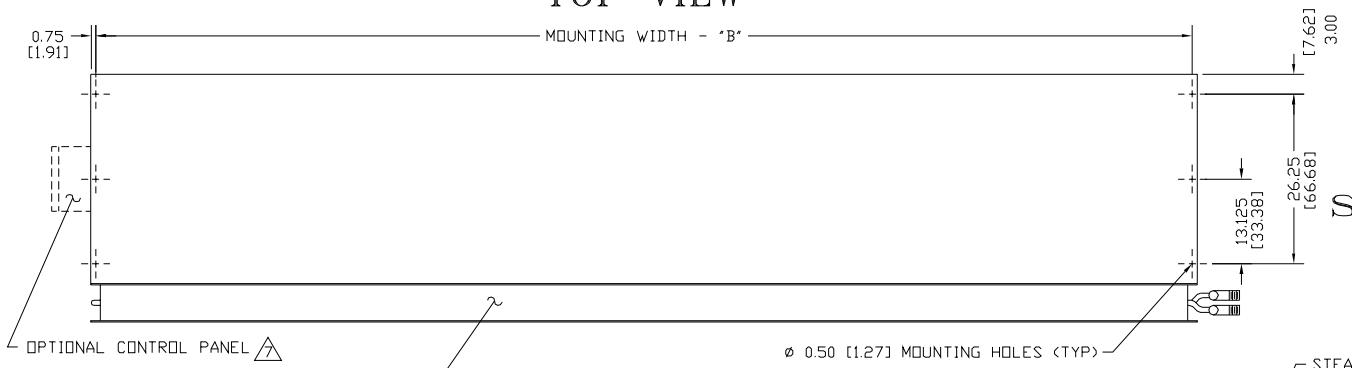
FLOW

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

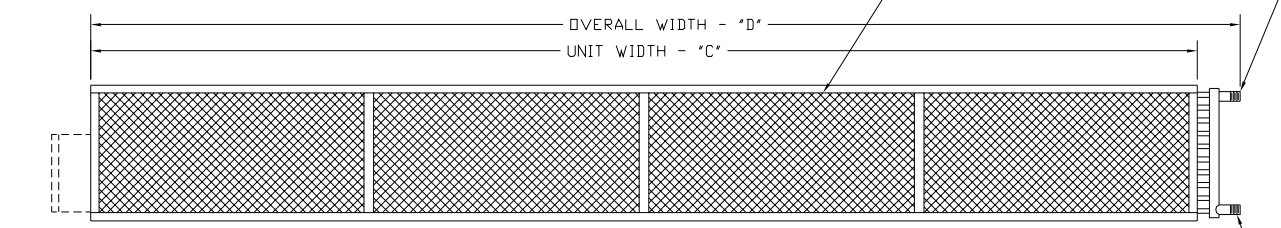
PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCQ3186	TITLE: BERNER MODEL CFC AIR CURTAIN FRONT INTAKE STEAM/HOT WATER HEATED
DATE	29JUN06	
BY	A.Johnston	
REPLACES	04APR03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

CFC
FRONT INTAKE STEAM/HOT WATER SAME END SUP./RET.

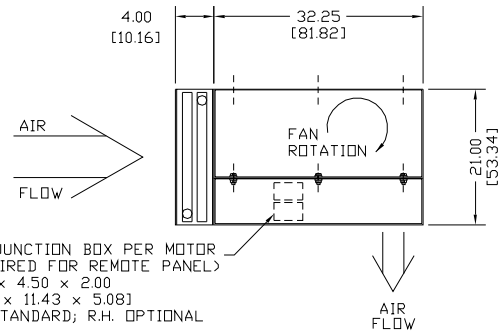
TOP VIEW



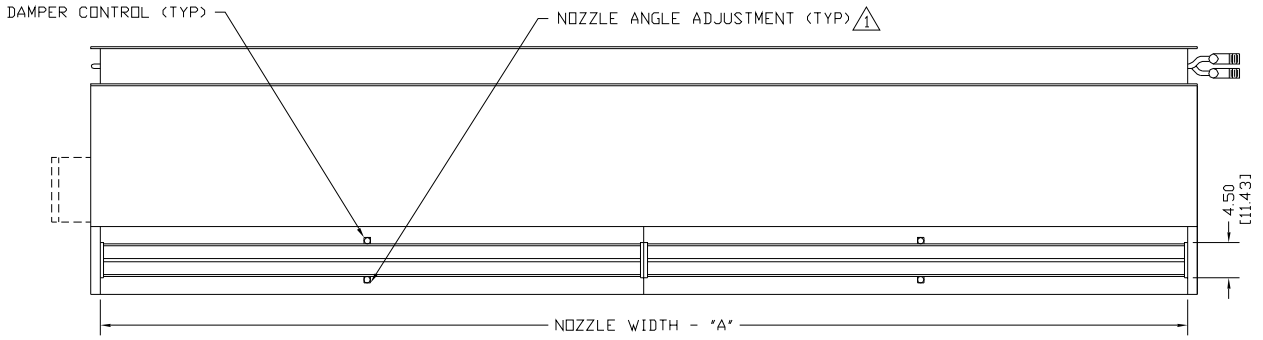
FRONT VIEW



END VIEW



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	OVERALL WIDTH "D"
CFC1060*-F	60.00 [152.40]	61.50 [156.21]	63.00 [160.02]	69.50 [176.53]
CFC1072*-F	72.00 [182.88]	73.50 [186.69]	75.00 [190.50]	81.50 [207.01]
CFC1084*-F	84.00 [213.36]	84.50 [214.63]	87.00 [220.98]	93.50 [237.49]
CFC1096*-F	96.00 [243.84]	97.50 [247.65]	99.00 [251.46]	105.50 [267.97]
CFC1108*-F	108.00 [274.32]	109.50 [278.13]	111.00 [281.94]	117.50 [298.45]
CFC1120*-F	117.00 [297.18]	118.50 [300.99]	120.00 [304.80]	126.50 [321.31]
CFC1132*-F	132.00 [335.28]	133.50 [339.09]	135.00 [342.90]	141.50 [359.41]
CFC1144*-F	144.00 [365.76]	145.50 [369.57]	147.00 [373.38]	153.50 [389.89]
CFC1156*-F	156.00 [396.24]	157.50 [400.05]	159.00 [403.86]	165.50 [420.37]
CFC1168*-F	168.00 [426.72]	169.50 [430.53]	171.00 [434.34]	177.50 [450.85]
CFC1180*-F	180.00 [457.20]	181.50 [461.01]	183.00 [464.82]	189.50 [481.33]
CFC2192*-F	192.00 [487.68]	193.50 [491.49]	195.00 [495.30]	201.50 [511.81]

* S- STEAM; W- WATER

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	CFCQ3187	TITLE: BERNER MODEL CFC AIR CURTAIN FRONT INTAKE STEAM/HOT WATER HEATED
DATE	29JUN06	
BY	A.Johnston	
REPLACES	04APR03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

No.: DS-216Y
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFY
Steam Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES

- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @325 psig dry nitrogen

					Lab Data								
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Steam: Capacity (mbtu/ hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**	**Ship Wgt. (lbs)**
CFY1060S	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	257	32	485	610
CFY1072S	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	298	34	540	670
CFY1084S	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	336	35	638	773
CFY1096S	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	406	33	735	875
CFY1108S	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	452	33	832	977
CFY1120S	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	518	31	905	1060
CFY1132S	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	562	32	983	1145
CFY1144S	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	636	31	1020	1190
CFY1156S	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	680	31	1128	1308
CFY1168S	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	796	33	1235	1425
CFY1180S	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	830	34	1343	1578
CFY1192S	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	864	35	1450	1730

*Steam rating based on 70F entering air and 5 psig steam.
Based on opposite end supply/return

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

No.: DS-219Y
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

CFY
Hot Water Heated
Data Sheet

For Door Heights To 20' (environmental separation)

STANDARD FEATURES

- Belt drive T.E.F.C. motor(s)
- Galvanized steel blower wheels and housing
- Adjustable air discharge nozzle
- Fiberglass air diverters on fan discharge
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- ½" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Hand brazed joints
- Leak tested @325 psig dry nitrogen

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Hot Water: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
CFY1060W	60	6580	11474	7573	4181	7403	4.7	89	1 @ 5	256	32	485
CFY1072W	72	6549	13114	8655	3852	8186	4.9	89	1 @ 5	298	34	540
CFY1084W	84	6076	13876	9158	3574	8861	4.9	87	1 @ 5	338	35	638
CFY1096W	96	6900	19044	12569	4059	11,500	6.8	92	1 @ 7½	419	34	735
CFY1108W	108	6747	20493	13525	3969	12,650	6.9	90	1 @ 7½	466	34	832
CFY1120W	117	7494	24729	16321	4523	15,612	8.7	88	1 @ 10	533	32	905
CFY1132W	132	7017	25181	16620	4127	16,080	8.9	87	1 @ 10	586	34	983
CFY1144W	144	7640	29911	19741	4381	19,100	11.7	87	1 @ 15	666	32	1020
CFY1156W	156	7405	31045	20490	4355	20,055	11.9	86	1 @ 15	719	33	1128
CFY1168W	168	7783	36774	24271	4323	22,700	12.8	90	1 @ 15	792	32	1235
CFY1180W	180	7300	37369	24664	4294	22,814	12.9	91	1 @ 15	835	34	1343
CFY1192W	192	6900	38088	25138	4059	23,000	13.6	92	2 @ 7½	870	35	1450

*Hot water rating based on 70F entering air and 200F entering water temperature.
Based on opposite end supply/return. See PD-118 for same end supply/return.

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
5	17.0	15.8	7.9	5.1	15.4	7.7
7½	23.0	22.0	11.0	7.5	18.0	9.0
10	31.5	30.6	15.3	9.9	25.0	12.5
15	46.0	44.0	22.0	14.7	36.0	18.0

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
73 dBA

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

CFC/CFY STEAM				
Steam Coil (1) Row (10) Fins Per Inch				
Opposite End Supply/Return				
Model		**Temp. Rise °F**	**Capacity mbtu/hr**	**Condensate lbs/hr**
CFC1060S	CFY1060S	36	291	302.7
CFC1072S	CFY1072S	38	336	349.4
CFC1084S	CFY1084S	39	378	393.0
CFC1096S	CFY1096S	37	459	478.0
CFC1108S	CFY1108S	37	511	531.6
CFC1120S	CFY1120S	35	588	612.3
CFC1132S	CFY1132S	36	636	661.9
CFC1144S	CFY1144S	35	722	751.4
CFC1156S	CFY1156S	35	771	802.2
CFC1168S	CFY1168S	34	850	884.2
CFC1180S	CFY1180S	36	883	919.3
CFC2192S	CFY1192S	37	917	954.8

Performance based on 5# Steam

* For other steam pressures - see chart on reverse side.
Berner recommends that maximum Leaving Air Temperature (L.A.T.) never exceed 120°F.
All coils should be supplied by a solenoid valve that energizes coil only when air curtain is on.

CONSTANTS FOR OBTAINING TEMPERATURE RISE AT VARIOUS STEAM PRESSURES & INLET TEMPERATURES

Steam Pressures in Pounds per Square Inch (Gauge)

ENTERING AIR TEMPERATURE °F	0	2	5	10	15	20	30	40	50	60	80	100	125	150	175	200
-30	1.54	1.59	1.64	1.71	1.78	1.84	1.94	2.02	2.10	2.16	2.25	2.34	2.44	2.52	2.59	2.67
-20	1.48	1.52	1.57	1.65	1.72	1.77	1.87	1.95	2.02	2.08	2.19	2.28	2.37	2.46	2.53	2.59
-10	1.41	1.45	1.51	1.59	1.65	1.71	1.81	1.89	1.96	2.02	2.12	2.21	2.31	2.39	2.46	2.53
00	1.35	1.39	1.45	1.54	1.59	1.65	1.74	1.82	1.89	1.96	2.06	2.15	2.25	2.33	2.40	2.47
10	1.28	1.33	1.38	1.46	1.52	1.58	1.68	1.76	1.83	1.89	2.00	2.09	2.18	2.26	2.34	2.40
20	1.22	1.26	1.31	1.40	1.46	1.52	1.62	1.70	1.77	1.83	1.93	2.02	2.12	2.20	2.27	2.34
30	1.16	1.20	1.25	1.33	1.40	1.46	1.55	1.63	1.70	1.76	1.87	1.96	2.05	2.14	2.21	2.28
40	1.09	1.14	1.19	1.27	1.33	1.39	1.49	1.57	1.64	1.70	1.81	1.89	1.99	2.07	2.15	2.22
45	1.06	1.10	1.16	1.24	1.30	1.36	1.46	1.54	1.61	1.67	1.77	1.86	1.96	2.04	2.12	2.18
50	1.03	1.07	1.13	1.21	1.27	1.33	1.42	1.51	1.58	1.64	1.74	1.83	1.93	2.01	2.08	2.15
55	1.00	1.04	1.10	1.17	1.24	1.30	1.39	1.47	1.54	1.61	1.71	1.80	1.89	1.98	2.05	2.12
60	0.97	1.01	1.06	1.14	1.21	1.26	1.36	1.44	1.51	1.57	1.68	1.77	1.86	1.95	2.02	2.09
65	0.93	0.98	1.03	1.11	1.17	1.23	1.33	1.41	1.48	1.54	1.65	1.74	1.83	1.91	1.99	2.05
70	0.90	0.95	**1.00**	1.08	1.14	1.20	1.30	1.38	1.45	1.51	1.62	1.70	1.80	1.88	1.96	2.02
75	0.87	0.91	0.97	1.05	1.11	1.17	1.27	1.35	1.42	1.48	1.59	1.67	1.77	1.85	1.92	1.99
80	0.84	0.88	0.94	1.01	1.08	1.14	1.24	1.32	1.39	1.45	1.55	1.64	1.74	1.82	1.89	1.96
85	0.81	0.85	0.90	0.98	1.05	1.11	1.20	1.28	1.35	1.41	1.52	1.61	1.71	1.79	1.86	1.93
90	0.78	0.82	0.87	0.95	1.02	1.07	1.17	1.25	1.32	1.38	1.49	1.58	1.67	1.76	1.83	1.89
100	0.71	0.75	0.81	0.89	0.95	1.00	1.11	1.19	1.26	1.32	1.42	1.51	1.61	1.69	1.77	1.83
110	0.65	0.69	0.75	0.82	0.89	0.95	1.04	1.12	1.20	1.26	1.36	1.45	1.55	1.63	1.70	1.77
120	0.59	0.63	0.68	0.76	0.83	0.88	0.98	1.06	1.13	1.19	1.30	1.40	1.48	1.56	1.64	1.71
140	0.46	0.50	0.55	0.63	0.70	0.76	0.85	0.93	1.00	1.07	1.17	1.26	1.35	1.44	1.51	1.58
160	0.33	0.37	0.43	0.50	0.57	0.63	0.73	0.81	0.88	0.94	1.04	1.13	1.23	1.31	1.38	1.45
180	0.20	0.24	0.30	0.38	0.44	0.50	0.60	0.68	0.75	0.81	0.91	1.00	1.10	1.18	1.26	1.32
200	0.08	0.12	0.17	0.25	0.32	0.37	0.47	0.55	0.62	0.68	0.79	0.88	0.97	1.06	1.13	1.20

$T = T^{\circ} + \triangle t \times C$ T = Temperature at exit T° = Temperature at intake

$\triangle t$ = Temperature rise from data sheet C = Constant from above table

No.: DS-130
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

EWD
Ambient
Data Sheet

For Door Heights To 30' (environmental separation) and 28' (insect control)

STANDARD FEATURES

- 1750 RPM T.E.F.C. motor (front or top mount)
- Galvanized steel blower wheels and housing
- Belt drive fans
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- 7/8" mounting holes
- Five year parts warranty
- Crafted with Pride in the USA

					AMCA Certified Lab Data					
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Mot or(s) @ hp**	**Net Wgt. (lbs)**
EWD1096A	96	7590	31979	21106	3800	20,240	15.9	79	1 @ 15	960
EWD1108A	108	6429	33174	21895	3215	19,287	14.6	86	1 @ 15	1000
EWD1120A	116	7395	43877	28959	3800	24,650	20.8	89	1 @ 20	1050
EWD1132A	132	6868	43818	28920	3434	25,183	20.4	87	1 @ 20	1150
EWD1144A	144	6429	44232	29193	3215	25,716	19.5	86	1 @ 20	1250
EWD1156A	156	5996	44171	29153	2998	25,983	20.8	85	1 @ 20	1350
EWD1168A	168	7330	58834	38831	3665	34,206	26.4	86	1 @ 25	1450
EWD1180A	180	6948	59056	38977	3474	34,739	26.6	85	1 @ 25	1550
EWD1192A	192	7590	63958	42213	3800	40,480	31.8	79	1 @ 30	1650

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
15	41.0	37.8	18.9	14.7	46.0	23.0
20	54.0	50.0	25.0	19.5	31.0	30.5
25	66.0	59.0	29.5	23.6	78.2	39.1
30	80.4	74.0	36.0	28.6	95.0	47.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

VELOCITY PROJECTION: *Model EWD1096*			
Distance from Nozzle (ft)	3	15	27
Core Velocity (fpm)	5072	2513	1918

amca CERTIFIED RATINGS — AIR PERFORMANCE — AIR MOVEMENT AND CONTROL ASSOCIATION, INC. — PRINTED IN THE UNITED STATES OF AMERICA

Berner International Corporation certifies that the air curtains shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.
Rated data shown is for base (unheated) units.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only.

Sound level measured 10' (3m) from the unit in free field: **85 dBA**

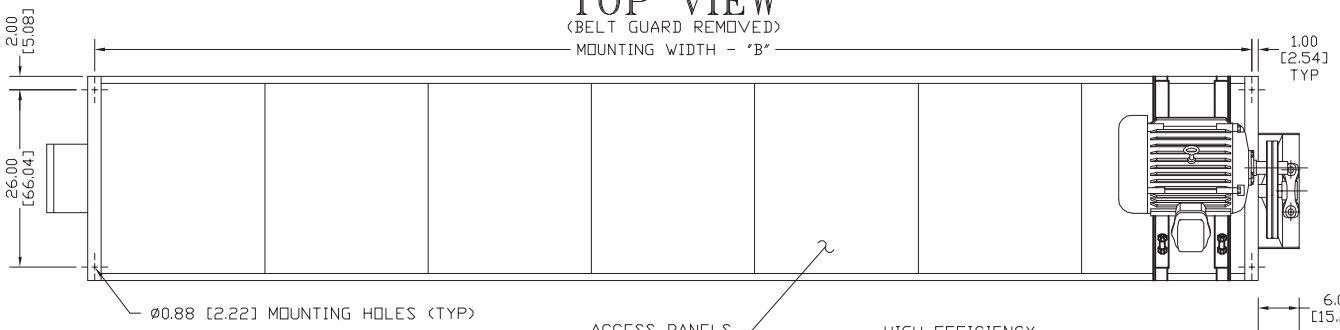
Sound data is not AMCA certified.

Berner reserves the right to alter specifications without prior notice.

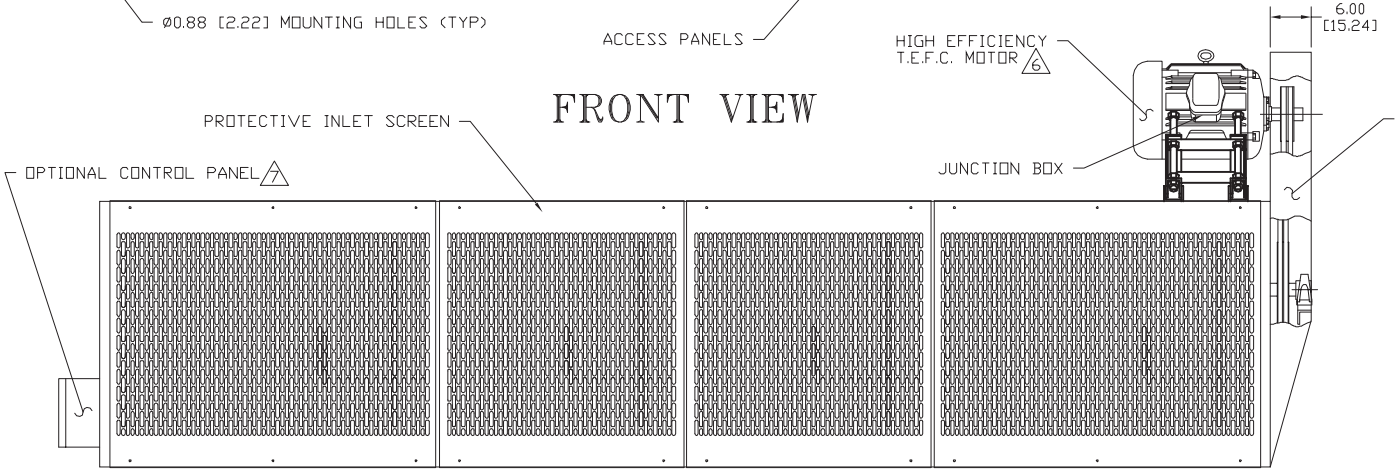
Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

EWD
FRONT INTAKE AMBIENT SYSTEM

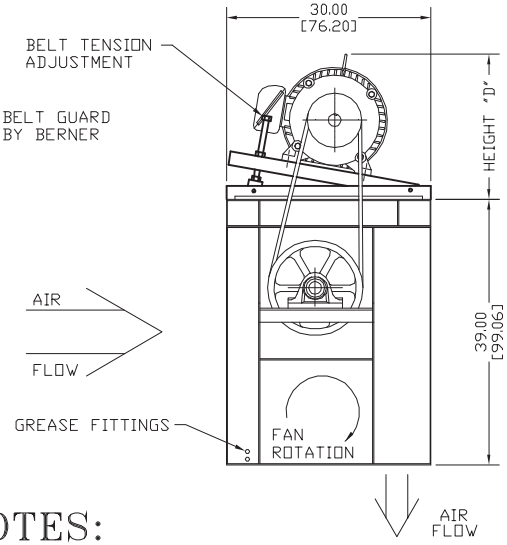
TOP VIEW
(BELT GUARD REMOVED)



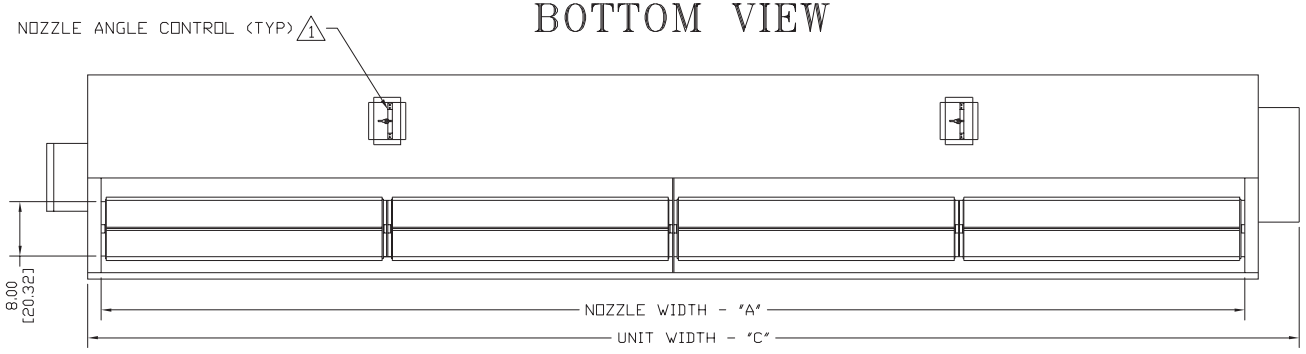
FRONT VIEW



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



NOTES:

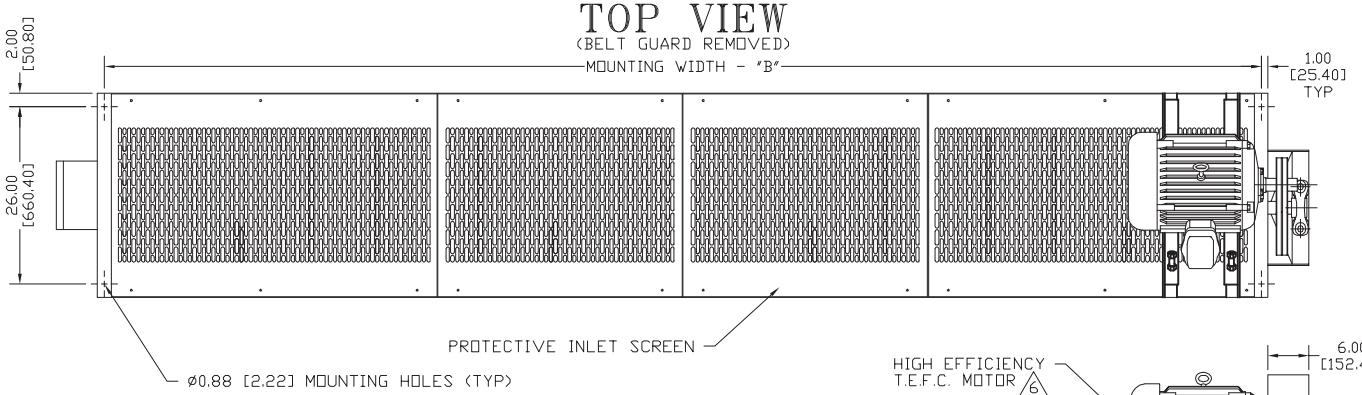
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. MOTOR MOUNT STANDARD AS SHOWN, OPPOSITE AND FRONT MOUNT AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MAX MOTOR HEIGHT "D"
EWD1096A-F	96.00 [243.84]	98.00 [248.92]	106.00 [269.24]	20.50 [52.07]
EWD1108A-F	108.00 [274.32]	110.00 [279.40]	118.00 [299.72]	20.50 [52.07]
EWD1120A-F	116.00 [294.64]	118.00 [299.72]	126.00 [320.04]	20.50 [52.07]
EWD1132A-F	132.00 [335.28]	134.00 [340.36]	142.00 [360.68]	20.50 [52.07]
EWD1144A-F	144.00 [365.76]	146.00 [370.84]	154.00 [391.16]	22.00 [55.88]
EWD1156A-F	156.00 [396.24]	158.00 [401.32]	166.00 [421.64]	22.00 [55.88]
EWD1168A-F	168.00 [426.72]	170.00 [431.80]	178.00 [452.12]	22.00 [55.88]
EWD1180A-F	180.00 [457.20]	182.00 [462.28]	190.00 [482.60]	22.00 [55.88]
EWD1192A-F	192.00 [487.68]	194.00 [492.76]	202.00 [513.08]	25.00 [63.50]

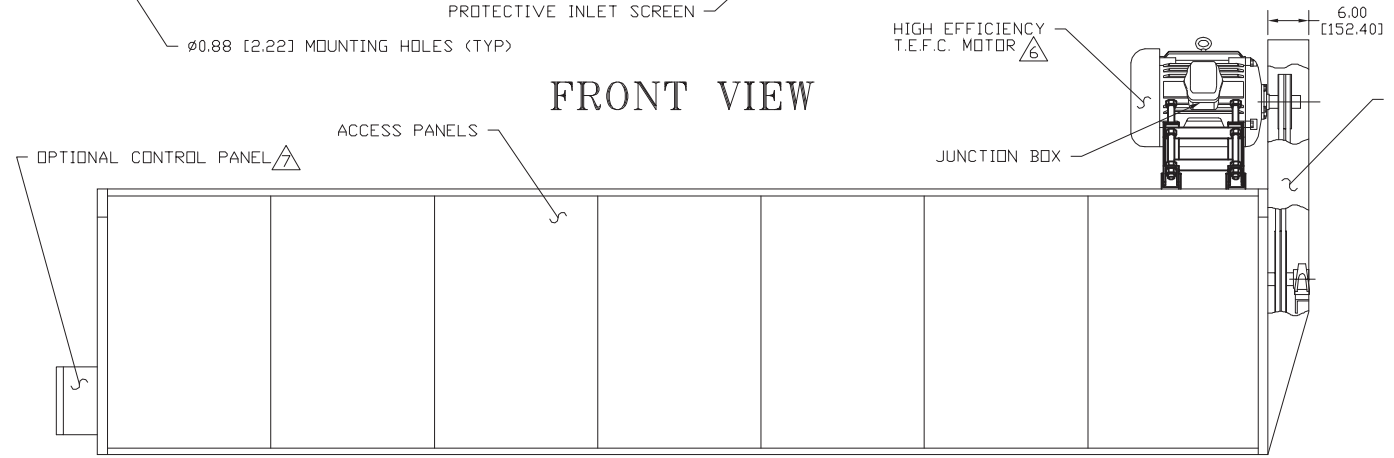
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDR2578	TITLE: BERNER MODEL EWD AIR CURTAIN FRONT INTAKE AMBIENT SYSTEM	
DATE	11MARCH11		
BY	A.JOHNSTON		
REPLACES	15JUL03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	
BY	A.JOHNSTON		

EWD
TOP INTAKE AMBIENT SYSTEM

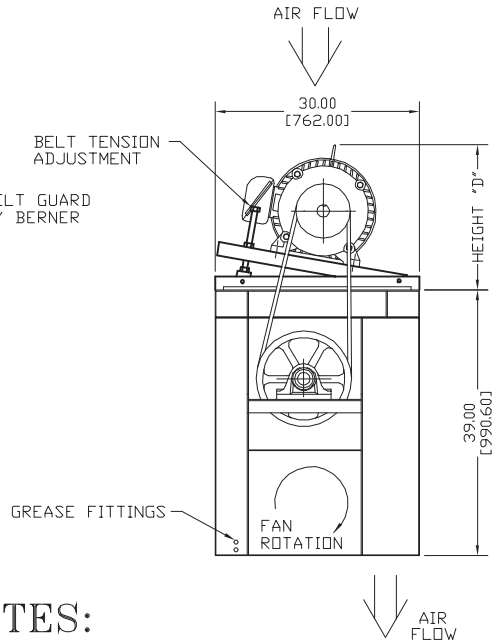
TOP VIEW
(BELT GUARD REMOVED)



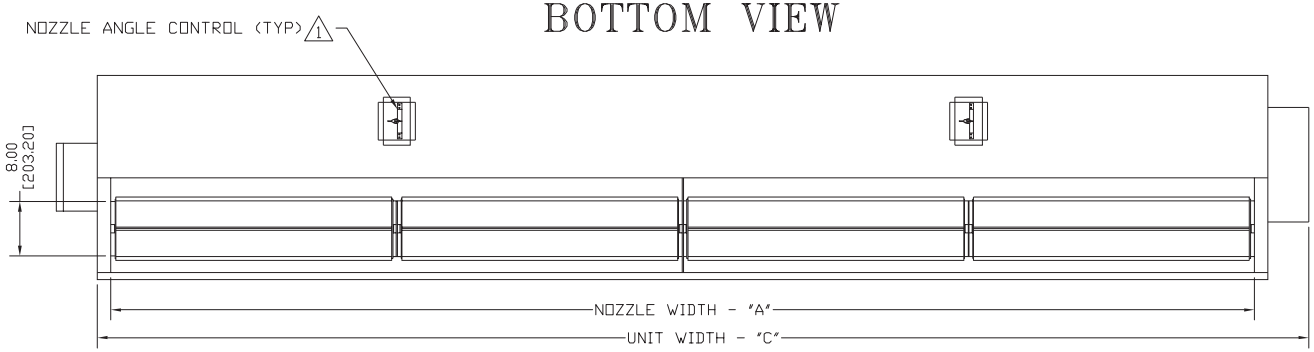
FRONT VIEW



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MAX MOTOR HEIGHT "D"
EWD1096A-T	96.00 [243.84]	98.00 [248.92]	106.00 [269.24]	20.50 [52.07]
EWD1108A-T	108.00 [274.32]	110.00 [279.40]	118.00 [299.72]	20.50 [52.07]
EWD1120A-T	116.00 [294.64]	118.00 [299.72]	126.00 [320.04]	20.50 [52.07]
EWD1132A-T	132.00 [335.28]	134.00 [340.36]	142.00 [360.68]	20.50 [52.07]
EWD1144A-T	144.00 [365.76]	146.00 [370.84]	154.00 [391.16]	22.00 [55.88]
EWD1156A-T	156.00 [396.24]	158.00 [401.32]	166.00 [421.64]	22.00 [55.88]
EWD1168A-T	168.00 [426.72]	170.00 [431.80]	178.00 [452.12]	22.00 [55.88]
EWD1180A-T	180.00 [457.20]	182.00 [462.28]	190.00 [482.60]	22.00 [55.88]
EWD1192A-T	192.00 [487.68]	194.00 [492.76]	202.00 [513.08]	25.00 [63.50]

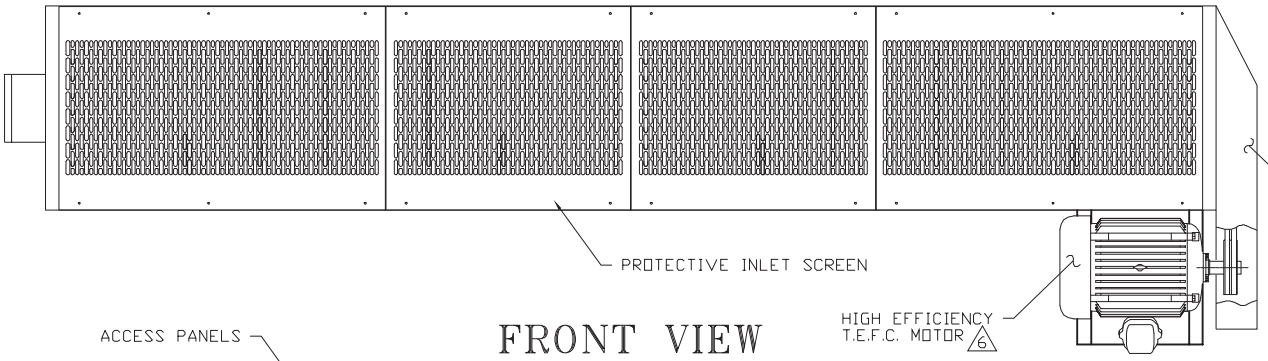
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. MOTOR MOUNT LOCATION AS SHOWN, OPPOSITE AND FRONT MOUNTING LOCATION AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.
8. DIMENSIONS IN INCHES [CENTIMETERS].

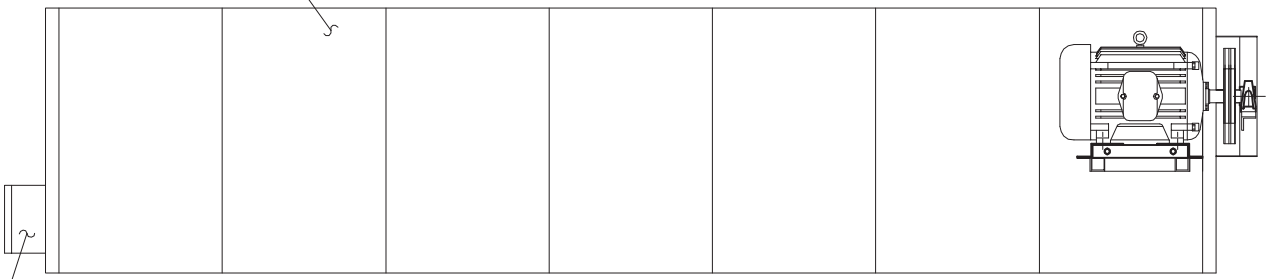
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			REV. A
DWG. NO.	EWDR2580	TITLE: BERNER	
DATE	11MARCH11	MODEL EWD AIR CURTAIN	
BY	A.JOHNSTON	TOP INTAKE AMBIENT SYSTEM	
REPLACES	16JUL03	BERNER INTERNATIONAL CORP.	
BY	A.JOHNSTON	NEW CASTLE,PA.	

EWD
TOP INTAKE AMBIENT FRONT MOTOR MOUNT

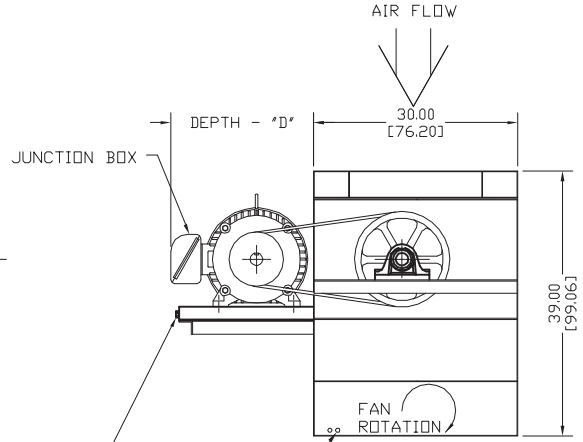
TOP VIEW



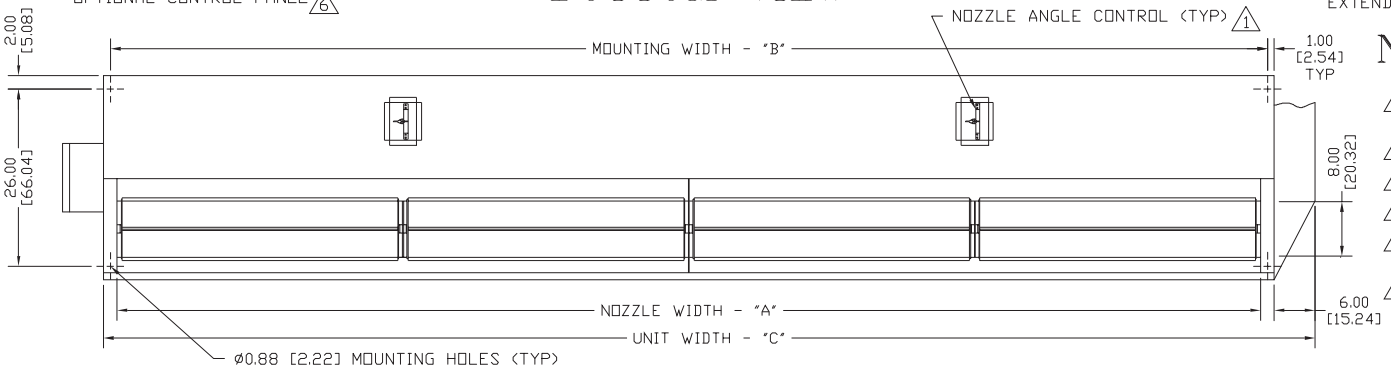
FRONT VIEW
(BELT GUARD REMOVED)



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathcal{L}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	MAX MOTOR HEIGHT "D"
EWD1096A-T	96.00 [243.84]	98.00 [248.92]	106.00 [269.24]	20.50 [52.07]
EWD1108A-T	108.00 [274.32]	110.00 [279.40]	118.00 [299.72]	20.50 [52.07]
EWD1120S-T	116.00 [294.64]	118.00 [299.72]	126.00 [320.04]	20.50 [52.07]
EWD1132S-T	132.00 [335.28]	134.00 [340.36]	142.00 [360.68]	20.50 [52.07]
EWD1144S-T	144.00 [365.76]	146.00 [370.84]	154.00 [391.16]	24.50 [62.23]
EWD1156S-T	156.00 [396.24]	158.00 [401.32]	166.00 [421.64]	24.50 [62.23]
EWD1168S-T	168.00 [426.72]	170.00 [431.80]	178.00 [452.12]	24.50 [62.23]
EWD1180S-T	180.00 [457.20]	182.00 [462.28]	190.00 [482.60]	27.50 [69.85]
EWD1192S-T	192.00 [487.68]	194.00 [492.76]	202.00 [513.08]	27.50 [69.85]

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDR2581	TITLE: BERNER	
DATE	11MARCH11	MODEL EWD AIR CURTAIN	
BY	A.JOHNSTON	TOP INTAKE AMBIENT	
REPLACES	16JUL03	BERNER INTERNATIONAL CORP.	
BY	A.JOHNSTON	NEW CASTLE,PA.	

No.: DS-131
Date: October, 2011

BERNER INTERNATIONAL CORP.

EWD
Steam Heated
Data Sheet

For Door Heights To 30' (environmental separation)

STANDARD FEATURES

- 1750 RPM T.E.F.C. motor (front or top mount)
- Galvanized steel blower wheels and housing
- Belt drive fans
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- 7/8" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

COIL FEATURES

- 16 gauge galvanized steel casing
- 5/8" O.D. seamless copper tubes
- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Steam: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
EWD1096S	96	7590	31979	21106	3800	20,240	15.9	79	1 @ 15	837	38	1112
EWD1108S	108	6429	33174	21895	3215	19,287	14.6	86	1 @ 15	903	39	1232
EWD1120S	116	7395	43877	28959	3800	24,650	20.8	89	1 @ 20	1012	38	1300
EWD1132S	132	6868	43818	28920	3434	25,183	20.4	87	1 @ 20	1089	40	1421
EWD1144S	144	6429	44232	29193	3215	25,716	19.5	86	1 @ 20	1148	41	1541
EWD1156S	156	5996	44171	29153	2998	25,983	20.8	85	1 @ 20	1198	42	1600
EWD1168S	168	7330	58834	38831	3665	34,206	26.4	86	1 @ 25	1415	38	1782
EWD1180S	180	6948	59056	38977	3474	34,739	26.6	85	1 @ 25	1472	39	1950
EWD1192S	192	7590	63958	42213	3800	40,480	31.8	79	1 @ 30	1627	37	2023

*Steam rating based on 70F entering air and 5 psig steam.

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
15	41.0	37.8	18.9	14.7	46.0	23.0
20	54.0	50.0	25.0	19.5	31.0	30.5
25	66.0	59.0	29.5	23.6	78.2	39.1
30	80.4	74.0	36.0	28.6	95.0	47.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
85 dBA

Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

BERNER™ INTERNATIONAL CORP.

For Door Heights To 30' (environmental separation)

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- Heavy wall seamless copper headers
- Aluminum fins
- Leak tested @325 psig dry nitrogen
- 2" MPT supply and return

					Lab Data							
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor (s) @ hp**	**Hot Water: Capacity (mbtu/hr)***	**Temp. Rise (°F)**	**Net Wgt. (lbs)**
EWD1096W	96	7590	31979	21106	3800	20,240	15.9	79	1 @ 15	780	35	1112
EWD1108W	108	6429	33174	21895	3215	19,287	14.6	86	1 @ 15	856	37	1232
EWD1120W	116	7395	43877	28959	3800	24,650	20.8	89	1 @ 20	975	36	1300
EWD1132W	132	6868	43818	28920	3434	25,183	20.4	87	1 @ 20	989	36	1421
EWD1144W	144	6429	44232	29193	3215	25,716	19.5	86	1 @ 20	1035	37	1541
EWD1156W	156	5996	44171	29153	2998	25,983	20.8	85	1 @ 20	1035	37	1600
EWD1168W	168	7330	58834	38831	3665	34,206	26.4	86	1 @ 25	1403	38	1782
EWD1180W	180	6948	59056	38977	3474	34,739	26.6	85	1 @ 25	1376	36	1950
EWD1192W	192	7590	63958	42213	3800	40,480	31.8	79	1 @ 30	1632	37	2023

*Hot water rating based on 70F entering air and 200F entering water temperature.
This chart is based on opposite end supply/return. See PD 131 for same end supply/return.

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
15	41.0	37.8	18.9	14.7	46.0	23.0
20	54.0	50.0	25.0	19.5	31.0	30.5
25	66.0	59.0	29.5	23.6	78.2	39.1
30	80.4	74.0	36.0	28.6	95.0	47.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
85 dBA

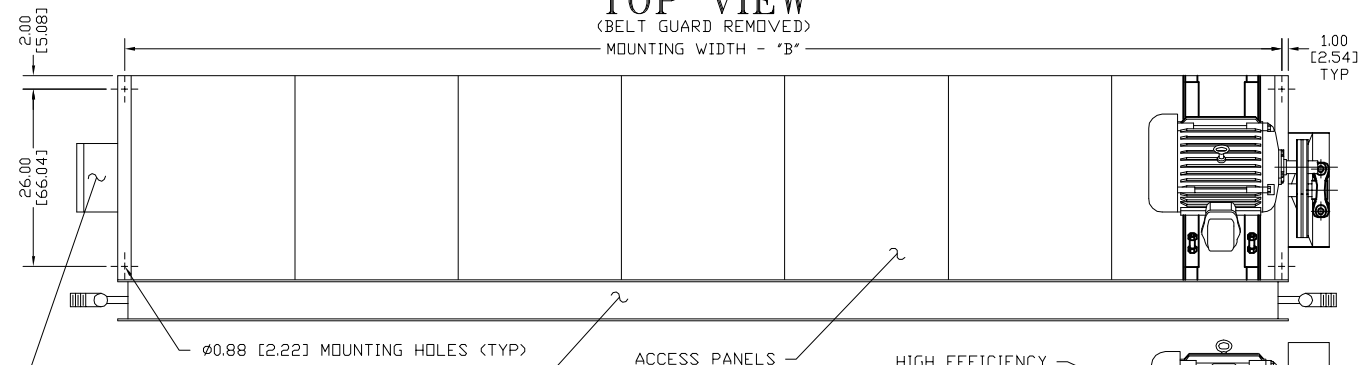
Berner reserves the right to alter specifications without prior notice.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com
MADE IN U.S.A.

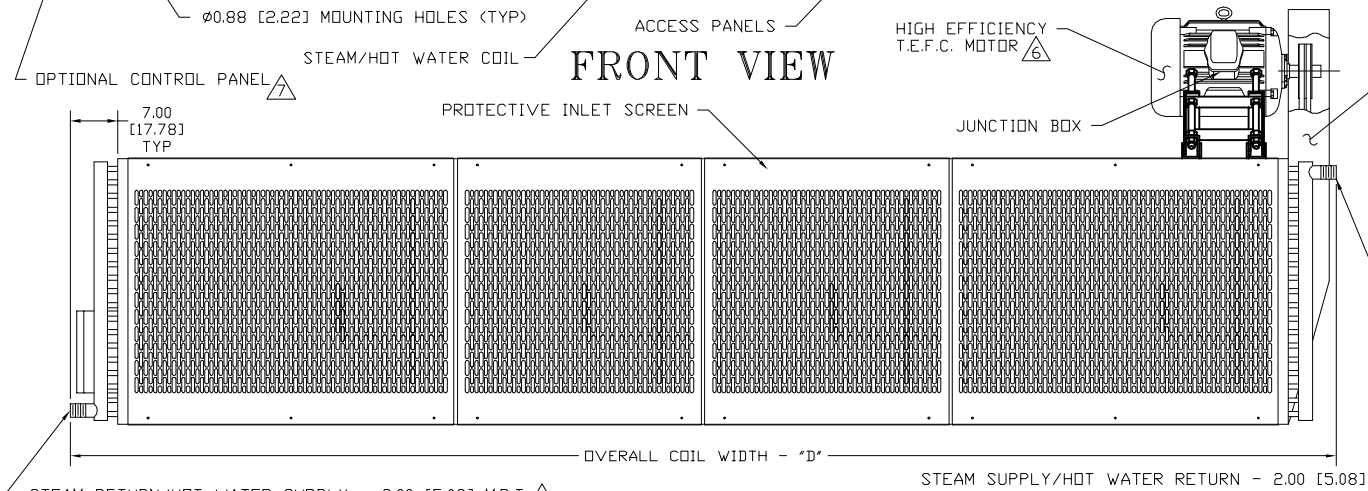
EWD

FRONT INTAKE STEAM/HOT WATER OPP. END SUP./RET. TOP MOTOR MOUNT.

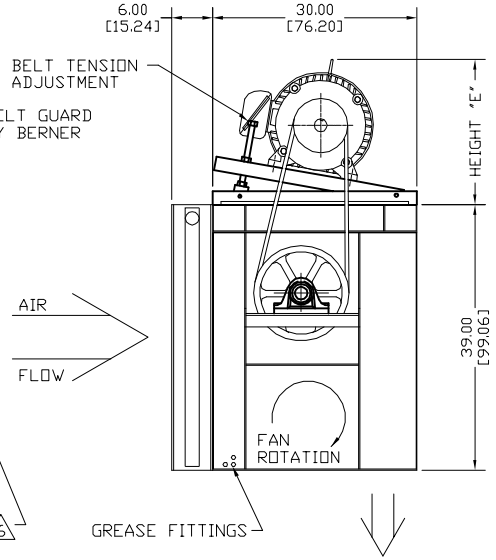
TOP VIEW
(BELT GUARD REMOVED)



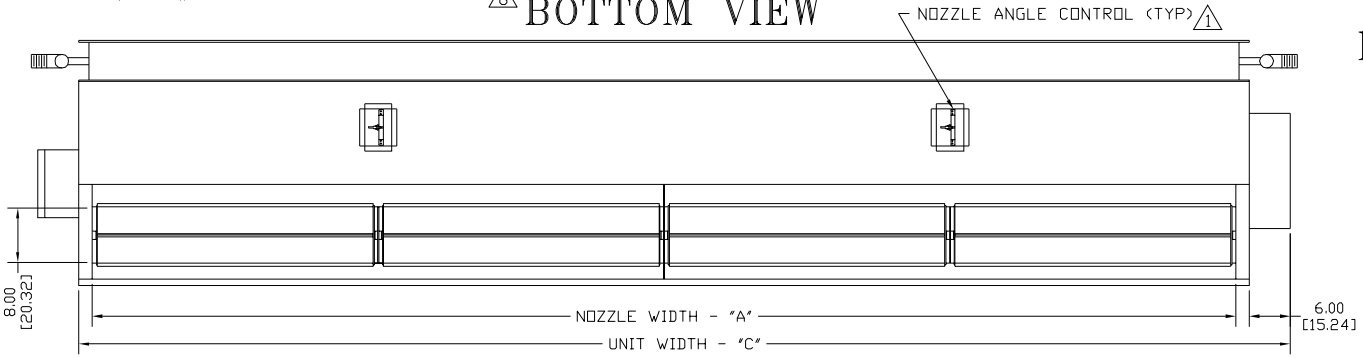
FRONT VIEW



END VIEW
(BELT GUARD REMOVED)



BOTTOM VIEW



NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. MOTOR AND COIL CONNECTIONS AS SHOWN, OPPOSITE AND SAME END CONNECTIONS AVAILABLE, PLEASE SPECIFY.
7. OPTIONAL CONTROL PANEL AVAILABLE: LEFT HAND MOUNT, RIGHT HAND MOUNT, OR REMOTE. PLEASE SPECIFY.

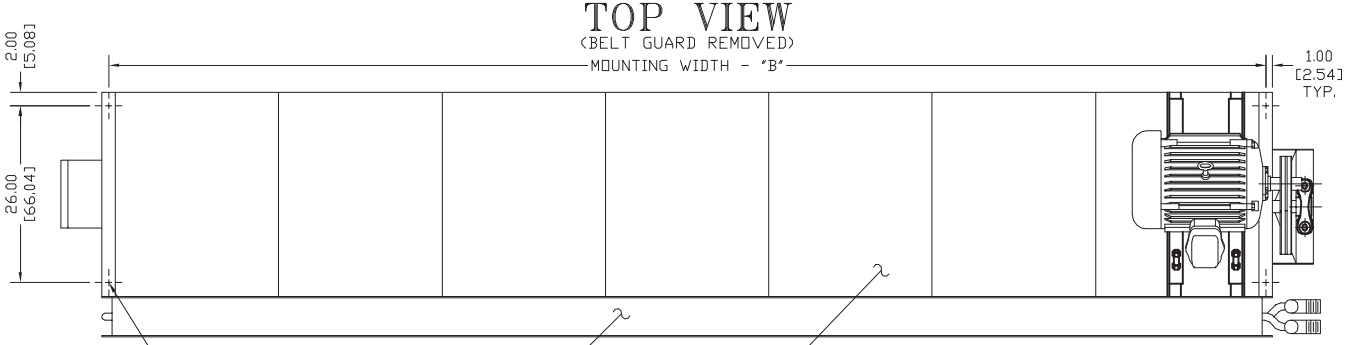
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	COIL WIDTH "D"	MAX MOTOR HEIGHT "E"
EWD1096S-F	96.00 [243.84]	98.00 [248.92]	106.00 [269.24]	114.00 [289.56]	20.50 [52.07]
EWD1108S-F	108.00 [274.32]	110.00 [279.40]	118.00 [299.72]	126.00 [320.04]	20.50 [52.07]
EWD1120S-F	116.00 [294.64]	118.00 [299.72]	126.00 [320.04]	134.00 [340.36]	20.50 [52.07]
EWD1132S-F	132.00 [335.28]	134.00 [340.36]	142.00 [360.68]	150.00 [381.00]	20.50 [52.07]
EWD1144S-F	144.00 [365.76]	146.00 [370.84]	154.00 [391.16]	162.00 [411.48]	22.00 [55.88]
EWD1156S-F	156.00 [396.24]	158.00 [401.32]	166.00 [421.64]	174.00 [441.96]	22.00 [55.88]
EWD1168S-F	168.00 [426.72]	170.00 [431.80]	178.00 [452.12]	186.00 [472.44]	22.00 [55.88]
EWD1180S-F	180.00 [457.20]	182.00 [462.28]	190.00 [482.60]	198.00 [502.92]	22.00 [55.88]
EWD1192S-F	192.00 [487.68]	194.00 [492.76]	202.00 [513.08]	210.00 [533.40]	25.00 [63.50]

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. A
DWG. NO.	EWDR2582	TITLE: BERNER MODEL EWD AIR CURTAIN FRONT INTAKE STEAM/HOT WATER
DATE	11MARCH11	
BY	A.JOHNSTON	
REPLACES	16JUL03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	A.JOHNSTON	

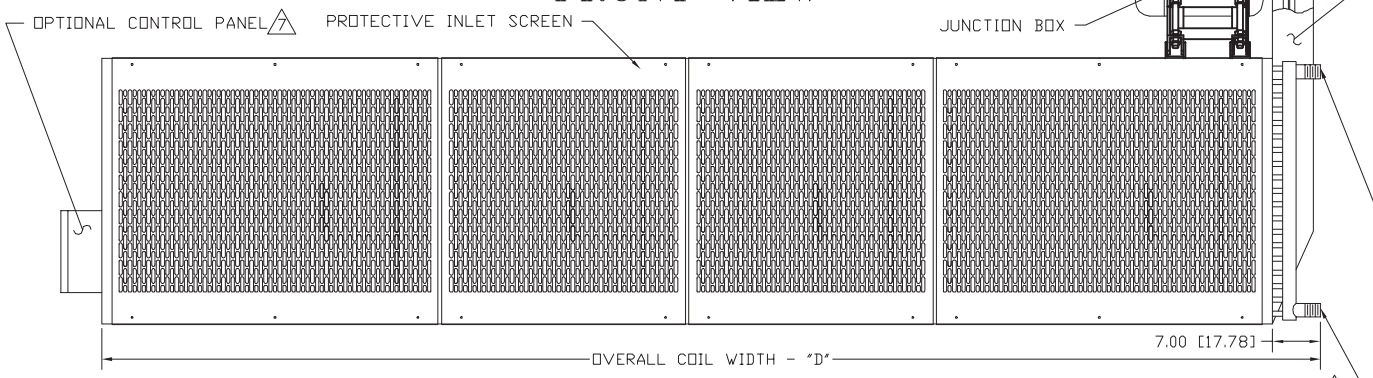
EWD

FRONT INTAKE STEAM/HOT WATER SAME END SUP./RET. TOP MOTOR MOUNT

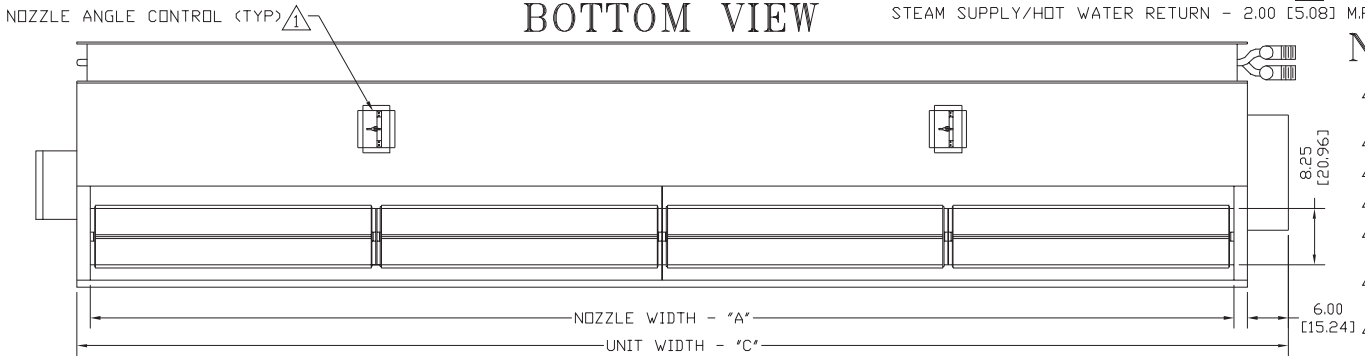
TOP VIEW
(BELT GUARD REMOVED)



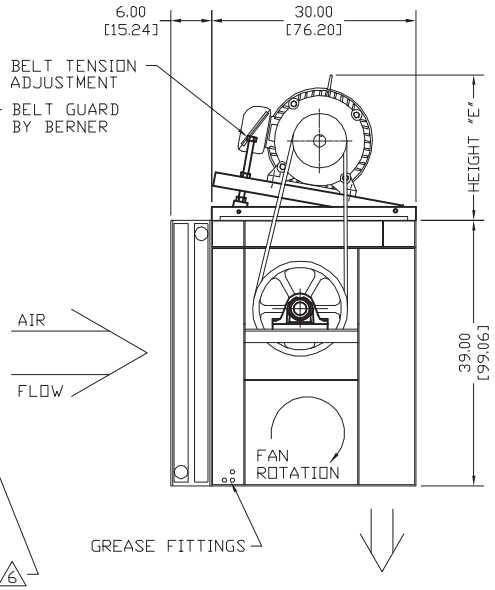
FRONT VIEW



BOTTOM VIEW



END VIEW
(BELT GUARD REMOVED)



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	COIL WIDTH "D"	MAX MOTOR HEIGHT "E"
EWD1096S-F	96.00 [243.84]	98.00 [248.92]	106.00 [269.24]	107.00 [271.78]	20.50 [52.07]
EWD1108S-F	108.00 [274.32]	110.00 [279.40]	118.00 [299.72]	119.00 [302.26]	20.50 [52.07]
EWD1120S-F	116.00 [294.64]	118.00 [299.72]	126.00 [320.04]	127.00 [322.58]	20.50 [52.07]
EWD1132S-F	132.00 [335.28]	134.00 [340.36]	142.00 [360.68]	143.00 [363.22]	20.50 [52.07]
EWD1144S-F	144.00 [365.76]	146.00 [370.84]	154.00 [391.16]	155.00 [393.70]	22.00 [55.88]
EWD1156S-F	156.00 [396.24]	158.00 [401.32]	166.00 [421.64]	167.00 [424.18]	22.00 [55.88]
EWD1168S-F	168.00 [426.72]	170.00 [431.80]	178.00 [452.12]	179.00 [454.66]	22.00 [55.88]
EWD1180S-F	180.00 [457.20]	182.00 [462.28]	190.00 [482.60]	191.00 [485.14]	22.00 [55.88]
EWD1192S-F	192.00 [487.68]	194.00 [492.76]	202.00 [513.08]	203.00 [515.62]	25.00 [63.50]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
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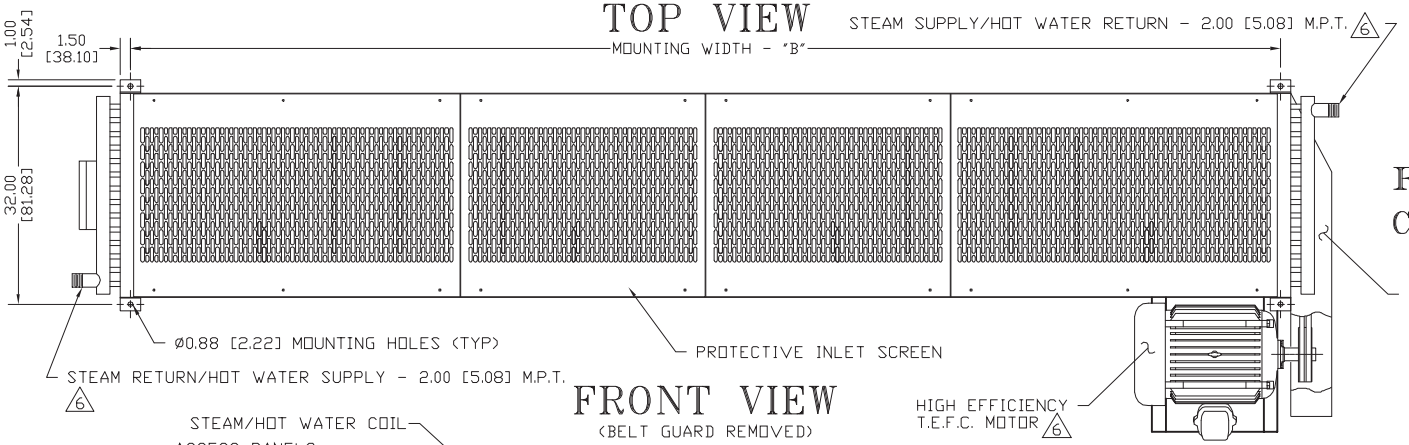
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDR2583	TITLE:	BERNER
DATE	11MARCH11		MODEL EWD AIR CURTAIN
BY	A.JOHNSTON		FRONT INTAKE STEAM/HOT WATER
REPLACES	16JUL03		BERNER INTERNATIONAL CORP.
BY	A.JOHNSTON		NEW CASTLE,PA.

