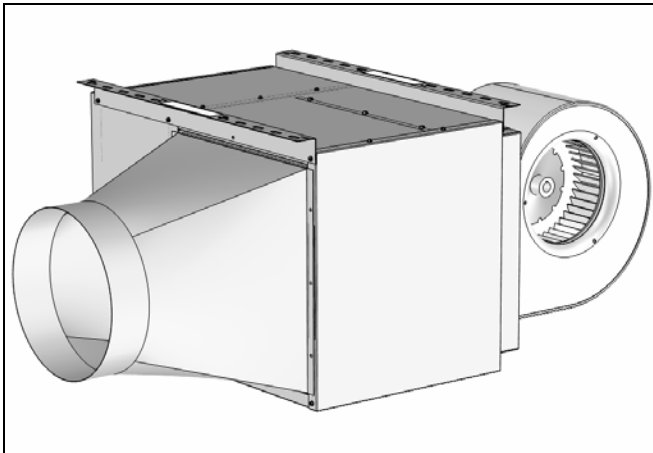


INSTALLATION INSTRUCTIONS

air discharge transition for connecting polytube duct models HDB, HDC, and BTS

ACCESSORY AIR DISCHARGE TRANSITION



WARNING

Gas supply shall be shut-off and the electrical power disconnected before proceeding with the installation. Failure to do so could result in fire, explosion, electrical shock, or the unit starting suddenly resulting in injury.



CAUTION

The minimum area for the polytube air discharge holes must be maintained. Failure to do so will reduce airflow CFM and will result in overheating of the heat exchanger. More holes can be added however caution must be used to assure that the number of holes are not so great as to not allow proper inflation of the polytube. For hole sizes other than those shown in Tables 3.1 and 3.2, maintain equivalent total hole area as shown in those tables.

IMPORTANT

1. The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these kits must be performed by a qualified installation and service agency.
2. These instructions must also be used in conjunction with the Installation and Service manual originally shipped with the appliance being converted, in addition to any other accompanying component supplier literature.

AIR DISCHARGE TRANSITION FOR CONNECTING POLYTUBE DUCT

Model Application

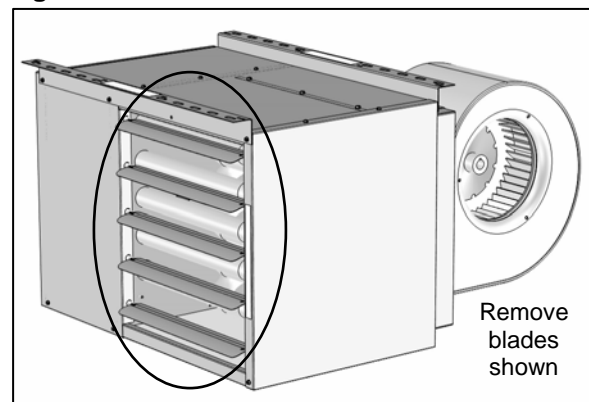
The pre-fabricated air-discharge transition is designed for direct attachment to blower type unit heaters, Models HDB and HDC. The transition includes fasteners for attachment and a duct band and seal for connecting a polyethylene tube for greenhouse heating systems. The discharge transition is shipped in a separate carton and should be attached after the unit heater is installed to make handling easier.

Assembly/Installation

The recommended procedure for assembly and installation is described as follows:

1. Before beginning installation of the air discharge transition, remove all of the spring loaded louver blades from the unit heater on which the transition is to be installed (Figure 1.1). To remove the spring loaded louver blades, grasp the blade and apply pressure against the louver blade retaining spring. After compressing the spring, the tab on the opposite side of the louver blade can be removed from the unit, freeing the blade from the unit.

Figure 1.1 – Remove Louvers on Front of Unit

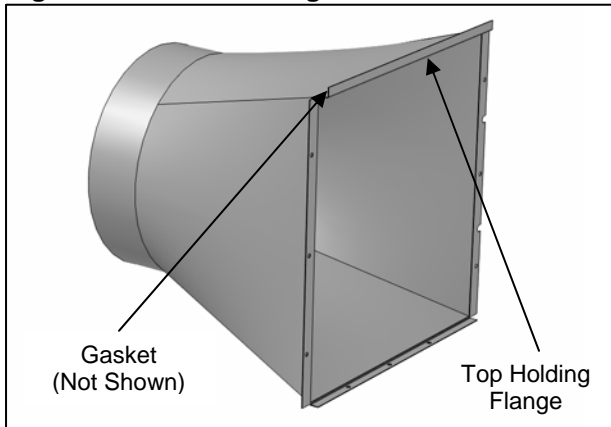


Note: These louver blades/springs can be discarded as they will not be used once the transition is installed.

