installation, start-up and service instructions

SINGLE PACKAGE ROOFTOP ELECTRIC COOLING UNITS

551B

DuraPac Plus Series

Sizes 090-150

$7^1/_2$ to $12^1/_2$ Tons

Perfect Humidity™

Cancels: II 551B-90-6

II 551B-90-7
10/15/05

CONTENTS

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

> ⚠ **CAUTION:** Ensure voltage listed on unit data plate agrees with electrical supply provided for unit.

> ⚠ **WARNING:** Before performing service or maintenance operations on unit, turn off main power switch to unit and install lockout tag. Electrical shock could cause personal injury.

INSTALLATION

Unit is shipped in the vertical configuration. To convert to horizontal configuration, remove side duct opening covers. Using the same screws, install covers on vertical duct openings with the insulation-side down. Seals around duct openings must be tight. See Fig. 1.

I. STEP 1 — PROVIDE UNIT SUPPORT

A. Roof Curb

Assemble and install accessory roof curb in accordance with instructions shipped with curb. Install insulation, cant strips, roofing felt, and counter flashing as shown. *Ductwork must be attached to curb.* If electric or control power is to be routed through the basepan, attach the accessory thru-the-bottom service connections to the basepan in accordance with the accessory installation instructions. Connections must be installed before unit is set on roof curb.

IMPORTANT: The gasketing of the unit to the roof curb is critical for a watertight seal. Install gasket supplied with the roof curb as shown in Fig. 2. Improperly applied gasket can also result in air leaks and poor unit performance.

Curb should be level. This is necessary for unit drain to function properly. Unit leveling tolerances are shown in Fig. 3. Refer to Accessory Roof Curb Installation Instructions for additional information as required.

B. Slab Mount (Horizontal Units Only)

Provide a level concrete slab that extends a minimum of 6 in. beyond unit cabinet. Install a gravel apron in front of condenser coil air inlet to prevent grass and foliage from obstructing airflow.

NOTE: Horizontal units may be installed on a roof curb if required.

C. Alternate Unit Support (Curb or Slab Mount)

A non-combustible sleeper rail can be used in the unit curb support area. If sleeper rails cannot be used, support the long sides of the unit with a minimum of 3 equally spaced 4-in. x 4-in. pads on each side.

II. STEP 2 — FIELD FABRICATE DUCTWORK

On vertical discharge units, secure all ducts to roof curb and building structure. *Do not connect ductwork to unit.* For horizontal applications, field-supplied flanges should be attached to horizontal discharge openings and all ductwork attached to the flanges. Insulate and weatherproof all external ductwork, joints, and roof openings with counter flashing and mastic in accordance with applicable codes.

Ducts passing through an unconditioned space must be insulated and covered with a vapor barrier.

If a plenum return is used on a vertical unit, the return should be ducted through the roof deck to comply with applicable fire codes.

A minimum clearance to combustibles is not required around ductwork on vertical discharge units. On horizontal discharge units, a minimum clearance of 1 in. is required for the first 12 in. of ductwork. Cabinet return-air static pressure (a negative condition) should not exceed 0.30 in. wg with EconoMi$er IV, or 0.45 in. wg without economizer.

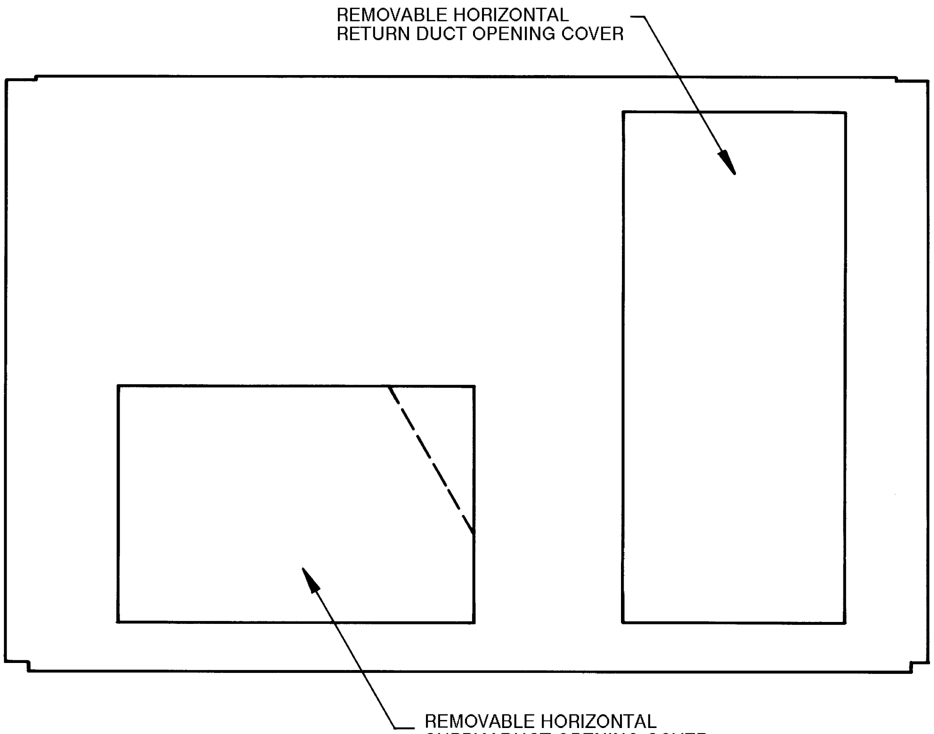


Fig. 1 — Horizontal Conversion Panels

III. STEP 3 — INSTALL CONDENSATE DRAIN LINE AND EXTERNAL TRAP

Condensate drain connections are located at the bottom and end of the unit. Unit discharge connections do not determine the use of drain connections; either drain connection can be used in vertical or horizontal applications.

When using the standard end drain connection, make sure the plug (red) in the alternate bottom connection is tight before installing the unit.

To use the bottom drain connection for a roof curb installation, relocate the factory-installed plug (red) from the bottom connection to the end connection. See Fig. 4. The piping for the condensate drain and external trap can be completed after the unit is in place. The center drain plug looks like a star connection, however it can be removed with a $^{1}/_{2}$-in. socket drive extension.

All units must have an external trap for condensate drainage. Install a trap at least 4-in. deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the unit at 1 in. per 10 ft of run. Do not use a pipe size smaller than the unit connection ($^{3}/_{4}$ in.). See Fig. 5.

IV. STEP 4 — RIG AND PLACE UNIT

Inspect unit for transportation damage. File any claim with transportation agency. Keep unit upright and do not drop. Spreader bars are not required if top crating is left on unit. Rollers may be used to move unit across a roof. Level by using unit frame as a reference. See Table 1 and Fig. 6 for additional information. Operating weight is shown in Table 1 and Fig. 6.

Lifting holes are provided in base rails as shown in Fig. 6 and 7. Refer to rigging instructions on unit.

A. Positioning

Maintain clearance around and above unit to provide proper airflow and service access. See Fig. 7.

Position unit on roof curb so that the following clearances are maintained: $^{1}/_{4}$ in. clearance between the roof curb and the base rail inside the front and rear, 0.0 in. clearance between the roof curb and the base rail inside on the duct end of the unit. This will result in the distance between the roof curb and the base rail inside on the condenser end of the unit being approximately equal to Fig. 2, section C-C.

Do not install unit in an indoor location. Do not locate unit air inlet near exhaust vents or other sources of contaminated air.

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

After unit is in position, remove polyethylene shipping wrapper and rigging skid.

CONNECTOR PKG. ACCY.	B	C	D ALT DRAIN HOLE	GAS	POWER	CONTROL	ACCESSORY POWER
CRBTMPWR001A01	2′-8 7/16″ [827]	1′-10 15/16″ [583]	1 3/4″ [44.5]	3/4″ [19] NPT	3/4″ [19] NPT	1/2″ [12.7] NPT	1/2″ [12.7] NPT
CRBTMPWR002A01					1 1/4″ [31.7]		
CRBTMPWR003A01				1/2″ [12.7] NPT	3/4″ [19] NPT		
CRBTMPWR004A01				3/4″ [19] NPT	1 1/4″ [31.7]		

ROOF CURB ACCESSORY	"A"	UNIT SIZE
CRRFCURB003A01	1′-2″ [356]	551B090-150
CRRFCURB004A01	2′-0″ [610]	

NOTES:
1. Roof curb accessory is shipped disassembled.
2. Insulated panels: 1-in. thick polyurethane foam, 1 3/4 lb density.
3. Dimensions in [ ] are in millimeters.
4. Roof curb: 16-gage steel.
5. Attach ductwork to curb (flanges of duct rest on curb).
6. Service clearance 4 ft on each side.
7. ⇨ Direction of airflow.
8. Connector packages CRBTMPWR001A01 and 2A01 are for thru-the-curb gas type. Packages CRBTMPWR003A01 and 4A01 are for thru-the-bottom type gas connections.

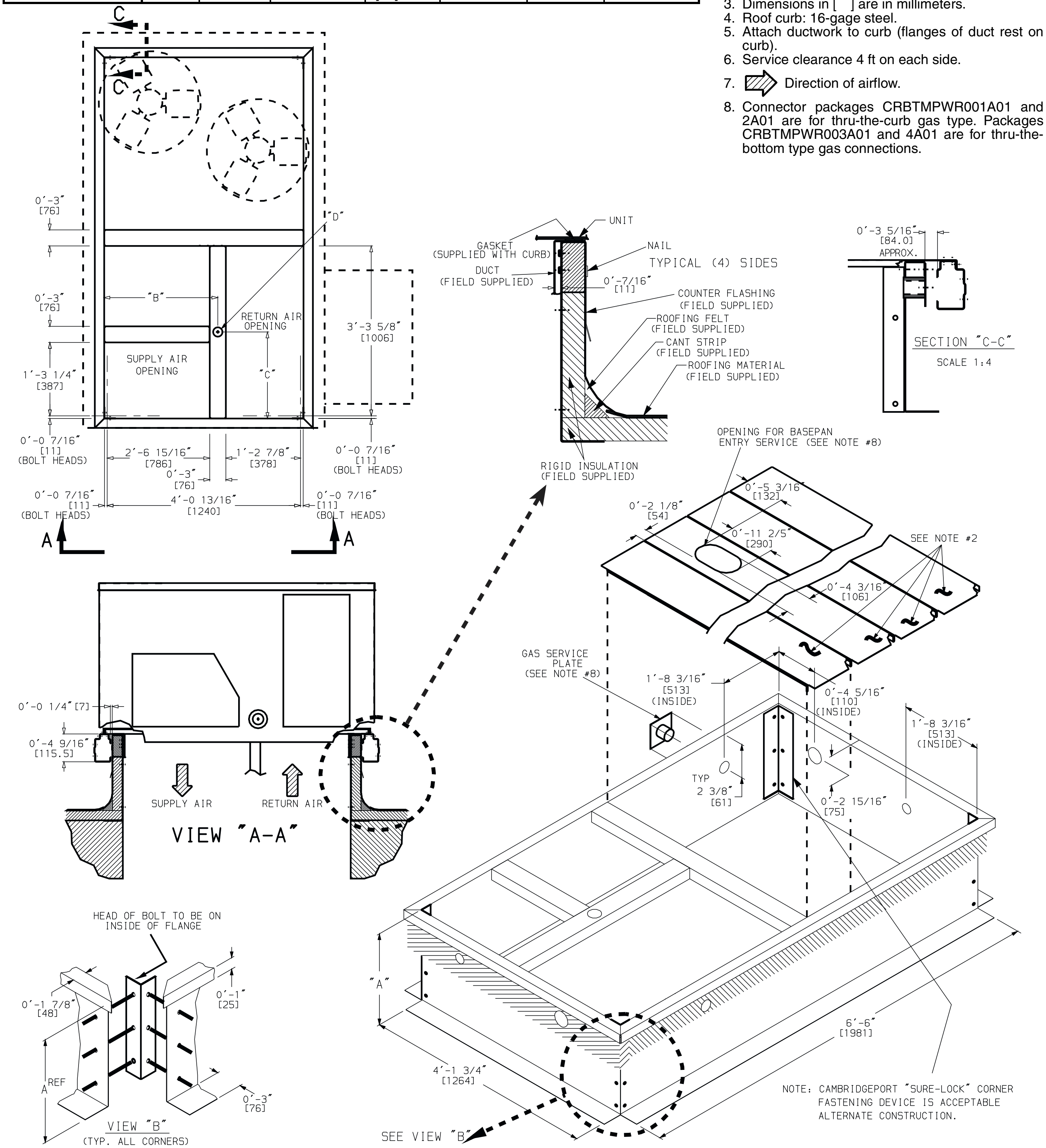
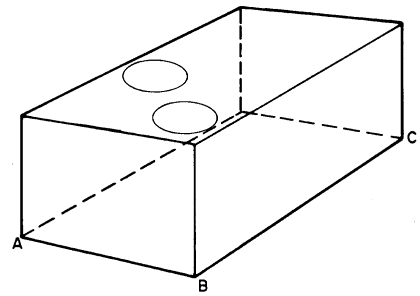


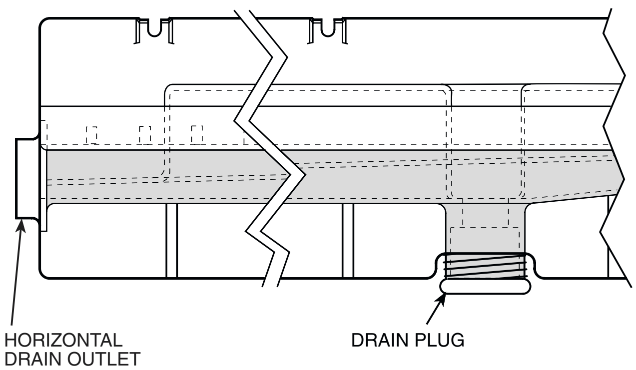
Fig. 2 — Roof Curb Details



MAXIMUM ALLOWABLE DIFFERENCE
(in.)

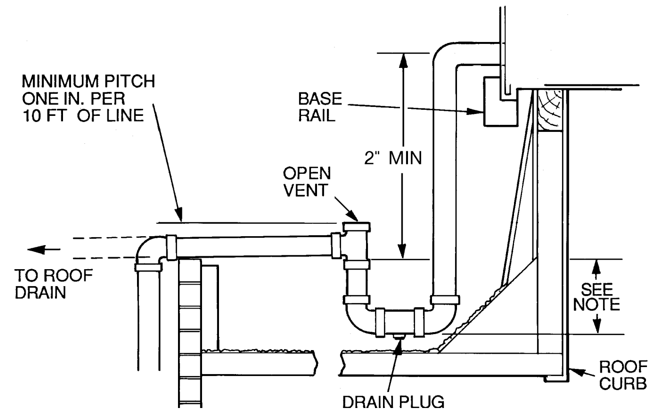
A-B	B-C	A-C
0.5	1.0	1.0

Fig. 3 — Unit Leveling Tolerances



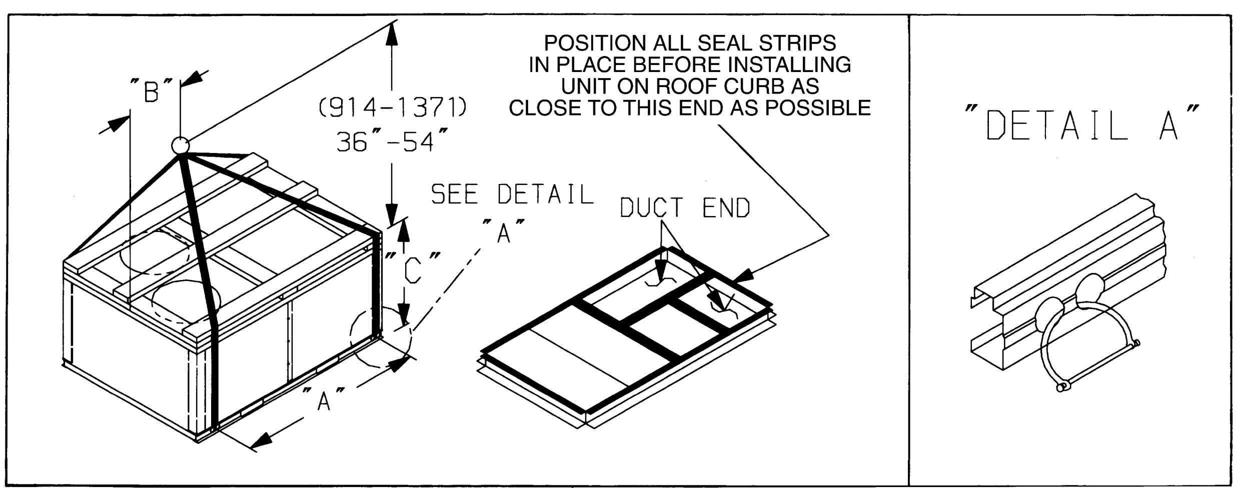
NOTE: Drain plug is shown in factory-installed position.

Fig. 4 — Condensate Drain Location



NOTE: Trap should be deep enough to offset maximum unit static difference. A 4-in. trap is recommended.

Fig. 5 — Condensate Drain Piping Details



NOTES:
1. Place unit on curb as close as possible to the duct end.
2. Dimension in ( ) is in millimeters.
3. Hook rigging shackles through holes in base rail, as shown in detail “A.” Holes in base rails are centered around the unit center of gravity. Use wooden top skid when rigging to prevent rigging straps from damaging unit.
4. Unit weights do not include economizer. See Table 1 for economizer weights.
5. Weights include base unit without the Perfect Humidity™ dehumidification system. See Table 1 for additional unit operating weights with the Perfect Humidity dehumidification system.

551B	OPERATING WEIGHT		A		B		C	
	lb	kg	in.	mm	in.	mm	in.	mm
090	755	343	77.42	1967	41.5	1054	42.12	1070
102	895	406	77.42	1967	41.5	1054	50.12	1273
120	915	415	77.42	1967	41.5	1054	50.12	1273
150	930	422	77.42	1967	41.5	1054	50.12	1273

⚠ **CAUTION:** All panels must be in place when rigging.

Fig. 6 — Rigging Details

UNIT	STD. UNIT WEIGHT LB	STD. UNIT WEIGHT KG	ECONOMI$ER IV WEIGHT LB	ECONOMI$ER IV WEIGHT KG	VERT. W/ P.E. LB	ECON IV WEIGHT KG	CORNER WEIGHT (A) LB	CORNER WEIGHT (A) KG	CORNER WEIGHT (B) LB	CORNER WEIGHT (B) KG	CORNER WEIGHT (C) LB	CORNER WEIGHT (C) KG	CORNER WEIGHT (D) LB	CORNER WEIGHT (D) KG	"H" FT -IN.	"H" MM	"J" FT -IN.	"J" MM	"K" FT -IN.	"K" MM
551B090	755	342	75	34.1	145	65.9	164	74	140	64	208	94	243	110	2′-0 7/8″	632	3′-5 5/16″	1050	2′-9 11/16″	856
551B102	895	406	↓	↓	↓	↓	195	88	166	75	247	112	288	131	2′-10 7/8″	885	4′-1 5/16″	1253	3′-0 3/8″	924
551B120	915	415	↓	↓	↓	↓	199	90	170	77	252	114	294	134	2′-10 7/8″	885	4′-1 5/16″	1253	3′-0 3/8″	924
551B150	930	422	↓	↓	↓	↓	202	92	172	78	256	116	300	136	1′-2 7/8″	378	4′-1 5/16″	1253	3′-0 3/8″	924

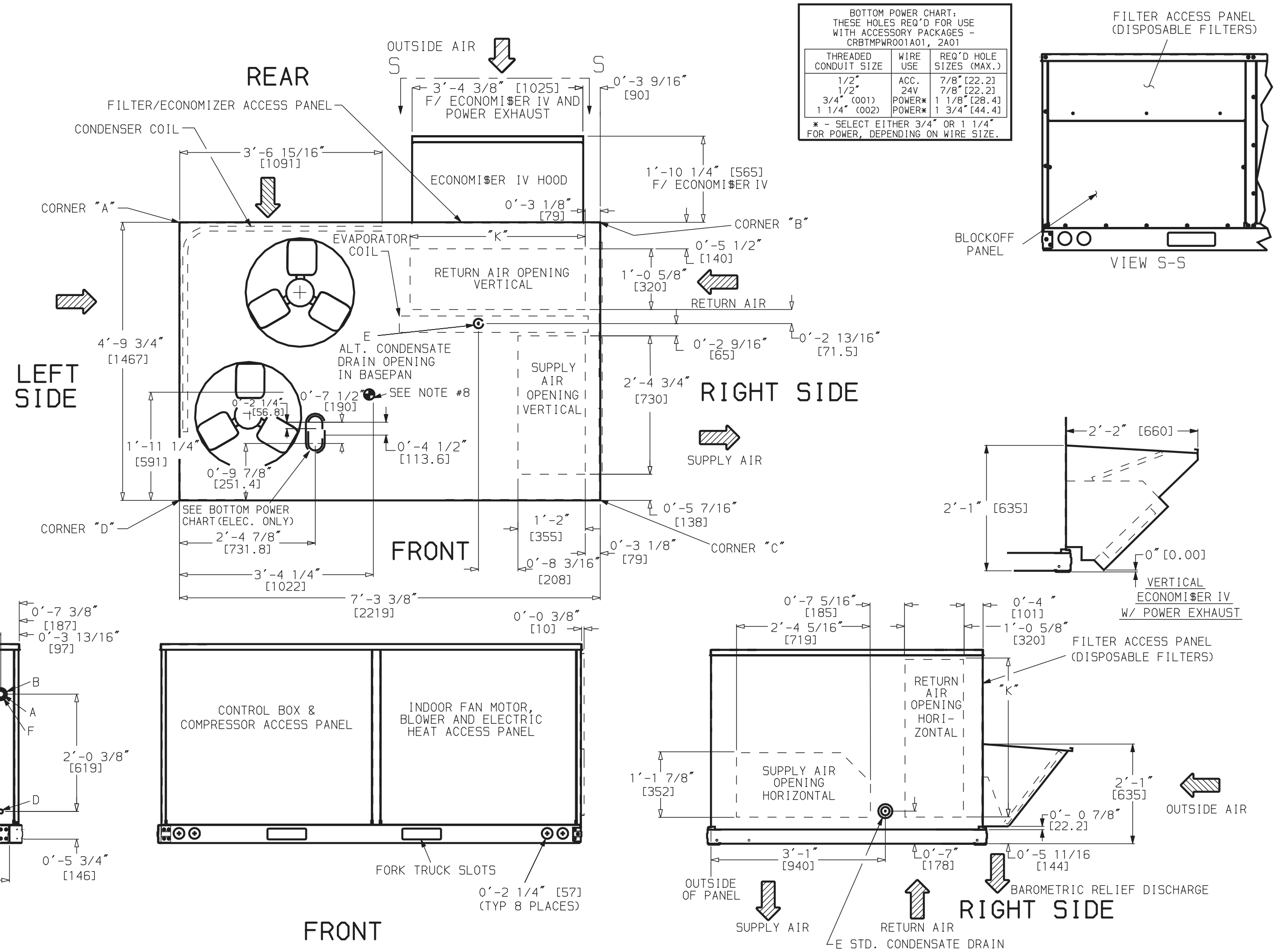
NOTES:
1. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY.
3. DIRECTION OF AIR FLOW.
4. DUCTWORK TO BE ATTACHED TO ACCESSORY ROOF CURB ONLY.
5. MINIMUM CLEARANCE (LOCAL CODES OR JURISDICTION MAY PREVAIL):
   a. BOTTOM TO COMBUSTIBLE SURFACES (WHEN NOT USING CURB) 0 INCHES, ON HORIZONTAL DISCHARGE UNITS WITH ELECTRIC HEAT 1 INCH CLEARANCE TO DUCTWORK FOR 1 FOOT.
   b. CONDENSER COIL, FOR PROPER AIR FLOW, 36 INCHES ONE SIDE, 12 INCHES THE OTHER. THE SIDE GETTING THE GREATER CLEARANCE IS OPTIONAL.
   c. OVERHEAD, 60 INCHES TO ASSURE PROPER CONDENSER FAN OPERATION.
   d. BETWEEN UNITS, CONTROL BOX SIDE, 42 IN. PER NEC.
   e. BETWEEN UNIT AND UNGROUNDED SURFACES, CONTROL BOX SIDE, 36 IN. PER NEC.
   f. BETWEEN UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURFACES, CONTROL BOX SIDE, 42 IN. PER NEC.
   g. HORIZONTAL SUPPLY AND RETURN END, 0 INCHES WHEN THE ALTERNATE CONDENSATE DRAIN IS USED.
6. WITH THE EXCEPTION OF THE CLEARANCE FOR THE CONDENSER COIL AS STATED IN NOTES 5a, b, AND c, A REMOVABLE FENCE OR BARRICADE REQUIRES NO CLEARANCE.
7. UNITS MAY BE INSTALLED ON COMBUSTIBLE FLOORS MADE FROM WOOD OR CLASS A, B, OR C ROOF COVERING MATERIAL.
8. THE VERTICAL CENTER OF GRAVITY IS 1′-7 1/2″[495] FOR 090, 2′-0″[610] FOR 102, 120 AND 150 UP FROM THE BOTTOM OF THE BASE RAIL.

	CONNECTION SIZES
A	1 3/8″ DIA. [35] FIELD POWER SUPPLY HOLE
B	2 1/2″DIA [64] POWER SUPPLY KNOCK-OUT
C	1 3/4″DIA [44] CHARGING PORT HOLE
D	7/8″ DIA. [22] FIELD CONTROL WIRING HOLE
E	3/4″-14 NPT CONDENSATE DRAIN
F	2″ DIA [51] POWER SUPPLY KNOCK-OUT

BOTTOM POWER CHART: THESE HOLES REQ'D FOR USE WITH ACCESSORY PACKAGES - CRBTMPWR001A01, 2A01

THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
1/2″	ACC.	7/8″ [22.2]
1/2″	24V	7/8″ [22.2]
3/4″ (001)	POWER*	1 1/8″ [28.4]
1 1/4″ (002)	POWER*	1 3/4″ [44.4]

* - SELECT EITHER 3/4″ OR 1 1/4″ FOR POWER, DEPENDING ON WIRE SIZE.



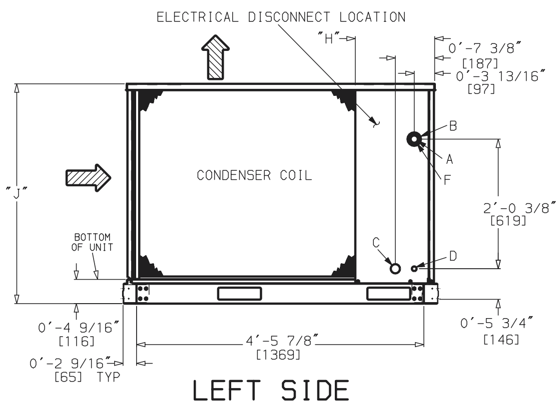


Fig. 7 — Base Unit Dimensions

Table 1 — Physical Data

UNIT 551B	090	102	120	150
NOMINAL CAPACITY (tons)	7 1/2	8 1/2	10	12 1/2
OPERATING WEIGHT (lb)				
Unit	755	895	915	930
EconoMi$er IV	75	75	75	75
Perfect Humidity™ Dehumidification Package	44	51	51	51
Roof Curb	143	143	143	143
COMPRESSOR	Scroll			
Quantity	2	2	2	2
Oil (oz) (each compressor)	53	53	50	60
REFRIGERANT TYPE	R-22			
Expansion Device	Metering Device			
Operating Charge (lb-oz)				
Standard Unit				
Circuit 1	7-10	9- 8	9-6	9-8
Circuit 2	8- 2	8-13	10-9	9-5
Unit With Perfect Humidity Dehumidification Package				
Circuit 1	13-0	16-0	16-8	15-3
Circuit 2	13-6	16-8	17-8	16-6
CONDENSER FAN	Propeller Type			
Quantity...Diameter (in.)	2...22	2...22	2...22	2...22
Nominal Cfm	6500	6500	7000	7000
Motor Hp...Rpm	1/4...1100	1/4...1100	1/4...1100	1/4...1100
Watts Input (Total)	650	650	650	650
CONDENSER COIL	High-Efficiency Enhanced Copper Tubes, Lanced Aluminum Fins			
Rows...Fins/in.	2...17	2...17	2...17	2...17
Total Face Area (sq ft)	20.5	25.0	25.0	25.0
EVAPORATOR COIL	High Efficiency Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Face Split			
Standard Unit				
Rows...Fins/in.	3...15	4...15	4...15	4...15
Total Face Area (sq ft)	8.9	11.1	11.1	11.1
Unit with Perfect Humidity Dehumidification Package				
Rows...Fins/in.	2...17	2...17	2...17	2...17
Total Face Area (sq ft)	6.3	8.4	8.4	8.4
EVAPORATOR FAN	Centrifugal Type, Belt Drive			
Size (in.)	15 x 15	15 x 15	15 x 15	15 x 15
Nominal Cfm — Standard	3000	3400	4000	5000
Maximum Continuous Bhp				
Standard	2.90	2.90	3.70	5.25
High Static	4.20	4.20	5.25	—
Motor Frame	56	56	56	56
Fan Rpm Range				
Standard	840-1085	840-1085	860-1080	830-1130
High Static	860-1080	860-1080	830-1130	—
Motor Bearing Type	Ball	Ball	Ball	Ball
Maximum Fan Rpm	2100	2100	2100	2100
Motor Pulley Pitch Diameter A/B (in.)				
Standard	3.4/4.4	3.4/4.4	4.0/5.0	2.8/3.8
High Static	4.0/5.0	4.0/5.0	2.8/3.8	—
Nominal Motor Shaft Diameter (in.)	7/8	7/8	7/8	7/8
Fan Pulley Pitch Diameter (in.)				
Standard	7.0	7.0	8.0	5.8
High Static	8.0	8.0	5.8	—
Belt — Quantity...Type...Length (in.)				
Standard	1...A...48	1...A...51	1...A...51	1...BX...46
High Static	1...A...55	1...A...55	1...BX...46	—
Pulley Center Line Distance (in.)	16.75-19.25	16.75-19.25	15.85-17.50	15.85-17.50
Speed Change per Full Turn of Movable Pulley Flange (rpm)				
Standard	50	50	45	60
High Static	60	60	60	—
Movable Pulley Maximum Full Turns From Closed Position				
Standard	5	5	5	6
High Static	5	5	6	—
Factory Setting — Full Turns Open	5	5	5	5
Factory Speed Setting (rpm)				
Standard	840	840	862	887
High Static	860	860	887	—
Fan Shaft Diameter at Pulley (in.)	1	1	1	1
HIGH-PRESSURE SWITCH (psig)				
Standard Compressor Internal Relief (Differential)	450 ± 50			
Cutout	428			
Reset (Auto.)	320			
LOSS-OF-CHARGE/LOW-PRESSURE SWITCH (Liquid Line) (psig)				
Cutout	7 ± 3			
Reset (Auto.)	22 ± 5			
FREEZE-PROTECTION THERMOSTAT				
Opens (F)	30 ± 5			
Closes (F)	45 ± 5			
OUTDOOR-AIR INLET SCREENS	Cleanable. Screen size and quantity varies by options selected.			
RETURN-AIR FILTERS	Throwaway			
Quantity...Size (in.)	4...16 x 20 x 2	4...16 x 20 x 2	4...20 x 20 x 2	4...20 x 20 x 2

LEGEND

Bhp — Brake Horsepower

V. STEP 5 — MAKE ELECTRICAL CONNECTIONS

⚠ **WARNING:** Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground lug in control compartment, or conduit approved for electrical ground when installed in accordance with NEC (National Electrical Code) ANSI (American National Standards Institute) / NFPA (National Fire Protection Association) 70-latest year and local electrical codes. Failure to follow this warning could result in the installer being liable for personal injury of others.

