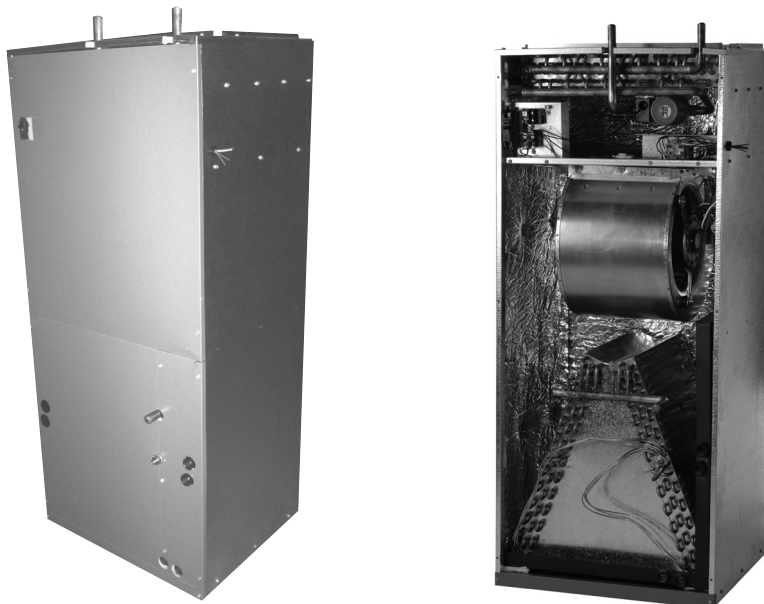



HEAT CONTROLLER


INSTALLATION, OPERATION & MAINTENANCE MANUAL


Multi-Position Air Handler with Hyrdonic Heat with X13 Motor HWCGxxX0A





Safety Instruction


Potential safety hazards are alerted using  symbol. The symbol is used in conjunction with terms that indicate the intensity of the hazard.


 **WARNING** This symbol indicates a potentially hazardous situation which if not avoided, **could** result in serious injury, property damage, product damage or death.


 **CAUTION** This symbol indicates a potentially hazardous situation which if not avoided, **may** result in moderate injury or property damage.


 **WARNING** Certified technicians or those individuals meeting the requirements specified by NATE may use this information. Property and product damage or personal injury hazard may occur without such background.


 **WARNING** All power sources should be disconnected prior to servicing. Failure to do so may cause personal injury or property damage.

 **WARNING** Product designed and manufactured to permit installation in accordance with local and national building codes. It is the installer's responsibility to ensure that product is installed in strict compliance with national and local codes. Manufacturer takes no responsibility for damage (personal, product or property) caused due to installations violating regulations. In absence of local/state codes, refer to **National Electric Code: NFPA 90A & 90B Uniform Mechanical Code (CEC or CSA for Canadian Installation)**.

 **WARNING** When this unit is installed in an enclosed area, such as a garage or utility room with any Carbon Monoxide producing devices (i.e. automobile, space heater, water heater etc.) ensure that the enclosed area is properly ventilated.

 **CAUTION** Only factory authorized kits and accessories should be used when installing or modifying this unit unless it is so noted in these instructions. Some localities may require a licensed installer/service personnel.

 **WARNING** Unit is not approved for outdoor installations.

 **WARNING** The unit is designed for operation with 108/120 V, single phase, 60 Hz power supply. manufacturer will not be responsible for damages caused due to modification of the unit to operate with alternative power sources.

Inspection

On receiving the product, visually inspect it for any major shipping related damages. Shipping damages are the carrier's responsibility. Inspect the product labels to verify that the model number and options are in accordance with your order. Manufacturer will not accept damage claims for incorrectly shipped product.

Installation Preparation

Read all the instructions in this guideline carefully while paying special attention to the WARNING and CAUTION alerts. If any of the instructions are unclear; clarify with certified technicians. Gather all the tools needed for successful installation of the unit prior to beginning the installation.

This unit is designed for zero clearance installation on three sides and adequate clearance to provide access for service in the front. A min of 2.5 – 3.5 feet clearance is recommended on the front end.

If the unit is to be installed in garages, warehouses or other areas where they may be subjected to physical damage, adequate protective barriers must be installed. Unit **MUST** be installed 18" away from source of ignition.

