

# INSTALLATION INSTRUCTIONS

**MODEL**

**BH120-3**

**INDOOR BLOWER COIL UNIT**

## GENERAL

Units are shipped completely assembled and internally wired, with filters and filter rack, duct connections, thermostat wiring and external 415/380-50 Hz - 3 ph, AC power supply.

The BH120-3 is designed to be connected to two air conditioner or heat pump outdoor sections. The following are approved combinations. They can be wired for single or 2-stage operation.

APPROVED COMBINATIONS		
Application	Outdoor Section (2 Req'd)	Indoor Section
Heat Pump	48HPQ4 + 48HPQ4 60HPQ5 + 48HPQ4 60HPQ5 + 60HPQ5	BH120-3
Air Conditioning	48ECQ2 + 48ECQ2 60ECQ1 + 48ECQ2 60ECQ1 + 60ECQ1	BH120-3

## GENERAL SPECIFICATIONS

INDOOR BLOWER COIL UNIT	
Model	BH120-3
Electrical Rating	415V-3 Ph- 50Hz
Operating Voltage Range	373-464
Fusing/Ampacity	15/15
Motor and Blower	12x15 Belt Drive
Motor RPM (at 50Hz)	1425
Motor Horsepower	1 hp
Motor Amps	1.6A
Evaporator Coil-Face Area Sq.Ft./No. Rows/Fins per inch	8.08/4/10
Filter (Fiberglass-Throwaway)	(2) 16" x 25"
Refrigerant Control/R22 Charge	Capillary/48 Oz.
Shipping Weight	390 lbs.

## UNPACKING

Upon receipt of equipment, carton should be checked for external signs of damage. If damage is found, request for inspection by carrier's agent should be made in writing immediately.

## MOUNTING POSITION

The BH120-3 may be mounted in the horizontal position only. When installed in an attic installation, a platform should be made for the unit to sit on. This can be made from 3/4" plywood or boards. The unit can also be suspended with a suitable field constructed frame.

Determine if the application requires electrical and service access from the left side or the right side of the cabinet (see Figure 1).

As the unit is shipped from the factory it is set up with the electrical control panel, service panel, drain, motor and blower pulleys located on the left side of the casing. The unit can be converted to a right side service by moving the control panel to the opposite side. This is done by removing the attachment screws in the front of the unit and inverting the control panel and reattaching it with screws to the opposite front corner. The wire lengths are adequate to permit this. The blower motor and pulleys can also be removed and reinstalled on the right hand side (see Figure 2).

## FILTER RACK - FILTER

This unit comes supplied with a filter rack installed and with (2) 16"x25" filters. The filters can be removed from the left or right side.

The filter supplied should be changed periodically throughout the year, as these are year-round heat-cool systems. Special attention should be given to new installation as airborne dust and debris from recent construction can easily plug a filter in a matter of days.

Dirty filters are the most prevalent and most easily corrected problem to be encountered in any forced air heating and/or cooling system.

## LOCATION AND CLEARANCES

All access to the equipment is from one side and at least 30 inches should be provided from this side for service access.

The unit casing and duct work is suitable for 0 inch clearance.

## CONDENSATE DRAIN

The unit is shipped with a condensate drain tap located on both sides of the unit. Determine which side provides the best drain location for the application. Be sure and plug the unused drain. This drain line contains cold water and must be insulated to avoid drops of water from dropping on ceiling, etc. A trap must be installed in the primary drain line below the bottom of the drain pan.

It is not recommended that any condensate drain lines be connected to a sewer main. Drain lines must be installed in accordance with local codes.

An auxiliary drain pan should always be used when equipment is installed over a finished living area, to provide protection from water damage in case of plugging the primary drain line from the unit condensate collection pan.

## INTERCONNECTING TUBING

It is recommended that the interconnecting tubing be the CT-12 series charged tubing sets. This is a precharged tubing set with an insulated suction line. Both suction and liquid line are equipped with the correct quick connect fittings for proper match up to the indoor and outdoor sections. The CT-12 series is available in standard tubing lengths of 15, 25, 35 and 45 feet.