EWD

TOP INTAKE STEAM/HOT WATER OPP. END SUP./RET. FRONT MOTOR MOUNT

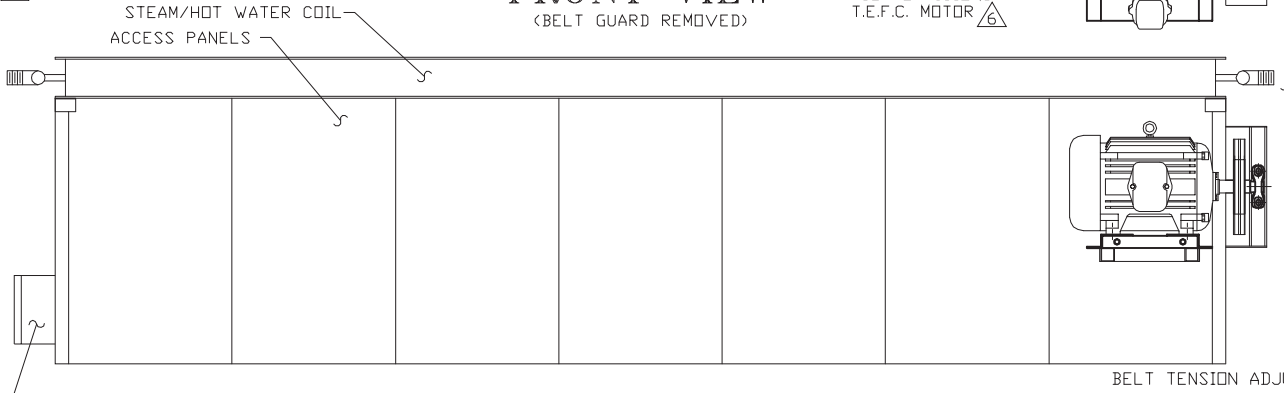
CAUTION: UNIT MAY NOT BE SUSPENDED FROM COIL IT MUST BE SUPPORTED FROM THE BOTTOM

TOP VIEW



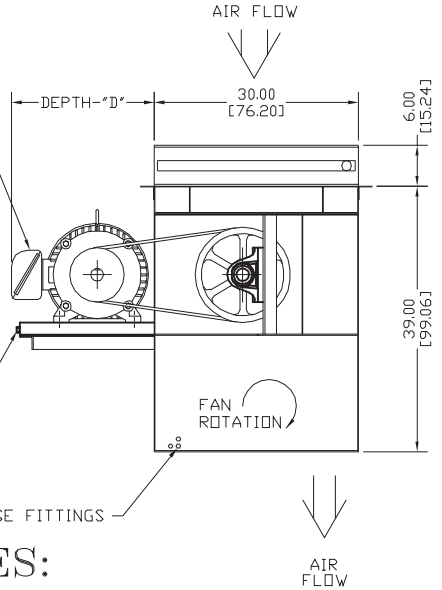
FRONT VIEW

(BELT GUARD REMOVED)

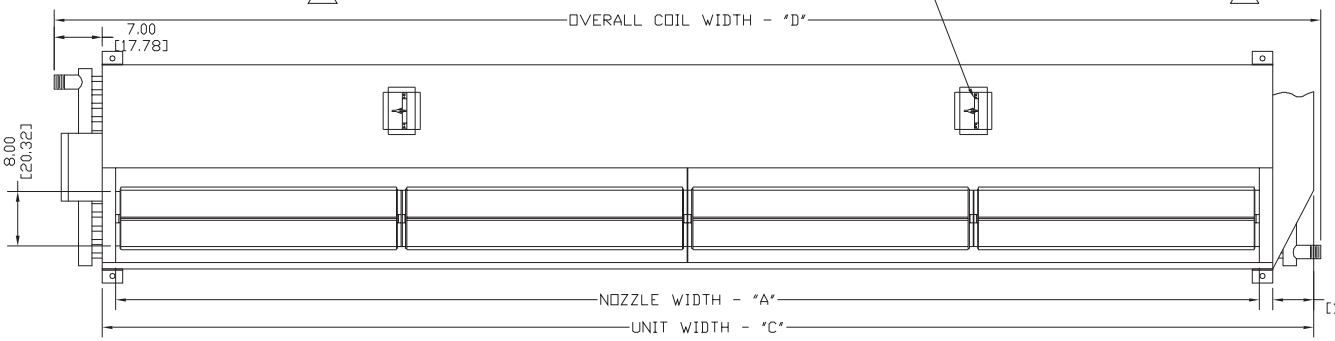


END VIEW

(BELT GUARD REMOVED)



BOTTOM VIEW



NOTES:

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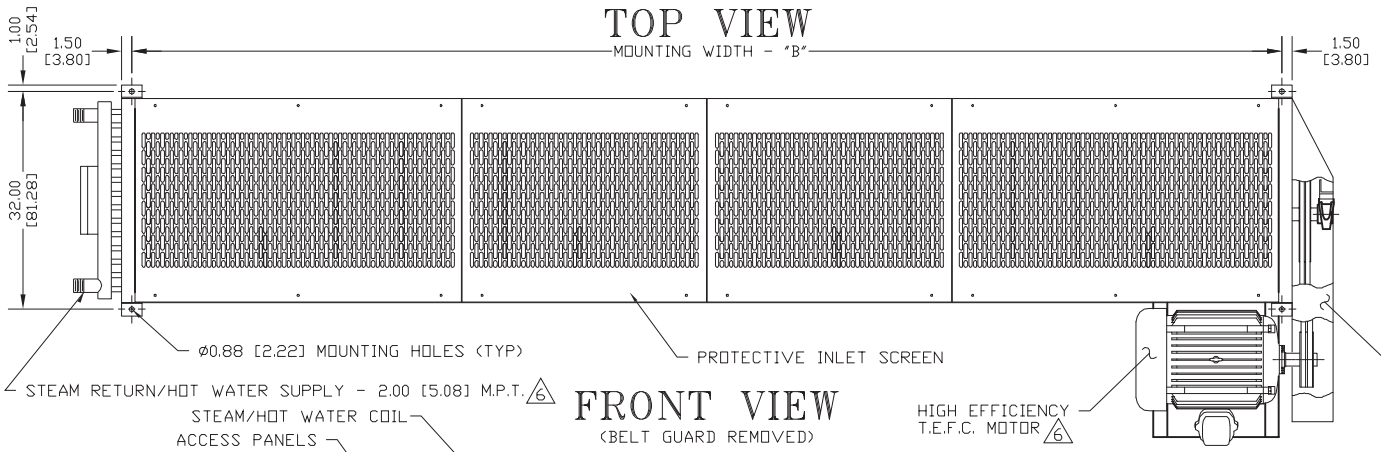
MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	COIL WIDTH "D"	MAX MOTOR HEIGHT "E"
EWD1096S-T	96.00 [243.84]	97.00 [246.38]	106.00 [269.24]	114.00 [289.56]	20.50 [52.07]
EWD1108S-T	108.00 [274.32]	109.00 [276.86]	118.00 [299.72]	126.00 [320.04]	20.50 [52.07]
EWD1120S-T	116.00 [294.64]	117.00 [297.18]	126.00 [320.04]	134.00 [340.36]	20.50 [52.07]
EWD1132S-T	132.00 [335.28]	133.00 [337.82]	142.00 [360.68]	150.00 [381.00]	20.50 [52.07]
EWD1144S-T	144.00 [365.76]	145.00 [368.30]	154.00 [391.16]	162.00 [411.48]	24.50 [62.23]
EWD1156S-T	156.00 [396.24]	157.00 [398.78]	166.00 [421.64]	174.00 [441.96]	24.50 [62.23]
EWD1168S-T	168.00 [426.72]	169.00 [429.26]	178.00 [452.12]	186.00 [472.44]	24.50 [62.23]
EWD1180S-T	180.00 [457.20]	181.00 [459.74]	190.00 [482.60]	198.00 [502.92]	27.50 [69.85]
EWD1192S-T	192.00 [487.68]	193.00 [490.22]	202.00 [513.08]	210.00 [533.40]	27.50 [69.85]

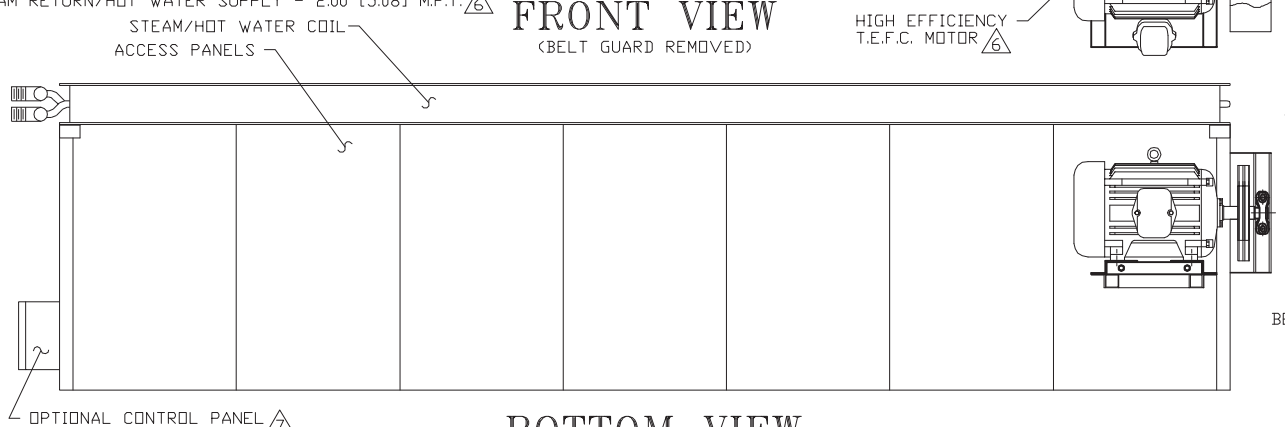
PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDR2584	TITLE: BERNER MODEL EWD AIR CURTAIN TOP INTAKE STEAM/HOT WATER	
DATE	11MARCH11		
BY	A.JOHNSTON		
REPLACES	23MAR05		
BY	A.JOHNSTON	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	

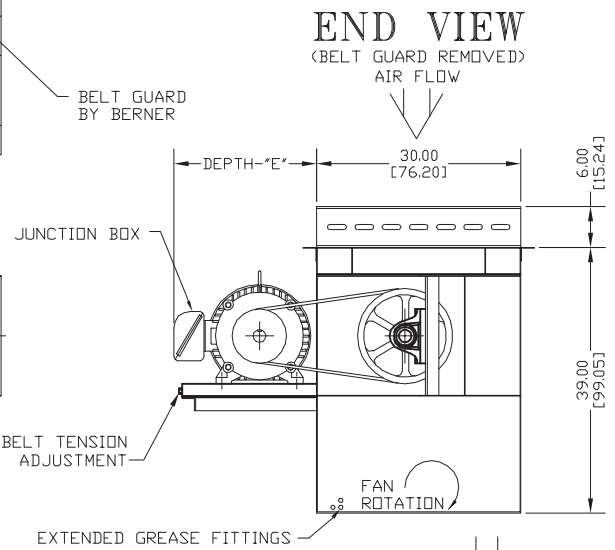
EWD

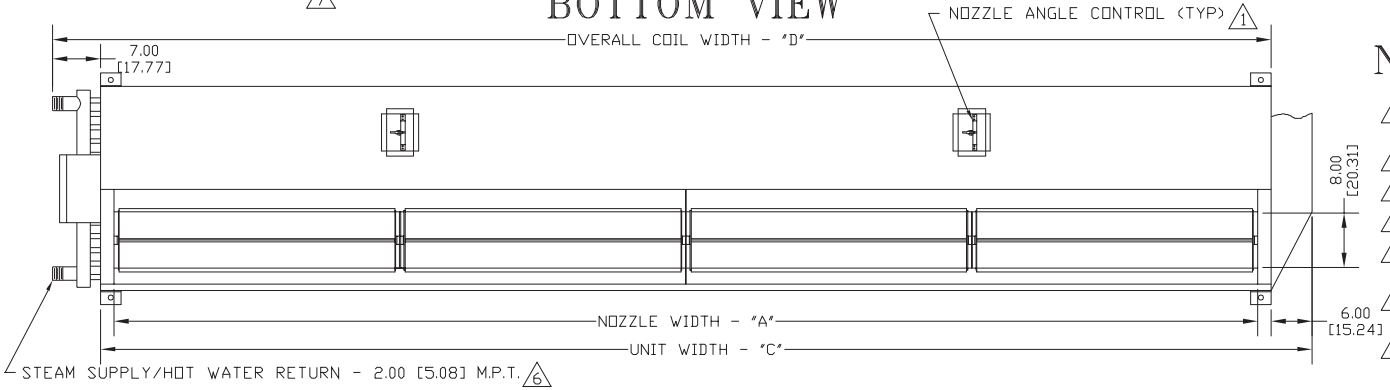
TOP INTAKE STEAM/HOT WATER SAME END SUP./RET. FRONT MOTOR MOUNT

CAUTION: UNIT MAY NOT BE SUSPENDED FROM COIL IT MUST BE SUPPORTED FROM THE BOTTOM









NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
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MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	COIL WIDTH "D"	MAX MOTOR HEIGHT "E"
EWD1096S-T	96.00 [243.84]	97.00 [246.38]	106.00 [269.24]	107.00 [271.78]	20.50 [52.07]
EWD1108S-T	108.00 [274.32]	109.00 [276.86]	118.00 [299.72]	119.00 [302.26]	20.50 [52.07]
EWD1120S-T	116.00 [294.64]	117.00 [297.18]	126.00 [320.04]	127.00 [322.58]	20.50 [52.07]
EWD1132S-T	132.00 [335.28]	133.00 [337.82]	142.00 [360.68]	143.00 [363.22]	20.50 [52.07]
EWD1144S-T	144.00 [365.76]	145.00 [368.30]	154.00 [391.16]	155.00 [393.70]	24.50 [62.23]
EWD1156S-T	156.00 [396.24]	157.00 [398.78]	166.00 [421.64]	167.00 [424.18]	24.50 [62.23]
EWD1168S-T	168.00 [426.72]	169.00 [429.26]	178.00 [452.12]	179.00 [454.66]	24.50 [62.23]
EWD1180S-T	180.00 [457.20]	181.00 [459.74]	190.00 [482.60]	191.00 [485.14]	27.50 [69.85]
EWD1192S-T	192.00 [487.68]	193.00 [490.22]	202.00 [513.08]	203.00 [515.62]	27.50 [69.85]

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDR2585	TITLE: BERNER	
DATE	11MARCH11	MODEL EWD AIR CURTAIN	
BY	A.JOHNSTON	TOP INTAKE STEAM/HOT WATER	
REPLACES	23MAR05	BERNER INTERNATIONAL CORP.	
BY	A.JOHNSTON	NEW CASTLE,PA.	

EWD STEAM			
Steam Coil (1) Row (10) Fins Per Inch			
Same End & Opposite End Supply/Return			
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**Condensate lbs/hr**
EWD1096S	38	837	872
EWD1108S	39	903	940
EWD1120S	38	1012	1053
EWD1132S	40	1089	1134
EWD1144S	41	1148	1194
EWD1156S	42	1198	1247
EWD1168S	38	1415	1473
EWD1180S	39	1472	1532
EWD1192S	37	1627	1693

Performance based on 70°F Entering Air Temperature (E.A.T.) and 5# Steam*

* For other steam pressures - see chart on reverse side.
Berner recommends that maximum Leaving Air Temperature (L.A.T.) never exceed 120°F.
All coils should be supplied by a solenoid valve that energizes coil only when air curtain is on.

Berner International Corporation New Castle, PA 16101 / USA / Telephone (724) 658-3551 / FAX (724) 652-0682 / www.berner.com / airdoors@berner.com

Constants For Obtaining Temperature Rise At Various Steam Pressures & Inlet Temperatures

STEAM PRESSURES IN POUNDS PER SQUARE INCH (GAUGE)

ENTERING AIR TEMPERATURE °F	0	2	5	10	15	20	30	40	50	60	80	100	125	150	175	200
-30	1.54	1.59	1.64	1.71	1.78	1.84	1.94	2.02	2.10	2.16	2.25	2.34	2.44	2.52	2.59	2.67
-20	1.48	1.52	1.57	1.65	1.72	1.77	1.87	1.95	2.02	2.08	2.19	2.28	2.37	2.46	2.53	2.59
-10	1.41	1.45	1.51	1.59	1.65	1.71	1.81	1.89	1.96	2.02	2.12	2.21	2.31	2.39	2.46	2.53
00	1.35	1.39	1.45	1.54	1.59	1.65	1.74	1.82	1.89	1.96	2.06	2.15	2.25	2.33	2.40	2.47
10	1.28	1.33	1.38	1.46	1.52	1.58	1.68	1.76	1.83	1.89	2.00	2.09	2.18	2.26	2.34	2.40
20	1.22	1.26	1.31	1.40	1.46	1.52	1.62	1.70	1.77	1.83	1.93	2.02	2.12	2.20	2.27	2.34
30	1.16	1.20	1.25	1.33	1.40	1.46	1.55	1.63	1.70	1.76	1.87	1.96	2.05	2.14	2.21	2.28
40	1.09	1.14	1.19	1.27	1.33	1.39	1.49	1.57	1.64	1.70	1.81	1.89	1.99	2.07	2.15	2.22
45	1.06	1.10	1.16	1.24	1.30	1.36	1.46	1.54	1.61	1.67	1.77	1.86	1.96	2.04	2.12	2.18
50	1.03	1.07	1.13	1.21	1.27	1.33	1.42	1.51	1.58	1.64	1.74	1.83	1.93	2.01	2.08	2.15
55	1.00	1.04	1.10	1.17	1.24	1.30	1.39	1.47	1.54	1.61	1.71	1.80	1.89	1.98	2.05	2.12
60	0.97	1.01	1.06	1.14	1.21	1.26	1.36	1.44	1.51	1.57	1.68	1.77	1.86	1.95	2.02	2.09
65	0.93	0.98	1.03	1.11	1.17	1.23	1.33	1.41	1.48	1.54	1.65	1.74	1.83	1.91	1.99	2.05
70	0.90	0.95	**1.00**	1.08	1.14	1.20	1.30	1.38	1.45	1.51	1.62	1.70	1.80	1.88	1.96	2.02
75	0.87	0.91	0.97	1.05	1.11	1.17	1.27	1.35	1.42	1.48	1.59	1.67	1.77	1.85	1.92	1.99
80	0.84	0.88	0.94	1.01	1.08	1.14	1.24	1.32	1.39	1.45	1.55	1.64	1.74	1.82	1.89	1.96
85	0.81	0.85	0.90	0.98	1.05	1.11	1.20	1.28	1.35	1.41	1.52	1.61	1.71	1.79	1.86	1.93
90	0.78	0.82	0.87	0.95	1.02	1.07	1.17	1.25	1.32	1.38	1.49	1.58	1.67	1.76	1.83	1.89
100	0.71	0.75	0.81	0.89	0.95	1.00	1.11	1.19	1.26	1.32	1.42	1.51	1.61	1.69	1.77	1.83
110	0.65	0.69	0.75	0.82	0.89	0.95	1.04	1.12	1.20	1.26	1.36	1.45	1.55	1.63	1.70	1.77
120	0.59	0.63	0.68	0.76	0.83	0.88	0.98	1.06	1.13	1.19	1.30	1.40	1.48	1.56	1.64	1.71
140	0.46	0.50	0.55	0.63	0.70	0.76	0.85	0.93	1.00	1.07	1.17	1.26	1.35	1.44	1.51	1.58
160	0.33	0.37	0.43	0.50	0.57	0.63	0.73	0.81	0.88	0.94	1.04	1.13	1.23	1.31	1.38	1.45
180	0.20	0.24	0.30	0.38	0.44	0.50	0.60	0.68	0.75	0.81	0.91	1.00	1.10	1.18	1.26	1.32
200	0.08	0.12	0.17	0.25	0.32	0.37	0.47	0.55	0.62	0.68	0.79	0.88	0.97	1.06	1.13	1.20

$T = T^{\circ} + \triangle t \times C$ T = Temperature at exit T° = Temperature at intake

$\triangle t$ = Temperature rise from data sheet C = Constant from above table

EWD HOT WATER					
(2) Rows (6) Fins Per Inch					
Opposite End Supply/Return					
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
EWD1096W	35	772	177	67	2.3
EWD1108W	37	845	178	77	3.1
EWD1120W	36	967	178	88	3.9
EWD1132W	36	984	171	70	2.4
EWD1144W	37	1027	170	69	2.5
EWD1156W	37	1030	165	60	1.8
EWD1168W	38	1395	176	118	7.2
EWD1180W	36	1363	169	88	2.0
EWD1192W	37	1616	174	126	8.6

EWD HOT WATER					
(2) Rows (6) Fins Per Inch					
Same End Supply/Return					
Model	**Temp. Rise °F**	**Capacity mbtu/hr**	**L.W.T.* °F**	**Water Flow gpm**	**Drop or Loss ft. wg.**
EWD1096W	37	843	176	68	4.3
EWD1108W	36	816	166	48	2.4
EWD1120W	36	970	171	67	4.6
EWD1132W	37	1001	165	58	3.6
EWD1144W	36	998	158	48	2.7
EWD1156W	37	1036	157	49	2.8
EWD1168W	36	1344	165	77	4.7
EWD1180W	36	1352	160	68	5.5
EWD1192W	37	1612	167	99	7.7

Performance based on 70°F Entering Air Temperature (E.A.T.)
and 200°F Entering Water Temperature (E.W.T.)

* Leaving Water Temperature (L.W.T.)
Consult factory for other E.A.T., E.W.T. or GPM

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No.: DS-326
Date: October, 2011

BERNER™ INTERNATIONAL CORP.

EWD
Direct Gas Fired
Data Sheet

For Door Heights To 30' (environmental separation)

STANDARD FEATURES

- 1750 RPM T.E.F.C. motor (front or top mount)
- Galvanized steel blower wheels and housing
- Belt drive fans
- Gray powder coated finish
- Welded 14 gauge aluminized steel cabinet
- 7/8" mounting holes
- Two year parts warranty
- Crafted with Pride in the USA

HEATER FEATURES

- Steel cabinet with gray finish
- Adjustable profile plates
- FM/IRI gas train
- Factory mounted wired heater control cabinet
- Modulating direct fired burner
- Spark ignited intermittent pilot

					Lab Data									
MODEL	**Nozzle Width (in)**	**Max FPM at Nozzle**	**Max CFM at Nozzle**	**CFM at Nozzle**	**Avg. Outlet Vel. (fpm)**	**Air Volume (scfm)**	**Power Rating (kW)**	**Outlet Vel. Unif. (%)**	**Motor(s) @ hp**	***MBTU/ hr**	**Temp. Rise °F**	**# Gas Heaters**	**Gas Train Size**	**Gas Inlet Pressure Range Min. - Max.**
EWD1096D	96"	7590	31979	21106	3800	20,240	15.9	79	1 @ 15	2196	100	1	1¼"	1# - 5#
EWD1108D	108"	6429	33174	21895	3215	19,287	14.6	86	1 @ 15	2092	100	1	1¼"	1# - 5#
EWD1120D	117"	7395	43877	28959	3800	24,650	20.8	89	1 @ 20	2675	100	1	1½"	1# - 5#
EWD1132D	132"	6868	43818	28920	3434	25,183	20.4	87	1 @ 20	2732	100	1	1½"	1# - 5#
EWD1144D	144"	6429	44232	29193	3215	25,716	19.5	86	1 @ 20	2790	100	1	1½"	1# - 5#
EWD1156D	156"	5996	44171	29153	2998	25,983	20.8	85	1 @ 20	2819	100	1	1½"	1# - 5#
EWD1168D	168"	7330	58834	38831	3665	34,206	26.4	86	1 @ 25	3711	100	1	1½"	1# - 5#
EWD1180D	180"	6948	59056	38977	3474	34,739	26.6	85	1 @ 25	3769	100	1	1½"	1# - 5#
EWD1192D	192"	7590	63958	42213	3800	40,480	31.8	79	1 @ 30	4392	100	1	2"	1# - 5#

*Other MBTU/hr available - consult factory.

WEIGHT CHART			
MODEL	**Air Curtain (lbs)**	**Duct Transition (lbs)**	**Gas Heater (lbs)**
EWD1096D	960	252	700
EWD1108D	1000	269	700
EWD1120D	1050	284	700
EWD1132D	1150	301	700
EWD1144D	1250	317	700
EWD1156D	1350	333	700
EWD1168D	1450	349	950
EWD1180D	1550	365	950
EWD1192D	1650	381	950

MOTOR VOLTAGES/AMP DRAWS						
HP	**208/3/60**	**240/3/60**	**480/3/60**	**600/3/60**	**190/3/50***	**380/3/50***
15	41.0	37.8	18.9	14.7	46.0	23.0
20	54.0	50.0	25.0	19.5	31.0	30.5
25	66.0	59.0	29.5	23.6	78.2	39.1
30	80.4	74.0	36.0	28.6	95.0	47.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

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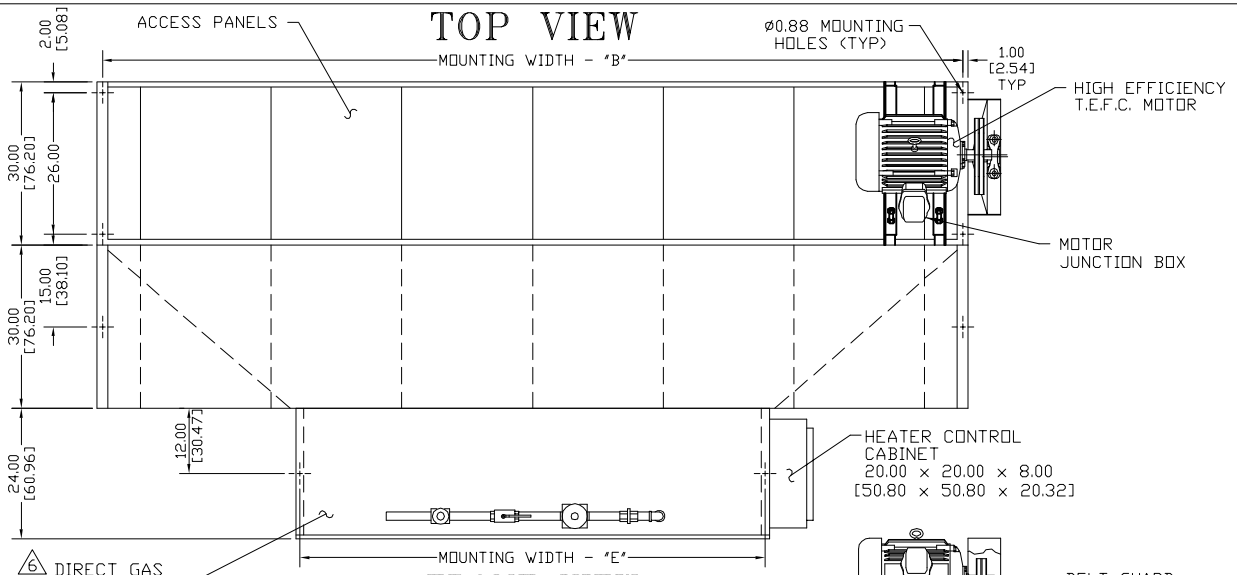
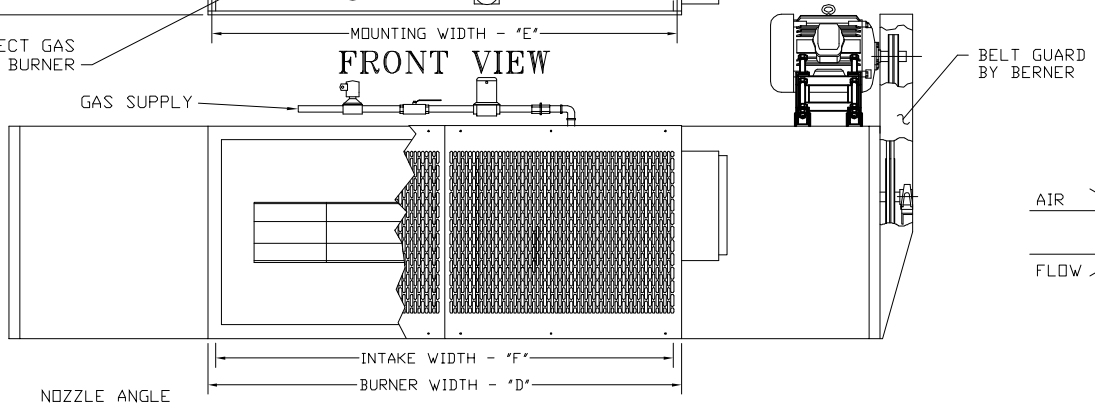
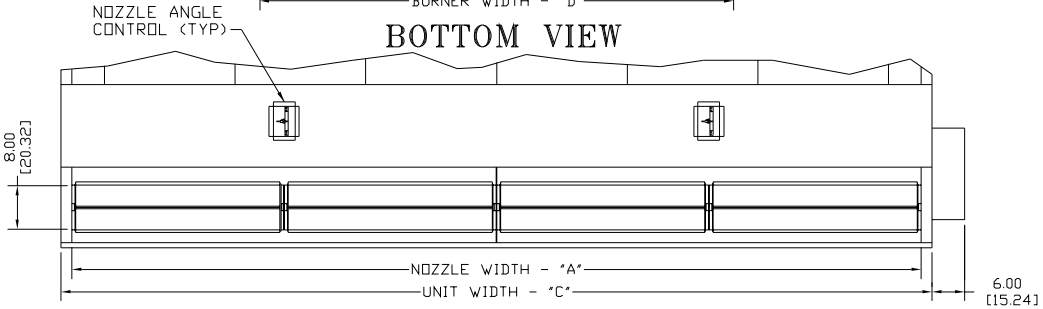
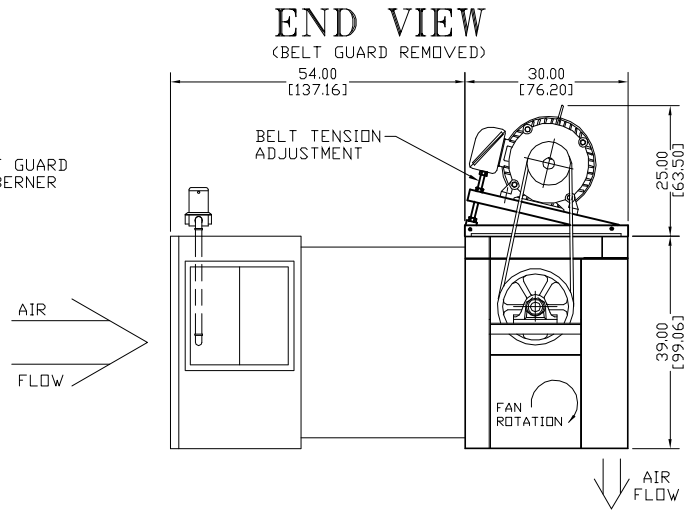
MADE IN U.S.A.

EWD
FRONT INTAKE DIRECT GAS FIRED TOP MOTOR MOUNT









MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"	UNIT WIDTH "C"	BURNER WIDTH "D"	MOUNTING WIDTH "E"	INTAKE WIDTH "F"
EWD1096D	96.00 [243.84]	98.00 [248.92]	100.00 [254.00]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1108D	108.00 [274.32]	110.00 [279.40]	112.00 [284.48]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1120D	117.00 [297.18]	119.00 [302.26]	121.00 [307.34]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1132D	132.00 [335.28]	134.00 [340.36]	136.00 [345.44]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1144D	144.00 [365.76]	146.00 [370.84]	148.00 [375.92]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1156D	156.00 [396.24]	158.00 [401.32]	160.00 [406.40]	87.00 [220.98]	85.50 [217.17]	84.00 [213.36]
EWD1168D	168.00 [426.72]	170.00 [431.80]	172.00 [436.88]	120.00 [304.80]	118.50 [300.99]	117.00 [297.18]
EWD1180D	180.00 [457.20]	182.00 [462.28]	184.00 [467.36]	120.00 [304.80]	118.50 [300.99]	117.00 [297.18]
EWD1192D	192.00 [487.68]	194.00 [492.76]	196.00 [497.84]	120.00 [304.80]	118.50 [300.99]	117.00 [297.18]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF $\mathcal{L}$.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SUPPORT DIRECT GAS HEATERS SEPARATELY FROM UNIT.
7. OPTIONAL CONTROL PANEL AVAILABLE; LEFT HAND MOUNT; RIGHT HAND MOUNT, OR REMOTE, PLEASE VERIFY.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER		REV.	A
DWG. NO.	EWDV2596	TITLE: BERNER	
DATE	11MARCH11	DIRECT GAS FIRED AIR CURTAIN	
BY	A.Johnston	FRONT INTAKE; BELT DRIVE	
REPLACES	15JAN06	BERNER INTERNATIONAL CORP.	
BY	A.Johnston	NEW CASTLE,PA.	

BERNER INTERNATIONAL CORP.

FS
Data Sheet
Recommended for outdoor installation

STANDARD FEATURES

- 2 hp direct driven single speed motor(s)
- Adjustable air stream
- Four blade propeller fan w/OSHA approved inlet guards
- Aluminized steel cabinet with gray baked on enamel finish
- Wall mounting bracket with angle adjusting rod
- Five year parts warranty
- Crafted with Pride in the USA

OPTIONAL FEATURE

- Weather hood (1) per motor

MODEL	Nozzle Width (in)	Maximum Air Velocity (fpm)	Maximum Air Volume (cfm)	Motor(s) @ hp	Net Wgt (lbs)	Ship Wgt (lbs)
FSX1042A	42	5000	6800	1 @ 2	180	230
FSX1051A	51	5000	7500	1 @ 2	190	240
FSX1066A	66	5000	8400	1 @ 2	205	260
FSX1072A	72	5000	8500	1 @ 2	215	270
FSX2076A	76	5000	13,800	2 @ 2	315	415
FSX2088A	88	5000	14,800	2 @ 2	325	425
FSX2100A	100	5000	15,600	2 @ 2	335	435
FSX2120A	120	5000	17,500	2 @ 2	355	470
FSX3120A	120	5000	20,400	3 @ 2	420	530
FSX3144A	144	5000	22,500	3 @ 2	480	600

For doors wider than 144" - **use multiple units.**

MOTOR VOLTAGES/AMP DRAWS						
VOLTS	208	240	480	600	190*	380*
PHASE	3	3	3	3	3	3
HERTZ*	60	60	60	60	50	50
AMPS per MOTOR	8.0	7.8	3.9	2.2	2.0	5.5

*Operation at 50 Hz will generate approximately a 17% reduction in performance.

Sound level measured 10' (3m) from the unit in free field:
93 dBA

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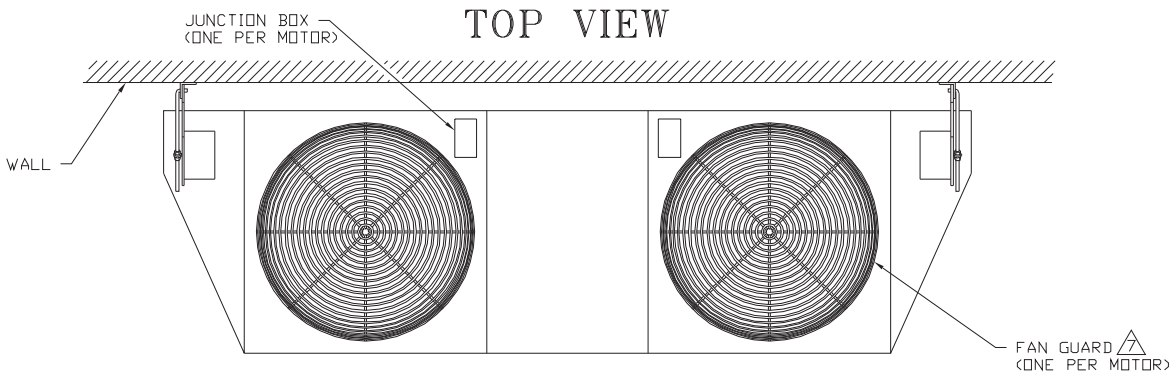
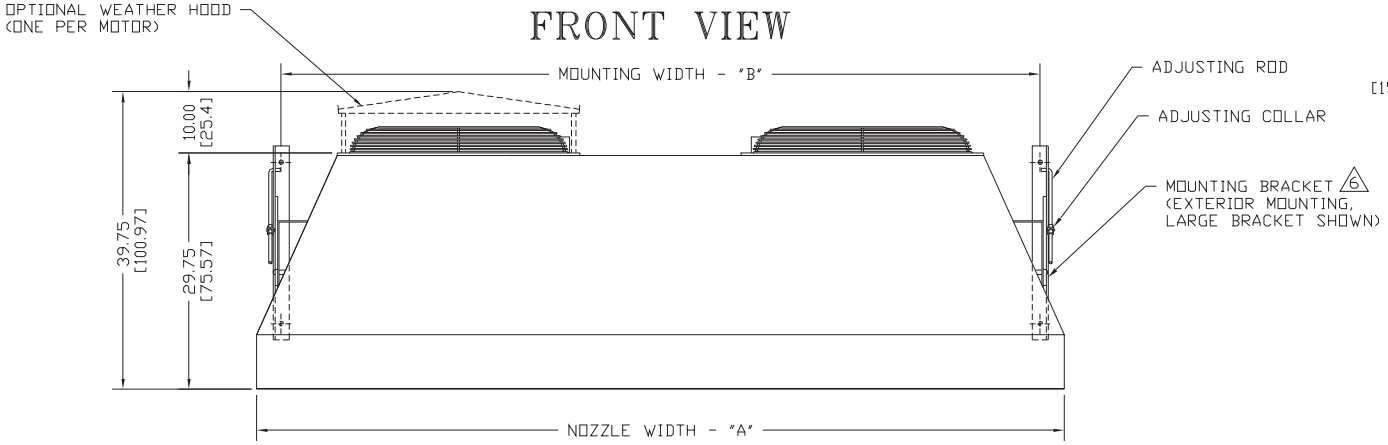
MADE IN U.S.A.

FS
FLYSTOP SYSTEM

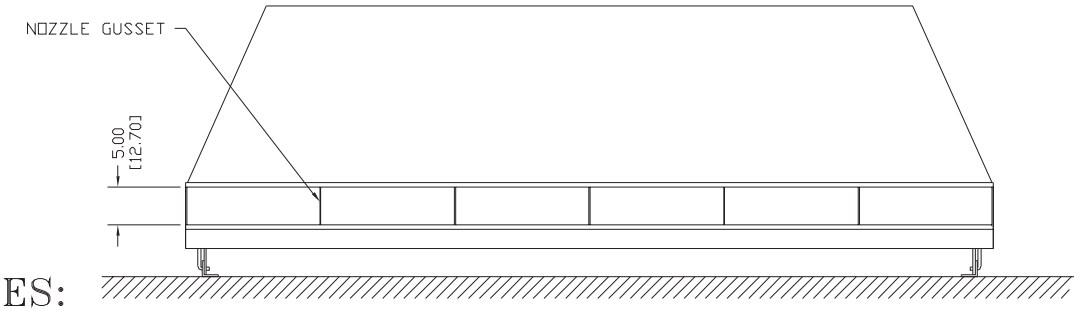
TOP VIEW



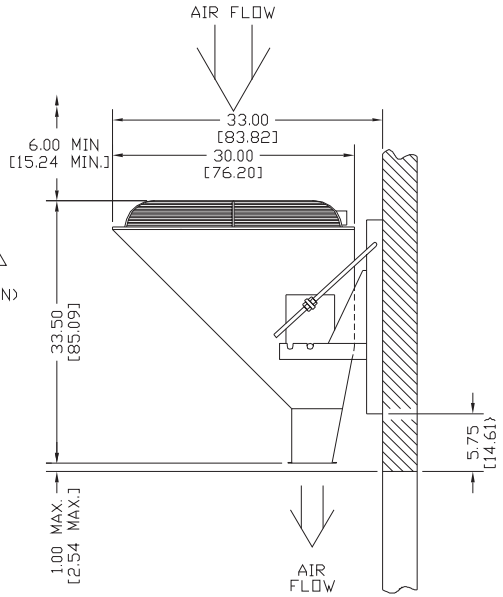
FRONT VIEW



BOTTOM VIEW



END VIEW



MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"
FSX1042	42.00 [106.68]	37.00 [93.98]
FSX1051	51.00 [129.54]	42.50 [107.95]
FSX1066	66.00 [167.64]	53.88 [136.84]
FSX1072	72.00 [182.88]	53.88 [136.84]
FSX2076	76.00 [193.04]	72.00 [182.88]
FSX2088	88.00 [223.52]	83.00 [210.82]
FSX2100	100.00 [254.00]	94.00 [238.76]
FSX2120	120.00 [304.80]	114.00 [289.56]
FSX3120	120.00 [304.80]	114.00 [289.56]
FSX3144	144.00 [365.76]	137.50 [349.25]

NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. USE LARGE MOUNTING BRACKET FOR ALL UNITS 76" AND ABOVE.
7. TWO MOTOR FLY STOP AIR CURTAIN SHOWN.
8. SEE DRAWING FSX-E-2344 FOR MOUNTING BRACKET DIMENSIONS AND INSTALLATION INSTRUCTIONS.
9. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		REV. B
DWG. NO.	FSXE2346	TITLE: BERNER MODEL FSX AIR CURTAIN FLYSTOP SYSTEM
DATE	18MAR05	
BY	A.Johnston	
REPLACES	26AUG03	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer	

BERNER™
INTERNATIONAL CORP.

READ AND SAVE THESE INSTRUCTIONS

No. **II-450**
Date **January, 2009**

DRIVE-THRU UNIT

AIR DOOR
MADE IN THE USA

www.berner.com
800-343-7991

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING 2
II. MOUNTING INSTRUCTIONS 2
III. WALL MOUNTING 3
IV. ELECTRICAL CONNECTIONS 4
V. OPERATION AND CONTROLS 4
VI. AIRFLOW ADJUSTMENTS 4
VII. MAINTENANCE AND CLEANING 4
VIII. SERVICE 5

Your new Drive-Thru air door (sometimes referred to as an air curtain) , properly installed, maintained and operated, will keep fumes out of your restaurant, increase employee comfort, and save energy.

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify shipping company. If the unit(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the unit(s) is installed and properly operating.

ACCESSORIES: If the unit(s) was ordered with optional electrical accessories, the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING INSTRUCTIONS

(General Notes for All Mounting Configurations)

INDOOR MOUNTING ONLY!

Environmental/Insect/Dust & Fume Control

The Drive-Thru air door is designed to be an effective barrier against cold drafts in the winter and hot air in the summer. To achieve optimum protection, the unit should be mounted on the inside of the building, as close to the top of the window opening as possible. To ensure peak performance, keep the air stream free of obstructions. The unit is equipped with mounting brackets to ensure proper mounting in most applications.

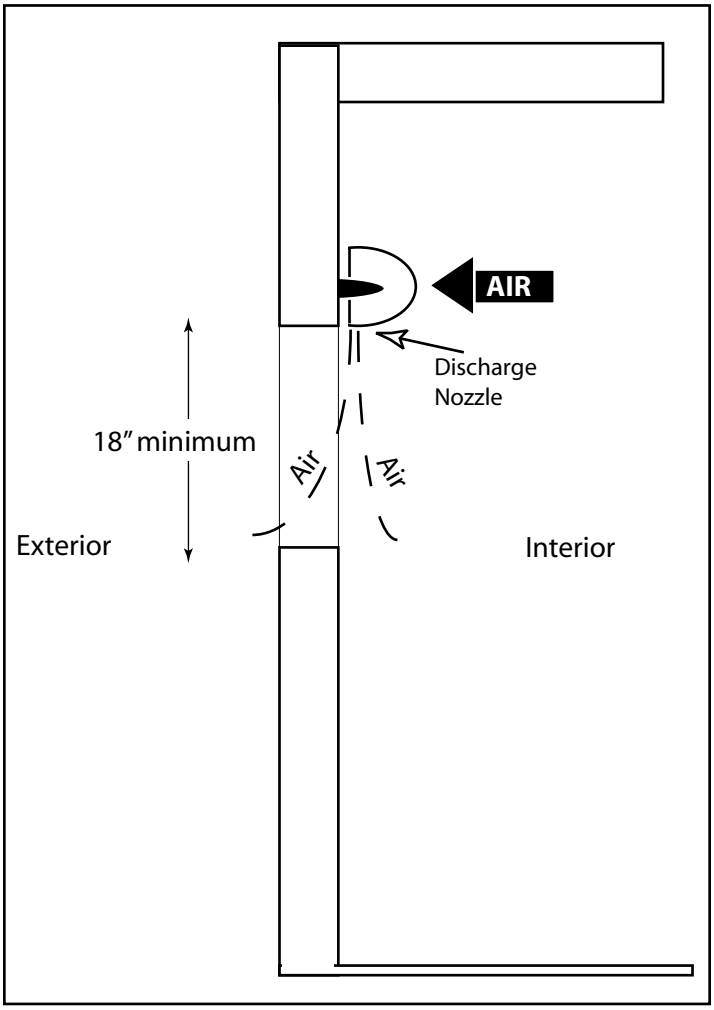
The air door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

Before mounting the unit, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware should be capable of supporting a minimum of three (3) times the weight of the unit (See Table 1).

MODEL	NET WEIGHT AMBIENT (lbs)	NET WEIGHT ELECTRIC (lbs)
DTU1018	11	12
DTU1026	16	17

TABLE 1

A. When determining the mounting location for the unit(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0º to 20º toward the drive-thru window opening. If the air stream strikes any obstruction (the top edge of the window, a window opening device, etc.), the effectiveness of the unit will be greatly reduced (See Drawing 1).



DRAWING 1

B. For optimum performance, the bottom of the unit (discharge nozzle) should be no more than 1" above the top of the drive-thru window opening with the unit mounted flush to the wall. If the unit must be mounted higher, it must be spaced out from the wall 3/8" for every inch the unit is above the drive-thru window opening.

C. Electric heated units shall:

1. Have a minimum clearance of at least 1" between the sides and top of the unit and any combustible material.
2. Have a minimum clearance of at least 18" between the bottom of the unit and the counter.

III. WALL MOUNTING

The Drive-Thru Unit air door is shipped with a variety of wall mounting options. Included in standard orders are standard brackets (See Figure 1) and spanning legs (See Figure 2). Adjustable brackets (See Figure 3) available by special order.

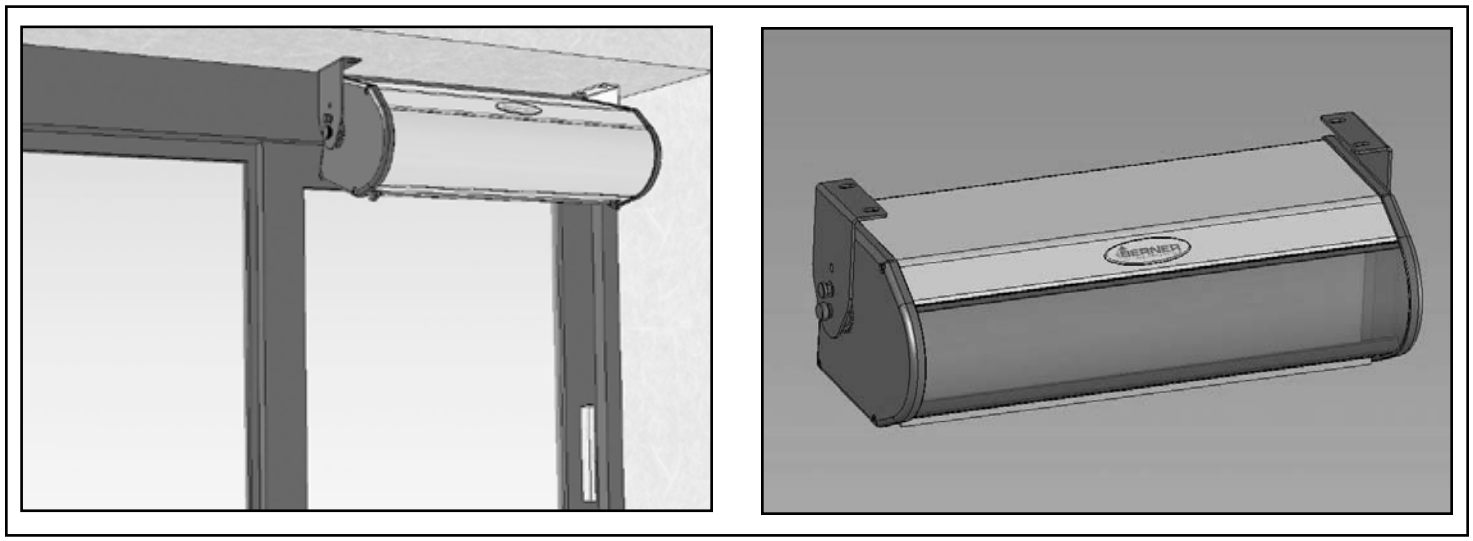


FIGURE 1 -Standard Brackets

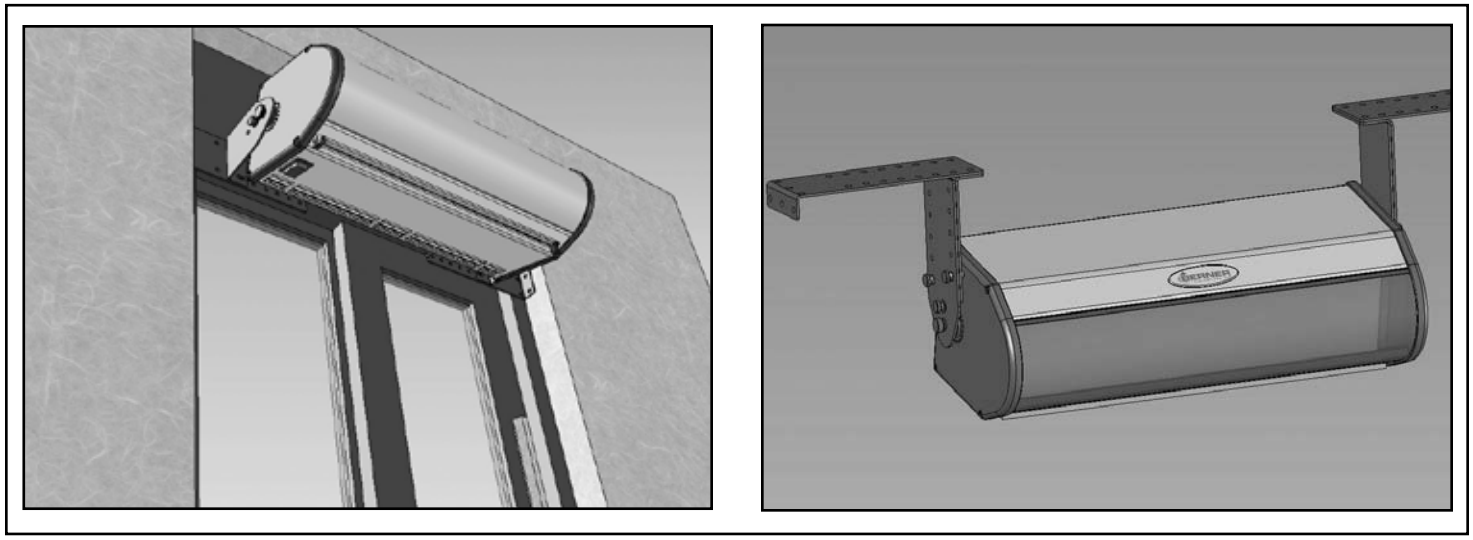


FIGURE 2 -Spanning Brackets (works with both standard and adjustable extension brackets)

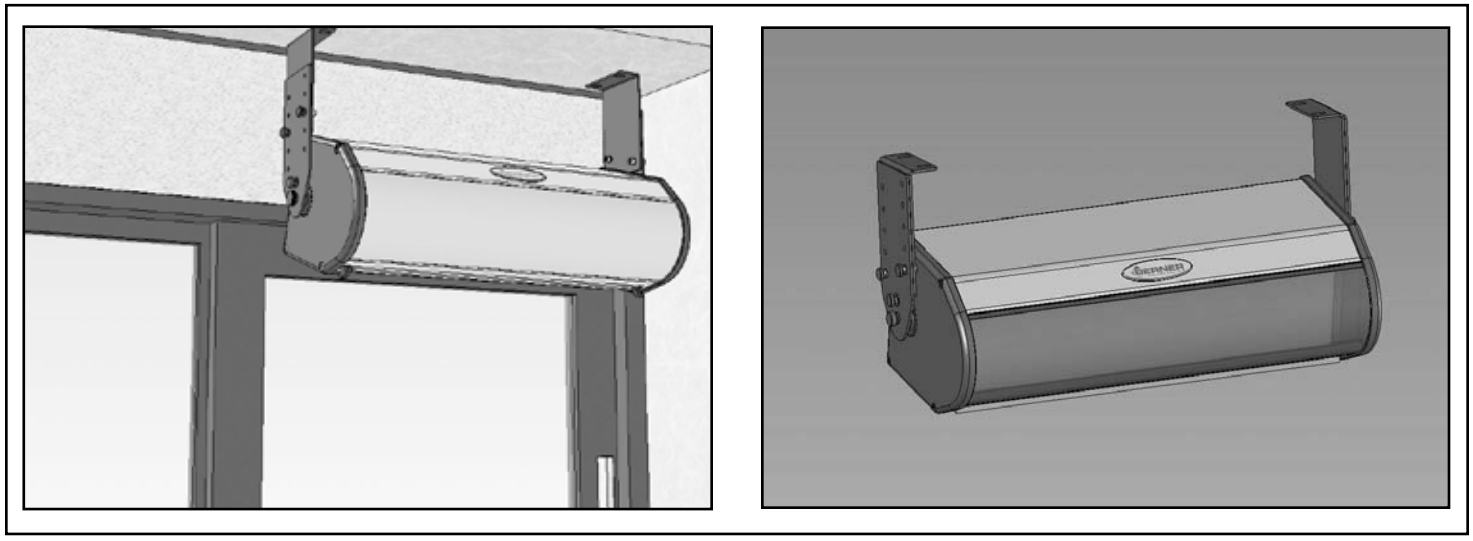


FIGURE 3 -Adjustable Extension Brackets (optional, must be ordered separately by special order)

Motor Voltages/Amp Draws

	DTU1018AA	DTU1018EA	DTU2026AA	DTU2026EA
Volts	120	120	120	120
Phase	1	1	1	1
Hertz	60	60	60	60
Amps per unit	1.6	18.3	2.2	18.9
kW	0	2	0	2

TABLE 2

IV. ELECTRICAL CONNECTIONS

All electrical wiring and connections MUST be performed by qualified personnel in accordance with the National Electrical Code ANSI/NFPA No. 70 (latest edition) or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1, and local codes and regulations.

A. Check the rating nameplate on the top of the unit for supply voltage and current requirements (See Figure 2). Unheated units may be plugged into any 15 or 20 amp receptacle. **Heated units require a dedicated 20 amp receptacle and circuit.** A disconnect switch for each branch circuit is a required part of this installation (See Table 2).

B. All field wiring must be copper with a minimum insulation of 60°C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90°C.

V. OPERATION AND CONTROLS

A. The unheated Drive-Thru Unit air door operates with a two position on-off switch.

B. The heated Drive-Thru Unit air door operates with a three position fan-off-heat switch.

VI. AIR FLOW ADJUSTMENTS

A. With the air door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle vanes.

B. Find the air stream split location. Hold a handkerchief or tissue, by its corners, approximately 4" above the counter. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split location is indicated where the handkerchief is vertical with minimal or no fluttering.

C. Rotate the air curtain by adjusting its position in the mounting bracket so the split location is approximately 2" outside the window (See Drawing 1).

VII. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD:

Disconnect power when servicing unit.

More than one disconnect may be required to de-energize unit.

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Build up of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months.

To remove the filter:

This unit is equipped with a "No Tool" filter removal. Simply, pull the (2) black tabs, located underneath the intake grille, outward. This action releases the filter which then can be pulled downward out of the unit (See Figure 4).

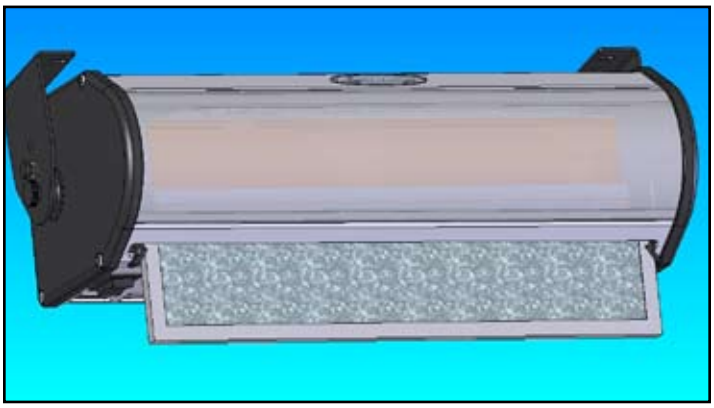


FIGURE 4 -Filter Removal

To clean the interior of the unit:

A. Disconnect the power to the unit; remove the intake grille by removing the (4) screws on one side of the unit. Pull the top of the end cap outward to release the filter tab to remove end cap. Slide the intake grille out of unit (See Figure 5). It is not recommended to remove the blower assembly from the cabinet. To clean the motor and blower wheels, with the filter and inlet screen removed, blow compressed air in the unit to remove loose dust and debris.

CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.

B. Connect power and switch the power on after cleaning.

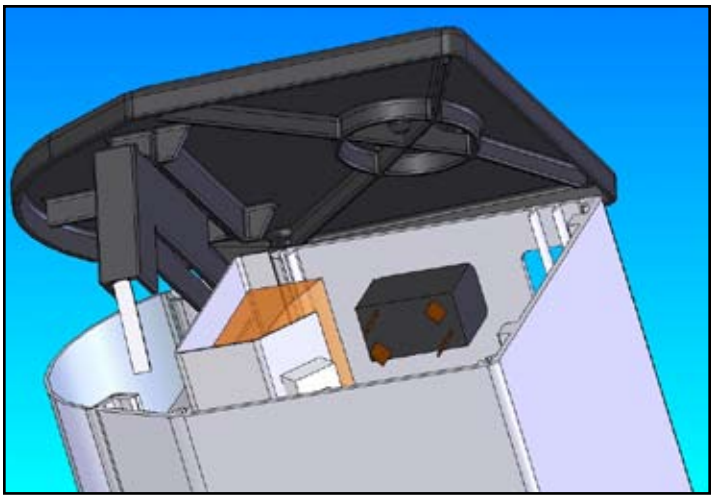
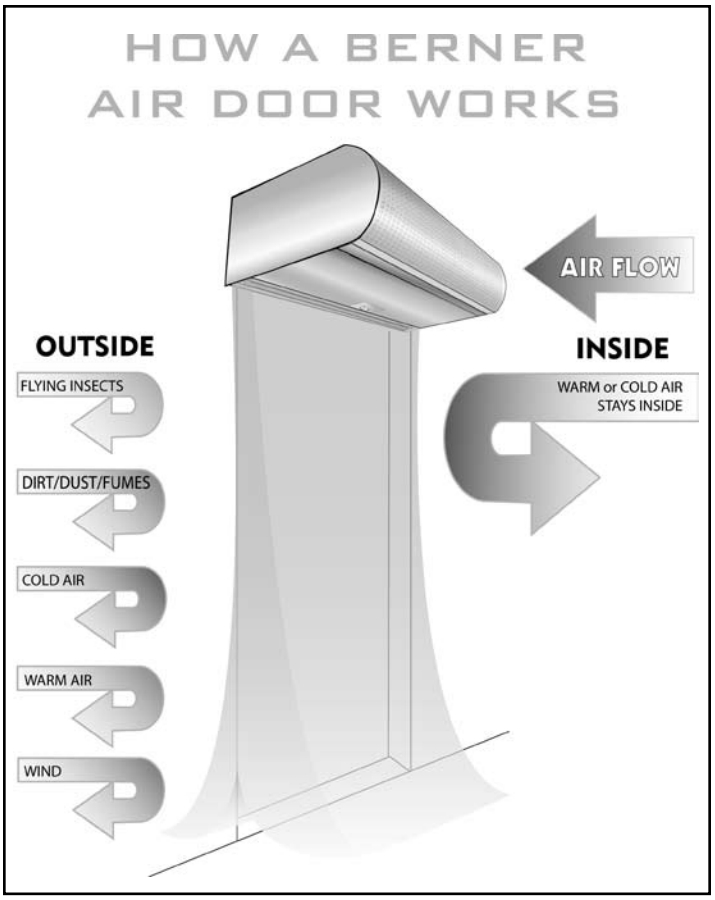


FIGURE 5 -Removing End Cap



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VIII. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD:

Disconnect power when servicing unit.
More than one disconnect may be required to de-energize unit.

Any service performed on the Drive-Thru Unit air door ***MUST*** *be done by qualified personnel.*

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve, or ball bearings and require no maintenance.

A. REPLACEMENT OF ELECTRIC HEATER ELEMENT

1. Disconnect power to the unit.
2. Remove the end cap and intake grille by removing the screws on one end of the unit and sliding the grille out.
3. Remove and mark all wires from damaged element.
4. To remove damaged element from unit, slide it out through the front of the unit.
5. Install new element and connect all wires.
6. Reinstall intake grille and end cap.
7. Connect power and turn power on.

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of one year on unheated and heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

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BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

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READ AND SAVE THESE INSTRUCTIONS

No. **II-480**
Date **January, 2011**

E-ZONE
AIR DOOR
Made in the USA

K-ZONE
AIR DOOR
Made in the USA

ANSI/NSF 37
Air Curtain Fans for
Customer Entry
12CS

For Outdoor Use
KZN/EZN

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING 2
II. MOUNTING INSTRUCTIONS 2
III. WALL MOUNTING 2
IV. SUSPENDED MOUNTING 3
V. ELECTRICAL CONNECTIONS 3
VI. MECHANICAL CONNECTIONS 4
VII. AIRFLOW ADJUSTMENTS 4
VIII. MAINTENANCE AND CLEANING 4
IX. SERVICE 4
TROUBLESHOOTING 5

To meet NSF Standard 37 requirements, the air curtain width must be greater than or equal to the opening width with a maximum mounting height of 7 feet for all EZN/KZN models.

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify shipping company. If the unit(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Remove the plastic cover housing by lifting vertically. Remove and discard four (4) nuts and washers holding the motor/blower section to the bottom of the carton. Remove motor/blower section from the carton.

CAUTION: ONLY LIFT THE UNIT BY GRASPING INLET RINGS ON THE BLOWER HOUSING WITHOUT TOUCHING BLOWER WHEELS.

Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the unit(s) are installed and properly operating.

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING INSTRUCTIONS *(General)*

The E-Zone/K-Zone air door is designed to be an effective barrier against cold drafts in the winter and hot air in the summer, flying insects and airborne contaminants. To achieve optimum protection, the unit should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance keep air stream free of obstructions.

The air door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

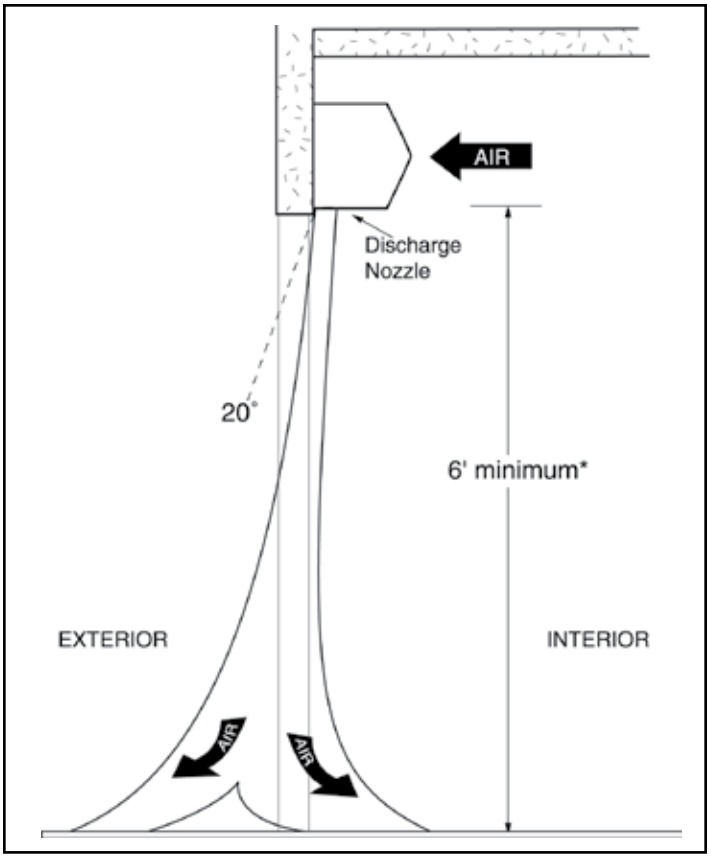

FIGURE 1 - Air Stream

MODEL	Net Weight Ambient (lbs)
EZN/KZN1030A	33
EZN/KZN1036A	38
EZN/KZN1042A	43
EZN/KZN1048A	48
EZN/KZN1060A	57
EZN/KZN1072A	64

TABLE 1 - Weight Chart

Before mounting the unit, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the unit. **See TABLE 1.**

WARNING: Use caution when mounting the air curtain to ensure adequate clearance is provided for variable speed control knob located on unit bottom. Failure to do so will result in permanent damage to the controller.

A. When determining the mounting location for the unit(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0° to 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the unit will be greatly reduced. **See FIGURE 1**
B. For optimum performance, the bottom of the unit (discharge nozzle) should be no more than 1" above the top of the door opening with the unit mounted flush to the wall. If the unit must be mounted higher, it must be **spaced out** from the wall **3/8" for every inch** the unit is above the door opening. Any void between the air door and the wall should be sealed along the full length of the unit. **See FIGURE 2**
C. Proceed to **Section III-WALL MOUNTING**

III. WALL MOUNTING

A. Determine the location on the wall above the opening where the air curtain will be mounted. This location should center the unit over the opening and provide suitable mounting support. It is recommended to use at least four locations that correspond to the outer corners of the wall mounting plate. **See FIGURE 3.**
B. Prepare the wall as necessary for the wall mounting plate anchors (by others).
C. Drill holes in the wall mounting plate to correspond to the locations on the wall.

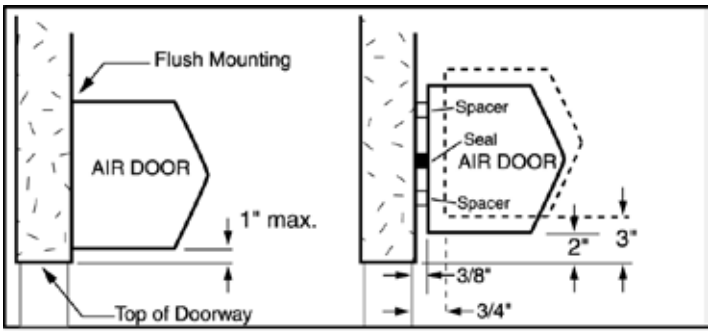

FIGURE 2 - Positioning of Air Door

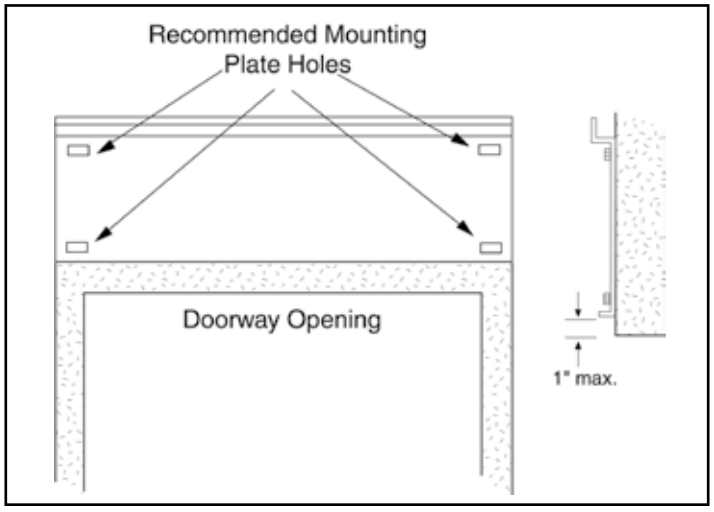

FIGURE 3 - Positioning of Mounting Plate

D. Anchor the wall mounting plate over the door opening with the mounting tabs pointing upwards.
E. Raise the unit over the door (air discharge nozzle facing down) and on to the mounting plate. First, tilt the unit upward matching the holes in the frame with the tabs on the mounting plate. **See FIGURE 4.**
F. Lower the unit into place allowing it to rest on the mounting plate. The unit flange should rest above the mounting plate flange.
G. After the unit is securely seated to the mounting plate, install the locking screws along the bottom flange. **See FIGURE 4.**

IV. SUSPENDED MOUNTING

(Ceiling Suspension)

A. When the unit is top mounted, the wall mounting plate is designed to store on the back of unit for future use.
B. Four (4) factory installed #10-24 threaded inserts are located on the top of the unit for top suspension mounting. **See Figure 5**
C. Determine the exact mounting location of the air door unit.
D. The top of the unit is provided with an electrical knockout for power connection. Remove the wiring tray compartmentcover. Remove the knockout and attach necessary electrical hardware. Save the wiring diagram found inside of wiring tray.
E. Attach #10-24 threaded rods, or other suitable hardware to the top mounted threaded inserts.