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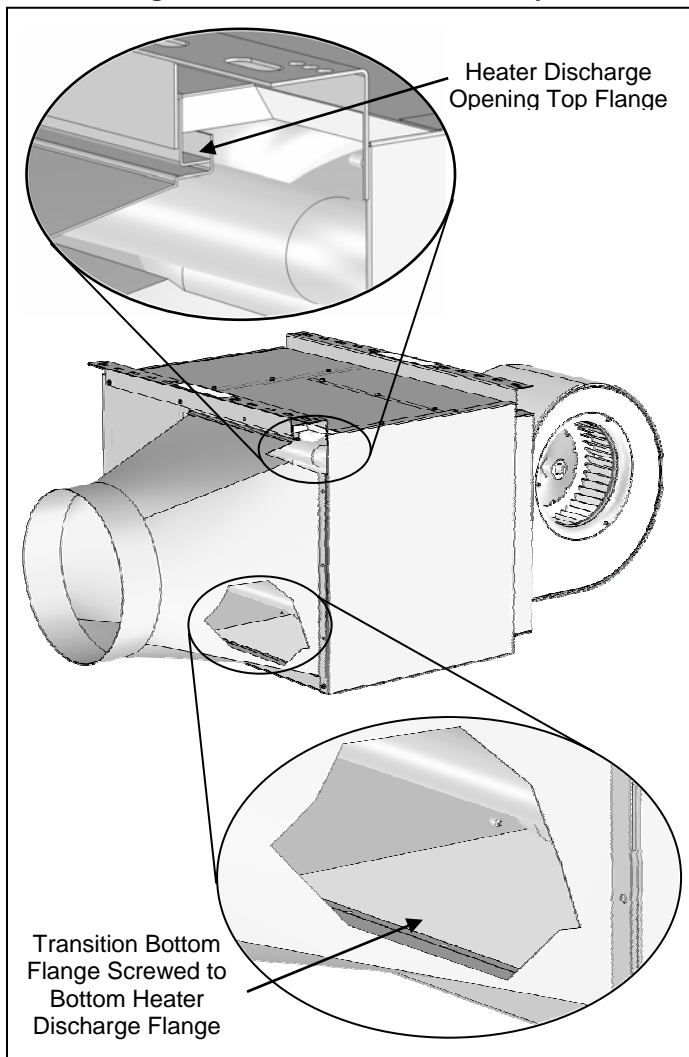
INSTALLATION – AIR DISCHARGE TRANSITION FOR POLYTUBE DUCT

Figure 2.1 – Air Discharge Transition



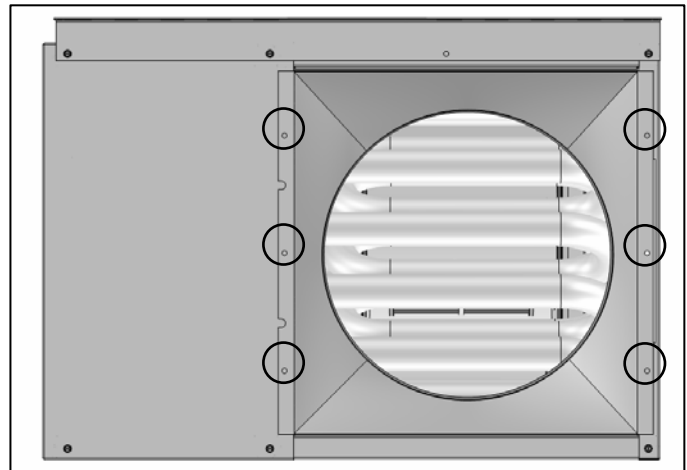
2. Guide the Top Holding Flange (Figure 2.1) of the transition behind the flange of the top opening of the unit (top of Figure 2.2) and guide the bottom flange of the transition into the heater discharge opening (bottom of Figure 2.2). For unit sizes 175-400, the top and bottom flanges on the transition includes a notch to clear the center support bracket on the unit.