If the unit is located in high humidity areas like attics or unconditioned garage; the air handler casing might experience nuisance sweating. In such installation scenarios, wrapping the casing with a 2" fiberglass insulation with vapor barrier **SHOULD** be used.

The drain lines must be installed with 1/4" per foot pitch to provide free drainage. A condensate trap **MUST** be installed on the primary drain line to ensure proper drainage of the condensate. The trap must be installed in the drain line below the bottom of the drain pan. Figure 1 illustrates the typical drain trap installation

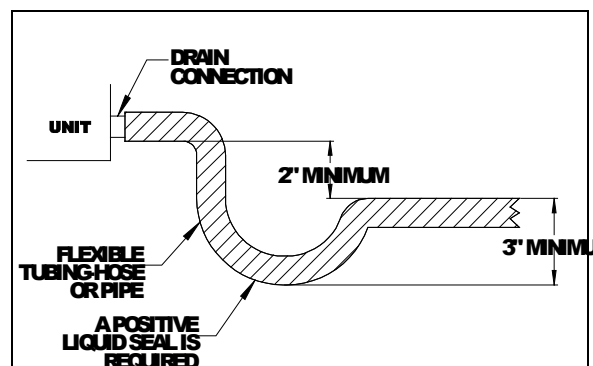


Figure.1. Typical drain line trap set up

Ductwork

Duct systems should be installed in accordance with standards for air-conditioning systems, National Fire Protection Association Pamphlet No. 90A or 90B. They should be sized in accordance with National Environmental System Contractors Association Manual K, or whichever is applicable.

On any job, non-flammable flexible collars should be used for the return air and discharge connections to prevent transmission of vibration. Although these units have been specially designed for quiet vibration-free operation, air ducts can act as soundboards can, if poorly installed, amplify the slightest vibration to the annoyance level.

All main supply and return air drops should be properly sized as determined by the designer of the duct system and should not necessarily be the size of the duct flange openings of the unit.

When installing a central air return grille in or near the living space, it is advisable to design the ductwork so that the grille is not in direct line with the opening in the unit. One or two elbows and acoustical duct liner will also assure a quieter installation and system.

It is recommended that wherever supply and return air sheet metal ducts pass through unconditioned areas, they be insulated to prevent excessive heat loss during heating operation. When applied in conjunction with summer air conditioning, sheet metal duct routed through unconditioned areas should be insulated and have an outside vapor barrier to prevent formation of condensation.

Installation

CAUTION

Ensure that the unit is adequately sized. The tonnage of the outdoor unit should never exceed the tonnage of this unit.

WARNING

The coil was manufactured with a dry nitrogen pre-charge. Release the pressure through the Schrader valve test port prior to installation. If holding pressure is not present, return coil to distributor for exchange.

Clean coil fins with degreasing agent or mild detergent and rinse fins clean prior to installation.

All connection joints should be burr-free and clean. Not removing the burr and cleaning may increase the chance of a leak. It is recommended to use a pipe cutter to remove any spun closed ends.

To avoid damage to grommets (where present), remove these prior to brazing by sliding over the lines. Use a quenching cloth or allow the lines to cool before reinstalling the grommets.

WARNING

Prior to connecting the water (hydronic) coil, make sure that the hot water supply is turned off. Water from the heater could be extremely hot and may result in burns and other personal injury along with equipment damage. Ensure that proper safety gear is being used prior to making connections.

CAUTION

Only lead free solder should be used to connect water (hydronic) coil to the hot water source.

CAUTION

Some coils may include a Schrader valve on the suction manifold. Ensure that the Schrader valve and valve core (where present) are protected from heat to prevent leakage.

Metering Device

Coils use a TXV metering device. Instructions below are for the metering device. Ensure that the instructions are thoroughly read and understood.

TXV Coils:

WARNING

The sensing bulb and TXV body MUST be protected from overheating during brazing. The sensing bulb and TXV body must be covered using a quench cloth or wet cloth when brazing. Pointing the brazing flame away from the valve and sensing bulb provide partial protection only.

CAUTION

Ensure that the TXV selected is compatible with the refrigerant used in the outdoor system (R22 or R410A). TXV caps are painted green for R22 or pink for R410A. In absence of color, the caps will be marked with the compatible refrigerant.