A. Field Power Supply

All units except 208/230-v units are factory-wired for the voltage shown on the unit nameplate. If the 208/230-v unit is to be connected to a 208-v power supply, the transformer *must* be rewired by disconnecting the black wire from the 230-v terminal wire on the transformer and connecting it to the 200-v red terminal of the transformer. The end of the orange wire must then be insulated.

Refer to unit label diagram for additional information. Pigtails are provided for field wire connections. Use factory-supplied splices or UL (Underwriters' Laboratories) approved copper/aluminum connector.

When installing units, provide a disconnect per the NEC.

All field wiring must comply with the NEC and local requirements. In Canada, electrical connections must be made in accordance with CSA (Canadian Standards Association) C22.1 Canadian Electrical Code Part One.

Install field wiring as follows:

1. Install conduit through side panel openings. For units without electric heat, install conduit between disconnect and control box.
2. Install power lines to terminal connections as shown in Fig. 8.
3. For units with electric heat, refer to Accessory Installation Instructions.

During operation, voltage to compressor terminals must be within range indicated on unit nameplate (see Table 2). On 3-phase units, voltages between phases must be balanced within 2%, and the current within 10%. Use the formula shown in Table 2, Note 2 on page 10 to determine the percentage of voltage imbalance. Operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components. Such operation would invalidate any applicable Bryant warranty.

See Table 3 for electric heater and single point box usage.

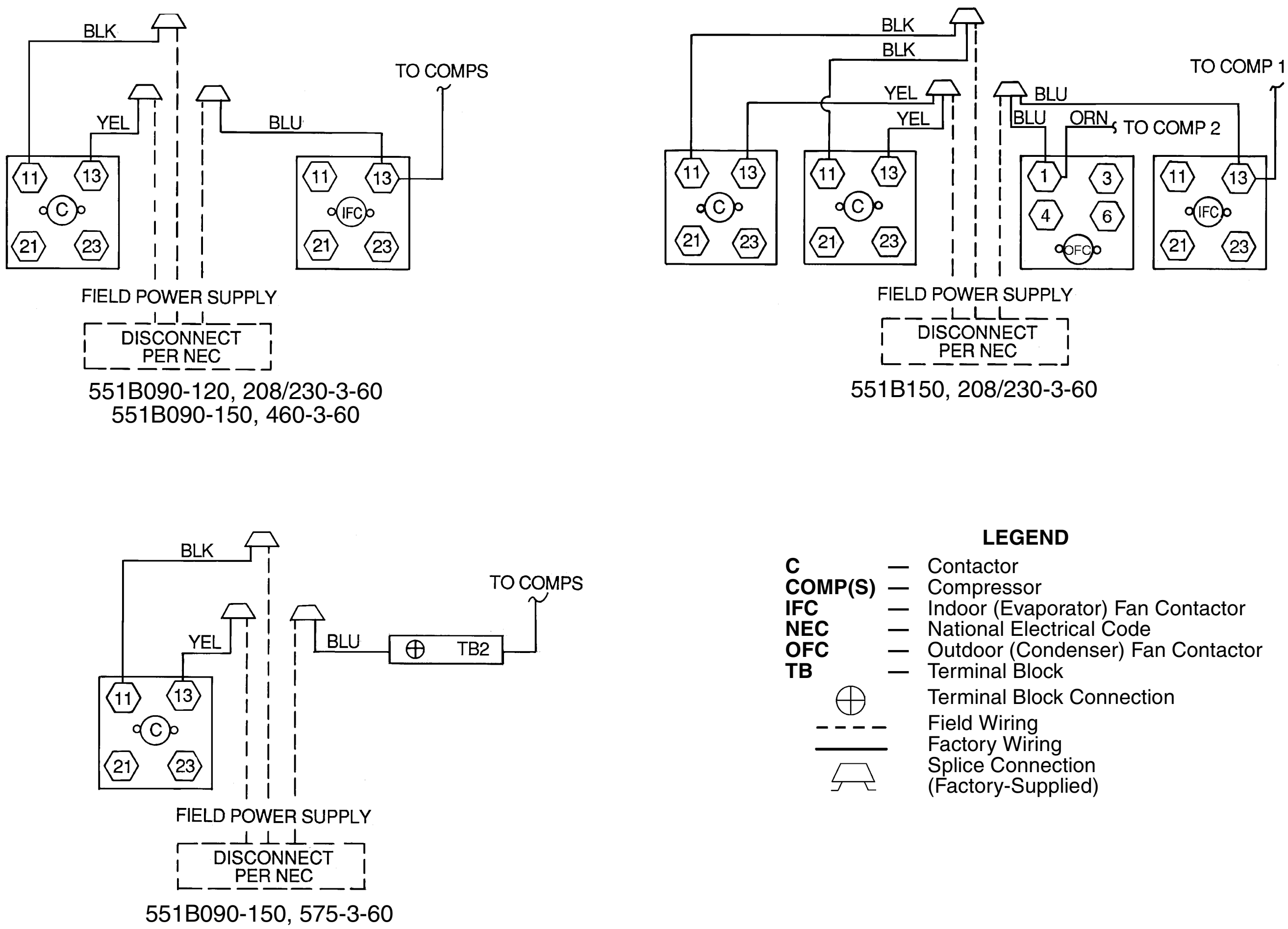


Fig. 8 — Power Wiring Connections

Table 2 — Electrical Data

UNIT 551B	NOMINAL V-PH-Hz	IFM TYPE	CONV OUTLET	VOLTAGE RANGE		COMP NO. 1		COMP NO. 2		OFM QTY	OFM FLA	IFM FLA	ELECTRIC HEATER		POWER SUPPLY			DISCONNECT SIZE†	
				Min	Max	RLA	LRA	RLA	LRA				Nominal kW*	FLA	MCA	Fuse or HACR Bkr	MOCP	FLA	LRA
090	208/230-3-60	STD	NO	187	254	12.4	88.0	12.4	88.0	2	1.4	7.5	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	38.2/38.2 38.2/40.6 51.1/57.5 74.0/84.0 92.8/105.6 119.9/136.9	45/45 45/45 60/60 — — —	— — — 80/90 100/110 125/150	40/40 40/40 47/53 68/77 85/97 110/126	242/242 242/242 242/242 242/242 242/242 242/242
090	208/230-3-60	STD	YES	187	254	12.4	88.0	12.4	88.0	2	1.4	7.5	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	44.2/44.2 44.2/45.6 56.1/62.5 79.0/89.0 97.8/110.6 124.9/141.9	50/50 50/50 — — — —	— — 60/70 80/90 100/125 125/150	46/46 46/46 53/58 74/83 91/103 116/131	247/247 247/247 247/247 247/247 247/247 247/247
090	208/230-3-60	HIGH STATIC	NO	187	254	12.4	88.0	12.4	88.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	41.3/41.3 41.3/44.5 54.9/61.4 77.9/87.8 96.6/109.5 123.7/140.8	45/45 50/50 — — — —	— — 60/70 80/90 100/110 125/150	44/44 44/44 51/56 72/81 89/101 114/129	267/267 267/267 267/267 267/267 267/267 267/267
090	208/230-3-60	HIGH STATIC	YES	187	254	12.4	88.0	12.4	88.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	47.3/47.3 47.3/49.5 59.9/66.4 82.9/92.8 101.6/114.5 128.7/145.8	50/50 60/60 — — — —	— — 70/70 90/100 110/125 150/150	49/49 49/49 56/62 77/86 94/106 119/135	271/271 271/271 271/271 271/271 271/271 271/271
090	460-3-60	STD	NO	414	508	6.4	44.0	6.4	44.0	2	0.7	3.4	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	19.2 25.1 29.1 46.0 53.9 66.9	20 20 20 50 60 —	— — — — — 70	20 23 27 42 50 62	121 121 121 121 121 121
090	460-3-60	STD	YES	414	508	6.4	44.0	6.4	44.0	2	0.7	3.4	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	21.9 28.5 31.8 48.7 56.6 69.6	20 20 35 50 60 —	— — — — — 70	23 26 29 45 52 64	123 123 123 123 123 123
090	460-3-60	HIGH STATIC	NO	414	508	6.4	44.0	6.4	44.0	2	0.7	4.8	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	20.6 26.9 30.8 47.8 55.6 68.7	20 20 35 50 60 —	— — — — — 70	22 25 28 44 51 63	133 134 134 134 134 134
090	460-3-60	HIGH STATIC	YES	414	508	6.4	44.0	6.4	44.0	2	0.7	4.8	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	23.3 30.3 33.5 50.5 58.3 71.4	20 35 35 60 60 —	— — — — — 80	24 27 31 46 54 66	135 136 136 136 136 136
090	575-3-60	STD	NO	518	632	4.8	34.0	4.8	34.0	2	0.7	3.4	— 17.0 34.0	— 16.4 32.7	14.6 23.8 44.3	20 20 45	— — —	15 22 41	94 95 95
090	575-3-60	STD	YES	518	632	4.8	34.0	4.8	34.0	2	0.7	3.4	— 17.0 34.0	— 16.4 32.7	16.8 26.5 44.3	20 20 45	— — —	17 24 43	96 96 96
090	575-3-60	HIGH STATIC	NO	518	632	4.8	34.0	4.8	34.0	2	0.7	4.8	— 17.0 34.0	— 16.4 32.7	15.8 25.2 45.7	20 20 50	— — —	17 23 42	104 104 104
090	575-3-60	HIGH STATIC	YES	518	632	4.8	34.0	4.8	34.0	2	0.7	4.8	— 17.0 34.0	— 16.4 32.7	17.9 27.9 45.7	20 20 50	— — —	19 25 44	106 106 106
102	208/230-3-60	STD	NO	187	254	13.4	105.0	13.1	105.0	2	1.4	7.5	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	40.2/40.2 40.2/40.6 51.1/57.5 74.0/84.0 92.8/105.6 119.9/136.9	45/45 45/45 60/60 — — —	— — — 80/90 100/110 110/150	42/42 42/42 47/53 68/77 85/97 110/126	276/276 276/276 276/276 276/276 276/276 276/276
102	208/230-3-60	STD	YES	187	254	13.4	105.0	13.1	105.0	2	1.4	7.5	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	46.2/46.2 46.2/46.2 56.1/62.5 79.0/89.0 97.8/110.6 124.9/141.9	50/50 50/50 — — — —	— — 60/70 80/90 100/125 125/150	48/48 48/48 53/58 74/83 91/103 116/131	281/281 281/281 281/281 281/281 281/281 281/281
102	208/230-3-60	HIGH STATIC	NO	187	254	13.4	105.0	13.1	105.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	43.3/43.3 43.3/44.5 54.9/61.4 77.9/87.8 96.6/109.5 123.7/140.8	50/50 50/50 — — — —	— — 60/70 80/90 100/110 125/150	46/46 46/46 51/56 72/81 89/101 114/129	301/301 301/301 301/301 301/301 301/301 301/301
102	208/230-3-60	HIGH STATIC	YES	187	254	13.4	105.0	13.1	105.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	—/— 21.7/25.0 33.4/38.5 51.7/59.7 66.7/77.0 88.4/102.0	49.3/49.3 49.3/49.5 59.9/66.4 82.9/92.8 101.6/114.5 128.7/145.8	60/60 60/60 — — — —	— — 70/70 90/100 110/125 150/150	51/51 51/51 56/62 77/86 94/106 119/135	305/305 305/305 305/305 305/305 305/305 305/305
102	460-3-60	STD	NO	414	508	7.4	55.0	7.4	55.0	2	0.7	3.4	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	21.5 25.1 29.1 46.0 53.9 66.9	20 20 20 50 60 —	— — — — — 70	23 23 27 42 50 62	143 143 143 143 143 143
102	460-3-60	STD	YES	414	508	7.4	55.0	7.4	55.0	2	0.7	3.4	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	24.2 28.5 31.8 48.7 56.6 69.6	20 20 35 50 60 —	— — — — — 70	25 26 29 45 52 64	145 145 145 145 145 145
102	460-3-60	HIGH STATIC	NO	414	508	7.4	55.0	7.4	55.0	2	0.7	4.8	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	22.9 26.9 30.8 47.8 55.6 68.7	20 20 35 50 60 —	— — — — — 70	24 25 28 44 51 63	155 156 156 156 156 156
102	460-3-60	HIGH STATIC	YES	414	508	7.4	55.0	7.4	55.0	2	0.7	4.8	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	25.6 30.3 33.5 50.5 58.3 71.4	20 35 35 60 60 —	— — — — — 80	27 27 31 46 54 66	157 158 158 158 158 158

See page 10 for legend and notes.

Table 2 — Electrical Data (cont)

UNIT 551B	NOMINAL V-PH-Hz	IFM TYPE	CONV OUTLET	VOLTAGE RANGE		COMP NO. 1		COMP NO. 2		OFM QTY	OFM FLA	IFM FLA	ELECTRIC HEATER		POWER SUPPLY			DISCONNECT SIZE†	
				Min	Max	RLA	LRA	RLA	LRA				Nominal kW*	FLA	MCA	Fuse or HACR Bkr	MOCP	FLA	LRA
102 (cont)	575-3-60	STD	NO	518	632	6.4	44.0	6.4	44.0	2	0.7	3.4	— 17.0 34.0	— 16.4 32.7	18.2 23.8 44.3	20 20 45	— — —	19 22 41	114 115 115
		STD	YES	518	632	6.4	44.0	6.4	44.0	2	0.7	3.4	— 17.0 34.0	— 16.4 32.7	20.4 26.5 46.9	25 25 50	— — —	21 24 43	116 116 116
		HIGH STATIC	NO	518	632	6.4	44.0	6.4	44.0	2	0.7	3.4	— 17.0 34.0	— 16.4 32.7	18.2 23.8 44.3	20 20 45	— — —	19 22 41	114 115 115
		HIGH STATIC	YES	518	632	6.4	44.0	6.4	44.0	2	0.7	4.8	— 17.0 34.0	— 16.4 32.7	21.5 27.9 48.3	25 25 50	— — —	22 25 44	126 126 126
120	208/230-3-60	STD	NO	187	254	17.6	125.0	17.6	125.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	53.0/ 53.0 53.0/ 53.0 54.9/ 61.4 96.6/109.5 123.7/140.8 143.5/133.5	60/60 60/60 — — — —	— — 60/ 70 100/110 125/150 150/150	56/ 56 56/ 56 56/ 56 89/101 114/129 132/151	341/341 341/341 341/341 341/341 341/341 341/341
		STD	YES	187	254	17.6	125.0	17.6	125.0	2	1.4	10.6	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	59.0/ 59.0 59.0/ 59.0 59.9/ 66.4 101.6/114.5 128.7/145.8 148.5/137.5	70/70 — — — — —	— 70/ 70 70/ 70 110/125 150/150 150/150	61/ 61 61/ 61 61/ 62 94/106 119/135 138/156	345/345 345/345 345/345 345/345 345/345 345/345
		HIGH STATIC	NO	187	254	17.6	125.0	17.6	125.0	2	1.4	15.0	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	57.4/ 57.4 57.4/ 57.4 60.4/ 66.9 102.1/115.0 129.2/146.3 149.0/139.0	70/70 — — — — —	— 70/ 70 70/ 80 110/125 150/150 150/175	61/ 61 61/ 61 61/ 62 94/106 119/135 137/156	364/364 364/364 364/364 364/364 364/364 364/364
		HIGH STATIC	YES	187	254	17.6	125.0	17.6	125.0	2	1.4	15.0	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	63.4/ 63.4 63.4/ 63.4 65.4/ 71.9 107.1/120.0 134.2/151.3 154.0/143.0	70/70 — — — — —	— 70/ 70 80/ 80 110/125 150/175 175/175	66/ 66 66/ 66 66/ 67 99/111 124/140 143/161	369/369 369/369 369/369 369/369 369/369 369/369
	460-3-60	STD	NO	414	508	8.3	62.5	8.3	62.5	2	0.7	4.8	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	24.9 26.9 30.8 55.6 68.7 66.1	20 20 35 60 — —	— — — — 70 80	26 26 28 51 63 75	170 171 171 171 171 171
		STD	YES	414	508	8.3	62.5	8.3	62.5	2	0.7	4.8	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	27.6 30.3 33.5 58.3 71.4 70.1	20 35 35 60 — —	— — — — 80 80	29 29 31 54 66 77	172 173 173 173 173 173
		HIGH STATIC	NO	414	508	8.3	62.5	8.3	62.5	2	0.7	7.4	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	27.5 30.1 34.1 58.9 71.9 69.4	20 35 40 60 — —	— — — — 80 80	29 29 31 54 66 78	182 182 182 182 182 182
		HIGH STATIC	YES	414	508	8.3	62.5	8.3	62.5	2	0.7	7.4	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	30.2 33.5 36.8 61.6 74.6 73.4	35 40 40 — — —	— — — 70 80 80	32 32 34 57 69 80	184 184 184 184 184 184
	575-3-60	STD	NO	518	632	6.3	50.0	6.3	50.0	2	0.7	4.8	— 17.0 34.0 51.0	— 16.4 32.7 49.1	19.1 25.2 45.7 53.9	25 25 50 60	— — — —	20 23 42 61	136 136 136 136
		STD	YES	518	632	6.3	50.0	6.3	50.0	2	0.7	4.8	— 17.0 34.0 51.0	— 16.4 32.7 49.1	21.3 27.9 48.3 56.5	25 25 50 60	— — — —	22 25 44 63	138 138 138 138
		HIGH STATIC	NO	518	632	6.3	50.0	6.3	50.0	2	0.7	7.4	— 17.0 34.0 51.0	— 16.4 32.7 49.1	21.2 27.8 48.3 56.5	25 25 50 —	— — — 70	23 26 44 63	145 146 146 146
		HIGH STATIC	YES	518	632	6.3	50.0	6.3	50.0	2	0.7	7.4	— 17.0 34.0 51.0	— 16.4 32.7 49.1	23.4 30.5 50.9 59.1	25 35 60 —	— — — 70	25 28 46 65	147 148 148 148
150	208/230-3-60	STD	NO	187	254	19.0	156.0	19.0	156.0	2	1.4	15.0	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	60.6/ 60.6 60.6/ 60.6 60.4/ 66.9 102.1/115.0 129.2/146.3 149.0/139.0	70/70 — — — — —	— 70/ 70 70/ 80 110/125 150/150 150/175	64/ 64 64/ 64 64/ 64 94/106 119/135 137/156	426/426 426/426 426/426 426/426 426/426 426/426
		STD	YES	187	254	19.0	156.0	19.0	156.0	2	1.4	15.0	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	—/— 21.7/ 25.0 33.4/ 38.5 66.7/ 77.0 88.4/102.0 104.2/120.3	66.6/ 66.6 66.6/ 66.6 65.4/ 71.9 107.1/120.0 134.2/151.3 154.0/143.0	70/70 — — — — —	— 70/ 70 80/ 80 110/125 150/175 175/175	70/ 70 70/ 70 70/ 70 99/111 124/140 143/161	431/431 431/431 431/431 431/431 431/431 431/431
	460-3-60	STD	NO	414	508	9.0	70.0	9.0	70.0	2	0.7	7.4	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	29.1 30.1 34.1 58.9 71.9 69.4	35 35 40 60 — —	— — — — 80 80	31 31 31 54 66 78	197 197 197 197 197 197
		STD	YES	414	508	9.0	70.0	9.0	70.0	2	0.7	7.4	— 13.9 16.5 33.0 41.7 50.0	— 16.7 19.8 39.7 50.2 60.1	31.8 33.5 36.8 61.6 74.6 73.4	35 40 40 — — —	— — — 70 80 80	33 33 34 57 69 80	199 199 199 199 199 199
	575-3-60	STD	NO	518	632	7.4	54.0	7.4	54.0	2	0.7	7.4	— 17.0 34.0 51.0	— 16.4 32.7 49.1	23.7 27.8 48.3 56.5	30 30 50 —	— — — 70	25 26 44 63	153 154 154 154
		STD	YES	518	632	7.4	54.0	7.4	54.0	2	0.7	7.4	— 17.0 34.0 51.0	— 16.4 32.7 49.1	25.9 30.5 50.9 59.1	30 35 60 —	— — — 70	27 28 46 65	155 155 155 155

See page 10 for legend and notes.

LEGEND AND NOTES FOR TABLE 2

LEGEND

FLA — Full Load Amps
HACR — Heating, Air Conditioning and Refrigeration
IFM — Indoor (Evaporator) Fan Motor
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
NEC — National Electrical Code
OFM — Outdoor (Condenser) Fan Motor
RLA — Rated Load Amps

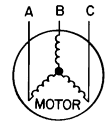
*Heater capacity (kW) is based on heater voltage of 208, 240, 480, and 575-V. If power distribution voltage varies from rated heater voltage, heater kW will vary accordingly.
†Used to determine minimum disconnect per NEC.

NOTES:

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker.
2. **Unbalanced 3-Phase Supply Voltage**
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance.
   % Voltage Imbalance

$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60.



AB = 452 v
BC = 464 v
AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3} = \frac{1371}{3} = 457$$

Determine maximum deviation from average voltage.
(AB) 457 – 452 = 5 v
(BC) 464 – 457 = 7 v
(AC) 457 – 455 = 2 v
Maximum deviation is 7 v.
Determine percent of voltage imbalance.

$$\text{\% Voltage Imbalance} = 100 \times \frac{7}{457} = 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

3. Non-fused disconnect switch cannot be used when rooftop unit electrical ratings exceed 80 amps.

Table 3 — Electric Heater Usage

UNIT 551B	VOLTAGE (60 Hz)	ACCESORY kW	ACCESSORY HEATER PART NUMBER CRHEATER---A00	ACCESSORY SINGLE POINT BOX PART NUMBER CRSINGLE---A00
090	208/230/240 (3 phase)	7.8/ 9.6/10.4	017	006
		12.0/14.7/16.0	010	006
		18.6/22.8/24.8	011	007
		24.0/29.4/32.0	012	007
		31.8/39.0/42.4	012+017	009
	460/480 (3 phase)	12.8/13.9	016	006
		15.2/16.5	013	006
		25.6/27.8	014	006
		30.4/33.0	015	006
		38.4/41.7	014+016	008
	575 (3 phase)	17.0	018	006
		34.0	019	006
102	208/230/240 (3 phase)	7.8/ 9.6/10.4	017	011
		12.0/14.7/16.0	010	011
		18.6/22.8/24.8	011	012
		24.0/29.4/32.0	012	012
		31.8/39.0/42.4	012+017	015
	460/480 (3 phase)	12.8/13.9	016	011
		15.2/16.5	013	011
		25.6/27.8	014	011
		30.4/33.0	015	011
		38.4/41.7	014+016	014
	575 (3 phase)	17.0	018	011
		34.0	019	011
120	208/230/240 (3 phase)	7.8/ 9.6/10.4	017	011
		12.0/14.7/16.0	010	012
		24.0/29.4/32.0	012	012
		31.8/38.9/42.4	012+017	015
		37.5/46.0/50.0	010+012	015
	460/480 (3 phase)	12.8/13.9	016	011
		15.2/16.5	013	011
		30.4/33.0	015	011
		38.4/41.7	014+016	014
		46.0/50.0	013+015	014
	575 (3 phase)	17.0	018	011
		34.0	019	011
		51.0	018+019	014
150	208/230/240 (3 phase)	7.8/ 9.6/10.4	017	012
		12.0/14.7/16.0	010	012
		24.0/29.4/32.0	012	012
		31.8/38.9/42.4	012+017	015
		37.5/46.0/50.0	010+012	015
	460/480 (3 phase)	12.8/13.9	016	011
		15.2/16.5	013	011
		30.4/33.0	015	011
		38.4/41.7	014+016	014
		46.0/50.0	013+015	014
	575 (3 phase)	17.0	018	011
		34.0	019	014
		51.0	018+019	014

NOTES:

1. The rated heater voltage is 240, 480, and 575 v. If power distribution voltage varies from rated heater voltage, heater kW vary accordingly.
2. To determine heater kW at voltages other than those shown in table, use the following formula:
   Heater kW new = Heater kW rated x (unit power distribution voltage / rated heater voltage) ^{2}
   As an example:
   For a 16 kW heater rated at 240 v with a power distribution voltage of 215 v
   kW new = 16 kW (215/240) ^{2}
   kW new = 12.8 kW (rating at 215 v)

B. Field Control Wiring

Install a Bryant-approved accessory thermostat assembly according to installation instructions included with the accessory. Locate thermostat assembly on a solid wall in the conditioned space to sense average temperature in accordance with thermostat installation instructions.

Route thermostat cable or equivalent single leads of colored wire from subbase terminals to low-voltage connections on unit (shown in Fig. 9) as described in Steps 1 through 4 below.

NOTE: For wire runs up to 50 ft, use no. 18 AWG (American Wire Gage) insulated wire (35 C minimum). For 51 to 75 ft, use no. 16 AWG insulated wire (35 C minimum). For over 75 ft, use no. 14 AWG insulated wire (35 C minimum). All wire larger than no. 18 AWG cannot be directly connected to the thermostat and will require a junction box and splice at the thermostat.

1. If mounted on a roof curb and electrical power is to be run through the basepan, an accessory thru-the-bottom connection kit is required. This is available through the local Bryant distributor. This kit is required to ensure a reliable water-tight connection.
2. If unit is mounted on roof curb and accessory thru-the-bottom service connections are used, route wire through connections.
3. Pass control wires through the hole provided on unit (see connection D in Connection Sizes table in Fig. 7).
4. Feed wire through the raceway built into the corner post to the 24-v barrier located on the left side of the control box. See Fig. 9. The raceway provides the UL required clearance between the high-voltage and low-voltage wiring.
5. Connect thermostat wires to screw terminals of low-voltage connector (see Fig. 9).

NOTE: If thru-the-bottom power connections are used refer to the accessory installation instructions for information on power wiring. Refer to Fig. 7 for drilling holes in basepan.

C. Heat Anticipator Settings

For units with electric heat, set heat anticipator settings as shown in Table 4.

VI. STEP 6 — ADJUST FACTORY-INSTALLED OPTIONS

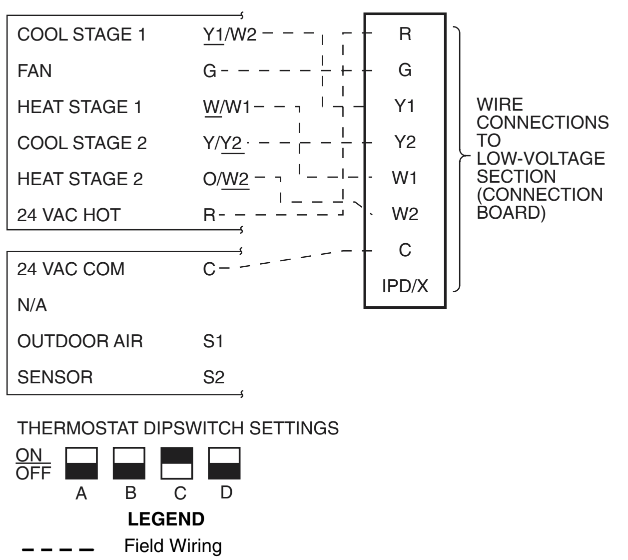
A. Disconnect Switch

The optional disconnect switch is non-fused. The switch has the capability of being locked in place for safety purposes.

B. Perfect Humidity™ Dehumidification System

Perfect Humidity system operation can be controlled by field installation of a Bryant-approved humidistat (Fig. 11), or light commercial Thermidistat™ device (Fig. 12). To install the humidistat:

1. Route humidistat cable through hole provided in unit corner post.
2. Feed wires through the raceway built into the corner post to the 24-v barrier located on the left side of the control box. See Fig. 10. The raceway provides the UL-required clearance between high-voltage and low-voltage wiring.



NOTE: Underlined letter indicates active thermostat output when configured for A/C operation.