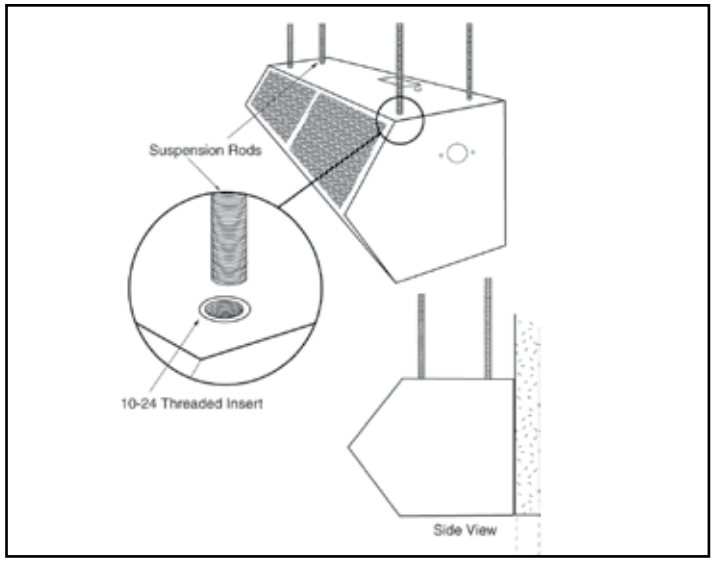

FIGURE 5 - Suspended Mounting

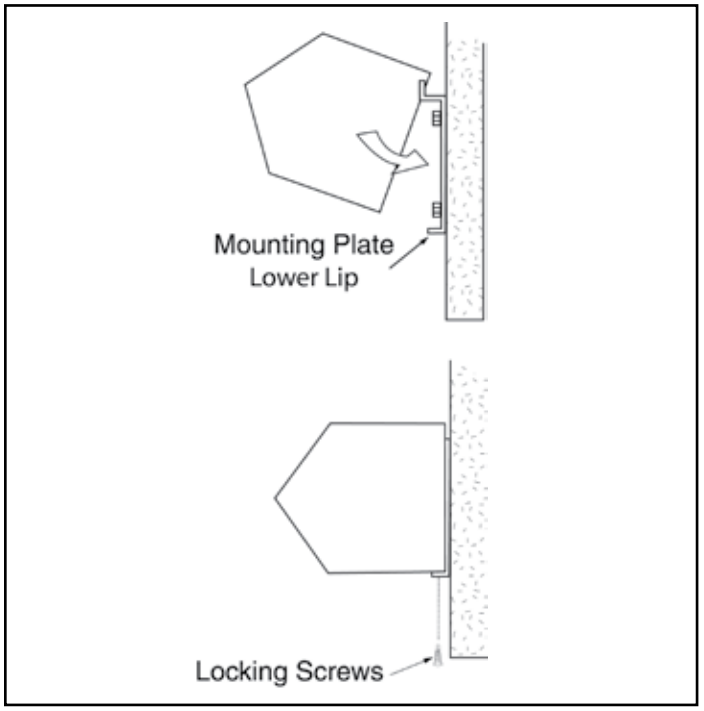

FIGURE 4 - Attaching Unit to Mounting Plate

F. Proceed to **Section V - Electrical Connections**

V. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the latest edition of the National Electrical Code ANSI/NFPA No. 70 or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

A. Check the rating nameplate on the unit for supply voltage and current requirements. A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the unit. A disconnect switch for each branch circuit is a required part of this installation. **See TABLE 2**
B. All field wiring must be copper with a minimum insulation of 60°C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90°C.
C. Remove the wiring compartment cover located on the top of the unit. **See FIGURE 6**
D. A ½" knockout is provided next to the wiring compartment

MOTOR DATA			
Model	#Motors @HP	120 V 1ø	208/240 V 1ø
		Total Motor Amps	Total Motor Amps
EZN/KZN1030	1@1/5	3.4	1.7
EZN/KZN1036	1@1/5	3.4	1.7
EZN/KZN1042	1@1/5	3.4	1.7
EZN/KZN1048	1@1/5	3.4	1.7
EZN/KZN1060	1@1/5	3.4	1.7
EZN/KZN1072	1@1/5	3.4	1.7

** Operation at 50 HZ will generate approximately a 17% reduction in performance.

TABLE 2 - Motor Amp Ratings

to connect electrical conduit. Connect all supply and control circuit wires according to the wiring diagram.

E. Reinstall the wiring compartment cover.

F. Switch on the power at the service disconnect. Turn on the unit and check the sequence of operation against the wiring diagram.

G. Proceed to **Section VI-AIRFLOW ADJUSTMENTS.**

VI. AIRFLOW ADJUSTMENTS

A. AIR STREAM SPLIT ADJUSTMENT

1. With the air door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle vanes.
2. Find the air stream split location. Hold a handkerchief, by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split location is indicated where the handkerchief is vertical with minimal or no fluttering. **See FIGURE 7.**
3. Adjust the discharge nozzle vanes so the split location is approximately 3" outside the doorway. This is accomplished by first de-energizing the unit. Remove the cover housing, loosen the nozzle vane locking screws and adjusting vanes.

B. LOW SPEED ADJUSTMENT

NOTE: This Section is applicable to units with a factory supplied speed controller only. A speed control device shall not be used on units required to comply with EPH or NSF Standard 37.

NOTE: Variable speed controller is not factory set for low speed setting. If low speed setting is desired it must be done after installation.

WARNING: Changing the low speed setting too much can cause the motor to stall on low speed.

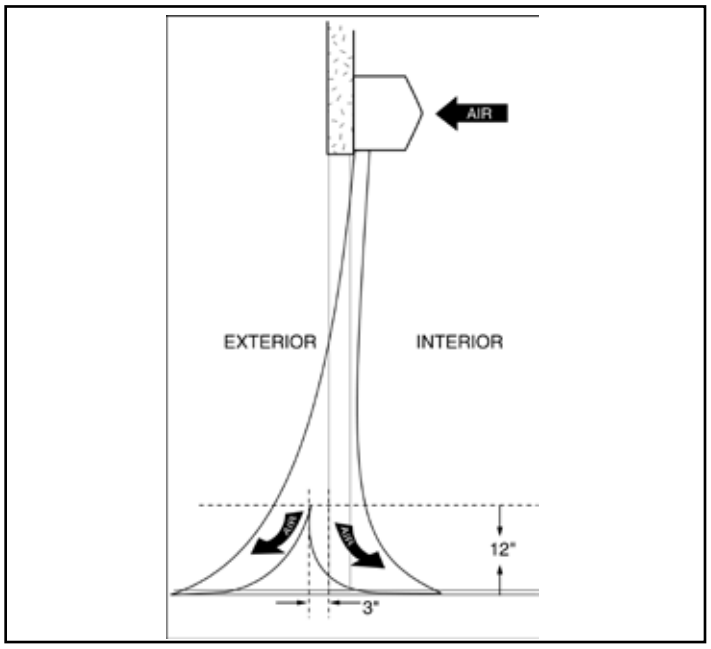

FIGURE 7 - Air Flow Adjustment

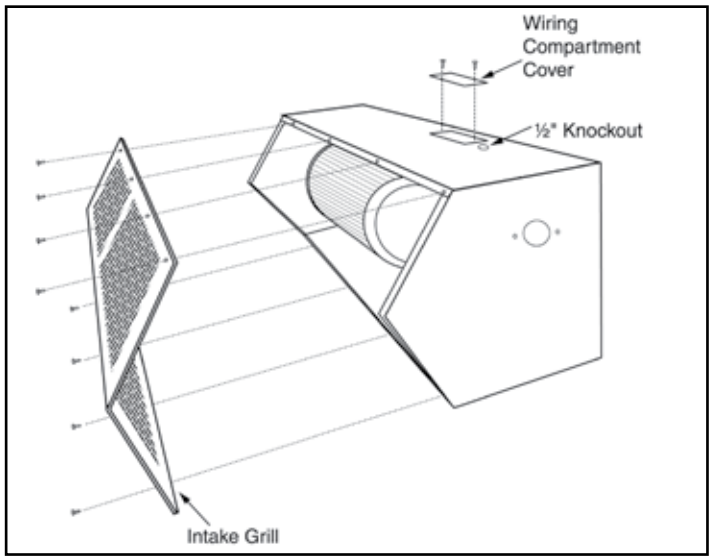

FIGURE 6 - Junction Box

1. Turn the speed controller knob clockwise to low speed.
2. Insert a small phillips screwdriver in the hole located next to the speed control knob and slowly turn adjusting screw clockwise to lower the speed. A small degree of rotation is required to change speed. Wait for speed to settle after each turn.

VII. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months. To access the interior of the unit:

A. Disconnect the power to the unit.

B. Remove the intake grille by removing all phillips head screws around edge. **See FIGURE 6.**

C. Vacuum and scrape (if necessary) to remove the buildup of dirt and debris. The motor(s) are permanently lubricated and require no additional lubrication. Reinstall the cover and intake grille.

D. Switch the power on after cleaning. **CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.**

VIII. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

*Any service performed on the EZN/KZN Series air door **MUST** be done by qualified personnel.*

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

A. UNIT MOUNTED ROTARY SWITCH REMOVAL

The variable speed switch must be removed from the bottom of the unit.

1. Disconnect power to the unit.
2. Remove the intake grille by removing all phillips head screws around edge. **See FIGURE 6.**
3. Disconnect and mark the wires in the unit connected to the switch.
4. Remove the knob from the switch by pulling it straight away from the unit.
5. Remove the two phillips head screws holding the switch and nameplate to the unit.
6. Remove the switch by pushing it into the unit.
7. Reinstall in reverse order of removal.

B. FAN AND MOTOR REMOVAL

1. Disconnect power to the unit.
2. Remove the intake grille by removing all phillips head screws around edge. **See FIGURE 6.**
3. Unplug motor harness from motor and remove necessary wiring.
4. Using a 1/8" Allen wrench, loosen each set screw attaching fan(s) to motor.
5. While holding the motor in place, loosen and remove the motor clips.
6. Slide the fans toward the motor so that the ball bearings on the outer fan shaft are exposed.
7. Slowly roll the motor out of the motor mount cradle forward and down. The hubs of the fans are flexible enough to allow the motor to move before the fans' outer ball bearings pull out of the unit.
8. Reinstall in reverse order of removal.

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Electrical Power supply line open (no power) • Fuse blown/circuit breaker tripped • Motor overload tripped • Failed switch	• Check power source, check method of control in ON position • Replace fuse(s)/reset breaker • Internally protected motor - should reset automatically after cool-down, if not, replace motor. • Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken fan hub • Shaft rotating inside fan • Broken / Loose coupling	• Replace fan • Tighten set screws/tighten fan on shaft • Replace / Tighten coupling
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position • Door limit switch not operating	• Turn switch to "ON" position • Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes misadjusted • Inadequate intake clearance • Blower motor operates below speed • Fan rubbing against housing • Fan wheels clogged with dirt	• Adjust vanes to proper position, see instructions • Move air curtain or remove obstruction Provide adequate space for air curtain • Improper voltage • Free fan from housing • Clean and vacuum fan wheels
AIR IS NOT HITTING FLOOR	• Air stream to weak • Air steam hits obstruction • Negative pressure	• Adjust nozzle to proper position, adjust motor speed; see installation instructions • Remove obstruction or reposition air curtain (move out 3/8" for every 1" up from the door) • Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws/Replace fan
EXCESSIVE AIR MOVEMENT AT DOORWAY	• Nozzle not angled out far enough • Air movement too cold • Pushing air outside building SEE AIR IS NOT HITTING FLOOR SYMPTOMS	• Adjust nozzle angle to outside • Add auxiliary heat to overcome wind chill • Adjust discharge angle back into building

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

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SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED

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INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

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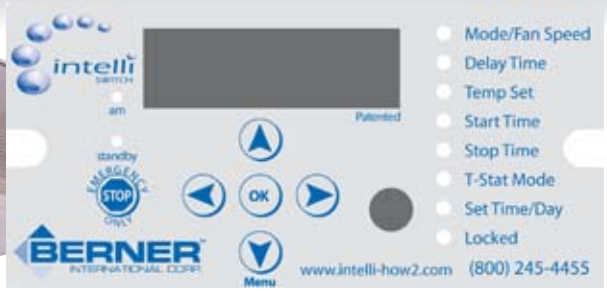
MADE IN U.S.A.

BERNER INTERNATIONAL CORP.

MAXAIR AIR DOOR | ZEPHYR AIR DOOR

intelli SWITCH Factory Installed Digital Programmable Controller



No. **II-470**
Date **August, 2011**

READ AND SAVE THESE INSTRUCTIONS

Installation & Maintenance Instructions For MaxAir & Zephyr *with the Intelliswitch™*

TABLE OF CONTENTS

MAXAIR/ZEPHYR AIR CURTAIN

I. UNCRATING 2
II. GENERAL MOUNTING INSTRUCTIONS 2
III. WALL MOUNTING 2
IV. SUSPENDED MOUNTING 3
V. ELECTRICAL CONNECTIONS 4
VI. FIELD CONNECTIONS 6
VII. AIRFLOW ADJUSTMENTS 6
VIII. MAINTENANCE AND CLEANING 7
IX. SERVICE 7-9
TROUBLESHOOTING 19
INTELLISWITCH™ (How to operate the MaxAir & Zephyr) 10
QUICK START PROGRAMMING 10-11
FAQ's (FREQUENTLY ASKED QUESTIONS) 12-13
APPENDIX (INTELLISWITCH DETAILED PROGRAMMING) 14-18

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction. (See page 4 V. ELECTRICAL CONNECTIONS (NEC Code ANSI/NFPA No. 70)
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage. If the carton is damaged, immediately notify the shipping company. **Do not delay in filing claim.** If the air door(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the air door(s) are installed and properly operating.

ACCESSORIES: If the air door(s) were ordered with optional electrical accessories, the accessories will be found in the carton containing the air door or in a separate carton(s) accompanying the air door(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING INSTRUCTIONS

(General)

INDOOR MOUNTING ONLY - Environmental/Insect/Dust Control

The MaxAir /Zephyr Air Door are designed to be an effective barrier against cold drafts in the winter and hot air in the summer. To achieve optimum protection, the air door should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance, keep the air stream free of obstructions.

The air door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

Before mounting the air door, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the air door(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the air door.
See Table 1.

IMPORTANT: A minimum of 1″ is required above the top of the air door for the installation and removal of the cover housing.

A. When determining the mounting location for the air door(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0º to 20º toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the air door will be greatly reduced. **See Figure 1**.
B. For optimum performance, the bottom of the air door (discharge nozzle) should be no more than 1″ above the top of the door opening with the air door(s) mounted flush to the wall. If the air door must be mounted higher, it must be **spaced out** from the wall **3/8″ for every inch** the air door is above the door opening. **See Figure 3**. For optimum protection, any void between the air door and the wall should be sealed along the full length of the air door.
C. **Electric heated air door(s) shall:**
   1. Have a minimum clearance of at least 1″ between the sides and top of the air door and any combustible material.
   2. Have a minimum clearance of at least 6′ between the bottom of the air door and the floor.
   3. Be installed Indoors Only.
D. Proceed to either **Section III - WALL MOUNTING** or **Section IV - SUSPENDED MOUNTING**

MODEL	Net Weight Ambient (lbs)	Net Weight Heated (lbs)	Net Weight Steam/Hot Water (lbs)
MAX/ZPR1030	33	40.5	39
MAX/ZPR1036	38	45.5	48
MAX/ZPR1042	43	50	55
MAX/ZPR1048	48	56	62
MAX/ZPR1060	57	75	75
MAX/ZPR1072	64	76.5	87
MAX/ZPR2084	86	100	113
MAX/ZPR2096	96	111.5	127
MAX/ZPR2120	124	145.5	163

TABLE 1 - Unit Weight

III. WALL MOUNTING

A. The MaxAir/Zephyr Air Door is equipped with two ¼″ threaded inserts on the back of each air door (two per module on air doors 84″ and over). Insert and tighten the shoulder bolts (provided in bag taped to the wall plate) into these threaded inserts. A minimum of two shoulder bolts are required; on air doors comprised of modules, use the outer threaded inserts and a minimum of one of the inner threaded inserts.

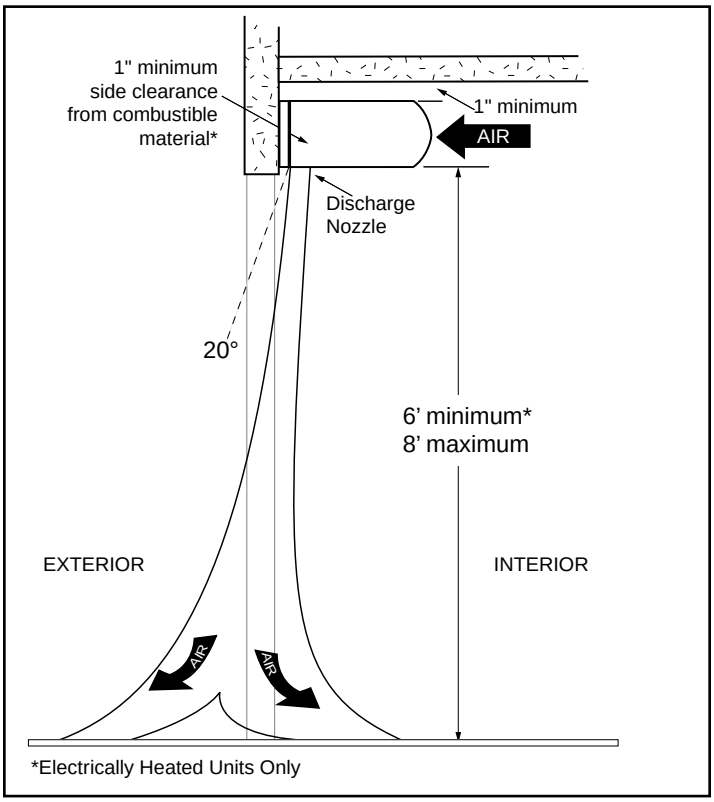


FIGURE 1 - Mounting Location

B. Determine the exact mounting location of the air door.
NOTE: A minimum of 1" is required above the wall mounting plate to provide clearance for installation and removal of the air door.

C. Remove the wall mounting plate from the unit to install. The wall mounting plate (included) is designed to fit flush with the top of the MaxAir/Zephyr Air Door. Therefore the location of the wall mounting plate will determine the final location of the top of the air door.

D. For Standard Flush Wall Mounting, position the center of the wall mounting plate over the center of the door open ing with the larger opening of the key hole slots facing up. The wall mounting plate thickness provides a natural ¾" space which allows for mounting it up to 4" above the opening. For optimum performance, the bottom of the mounting plate should *be no more than 2" or less than 1"* above the top of the door opening.
See Figure 2.
High Wall Mounting must be used if the wall mounting plate must be mounted higher than 4" above the door opening: the mounting plate must be **spaced out** from the wall **3/8" for every additional inch** (over 4") that the air door is above the door opening (clearance height). **See Figure 3.** For optimum protection, do not exceed the recommended **maximum mounting height of 8'** above the finished floor. Any void between the mounting plate and the wall should be sealed along the full length of the mounting plate.

E. Determine which of the four holes provided in each of the steel brackets of the wall mounting plate are located where suitable support is available for the air door.
A minimum of one inside hole and one outside hole from

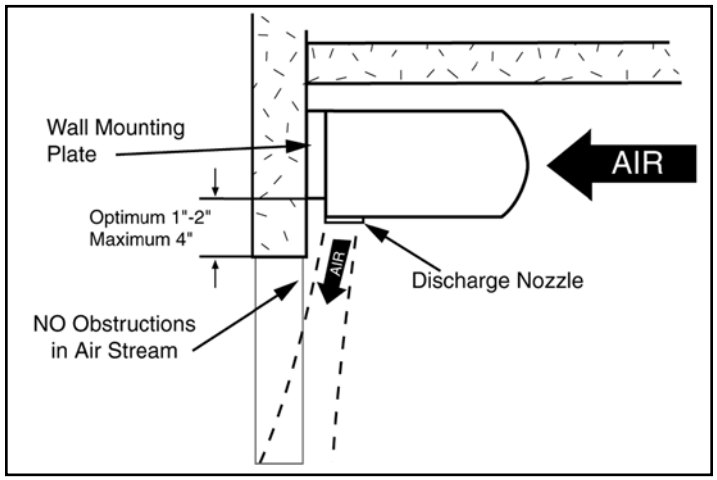


FIGURE 2 - Standard Flush Wall Mounting

each bracket must be used for proper support.
Drill out the aluminum backing of the holes chosen with a ¼" drill bit. If the provided holes on the mounting plate are not located where suitable support is available, drill new holes in the space provided on the steel mounting brackets.

F. Mark the wall in the centers of the ¼" holes drilled on the mounting plate.

G. Attach the mounting plate to the wall (hardware by others).

H. The top of the air door is provided with two knockouts on each side allowing for a left or right hand power connection. Remove the wiring tray cover; on air doors

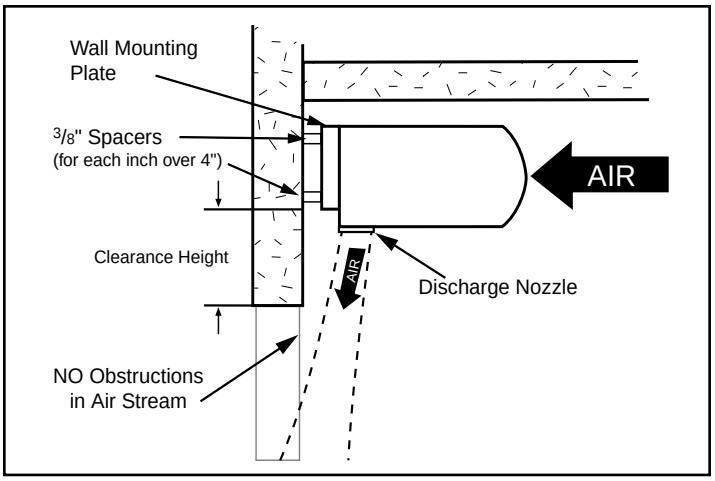


FIGURE 3 - High Wall Mounting

that are comprised of modules, remove the wiring tray cover that is located closest to the electrical rating nameplate. Remove the required knockouts and attach the necessary electrical hardware. ***Save the wiring diagram found inside of the wiring tray.*** **See Figure 7.**

I. There are two sets of keyhole slots on the wall mounting plate. *In low overhead installations, the air door may be staged in the lower keyholes to provide clearance for electrical wiring and then moved to the higher key holes after completion.* Raise the air door with the discharge opening facing down toward the floor. While holding the air door level, slide the heads of the shoulder bolts into the larger hole of the keyhole slots of the mounting plate. Lower the air door into place, keeping both ends level, allowing it to rest flush with the mounting plate. **See Figure 4.**

J. After attaching the air door to the mounting plate, ensure that the air door is seated and flush with the mounting plate on all four sides.

K. Proceed to **Section V - Electrical Connections.**

IV. SUSPENDED MOUNTING

(Ceiling Suspension)

A. When the air door is top mounted, the wall mounting plate is designed to store on the back of the air door for future use. **See Figure 5**.

B. Four (4) factory installed ¼" threaded inserts are located on the top of the air door for top suspension mounting; on air doors comprised of modules use the outer threaded inserts.
To eliminate the slight deflection of longer air doors, the inner threaded inserts may also be used. **See Figure 6.**

C. Determine the exact mounting location of the air door.

D. The top of the air door is provided with two knock-outs on each side allowing for a left or right hand power connection. Remove the wiring tray cover; on air doors that are comprised of modules, remove the wiring tray cover that is located closest to the electrical rating nameplate. Remove the required knockouts and attach the necessary electrical hardware. Save the wiring diagram found inside of the wiring tray. **See Figure 7.**

E. Attach ¼" threaded rods or other suitable hardware to the top mounted threaded inserts.

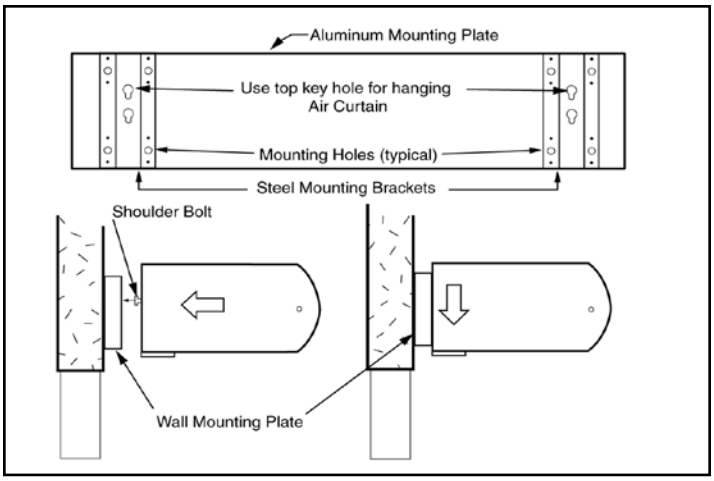


FIGURE 4 - Installing Air Door on Wall Mounting Plate

F. Proceed to **Section V - Electrical Connections.**

V. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the National Electrical Code ANSI/NFPA No. 70 (latest edition) or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

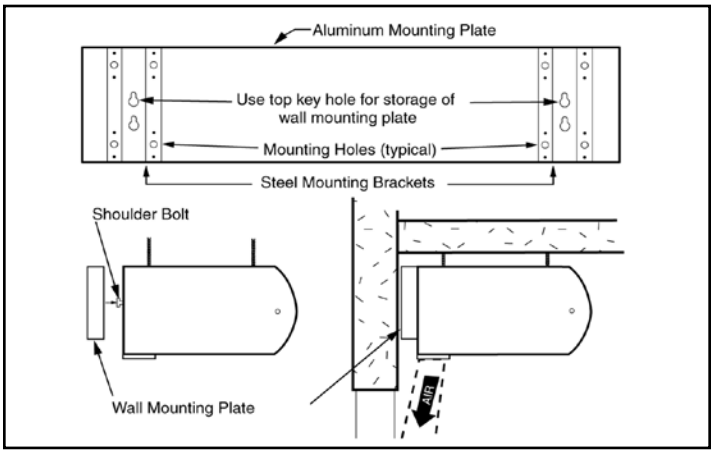


FIGURE 5 - Wall Mounting Plate Storage

A. Check the rating nameplate on the top of the air door for supply voltage and current requirements. **See Figure 7.** A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the air door. A disconnect switch for each branch circuit is a required part of this installation. **See Tables 2 & 3.**

B. All field wiring must be copper with a minimum insulation of 60° C within approved conduit. If any of the wire supplied with the air door must be replaced, it must be replaced with copper wiring with a minimum insulation of 90° C.

C. Remove the wiring tray cover; on air doors that are comprised of modules, remove the wiring tray cover that is located closest to the electrical rating nameplate (if it has not already been done).

D. Electric, steam and hot water heated air doors are factory equipped with a air door mounted solid state temperature sensor cable (for the Intelliswitch thermostat) located in the wiring tray. Depending where the temperature is to be measured, the sensor may be left in the wiring tray or it may be located outside of the air door. If the air door is unheated, or the sensor will be left in the wiring tray, skip to step E, otherwise continue.

1. Remove the ½" bushing taped to the back of the wiring tray cover and set aside.
2. Determine mounting location of the temperature sensor (do not mount at this time).
3. Choose end of the wiring tray that the sensor will exit the air door based on the mounting location from Step 2.
4. Locate the ⅛" hole on the wiring tray next to the electrical knockout on the side determined in Step 3.
5. Drill out the ⅛" hole to ½".

CAUTION: DO NOT DAMAGE EXISTING WIRES IN THE WIRING TRAY WHEN DRILLING.

6. Maneuver the tip of the temperature sensor from the inside of the wiring tray out through ½" hole.
7. Thread the tip through ½" bushing from Step 1 and snap the bushing into the wiring tray.
8. Mount the temperature sensor. Do not put any clamps on the rubber coated tip.

E. The top of the air door has two knockouts on each side of the air door, allowing for a left hand or right hand power connection. Remove the required knockout if it has not already been done and connect the power supply to the air door. Connect all supply and control circuit wires according to the wiring diagram provided.
NOTE: For Electric heated air doors provided with the optional remote thermostat, mount and wire the thermostat according to instructions and wiring diagram.

F. Master/Slave connection, if two or more units are to be linked together for master/Slave operation continue, otherwise skip to step G.

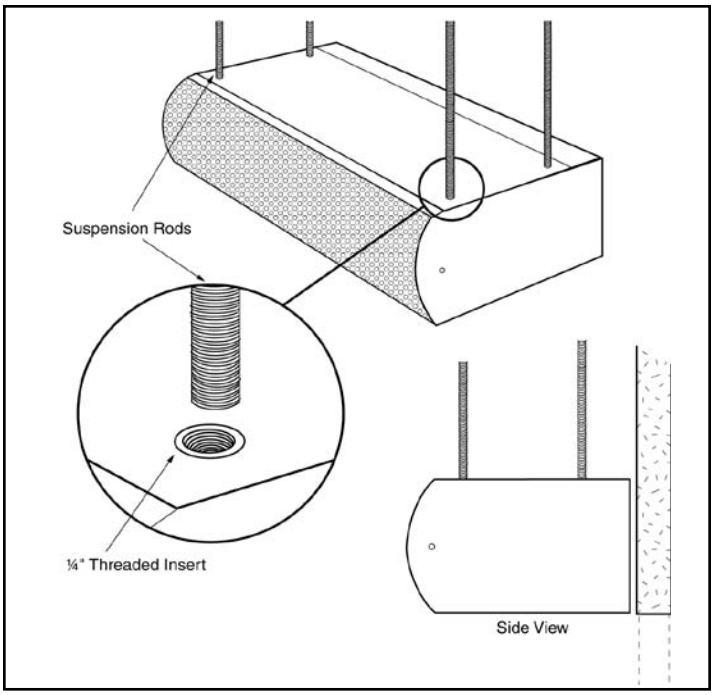


FIGURE 6 - Suspended Mounting

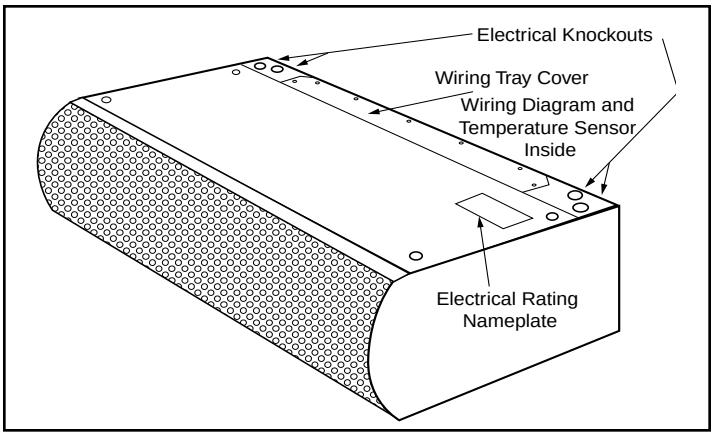


FIGURE 7 - Electrical Connections

MOTOR DATA			
Model	#Motors @HP	120 V 1ø	208/240 V 1ø
		Total Motor Amps	Total Motor Amps
MAX/ZPR1030	1@1/5	3.4	1.7
MAX/ZPR1036	1@1/5	3.4	1.7
MAX/ZPR1042	1@1/5	3.4	1.7
MAX/ZPR1048	1@1/5	3.4	1.7
MAX/ZPR1060	1@1/5	3.4	1.7
MAX/ZPR1072	1@1/5	3.4	1.7
MAX/ZPR2084	2@1/5	6.8	3.4
MAX/ZPR2096	2@1/5	6.8	3.4
MAX/ZPR2120	2@1/5	6.8	3.4

TABLE 2 - Motor Amp Draw

NOTE: One Intelliswitch serial cable assembly (part # 505SC*INT485-A) is required for every unit that is to be used as a master/slave. "***" denotes length of cable in feet- "008" = 8 feet long.**

For Master/Slave operation, a serial cable connection must be made between the INTELLISWITCH GEN2 control boards of each unit to be linked.

1. Disconnect power to all the units.
2. Access the wiring tray on top of each unit by removing the screws that hold the cover in place.
3. Find the (RS485) phone jack couplers in the wiring trays. There will be two short cables in the wiring tray of each air curtain, each with a double ended female phone jack coupler attached to the cable.
4. The serial cable ordered for each unit will be coiled up in the wiring tray of the unit and connected to one of the couplers.

Note: There may be one less serial cable than the number of units ordered. e.g. Two units together will need only one cable; three units together will need two cables, etc. Any extra cables can be kept as spares.

5. Use one of the extra electrical knockouts to route serial cable from one unit to the next. Be sure to protect the edge of the knockout properly.
6. Plug (RS485) male phone jack on the end of the serial cable into the empty coupler on the next unit.
7. Continue process for all units that are to be connected serially.
8. Serial cable connections are capable of two way com munication. It does not matter which coupler the cables are connected to.
9. The first and last air curtains in the group will each have an empty coupler after all connections are made. So if there are only two air curtains connected, each will have an empty cable coupler.

ELECTRIC HEATER DATA* Add total motor amp draw from Table #2 to circuit #1 for air door total amp draw											
MODEL	KW	208V 1Ø Amp Draw		240V 1Ø Amp Draw		208V 3Ø Amp Draw		240V 3Ø Amp Draw		480V 3Ø** Amp Draw	600V 3Ø** Amp Draw
		Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 1
MAX/ZPR1030	5.4	26.0	N/A	22.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/ZPR1030	7.2	34.6	N/A	30.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MAX/ZPR1036	10	48.0	N/A	41.7	N/A	27.8	N/A	24.1	N/A	12.0	10.0
MAX/ZPR1042	10	48.0	N/A	41.7	N/A	27.8	N/A	24.1	N/A	12.0	10.0
MAX/ZPR1048	14.4	34.6	34.6	30.0	30.0	40.0	N/A	34.6	N/A	17.3	14.6
MAX/ZPR1060	14.4	34.6	34.6	30.0	30.0	40.0	N/A	34.6	N/A	17.3	14.6
MAX/ZPR1072	20	N/A	N/A	N/A	N/A	27.8	27.8	24.1	24.1	24.0	20.1
MAX/ZPR2084	20	N/A	N/A	N/A	N/A	27.8	27.8	24.1	24.1	24.0	20.1
MAX/ZPR2096	28.8	N/A	N/A	N/A	N/A	40.0	40.0	34.6	34.6	34.6	28.9
MAX/ZPR2120	28.8	N/A	N/A	N/A	N/A	40.0	40.0	34.6	34.6	34.6	28.9

*Optional kW available. Check wiring diagram supplied with air door for kW and AMP draw if not listed above.

** Separate 120V, 208V or 240V single phase circuit required to operate motors rated in Table 2.

TABLE 3 - Electric Heater Amp Draw

Note: If a longer cable is required than was supplied, it can be ordered from the factory or made by using standard flat telephone cable, phone jack connectors and the proper crimping tool.

G. Remote mounted Display Faceplate - if operation of the Intelliswitch is desired through a remote mounted display face plate continue, otherwise skip to step H.
NOTE: Maximum mounting distance between the Display Faceplate and the unit is 20'.
The unit MUST be factory ordered with the remote mounted faceplate option.
   1. When the remote faceplate option is ordered from the factory the air door comes equipped with the blank faceplate and 12' ribbon attached. The Display Faceplate is shipped loose ready for field installation.
   2. Locate the male end of the 14-conductor ribbon cable in the wiring tray and run to the remote display loca tion. The cable is minimum CL2 rated and should not need to be in conduit.
   3. Connect the ribbon cable to the 14-pin socket with red stripe positioned on the top left when facing the front of the display board.
   4. Mount remote faceplate to the wall.

H. Reinstall the wiring tray cover.

I. For Electric, Steam and Hot Water air doors proceed to **Section VI - Field Connections** otherwise proceed to **Section VII - Operation and Controls.**

VI. FIELD CONNECTIONS

A. ELECTRICALLY HEATED MODELS
The heater circuit may be controlled by a remote thermostat or manually through the Intelliswitch located on the discharge side of the air door. Overheating protection is provided by auto reset thermal cutouts built into the heater coil assembly **(see the wiring diagram)**.

B. STEAM OR HOT WATER HEATED MODELS
Piping should be done in accordance with local codes, regulations and standard practices.
Connect the building system supply and return to the ¾" MPT nipples on the heating coil. **See Figure 8**.

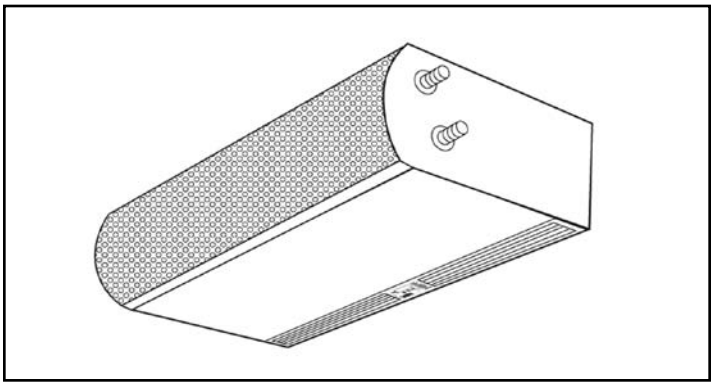


FIGURE 8 - Steam/Hot Water Connections

VII. AIRFLOW ADJUSTMENTS

A. With the air door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle vanes.

B. Find the air stream split location. Hold a handkerchief, by corner, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. **See Figure 9.** The split location is indicated where the handkerchief is vertical with minimal or no fluttering.

C. Adjust the discharge nozzle vanes so the split location is approximately 3" outside the doorway. Adjust the speed controller so that the split location is approximately 12" above the floor.

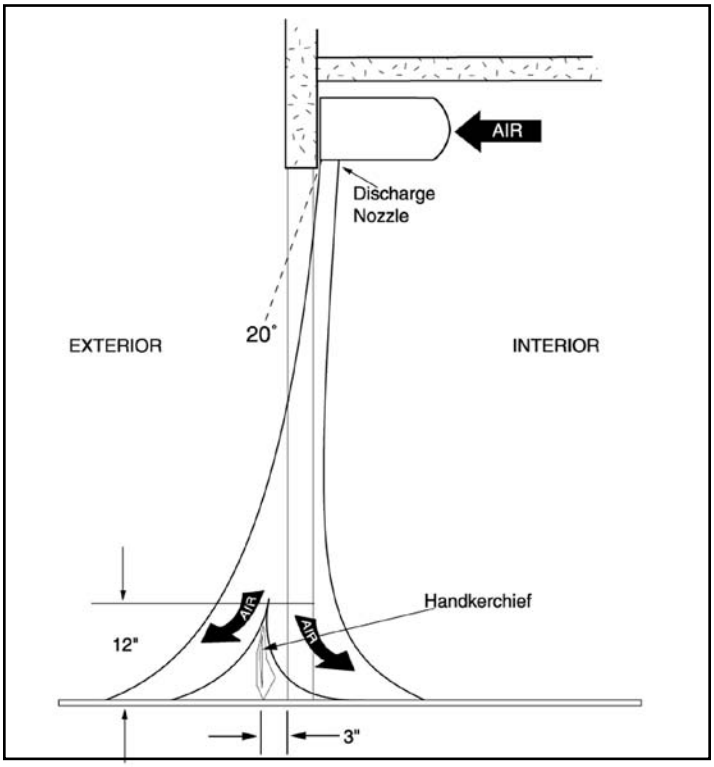


FIGURE 9 - Airflow Adjustment

VIII. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months.

To access the interior of the unit:

A. Disconnect the power to the unit; remove the intake grille by removing the locking screws on each end of the unit. Lift the intake grille up and then towards you. **See Figure 10.**
B. Remove the bottom access panel by removing the phillips head screws on the bottom of the unit.
C. Vacuum and scrape (if necessary) to remove the buildup of dirt and debris. The motor(s) are permanently lubricated and require no additional lubrication. Reinstall the cover and intake grille.
D. Switch the power on after cleaning reinstalling the cover and intake grille.

CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.

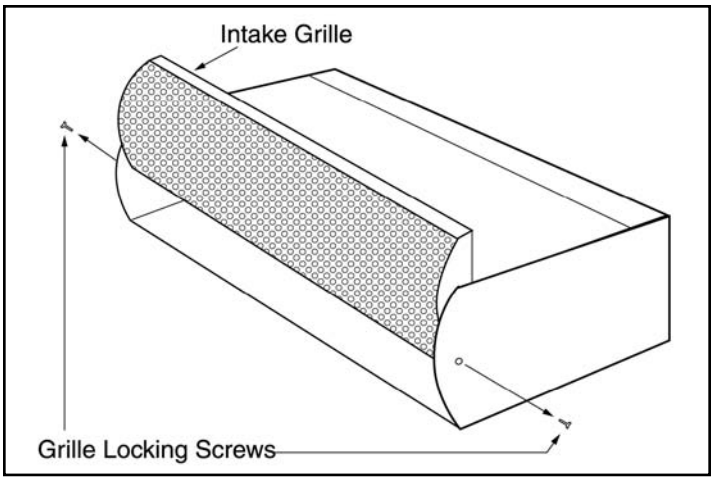


FIGURE 10- Intake Grill Removal

IX. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

*Any service performed on the MaxAir/Zephyr air door **MUST** be done by qualified personnel.*

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance. **See Figure 11**

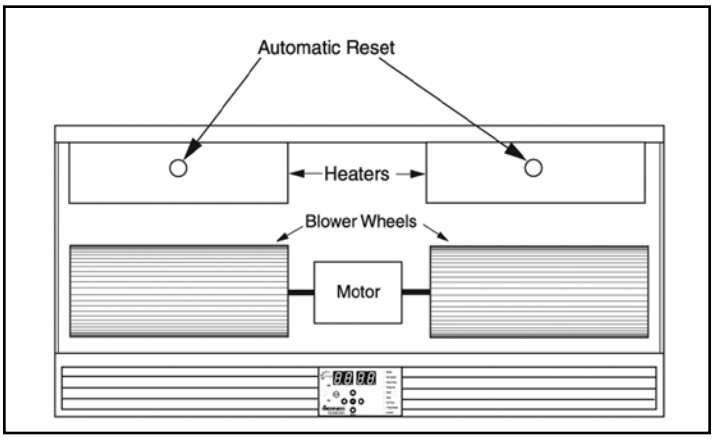


FIGURE 11 - Unit Components

A. INTELLISWITCH DISPLAY BOARD REMOVAL OR REPLACEMENT

CAUTION: Do not expose the bare board to static electricity, water, extreme heat or extreme moisture.

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit.
3. Remove the two Phillips head screws from the Intelliswitch display faceplate.
4. Remove the faceplate from the unit by gently pulling it away from the unit and unplugging the ribbon cable from the back.
5. Flip the faceplate over and place it on a clean soft sur face.
6. Remove the two nuts, aluminum shield and flat washers holding the display board to the faceplate.
7. Lift display board off of the studs while leaving the stand off spacers in place.
8. Install new display board onto faceplate studs, reinstall washers with aluminum shield and attach with existing nuts.
9. Reinstall display faceplate by attaching the ribbon cable (with red stripe positioned on the top left) to the back of display board. Place the face plate against the mounting bracket, insert and tighten the two Phillips head screws.

B. INTELLISWITCH CONTROL BOARD REMOVAL OR REPLACEMENT

CAUTION: Do not expose the bare board to static electricity, water, extreme heat or extreme moisture.

NOTE: The Intelliswitch Control Board may be removed without removing the bottom access cover or transverse. However removal of the bottom access cover and transverse will simplify the process.

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit.
3. Remove the two Phillips head screws from the Intelliswitch display faceplate.
4. Remove the faceplate from the unit by gently pulling it away from the unit and unplugging the ribbon cable from the back.
5. Mark and remove all wires connected to the control board.
6. Remove the two plastic push-rivets that attach the control board to the unit frame by gently prying a screw driver under the metal bracket attached to the control board.
7. Carefully maneuver the control board partially out of the unit by sliding straight down. Avoid contact between board components and the motor mount.
8. Remove the Phillips head screw that attaches the control board to the mounting bracket and ground wire and completely remove the control board from the unit.
9. Attach mounting bracket to the new control board with existing screw only on the side that does not contain the ground wire.
10. Partially insert the board into the unit and attach the second Phillips head screw and ground wire.

NOTE: GROUND RING TERMINAL MUST BE SITUATED OR BEND SUCH THAT IT DOES NOT TOUCH ANY TRACES ON THE CONTROL BOARD

11. Continue installing the new control board into the unit by carefully sliding the two tabs at the top of the con trol board into the two corresponding slots in the unit frame. Attach with new plastic push-rivets provided. Note: when the tabs of the board hit the unit frame tip the board up and angle the tabs into the slots.
12. Reconnect all wires to the control board.
13. Reinstall display faceplate by attaching the ribbon cable (with red stripe positioned on the top left) to the back of display board. Place the face plate against the mounting bracket, insert and tighten the two Phillips head screws.

C. INTELLISWITCH SPEED SENSOR REPLACEMENT

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit
3. Remove the intake grille by removing the locking screws on each end of the unit. Lift the intake grille up and then away from the unit.
4. Remove the bottom access panel by removing the Phillips head screws on the bottom of the unit.
5. Remove the two Phillips head screws from the Intelliswitch display faceplate.
6. Remove the faceplate from the unit by gently pulling it away from the unit and unplugging the ribbon cable from the back.
7. Disconnect the speed sensor from the control board by locating the pin connection marked J5 and labeled PROXIMITY. Grasp the socket and carefully pull away from the control board.
8. Remove the 13 mm hex nut and washer closest to the fan from the sensor.
9. Remove the sensor.
10. Connect the new sensor to the control board; secure all loose wires from rotating parts.
11. Install new sensor into mounting bracket. Use the 13 mm nuts to position the tip of the sensor a maximum of 1/16" (2 mm) away from the rotating trigger located on the motor shaft. When the unit is energized, the LED on the back of the sensor will illumi nate when the trigger passes if the correct distance has been set.

CAUTION: Do not mount the speed sensor too close to the trigger, the sensor will be ruined if it is struck by the trigger.

12. Reinstall display faceplate by attaching the ribbon cable (with red stripe positioned on the top left) to the back of display board. Place the face plate against the mounting bracket, insert and tighten the two Phillips head screws.
13. Reinstall remaining components in reverse order of removal.

D. INTELLISWITCH SPEED SENSOR ADJUSTMENT

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit
3. Remove the intake grille by removing the locking screws on each end of the unit. Lift the intake

grille up and then away from the unit.
4. Remove the bottom access panel by removing the Phillips head screws on the bottom of the unit.
5. The speed sensor is held in with two 13 mm hex nuts and a star washer.
6. Use the 13 mm nuts to position the tip of the sensor a maximum of 1/16" (2 mm) away from the rotating trigger located on the motor shaft. When the unit is energized, the LED on the back of the sensor will illumi nate when the trigger passes if the correct distance has been set.

CAUTION: Do not mount the speed sensor too close to the trigger, the sensor will be ruined if it is struck by the trigger.

7. Reinstall remaining components in reverse order of removal.

E. INTELLISWITCH TEMPERATURE SENSOR REPLACEMENT

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit.
3. Remove the wiring tray cover.
4. Cut necessary cable ties that may be holding the brown temperature sensor lead.
5. Disconnect the temperature sensor from the socket.
6. Install new temperature sensor and all necessary cable ties.
7. Reinstall remaining components in reverse order.

F. FAN AND MOTOR REMOVAL

1. Set Intelliswitch mode to off.
2. Disconnect power to the unit.
3. Remove the intake grille by removing the locking screws on each end of the unit. Lift the intake grille up and then away from the unit.
4. Remove the bottom access panel by removing the Phillips head screws on the bottom of the unit.
5. Free the fan bearing retainer bracket(s) by loosening the Phillips head screw lock located on the inside unit end plate(s). Rotate them out of the way to allow the fans to be removed.
6. Remove the transverse by removing the four (4) 5/16" hex washer head bolts.
7. Rotate the speed sensor bracket away from the motor by removing the Phillips screw farthest from the motor and loosening the second Phillips screw. Do not remove the speed sensor from the bracket.
8. Unplug motor harness from motor and remove necessary wiring.
9. Using a 1/8" Allen wrench, loosen each set screw attaching fan(s) to motor.
10. While holding the motor in place, loosen and remove the motor clips.
11. Slide the fans toward the motor so that the ball bear ings on the outer fan shaft are exposed.
12. Slowly roll the motor out of the motor mount cradle forward and down. The hubs of the fans are flexible enough to allow the motor to move before the fans' outer ball bearings pull out of the unit.
13. If the unit equipped with an intelliswitch, remove the trigger bar from the motor shaft with a 5/64" Allen wrench.
14. Install the trigger bar on the replacement motor so that it is not closer than 0.030" to the motor bearing cap (including shaft movement).
15. Ensure the trigger does not contact the speed sensor. Maximum gap distance between trigger and sensor is 1/16" (2mm).
16. Reinstall in reverse order of removal.

G. REPLACEMENT OF ELECTRIC HEATER ELEMENT

1. Disconnect power to the unit; remove the intake grille by removing the locking screws on each end of the unit.
   Lift the intake grille up and away from the unit.
2. Remove the bottom access panel by removing the Phil lips head screws on the bottom of the unit.
3. Remove and mark all wires from damaged element.
4. To remove damaged element from unit, drill out rivets and remove screws.
5. Install new element and connect all wires.
6. Reinstall cover and intake grille.

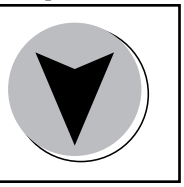
How to operate your MaxAir & Zephyr Air Door
that comes with a factory installed digital programmable controller called the Intelliswitch™

INTELLISWITCH™ QUICK START OPERATION

www.intelli-how2.com

When power is turned on to the Air Door, all of the lights on the display will light briefly while the Intelliswitch™ starts up. After startup the clock will then display. The Intelliswich is now ready to set.
NOTE: To adjust the clock, refer to section 4.5 Appendix A.

To operate the air door:

	Press the Down Arrow (Menu) button once. NOTE: If the Down Arrow button is pressed twice, the function will change from "Mode" to "Fan Speed".	Mode/Fan Speed indicator will light
	Using either the Left or Right Arrow buttons, scroll through the **Modes of Operation** until you reach the desired mode. *See below to determine which mode is right for you.*	

For detailed information of the Intelliswitch™ Navigation and Operation please refer to Appendix A (see pages 12-18)

	Once the Mode of Operation is selected, press "OK" button to set and return to the clock or the down arrow to select and adjust any of the other available settings.	

Mode of Operation:

OFF	The unit will not run.	
ON	The unit will run continuously unless a start and stop time is programmed.	

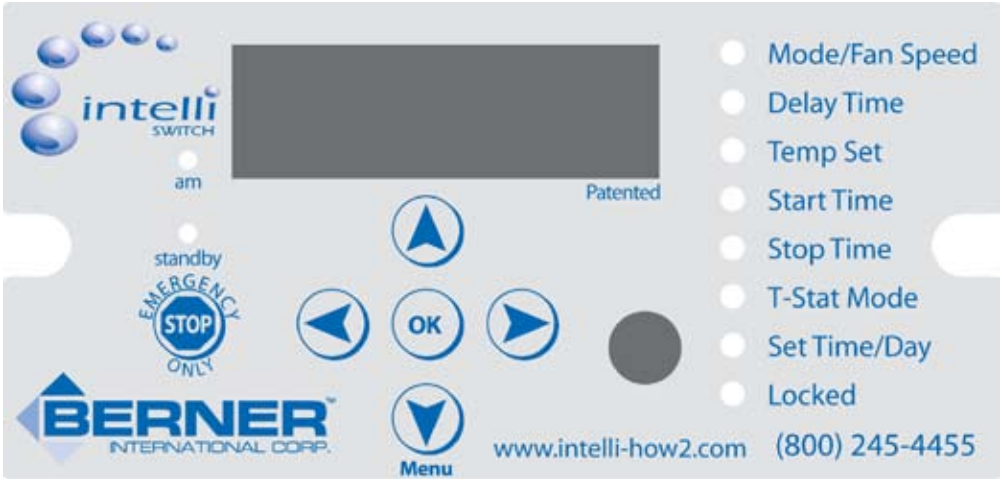
The following modes can be customized see "Programming the Intelliswitch" for more info.

AUTO	For use with a door switch, the unit will operate only when the door is open.	
"delu" DELUXE	For use with a door switch, the unit will operate only when the door is open with a minimum 1 minute delay before turning off when it closes.	

Modes of Operation continued:

The following modes can be customized see "Programming the Intelliswitch" for more info.

"PluS" COMFORT PLUS	For use on heated units only, requires a door switch. When the temperature drops below the thermostat set point and the door is closed, the unit will activate on a low speed and provide supplemental heating to the space. The unit will change to normal speed when the door is open. If the thermostat is still not satisfied when the door closes the unit will return to low speed until the set point is reached.	PLUS
"Pro1" PROGRAM 1	Recommended for unheated units. This setting will enable the air door to operate on Deluxe mode with a 1 minute time delay, 24 hours a day, 7 days a week. See Appendix A page 18 for more detailed information.	PRO1
"Pro2" PROGRAM 2	Recommended for heated units. This setting will enable the air door to operate on Deluxe mode with a 1 minute time delay from 8:00 am – 5:00 pm. From 5:01 pm – 7:59 am, the unit will operate on Comfort Plus with a 30 second time delay. See Appendix A page 18 for more detailed information.	PRO2
"Pro3" PROGRAM 3	Recommended for heated units. This setting will enable the air door to operate on Auto mode with a 30 second time delay, 24 hours a day, 7 days a week. See Appendix A page 18 for more detailed information.	PRO3



INTELLISWITCH™ FAQ's (Frequently Asked Questions)

www.intelli-how2.com

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING: Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Even though every MaxAir/Zephyr unit is individually tested at the factory before shipment, on occasion improper functionality may be experienced. Here is a list of common questions:

Q. Why can't I change my settings?
A. The Intelliswitch™ may be locked. If the Lock light is illuminated, the control is locked. To unlock, press and hold the left & right arrows simultaneously for 5 seconds. The Lock mode can also be protected with a PASScode. If the PASScode option is on, an attempt to unlock the control will display PASS and then a 0000 prompt. A four-digit code (available in the installation instruction book Appendix) must then be entered to unlock the control. Use the up and down arrows to select a number and the left and right arrows to select the digit to edit. Press OK when done. Note: If the AutoLock setting is on, the control will re-lock if there is no activity after 5 minutes.

Q. Why won't my heat work, even though fans are running?
A. The thermostat(s) or speed sensor may need adjusted or replaced.
1.) Make sure that the thermostat probe and/or remote thermostat are in the "On" position and set above ambient (room) temperature.
2.) Check internal and external thermostat status in the Diagnostics Menu for a faulty thermostat. To do this, hold the right arrow for five seconds until DIAG appears, then arrow down to the ts setting, if it displays "1" then the thermostat(s) is working (there is a call for heat).
3.) If no external thermostat is used, check to see if the internal probe is attached to the control board. Disconnect power to the unit, remove the display board and check that the beige sheathed cable is attached at both ends. If the thermostat(s) and settings are correct and you are still not getting heat, then check to see the fan speed. to do this, press the down arrow to reach the Mode/Fan speed setting. Use the right and left arrow to change the fan speed.
4.) Check to see if you can adjust the fan speed. If the speed sensor is bad there will be no speed control and the Intelliswitch will not let the heat come on. If it is too difficult to determine a change in speed, the speed sensor can be checked by entering the DIAG menu and checking the first error code. If ER 10 displays, the speed sensor is recognized by the Intelliswitch. If the code ER 11 is displayed, the Intelliswitch does not recognize the sensor, and it may be faulty or need adjusted closer to the trigger bar. Turn off the power to the unit and remove the screen to check the distance between the sensor and the trigger located on the left side of the motor (use the bottom access cover for steam/hot water heated units). The sensor should be less than 1/16" from the trigger face. Check distance at both ends of trigger. Adjust if necessary.
5.) If there is still no heat or speed control, you may need a new speed sensor: consult factory.

Q. Why won't the Intelliswitch light up?
A. There may not be power to the control.
1.) Check to see if the main power is turned on to the unit. Your air curtain may have multiple disconnects, be sure all are turned on.
2.) Verify that there is power to the board. **NOTE: ONLY QUAILIFED PERSONS SHALL CHECK POWER IN THE UNIT WITH THE POWER ON.** The power terminals are located directly behind the display. Remove two Phillips screws from the Intelliswitch display to expose the power terminals and check the line voltage at spade terminals L2 and 120, 208 or 240 (depending on the voltage supplied to the unit).
3.) Check the ribbon cable connections to the display board for a loose connector or improperly connected cable (see Installation Instructions for correct cable connection).
4.) If display still doesn't light, unplug the speed sensor and thermostat probe (if a heated unit) from the control board. If the display lights, plug one component back in at a time to see which one may be shorted. The faulty component will make the display go blank again.
5.) If there is line voltage power at the board terminals, the ribbon cable is correctly connected, the speed sensor and the thermostat are working, and it is still not working, you may need a new circuit board: consult factory.

Q. Why won't my fans shut off?
A. The Intelliswitch may be in the wrong mode or mis-wired.
1.) Check to see if the control is in the "ON" mode, if it is, then change the Mode to another setting.
2.) The T-Stat Mode may be set to the "both" setting and the thermostat is calling for both Fan and Heat, change the T-Stat Mode to "HEAT".
3.) If there is a door switch and the unit is in a mode that is activated by it, there could be a short, mis-wiring or mixup in components. Close the door and check the door switch status in the Diagnostics menu. Hold the right arrow for five seconds until DIAG appears, then arrow down to the ds setting, if it displays "1" then the door switch signal is closed (there is a call for fan). If the door is closed, the signal should be "0" or open.
4.) There could be a short in the field connections to the door switch or the door switch leads could be mis-wired. To test, disconnect the door switch connection at the unit. Opening the wiring tray on top of the unit and be cautious of high voltage connections. Disconnect the blue wires labeled 9 & 10 from the field wiring to the door switch or make sure they are not tied together. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the blue wires to anything metal (or grounded). The unit should shut off when it is in

any mode that is activated by the door switch.
5.) If the air curtain is heated, make sure that the thermostat isn't wired to the door switch leads. Door switch leads are blue and labeled 9 & 10.

Q. How can I check the door switch to be sure it's working?
A. The Intelliswitch may be in the wrong mode, be mis-wired or have a faulty door switch.
1.) Test the wiring and controller function at the same time first. Locate the door switch and open its wiring compartment by removing the two screws holding on the back cover. There should be two wires connected to screws inside the switch. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the wires to anything metal (or grounded). Either disconnect both wires from the screws (noting which screws the wires are under) and touch them together (with air curtain in "Auto" mode) or make a short jumper wire and touch the jumper to both screws at the same time to see if air curtain comes on. If it does, the controller and wiring work.
2.) If the wiring and unit pass the function test, the problem could be either misalignment or a faulty door switch. On a magnetic reed switch check for magnet alignment, for plunger/roller type switch, check contact engagement with door.
3.) If you have access to an electrical test meter, the door switch contacts can be tested for continuity when the door switch wires are disconnected from the unit.

Q. Why won't my heat shut off?
A. The Intelliswitch may need adjusted, have been mis-wired or have a faulty thermostat.
1.) Heat is activated by one of two thermostat connections. To test the internal thermostat set the external thermostat to OFF. The settings of the unit mounted thermostat probe are accessed through the display. Press the down arrow until the Temp Set indicator lights up; check if the temperature setting and unit of measure are correct. Test to see if it shuts off by setting the thermostat temperature to OFF or lower than the room temperature.
2.) If an external thermostat is connected to the unit, there could be a short in the field connections or the thermostat leads may be mis-wired. To test the external thermostat set the internal thermostat to OFF. Disconnect the external thermostat connections at the unit. Open the wiring tray on top of the unit and be cautious of high voltage connections. Disconnect the orange wires labeled 6 & 7 from the field wiring to the thermostat or make sure they are not tied together. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the orange wires to anything metal (or grounded). The heat should shut off when the wires are separated.
For more complex troubleshooting of either thermal cutouts or heater contactors, please consult a qualified electrician or the factory.

Q. Why didn't the Intelliswitch save the changes I made to a program?
A. If a program is active (a dot is illuminated by one of the clock digits), changes can be made to any settings on the User Menu. These changes however will only remain in effect until the program changes to the next time zone. To make changes permanent, settings must be changed in the program from the Program Menu. Access the Program Menu by holding down the left arrow for 5 seconds until "PRO" is displayed. Arrow down to select programming and arrow left to select the program to edit. Use the down arrow to step through the options and make changes as desired. Continue to press the down arrow until Stor is displayed. Press OK or down to keep or store the changes.

Q. How do I undo a change that I made to a program in the Program Menu?
A. Changes to programs cannot be undone. The programs can however be reset to the factory default settings. This must be done on the Factory Menu. Access to the Factory Menu is attained through the Diagnostics Menu. Press and hold the right arrow for 5 seconds until "DIAG" is displayed. From the "DIAG" display press and hold the up and down simultaneously for 10 seconds until "FACT" is displayed. Use the down arrow to select "DEFn" on the display then use the right arrow to select "DEFP". Press "OK" to reset. The control display will go blank then blink as confirmation.

Q. My air curtain won't turn on?
A. Check the AM/PM setting on the Start and Stop times or the clock (considering the AM indicator light whensetting values). Note: set the start time and stop time to the exact time for the unit to be active full time. Check to see if a program is active that may have different start/stop times than those expected.

Q. My building has a Building Management System, can the Intelliswitch work with a BMS?
A. The Intelliswitch can be controlled by a Building Management System (BMS) but currently does not have the ability to communicate with them. Dry contacts on the BMS may be used to control the unit activation through the door switch connections (blue wires 9 & 10) and the heat activation thought the remote thermostat connections (orange wires 6 & 7). Consult factory.

A. PROGRAMMING THE INTELLISWITCH™

To reduce the risk of injury and ensure proper operation all Notes and instructions shall be read!

Note: The STOP button (STOP) is available at all times and immediately stops the unit for an emergency situation. The Intelliswitch® will display STBY for Stand By when selected. To release the control from STBY press STOP again. When the control is released from STOP it will be in the OFF Mode. Press the left or right arrows to select new Mode or OK to return to the clock.

Note: When changing options, if there is no activity for 15 seconds, the control will save changes and default back to the User Menu display clock.

Note: The OK button (OK) always saves the current entered value and returns you to the User Menu display clock.

Section 1: Quick Start Reference
Section 2: Arrow Navigation
Section 3: Menu Structure
Section 4: User Menu
Section 5: Program Menu
Section 6: Diagnostic Menu
Section 7: Factory Menu
Section 8: External Connections

1. Quick Start Reference

1.1. Press the Menu button (down Arrow).

1.2. Using the left and right arrows, select the operating Mode: Off, On, Auto, Deluxe, Comfort Plus or Program Number 1, 2 or 3.

1.3. Press OK.

2. Arrow Navigation

The up and down arrows (▲)(▼) select the menu options. The left and right arrows (◄)(►) change values for single-level menu options (Mode, Speed, Temp Degree, Temp Set, T-stat Mode and Day) or are used to enter into multi-level menu options (Delay Time, Temp Set, Start Time, Stop Time and Set Time).
Arrow sequence and available settings are illustrated under each option.

2.1. Single Level Options

Single level options can change values directly with the left and right arrows. No additional actions are necessary to access these option settings.

2.2. Multi-level Options

Multi-level options require additional actions to access an options setting. The right or left arrow is required to enter into an option.

If the multi-level option has **one** value to edit it may be changed directly with the up and down arrows.

If the multi-level menu option has **two** values (such as a time value) the first option value flashes upon selection. Use the left or right arrow to select which value to change and then use the up and down arrows to change the option value. See the Menu Options section for the option increment i.e. hours/minutes, minutes/seconds.

To leave a multi-level option, use the left or right arrow to cycle through the option value until it stops flashing. The up or down arrow may now be used to navigate to the other options.

3. Menu Structure

The Intelliswitch™ has four menus:

- User Menu (Section 4)
- Program Menu (Section 5)
- Diagnostic Menu (Section 6)
- Factory Menu (Section 7)

The **User Menu** is the top level menu where values for each option is entered based on the Mode selected. Each option is identified by a green light when selected. The clock display is the default home position for the User Menu when OK is selected or there is no activity for 15 seconds.
Note: Access to all Secondary Menus must originate from the User Menu. Secondary Menus are identified by the menu title upon successful entry, e.g. PRO, DIAG and FACT.
The **Program Menu** is used to edit all program option parameters.
The Diagnostic Menu is used to diagnose and troubleshoot errors with the Intelliswitch™.
The Factory Menu is only to be used when directed to reset or change factory default settings.

4. User Menu

To enter into the User Menu press the down arrow (menu) or up arrow. Use the down or up arrow to step through each option. Each option is identified by a green light when selected.
Options available from the User Menu are:

- Mode
- Fan Speed
- Delay Time
- Thermostat degree type
- Thermostat Set Point
- Start Time
- Stop Time
- Thermostat Control Mode
- Time Set
- Day Set
- Lock/PASScode

4.1. Mode: single-level (◄)(►)

↳OFF-ON-AUTO-DELU-PLUS-PRO1-PRO2-PRO3↰
Use left or right arrows to select the desired Mode of Operation. Press "OK to accept selection.

- **OFF** – air door off.
- **ON** – air door will run when start/stop time is satisfied.

