

Options CD6 & CD11 - Polytube Adapters for Suspended Blower-Type Unit Heaters

Applies: Models B & BE

HAZARD INTENSITY LEVELS

1. **DANGER:** Failure to comply will result in severe personal injury or death and/or property damage.
2. **WARNING:** Failure to comply could result in severe personal injury or death and/or property damage.
3. **CAUTION:** Failure to comply could result in minor personal injury or death and/or property damage.

OPTION DESCRIPTION & APPLICATION

The optional polytube adapter is designed to adapt blower type unit heaters (Models B/BE 75-400) for use with polytube ductwork. The adapter is installed on the front of the heater and is equipped with a collar for attaching the field-supplied polytube.

The most common application of polytube ductwork for distribution of tempered air is in greenhouses. Polytubes are also used in industrial buildings to improve operating efficiency by recovering stratified air and reducing the need for complete area heating.

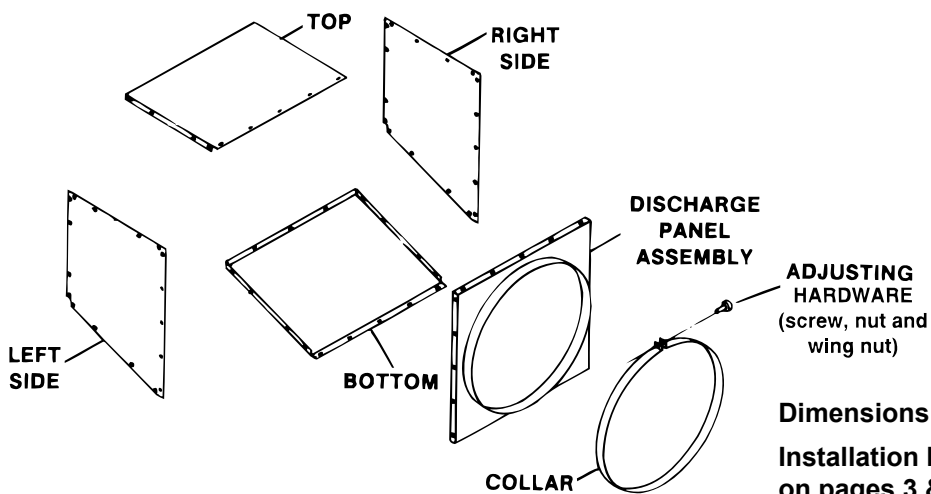
Option CD6 - The polytube adapter in Option CD6 is designed to either raise the adapter discharge panel above the heater discharge or lower it below - depending upon how the adapter is assembled.

Option CD11 - The polytube adapter in Option CD11 is designed so that the polytube adapter discharge panel is directly in line with the heater discharge.

By offering these three installation designs the option is adaptable to be a variety of types of building structure. Follow the instructions in this manual that applies to your installation.

The option packages include:	75		100		125		130		165		200		250-300		400	
	Qty	P/N	Qty	P/N	Qty	P/N	Qty	P/N	Qty	P/N	Qty	P/N	Qty	P/N	Qty	P/N
Option CD6 - Pkg P/N		101243		101244		137299		122086		101245		101246		101247		101248
Adapter Side	1	101253	1	101253	1	132066	1	101254	1	101254	1	101254	1	101255	1	101254
Adapter Side	1	101259	1	101259	1	132066	1	101260	1	101260	1	101260	1	101255	1	101260
Adapter Top	1	101266	1	101267	1	132061	1	121548	1	101268	1	101269	1	101270	1	101271
Adapter Bottom	1	101272	1	101273	1	132062	1	121547	1	101274	1	101275	1	101276	1	101277
Discharge Panel Assy	1	101249	1	101249	1	101249	1	101250	1	101250	1	101250	1	101250	1	101250
Discharge Collar Band	1	101499	1	101499	1	101163	1	146463	1	146463	1	146463	1	146463	1	146463
1/4-20x1-1/2 Hex Head Screw	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231
1/4-20 Hex Nut	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328
1/4-20 Wing Nut	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246
Label	1	101263	1	101263	1	101263	1	101263	1	101263	1	101263	1	101263	1	101263
Screws, #10 x 1/2"lg	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813
Option CD11 - Pkg P/N		104227		104228		137301		122087		104229		104230		104231		104232
Adapter Side	2	104233	2	104233	2	132194	2	104234	2	104234	2	104234	2	104235	2	104234
Adapter Top	1	104236	1	104237	1	132063	1	121546	1	104238	1	104239	1	104240	1	104241
Adapter Bottom	1	104242	1	104243	1	132064	1	121546	1	104244	1	104245	1	104246	1	104247
Discharge Panel Assy	1	101249	1	101249	1	101249	1	101250	1	101250	1	101250	1	101250	1	101250
Discharge Collar Band	1	101499	1	101499	1	101499	1	146463	1	146463	1	146463	1	146463	1	146463
1/4-20x1-1/2 Hex Head Screw	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231	1	51231
1/4-20 Hex Nut	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328	1	7328
1/4-20 Wing Nut	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246	1	107246
Label	1	101263	1	101263	1	96426	1	101263	1	101263	1	101263	1	101263	1	101263
Screws, #10 x 1/2"lg	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813	38	11813