Fig. 9 — Low-Voltage Connections

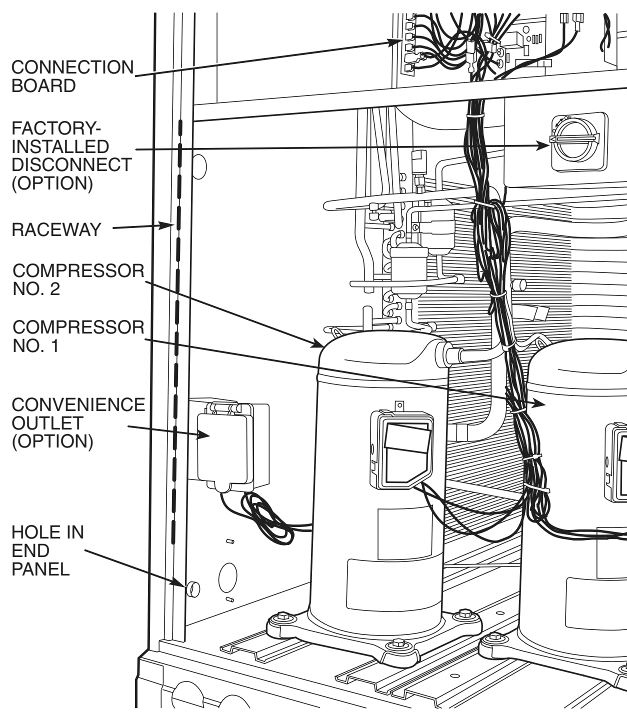


Fig. 10 — Field Control Wiring Raceway

Table 4 — Heat Anticipator Settings

UNIT	UNIT VOLTAGE											
	208/230				460				575			
	Heater kW*	Configuration			Heater kW	Configuration			Heater kW	Configuration		
		1-Stage	2-Stage			1-Stage	2-Stage			1-Stage	2-Stage	
			Stage 1	Stage 2			Stage 1	Stage 2			Stage 1	Stage 2
551B	10.4, 16.0	0.3	NA	NA	13.9, 16.5	0.3	NA	NA	17.0, 34.0	0.3	NA	NA
	24.8, 32.0	0.6	0.3	0.3	27.8, 33.0							
	42.4, 50.0	0.9	0.6	0.3	41.7, 50.0	0.6	0.3	0.3	51.0	0.6	0.3	0.3

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v or 575 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

3. Use a wire nut to connect humidistat cable into low-voltage wiring as shown in Fig. 13.

To install Thermidistat™ device:

1. Route Thermidistat cable through hole provided in unit corner post.
2. Feed the wires through the raceway built into the corner post to the 24-v barrier located on the left side of the control box. See Fig. 10. The raceway provides the UL-required clearance between high and low voltage wiring.
3. A field-supplied relay must be installed between the Thermidistat device and the Perfect Humidity™ circuit (recommended relay: HN612KK324) Fig. 14. The relay coil is connected between the DEHUM output and C (common) of the unit. The relay controls the Perfect Humidity solenoid valve and must be wired between the Perfect Humidity fuse and the low-pressure switch. Refer to the installation instructions included with the Bryant Light Commercial Thermidistat device for more information.

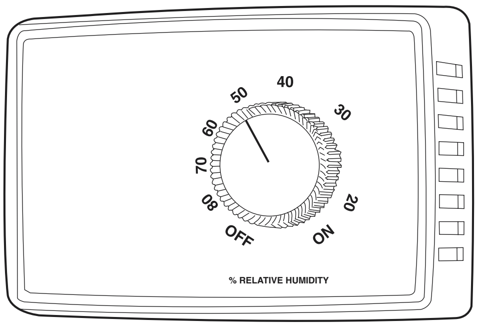


Fig. 11 — Accessory Field-Installed Humidistat

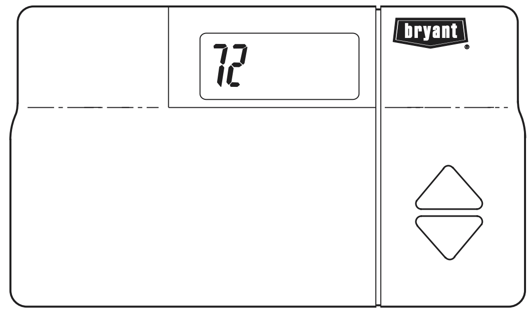


Fig. 12 — Light Commercial Thermidistat Device

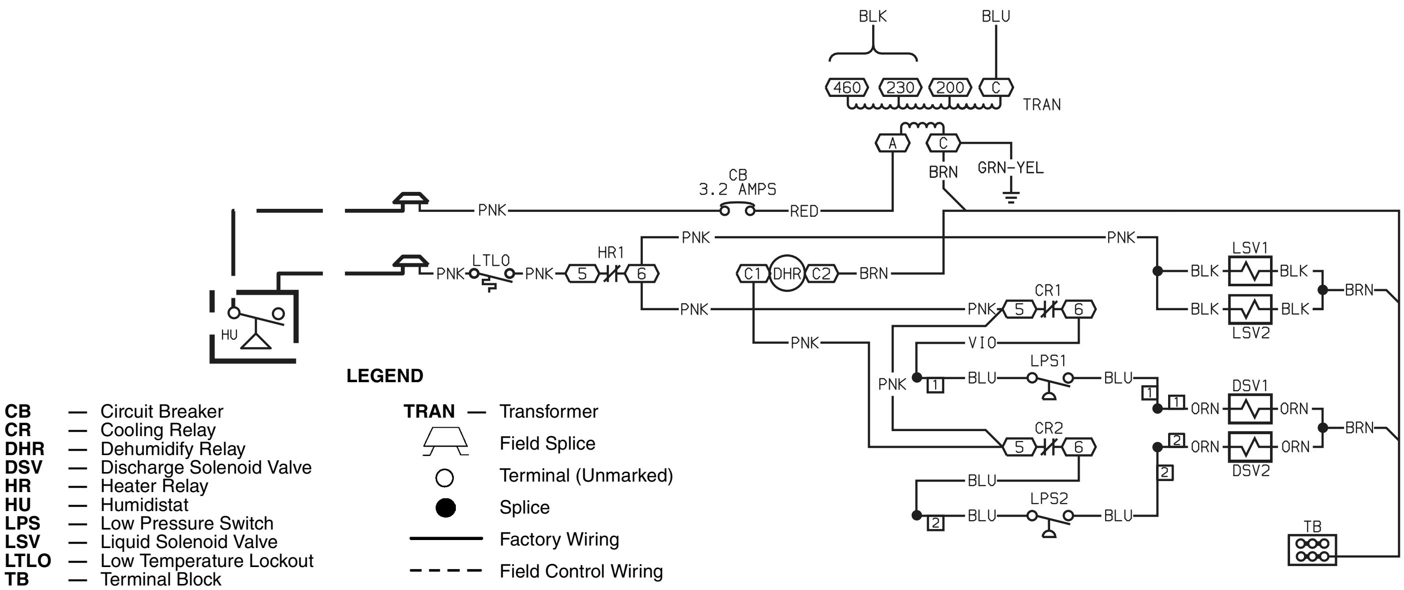


Fig. 13 — Typical Perfect Humidity Dehumidification System Humidistat Wiring (208/230-v Unit Shown)

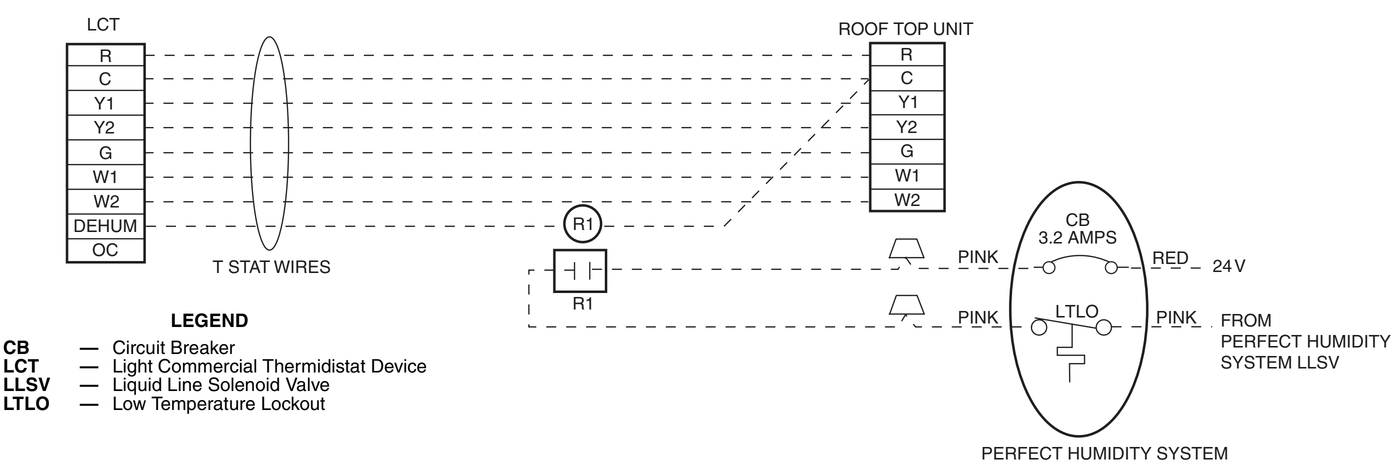


Fig. 14 — Typical Rooftop Unit with Perfect Humidity Dehumidification System with Thermidistat Device

C. Convenience Outlet

An optional convenience outlet provides power for rooftop use. For maintenance personnel safety, the convenience outlet power is off when the unit disconnect is off. Adjacent unit outlets may be used for service tools. An optional "Hot Outlet" is available from the factory as a special order item.

D. Manual Outdoor-Air Damper

The outdoor-air hood and screen are attached to the basepan at the bottom of the unit for shipping.

Assembly:

1. Determine quantity of ventilation required for building. Record amount for use in Step 8.
2. Remove filter access panel by raising panel and swinging panel outward. Panel is now disengaged from track and can be removed. No tools are required to remove the filter access panel. Remove outdoor-air opening panel. Save panels and screws. See Fig. 15.
3. Separate hood and screen from basepan by removing the screws and brackets securing them. Save all screws and discard brackets.
4. Replace outdoor air opening panel.
5. Place hood on front of outdoor air opening panel. See Fig. 16 for hood details. Secure top of hood with the 6 screws removed in Step 3. See Fig. 17.
6. Remove and save 8 screws (4 on each side) from sides of the manual outdoor-air damper.
7. Align screw holes on hood with screw holes on side of manual outdoor-air damper. See Fig. 16 and 17. Secure hood with 8 screws from Step 6.
8. Adjust minimum position setting of the damper blade by adjusting the manual outdoor-air adjustment screws on the front of the damper blade. See Fig. 15. Slide blade vertically until it is in the appropriate position determined by Fig. 18. Tighten screws.
9. Remove and save screws currently on sides of hood. Insert screen. Secure screen to hood using the screws. See Fig. 17.
10. Replace filter access panel. Ensure filter access panel slides along the tracks and is securely engaged.

E. Optional EconoMi$er IV

See Fig. 19 for EconoMi$er IV component locations.

NOTE: These instructions are for installing the optional EconoMi$er IV. Refer to the accessory EconoMi$er IV installation instructions when field installing an EconoMi$er IV accessory.

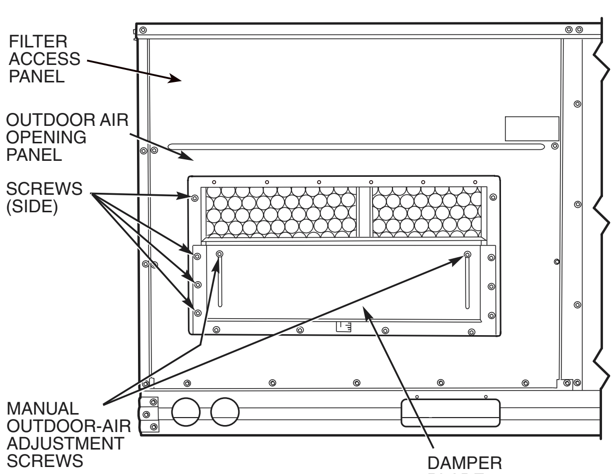


Fig. 15 — Damper Panel with Manual Outdoor-Air Damper Installed

1. To remove the existing unit filter access panel, raise the panel and swing the bottom outward. The panel is now disengaged from the track and can be removed. See Fig. 20.

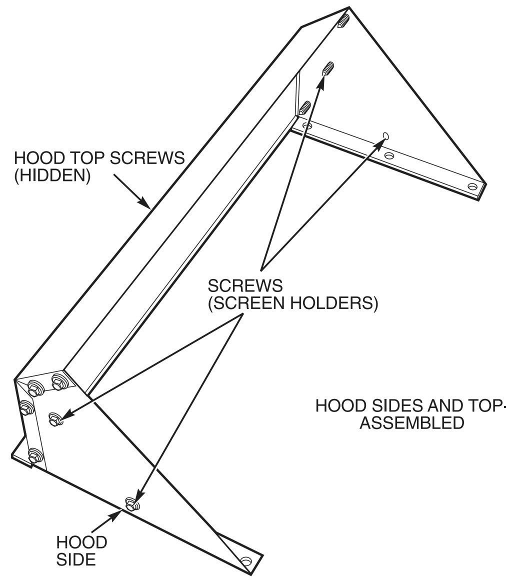


Fig. 16 — Outdoor-Air Hood Details

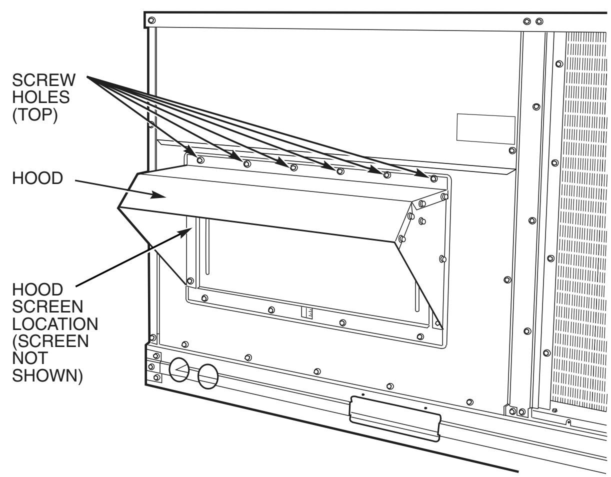


Fig. 17 — Optional Manual Outdoor-Air Damper with Hood Attached

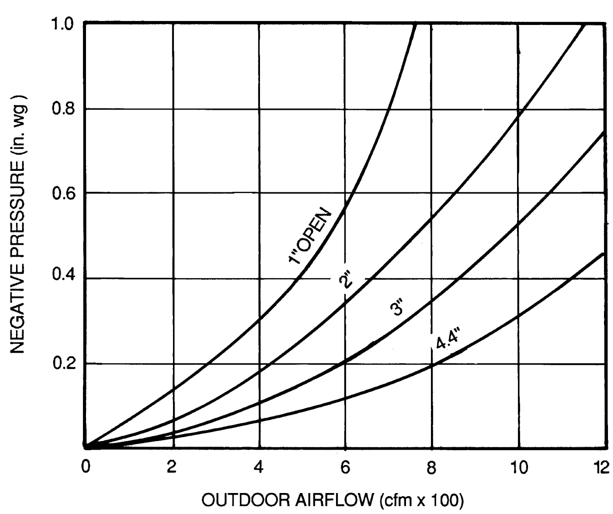


Fig. 18 — Outdoor Air Damper Position Setting

2. The box with the economizer hood components is shipped in the compartment behind the economizer. The EconoMi$er IV controller is mounted on top of the EconoMi$er IV in the position shown in Fig. 19. To remove the component box from its shipping position, remove the screw holding the hood box bracket to the top of the economizer. Slide the hood box out of the unit. See Fig. 21.

IMPORTANT: If the power exhaust accessory is to be installed on the unit, the hood shipped with the unit will not be used and must be discarded. **Save the aluminum filter for use in the power exhaust hood assembly.**

3. The indoor coil access panel will be used as the top of the hood. Remove the screws along the sides and bottom of the indoor coil access panel. See Fig. 22.
4. Swing out indoor coil access panel and insert the hood sides under the panel (hood top). Use the screws provided to attach the hood sides to the hood top. Use screws provided to attach the hood sides to the unit. See Fig. 23.
5. Remove the shipping tape holding the economizer barometric relief damper in place.
6. Insert the hood divider between the hood sides. See Fig. 23 and 24. Secure hood divider with 2 screws on each hood side. The hood divider is also used as the bottom filter rack for the aluminum filter.
7. Open the filter clips which are located underneath the hood top. Insert the aluminum filter into the bottom filter rack (hood divider). Push the filter into position past the open filter clips. Close the filter clips to lock the filter into place. See Fig. 24.
8. Caulk the ends of the joint between the unit top panel and the hood top. See Fig. 22.
9. Replace the filter access panel.
10. Install all EconoMi$er IV accessories. EconoMi$er IV wiring is shown in Fig. 25.

Barometric flow capacity is shown in Fig. 26. Outdoor air leakage is shown in Fig. 27. Return air pressure drop is shown in Fig. 28.

F. EconoMi$er IV Standard Sensors

Outdoor Air Temperature (OAT) Sensor

The outdoor air temperature sensor (HH57AC074) is a 10 to 20 mA device used to measure the outdoor-air temperature. The outdoor-air temperature is used to determine when the EconoMi$er IV can be used for free cooling. The sensor is factory-installed on the EconoMi$er IV in the outdoor airstream. See Fig. 19. The operating range of temperature measurement is 40 to 100 F.

Supply Air Temperature (SAT) Sensor

The supply air temperature sensor is a 3 K thermistor located at the inlet of the indoor fan. See Fig. 29. This sensor is factory installed. The operating range of temperature measurement is 0° to 158 F. See Table 5 for sensor temperature/resistance values.

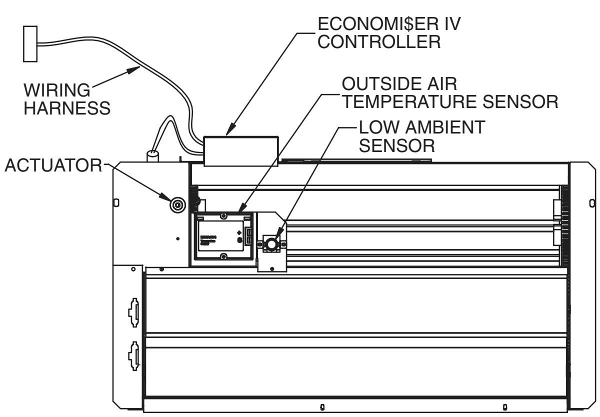


Fig. 19 — EconoMi$er IV Component Locations

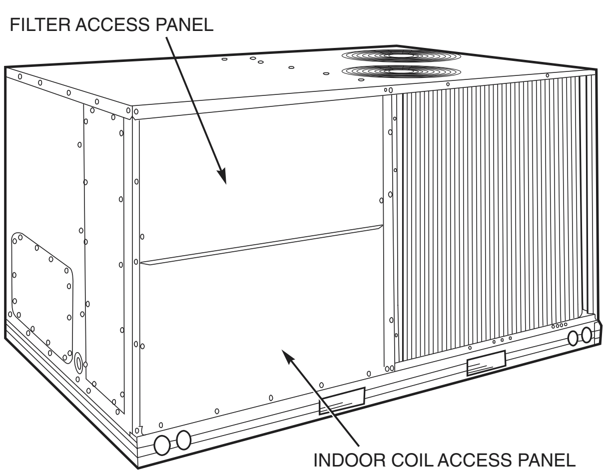


Fig. 20 — Typical Access Panel Locations

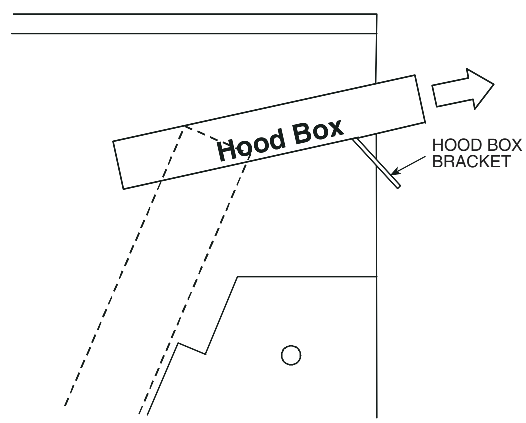


Fig. 21 — Hood Box Removal

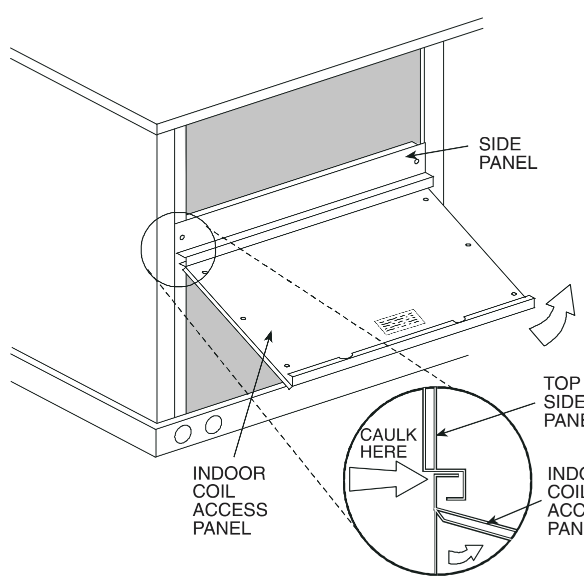


Fig. 22 — Indoor Coil Access Panel Relocation

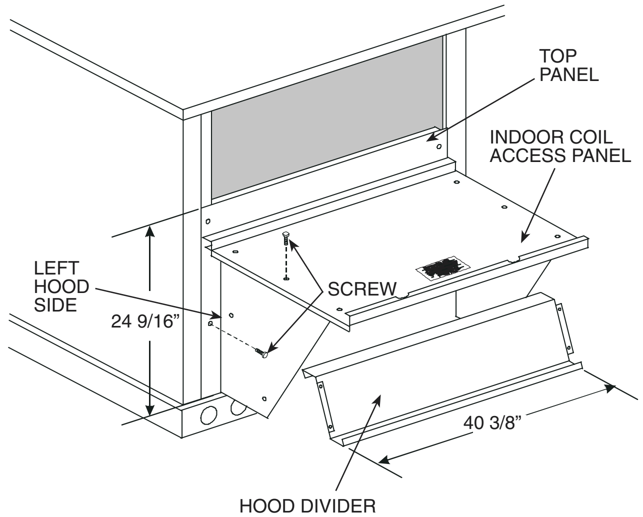


Fig. 23 — Outdoor-Air Hood Construction

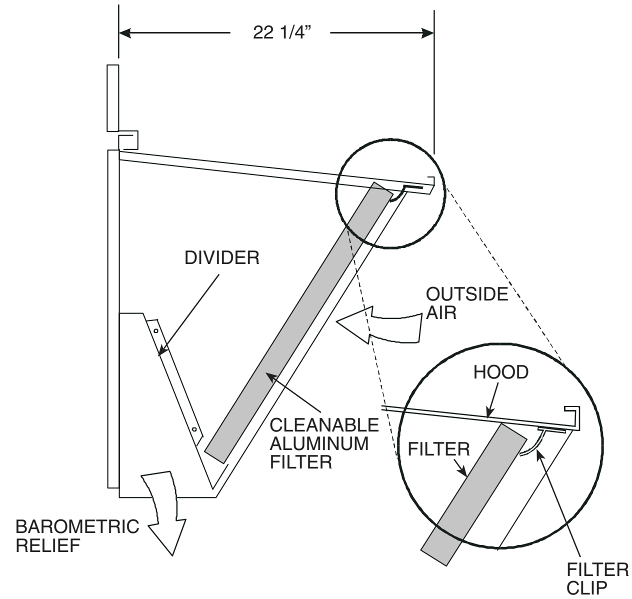
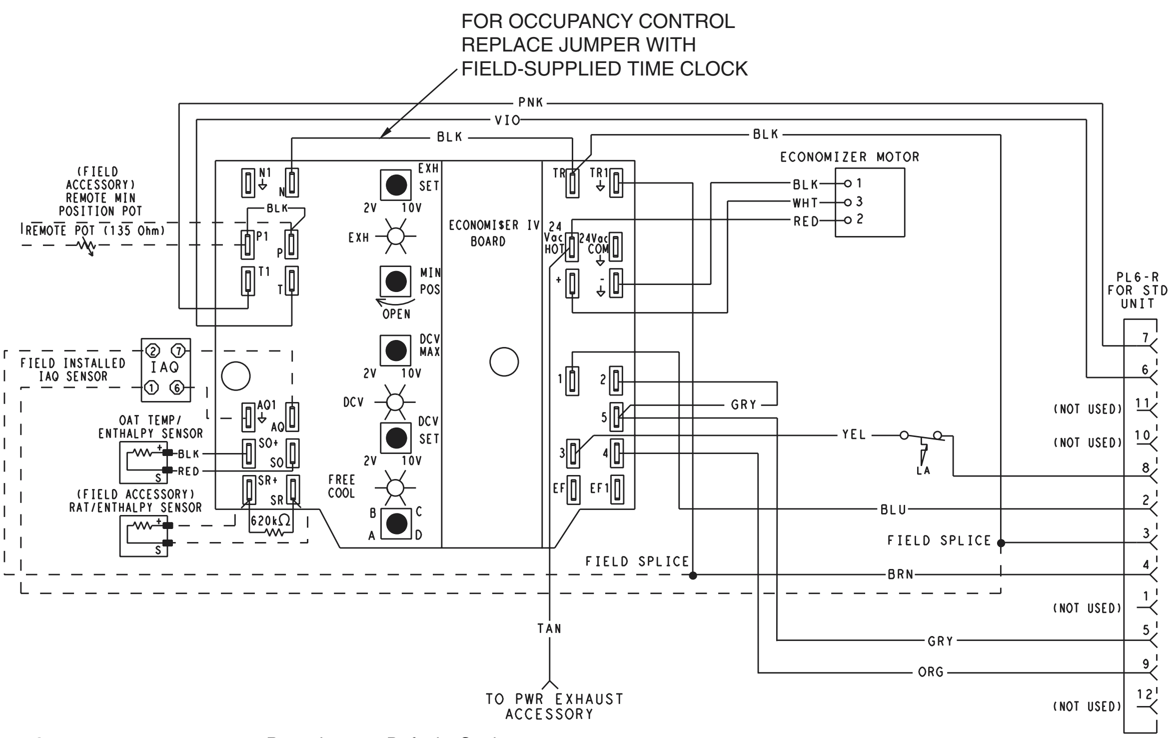


Fig. 24 — Filter Installation



LEGEND

DCV— Demand Controlled Ventilation
IAQ — Indoor Air Quality
LA — Low Ambient Lockout Device
OAT— Outdoor-Air Temperature
POT— Potentiometer
RAT— Return-Air Temperature

Potentiometer Defaults Settings:

Power Exhaust	Middle
Minimum Pos.	Fully Closed
DCV Max.	Middle
DCV Set	Middle
Enthalpy	C Setting

NOTES:

1. 620 ohm, 1 watt 5% resistor should be removed only when using differential enthalpy or dry bulb.
2. If a separate field-supplied 24 v transformer is used for the IAQ sensor power supply, it cannot have the secondary of the transformer grounded.
3. For field-installed remote minimum position POT, remove black wire jumper between P and P1 and set control minimum position POT. to the minimum position.

Fig. 25 — EconoMi$er IV Wiring

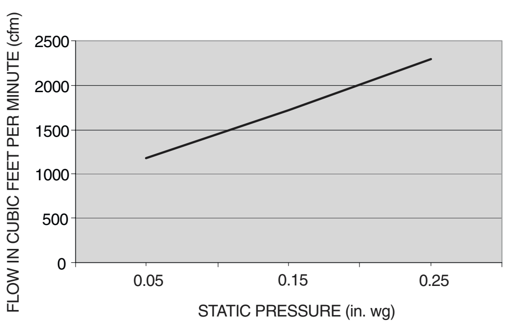


Fig. 26 — Barometric Relief Flow Capacity

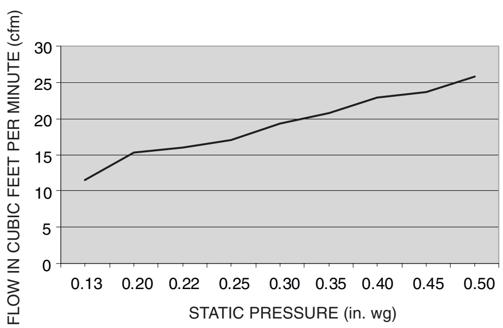


Fig. 27 — Outdoor Air Damper Leakage

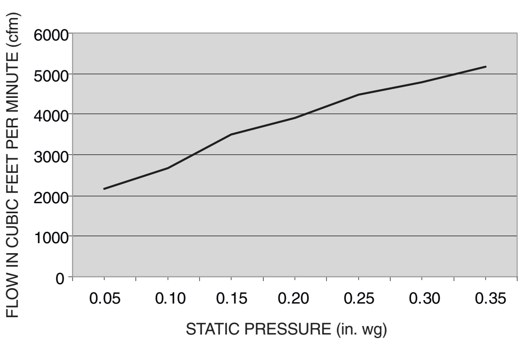


Fig. 28 — Return Air Pressure Drop

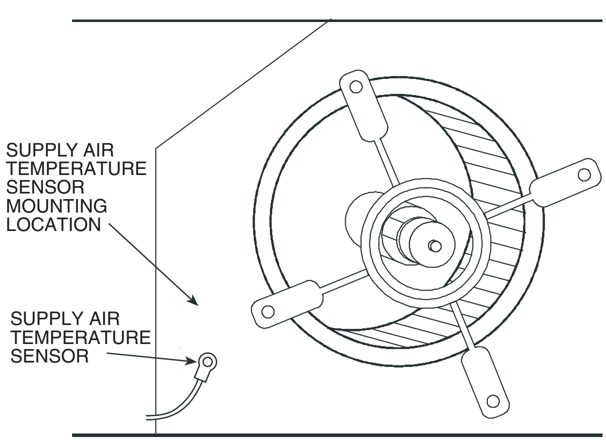


Fig. 29 — Supply Air Sensor Location

Table 5 — Supply Air Sensor Temperature/Resistance Values

TEMPERATURE (F)	RESISTANCE (ohms)
–58	200,250
–40	100,680
–22	53,010
–4	29,091
14	16,590
32	9,795
50	5,970
68	3,747
77	3,000
86	2,416
104	1,597
122	1,080
140	746
158	525
176	376
185	321
194	274
212	203
230	153
248	116
257	102
266	89
284	70
302	55

The temperature sensor looks like an eyelet terminal with wires running to it. The sensor is located in the "crimp end" and is sealed from moisture.

Outdoor Air Lockout Sensor

The Economi$er IV is equipped with an ambient temperature lockout switch located in the outdoor airstream which is used to lock out the compressors below a 42 F ambient temperature. See Fig. 19.