- **AUTO** – air door will run when terminals 9 & 10 are connected through a switch (i.e. doorswitch) and the start/stop time is satisfied, ALL menu options available.
- **DELU** – air door will run when terminals 9 & 10 are connected through a switch (i.e. doorswitch) and the start/stop time is satisfied, MUST set time delay from 1-10 minutes, T-Stat Mode NOT available.
- **PLUS** - air door will run when terminals 9 & 10 are connected through a switch (i.e. doorswitch) and the start/stop time is satisfied, when door is closed and temperature drops below the set point the air door will run on low speed with heat (low speed set on the Program Menu), air door will run at higher user level set speed when the door opens.
- **PRO1** – Runs Program #1; see Program Menu Section, 1st digit indicator light when active.
- **PRO2** – Runs Program #2; see Program Menu Section, 2nd digit indicator light when active.
- **PRO3** – Runs Program #3 see Program Menu Section, 3rd digit indicator light when active.

NOTE: When Program Modes are selected changes can only be made to the Mode, Time Delay, Temperature, Time and Day settings. Changes will only remain in affect until the program changes between active time zones.
NOTE: AutoLock, Comfort + Low Speed and PASSCode are global options and their settings are the same for any Mode selected. They will not change when the Mode or Program changes.

4.2. Fan Speed: single-level ◄►
SP ↳ 1-2-3-4-5-6-7-8-9-10 ↰
Use left & right arrows to select fan speed from 1 to 10. (1=low, 10 = high)

4.3. Delay Time: multi-level – min/sec ►▲▼
↳ OFF – 00:01 thru 10:00 ↰
Select option with right arrow, use up & down arrows to set the amount of time that the air door will delay shutting off after terminals 9 & 10 or doorswitch are opened.

4.4. Temp Set (air doors): single level ◄►
↳ °F – °C ↰
Use left & right arrows to select the temperature degree type, Fahrenheit or Celsius, for thermostat set point.
Note: This option is only available for heated units with a built-in thermostat.

4.5. Temp Set : single level ◄►
↳ OFF – 34°F thru 90°F ↰
or
↳ OFF – 1°C thru 32°C ↰
Use left & right arrows to select the temperature set point when the heat is to be activated.
Note: This option is only available for heated air doors with built-in thermostat.

4.6. Start Time: multi-level – hours/min ►▲▼
Select this option with right arrow, use up & down arrows to set the time that the unit is to turn on in the ON Mode or become active for AUTO, DELU and PLUS Modes
Note: To turn off this feature the Start Time must be set equal to Stop Time (including am/pm).

4.7. Stop Time: multi-level – hours/min ►▲▼
Select this option with right arrow, use up & down arrows to set the time that the unit is to turn off in the ON Mode or become active for AUTO, DELU and PLUS Mode.
Note: to turn off this feature the Start Time must be set equal to Stop Time (including am/pm).

4.8. Thermostat Mode: single level ◄►
↳ HEAT-BOTH ↰
Select the control mode for the built-in and remote thermostats. The **HEAT** mode only cycles the heater on call for heat from either internal or external thermostats when the fan is running. BOTH mode cycles both the fan and the heater on a call for heat from either internal or external thermostats.
Note: This option is only available for electric heated air doors with built-in thermostat or air doors with external remote mount thermostat connected between terminals 6 & 7.

4.9. Set Time: multi-level – hours/min ►▲▼
Select option with right arrow, use up & down arrows to set the clock. Note: time does not adjust for daylight savings time.

4.10. Set Day: single level ◄►
↳ DAY1-DAY2-DAY3-DAY4-DAY5-DAY6-DAY7 ↰
Use left & right arrows to select day of the week, where Sunday = DAY1, Monday = DAY2, etc. Used as a reference by programs.

4.11. Lock/Unlock ◄►
The Intelliswitch™ can be locked to prevent unauthorized tampering of the settings.
When locked, only the options on the User Level may be viewed. Only the Mode can be changed between OFF and the Mode that was active when it was locked, all other options may NOT be changed.
To lock or unlock, press and hold the left and right arrows simultaneously for 5 seconds, the Locked light will illuminate.
If the PASScode option is ON, an attempt to unlock the control will display PASS and then a 0000 prompt to enter a four digit unlock code. Use the up & down arrows to change the numbers and the left & right arrows to move between positions.
Note: When the AutoLock option is set to ON in the Program Menu, the Intelliswitch™ will automatically lock after 5 minutes without any activity. Default setting – OFF. See Section 5.2
Note: When the PASScode option is set to ON in the Factory Menu, the Intelliswitch™ will require a code be entered to unlock the control. Default setting – OFF. See Section 7.4.

5. Program Menu

To enter into the Program Menu hold down the left arrow for 5 seconds. **PRO** will display when the Program Menu is available. Use the Program Menu to set the following options:
- Program 1, 2 & 3 settings
- AutoLock setting
- Comfort Plus low speed setting
- Master/Slave Stand By setting

↳ PRO-AULC-PLUS-STBY ↰
Program Menu – single level ◄►
Use left & right arrows to select the option to change.

5.1. Program
The Intelliswitch™ can store up to three Dual-Tine Zone programs. Use the Program option to select and save User Menu settings to be recalled at anytime.
A time zone is the period of operation defined by the use for the unit to be active. Both zones may operate one after the other or have gaps between them.

The Program menu allows parameters for the following options to be set:

- Number of Zones: 1 or 2
- Days of the week to operate per zone
- Mode (Off-On-Auto-Deluxe-Plus)
- Speed
- Time Delay
- Thermostat Set Point
- Start Time
- Stop Time
- Thermostat Mode

To enter into the Program menu press the down arrow (menu button) at the **PRO** display. Use the left & right arrows to select the program to be edited.

↳ PRO1-PRO2-PRO3 ↰

Note: After setting the number of zones and active days all parameters are set the same as the User Menu. Use the Up and Down arrows to accept changes and OK to return to User Menu.

5.1.1. Zone: single level ◄ ►

↳ Zn 01-Zn 02 ↰

Select the number of Zones for the program. If **one** zone is selected a prompt will ask to save settings after the last option. If **two** zones are selected, Zone1 parameters will be set first and then parameters for Zone2 will be set. A prompt will ask to save settings after the last option of Zone2.

5.1.2. Day: multi-level ► ► ▼ ►

↳day-day1-day2-day3-day4-day5-day6-day7 ↰

Select the days of the week that the program is to operate for each zone.
When **day** is displayed, press the right arrow to enter into the day parameters.
Once in the day parameters each day is identified by the day number, use the right or left arrows to select **yes** to active a day or **no** to deactivate a day.

↳ dy 1n-dy 1y ↰
↓
↳ dy 2n-dy 2y ↰
↓
↳ dy 3n-dy 3y ↰

Use the up and down arrows to move to the next day or skip days until **day** is displayed.
From this point enter right to re-enter day settings or down to continue.
Note: The top seven LED's will light from the top down representing days 1 thru 7 that have been activated.

5.1.3. Mode: single level ◄ ►
Select operating mode for Zone. Only Off, On, Auto or Plus are available.

5.1.4. Fan Speed: single level ◄ ►
Select the fan speed for the time zone being programmed.

5.1.5. Time Delay: multi-level ► ▲ ▼
Set the time delay for the time zone being programmed.

5.1.6. Temperature Set: single level ◄ ►
Set the temperature set point for internal thermostat for Zone being programmed. Degree type is based on degrees selected on the User Menu.

5.1.7. Start Time: multi-level ► ▲ ▼
Set start time for zone program to activate including am/pm.

Note: Zone 1 has priority over Zone 2 and if conflicting times are entered Zone 1 will always activate and take precedence over Zone 2.

5.1.8. Stop Time: multi-level ► ▲ ▼
Set stop time for zone program to activate including am/pm.

Note: Zone 1 has priority over Zone 2 and if conflicting times are entered Zone 1 will always activate and take precedence over Zone 2.

5.1.9. Thermostat Mode: single level ▲ ▼
Set thermostat mode for Zone.

5.1.10. Store: single level ► ▲ ▼

↳ str y-str n ↰

Use the right or left arrows to select **yes** to save program or no to abandon changes.
A single zone program will prompt to save all options after the first set of parameters; a dual zone program will prompt to save after the second set of parameters.
Note: upon saving, the LED on the digit light corresponding to the program number will blink.

5.2. AutoLock: multi-level ▼ ◄ ►

↳ ON-YES ↰

To enter into the AutoLock menu press the down arrow (menu button) at the **AULC** display. Use the left or right arrows to select **ON** to have control automatically lock if there is no activity for 5 minutes or **OFF** to deactivate.

5.3. Comfort Plus (fan speed): multi-level ▼ ◄ ►

SP ↳1-2-3-4-5-6-7-8-9-10 ↰ see Note*

To enter into the Comfort Plus low speed setting, press the down arrow (menu button) at the PLUS display. Use the left or right arrows to select the fan speed for the PLUS mode, when the door is closed and the thermostat set point is reached.
***Note: The speed range is limited to be equal to of less than that of the User Menu speed setting.**

5.4. Master/Slave Stand By: multi-level ▼ ◄ ►

↳ **ind-ALL n** ↰

To enter into the Master/Slave stand by setting press the down arrow at the **STBY** display. Use the left or right arrows to select the STOP button behavior when units are connected together in a Master/Slave configuration. Select "ind" or independent to stop only the unit where STOP is pressed. Select "ALL" to stop all connected units.

6. Diagnostic Menu

To enter into the Diagnostic Menu hold down the right arrow for 5 seconds. **DIAG** will display when the Diagnostic Menu is available.
The Diagnostic Menu is used to diagnose and troubleshoot Intelliswitch™ errors. Only "live" parameter settings are displayed, there are no options to change.

The Diagnostic Menu displays the following parameters:

- Software version release
- Speed Range Setting
- Internal Thermostat reading – Celsius
- Internal Thermostat reading – Fahrenheit
- Motor rpm reading
- Supply Voltage Frequency
- Door Switch status
- External Thermostat status
- Heater Relay status
- Error Code 1 – Speed Sensor
- Error Code 2 – Line Frequency
- Error Code 3 – Power Issue
- Error Code 4 – Motor Off Fault

6.1. Software Release Version – Format: rX.XX
6.2. Fan Speed Range – rn XX (see Section 7.1)
6.3. Thermostat Probe – Pr XX (see Section 7.2)
6.4. Internal Thermostat – °C (np = no probe)
6.5. Internal Thermostat – °F (np = no probe)
6.6. Motor RPM – measured speed in rpm
6.7. Supply Voltage – measured frequency in Hz
6.8. Door Switch Status – 0=open, 1=closed
6.9. External T-stat Status – 0=open, 1=closed
6.10.Heater Relay Status – 0=open, 1=closed

6.11.Error Codes
The Intelliswitch has six error codes, 1 through 6, to help troubleshooting. The status of 1-4 can be observed from the Diagnostic Menu. The format for displaying the error code is the "Er" descriptor and a two digit code. The first digit is the error number and the second digit is the status using international convention. 0 = inactive, 1 = on or active.

6.11.1. Error Code 1 – Speed Sensor
Er 10 – Prox Sensor or Speed feedback exists
Er 11 – **NO** Prox Sensor or Speed feedback
Solution – check to see if the proximity sensor (located next to the motor) is connected to the control board and check distance between tip and trigger bar is approximately 1/16 of an inch.

6.11.2. Error Code 2 – Line Frequency
Er 20 – power supply line frequency exists
Er 21 – undetermined supply line frequency
Solution – The Intelliswitch automatically senses line frequency. In the event that it can not determine the proper line frequency, it will run at full speed and flash error. Manually set the line frequency in the FACT menu. See Section 7.5.

6.11.3. Error Code 3 – Zero Cross/Power Issues
Er 30 – clean power exists
Er 31 – poor power exists, electrical noise
Solution – When the control encounters "noise" in the electrical power supply it will run at full speed and flash error code. There are no internal changes available. Have the electrical system checked for problems.

6.11.4. Error Code 4 – Speed Feedback
Er 40 – proper motor and sensor operation
Er 41 – Motor off but receiving prox/speed sensor feedback
Solution – this is usually the result of a failing motor control component on board that cannot be serviced. A replacement board is required.

6.11.5. Error Code 5 – Corrupted Memory Setting
Er 51 – Status of this error is not available. It only appears when there has been an event that has corrupted the settings in memory. When corrupted settings are identified the control will reset all settings (except for Speed Range) back to Factory default values. Because some speed ranges are not compatible with all motors, the proper value cannot be automatically set and therefore requires user input. This is prompted by the scrolling "Set FACt SPEEd" on the display.
Solution – press the "OK" button. This will open the range setting identified by "rn". Select the correct speed range (see Section 7.1) based on the Series/Model. Press "OK" button.

6.11.6. Error Code 6 – Incompatible Speed Range for Master/Slave Operation
Er 61 – Status of this error is not available. It only appears when unit are connected in a Master/Slave configuration that do not have identical Speed Range settings.

If two units are connected without equivalent speed ranges, every time a button is pressed on the Master unit (the unit used to make setting selections) the Slave unit will display an "Er 61" and the Slave will ignore the command to protect the control from damaging the motor.

Solution – Enter the Factory Menu to select the proper Speed Range (See Sections 7 and 7.1)

Note: This error does not monitor if the correct speed range has been selected for a Series/Model. Only that two or more units have been connected that do not have equivalent speed ranges.

Note: Once the correct speed ranges are selected and the controls accept commands from one another, the controls should be synchronized by simply cycling through all of the settings on the User Menu using the up or down arrows. None of the settings need to be changed.

7. Factory Menu – Service Personnel Only
The Factory Menu must be entered from the DIAG header. To enter into the Factory Menu hold down the right arrow for 5 seconds. **DIAG** will display when the Diagnostic Menu is available. From the DIAG display, press and hold the up and down arrows simultaneously for 10 seconds. **FACT** will display when the Factory Menu is available.
Note: When the Factory Menu is accessed it automatically shut the unit off by changing the Mode to OFF.
The Factory Menu is used to change or reset core settings to change base functions or resolve Intelliswitch™ errors.
The Factory Menu allows parameters for the following options to be set:

- Speed Range Setting
- Restore Factory Default Settings
- Reboot Software
- PASScode
- Supply Voltage Frequency

To enter into the Factory Menu from the header press the down arrow. Use the left & right arrows to change setting values. Use the OK button select action and return to the User Menu.

7.1. Speed Range: single level ◄►
rn ↳ 0 – 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10 -11 – 99 ↰
Select the fan speed range from 0 to 11 using the left or right arrows. The speed range for each unit is located on the unit wiring diagram called out in a box in the Intelliswitch® schematic by "SPEED rn __".

Note: Selecting the incorrect speed range can damage the motor(s) beyond repair and potentially create abnormally high temperatures.

Speed ranges are dependent upon the air curtain Series, motor type and heat option.
MAX/ZPR (1/5 hp) – all voltages use ranges 0-2
Available ranges are:
0 = ambient – variable 10-speed, 600 rpm to full
1 = ambient – variable 10-speed, 1050 rpm to full
2 = heated – variable 10-speed, 1250 rpm to full
3 = ambient – full on, no adjustment
4 = heated – full on, no adjustment (monitored)
5 = heated – full on, no adjustment (not monitored)
6 = ambient – multiple 3-speed, ITC relay control
7 = heated – multiple 3-speed, ITC relay control
8 = ambient – variable 3-speed, 1250 rpm to full
9 = heated – variable 3-speed, 1250 rpm to full
10 = ambient – multiple 2-speed, ITC relay control
11 = heated – multiple 2-speed, ITC relay control
99 = lock out – scrolling request for user input

7.2. Thermostat Probe Mode: single level

In **"St" (Standard) mode** the lowest operating point for the thermostat probe is 34°F (1°C). Below this temperature there will be no call for heat and "nP" (no Probe) will display on the diagnostics menu.
In **"Cd" (Cold) mode** the thermostat will operate below 34°F (1°C) but disables the "nP" (no Probe) feature and will call for heat on a probe failure or if it is disconnected.
St - Standard mode, locks out below 34°F (1°C). **Cd** - Cold mode, works below 34°F (1°C).

7.3. Restore Factory Default: single level

DEF ↳ n – U – P – A – t ↰
If it is necessary to restore any of the controls settings back to the factory defaults, select DEF using the down arrow. Select the factory setting restore type using the left or right arrows. This will reset the option settings back to the factory default settings. Available selections are:
DEFn – no changes
DEFU – reset User Menu ONLY settings
DEFP – reset Programs ONLY settings
DEFA – reset ALL settings (user and program)
DEFt – set controller to factory TEST parameters

7.4. Reboot Software: single level

↳ reb y – reb n ↰
If an error occurs that can be fixed by rebooting the control software, select **REB** using the down arrow. Select **YES** or **NO** to reboot the control.

7.5. PASScode multi-level

↳ PAS y – PAS n ↰
Select y to enable the PASScode feature and n to disable. When active, the PASScode feature requires that a four digit code be entered to unlock the control. The code is: **2376**

7.6. Line Frequency: single level

↳ Fr Au – Fr 60 – Fr 50 ↰
The Intelliswitch® default is to automatically sense the line voltage frequency. If it cannot be determined automatically, the line frequency may be manually selected.
Au – Automatically Sense
60 – 60 Hz power supply
50 – 50 Hz power supply

8. External Connections

There are three types of external connections available on the Intelliswitch™.
- Door Switch
- External Thermostat
- Serial Connection

8.1. Auto Mode Activation

When terminals 9 and 10 in the junction box are connected (closed), the Auto, Deluxe, Plus and Programmable Modes are activated. The Intelliswitch™ uses a low 5 volt DC voltage signal to monitor contact closure.

8.1.1. Door Switch (limit switch)

The door or limit switch is used in conjunction with the Auto, Deluxe, Plus and Programmable Modes to signal that the door is open. Connect the door or limit switch to terminals 9 and 10 in the air door junction box.

8.1.2. Building Management System

A building management system or dry contact closure can be used to activate the air door through the Auto, Deluxe, Plus and Programmable Modes. Connect applicable contacts to terminals 9 and 10 in the air door junction box.

8.2. Heat Mode Activation

When terminals 6 and 7 in the junction box are connected (closed), the Heat Mode is activated for all Operating (On, Auto, Deluxe, Plus and Programmable) Modes. The Intelliswitch™ uses a low 5 volt DC voltage signal to monitor contact closure.
If the internal thermostat is left on, the external heat mode will operate in parallel to contact closure, allowing either one to activate the heat. If the internal thermostat is turned off the external heat mode will activate independently to activate the heat.

8.2.1. External Thermostat

An external (remote) thermostat connection can be used to sense temperature independent of the built-in thermostat. Connect thermostat to terminals 6 and 7 in the air door junction box.

8.2.2. Building Management System

A building management system or dry contact closure can be used to activate the Heat Mode for all Operating Modes. Connect applicable contacts to terminals 6 and 7 in the air door junction box.

8.3. Master/Slave Operation

For Master/Slave Operation a serial cable connection must be made between all Intelliswitch™ controls of each air door to be linked.
Once air doors are linked all Menu settings made through any air door display or remote control will transfer to all other linked air doors.
Parameter changes made on any linked air door will update all other boards "live" upon menu selections.

9. Infra-red Remote Control

The handheld infra-red remote control buttons, layout and operation are the same as that on the Intelliswitch™ air door display (including multiple button presses) with one exception, the Lock Button.

There is no need for multi-button press and hold for lock/unlock activation. The Lock Button will lock/unlock display in one press.

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not, replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or damaged flexible hub	• Replace fan sleeve/reengage coupling
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position	• Turn switch to “ON” position
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes mis-adjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improper voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
	• Fan in backwards	• Check fans for blade curve toward discharge
NO SPEED ADJUSTMENT	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/ replace sensor
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air steam hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8” for every 1” up from the door)
	• Negative pressure	• Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws
	• One motor not operating	• Repair or replace motor
EXCESSIVE AIR MOVEMENT AT DOOR-WAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Unit too powerful	• Adjust motor speed
	• Air movement too cold	• Add auxiliary heat to overcome wind chill factor
	• Pushing air outside building	• Adjust discharge angle back into building, adjust motor speed
	SEE **AIR IS NOT HITTING FLOOR** SYMPTOMS	
ELECTRICALLY HEATED MODELS		
NO HEAT	• Switch turned to “ON” position	• Replace switch or check wiring
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped (if supplied)	• Reset manual thermal cutout
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor and trigger
	• Without speed adjustment, failed speed sensor	• Replace speed sensor
MINIMAL HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/replace sensor
EXCESSIVE HEAT	• Incorrect speed range	• Set dip switch to electric heated speed range
	• Thermostat in wrong location	• Move the thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage
STEAM/HOT WATER HEATED UNITS		
EXCESSIVE HEAT	• Too high steam/hot water pressure	• Reduce steam pressure/hot water flow
	• Inadequate air flow, fins plugged up, dirty coils	• Clean intake and coils
MINIMAL HEAT	• Insufficient removal of condensation (steam)	• Increase trap size
	• Not enough steam pressure/water temperature too low	• Raise pressure for steam/increase water flow
	• Intake air below design temperature	• Increase steam pressure/increase water flow

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED

BERNER™
INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

724-658-3551 • 1-800-245-4455 • www.berner.com • airdoors@berner.com

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MADE IN U.S.A.

BERNER™
INTERNATIONAL CORP.

READ AND SAVE THESE INSTRUCTIONS

No. **II-260**
Date **April, 2012**

MARK
AIR DOOR
Made in the USA

c UL us

DIPLOMAT
AIR DOOR
Made in the USA

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING....2
II. INDOOR INSTALLATION - WALL MOUNTING....2
III. WALL PREPARATION....2-3
IV. ATTACHING THE AIR DOOR TO THE MOUNTING PLATE....3
V. INDOOR INSTALLATION - TOP MOUNTING....3
VI. ELECTRICAL CONNECTIONS....3
VII. ELECTRICALLY HEATED MODELS....3
VIII. STEAM OR HOT WATER HEATED MODELS....3
IX. AIRFLOW ADJUSTMENTS....4
X. AIR DIRECTIONAL VANES....4
XI. MAINTENANCE AND CLEANING....4
XII. SERVICE....4
TROUBLESHOOTING....5

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify the shipping company. Open the carton and remove all protective packing. Remove the unit by lifting vertically. Place the unit upside down on end supports to avoid damage to the electrical junction box. If the unit will be wall mounted, remove and save the two (2) locking screws from the back corners and detach the wall mounting plate. **See Figure 1**

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

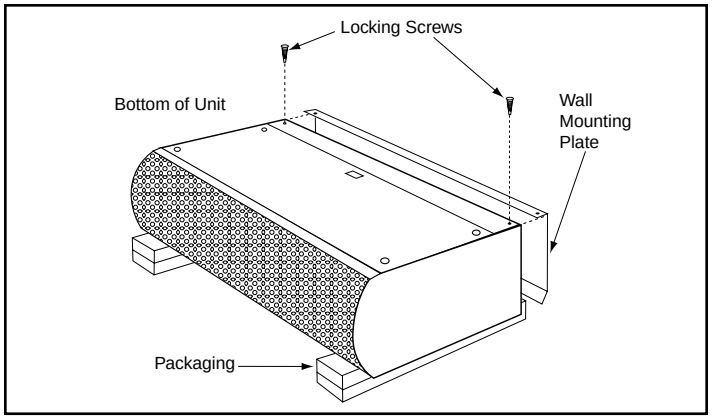


Figure 1

The MARK/DIPLOMAT air door is designed to be an effective barrier against cold drafts in the winter and hot air in the summer, flying insects and airborne contaminants. To achieve optimum protection, the unit should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance keep air stream free of obstructions. **See Figure 2.**

II. WALL MOUNTING - INDOOR INSTALLATION

Unit should be mounted no higher than 10' above the floor. For maximum efficiency, the unit should be mounted no higher than 8'.

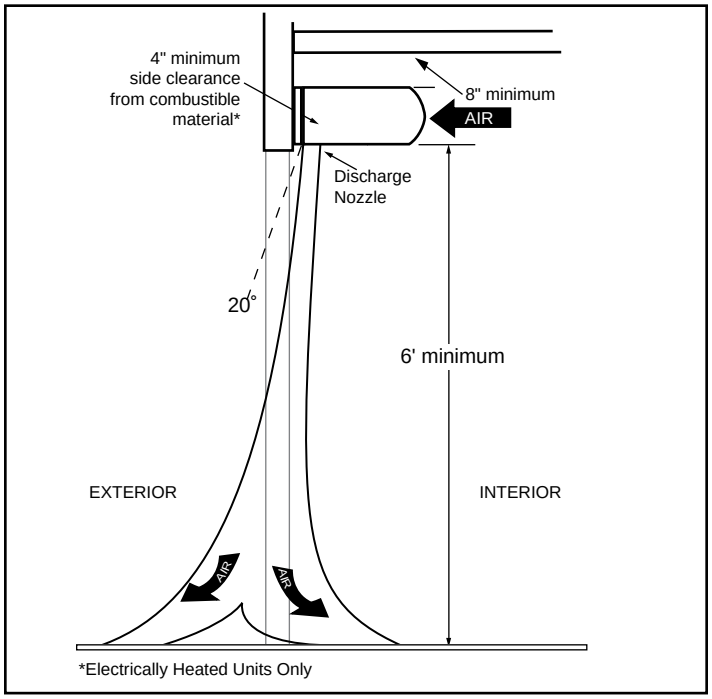


Figure 2

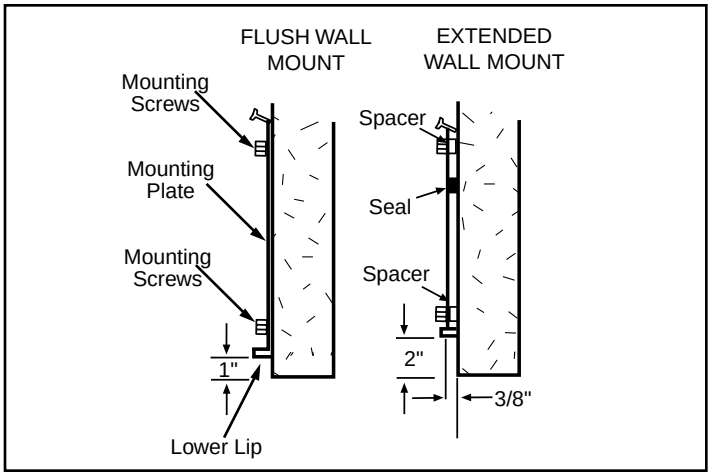


Figure 3

1. Install the MARK/DIPLOMAT air door so that nothing interferes with the curtain of air when it is deflected 20° to either side. If the air stream strikes any obstruction, i.e. the top edge of the doorway, a structural beam, a door opening device, etc., its efficiency will be greatly reduced. **See Figure 2.**
2. The lower lip of the mounting plate should be no more than 1" above the door opening when the unit is mounted flush to the wall. If the air door must be mounted higher, it must be spaced out from the wall 3/8" for every inch the unit is above the door opening. For the best performance, any void between the air door and the wall must be sealed (use foam, plastics or a similar packing). **See Figure 3.**
3. Do not block the air flow to or from the unit since this could cause overheating. **On electrically heated units there should be:**
   A) A minimum clearance of at least 4" between the side of the unit and any combustible material if the unit is enclosed in the ceiling or a decorative cover.
   B) A minimum clearance of 8" between the top of the unit and the ceiling in order to service the junction box(es).
   C) Do not install less than six feet (or 1.8 meters) from the floor to the unit. **See Figure 2.**

III. WALL PREPARATION

1. Position and center the mounting plate over the door opening. The mounting plate must be positioned with the 45° lip and the rubber vibration gasket on top. Drill mounting holes on the mounting plate. **See Figure 4.**
2. Mark the wall in the center of each mounting plate hole.

WEIGHT IN POUNDS			
Model	**Unheated**	**Electric**	**Hot Water/Steam**
DP2/MK21036	100	110	120
DP2/MK21042	118	125	140
DP2/MK21048	125	132	155
DP2/MK22048	138	140	197
DP2/MK22060	160	179	210
DP2/MK22072	174	219	222
DP2/MK22084	195	254	227
DP2/MK22096	210	275	235
DP2/MK23096	216	284	240
DP2/MK23108	237	305	248
DP2/MK23120	268	324	270

TABLE 1 - Weight Chart

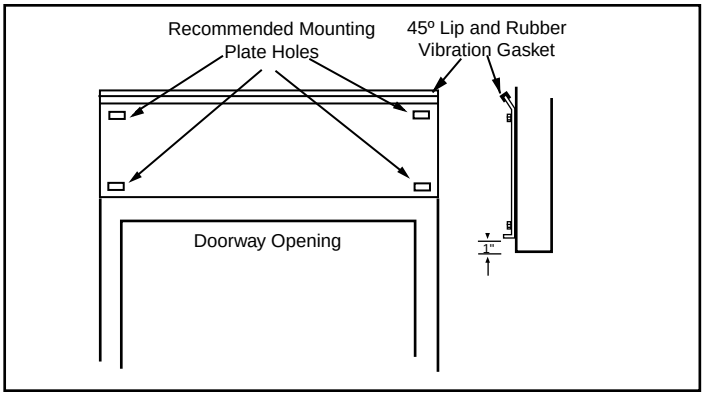


Figure 4

The wall must provide sufficient support for the air door. The mounting hardware (supplied by others) must be capable of supporting a minimum of three times the net weight of the air door. **See Weight Chart, Table 1.** If the location of the marks on the wall do not provide suitable support, mark and drill additional holes.

3. Drill the four holes as marked on the wall and attach the mounting plate with anchors (if used) and the four mounting screws (provided by others).

IV. ATTACHING THE AIR DOOR TO THE MOUNTING PLATE

1. Raise the unit over the door (air discharge nozzle facing down) and on to the mounting plate. First, tilt the unit upward matching the top recessed edge of the unit to the top 45° angled lip on the mounting plate. **See Figure 5.**
2. Lower the unit into place, allowing it to rest on the lower lip of the mounting plate.
3. After the unit is securely attached to the mounting plate, reinstall the two (2) locking screws at the bottom corners. **See Figure 5.**

V. TOP MOUNTING - INDOOR INSTALLATION (CEILING SUSPENSION)

For top mounting suspension rods, four (4) factory installed 5/16" threaded inserts are located on the top of the unit. **See Figure 6.**

1. Install the MARK/DIPLOMAT air door so that nothing interferes with the curtain of air when it is deflected 20° to either side. If the air stream strikes any obstruction, i.e. the top edge of the doorway, a structural beam, a door opening device, etc., its efficiency will be greatly reduced. **See Figure 2.**
2. Follow instructions 2 and 3 under INDOOR INSTALLATION: WALL MOUNTING (on page 1) checking to assure the minimum clearances are met.
3. Attach 5/16" threaded rods, or other suitable hardware to the top mounted threaded inserts.

VI. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the latest edition of the National Electrical Code ANSI/NFPA No. 70 or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations. **MAKE SURE THE CORRECT VOLTAGE AS MARKED ON THE UNIT IS USED.**

The MARK/DIPLOMAT air door is internally wired to the junction box(es) on top of the of the unit.

1. Run the proper size cable from the source to the junction box and connect the leads.
2. Wiring diagrams are located inside the junction box. For amp rating, **See Tables 2 or 3** and the name plate on the unit.

VII. ELECTRICALLY HEATED MODELS

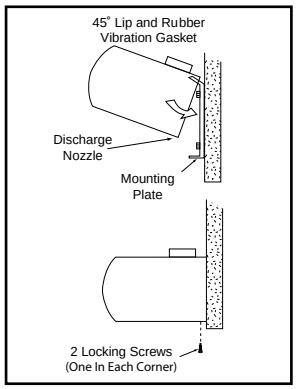


Figure 5

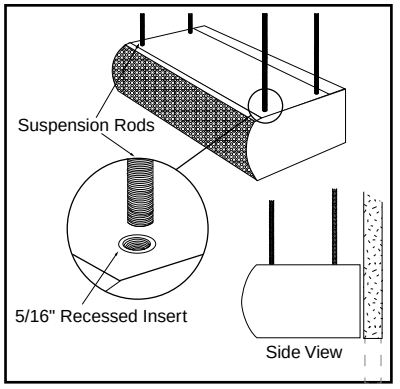


Figure 6

The heater circuit may be controlled by a remote thermostat, a built-in thermostat or a manual on/off heater switch located on the discharge side of the unit. **See Figure 7.**

1. If a thermostat is used, connect the proper leads located in the junction box to the leads of the thermostat. (See wiring diagram located in the junction box)
2. If a manual heat on/off switch is used, factory wiring is supplied from the heating coil to the unit mounted heat on/off switch.

Overheat protection is provided by thermal cutouts built into the heater coil assembly. (See the wiring diagram located in the junction box.)

VIII. STEAM OR HOT WATER HEATED MODELS

Piping should be done in accordance with local codes, regulations and standard practice.

1. Connect the supply & return to the 1" MPT nipples on the heating coil. **See Figure 8.**
2. Temperature controls to be supplied by others.

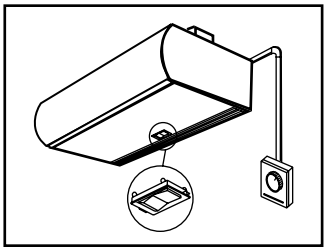


Figure 7

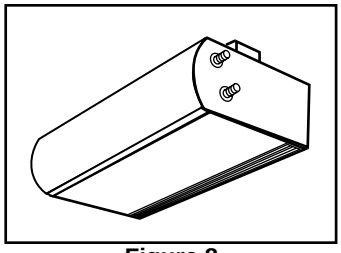


Figure 8

MOTOR DATA				
Model	#Motors @HP	120 V 1ø	208/240 V 1ø	460 V* 1 ø
		Motor Amps	Motor Amps	Motor Amps
DP2/MK21036	1@½	7.2	4.0	1.3
DP2/MK21042	1@½	7.2	4.0	1.3
DP2/MK21048	1@½	7.2	4.0	1.3
DP2/MK22048	2@½	14.4	8.0	2.6
DP2/MK22060	2@½	14.4	8.0	2.6
DP2/MK22072	2@½	14.4	8.0	2.6
DP2/MK22084	2@½	14.4	8.0	2.6
DP2/MK22096	2@½	14.4	8.0	2.6
DP2/MK23096	3@½	21.6	12.0	3.9
DP2/MK23108	3@½	21.6	12.0	3.9
DP2/MK23120	3@½	21.6	12.0	3.9
*Special 1/3 hp Two Speed Motor				

Table 2

IX. ADJUSTMENTS AIR FLOW ADJUSTMENTS

1. With the air door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle.
2. Find the air stream split location. Hold a handkerchief, by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. **See Figure 9**. The split location is indicated where the handkerchief is vertical with minimal or no fluttering.
3. The split location should be approximately 3" outside the doorway and 12" above the floor.

If the split location does not conform to the above specifications, the air directional vanes in the outlet nozzle should be adjusted.

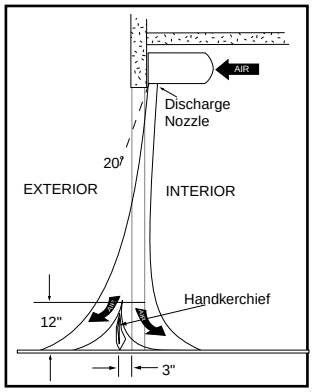


Figure 9

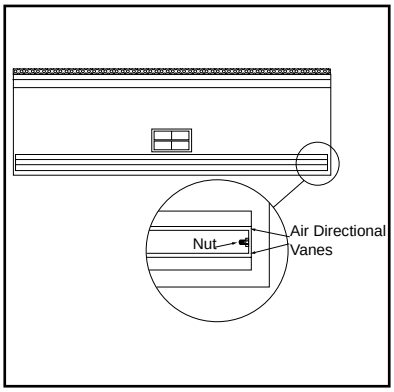


Figure 10

X. AIR DIRECTIONAL VANES

1. Loosen the two (2) nuts on each end of the outlet nozzle. Adjust the air directional vanes so the air flow split is in the proper location. **See Figure 10.**
2. Retighten the two screws after air directional adjustment is complete.

XI. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months. To access the interior of the unit:

1. **Disconnect the power to the unit.**
2. Remove the intake grille by removing the locking screw on each end of the unit. Lift the intake grille up and then towards you. **See Figure 11.**
3. Remove the bottom access panel. Remove Phillips head screws on the bottom of the unit. Vacuum and scrape (if necessary) to remove the build-up of dirt and debris. The motor(s) are permanently lubricated and require no additional lubrication. Re-install the cover and intake grille.
4. Switch the power on after cleaning. **CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.**

XII. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

*Any service performed on the MARK/DIPLOMAT Series air door **MUST** be done by qualified personnel.*

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

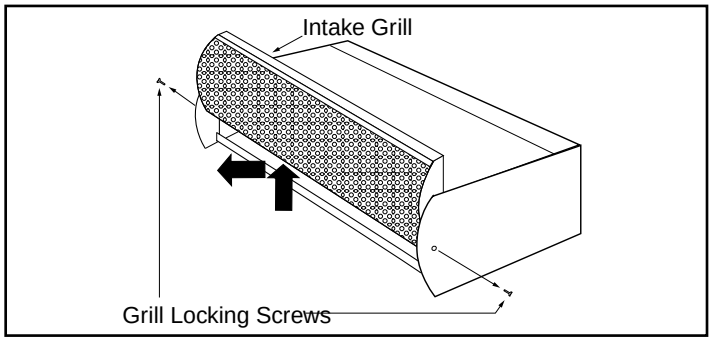


Figure 11

ELECTRIC HEATER DATA* Add total motor amp draw from Table #2 to circuit #1 for unit total amp draw

MODEL	KW	208V 1Ø		240V 1Ø		208V 3Ø Amp Draw			240V 3Ø Amp Draw		460V 3Ø** Amp Draw	600V 3Ø** Amp Draw
		Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 3	Circuit 1	Circuit 2	Circuit 1	Circuit 1
DP2/MK21036	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
DP2/MK21042	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
DP2/MK21048	9.5	45.7	-	39.6	-	26.4	-	-	22.9	-	11.4	9.5
DP2/MK22048	12.5	20.0	40.1	17.4	34.7	34.7	-	-	30.1	-	15.0	12.6
DP2/MK22060	16.0	-	-	-	-	44.4	-	-	38.5	-	19.2	16.1
DP2/MK22072	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
DP2/MK22084	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
DP2/MK22096	19.0	-	-	-	-	26.4	26.4	-	22.9	22.9	22.9	19.1
DP2/MK23096	25.0	-	-	-	-	34.7	34.7	-	30.1	30.1	30.1	25.1
DP2MK23108	28.5	-	-	-	-	26.4	26.4	26.4	22.9	45.7	34.3	28.6
DP2/MK23120	28.5	-	-	-	-	26.4	26.4	26.4	22.9	45.7	34.3	28.6

*Optional kW available. Check wiring diagram supplied with unit for kW and AMP draw if not listed above.
** Separate 120V, 208V or 240V single phase circuit required to operate motors.

Table 3

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not, replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or damaged flexible hub • Shaft rotating inside fan	• Replace fan sleeve/reengage coupling • Tighten set screws/tighten fan on shaft
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position • Door limit switch not operating	• Turn switch to "ON" position • Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes mis-adjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improper voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
	• Fan in backwards	• Check fans for blade curve toward discharge
NO SPEED ADJUSTMENT	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/ replace sensor
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air steam hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8" for every 1" up from the door)
	• Negative pressure	• Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws
	• One motor not operating	• Repair or replace motor
EXCESSIVE AIR MOVEMENT AT DOOR-WAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Unit too powerful	• Adjust motor speed
	• Air movement too cold	• Add auxiliary heat to overcome wind chill factor
	• Pushing air outside building	• Adjust discharge angle back into building, adjust motor speed
	SEE **AIR IS NOT HITTING FLOOR** SYMPTOMS	
	ELECTRICALLY HEATED MODELS	
NO HEAT	• Switch turned to "ON" position	• Replace switch or check wiring
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped (if supplied)	• Reset manual thermal cutout
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor and trigger
	• Without speed adjustment, failed speed sensor	• Replace speed sensor
MINIMAL HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/replace sensor
EXCESSIVE HEAT	• Incorrect speed range	• Set dip switch to electric heated speed range
	• Thermostat in wrong location	• Move the thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage
	STEAM/HOT WATER HEATED UNITS	
EXCESSIVE HEAT	• Too high steam/hot water pressure	• Reduce steam pressure/hot water flow
	• Inadequate air flow, fins plugged up, dirty coils	• Clean intake and coils
MINIMAL HEAT	• Insufficient removal of condensation (steam)	• Increase trap size
	• Not enough steam pressure/water temperature too low	• Raise pressure for steam/increase water flow
	• Intake air below design temperature	• Increase steam pressure/increase water flow

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED

BERNER™
INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

724-658-3551 • 1-800-245-4455 • www.berner.com • airdoors@berner.com

Berner reserves the right to alter specifications without prior notice.

MADE IN U.S.A.

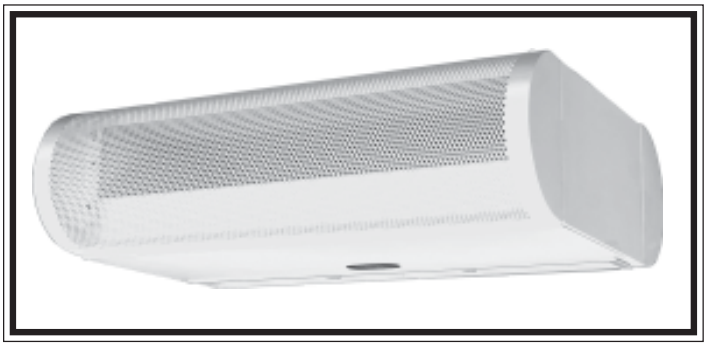
READ AND SAVE THESE INSTRUCTIONS

BERNER™ INTERNATIONAL CORP.

No.: II-500
Date: January, 2011

AURA

Installation & Maintenance Instructions



WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

WARNING FOR FUEL BURNING EQUIPMENT:
Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.

UNCRATING

This unit was quality inspected and tested immediately prior to packaging and was in operating condition at that time. Check the shipping carton and unit for any damage that may have occurred during shipment. If damage is found, notify the shipping company immediately.

The AURA Series air door is shipped completely assembled. Remove the accessory box and the louvered discharge grille (wrapped in protective paper) from the carton. Remove the AURA Series air door from the carton. **See Figure 1.** Immediately upon unpacking the unit, verify that the rating nameplate agrees with the electric supply available.
Do NOT attach the louvered discharge grille or perforated intake grille at this time.

BERNER INTERNATIONAL CORPORATION
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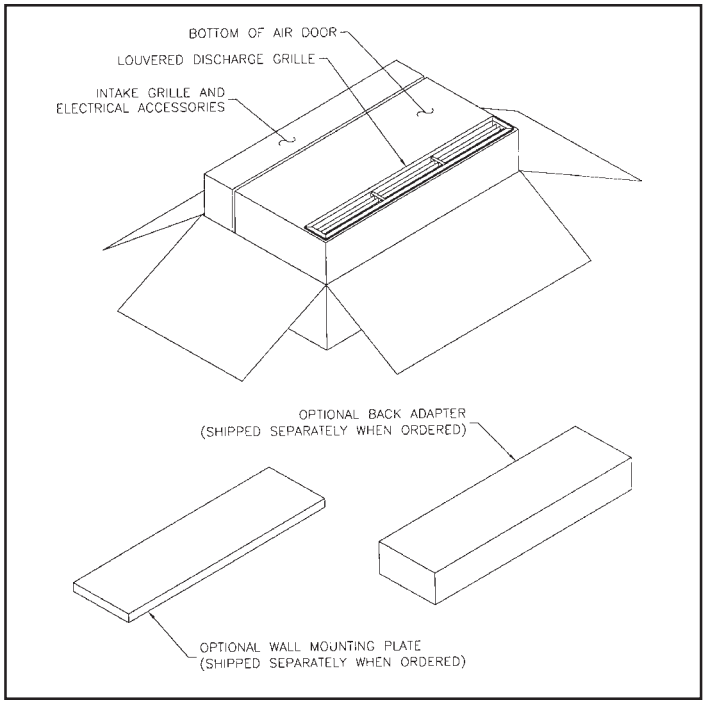


FIGURE 1 - Contents

Each AURA Series carton contains the following **pre-assembled components:**

- ✓ (1) AURA air door unit
- ✓ (1) Louvered discharge grille
- ✓ (1) Perforated intake grille
- ✓ (2) Plastic snap ring bushings
- ✓ (6) No. 6 x ¾ Phillips head screws
- ✓ (1) Remote selector switch

Optional Accessories

- ✓ Wall mounting plate
- ✓ Perforated back adapter
- ✓ Solid back adapter
- ✓ Solid back adapter (with or without lights)

I. MOUNTING INSTRUCTIONS

(All Models)

A. Before mounting the unit, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the unit. **See Table 1.**

B. Nothing should interfere with the curtain of air developed when the discharge grille vanes are directed 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the unit will be greatly reduced.

MODEL	Net Weight Ambient (lbs)	Net Weight Heated (lbs)
ARA1036	120	130
ARA1042	135	145
ARA1048	158	168
ARA1060	185	195

TABLE 1 - Unit Weight

C .For optimum performance, the bottom of the unit (discharge grille) should be a maximum of 1" above the top of the door opening with the unit mounted flush to the wall. If the unit must be mounted higher, it must be **spaced out** from the wall 3/8" for every inch the unit is above the door opening (maximum recommended mounting height of 8'). Where possible (installation site permitting), for optimum protection, any void between the air door and the wall should be sealed along the full length of the unit.

D. Do not block (obstruct) the air intake grille. Insufficient air flow can cause the unit to overheat.

E. **Electric heated units should have:**

1. A minimum clearance of at least 4" between the sides and top of the unit and any combustible material.
2. A minimum clearance of at least 6' between the bottom of the unit and the floor.

Proceed to either **Suspended or Wall Mounting Instructions.**

II. SUSPENDED MOUNTING

A. NO BACK ADAPTOR: Figure 2

1. Suspend the AURA Series air door on the inside of the building with the **louvered discharge grille** facing the door opening. **See Figure 2.**
2. Mount and level the air door by connecting four (4) 5/16-18 threaded rods or other suitable hardware (supplied by others) to the (4) 5/16-18 threaded inserts located on top of the unit.

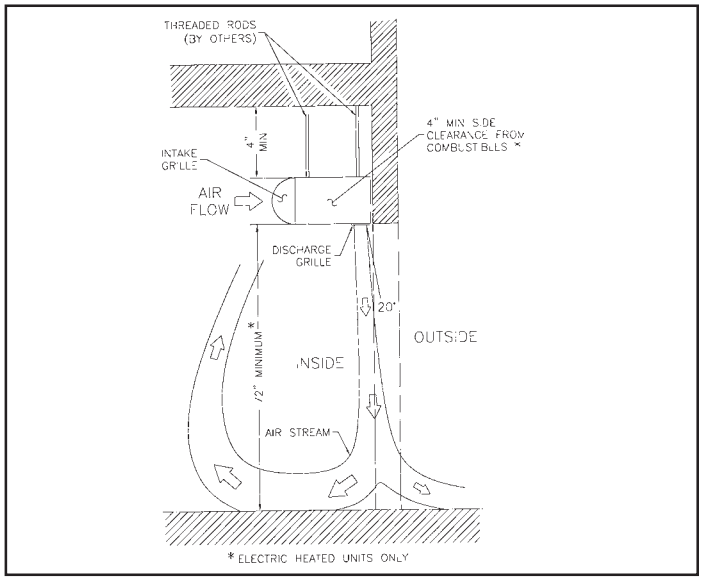


FIGURE 2 - Suspension Mount without Back Adapter

B. WITH BACK ADAPTER: Figures 3 & 4

1. The unit may be mounted with the louvered discharge grille facing toward the door opening, or the interior of the building (electric heated models only). **See Figures 3 and 4.**
2. **Figure 3** installation (louvered discharge grille facing interior of the building). Follow instructions A & B above.
3. **Figure 4** installation (louvered discharge grille facing interior of the building). A maximum of 6" between the wall and intake grille is required. Install the back adap tor at this time. Follow instructions 2 under Item A.

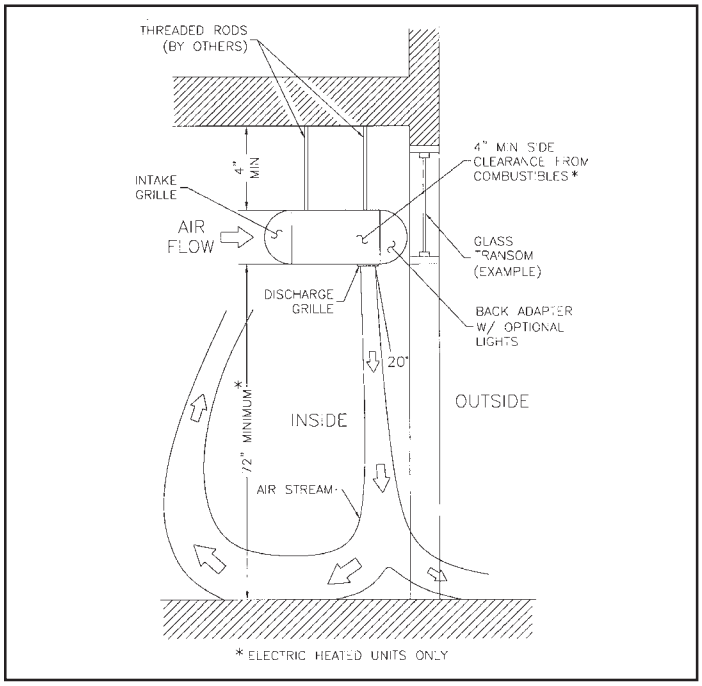


FIGURE 3 - Suspension Mount with Back Adapter

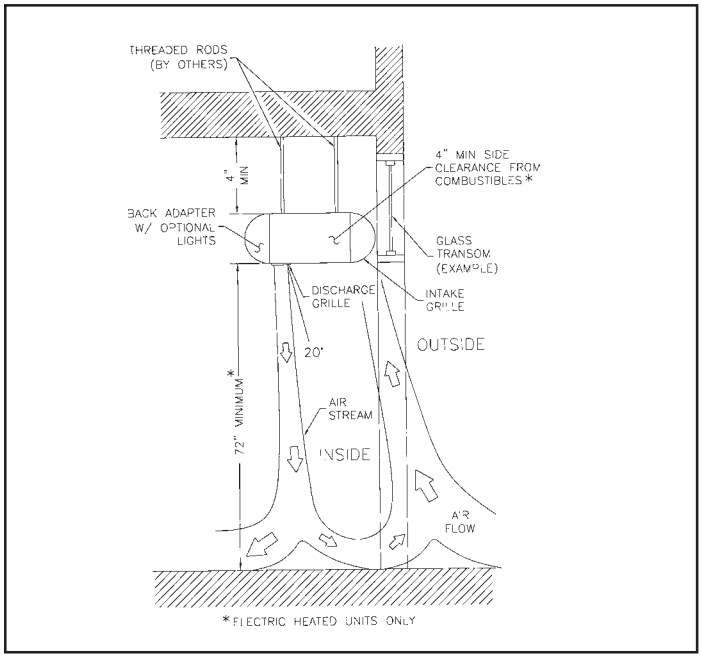


FIGURE 4 - Suspension With Back Adapter Reverse Flow

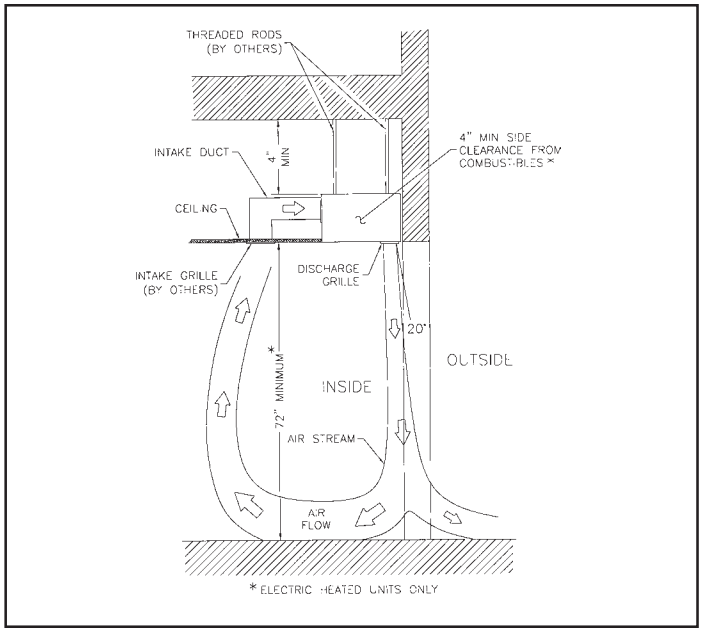


FIGURE 5 - In-Ceiling Suspension Mount Without Adapter

C. ABOVE CEILING: Figure 5

Follow instructions 1 & 2 under Item A. **See Figure 5.** The bottom of the unit can be exposed for easy servicing.

D. DO NOT install the perforated intake grille or the louvered air discharge grille at this time. Proceed to Section IV ELECTRICAL CONNECTIONS.

III. WALL MOUNTING

(Optional Wall Mounting Bracket Required)
See Figures 6-10

A. When the AURA Sseries air door is for wall mounting, four 5/16" shoulder bolts will be pre-assembled on the back of the unit (opposite the perforated intake grille).

B. The wall mounting plate is designed to fit flush with the back of the entire AURA door.

C. Determine the exact location of the air door unit. Position the center of the wall mounting plate over the center of the door opening with the larger opening of the key hole slots facing up.

For optimum performance, the bottom of the mounting plate should be no more than 1" above the top of the door opening.

STANDARD WALL MOUNTING: **Figure 7A.** The wall mounting plate thickness provides a natural $1\frac{3}{8}$" space which allows for mounting up to 4" above the opening.

HIGH WALL MOUNTING: If the wall mounting plate must be mounted higher than 4" above the door opening, it must be spaced out from the wall $\frac{3}{8}$" for every inch the unit is above the door opening. **See Figure 7B.**

For optimum performance, do not exceed the recommended **maximum mounting height of 8'** above the finished floor. For optimum protection, any void between the mounting plate and the wall should be sealed along the full length of the mounting plate.

D. Mark the wall in the centers of the (4) ½" round holes provided on the mounting plate. **See Figure 6.** If the holes on the mounting plate are not located where suitable support is available for the unit, drill new holes in the space provided on the mounting plate.

E. Drill the four holes as marked on the wall and attach the mounting plate to the wall (mounting hardware by others).

F. Raise the air door with the discharge opening facing down toward the floor. While holding the unit level, slide the heads of the shoulder bolts into the larger hole of the key-hole slots of the mounting plate. Lower the unit into place, keeping both ends level, allowing it to rest flush with the mounting plate. **See Figure 9.**

G. After attaching the unit to the mounting plate, check to ensure the unit is seated and flush with the mounting plate on all four sides.

H. Do not install the perforated intake grille or the louvered discharge grille at this time.
Proceed to Section IV - Electrical Connections.

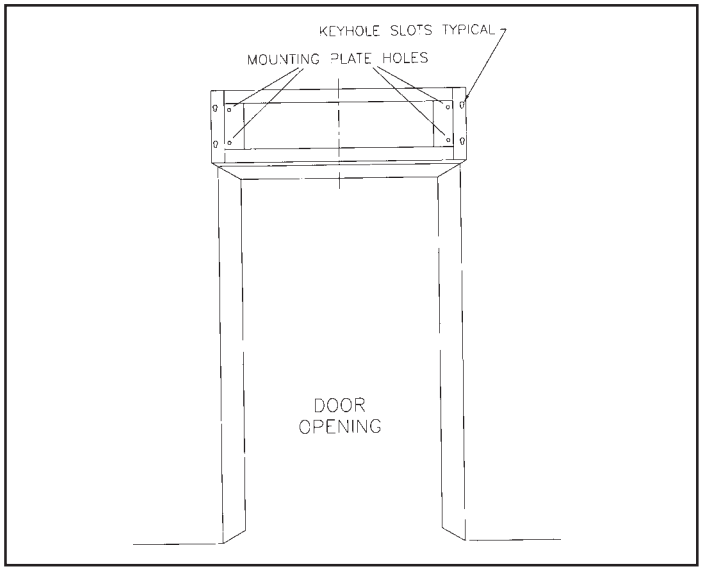


FIGURE 6 - Wall Mounting Plate, Wall Marking

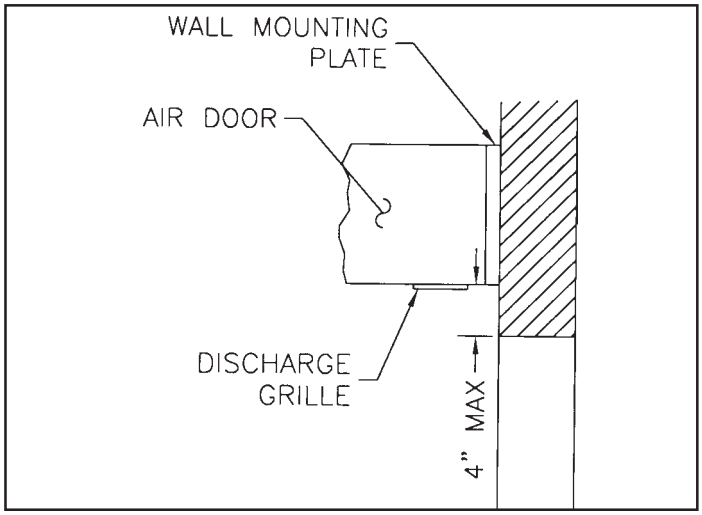


FIGURE 7A - Standard Wall Mounting

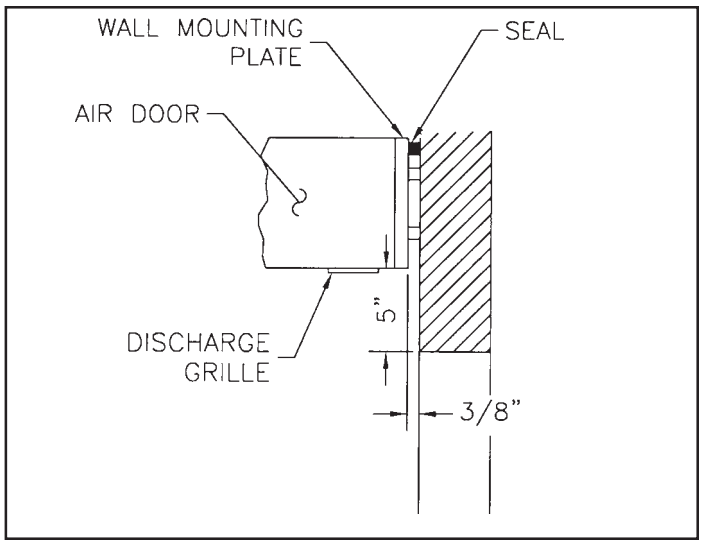


FIGURE 7B - High Wall Mounting

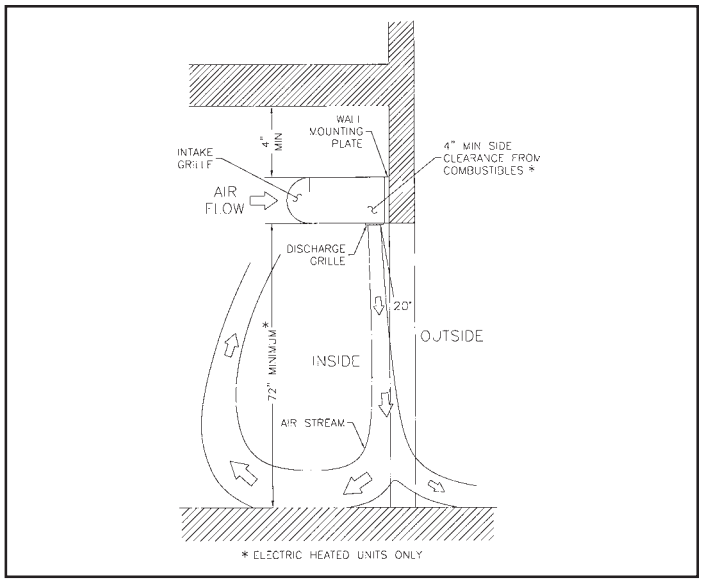


FIGURE 8 - Wall Mount With Optional Wall Plate

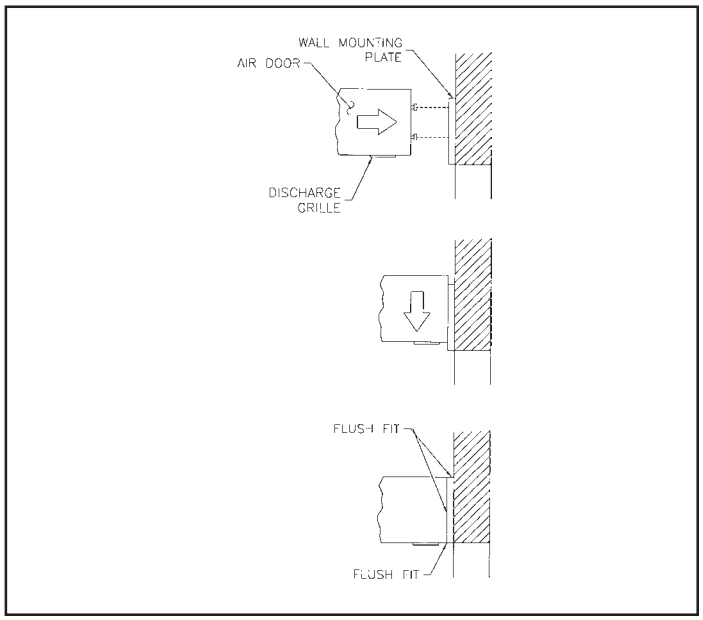


FIGURE 9 - Mounting to Wall Plate

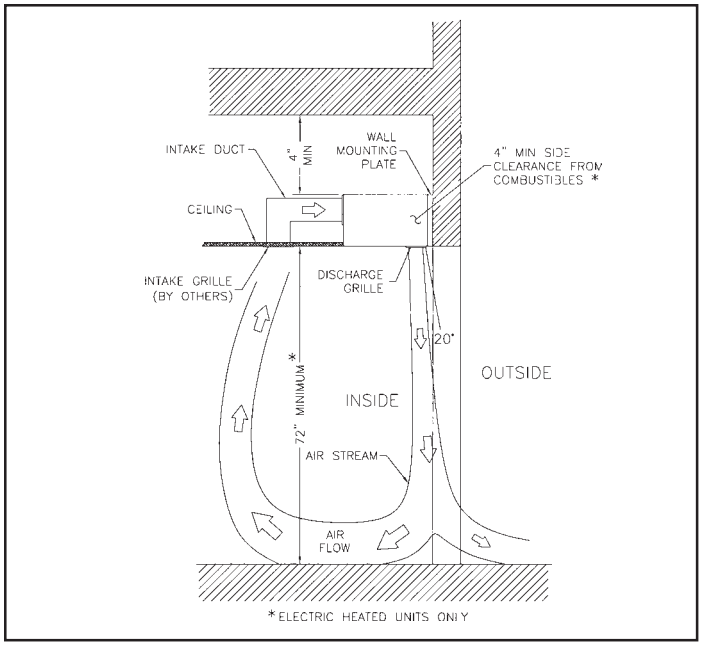


FIGURE 10 - In-Ceiling Mount With Optional Wall Plate

IV.ELECTRICAL CONNECTIONS

A. All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the National electrical Code ANSI/NFPA No. 70 (latest edition) or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.
WARNING: DO NOT OPERATE THIS FAN WITH ANY SOLID STATE SPEED CONTROL DEVICE.

B. Check the rating nameplate on the top of the unit, or inside the bottom access cover, for supply voltage and current requirements. **See Figure 11.** A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel of the unit. A disconnect switch for each branch circuit is a required part of this installation.

C. All field wiring must be copper with a minimum insulation of 60°C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90°C.

D. Access the wiring compartment, **See Figure 11,** by lowering the bottom **hinged access cover.** Remove the two ¼" bolts located on the intake side of the unit and the access cover will swing down to rest in the vertical position exposing the wiring compartment. If desired, the access cover may be removed by grasping both sides of the access cover and pressing in on the spring loaded hinges. **See Figure 11.**

E. The top of the unit has two knockouts on each side allowing for a left hand or right hand power connection. Remove the required knockout and connect the power supply to the unit.

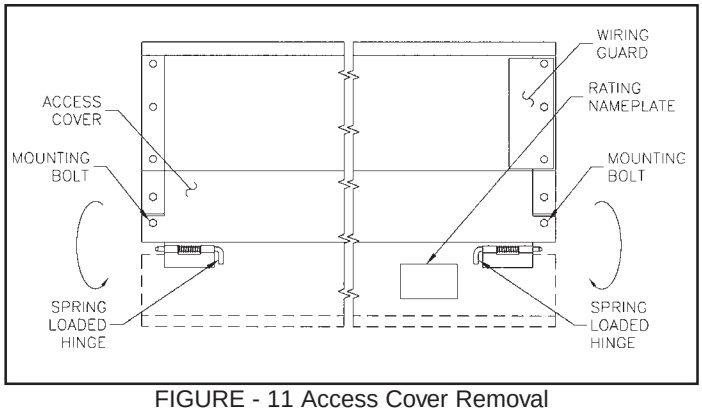


FIGURE - 11 Access Cover Removal

F. A wiring guard, **See Figure 12,** is mounted on the right of the air intake of the unit. The wiring guard is reversible, so it may be mounted on either side of the unit. Remove the ¼" mounting bolt. Clearance holes enable the wiring guard to be removed without disturbing the ¼" shoulder bolts.