Two sets will be required, one to each outdoor unit. Care must be taken to insure that the tube sets are connected in "matched" sets to the outdoor sections.

## BLOWER MOTOR OILERS

The blower motors should be oiled twice a year with approximately 8-10 drops of 20 weight motor oil. DO NOT over oil and DO NOT use a 3-in-1 oil or any other light oil.

## INDOOR AIR FLOW

The following chart shows the required indoor air flow for each recommended combination of outdoor units to be used with the BH120-3.

Outdoor Model (2 req'd) △ (220/200-1-50)	Indoor Model (415-3-50)	Indoor CFM
48HPQ4+48HPQ4	BH120-3	2800
60HPQ5+48HPQ4	BH120-3	3200
60HPQ5+60HPQ5	BH120-3	3200
48ECQ2+48ECQ2	BH120-3	2800
60ECQ1+48ECQ2	BH120-3	3200
60ECQ1+60ECQ1	BH120-3	3200

BLOWER COIL PERFORMANCE				
CFM -- Dry Coil With Filter				
E.S.P. In H <sub>2</sub> O	Motor Pulley Turns Open			
	2	3	4	5
0	3940	3800	3600	3390
.1	3800	3640	3420	3220
.2	3640	3450	3240	3030
.3	3490	3270	3050	2790
.4	3300	3075	2825	2520
.5	3110	2850	2580	2225
.6	2880	2570	2270	1770

Motor Pulley - 4" Dia. Adjustable  
Blower Pulley - 6" Dia.  
Belt Length - 44"

**IMPORTANT**

The unit is shipped from the factory with a bracket to hold the motor down securely for shipment. Remove this bracket (secured with screws under the motor at the adjustment assembly) and discard. Adjust the motor pulley to the proper turns open to obtain the correct indoor CFM.

Adjust the belt for proper tension, approximately one-half to one inch deflection with light pressure.

Check direction of motor for proper rotation. Stop motor and then reconnect as necessary if not correct. Rotation of a three-phase motor can be reversed by interchanging any two line leads.

**THERMOSTAT HEAT ANTICIPATION**

Some of the wall thermostats require setting of the heat anticipator to assure proper cyclic operation and good temperature control within the structure being heated and cooled. Other anticipators are fixed and require no adjustment. The table below summarizes the anticipator types and their ranges, if adjustable.

Part No.	Description	HEATING			COOLING	
		Stage	Type	Range	Stage	Type
8403-021	T874D1009	1	Adj.	.10-1.2A	1	Fixed
		2	Adj.	.10-1.2A	2	Fixed

**ELECTRICAL**

Refer to the wiring diagram for connections to a 415/380 volt, 50 Hz, 3 phase power supply. Use the proper wire and fuse size as shown earlier under General Specifications.

Refer to the 24 volt connection diagrams for the proper low voltage hookup for either air conditioner or heat pump installation.

WALL THERMOSTAT AND SUBBASE COMBINATIONS		
Air Conditioning and Heat Pump	8403-021 (T874D1009) 2 Stage Cool 2 Stage Heat	8404-012 (Q674A1001)