G. EconoMi$er IV Control Modes

Determine the EconoMi$er IV control mode before set up of the control. Some modes of operation may require different sensors. Refer to Table 6. The EconoMi$er IV is supplied from the factory with a supply air temperature sensor and an outdoor air temperature sensor. This allows for operation of the EconoMi$er IV with outdoor air dry bulb changeover control. Additional accessories can be added to allow for different types of changeover control and operation of the EconoMi$er IV and unit.

Table 6 — EconoMi$er IV Sensor Usage

APPLICATION	ECONOMI$ER IV WITH OUTDOOR AIR DRY BULB SENSOR		
	Accessories Required		
Outdoor Air Dry Bulb	None. The outdoor air dry bulb sensor is factory installed.		
Differential Dry Bulb	CRTEMPSN002A00*		
Single Enthalpy	HH57AC078		
Differential Enthalpy	HH57AC078 and CRENTDIF004A00*		
CO_2 for DCV Control using a Wall-Mounted CO_2 Sensor	33ZCSENCO2		
CO_2 for DCV Control using a Duct-Mounted CO_2 Sensor	33ZCSENCO2† and 33ZCASPCO2**	OR	CRCBDIOX005A00††

*CRENTDIF004A00 and CRTEMPSN002A00 accessories are used on many different base units. As such, these kits may contain parts that will not be needed for installation.
†33ZCSENCO2 is an accessory CO_2 sensor.
**33ZCASPCO2 is an accessory aspirator box required for duct-mounted applications.
††CRCBDIOX005A00 is an accessory that contains both 33ZCSENCO2 and 33ZCASPCO2 accessories.

Outdoor Dry Bulb Changeover

The standard controller is shipped from the factory configured for outdoor dry bulb changeover control. The outdoor air and supply air temperature sensors are included as standard. For this control mode, the outdoor temperature is compared to an adjustable set point selected on the control. If the outdoor-air temperature is above the set point, the EconoMi$er IV will adjust the outdoor-air dampers to minimum position. If the outdoor-air temperature is below the set point, the position of the outdoor-air dampers will be controlled to provide free cooling using outdoor air. When in this mode, the LED next to the free cooling set point potentiometer will be on. The changeover temperature set point is controlled by the free cooling set point potentiometer located on the control. See Fig. 30. The scale on the potentiometer is A, B, C, and D. See Fig. 31 for the corresponding temperature changeover values.

Differential Dry Bulb Control

For differential dry bulb control the standard outdoor dry bulb sensor is used in conjunction with an additional accessory dry bulb sensor (part number CRTEMPSN002A00). The accessory sensor must be mounted in the return airstream. See Fig. 32. Wiring is provided in the EconoMi$er IV wiring harness. See Fig. 25.

In this mode of operation, the outdoor-air temperature is compared to the return-air temperature and the lower temperature airstream is used for cooling. When using this mode of changeover control, turn the enthalpy set point potentiometer fully clockwise to the D setting. See Fig. 30.

Outdoor Enthalpy Changeover

For enthalpy control, accessory enthalpy sensor (part number HH57AC078) is required. Replace the standard outdoor dry bulb temperature sensor with the accessory enthalpy sensor in the same mounting location. See Fig. 19. When the outdoor air enthalpy rises above the outdoor enthalpy changeover set point, the outdoor-air damper moves to its minimum position. The outdoor enthalpy changeover set point is set with the outdoor enthalpy set point potentiometer on the EconoMi$er IV controller. The set points are A, B, C, and D. See Fig. 33. The factory-installed 620-ohm jumper must be in place across terminals SR and SR+ on the EconoMi$er IV controller. See Fig. 19 and 34.

Differential Enthalpy Control

For differential enthalpy control, the EconoMi$er IV controller uses two enthalpy sensors (HH57AC078 and CRENTDIF004A00), one in the outside air and one in the return air duct. The EconoMi$er IV controller compares the outdoor air enthalpy to the return air enthalpy to determine EconoMi$er IV use. The controller selects the lower enthalpy air (return or outdoor) for cooling. For example, when the outdoor air has a lower enthalpy than the return air, the EconoMi$er IV opens to bring in outdoor air for free cooling.

Replace the standard outside air dry bulb temperature sensor with the accessory enthalpy sensor in the same mounting location. See Fig. 19. Mount the return air enthalpy sensor in the return air duct. See Fig. 32. Wiring is provided in the EconoMi$er IV wiring harness. See Fig. 25. The outdoor enthalpy changeover set point is set with the outdoor enthalpy set point potentiometer on the EconoMi$er IV controller. When using this mode of changeover control, turn the enthalpy setpoint potentiometer fully clockwise to the D setting.

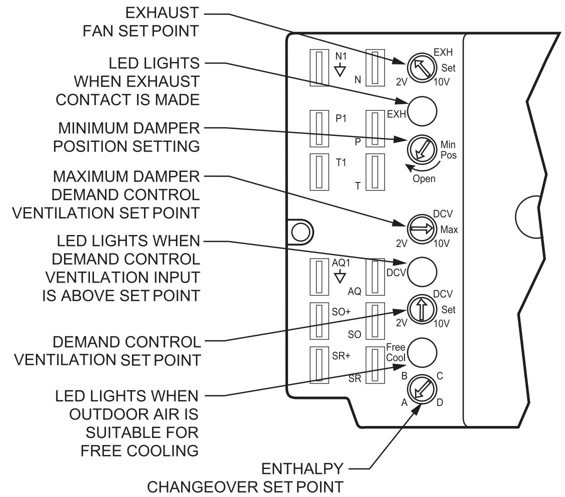


Fig. 30 — EconoMi$er IV Controller Potentiometer and LED Locations

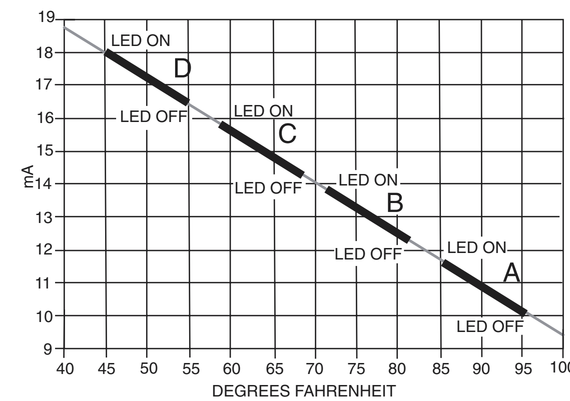


Fig. 31 — Outdoor Air Temperature Changeover Set Points

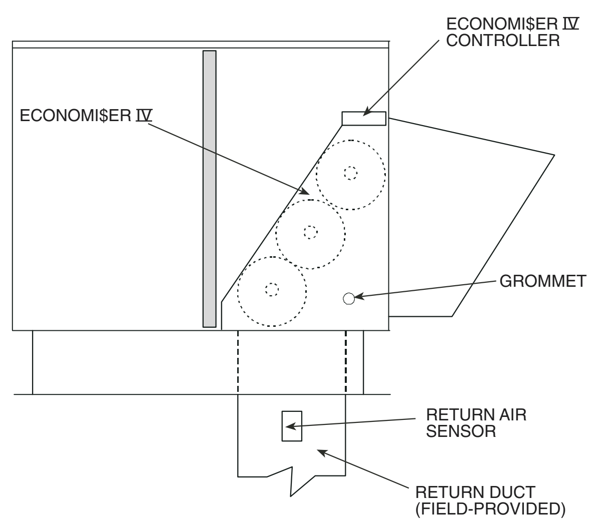


Fig. 32 — Return Air Temperature or Enthalpy Sensor Mounting Location

Indoor Air Quality (IAQ) Sensor Input

The IAQ input can be used for demand control ventilation control based on the level of CO_2 measured in the space or return air duct.

Mount the accessory IAQ sensor according to manufacturer specifications. The IAQ sensor should be wired to the AQ and AQ1 terminals of the controller. Adjust the DCV potentiometers to correspond to the DCV voltage output of the indoor air quality sensor at the user-determined set point. See Fig. 35.

If a separate field-supplied transformer is used to power the IAQ sensor, the sensor must not be grounded or the EconoMi$er IV control board will be damaged.

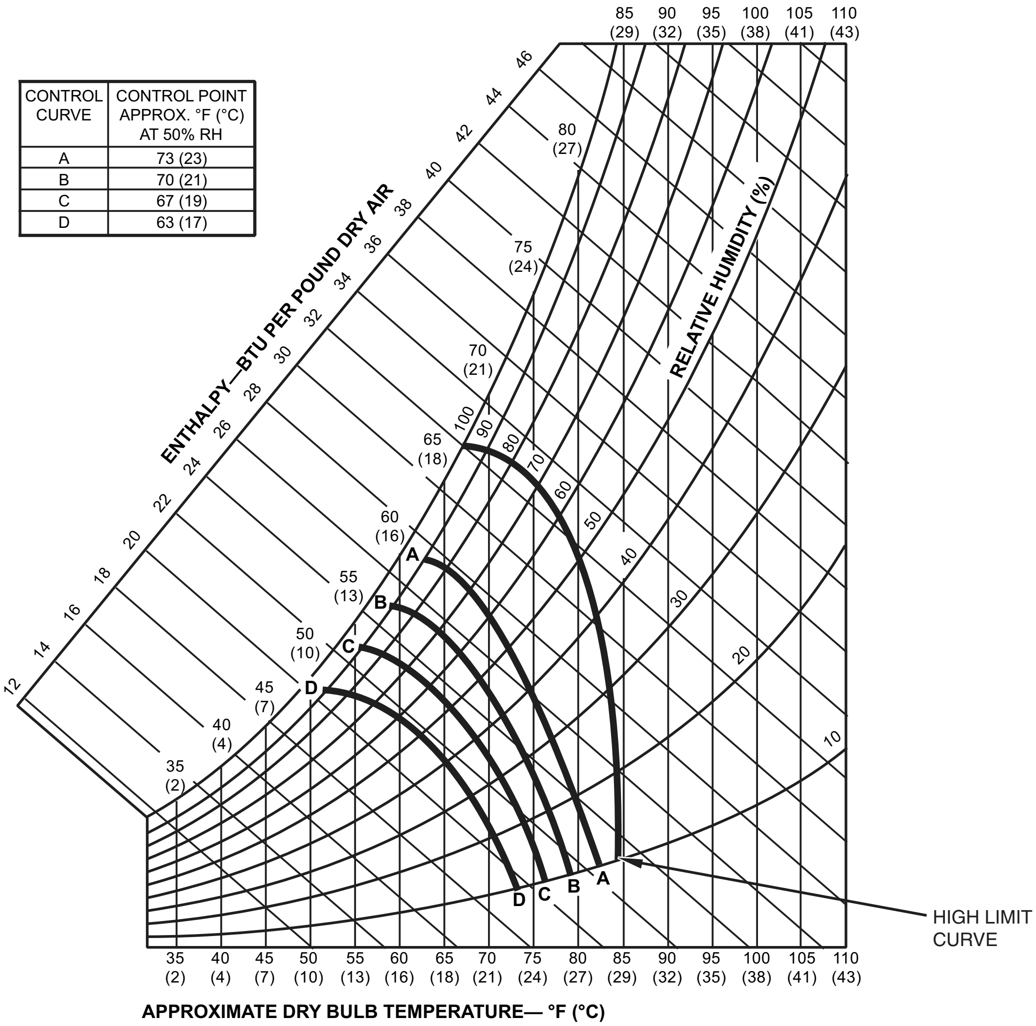


Fig. 33 — Enthalpy Changeover Set Points

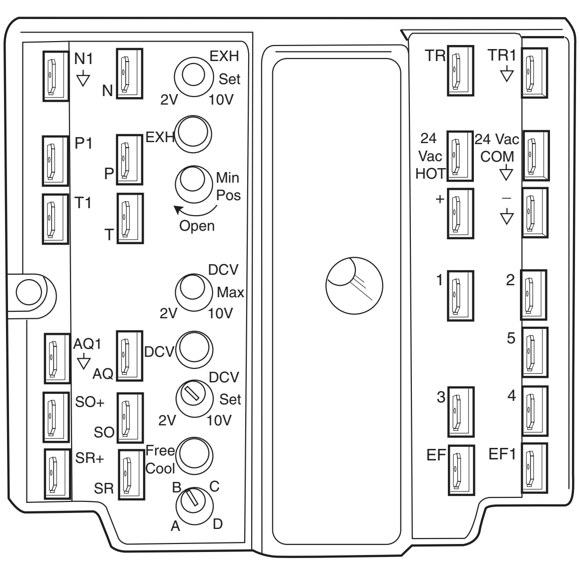


Fig. 34 — EconoMi$er IV Control

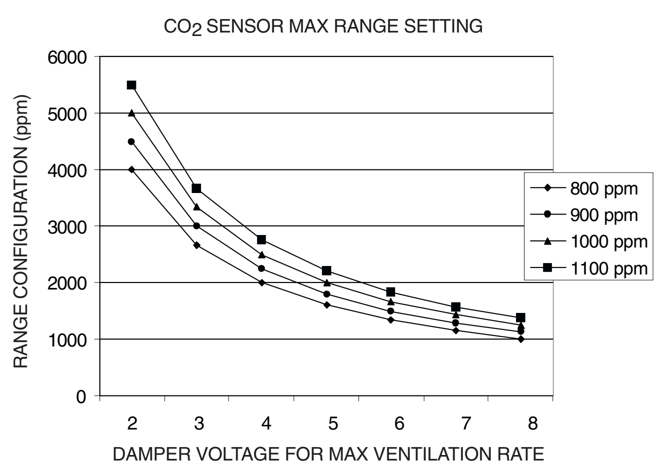


Fig. 35 — CO_2 Sensor Maximum Range Setting

Exhaust Set Point Adjustment

The exhaust set point will determine when the exhaust fan runs based on damper position (if accessory power exhaust is installed). The set point is modified with the Exhaust Fan Set Point (EXH SET) potentiometer. See Fig. 30. The set point represents the damper position above which the exhaust fans will be turned on. When there is a call for exhaust, the EconoMi$er IV controller provides a 45 ± 15 second delay before exhaust fan activation to allow the dampers to open. This delay allows the damper to reach the appropriate position to avoid unnecessary fan overload.

Minimum Position Control

There is a minimum damper position potentiometer on the EconoMi$er IV controller. See Fig. 30. The minimum damper position maintains the minimum airflow into the building during the occupied period.

When using demand ventilation, the minimum damper position represents the minimum ventilation position for VOC (volatile organic compound) ventilation requirements. The maximum demand ventilation position is used for fully occupied ventilation.

When demand ventilation control is not being used, the minimum position potentiometer should be used to set the occupied ventilation position. The maximum demand ventilation position should be turned fully clockwise.

Adjust the minimum position potentiometer to allow the minimum amount of outdoor air, as required by local codes, to enter the building. Make minimum position adjustments with at least 10 F temperature difference between the outdoor and return-air temperatures.

To determine the minimum position setting, perform the following procedure:

1. Calculate the appropriate mixed-air temperature using the following formula:

   $$(T_O \times \frac{OA}{100}) + (T_R \times \frac{RA}{100}) = T_M$$

   T_O = Outdoor-Air Temperature
   OA = Percent of Outdoor Air
   T_R = Return-Air Temperature
   RA = Percent of Return Air
   T_M = Mixed-Air Temperature

   As an example, if local codes require 10% outdoor air during occupied conditions, outdoor-air temperature is 60 F, and return-air temperature is 75 F.

   (60 x .10) + (75 x .90) = 73.5 F
2. Disconnect the supply air sensor from terminals T and T1.
3. Ensure that the factory-installed jumper is in place across terminals P and P1. If remote damper positioning is being used, make sure that the terminals are wired according to Fig. 25 and that the minimum position potentiometer is turned fully clockwise.
4. Connect 24 vac across terminals TR and TR1.
5. Carefully adjust the minimum position potentiometer until the measured mixed-air temperature matches the calculated value.
6. Reconnect the supply-air sensor to terminals T and T1.

Remote control of the EconoMi$er IV damper is desirable when requiring additional temporary ventilation. If a field-supplied remote potentiometer (Honeywell part number S963B1128) is wired to the EconoMi$er IV controller, the minimum position of the damper can be controlled from a remote location.

To control the minimum damper position remotely, remove the factory-installed jumper on the P and P1 terminals on the EconoMi$er IV controller. Wire the field-supplied potentiometer to the P and P1 terminals on the EconoMi$er IV controller. See Fig. 34.

Damper Movement

Damper movement from full open to full closed (or vice versa) takes 2 1/2 minutes.

Thermostats

The EconoMi$er IV control works with conventional thermostats that have a Y1 (cool stage 1), Y2 (cool stage 2), W1 (heat stage 1), W2 (heat stage 2), and G (fan). The EconoMi$er IV control does not support space temperature sensors. Connections are made at the thermostat terminal connection board located in the main control box.

Occupancy Control

The factory default configuration for the EconoMi$er IV control is occupied mode. Occupied status is provided by the black jumper from terminal TR to terminal N. When unoccupied mode is desired, install a field-supplied timeclock function in place of the jumper between TR and N. See Fig. 25. When the timeclock contacts are closed, the EconoMi$er IV control will be in occupied mode. When the timeclock contacts are open (removing the 24-v signal from terminal N), the EconoMi$er IV will be in unoccupied mode.

Demand Controlled Ventilation (DCV)

When using the EconoMi$er IV for demand controlled ventilation, there are some equipment selection criteria which should be considered. When selecting the heat capacity and cool capacity of the equipment, the maximum ventilation rate must be evaluated for design conditions. The maximum damper position must be calculated to provide the desired fresh air.

Typically the maximum ventilation rate will be about 5 to 10% more than the typical cfm required per person, using normal outside air design criteria.

A proportional anticipatory strategy should be taken with the following conditions: a zone with a large area, varied occupancy, and equipment that cannot exceed the required ventilation rate at design conditions. Exceeding the required ventilation rate means the equipment can condition air at a maximum ventilation rate that is greater than the required ventilation rate for maximum occupancy. A proportional-anticipatory strategy will cause the fresh air supplied to increase as the room CO_2 level increases even though the CO_2 set point has not been reached. By the time the CO_2 level reaches the set point, the damper will be at maximum ventilation and should maintain the set point.

In order to have the CO_2 sensor control the economizer damper in this manner, first determine the damper voltage output for minimum or base ventilation. Base ventilation is the ventilation required to remove contaminants during unoccupied periods. The following equation may be used to determine the percent of outside-air entering the building for a given damper position. For best results there should be at least a 10 degree difference in outside and return-air temperatures.

$$(T_O \times \frac{OA}{100}) + (T_R \times \frac{RA}{100}) = T_M$$

T_O = Outdoor-Air Temperature
OA = Percent of Outdoor Air
T_R = Return-Air Temperature
RA = Percent of Return Air
T_M = Mixed-Air Temperature

Once base ventilation has been determined, set the minimum damper position potentiometer to the correct position.

The same equation can be used to determine the occupied or maximum ventilation rate to the building. For example, an output of 3.6 volts to the actuator provides a base ventilation rate of 5% and an output of 6.7 volts provides the maximum ventilation rate of 20% (or base plus 15 cfm per person). Use Fig. 35 to determine the maximum setting of the CO_2 sensor. For example, a 1100 ppm set point relates to a 15 cfm per person design. Use the 1100 ppm curve on Fig. 35 to find the point when the CO_2 sensor output will be 6.7 volts. Line up the point on the graph with the left side of the chart to determine that the range configuration for the CO_2 sensor should be 1800 ppm. The EconoMi$er IV controller will output the 6.7 volts from the CO_2 sensor to the actuator when the CO_2 concentration in the space is at 1100 ppm. The DCV set point may be left at 2 volts since the CO_2 sensor voltage will be ignored by the EconoMi$er IV controller until it rises above the 3.6 volt setting of the minimum position potentiometer.

Once the fully occupied damper position has been determined, set the maximum damper demand control ventilation potentiometer to this position. Do not set to the maximum position as this can result in over-ventilation to the space and potential high-humidity levels.

CO_2 Sensor Configuration

The CO_2 sensor has preset standard voltage settings that can be selected anytime after the sensor is powered up. See Table 7.

Use setting 1 or 2 for Bryant equipment. See Table 7.

1. Press Clear and Mode buttons. Hold at least 5 seconds until the sensor enters the Edit mode.
2. Press Mode twice. The STDSET Menu will appear.
3. Use the Up/Down button to select the preset number. See Table 7.
4. Press Enter to lock in the selection.
5. Press Mode to exit and resume normal operation.

The custom settings of the CO_2 sensor can be changed anytime after the sensor is energized. Follow the steps below to change the non-standard settings:

1. Press Clear and Mode buttons. Hold at least 5 seconds until the sensor enters the Edit mode.
2. Press Mode twice. The STDSET Menu will appear.
3. Use the Up/Down button to toggle to the NONSTD menu and press Enter.
4. Use the Up/Down button to toggle through each of the nine variables, starting with Altitude, until the desired setting is reached.
5. Press Mode to move through the variables.
6. Press Enter to lock in the selection, then press Mode to continue to the next variable.

Dehumidification of Fresh Air with DCV Control

Information from ASHRAE indicates that the largest humidity load on any zone is the fresh air introduced. For some applications, an energy recovery unit is added to reduce the moisture content of the fresh air being brought into the building when the enthalpy is high. In most cases, the normal heating and cooling processes are more than adequate to remove the humidity loads for most commercial applications.

If normal rooftop heating and cooling operation is not adequate for the outdoor humidity level, an energy recovery unit and/or a dehumidification option should be considered.

Table 7 — CO_2 Sensor Standard Settings

SETTING	EQUIPMENT	OUTPUT	VENTILATION RATE (cfm/Person)	ANALOG OUTPUT	CO_2 CONTROL RANGE (ppm)	OPTIONAL RELAY SETPOINT (ppm)	RELAY HYSTERESIS (ppm)
1	Interface w/Standard Building Control System	Proportional	Any	0-10V 4-20 mA	0-2000	1000	50
2		Proportional	Any	2-10V 7-20 mA	0-2000	1000	50
3		Exponential	Any	0-10V 4-20 mA	0-2000	1100	50
4	Economizer	Proportional	15	0-10V 4-20 mA	0-1100	1100	50
5		Proportional	20	0-10V 4-20 mA	0- 900	900	50
6		Exponential	15	0-10V 4-20 mA	0-1100	1100	50
7		Exponential	20	0-10V 4-20 mA	0- 900	900	50
8	Health & Safety	Proportional	—	0-10V 4-20 mA	0-9999	5000	500
9	Parking/Air Intakes/ Loading Docks	Proportional	—	0-10V 4-20 mA	0-2000	700	50

LEGEND

ppm — Parts Per Million

VII. STEP 7 — ADJUST EVAPORATOR-FAN SPEED

Adjust evaporator-fan rpm to meet jobsite conditions.

For units with electric heat, required minimum cfm is 2250 for 551B090 and 102 and 3000 for 551B120 and 150. See Table 8 for exceptions.

Table 8 — Minimum Required Airflow Exceptions

UNIT 551B	UNIT VOLTAGE	HEATER kW	UNIT CONFIG-URATION	REQUIRED MINIMUM CFM
120,150	208/230	42.4	Horizontal	3200
	208/230	50.0	Horizontal	3200
	460	50.0	Horizontal or Vertical	3200
090-150	575	17.0	Horizontal or Vertical	2800
		34.0		2350

Tables 9 and 10 show fan rpm at motor pulley settings for standard and high-static motors. Tables 11 and 12 show evaporator-fan motor data. See Tables 13 and 14 and Fig. 36 for accessory and option static pressure drops. Refer to Tables 15-28 to determine fan speed settings.

Fan motor pulleys are factory set for speed shown in Table 1.

To change fan speeds:

1. Shut off unit power supply and install lockout tag.
2. Loosen belt by loosening fan motor mounting nuts. See Fig. 37 and 38.
3. Loosen movable pulley flange setscrew (see Fig. 39).
4. Screw movable flange toward fixed flange to increase rpm or away from fixed flange to decrease rpm. Increasing fan rpm increases load on motor. Do not exceed maximum speed specified in Table 1.
5. Set movable flange at nearest keyway of pulley hub and tighten setscrew. (See Table 1 for speed change for each full turn of pulley flange.)

To align fan and motor pulleys:

1. Loosen fan pulley setscrews.
2. Slide fan pulley along fan shaft.
3. Make angular alignment by loosening motor from mounting plate.

To adjust belt tension:

1. Loosen fan motor mounting nuts.
2. *Size 090* — Slide motor mounting plate away from fan scroll for proper belt tension ($^1/_2$-in. deflection with 8 to 10 lb of force) and tighten mounting nuts (see Fig. 37).

   Sizes 102-150 — Slide motor mounting plate downward to tighten belt tension. Secure motor mounting plate nuts. See Fig. 38. Use $^1/_2$-in. deflection with 10 lb of force.
3. Adjust bolt and nut on mounting plate to secure motor in fixed position.

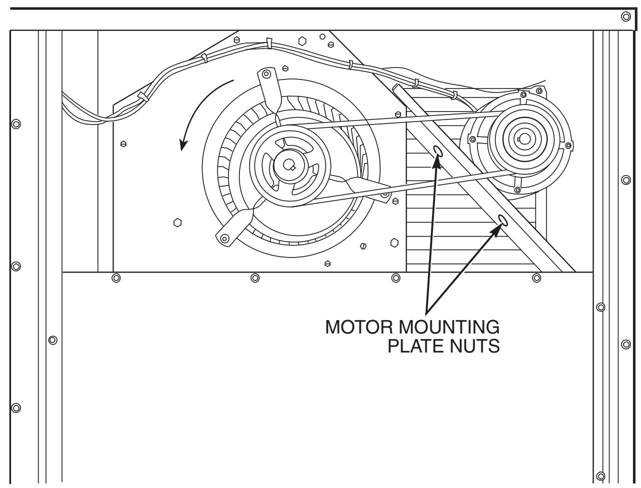


Fig. 37 — Typical Belt-Drive Motor Mounting for Size 090

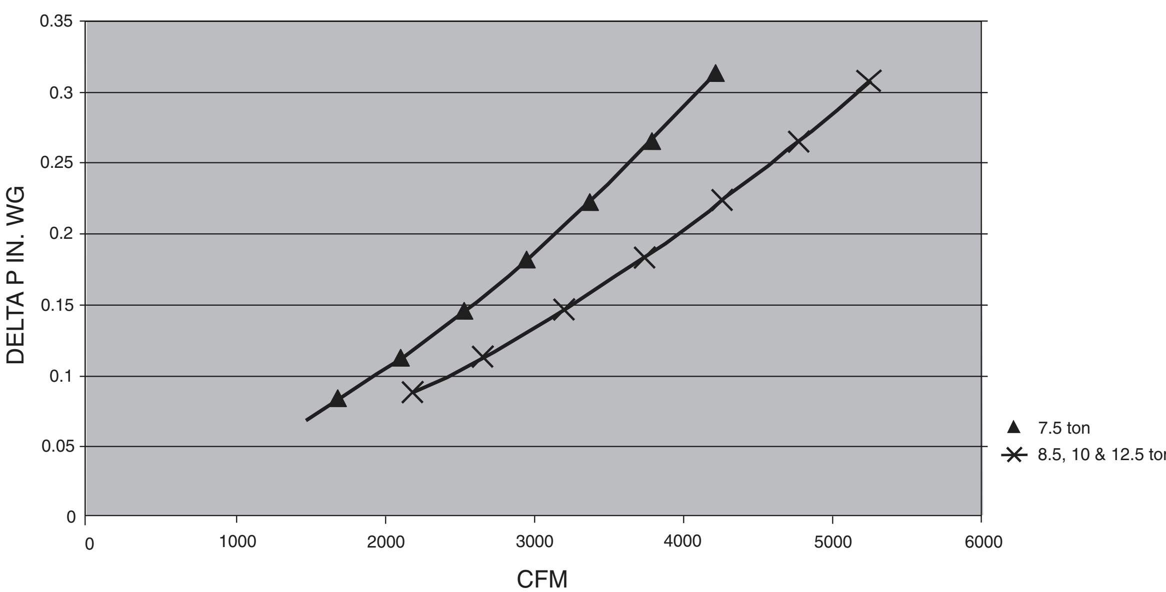


Fig. 36 — Perfect Humidity™ Dehumidification System Static Pressure Drop (in. wg)

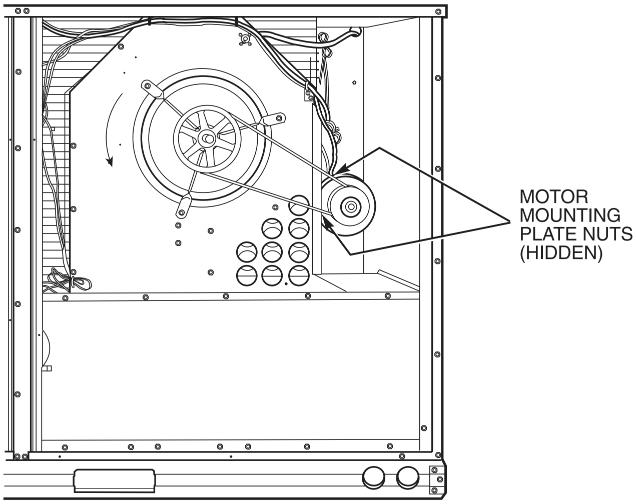


Fig. 38 — Typical Belt-Drive Motor Mounting for Sizes 102-150

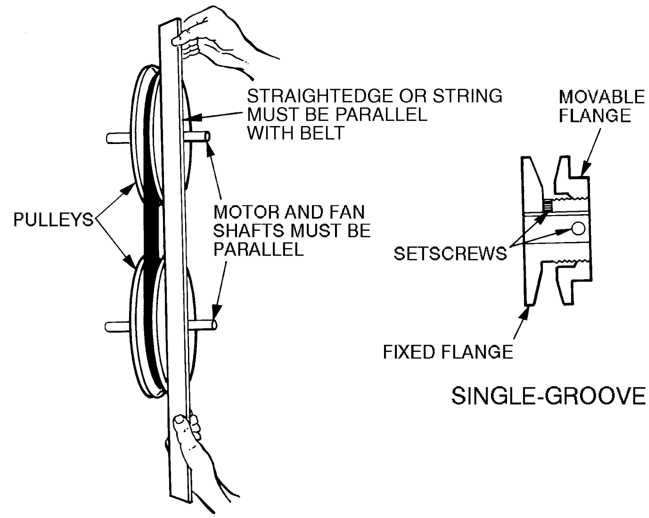


Fig. 39 — Indoor-Fan Pulley Adjustment

Table 9 — Fan Rpm at Motor Pulley Setting*; Standard Motor/Drive

UNIT 551B	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
090,102	1085	1060	1035	1010	985	960	935	910	890	865	840	—	—
120	1080	1060	1035	1015	990	970	950	925	905	880	860	—	—
150	1130	1112	1087	1062	1037	1212	987	962	937	912	887	862	830

*Approximate fan rpm shown.