CAUTION

The valves should be sized according to the capacity of the outdoor unit. Failure to install the right valve can lead to poor performance and possible compressor damage.

TXV Bulb Mounting

The orientation and location of the TXV bulb has a major influence on the system performance.

CAUTION

Ensure that the TXV bulb is in direct contact with the suction/vapor line. Gaps between the bulb and tube should be avoided. Failure to eliminate gaps will impair the proper functioning of the valve.

It is recommended that the TXV bulb be installed parallel to the ground (in a horizontal plane). The bulb position should be above and between 4 o'clock and 8 o'clock.

Fig. 2 shows the recommended position for the TXV bulb installation in the horizontal plane.

The TXV sensing bulb **SHOULD** be mounted using the metal clamp provided. In order to obtain a good temperature reading and correct superheat control, the TXV sensing bulb must conform to ALL of the following criteria:

- 1) The sensing bulb must be in direct and continuous contact with the suction line
- 2) The sensing bulb should be mounted horizontally on the suction line.
- 3) The sensing bulb must be mounted above and between the 4 and 8 o'clock position on the circumference of the suction line.
- 4) The sensing bulb must be insulated from outside air.

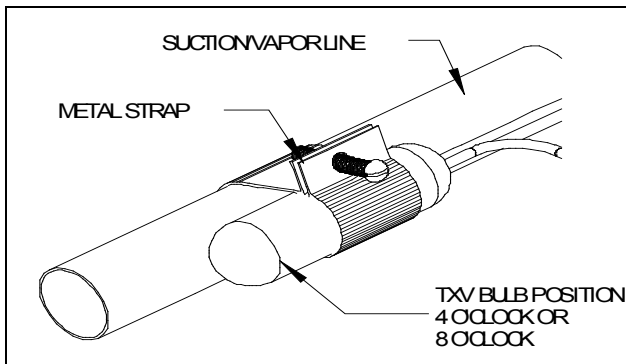


Fig.2. Recommended location of the TXV bulb in a horizontal orientation

The mounting location and insulation guards the sensing bulb from false reading due to hot outside air or liquid refrigerant formed inside the suction/vapor line.

As recommended earlier, the TXV sensing bulb should be mounted in a horizontal plane in relation to the suction/vapor line. However, in case such a mounting is not feasible and the sensing bulb has to be mounted vertically; then place the bulb as shown in Fig.3.

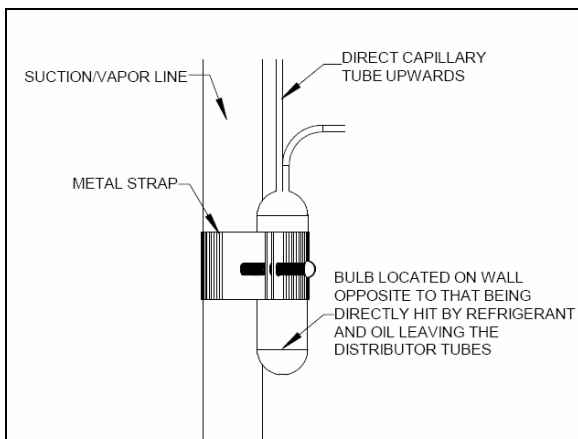


Fig.3. Sensing bulb mounted in a vertical orientation

⚠ CAUTION

If the TXV sensing bulb is mounted vertically; the capillary **MUST** be directed upwards. The bulb must be mounted on the wall opposite to that being directly hit by the refrigerant and oil leaving the distributor tubes.

Field – Installed Expansion Valve Coils

Remove the valve identification sticker from the valve and place it adjacent to the model number on unit name plate.

When installing an expansion valve, it is not necessary to remove all the access panels and slide the coil out of the housing.

- 1) Disassemble the flowrator body using two wrenches. Unscrew the body with a counter-clockwise motion.
- 2) Replace the white Teflon seal in place (located between the halves).
- 3) Remove the existing flowrator piston using a small wire or pick.
- 4) Inspect the TXV box to confirm that the valve is compatible with the refrigerant in the system.
- 5) Remove the valve from the box and note the location of the inlet side (threaded male port) and the outlet side (female swivel nut port).
- 6) After ensuring that the white Teflon seal is still in place inside the flowrator body, screw the female swivel nut onto the flowrator body.
- 7) Place the attachment nut on the liquid line.
- 8) Braze the stub-out portion to the liquid line and let cool.