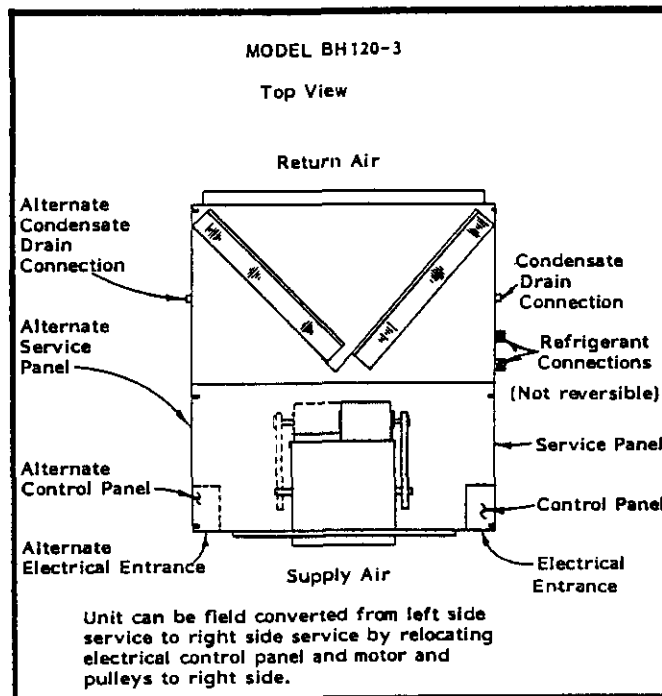
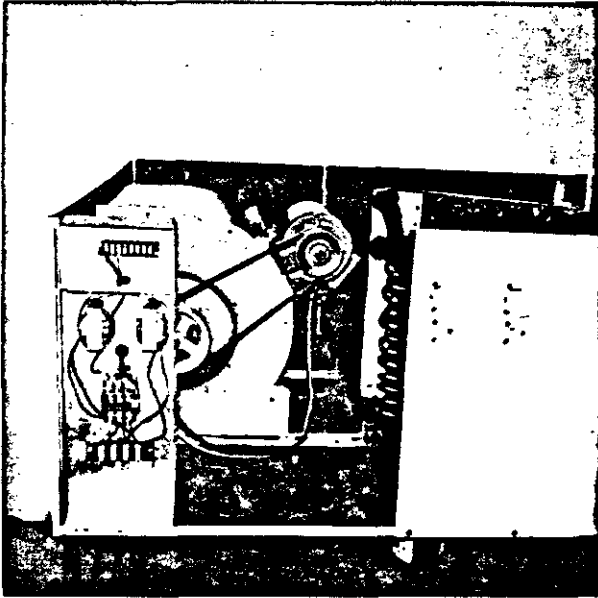
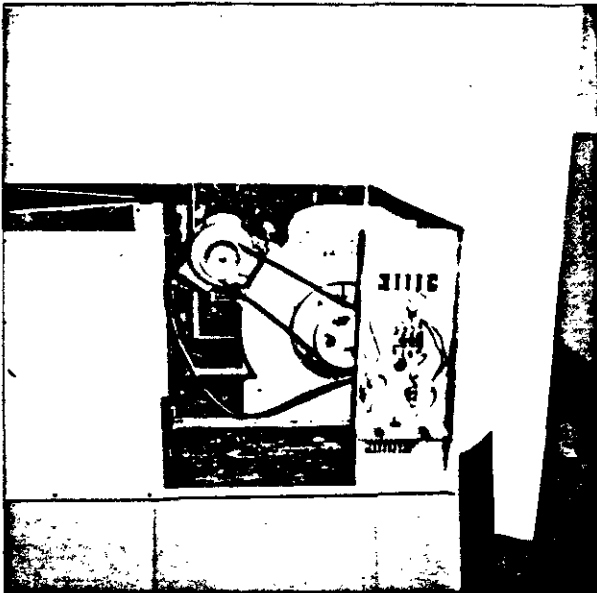


Figure 1.



Left Side View

Electrical Control Panel, Motor, Blower and Motor Pulleys and service access on left-hand side as shipped from factory.



Right Side View

Electrical Control Panel, Motor, Blower and Motor Pulleys relocated to right-hand side at installation for right hand service.

Filter removal from right and left side.

Optional drain locations (right and left sides).

Refrigerant connections - left side only.

Figure 2.

PARTS LIST

BH120-3

SPLIT SYSTEM BLOWER COIL

PART NO.	DESCRIPTION	QTY.
5152-048	Blower Wheel & Housing Assembly	1
5811-020	Capillary Tube	4
5651-036	Check Valve	2
5060-002	Evaporator Coil	2
7004-011	Filters 16x25x1	2
8108-003	Motor - Blower 1 hp - 3 Phase	1
5601-015	Belt	1
8201-015	Relay - Changeover	2
5210-005	Strainer	2
8607-013	Terminal Block	1
8607-006	Terminal Strip	1
8401-002	Contactors (for blower)	1
5501-016	Motor Pulley 4" x 5/8	1
5501-006	Blower Pulley 6" x 1	1
8407-035	Transformer	2

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