Table 10 — Fan Rpm at Motor Pulley Setting*; High-Static Motor/Drive

UNIT 551B	MOTOR PULLEY TURNS OPEN												
	0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
090	1080	1025	1007	988	970	952	933	915	897	878	860	—	—
102	1080	1025	1007	988	970	952	933	915	897	878	860	—	—
120	1130	1112	1087	1062	1037	1212	987	962	937	912	887	862	830

*Approximate fan rpm shown.

Table 11 — Evaporator-Fan Motor Data — Standard Motor

UNIT 551B	UNIT PHASE	MAXIMUM CONTINUOUS BHP*	MAXIMUM OPERATING WATTS*	UNIT VOLTAGE	MAXIMUM AMP DRAW
090,102	Three	2.90	2615	208/230	8.6
				460	3.9
				575	3.9
120	Three	3.70	3775	208/230	12.2
				460	5.5
				575	5.5
150	Three	5.25	4400	208/230	17.3
				460	8.5
				575	8.5

LEGEND

BHP — Brake Horsepower

*Extensive motor and electrical testing on these units ensures that the full horsepower and watts range of the motors can be utilized with confidence. Using your fan motors up to the ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

Table 12 — Evaporator-Fan Motor Data — High-Static Motors

UNIT 5551B	UNIT PHASE	MAXIMUM CONTINUOUS BHP*	MAXIMUM OPERATING WATTS*	UNIT VOLTAGE	MAXIMUM AMP DRAW
090,102	Three	4.20	3775	208/230	12.2
				460	5.5
				575	5.5
120	Three	5.25	4400	208/230	17.3
				460	8.5
				575	8.5

LEGEND

BHP — Brake Horsepower

*Extensive motor and electrical testing on these units ensures that the full horsepower and watts range of the motors can be utilized with confidence. Using your fan motors up to the ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

Table 13 — Accessory/FIOP EconoMi$er IV Static Pressure* (in. wg)

COMPONENT	CFM													
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	6250
Vertical EconoMi$er IV	0.06	0.075	0.09	0.115	0.13	0.15	0.17	0.195	0.22	0.25	0.285	0.325	0.36	—
Horizontal EconoMi$er IV	—	0.1	0.125	0.15	0.18	0.21	0.25	0.275	0.3	0.34	0.388	—	—	—

LEGEND

FIOP — Factory-Installed Option

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should be used in conjunction with the Fan Performance tables to determine indoor blower rpm and watts.

Table 14 — Accessory/FIOP Electric Heaters Static Pressure (in. wg)

COMPONENT	CFM								
	2200	2500	3000	3500	4000	4500	5000	5500	6000
1 Heater Module	0.02	0.03	0.05	0.065	0.08	0.10	0.12	0.14	0.155
2 Heater Modules	0.03	0.05	0.07	0.09	0.12	0.14	0.16	0.19	0.21

LEGEND

FIOP — Factory-Installed Option

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should be used in conjunction with the Fan Performance tables to determine indoor blower rpm and watts.

GENERAL FAN PERFORMANCE NOTES

1. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using fan motors up to the ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance refer to Evaporator-Fan Motor Data, Tables 11 and 12.
2. Values include losses for filters, unit casing, and wet coils. See Tables 13 and 14 and Fig. 36 for accessory/FIOP static pressure information.
3. Use of a field-supplied motor may affect wire sizing. Contact Bryant representative to verify.
4. Interpolation is permissible. Do not extrapolate.

Table 15 — Fan Performance 551B090 — Vertical Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**511**	**0.53**	**492**	**591**	**0.73**	**680**	**660**	**0.95**	**885**	**722**	**1.19**	**1106**	**779**	**1.44**	**1342**
2300	**519**	**0.56**	**518**	**597**	**0.76**	**709**	**666**	**0.98**	**916**	**727**	**1.22**	**1140**	**784**	**1.48**	**1378**
2400	**534**	**0.61**	**571**	**611**	**0.82**	**768**	**678**	**1.05**	**982**	**739**	**1.30**	**1210**	**795**	**1.56**	**1453**
2500	**550**	**0.67**	**629**	**624**	**0.89**	**832**	**690**	**1.13**	**1051**	**750**	**1.38**	**1285**	**805**	**1.64**	**1533**
2550	**558**	**0.71**	**660**	**631**	**0.93**	**866**	**697**	**1.17**	**1088**	**756**	**1.42**	**1324**	**811**	**1.69**	**1574**
2600	**565**	**0.74**	**691**	**638**	**0.97**	**901**	**703**	**1.21**	**1125**	**762**	**1.46**	**1365**	**816**	**1.73**	**1617**
2700	**581**	**0.81**	**758**	**652**	**1.04**	**974**	**716**	**1.29**	**1204**	**774**	**1.55**	**1449**	**828**	**1.83**	**1707**
2800	**597**	**0.89**	**829**	**667**	**1.13**	**1051**	**729**	**1.38**	**1287**	**786**	**1.65**	**1538**	**839**	**1.93**	**1801**
2900	**613**	**0.97**	**905**	**681**	**1.22**	**1133**	**742**	**1.48**	**1376**	**799**	**1.75**	**1632**	851	2.04	1900
3000	**630**	**1.06**	**985**	**696**	**1.31**	**1220**	**756**	**1.58**	**1469**	**811**	**1.86**	**1731**	863	2.15	2004
3100	**646**	**1.15**	**1071**	**711**	**1.41**	**1313**	**770**	**1.68**	**1568**	**824**	**1.97**	**1835**	875	2.27	2114
3200	**663**	**1.25**	**1162**	**726**	**1.51**	**1411**	**784**	**1.79**	**1672**	**837**	**2.09**	**1944**	888	2.39	2229
3300	**679**	**1.35**	**1259**	**741**	**1.62**	**1514**	**798**	**1.91**	**1781**	851	2.21	2060	900	2.52	2351
3400	**696**	**1.46**	**1361**	**756**	**1.74**	**1623**	**812**	**2.03**	**1896**	864	2.34	2181	913	2.66	2478
3500	**713**	**1.58**	**1469**	**772**	**1.86**	**1737**	**827**	**2.16**	**2017**	878	2.48	2308	926	2.80	2610
3600	**729**	**1.70**	**1583**	**787**	**1.99**	**1857**	841	2.30	2144	892	2.62	2441	—	—	—
3700	**746**	**1.83**	**1703**	**803**	**2.13**	**1985**	856	2.44	2277	906	2.77	2580	—	—	—
3750	**755**	**1.89**	**1766**	**811**	**2.20**	**2051**	864	2.52	2346	913	2.84	2653	—	—	—

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**832**	**1.71**	**1592**	882	1.99	1855	928	2.29	2131	973	2.59	2420	—	—	—
2300	**837**	**1.75**	**1630**	886	2.03	1896	933	2.33	2174	977	2.64	2463	—	—	—
2400	847	1.83	1710	896	2.12	1980	942	2.43	2262	986	2.74	2556	—	—	—
2500	857	1.92	1794	905	2.22	2069	951	2.52	2355	995	2.84	2653	—	—	—
2550	862	1.97	1838	910	2.27	2114	956	2.58	2403	999	2.90	2704	—	—	—
2600	867	2.02	1884	915	2.32	2162	961	2.63	2453	—	—	—	—	—	—
2700	878	2.12	1978	926	2.42	2261	971	2.74	2556	—	—	—	—	—	—
2800	889	2.23	2077	936	2.54	2365	981	2.86	2664	—	—	—	—	—	—
2900	900	2.34	2181	947	2.65	2474	—	—	—	—	—	—	—	—	—
3000	912	2.46	2290	958	2.78	2588	—	—	—	—	—	—	—	—	—
3100	923	2.58	2406	969	2.90	2708	—	—	—	—	—	—	—	—	—
3200	935	2.71	2526	—	—	—	—	—	—	—	—	—	—	—	—
3300	947	2.84	2652	—	—	—	—	—	—	—	—	—	—	—	—
3400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See page 23 for general fan performance notes.

Table 16 — Fan Performance 551B090 — Vertical Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**511**	**0.53**	**492**	**591**	**0.73**	**680**	**660**	**0.95**	**885**	**722**	**1.19**	**1106**	**779**	**1.44**	**1342**
2300	**519**	**0.56**	**518**	**597**	**0.76**	**709**	**666**	**0.98**	**916**	**727**	**1.22**	**1140**	**784**	**1.48**	**1378**
2400	**534**	**0.61**	**571**	**611**	**0.82**	**768**	**678**	**1.05**	**982**	**739**	**1.30**	**1210**	**795**	**1.56**	**1453**
2500	**550**	**0.67**	**629**	**624**	**0.89**	**832**	**690**	**1.13**	**1051**	**750**	**1.38**	**1285**	**805**	**1.64**	**1533**
2550	**558**	**0.71**	**660**	**631**	**0.93**	**866**	**697**	**1.17**	**1088**	**756**	**1.42**	**1324**	**811**	**1.69**	**1574**
2600	**565**	**0.74**	**691**	**638**	**0.97**	**901**	**703**	**1.21**	**1125**	**762**	**1.46**	**1365**	**816**	**1.73**	**1617**
2700	**581**	**0.81**	**758**	**652**	**1.04**	**974**	**716**	**1.29**	**1204**	**774**	**1.55**	**1449**	**828**	**1.83**	**1707**
2800	**597**	**0.89**	**829**	**667**	**1.13**	**1051**	**729**	**1.38**	**1287**	**786**	**1.65**	**1538**	**839**	**1.93**	**1801**
2900	**613**	**0.97**	**905**	**681**	**1.22**	**1133**	**742**	**1.48**	**1376**	**799**	**1.75**	**1632**	**851**	**2.04**	**1900**
3000	**630**	**1.06**	**985**	**696**	**1.31**	**1220**	**756**	**1.58**	**1469**	**811**	**1.86**	**1731**	863	2.15	2004
3100	**646**	**1.15**	**1071**	**711**	**1.41**	**1313**	**770**	**1.68**	**1568**	**824**	**1.97**	**1835**	875	2.27	2114
3200	**663**	**1.25**	**1162**	**726**	**1.51**	**1411**	**784**	**1.79**	**1672**	**837**	**2.09**	**1944**	888	2.39	2229
3300	**679**	**1.35**	**1259**	**741**	**1.62**	**1514**	**798**	**1.91**	**1781**	**851**	**2.21**	**2060**	900	2.52	2351
3400	**696**	**1.46**	**1361**	**756**	**1.74**	**1623**	**812**	**2.03**	**1896**	864	2.34	2181	913	2.66	2478
3500	**713**	**1.58**	**1469**	**772**	**1.86**	**1737**	**827**	**2.16**	**2017**	878	2.48	2308	926	2.80	2610
3600	**729**	**1.70**	**1583**	**787**	**1.99**	**1857**	**841**	**2.30**	**2144**	892	2.62	2441	939	2.95	2749
3700	**746**	**1.83**	**1703**	**803**	**2.13**	**1985**	**856**	**2.44**	**2277**	906	2.77	2580	953	3.10	2894
3750	**755**	**1.89**	**1766**	**811**	**2.20**	**2051**	864	2.52	2346	913	2.84	2653	959	3.18	2969

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**832**	**1.71**	**1592**	882	1.99	1855	928	2.29	2131	973	2.59	2420	1015	2.92	2720
2300	**837**	**1.75**	**1630**	886	2.03	1896	933	2.33	2174	977	2.64	2463	1020	2.97	2766
2400	**847**	**1.83**	**1710**	896	2.12	1980	942	2.43	2262	986	2.74	2556	1028	3.07	2861
2500	**857**	**1.92**	**1794**	905	2.22	2069	951	2.52	2355	995	2.84	2653	1037	3.18	2962
2550	862	1.97	1838	910	2.27	2114	956	2.58	2403	999	2.90	2704	1041	3.23	3014
2600	867	2.02	1884	915	2.32	2162	961	2.63	2453	1004	2.95	2755	1045	3.29	3068
2700	878	2.12	1978	926	2.42	2261	971	2.74	2556	1013	3.07	2862	1055	3.41	3180
2800	889	2.23	2077	936	2.54	2365	981	2.86	2664	1023	3.19	2975	1064	3.54	3297
2900	900	2.34	2181	947	2.65	2474	991	2.98	2778	1033	3.32	3094	1073	3.67	3419
3000	912	2.46	2290	958	2.78	2588	1001	3.11	2897	1043	3.45	3217	**1083**	**3.80**	**3547**
3100	923	2.58	2406	969	2.90	2708	1012	3.24	3022	1053	3.59	3347	**1093**	**3.95**	**3682**
3200	935	2.71	2526	980	3.04	2834	1023	3.38	3152	1064	3.73	3482	**1103**	**4.10**	**3821**
3300	947	2.84	2652	992	3.18	2966	1034	3.53	3289	1075	3.89	3623	—	—	—
3400	959	2.99	2785	1003	3.33	3103	1045	3.68	3432	**1086**	**4.04**	**3771**	—	—	—
3500	972	3.13	2923	1015	3.48	3246	1057	3.84	3581	—	—	—	—	—	—
3600	984	3.29	3068	1027	3.64	3396	1068	4.01	3736	—	—	—	—	—	—
3700	997	3.45	3218	1040	3.81	3553	1080	4.18	3897	—	—	—	—	—	—
3750	1004	3.54	3296	1046	3.90	3633	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See page 23 for general fan performance notes.

Table 17 — Fan Performance 551B102 — Vertical Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**489**	**0.41**	**386**	**564**	**0.54**	**506**	**629**	**0.67**	**625**	**688**	**0.80**	**745**	**741**	**0.93**	**866**
2600	**502**	**0.45**	**424**	**576**	**0.59**	**548**	**640**	**0.72**	**672**	**697**	**0.85**	**797**	**750**	**0.99**	**923**
2700	**515**	**0.50**	**465**	**587**	**0.64**	**594**	**650**	**0.77**	**723**	**707**	**0.91**	**852**	**760**	**1.05**	**982**
2800	**529**	**0.55**	**508**	**599**	**0.69**	**642**	**661**	**0.83**	**776**	**718**	**0.98**	**910**	**769**	**1.12**	**1044**
2900	**542**	**0.59**	**555**	**611**	**0.74**	**693**	**672**	**0.89**	**832**	**728**	**1.04**	**970**	**779**	**1.19**	**1109**
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	841	1.68	1567
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	852	1.78	1656
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	840	1.88	1758	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	852	1.99	1857	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	843	2.12	1973	889	2.34	2179	932	2.56	2384

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**791**	**1.06**	**988**	**837**	**1.19**	**1112**	881	1.33	1236	922	1.46	1362	962	1.60	1490
2600	**799**	**1.12**	**1049**	845	1.26	1177	889	1.40	1306	930	1.54	1436	969	1.68	1568
2700	**808**	**1.19**	**1113**	854	1.34	1245	897	1.48	1378	938	1.62	1513	977	1.77	1648
2800	**817**	**1.26**	**1179**	863	1.41	1316	905	1.56	1454	946	1.71	1592	985	1.86	1732
2900	**827**	**1.34**	**1249**	872	1.49	1390	914	1.64	1532	954	1.80	1675	993	1.95	1819
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	846	1.50	1398	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	856	1.58	1477	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	—	—	—
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	—	—	—
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	—	—	—	—	—	—
4100	951	2.52	2351	991	2.73	2547	—	—	—	—	—	—	—	—	—
4200	962	2.65	2468	1002	2.86	2668	—	—	—	—	—	—	—	—	—
4300	973	2.78	2589	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See page 23 for general fan performance notes.

Table 18 — Fan Performance 551B102 — Vertical Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	**EXTERNAL STATIC PRESSURE (in. wg)**														
	0.2			**0.4**			**0.6**			**0.8**			**1.0**		
	Rpm	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**
2500	**489**	**0.41**	**386**	**564**	**0.54**	**506**	**629**	**0.67**	**625**	**688**	**0.80**	**745**	**741**	**0.93**	**866**
2600	**502**	**0.45**	**424**	**576**	**0.59**	**548**	**640**	**0.72**	**672**	**697**	**0.85**	**797**	**750**	**0.99**	**923**
2700	**515**	**0.50**	**465**	**587**	**0.64**	**594**	**650**	**0.77**	**723**	**707**	**0.91**	**852**	**760**	**1.05**	**982**
2800	**529**	**0.55**	**508**	**599**	**0.69**	**642**	**661**	**0.83**	**776**	**718**	**0.98**	**910**	**769**	**1.12**	**1044**
2900	**542**	**0.59**	**555**	**611**	**0.74**	**693**	**672**	**0.89**	**832**	**728**	**1.04**	**970**	**779**	**1.19**	**1109**
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	**841**	**1.68**	**1567**
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	**852**	**1.78**	**1656**
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	**840**	**1.88**	**1758**	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	**852**	**1.99**	**1857**	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	**843**	**2.12**	**1973**	889	2.34	2179	932	2.56	2384

AIRFLOW CFM	**EXTERNAL STATIC PRESSURE (in. wg)**														
	1.2			**1.4**			**1.6**			**1.8**			**2.0**		
	Rpm	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**	**Rpm**	**Bhp**	**Watts**
2500	**791**	**1.06**	**988**	**837**	**1.19**	**1112**	881	1.33	1236	922	1.46	1362	962	1.60	1490
2600	**799**	**1.12**	**1049**	**845**	**1.26**	**1177**	889	1.40	1306	930	1.54	1436	969	1.68	1568
2700	**808**	**1.19**	**1113**	**854**	**1.34**	**1245**	897	1.48	1378	938	1.62	1513	977	1.77	1648
2800	**817**	**1.26**	**1179**	863	1.41	1316	905	1.56	1454	946	1.71	1592	985	1.86	1732
2900	**827**	**1.34**	**1249**	872	1.49	1390	914	1.64	1532	954	1.80	1675	993	1.95	1819
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	**846**	**1.50**	**1398**	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	**856**	**1.58**	**1477**	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	**1082**	**3.09**	**2877**
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	**1092**	**3.22**	**3004**
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	**1102**	**3.36**	**3136**
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	**1112**	**3.51**	**3271**
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	**1087**	**3.44**	**3205**	**1122**	**3.66**	**3411**

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See page 23 for general fan performance notes.

Table 19 — Fan Performance 551B120 — Vertical Discharge Units; Standard Motor (Belt Drive*)

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	**831**	**1.59**	**1483**
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	**841**	**1.68**	**1567**
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	**852**	**1.78**	**1656**
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	**840**	**1.88**	**1758**	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	**852**	**1.99**	**1857**	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	**830**	**2.00**	**1866**	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	**843**	**2.12**	**1973**	889	2.34	2179	932	2.56	2384
4400	**755**	**1.78**	**1660**	**807**	**2.01**	**1873**	**856**	**2.23**	**2084**	901	2.46	2295	944	2.69	2505
4500	**770**	**1.89**	**1766**	**821**	**2.13**	**1984**	869	2.36	2200	914	2.59	2415	956	2.82	2630
4600	**785**	**2.01**	**1876**	**835**	**2.25**	**2099**	882	2.49	2320	926	2.72	2541	968	2.96	2760
4700	**800**	**2.14**	**1991**	**849**	**2.38**	**2219**	895	2.62	2445	939	2.86	2670	980	3.10	2895
4800	**815**	**2.26**	**2111**	863	2.51	2344	909	2.76	2575	952	3.01	2805	993	3.25	3034
4900	**829**	**2.40**	**2235**	877	2.65	2473	922	2.91	2709	965	3.16	2944	1005	3.41	3178
5000	**844**	**2.54**	**2365**	891	2.80	2608	936	3.06	2849	978	3.31	3089	1018	3.57	3328

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**836**	**1.42**	**1322**	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	**846**	**1.50**	**1398**	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	**856**	**1.58**	**1477**	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	**1082**	**3.09**	**2877**
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	**1092**	**3.22**	**3004**
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	**1102**	**3.36**	**3136**
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	**1112**	**3.51**	**3271**
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	**1087**	**3.44**	**3205**	**1122**	**3.66**	**3411**
4400	985	2.91	2715	1024	3.14	2924	1061	3.36	3134	**1097**	**3.59**	**3345**	—	—	—
4500	996	3.05	2845	1035	3.28	3059	1072	3.51	3274	—	—	—	—	—	—
4600	1008	3.20	2979	1046	3.43	3199	**1083**	**3.67**	**3418**	—	—	—	—	—	—
4700	1020	3.34	3119	1058	3.58	3343	—	—	—	—	—	—	—	—	—
4800	1032	3.50	3263	—	—	—	—	—	—	—	—	—	—	—	—
4900	1044	3.66	3413	—	—	—	—	—	—	—	—	—	—	—	—
5000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.
3. See page 23 for general fan performance notes.

Table 20 — Fan Performance 551B120 — Vertical Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**556**	**0.65**	**604**	**623**	**0.80**	**748**	**684**	**0.95**	**891**	**738**	**1.11**	**1034**	**789**	**1.26**	**1177**
3100	**569**	**0.70**	**656**	**636**	**0.86**	**805**	**695**	**1.02**	**953**	**749**	**1.18**	**1100**	**799**	**1.34**	**1249**
3200	**583**	**0.76**	**712**	**648**	**0.93**	**865**	**707**	**1.09**	**1018**	**760**	**1.26**	**1170**	**809**	**1.42**	**1323**
3300	**597**	**0.83**	**770**	**661**	**1.00**	**929**	**718**	**1.17**	**1086**	**771**	**1.33**	**1244**	**820**	**1.50**	**1401**
3400	**611**	**0.89**	**832**	**674**	**1.07**	**996**	**730**	**1.24**	**1158**	**782**	**1.42**	**1320**	831	1.59	1483
3500	**625**	**0.96**	**898**	**687**	**1.14**	**1066**	**742**	**1.32**	**1233**	**794**	**1.50**	**1400**	841	1.68	1567
3600	**639**	**1.04**	**967**	**700**	**1.22**	**1140**	**754**	**1.41**	**1312**	**805**	**1.59**	**1484**	852	1.78	1656
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	840	1.88	1758	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	852	1.99	1857	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	830	2.00	1866	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	843	2.12	1973	889	2.34	2179	932	2.56	2384
4400	**755**	**1.78**	**1660**	**807**	**2.01**	**1873**	856	2.23	2084	901	2.46	2295	944	2.69	2505
4500	**770**	**1.89**	**1766**	**821**	**2.13**	**1984**	869	2.36	2200	914	2.59	2415	956	2.82	2630
4600	**785**	**2.01**	**1876**	835	2.25	2099	882	2.49	2320	926	2.72	2541	968	2.96	2760
4700	**800**	**2.14**	**1991**	849	2.38	2219	895	2.62	2445	939	2.86	2670	980	3.10	2895
4800	**815**	**2.26**	**2111**	863	2.51	2344	909	2.76	2575	952	3.01	2805	993	3.25	3034
4900	**829**	**2.40**	**2235**	877	2.65	2473	922	2.91	2709	965	3.16	2944	1005	3.41	3178
5000	844	2.54	2365	891	2.80	2608	936	3.06	2849	978	3.31	3089	1018	3.57	3328

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	836	1.42	1322	881	1.57	1467	923	1.73	1613	963	1.89	1761	1001	2.05	1909
3100	846	1.50	1398	890	1.66	1547	932	1.82	1698	972	1.98	1849	1010	2.15	2002
3200	856	1.58	1477	899	1.75	1631	941	1.92	1786	980	2.08	1942	1018	2.25	2099
3300	866	1.67	1559	909	1.84	1718	950	2.01	1878	989	2.19	2038	1027	2.36	2199
3400	876	1.76	1645	919	1.94	1808	960	2.12	1972	998	2.29	2137	1036	2.47	2303
3500	886	1.86	1734	929	2.04	1902	969	2.22	2071	1008	2.40	2240	1045	2.58	2410
3600	897	1.96	1827	939	2.14	2000	979	2.33	2173	1017	2.52	2347	1054	2.70	2521
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	1082	3.09	2877
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	1092	3.22	3004
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	1102	3.36	3136
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	1112	3.51	3271
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	1087	3.44	3205	1122	3.66	3411
4400	985	2.91	2715	1024	3.14	2924	1061	3.36	3134	1097	3.59	3345	**1132**	**3.81**	**3555**
4500	996	3.05	2845	1035	3.28	3059	1072	3.51	3274	1108	3.74	3489	**1142**	**3.97**	**3704**
4600	1008	3.20	2979	1046	3.43	3199	1083	3.67	3418	1118	3.90	3638	**1152**	**4.14**	**3857**
4700	1020	3.34	3119	1058	3.58	3343	1094	3.83	3567	1129	4.07	3792	**1163**	**4.31**	**4016**
4800	1032	3.50	3263	1069	3.74	3492	1105	3.99	3721	**1140**	**4.24**	**3950**	**1174**	**4.48**	**4179**
4900	1044	3.66	3413	1081	3.91	3646	1117	4.16	3880	**1151**	**4.41**	**4113**	**1184**	**4.66**	**4347**
5000	1056	3.82	3566	1093	4.08	3805	1128	4.34	4044	**1162**	**4.59**	**4282**	**1195**	**4.85**	**4520**

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See page 23 for general fan performance notes.

Table 21 — Fan Performance 551B150 — Vertical Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	**654**	**1.11**	**1040**	**713**	**1.31**	**1218**	**767**	**1.50**	**1395**	**817**	**1.69**	**1571**	863	1.87	1748
3800	**668**	**1.20**	**1116**	**726**	**1.39**	**1299**	**779**	**1.59**	**1481**	**828**	**1.78**	**1662**	874	1.98	1844
3900	**683**	**1.28**	**1197**	**739**	**1.48**	**1385**	**792**	**1.69**	**1572**	840	1.88	1758	886	2.08	1943
4000	**697**	**1.37**	**1281**	**753**	**1.58**	**1474**	**804**	**1.79**	**1666**	852	1.99	1857	897	2.20	2048
4100	**712**	**1.47**	**1370**	**766**	**1.68**	**1567**	**817**	**1.89**	**1764**	864	2.10	1960	909	2.31	2155
4200	**726**	**1.57**	**1462**	**780**	**1.79**	**1665**	830	2.00	1866	876	2.22	2067	920	2.43	2268
4300	**741**	**1.67**	**1559**	**794**	**1.89**	**1767**	843	2.12	1973	889	2.34	2179	932	2.56	2384
4400	**755**	**1.78**	**1660**	**807**	**2.01**	**1873**	856	2.23	2084	901	2.46	2295	944	2.69	2505
4500	**770**	**1.89**	**1766**	**821**	**2.13**	**1984**	869	2.36	2200	914	2.59	2415	956	2.82	2630
4600	**785**	**2.01**	**1876**	835	2.25	2099	882	2.49	2320	926	2.72	2541	968	2.96	2760
4700	**800**	**2.14**	**1991**	849	2.38	2219	895	2.62	2445	939	2.86	2670	980	3.10	2895
4800	**815**	**2.26**	**2111**	863	2.51	2344	909	2.76	2575	952	3.01	2805	993	3.25	3034
4900	**829**	**2.40**	**2235**	877	2.65	2473	922	2.91	2709	965	3.16	2944	1005	3.41	3178
5000	844	2.54	2365	891	2.80	2608	936	3.06	2849	978	3.31	3089	1018	3.57	3328
5100	859	2.68	2499	906	2.95	2747	949	3.21	2994	991	3.47	3238	1030	3.73	3483
5200	874	2.83	2640	920	3.10	2892	963	3.37	3143	1004	3.64	3393	1043	3.91	3642
5300	889	2.99	2784	934	3.26	3042	977	3.54	3298	1017	3.81	3553	1056	4.08	3807
5400	904	3.15	2936	949	3.43	3198	990	3.71	3459	1030	3.99	3719	1068	4.27	3977
5500	920	3.32	3092	963	3.60	3359	1004	3.89	3625	1044	4.17	3890	1081	4.45	4153
5600	935	3.49	3253	977	3.78	3525	1018	4.07	3796	1057	4.36	4066	1094	4.65	4335
5700	950	3.67	3421	992	3.97	3698	1032	4.26	3974	1070	4.56	4249	1107	4.85	4522
5800	965	3.85	3594	1006	4.16	3876	1046	4.46	4157	1084	4.76	4436	1120	5.06	4715
5900	980	4.05	3773	1021	4.35	4060	1060	4.66	4346	1098	4.97	4630	—	—	—
6000	995	4.24	3958	1036	4.56	4250	1074	4.87	4541	1111	5.18	4831	—	—	—
6100	1011	4.45	4149	1050	4.77	4446	1088	5.09	4742	—	—	—	—	—	—
6200	1026	4.66	4347	1065	4.99	4649	—	—	—	—	—	—	—	—	—
6300	1041	4.88	4550	—	—	—	—	—	—	—	—	—	—	—	—

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	907	2.06	1924	949	2.25	2101	989	2.44	2279	1027	2.63	2457	1063	2.83	2636
3800	918	2.17	2025	959	2.37	2207	999	2.56	2389	1036	2.76	2571	1073	2.95	2755
3900	929	2.28	2130	970	2.48	2316	1009	2.68	2502	1046	2.88	2690	1082	3.09	2877
4000	940	2.40	2238	980	2.61	2429	1019	2.81	2620	1056	3.02	2812	1092	3.22	3004
4100	951	2.52	2351	991	2.73	2547	1029	2.94	2743	1066	3.15	2939	1102	3.36	3136
4200	962	2.65	2468	1002	2.86	2668	1040	3.08	2869	1076	3.29	3070	1112	3.51	3271
4300	973	2.78	2589	1013	3.00	2794	1050	3.22	2999	1087	3.44	3205	1122	3.66	3411
4400	985	2.91	2715	1024	3.14	2924	1061	3.36	3134	1097	3.59	3345	**1132**	**3.81**	**3555**
4500	996	3.05	2845	1035	3.28	3059	1072	3.51	3274	1108	3.74	3489	**1142**	**3.97**	**3704**
4600	1008	3.20	2979	1046	3.43	3199	1083	3.67	3418	1118	3.90	3638	**1152**	**4.14**	**3857**
4700	1020	3.34	3119	1058	3.58	3343	1094	3.83	3567	1129	4.07	3792	**1163**	**4.31**	**4016**
4800	1032	3.50	3263	1069	3.74	3492	1105	3.99	3721	**1140**	**4.24**	**3950**	**1174**	**4.48**	**4179**
4900	1044	3.66	3413	1081	3.91	3646	1117	4.16	3880	**1151**	**4.41**	**4113**	**1184**	**4.66**	**4347**
5000	1056	3.82	3566	1093	4.08	3805	1128	4.34	4044	**1162**	**4.59**	**4282**	**1195**	**4.85**	**4520**
5100	1068	4.00	3726	1104	4.26	3969	**1139**	**4.52**	**4212**	**1173**	**4.78**	**4456**	**1206**	**5.04**	**4699**
5200	1080	4.17	3891	1116	4.44	4139	**1151**	**4.70**	**4386**	**1185**	**4.97**	**4634**	—	—	—
5300	1093	4.35	4060	1128	4.63	4314	**1163**	**4.90**	**4566**	**1196**	**5.17**	**4819**	—	—	—
5400	1105	4.54	4236	**1140**	**4.82**	**4494**	**1174**	**5.10**	**4751**	—	—	—	—	—	—
5500	1118	4.74	4417	**1152**	**5.02**	**4679**	—	—	—	—	—	—	—	—	—
5600	1130	4.94	4603	—	—	—	—	—	—	—	—	—	—	—	—
5700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See page 23 for general fan performance notes.