**Figure 2.2
Air Discharge Transition Installed Cutaway Views**

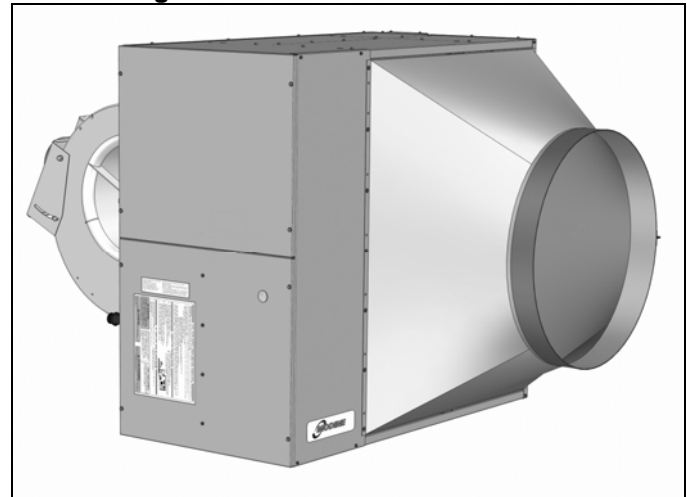


3. Insert the strip seal (gasket) supplied with the kit between the top holding flange (refer to Figure 2.1) and the top opening of the unit. This will prevent the discharge transition from rattling during operation.
4. Holding the transition in place and reaching through the round transition opening, drill pilot holes for (3) #10 x 1/2" sheet metal screws, using the holes in the bottom flange of the transition as a template. Secure bottom of transition to the unit using (3) #10 x 1/2" self-drilling screws (bottom of Figure 2.2).
5. To complete the transition installation, use (6) #10 x 1/2" self drilling sheet metal screws to fasten the transition side flanges to the unit heater (Figure 2.3).

Figure 2.3 – Air Discharge Transition



**Figure 2.4
Air Discharge Transition Installed on Model BTS**



PERFORMANCE DATA – DISCHARGE AIR TRANSITION FOR POLYTUBE

Table 3.1 – HDB/HDC/BTS Performance Data for Units with Straight Polytube^①

Model	Growing Area Coverage (ft ² per Unit)	Input (BTU/HR)	Output (BTU/HR)	Air Flow (CFM)	Air Temp Rise (°F)	Motor H.P.	Motor Speed/ Drive Number ^②	Polytube Diameter (Inches)	Total Required Polytube Hole Area (Ft ²)	Total Required Polytube Hole Quantity by Hole Diameter		
										3"	2 1/2"	2"
HDB/HDC 60	603	60,000	48,000	905	49	1/4	Med	12	0.95	19	29	43
HDB/HDC 75	675	75,000	60,000	1013	55	1/3	Med	12	1.07	21	32	48
HDB/HDC100	1143	100,000	80,000	1714	43	1/2	Med	18	1.80	36	54	81
HDB/HDC125	1147	125,000	100,000	1721	54	1/2	Med	18	1.81	36	54	82
BTS150	1347	150,000	120,000	2020	55	1/3	232	18	2.13	43	64	96
BTS175	1571	175,000	140,000	2357	55	1/2	229	24	2.48	50	74	112
BTS200	1796	200,000	160,000	2694	55	1	229	24	2.84	57	85	128
BTS250	2245	250,000	200,000	3367	55	1	241	24	3.54	71	106	159
BTS300	2693	300,000	240,000	4040	55	1	241	24	4.25	85	128	191
BTS350	3143	350,000	280,000	4714	55	1-1/2	247	24	4.96	99	149	223
BTS400	3591	400,000	320,000	5387	55	3	246	24	5.67	113	170	255

① Based on 1.5 cfm/ft² air circulation requirement, polytube length 150 ft. and approximately 0.2" W.C. E.S.P.

② Refer to Table 4.1 and 4.2 for applicable Motor HP/Drive Number to Power Code cross reference.