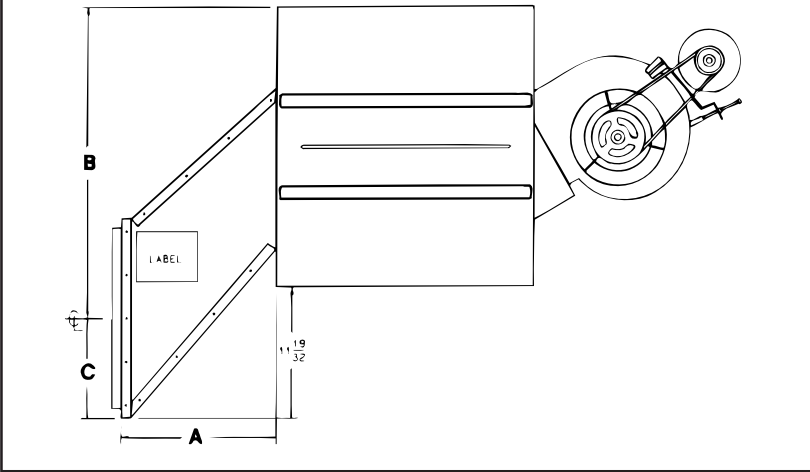
Figure 1 - Polytube Adapter Parts in Option CD6 & CD11



Dimensions on page 2
Installation Instructions on pages 3 & 4

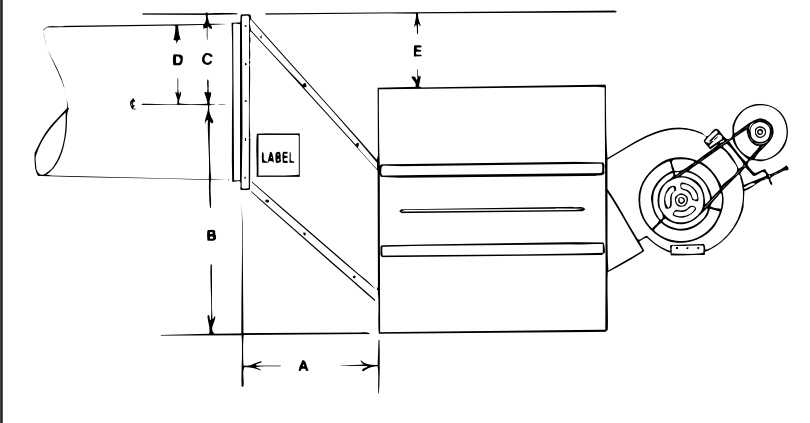
DIMENSIONS OF POLYTUBE ADAPTERS -- Options CD6 & CD11

Figure 2 - Side View of Heater and Polytube Adapter, Option CD6, with Adapter Outlet *Below* the Heater Discharge



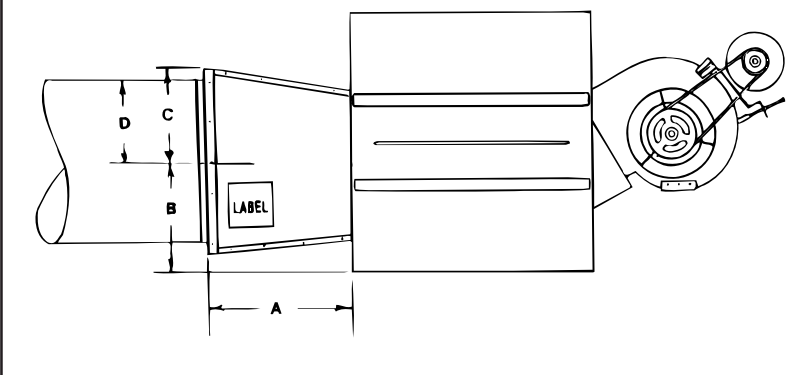
Heater Size	Option CD6 with Discharge Below Heater Discharge		
	A	B	C
75	16-7/32	30-7/32	10-3/8
100	16-13/32	30-7/32	10-3/8
125	16-11/16	30-7/32	10-3/8
130	16-1/32	37-3/32	13-3/8
165	16	37-3/32	13-3/8
200	16-9/16	37-3/32	13-3/8
250/300	16-3/4	37-3/32	13-3/8
400	16-7/32	37-3/32	13-3/8