Table 22 — Fan Performance 551B090 — Horizontal Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**465**	**0.43**	**402**	**555**	**0.64**	**596**	**629**	**0.86**	**802**	**694**	**1.10**	**1021**	**753**	**1.34**	**1252**
2300	**471**	**0.45**	**421**	**560**	**0.66**	**618**	**634**	**0.89**	**828**	**699**	**1.13**	**1050**	**757**	**1.38**	**1283**
2400	**483**	**0.49**	**461**	**571**	**0.71**	**665**	**644**	**0.94**	**881**	**708**	**1.19**	**1109**	**766**	**1.45**	**1348**
2500	**495**	**0.54**	**503**	**581**	**0.77**	**715**	**654**	**1.01**	**937**	**717**	**1.26**	**1171**	**775**	**1.52**	**1416**
2550	**501**	**0.56**	**526**	**587**	**0.79**	**740**	**659**	**1.04**	**967**	**722**	**1.29**	**1204**	**779**	**1.56**	**1452**
2600	**507**	**0.59**	**549**	**592**	**0.82**	**767**	**664**	**1.07**	**996**	**727**	**1.33**	**1237**	**784**	**1.60**	**1488**
2700	**519**	**0.64**	**597**	**603**	**0.88**	**823**	**674**	**1.14**	**1059**	**737**	**1.40**	**1306**	**793**	**1.68**	**1563**
2800	**532**	**0.70**	**649**	**614**	**0.95**	**882**	**684**	**1.21**	**1125**	**746**	**1.48**	**1378**	**803**	**1.76**	**1641**
2900	**544**	**0.75**	**703**	**625**	**1.01**	**944**	**695**	**1.28**	**1194**	**756**	**1.56**	**1453**	**812**	**1.85**	**1723**
3000	**557**	**0.82**	**761**	**637**	**1.08**	**1009**	**705**	**1.36**	**1266**	**766**	**1.64**	**1533**	**822**	**1.94**	**1808**
3100	**570**	**0.88**	**823**	**648**	**1.16**	**1079**	**716**	**1.44**	**1342**	**776**	**1.73**	**1615**	**831**	**2.03**	**1897**
3200	**583**	**0.95**	**888**	**660**	**1.23**	**1151**	**727**	**1.53**	**1422**	**787**	**1.82**	**1702**	841	2.13	1991
3300	**596**	**1.03**	**957**	**672**	**1.32**	**1228**	**738**	**1.61**	**1506**	**797**	**1.92**	**1792**	851	2.24	2088
3400	**609**	**1.10**	**1030**	**684**	**1.40**	**1308**	**749**	**1.71**	**1593**	**808**	**2.02**	**1887**	861	2.35	2188
3500	**622**	**1.19**	**1106**	**696**	**1.49**	**1392**	**760**	**1.81**	**1685**	**818**	**2.13**	**1985**	872	2.46	2294
3600	**635**	**1.27**	**1187**	**708**	**1.59**	**1481**	**771**	**1.91**	**1781**	**829**	**2.24**	**2088**	882	2.58	2403
3700	**649**	**1.36**	**1272**	**720**	**1.69**	**1573**	**783**	**2.02**	**1881**	840	2.35	2195	892	2.70	2517
3750	**655**	**1.41**	**1316**	**726**	**1.74**	**1621**	**789**	**2.07**	**1932**	845	2.41	2250	897	2.76	2575

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**806**	**1.60**	**1494**	856	1.87	1747	903	2.15	2009	947	2.45	2282	988	2.75	2564
2300	**811**	**1.64**	**1528**	860	1.91	1784	907	2.20	2048	950	2.49	2323	992	2.80	2607
2400	**819**	**1.71**	**1599**	868	1.99	1859	915	2.28	2129	958	2.58	2410	1000	2.89	2698
2500	**828**	**1.79**	**1672**	877	2.08	1938	923	2.37	2214	966	2.68	2499	—	—	—
2550	**832**	**1.83**	**1710**	881	2.12	1979	927	2.42	2258	971	2.73	2545	—	—	—
2600	**836**	**1.88**	**1749**	885	2.17	2021	931	2.47	2302	975	2.78	2592	—	—	—
2700	845	1.96	1830	894	2.26	2107	940	2.57	2394	983	2.88	2689	—	—	—
2800	854	2.05	1914	903	2.36	2197	948	2.67	2488	—	—	—	—	—	—
2900	864	2.15	2002	912	2.46	2290	957	2.77	2587	—	—	—	—	—	—
3000	873	2.24	2093	921	2.56	2388	966	2.89	2691	—	—	—	—	—	—
3100	882	2.35	2189	930	2.67	2489	—	—	—	—	—	—	—	—	—
3200	892	2.45	2288	939	2.78	2595	—	—	—	—	—	—	—	—	—
3300	901	2.56	2391	948	2.90	2704	—	—	—	—	—	—	—	—	—
3400	911	2.68	2499	—	—	—	—	—	—	—	—	—	—	—	—
3500	921	2.80	2610	—	—	—	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See page 23 for general fan performance notes.

Table 23 — Fan Performance 551B090 — Horizontal Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**465**	**0.43**	**402**	**555**	**0.64**	**596**	**629**	**0.86**	**802**	**694**	**1.10**	**1021**	**753**	**1.34**	**1252**
2300	**471**	**0.45**	**421**	**560**	**0.66**	**618**	**634**	**0.89**	**828**	**699**	**1.13**	**1050**	**757**	**1.38**	**1283**
2400	**483**	**0.49**	**461**	**571**	**0.71**	**665**	**644**	**0.94**	**881**	**708**	**1.19**	**1109**	**766**	**1.45**	**1348**
2500	**495**	**0.54**	**503**	**581**	**0.77**	**715**	**654**	**1.01**	**937**	**717**	**1.26**	**1171**	**775**	**1.52**	**1416**
2550	**501**	**0.56**	**526**	**587**	**0.79**	**740**	**659**	**1.04**	**967**	**722**	**1.29**	**1204**	**779**	**1.56**	**1452**
2600	**507**	**0.59**	**549**	**592**	**0.82**	**767**	**664**	**1.07**	**996**	**727**	**1.33**	**1237**	**784**	**1.60**	**1488**
2700	**519**	**0.64**	**597**	**603**	**0.88**	**823**	**674**	**1.14**	**1059**	**737**	**1.40**	**1306**	**793**	**1.68**	**1563**
2800	**532**	**0.70**	**649**	**614**	**0.95**	**882**	**684**	**1.21**	**1125**	**746**	**1.48**	**1378**	**803**	**1.76**	**1641**
2900	**544**	**0.75**	**703**	**625**	**1.01**	**944**	**695**	**1.28**	**1194**	**756**	**1.56**	**1453**	**812**	**1.85**	**1723**
3000	**557**	**0.82**	**761**	**637**	**1.08**	**1009**	**705**	**1.36**	**1266**	**766**	**1.64**	**1533**	**822**	**1.94**	**1808**
3100	**570**	**0.88**	**823**	**648**	**1.16**	**1079**	**716**	**1.44**	**1342**	**776**	**1.73**	**1615**	**831**	**2.03**	**1897**
3200	**583**	**0.95**	**888**	**660**	**1.23**	**1151**	**727**	**1.53**	**1422**	**787**	**1.82**	**1702**	**841**	**2.13**	**1991**
3300	**596**	**1.03**	**957**	**672**	**1.32**	**1228**	**738**	**1.61**	**1506**	**797**	**1.92**	**1792**	**851**	**2.24**	**2088**
3400	**609**	**1.10**	**1030**	**684**	**1.40**	**1308**	**749**	**1.71**	**1593**	**808**	**2.02**	**1887**	861	2.35	2188
3500	**622**	**1.19**	**1106**	**696**	**1.49**	**1392**	**760**	**1.81**	**1685**	**818**	**2.13**	**1985**	872	2.46	2294
3600	**635**	**1.27**	**1187**	**708**	**1.59**	**1481**	**771**	**1.91**	**1781**	**829**	**2.24**	**2088**	882	2.58	2403
3700	**649**	**1.36**	**1272**	**720**	**1.69**	**1573**	**783**	**2.02**	**1881**	**840**	**2.35**	**2195**	892	2.70	2517
3750	**655**	**1.41**	**1316**	**726**	**1.74**	**1621**	**789**	**2.07**	**1932**	**845**	**2.41**	**2250**	897	2.76	2575

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	**806**	**1.60**	**1494**	**856**	**1.87**	**1747**	903	2.15	2009	947	2.45	2282	988	2.75	2564
2300	**811**	**1.64**	**1528**	860	1.91	1784	907	2.20	2048	950	2.49	2323	992	2.80	2607
2400	**819**	**1.71**	**1599**	868	1.99	1859	915	2.28	2129	958	2.58	2410	1000	2.89	2698
2500	**828**	**1.79**	**1672**	877	2.08	1938	923	2.37	2214	966	2.68	2499	1008	3.00	2793
2550	**832**	**1.83**	**1710**	881	2.12	1979	927	2.42	2258	971	2.73	2545	1012	3.05	2842
2600	**836**	**1.88**	**1749**	885	2.17	2021	931	2.47	2302	975	2.78	2592	1016	3.10	2891
2700	**845**	**1.96**	**1830**	894	2.26	2107	940	2.57	2394	983	2.88	2689	1024	3.21	2993
2800	**854**	**2.05**	**1914**	903	2.36	2197	948	2.67	2488	991	2.99	2790	1032	3.32	3099
2900	864	2.15	2002	912	2.46	2290	957	2.77	2587	1000	3.10	2894	1041	3.44	3209
3000	873	2.24	2093	921	2.56	2388	966	2.89	2691	1008	3.22	3003	1049	3.56	3323
3100	882	2.35	2189	930	2.67	2489	975	3.00	2798	1017	3.34	3115	1057	3.69	3441
3200	892	2.45	2288	939	2.78	2595	984	3.12	2909	1026	3.47	3233	1066	3.82	3564
3300	901	2.56	2391	948	2.90	2704	993	3.24	3024	1035	3.60	3353	1075	3.96	3690
3400	911	2.68	2499	958	3.02	2817	1002	3.37	3144	1044	3.73	3479	**1084**	**4.10**	**3821**
3500	921	2.80	2610	967	3.15	2935	1011	3.50	3268	1053	3.87	3608	—	—	—
3600	931	2.92	2726	977	3.28	3057	1021	3.64	3396	1062	4.01	3743	—	—	—
3700	941	3.05	2847	987	3.41	3184	1030	3.78	3529	1071	4.16	3882	—	—	—
3750	946	3.12	2908	992	3.48	3249	1035	3.86	3597	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See page 23 for general fan performance notes.

Table 24 — Fan Performance 551B102 — Horizontal Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**462**	**0.37**	**348**	**541**	**0.50**	**467**	**614**	**0.64**	**594**	**681**	**0.78**	**728**	**744**	**0.93**	**868**
2600	**474**	**0.41**	**381**	**551**	**0.54**	**505**	**622**	**0.68**	**635**	**688**	**0.83**	**773**	**750**	**0.98**	**916**
2700	**486**	**0.45**	**417**	**561**	**0.58**	**545**	**630**	**0.73**	**679**	**695**	**0.88**	**820**	**756**	**1.04**	**967**
2800	**498**	**0.49**	**456**	**571**	**0.63**	**587**	**639**	**0.78**	**725**	**702**	**0.93**	**870**	**762**	**1.09**	**1020**
2900	**510**	**0.53**	**497**	**581**	**0.68**	**632**	**648**	**0.83**	**774**	**710**	**0.99**	**922**	**768**	**1.15**	**1076**
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	844	2.12	1979	890	2.34	2184

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**804**	**1.09**	**1013**	861	1.25	1164	915	1.41	1319	967	1.59	1479	1017	1.76	1642
2600	**809**	**1.14**	**1065**	864	1.31	1219	918	1.48	1378	969	1.65	1541	1018	1.83	1708
2700	**813**	**1.20**	**1119**	869	1.37	1277	921	1.54	1439	972	1.72	1606	1021	1.90	1776
2800	**819**	**1.26**	**1176**	873	1.43	1337	925	1.61	1503	975	1.79	1673	1023	1.98	1847
2900	**824**	**1.32**	**1235**	878	1.50	1400	929	1.68	1569	978	1.87	1742	1026	2.06	1920
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	843	1.53	1431	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	850	1.61	1502	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	858	1.69	1576	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	—	—	—
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	—	—	—
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	—	—	—	—	—	—
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	—	—	—	—	—	—
4200	925	2.45	2289	969	2.68	2500	—	—	—	—	—	—	—	—	—
4300	934	2.57	2395	978	2.80	2610	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 840 to 1085 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 2.90.
3. See page 23 for general fan performance notes.

Table 25 — Fan Performance 551B102 — Horizontal Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**462**	**0.37**	**348**	**541**	**0.50**	**467**	**614**	**0.64**	**594**	**681**	**0.78**	**728**	**744**	**0.93**	**868**
2600	**474**	**0.41**	**381**	**551**	**0.54**	**505**	**622**	**0.68**	**635**	**688**	**0.83**	**773**	**750**	**0.98**	**916**
2700	**486**	**0.45**	**417**	**561**	**0.58**	**545**	**630**	**0.73**	**679**	**695**	**0.88**	**820**	**756**	**1.04**	**967**
2800	**498**	**0.49**	**456**	**571**	**0.63**	**587**	**639**	**0.78**	**725**	**702**	**0.93**	**870**	**762**	**1.09**	**1020**
2900	**510**	**0.53**	**497**	**581**	**0.68**	**632**	**648**	**0.83**	**774**	**710**	**0.99**	**922**	**768**	**1.15**	**1076**
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	**850**	**1.93**	**1799**
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	**844**	**2.12**	**1979**	890	2.34	2184

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2500	**804**	**1.09**	**1013**	861	1.25	1164	915	1.41	1319	967	1.59	1479	1017	1.76	1642
2600	**809**	**1.14**	**1065**	864	1.31	1219	918	1.48	1378	969	1.65	1541	1018	1.83	1708
2700	**813**	**1.20**	**1119**	869	1.37	1277	921	1.54	1439	972	1.72	1606	1021	1.90	1776
2800	**819**	**1.26**	**1176**	873	1.43	1337	925	1.61	1503	975	1.79	1673	1023	1.98	1847
2900	**824**	**1.32**	**1235**	878	1.50	1400	929	1.68	1569	978	1.87	1742	1026	2.06	1920
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	**843**	**1.53**	**1431**	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	**850**	**1.61**	**1502**	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	**858**	**1.69**	**1576**	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	**1087**	**3.26**	**3042**
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	**1094**	**3.39**	**3159**
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	**1101**	**3.52**	**3279**

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 4.20.
3. See page 23 for general fan performance notes.

Table 26 — Fan Performance 551B120 — Horizontal Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	**832**	**1.75**	**1629**
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	**841**	**1.84**	**1712**
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	**850**	**1.93**	**1799**
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	**833**	**2.02**	**1880**	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	**844**	**2.12**	**1979**	890	2.34	2184
4400	**710**	**1.59**	**1482**	**760**	**1.80**	**1677**	**808**	**2.01**	**1876**	**855**	**2.23**	**2081**	900	2.46	2290
4500	**723**	**1.69**	**1577**	**773**	**1.90**	**1775**	**820**	**2.12**	**1978**	866	2.35	2187	910	2.57	2400
4600	**737**	**1.80**	**1675**	**785**	**2.01**	**1877**	**832**	**2.24**	**2085**	877	2.46	2297	921	2.70	2514
4700	**751**	**1.91**	**1778**	**798**	**2.13**	**1984**	**844**	**2.35**	**2195**	889	2.59	2412	932	2.82	2633
4800	**765**	**2.02**	**1885**	**812**	**2.25**	**2095**	**856**	**2.48**	**2310**	900	2.71	2531	942	2.95	2756
4900	**779**	**2.14**	**1996**	**825**	**2.37**	**2210**	869	2.61	2430	912	2.85	2654	953	3.09	2883
5000	**793**	**2.26**	**2112**	**838**	**2.50**	**2330**	881	2.74	2554	923	2.98	2782	965	3.23	3014

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**830**	**1.39**	**1298**	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	**837**	**1.46**	**1363**	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	**843**	**1.53**	**1431**	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	**850**	**1.61**	**1502**	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	**858**	**1.69**	**1576**	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	**1087**	**3.26**	**3042**
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	**1094**	**3.39**	**3159**
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	**1101**	**3.52**	**3279**
4400	944	2.69	2504	986	2.92	2723	1028	3.16	2946	1068	3.40	3173	**1108**	**3.65**	**3403**
4500	954	2.81	2618	996	3.05	2840	1037	3.29	3067	1076	3.54	3297	—	—	—
4600	963	2.93	2736	1005	3.18	2962	1045	3.42	3192	**1085**	**3.67**	**3426**	—	—	—
4700	974	3.07	2858	1014	3.31	3088	1054	3.56	3322	—	—	—	—	—	—
4800	984	3.20	2985	1024	3.45	3219	—	—	—	—	—	—	—	—	—
4900	994	3.34	3116	1034	3.60	3353	—	—	—	—	—	—	—	—	—
5000	1005	3.49	3251	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 860 to 1080 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 3.70.
3. See page 23 for general fan performance notes.

Table 27 — Fan Performance 551B120 — Horizontal Discharge Units; High-Static Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	**523**	**0.58**	**541**	**592**	**0.73**	**680**	**657**	**0.88**	**825**	**718**	**1.05**	**977**	**775**	**1.22**	**1135**
3100	**536**	**0.63**	**587**	**603**	**0.78**	**730**	**666**	**0.94**	**879**	**726**	**1.11**	**1035**	**783**	**1.28**	**1196**
3200	**549**	**0.68**	**637**	**614**	**0.84**	**783**	**676**	**1.00**	**936**	**735**	**1.17**	**1096**	**790**	**1.35**	**1260**
3300	**562**	**0.74**	**689**	**626**	**0.90**	**839**	**686**	**1.07**	**996**	**743**	**1.24**	**1159**	**798**	**1.42**	**1328**
3400	**575**	**0.80**	**744**	**637**	**0.96**	**898**	**696**	**1.14**	**1059**	**752**	**1.31**	**1226**	**806**	**1.50**	**1398**
3500	**588**	**0.86**	**802**	**649**	**1.03**	**961**	**707**	**1.21**	**1125**	**762**	**1.39**	**1296**	**815**	**1.58**	**1472**
3600	**601**	**0.93**	**864**	**661**	**1.10**	**1026**	**717**	**1.28**	**1194**	**771**	**1.47**	**1369**	**823**	**1.66**	**1548**
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	832	1.75	1629
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	841	1.84	1712
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	833	2.02	1880	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	844	2.12	1979	890	2.34	2184
4400	**710**	**1.59**	**1482**	**760**	**1.80**	**1677**	**808**	**2.01**	**1876**	855	2.23	2081	900	2.46	2290
4500	**723**	**1.69**	**1577**	**773**	**1.90**	**1775**	**820**	**2.12**	**1978**	866	2.35	2187	910	2.57	2400
4600	**737**	**1.80**	**1675**	**785**	**2.01**	**1877**	832	2.24	2085	877	2.46	2297	921	2.70	2514
4700	**751**	**1.91**	**1778**	**798**	**2.13**	**1984**	844	2.35	2195	889	2.59	2412	932	2.82	2633
4800	**765**	**2.02**	**1885**	**812**	**2.25**	**2095**	856	2.48	2310	900	2.71	2531	942	2.95	2756
4900	**779**	**2.14**	**1996**	**825**	**2.37**	**2210**	869	2.61	2430	912	2.85	2654	953	3.09	2883
5000	**793**	**2.26**	**2112**	838	2.50	2330	881	2.74	2554	923	2.98	2782	965	3.23	3014

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	830	1.39	1298	883	1.57	1466	934	1.76	1638	982	1.95	1815	1029	2.14	1996
3100	837	1.46	1363	889	1.65	1534	938	1.83	1710	986	2.03	1891	1033	2.23	2075
3200	843	1.53	1431	894	1.72	1606	944	1.91	1785	991	2.11	1969	1037	2.31	2157
3300	850	1.61	1502	901	1.80	1680	949	2.00	1863	996	2.20	2051	1041	2.40	2242
3400	858	1.69	1576	907	1.88	1758	955	2.09	1944	1001	2.29	2135	1046	2.50	2331
3500	865	1.77	1653	914	1.97	1838	961	2.18	2029	1007	2.38	2223	1051	2.60	2422
3600	873	1.86	1733	921	2.06	1922	967	2.27	2116	1012	2.48	2314	1056	2.70	2516
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	1087	3.26	3042
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	1094	3.39	3159
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	1101	3.52	3279
4400	944	2.69	2504	986	2.92	2723	1028	3.16	2946	1068	3.40	3173	1108	3.65	3403
4500	954	2.81	2618	996	3.05	2840	1037	3.29	3067	1076	3.54	3297	1115	3.79	3531
4600	963	2.93	2736	1005	3.18	2962	1045	3.42	3192	1085	3.67	3426	1123	3.93	3664
4700	974	3.07	2858	1014	3.31	3088	1054	3.56	3322	1093	3.82	3560	**1131**	**4.08**	**3801**
4800	984	3.20	2985	1024	3.45	3219	1063	3.71	3456	1102	3.96	3697	**1139**	**4.23**	**3943**
4900	994	3.34	3116	1034	3.60	3353	1073	3.85	3594	1111	4.12	3839	**1148**	**4.38**	**4088**
5000	1005	3.49	3251	1044	3.74	3492	1082	4.01	3737	1119	4.27	3986	**1156**	**4.55**	**4238**

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:

1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See page 23 for general fan performance notes.

Table 28 — Fan Performance 551B150 — Horizontal Discharge Units; Standard Motor (Belt Drive)*

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	**614**	**1.00**	**929**	**673**	**1.17**	**1095**	**728**	**1.36**	**1267**	**781**	**1.55**	**1445**	832	1.75	1629
3800	**628**	**1.07**	**997**	**685**	**1.25**	**1167**	**739**	**1.44**	**1343**	**791**	**1.64**	**1525**	841	1.84	1712
3900	**641**	**1.15**	**1069**	**697**	**1.33**	**1243**	**750**	**1.53**	**1423**	**801**	**1.72**	**1608**	850	1.93	1799
4000	**655**	**1.23**	**1144**	**709**	**1.42**	**1322**	**761**	**1.61**	**1506**	**812**	**1.82**	**1695**	860	2.03	1890
4100	**668**	**1.31**	**1223**	**722**	**1.51**	**1405**	**773**	**1.71**	**1593**	**822**	**1.92**	**1786**	870	2.13	1984
4200	**682**	**1.40**	**1305**	**734**	**1.60**	**1492**	**784**	**1.80**	**1683**	833	2.02	1880	880	2.23	2082
4300	**696**	**1.49**	**1392**	**747**	**1.70**	**1582**	**796**	**1.91**	**1777**	844	2.12	1979	890	2.34	2184
4400	**710**	**1.59**	**1482**	**760**	**1.80**	**1677**	**808**	**2.01**	**1876**	855	2.23	2081	900	2.46	2290
4500	**723**	**1.69**	**1577**	**773**	**1.90**	**1775**	**820**	**2.12**	**1978**	866	2.35	2187	910	2.57	2400
4600	**737**	**1.80**	**1675**	**785**	**2.01**	**1877**	832	2.24	2085	877	2.46	2297	921	2.70	2514
4700	**751**	**1.91**	**1778**	**798**	**2.13**	**1984**	844	2.35	2195	889	2.59	2412	932	2.82	2633
4800	**765**	**2.02**	**1885**	**812**	**2.25**	**2095**	856	2.48	2310	900	2.71	2531	942	2.95	2756
4900	**779**	**2.14**	**1996**	**825**	**2.37**	**2210**	869	2.61	2430	912	2.85	2654	953	3.09	2883
5000	**793**	**2.26**	**2112**	838	2.50	2330	881	2.74	2554	923	2.98	2782	965	3.23	3014
5100	**807**	**2.39**	**2232**	851	2.63	2455	894	2.88	2682	935	3.13	2914	976	3.38	3150
5200	**821**	**2.53**	**2357**	864	2.77	2584	906	3.02	2815	947	3.27	3050	987	3.53	3292
5300	835	2.67	2487	878	2.91	2718	919	3.17	2953	959	3.42	3193	999	3.69	3437
5400	850	2.81	2622	891	3.06	2856	932	3.32	3096	971	3.58	3339	1010	3.85	3588
5500	864	2.96	2762	905	3.22	3000	945	3.48	3242	984	3.74	3491	1022	4.01	3743
5600	878	3.12	2906	918	3.38	3148	958	3.64	3396	996	3.91	3648	1034	4.19	3903
5700	892	3.28	3055	932	3.54	3302	971	3.81	3554	1008	4.09	3810	1045	4.36	4069
5800	907	3.44	3211	945	3.71	3461	984	3.99	3716	1021	4.26	3976	1057	4.55	4240
5900	921	3.61	3370	959	3.89	3626	997	4.17	3885	1033	4.45	4149	1069	4.74	4416
6000	935	3.79	3536	973	4.07	3795	1010	4.35	4059	1046	4.64	4326	1082	4.93	4598
6100	949	3.98	3707	987	4.26	3970	1023	4.54	4238	1059	4.84	4510	1094	5.13	4785
6200	964	4.16	3883	1000	4.45	4151	1036	4.74	4422	1071	5.04	4698	—	—	—
6300	978	4.36	4066	1014	4.65	4337	1050	4.95	4613	1084	5.25	4892	—	—	—

AIRFLOW CFM	EXTERNAL STATIC PRESSURE (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	881	1.95	1816	928	2.16	2010	974	2.37	2207	1019	2.58	2409	1062	2.80	2615
3800	889	2.04	1904	936	2.25	2100	981	2.47	2302	1025	2.69	2507	1068	2.91	2716
3900	898	2.14	1995	944	2.35	2195	988	2.57	2399	1032	2.80	2608	1074	3.03	2821
4000	907	2.24	2089	952	2.46	2293	996	2.68	2501	1038	2.91	2713	1080	3.14	2930
4100	916	2.35	2187	960	2.57	2395	1004	2.80	2607	1046	3.03	2822	1087	3.26	3042
4200	925	2.45	2289	969	2.68	2500	1011	2.91	2716	1053	3.15	2935	1094	3.39	3159
4300	934	2.57	2395	978	2.80	2610	1020	3.03	2828	1061	3.27	3052	1101	3.52	3279
4400	944	2.69	2504	986	2.92	2723	1028	3.16	2946	1068	3.40	3173	1108	3.65	3403
4500	954	2.81	2618	996	3.05	2840	1037	3.29	3067	1076	3.54	3297	1115	3.79	3531
4600	963	2.93	2736	1005	3.18	2962	1045	3.42	3192	1085	3.67	3426	1123	3.93	3664
4700	974	3.07	2858	1014	3.31	3088	1054	3.56	3322	1093	3.82	3560	**1131**	**4.08**	**3801**
4800	984	3.20	2985	1024	3.45	3219	1063	3.71	3456	1102	3.96	3697	**1139**	**4.23**	**3943**
4900	994	3.34	3116	1034	3.60	3353	1073	3.85	3594	1111	4.12	3839	**1148**	**4.38**	**4088**
5000	1005	3.49	3251	1044	3.74	3492	1082	4.01	3737	1119	4.27	3986	**1156**	**4.55**	**4238**
5100	1015	3.64	3391	1054	3.90	3636	1092	4.17	3885	1129	4.44	4137	**1165**	**4.71**	**4393**
5200	1026	3.79	3536	1064	4.06	3784	1101	4.33	4037	**1138**	**4.60**	**4293**	**1174**	**4.88**	**4553**
5300	1037	3.95	3685	1075	4.22	3938	1111	4.50	4194	**1147**	**4.78**	**4454**	**1183**	**5.06**	**4718**
5400	1048	4.12	3840	1085	4.39	4096	1121	4.67	4356	**1157**	**4.95**	**4619**	**1192**	**5.24**	**4886**
5500	1059	4.29	3999	1096	4.57	4259	**1132**	**4.85**	**4523**	**1167**	**5.14**	**4790**	—	—	—
5600	1070	4.46	4163	1106	4.75	4427	**1142**	**5.03**	**4695**	—	—	—	—	—	—
5700	1082	4.65	4333	1117	4.93	4601	**1152**	**5.22**	**4872**	—	—	—	—	—	—
5800	1093	4.83	4508	1128	5.13	4779	—	—	—	—	—	—	—	—	—
5900	1105	5.03	4688	—	—	—	—	—	—	—	—	—	—	—	—
6000	1116	5.23	4873	—	—	—	—	—	—	—	—	—	—	—	—
6100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

*Motor drive range: 830 to 1130 rpm. All other rpms require field-supplied drive.