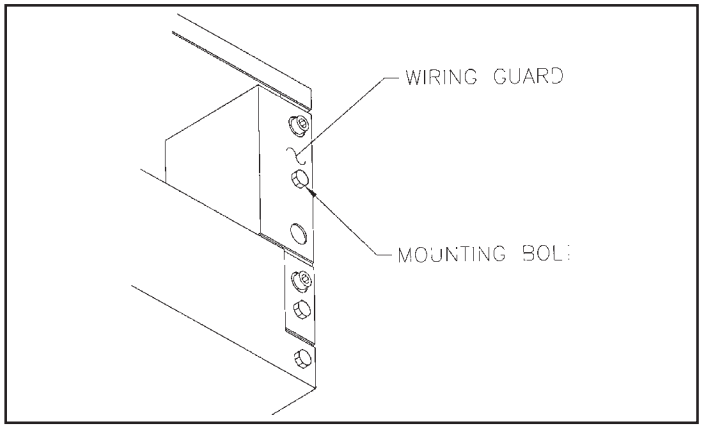


FIGURE 12 - Wiring Guard

G The wiring tray, directly below the power supply connection, also has two knockout slugs. Remove the required knockouts and insert one plastic snap ring bushing into each hole created.

H. Install the **Remote Selector Switch** in accordance with the directions furnished with the selector switch. Each switch is capable of operating up to three units at 120 VAC and up to six units at 208/240 VAC. Make the switch connections according to the applicable wiring diagram..

I. Connect all power and control circuit wires to the terminal strip located on the right hand side of the wiring tray. Refer to the wiring diagram.

J. If your unit was provided with a Time Delay-Off Relay, it will be factory set at 15 seconds. If a longer delay-off is desired, adjust the rotary dial clockwise with a small screwdriver to preferred time setting. Each hashmark stands for 60 seconds with a maximum setting of up to 300 seconds. **See Figure 13.**

K. Reinstall the wiring guard so that it covers all of the wires used to make the connections to the terminal strip. Reinstall the ¼" mounting bolt. **See Figure 12.**

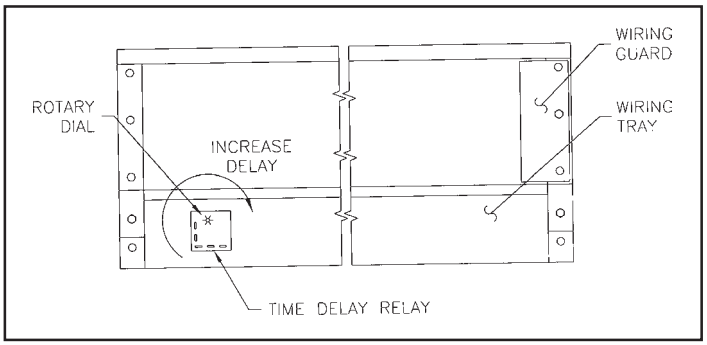


FIGURE 13 - Time Delay Adjustment

L. Reinstall the hinged access cover by positioning one hinge into the corresponding catch located on the unit. Raise the other hinge to the unit, when the catch is located press in the hinge and release it into the catch. Swing the access cover into place and align the mounting holes with the threaded inserts on the unit. Reinstall the two ¼" bolts. **See Figure 11.**

M. Attach the perforated intake grille on the ¼" shoulder bolts of the unit. **See Figure 15.** While holding the grille level with the unit, align the keyhole slots with the shoulder bolts. Press the grille firmly against the unit and push down until the grille rests flush with the bottom of the unit.

N. Attach the louvered discharge grille to the unit with the six (6) No. 6 x ¾" phillips head screws provided. **See Figure 14.**

O. Switch on the power at the service disconnect. Turn on the unit at the selector switch and check the sequence of operation against that provided on the wiring diagram. **Proceed to Section V: Operation and Air Flow Adjustment.**

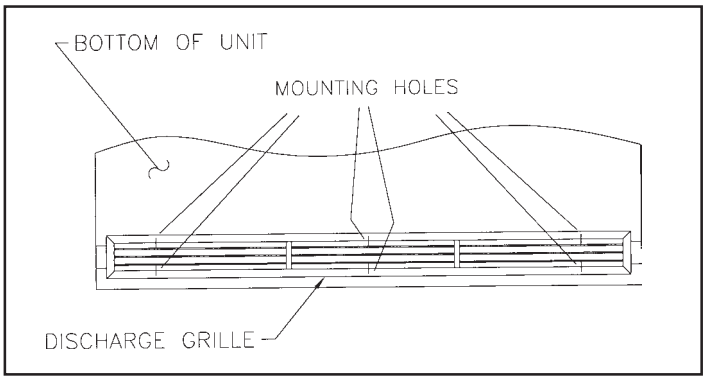


FIGURE 14 - Louvered Discharge Grille Installation

V. OPERATION AND AIR FLOW ADJUSTMENT

A. With the air curtain operating on high speed, and the door in its full open position, check to see that nothing is obstructing the air flow at the louvered discharge grille.

B. Find the air stream "split" location. Hold a handkerchief, by its top corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split locations indicated when the handkerchief is vertical with minimal flutter.

C. Adjust the air directional vanes in the louvered discharge grille so the split location is approximately 3" outside the doorway.

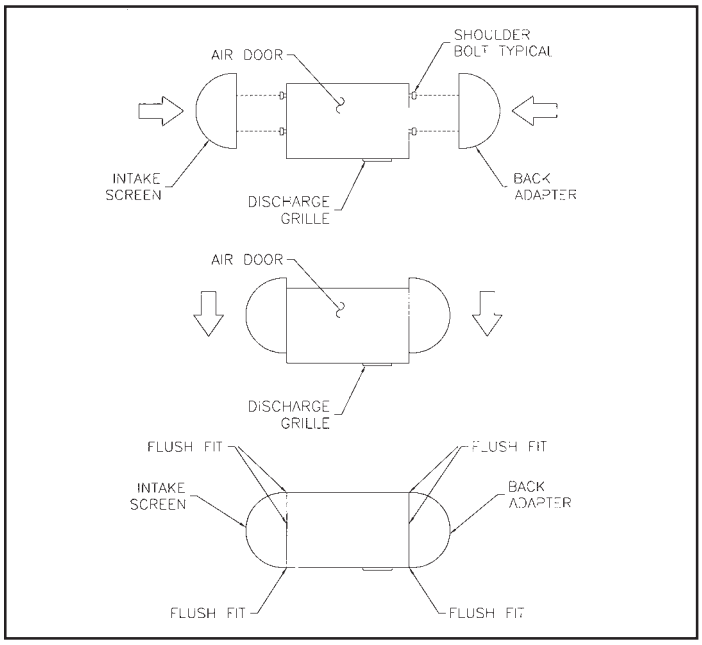


FIGURE 15 - Attaching Intake Screen or Back Adapter

VI. PREVENTIVE MAINTENANCE & SERVICE

A. CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnectmay be required to de-energize unit.

Any service performed on the AURA Series air door **MUST** be done by qualified personnel.

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

B. TO PERFORM PREVENTIVE MAINTENANCE, REMOVE THE LOUVERED DISCHARGE GRILLE, THE PERFORATED INTAKE GRILLE AND THE BOTTOM ACCESS COVER.

1. Remove the discharge grille by unscrewing the six (6) Phillips head screws located on the inside edge of the grille. **See Figure 14.**
2. Remove the intake grille by lifting up on both sides with equal force. Once the grille is detached, pull the grille away from the unit until it clears the shoulder bolts. This will expose the bottom access cover mounting bolts and the heating coils (if applicable).
3. Remove the bottom two ¼" mounting bolts on the intake side of the unit. Swing the access cover to rest in the vertical position. Grasp both sides of the access cover and press in on the spring loaded hinge. This will release the access cover from the unit and expose the blower mounting plate. **See Figure 11.**

4. Use an industrial vacuum or compressed air to remove dirt build-up from the inside of the access cover, air inlet grille, blower wheels/housings, interior of the unit, and heating coils (if applicable). Remove the dirt build-up from the blower wheels through the discharge openings on the blower plate.
5. If the unit is extremely dirty the blower plate (containing the motor and fan wheels) may be removed to further access the internals.

C. TO REMOVE THE BLOWER PLATE:

1. Unplug the wiring harness from the motor.
2. Blower plate removal - Remove the four (4) ¼" bolts located on the four corners of the blower mounting plate. This will release the blower plate from the unit. Remove the blower plate by lowering it straight down and out of the unit. All internals are attached to the blower plate allowing for service or repair to be done on the ground away from the unit.
3. To reassemble the unit reverse steps 1 through 5.

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to the Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of the Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but the Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by the Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

Serial No. _____ Model No. _____ Date of Purchase _____

Berner International Corporation
New Castle, PA
724-658-3551
1-800-343-7991
www.berner.com

TROUBLESHOOTING

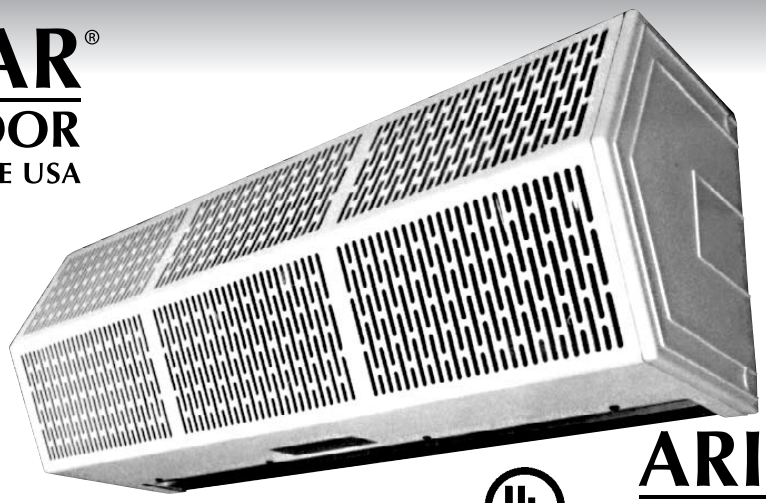
SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or flexible hub	• Replace fan sleeve/reengage coupling
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	• Belt driven units/belt broken	• Replace belts
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position	• Turn switch to "ON" position
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes misadjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improve voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
AIR IS NOT HITTING FLOOR	• Air stream to weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air stream hits obstruction	• Remove obstruction or reposition air curtain (move out $^{3}/_{8}$" for every 1" up from the door)
	• Negative pressure	• Relieve negative pressure by providing make-up air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws
	• One motor not operating	• Repair or replace motor
EXCESSIVE AIR MOVEMENT AT DOORWAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Unit too powerful	• Adjust motor speed
	• Air movement too cold	• Add auxiliary heat to overcome wind chill factor
	• Pushing air outside building	• Adjust discharge angle back into building, adjust motor speed
	SEE **AIR IS NOT HITTING FLOOR** SYMPTOMS	
	ELECTRICALLY HEATED MODELS	
NO HEAT	• Switch turned to "ON" position	• Replace switch or check wiring
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped	• Reset manual thermal cutout
NOT ENOUGH HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
TOO MUCH HEAT	• Thermostat in wrong location	• Move thermostat closer to air stream
	• Thermostat not set properly	• change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage

BERNER™
INTERNATIONAL CORP.

READ AND SAVE THESE INSTRUCTIONS

No. **II-123**
Date **June, 2010**

STAR®
AIR DOOR
MADE IN THE USA



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ARISTOCRAT®
AIR DOOR
MADE IN THE USA

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING 2
II. MOUNTING INSTRUCTIONS 2
III. WALL MOUNTING 3
IV. SUSPENDED MOUNTING 3
V. ELECTRICAL CONNECTIONS 3
VI. MECHANICAL CONNECTIONS 4
VII. AIRFLOW ADJUSTMENTS 4
VIII. MAINTENANCE AND CLEANING 5
IX. SERVICE 5
TROUBLESHOOTING 7

NSF certification requires maximum mounting height of 7 feet for models ASN/STN 36" & 42"
EPH certification requires maximum mounting height of 7 feet for all ASN/STN models

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify shipping company. If the unit(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Remove the plastic cover housing by lifting vertically. Remove and discard four (4) nuts and washers holding the motor/blower section to the bottom of the carton. Remove motor/blower section from the carton.

CAUTION: ONLY LIFT THE UNIT BY GRASPING INLET RINGS ON THE BLOWER HOUSING WITHOUT TOUCHING BLOWER WHEELS.

Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the unit(s) are installed and properly operating.

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING INSTRUCTIONS *(General)*

INDOOR MOUNTING - Environmental/Insect Dust Control

OUTDOOR MOUNTING (Unheated Only) - Insect/Dust Control

The Aristocrat/Star Air Door is designed to be an effective barrier against cold drafts in the winter and hot air in the summer. To achieve optimum protection, the unit should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance keep air stream free of obstructions.

The Air Door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

Before mounting the unit, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the unit. **See Table 1.**

Model	Net Weight Amient (lbs)	Net Weight Electric (lbs)
ASF/STF 1036	50	55
ASR/STR/ASN/STN 1036	52	57
ASF/STF 1042	52	57
ASR/STR/ASN/STN 1042	54	59
ASF/STF 1048	54	59
ASR/STR/ASN/STN 1048	56	61
ASF/STF 1060-2	56	61
ASF/STF 1060-3	60	65
ASR/STR/ASN/STN2060	70	75
ASR/STR 1060	58	63
ASF/STF 1072	70	75
ASF/STF 2072	80	85
ASR/STR/ASN/STN 2072	84	89

TABLE 1 - Unit Weight

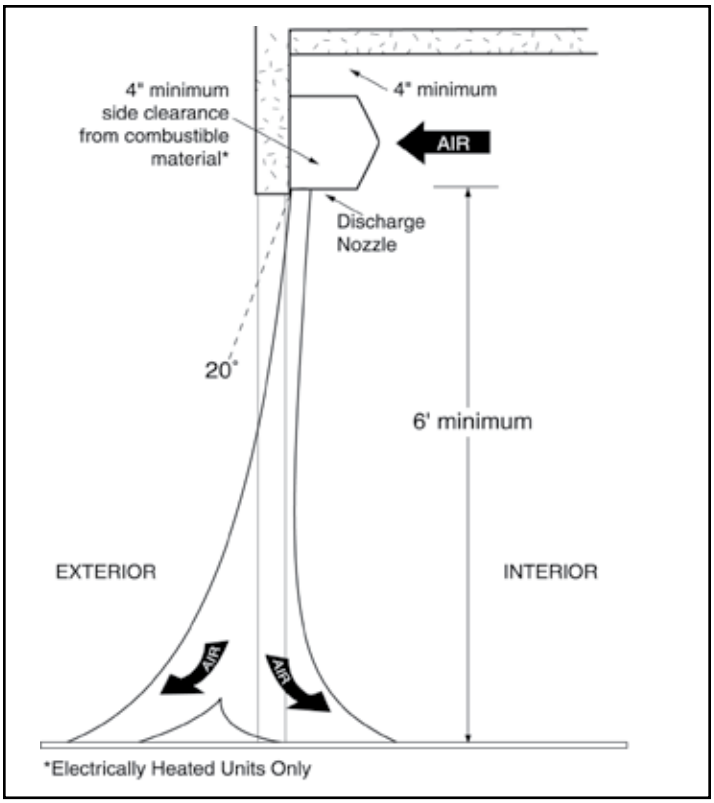


FIGURE 1 - Air Stream

NOTE: The Air Door is weatherproof, therefore no special covering is required for outdoor mounting.

IMPORTANT: A minimum of 4" is recommended above the top of the Air Door for the installation and removal of the cover housing.

A. When determining the mounting location for the unit(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0° to 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the unit will be greatly reduced. **See Figure 1.**

B. For optimum performance, the bottom of the unit (discharge nozzle) should be no more than 1" above the top of the door opening with the unit mounted flush to the wall. If the unit must be mounted higher, it must be **spaced out** from the wall **$^3/_8$" for every inch** the unit is above the door opening. For optimum protection, any void between the Air Door and the wall should be sealed along the full length of the unit.

See Figure 2.

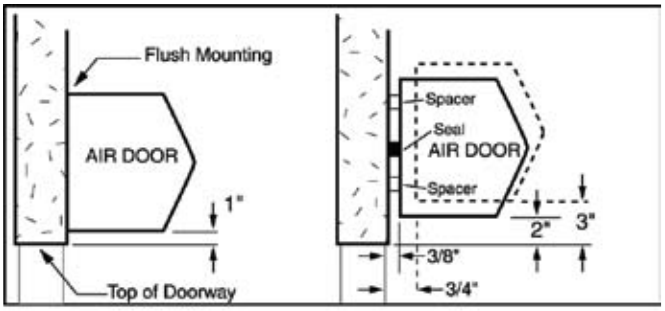


FIGURE 2

C. **Electric heated units shall:**
   1. Have a minimum clearance of at least 4" between the sides and top of the unit and any combustible material.
   2. Have a minimum clearance of at least 6' between the bottom of the unit and the floor.
   3. Be installed indoors only.

D. Proceed to either **Section III - WALL MOUNTING,** or **Section IV SUSPENDED MOUNTING**

III. WALL MOUNTING

To prevent damage to the Air Door during shipping, the unit is shipped with each blower attached to the back plate by two phillips head screws. These screws should be removed before installation.
See Figure 3.

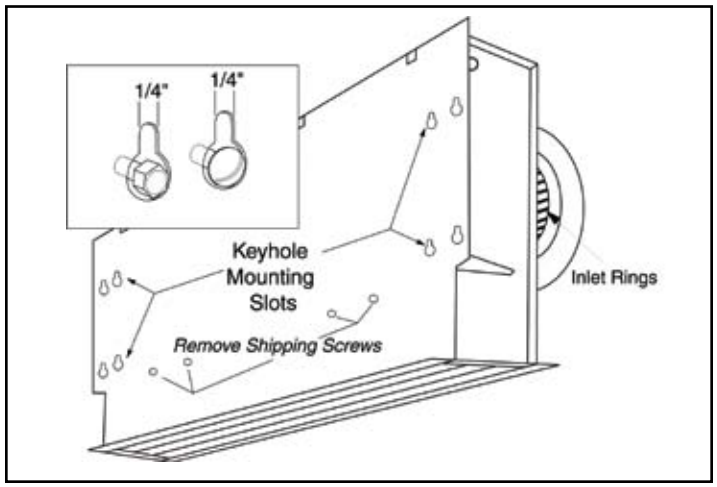


FIGURE 3 - Mounting Screws

A. The Aristocrat/Star Series Air Door is equipped with ¼" keyhole mounting slots on the back of each unit for wall mounting. It is recommended that a minimum of two keyhole slots are used from each end.

B. Determine the exact mounting location of the Air Door unit.
NOTE: A minimum of 4" is recommended above the unit to provide clearance for installation and removal of the unit blower assembly.

C. Choose four (4) keyhole slots that are located where suitable support is available for the unit. If the keyhole slots are not located where suitable support is available, drill new holes in the unit backplate where space is available.

D. Mark the wall in the top center of the keyhole slots or in the center of the holes drilled.

E. **Keyhole Mounting:**
Install the mounting hardware (supplied by others), allowing for space to hang the unit by not fully tightening. Lift and slip the blower assembly over the mounting hardware by grasping the inlet rings on the blower housing, without touching the blower wheels. Tighten the mounting hardware. **See Figure 4.**
Drilled Mounting Holes:
Lift the blower assembly by grasping the inlet rings on the blower housing, without touching the blower wheels, and install the mounting hardware (supplied by others) through the drilled holes.

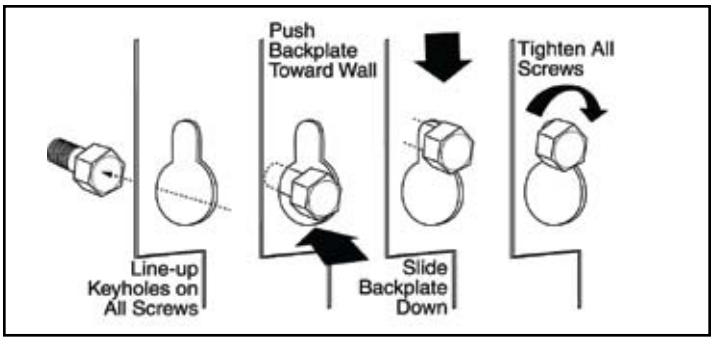


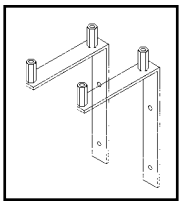
FIGURE 4 - Keyhole Mounting

F. Do not install the cover housing at this time.

G. Proceed to **Section V - ELECTRICAL CONNECTIONS.**

IV. SUSPENDED MOUNTING *(Ceiling Suspension)*

NOTE: TWO (2) TOP MOUNTING BRACKETS (PART#66LWA000TOP)ARE REQUIRED PER UNIT FOR SUSPENDED MOUNTING.



To prevent damage to the Air Door during shipping, the unit is shipped with each blower attached to the back plate by two phillips head screws. These screws should be removed before installation. **See Figure 3.**

A. The Aristocrat/Star Series Air Door is equipped with keyhole mounting slots on the back of the unit. The top mounting brackets are designed to attach to these keyhole slots.

B. Attach the top mounting brackets to the unit using the hardware provided.

C. Determine the exact mounting location of the Air Door unit.

D. Attach ⅜" threaded rods or other suitable hardware to the coupling nuts, located on the mounting bracket(s).

E. Do not install the cover housing at this time.

F. Proceed to **Section V - ELECTRICAL CONNECTIONS.**

V. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the latest edition of the National Electrical Code ANSI/NFPA No. 70 or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

A. Check the rating nameplate on the unit for supply voltage and current requirements. A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the unit. A disconnect switch for each branch circuit is a required part of this installation.
See Tables 2 & 3.

B. All field wiring must be copper with a minimum insulation of 60° C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90° C.

C. Remove the junction box cover located on the right-hand side of the unit. **See Figure 5.**

D. Connect all supply and control circuit wires according to the wiring diagram. To connect wiring from the left-hand side, an optional knockout is provided.

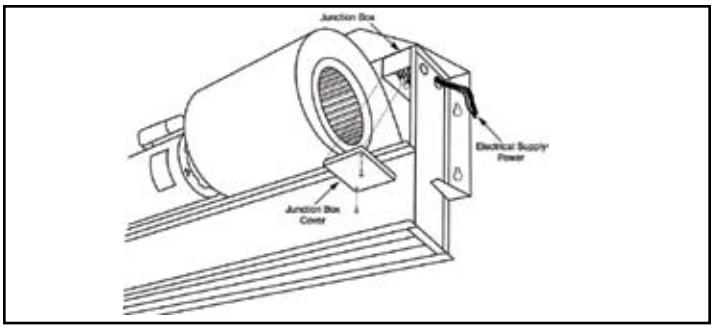


FIGURE 5 - Junction Box

NOTE: Electric heated units may be provided with a line voltage thermostat. Mount and wire thermostat according to instructions and the wiring diagram.

E. Install the cover housing and attach it temporarily at each end of the unit with two of the cover screws provided. Final assembly should be done after airflow adjustments. **See Figure 6.**

F. Switch on the power at the service disconnect. Turn on the unit and check the sequence of operation against the wiring diagram.

G. Proceed to **Section VI - MECHANICAL CONNECTIONS** for electric heated units, otherwise proceed to **Section VII - AIRFLOW ADJUSTMENTS**

VI. MECHANICAL CONNECTIONS

A. **ELECTRICALLY HEATED MODELS**

The heater circuit may be controlled by a remote thermostat, or manually through a remote mounted three position - fan only/off/fan with heat switch. Overheating protection is provided by auto reset thermal cutouts built into the blower assembly (see wiring diagram). Proceed to **Section VII - AIRFLOW ADJUSTMENTS.**

MOTOR VOLTAGES/AMP DRAWS					
Horsepower	3/4	3/4	3/4	1/2	1/2
Speed	1	1	1	3	3
Volts	120	208/240	480	120	208/240
Phase	1	1	1	1	1
Hertz**	50/60	50/60	50/60	50/60	50/60
Amps per Motor	7.5	3.8	1.8	7.2	4.0

** Operation at 50 HZ will generate approximately a 17% reduction in performance.

TABLE 2 - Motor Amp Ratings

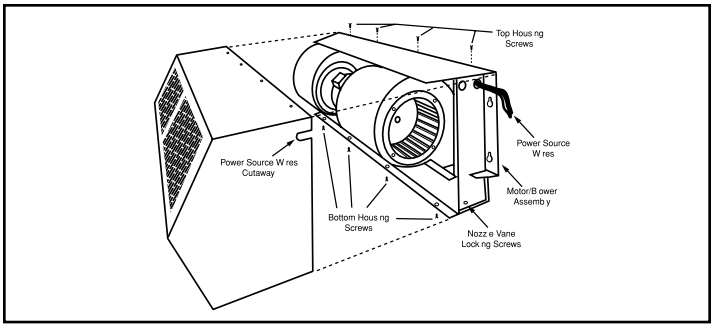


FIGURE 6 - Removing Cover

VII. AIRFLOW ADJUSTMENTS

A. With the Air Door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle vanes.

B. Find the air stream split location. Hold a handkerchief, by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split location is indicated where the handkerchief is vertical with minimal or no fluttering. **See Figure 7.**

C. Adjust the discharge nozzle vanes so the split location is approximately 3" outside the doorway. This is accomplished by first de-energizing the unit. Remove the cover housing, loosen the nozzle vane locking screws and adjusting vanes.

D. Install remaining screws in cover housing.

ELECTRIC HEATER DATA									
Model	KW	208V 1Ø Amp Draw		240V 1Ø Amp Draw		240V 3Ø Amp Draw		240V 3Ø Amp Draw	480V 3Ø Amp Draw
		Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 1
AS/ST*1036E	7.5	36.1	-	30.8	-	20.8	-	17.8	-
AS/ST*1042E	7.5	36.1	-	30.8	-	20.8	-	17.8	-
AS/ST*1048E	7.5	36.1	-	30.8	-	20.8	-	17.8	-
AS/ST*1060E-2	7.5	36.1	-	30.8	-	20.8	-	17.8	-
AS/ST*1036E	10	16.0	32.0	41.7	-	27.8	-	24.1	12.0
AS/ST*1042E	10	16.0	32.0	41.7	-	27.8	-	24.1	12.0
AS/ST*1048E	10	16.0	32.0	41.7	-	27.8	-	24.1	12.0
AS/ST*1060E-2	10	16.0	32.0	41.7	-	27.8	-	24.1	12.0
ASF/STF1060E-3	15	24.0	48.1	41.7	20.8	41.6	-	36.1	18.0
ASR/STR2060E	15	24.0	48.1	41.7	20.8	41.6	-	36.1	18.0
AS/ST*1072E	15	24.0	48.1	41.7	20.8	41.6	-	36.1	18.0
ASR/STR2072E	15	24.0	48.1	41.7	20.8	41.6	-	36.1	18.0
ASR/STR2072E	20.0	48.1	48.1	41.7	41.7	27.8	27.8	48.1	34.0
*Applies to both ASF/STF front door models and ASR/STR rear door models.									

TABLE 3

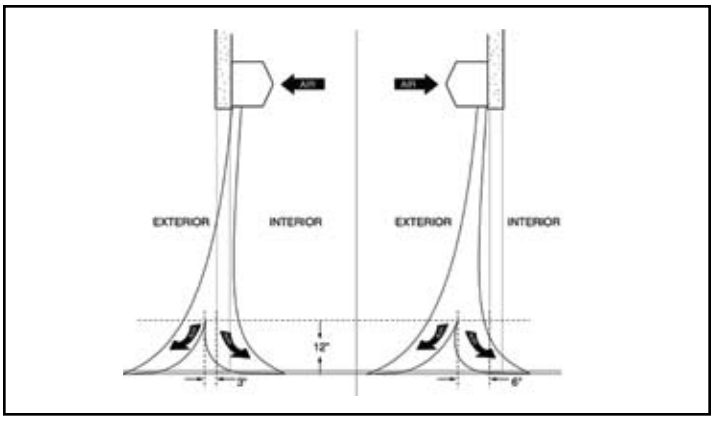


FIGURE 7 - Air Flow Adjustment

VIII. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD

Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

Keep your Air Door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. Otherwise, the unit(s) should be scheduled for cleaning a minimum of once every (6) months. To access the interior of the unit:

A. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove. If the unit has a filter, it should be removed and cleaned at this time. The filter is located in the cover housing and held in place by wing nuts and clips. **See Figure 8.**

B. Vacuum and scrape (if necessary) to remove the buildup of dirt and debris from the interior of the Air Door. The motor(s) are permanently lubricated and require no additional lubrication. Reinstall the cover housing.

C. Switch the power on after cleaning.

CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE.

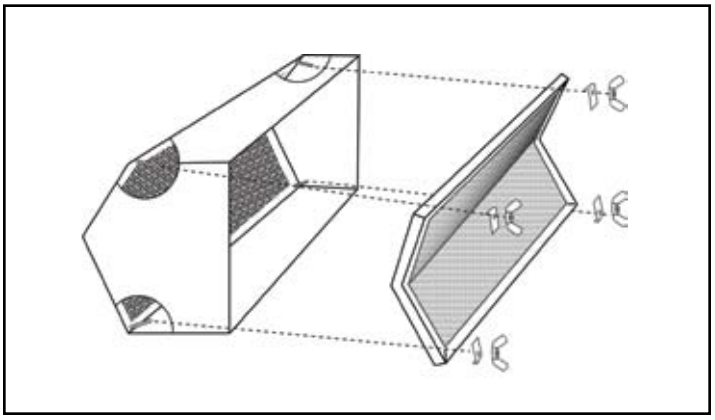


FIGURE 8 - Filter Replacement

IX. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD Disconnect power whenever servicing unit. More than one disconnect may be required to de-energize unit.

*Any service performed on the Aristocrat/Star Series Air Door **MUST** be done by qualified personnel.*

Berner Air Doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

A. Fan Wheel Removal - Ambient and Electric Heated

1. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove.
2. If unit is equipped with inlet rings and/or tri-arm bearings, remove outside ring and/or bearing using a blade screw driver or ¼" nut driver. If unit does not have inlet rings proceed to next step.
3. Loosen **(do not remove)** 5/32" Allen head set screw from hub of fan wheel. Note: a T-handle Allen wrench may be inserted through hole in fan housing and fan blade with semi-circle notch.
4. Carefully slide fan wheel out of fan housing.
5. Reinstall fan wheel and align set screw with flat on motor shaft.
6. Slowly tighten set screw while gently rocking fan wheel back and forth to settle set screw perpendicular to motor shaft flat.
7. Reinstall inlet ring and/or bearing if necessary.
8. Reinstall unit cover housing and switch on power.

B. Motor Removal - Ambient and Electric Heated

1. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove. For electric heated units, mark connections and disconnect four spade wire terminals from electric heater(s).
2. Unplug wiring harness from motor.
3. Loosen **(do not remove)** 5/32" Allen head set screw from hub of each fan wheel attached to motor. Note: a T-handle Allen wrench may be inserted through hole in fan housing and fan blade with semi-circle notch. If unit is equipped with an extended shaft and coupling for a three fan, one motor construction, this fan assembly must be disconnected from motor shaft. Loosen 5/32" set screw on third fan wheel hub. Loosen set screw on motor shaft side of coupling (silver coupling - 5/32" Allen wrench, black coupling - 9/64" Allen wrench). Slide coupling and shaft off motor shaft by gently pushing it through third fan hub.
4. Remove four phillips head screws from each fan housing that has a fan attached to motor.
5. Remove each fan and housing assembly from motor shaft by sliding away from motor. After fan wheel is off motor shaft, remove assembly by rotating it away from the blower assembly.

6. While supporting motor, loosen and remove two clips that hold motor with a straight blade screw driver or 5/16" nut driver.
7. Remove motor.
8. Install motor in reverse order of removal.

C. Fan Wheel and Housing Removal - Ambient and Electric Heated

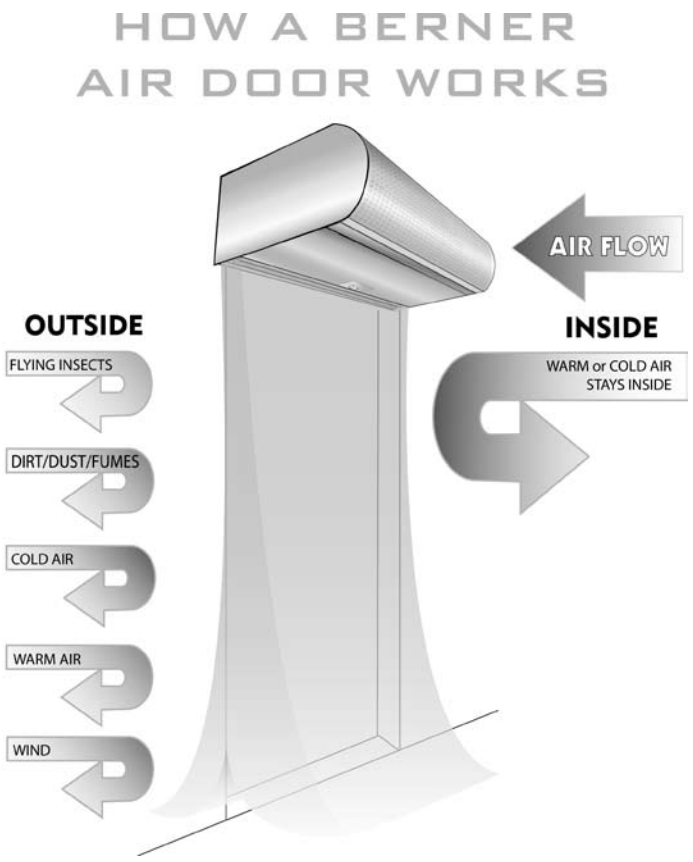
1. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove. For electric heated units, mark connections and disconnect four spade wire terminals from electric heaters.
2. Loosen **(do not remove)** 5/32" Allen head set screw from hub of fan wheel. Note: a T-handle Allen wrench may be inserted through hole in fan housing and fan blade with semi-circle notch.
3. Remove four phillips head screws from fan housing.
4. Remove fan and housing from motor shaft by sliding assembly away from motor. After fan wheel is off of motor shaft, remove assembly by rotating it away from blower assembly.
5. Reinstall in reverse order of removal.

D. Filter Replacement

1. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove.
2. Filter is located in cover housing. Remove wing nuts and clips that hold filter. **See Figure 8.**
3. Remove and replace filter. Note: clean aluminum filters with water and a mild detergent, rinse thoroughly.
4. Reinstall in reverse order of removal.
   Note: do not force or over tighten wing nuts as they will thread through the outside of cover housing.

E. Electric Heater Removal - Electric Heated

1. Disconnect and lockout power to the unit. Remove unit cover housing by removing screws from the top and bottom of unit. Slide cover housing away from blower assembly to remove. Mark connections and disconnect four spade wire terminals from electric heater(s).
2. Loosen **(do not remove)** 5/32" Allen head set screw from hub of fan wheel. Note: a T-handle Allen wrench may be inserted through hole in fan housing and fan blade with semi-circle notch.
3. Remove four phillips head screws from fan housing.
4. Remove fan and housing from motor shaft by sliding assembly away from motor. After fan wheel is off of motor shaft, remove assembly by rotating it away from blower assembly.
5. Remove electric heater element from fan housing by removing three screws with ¼" nut driver.
6. Reinstall in reverse order of removal.



TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Electrical Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or fan hub	• Replace fan
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	• Broken/Loose coupling	• Replace/Tighten coupling
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position	• Turn switch to "ON" position
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM	• Air directional discharge vanes misadjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction Provide adequate space for air curtain
	• Blower motor operates below speed	• Improve voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air stream hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8" for every 1" up from the door)
	• Negative pressure	• Relieve negative pressure by providing make-up air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws/Replace fan
	• One motor not operating	• Repair or replace motor/Check electrical connections
EXCESSIVE AIR MOVEMENT AT DOORWAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Air movement too cold	• Add auxiliary heat to overcome wind chill
	• Pushing air outside building	• Adjust discharge angle back into building
	SEE **AIR IS NOT HITTING FLOOR** SYMPTOMS	
	ELECTRICALLY HEATED MODELS	
NO HEAT	• Switch turned to "OFF" position	• Turn switch on
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped	• Reset manual thermal cutout
	• Defective switch	• Replace switch
NOT ENOUGH HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
TOO MUCH HEAT	• Thermostat in wrong location	• Move thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED

BERNER™
INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

724-658-3551 • 1-800-245-4455 • www.berner.com • airdoors@berner.com

Berner reserves the right to alter specifications without prior notice.

MADE IN U.S.A.

BERNER INTERNATIONAL CORP.

intelli SWITCH 2 Factory Installed Digital Programmable Controller

No. II-300
Date: August, 2011

READ AND SAVE THESE INSTRUCTIONS

Installation & Maintenance Instructions For the In-Ceiling Mount Air Curtain *with Intelliswitch®*

TABLE OF CONTENTS

IN-CEILING MOUNT AIR CURTAIN

I. UNCRATING 2
II. MOUNTING PREPARATION 2
III. MOUNTING 3
IV. ELECTRICAL CONNECTIONS 3
V. FIELD CONNECTIONS 4
VI. AIRFLOW ADJUSTMENTS 4
VII. MAINTENANCE AND CLEANING 4
VIII. SERVICE 5
TROUBLESHOOTING 19

INTELLISWITCH®

QUICK START PROGRAMMING 8-9
FAQ's (FREQUENTLY ASHED QUESTIONS) 10-11
INTELLISWITCH® DETAILED PROGRAMMING 12-18

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction. (See page 4 V. ELECTRICAL CONNECTIONS (NEC Code ANSI/NFPA No. 70)
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage. If the carton is damaged, immediately notify the shipping company. **Do not delay in filing claim.** If the air door(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the air door(s) are installed and properly operating.

ACCESSORIES: If the air door(s) were ordered with optional electrical accessories, the accessories will be found in the carton containing the air door or in a separate carton(s) accompanying the air door(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING PREPARATION

INDOOR MOUNTING ONLY - Environmental/Insect/Dust Control

A. The In-Ceiling Mount air curtain is designed to be an effective barrier against cold drafts in the winter and hot air in the summer. To achieve optimum protection, the unit should be mounted on the inside of the building, flush with the ceiling, so that the airstream can pass as close to the top of the door opening as possible. To ensure peak performance keep the air stream free of obstructions.

B. **The air door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.**

C. Before mounting the air door, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the unit. **See Table 1.**

D. When determining the mounting location for the unit(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0° to 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the unit will be greatly reduced. **See Figure 1.**

E. For optimum performance, the bottom of the discharge nozzle should be located in such a manner that it is spaced out from the wall 3/8" for every inch the unit is above the door opening.

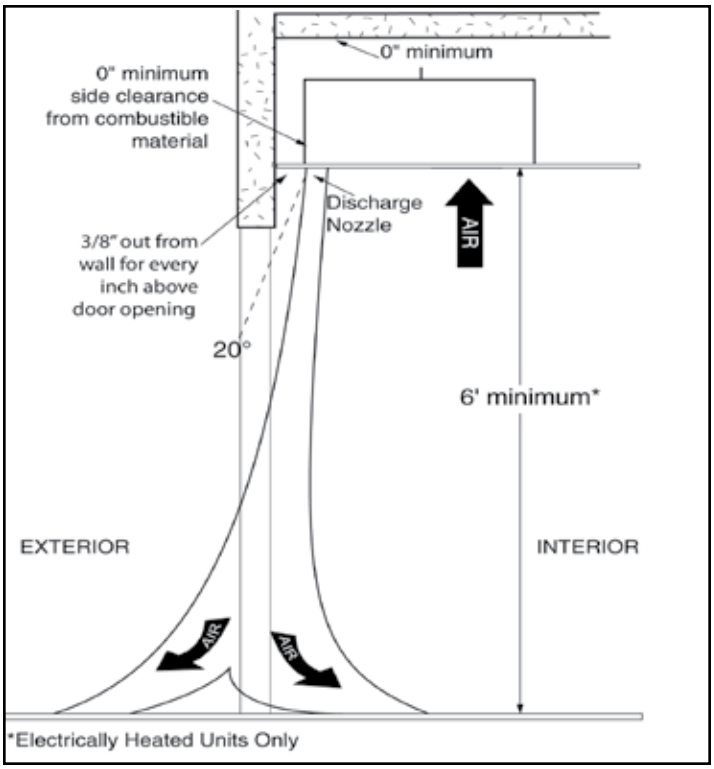


Figure 1

F. Electric heated unit(s) shall:
1. Have a minimum clearance of at least 6' between the bottom of the unit and the floor.
2. Be installed Indoors Only.
3. The unit is shipped without the front and back trim installed to protect it from shipping damage. This trim need not be installed until after the unit is hung. **See Figure 2.**

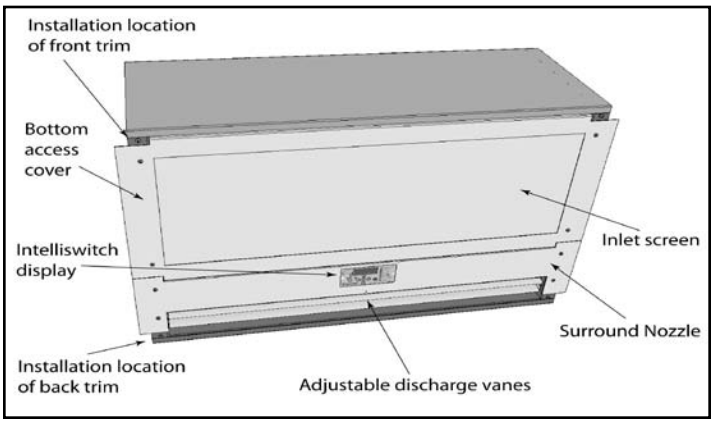


Figure 2

Model	Total Net Weight - Ambient	Total Net Weight - Electric Heat	Total Net Weight - Steam/ Hot Water Heat
ICA/FCA1036A	100	104	115
ICA/FCA1042A	107	111	124
ICA/FCA1048A	113	117	133
ICA/FCA1060A	133	137	160
ICA/FCA2060A	170	178	197
ICA/FCA2072A	177	185	205
ICA/FCA2084A	202	210	237
ICA/FCA2096A	215	223	256
ICA/FCA3096A	252	264	293
ICA/FCA2108A	222	230	267
ICA/FCA3108A	259	271	304
ICA/FCA3120A	269	281	318
ICA/FCA3132A	291	303	346
ICA/FCA3144A	304	316	364
ICA/FCA4144A	341	357	401

Table 1

III. MOUNTING

A. The ICA/FCA series air door enclosure is equipped with four 5/16"-18 threaded inserts on the top of the unit for suspended mounting. **See Figure 3.**

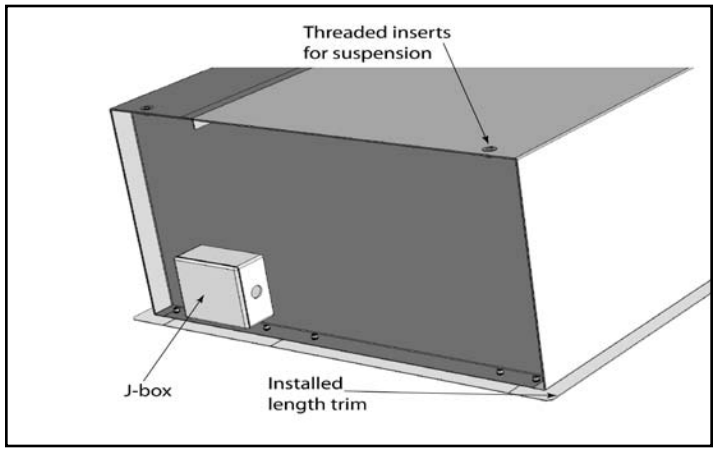


Figure 3

For lighter lifting the blower assembly may be removed so that the enclosure can be easily installed. See Section VIII: SERVICE for instruction on removing the blower assembly.

B. The electrical junction box is located on the outside of the enclosure on the left side of the unit.
C. Determine the exact mounting location of the air door unit.
D. Create structural attachment points to suspend the unit above the ceiling so that the unit is centered and parallel with the door opening.
E. Suspend air door cabinet by attaching threaded rods to the unit and support structures. Adjust unit position so the bottom of the cabinet is flush with the underside of the ceiling.
F. Install the front and back trim using the provided fasteners. **See Figure 3.**
G. Finish off ceiling edge as required.

NOTE: **Finishing materials must not overlap the bottom of the cabinet to allow the intake screen to open freely.**

H. If the blower assembly was removed, re-install it along with nozzle surround and bottom access cover.

IV. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the latest edition of the National Electrical Code ANSI/NFPA No. 70 or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

A. Check the rating nameplate on the unit for supply voltage and current requirements. A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the unit. A disconnect switch for each branch circuit is a required part of this installation. **See Table 2 & 3** for component electrical loads. See the voltage label on the unit for circuiting and total electrical load.

Motor Voltages/Amp Draws									
Volts	120	208	240	208	240	480	600	220	380
Phase	1	1	1	3	3	3	3	1	1
Hertz	60	60	60	60	60	60	60	50	50
Amps per Motor	6.5	3.5	3.5	3.5	3.5	1.4	1	3.5	3.5

Table 2

Heater Amp Draws for Selected kW						
Heater kW	Heater kW Amp Draws					
	208/1	240/1	208/3	240/3	480/3	600/3
6 kW	28.9	25.1	16.7	14.5	7.2	6.0
8 kW	38.5	33.5	22.2	19.3	9.6	8.0
10 kW	48.1	41.9	27.8	24.1	12.0	10.0
12 kW	57.7	50.3	33.4	28.9	14.4	12.0
14 kW	67.3	58.7	38.9	33.7	16.8	14.0
16 kW	77.0	67.0	44.5	38.6	19.2	16.0
18 kW	N/A	N/A	50.0	43.4	21.6	18.0
20 kW	N/A	N/A	55.6	48.2	24.0	20.0
24 kW	N/A	N/A	66.7	57.8	28.8	24.0
28 kW	N/A	N/A	77.8	67.5	33.6	28.0
30 kW	N/A	N/A	83.4	72.3	36.0	30.0
32 kW	N/A	N/A	88.9	77.1	38.4	32.0
40 kW	N/A	N/A	111.2	96.4	48.0	40.0
42 kW	N/A	N/A	116.8	101.2	50.4	42.0
56 kW	N/A	N/A	155.7	135.0	67.2	56.0
Amps per kW	4.81	4.19	2.78	2.41	1.20	1.00

Table 3

B. All field wiring must be copper with a minimum insulation of 60°C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90°C.
C. Electric, steam and hot water heated air doors are factory equipped with an air curtain mounted solid state temperature sensor cable (for Intelliswitch® thermostat) located on the outside of the left endplate. Depending on where the temperature is to be measured, the sensor may be left on the endplate or positioned elsewhere. Do not put any clamps on the rubber coated tip.
D. Remove the junction box cover.
E. Connect all supply and control circuit wires according to the wiring diagram provided.

NOTE: **For Electric heated air doors provided with the op tional remote thermostat, mount and wire the thermostat according to instructions and wiring diagram**.

F. Master/Slave connection, if two or more air doors are to be linked together for Master/Slave operation, continue, otherwise, skip to Step G.

NOTE: **The air door must have been ordered from the factory with this option.**

NOTE: **One Intelliswitch® serial cable assembly (part # 505SC***INT485-A) is required for every air door that is to be used as a Master/Slave. "***" denotes length of cable in feet "008"= 8 ft. long.**

For Master/Slave operation, a serial cable connection must be made between the Intelliswitch® control boards of each air door to be linked.

1. Disconnect power to all the air doors
2. Find the (RS485) phone jack couplers protruding through the hole in the endplate next to the j-box.
3. The serial cable ordered for each air door will be coiled up and attached to the left endplate.

NOTE: **There will be one less serial cable than the number of air doors ordered. E.g. Two air doors together will need only one cable; three air doors together will need two cables, etc. Any extra cables can be kept as spares.**

4. Plug the (RS485) male phone jack on the end of the serial cable into the empty coupler on the next air door.
5. Continue process for all air doors that are to be connected serially.
6. Serial cable connections are capable of two way communication. It does not matter to which coupler the cables are connected.
7. The first and last air door in the group will each have an empty coupler after all connections are made. If there are only two air doors connected, each will have an empty cable coupler.

NOTE: **If a longer cable is required than was supplied, it can be ordered from the factory or made by using standard 4 wire flat telephone cable, phone jack connectors and the proper crimping tool.**

G. Remote Mounted Display Faceplate – If operation of the Intelliswitch® is to be through a Factory Ordered Remote Mounted Display Faceplate, continue, otherwise, skip to step H.

NOTE: **Maximum mounting distance between the Display Faceplate and the air door is 20'.**

1. When the remote faceplate option is ordered from the factory, the air door comes equipped with the blank faceplate already installed and the 20' ribbon cable attached. The Display Faceplate is shipped loose, ready for field installation.
2. Locate the male end of the conductor ribbon cable and run it to the remote display location. The cable is minimum CL2 rated and should not need to be in conduit.
3. Connect the female end of the ribbon cable to the 14-pin socket on the back of the display board with the cable approaching from the top and the red ribbon indicator to the right (when facing the front of the display board).
4. Mount Display Faceplate to the wall.

H. For Electric, Steam and Hot Water air doors proceed to **Section V - Field Connections** otherwise proceed to **Section VI - Airflow Adjustments**

V. FIELD CONNECTIONS

A. ELECTRICALLY HEATED MODELS

The heater circuit may be controlled by a remote thermostat or manually through the Intelliswitch® located on the discharge side of the air door. Overheating protection is provided by auto reset thermal cutouts built into the heater coil assembly (see the wiring diagram).

B. STEAM AND HOT WATER HEATED MODELS

Piping should be done in accordance with local codes, regulations and standard practices. Connect the building system supply and return to the ¾" MPT nipples on the heating coil. **See Figure 4.**

VI. AIRFLOW ADJUSTMENTS

A. With the air door operating and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle vanes.

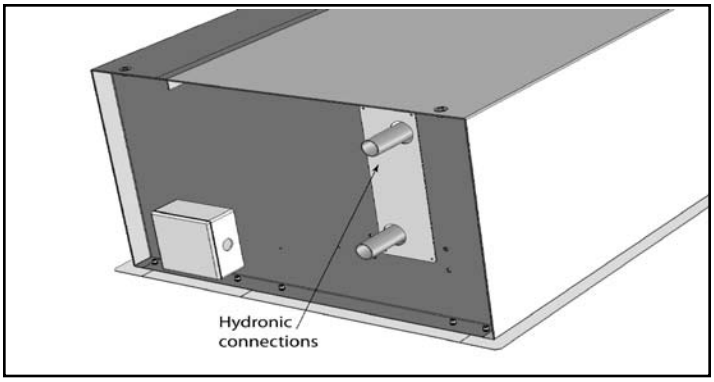


Figure 4

B. Find the air stream split location. Hold a handkerchief, by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split location is indicated where the handkerchief is vertical with minimal or no fluttering. **See Figure 5.**

C. Adjust the discharge nozzle vanes so the split location is approximately 3" outside the doorway. Loosen the nozzle vane locking screws and adjusting the vanes.

VII. MAINTENANCE AND CLEANING

CAUTION: **ELECTRIC SHOCK HAZARD Disconnect power when ever servicing unit. More than one disconnect may be required to de-energize unit.**

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Buildup of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. Otherwise, the unit(s) should be scheduled for cleaning a minimum of once every (6) months. To access the interior of the unit:

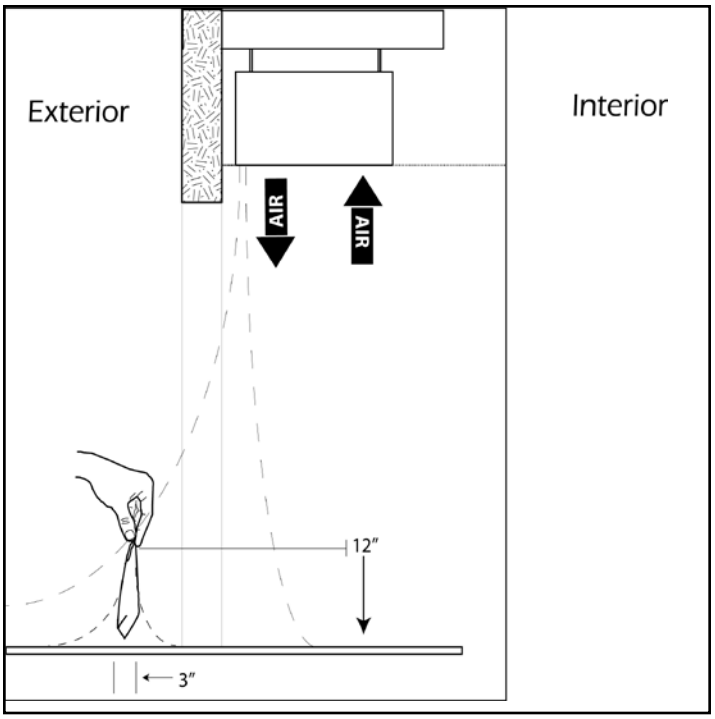


Figure 5

A. Disconnect and lockout power to the unit. If necessary remove the blower assembly. **See Section VIII: Service** for instructions on how to remove blower module.
B. Remove the bottom access cover by removing (4) Phillips head machine screws located at the cover's corners. **See Figure 6.**
C. Vacuum and scrape (if necessary) to remove the buildup of dirt and debris from the interior of the air door. The motor(s) are permanently lubricated and require no additional lubrication.
D. Pull the filter out from underneath the struts of the bottom access cover. It is easiest to work from the middle, pulling one side out and then the other. Spray the filter with warm, soapy water, rinse, and pad dry.
E. Replace Filter.
F. Reinstall the bottom access cover.
G. Switch the power on after cleaning.

CAUTION: **STAND CLEAR of the unit or wear safety goggles as loose debris may be present and may exit the nozzle.**

VIII. SERVICE

CAUTION: **ELECTRIC SHOCK HAZARD Disconnect power when ever servicing unit. More than one disconnect may be required to de-energize unit.**

Any service performed on the ICA/FCA air door MUST be done by qualified personnel.

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve bearings and require no maintenance.

A. To remove the blower module and clean or replace the fans and motor:
   1. Disconnect and lockout power to the unit.
   2. Remove the bottom access cover by removing (4) Phillips head machine screws located at the cover's corners. **See Figure 6.**
   3. If desired, the nozzle surround may be removed to provide more working room. To remove the nozzle surround, remove the (4) Phillips head machine screws from the corners. The Intelliswitch® ribbon cable must also be disconnected from the back of the display circuit board

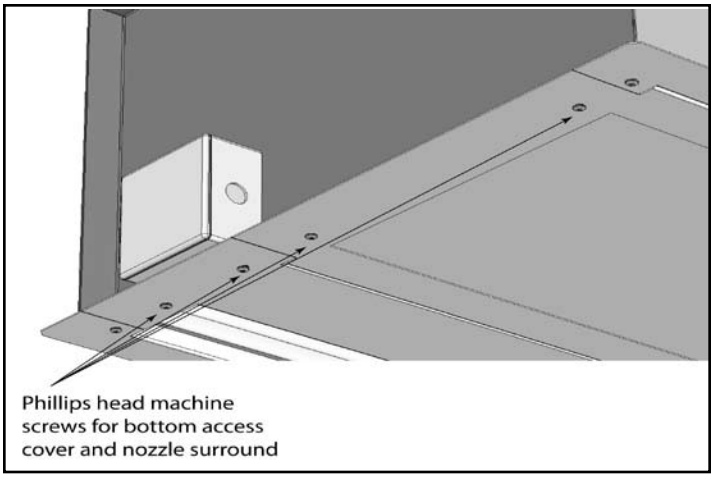


Figure 6

   before the nozzle surround can be set aside.
   4. Disconnect motor power wires/harness from motor.
   5. If the unit has electric heat, the heaters need to be disconnected from supply wiring. Each fan housing will have a heating element on both of its sides, spanning the inlet venturi. Each heating element will have (2) ¼" quick disconnects for power supply wiring. In addition, the heating elements located on the outside of the module will have (2) ¼" quick disconnects for the auto reset thermal cutouts. Label and separate all of those connections. **See Figure 7**.
   6. Using a 5/16" hex driver, loosen and remove the (4) self drilling screws that hold the blower plate to the frame of the unit. Remove the two screws at the top of the product last, as after they are removed, the module will be

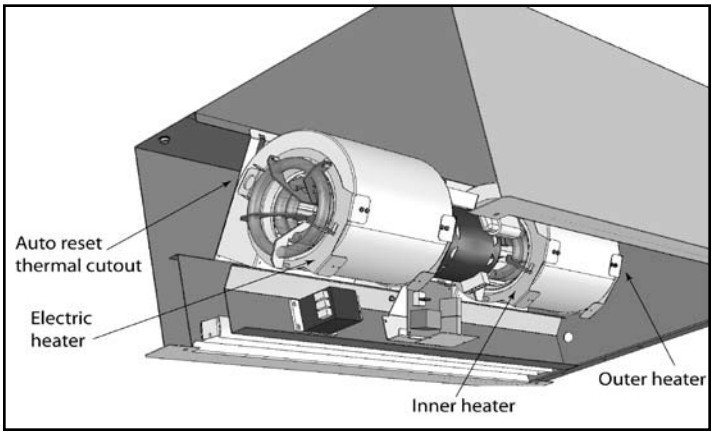


Figure 7

free to drop out of the cabinet. **See Figure 8** for location of all screws.

7. Wearing protective gloves, hold the module by the motor, and rotate the module top forward and drop it down through the bottom of the unit. **See Figure 9**.
8. To remove the fans and/or motor, loosen the set screws in the fan wheel hubs by using a 5/32" Allen wrench that is at least 6" long. The set screw can be accessed up through the fan's discharge.
9. Next, remove the two blower housings by removing the (8) screws that attach the fan housings to the blower plate. When the fan housings are free, slide them and their fan wheels off to each side.
10. Remove the motor clips from the motor mounts, disconnect the motor ground wire if necessary, and lift the motor up and out of its cradle.
11. Reinstall in reverse order of removal.

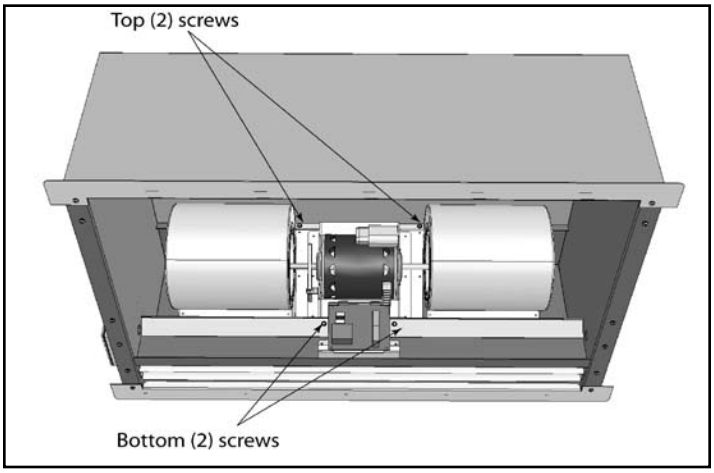


Figure 8

B. To Replace the Electric Heater:

1. Disconnect and lockout power to the unit.
2. Remove the bottom access cover.
3. The blower module does NOT need to be removed from the unit to replace electric heaters, unless you have one of the following models: ICA1036, ICA2060, or ICA3096. If you have one of these models, you will need to remove the blower module to replace the outer heaters. If you need to remove the blower module, see **Section VIII Service, A.**
4. Label and detach the heater connections for supply power and for the auto reset thermal cutout.
5. Remove the (2) self drilling, heater retention screws holding the electric heater frame to the fan housing. **See Figure 10**.
6. Carefully maneuver the heater out from the fan and

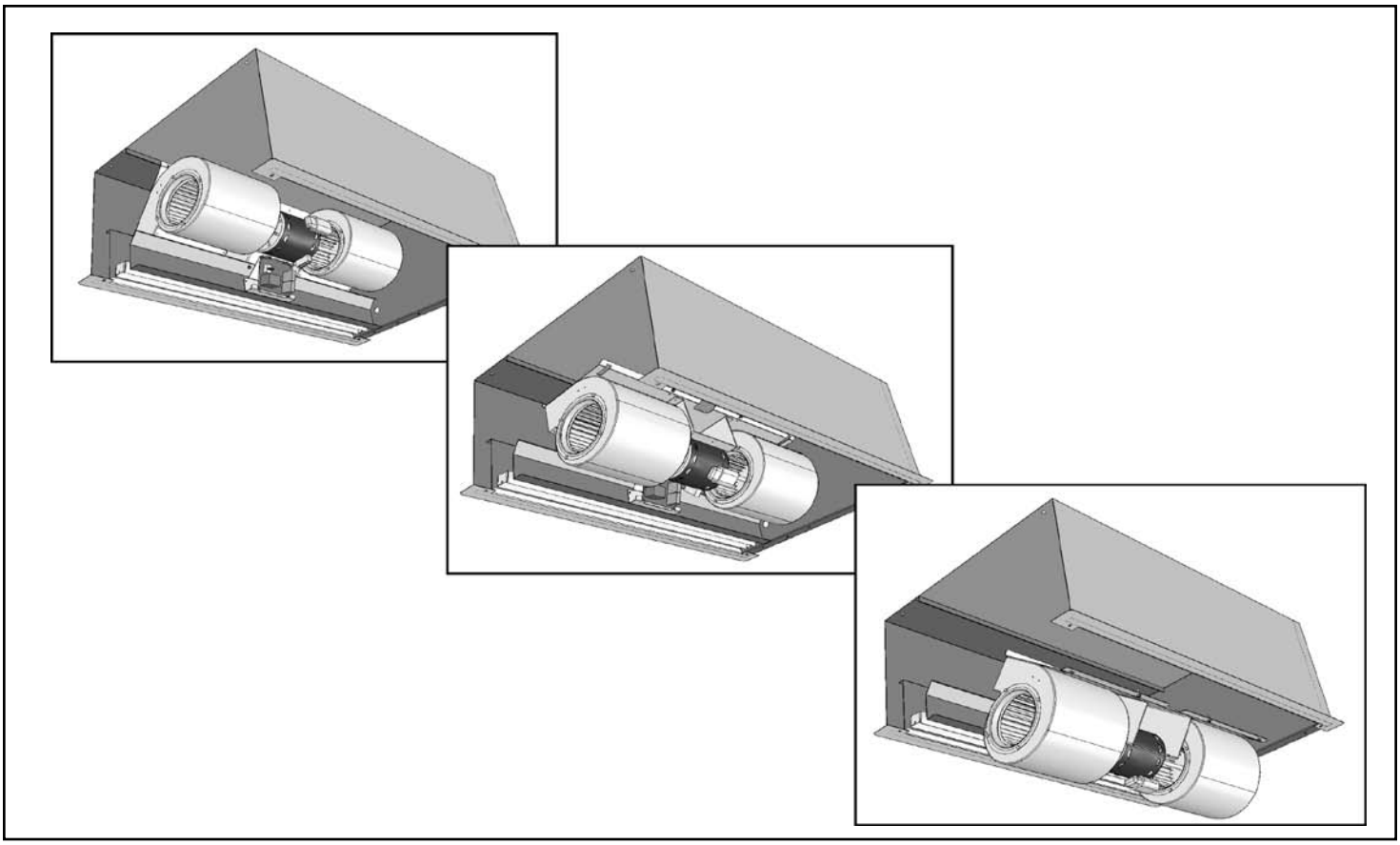


Figure 9

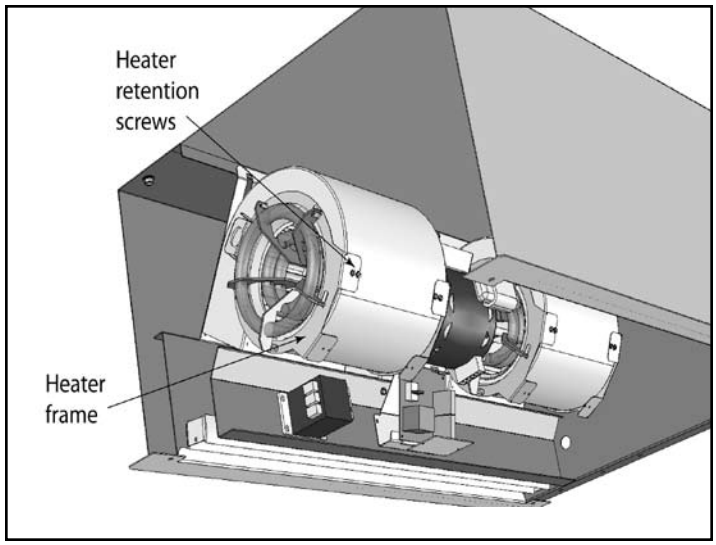


Figure 10

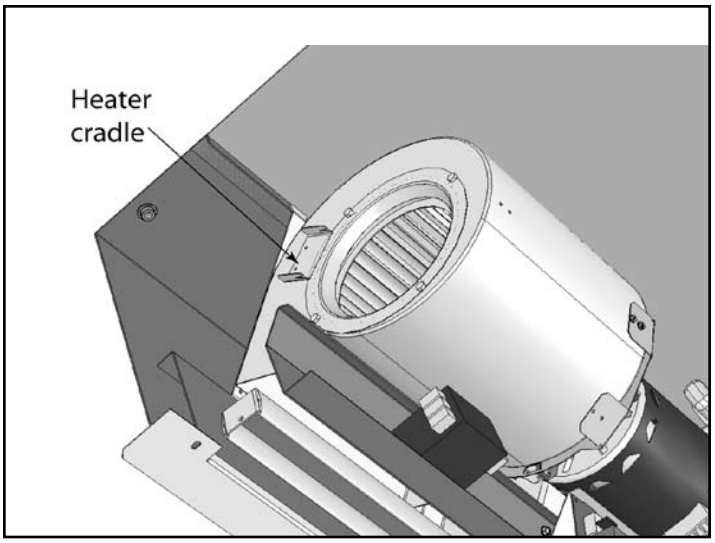


Figure 11

around the motor shaft.