Figure 3 - Side View of Heater and Polytube Adapter, Option CD6, with Adapter Outlet *Above* the Heater Discharge



Heater Size	Option CD6 with Discharge Below Heater Discharge				
	A	B	C	D	E
75	16-7/32	24-15/32	10-3/8	9	5-27/32
100	16-13/32	24-15/32	10-3/8	9	5-27/32
125	16-11/16	24-15/32	10-3/8	9	5-27/32
130	16-1/32	32-1/8	13-3/8	12	6-1/2
165	16	32-1/8	13-3/8	12	6-1/2
200	16-9/16	32-1/8	13-3/8	12	6-1/2
250/300	16-3/4	32-1/8	13-3/8	12	6-1/2
400	16-7/32	32-1/8	13-3/8	12	6-1/2

Figure 4 - Side View of Heater and Polytube Adapter, Option CD11



Heater Size	Option CD11 with Discharge in Line with Heater Discharge			
	A	B	C	D
75	16-7/32	12-1/8	10-3/8	9
100	16-13/32	12-1/8	10-3/8	9
125	16-11/16	12-1/8	10-3/8	9
130	16-1/32	16-5/32	13-3/8	12
165	16	16-5/32	13-3/8	12
200	16-9/16	16-5/32	13-3/8	12
250/300	16-3/4	16-5/32	13-3/8	12
400	16-7/32	16-5/32	13-3/8	12

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

INSTALLATION INSTRUCTIONS

Installation should be done by a qualified agency in accordance with the instructions in this manual and in compliance with all codes and requirements of authorities having jurisdiction.

NOTE: The illustrations show the polytube adapter being installed with the adapter discharge and polytube below the heater discharge. The instructions apply to all three configurations.

1. **If the heater is installed, turn off the gas and electric.**
Allow sufficient time for the louvers on the heater to cool before beginning installation.
If the heater is not installed, it is recommended that the crate bottom be left in place until the heater installation is complete. For ease of assembly, it is also recommended that the heater be elevated at least 24" when attaching the polytube adapter.

2. **Remove the Horizontal Louver Assembly (See Figure 5)**
Remove the screws that attach the sides of the horizontal louver assembly to the inner side panels of the heater. Remove the louver assembly.
3. **Install the Adapter Sides (See Figure 6)**
Before attaching the side panels, determine their correct positioning depending on the desired configuration. Using the holes that held the louver assembly, attach the adapter side panels to the heater. At the remaining hole locations (pre-punched in the adapter sides), drill 3/32" diameter holes. Insert the screws and tighten.

Figure 5 - Blower-Type Unit Heater with Standard Horizontal Louver Assembly (Remove Louver Assembly to Install Polytube Adapter)

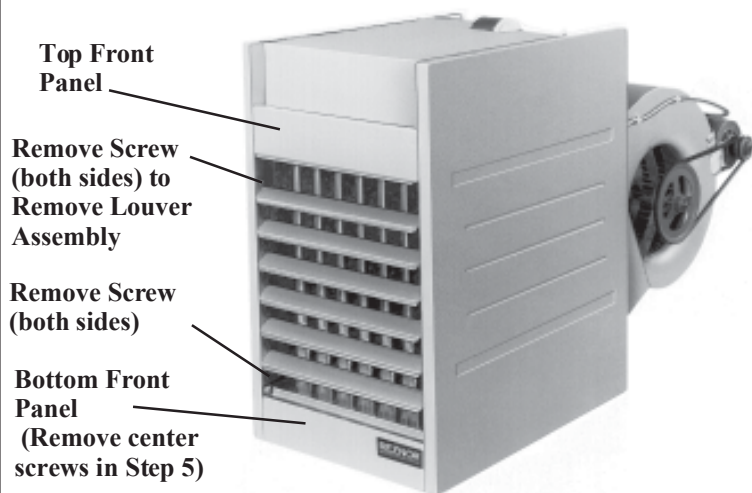
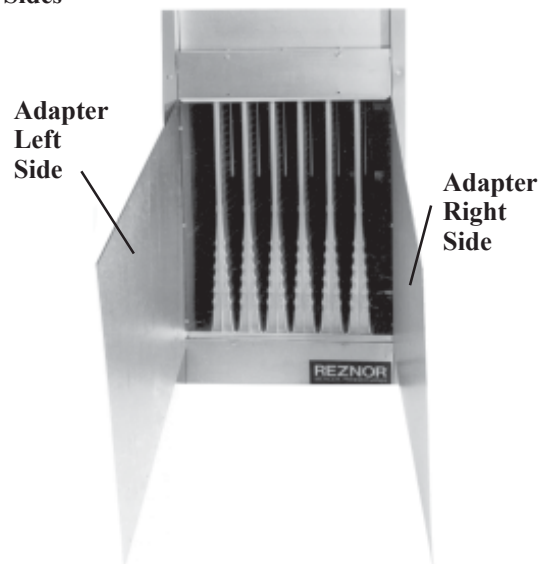