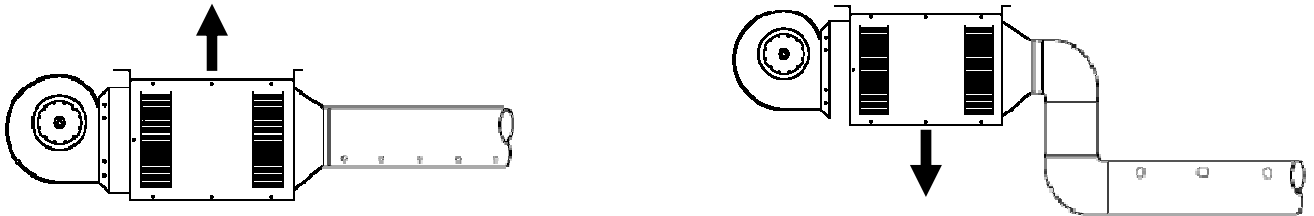


Table 3.2 – HDB/HDC/BTS Performance Data for Units with Two 90° Elbows and Straight Polytube^③

Model	Growing Area Coverage (ft ² per Unit)	Input (BTU/HR)	Output (BTU/HR)	Air Flow (CFM)	Air Temp Rise (°F)	Motor H.P.	Motor Speed/ Drive Number ^②	Polytube Diameter (Inches)	Total Required Polytube Hole Area (Ft ²)	Total Required Polytube Hole Quantity by Hole Diameter		
										3"	2 1/2"	2"
HDB/HDC 60	606	60,000	48,000	909	49	1/4	Med	12	0.96	19	29	43
HDB/HDC 75	675	75,000	60,000	1013	55	1/3	Med	12	1.07	21	32	48
HDB/HDC100	1125	100,000	80,000	1687	44	1/2	Med	18	1.78	36	53	80
HDB/HDC125	1125	125,000	100,000	1688	55	1/2	Med	18	1.78	36	53	80
BTS150	1347	150,000	120,000	2020	55	1/2	229	18	2.13	43	64	96
BTS175	1571	175,000	140,000	2357	55	1/2	229	24	2.48	50	74	112
BTS200	1796	200,000	160,000	2694	55	1	229	24	2.84	57	85	128
BTS250	2245	250,000	200,000	3367	55	1	241	24	3.54	71	106	159
BTS300	2693	300,000	240,000	4040	55	1-1/2	23	24	4.25	85	128	191
BTS350	3143	350,000	280,000	4714	55	2	177	24	4.96	99	149	223
BTS400	3591	400,000	320,000	5387	55	3	246	24	5.67	113	170	255

② Refer to Table 4.1 and 4.2 for applicable Motor HP/Drive Number to Power Code cross reference.

③ Based on 1.5 cfm/ft² air circulation requirement, polytube length 150 ft. and approximately 0.3" W.C. E.S.P.

POWER CODE DESCRIPTIONS

Table 4.1 – Power Code Descriptions – Models HDB/HDC 60 through 125

Power Code Description			HDB/HDC 60		HDB/HDC 75		HDB/HDC100		HDB/HDC125	
Power Code	Voltage	Phase	HP	Drive	HP	Drive	HP	Drive	HP	Drive
01	115	1	1/4	①	1/3	①	1/2	①	1/2	①

① HDB/HDC 60-125 units feature a direct-drive, 3-speed motor. A drive number is not applicable.

Table 4.2 – Power Code Descriptions – Models BTS150 through 400

Power Code Description			BTS150		BTS175		BTS200		BTS250		BTS300		BTS350		BTS400					
Power Code	Voltage	Phase	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive	HP	Drive				
13	115/230	1	1/3	232	1/2	229	1	229	1	241	1	241	1 1/2	247	-	-				
19	208-230/460	3		233②										248②						
22	575	3																		
24	115/230	1	1/2	229	-	-	-	-	-	-	-	-	-	-	-	-				
30	208-230/460	3																		
33	575	3																		
35	115/230	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
38	208	3															1 1/2	23	-	-
41	208-230/460	3															-	-	2	177
42	230/460	3															1 1/2	23	-	-
44	575	3															-	-	2	177
60	208	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
64	230/460	3															1 1/2	177②		
66	575	3															3	246		

② Where indicated, the drive number is different for 575V motor because of the change in motor sheave required to accommodate the larger motor shaft used on those 575V motors. However, performance is the same as the drive indicated for motors with voltage ratings 460V and lower.

Modine Manufacturing Company has a continuous product improvement program, and therefore reserves the right to change design and specifications without notice.