NOTES:
1. **Boldface** indicates field-supplied drive is required.
2. Maximum continuous bhp is 5.25.
3. See page 23 for general fan performance notes.

PRE-START-UP

> ⚠ **WARNING:** Failure to observe the following warnings could result in serious personal injury:
>
> 1. Follow recognized safety practices and wear protective goggles when checking or servicing refrigerant system.
> 2. Do not operate compressor or provide any electric power to unit unless compressor terminal cover is in place and secured.
> 3. Do not remove compressor terminal cover until all electrical sources are disconnected and properly tagged.
> 4. Relieve all pressure from system before touching or disturbing anything inside terminal box if refrigerant leak is suspected around compressor terminals. Use accepted methods to recover refrigerant.
> 5. Never attempt to repair soldered connection while refrigerant system is under pressure.
> 6. Do not use torch to remove any component. System contains oil and refrigerant under pressure. To remove a component, wear protective goggles and proceed as follows:
>   a. Shut off electrical power to unit and install lockout tag.
>   b. Relieve all pressure from system using both high and low-pressure ports. Use accepted methods to recover refrigerant.
>   c. Cut component connection tubing with tubing cutter and remove component from unit.
>   d. Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

Proceed as follows to inspect and prepare the unit for initial start-up:

1. Remove all access panels.
2. Read and follow instructions on all WARNING, CAUTION, and INFORMATION labels attached to or shipped with unit.
3. Make the following inspections:
   a. Inspect for shipping and handling damages such as broken lines, loose parts, or disconnected wires.
   b. Inspect for oil at all refrigerant tubing connections and on unit base. Detecting oil generally indicates a refrigerant leak. Leak-test all refrigerant tubing connections using electronic leak detector, halide torch, or liquid-soap solution.
   c. Inspect all field-wiring and factory-wiring connections. Be sure that connections are completed and tight.
   d. Inspect coil fins. If damaged during shipping and handling, carefully straighten fins with a fin comb.
4. Verify the following:
   a. Make sure that condenser-fan blades are correctly positioned in fan orifice. Refer to Condenser-Fan Adjustment section on page 42 for more details.
   b. Make sure that air filters are in place.
   c. Make sure that condensate drain trap is filled with water to ensure proper drainage.
   d. Make sure that all tools and miscellaneous loose parts have been removed.
   e. Make sure that the start-up checklist has been performed and filled out.

NOTE: Ensure wiring does not contact any refrigerant tubing.

START-UP

I. UNIT PREPARATION

Make sure that unit has been installed in accordance with these installation instructions and applicable codes.

II. RETURN-AIR FILTERS

Make sure correct filters are installed in unit (see Table 1). Do not operate unit without return-air filters.

III. OUTDOOR-AIR INLET SCREENS

Outdoor-air inlet screens must be in place before operating unit.

IV. COMPRESSOR MOUNTING

Compressors are internally spring mounted. Do not loosen or remove compressor holddown bolts.

V. INTERNAL WIRING

Check all electrical connections in unit control boxes; tighten as required.

VI. REFRIGERANT SERVICE PORTS

Each refrigerant system has 4 Schrader-type service gage ports: one on the suction line, one on the liquid line, and 2 on the compressor discharge line. Be sure that caps on the ports are tight.

VII. HIGH FLOW VALVES

Two high flow refrigerant valves are located on the compressor hot gas and suction tubes. Large black plastic caps distinguish these valves with o-rings located inside the caps. These valves can not be accessed for service in the field. Ensure the plastic caps are in place and tight or the possibility of refrigerant leakage could occur.

VIII. COMPRESSOR ROTATION

On 3-phase units, it is important to be certain the scroll compressor is rotating in the proper direction. To determine whether or not compressor is rotating in the proper direction:

1. Connect service gages to suction and discharge pressure fittings.
2. Energize the compressor.
3. The suction pressure should drop and the discharge pressure should rise, as is normal on any start-up.

If the suction pressure does not drop and the discharge pressure does not rise to normal levels:

1. Note that the evaporator fan is probably also rotating in the wrong direction.
2. Turn off power to the unit and install lockout tag.
3. Reverse any two of the unit power leads.
4. Turn on power to the unit.

The suction and discharge pressure levels should now move to their normal start-up levels.

NOTE: When the compressor is rotating in the wrong direction, the unit makes an elevated level of noise and does not provide heating or cooling.

> ⚠ **CAUTION:** Compressor damage will occur if rotation is not immediately corrected.

IX. COOLING

To start unit, turn on main power supply. Set system selector switch at COOL position and fan switch at AUTO position. Adjust thermostat to a setting below room temperature. Compressor starts on closure of contactor.

Check unit charge. Refer to Refrigerant Charge section on page 42.

Reset thermostat at a position above room temperature. Compressor will shut off.

To Shut Off Unit

Set system selector switch at OFF position. Resetting thermostat at a position above room temperature shuts unit off temporarily until space temperature exceeds thermostat setting. Units are equipped with Cycle-LOC™ protection device. Unit shuts down on any safety trip and remains off; an indicator light on the thermostat comes on. Check reason for safety trip.

Compressor restart is accomplished by manual reset at the thermostat by turning the selector switch to OFF position and then ON position.

X. HEATING (IF ACCESSORY HEATER IS INSTALLED)

To start unit, turn on main power supply.

Set thermostat at HEAT position and a setting above room temperature, and set fan at AUTO position.

First stage of thermostat energizes the first-stage electric heater elements; second stage energizes second-stage electric heater elements. Check heating effects at air supply grille(s).

If accessory electric heaters do not energize, reset limit switch (located on evaporator-fan scroll) by pressing button located between terminals on the switch.

To Shut Off Unit

Set system selector switch at OFF position. Resetting heating selector lever below room temperature temporarily shuts unit off until space temperature falls below thermostat setting.

XI. SAFETY RELIEF

A soft solder joint in the suction line at the loss-of-charge/low-pressure switch fitting provides pressure relief under abnormal temperature and pressure conditions.

XII. VENTILATION (CONTINUOUS FAN)

Set fan and system selector switches at ON and OFF positions, respectively. Evaporator fan operates continuously to provide constant air circulation.

XIII. OPERATING SEQUENCE

A. Cooling, Units Without EconoMi$er IV

When the thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC), outdoor (condenser) fan contactor (OFC), and compressor contactor no. 1 (C1) are energized and the evaporator-fan motor, compressor no. 1, and condenser fans start. The condenser-fan motors run continuously while unit is in cooling. If the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

B. Heating, Units Without EconoMi$er IV (If Accessory Heater is Installed)

Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

C. Cooling, Units With EconoMi$er IV

When free cooling is not available, the compressors will be controlled by the zone thermostat. When free cooling is available, the outdoor-air damper is modulated by the EconoMi$er IV control to provide a 50 to 55 F supply-air temperature into the zone. As the supply-air temperature fluctuates above 55 or below 50 F, the dampers will be modulated (open or close) to bring the supply-air temperature back within the set point limits.

For EconoMi$er IV operation, there must be a thermostat call for the fan (G). This will move the damper to its minimum position during the occupied mode.

Above 50 F supply-air temperature, the dampers will modulate from 100% open to the minimum open position. From 50 F to 45 F supply-air temperature, the dampers will maintain at the minimum open position. Below 45 F the dampers will be completely shut. As the supply-air temperature rises, the dampers will come back open to the minimum open position once the supply air temperature rises to 48 F.

If optional power exhaust is installed, as the outdoor-air damper opens and closes, the power exhaust fans will be energized and deenergized.

If field-installed accessory CO_2 sensors are connected to the EconoMi$er IV control, a demand controlled ventilation strategy will begin to operate. As the CO_2 level in the zone increases above the CO_2 set point, the minimum position of the damper will be increased proportionally. As the CO_2 level decreases because of the increase in fresh air, the outdoor-air damper will be proportionally closed. Damper position will follow the higher demand condition from DCV mode or free cooling mode.

Damper movement from full closed to full open (or vice versa) will take between $1^1/_2$ and $2^1/_2$ minutes.

If free cooling can be used as determined from the appropriate changeover command (switch, dry bulb, enthalpy curve, differential dry bulb, or differential enthalpy), a call for cooling (Y1 closes at the thermostat) will cause the control to modulate the dampers open to maintain the supply air temperature set point at 50 to 55 F.

As the supply-air temperature drops below the set point range of 50 to 55 F, the control will modulate the outdoor-air dampers closed to maintain the proper supply-air temperature.

D. Heating, Units with EconoMi$er IV

Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2. The economizer damper moves to the minimum position. When the thermostat is satisfied, the damper moves to the fully closed position.

E. Units With Perfect Humidity™ Dehumidification System

Normal Design Cooling Operation

When the rooftop operates under the normal sequence of operation, the compressors will cycle to maintain indoor conditions. See Fig. 40.

The Perfect Humidity dehumidification system includes a factory-installed Motormaster® low ambient control to keep the head and suction pressure high, allowing normal design cooling mode operation down to 0° F.

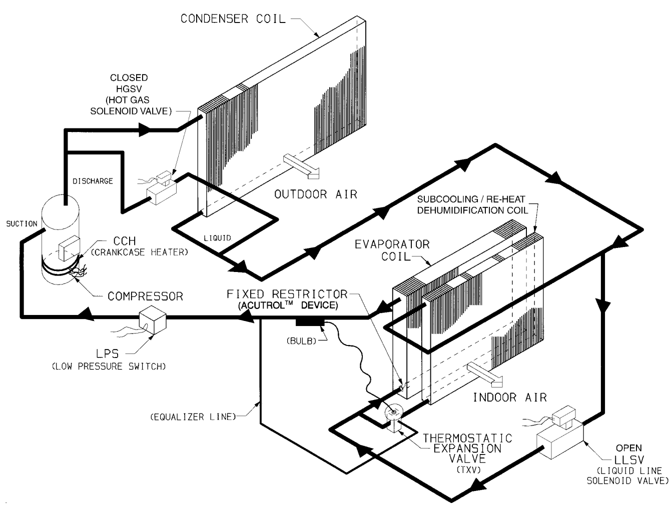


Fig. 40 — Perfect Humidity™ System Normal Design Cooling Operation

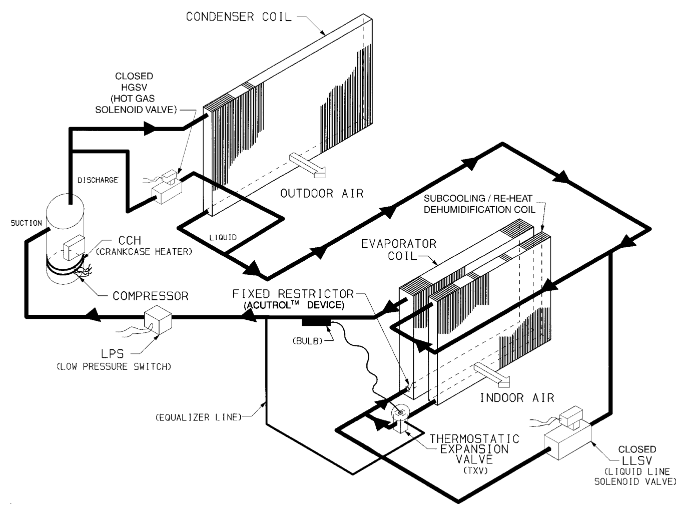


Fig. 41 — Perfect Humidity System Subcooling Mode Operation

Subcooling Mode

When subcooling mode is initiated, this will energize (close) the liquid line solenoid valve (LLSV) forcing the hot liquid refrigerant to enter into the subcooling coil (see Fig. 41).

As the hot liquid refrigerant passes through the subcooling/reheat dehumidification coil, it is exposed to the cold supply airflow coming through the evaporator coil. The liquid is further subcooled to a temperature approaching the evaporator leaving-air temperature. The liquid then enters a thermostatic expansion valve (TXV) where the liquid drops to a lower pressure. The TXV does not have a pressure drop great enough to change the liquid to a 2-phase fluid, so the liquid then enters the Acutrol™ device at the evaporator coil.

The liquid enters the evaporator coil at a temperature lower than in standard cooling operation. This lower temperature increases the latent capacity of the rooftop unit. The refrigerant passes through the evaporator and is turned into a vapor. The air passing over the evaporator coil will become colder than during normal operation. However, as this same air passes over the subcooling coil, it will be slightly warmed, partially reheating the air.

Subcooling mode operates only when the outside-air temperature is warmer than 40 F. A factory-installed temperature switch located in the condenser section will lock out subcooling mode when the outside temperature is cooler than 40 F.

The scroll compressors are equipped with crankcase heaters to provide protection for the compressors due to the additional refrigerant charge required by the subcooling/reheat coil.

When in subcooling mode, there is a slight decrease in system total gross capacity (5% less), a lower gross sensible capacity (20% less), and a greatly increased latent capacity (up to 40% more).

Hot Gas Reheat Mode

When the humidity levels in the space require humidity control, a hot gas solenoid valve (specific to hot gas reheat mode only) will open to bypass a portion of hot gas refrigerant around the condenser coil (see Fig. 42).

This hot gas will mix with liquid refrigerant leaving the condenser coil and flow to the subcooling/reheat dehumidification coil. Now the conditioned air coming off the evaporator will be cooled and dehumidified, but will be warmed to neutral conditions (72 F to 75 F) by the subcooling/reheat dehumidification coil.

NOTE: The 551B090-150 rooftop units can operate one circuit in subcooling mode and one circuit in hot gas reheat mode or both circuits in hot gas reheat mode, or both in normal design cooling mode.

The net effect of the rooftop when in hot gas reheat mode is to provide nearly all latent capacity removal from the space when sensible loads diminish (when outdoor temperature conditions are moderate). When in hot gas reheat mode, the unit will operate to provide mostly latent capacity and extremely low sensible heat ratio capability.

Similar to the subcooling mode of operation, hot gas reheat mode operates only when the outside air temperature is warmer than 40 F. Below this temperature, a factory-installed outside air temperature switch will lock out this mode of operation.

See Table 29 for the Perfect Humidity dehumidification system sequence of operation.

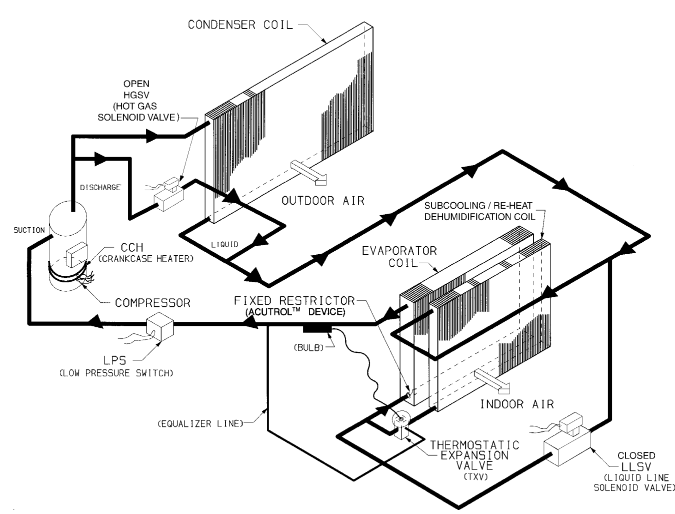


Fig. 42 — Perfect Humidity System Hot Gas Reheat Mode Operation

Table 29 — Perfect Humidity™ Dehumidification System Sequence of Operation and System Response — Dual Compressor Units

THERMOSTAT INPUT			ECONOMIZER FUNCTION		551B UNIT OPERATION					
					First Stage			Second Stage		
H	Y1	Y2	OAT < Economizer Set Point	Economizer	Compressor 1	Subcooling Mode	Hot Gas Reheat Mode	Compressor 2	Subcooling Mode	Hot Gas Reheat Mode
Off	—	—	Unit Operates Under Normal Sequence of Operation							
On	On	On	No	Off	On	Yes	No	On	Yes	No
On	On	Off	No	Off	On	Yes	No	On	No	Yes
On	On	On	Yes	On	On	Yes	No	On	No	Yes
On	On	Off	Yes	On	On	No	Yes	On	No	Yes
On	Off	Off	No	Off	On	No	Yes	On	No	Yes

LEGEND

OAT — Outdoor Air Temperature

NOTE: On a thermostat call for W1, all cooling and dehumidification will be off.

F. Units With Power Exhaust

When the outdoor-air damper is modulated open, the two end switches located in the actuator are tripped. The factory settings are: switch no. 1 will close at 30% outdoor air; switch no. 2 will close at 70% outdoor-air. Both switches are field adjustable. As the outdoor-air damper opens, switch no. 1 closes, energizing a double-pole relay that starts fan no. 1. As the outdoor-air damper continues to open, switch no. 2 will close, energizing a double-pole relay that starts fan no. 2. When the outdoor-air damper closes to a point below the fan start points (30% fan no. 1, 70% fan no. 2), the respective fan will be deenergized.

SERVICE

⚠ **CAUTION:** When servicing unit, shut off all electrical power to unit to avoid shock hazard or injury from rotating parts.

I. CLEANING

Inspect unit interior at the beginning of each heating and cooling season or as operating conditions require.

A. Evaporator Coil

1. Turn unit power off and install lockout tag. Remove evaporator coil access panel.
2. If EconoMi$er IV or accessory two-position damper is installed, remove economizer or two-position damper by disconnecting EconoMi$er IV plug and removing mounting screws.
3. Slide filters out of unit.
4. Clean coil using a commercial coil cleaner or dishwasher detergent in a pressurized spray canister. Wash both sides of coil and flush with clean water. For best results, back-flush toward return-air section to remove foreign material.
5. Flush condensate pan after completion.
6. Reinstall economizer or two-position damper and filters.
7. Reconnect wiring.
8. Replace access panels.

B. Condenser Coils

Inspect coils monthly. Clean condenser coils annually, and as required by location and outdoor-air conditions.

Clean 2-row coils as follows:

1. Turn off unit power and install lockout tag.
2. Remove top panel screws on condenser end of unit.
3. Remove condenser coil corner post. See Fig. 43. To hold top panel open, place coil corner post between top panel and center post. See Fig. 44.
4. Remove device holding coil sections together at return end of condenser coil. Carefully separate the outer coil section 3 to 4 in. from the inner coil section. See Fig. 45.
5. Use a water hose or other suitable equipment to flush down between the 2 coil sections to remove dirt and debris. Clean the outer surfaces with a stiff brush in the normal manner.
6. Secure the sections together. Reposition the coil sections, and remove the coil corner post from between the top panel and center post. Install the coil corner post and coil center post, and replace all screws.

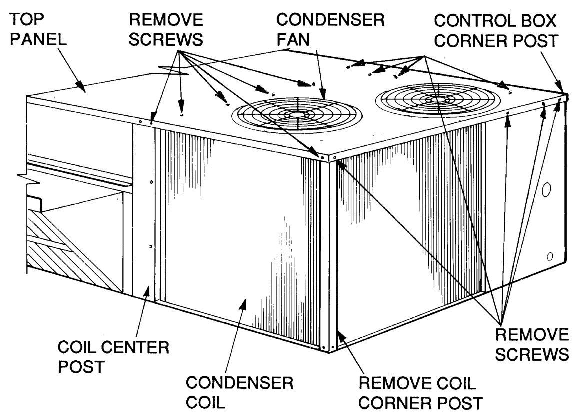


Fig. 43 — Cleaning Condenser Coil

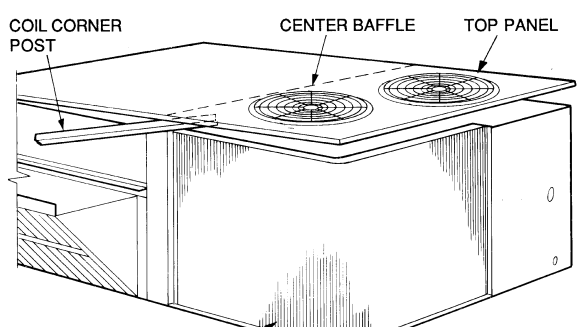


Fig. 44 — Propping Up Top Panel

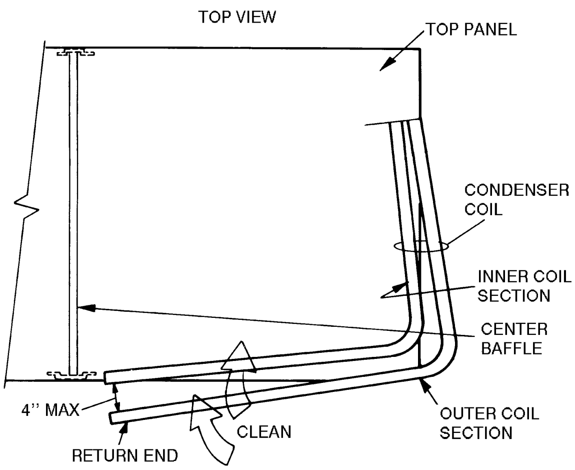


Fig. 45 — Separating Coil Sections

C. Condensate Drain

Check and clean each year at start of cooling season. In winter, protect against freeze-up.

D. Filters

Clean or replace at start of each heating and cooling season, or more often if operating conditions require it. Replacement filters must be same dimensions as original filters.

E. Outdoor-Air Inlet Screen

Clean screen with steam or hot water and a mild detergent. Do not use throwaway filters in place of screens.

II. LUBRICATION

A. Compressors

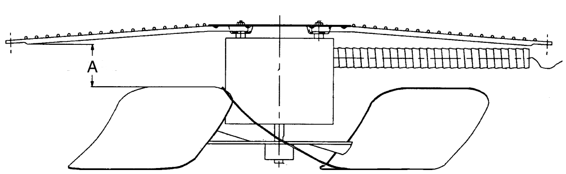
Each compressor is charged with correct amount of oil from the factory.

B. Fan Motor Bearings

Fan motor bearings are permanently lubricated. No further lubrication of condenser-fan or evaporator-fan motors is required.

III. CONDENSER-FAN ADJUSTMENT (FIG. 46)

1. Shut off unit power supply and install lockout tag.
2. Remove condenser-fan assembly (grille, motor, motor cover, and fan) and loosen fan hub setscrews.
3. Adjust fan height as shown in Fig. 46.
4. Tighten setscrews and replace condenser-fan assembly.



UNIT VOLTAGE	FAN HEIGHT "A" (in.)
208/230 v	2.75
460 v and 575 v	3.50

Fig. 46 — Condenser-Fan Adjustment

IV. BELT/PULLEY ADJUSTMENT

Inspect once each season or sooner if conditions warrant, verifying that belt tension and pulley alignment are correct. Replace belt if required.

V. ECONOMI$ER IV ADJUSTMENT

Refer to Optional EconoMi$er IV section on page 13.

VI. REFRIGERANT CHARGE

Amount of refrigerant charge is listed on unit nameplate (also refer to Table 1). Refer to Bryant Standard Service Techniques Manual, Chapter 1, Refrigerants section.

Unit panels must be in place when unit is operating during charging procedure.

A. No Charge

Locate and repair any refrigerant leak. Use standard evacuating techniques. After evacuating system, weigh in the specified amount of refrigerant (refer to Table 1).

B. Low Charge Cooling

Use Cooling Charging Charts, Fig. 47-50. Vary refrigerant until the conditions of the appropriate chart are met. Note that charging charts are different from the type normally used. Charts are based on charging the units to the correct superheat for the various operating conditions. Accurate pressure gage and temperature sensing device are required. Connect the pressure gage to the service port on the suction line. Mount the temperature sensing device on the suction line and insulate it so that outdoor ambient temperature does not affect the reading. Indoor-air cfm must be within the normal operating range of the unit.

C. Perfect Humidity™ System Charging

The system charge for units with the Perfect Humidity option is greater than that of the standard unit alone. The charge for units with this option is indicated on the unit nameplate drawing. Also refer to Fig. 51-53. To charge systems using the Perfect Humidity dehumidification system, fully evacuate, recover and recharge the system to the nameplate specified charge level.

To check or adjust refrigerant charge on systems using the Perfect Humidity Dehumidification system, charge per Fig. 51-53.

NOTE: When using the charging charts, it is important that only the subcooling/reheat dehumidification coil liquid line solenoid valve be energized. The subcooling/reheat dehumidification coil liquid line solenoid valve MUST be energized to use the charging charts and the outdoor motor speed controller jumpered to run the fan at full speed.

The charts reference a liquid pressure (psig) and temperature at a point between the condenser coil and the subcooling/reheat dehumidification coil. A tap is provided on the unit to measure liquid pressure entering the subcooling/reheat dehumidification coil.

IMPORTANT: The subcooling mode charging charts (Fig. 51-53) are to be used ONLY with units having the optional Perfect Humidity dehumidification system. DO NOT use standard charts (Fig. 47-50) for units with Perfect Humidity option, and DO NOT use Fig. 51-53 for standard units.

D. To Use Cooling Charging Charts, Standard Units

Take the outdoor ambient temperature and read the suction pressure gage. Refer to appropriate chart to determine what the suction temperature should be. If suction temperature is high, add refrigerant. If suction temperature is low, carefully recover some of the charge. Recheck the suction pressure as charge is adjusted.

EXAMPLE (Fig. 47):
Circuit 1
Outdoor Temperature . . . . 85 F
Suction Pressure . . . . 70 psig
Suction Temperature should be . . . . 46 F
(Suction Temperature may vary ±5° F.)