7. Remove the pigtails from the old heater thermal cutout, and place them on the new heater.
8. To install the new heater, maneuver it into position making sure the frame of the heater sits in its cradle, which is attached to the fan. **See Figure 11.**
9. Reinstall the (2) self drilling screws using the existing holes in the fan housing. As the fan housings are constructed of thin gauge steel, be careful not to strip these holes.
10. Reconnect supply power and thermal cutout wiring.

End of Section

See the following pages for information on the Intelliswitch®, including: Quick Start Operation Guide, FAQ's, and Detailed Programming Guide.

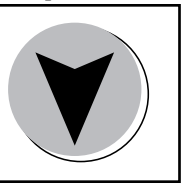
How to operate your In-Ceiling Mount Air Door
that comes with a factory installed digital programmable controller called the Intelliswitch®

INTELLISWITCH® QUICK START OPERATION

www.intelli-how2.com

When power is turned on to the Air Door, all of the lights on the display will light briefly while the Intelliswitch® starts up. After startup the clock will then display. The Intelliswich is now ready to set.
NOTE: To adjust the clock, refer to section 4.5 Appendix A.

To operate the air door:

	Press the Down Arrow (Menu) button once. NOTE: If the Down Arrow button is pressed twice, the function will change from "Mode" to "Fan Speed".	Mode/Fan Speed indicator will light
	Using either the Left or Right Arrow buttons, scroll through the **Modes of Operation** until you reach the desired mode. *See below to determine which mode is right for you.*	

For detailed information of the Intelliswitch® Navigation and Operation please refer to Appendix A (see pages 12-18)

	Once the Mode of Operation is selected, press "OK" button to set and return to the clock or the down arrow to select and adjust any of the other available settings.	

Mode of Operation:

OFF	The unit will not run.	
ON	The unit will run continuously unless a start and stop time is programmed.	

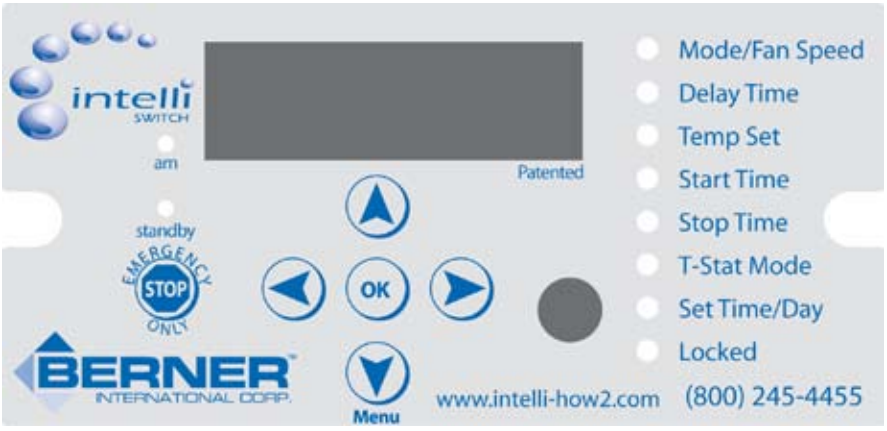
The following modes can be customized see "Programming the Intelliswitch®" for more info.

AUTO	For use with a door switch, the unit will operate only when the door is open.	
"delu" DELUXE	For use with a door switch, the unit will operate only when the door is open with a minimum 1 minute delay before turning off when it closes.	

Modes of Operation continued:

The following modes can be customized see "Programming the Intelliswitch®" for more info.

"PluS" COMFORT PLUS	For use on heated units only, requires a door switch. When the temperature drops below the thermostat set point and the door is closed, the unit will activate on a low speed and provide supplemental heating to the space. The unit will change to normal speed when the door is open. If the thermostat is still not satisfied when the door closes the unit will return to low speed until the set point is reached.	PLUS
"Pro1" PROGRAM 1	Recommended for unheated units. This setting will enable the air door to operate on Deluxe mode with a 1 minute time delay, 24 hours a day, 7 days a week. See Appendix A page 18 for more detailed information.	PRO1
"Pro2" PROGRAM 2	Recommended for heated units. This setting will enable the air door to operate on Deluxe mode with a 1 minute time delay from 8:00 am – 5:00 pm. From 5:01 pm – 7:59 am, the unit will operate on Comfort Plus with a 30 second time delay. See Appendix A page 18 for more detailed information.	PRO2
"Pro3" PROGRAM 3	Recommended for heated units. This setting will enable the air door to operate on Auto mode with a 30 second time delay, 24 hours a day, 7 days a week. See Appendix A page 18 for more detailed information.	PRO3



INTELLISWITCH® FAQ's (Frequently Asked Questions)

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WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING: Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Even though every In-Ceiling Mount unit is individually tested at the factory before shipment, on occasion improper functionality may be experienced. Here is a list of common questions:

Q. Why can't I change my settings?
A. The Intelliswitch® may be locked. If the Lock light is illuminated, the control is locked. To unlock, press and hold the left & right arrows simultaneously for 5 seconds. The Lock mode can also be protected with a PASScode. If the PASScode option is on, an attempt to unlock the control will display PASS and then a 0000 prompt. A four-digit code (available in the installation instruction book Appendix) must then be entered to unlock the control. Use the up and down arrows to select a number and the left and right arrows to select the digit to edit. Press OK when done. Note: If the AutoLock setting is on, the control will re-lock if there is no activity after 5 minutes.

Q. Why won't my heat work, even though fans are running?
A. The thermostat(s) or speed sensor may need adjusted or replaced.
1.) Make sure that the thermostat probe and/or remote thermostat are in the "On" position and set above ambient (room) temperature.
2.) Check internal and external thermostat status in the Diagnostics Menu for a faulty thermostat. To do this, hold the right arrow for five seconds until DIAG appears, then arrow down to the ts setting, if it displays "1" then the thermostat(s) is working (there is a call for heat).
3.) If no external thermostat is used, check to see if the internal probe is attached to the control board. Disconnect power to the unit, remove the display board and check that the beige sheathed cable is attached at both ends. If the thermostat(s) and settings are correct and you are still not getting heat, then check to see the fan speed. to do this, press the down arrow to reach the Mode/Fan speed setting. Use the right and left arrow to change the fan speed.
4.) Check to see if you can adjust the fan speed. If the speed sensor is bad there will be no speed control and the Intelliswitch® will not let the heat come on. If it is too difficult to determine a change in speed, the speed sensor can be checked by entering the DIAG menu and checking the first error code. If ER 10 displays, the speed sensor is recognized by the Intelliswitch®. If the code ER 11 is displayed, the Intelliswitch® does not recognize the sensor, and it may be faulty or need adjusted closer to the trigger bar. Turn off the power to the unit and remove the screen to check the distance between the sensor and the trigger located on the left side of the motor (use the bottom access cover for steam/hot water heated units). The sensor should be less than 1/16" from the trigger face. Check distance at both ends of trigger. Adjust if necessary.
5.) If there is still no heat or speed control, you may need a new speed sensor: consult factory.

Q. Why won't the Intelliswitch® light up?
A. There may not be power to the control.
1.) Check to see if the main power is turned on to the unit. Your air curtain may have multiple disconnects, be sure all are turned on.
2.) Verify that there is power to the board. **NOTE: ONLY QUAILIFED PERSONS SHALL CHECK POWER IN THE UNIT WITH THE POWER ON.** The power terminals are located directly behind the display. Remove two Phillips screws from the Intelliswitch® display to expose the power terminals and check the line voltage at spade terminals L2 and 120, 208 or 240 (depending on the voltage supplied to the unit).
3.) Check the ribbon cable connections to the display board for a loose connector or improperly connected cable (see Installation Instructions for correct cable connection).
4.) If there is line voltage power at the board terminals, the ribbon cable is correctly connected, and it is still not working, you may need a new circuit board: consult factory.
5.) If there is line voltage power at the board terminals, the ribbon cable is correctly connected, the speed sensor and the thermostat are working, and it is still not working, you may need a new circuit board: consult factory.

Q. Why won't my fans shut off?
A. The Intelliswitch® may be in the wrong mode or mis-wired.
1.) Check to see if the control is in the "ON" mode, if it is, then change the Mode to another setting.
2.) The T-Stat Mode may be set to the "both" setting and the thermostat is calling for both Fan and Heat, change the T-Stat Mode to "HEAT".
3.) If there is a door switch and the unit is in a mode that is activated by it, there could be a short, mis-wiring or mixup in components. Close the door and check the door switch status in the Diagnostics menu. Hold the right arrow for five seconds until DIAG appears, then arrow down to the ds setting, if it displays "1" then the door switch signal is closed (there is a call for fan). If the door is closed, the signal should be "0" or open.
4.) There could be a short in the field connections to the door switch or the door switch leads could be mis-wired. To test, disconnect the door switch connection at the unit. Opening the wiring tray on top of the unit and be cautious of high voltage connections. Disconnect the blue wires labeled 9 & 10 from the field wiring to the door switch or make sure they are not tied together. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the blue wires to anything metal (or grounded). The unit should shut off when it is in any mode that is activated by the door switch.
5.) If the air curtain is heated, make sure that the thermostat isn't wired to the door switch leads. Door switch leads are blue and labeled 9 & 10.

INTELLISWITCH® FAQ's Continued (Frequently Asked Questions)

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Q. How can I check the door switch to be sure it's working?
A. The Intelliswitch® may be in the wrong mode, be mis-wired or have a faulty door switch.
1.) Test the wiring and controller function at the same time first. Locate the door switch and open its wiring compartment by removing the two screws holding on the back cover. There should be two wires connected to screws inside the switch. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the wires to anything metal (or grounded). Either disconnect both wires from the screws (noting which screws the wires are under) and touch them together (with air curtain in "Auto" mode) or make a short jumper wire and touch the jumper to both screws at the same time to see if air curtain comes on. If it does, the controller and wiring work.
2.) If the wiring and unit pass the function test, the problem could be either misalignment or a faulty door switch. On a magnetic reed switch check for magnet alignment, for plunger/roller type switch, check contact engagement with door.
3.) If you have access to an electrical test meter, the door switch contacts can be tested for continuity when the door switch wires are disconnected from the unit.

Q. Why won't my heat shut off?
A. The Intelliswitch® may need adjusted, have been mis-wired or have a faulty thermostat.
1.) Heat is activated by one of two thermostat connections. To test the internal thermostat set the external thermostat to OFF. The settings of the unit mounted thermostat probe are accessed through the display. Press the down arrow until the Temp Set indicator lights up; check if the temperature setting and unit of measure are correct. Test to see if it shuts off by setting the thermostat temperature to OFF or lower than the room temperature.
2.) If an external thermostat is connected to the unit, there could be a short in the field connections or the thermostat leads may be mis-wired. To test the external thermostat set the internal thermostat to OFF. Disconnect the external thermostat connections at the unit. Open the wiring tray on top of the unit and be cautious of high voltage connections. Disconnect the orange wires labeled 6 & 7 from the field wiring to the thermostat or make sure they are not tied together. There is no danger of getting shocked because the signal is 5 volt dc. Be sure not to touch the orange wires to anything metal (or grounded). The heat should shut off when the wires are separated.
For more complex troubleshooting of either thermal cutouts or heater contactors, please consult a qualified electrician or the factory.

Q. Why didn't the Intelliswitch® save the changes I made to a program?
A. If a program is active (a dot is illuminated by one of the clock digits), changes can be made to any settings on the User Menu. These changes however will only remain in effect until the program changes to the next time zone. To make changes permanent, settings must be changed in the program from the Program Menu. Access the Program Menu by holding down the left arrow for 5 seconds until "PRO" is displayed. Arrow down to select programming and arrow left to select the program to edit. Use the down arrow to step through the options and make changes as desired. Continue to press the down arrow until Stor is displayed. Press OK or down to keep or store the changes.

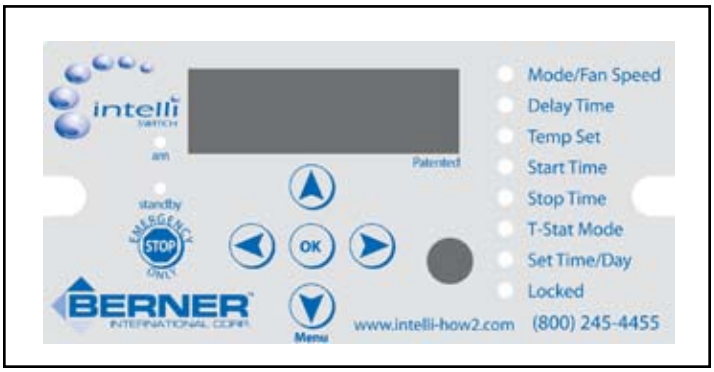
Q. How do I undo a change that I made to a program in the Program Menu?
A. Changes to programs cannot be undone. The programs can however be reset to the factory default settings. This must be done on the Factory Menu. Access to the Factory Menu is attained through the Diagnostics Menu. Press and hold the right arrow for 5 seconds until "DIAG" is displayed. From the "DIAG" display press and hold the up and down simultaneously for 10 seconds until "FACT" is displayed. Use the down arrow to select "DEFn" on the display then use the right arrow to select "DEFP". Press "OK" to reset. The control display will go blank then blink as confirmation.

Q. My air curtain won't turn on?
A. Check the AM/PM setting on the Start and Stop times or the clock (considering the AM indicator light whensetting values). Note: set the start time and stop time to the exact time for the unit to be active full time. Check to see if a program is active that may have different start/stop times than those expected.

Q. My building has a Building Management System, can the Intelliswitch® work with a BMS?
A. The Intelliswitch® can be controlled by a Building Management System (BMS) but currently does not have the ability to communicate with them. Dry contacts on the BMS may be used to control the unit activation through the door switch connections (blue wires 9 & 10) and the heat activation thought the remote thermostat connections (orange wires 6 & 7). Consult factory.

A. PROGRAMMING THE INTELLISWITCH®

To reduce the risk of injury and ensure proper operation all Notes and Instructions shall be read!



Note: The STOP button (STOP) is available at all times and immediately stops the unit for an emergency situation. The Intelliswitch® will display STBY for Stand By when selected. To release the control from STBY press STOP again. When the control is released from STOP it will be in the OFF Mode. Press the left or right arrows to select new Mode or OK to return to the clock.

Note: When changing options, if there is no activity for 15 seconds, the control will save changes and default back to the User Menu display clock.

Note: The OK button (OK) always saves the current entered value and returns you to the User Menu display clock.

Section 1: Quick Start Reference
Section 2: Arrow Navigation
Section 3: Menu Structure
Section 4: User Menu
Section 5: Program Menu
Section 6: Diagnostic Menu
Section 7: Factory Menu
Section 8: External Connections

1. Quick Start Reference

1.1 Press the Menu button (down Arrow).
1.2 Using the left and right arrows, select the operating Mode: Off, On, Auto, Deluxe, Comfort Plus or Program Number 1, 2 or 3.
1.3 Press OK.

2. Arrow Navigation

The up and down arrows (▲)(▼) select the menu options.

The left and right arrows (◀)(▶) change values for single-level menu options (Mode, Speed, Temp Degree, Temp Set, T-stat Mode and Day) or are used to enter into multi-level menu options (Delay Time, Temp Set, Start Time, Stop Time and Set Time).
Arrow sequence and available settings are illustrated under each option.

2.1. Single Level Options

Single level options can change values directly with the left and right arrows. No additional actions are necessary to access these option settings.

2.2. Multi-level Options

Multi-level options require additional actions to access an option's settings. The right or left arrow is required to enter into an option.

If the multi-level option has one value to edit it may be changed directly with the up or down arrow.

If the multi-level menu option has two values (such as a time value) the first option value flashes upon selection. Use the left or right arrow to select which value to change and then use the up and down arrows to change the option value. See the Menu Options section for the option increment i.e. hours/minutes, minutes/seconds.

To leave a multi-level option, use the left or right arrow to cycle through the option value until it stops flashing. The up or down arrow may now be used to navigate to the other options.

3. Menu Structure

The Intelliswitch® has four menus:

- User Menu (Section 4)
- Program Menu (Section 5)
- Diagnostic Menu (Section 6)
- Factory Menu (Section7)

The **User Menu** is the top level menu where values for each option is entered based on the Mode selected. Each option is identified by a green light when selected. The clock display is the default home position for the User Menu when OK is selected or there is no activity for 15 seconds.

Note: Access to all Secondary Menus must originate from the User Menu. Secondary menus are identified by the menu title upon successful entry, e.g. PRO, DIAG and FACT.

The **Program Menu** is used to edit all program option parameters.

The **Diagnostic Menu** is used to diagnose and troubleshoot errors with the Intelliswitch®.

The **Factory Menu** is only to be used when directed to reset or change factory default settings.

4. User Menu

To enter into the User Menu press the down arrow (menu). Use the down or up arrow to step through each option. Each option is identified by a green light when selected. Options available from the User Menu are:

- Mode
- Fan Speed
- Time Delay
- Thermostat degree type
- Thermostat Set Point
- Start Time
- Stop Time
- Thermostat Control Mode
- Time Set
- Day Set
- Lock/PASScode

4.1. Mode: single-level

↳OFF-ON-AUTO-DELU-PLUS-PRO1-PRO2-PRO3 ↰

Use left & right arrows to select the desired operating Mode.

- OFF – unit off.
- ON – unit will run when start/stop time is satisfied.
- AUTO – unit will run when terminals 9 & 10 are connected through a switch and start/stop time is satisfied, ALL menu options available.
- DELU – unit will run when terminals 9 & 10 are connected through a switch and start/stop time is satisfied, MUST set time delay from 1-10 minutes, T-Stat Mode NOT available.
- PLUS - unit will run when terminals 9 & 10 are connected through a switch and start/stop time is satisfied, when door is closed and temperature drops below the set point the unit will run on low speed with heat (low speed set on the Program Menu), unit will run at higher user level set speed when door opens.
- PRO1 – Runs Program #1 see Program Menu Section, 1st digit indicator light when active.
- PRO2 – Runs Program #2 see Program Menu Section, 2nd digit indicator light when active.
- PRO3 – Runs Program #3 see Program Menu Section, 3rd digit indicator light when active.

NOTE: When Program Modes are selected changes can only be made to the Mode, Time Delay, Temperature, Time and Day settings. Changes will only remain in effect until the program changes between active time zones.

NOTE: AutoLock, Comfort + Low Speed and PASSCode are global options and their settings are the same for any Mode selected. They will not change when the Mode or Program changes.

4.2. Fan Speed: single-level

SP ↳1-2-3↰

Use left or right arrows to select fan speed. Depending on the Air Curtain Series, the ranges will be either 1-10, 1-3 or 1-2 with 1 = low, and the highest number = high speed.

4.3. Delay Time: multi-level – min/sec

↳OFF – 00:01 thru 10:00 ↰

Select option with right arrow, use up & down arrows to set the amount of time that the unit will delay shutting off after terminals 9 & 10 are opened.

4.4. Temp Set (units): single level

↳ °F – °C ↰

Use left & right arrows to select the temperature degree type, Fahrenheit or Celsius, for thermostat set point.

Note: This option is only available for heated units with a built-in thermostat.

4.5. Temp Set : single level

↳ OFF – 34°F thru 90°F ↰
or
↳ OFF – 1°C thru 32°C↰

Use left & right arrows to select the temperature set point when the heat is to be activated.

Note: This option is only available for heated units with a built-in thermostat.

4.6. Start Time: multi-level – hours/min

Select this option with right arrow, use up & down arrows to set the time that the unit is to turn on in the ON Mode or become active for AUTO, DELU and PLUS Modes.

Note: to turn off this feature the Start Time must be set equal to Stop Time (including am/pm).

4.7. Stop Time: multi-level – hours/min

Select this option with right arrow, use up & down arrows to set the time that the unit is to turn off in the ON Mode or become active for AUTO, DELU and PLUS Mode.

Note: to turn off this feature the Start Time must be set equal to Stop Time (including am/pm).

4.8. Thermostat Mode: single level

↳ HEAT-BOTH ↰

Select the control mode for the built-in and remote thermostats.

The **HEAT** mode only cycles the heater when there is a call for heat from either internal or external thermostats when the fan is running. The **BOTH** mode cycles both the fan and the heater on a call for heat from either internal or external thermostats.

Note: This option is only available for electric heated units with built-in thermostat or units with external remote mount thermostat connected between terminals 6 & 7.

4.9. Set Time: multi-level – hours/min

Select option with right arrow, use up & down arrows to set the clock. Note: time does not adjust for daylight savings time.

4.10. Set Day: single level

↳ DAY1-DAY2-DAY3-DAY4-DAY5-DAY6-DAY7 ↰

Use left & right arrows to select day of the week, where Sunday = DAY1, Monday = DAY2 etc. Used as reference by programs.

4.11. Lock/Unlock

The Intelliswitch® can be locked to prevent unauthorized tampering of the settings.

When locked, only the options on the User Level may be viewed. Only the Mode can be changed between OFF and the Mode that was active when it was locked, all other options may NOT be changed.

To lock or unlock, press and hold the left and right arrows simultaneously for 5 seconds, the Locked light will illuminate when locked.

If the PASScode option is ON, an attempt to unlock the control will display PASS and then a 0000 prompt to enter a four digit unlock code. Use the up & down arrows to change the numbers and the left & right arrows to move between positions.

Note: When the AutoLock option is set to ON in the Program Menu, the Intelliswitch® will automatically lock after 5 minutes without any activity. Default setting – OFF. See Section 5.2.

Note: When the PASScode option is set to ON in the Factory Menu, the Intelliswitch® will require a code be entered to unlock the control. Default setting – OFF. See Section 7.4.

5. Program Menu

To enter into the Program Menu hold down the left arrow for 5 seconds. PRO will display when the Program Menu is available.

Use the Program Menu to set the following options:

- Program 1, 2 & 3 settings
- AutoLock setting
- Comfort Plus low speed setting
- Master/Slave Stand By setting

↳ PRO-AULC-PLUS-STBY↰

Program Menu – single level

Use left & right arrows to select the option to change.

5.1. Program

The Intelliswitch® can store up to three Dual-Zone programs.

Use the Program option to select and save User Menu settings to be recalled at anytime.

A time zone is the period of time defined by the user for the unit to be active. Both zones may operate one after the other or with a gap between them.

The Program menu allows parameters for the following options to be set:

- Number of Zones: 1 or 2
- Days of the week to operate per zone
- Mode (Off-On-Auto-Deluxe-Plus)
- Speed
- Time Delay
- Thermostat Set Point
- Start Time
- Stop Time
- Thermostat Mode

To enter into the Program menu press the down arrow (menu button) at the PRO display. Use the left & right arrows to select the program to be edited.

↳ PRO1-PRO2-PRO3 ↰

Note: After setting the number of zones and active days all parameters are set the same as the User Menu. Use the Up and Down arrows to accept changes and OK to return to User Menu.

5.1.1. Zone: single level

↳ Zn 01-Zn 02 ↰

Select the number of Zones for the program. If **one** zone is selected a prompt will ask to save settings after the last option. If **two** zones are selected, Zone 1 parameters will be set first and then parameters for Zone 2 will be set. A prompt will ask to save settings after the last option of Zone 2.

5.1.2. Day: multi-level

→ day-day1-day2-day3-day4-day5-day6-day7 →

Select the days of the week that the program is to operate for each zone.

When **day** is displayed, press the right arrow to enter into the day parameters.

Once in the day parameters each day is identified by the day number, use the right or left arrows to select **yes** to active a day or **no** to deactivate a day.

↳ dy 1n-dy 1y↰
↓
↳ dy 2n-dy 2y ↰
↓
↳ dy 3n-dy 3y ↰

Use the up and down arrows to move to the next day or skip days until **day** is displayed.

From this point enter right to re-enter day settings or down to continue.

Note: The top seven LED's will light from the top down representing days 1 thru 7 that have been activated.

5.1.3. Mode: single level ◄►

Select operating mode for Zone. Only Off, On, Auto or Plus are available.

5.1.4. Fan Speed: single level ◄►

Select the fan speed for Zone being programmed.

5.1.5. Time Delay: multi-level ►▲▼

Set the time delay for Zone being programmed.

5.1.6. Temperature Set: single level ◄►

Set the temperature set point for internal thermostat for Zone being programmed. Degree type is based on degrees selected on the User Menu.

5.1.7. Start Time: multi-level ►▲▼

Set the start time for Zone program to activate including am/pm.

Note: Zone 1 has priority over Zone 2 and if conflicting times are entered Zone 1 will always activate and take precedence over Zone 2.

5.1.8. Stop Time: multi-level ►▲▼

Set the stop time for Zone program to activate including am/pm.

Note: Zone 1 has priority over Zone 2 and if conflicting times are entered Zone 1 will always activate and take precedence over Zone 2.

5.1.9. Thermostat Mode: single level ▲▼

Set thermostat mode for Zone.

5.1.10. Store: single level ►▲▼

↳ str y-str n ↰

Use the right or left arrows to select **yes** to save program or **no** to abandon changes.

A single zone program will prompt to save all options after the first set of parameters; a dual zone program will prompt to save after the second set of parameters.

Note: Upon saving, the LED on the digit light corresponding to the program number will blink.

5.2. AutoLock: multi-level ▼◄►

↳ ON-YES ↰

To enter into the AutoLock menu press the down arrow (menu button) at the **AULC** display. Use the left or right arrows to select **ON** to have control automatically lock if there is no activity for 5 minutes or **OFF** to deactivate.

5.3. Comfort Plus (fan speed): multi-level ▼◄►

SP ↳ 1-2-3 ↰ see Note*

To enter into the Comfort Plus low speed setting, press the down arrow (menu button) at the **PLUS** display. Use the left or right arrows to select the low fan speed for the unit when in the PLUS mode, when the door is closed and the thermostat set point is reached.

***Note: the speed range is limited to be equal to or less than that of the User Menu speed setting.**

5.4. Master/Slave Stand By: multi-level ▼◄►

↳ ind-ALL n ↰

To enter into the Master/Slave stand by setting press the down arrow at the **STBY** display. Use the left or right arrows to select the STOP button behavior when units are connected together in a Master/Slave configuration. Select "ind" or independent to stop only the unit where STOP is pressed. Select "ALL" to stop all connected units.

6. Diagnostic Menu

To enter into the Diagnostic Menu hold down the right arrow for 5 seconds. **DIAG** will display when the Diagnostic Menu is available.

The Diagnostic Menu is used to diagnose and troubleshoot Intelliswitch® errors. Only "live" parameter settings are displayed, there are no options to change.

The Diagnostic Menu displays the following parameters:

- Software version release
- Speed Range Setting
- Internal Thermostat reading – Celsius
- Internal Thermostat reading – Fahrenheit
- Motor rpm reading

- Supply Voltage Frequency
- Door Switch status
- External Thermostat status
- Heater Relay status
- Error Code 1 – Speed Sensor
- Error Code 2 – Line Frequency
- Error Code 3 – Power Issue
- Error Code 4 – Motor Off Fault

6.1. Software Release Version – Format: rX.XX
6.2. Fan Speed Range – rn XX (see Section 7.1)
6.3. Thermostat Probe – Pr XX (see Section 7.2)
6.4. Internal Thermostat – ºC (np = no probe)
6.5. Internal Thermostat – ºF (np = no probe)
6.6. Motor RPM – measured speed in rpm
6.7. Supply Voltage – measured frequency in Hz
6.8. Door Switch Status – 0=open, 1=closed
6.9. External T-stat Status – 0=open, 1=closed
6.10.Heater Relay Status – 0=open, 1=closed

6.11. Error Codes

The Intelliswitch® has six error codes, 1 through 6, to help troubleshooting. The status of 1-4 can be observed from the Diagnostic Menu. The format for displaying the error code is the "Er" descriptor and a two digit code. The first digit is the error number and the second digit is the status using international convention. 0 = inactive, 1 = on or active.

6.11.1. Error Code 1 – Speed Sensor
Er 10 – Prox Sensor or Speed feedback exists
Er 11 – **NO** Prox Sensor or Speed feedback
Solution – check to see if the proximity sensor (located next to the motor) is connected to the control board and check distance between tip and trigger bar is approximately 1/16 of an inch.

6.11.2. Error Code 2 – Line Frequency
Er 20 – power supply line frequency exists
Er 21 – undetermined supply line frequency
Solution – The Intelliswitch® automatically senses line frequency. In the event that it can not determine the proper line frequency, it will run at full speed and flash error. Manually set the line frequency in the FACT menu. See Section 7.5.

6.11.3. Error Code 3 – Zero Cross/Power Issues
Er 30 – clean power exists
Er 31 – poor power exists, electrical noise
Solution – When the control encounters "noise" in the electrical power supply it will run at full speed and flash error code. There are no internal changes available. Have the electrical system checked for problems.

6.11.4. Error Code 4 – Speed Feedback
Er 40 – proper motor and sensor operation
Er 41 – Motor off but receiving prox/speed sensor feedback
Solution – this is usually the result of a failing motor control component on board that cannot be serviced. A replacement board is required.

6.11.5. Error Code 5 – Corrupted Memory Setting
Er 51 – Status of this error is not available. It only appears when there has been an event that has corrupted the settings in memory. When corrupted settings are identified the control will reset all settings (except for Speed Range) back to Factory default values. Because some speed ranges are not compatible with all motors, the proper value cannot be automatically set and therefore requires user input. This is prompted by the scrolling "Set FACt SPEEd" on the display.
Solution – press the "OK" button. This will open the range setting identified by "rn". Select the correct speed range (see Section 7.1) based on the Series/Model. Press "OK" button.

6.11.6. Error Code 6 – Incompatible Speed Range for Master/Slave Operation
Er 61 – Status of this error is not available. It only appears when unit are connected in a Master/Slave configuration that do not have identical Speed Range settings.

If two units are connected without equivalent speed ranges, every time a button is pressed on the Master unit (the unit used to make setting selections) the Slave unit will display an "Er 61" and the Slave will ignore the command to protect the control from damaging the motor.

Solution – Enter the Factory Menu to select the proper Speed Range (See Sections 7 and 7.1)

Note: This error does not monitor if the correct speed range has been selected for a Series/Model. Only that two or more units have been connected that do not have equivalent speed ranges.

Note: Once the correct speed ranges are selected and the controls accept commands from one another, the controls should be synchronized by simply cycling through all of the settings on the User Menu using the up or down arrows. None of the settings need to be changed.

7. Factory Menu – Service Personnel Only

The Factory Menu must be entered from the DIAG header. To enter into the Factory Menu hold down the right arrow for 5 seconds. DIAG will display when the Diagnostic Menu is available. From the DIAG display, press and hold the up and down arrows simultaneously for 5 seconds. FACT will display when the Factory Menu is available.

Note: When the Factory Menu is accessed it automatically shut the unit off by changing the Mode to OFF.

The Factory Menu is used to change or reset core settings to change base functions or resolve Intelliswitch® errors.

The Factory menu allows parameters for the following options to be set:

- Speed Range Setting
- Restore Factory Default Settings
- Reboot Software
- PASScode
- Supply Voltage Frequency

To enter into the Factory Menu from the header press the down

arrow. Use the left & right arrows to change setting values. Use the OK button select action and return to the User Menu.

7.1. Speed Range: single level

rn ↳ 0 – 1 – 2 – 3 – 4 – 5 – 6 – 7 –8 – 9 – 10 -11 – 99 ↰

Select the fan speed range from 0 to 11 using the left or right arrows. The speed range for each unit is located on the unit wiring diagram called out in a box in the Intelliswitch® schematic by "SPEED rn __".

Note: Selecting the incorrect speed range can damage the motor(s) beyond repair and potentially create abnormally high temperatures.

Speed ranges are dependent upon the Air Curtain Series, motor type and heat option.

ICA/FCA (1/2 hp) – 120, 208 or 240 voltages use range 8 or 9. 480 and 600 volts use ranges 6 or 7.
Motor Control Panel – only 120 volt, use range 3-4

Available ranges are:
0 = ambient – variable 3-speed, 600 rpm to full
1 = ambient – variable 3-speed, 1050 rpm to full
2 = heated – variable 3-speed, 1250 rpm to full
3 = ambient – full on, no adjustment
4 = heated – full on, no adjustment (monitored)
5 = heated – full on, no adjustment (not monitored)
6 = ambient – multiple 3-speed, ITC relay control
7 = heated – multiple 3-speed, ITC relay control
8 = ambient – variable 3-speed, 1250 rpm to full
9 = heated – variable 3-speed, 1250 to full
10 = ambient – multiple 2-speed, ITC relay control
11 = heated – multiple 2-speed, ITC relay control
99 = lock out – scrolling request for user input

7.2. Thermostat Probe Mode: single level

In **"St" (Standard) mode** the lowest operating point for the thermostat probe is 34°F (1°C). Below this temperature there will be no call for heat and "nP" (no Probe) will display on the diagnostics menu.
In **"Cd" (Cold) mode** the thermostat will operate below 34°F (1°C) but disables the "nP" (no Probe) feature and will call for heat on a probe failure or if it is disconnected.
St - Standard mode, locks out below 34°F (1°C). **Cd** - Cold mode, works below 34°F (1°C).

7.3. Restore Factory Default: single level

DEF ↳ n – U – P – A – t ↰

If it is necessary to restore any of the controls settings back to the factory defaults, select DEF using the down arrow. Select the factory setting restore type using the left or right arrows. This will reset the option settings back to the factory default settings. Available selections are:

DEFn – no changes
DEFU – reset User Menu ONLY settings
DEFP – reset Programs ONLY settings
DEFA – reset ALL settings (user and program)
DEFt – set controller to factory TEST parameters

7.4. Reboot Software: single level

↳ reb y – reb n ↰

If an error occurs that can be fixed by rebooting the control software, select **REB** using the down arrow. Select **YES** or **NO** to reboot the control.

7.5. PASScode multi-level

↳ PAS y – PAS n ↰

Select y to enable the PASScode feature and n to disable. When active, the PASScode feature requires that a four digit code be entered to unlock the control. The code is: 2376

7.6. Line Frequency: single level

↳ Fr Au – Fr 60 – Fr 50 ↰

The Intelliswitch® default is to automatically sense the line voltage frequency. If it cannot be determined automatically, the line frequency may be manually selected.

Au – Automatically Sense
60 – 60 Hz power supply
50 – 50 Hz power supply

8. External Connections

There are three types of external connections available on the Intelliswitch®.

- Door Switch
- External Thermostat
- Serial Connection

8.1. Auto Mode Activation

When terminals 9 and 10 in the junction box are connected (closed), the Auto, Deluxe, Plus and Programmable Modes are activated. The Intelliswitch® uses a low 5 volt DC voltage signal to monitor contact closure.

8.1.1. Door Switch (limit switch)

The door or limit switch is used in conjunction with the Auto, Deluxe, Plus and Programmable Modes to signal that the door is open. Connect door or limit switch to terminals 9 and 10 in the unit junction box.

8.1.2. Building Management System

A building management system or dry contact closure can be used to activate the unit through the Auto, Deluxe, Plus and Programmable Modes. Connect applicable contacts to terminals 9 and 10 in the unit junction box.

8.2. Heat Mode Activation

When terminals 6 and 7 in the junction box are connected (closed), the Heat Mode is activated for all Operating (On, Auto, Deluxe, Plus and Programmable) Modes. The Intelliswitch® uses a low 5 volt DC voltage signal to monitor contact closure.

If the internal thermostat is left on, the external heat mode will operate in parallel to contact closure, allowing either one to activate the heat. If the internal thermostat is turned off the external heat mode will activate independently to activate the heat.

8.2.1. External Thermostat

An external (remote) thermostat connection can be used to sense temperature independent of the built-in thermostat. Connect thermostat to terminals 6 and 7 in the unit junction box.

8.2.2. Building Management System

A building management system or dry contact closure can be used to activate the Heat Mode for all Operating Modes. Connect applicable contacts to terminals 6 and 7 in the unit junction box.

8.3. Master/Slave Operation

For Master/Slave Operation a serial cable connection must be made between all Intelliswitch® controls of each unit to be linked.

Once units are linked all Menu settings made through any unit display or remote control will transfer to all other linked units.

Parameter changes made on any linked unit will update all other boards "live" upon menu selections.

9. Infra-red Remote Control

The handheld infra-red remote control buttons layout and operation are the same as that on the Intelliswitch® unit display (including multiple button presses) with one exception, the Lock Button.

There is no need for multi-button press and hold for lock/unlock activation. The Lock button will lock/unlock display in one press.

B. USER MENU DEFAULTS

NOTE: AutoLock, Comfort+ Low Speed and PASSCode are global options and their settings are the same for any Mode selected. They will not change when the Mode or Program changes.

User Menu Default Settings Restore for DEFu:

- Mode: OFF
- Fan Speed: 3
- Time Delay: 15 sec (00:15)
- Thermostat degree type: ºF
- Thermostat Set Point: 68
- Start Time: 8:00am
- Stop Time: 8:00am
- Thermostat Control Mode: HEAT
- Lock: unlocked
- AutoLock: OFF
- Comfort+ Low Speed: 3
- PASScode: n = OFF

NOTE: does not change Speed Range, Time or Day

C. PROGRAM DEFAULTS

Program Default Settings for Restore for DEFp:

Program #1
(recommended for unheated units):

- Number of Zones: 1
- Days of the week to operate per zone: 1 – 7 (all)
- Mode (Off-On-Auto-Deluxe-Plus): Deluxe
- Speed: 3
- Time Delay: 1 min (01:00)
- Thermostat degree type: ºF
- Thermostat Set Point: OFF
- Start Time: 8:00am
- Stop Time: 8:00am
- Thermostat Mode: HEAT

Program #2
(recommended for heated units):

- Number of Zones: 2
- Days of the week to operate per zone: 1 – 7 (all)
- Mode (Off-On-Auto-Deluxe-Plus):
  Zone 1 – Deluxe; Zone2 – Comfort+
- Speed: Zone 1 – 3; Zone 2 – 3
- Time Delay: Zone 1 – 1 min (01:00);
  Zone 2 – 30 sec (00 :30)
- Thermostat degree type: ºF
- Thermostat Set Point: Zone 1 – 68; Zone 2 – 62
- Start Time: Zone 1 – 8:00am; Zone 2 – 5:01pm
- Stop Time: Zone 1 – 5:00am; Zone 2 – 7:59am
- Thermostat Mode: HEAT

Program #3
(recommended for heated units):

- Number of Zones: 1
- Days of the week to operate per zone: 1 – 7 (all)
- Mode (Off-On-Auto-Deluxe-Plus): AUTO
- Speed: 3
- Time Delay: 30 sec (00:30)
- Thermostat degree type: ºF
- Thermostat Set Point: 60
- Start Time: 8:00am
- Stop Time: 8:00am
- Thermostat Mode: HEAT

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not, replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken fan hub	• Replace fan
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes mis-adjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improper voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
	• Fan in backwards	• Check fans for blade curve toward discharge
NO SPEED ADJUSTMENT	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/ replace sensor
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air steam hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8" for every 1" up from the door)
	• Negative pressure	• Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws
	• One motor not operating	• Repair or replace motor
ELECTRICALLY HEATED MODELS		
NO HEAT	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor and trigger
	• Without speed adjustment, failed speed sensor	• Replace speed sensor
MINIMAL HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
	• Speed sensor not detecting trigger rotation	• Adjust gap between sensor & trigger/replace sensor
EXCESSIVE HEAT	• Thermostat in wrong location	• Move the thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage
STEAM/HOT WATER HEATED UNITS		
EXCESSIVE HEAT	• Too high steam/hot water pressure	• Reduce steam pressure/hot water flow
	• Inadequate air flow, fins plugged up, dirty coils	• Clean intake and coils
MINIMAL HEAT	• Insufficient removal of condensation (steam)	• Increase trap size
	• Not enough steam pressure/water temperature too low	• Raise pressure for steam/increase water flow
	• Intake air below design temperature	• Increase steam pressure/increase water flow

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

SERIAL NUMBER	MODEL NUMBER	DATE PURCHASED

BERNER™
INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

724-658-3551 • 1-800-245-4455 • www.berner.com • airdoors@berner.com

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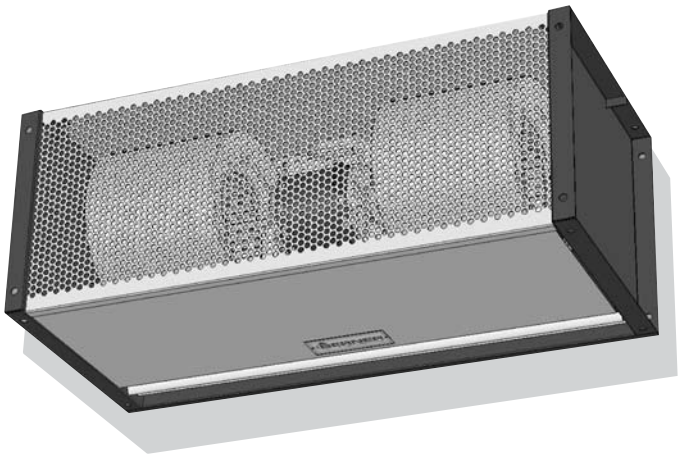
MADE IN U.S.A.

BERNER INTERNATIONAL CORP.

READ AND SAVE THESE INSTRUCTIONS

No. **II-230**
Date **July, 2008**

VSA/VSB
AIR DOOR
Made in the USA



KSA/KSB
AIR DOOR
Made in the USA

Installation & Maintenance Instructions

TABLE OF CONTENTS

I. UNCRATING 2
II. MOUNTING INSTRUCTIONS 2
III. WALL MOUNTING 3
IV. SUSPENDED MOUNTING 4
V. VERTICAL MOUNTING 4
VI. TANDEM MOUNTING BRACKETS 5
VII. ELECTRICAL CONNECTIONS 5
VIII. MECHANICAL CONNECTIONS 5
IX. AIRFLOW ADJUSTMENTS 5
X. MAINTENANCE AND CLEANING 6
XI. SERVICE 6

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

I. UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify shipping company. If the unit(s) were shipped on wooden skids, remove protective wood and banding straps securing the carton(s) to the skid. Open the carton(s) and remove all protective packaging. Immediately verify that the electrical rating nameplate located on the cover matches electrical power supply available. Retain the shipping carton(s) until the unit(s) is installed and properly operating.

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). Check all of the cartons/skids for accessories before discarding.

II. MOUNTING INSTRUCTIONS

(General Notes for All Mounting Configurations)

INDOOR MOUNTING - Environmental/Insect/Dust Control

OUTDOOR MOUNTING (Unheated Only) - Insect/Dust Control

A. Berner VSA and VSB Series Air Doors are designed to be mounted by their end flanges without the need for intermediate support. Each end flange contains (8) total ½" holes located on all (4) sides to facilitate mounting flexibility and the easy addition of mounting accessories. Units may be attached to the wall directly, suspended from overhead, or supported by brackets. The style of door will determine the best mounting method and; as a general rule, use the mounting configuration that positions the air door as close to the top of the doorway as possible without interfering with door operation.

B. The VSA/VSB air door is designed to be an effective barrier against cold drafts in the winter and hot air in the summer. To achieve optimum protection, the unit should be mounted on the inside of the building, flush to the wall and as close to the top of the door opening as possible. To ensure peak performance keep the air stream free of obstructions. If the air door cannot be installed flush with the wall, be sure to seal the gap between the wall and the back of the Air Door along the entire length of the unit to prevent airflow through this void.

C. The air door will not perform properly if negative air pressure exists in the building. Under these conditions, a means for makeup air to the building must be provided so that the air pressure on both sides of the opening is in balance.

Model	Weight by Unit Type			
	Ambient	Electric Heat	Hydronic Heat	Indirect Gas Heat*
VSA1036	80	86	95	250
VSA1042	86	92	103	261
VSA1048	91	97	111	270
VSA1060	102	108	127	289
VSA2060	148	160	173	340
VSA2072	157	169	187	359
VSA 2078	163	175	195	369
VSA2084	168	180	203	378
VSA2096	178	190	218	417
VSA3096	218	236	258	472
VSA2108	221	233	266	469
VSA3108	261	279	306	524
VSA2120	228	240	278	494
VSA3120	268	286	318	549
VSA3132	289	307	344	576
VSA3144	303	321	363	595
VSA4144	343	367	403	715

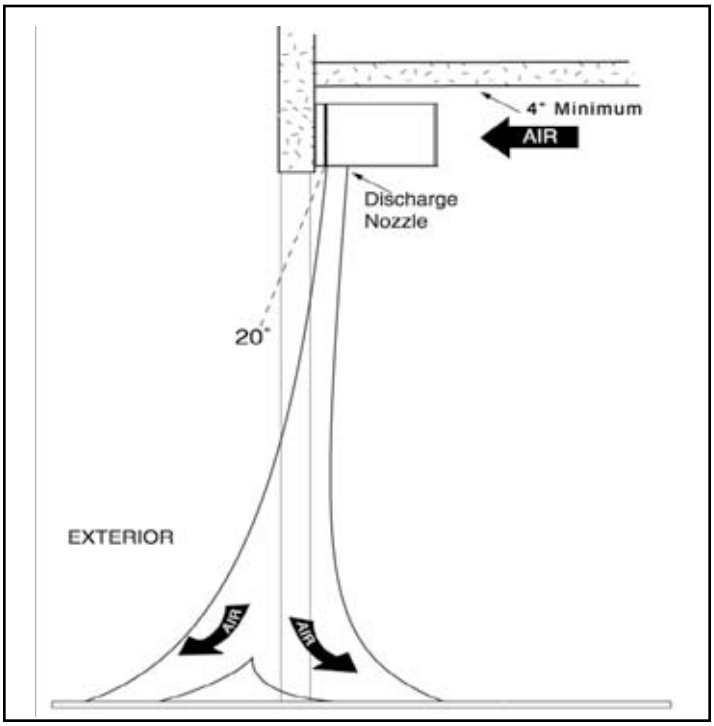
*Weight includes heater and duct transition

TABLE 1

Model	Weight by Unit Type			
	Ambient	Electric Heat	Hydronic Heat	Indirect Gas Heat*
VSB1036	95	101	110	265
VSB1042	101	107	118	276
VSB1048	106	112	126	285
VSB1060	117	123	142	304
VSB2060	178	190	203	385
VSB2072	187	199	217	414
VSB2078	193	205	225	414
VSB2084	198	210	233	434
VSB2096	208	220	248	453
VSB3096	263	281	303	633
VSB2108	251	263	296	505
VSB3108	306	324	351	685
VSB2120	258	270	308	521
VSB3120	313	331	363	701
VSB3132	334	352	389	761
VSB3144	348	366	408	770
VSB4144	403	427	463	825

*Weight includes heater and duct transition

TABLE 2



DRAWING 1

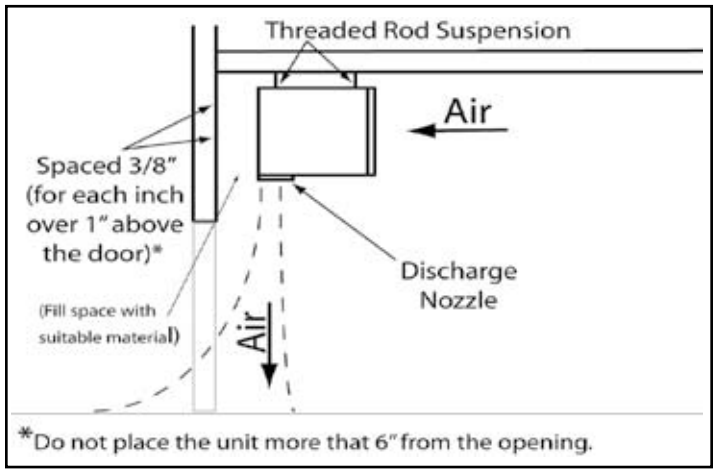
D. Before mounting the air door, check the supporting structure to verify that it has sufficient load-carrying capacity to support the weight of the unit(s). The mounting hardware (supplied by others) should be capable of supporting a minimum of three (3) times the weight of the unit. **See Tables 1 & 2.**

E. The air door is weatherproof. Therefore, no special covering is required when outdoor mounting, unheated, steam, or hot water units.

F. **IMPORTANT:** A minimum of 4" (8" preferred) is recommended above the top of the Air Door for the installation and removal of the screen or to gain access to junction boxes.

G. When determining the mounting location for the unit(s), make sure that nothing interferes with the curtain of air developed when the discharge vanes are directed from 0° to 20° toward the door opening. If the air stream strikes any obstruction (the top edge of the doorway, a door opening device, etc.), the effectiveness of the unit will be greatly reduced. **See Drawing 1.**

H. For optimum performance, the bottom of the unit (discharge nozzle) should be no more than 1" above the top of the door opening with the unit mounted flush to the wall. If the unit must be mounted higher, it must be **spaced out** from the wall **3/8" for every inch** the unit is above the door opening. **See Drawing 2.**



DRAWING 2

I. **Electric heated units shall:**

1. Have a minimum clearance of at least 1" between the sides and top of the unit and any combustible material.
2. Have a minimum clearance of at least 6' between the bottom of the unit and the floor.
3. Be installed indoors only.

J. **Proceed to one of the following sections, depending on application and door type:**

Section III: Wall Mounting

Section IV: Suspended Mounting

Section V: Vertical Mounting

Section VI: Tandem Mounting Brackets

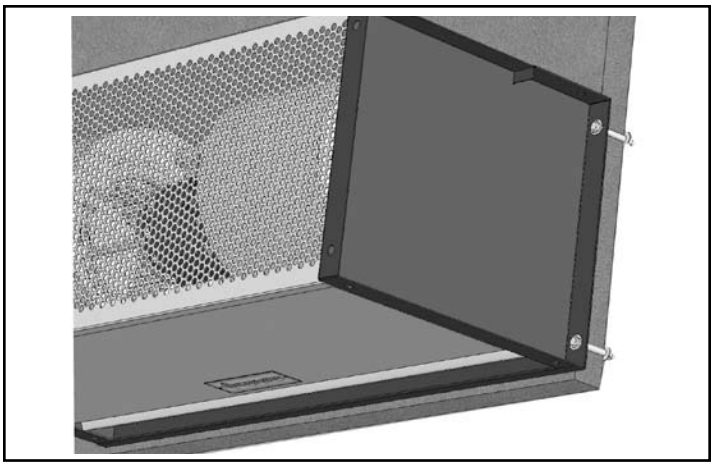


FIGURE 1 - Wall Mounting

III. WALL MOUNTING

A. Wall mounting works well with standard hinged doors or sliding doors.

B. The VSA/VSB series endplates are equipped with ½" holes for wall mounting. The unit may be attached to the wall using, at minimum, 3/8" bolts through the holes on the back of the endplate. **See Figure 1**. Or, the unit may be attached using an optional wall mounting bracket or a combination of extension and wall mounting brackets (available from Berner) attached to the holes on the top of the endplate and the wall. **See Figure 2**.

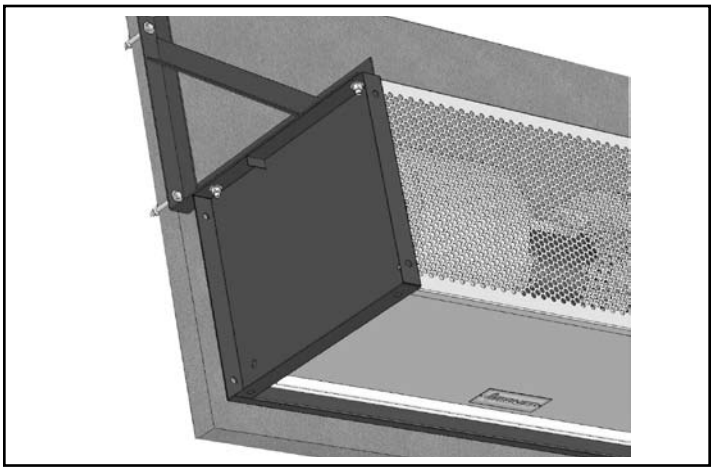


FIGURE 2 - Wall Mounting Bracket

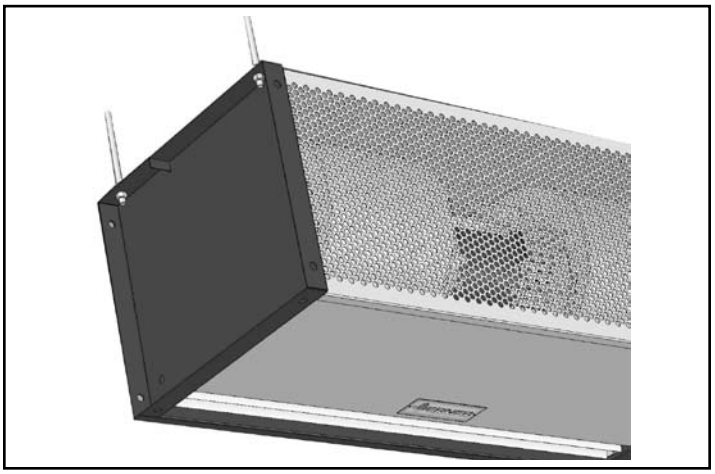


FIGURE 3 - Threaded Rod Suspension

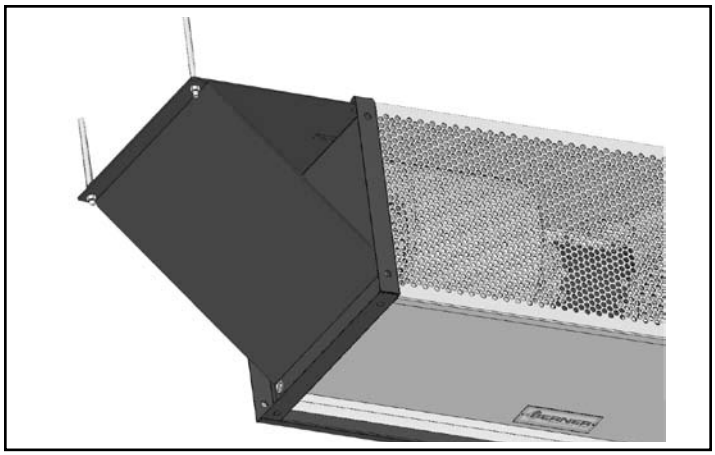


FIGURE 4 - With Extension Brackets

C. **Electrical Connections -** Proceed to **Section VII.**

IV. SUSPENDED MOUNTING

A. Suspended mounting works well with the majority of door types commonly found in an industrial setting, such as roll up doors, "high rise" track doors, "low-rise" turn back doors, and "high-rise" turn back doors.

B. The VSA/VSB series endplates are equipped with ½" holes for suspended mounting. The unit may be suspended using a minimum ⅜" suspension rod **(Figure 3)**, or using ⅜" suspension rods and extension brackets (available from Berner). **See Figure 4.**

C. **Electrical Connections -** Proceed to **Section VII.**

V. VERTICAL MOUNTING

A. Vertical mounting works well when the opening is taller than it is wide, or when the door type prevents a typical "over-door" mounting position.

B. Optional Floor Mounting Brackets bolt to the unit endplate, and provide a rigid base to attach the unit to the floor. Two Brackets are required.

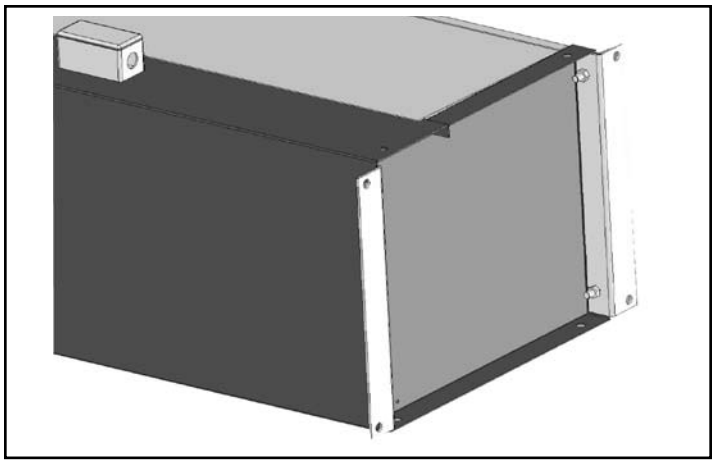


FIGURE 5 - Floor Mounting Brackets

C. To vertically mount a VSA/VSB unit using optional Floor Mounting Brackets, bolt brackets on the inside of the endplate with (4) ½ - 13 bolts as shown in **Figure 5**.

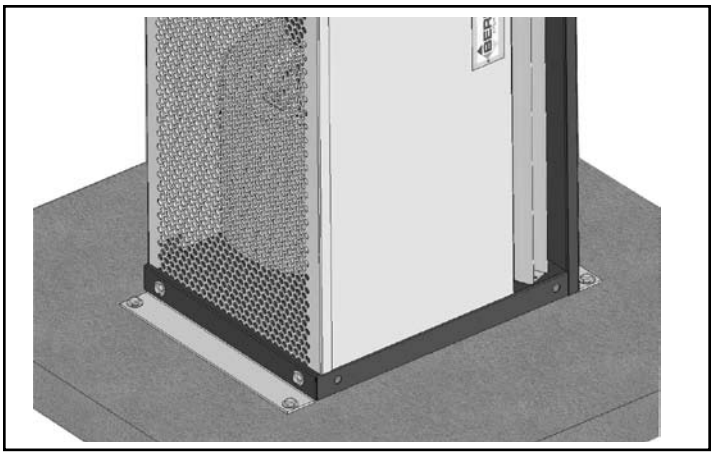


FIGURE 6 - Floor Mounting

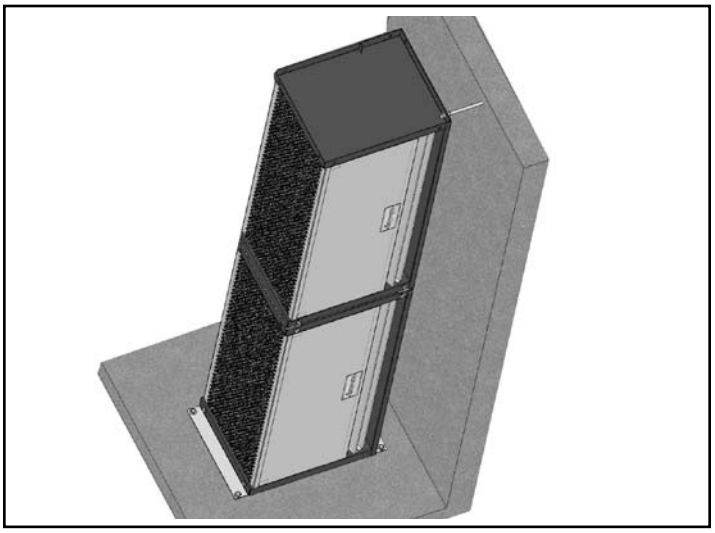


FIGURE 7 - Increased Stability

D. Position the unit vertically in its intended position and anchor it to the floor with a minimum ⅜" fastener. **See Figure 6**.

E. To improve the stability of the installation, it is required that the top of the unit be attached to the wall. A common approach is to attach a minumum length of ⅜" threaded rod through one of the open mounting holes in the top endplate and affix the other end of the rod to the wall. **See Figure 7**.

F. **Electrical Connections** - Proceed to **Section VII.**

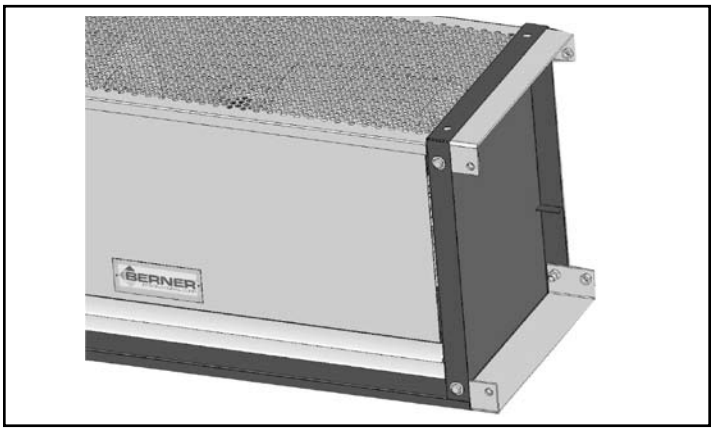


FIGURE 8 - Tandem Mounting

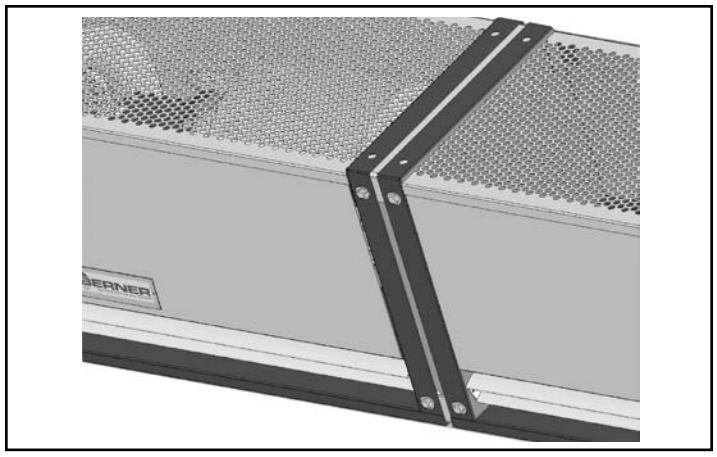


FIGURE 9 - Tandem Mounting

VI. TANDEM MOUNTING BRACKETS

(For Vertical Mount Installation)

A. Optional Tandem Mounting Brackets are used to join two air curtains together in a vertical application when the door height exceeds 12'.

B. Tandem Mounting Brackets connect the endplates of the units to be joined. Two brackets are required. Ideally, the units are joined together before the lower unit is bolted to the floor.

C. Using (4) ½ - 13 x 1" bolts, attach the Tandem Mounting Brackets to the inside of one of the unit's endplates as shown in **Figure 8**.

D. Slide the endplate of the next unit over the brackets installed in Step C and attach using (4) additional ½" bolts as shown in **Figure 9**.

E. Assemble Floor Mounting Brackets to lower unit and attach to floor per steps C and D of Section V.

F. **Electrical Connections -** Proceed to **Section VII.**

VII. ELECTRICAL CONNECTIONS

All electrical wiring and connections **MUST** be performed by qualified personnel in accordance with the National Electrical Code ANSI/NFPA No. 70 (latest edition) or, in Canada, the Canadian Electrical Code, Part 1-C.S.A. Standard C22.1 and local codes and regulations.

A. Check the rating nameplate on the top of the unit for supply voltage and current requirements. A separate line voltage supply with a suitable branch circuit protection device should be run directly from the main electrical panel to the unit. A disconnect switch for each branch circuit is a required part of this installation.

B. All field wiring must be copper with a minimum insulation of 60° C within approved conduit. If any of the wire supplied with the unit must be replaced, it must be replaced with copper wiring with a minimum insulation of 90° C.

C. Remove the Junction-Box cover.

D. Connect the power supply to the unit. Connect all supply and control circuit wires according to wiring diagram provided.

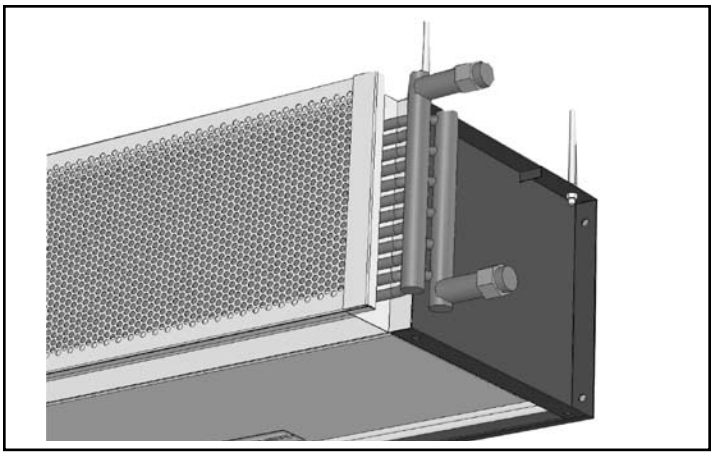


FIGURE 10 - Mechanical Connection - Steam/Hot Water

NOTE: For electric heated units provided with optional remote thermostat: Mount and wire the thermostat according to instructions and wiring diagram.

VIII. MECHANICAL CONNECTIONS

A. ELECTRICALLY HEATED MODELS

The heater circuit may be controlled by a remote thermostat or manually through the switch located on the discharge side of the unit. Overheating protection is provided by auto reset thermal cutouts built into the heater coil assembly **(see the wiring diagram)**.

B. STEAM OR HOT WATER HEATED MODELS

Piping should be done in accordance with local codes, regulations and standard practices. Connect the building system supply and return to the MNPT nipples on the heating coil. **See Figure 10.**

IX. AIR FLOW ADJUSTMENTS

A. With the air door operating and the door in its full open position, check to see that nothing is obstructing the airflow at the discharge nozzle vanes.

B. Find the air stream split location. Hold a handkerchief by its corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. See Figure 11. The split location is indicated where the handkerchief is vertical with minimal or no fluttering.

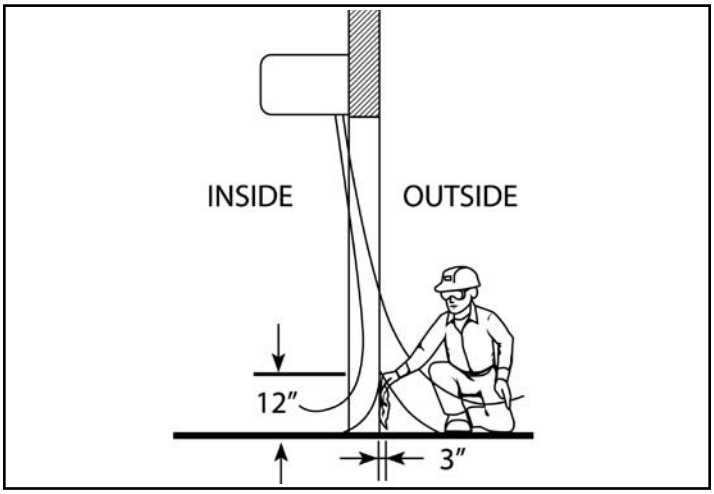


FIGURE 11 - Air Stream Split

C. Adjust the discharge nozzle vanes so the split location is approximately 3" outside the doorway. Adjust the speed controller so that the split location is approximately 12" above the floor.

X. MAINTENANCE AND CLEANING

CAUTION: ELECTRIC SHOCK HAZARD: Disconnect power when servicing unit. More than one disconnect may be required to de-energize unit.

Keep your air door operating at peak efficiency by cleaning the blower wheels, motor(s) and intake grille. Build up of dust on the blower wheels can cause vibration, noise and excessive wear on the motor bearings. The frequency of cleaning will depend on the environment where the unit is operating.

Dirty, dusty or greasy environments could require a cleaning schedule of once every two months. If the environment is not that dirty, the unit(s) should be scheduled for cleaning a minimum of once every (6) months.

To access the interior of the unit:

A. Disconnect the power to the unit and remove the intake grille by removing the screws on the top and bottom of the screen.

B. Remove the bottom access panel by removing the phillips head screws on the bottom of the unit.

C. Vacuum and scrape (if necessary) to remove the build up of dirt and debris. The motor(s) are permanently lubricated and require no additional lubrication. Reinstall the cover and intake grille.

D. Switch the power on after cleaning. **CAUTION: STAND CLEAR OF THE UNIT OR WEAR SAFETY GOGGLES AS LOOSE DEBRIS MAY BE PRESENT AND MAY EXIT THE NOZZLE**.

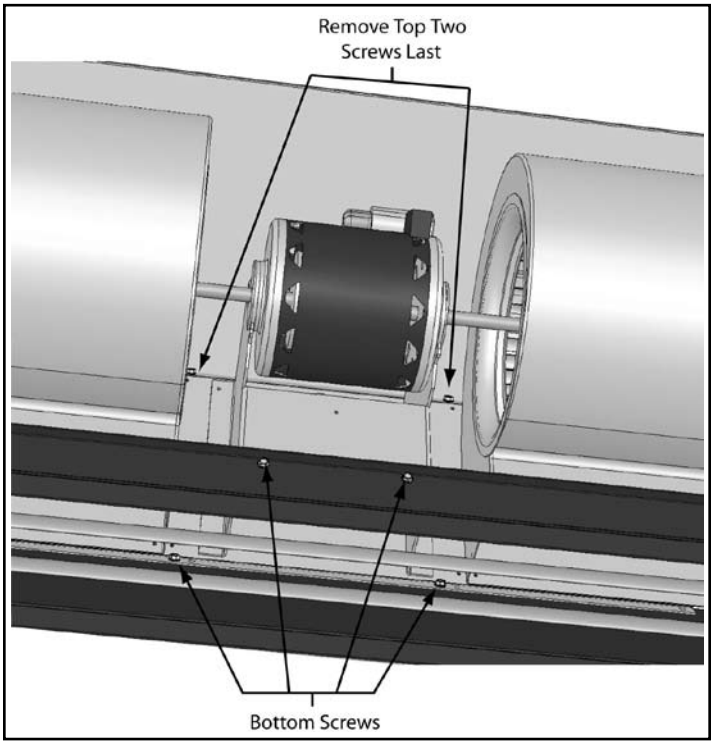


FIGURE 12 - Location of screws

XI. SERVICE

CAUTION: ELECTRIC SHOCK HAZARD: Disconnect power when servicing unit. More than one disconnect may be required to de-energize unit.

*Any service performed on the VSA/VSB series air door **MUST** be done by qualified personnel.*

Berner air doors require very little servicing. All parts are easily accessible for periodic inspection and maintenance. Units should be cleaned at least twice a year. Your particular application (the amount of dirt and dust in the air) and location of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. All motors have permanently lubricated, sealed, sleeve, or ball bearings and require no maintenance.

A. BLOWER MODULE REMOVAL

1. Disconnect and Lockout power to the unit.
2. Remove the bottom access panel by removing the phillips head screws on the bottom of the unit. The inlet screen does not have to be removed, but taking it off will make blower module removal easier.
3. Disconnect motor power wires/harness from motor.
4. If the unit has electric heat, there will be a series of insulated disconnects on the same side of the unit as the control panel. Disconnect them all.
5. Using a 5/16" socket on a 12" extension, loosen and remove the (6) self drilling screws from the blower plate and transverse. Remove the two screws at the top of the product last, as after they are removed, the module will be free to drop out of the cabinet. **See Figure 12** for location of all screws.
6. Rotate the module top forward and drop it down through the bottom of the unit. **See Figure 13.**

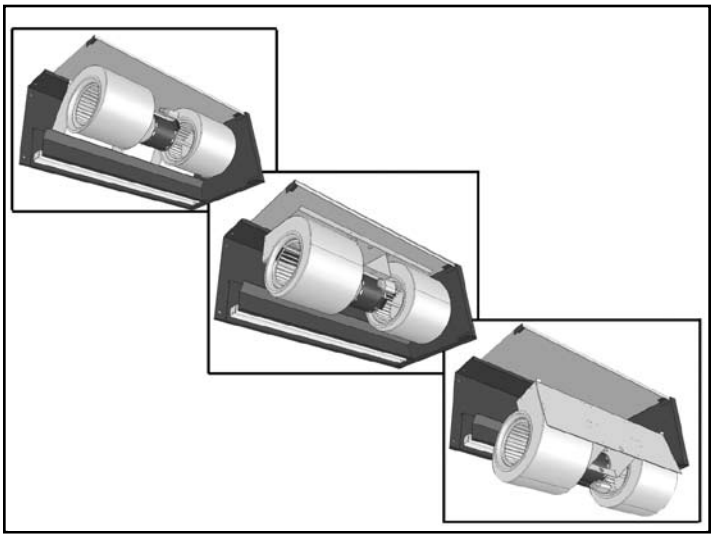


FIGURE 13 - Removing the Blower Module

7. To remove the motor, first loosen the set screws in the fan wheel hubs by using a 5/32" Allen wrench. The set screw can be accessed up through the fan's discharge or on the back of the blower housing.

8. Next, remove one of the two blower housings by removing the (4) screws from the blower plate and sliding it and its fan wheel off to the side.
9. Remove the motor clips from the motor mounts, lift the motor up and out of its cradle and slide it to the side. This should pull the motor shaft out of the remaining blower wheel.
10. Reinstall in reverse order of removal.

B. REPLACEMENT OF ELECTRIC HEATER ELEMENT

1. Electric Heater Elements are attached to the end of the blower housings. To access them, follow "Blower Module Removal" section above.
2. Detach the wire mesh heater guard
3. Disconnect the (4) power wires and (2) control wires per element.
4. Remove the (4) screws that hold the element to the blower housing. **See Figure 14** for location of screws and wire connections.
5. Install new element and connect all wires.
6. Reinstall Blower Module and connect all wires.

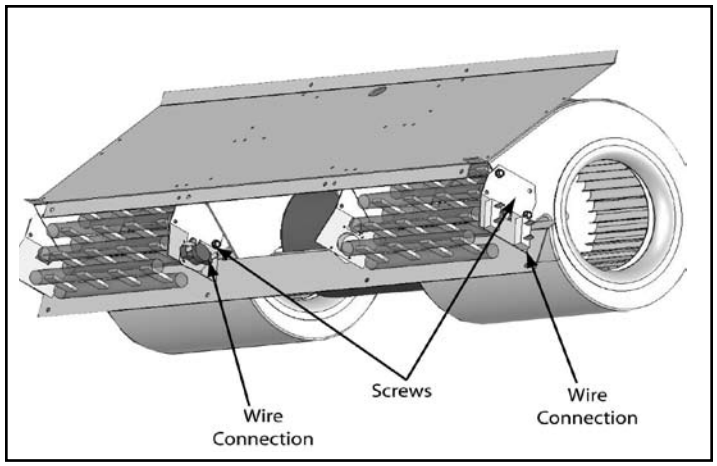


FIGURE 14 - Location of screws

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) on unheated models and two years (2 years) on heated models from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to The Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of The Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but The Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by The Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HERE OF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

BERNER™
INTERNATIONAL CORP.

BERNER INTERNATIONAL CORPORATION
New Castle, Pennsylvania

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Berner reserves the right to alter specifications without prior notice.

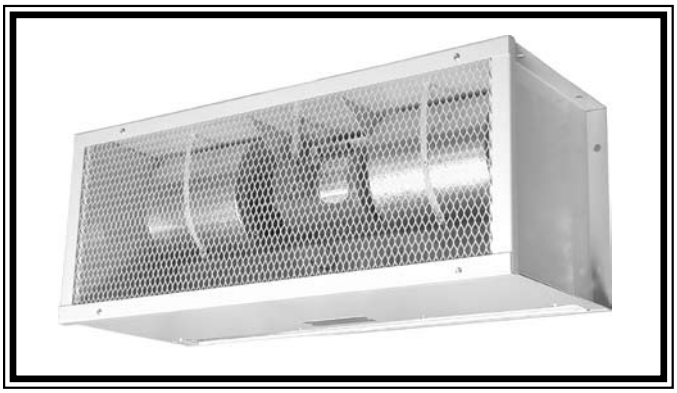
MADE IN U.S.A.

READ AND SAVE THESE INSTRUCTIONS

BERNER™ INTERNATIONAL CORP.

No.: II-112
Date: October, 2007

INDUSTRIAL MODELS:
CFA, CFC, CFX, CFY, EWD



Installation & Maintenance Instructions

WARNING: TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

A. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
B. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
C. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
D. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.
E. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.

UNCRATING

Carefully examine the carton(s) for damage before opening. If the carton is damaged, immediately notify the shipping company. Remove the banding straps. Open the carton(s) and remove all protective packaging. If the unit(s) were shipped on wooden skids, remove all protective wood and all bolts securing the unit to the bottom of the skid. Retain the shipping carton(s) until the unit(s) are installed and properly operating.

ACCESSORIES: If the unit(s) were ordered with optional electrical accessories (door switch, control panel, etc.), the accessories may be found in the carton containing the unit or in a separate carton(s) accompanying the unit(s). **Check all of the cartons/skids for accessories before discarding.**

IMPORTANT: A minimum of 6" is required above the top of the unit to allow for wiring to motor junction box(es). This space is NOT required if the unit is supplied with a unit mounted control panel.

BERNER INTERNATIONAL CORPORATION
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Berner air curtains are designed to create an effective barrier against exterior elements: cold drafts in the winter, hot air in the summer, dust, dirt, debris and flying insects. For year-around protection, units should be mounted on the inside of the building and as close to the top of the door opening as possible or vertically mounted as close to the side of the opening as possible (vertical mount not suitable for gas heated units). Units installed on the outside of the building are to be used exclusively for protection against insects.

I. MOUNTING

A. Berner models are designed to be mounted by their end flanges, without the need for intermediate support. The unit may be attached to the wall, suspended from overhead or supported by brackets. The style of door will determine the best mounting method. **See Figures 1-6.** All hangers and supports are to be supplied by others. Air curtain(s) must be installed so that nothing will interfere with the air stream when it is deflected ± 20° to either side of the opening. If the air stream does strike an obstruction, its efficiency will be greatly reduced. Floor brackets are available for vertical mounting.

B. **IMPORTANT See Figures 1-6.** The unit should be mounted level with the top of the door opening or level with the side of the opening (for vertical mount). The outlet nozzle shall be located no more than 1" above the top/side of the opening. If the air curtain must be mounted higher, then it must be spaced out from the wall 3/8" for every inch the unit is above the opening (4.5" per foot). If the unit is mounted 6" or more away from the opening, side shields are recommended **See Figure 1.**

II. STEAM/HOT WATER HEATED MODELS

Piping should be done in accordance with local codes and regulations and standard practice. Condensate traps should be sized for three times the amount of condensate expected. All piping, traps and temperature controls are provided by others.

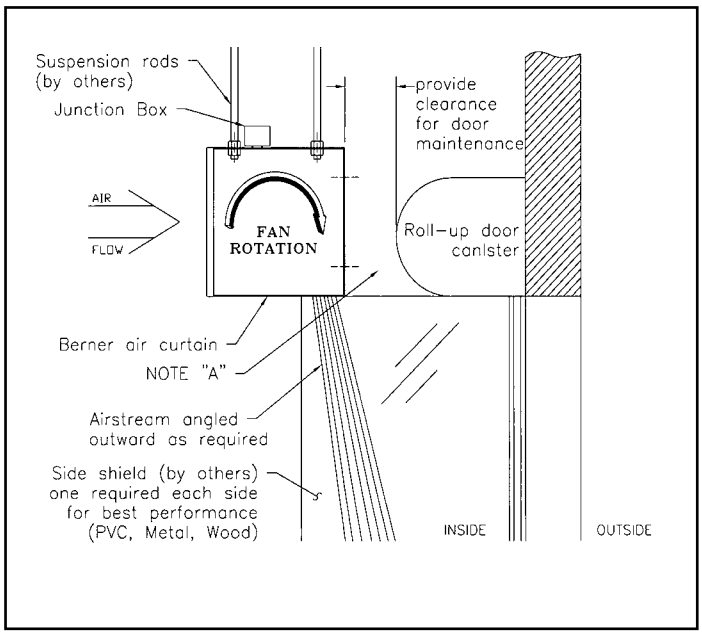


FIGURE 1 - Roll-Up Door

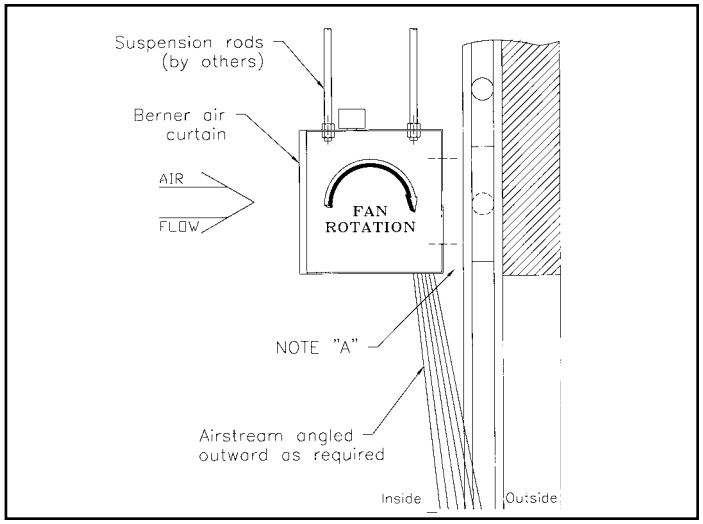


FIGURE 2 - High Rise Track Door

III. ELECTRIC WIRING

All electrical wiring should be done in accordance with: N.E.C., C.E.C., local codes and regulations. Each motor is internally wired to a junction box located on the outside of the unit (one for each motor), or to an optional motor control panel. Control panel wiring diagrams are located on the inside cover of the enclosure.

Make sure the correct voltage as marked on the unit is used. For amp rating, see the name plate located on each junction box or on the control panel.

IV. METHODS OF CONTROL

For convenience of operation, single phase air doors may be operated manually through an On/Off Switch or automatically through a door switch (activates the unit each time the door opens). Three phase units require a motor starter control panel which may also include an On/Off Switch, an Hand/Off/Automatic Switch, or an Automatic Door Switch (activates the unit each time the door opens, and deactivates the unit each time the door closes). The control panel may be unit mounted or remote mounted.

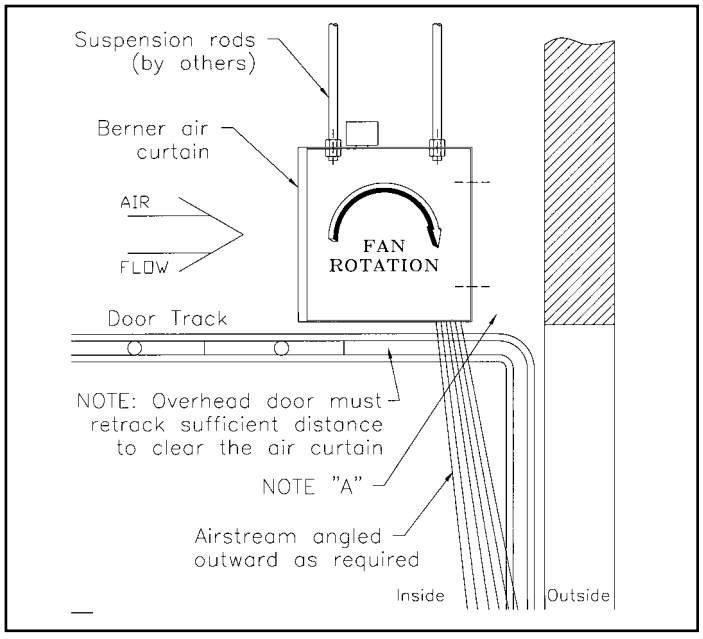


FIGURE 3 - Low "Turn-Back" Track Door

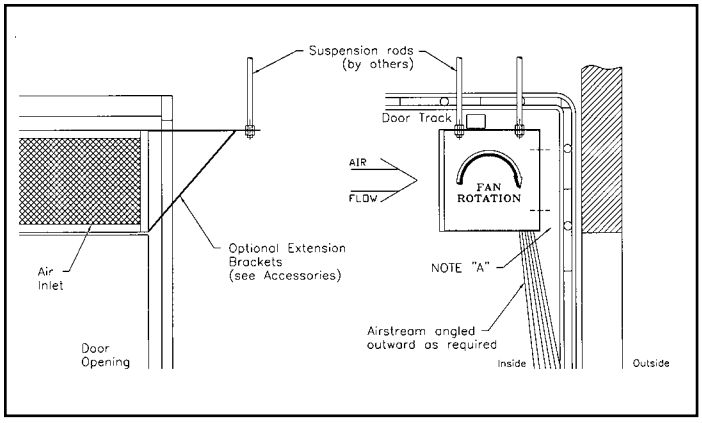


FIGURE 4 - High "Turn-Back" Track Door

V. INTERIOR MOUNTING

(Adjustment For Protecting Against The Weather)
(See Figure 7)

A. With the air curtain operating, and the door in its full open position, check to see that nothing is obstructing the air flow at the discharge nozzle.

B. Find the air stream "split" location. Hold a handkerchief, by its top corners, approximately 12" above the floor. Gently move the handkerchief back and forth in the doorway. Make sure the air is being directed to both the inside and the outside. The split location is indicated when the handkerchief is vertical with minimal flutter.

C. The split location should be approximately 3" outside the doorway. If the split location does not conform to the above specifications, the air directional vanes in the outlet nozzle should be adjusted.

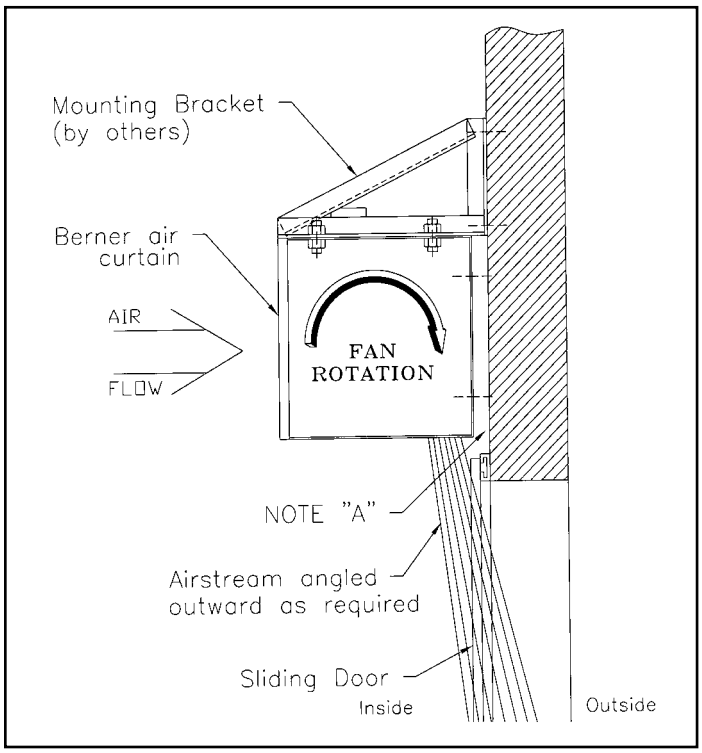


FIGURE 5 - Sliding Doors

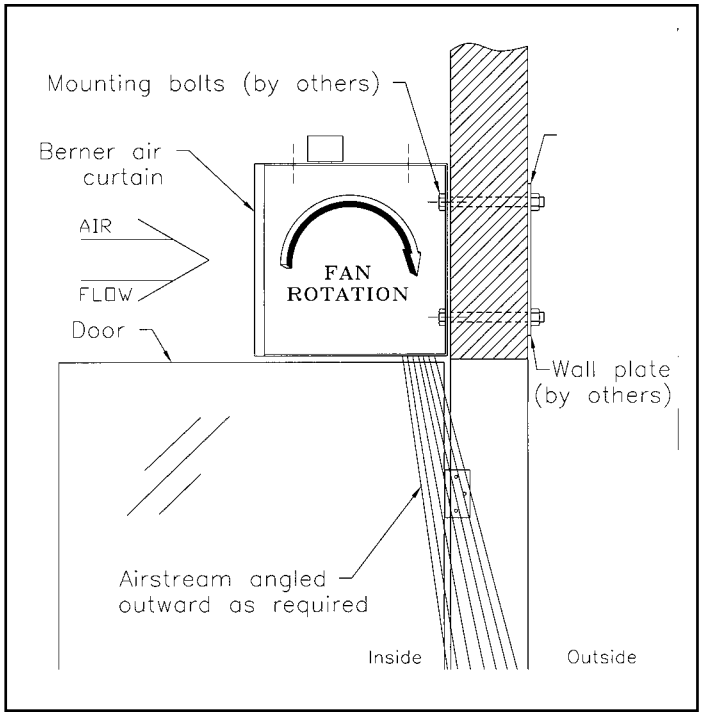


FIGURE 6 - Standard Hinged Door

VI. AIR DIRECTIONAL VANES

A. Loosen the two nuts on each end of the outlet nozzle(s).

B. Adjust the angle of the air stream by turning the vanes in the outlet nozzle until the split lies just outside the door threshold. **See Figure 7.**

C. After adjustment is complete, tighten the two nuts on each end of the outlet nozzle. Repeat as needed for units with more than one nozzle.

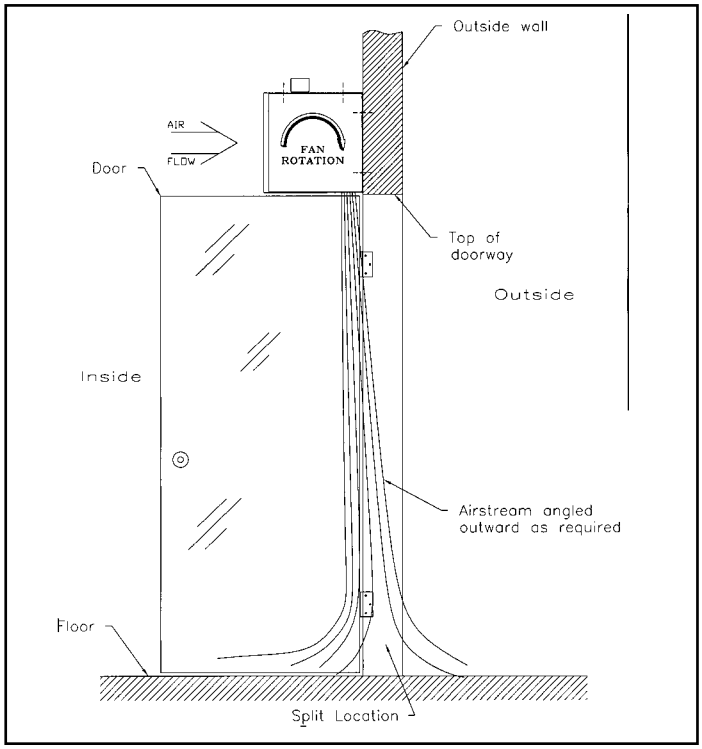


FIGURE 7 - Airstream Flow Pattern

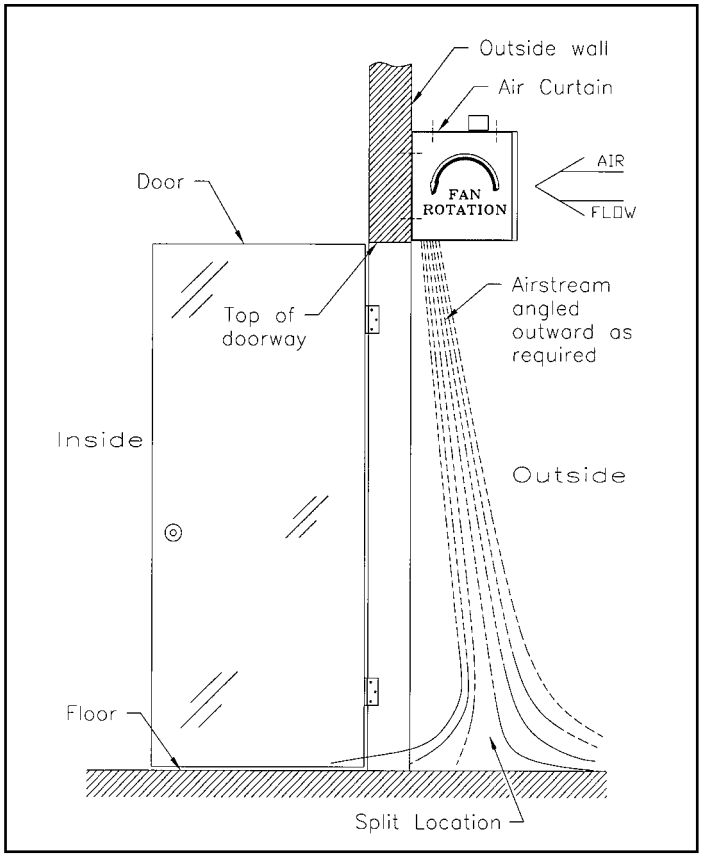


FIGURE 8 - Airstream Location (Exterior)

VII. EXTERIOR MOUNTING

(Adjustments For Protection Against Insects)
(See Figure 8)

Mount the air curtain following the INTERIOR MOUNTING Installation Instructions EXCEPT for air flow adjustment

VIII. AIR FLOW ADJUSTMENT

(For Exterior Insect Control)

Follow the AIR DIRECTIONAL VANES instructions. The split location should be located approximately 6" outside the doorway and approximately 12" above the floor.

NOTE: The in flowing airstream may feel cold, due to the "wind chill factor." The temperature of the moving air can be determined with a thermometer. If this apparent coolness is objectionable to personnel, a heater may be added to your unit.

IX. AIR CONTROL DAMPER

Industrial models are supplied with an air control damper. The air control damper will reduce the air volume supplied by the unit. The air flow may be reduced, if necessary, for light wind conditions. Do not damper the unit unnecessarily, since outside gusts of wind could break through the reduced curtain of air.

X. PREVENTIVE MAINTENANCE & SERVICE

CAUTION: ELECTRIC SHOCK HAZARD
Disconnect power line whenever working on unit. More than one disconnect switch may be required to de-energize the unit for servicing.

Berner air curtains require very little servicing. All parts are easily accessible for periodic inspection and maintenance.

A. FRONT ACCESS - Maintenance may be performed on ambient (unheated) models by removing the protective inlet screen.

B. BOTTOM ACCESS - Preventive maintenance may be performed on all models (heated and ambient) by removing the bottom access cover.

C. ACCESS PANELS: **INDIRECT GAS HEATED MODELS** Access may be accomplished through the access panels located in the transition duct, or through the bottom access cover of the air curtain.

XI. PREVENTIVE MAINTENANCE & CLEANING

Units should be cleaned and serviced at least twice a year. Your particular application and location (the amount of dirt and dust in the air) of the unit(s) will determine how often your unit(s) will need to be cleaned and serviced. Use an industrial vacuum or compressed air to remove dirt buildup from the inside of the cover housing, air inlet screen, blow wheels/housings, interior of the unit, and heating coils (if applicable).

All motors have permanently lubricated, sealed ball bearings.

TROUBLESHOOTING

SYMPTOMS	CAUSE	REMEDY
NO AIR	• Power supply line open (no power)	• Check power source, check method of control in ON position
	• Fuse blown/circuit breaker tripped	• Replace fuse(s)/reset breaker
	• Motor overload tripped	• Internally protected motor - should reset automatically after cool-down, if not, replace motor.
	• Failed switch	• Replace switch
	MOTOR RUNNING/FANS ARE NOT ROTATING	
	• Broken or damaged flexible hub	• Replace fan sleeve/re-engage coupling
	• Shaft rotating inside fan	• Tighten set screws/tighten fan on shaft
	ELECTRICAL CONTROLS NOT FUNCTIONING WHEN DOOR IS OPEN	
	• Selector switch is in off position	• Turn switch to “ON” position
	• Door limit switch not operating	• Repair or replace limit switch
MINIMUM AIR	• Air directional discharge vanes mis-adjusted	• Adjust vanes to proper position, see instructions
	• Inadequate intake clearance	• Move air curtain or remove obstruction
		• Provide adequate space for air curtain
	• Blower motor operates below speed	• Improper voltage
	• Fan rubbing against housing	• Free fan from housing
	• Fan wheels clogged with dirt	• Clean and vacuum fan wheels
	• Fan in backwards	• Check fans for blade curve toward discharge
AIR IS NOT HITTING FLOOR	• Air stream too weak	• Adjust nozzle to proper position, adjust motor speed; see installation instructions
	• Air steam hits obstruction	• Remove obstruction or reposition air curtain (move out 3/8” for every 1” up from the door)
	• Negative pressure	• Relieve negative pressure by providing makeup air
UNEVEN AIR	• Shaft rotating inside fan	• Tighten set screws/Replace fan
EXCESSIVE AIR MOVEMENT AT DOORWAY	• Nozzle not angled out far enough	• Adjust nozzle angle to outside
	• Air movement too cold	• Add auxiliary heat to overcome wind chill
	• Pushing air outside building	• Adjust discharge angle back into building
	SEE AIR IS NOT HITTING FLOOR SYMPTOMS	
	ELECTRICALLY HEATED MODELS	
NO HEAT	• Switch turned to “ON” position	• Replace switch or check wiring
	• Thermostat not set properly	• Change thermostat setting
	• Coils burned out due to lack of air	• Correct airflow problem; replace coils
	• Automatic reset thermal cutout failed in open position	• Replace automatic thermal cutout
	• Manual reset thermal cutout tripped	• Reset manual thermal cutout
MINIMAL HEAT	• Thermostat in wrong location - thermostat too close to discharge	• Move thermostat away from air stream
	• Improper voltage	• Supply proper voltage
	• Thermostat not set properly	• Change temperature setting
EXCESSIVE HEAT	• Thermostat in wrong location	• Move thermostat closer to air stream
	• Thermostat not set properly	• Change temperature setting
	• Insufficient air over coil	• Remove restriction on intake
	• Improper voltage	• Supply proper voltage
	STEAM/HOT WATER HEATED MODELS	
EXCESSIVE HEAT	• Too high stream/hot water pressure	• Reduce stream pressure/hot water flow
	• Inadequate air flow, fins plugged up, dirty coils	• Clean intake and coils
MINIMAL HEAT	• Insufficient removal of condensation (steam)	• Increase trap size
	• Not enough steam pressure/water temperature too low	• Raise pressure for steam/increase water flow
	• Intake air below design temperature	• Increase steam pressure/increase water flow

WARRANTY

Berner International warrants all new equipment to be free of defects in workmanship and material for a period of five years (5 years) from the original date of shipment, provided the equipment has been properly cared for, installed and operated in accordance with the limits specified on the nameplate and The Company's instructions.

The Company will correct by repair or replacement, at its option and expense, any proven defects in said apparatus, subject to the above conditions, provided that immediate written notice of such defects is given to the Company. The warranty does not include any labor incurred for the removal or installation of defective part(s). The Company reserves the right to inspect, or have inspected by a qualified representative, any apparatus at the place of installation before authorizing repair or replacement. Repair or replacement will be made F.O.B. factory with any applicable transportation charges to be borne by the customer. Merchandise not of the Company's manufacture supplied in piece, or in component assemblies, is not covered by the above warranty, but the Company will give the customer the benefit of any adjustment as made with the Manufacturer.

This warranty is void if the apparatus has been tampered with in any way or shows evidence of misuse.

The Company will not assume any expense or liability for repairs made outside its factory without proper written consent from its service manager, nor for any transportation charges on apparatus returned to the factory without written authorization by the Company.

Nothing in the above warranty provisions, however, shall impose any liability or obligation of any type, nature or description upon Berner International if Berner has not received payment in full for the apparatus in question.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF DAMAGES

Notwithstanding anything to the contrary above, customer's exclusive remedy for any and all losses or damages resulting from the sale of The Company's equipment under this agreement, including but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at The Company's option, to either the return of the purchase price or the replacement of the particular equipment for which a claim is made and proved. In no event shall The Company be liable for any special, consequential, incidental or indirect losses or damages from the sale of The Company's equipment under this agreement.

Serial Number _____ Model Number _____ Date Purchased _____

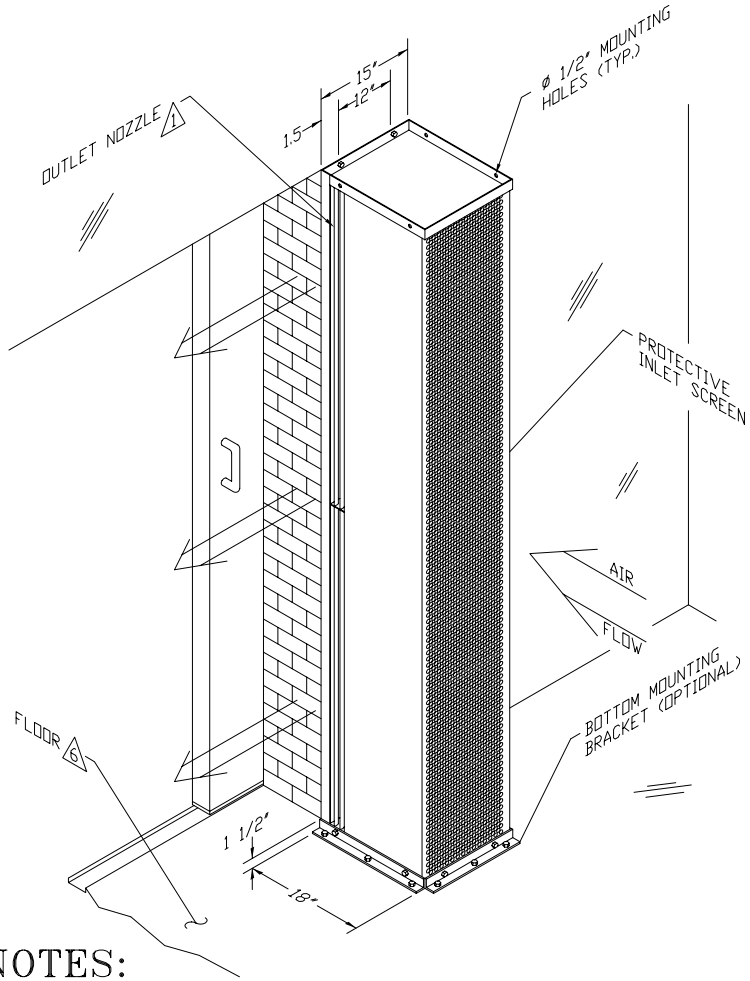
BERNER™
INTERNATIONAL CORP.

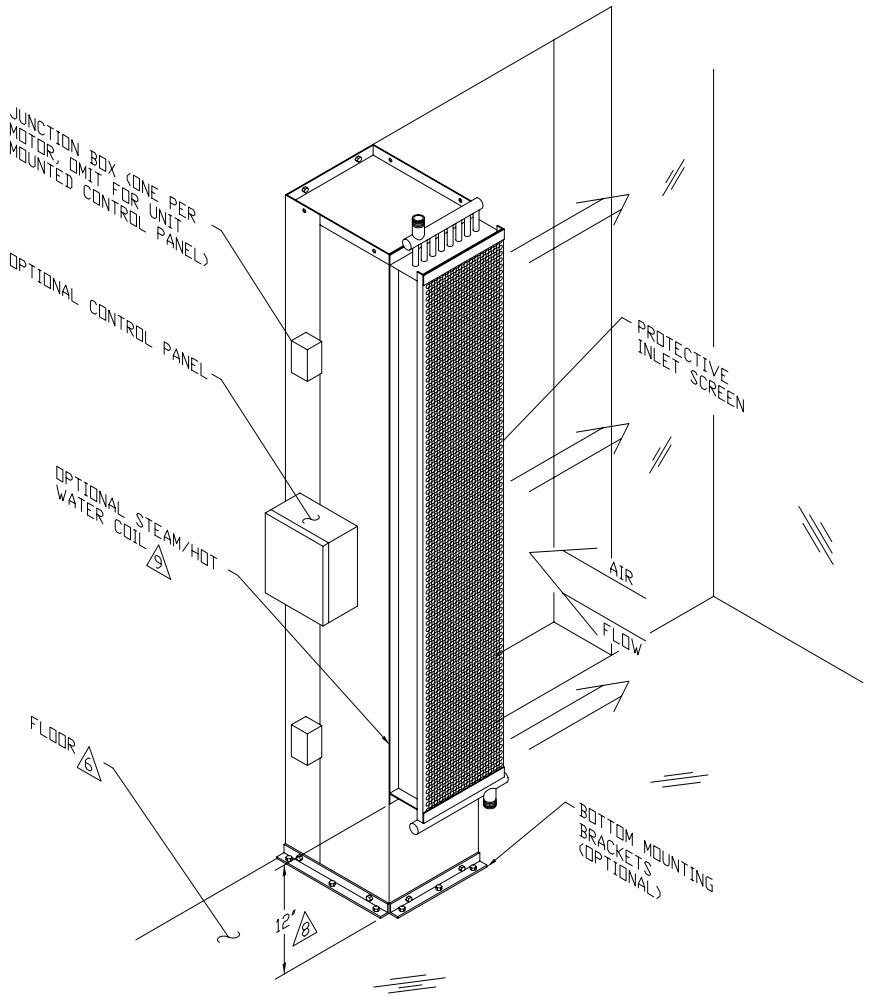
Berner International Corporation
111 Progress Avenue
New Castle, PA
724-658-3551
1-800-245-4455
www.berner.com

Berner reserves the right to alter specifications without prior notice.

VERTICAL MOUNT

VSA/VSB, KSA/KSB





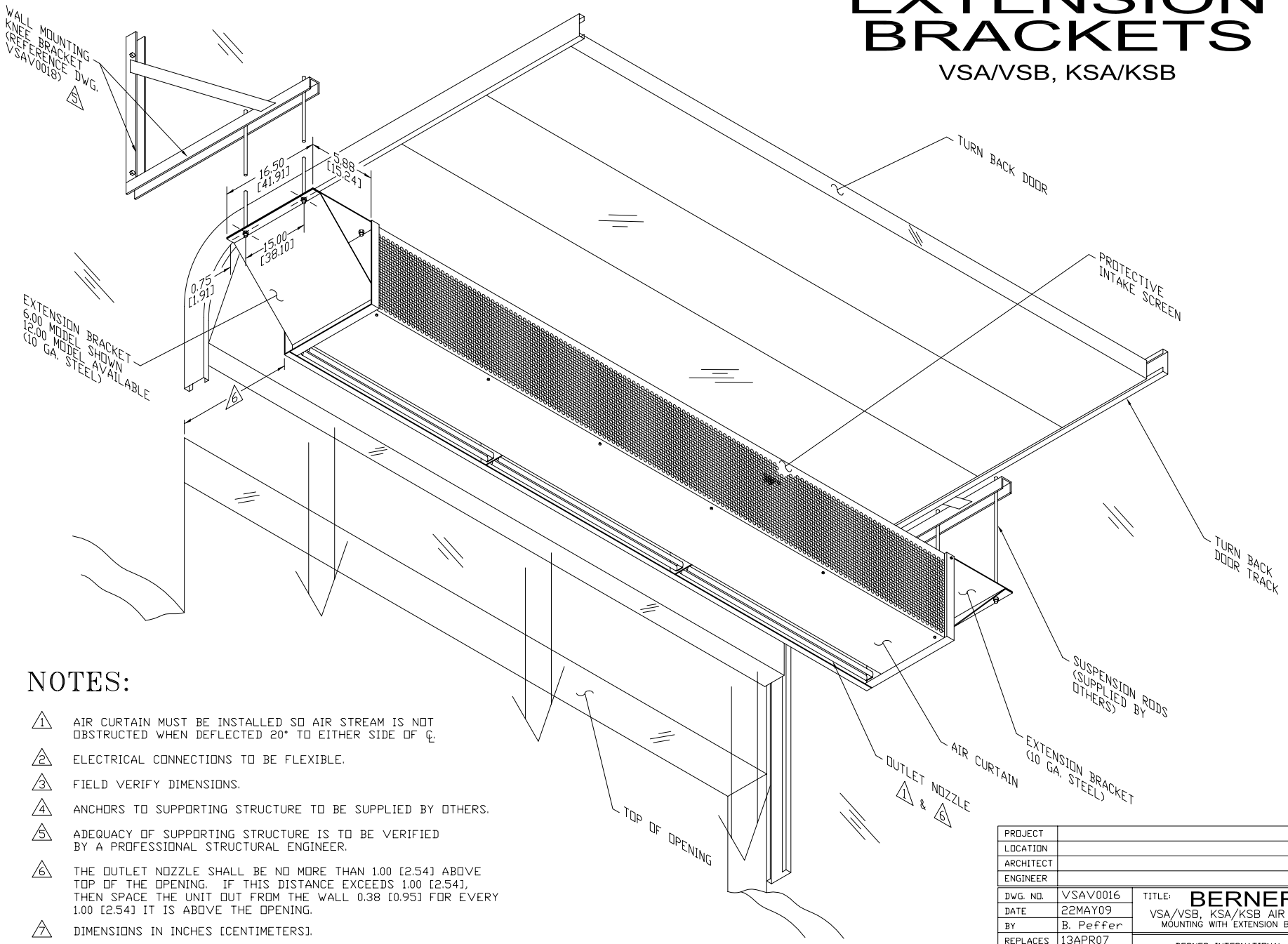
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. SURFACE SHOULD BE SMOOTH AND LEVEL.
7. THE OUTLET NOZZLE SHALL BE NO MORE THAN 1" AWAY FROM EDGE OF THE OPENING. IF THIS DISTANCE MUST BE MORE, SPACE THE UNIT OUT FROM THE WALL 3/8" FOR EVERY 1" IT IS MOVED AWAY FROM THE OPENING.
8. VERTICALLY MOUNTED UNITS W/ COILS MAY REQUIRE ADDITIONAL CLEARANCE AT BOTTOM FOR SUPPLY/RETURN HEADERS. STEAM SHOWN W/REQUIRED TOP SUPPLY/BOTTOM RETURN. HOT WATER STANDARD SAME END SUPPLY/RETURN TOP OR BOTTOM, AVAILABLE W/OPPOSITE SUPPLY/RETURN.

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	VSAV0017	TITLE: BERNER VSA/VSB, KSA/KSB AIR CURTAIN VERTICAL MOUNTING	
DATE	22MAY09		
BY	B. Peffer		
REPLACES	13APR07		
BY	D. Johnson	BERNER INTERNATIONAL CORP. NEW CASTLE,PA.	

EXTENSION BRACKETS

VSA/VSB, KSA/KSB



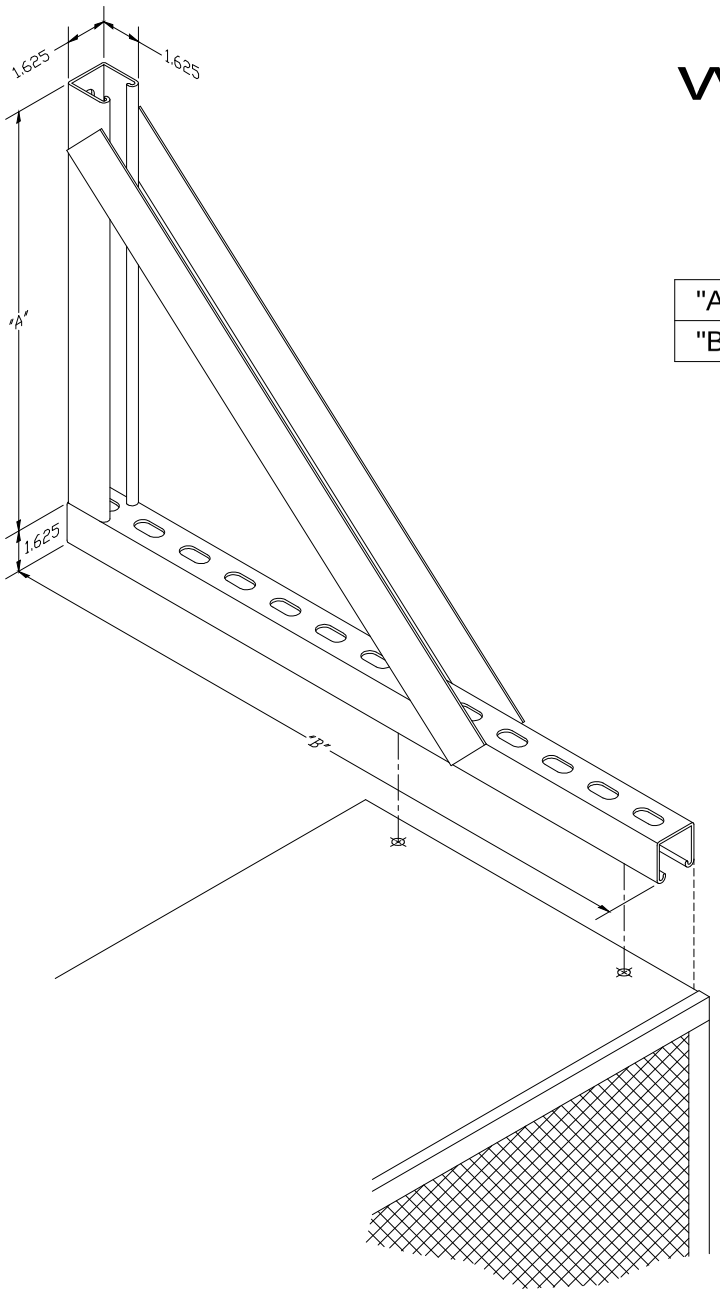
NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE TO BE SUPPLIED BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. THE OUTLET NOZZLE SHALL BE NO MORE THAN 1.00 [2.54] ABOVE TOP OF THE OPENING. IF THIS DISTANCE EXCEEDS 1.00 [2.54], THEN SPACE THE UNIT OUT FROM THE WALL 0.38 [0.95] FOR EVERY 1.00 [2.54] IT IS ABOVE THE OPENING.
7. DIMENSIONS IN INCHES [CENTIMETERS].

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	VSAV0016
DATE	22MAY09
BY	B. Peffer
REPLACES	13APR07
BY	D. Johnson

TITLE: BERNER
VSA/VSB, KSA/KSB AIR CURTAIN
MOUNTING WITH EXTENSION BRACKETS

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.



WALL BRACKET

VSA/VSB, KSA/KSB

	PART NUMBER	
	66VS-000WMB-012	66VS-000WMB-020
"A"	16.00	22.00
"B"	29.00 (A)	37.00 (A)

DATE	REVISION	REV	BY
26SEP11	REVISE LENGTH "B"	A	ARJ

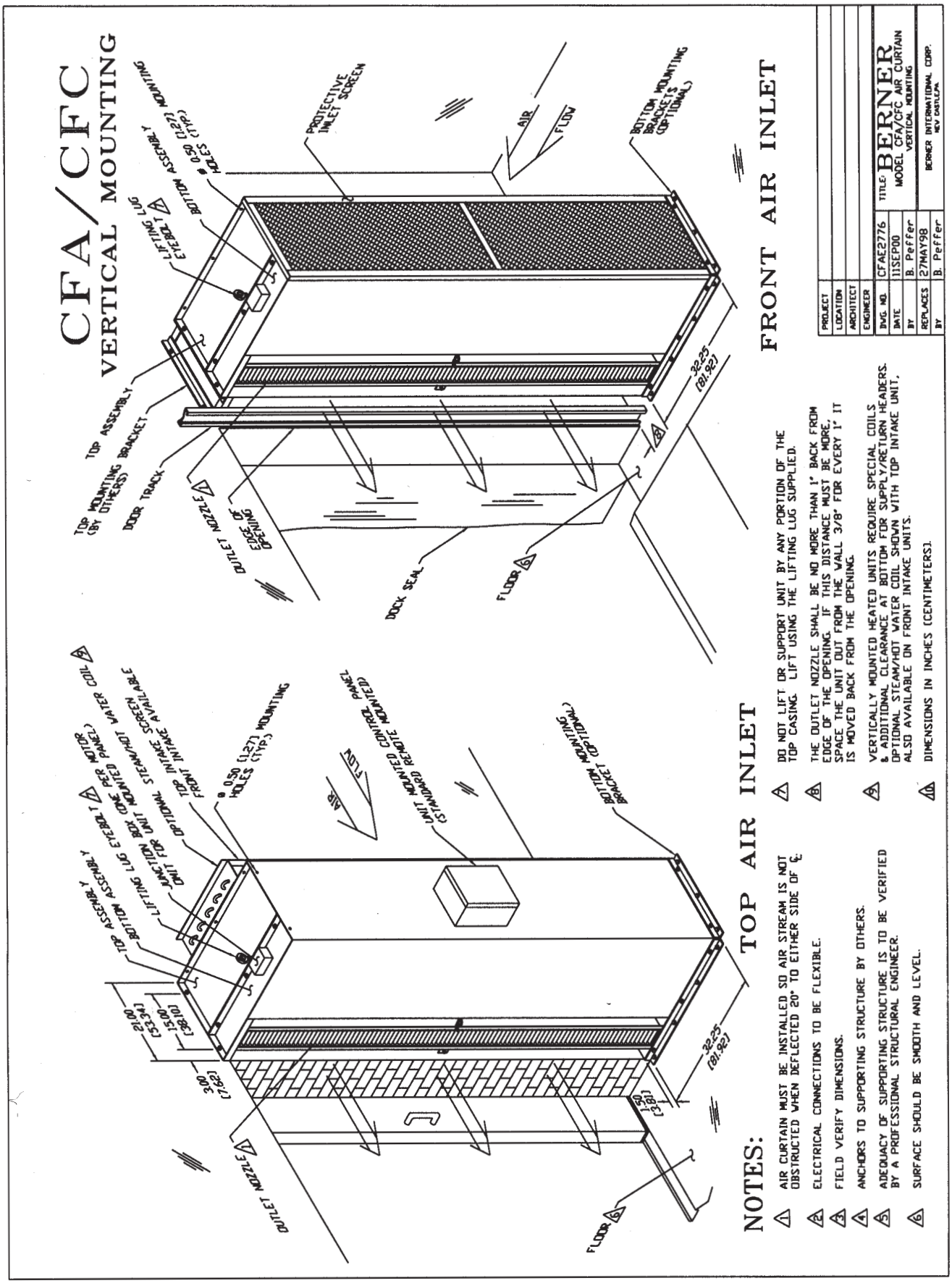
PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	VSAV0018
DATE	26SEP11
BY	A.Johnston
REPLACES	13APR07
BY	D. Johnson

TITLE: WALL BRACKET FOR VSA/VSB, KSA/KSB AIR CURTAINS

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

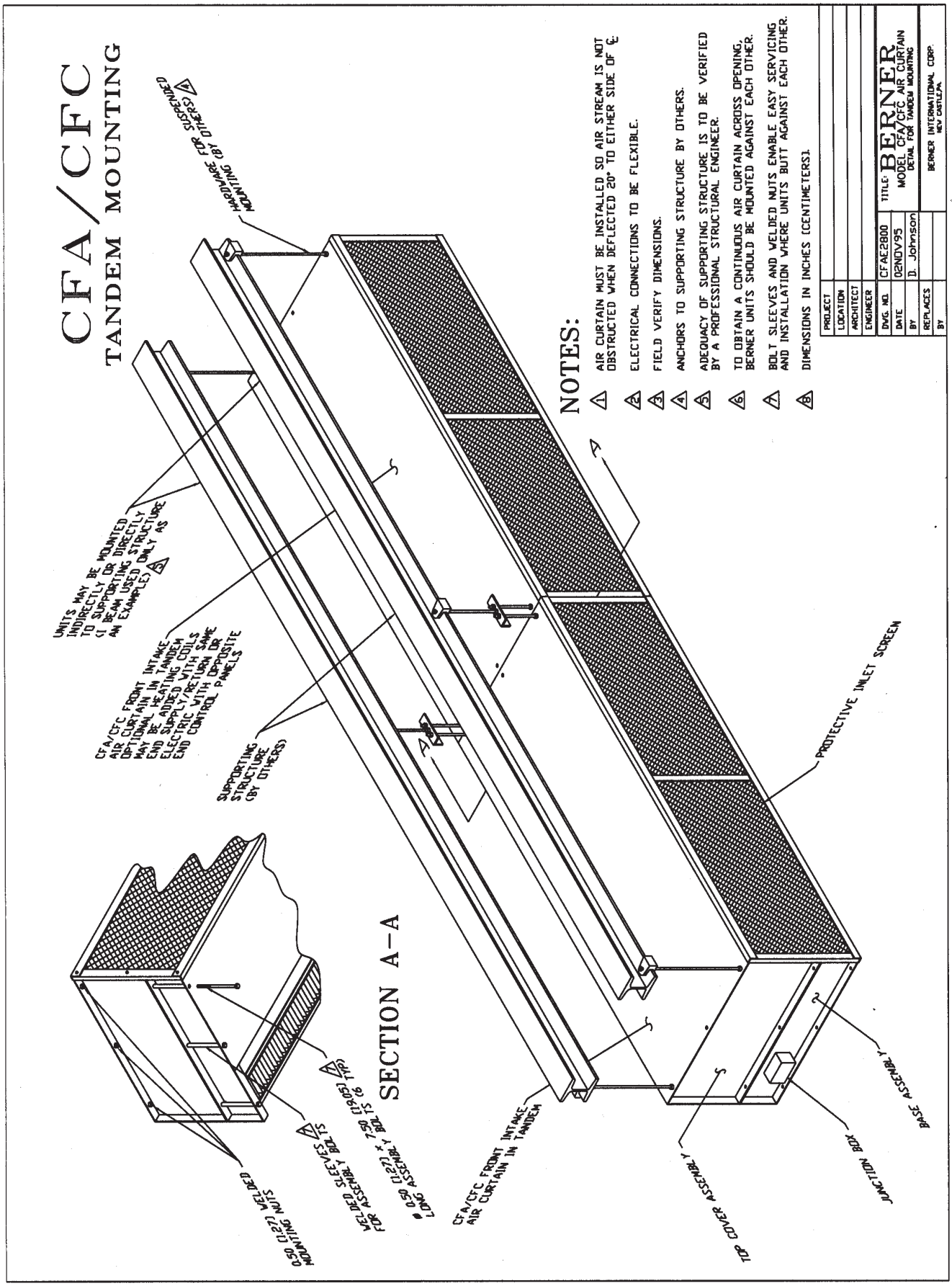
BERNER INTERNATIONAL CORP.

CFA, CFC
Vertical Mounting
Accessories



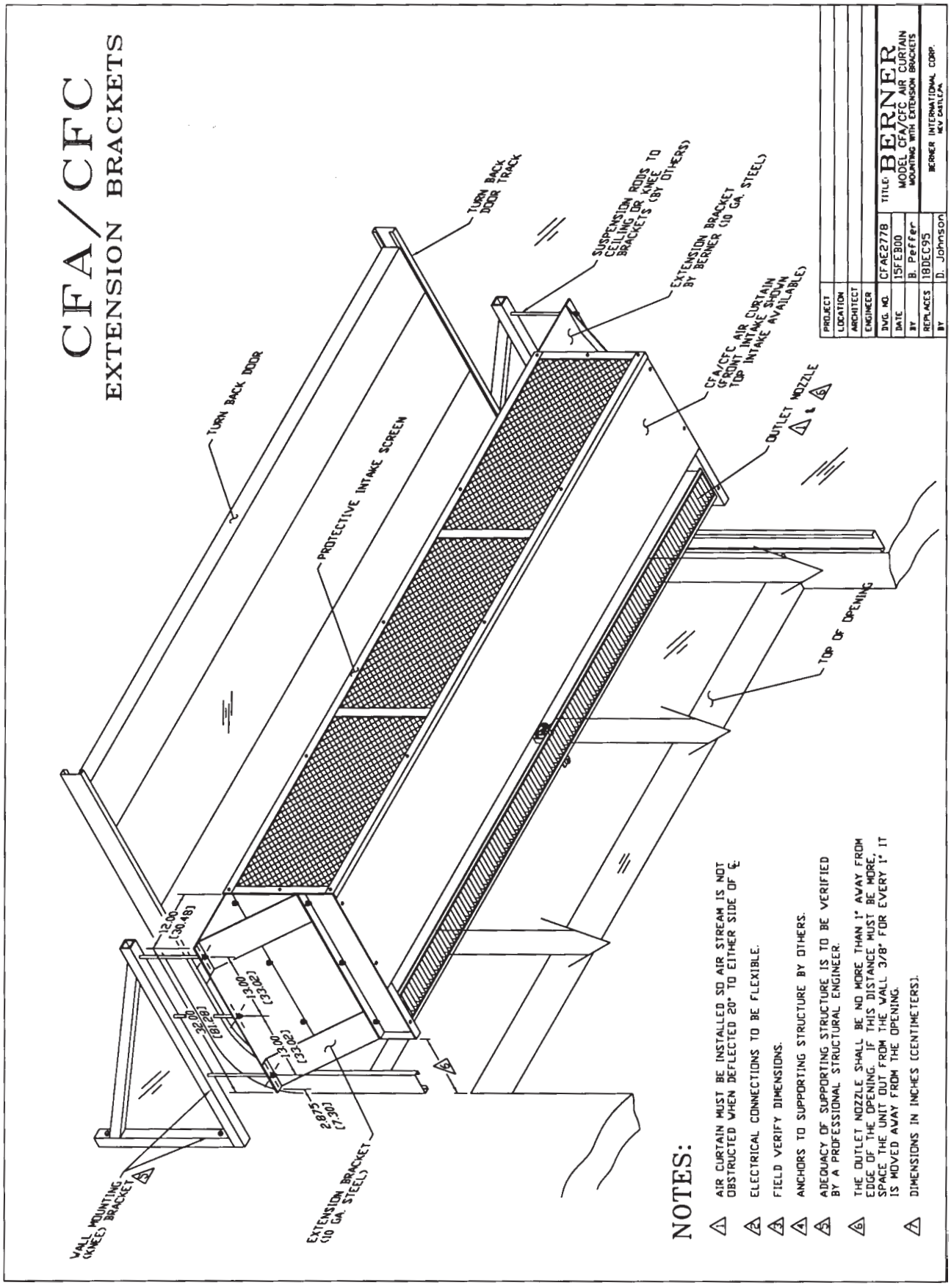
Berner reserves the right to alter specifications without prior notice.

CFA, CFC
Tandem Mounting
Accessories



Berner reserves the right to alter specifications without prior notice.

CFA/CFC
Extension Brackets
Accessories



Berner reserves the right to alter specifications without prior notice.

CFA/CFC
WALL BRACKET

FIG. 1

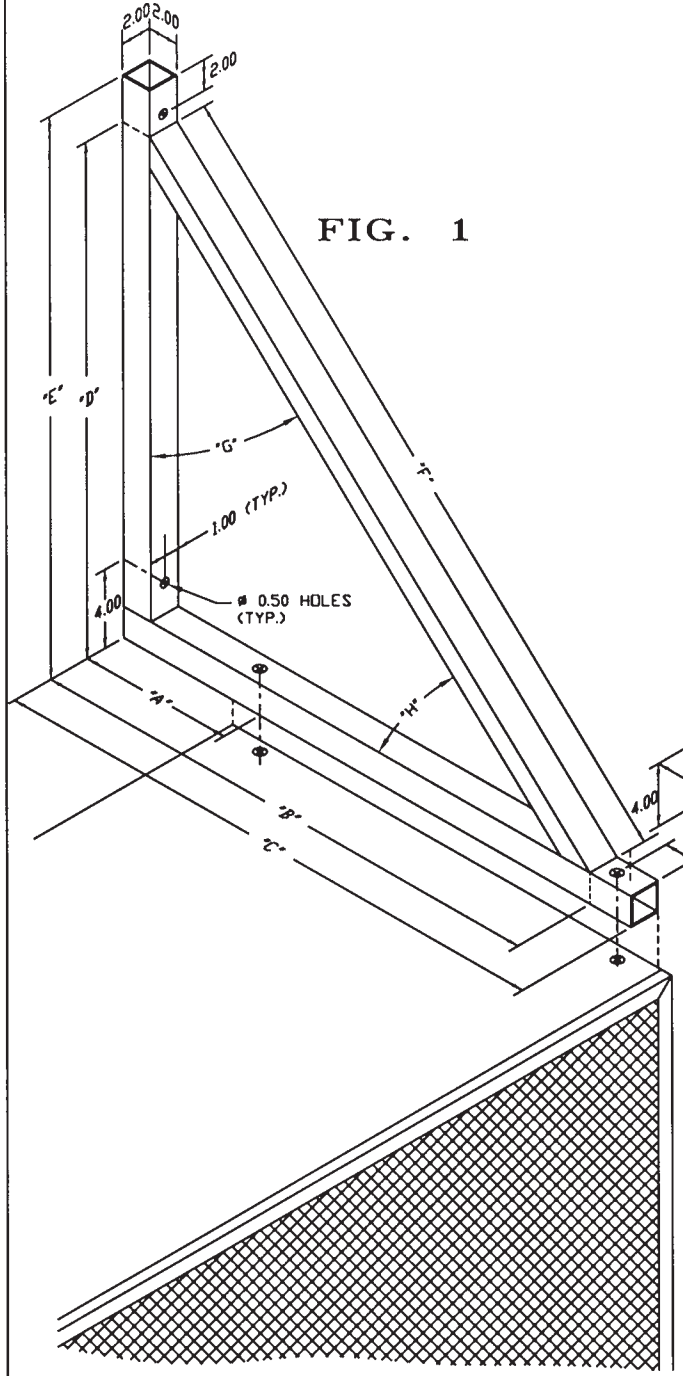
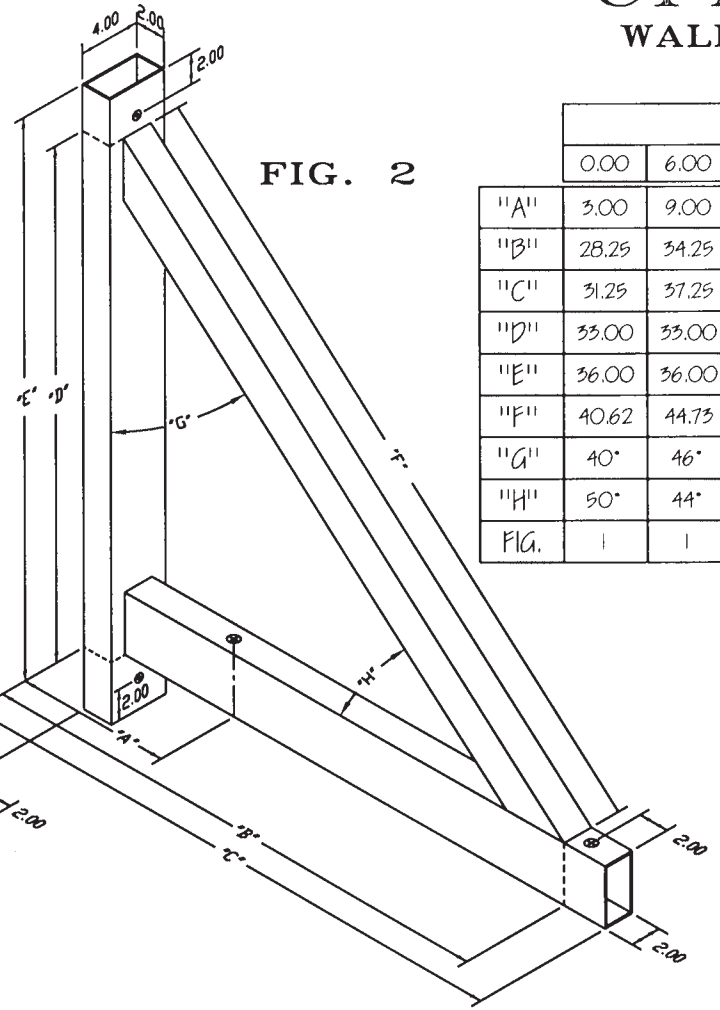


FIG. 2



	DISTANCE FROM WALL							
	0.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
"A"	3.00	9.00	11.00	13.00	15.00	17.00	19.00	21.00
"B"	28.25	34.25	36.25	38.25	40.25	42.25	44.25	46.25
"C"	31.25	37.25	39.25	41.25	43.25	45.25	47.25	49.25
"D"	33.00	33.00	33.00	33.00	39.00	39.00	39.00	42.00
"E"	36.00	36.00	36.00	36.00	42.00	42.00	42.00	45.00
"F"	40.62	44.73	46.19	47.70	51.85	53.34	54.86	58.33
"G"	40°	46°	48°	49°	46°	47°	49°	48°
"H"	50°	44°	42°	41°	44°	43°	41°	42°
FIG.	1	1	1	1	2	2	2	2

PROJECT			
LOCATION			
ARCHITECT			
ENGINEER			
DWG. NO.	MSCL0110	TITLE:	WALL BRACKET FOR CFA/CFC AIR CURTAINS
DATE	22JUN00		
BY	B. Peffer		
REPLACES	21JAN98		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
BY	B. Peffer		

BERNER INTERNATIONAL CORP.

CFA/CFC Maintenance Instructions

CAUTION: Disconnect all power supplies prior to any service performed.
When properly installed according to our instructions, Berner Model CFA and CFC Air Curtains are easily serviced.

AMBIENT MODELS FOR MINOR REPAIRS

On ambient models, periodic inspection and minor maintenance can be performed by simply removing the inlet grill. This is done by first removing the sheet metal screws and then removing the entire screen, thus providing access to the internal parts.

Inspection or minor maintenance such as cleaning of the wheels or tightening any loose set screws can be made at this point.

HEATED MODELS OR MAJOR REPAIRS

For any major repair, or if the unit is equipped with auxiliary heat, i.e. steam/hot water, gas or electric, the lower section of the air curtain may need to be removed. The lower section contains the motors, couplings, wheels, bearings and drive shaft. (See Figure 1 on back). If optional access panels were supplied, maintenance may be performed by removing the necessary access panels.

Supply power must be disconnected prior to lowering this section. All factory wiring is attached to the lower section through a junction box, starter or control panel.

To remove the lower section, the unit must be firmly supported underneath by a forklift or other suitable equipment.

Remove the #12 self-drilling type screws located on the crossbar near the nozzle section (these screws are used to join the back of the top and bottom section of the unit to prevent vibration). Remove the six 3/8" bolts, (three on each end of the unit) that hold the bottom section of the unit to the top.

When steam/hot water, gas or electric is supplied, it is not necessary to disconnect any piping or electrical connection. The upper section, along with the auxiliary heater will remain intact during the lowering procedure. For all steam/hot water coils, you must remove all fasteners in the lower assembly only that secures the coil to the lower section.

After the bottom section is lowered and in a secure position, it is possible to clean the internals of the unit. The inaccessible areas can be cleaned by using compressed air.

The couplings should be checked for proper alignment. The rubber sleeves, which separate the two metal flanges of the coupling, should be examined for excessive wear and replaced, if necessary. All set screws should be checked for tightness.

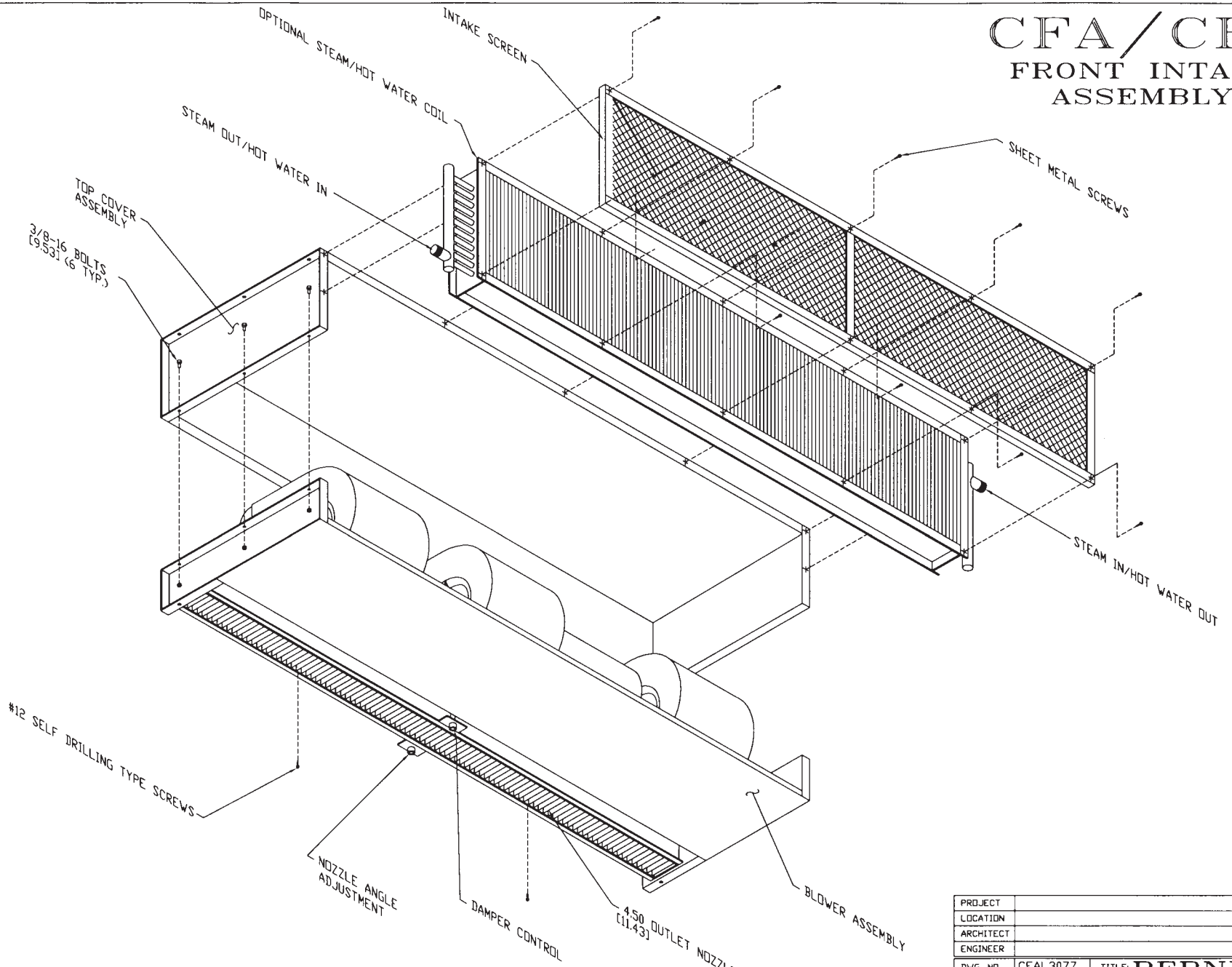
The bearings that support the wheels are encased in a rubber cylindrical housing and are permanently lubricated with moisture resistant grease that is sufficient for the life of the bearing. Check that all bearing locking collars are still intact.

The motors, equipped with shielded bearings, have sufficient grease to last indefinitely under normal use. Where the motor is used constantly in dirty, wet or corrosive atmosphere, it is recommended to add one quarter (¼) ounce of grease per bearing at least once a year. Use a good quality, rust inhibited, polyurea based grease such as Chevron SRI or Shell Dolium R with a temperature range from -35°F to +350°F.

For heated units, it is recommended that while the bottom section of the unit is lowered, any excessive dust be blown from the heating coils.

After servicing, the bottom of the unit may be placed back into position, making sure that all bolts are reinserted, tightened securely and all self-drilling screws replaced at the nozzle section.

CFA/CFC
FRONT INTAKE ASSEMBLY



PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	CFAL3077
DATE	29MAR00
BY	B. Peffer
REPLACES	12JUN98
BY	B. Peffer

TITLE: BERNER
MODEL CFA/CFC AIR CURTAIN
FRONT INTAKE ASSEMBLY

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

The BERNER FLYSTOP is suitable for mounting above the door opening on the outside of the building. Indoor mounting is available, but consideration should be given concerning sound levels. Sound level measured 10' from the unit in free field: 93 dBA.

The BERNER FLYSTOP, Series FS, is supplied with two (2) wall mounting brackets, adjusting rods, washers and nuts. (Control panel and automatic door switch are not included unless ordered separately.)

INSTALLATION

1. Attach the two (2) wall mounting brackets securely to the wall or suitable structure (bolts and installation hardware provided by others). Refer to detail of mounting brackets and air curtain dimensions for correct spacing and height of brackets.
   NOTE: The brackets should be installed to allow for the air discharge nozzle to be flush with the top of the door opening.
2. With the brackets securely fastened to the wall or suitable structure, attach the air curtain to the brackets. A pivot pin, located on each end of the air curtain plenum, should be installed in one of the two notches of the mounting brackets. Install the pivot pin on the notch nearest the wall for exterior mounted (outdoor) units and the notch away from the wall for interior mounted (indoor) units.
3. Attach the adjusting rod. The rod goes through the adjusting collar with a nut and washer on each side of the collar (do not tighten the nut at this time).
4. Electrical installation should be in accordance with local codes and regulations. Use a flexible connection of sufficient length to permit angle adjustments. Where applicable, wiring diagrams are located in the junction box(es) or in the control panel.
5. If your unit is supplied with an optional weatherhood(s) (one weatherhood per fan) install the weatherhood above each fan. Attach the weatherhood by lining up the pre-drilled holes in the (4) legs on the weatherhood with the threaded nuts on the top casing of the air curtain. Attach with the (4) bolts supplied by Berner.

ADJUSTMENT FOR PROTECTION AGAINST INSECTS

With the unit operating, find the air stream split location (See drawing on reverse side). Hold a handkerchief, by its corners, approximately one foot above the floor. The fluttering of the handkerchief will show the air flow pattern. Adjusting rods are used to vary this angle. To adjust for the correct nozzle angle of the air stream, the split location should be outside of the doorway. An angle between 15-20° to the outside is the most efficient for insect control. The nozzle adjustment applies to both interior and exterior mounting. Anchor the pivot pins on the brackets. Tighten the lock nuts on the pivot pins. When adjustment is complete, install packing between the plenum and the wall (Refer to the Installation Drawing.)

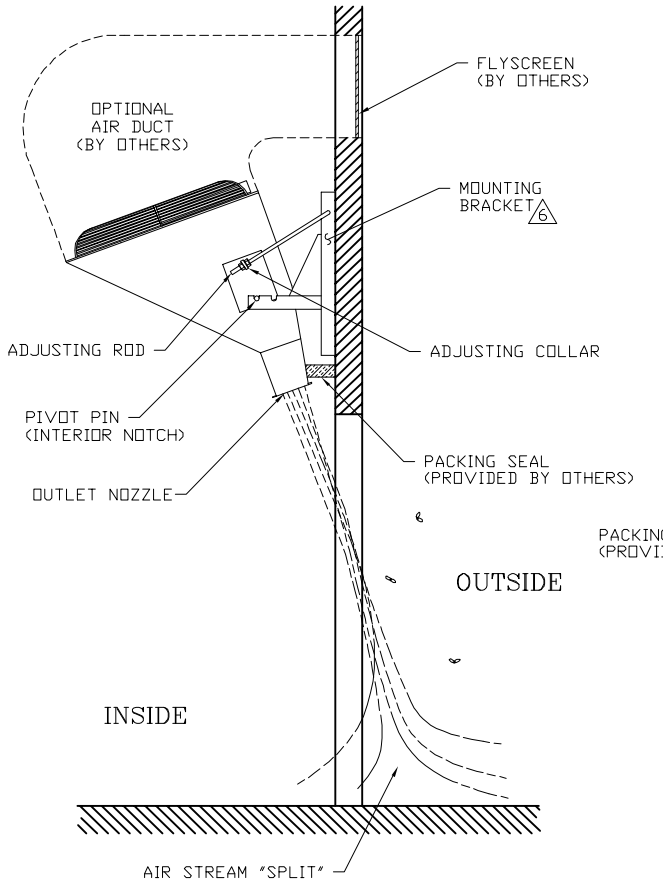
SERVICE & PREVENTIVE MAINTENANCE

CAUTION: Electric shock hazard - Disconnect the power whenever working on the unit. More than one disconnect switch may be required to de-energize the unit for servicing. Berner air curtains require very little servicing. However, all parts are easily accessible for periodic inspection and maintenance. **(WARNING:** VIBRATION, NOISE AND EXCESSIVE WEAR ON THE MOTOR BEARINGS ARE CAUSED BY DUST BUILDUP ON THE IMPELLER.)

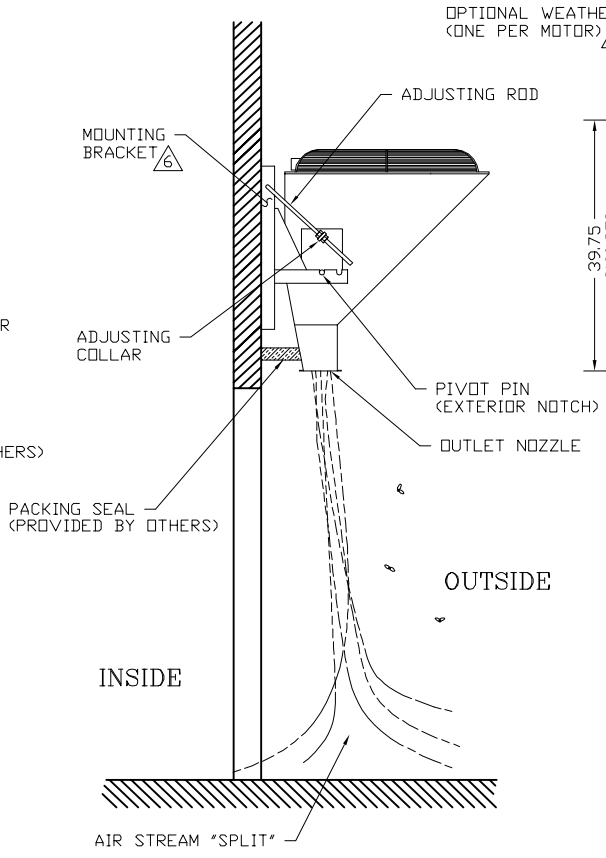
1. To clean the interior of the unit:
   A. Disconnect the power to the unit.
   B. Remove the fastening screws from the inlet screen.
      NOTE: If a weatherhood is provided, remove the weatherhood prior to removing the inlet screen.
   C. Vacuum and scrape (if necessary) the impeller and the interior of the unit. The impeller and the motor may be removed if necessary.
2. Motor bearings are packed for a normal service life of 15,000 working hours. If a seasonal service motor is idle for six months, or more, it should be lubricated every year at the beginning of the season.
3. Mechanical fasteners should be checked occasionally, tighten if necessary.

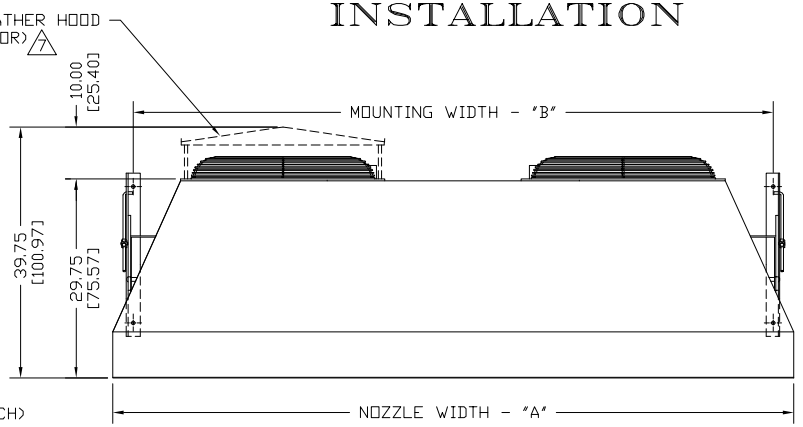
FS INSTALLATION

INTERIOR MOUNTING



EXTERIOR MOUNTING



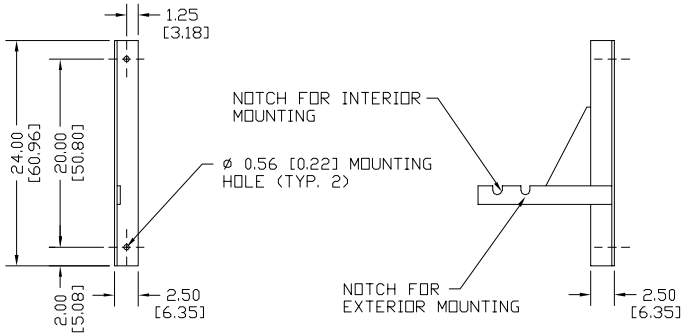


NOTES:

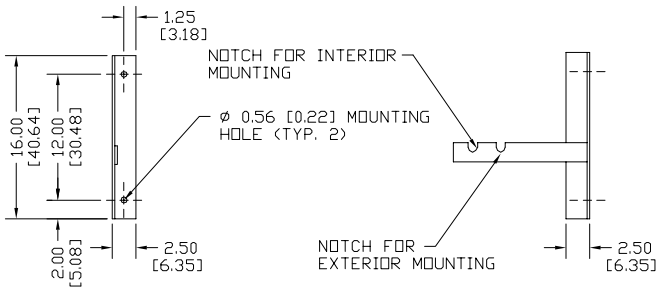
1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20° TO EITHER SIDE OF ℄.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL STRUCTURAL ENGINEER.
6. USE LARGE MOUNTING BRACKET FOR ALL UNITS 76" & ABOVE.
7. TWO MOTOR FLY STOP AIR CURTAIN SHOWN.
8. DIMENSIONS IN INCHES [CENTIMETERS].

MODEL	NOZZLE WIDTH "A"	MOUNTING WIDTH "B"
FSX1042	42.00 [106.68]	37.00 [93.98]
FSX1051	51.00 [129.54]	42.50 [107.95]
FSX1066	66.00 [167.64]	53.88 [136.84]
FSX1072	72.00 [182.88]	53.88 [136.84]
FSX2076	76.00 [193.04]	72.00 [182.88]
FSX2088	88.00 [223.52]	83.00 [210.82]
FSX2100	100.00 [254.00]	94.00 [238.76]
FSX2120	120.00 [304.80]	114.00 [289.56]
FSX3120	120.00 [304.80]	114.00 [289.56]
FSX3144	144.00 [365.76]	137.50 [2889.25]

DETAIL OF MOUNTING BRACKETS



BRACKET FOR MULTI-MOTOR AIR CURTAIN



BRACKET FOR SINGLE MOTOR AIR CURTAIN

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	FSDE2344
DATE	06JUNE11
BY	A.Johnston
CHECK	29OCT98
JOB NO.	B. Peffer

TITLE: BERNER
INSTALLATION OF MODEL FS
FLYSTOP SYSTEM

BERNER INTERNATIONAL CORP.
NEW CASTLE,PA.

CAREFULLY READ ALL DIRECTIONS BEFORE STARTING INSTALLATION.

1. Mount the air curtain according to the air curtain installation instructions provided for your model(s). Refer to air curtain Installation Instructions sheet No. II-112.

2. Mount the indirect gas-fired heater(s) according to the heater installation and operating instructions, and local codes. Individually support the heaters. Mount the heaters a minimum of 1" away from the duct transition opening. Support rods, brackets, etc. to be supplied by others.

3. Connect the flue pipe(s) (supplied by others) to the exhaust flange of the heater(s) per the heater installation and operation instructions, and local codes. All heaters have power venters, and the flue can be exhausted through the roof or through the walls. See furnace installation instructions chart for maximum flue lengths.

4. Connect the gas supply line(s) to the heater(s). Each heater is supplied with either a ½" or ¾" gas connection. This is not the supply line size. A larger main gas supply line may be required for multiple units. Refer to furnace installation instructions for maximum and minimum gas pressures.

5. All equipment should be wired by a qualified electrician. Connect the electrical power supply to the air curtain motor(s) per the wiring diagram, National Electrical code and local codes.

6. Check for proper fan rotation by turning on the air curtain. Three phase wiring only. Refer to the installation instructions, Form II-112, to determine the proper fan rotation. The fans are rotating in reverse rotation if they produce a weak, uneven air stream and excessive noise and vibration. Switch any two power supply leads to change the rotation.

7. Connect the electrical power to the heaters per the wiring diagram, the national Electrical Code, and local codes.

8. Turn on the controls to verify proper operation of the air curtain and the heater(s). Check the sequence of operation schedule provided to verify proper operation.

CAUTION: ELECTRIC SHOCK HAZARD. Disconnect power line whenever working on unit. More than one disconnect switch is required to de-energize the unit for servicing.

CAUTION: An excessive dirt buildup on fan wheels, that reduces the air performance of the air curtain, will result in heat exchanger failure.

CLEANING AND MAINTENANCE

Vibration, noise and excessive wear on the motor bearings are caused by dirt and dust buildup on the blower wheels. To clean the blower wheels, remove the fastening screws from the cover housing. Vacuum and scrape (if necessary) the blower wheels and the interior of the unit.

The frequencies of cleaning will vary depending on individual applications. Under normal conditions, the system will require semiannual cleaning.

POSITIVE
INDIRECT GAS FIRED

FIGURE #1

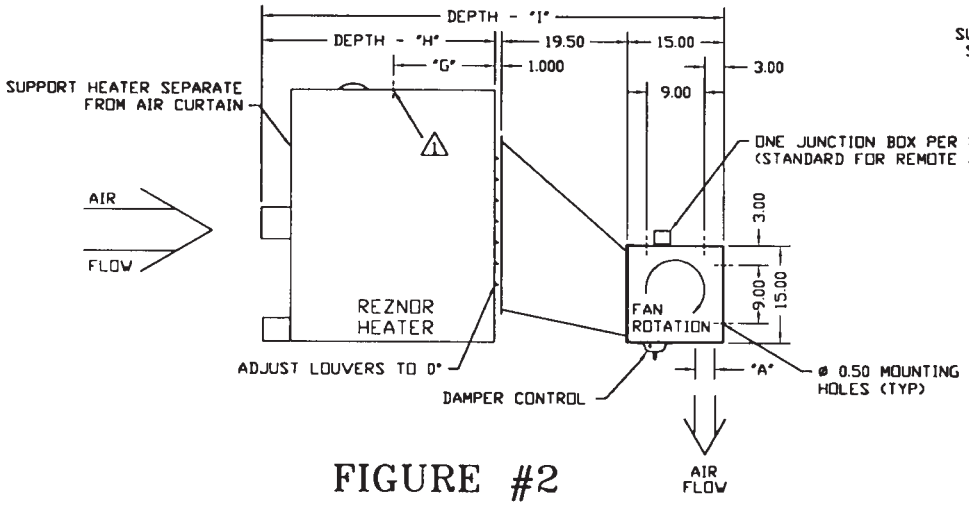
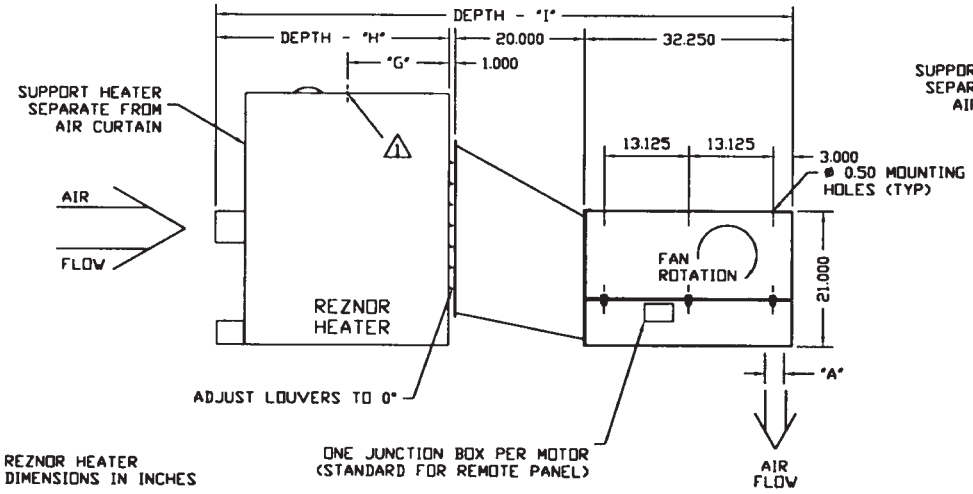


FIGURE #2



REZNOR HEATER
DIMENSIONS IN INCHES

MODEL	FIG. NO.	STANDARD HEATER MBTU INPUT	NOZZLE DEPTH "A"	MOUNTING DEPTH "G"	DEPTH "H"	DEPTH "I"
AFA/ECA	#1	100 TO 125	2.50	14.00	30.438	65.938
		165		15.75	35.438	70.938
		200 TO 250		15.75	36.188	71.688
		300		15.75	36.688	72.188
AFB/ECB	#1	125	3.50	14.00	30.438	65.938
		200 TO 250		15.75	36.188	71.688
		300		15.75	36.688	72.188
		400		15.75	37.313	90.563
CFA/CFC	#2	250	4.50	15.75	36.188	89.438
		300		15.75	36.688	89.938
		400		15.75	37.313	90.563

FIGURE #3

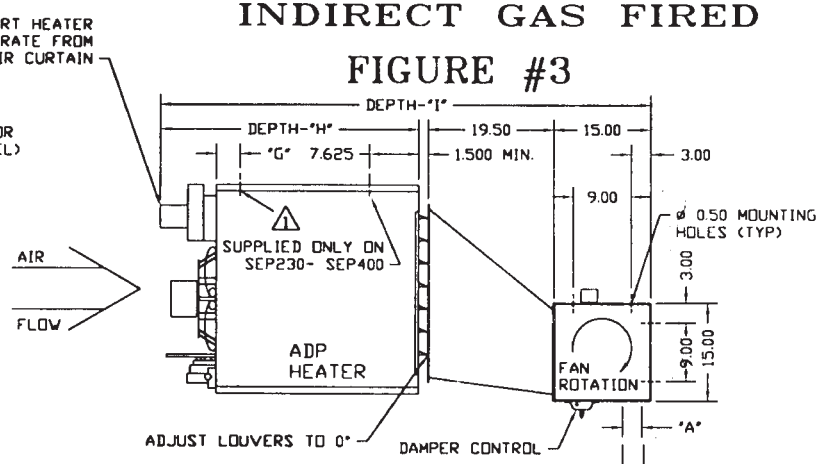
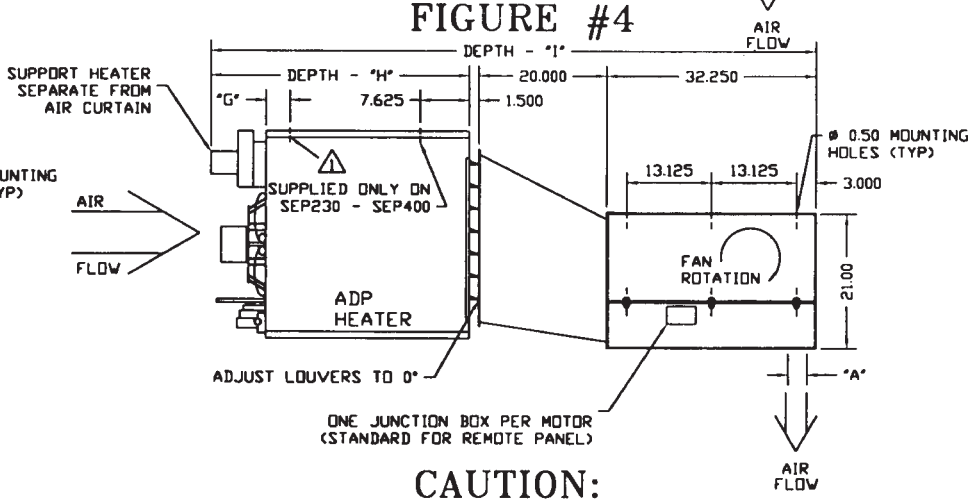


FIGURE #4



ADP HEATER
DIMENSIONS IN INCHES

MODEL	FIG. NO.	STANDARD HEATER MBTU INPUT	NOZZLE DEPTH "A"	MOUNTING DEPTH "G"	DEPTH "H"	DEPTH "I"
AFA/ECA	#3	90	2.50	8.50	33.875	69.875
		115 TO 145		10.50	39.188	75.188
		200 TO 290		3.688	40.00	76.00
AFB/ECB	#3	115	3.50	10.50	39.188	75.188
		175		10.50	40.00	76.00
		230 TO 290		3.688	40.00	76.00
		345		3.688	41.125	77.125
CFA/CFC	#4	230 TO 290	4.50	3.688	40.00	93.75
		345 TO 400		3.688	41.125	94.875

CAUTION:

HEATER IS EQUIPPED FOR A MAXIMUM GAS SUPPLY PRESSURE OF 1/2 POUND, 8 OUNCES, OR 14 INCHES WATER COLUMN.

NOTE:

1. ALL HEATERS SUPPLIED WITH 3/8"-16 FEMALE THREAD.

PROJECT	
LOCATION	
ARCHITECT	
ENGINEER	
DWG. NO.	MSCL0113
DATE	23APR98
BY	B. Peffer
CHECK	
JOB NO.	

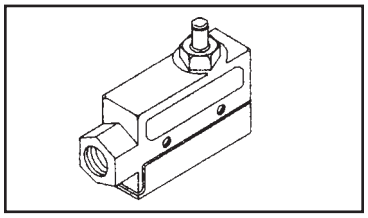
TITLE: BERNER
INSTALLATION DIMENSIONS FOR POSITIVE INDIRECT GAS FIRED - ALL MODELS

BERNER INTERNATIONAL CORP.
NEW CASTLE PA

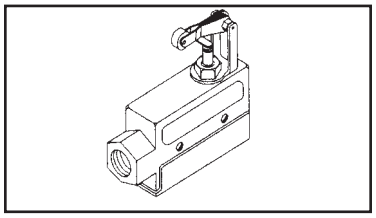
DOOR SWITCH
Installation Instructions

IMPORTANT: ONLY use the hardware provided to install the door switch. Larger screws will crack and break the internals of the door switch.

The door switch (plunger or roller type) is designed to automatically activate the air curtain each time the door is opened and deactivate the air curtain each time the door is closed. The automatic activation assures you of immediate protection each time the door is opened.



Plunger Type Door Switch



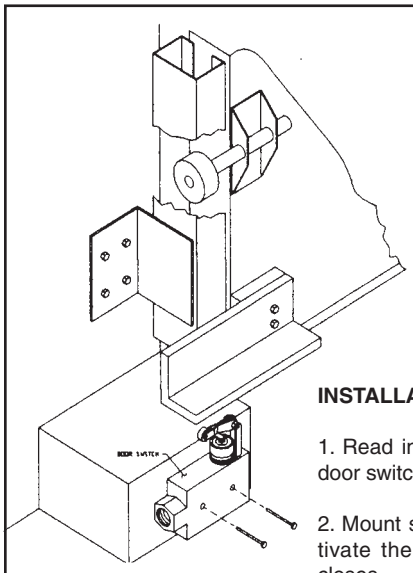
Roller Type Door Switch

The door switch may be located along the door track, or in the best position for contact with the door. A bracket (supplied by others) must be field fabricated to activate or deactivate the air curtain. The bracket will compress the plunger/roller of the door switch when it is closed.

The door switch can be wired in two positions. The most frequently used position is the **NORMALLY CLOSED & COMMON** with the door switch contacts in a closed position.

1. **NORMALLY CLOSED & COMMON:** When the door switch is wired between **NC** (normally closed) and **C** (common), the door switch is activated (compressed) and the contacts of the switch are opened. The open contacts in the door switch turn the power off, de-energizing the air curtain.

EXAMPLE: When the door opens, the plunger on the switch is released. This causes the contacts to return to their normally closed position, turning the power on to the air curtain.



INSTALLATION
DOOR SWITCH

INSTALLATION

1. Read instructions provided with the door switch prior to installing.

2. Mount so the door switch will deactivate the air curtain when the door closes.

3. Electrical connections to be flexible.

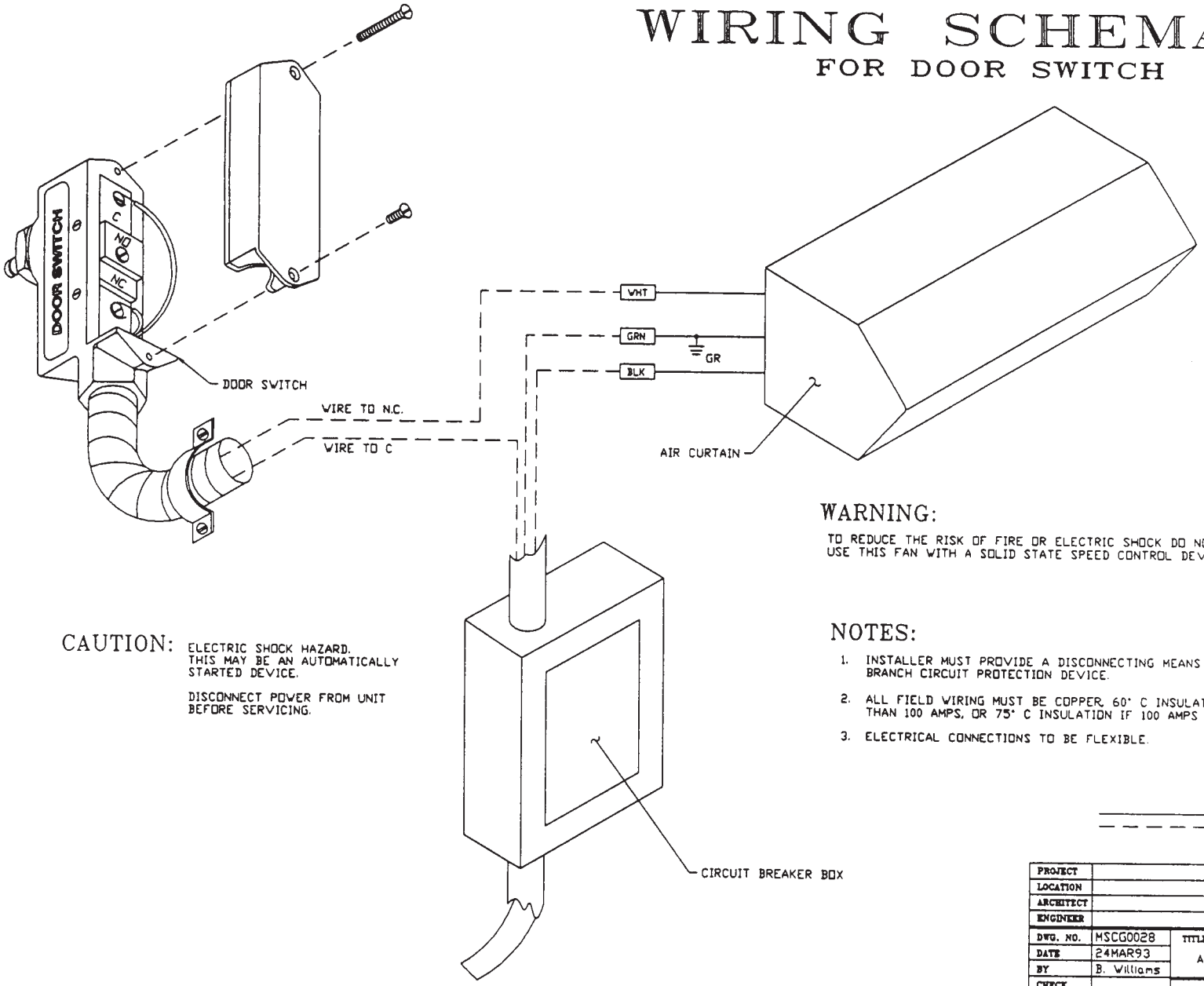
ROLLER TYPE DOOR SWITCH
INSTALLED ON A ROLL-UP DOOR

2. **NORMALLY OPEN & COMMON:** The door switch contacts are in an opened position. When the door switch plunger is actuated, the contacts of the switch are closed, turning the power on to the air curtain.

EXAMPLE: When the door opens enough to actuate the plunger on the door switch, the contacts of the switch are closed. This permits power through the circuit and activates the air curtain.

NOTE: The air curtain should turn off as stated above unless a timer is wired to the circuit.

WIRING SCHEMATIC
FOR DOOR SWITCH



CAUTION: ELECTRIC SHOCK HAZARD.
THIS MAY BE AN AUTOMATICALLY STARTED DEVICE.

DISCONNECT POWER FROM UNIT BEFORE SERVICING.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT USE THIS FAN WITH A SOLID STATE SPEED CONTROL DEVICE.

NOTES:

1. INSTALLER MUST PROVIDE A DISCONNECTING MEANS AND A BRANCH CIRCUIT PROTECTION DEVICE.
2. ALL FIELD WIRING MUST BE COPPER, 60° C INSULATION IF LESS THAN 100 AMPS, OR 75° C INSULATION IF 100 AMPS OR MORE.
3. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.

——— FACTORY WIRING
– – – – – FIELD WIRING

PROJECT		
LOCATION		
ARCHITECT		
ENGINEER		
DWG. NO.	MSCG0028	TITLE: BERNER AIR DOOR WITH DOOR SWITCH WIRING CONNECTION DIAGRAM
DATE	24MAR93	
BY	B. Williams	
CHECK		BERNER INTERNATIONAL CORP. NEW CASTLE,PA.
JOB NO.		

EXCLUSIVE DESIGN

AIR ENTRANCE SYSTEM

Provides a uniform air discharge and return across the entire system.
Produces highly efficient environmental separation.

Engineered to be integrated into the building's architecture.

Energy Efficient

90% of the discharge air is collected and recirculated.

Our Recirculating stream of air separates the indoor conditioned air from the outdoor unconditioned air - *while allowing you to keep your doors open.*

Ideal Applications:

- Retail
- Supermarkets
- Healthcare
- Casinos
- Public Facilities

BERNER™
INTERNATIONAL CORP.

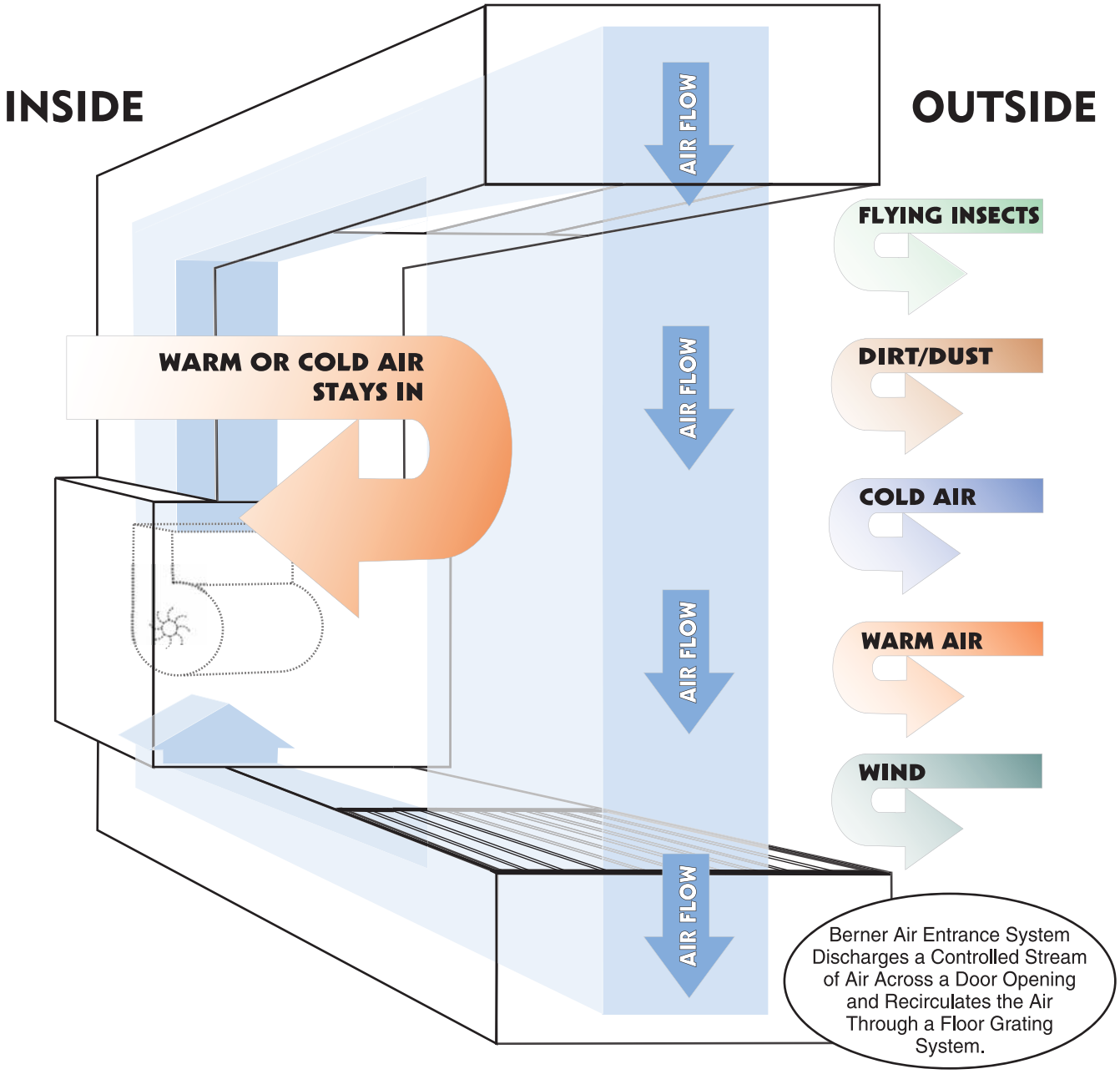
800-245-4455 www.berner.com

Saving Energy and Creating Healthy, Comfortable Environments.

Keep Your Doors Open

The free, unobstructed flow of traffic is an important factor in planning access to your facility. Berner International Corporation, a pioneer in the development and manufacture of air curtains, offers an aesthetically pleasing solution for high traffic entrance ways -The Berner Air Entrance System. This innovative entrance system provides a recirculated air seal, through concealed ductwork, effectively creating a barrier between indoor and outdoor temperature conditions. Open access, safety, and energy efficiency are created out of thin air with the Berner Air Entrance System-the only air entrance system backed by the engineering expertise of Berner International Corporation.

HOW AN AIR ENTRANCE SYSTEM WORKS



SAFETY FIRST

Increase customer safety, comfort, and convenience with an Air Entrance System from Berner International - the most trusted name in air curtain systems. Ideal for retail, supermarkets, health care, casinos and other public facilities, the Air Entrance System from Berner offers unsurpassed safety and reliability. Unlike a traditional air curtain, this system discharges a controlled stream of air from a concealed overhead plenum, which travels vertically across openings and enters a special floor grating system where it is cleaned and recirculated. The Air Entrance System from Berner can replace the need for conventional swinging or automatic doors to open and close during normal business hours, thus creating a barrier-free entrance that increases access and reduces liability.

ENERGY EFFICIENT

Today's building codes demand energy efficient entrance systems that maintain positive internal air pressure within tightly constructed buildings. The Air Entrance System from Berner is specially engineered to produce a stream of air that separates the indoor conditioned air from the outdoor uncontrolled air. Berner units are so efficient that as much as 90% of the discharge air is collected and recirculated.

AUTOMATIC CLEANING

As the fan draws air through the floor grill, fine mesh filters trap dirt and foreign particles before the air is recirculated. An automatic wash system removes any dirt drawn into the pit and filters. The Berner Air Entrance system is completely plumbed and requires only a standard connection to an existing water supply.

MODEL PERFORMANCE DATA

Model	Opening Width (ft)	Nozzle Opening	Motor (hp)	Amp Draw (208 / 240 / 480)	Air Flow (cfm)
AES-1-008	8	1.5' x 8'	3	9.1 / 8.2 / 4.1	9340
AES-1-009	9	1.5' x 9'	3	9.1 / 8.2 / 4.1	10673
AES-1-010	10	1.5' x 10'	3	9.1 / 8.2 / 4.1	12006
AES-1-011	11	1.5' x 11'	3	9.1 / 8.2 / 4.1	13339
AES-1-012	12	1.5' x 12'	5	14 / 12.7 / 6.4	14672
AES-1-013	13	1.5' x 13'	5	14 / 12.7 / 6.4	16005
AES-1-014	14	1.5' x 14'	7.5	21 / 19 / 9.5	17338
AES-1-015	15	1.5' x 15'	7.5	21 / 19 / 9.5	18671
AES-1-016	16	1.5' x 16'	10	27.3 / 24.7 / 12.3	20004

Heat and Cooling Options - Consult Factory
2 Year Parts Warranty

Other Quality Products Available From Berner International ...

Air Doors

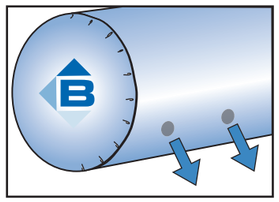
In-Ceiling Mount Air Door

Posi-Flow Fabric Air Diffusers

BERNER™ INTERNATIONAL CORP.

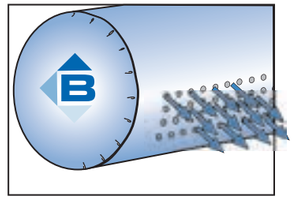
111 Progress Avenue, New Castle, Pennsylvania 16101
800-245-4455 724-658-3551 fax 724-652-0686
www.berner.com airdoors@berner.com

AIRFLOW PATTERN



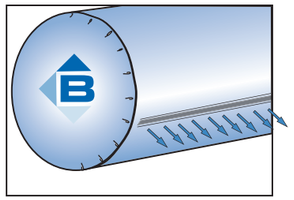
SUPER-FLOW

- Long throw air jets.
- Provide air circulation 30-40' beyond their profile.
- Propel warm ceiling air to cooler floor areas.
- For heated, cooled or untempered air.
- For 10' & above finished floor installation.



GENTLE-FLOW

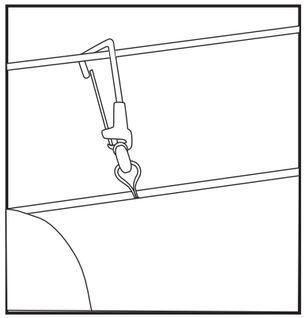
- Little noticeable movement.
- Provide air circulation 2-10' beyond their profile.
- Efficient at entrapping air.
- For heated, cooled or untempered air.
- For 8-14' above finished floor installation.



LINEAR DIFFUSERS

- Little noticeable movement.
- Provide air circulation 2-10' beyond their profile.
- Efficient at entrapping air.
- For heated, cooled or untempered air.
- For 8-14' above finished floor installation.

SUSPENSION

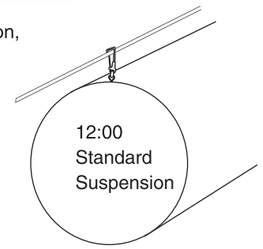


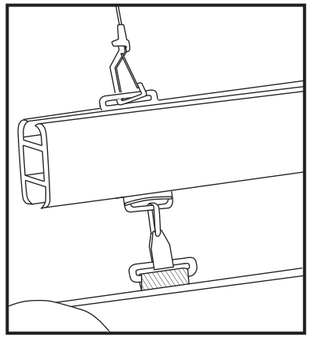
Snap Clip

Available in:

- Zinc plated
- Black powder coated
- Black plastic
- Stainless steel

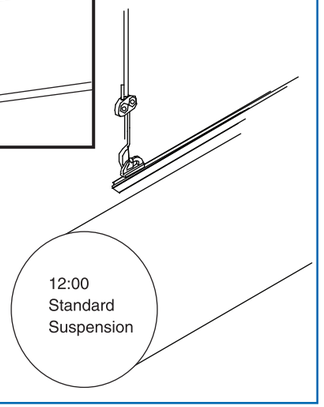
Used with cable suspension, turn buckles and clamps.





HD Anodized Aluminum Rail

- Sleek new look
- Easy support cables
- Nice smooth bends



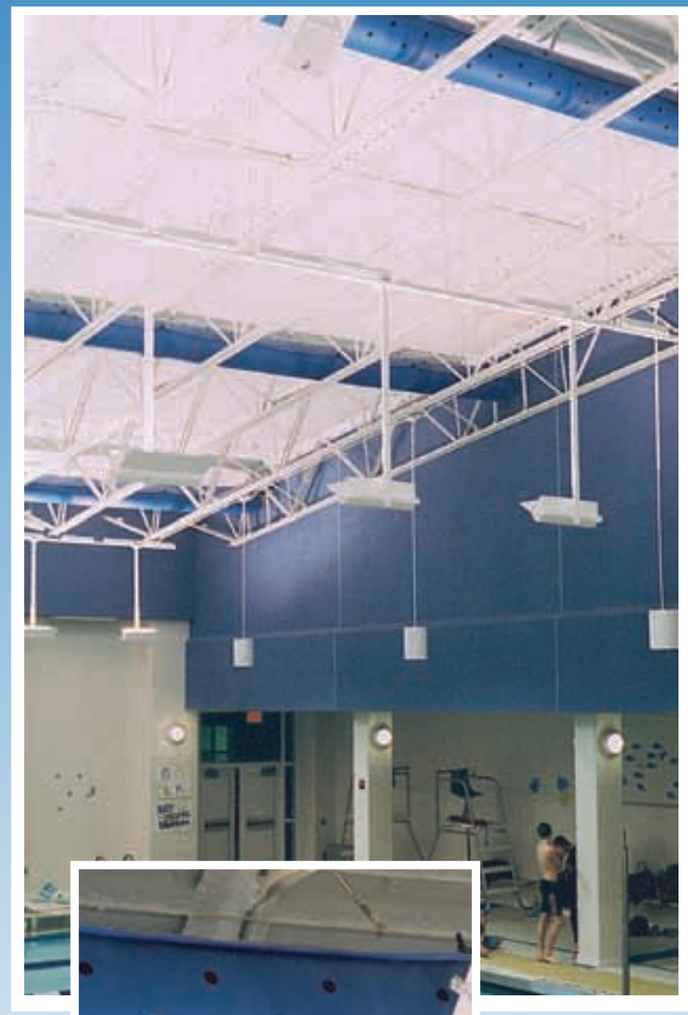
BERNER INTERNATIONAL CORP.™

PF-100 March, 2010

111 Progress Avenue, New Castle, Pennsylvania 16101
800-245-4455 ● www.berner.com

FABRIC AIR DIFFUSION DUCTS

Posi-Flow



Improve Air Dispersion

- Affordable
- Lightweight
- Fast and Easy Installation
- Single Length System
- Wide Spectrum of Colors
- Durable
- Condensation and Bacteria Free
- Melt Resistant
- Quiet Air Distribution
- Washable

MADE IN U.S.A.

BERNER INTERNATIONAL CORP.™

800-245-4455 www.berner.com

Saving Energy and Creating Healthy, Comfortable Environments

CP Series

Acrylic Coated Polyester

Versatile and aesthetically pleasing. Ideal for schools, sports arenas, supermarkets, swimming pools and retail stores. Water repellent, flame resistant and UV treated. Multiple colors available to complement surroundings.

FABRIC SPECIFICATIONS:

Construction:	300 Denier
Coating:	Acrylic Coated
Weight:	7 oz. per sq. yard
Melt Resistance:	350° F
Flame Resistance	California State Fire Marshal ASTM E84 Class A Material
Certification:	ICCES BOCA-94-08

Black 311 | Gray 312 | White 313 | Dk. Green 314 | Blue 315 | Tan 316 | Red 317

Special order only

Air Flow Patterns:
Super-Flow
Gentle Flow
Linear Diffusers

Suspension:
Snap Clip
HD Aluminum Rail

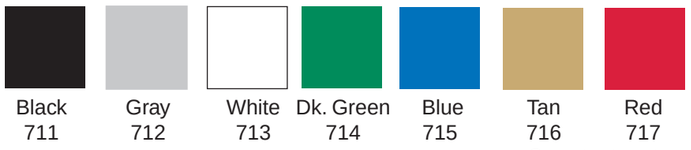
AP Series

Non-Coated Antimicrobial Polyester

New antimicrobial polyester fabric has a porosity of 2.0 cfm/sq. ft., ideal if condensation is a concern.

FABRIC SPECIFICATIONS:

Construction:	250/150 Denier
Coating:	Acrylic Finished
Weight:	5 oz. per sq. yard
Melt Resistance:	350° F
Flame Resistance:	NFPA-701-1999 ASTM-84 Class A (Building Material)
Certification:	UL Classified / Certified to NFPA-90A USDA Accepted



Black 711 | Gray 712 | White 713 | Dk. Green 714 | Blue 715 | Tan 716 | Red 717

Special order only

Air Flow Patterns:
Super-Flow
Gentle Flow

Suspension:
Snap Clip
HD Aluminum Rail

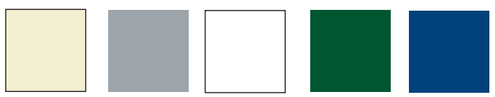
PE Series

Polyethylene

Extra durable for use in warehouses and manufacturing facilities. Tear resistant woven polyethylene. Water repellent and flame resistant.

FABRIC SPECIFICATIONS:

Construction:	10 x 10 Woven HDPE Scrim
Weight:	6 oz. per sq. yard
Flame Resistance:	CAN/ULC S-109 Cal. Fire Marshal, NFPA-701 CPAI-84, Boston Fire Marshal
Melt Resistance:	180° F
Certification:	CAN/ULC Listed (Canada Only) USDA Accepted



Natural 211 | Gray 212 | White 213 | Dk. Green 214 | Blue 215

Air Flow Patterns:
Super-Flow
Gentle Flow

Suspension:
Snap Clip
HD Aluminum Rail

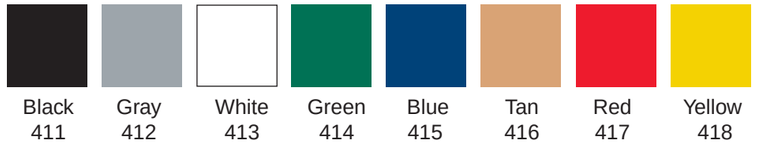
PV Series

Polyester Vinyl Coated

Vibrant color selection accents the PV series making it ideal for any application. Water repellent, flame resistant and UV treated.

FABRIC SPECIFICATIONS:

Construction:	10 x 10 Scrim 500 x 500 Denier
Coating:	Polyester Vinyl Coated
Weight:	10 oz. per sq. yard
Melt Resistance:	180° F
Flame Resistance:	California State Fire Marshal ASTM E84 Class A Material
Certification:	ICCES BOCA-94-08



Black 411 | Gray 412 | White 413 | Green 414 | Blue 415 | Tan 416 | Red 417 | Yellow 418

Air Flow Patterns:
Super-Flow
Gentle Flow
Linear Diffusers

Suspension:
Snap Clip
HD Aluminum Rail

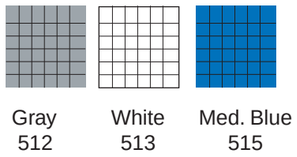
XS Series

Anti-Static Polyester

New anti-static fabric is ideal for static sensitive environments such as computer rooms or laboratories.

FABRIC SPECIFICATIONS:

Construction:	98% Polyester plus 2% Carbon
Weight:	3.2 oz. per sq. yard
Flame Retardant:	NFPA-701 small scale ASTM-84 Class A (Building Material)
Melt Resistance:	250° F
Air Permeability:	.49 (cc/cm^2/sec) ASTM D 737



Gray 512 | White 513 | Med. Blue 515

Air Flow Patterns:
Super-Flow
Gentle Flow

Suspension:
Snap Clip
HD Aluminum Rail

SF Series

Silicone Coated Fiberglass

The SF Series is a coated fiberglass fabric that features a melt temperature of 500 degrees F.

FABRIC SPECIFICATIONS:

Construction:	100% fiberglass coated with silicone rubber
Weight:	17.3 oz. per sq. yard
Tear Strength (Tongue):	50 lbs. Warp, 25 lbs. Fill
Flame Retardant:	Zero flame, self extinguishing UL classified, (file R20672) ASTEM-84 Class A (Building Material)
Melt Resistance:	500° F

Gray 112

Air Flow Patterns:
Super-Flow
Gentle-Flow

Suspension:
Snap Clip
Aluminum Track

Posi-Flow

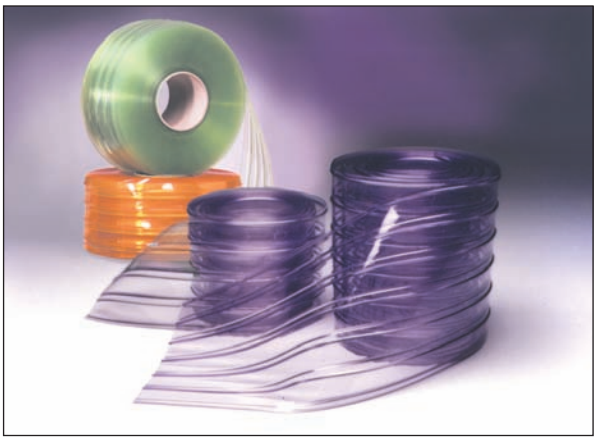
VINYL STRIP DOORS

Create an affordable environmental barrier

- Loading Dock Doors
- Machine Enclosure, Conveyor Openings and Welding Screens
- Cold Storage Doors
- Insect Control
- High Traffic Doors

Consult Factory for more information and pricing

Stock or custom sizes. Bulk rolls and mounting hardware available.



IDA International Door Association

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BERNER™ INTERNATIONAL CORP.

800-245-4455 www.berner.com

Saving energy and creating healthy, comfortable environments

B-22- 1½ hp
B-24 - 2 hp

Low Cost Alternative To Heating Open Doorways

Berner's DIRECT GAS-FIRED DOOR HEATERS are the economical solution to heat loss problems where shipping and receiving doors are frequently opened and closed.

Ideal solution for facilities with negative pressure.

ACTIVATED THROUGH A LIMIT SWITCH
A high velocity stream of hot air heats the incoming cold air

MOUNTING VERSATILITY
Can be mounted either horizontal or vertical or any angle in between

FACTORY ASSEMBLED AND SHIPPED
Ready for installation

DIRECT GAS-FIRED Door Heater

STANDARD FEATURES

- Electronic Flame Safeguard with LED Status Indicating Lights
- Magnetic Starter
- Control Transformer
- Ignition Transformer
- Sparktrode
- Interrupted Pilot
- Main Fuel Safety Valve
- High Temperature Limit Switch
- Remote Station for Floor Mounting with Status Indicating Lights and Summer/Off/Winter Selector Switch
- Door Switch
- Air Flow Switch
- Inlet Guard
- 12 Ga. Hot Rolled Steel Housing
- Finish is Air-Dry Alkyd Enamel Applied over Phosphatized Steel

Door heaters are designed for heating open doorways only, not recommended for doors with dock seals or for general-purpose plant heating.

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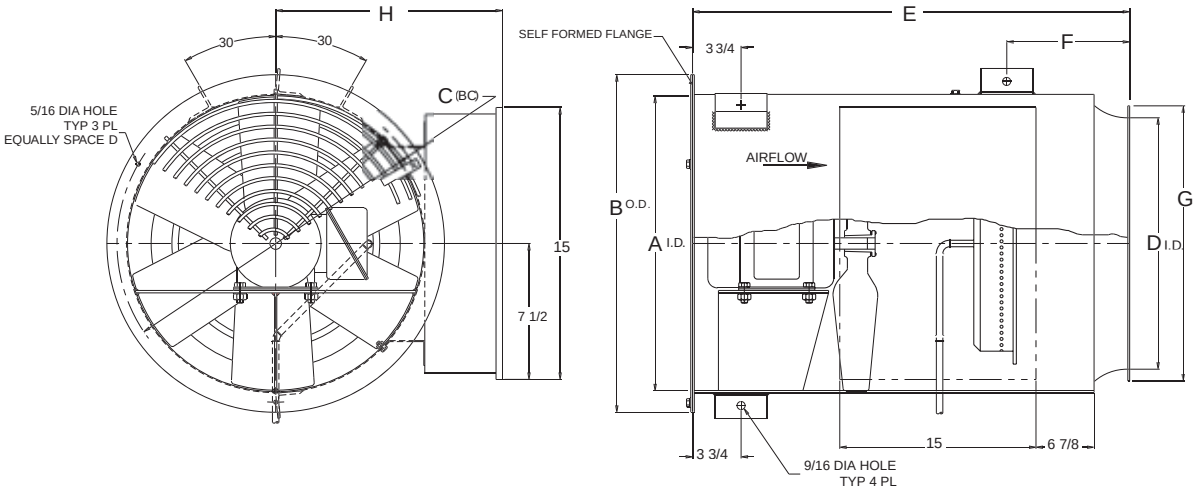
PRINCIPAL DIMENSIONS



Model	A	B	C	D	E	F	G	H
B-22	$22^{7}/_{8}$	$26^{1}/_{16}$	$24^{1}/_{2}$	20	$32^{11}/_{16}$	$8^{7}/_{16}$	$21^{1}/_{2}$	$17^{1}/_{2}$
B-24	$24^{7}/_{8}$	$28^{1}/_{16}$	$26^{5}/_{8}$	22	$34^{3}/_{16}$	$9^{15}/_{16}$	24	$18^{1}/_{2}$

NOTE: Specifications are subject to change. Certified prints are available.

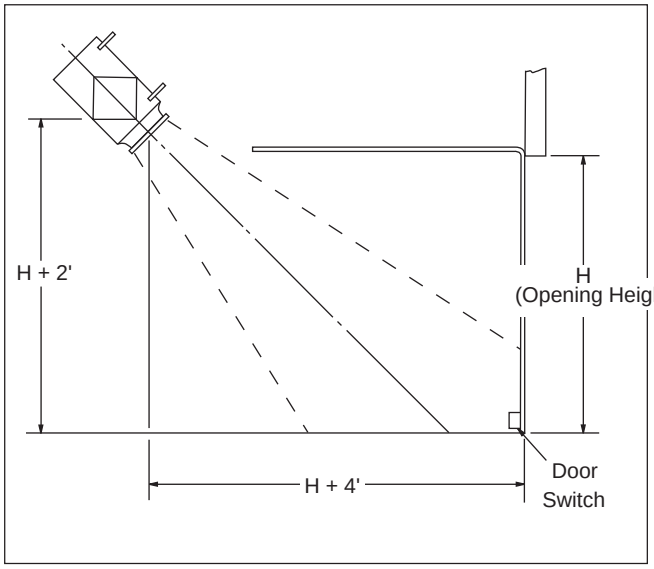
RATING TABLE

Model No.	Motor H.P.	Amps @ Voltage			Fan RPM	CFM	Input BTU	Outlet Velocity	Final Temp. 70º Ent. Air	Temp. Rise	Inlet Gas Pressure	Shipping Weight
		208	240	480								
B-22-700	$1^{1}/_{2}$	4.6	4.2	2.1	1750	6,500	700,000	3,000	169º	99º	5"	350 lbs.
B-22-765	$1^{1}/_{2}$	4.6	4.2	2.1	1750	6,500	765,000	3,000	179º	109º	6"	350 lbs.
B-22-820	$1^{1}/_{2}$	4.6	4.2	2.1	1750	6,500	820,000	3,000	187º	117º	7"	350 lbs.
B-24-865	2	5.9	5.6	2.8	1750	7,900	865,000	3,000	171º	101º	6"	400 lbs.
B-24-930	2	5.9	5.6	2.8	1750	7,900	930,000	3,000	179º	109º	7"	400 lbs.
B-24-990	2	5.9	5.6	2.8	1750	7,900	990,000	3,000	186º	116º	8"	400 lbs.

NOTE" Based on Natural Gas Specify Gravity 0.6, 1000 BTU per cu. ft.

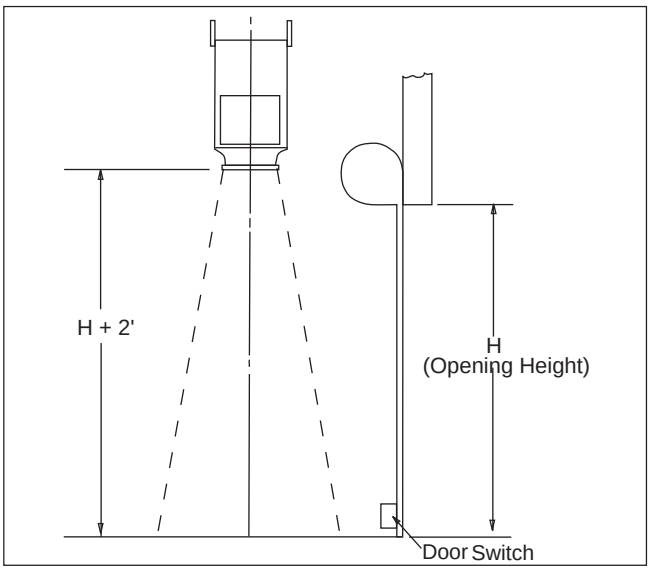
Overhead Door

Mounted at a 45º or 30º angle, the Berner Automatic Door Heater directs a flow of hot air to the floor area just inside the doorway. The door switch turns on the heater when the door is opened.



Roll Top Door

Alternate vertical mounting of the Berner Automatic Door Heater may also be used with roll top or straight lift doors, directing a flow of hot air to the floor just inside the door opening.



NOTE: It is recommended the door switch be mounted 24" from floor level.

BERNER INTERNATIONAL CORP.
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