

CROWN Boiler Co.

D E S I G N E D T O L E A D

Santa-Fe Series Hydronic Air Handlers

INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

These instructions must be affixed on or adjacent to the air handler

Models: SAC049B20
SAC059B25
SAC071B30
SAC075B35
SAC110B40
SAC121B50

CROWN Boiler Co.

Manufacturer of Hydronic Heating Products
P.O. Box 14818 3633 I. Street
Philadelphia, PA 19134

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury, or loss of life. For assistance of additional information, consult a qualified installer or service agency. Read these instructions carefully before installing or using this equipment.

DISCONNECT ALL INCOMING POWER BEFORE WIRING OR SERVICING UNIT.

NO ATTEMPT SHOULD BE MADE TO HANDLE, INSTALL, OR SERVICE ANY UNIT WITHOUT FOLLOWING SAFE PRACTICES REGARDING MECHANICAL EQUIPMENT.

DO NOT STORE COMBUSTIBLE MATERIALS OR USE GASOLINE OR OTHER FLAMMABLE LIQUIDS OR VAPORS IN THE VICINITY OF THIS APPLIANCE.

DO NOT OPERATE THE EQUIPMENT WITH PANELS REMOVED.

IT IS THE INSTALLER'S RESPONSIBILITY TO INSTALL THE PRODUCT IN ACCORDANCE WITH ALL LOCAL AND NATIONAL CODES.

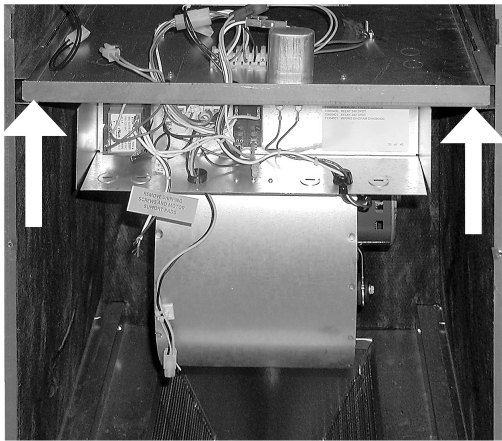
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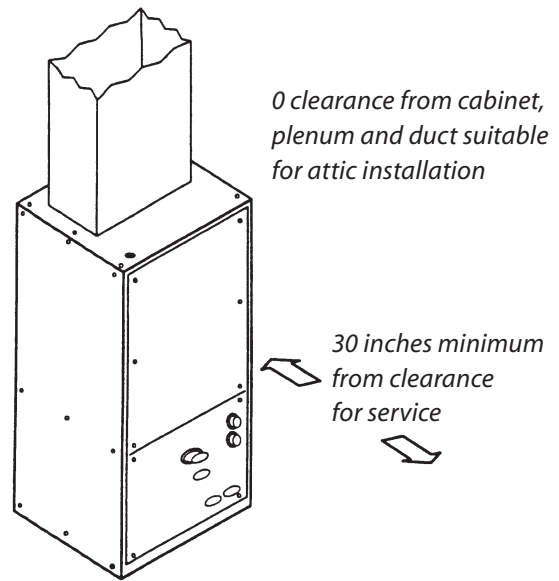
Unpacking and Inspection

All units are carefully inspected at the factory under a strict detailed quality assurance program. Each unit is then carefully packaged for shipment to avoid damage during normal transit and handling. The equipment should always be stored in a dry place in the proper orientation as marked on the carton. It is the responsibility of the receiving party to inspect the equipment upon arrival. Any obvious or hidden damage to the carton and/or its contents should be recorded on the bill of lading and a claim should be filed with the freight carrier.

Before installation, be sure to remove the shipping screws from the fan deck.



In addition, adequate clearance must be provided for service and removal of the equipment and its accessory components. Units are approved for zero (0) inches of clearance. Units may, with field modification, be positioned for horizontal application. More information on this modification is available upon request. Allow a minimum of thirty (30) inches clearance in front of unit for servicing. If screws or holes must be drilled into fan coil cabinet for mounting or any other purposes, check to insure that no damage is done to internal components.



Handling and Installation

Care must be taken to assure that no force or pressure is applied to the coil, piping, or the drain stub-outs during handling.

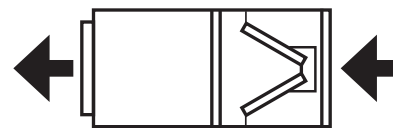
The equipment covered in this manual IS NOT suitable for outdoor installations. The equipment should never be stored or installed where it may be subjected to a hostile environment such as rain, snow, or extreme temperatures.

During and after installation, special care must be taken to prevent foreign materials from being deposited in the drain pan or on the motor or blower wheels. Failure to do so may have serious adverse effects on unit operation and will void all manufacturer's warranties.

This unit is made for closet, basement, and attic installation. In an attic installation, where the unit is resting on the attic floor, a suitable isolation pad should be provided to minimize equipment sound transmission to the ceiling below.



upflow discharge



horizontal left discharge



horizontal right discharge

Ductwork Connections

All ductwork should be designed and installed in accordance with the current guidelines of the Air Conditioning Contractors of America (ACCA) or the American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. (ASHRAE).

The recommended range of external static pressure of the duct system is .10 to .50 in. W.C.

These units may be damaged by operation without the proper ductwork connected. Duct connections should be sized no smaller than the duct flanges on the unit.

All ductwork and insulation shall be installed to allow proper access to all components for service and repair such as air filters, motor/blower assemblies, etc.

It is recommended that sheet metal duct be insulated wherever supply and return air pass through unconditioned areas.

The manufacturer assumes no responsibility for undesirable system operation due to improper system design, equipment or component selection, and/or installation of ductwork and other related components.

After ducting the unit, it is then ready for the various service connections such as water, drain, and electrical. Refer to the unit nameplate for refrigerant type, maximum water temperature, and electrical requirements. The routing and sizing of all piping, and the type and sizing of all wiring and other electrical components such as circuit breakers, disconnect switches, etc. should be determined by the individual job requirements and should not be based on the size and/or type of connection provided on the equipment.

Refrigerant Piping

Connect copper liquid and suction lines of proper size (refer to condensing unit manufacturer's recommendation) to refrigerant line stub-outs. Protect cabinet and internal piping by wrapping each pipe with a wet rag while brazing.

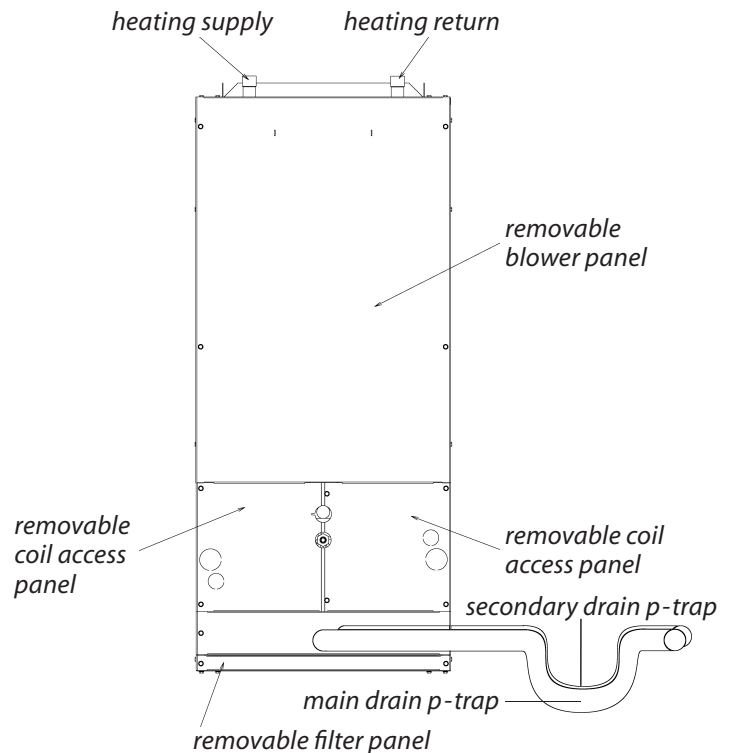
The refrigerant coil is shipped from the factory with a 10-20 psi nitrogen charge. Use caution when removing coil plugs.

Refrigerant piping exits the door. Consideration should be given to routing refrigerant lines during installation so the filter access door can be removed for replacing the air filter. Insulation on the suction line must extend into cabinet

and continue as far as possible to eliminate condensation from dripping onto access door insulation. All refrigerant suction line piping external to the unit must be insulated to prevent damage from sweating. An optional, separate liquid line connection kit is supplied with the unit. (Includes: nut, o-ring, liquid line, and ferrule.)

Condensate Piping

Any refrigeration coil used requires a condensate connection. An auxiliary drain pan must be installed where condensate overflow may cause damage. All condensate lines must be trapped as shown below. The drain should always be connected and piped to an acceptable disposal point. For proper moisture carry-off, the drain piping should be sloped away from the unit at least 1/8" per foot. The secondary, or "tell tale", connection must be piped to some location where an indication of drain flow restriction may be readily observed.



Water Piping

This air handler requires hot water produced from a separate source such as a boiler. Piping from the hot water source to the air handler must be installed in accordance with all local building codes.

The piping connections on the water coil are marked. Pipe the inlet water or supply connection to the side marked with an "S". Pipe the return connection to the side marked with an "R".

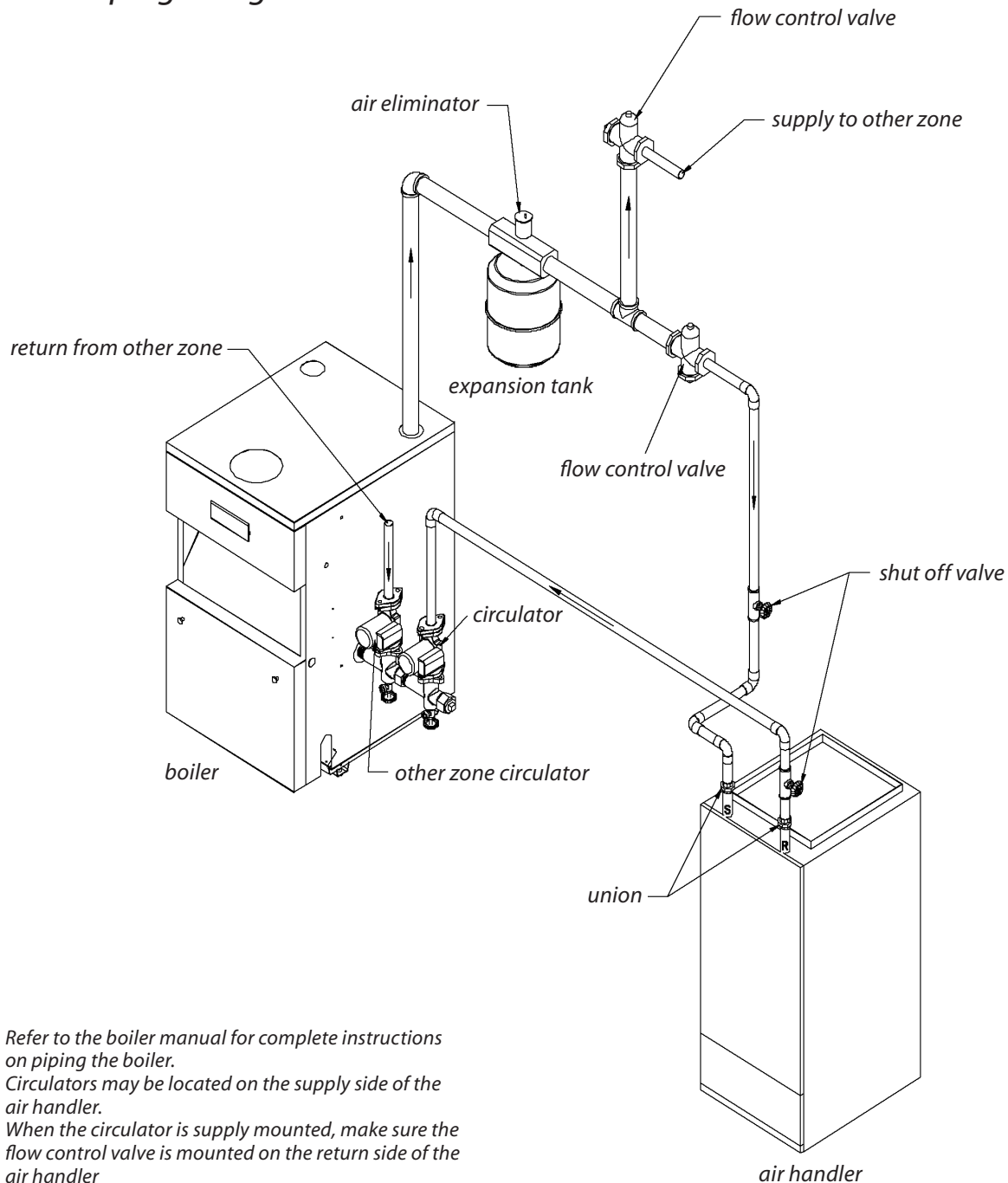
It is recommended a shut-off valve be provided on both the supply and return lines to facilitate air purging and to isolate the unit in the event repairs are required. Schrader valves are also located on both water coil headers to help purge air from the coil. All air must be purged from the system for the unit to operate properly. Do not allow water to come in contact with any of the electrical connections.

A flow control valve may be necessary under certain conditions to prevent gravity flow through the water coil unless the circulator is operating. Flow control valves are also used to prevent "ghost flows" in circulator zone systems through zones that are not calling for heat.

Insulate all piping run in an unconditioned space to prevent freezing. The water coil is protected by a freeze protection device. **Do not disable or bypass this device.**

WARNING: The following illustrations are intended to demonstrate various methods with which the air handlers may be connected to the hot water source. They are not comprehensive boiler piping instructions. For other possible boiler-side piping requirements, see the boiler manufacturer's instructions and the authority having jurisdiction.

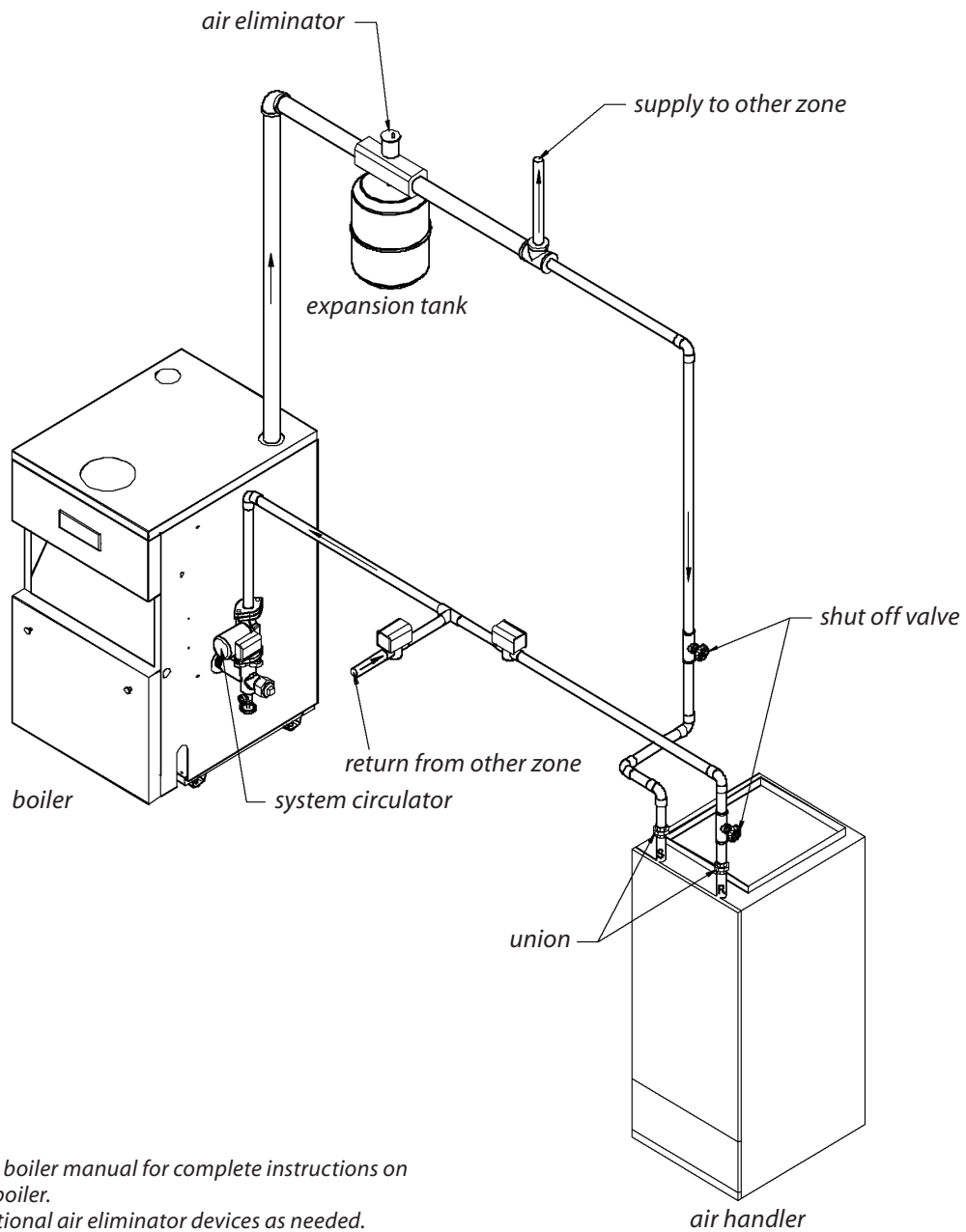
Boiler Side Piping Using Circulators



Notes

1. Refer to the boiler manual for complete instructions on piping the boiler.
2. Circulators may be located on the supply side of the air handler.
3. When the circulator is supply mounted, make sure the flow control valve is mounted on the return side of the air handler

Boiler Side Piping Using Zone Valves



Notes

1. Refer to the boiler manual for complete instructions on piping the boiler.
2. Install additional air eliminator devices as needed.

Electrical Connections

Wiring must be done in accordance with all codes. In the absence of any codes, the system must be wired in accordance with the National Electrical Code (ANSI/NFPA 70-latest edition).

Refer to the unit serial plate for the required supply voltage and minimum circuit ampacities. The unit wiring diagram shows all unit and field wiring. Unit terminals are designed to accommodate copper wiring.

Make certain the unit is properly grounded.

Class 2 low voltage control wiring must be separated from the power wiring and must not be run in the conduit used for power wiring unless Class I wire of proper voltage rating is used.

Two knockouts are located on either side for connection of power and control wiring. Since this unit is supplied with a 24 volt Class 2 transformer, a thermostat with isolating contacts must be used when connecting other add-on equipment using a Class 2 transformer.

When replacing any components such as contactors or relays, use only the exact type, size and voltage component as furnished from the factory. Any deviation without factory authorization could result in personal injury or damage to the unit and will void all manufacturer's warranties.

Any modification of the unit wiring without factory authorization will result in voidance of all manufacturer's warranties and will nullify any agency listings. The manufacturer assumes no responsibility for any damages and/or injuries resulting from improperly wired components.

Sequence of Operation

Cooling: On a call for cooling from the thermostat, the circuit between R and G makes and the fan relay coil energizes, closing a set of contacts to bring the air handler blower motor on in the cooling speed. At the same time, the circuit between R and Y makes and energizes the outdoor cooling contactor, which starts the compressor and outdoor fan motor. Built-in fan delay energizes fan 30 seconds after call for cooling.

When the thermostat has reached its set point temperature, the circuit between R and G breaks and the fan relay coil de-energizes, opening the contacts to turn the air handler blower motor off. Built-in fan delay de-energizes fan 110 seconds after cooling set point is satisfied. At the same time, the circuit between R and Y breaks and de-energizes the outdoor cooling contactor, which shuts down the compressor.

Should the evaporator coil approach freezing point, a low ambient temperature switch opens the circuit to the compressor contactor to turn off the compressor, which prevents the coil and/or liquid lines from rupturing.

Heating: On a call for heat from the thermostat, the circuit between R and W makes and the circulator relay coil energizes, closing a set of contacts to start the circulator (when wired across the terminals P1 and P2). The circulator relay coil also closes another set of dry contacts, which activates the boiler (when wired across the terminals T and TV). As hot water circulates through the water coil, a temperature switch (aquastat) senses the return water temperature and energizes the heating relay coil when the water temperature reaches at least 120°F, closing a set of contacts to turn the air handler blower motor on in the heating speed.

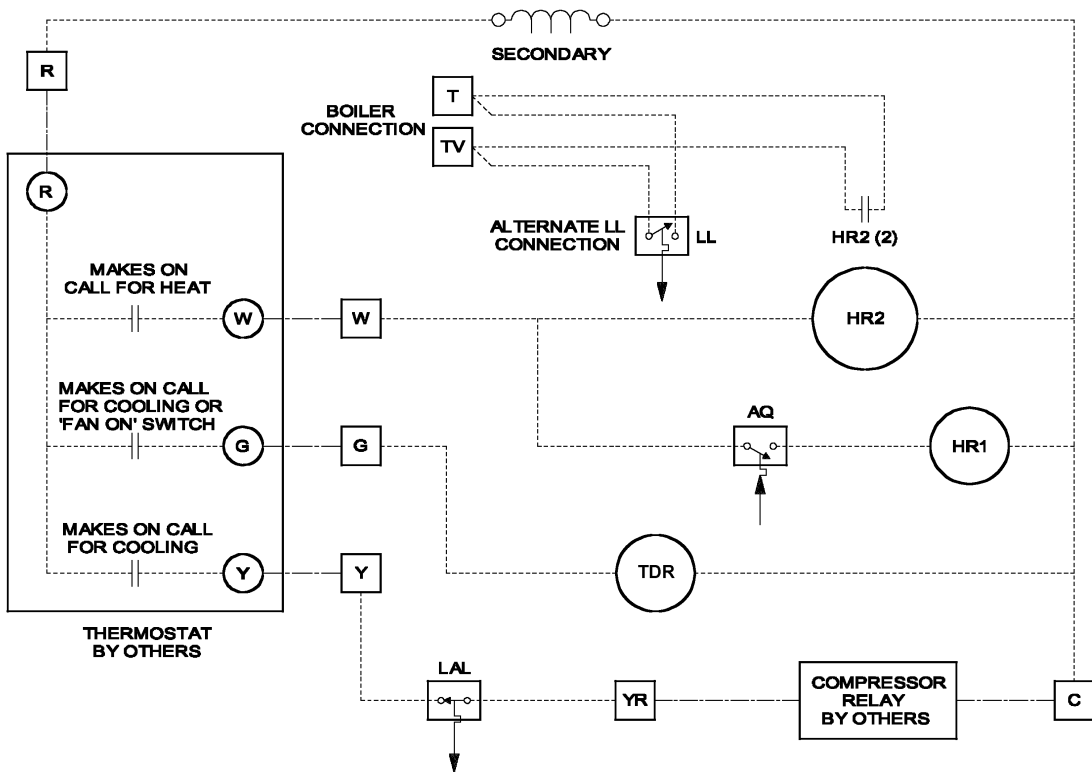
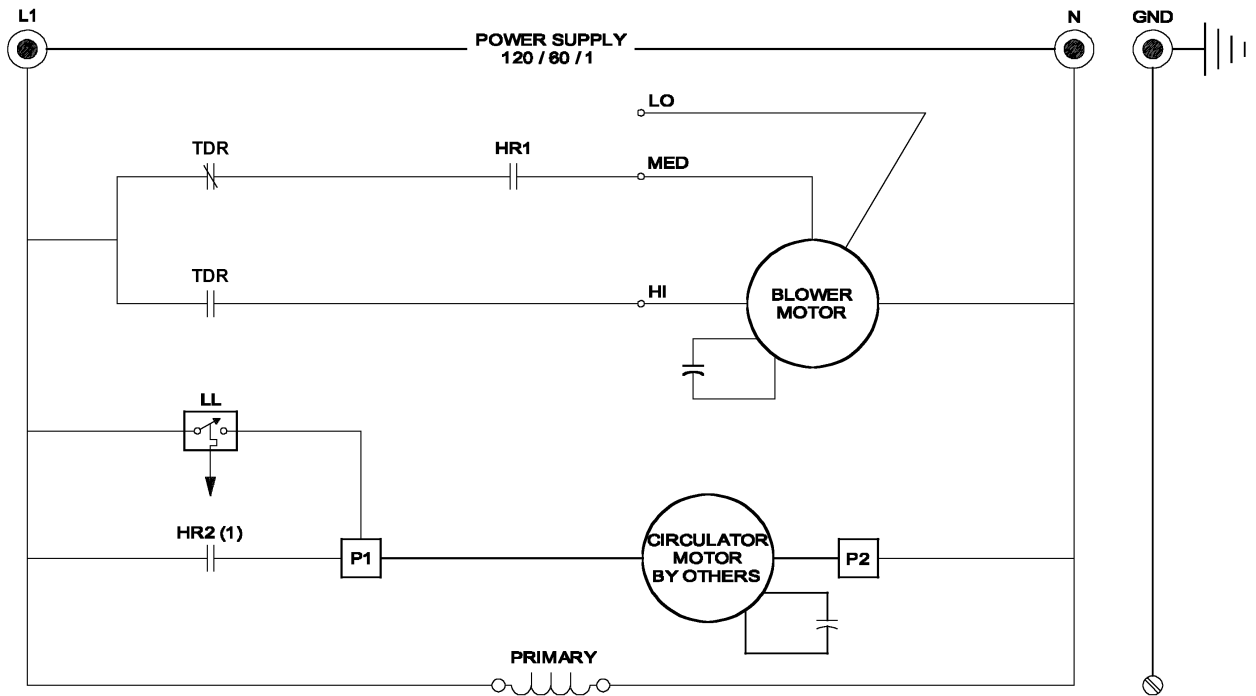
When the thermostat has reached its set point temperature, the circuit between R and W breaks, and the pump relay and heating relay coils are de-energized, opening the contacts to turn off the circulator and air handler blower motor.

This unit is also equipped with a freeze protection switch. When the unit is located in an unconditioned space, the freeze protection switch activates the circulator (when wired across the terminals P1 and P2) to move warm water through the water coil to keep it from rupturing.

Note—If the thermostat "Fan On / Auto" switch is in the "Fan On" position the blower motor will come on in the cooling speed regardless of whether the thermostat is in Cooling or Heating mode.

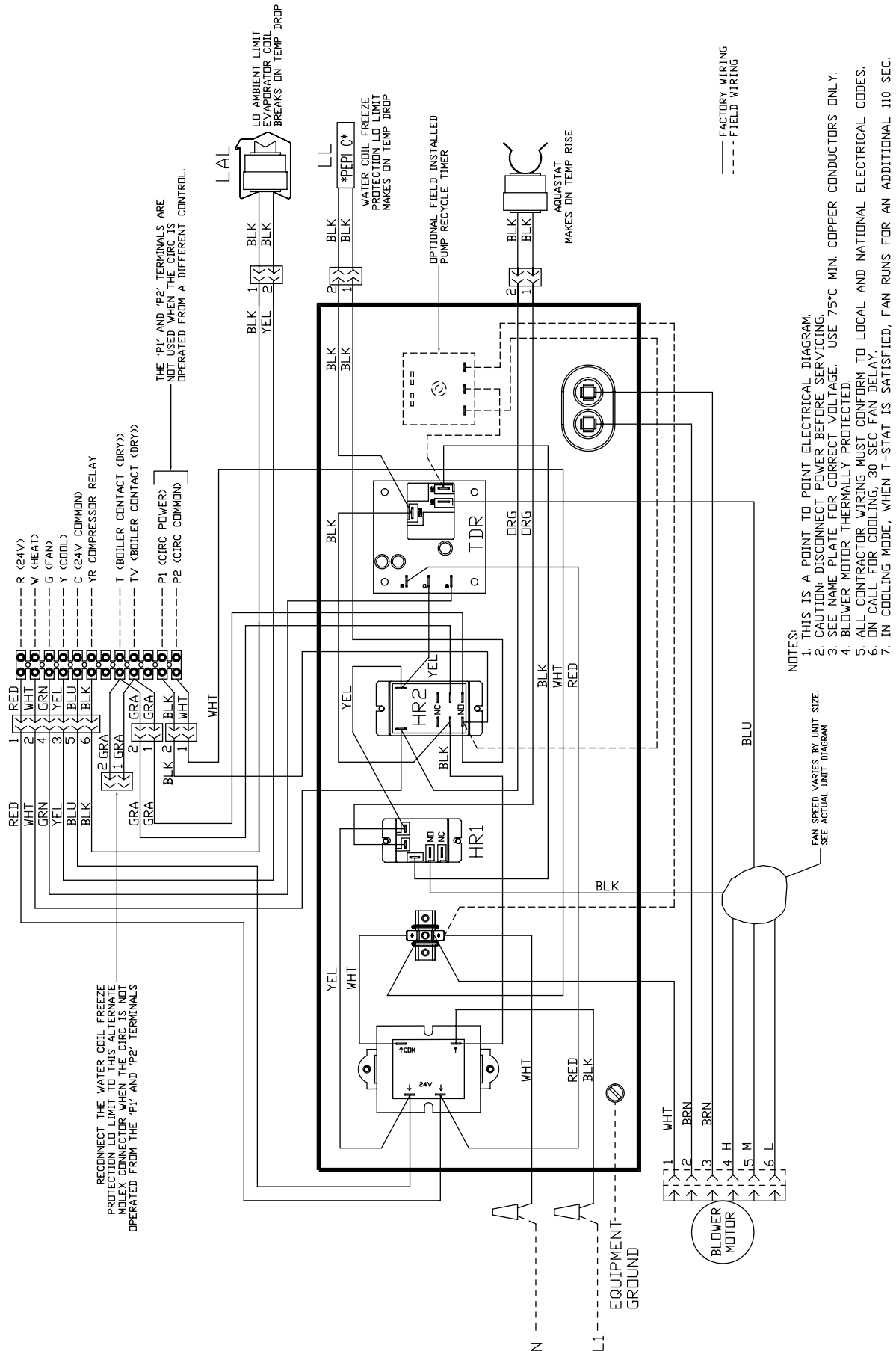
Wiring Diagrams

Ladder Diagram

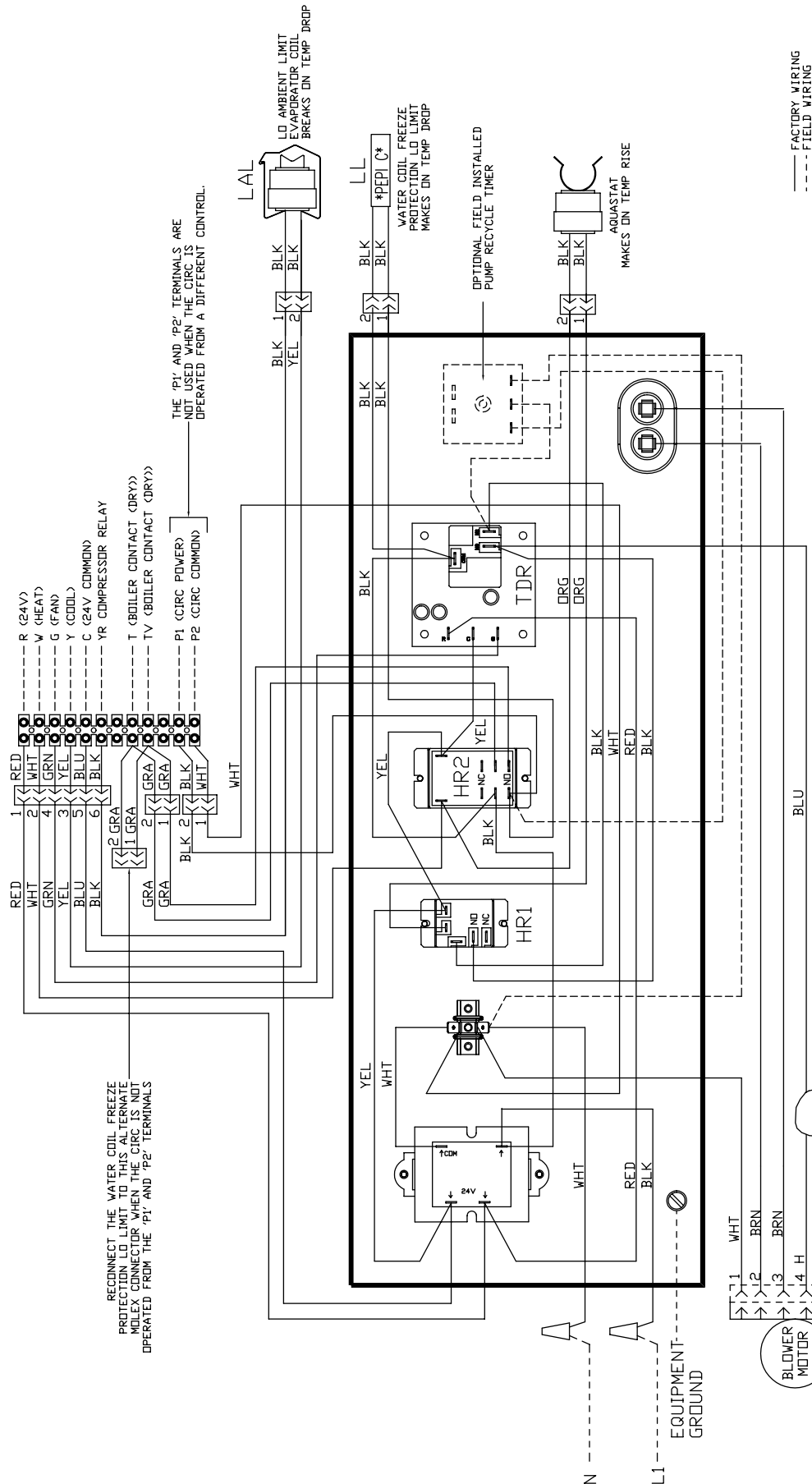


—————	120 VAC FIELD WIRING
—————	120 VAC FACTORY WIRING
-----	24 VAC FIELD WIRING
-----	24 VAC FACTORY WIRING

Internal Wiring Diagram for 2 and 3.5 Ton Units



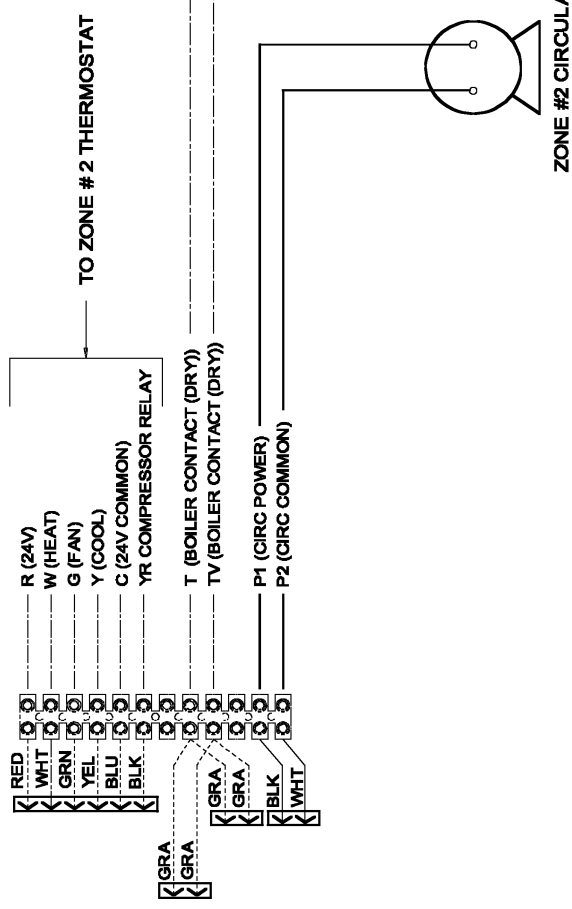
Internal Wiring Diagram for 2.5, 3.0, 4.0 and 5.0 Ton Units



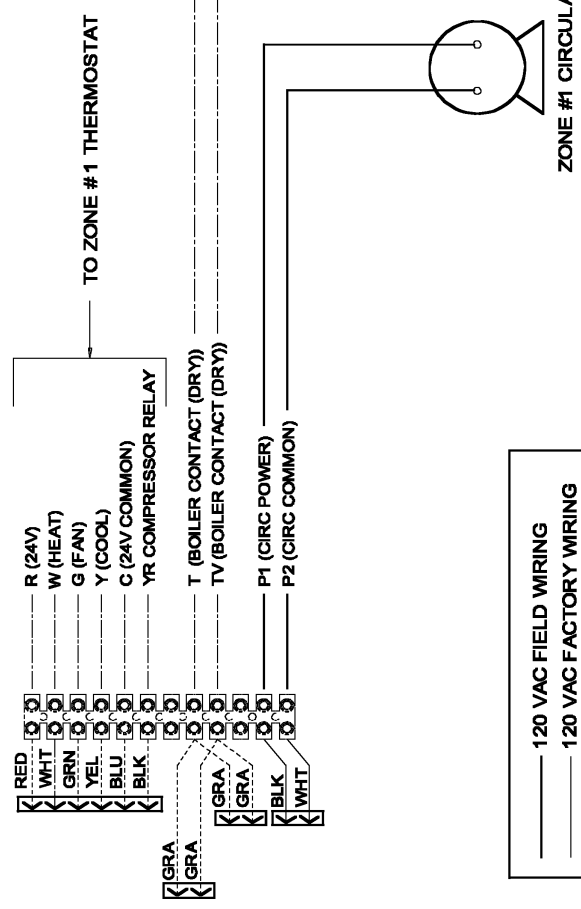
- NOTES:
1. THIS IS A POINT TO POINT ELECTRICAL DIAGRAM.
 2. CAUTION: DISCONNECT POWER BEFORE SERVICING.
 3. SEE NAME PLATE FOR CORRECT VOLTAGE. USE 75°C MIN. COPPER CONDUCTORS ONLY.
 4. BLOWER MOTOR THERMALLY PROTECTED.
 5. ALL CONTRACTOR WIRING MUST CONFORM TO LOCAL AND NATIONAL ELECTRICAL CODES.
 6. ON CALL FOR COOLING, 30 SEC FAN DELAY.
 7. IN COOLING MODE, WHEN T-STAT IS SATISFIED, FAN RUNS FOR AN ADDITIONAL 110 SEC.

Multiple Air Handler Field Wiring Using Circulator Zoning

ZONE # 2 AIR HANDLER



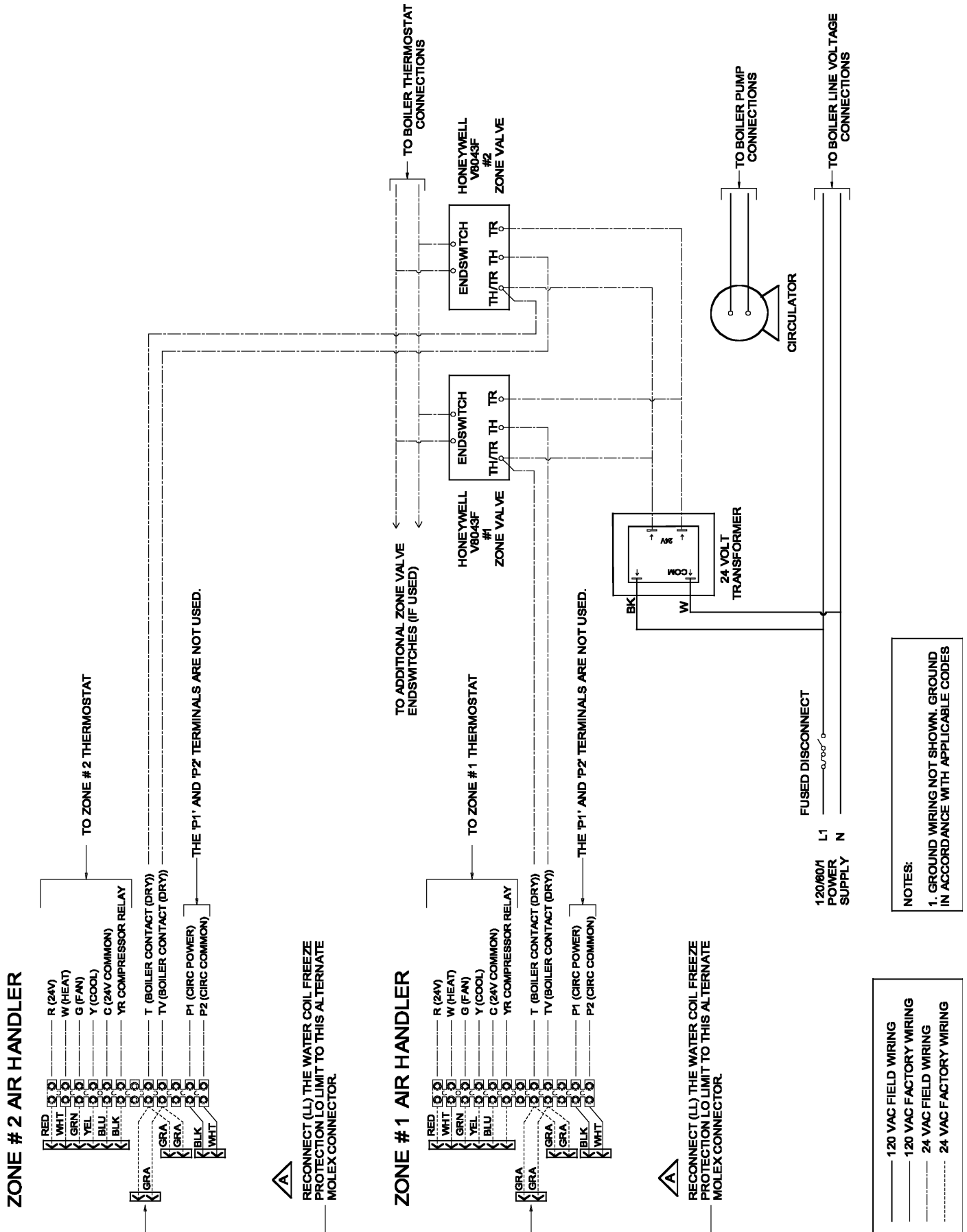
ZONE # 1 AIR HANDLER



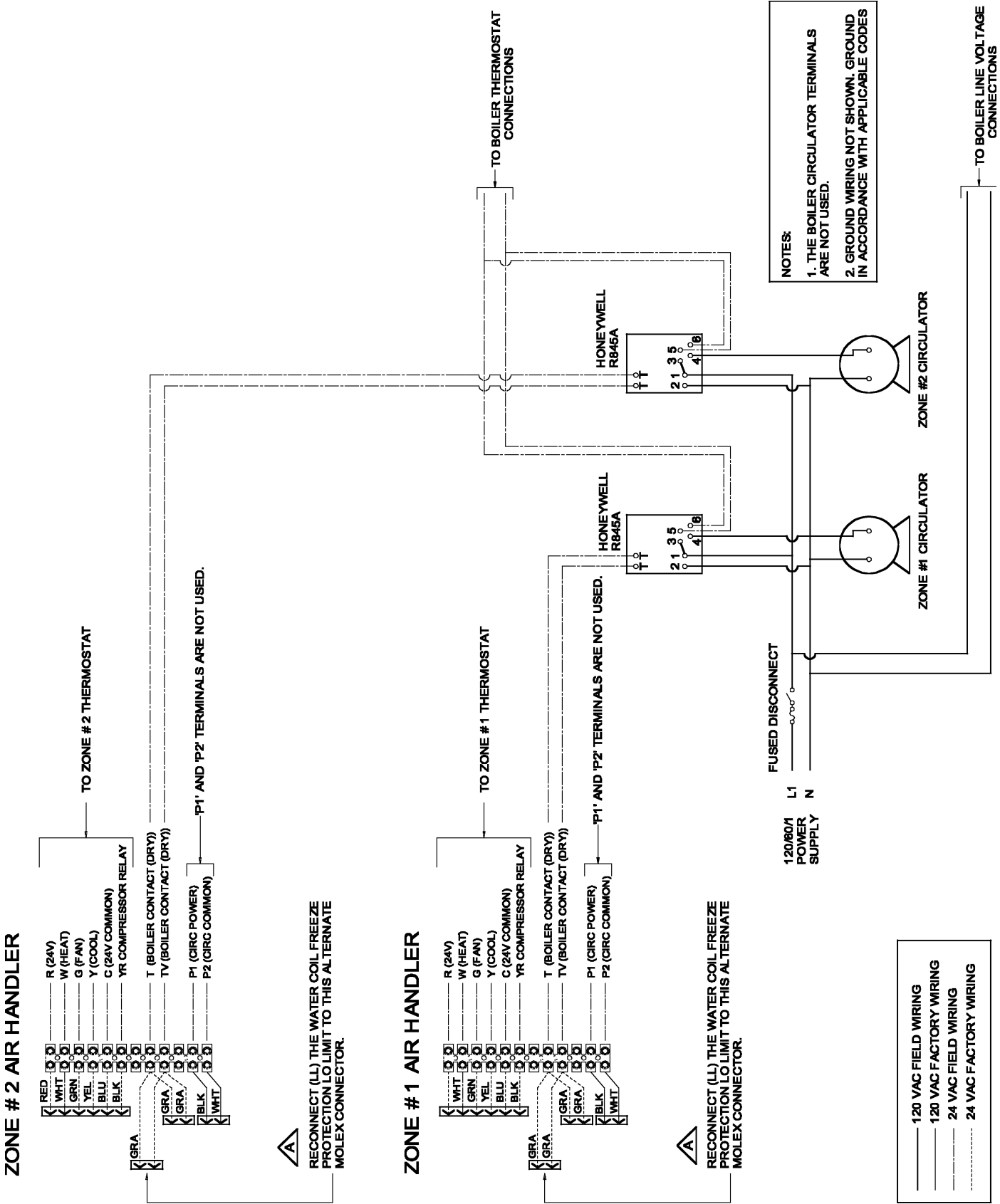
- 120 VAC FIELD WIRING
- 120 VAC FACTORY WIRING
- 24 VAC FIELD WIRING
- 24 VAC FACTORY WIRING

- NOTES:
1. THE BOILER CIRCULATOR TERMINALS ARE NOT USED.
 2. GROUND WIRING NOT SHOWN. GROUND IN ACCORDANCE WITH APPLICABLE CODES

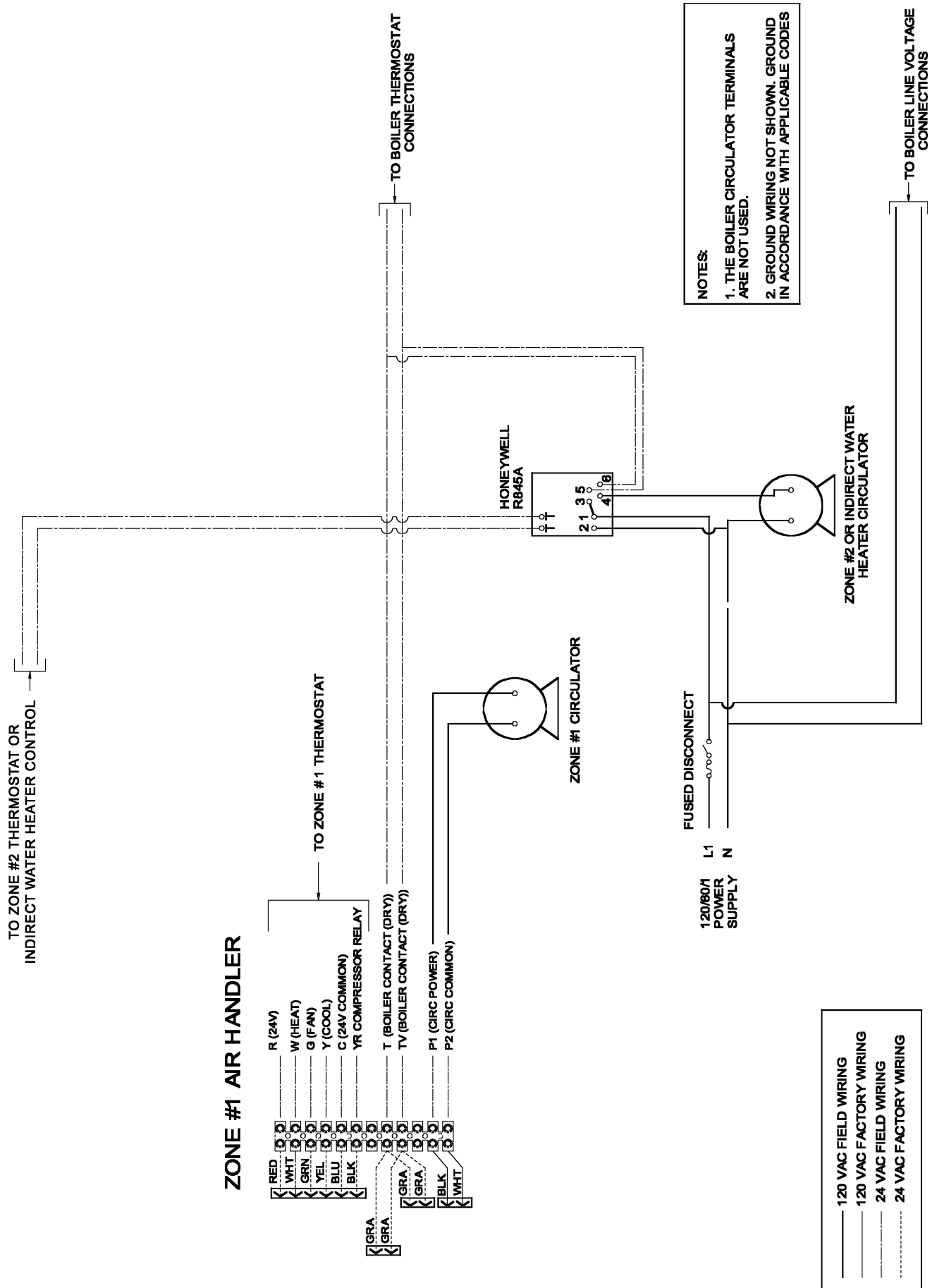
Field Wiring Using Honeywell V8043F Zone Valves



Field Wiring Using Honeywell R845A Relays for Remote-Located Circulators



Field Wiring With Other Hydronic Circulator Zoning



Start-Up

Visually inspect all equipment, plenums, ductwork and piping to verify that all systems are complete and properly installed and mounted and that no debris is left in the units or other areas.

Make sure boilers and system piping are filled with water and purged of air prior to start-up.

Except as required during start-up, the unit should only be operated with all proper ductwork attached and all access doors and panels in place and secure. Failure to do so could result in damage to the equipment or building and furnishings, and/or void all manufacturer's warranties.

Reconnect power to the unit. Verify the cooling and heating functions operate correctly and that there are no refrigerant, water or air leaks.

Operation and Maintenance

WARNING: Disconnect all incoming power before performing maintenance on this unit.

1. **Room Thermostat:** This device controls the operation of your heating and/or cooling unit by sensing the indoor temperature and signaling the equipment to start or stop maintaining the temperature you have selected. The thermostat should be in a central, draft free, inside-wall location for best operation. Do not place any heat producing apparatus such as lights, radio, etc. near the thermostat, as this will cause erratic operation of the system. The thermostat can accumulate dust and lint which can affect its accuracy and therefore, should be cleaned annually.
2. **Electrical Wiring and Controls:** This electrical connection includes circuit breakers for over current protection. Your contractor should identify the circuits and the locations of over current protection so that you may be in a position to make inspections or replacements in the event the equipment fails to operate. When replacing any components such as contactors or relays, use only the exact type, size and voltage components as furnished from the factory. Any deviation without factory authorization could result in personal injury or damage to the unit and will void all manufacturer's warranties. Repair work should be done only by qualified personnel.
3. **Air Filter:** All central air moving comfort systems must include an air filter. The air filter is located in the equipment. The air filter removes dust and debris from the air thus helping to keep your air-conditioned space clean. More importantly, it keeps dust and debris from collecting on the heat transfer surfaces thus providing optimum equipment efficiency and performance. The air filter should be replaced every month to optimize the flow of air to the fan coil and help reduce operating costs and service expense. When replacing the air filter, always replace with the same type and size as originally furnished with the unit. Never operate comfort equipment without an air filter.
4. **Coils:** Coils may be cleaned by brushing the entering air face between fins with a stiff brush. Brushing should be followed by cleaning with a vacuum cleaner. If a compressed air source is available, the coil may also be cleaned by blowing air through the coil fins from the leaving air face. This should again be followed by vacuuming. Units provided with the proper type of air filters, replaced regularly, will require less frequent coil cleaning.
5. **Drain:** The drain should be checked before initial start-up and at the beginning of each cooling season to assure that the drain trap and line are clear. If it is clogged, steps should be taken to clear the debris so that condensate will flow easily. Periodic checks of the drain should be made during the cooling season to maintain a free flowing condensate. Units are provided with a secondary, or "tell tale", drain connection that will indicate a clogged main drain line by flow from the "tell tale" connection.



6. **Motor/Blower Assembly:** Dirt and dust should not be allowed to accumulate on the blower wheel or housing. This can result in an unbalanced blower wheel condition that can damage a blower wheel or motor. The wheel and housing may be cleaned periodically using a vacuum cleaner and a brush taking care not to dislodge the factory balancing weights on the blower wheel blades. Be sure the wheel blades have stopped rotating before cleaning.
7. **Periodic Checkup and Service:** This unit will provide many years of reliable, trouble-free service when properly maintained. Have the internal components checked and cleaned annually by a qualified technician to achieve the maximum performance and service life.
8. **Replacement Parts:** Factory replacement parts should be used wherever possible to maintain the unit performance and operating characteristics and the testing agency listings. For replacement parts, call your local Crown distributor.

Heating Performance

Unit Model	Heating Nominal SCFM	Blower Motor Speed	Unit Heating BTUH Capacities @ .20" External Static Pressure (1) And Incoming Water Temperatures Of:							GPM	Pressure Drop Ft. of Water
			130°F	140°F	150°F	160°F	170°F	180°F	190°F		
SAC049B20	675	L	30,150	33,925	37,675	41,450	45,225	49,000	53,100	4	1.9
SAC059B25	845	H	36,300	40,825	45,375	49,925	54,450	59,000	63,925	4	1.9
SAC071B30	1170	H	47,825	51,800	56,100	60,750	65,800	71,250	77,175	4	2.5
SAC075B35	1270	M	50,275	54,475	59,000	63,925	69,250	75,000	81,250	4	2.5
SAC110B40	1595	L	73,750	79,900	86,550	93,750	101,550	110,000	119,150	7	2.7
SAC121B50	1910	H	81,100	87,900	95,200	103,100	111,700	121,000	131,000	7	2.7

Note

1. Ratings are based on 65°F entering air temperature at the return opening.

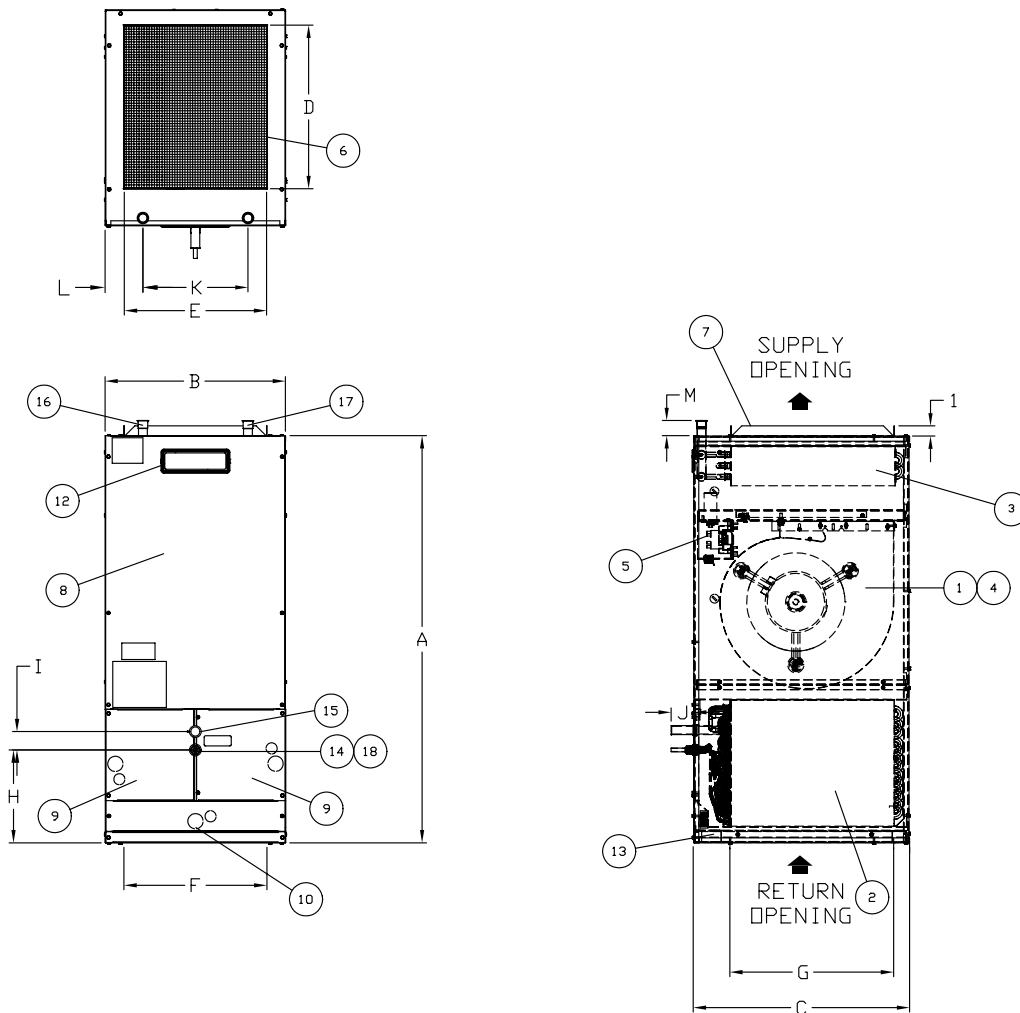
Cooling Performance

Unit Model	Airflow Tonnage Range	Motor @ 115V 1PH / 60 HZ		DD Blower Wheel	3 Speed Motor	SCFM vs External Static Pressure (2, 3)				
		HP	FLA			0.1	0.2	0.3	0.4	0.5
SAC049B20	2.0	1/3	5.9	10-3/4" x 7"	H	910	845	785	730	660
					M	845	785	730	670	595
					L	720	675	630	580	505
SAC059B25	2.5	1/3	5.9	10-3/4" x 7"	H	910	845	785	730	660
					M	845	785	730	670	595
					L	720	675	630	580	505
SAC071B30	3.0	1/3	5.9	10-3/4" x 7"	H	1215	1170	1105	1040	960
					M	1165	1100	1035	965	930
					L	1105	1040	970	895	840
SAC075B35	3.5	1/2	9.3	10-3/4" x 10"	H	1450	1375	1300	1220	1150
					M	1335	1270	1200	1125	1060
					L	1145	1090	1030	930	865
SAC110B40	4.0	0.75	10.3	11-3/4" x 10"	H	1975	1890	1815	1740	1680
					M	1845	1785	1715	1655	1590
					L	1665	1595	1535	1480	1435
SAC121B50	5.0	0.75	10.3	11-3/4" x 10"	H	1995	1910	1835	1760	1695
					M	1865	1800	1735	1670	1605
					L	1680	1610	1550	1495	1450

Notes

2. Ratings are based on units with a nominal tonnage dry coil and filter installed.
3. The SCFM correction factor for a wet coil is approximately .96.

Physical Dimensions, Weights and Features



Description

1. Motor, 3 speed, PSC, with quick connect
2. Coil 3/8-inch O.D. copper tube DX
3. Coil 1/2-inch O.D. copper tube hydronic
4. Blower housing
5. 24-volt control box assembly
6. Supply air opening(s)
7. Duct collar, 1-inch extension (typical)
8. Removable blower panel
9. Removable panels for DX coil access (2)
10. Drain knockouts (3 places)
11. Return air opening
12. Unit nameplate
13. Filter, throwaway, 1-inch
14. DX coil liquid connection
15. DX coil suction line connection
16. Hydronic coil supply connection
17. Hydronic coil return connection
18. Chatleff distributor and piston

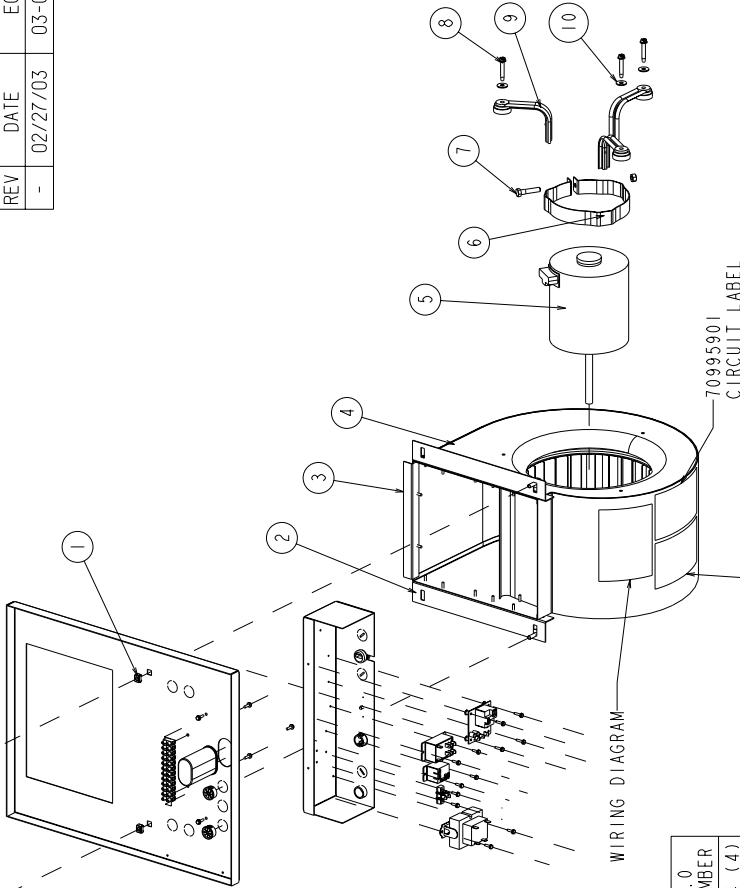
Unit Model	A	B	C	D		E		F		G		H	I	J	K	L	M	Filter Size	Weight in pounds
				Supply Air Connection	Return Air Connection	Supply Air Connection	Return Air Connection	Supply Air Connection	Return Air Connection	Supply Air Connection	Return Air Connection								
SAC049B20	39-3/4"	17-1/2"	21"	14"	16"	14"	16"	14"	16"	9-1/16"	1-7/8"	2-1/5"	10"	3-5/8"	1-1/2"	16" x 20"	135		
SAC059B25	39-3/4"	17-1/2"	21"	14"	16"	14"	16"	14"	16"	9-1/16"	1-7/8"	2-1/5"	10"	3-5/8"	1-1/2"	16" x 20"	135		
SAC071B30	49-3/4"	21-1/2"	21"	17"	19"	16"	18"	9-5/8"	1-7/8"	2-1/5"	14-1/2"	3-1/2"	1-1/4"	20" x 20"	160				
SAC075B35	49-3/4"	21-1/2"	21"	17"	19"	16"	18"	9-5/8"	1-7/8"	2-1/5"	14-1/2"	3-1/2"	1-1/4"	20" x 20"	165				
SAC110B40	52-1/2"	21-1/2"	27"	19"	22"	18"	22"	9-5/8"	1-7/8"	2-1/5"	15-5/8"	3	1-1/2"	20" x 25"	195				
SAC121B50	52-1/2"	21-1/2"	27"	19"	22"	18"	22"	8-3/4"	2-7/8"	2-1/5"	15-5/8"	3	1-1/2"	20" x 25"	200				

Notes

1. Units are fabricated of galvanized steel with a 16 gauge galvanized fan deck.
2. Unit and control box are insulated with coated glass fiber insulation.
3. Units may be installed vertically or horizontal left or horizontal right.
4. Horizontal unit installation requires the horizontal drain.

Motor/Blower Deck Assembly

REVISION HISTORY		
REV	DATE	ECN
-	02/27/03	03-0213



NOTES:

1. THIS DRAWING IS FOR ASSY REFERENCE ONLY.
2. ONLY PART NUMBERS 50016007, 08, 10 AND 50076901 ARE ASSEMBLIES

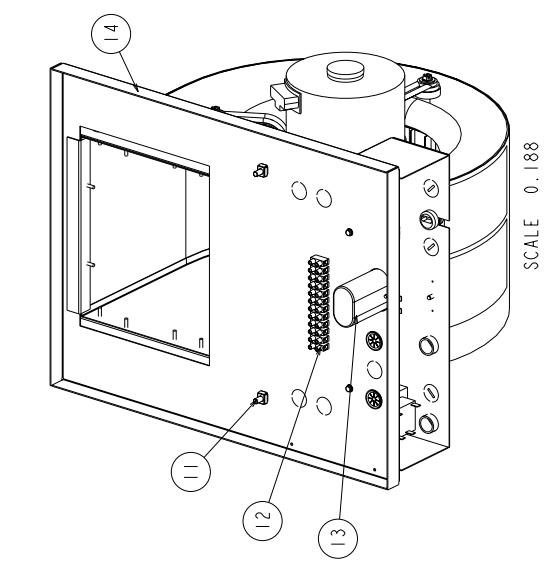
SIGNATURES	DATE
DESIGN C. BIGGS	02/27/03
APPROVED J. WASHBOURNE	02/27/03

TITLE	CLASS	REV
MTR BLWR DECK ASSY SAC	DMC-ND	-
SCALE	JOB	SIZE
0.033	-	B

UNLESS OTHERWISE SPECIFIED
TOLERANCES SHALL BE:
FRACTIONS .005
DECIMALS .015
ANGULAR ±1°

THIRD ANGLE PROJECTION

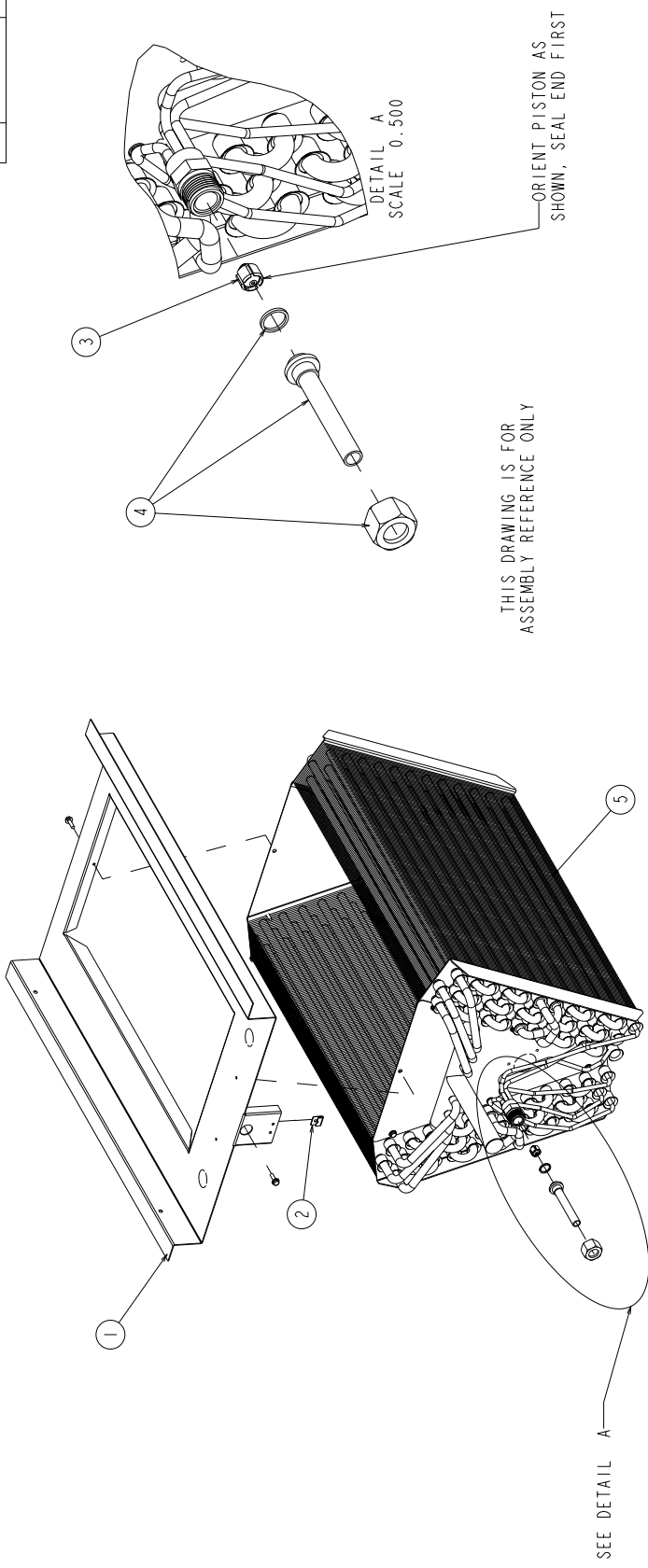
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ITEM	SAC 2.0	SAC 2.5	SAC 3.0	SAC 3.5	SAC 4.0	SAC 5.0
	PART NUMBER	PART NUMBER	PART NUMBER	PART NUMBER	PART NUMBER	PART NUMBER
1	70309904 (2)	70309904 (2)	70309904 (2)	70309904 (2)	70309904 (4)	70309904 (4)
2	50075201 (2)	50075201 (2)	50075201 (2)	50075201 (2)	50075202 (2)	50075202 (2)
3	50070502 (1)	50070502 (1)	50070502 (1)	50070501 (1)	-	-
4	50016007 (1)	50016007 (1)	50016007 (1)	50016008 (1)	50016010 (1)	50016010 (1)
5	70556337 (1)	70556337 (1)	70556337 (1)	70556390 (1)	70556391 (1)	70556391 (1)
6	50079201 (1)	50079201 (1)	50079201 (1)	50079201 (1)	50079201 (1)	50079201 (1)
7	70018220 (1)	70018220 (1)	70018220 (1)	70018220 (1)	70018220 (1)	70018220 (1)
8	70018258 (3)	70018258 (3)	70018258 (3)	70018258 (3)	70018258 (3)	70018258 (3)
9	50079301 (3)	50079301 (3)	50079301 (3)	50079302 (3)	50079302 (3)	50079302 (3)
10	70018808 (3)	70018808 (3)	70018808 (3)	50076901 (3)	70018808 (3)	70018808 (3)
11	70018207 (2)	70018207 (2)	70018207 (2)	70018207 (2)	70018207 (4)	70018207 (4)
12	70015416 (1)	70015416 (1)	70015416 (1)	70015416 (1)	70015416 (1)	70015416 (1)
13	70005306 (1)	70005306 (1)	70005306 (1)	70005301 (1)	70005312 (1)	70005312 (1)
14	50064701 (1)	50064701 (1)	50064702 (1)	50064703 (1)	50064705 (1)	50064705 (1)

DX Coil/Baffle Assembly

REVISION HISTORY		
REV	DATE	ECN
-	02/27/03	03-0213



NOTES:
 1. THIS DRAWING IS FOR ASSY REFERENCE ONLY.
 2. ONLY PART NUMBERS 50063101 THROUGH 06 AND 50081401 ARE ASSEMBLIES.

SIGNATURES	DATE	TITLE	CLASS	SCALE	REV
DESIGNED C. BIGGS	02/27/03	DX COIL/BFFLE ASY SAC	306	0.083	-
APPROVED J. WASHBOURNE	02/27/03				B
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ITEM	SAC 2.0 PART NUMBER	SAC 2.5 PART NUMBER	SAC 3.0 PART NUMBER	SAC 3.5 PART NUMBER	SAC 4.0 PART NUMBER	SAC 5.0 PART NUMBER
1	50063901 (1)	50063901 (1)	50063902 (1)	50063902 (1)	50063903 (1)	50063903 (1)
2	70562401 (1)	70562401 (1)	70562401 (1)	70562401 (1)	70562401 (1)	70562401 (1)
3	71337001 (1)	71337002 (1)	71337003 (1)	71337004 (1)	71337005 (1)	71337006 (1)
4	50081401 (1)	50081401 (1)	50081401 (1)	50081401 (1)	50081401 (1)	50081401 (1)
5	50063101 (1)	50063102 (1)	50063103 (1)	50063104 (1)	50063105 (1)	50063106 (1)

Control Box Assembly

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	50012001	TRNSFRMR CLS2 120-24V 40VA HBC
2	1	50064201	CNTRL BOX DVA 2.0-5.0 TON
3	1	50078901	RELAY BOARD DVA FAN DELAY
4	1	50080201	TERMINAL BLOCK W/4 ODISC
5	1	70016926	BUSHING STRAIN RELIEF
6	2	70016959	BUSHING UNIVERSAL UB-875 SLIP
7	4	70018914	SCREW SH MET TYPE B 6 X 5/8
8	8	70018919	SCREW SH MET TYPE B 8 X 1/2
9	1	70020202	SCREW GROUND 10-32 X 1/2
10	1	70020203	WASHER GROUND CUPPED BRASS
11	1	70665401	RELAY 24V SPDT
12	1	70665406	RELAY 24V DPDT
13	1	71346205	HARNSS 1B (2.0-5.0 TON)
14	1	71346206	HARNSS 2B (2.0 & 3.5 TON)
15	1	71346207	HARNSS 3B (2.5, 3.0, 4.0 & 5.0 TON)
16	1	70005306	CAPACITOR 100370 VAC (2.0-3.0 TON)
17	1	70005301	CAPACITOR 50370 VAC (3.5 TON)
18	1	70005312	CAPACITOR 150370 VAC (4.0 & 5.0 TON)
19	1	70015416	I2 POSITION TERMINAL BLOCK
20	1	70016920	STRAIN RELIEF (2119)
21	1	50081801	HEATING AQUASTAT ASSY
22	1	50081901	HYDRONIC FREEZE SENSOR ASSY
23	1	50082002	DX FREEZE SENSOR ASSY

* ELECTRICAL COMPONENTS LISTED, BUT NOT SHOWN.

REV	DATE	ECN
-	02/28/03	03-0213

SIGNATURES	DATE	TITLE
DESIGNED C. BIGGS	02/28/03	CTRL BOX ASSY SAC
APPROVED J. WASHBOURNE	02/28/03	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE NOMINATIVE	CLASS	REV
X .0005 Y .0005 Z .0005 ANGULAR .1°	DWG. NO 599	-
THIRD ANGLE PROJECTION	SCALE 0.600	SHEET 1 OF 1
	JOB	SIZE B

CROWN
Boiler Co.

Manufacturer of Hydronic Heating Products
P.O. Box 14818 3633 I. Street
Philadelphia, PA 19134