Figure 6 - Attach Polytube Adapter Sides



4. Install Adapter Top & Bottom (See Figure 7)

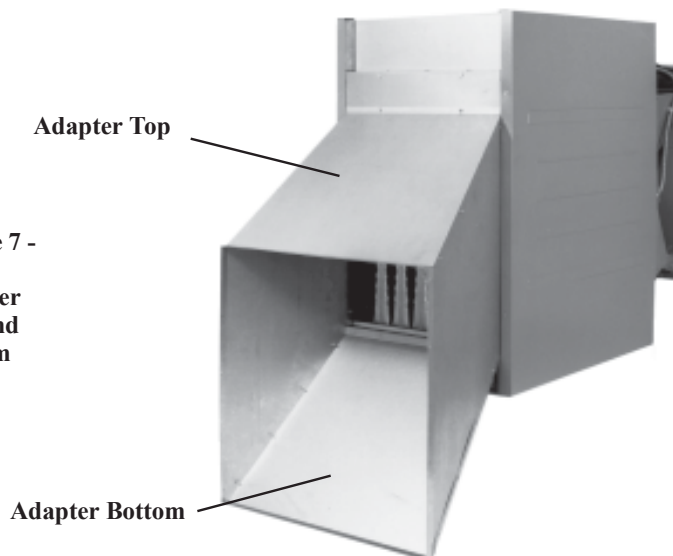
Determine which of the two remaining panels goes on the top and which goes on the bottom.

Adapter Top - Position the adapter top panel with the flange of the top **over** the adapter sides. Attach the top to the front of the heater and to the adapter side panels.

Adapter Bottom - Remove the screws in the bottom front panel of the heater. (Use these screws when attaching the adapter bottom to the front of the heater).

Position the adapter bottom panel with the flange of the bottom **over** the side panels. Attach the adapter bottom to the front of the heater and to the adapter side panels.

Figure 7 - Install Adapter Top and Bottom



INSTALLATION INSTRUCTIONS (cont'd)

5. Install Discharge Panel (See Figure 8)

Slide the discharge panel over the front of the "box" formed by the sides, top and bottom adapter panels. Attach at all the holes across the top, bottom and sides.

6. Attach the Label

For future reference, attach the "Polytube Holes Location" label on the side panel of the adapter (See recommended location in **Figures 2, 3 and 4**). Wipe the surface of the panel with a clean dry cloth. Remove the backing from the label and adhere to the adapter.

7. Install Polytube (See Figure 8)

The polytube adapter is now completed and ready for the field-supplied polytube. Slip the end of the polytube over the collar under the tightening band. Be sure that the air delivery holes are pointed in the proper direction. Fasten the band over the polytube by tightening the adjusting screw.

The polytube should be suspended in accordance with the polytube manufacturer's recommendations. General recommendations are that the first suspension point be 10 feet from the heater and that additional suspension be provided at approximately 8 foot intervals.

Polytubes are normally supplied as a tube which is open at both ends. The end opposite the heater must be closed to permit the tube to inflate.

8. Installation Checks

When the installation is completed, the motor load and discharge air temperature should be checked. Consult the installation manual supplied with the heater for information on checking motor load and how to make blower speed adjustments.