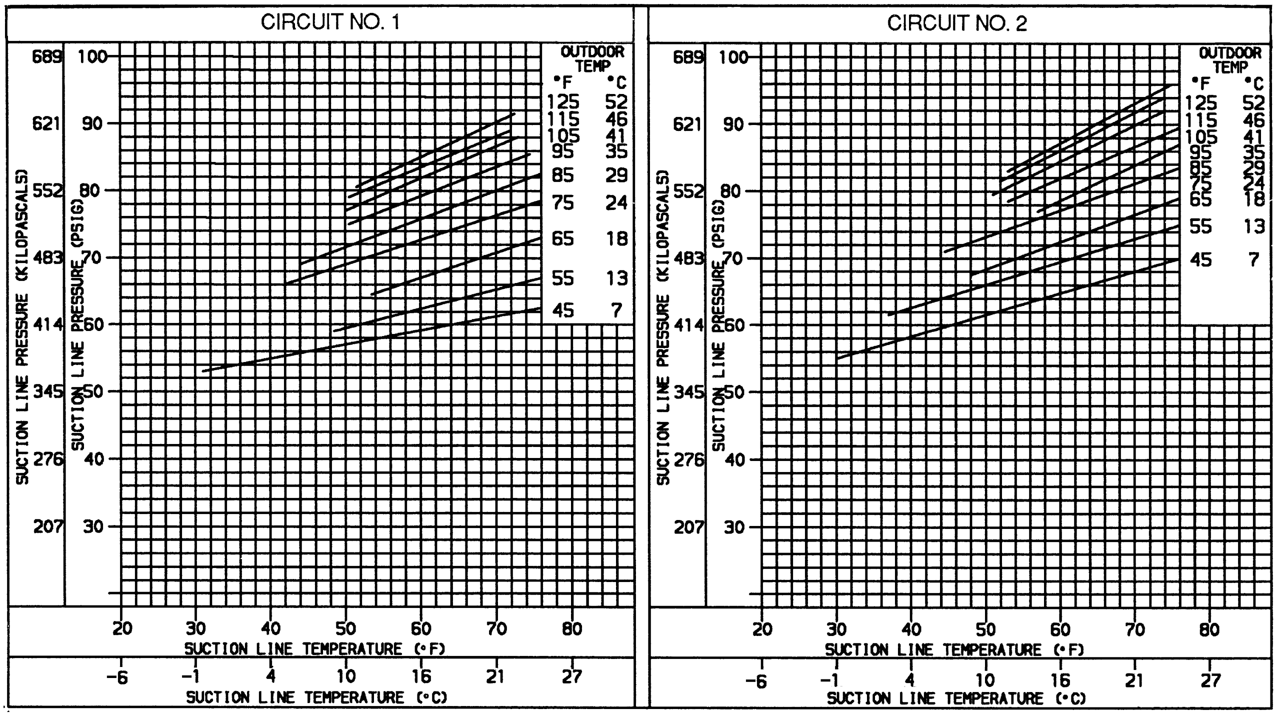


Fig. 47 — Cooling Charging Charts, Standard 551B090 Unit

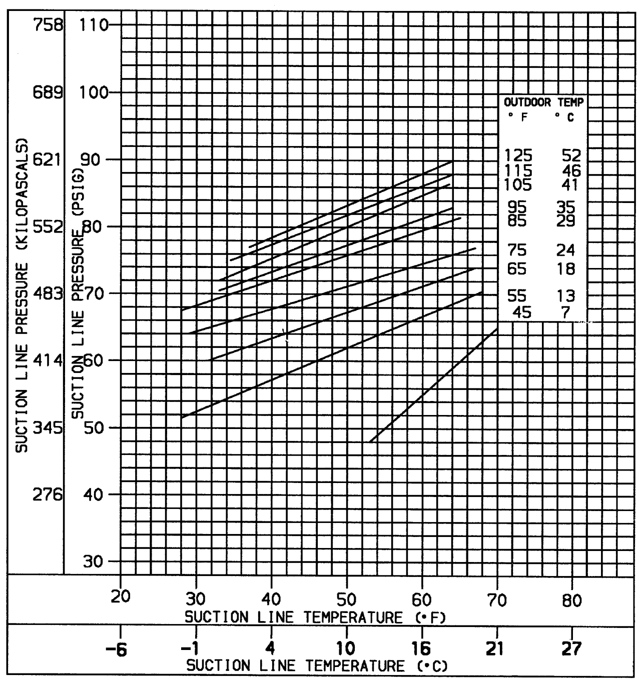


Fig. 48 — Cooling Charging Charts, Standard 551B102 Unit

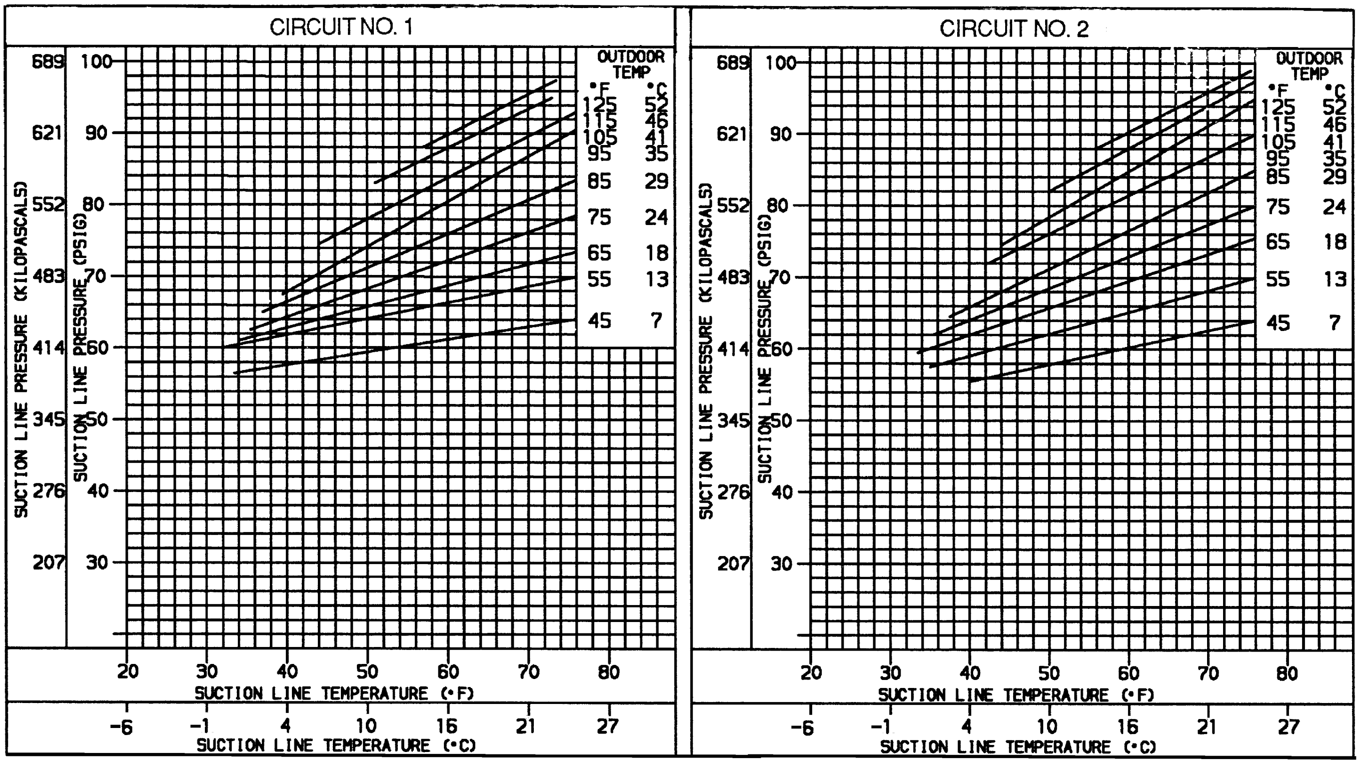


Fig. 49 — Cooling Charging Charts, Standard 551B120 Unit

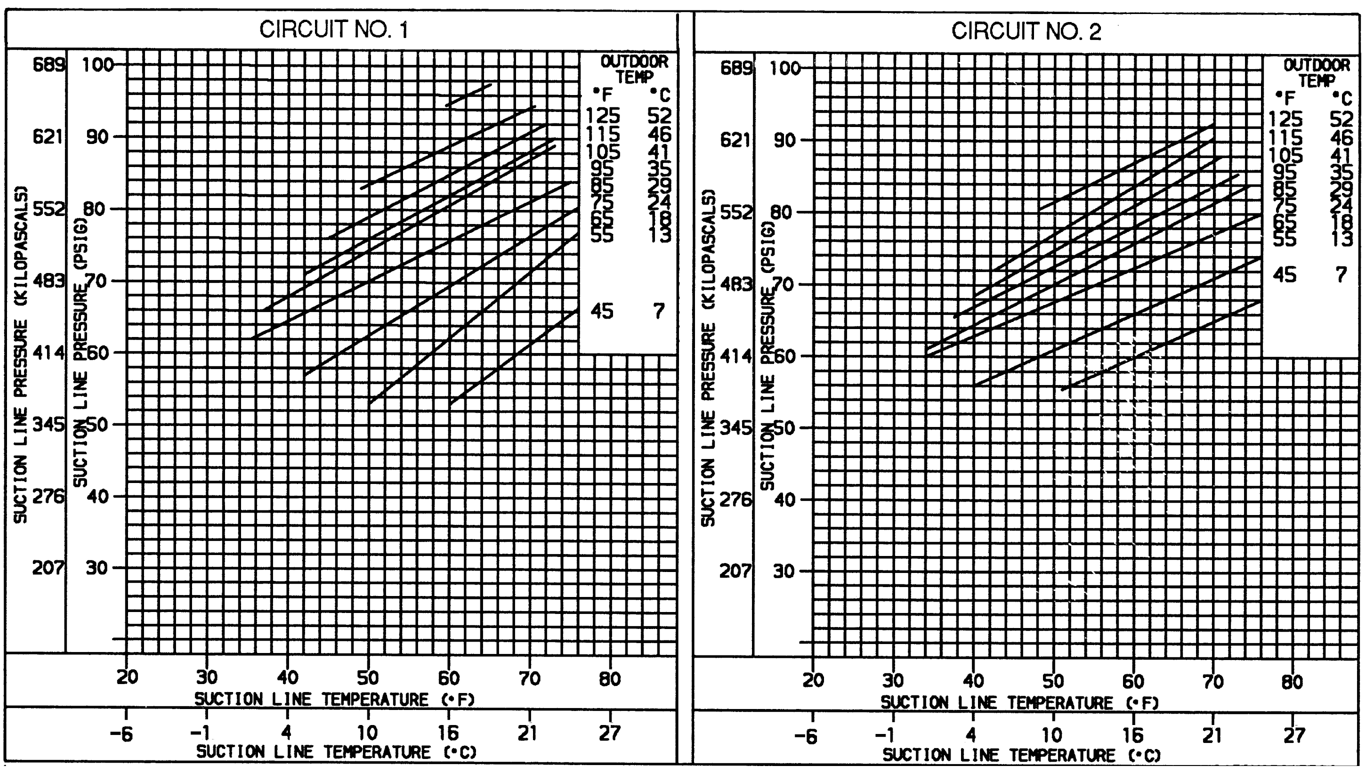


Fig. 50 — Cooling Charging Charts, Standard 551B150 Unit

E. To Use Cooling Charging Charts, Units the Perfect Humidity™ Dehumidification System

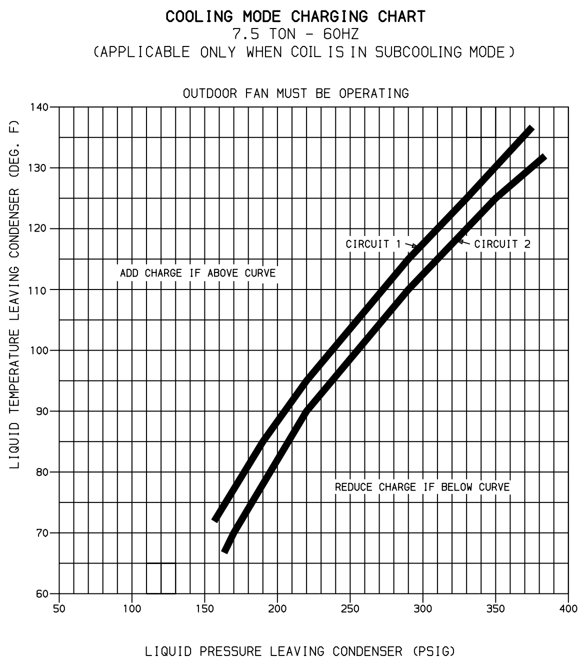
Refer to the charts (Fig. 51-53) to determine the proper leaving condenser pressure and temperature.

EXAMPLE: (Fig. 51)
Circuit 1
Leaving Condenser Pressure . . . . 300 psig
Leaving Condenser Temperature . . . . .117 F

NOTE: When using the charging charts, it is important that only the subcooling/reheat dehumidification coil liquid line solenoid valve be energized. The subcooling/reheat dehumidification coil liquid line solenoid valve MUST be energized to use the charging charts and the outdoor motor speed controller jumpered to run the fan at full speed.

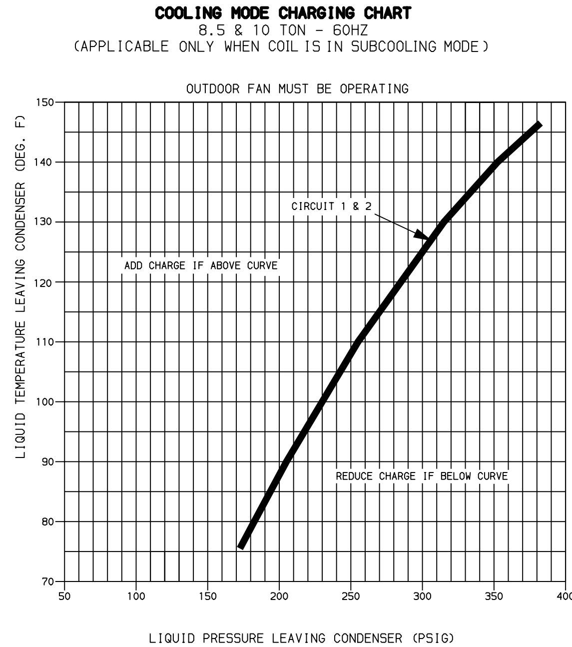
VII. REPLACEMENT PARTS

A complete list of replacement parts may be obtained from any Bryant distributor upon request.



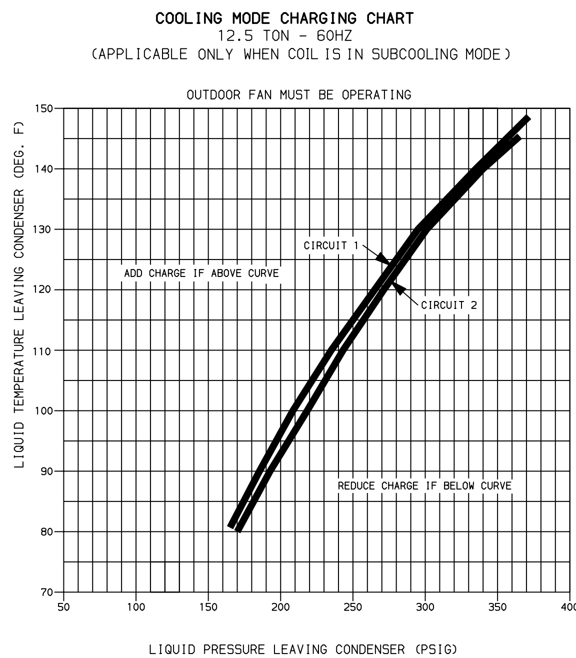
NOTE: When using the charging charts, it is important that only the subcooling/reheat dehumidification coil liquid line solenoid valve be energized. The subcooling/reheat dehumidification coil liquid line solenoid valve MUST be energized to use the charging charts and the outdoor motor speed controller jumpered to run the fan at full speed.

Fig. 51 — Cooling Charging Chart, 581B090 With the Perfect Humidity Dehumidification System



NOTE: When using the charging charts, it is important that only the subcooling/reheat dehumidification coil liquid line solenoid valve be energized. The subcooling/reheat dehumidification coil liquid line solenoid valve MUST be energized to use the charging charts and the outdoor motor speed controller jumpered to run the fan at full speed.

Fig. 52 — Cooling Charging Chart, 581B102 and 120 With the Perfect Humidity Dehumidification System



NOTE: When using the charging charts, it is important that only the subcooling/reheat dehumidification coil liquid line solenoid valve be energized. The subcooling/reheat dehumidification coil liquid line solenoid valve MUST be energized to use the charging charts and the outdoor motor speed controller jumpered to run the fan at full speed.

Fig. 53 — Cooling Charging Chart, 581B150 With the Perfect Humidity Dehumidification System

TROUBLESHOOTING

I. UNIT TROUBLESHOOTING

Refer to Tables 30-32 for additional information.

Table 30 — Cooling Troubleshooting

PROBLEM	CAUSE	REMEDY
Compressor(s) and Condenser Fan Will Not Start.	Power failure.	Call power company.
	Fuse blown or circuit breaker tripped.	Replace fuse or reset circuit breaker.
	Defective thermostat, contactor, transformer, control relay.	Replace component.
	Insufficient line voltage.	Determine cause and correct.
	Incorrect or faulty wiring.	Check wiring diagram and rewire correctly.
	Thermostat setting too high.	Lower thermostat setting below room temperature.
	High pressure switch tripped.	See problem “Excessive Head Pressure.”
	Low pressure switch tripped.	Check system for leaks, repair, and recharge.
	Freeze-up protection thermostat tripped.	See problem “Suction Pressure Too Low.”
Compressor(s) Will Not Start but Condenser Fan Runs.	Faulty wiring or loose connections in compressor circuit.	Check wiring and repair or replace.
	Compressor motor(s) burned out, seized, or internal overload open.	Determine cause. Replace compressor(s).
	Defective overload.	Determine cause and replace.
	One leg of 3-phase power dead.	Replace fuse or reset circuit breaker. Determine cause.
Compressor(s) Cycles (Other Than Normally Satisfying Thermostat).	Refrigerant overcharge or undercharge.	Recover refrigerant, evacuate system, and recharge to nameplate.
	Defective compressor.	Replace and determine cause.
	Insufficient line voltage.	Determine cause and correct.
	Blocked condenser.	Determine cause and correct.
	Defective overload.	Determine cause and replace.
	Defective thermostat.	Replace thermostat.
	Faulty condenser-fan motor(s) or capacitor.	Replace.
	Restriction in refrigerant system.	Locate restriction and remove.
Compressor(s) Operates Continuously.	Dirty air filter.	Replace filter.
	Unit undersized for load.	Decrease load or increase unit size.
	Thermostat set too low.	Reset thermostat.
	Low refrigerant charge.	Locate leak, repair, and recharge.
	Leaking valves in compressor.	Replace compressor.
	Air in system.	Recover refrigerant, evacuate system, and recharge.
	Condenser coil dirty or restricted.	Clean coil or remove restriction.
Scroll Compressor(s) Makes Excessive Noise.	Compressor(s) rotating in the wrong direction.	Reverse the 3-phase power leads as described in Start-Up section, page 38.
Excessive Head Pressure.	Dirty air filter.	Replace filter.
	Dirty condenser coil.	Clean coil.
	Refrigerant overcharged.	Remove excess refrigerant.
	Air in system.	Recover refrigerant, evacuate system to 500 microns, and recharge.
	Condenser air restricted or air short-cycling.	Determine cause and correct.
Head Pressure Too Low.	Low refrigerant charge.	Check for leaks, repair, and recharge.
	Compressor valves leaking.	Replace compressor(s).
	Restriction in liquid tube.	Remove restriction.
Excessive Suction Pressure.	High heat load.	Check for source and eliminate.
	Compressor valves leaking.	Replace compressor(s).
	Refrigerant overcharged.	Recover excess refrigerant.
Suction Pressure Too Low.	Dirty air filter.	Replace filter.
	Low refrigerant charge.	Check for leaks, repair, and recharge.
	Metering device or low side restricted.	Remove source of restriction.
	Insufficient evaporator airflow.	Increase air quantity. Check filter and replace if necessary.
	Temperature too low in conditioned area.	Reset thermostat.
	Field-installed filter drier restricted.	Replace.
	Outdoor ambient temperature below 25 F.	Install low-ambient kit.
Compressor No. 2 Will Not Run.	Unit in economizer mode.	Proper operation; no remedy necessary.

Table 31 — Perfect Humidity™ Dehumidification System Subcooling Mode Service Analysis

PROBLEM	CAUSE	REMEDY
Subcooling Mode (Liquid Reheat) Will Not Energize.	No power to control transformer from evaporator-fan motor.	Check power source and evaporator-fan relay. Ensure all wire connections are tight.
	No power from control transformer to liquid line solenoid valve.	1. Fuse open; check fuse. Ensure continuity of wiring. 2. Low-pressure switch open. Cycle unit off and allow low-pressure switch to reset. Replace switch if it will not close. 3. Transformer bad; check transformer.
	Liquid line solenoid valve will not operate.	1. Solenoid coil defective; replace. 2. Solenoid valve stuck open; replace.
	Liquid line solenoid valve will not open.	Valve is stuck closed; replace valve.
Low System Capacity.	Low refrigerant charge or frosted evaporator coil.	1. Check charge amount. Charge per Fig. 51-53. 2. Evaporator coil frosted; check and replace low-pressure switch if necessary.
Loss of Compressor Superheat Conditions with Subcooling/Reheat Dehumidification Coil Energized.	Thermostatic expansion valve (TXV).	1. Check TXV bulb mounting, and secure tightly to suction line. 2. Replace TXV if stuck open or closed.

Table 32 — Perfect Humidity Dehumidification Hot Gas Reheat Mode Service Analysis

PROBLEM	CAUSE	REMEDY
Reheat Mode Will Not Energize.	No power to control transformer from evaporator-fan motor.	Check power source and evaporator-fan relay. Ensure all wire connections are tight.
	No power from control transformer to hot gas line solenoid valve.	1. Fuse open; check fuse. Ensure continuity of wiring. 2. Low-pressure switch open. Cycle unit off and allow low-pressure switch to reset. Replace switch if it will not close. 3. Transformer bad; check transformer.
	Hot gas line solenoid valve will not operate.	1. Solenoid coil defective; replace. 2. Solenoid valve stuck closed; replace.
	Low refrigerant charge or frosted evaporator coil.	1. Check charge amount. Charge per Fig. 51-53. 2. Evaporator coil frosted; check and replace low-pressure switch if necessary.
Loss of Compressor Superheat Conditions with Subcooling/Reheat Dehumidification Coil Energized.	Thermostatic expansion valve (TXV).	1. Check TXV bulb mounting, and secure tightly to suction line. 2. Replace TXV if stuck open or closed.
Excessive Superheat.	Liquid line solenoid valve will not operate.	Valve is stuck; replace valve.
	Hot gas line solenoid valve will not close.	Valve is stuck; replace valve.

II. ECONOMI$ER IV TROUBLESHOOTING

See Table 33 for EconoMi$er IV logic.

A functional view of the EconoMi$er IV is shown in Fig. 54. Typical settings, sensor ranges, and jumper positions are also shown. An EconoMi$er IV simulator program is available from Bryant to help with EconoMi$er IV training and troubleshooting.

A. EconoMi$er IV Preparation

This procedure is used to prepare the EconoMi$er IV for troubleshooting. No troubleshooting or testing is done by performing the following procedure.

NOTE: This procedure requires a 9-v battery, 1.2 kilo-ohm resistor, and a 5.6 kilo-ohm resistor which are not supplied with the EconoMi$er IV.

IMPORTANT: Be sure to record the positions of all potentiometers before starting troubleshooting.

1. Disconnect power at TR and TR1. All LEDs should be off. Exhaust fan contacts should be open.
2. Disconnect device at P and P1.
3. Jumper P to P1.
4. Disconnect wires at T and T1. Place 5.6 kilo-ohm resistor across T and T1.
5. Jumper TR to 1.
6. Jumper TR to N.
7. If connected, remove sensor from terminals S_O and +. Connect 1.2 kilo-ohm 4074EJM checkout resistor across terminals S_O and +.
8. Put 620-ohm resistor across terminals S_R and +.
9. Set minimum position, DCV set point, and exhaust potentiometers fully CCW (counterclockwise).
10. Set DCV maximum position potentiometer fully CW (clockwise).
11. Set enthalpy potentiometer to D.
12. Apply power (24 vac) to terminals TR and TR1.

B. Differential Enthalpy

To check differential enthalpy:

1. Make sure EconoMi$er IV preparation procedure has been performed.
2. Place 620-ohm resistor across S_O and +.
3. Place 1.2 kilo-ohm resistor across S_R and +. The Free Cool LED should be lit.
4. Remove 620-ohm resistor across S_O and +. The Free Cool LED should turn off.
5. Return EconoMi$er IV settings and wiring to normal after completing troubleshooting.

C. Single Enthalpy

To check single enthalpy:

1. Make sure EconoMi$er IV preparation procedure has been performed.
2. Set the enthalpy potentiometer to A (fully CCW). The Free Cool LED should be lit.
3. Set the enthalpy potentiometer to D (fully CW). The Free Cool LED should turn off.
4. Return EconoMi$er IV settings and wiring to normal after completing troubleshooting.

D. DCV (Demand Controlled Ventilation) and Power Exhaust

To check DCV and Power Exhaust:

1. Make sure EconoMi$er IV preparation procedure has been performed.
2. Ensure terminals AQ and AQ1 are open. The LED for both DCV and Exhaust should be off. The actuator should be fully closed.
3. Connect a 9-v battery to AQ (positive node) and AQ1 (negative node). The LED for both DCV and Exhaust should turn on. The actuator should drive to between 90 and 95% open.
4. Turn the Exhaust potentiometer CW until the Exhaust LED turns off. The LED should turn off when the potentiometer is approximately 90%. The actuator should remain in position.
5. Turn the DCV set point potentiometer CW until the DCV LED turns off. The DCV LED should turn off when the potentiometer is approximately 9 v. The actuator should drive fully closed.
6. Turn the DCV and Exhaust potentiometers CCW until the Exhaust LED turns on. The exhaust contacts will close 30 to 120 seconds after the Exhaust LED turns on.
7. Return EconoMi$er IV settings and wiring to normal after completing troubleshooting.

E. DCV Minimum and Maximum Position

To check the DCV minimum and maximum position:

1. Make sure EconoMi$er IV preparation procedure has been performed.
2. Connect a 9-v battery to AQ (positive node) and AQ1 (negative node). The DCV LED should turn on. The actuator should drive to between 90 and 95% open.
3. Turn the DCV Maximum Position potentiometer to midpoint. The actuator should drive to between 20 and 80% open.
4. Turn the DCV Maximum Position potentiometer to fully CCW. The actuator should drive fully closed.
5. Turn the Minimum Position potentiometer to midpoint. The actuator should drive to between 20 and 80% open.
6. Turn the Minimum Position Potentiometer fully CW. The actuator should drive fully open.
7. Remove the jumper from TR and N. The actuator should drive fully closed.
8. Return EconoMi$er IV settings and wiring to normal after completing troubleshooting.

F. Supply-Air Input

To check supply-air input:

1. Make sure EconoMi$er IV preparation procedure has been performed.
2. Set the Enthalpy potentiometer to A. The Free Cool LED turns on. The actuator should drive to between 20 and 80% open.
3. Remove the 5.6 kilo-ohm resistor and jumper T to T1. The actuator should drive fully open.

4. Remove the jumper across T and T1. The actuator should drive fully closed.
5. Return EconoMi$er IV settings and wiring to normal after completing troubleshooting.

G. EconoMi$er IV Troubleshooting Completion

This procedure is used to return the EconoMi$er IV to operation. No troubleshooting or testing is done by performing the following procedure.

1. Disconnect power at TR and TR1.
2. Set enthalpy potentiometer to previous setting.
3. Set DCV maximum position potentiometer to previous setting.
4. Set minimum position, DCV set point, and exhaust potentiometers to previous settings.
5. Remove 620-ohm resistor from terminals S_R and +.
6. Remove 1.2 kilo-ohm checkout resistor from terminals S_O and +. If used, reconnect sensor from terminals S_O and +.
7. Remove jumper from TR to N.
8. Remove jumper from TR to 1.
9. Remove 5.6 kilo-ohm resistor from T and T1. Reconnect wires at T and T1.
10. Remove jumper from P to P1. Reconnect device at P and P1.
11. Apply power (24 vac) to terminals TR and TR1.

Table 33 — EconoMi$er IV Input/Output Logic

INPUTS					OUTPUTS			
Demand Control Ventilation (DCV)	Enthalpy*		Y1	Y2	Compressor		N Terminal†	
	Outdoor	Return			Stage 1	Stage 2	Occupied	Unoccupied
							Damper	
Below set (DCV LED Off)	High (Free Cooling LED Off)	Low	On	On	On	On	Minimum position	Closed
			On	Off	On	Off		
			Off	Off	Off	Off		
	Low (Free Cooling LED On)	High	On	On	On	Off	Modulating** (between min. position and full-open)	Modulating** (between closed and full-open)
			On	Off	Off	Off		
			Off	Off	Off	Off	Minimum position	Closed
Above set (DCV LED On)	High (Free Cooling LED Off)	Low	On	On	On	On	Modulating†† (between min. position and DCV maximum)	Modulating†† (between closed and DCV maximum)
			On	Off	On	Off		
			Off	Off	Off	Off		
	Low (Free Cooling LED On)	High	On	On	On	Off	Modulating***	Modulating†††
			On	Off	Off	Off		
			Off	Off	Off	Off		

*For single enthalpy control, the module compares outdoor enthalpy to the ABCD set point.
†Power at N terminal determines Occupied/Unoccupied setting: 24 vac (Occupied), no power (Unoccupied).
**Modulation is based on the supply-air sensor signal.
††Modulation is based on the DCV signal.
***Modulation is based on the greater of DCV and supply-air sensor signals, between minimum position and either maximum position (DCV) or fully open (supply-air signal).
†††Modulation is based on the greater of DCV and supply-air sensor signals, between closed and either maximum position (DCV) or fully open (supply-air signal).

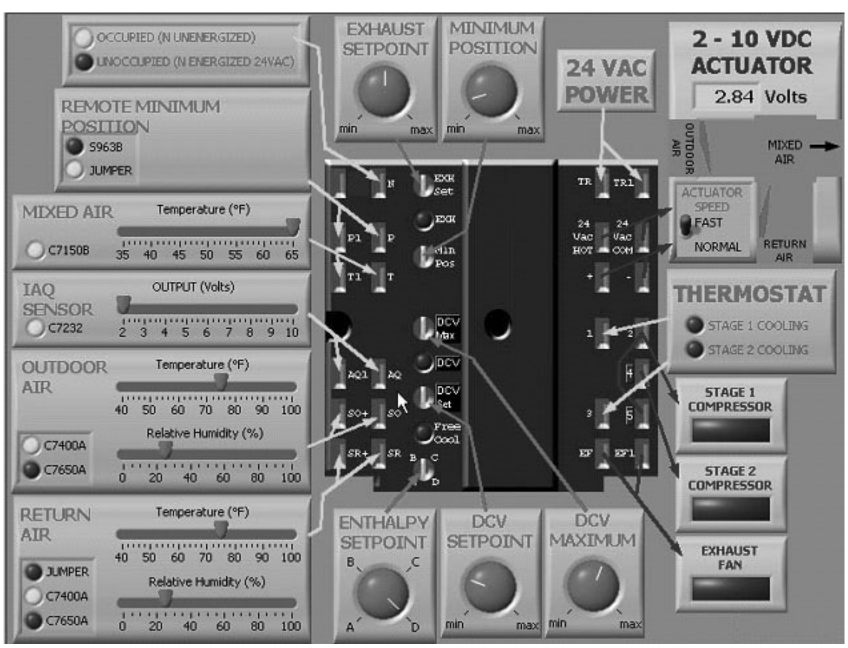


Fig. 54 — EconoMi$er IV Functional View

INDEX

START-UP CHECKLIST
(Remove and Store in Job File)

I. PRELIMINARY INFORMATION

MODEL NO.: ____________________ SERIAL NO.: ____________________

DATE: ____________________ TECHNICIAN: ____________________

BUILDING LOCATION: ____________________

II. PRE-START-UP (insert checkmark in box as each item is completed)

- ☐ VERIFY JOBSITE VOLTAGE AGREES WITH VOLTAGE LISTED ON RATING PLATE
- ☐ VERIFY THAT CONDENSATE CONNECTION IS INSTALLED PER INSTALLATION INSTRUCTIONS
- ☐ CHECK THAT ALL ELECTRICAL CONNECTIONS AND TERMINALS ARE TIGHT
- ☐ CHECK THAT RETURN (INDOOR SECTION) AIR FILTERS ARE CLEAN AND IN PLACE
- ☐ VERIFY THAT UNIT INSTALLATION IS LEVEL
- ☐ CHECK FAN WHEEL AND PROPELLER FOR LOCATION IN HOUSING AND ORIFICE AND CHECK THAT SETSCREW IS TIGHT
- ☐ CHECK PULLEY ALIGNMENT AND BELT TENSION PER INSTALLATION INSTRUCTIONS
- ☐ CHECK TO ENSURE THAT ELECTRICAL WIRING IS NOT IN CONTACT WITH REFRIGERANT LINES OR SHARP METAL EDGES

III. START-UP

ELECTRICAL

SUPPLY VOLTAGE	L1-L2	______	L2-L3	______	L3-L1	______
CIRCUIT 1 COMPRESSOR AMPS	L1	______	L2	______	L3	______
CIRCUIT 2 COMPRESSOR AMPS	L1	______	L2	______	L3	______
EVAPORATOR FAN AMPS	L1	______	L2	______	L3	______

TEMPERATURES

OUTDOOR-AIR TEMPERATURE	______	DB	______	WB
RETURN-AIR TEMPERATURE	______	DB	______	WB
COOLING SUPPLY AIR	______	DB	______	WB

PRESSURES

REFRIGERANT SUCTION, CIRCUIT 1	______	PSIG AT	______	F (AT SERVICE PORT)
REFRIGERANT SUCTION, CIRCUIT 2	______	PSIG AT	______	F (AT SERVICE PORT)
REFRIGERANT DISCHARGE, CIRCUIT 1	______	PSIG AT	______	F (CONDENSER LIQUID LINE OUTLET TUBE)
REFRIGERANT DISCHARGE, CIRCUIT 2	______	PSIG AT	______	F (CONDENSER LIQUID LINE OUTLET TUBE)

- ☐ VERIFY THAT 3-PHASE SCROLL COMPRESSOR IS ROTATING IN THE CORRECT DIRECTION
- ☐ VERIFY REFRIGERANT CHARGE USING CHARGING CHARTS ON PAGES 43-45.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE