



SUBMITTAL COVER SHEET

From: Tyler O'Neill Attn: Tim Brown
 Company: Piazza, Inc. C&S Companies
 Phone/Fax #: (914)741-4435 499 Col. Eileen Collins Blvd.
 Project: Dutchess Stadium Syracuse, NY 13212
 Project #: RFB-DCB-18-22 (315) 455-2000; Fax: 455-9577

Reference: CSI Code: 238239-1 Dwg No: _____
 Paragraph: _____ Other: _____

Description: Cabinet Unit Heaters Product data

Supplier: CB Strain

Manufacturer: _____

Item Type: Product Data _____ Manf. Cert/Warranty
 Shop Drawings _____ Samples
 Other: _____

Contractor's Approval:

_____ Reviewed for general compliance of specifications.
 _____ This submittal is a **substitute** to the specified product.
 _____ For Architects / Engineers Approval

This is our _____ submittal for this item.

We are submitting _____ copies.

Contractor Submittal Review Stamp
 THE ATTACHED MATERIAL HAS BEEN REVIEWED BY THE UNDERSIGNED AND IS BELIEVED TO COMPLY WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE UNDERSIGNED UNDERSTANDS VERIFICATION OF FIELD DIMENSIONS, AND COORDINATION WITH OTHER TRADES, REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

Submitted by: Piazza, Inc.
 Date: 07/24/2023

Digitally signed by Piazza, Inc.
 DN: C=US, E=tyler@piazzabrothers.com,
 OU=Piazza, Inc., O=Piazza, Inc.,
 CN=Piazza, Inc.
 Date: 2023.03.15 15:04:38-04'00'

C&S Companies Approval:

(A) Approved
 (A/N) Approved As Noted
 (R) Reviewed for General Conformance
 (RR) Revise and Resubmit
 (REJ) Rejected
 (SUB) Submit Specified Item

Checking is only for general compliance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the jobsite; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

Reviewed by: _____
 Date: _____

*Note: Provide one cover sheet for each copy of the submittal.

SUBMITTAL COVER SHEET

SUBMITTAL NUMBER: 2

PROJECT: Dutchess Stadium Leftfield Clubhouse

ARCHITECT: DLR Group

ENGINEER: DLR Group

CONSTRUCTION MANAGER: Piazza

DATE: 3/27/2023

CONTRACTOR: CB Strain a Division of Dynamic Systems, Inc.

SUBCONTRACTOR:

ITEM: Electric Cabinet Unit Heaters

SPECIFICATION SECTION: 23 33 00

DRAWING NUMBER: M1.1A, M1.2A

SUPPLIER or MANUFACTURER: Indeeco

COMMENTS:

REVIEWED BY Charles DeMarco

 **DLR Group**

- REVIEWED
- REVIEWED – ADDITIONAL INFORMATION REQUIRED
- FURNISH AS CORRECTED
- REVISE AND RESUBMIT
- REJECTED
- NOT REVIEWED

This review is for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of submittals is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are the Contractor's responsibility. The Architect's review shall not constitute approval of safety precautions or construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. The Architect's comments, notes or corrections are not an authorization to proceed with Work involving a change in the Contract Sum, the Contract Time or both. If any portion of this review requires a change to the Work, an appropriate change instrument must be executed in accordance with the Contract Documents.

DLR Group

Date: 07-28-23
By: Cody Campbell

SUBMITTAL

3/24/23

Products:

Electric Heat

Manufacturer:

Indeeco

Project:

Dutchess Stadium New Left Field Clubhouse

Contractor:

C B Strain

Engineer:

DLR Group

Vendor/Agent:

BUCKLEY ASSOCIATES

Submitted by:

MARK SCHROEDER



Buckley Associates, Inc.

120 Railroad Avenue, Albany 12205
Phone (518) 438-7423 Fax (518) 438-5527



Submittals

Quote #: 397854

Job Name:

Sales Rep: Buckley Associates - Newington
15 Progress Circle
Newington, CT, 06111
P: (860) 666-0555
F: (860) 666-3035

Sales Person: Attn: Buckley, Dan
P: 518-621-3471 Ext:
E: dbuckley@buckleyonline.com

Line	Qty	Part #	Description	Factory Options
1	3	240-U2100D-DT	UHHR - [240] Unit Heater 10 kW , 208 v, 3 phase, 28.5amps, AF cfm(cmh) 650 (361), Air throw ft(m) 18 (5.49), Ctr. v. 24 [Availability Code - AS] Tag: EUH-A250,A251A,A251B	[D] Power disconnect switch for up to 32 Amps [T] Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)
2	3	1024149	Universal wall & ceiling mounting bracket up to 10 KW [Availability Code - AS] Tag: EUH-A250,A251A,A251B	
3	2	240-U1038D-DT	UHHR - [240] Unit Heater 3.8 kW , 208 v, 3 phase, 10.9amps, AF cfm(cmh) 350 (194), Air throw ft(m) 15 (4.57), Ctr. v. 24 [Availability Code - AS] Tag: EUH-A232, A253	[D] Power disconnect switch for up to 24 Amps [T] Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)
4	2	1024149	Universal wall & ceiling mounting bracket up to 10 KW [Availability Code - AS] Tag: EUH-A232, A253	
5	1	931U03000NW-D3T1	CCI - [931] Commercial Ceiling Heater 3000W, 277V, 1Phase, 11.2A, 26lbs. [Availability Code - AS] Tag: EUH-A100-LL	[D3] Disconnect Switch, up to 277V, Double-pole, up to 16 Amps [T1] Tamperproof Thermostat
6	1	240-U1038D-DT	UHHR - [240] Unit Heater 3.8 kW , 208 v, 3 phase, 10.9amps, AF cfm(cmh) 350 (194), Air throw ft(m) 15 (4.57), Ctr. v. 24 [Availability Code - AS] Tag: EUH-A202B	[D] Power disconnect switch for up to 24 Amps [T] Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)
7	1	1024149	Universal wall & ceiling mounting bracket up to 10 KW [Availability Code - AS] Tag: EUH-A202B	

Catalog Number: 240-U2100D-DT



Description: UHIR - [240] Unit Heater 10 kW , 208 v, 3 phase, 28.5amps, AF cfm(cmh) 650 (361), Air throw ft(m) 18 (5.49), Ctrl. v. 24

Color: Camel

X		Camel
		Grey (Additional Charge)
		Yellow (Additional Charge)
		Red (Additional Charge)
		White (Additional Charge)
		Blue (Additional Charge)
		Galvanized (unpainted)
		Beige

Job Name:

Quote #	Line #	Qty	Tag
397854	1	3	EUH-A250,A251A,A251B

Selected Factory Installed Options:

Option Code	Description
D	Power disconnect switch for up to 32 Amps
T	Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)

Selected Field and Thermostat Options:

Line #	Qty	Catalog Number	Description	Tag
2	3	1024149	Universal wall & ceiling mounting bracket up to 10 KW	EUH-A250,A251A,A251B

Catalog Number: 240-U1038D-DT

Per Electric Cabinet Unit Heater Schedule, EUH-A252 and EUH-A253 are to be 208 V, 1 phase



Description: UHIR - [240] Unit Heater 3.8 kW , 208 v, 3 phase, 10.9amps, AF cfm(cmh) 350 (194), Air throw ft(m) 15 (4.57), Ctrl. v. 24

Color: Camel

X		Camel
		Grey (Additional Charge)
		Yellow (Additional Charge)
		Red (Additional Charge)
		White (Additional Charge)
		Blue (Additional Charge)
		Galvanized (unpainted)
		Beige

Job Name:

EUH-A252

Quote #	Line #	Qty	Tag
397854	3	2	EUH-A232, A253

Selected Factory Installed Options:

Option Code	Description
D	Power disconnect switch for up to 24 Amps
T	Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)

Selected Field and Thermostat Options:

Line #	Qty	Catalog Number	Description	Tag
4	2	1024149	Universal wall & ceiling mounting bracket up to 10 KW	EUH-A232, A253

EUH-A252

Catalog Number: 240-U1038D-DT

Per Electric Cabinet Unit Heater Schedule, EUH-A202B is to be 277 V, 1 phase



Description: UHIR - [240] Unit Heater 3.8 kW , 208 v, 3 phase, 10.9amps, AF cfm(cmh) 350 (194), Air throw ft(m) 15 (4.57), Ctrl. v. 24

Color: Camel

X		Camel
		Grey (Additional Charge)
		Yellow (Additional Charge)
		Red (Additional Charge)
		White (Additional Charge)
		Blue (Additional Charge)
		Galvanized (unpainted)
		Beige

Job Name:

Quote #	Line #	Qty	Tag
397854	6	1	EUH-A202B

Selected Factory Installed Options:

Option Code	Description
D	Power disconnect switch for up to 24 Amps
T	Built-in Thermostat - 1-Stage or 2-Stage Heater (Option 'X' also required for 2-Stage Heater)

Selected Field and Thermostat Options:

Line #	Qty	Catalog Number	Description	Tag
7	1	1024149	Universal wall & ceiling mounting bracket up to 10 KW	EUH-A202B



Architect's and Engineer's Specifications

Check off options which you require. Standard built-in controls have already been checked off.

- 1) Electric Commercial Unit Heaters shall be manufactured by INDEECO, with controls built-in and factory pre-wired as shown below. Heater is to be a forced fan type, UL Listed, of the KW rating, voltage and phase specified in the schedule.
- 2) Finned tubular heating elements shall have steel type fins copper brazed to a 0.475" diameter steel sheath epoxy sealed for moisture resistance.
- 3) Provide the following standard built-in controls:
 - Automatic reset thermal cutout for primary over-temperature protection and a secondary manual reset cutout shall be provided on heaters 20 KW and above.
 - 24 VAC transformer and disconnecting magnetic contactor.*
 - Fan delay to eliminate cold drafts when fan starts up, and dissipate stored element heat before fan shuts down
 - Fan motor is permanently lubricated and thermally protected.
 - Built-in power fusing for heater loads over 48 amps.
- 4) Cabinet shall be heavy gauge steel protected from corrosion by either a galvanized coating or a durable baked on polyester powder coat finish.
- 5) Outlet grille shall have individually adjustable directional louvers, an Anemostat (cone) diffuser or radial diffuser. In addition, an outlet protective grille shall prevent debris from reaching the element compartment. Inlet grille shall comply with OSHA requirements for a fan blade guard.
- 6) Single point, line voltage connection for incoming power enables heater, fan and controls to be connected to the same branch circuit.

* Note: For single-phase heaters rated up to 5 KW no contactor and transformer are required when controlled by a load-carrying thermostat. Contactor and transformer are required when used with a remote fan switch, INDEECO supplied remote thermostat, 24 volt control and heater on pilot light.

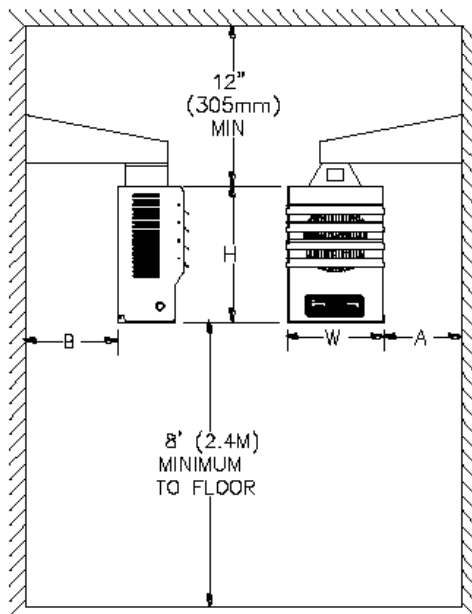


Fig. 1 Horizontal Wall Mounting

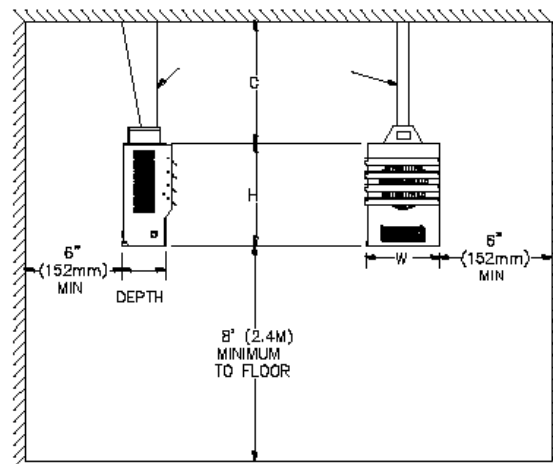


Fig 2. Horizontal Ceiling Mount with Mounting Arm

UHIR - [240] Unit Heater

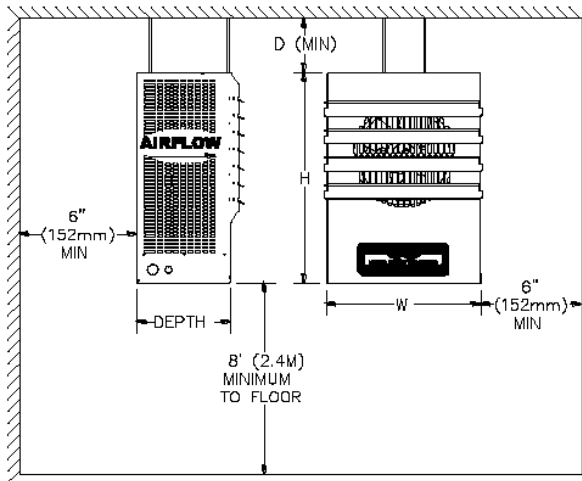


Fig. 3 Using Threaded Rod

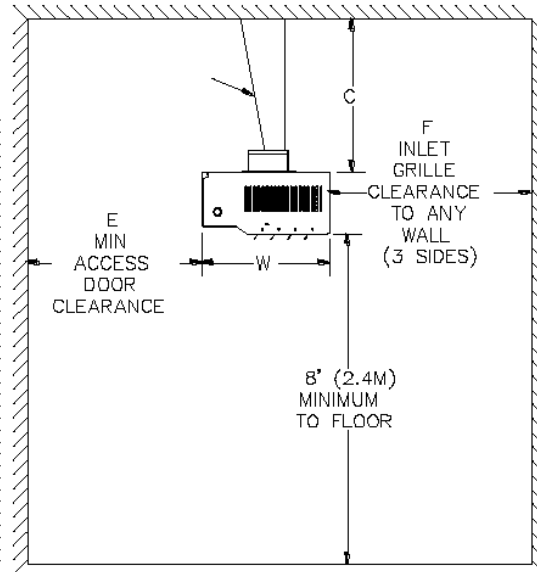


Fig. 4 Vertical Ceiling Mount with Mounting Arm

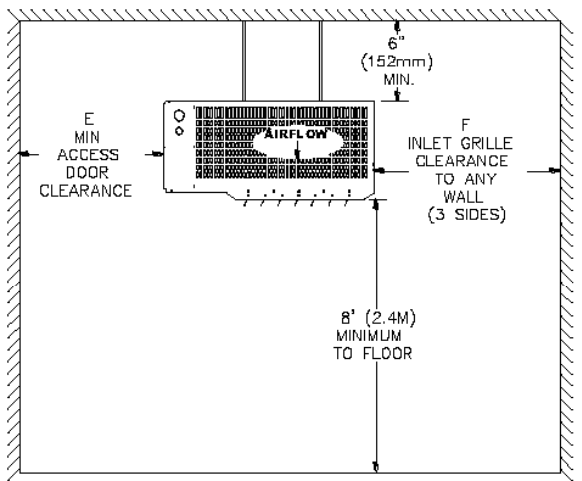


Fig. 5 Using Threaded Rod

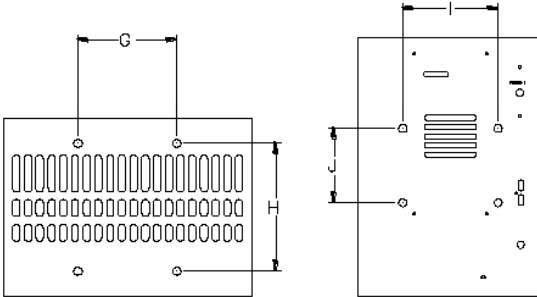
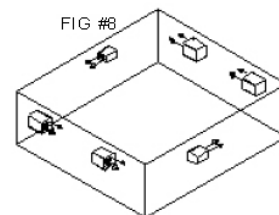
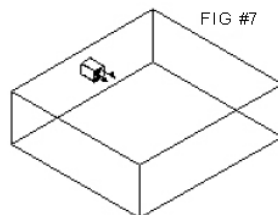


Fig. 6 3/8-16 Threaded Rod Attachment with Threaded Rod

Heater Dimensions

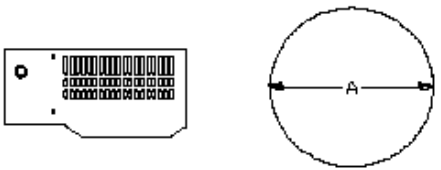
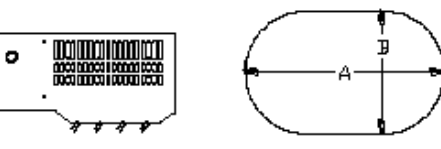
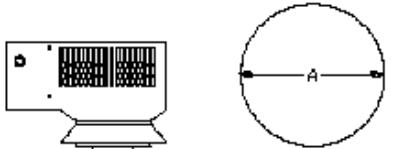
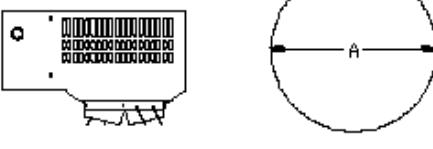
KW	W In. (mm)	H In. (mm)	Depth In. (mm)	A In. (mm)	B In. (mm)	C In. (mm)	D In. (mm)	E In. (mm)	F In. (mm)	G In. (mm)	H In. (mm)	I In. (mm)	J In. (mm)
up to 5	12.875 (327)	17.750 (450)	7.625 (194)	8 (203)	11.188 (284)	18 (457)	10 (254)	8 (203)	16 (406)	5 (127)	6.44 (164)	6.44 (164)	5 (127)
5.1 to 10	16.875 (429)	24.250 (616)	7.625 (194)	6 (152)	9.313 (237)	18 (457)	10 (254)	8 (203)	16 (406)	5 (127)	6.44 (164)	6.44 (164)	5 (127)
10.1 to 20	16.875 (429)	24.250 (616)	11.375 (289)	6 (152)	9.313 (237)	18 (457)	12 (305)	12 (305)	32 (813)	5 (127)	10.13 (257)	5 (127)	10.13 (257)
20.1 to 50	26.937 (684)	35.500 (902)	15.625 (397)	9.281 (236)	14.937 (380)	13 (330)	12 (305)	16 (406)	32 (813)	7 (178)	12.92 (328)	7 (178)	12.92 (328)

Small rooms may only require one unit heater (FIG #7) while other may require multiple unit heaters for proper perimeter circulation (FIG #8).

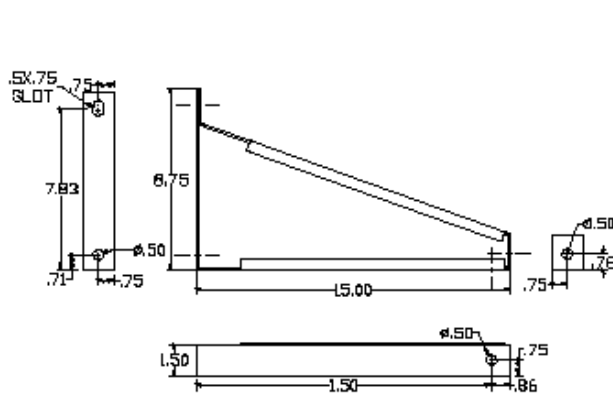


UHIR - [240] Unit Heater

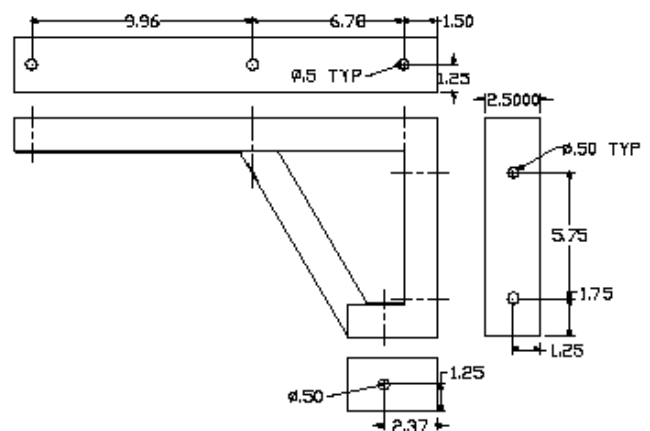
UHIR Vertical Mounting Air Pattern Table

Description	Used On	Max Mtg. Height ft (m)	A ft (m)	B ft (m)	Diffuser Pattern	
WITHOUT DIFFUSER For a straight downward air pattern, directional louvers can be removed in order to maximize airflow.	up to 5 kW	10 (3.0)	17 (5.2)	--		
	over 5 kW up to 10	15 (4.6)	28 (8.5)	--		
	over 10 kW up to 20	20 (6.1)	38 (11.6)	--		
	over 20 kW up to 50	25 (7.6)	68 (20.7)	--		
DIRECTIONAL LOUVERS (standard) Provides a directional (straight line) airflow which results in a rectangular air pattern. Louvers can be adjusted through a 35 degree range of motion.	up to 5 kW	10 (3.0)	22 (6.7)	12 (3.7)		
	over 5 kW up to 10	15 (4.6)	40 (12.2)	20 (6.1)		
	over 10 kW up to 20	20 (6.1)	53 (16.2)	27 (8.2)		
	over 20 kW up to 50	25 (7.6)	85 (25.9)	45 (13.7)		
ANEMOSTAT DIFFUSER Ideal for low mounting heights. Fabricated using 3 diverging hollow cones which disperse heat to the floor area at a minimum velocity for comfort.	up to 5 kW	9 (2.7)	17 (5.2)	--		
	over 5 kW up to 10	13 (4.0)	29 (8.8)	--		
	over 10 kW up to 20	17 (5.2)	40 (12.2)	--		
	over 20 kW up to 50	21 (6.4)	68 (20.7)	--		
RADIAL DIFFUSER Ideal for high ceiling mounting. Louvers can be adjusted to direct airflow straight down when fully open to 45 degrees in a radial pattern which increases floor coverage by approximately 20%.	OPEN	up to 5 kW	10 (3.0)	20 (6.1)	--	
		over 5 kW up to 10	15 (4.6)	30 (9.1)	--	
		over 10 up to 20	20 (6.1)	38 (11.6)	--	
		over 20 kW up to 50	25 (7.6)	65 (19.8)	--	
	45°	up to 5 kW	9 (2.7)	24 (7.3)	--	
		over 5 kW up to 10	11 (3.4)	36 (11.0)	--	
		over 10 kW up to 20	15 (4.5)	46 (14.0)	--	
		over 20 kW up to 50	18 (5.5)	78 (23.8)	--	

Wall Ceiling Mounting Hole Patterns



For Heaters 0-20 Kw



For Heaters 20.1 Kw & Up



UHIR Series

Horizontal or Vertical Mounting
Industrial / Commercial Electric Unit Heater

Owner's Manual



This manual covers installation, maintenance and repair parts. Read carefully before attempting to install, operate or service the UHIR Series Unit Heater.

IMPORTANT INSTRUCTIONS

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

Indeeco, LLC
425 HANLEY INDUSTRIAL COURT • ST. LOUIS, MO 63144
314-644-4300 • 800-243-8162 • FAX: 314-644-5332
www.indeeco.com • sales@indeeco.com



IMPORTANT INSTRUCTIONS

Installation and maintenance personnel should familiarize themselves with this manual and all the **IMPORTANT INSTRUCTIONS** before installing or working on this heater to avoid potential unsafe conditions, severe property damage, personal injury or death.

1. Read all instructions before using this heater.
2. Verify that the supply voltage and phase to the heater matches the nameplate rating before energizing.
3. Potentially lethal voltages are present. Be sure to lock the branch circuit disconnect switch in the OFF position and tag the circuit "Out for Maintenance" before working on this equipment.
4. Keep electrical enclosure cover tightly closed while in operation.
5. Hazard of Electric Shock. Heater must be grounded in accordance with both local and national codes.
6. This heater should be installed by a licensed electrician familiar with all applicable national and local codes having jurisdiction. It is the responsibility of the installer to verify the safety and suitability of the installation.
7. Disassembly of the unit for installation is not required or authorized.
8. Replacement electrical components must be obtained from the factory in order to maintain any applicable Agency Listings.
9. Use this heater only as described in this manual. Any other use is not recommended by the manufacturer and may result in fire, electric shock or personal injury.
10. The heater and discharge air are hot when in use. To avoid burns, do not let bare skin touch hot surfaces.
11. To prevent a possible fire, do not block or allow foreign objects to enter air intakes or exhaust in any manner.
12. Risk of fire due to high temperatures. Keep electrical cords, drapery, furnishings, insulation and other combustibles at least 3 feet (0.9m) from the front of the heater and away from the sides, rear and top.
13. Installation minimum mounting clearances specified both on heater nameplate and in this owner's manual must be maintained.
14. Use copper wire rated 75°C min. for supply connections according to size specified on heater nameplate.
15. Do not attempt to override louver stops. Do not operate unit with louvers turned above level of unit.
16. This heater should not be used in potentially explosive atmospheres. Do not use in areas where gasoline, paint, or flammable liquids are used or stored.
17. This heater should not be used in outdoor, wet and/or corrosive locations.
18. Risk of fire. Do not use as a residential or household heater.
19. Do not operate heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
20. **SAVE THESE INSTRUCTIONS.**

WARRANTY WILL BE VOID IF INSTRUCTIONS ARE NOT FOLLOWED

INSTALLATION INSTRUCTIONS



RISK OF FIRE / EXPLOSION

- This heater should not be used in potentially explosive atmospheres. Do not use in areas where gasoline, paint or flammable liquids are used or stored.
- Keep electrical cords, drapery, furnishings, insulation and other combustibles at least 3 feet (0.9m) from the front of the heater and away from the sides, rear and top.
- Installation minimum clearances specified both on the heater nameplate and in the owner's manual must be maintained.
- Do not use as a residential or household heater.

The air heaters are designed for comfort heating and should not be used in ambient temperatures exceeding 104°F (40°C). They are to be permanently mounted to the wall or ceiling for either horizontal or vertical discharge. The unit is designed to give years of safe, trouble-free operation when properly installed and maintained.

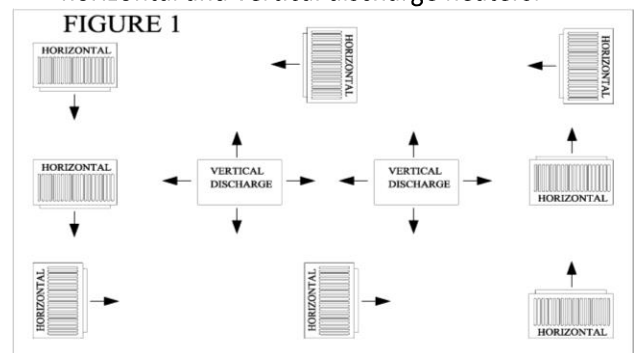
A. Site Selection:

The Heaters should not be mounted close to insulation, drapery or similar materials which could come in contact with the cabinet, or block the inlet or outlet of the heater. The heaters are intended for elevated mounting locations so that they blow warm air down to the floor area. A mounting height should be selected so that the heater is out of the way of possible moving equipment or personnel, yet low enough to deliver warm air to the selected area. See the mechanical installation section for recommended installation heights.

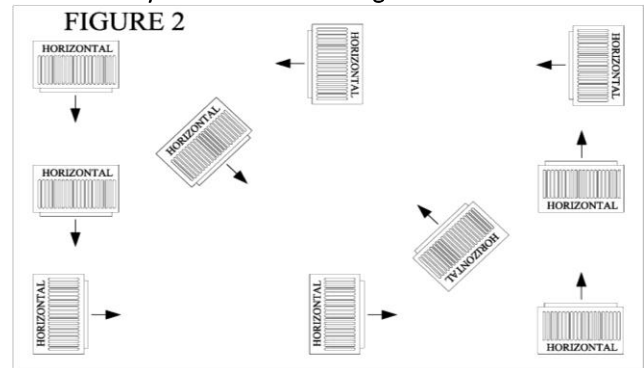
Heater airflow should be directed to areas of greatest heat loss. In general, greater numbers of small heaters will provide more uniform and even heat distributions than a few large ones. In order to help move heated air around the room, multiple heaters

should be spaced out and direct air in a circular pattern around the room perimeter such that each heater supports the next heater's airstreams. Additional vertical discharge heaters with appropriate diffusers can be located to direct heated air to the room center and offset any ceiling heat losses. See the figures below for some typical airflow pattern arrangements:

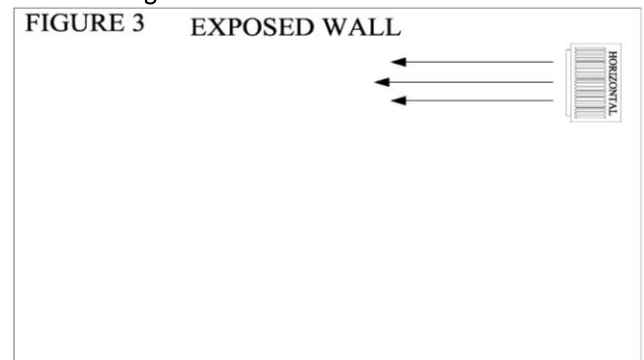
Large room with exposed walls and roof – both horizontal and vertical discharge heaters:



Large room with exposed walls and roof - only horizontal discharge heaters:



Small room with one exposed wall – horizontal discharge heater:



INSTALLATION INSTRUCTIONS – Continued

B. Mechanical Installation:

These heaters may be mounted for either horizontal or vertical discharge by means of threaded rods (supplied by others). The heaters may also be mounted by means of an optional mounting kit which includes a bracket and cantilever arm which allows horizontal pivoting of the heater. Lock washers should be used on all mounting nuts and bolts to ensure they don't vibrate or work loose due to fan vibration or other vibration transmitted to the heater.

The supporting structure that the heater is attached to must have adequate strength to safely support the heater. The heater dimensions and maximum unit weights are:

TABLE 1:

Max. KW	Cabinet Size	W	H	Depth	Weight
5	1	12.875" (327mm)	17.750" (450mm)	7.625" (194mm)	25 lbs (11.3 kg)
10	2	16.875" (429mm)	24.250" (616mm)	7.625" (194mm)	40 lbs (18.2 kg)
20	3	16.875" (429mm)	24.250" (616mm)	11.375" (289mm)	55 lbs (25.0 kg)
50	4	26.937" (684mm)	35.500" (902mm)	15.625" (397mm)	155 lbs (70.3 kg)

These heaters are provided with either directional louvers, a radial diffuser or an anemostat diffuser. Select an installation location such that the outlet air is not directed at an adjacent wall.

Once an acceptable location has been determined, see the following instructions to complete the mechanical installation:

Horizontal Discharge:

- To ensure proper heating of floor surfaces, observe the following recommended mounting height limitations (to bottom of heater):

TABLE 2:

Maximum Mounting Height from Floor, feet (m)			
Cabinet Size 1	Cabinet Size 2	Cabinet Size 3	Cabinet Size 4
10' (3m)	15' (4.6m)	20' (6.1m)	25' (7.6m)

The minimum mounting distance from the floor to the bottom of the heater is 8 feet (2.4m).

- Remove the four bolts located in the top of the heater and install four threaded rods (not supplied by INDEECO) using locknuts to secure. Do not remove the four bolts from the back of the heater case.
- Secure the four threaded rods to the ceiling using locknuts to complete the installation.
- Refer to table 3 and figure 4 below for minimum mounting clearances to the walls and ceiling:

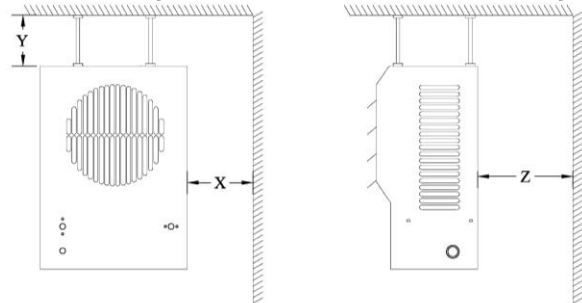


FIGURE 4

TABLE 3:

Minimum Clearances – Horizontal Discharge, inches (mm)			
Cabinet Size	X	Y	Z
1	6 (152)	10 (254)	6 (152)
2	6 (152)	10 (254)	6 (152)
3	6 (152)	12 (305)	6 (152)
4	6 (152)	12 (305)	6 (152)

- Refer to the table and figure below for mounting point size and locations:

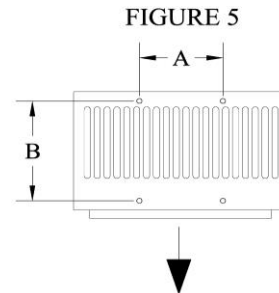


FIGURE 5

TABLE 4:

Cabinet Size	Thread Size	A, in (mm)	B, in (mm)
1	3/8 – 16	5 (127)	6.44 (164)
2	3/8 – 16	5 (127)	6.44 (164)
3	3/8 – 16	5 (127)	10.13 (257)
4	3/8 – 16	7 (178)	12.92 (328)

INSTALLATION INSTRUCTIONS – Continued

- Adjustable louvers should be set to achieve the desired airflow direction.

Vertical Discharge:

- When mounting for vertical discharge, ensure there is enough clearance to the wall to fully open the access cover to the wiring compartment.
- To ensure proper heating of floor surfaces, observe the following recommended mounting height limitations (to bottom of heater):

TABLE 5:

Maximum Mounting Height from Floor, feet (m)				
Cabinet Size	No Louvers	Standard Louvers	Anemostat Diffuser	Radial Diffuser
1	10' (3.0m)	10' (3.0m)	9' (2.7m)	10' (3.0m)
2	15' (4.6m)	15' (4.6m)	13' (4.0m)	15' (4.6m)
3	20' (6.1m)	20' (6.1m)	17' (5.2m)	20' (6.1m)
4	25' (7.6m)	25' (7.6m)	21' (6.4m)	25' (7.6m)

The minimum mounting distance from the floor to the bottom of the heater is 8 feet (2.4m).

- Remove the four bolts from back of heater cabinet and install four threaded rods (not supplied by INDEECO) using locknuts to secure. Do not remove the four bolts from the top of the heater cabinet.
- Secure the four threaded rods to the ceiling using locknuts to complete the installation.
- Refer to the table and figures below for minimum mounting clearances to the walls and ceiling:

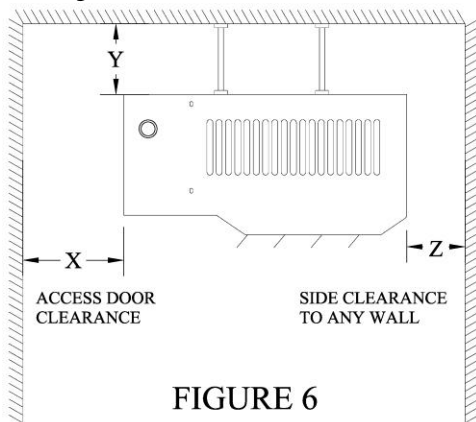


FIGURE 6

TABLE 6:

Minimum Clearances – Vertical Discharge, inches (mm)			
Cabinet Size	X	Y	Z
1	8 (203)	6 (152)	16 (406)
2	8 (203)	6 (152)	16 (406)
3	12 (305)	6 (152)	32 (813)
4	16 (406)	6 (152)	32 (813)

- Refer to the table and figure below for threaded mounting point size and locations:

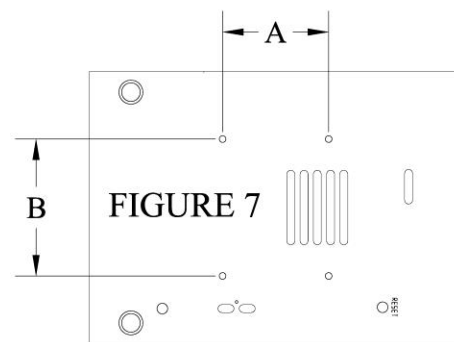


TABLE 7:

Cabinet Size	Thread Size	A, in (mm)	B, in (mm)
1	3/8 – 16	5 (127)	6.44 (164)
2	3/8 – 16	5 (127)	6.44 (164)
3	3/8 – 16	10.13 (257)	5 (127)
4	3/8 – 16	12.92 (328)	7 (178)

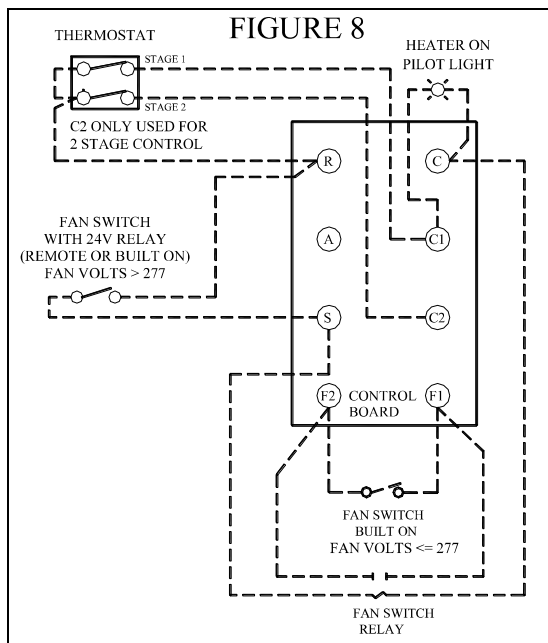
C. Electrical Installation:

Follow these instructions to complete the electrical installation:

- External branch circuit protection is required. See nameplate ratings and follow Code recommendations.
- Follow the NEC and/or CEC and any local electrical and building codes related to the installation and intended use of the heater.
- When doing any work on a heater, including the initial electrical connection, disconnect the electrical supply at the main branch circuit switch, and lock the switch in the off (open) position. Tag the circuit "Out for Maintenance" to prevent potential lethal shock hazards.
- Confirm that the electrical power supply matches the nameplate voltage, phase, amperage and frequency rating of the heater to be connected.

INSTALLATION INSTRUCTIONS – Continued

5. Ensure conductors are of appropriate gauge size as specified on the heater nameplate. Use copper conductors rated 75°C minimum.
6. Proper installation of the heater requires that an adequate grounding conductor be connected to the ground terminal. This terminal marked with the letter “G” and is located on the inside of the control enclosure.
7. A wiring diagram is supplied with each heater. Optional electrical controls, either kits or factory installed, are connected to the control wiring board and are shown as dashed lines. The figure below shows control wiring board connections for field wired options:
8. Install any electrical option kits according to the instructions provided.
9. Use min. 600 volts, NEC Class 1 insulated wire for all control circuit wiring.
10. Check and confirm all connections are securely tightened. Remove any foreign objects from the control box and close access door.
11. On single phase heaters rated less than 5 KW that do not contain a contactor and transformer, any remote thermostat used must be rated for the full load of the heater as shown on the heater nameplate.
12. See section titled “operation” before energizing the heater.



OPERATING INSTRUCTIONS



RISK OF FIRE / EXPLOSION

- This heater should not be used in potentially explosive atmospheres. Do not use in areas where gasoline, paint or flammable liquids are used or stored.
- Keep electrical cords, drapery, furnishings, insulation and other combustibles at least 3 feet (0.9m) from the front of the heater and away from the sides, rear and top.
- To prevent a possible fire, do not block or allow foreign objects to enter air intakes or exhaust in any manner.



ELECTRIC SHOCK HAZARD

- Keep electrical enclosure cover tightly closed while in operation.
- Do not operate heater after a malfunction. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- Use this heater only as described in this manual. Any other use is not recommended by the manufacturer and may result in fire, electric shock or personal injury.



RISK OF INJURY / BURN

- The heater and discharge air are hot when in use. To avoid burns, do not let bare skin touch hot surfaces.
- Do not attempt to service or clean heater while unit is operating as there is a hazard from electric shock, injury from operating fan blade and burns from hot heating elements.

The unit heater may be operated normally at ambient temperatures of 104°F (40°C) or less. Each heater contains a normally open bimetal cutout which delays the fan motor until the heating elements have warmed up and also keeps the fan running after shutdown until the heating elements have cooled down.

A. Initial Operation:

Confirm proper mechanical and electrical installation before operation of the heater.

- 1.) Heaters without built on or remotely mounted fan switch:
 - a.) Set the temperature control thermostat to a setting above the current room temperature.
 - b.) Energize the heater electrical supply circuit.
 - c.) The heater should come on and the fan should start within approximately 1 to 2 minutes.

d.) During normal operation the limit controls are not supposed to cycle the heater ON and OFF. If frequent cycling of the limit occurs, verify the minimum mounting clearances are maintained, verify proper orientation of the room thermostat and there is no visible obstruction to the heater inlet or outlet. If this does not eliminate the limit control cycling then the heater must be examined by qualified service personnel before further operation to determine the cause.

e.) Heaters may be provided with a manual reset limit control (Optional with order code M for cabinet sizes 1 & 2). This limit control disables the electrical function of the heater whenever excessive temperatures are present. If the manual reset limit control is suspected of causing heater non-function then the heater must be disconnected from the heater electrical

OPERATING INSTRUCTIONS - Continued

supply and examined by qualified service personnel. The personnel must determine the cause of the excessive temperatures, verify the minimum mounting clearances, verify proper orientation of the heater, verify proper orientation of room thermostat, or determine if there are any obstructions or damage to the heater or heater inlet or heater outlet. The manual reset limit control may then be reset as described in the "Repair and Replacement Instructions".

- f.) Check out and report any unusual or questionable operating characteristics, such as noise, vibration, etc.
- g.) Set the temperature control thermostat to the desired room temperature setting.
- h.) De-energize the heater electrical supply circuit until heater operation is required.
- i.) Set the temperature control thermostat to a setting above the current room temperature.
- j.) The heater should come on and the fan should energize in approximately 1 to 2

minutes. If the room ambient temperature is high or the heater is mounted too close to the ceiling or walls, the unit may cycle on the thermal high limits of the motor and/or the heater.

- k.) Check out and report any unusual or questionable operating characteristics, such as noise, vibration, etc.
 - l.) Set the fan switch and temperature control thermostat to the desired operating positions.
- 2.) Heater with fan switch:
- a.) Place the fan switch in the "ON" position.
 - b.) Set the temperature control thermostat to a setting below the current room temperature.
 - c.) Energize the heater electrical supply circuit.
 - d.) The heater fan should come on but the heater should remain off.
 - e.) Place the fan switch in the "OFF" position.
 - f.) The fan should go off.

B. Normal Operation:

Prior to the start of the heating season, perform the electrical and mechanical steps outlined in the section titled "MAINTENANCE INSTRUCTIONS".

- a.) Perform the operation steps for the applicable temperature control option.
- b.) Place all switches in their normal operating position and place the unit heater in service.

MAINTENANCE INSTRUCTIONS



ELECTRIC SHOCK HAZARD

- Potentially lethal voltages are present. Be sure to lock the branch circuit disconnect switch in the OFF position and tag the circuit “Out for Maintenance” before working on this equipment.



RISK OF INJURY / BURN

- Do not attempt to service or clean heater while unit is operating as there is a hazard from electric shock, injury from operating fan blade and burns from hot heating elements.
- Maintenance and repair must be performed by qualified personnel only.

A. Electrical:

1. Inspect all terminal connections, contactor and conductor insulation for damage, looseness, fraying, etc., as applicable. Tighten any loose terminals and replace or repair wire with damaged or deteriorated insulation. If contactor contacts are badly pitted, welded together, or burned, replace the contactor.
2. If reduced heat output is suspected, perform the mechanical checks. If low heat output is still suspected after completing the mechanical checks, verify the condition of the heating elements by visual inspection and by using an amperage meter to check the current draw of each input line. Adjust the room thermostat to its highest temperature to ensure all stages of heat are energized. All input lines should draw approximately equal current which should agree with the nameplate rating. If they do not, one or more of the heating elements could be burned out and should be replaced.

B. Mechanical:

1. Annually check the tightness of all visible bolts and nuts, in particular the support structure bolts and nuts. Similarly check the motor mounting bolts located in the top and back of the heater case.
2. Periodically, check the motor, fan, discharge openings, intake openings, heating elements and control compartment for cleanliness. If necessary, clean by using a vacuum or compressed air. Be careful not to bend the fan blade propeller.
3. Check motor and fan for smooth running operation. Any unusual noise or vibration must be investigated and rectified.
4. The electric motors are permanently lubricated and thermally protected. Check for smooth and quiet running at all inspections. Replace motor if excessive bearing play is detected.

REPAIR AND REPLACEMENT INSTRUCTIONS



RISK OF INJURY / BURN

- Maintenance and repair must be performed by qualified personnel only.

A. Replacing the High-Limit or Fan Delay Cutouts:

1. Disconnect the heater electrical power supply.
2. For horizontal discharge heaters, the heater will need to be disconnected and lowered.
3. For heaters with an optional "Heater On" pilot light, built on fan switch or built on room thermostat, mark wiring at control board and disconnect.
4. Remove any adjustable louvers and the front cabinet section to expose the fan motor and heating elements.
5. Remove the fan blade, careful not to bend.
6. The temperature high limit and fan delay are located on a stepped sheet metal bracket directly below the back heating element. The fan delay is the cutout directly against the heating element fin; the temperature high limit is approximately 5/8" below.
7. Mark and disconnect the appropriate wires.
8. Lower the cutout bracket by removing the side sheet metal screws.
9. Replace the appropriate cutout.
10. Reattach the sheet metal bracket and wiring.
11. Reinstall & verify the fan blade rotates freely.
12. Reassemble, remount and connect heater.
13. Reconnect any wires disconnected in step 3.
14. Perform steps in section titled "OPERATION" to verify heater performance.

B. Resetting the Optional Manual Cutout:

1. Disconnect the heater electrical power supply.
2. Determine the reason for the manual reset thermal cutout actuating and rectify the situation. See section titled "maintenance".
3. Reset the manual reset thermal cutout by pressing on the red button located in the back of the heater marked "RESET". It may be necessary to wait for the cutout to cool.
4. Energize the heater electrical supply circuit.

5. Perform the steps outlined in the section "OPERATION" to verify heater performance.
6. Check out and report any unusual or questionable operating characteristics, such as noise, vibration, etc.
7. If heater operation appears normal, place the unit into normal operation.

C. Replacing the Fan Motor and Blade:

The fan motor is permanently lubricated and does not require any maintenance. If the fan motor is defective, a replacement must be obtained from the factory.

1. Disconnect the electrical power supply.
2. For horizontal discharge heaters, the heater will need to be disconnected and lowered.
3. For heaters with an optional "Heater On" pilot light, built on fan switch or built on room thermostat, mark wiring at control board and disconnect.
4. Remove any louvers and the front cabinet section to expose the motor and blade.
5. Remove the fan blade, careful not to bend. If motor is not being replaced, skip to step 11.
6. Disconnect the motor supply wires, noting their location.
7. Remove motor mounting screws and lift motor out of heater assembly.
8. Install new motor to heater using existing motor mounting hardware.
9. Feed motor wires through snap bushing and into wiring compartment.
10. Reconnect motor wires.
11. Reinstall & verify the fan blade rotates freely.
12. Reassemble, remount and connect heater.
13. Reconnect any wires disconnected in step 3.
14. Perform steps in section titled OPERATION to verify heater performance.

REPLACEMENT PARTS

1. All replacements must be factory supplied to ensure safe heater operation.
2. Mark wires and refer to wiring diagram to ensure proper electrical connections.

Reference heater model number and the bubble number from the figures below when contacting factory for replacement parts. Contact factory for items not shown.

FIGURE 9 - CABINET, MOTOR AND HEATING ELEMENTS:

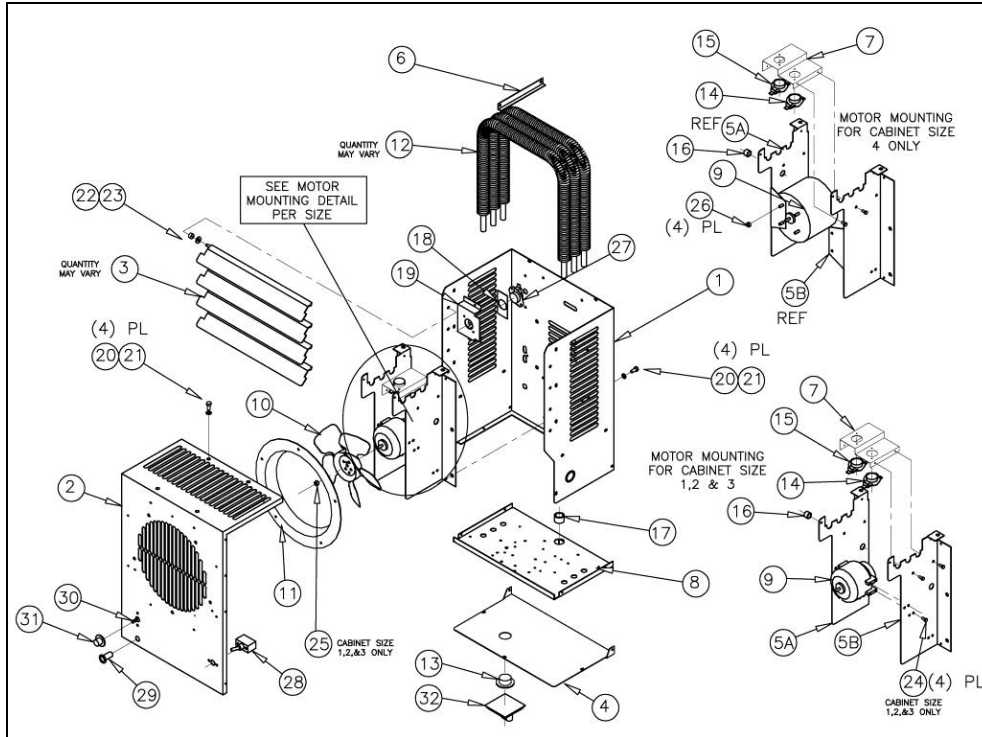


TABLE 8

BUBBLE	DESCRIPTION	Qty
01	Cabinet Back	1
02	Cabinet Front	1
03	Louver	A/R
04	Terminal Box Cover	1
5A	Element Support – Left	1
5B	Element Support – Right	1
06	Element Anchor	1
07	Thermal Cutout Bracket	1
08	Component Bridge	1
09	Motor	1
10	Fan Blade	1
11	Fan Ring	1
12	Heating Element	A/R
13	Plug	1
14	Automatic Reset Cutout	1
15	Fan Delay Cutout	1
16	Manual Wire Grommet	1

BUBBLE	DESCRIPTION	Qty
17	Wiring Grommet	1
18	Manual Cutout Barrier	1
19	Manual Reset Cutout Bracket	1
20	Bolt	8
21	Split Lockwasher	8
22	Neoprene Spacer	A/R
23	#10 Flat Washer	A/R
24	#8-36x1/2 Bolt	4
25	1/4-20 Keps Nut	1
26	10-32 Nut	4
27	Manual Reset Cutout – Optional	1
28	Fan Switch – Optional	1
29	Pilot Light – Optional	1
30	Built On Thermostat – Optional	1
31	Thermostat Knob – Optional	1
32	Disconnect Handle – Optional	1

REPLACEMENT PARTS - Continued

FIGURE 10 - ELECTRICAL COMPONENTS:

The figure below shows a typical layout of the heater electrical components for reference only. Locations and quantity of parts will vary.

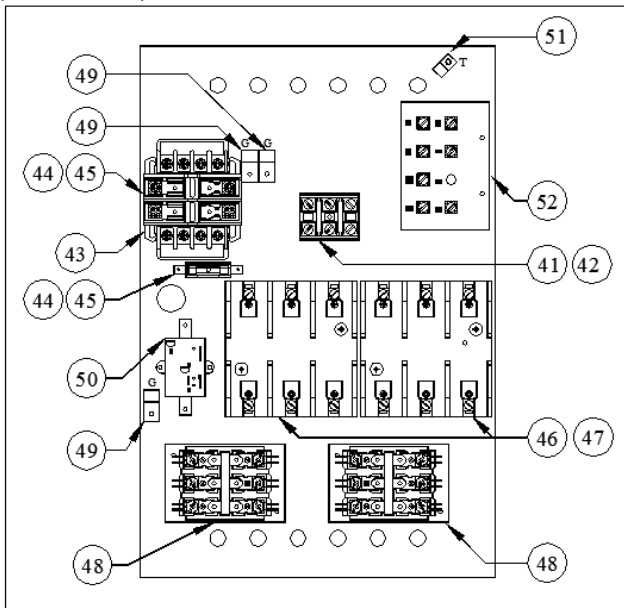


TABLE 9:

BUBBLE	DESCRIPTION
41	Disconnect Switch (not shown)
42	Power Terminal Block
43	Control Transformer
44	Transformer Fuse Block
45	Transformer Fuse
46	Power Fuse Block
47	Power Fuse
48	Control Contactor
49	Ground Lug
50	Fan Switch Relay
51	Thermostat Capillary Clamp
52	Motor Capacitor (not shown)

FIELD INSTALLABLE ACCESSORIES

The following items are available from the factory for field installation:

TABLE 11: Mechanical Accessories:

Item	Description
1024149	Universal wall & ceiling mounting bracket kit; Cabinet Sizes 1 & 2
1024150	Universal wall & ceiling mounting bracket kit; Cabinet Size 3
1024151	Universal wall & ceiling mounting bracket kit; Cabinet Size 4
1024155	Anemostat (Cone) Diffuser; Cabinet Size 1
1024156	Anemostat (Cone) Diffuser; Cabinet Sizes 2 & 3
1024157	Anemostat (Cone) Diffuser; Cabinet Size 4
1024152	Radial Diffuser; Cabinet Size 1
1024153	Radial Diffuser; Cabinet Sizes 2 & 3
1024154	Radial Diffuser; Cabinet Size 4
1023941	Horizontal Dust Shield; Cabinet Sizes 1 & 2
1024059	Horizontal Dust Shield; Cabinet Size 3
1024060	Horizontal Dust Shield; Cabinet Size 4

TABLE 12: Electrical Accessories:

Item	Description	Ratings
1024162	Disconnect Switch 32A	32 Amps, 600V, 3 Pole
1024163	Disconnect Switch 64A	64 Amps, 600V, 3 Pole
1024164	Disconnect Switch 80A	80 Amps, 600V, 3 Pole
1024166	Built On Thermostat Kit – 1 Stage	25A @ 240V, 22A @ 277V ; 125VA Pilot Duty
1024167	Built On Thermostat Kit – 2 Stage	25A @ 240V, 22A @ 277V ; 125VA Pilot Duty
1024168	“Heater On” Pilot Light – 24V	24 Vac Control Voltage
1024169	“Heater On” Pilot Light – 120V	120 Vac Control Voltage
1024170	Summer Fan Switch – Built On	Heater Voltage <= 277V
1024171	Summer Fan Switch with 24V Relay – Built On	24Vac Control, Heater Supply Voltage > 277V
1024172	Summer Fan Switch with 24V Relay – Remote	24Vac Control

UHIR Unit Heater Installation Instructions Combination Wall/Ceiling Mounting Kit & Optional Dust Shield

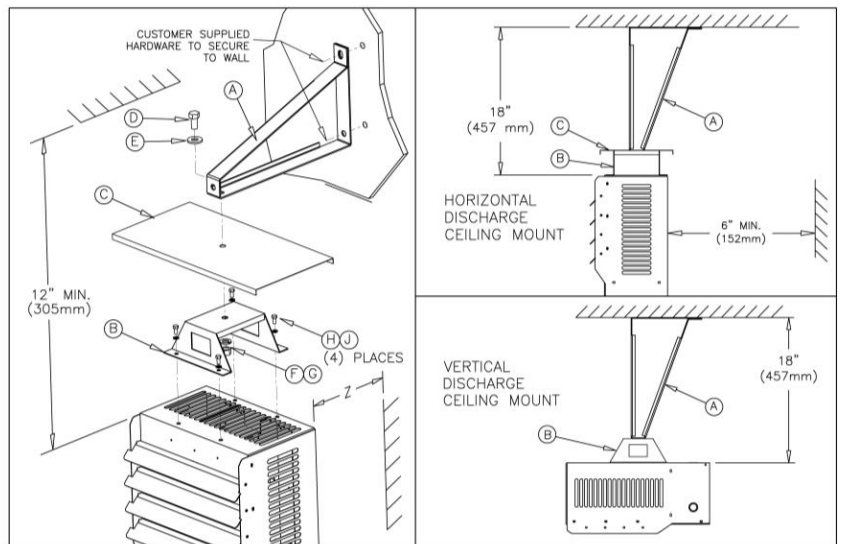
These instructions are meant to supplement the main installation, operating and maintenance instructions supplied with the UHIR unit heater. Do not attempt to install the heater before reading the main instructions. The dust shield is an optional component that may be used with horizontal discharge heaters.

WARNING

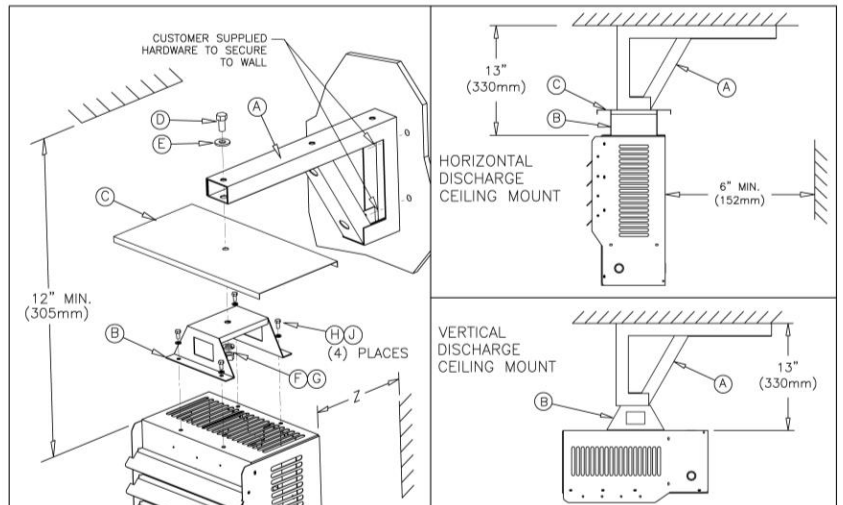
Serious injury or unsafe operating conditions could result from not following these instructions. Ensure that the mounting surface is of sufficient strength to support the weight of the heater.

Cabinet Size	Mounting Kit Item	Mtg Kit Weight Lb. (kg)	Dust Shield Item	Dust Shield Weight Lb. (kg)	Clearances	
					X WALL TO SIDE OF HTR	Z WALL TO BACK OF HTR
1	1024149	3 (1.4)	1023941	2 (0.9)	8 in (203mm)	11.188 in (284mm)
2					6 in (152mm)	9.313 in (237mm)
3	1024150	3.7 (1.7)	1024059	3 (1.4)	6 in (152mm)	9.313 in (237mm)
4	1024151	9 (4.1)	1024060	4 (1.8)	9.281 in (236mm)	14.937 in (380mm)

Cabinet Sizes 1, 2 & 3



Cabinet Size 4



425 Hanley Industrial Court
St. Louis, MO 63144
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Instructions d'installation pour des appareils de chauffage UHIR Nécessaire combiné d'installation au mur ou au plafond et écran de protection de poussière optionnel

Voici des instructions supplémentaires à l'installation principale et aux instructions de l'opération et entretien fournies avec le UHIR appareil de chauffage. Ne pas tenter d'installer l'appareil sans avoir lu les instructions principales. L'écran de protection de poussière est un élément optionnel qui peut être utilisé avec des appareils de chauffage avec échappement horizontal.

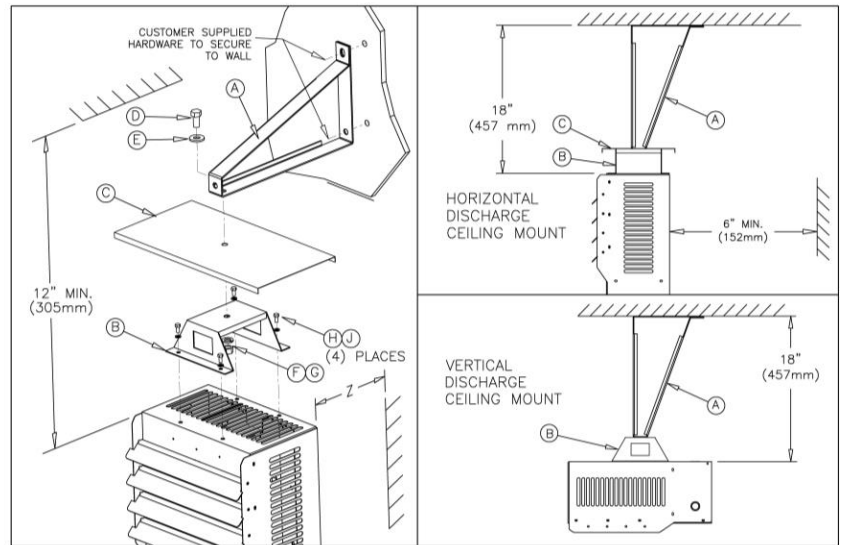
AVERTISSEMENT

Ne pas suivre ces instructions peut causer des blessures sérieuses et aussi des conditions dangereuses d'opération. Faites certain que le surface de l'installation soit suffisamment solide pour supporter le poids de l'appareil de chauffage.

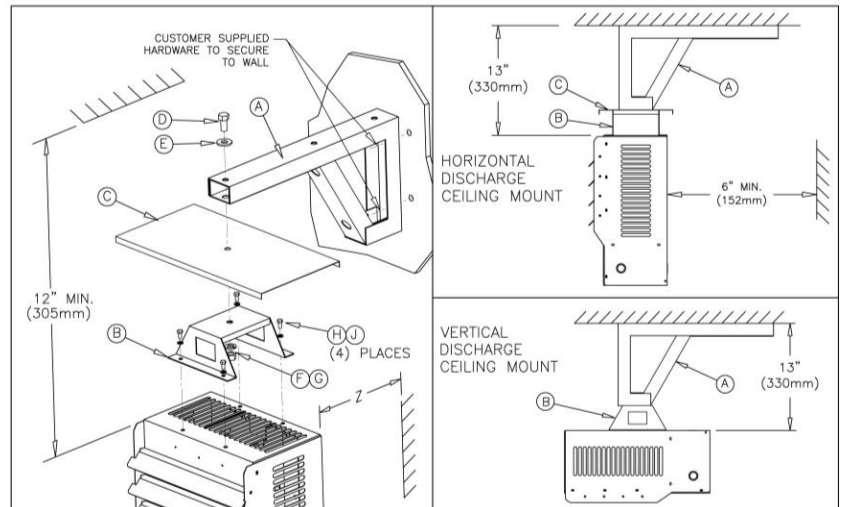
1. Déterminez la position pour le cantilever (A) et marquez les trous d'installation dans le mur ou dans le plafond. Consultez le manuel de propriétaire pour les dimensions et le poids de l'appareil de chauffage.
2. Installez le cantilever au mur ou au plafond en utilisant des boulons avec un diamètre minimum de 3/8" (9.5 mm) Il faut utiliser une grosse rondelle plate entre la tête du boulon et la surface du cantilever. Utilisez des boulons ou des vis adéquats au surface de l'installation. Cette quincaillerie n'est pas fournie ni avec le nécessaire d'installation ni avec l'appareil de chauffage.
3. Echappement horizontal: Ôtez et gardez les quatre boulons filetés (H) et les rondelles frein (J) au dessus de l'appareil de chauffage. Ne pas ôter nul boulon ou autre quincaillerie à l'arrière du cabinet de l'appareil de chauffage. Echappement vertical: Ôtez et gardez les quatre boulons filetés (H) et les rondelles frein (J) à l'arrière de l'appareil de chauffage. Ne pas ôter nul boulon ni nulle quincaillerie du dessus du cabinet de l'appareil.
4. Attachez le gousset (B) au cabinet de l'appareil de chauffage utilisant les boulons (H) et les rondelles frein gardés en étape 3.
5. Prenez soin en soulevant l'appareil de chauffage en position sous le cantilever (A). Attachez l'appareil de chauffage (et l'écran de protection contre la poussière optionnel (C) au trou centre du gousset (B) comme illustré en utilisant un boulon 1/2-13" (D) une rondelle plate à 1/2" (E) une rondelle frein (F) et un écrou 1/2-13 (G) inclus dans ce nécessaire.

Taille du Cabinet	Nécessaire d'installation Item	Poids du nécessaire d'installation Lb. (kg)	Écran poussière Item	Poids de l'écran poussière Lb. (kg)	Les jeux	
					X Du mur au côté de l'appareil	Z Du mur au derrière de l'appareil
1	1024149	3 (1.4)	1023941	2 (0.9)	8 in (203mm)	11.188 in (284mm)
2					6 in (152mm)	9.313 in (237mm)
3	1024150	3.7 (1.7)	1024059	3 (1.4)	6 in (152mm)	9.313 in (237mm)
4	1024151	9 (4.1)	1024060	4 (1.8)	9.281 in (236mm)	14.937 in (380mm)

Cabinet Tailles 1, 2 et 3



Taille du Cabinet 4



INDEECO

425 Hanley Industrial Court
St. Louis, MO 63144
314-644-4300
www.indeeco.com
sales@indeeco.com

Catalog Number: 931U03000NW-D3T1



Description: CCI - [931] Commercial Ceiling Heater 3000W, 277V, 1Phase, 11.2A, 26lbs.

Color: White

		Almond
X		White
		Metallic Silver (Additional Charge)
		Aluminum (Additional Charge)
		Black (Additional Charge)
		Bronze (Additional Charge)
		Metallic Charcoal (Additional Charge)

Job Name:

Quote #	Line #	Qty	Tag
397854	5	1	EUH-A100-LL

Selected Factory Installed Options:

Option Code	Description
D3	Disconnect Switch, up to 277V, Double-pole, up to 16 Amps
T1	Tamperproof Thermostat

Selected Field and Thermostat Options:

No Options Selected.

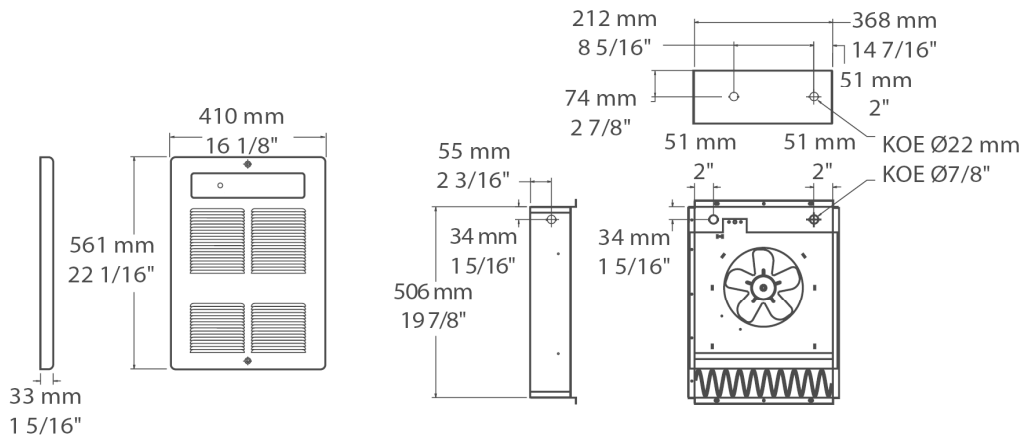
Architect's and Engineer's Specifications



Heater Element - steel finned tubular elements.
 Heater Housing shall be constructed from heavy 18-gauge steel.
 Grille shall have an epoxy/polyester paint finish. Grille openings shall be less than 0.25" to discourage tampering with the elements (pencil-proof).
 Fan Motor shall be permanently lubricated, open and ventilated fan. The single unit has a 160 CFM fan (55.5 dBA) and the double unit has 2 x 160 CFM fans (58.5 dBA).
 Fan Over-ride shall purge heater of residual heat to prevent an over heat condition.
 Thermal Cutout shall be of the bi-metal type and built into the system.
 Thermostat is optional and shall be built into the system as either tamperproof or adjustable.
 Disconnect Switch is offered as an option and is built into the back of the system. The disconnect switch shall provide positive disconnect of the main power source.

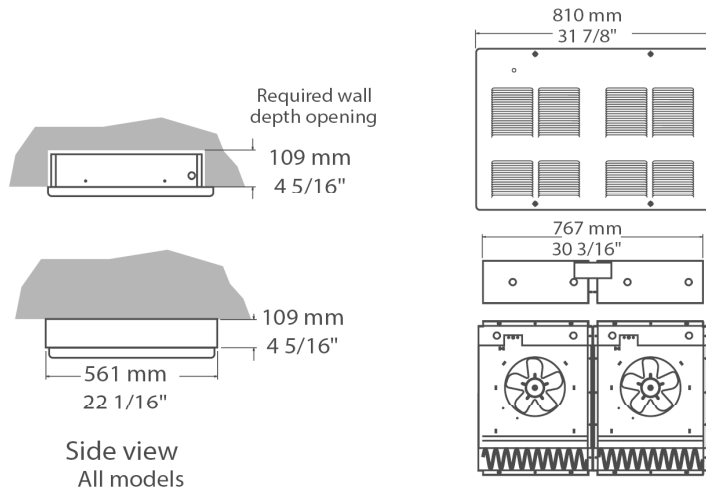
Low Voltage Relays with or without transformers are available built-in or supplied separately as kits.
 T-Bar Adapter is available as an option. T-Bar adaptor measures 23-3/4 x 23-3/4 inches.
 Installation Requirements - for best performance, do not install ceiling heaters above recommended maximum mounting height of ten feet. Heater must be installed at least ten inches from adjacent walls.

- Rough In Dimensions
- 1500/1125 – 4800 Watt heaters: 14-1/2" wide x 19-7/8" high x 4-1/2" deep.
 - 6000/4500 – 8000 Watt heaters: 30-3/16" wide x 19-7/8" high x 4-1/2" deep.



Front view

Single unit
1500/1125-4800 Watt Heater



Side view
All models

Double units
6000/4500-8000 Watt Heater



423 Hanley Industrial Court, St. Louis, MO 63144
 Phone: (314) 644-4300, Fax: (314) 644-5332
 www.indeeco.com

INSTRUCTIONS “CCI” Series

WARNING When using electrical appliances, basic precautions should always be taken to reduce the risk of fire, electrical shock and injury, including the following.



Read carefully these instructions before installation, operation of the heater. Failure to adhere to the instructions could result in fire, electric shock, serious personal injury, and death or property damage. Review frequently for continuing safe operation and instruction of future users, if necessary.

IMPORTANT INSTRUCTIONS

- 1- Read all instructions before installing or using this heater.
- 2- This heater is hot when in use. To avoid burns, do not let bare skin touch hot clothes, and curtains at least 36 in. (91.5 mm) from the front of the heater.
- 3- Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
- 4- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- 5- Do not use outdoors.
- 6- To disconnect heater, rotate thermostat knob full counter-clockwise and turn off power to heater circuit at main disconnect panel (or operate internal disconnect switch if provided).
- 7- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
- 8- To prevent a possible fire, do not block air intakes or exhaust in any way whatsoever.
- 9- This heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable vapors or liquids are used or stored.
- 10- Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- 11- **AMERICAN VERSION ONLY:** Some models (up to 6000W maximum and 240V maximum) include a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. If no obstruction is visible, the heater must be checked by a qualified person. **DO NOT OPERATE THE HEATER WHEN THE ALARM ILLUMINATING.**
- 12- The thermostat should not be considered an infaillible device in cases where maintaining a temperature is considered critical. Examples: Hazardous material storage, computer server room, etc. In these particular cases, it is imperative to add a monitoring system to avoid the consequences of a thermostat failure.

SAVE THESE INSTRUCTIONS

OPERATING INSTRUCTIONS

- 1- The heater must be properly installed before it is used.
- 2- Turn the power on at the circuit breaker panel.
- 3- Electronic thermostat: be sure to set it on the fan mode.
- 4- Built-in thermostat: to set thermostat at the desired temperature, follow these steps:
 - Set thermostat at maximum temperature (turn clockwise).
 - When the desired temperature is reached, turn the thermostat counter-clockwise slowly until you hear a click.
 - The thermostat will keep this room temperature.
- 5- Built-in thermostat with control knob, the setting can be adjusted with the supplied knob, located on the front cover.
- 6- Built-in tamperproof thermostat: the setting can be done through the hole in the front cover with a small slotted screwdriver.
- 7- **AMERICAN VERSION ONLY:** Some models (up to 6000W maximum and 240V maximum) include a visual alarm to warn that parts of the heater are getting excessively hot. If the light turns on, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DO NOT OPERATE THE HEATER WHEN THE ALARM ILLUMINATING.**

STARTUP

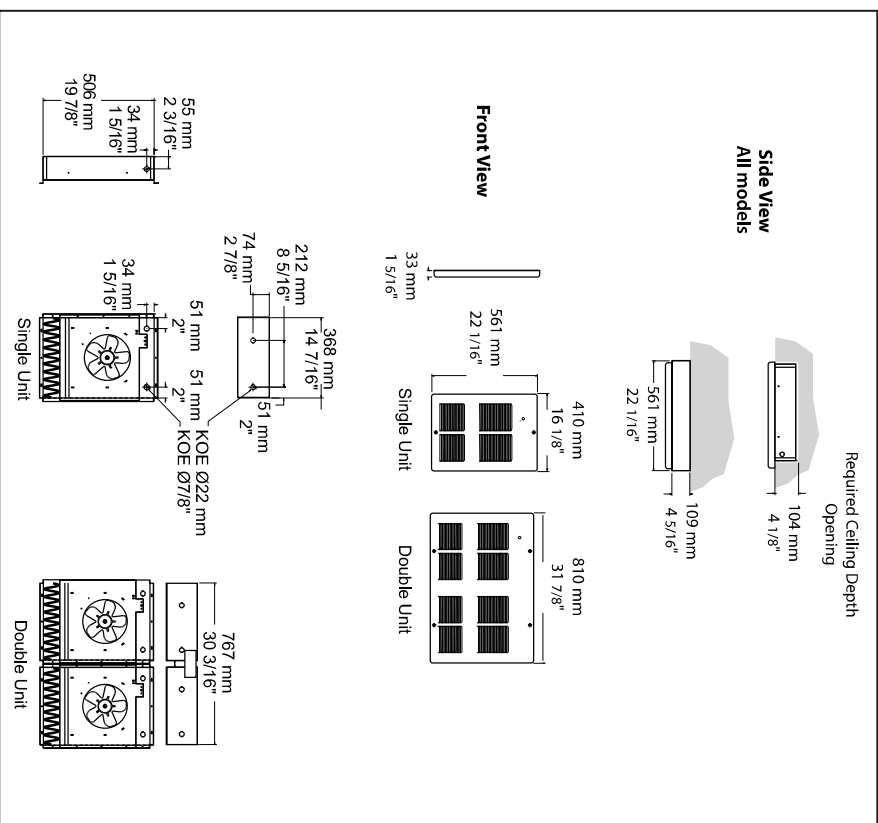
On a call for heat from either the remote thermostat or the unit mounted thermostat the elements and fan will be energized.

When the thermostat is satisfied the elements will be deenergized.

The fan will continue to run until the residual heat is removed from the heater. Then the fan will stop.

MAINTENANCE INSTRUCTIONS

- 1- Once a year, remove the front panel and use a vacuum cleaner to remove the dust accumulation inside the heater and through openings of the front panel.
- 2- Cleaning should be done while the heater is disconnected from the main service panel. Wait until the housing and heating element cool before performing maintenance.
- 3- Replace the front panel before energizing.
- 4- Any other servicing should be performed by a qualified technician.
- 5- Factory-lubricated motor. No lubrication required.



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INSTALLATION INSTRUCTIONS

CAUTION:

- High temperature, risk of fire, keep electrical cords, drapery, furnishings, and other combustibles at least 36 in. (915 mm) from the front of the heater. To reduce the risk of fire, do not store or use gasoline or other flammable vapors and liquids in the vicinity of the heater.
- Ceiling installation only.
- Do not install heater less than 10 in. (250 mm) from walls.
- Do not obstruct front of heater for at least 72 in. (1829 mm).
- Disconnect all power supplies before working on any circuit.

IMPORTANT:

- 1- Single unit: 26 lb (12 kg)
Double unit: 52 lb (24 kg)
- 2- Connect the control according to the wiring diagram in the heater.
- 3- Do not interrupt power supply to control this heater.
- 4- Any remote thermostat or relay must be connected to the heater control terminal block.
- 5- If an electronic thermostat is used, it must be compatible with forced-air heaters.

OPTIONS:

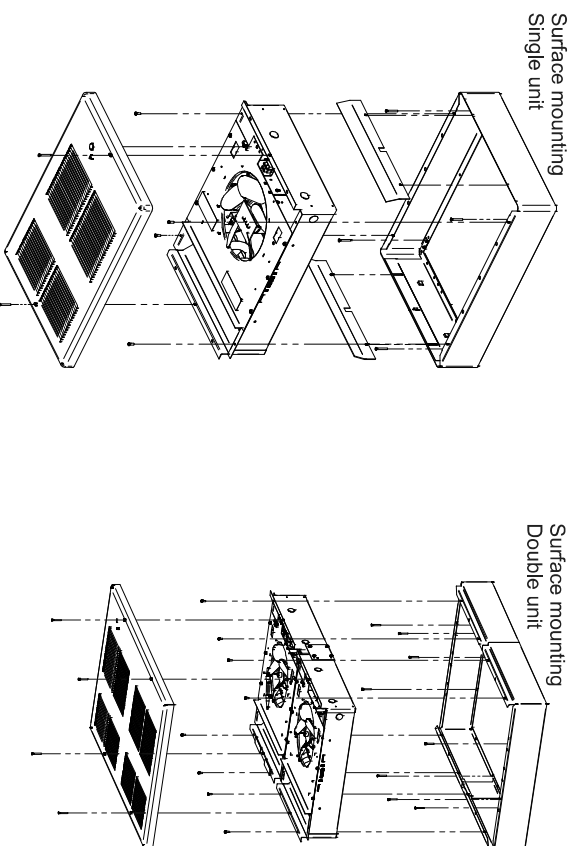
Refer to the instruction supplied with the option.

RECESS MOUNTING:

- 1- Heater must be used with recess box.
- 2- Provide a ceiling opening as:
Depth: 4 5/16 in. (109 mm)
Height: 19 7/8 in. (506 mm)
Length: -Single unit: 14 7/16 in. (368 mm)
 -Double unit: 30 3/16 in. (767 mm)
- 3- Remove the appropriate knock-out from the recess box for the electrical supply.
- 4- Attach firmly the recess box using provided screws. Make sure that the edge on each side of the recess box lean on the gypsum panel and not on the structural parts of the ceiling. See marking on the sides of the recess box. Install the heater to the recess box and be sure that the heater is attach firmly with four (4) provided screws.
- 6- Connect the heater leads to the supply leads according to national and local codes. See wiring diagram in the front cover of the heater.
- 7- Make sure the fan rotates freely and that there is no foreign object in the heater.
- 8- Install the front cover using the provided screws. **IMPORTANT:** Make sure that the part of the front cover without lower is in front of the supply terminal box.
- 9- To test the heater temporarily, set thermostat at maximum temperature.

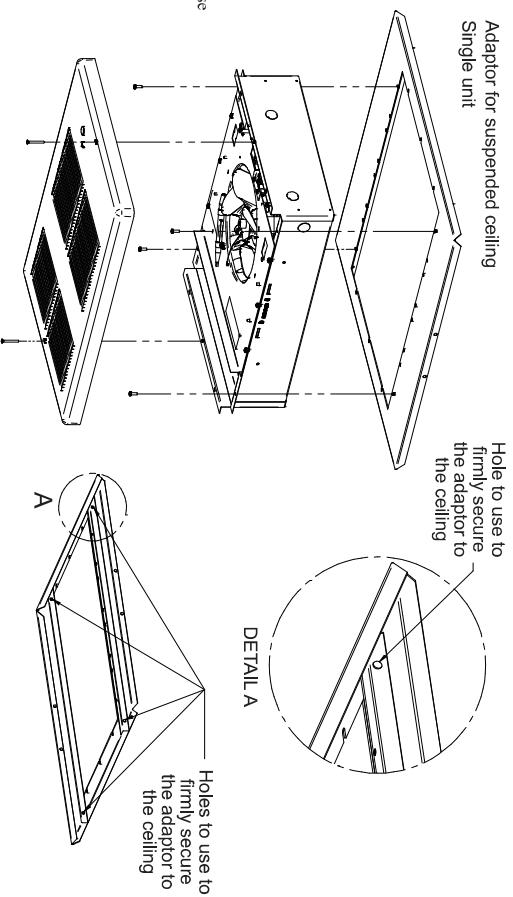
SURFACE MOUNTING:

- 1- The surface box must be used with recess box.
- 2- Locate the power supply leads behind the planned location of the heater (surface box).
- 3- Mount the surface box securely to the ceiling with provided screws. **IMPORTANT:** For a single surface box, there are two brackets fixed at the top and bottom. Unfold the metal hooks to remove the brackets. Insert the front cover supports (top and bottom) in the surface box before continuing the installation. See illustration to install properly.
- 4- Follow instructions 3 to 9 as above for recess mounting.



SUSPENDED CEILING MOUNTING:

- ### SINGLE UNIT:
- 1- Remove one suspended ceiling tile.
 - 2- Insert the adaptor for suspended ceiling in place of the removed tile.
 - 3- Firmly secure the adaptor to the ceiling using the holes for this purpose (see illustration).
 - 4- Refer to the installation instructions to the "Recessed Mounting" section to complete the installation of the unit.
- ### DOUBLE UNIT:
- 1- Remove two suspended ceiling tiles, side by side.
 - 2- Strengthen the structure of the suspended ceiling before cutting. T-bar passes through the opening.
 - 3- Insert the adaptor for suspended ceiling in place of the removed tiles.
 - 4- Firmly secure the adaptor to the ceiling using the holes for this purpose (see illustration).
 - 5- Refer to the installation instructions to the "Recessed Mounting" section to complete the installation of the unit.





LIMITED WARRANTY

Indeeco new products are warranted against defects in workmanship, material, design, labeling and packaging. No other warranty, expressed or implied, written or oral, applies. No person other than an officer or the general manager of Indeeco is authorized to give any other warranty or assume any liability.

Warranty Period

Warranty periods differ between product lines. See chart on following page for item specific warranty periods.

Conditions of Warranty

Indeeco products must be installed, operated, and maintained in accordance with Indeeco's instructions. Indeeco is not liable for damage or unsatisfactory performance of the product resulting from accident, negligence, alteration, unauthorized repair, improper application or installation of the product, improper specifications, or corrosion. **INDEECO IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.** Claims against carriers for damage in transit must be filed by the purchaser with the carrier.

Remedy

Contact Indeeco sales department at (314) 644-4300 or sales@indeeco.com, for a Return Material Authorization Number (RMA#) and return instructions.

If after receipt of the product and the claim, Indeeco finds to its reasonable satisfaction that the product is defective in workmanship, material, design, labeling or packaging, the product will be repaired or replaced, or the purchase price refunded at Indeeco's option. There will be no charge to the purchaser for parts or labor. Removal and reinstallation of the product, and shipment of the product to Indeeco for repair or inspection, shall be at the purchaser's risk and expense.

THE REPAIR, REPLACEMENT, OR REFUND PROVIDED FOR IN THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE TERMS OF THIS LIMITED WARRANTY.



Indeeco Product Line	Warranty Period
BBI	5 years* and lifetime on heating element
BCSI	10 years*
BISI	1 year*
BCI	10 years*
BII	1 year*
BASI	1 year*
BAI	1 year*
BCHI	10 years* and lifetime on heating element
CASI	1 year*
CAI	1 year*
BMI	1 year*
BHI	10 years*
RCI	10 years*
UHCI	5 years*
CUI	5 years*
ULIR	3 years*
UCI	1 year*
UPI	1 year*
UVI	3 years*
WRI	5 years*
CCI	1 year*
WCI	5 years*
WAI	5 years*
WLI	5 years*
EWI	2 years* and 5 years* on heating element
CDI	5 years*
CDIR	5 years*
TSI	1 year*
FFI	1 year*
WHI	2 years* and 5 years* on heating element
CLI	1 year*
All Other Product Lines	18 months from the date of shipment from Indeeco's factory, or 12 months from the date the product is first placed into service, whichever period lapses first.

*From date of shipment from Indeeco's factory.