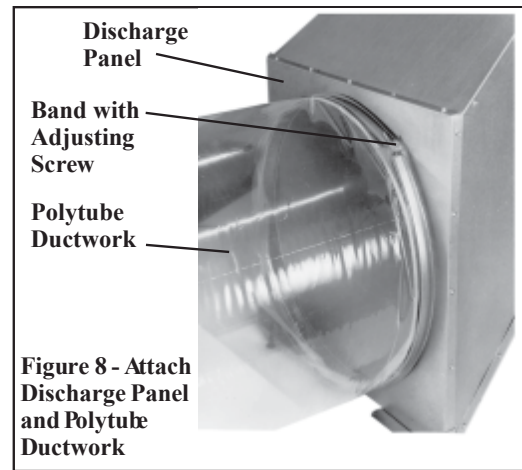


Figure 8 - Attach Discharge Panel and Polytube Ductwork

Use a temperature measuring device to check the discharge air temperature. Check the air temperature at a location in the tube, six to eight feet away from the heater. A temperature rise range of 55° to 65°F is recommended. Following the instructions in the heater manual, adjust the speed of the blower to achieve the desired range while maintaining motor current draw below the full load amperes shown on the motor rating plate.

POLYTUBE SELECTION - Polytube selection is the responsibility of the installer. Different grades, hole positions, hole sizes and lengths are available. Some local code authorities require that polytube material be a listed material. Consult code authority having jurisdiction and polytube supplier to determine the appropriate polytube material and recommended methods of suspension. Poly tubing can be obtained from a supply distributor such as FOF Products, Inc., P.O. Box E, 1505 Racine Street, Delavan, WI 53005; Acme Engineering Company, P.O. Box 978, Muskogee, OK 74402 or any local greenhouse supply distributor.

The total open or free area of the polytube is important. Polytube suppliers have a great deal of flexibility in placement and sizing of holes. Too small of a free area will cause overheating. Excessive open area may not permit the tube to inflate. See table below for a guide in hole size and location.

Spacing and hole size may be varied, but free area must not be less than shown for your heater size.

Size	CFM at .25"ESP	Polytube Dia (inch)	Minimum Free Area (sq inch)	Suggested Hole Sizes & Locations					
				Holes	Length of Polytube (feet)				
					50	75	100	125	150
75	925	18	110	Number	37 pairs	75 pairs	75 pairs	---	---
				Diameter	1-1/2"	1"	1"	---	---
				Spacing	16"	12"	16"	---	---
100	1235	18	145	Number	50 pairs	50 pairs	100 pairs	94 pairs	---
				Diameter	1-1/2"	1-1/2"	1"	1"	---
				Spacing	12"	18"	12"	16"	---
125	1540	18	185	Number	40 pairs	60 pairs	60 pairs	125 pairs	---
				Diameter	1-7/8"	1-1/2"	1-1/2"	1"	---
				Spacing	15"	15"	20"	12"	---
130	1600	24	190	Number	40 pairs	60pairs	60 pairs	125 pairs	---
				Diameter	1-7/8"	1-1/2"	1-1/2"	1"	---
				Spacing	15"	15"	20"	12"	---
165	2035	24	240	Number	50 pairs	50 pairs	75 pairs	75 pairs	75 pairs
				Diameter	1-7/8"	1-7/8"	1-1/2"	1-1/2"	1-1/2"
				Spacing	12"	18"	16"	20"	24"
200	2465	24	300	Number	42 pairs	42 pairs	60 pairs	60 pairs	100 pairs
				Diameter	2-1/4"	2-1/4"	1-7/8"	1-7/8"	1-1/2"
				Spacing	14"	21"	20"	25"	18"
250	3085	24	360	Number	40 pairs	60 pairs	60 pairs	60 pairs	60 pairs
				Diameter	2-1/2"	2"	2"	2"	2"
				Spacing	15"	15"	20"	25"	30"
300	3700	24	425	Number	75 pairs	75 pairs	75 pairs	75 pairs	75 pairs
				Diameter	2"	2"	2"	2"	2"
				Spacing	9"	12"	16"	20"	24"
400	4935	24	550	Number	60 pairs	60 pairs	60 pairs	100 pairs	100 pairs
				Diameter	2-1/2"	2-1/2"	2-1/2"	1-7/8"	1-7/8"
				Spacing	10"	15"	20"	15"	18"

Conversion Table (Diameter to Area)	
Dia of Hole (inch)	Area of Hole (sq inch)
2-1/2"	4.91
2-1/4"	3.98
2"	3.14
1-7/8"	2.76
1-1/2"	1.76
1"	0.785

WARNING:
Operational polytube adapters are to be used only on units equipped with a blower. At no time should the free area in the polytube be less than the listed minimum. Failure to comply with this warning could result in severe personal injury, death and/or property damage.

Specifications & illustrations subject to change without notice of incurring obligations.

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