⚠ WARNING

Do not attempt to touch the braze joint while hot. Touching it may cause severe burns.

- 9) Remove the additional white Teflon seal ring from the box and place on the shoulder just inside the inlet port. Screw the nut attached to the stub-out portion of the flowrator body onto the inlet port of the TXV.
- 10) Tighten all connections taking care to use proper back up.

Some coils come with a Schrader valve on the suction line. If a Schrader port is present

- 11) Remove valve stem from the Schrader port mounted on the suction line
- 12) Screw flare nut on TXV equalization tube in to the Schrader valve stem

Coils without Schrader Ports

- 11) Locate a convenient spot on the suction line and punch a 1/4" hole with a pick or other suitable tool.

CAUTION Do **NOT** drill a hole as chips will enter suction manifold.

- 12) Insert TXV equalizer tube approximately 3/8" into the hole and apply solder to seal.

Fig.4 shows the components of a typical TXV assembly

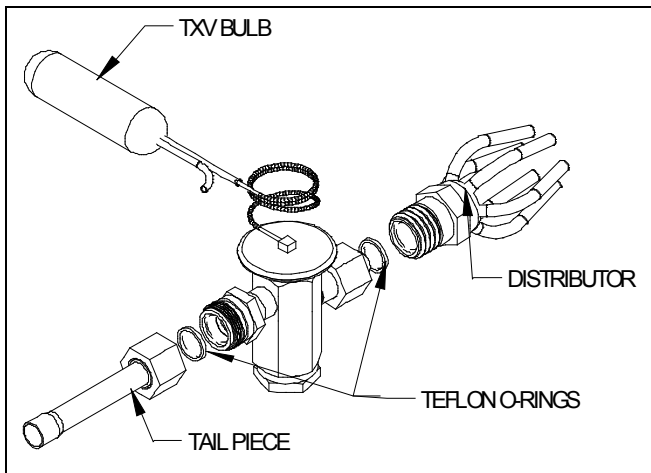


Fig.4. Components of a typical TXV assembly

CAUTION Using a non-bleed expansion valve may require the use of a hard-start kit. Follow the outdoor unit manufacturer's guidelines.

Air handler orientation

This unit can be installed in vertical or right horizontal position without modifications. In case of a counterflow application, the horizontal drain pan **MUST** be removed. Fig. 5 shows the various orientations this air handler can be installed in.

CAUTION When the unit is used in an horizontal orientation; an auxiliary drain pan **MUST** be provided by the installer and placed under the entire unit with a separate drain line that is properly sloped and terminated in an area visible to the home owner. The auxiliary pans provide extra protection to the area under the unit should the primary and secondary drain plug up and overflow. As expressed in our product warranty; **failure to follow this installation requirement will void the product warranty**. The drains from the auxiliary drain pan must be installed according to the local building codes.

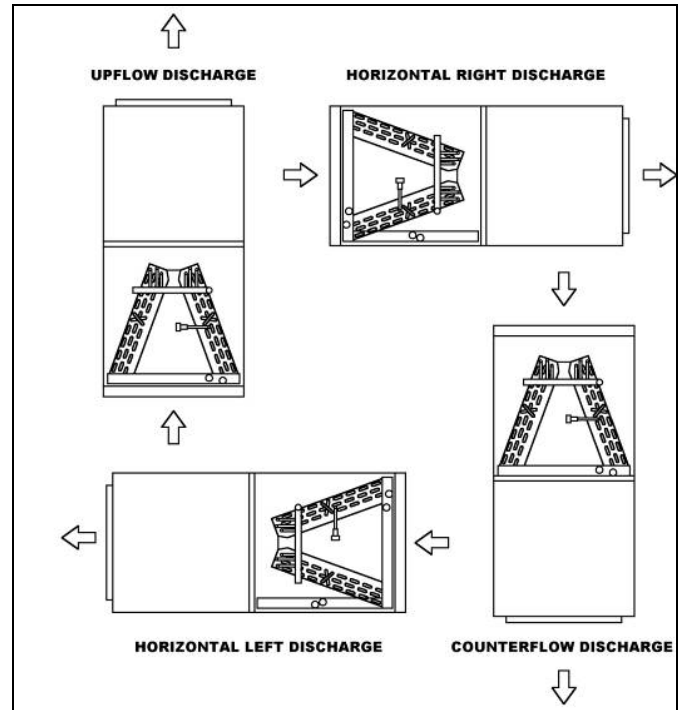


Fig.5. Various airflow orientation

Horizontal Left-hand Installation

- With Air Handler in vertical position remove all access panels.
- Remove horizontal drain pan from right hand side. Disconnect any drain connections.
- Relocate the removed horizontal drain pan on to the left side and reconnect the drain connections.
- "P" traps must be installed on primary and secondary drains of the horizontal drain pan.
- Reinstall all access panels to the unit.

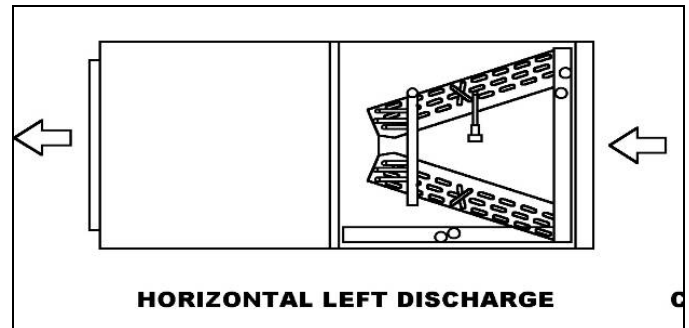


Fig.6. Air flow direction in Horizontal Left application

Counter Flow Installation

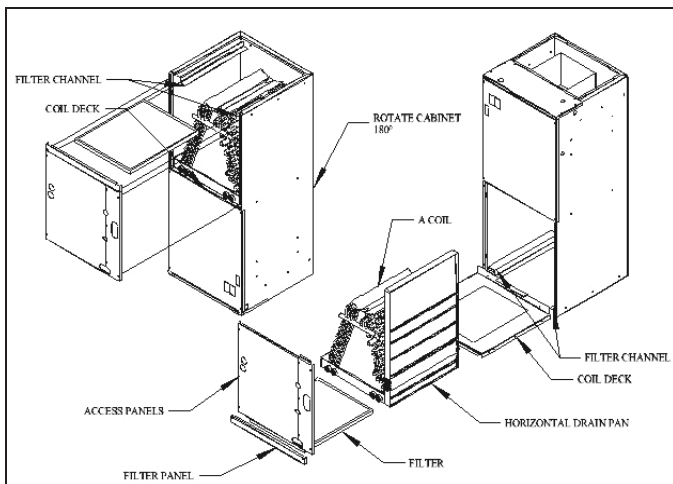


Fig.7. Air Handler parts and changes for Counter flow

- Before positioning the Air Handler in the counter flow position, remove lower access panels, filter panel and filter.
- Remove the A-Coil assembly with the horizontal drain pan; discard the horizontal drain pan (not required for counter flow application).
- Rotate the Air Handler 180° to the counter flow position.
- Remove the coil deck and filter channel, rotate the filter channels 180° and re-attach in the same location they were removed from.
- Rotate the coil deck 180° and re-attach in the holes near the center of the cabinet (screws not provided).
- Slide the A-coil assembly into the cabinet on the coil deck (without the horizontal drain pan). Note: Push the coil pan assembly all the way to the rear of the cabinet until it locks under the bracket in the rear.
- Place the 3" x 16" counter flow plates at the outside bottom of the coil as shown in FIG. 8.
- Replace the access panels and filter panel.

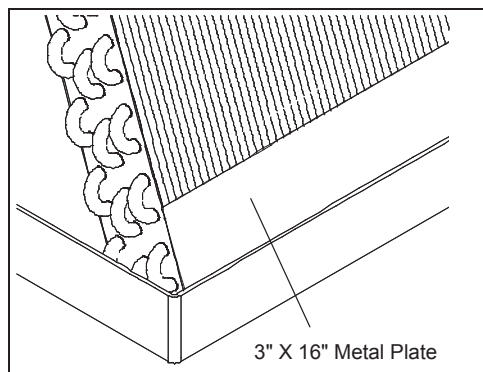


Fig.8. Position of plates required in counter flow

Electrical Installation

These units are designed for single or three phase 120 volts, 60 Hz power supply. Wire selection and wiring must be in accordance with the National Electric Code (or CEC for Canadian Installations) and/or local codes. Unit terminals are designed to accommodate copper and aluminum wirings. If aluminum wiring is used; please observe special precautions relative to sizing, wire connections and corrosion protection.

Fig.9 shows the typical electrical connections required for A/C only and heat pump applications.

The unit ships with a micro-processor based board which controls the electrical functioning of the unit. An inspection of the controls is recommended prior to start up of the unit.

Fig.10 provides a schematic of the control board present in the unit. The units ship from the factory with the aquastat jumper in the OFF position (right two pins) and the heating selector in the HW position (right two pins). If an aquastat is used in the application; the jumper should be changed to ON position (left two pins).

Note: Terminals T and N located on the top right side of the board are not intended for field use and should be left un-connected.



CAUTION

The aquastat (AQ) jumper must be in the OFF position at all times; except when an aquastat is used. If the jumper is moved to the ON position without installing an aquastat the blower will not be energized.

When an aquastat is present, the blower will be energized at the aquastat temperature settings.

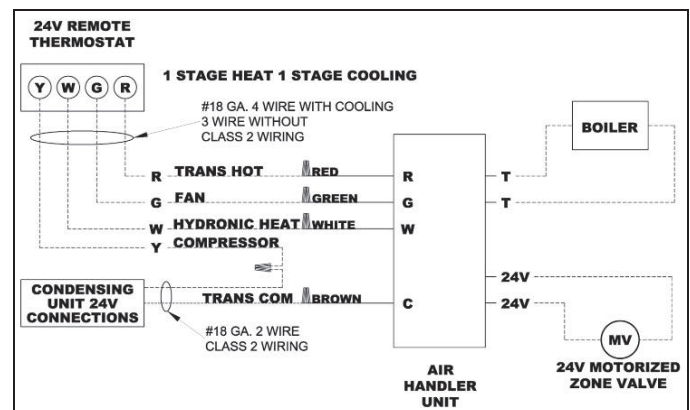


Fig 9. Electric connections



CAUTION

This model is shipped without factory a installed pump, therefore the two black wires should be connected to the boiler terminals T T. In applications where a boiler provides the hot water

supply, these wires should be connected to the boiler. Terminals T T are normally open dry contacts.

In applications where a valve is used to regulate hot water supply, the two black wires located on the T T terminals should be removed and placed on the two terminals reading "VALVE". The open ends of the wires should be connected to the valve according to local requirements and instructions of the valve manufacturer. On call for heat, 24V will be sent to the field installed valve or pump relay.

On call for heat water will circulate through the water (hydronic) coil for 60 secs prior to energizing the blower. After the thermostat is satisfied, the blower will continue to stay energized for a minimum of 30 secs. This helps maximize heating efficiency.

The freeze protection sensor is connected to the FP and R terminals. These are normally open and will close when the sensor sees 40°F. The pump stays ON for a minimum of 30 secs.

The board has a built-in timer which circulates hot water 6 times a day for 60 secs each time to prevent the coil from freezing.

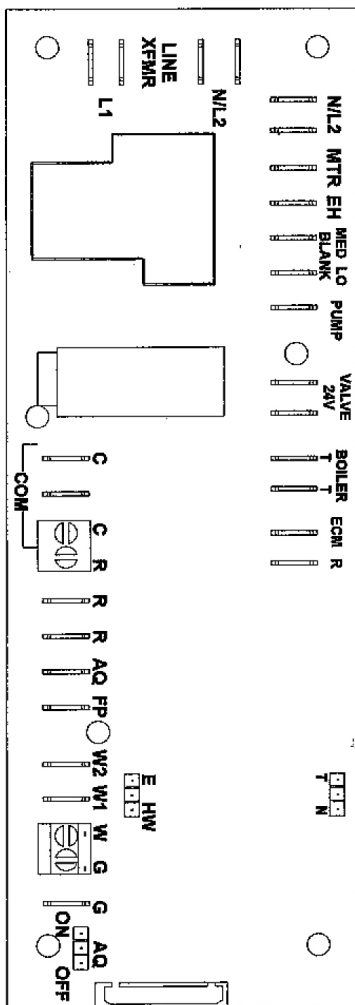


Fig.10. Micro-processor control board

Start up

Ensure motor is pre-loaded with program from factory.

⚠ WARNING

The hot water (hydronic) coil and all water lines **MUST** be purged of air prior to starting the pump. Failure to do so could result in pump damage. Manufacturer will not be responsible for any property damage or physical injury caused by failure to follow this instruction.

⚠ WARNING

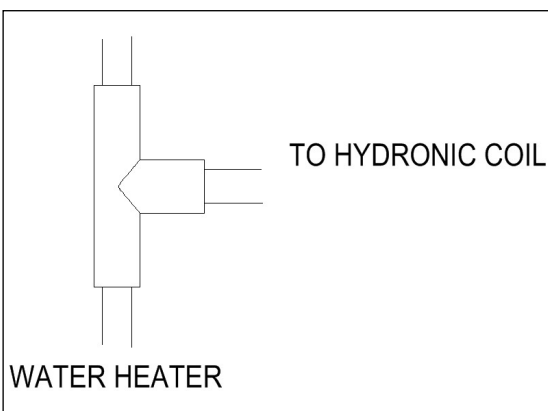
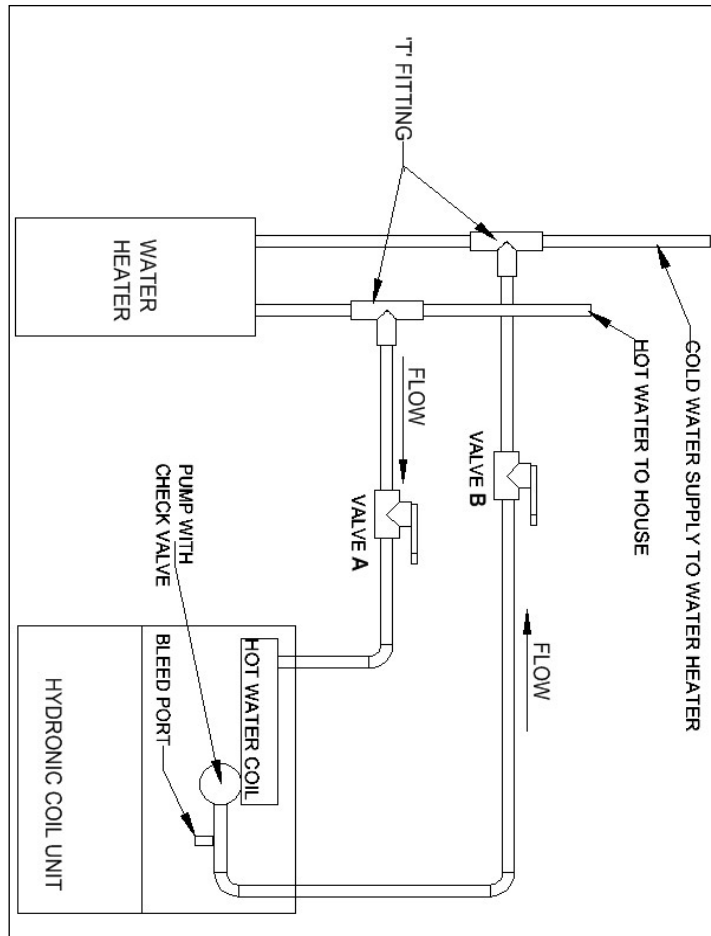
Hot water flowing to the coil should be in the range of 120° - 180° F. Water at these temperatures can cause first-degree burns. Use of proper safety gear while installing or servicing the equipment is strongly recommended as is installation of a water-tempering valve (for water temperatures of above 140°F) to supply lower temperature water to fixtures in the house. N170L series or equivalent should be used.

Connect the hydronic coil to the water heater system as shown in Fig 11. Use flexible piping and insulate all pipes. Plumbing must be in compliance with state or local codes (Code CMR248 in Massachusetts). The units for hydronic heat have different top and heater box configurations. This configuration is not suitable for electric heat. **DO NOT** try to install a hydronic heater in a unit not equipped for it. Verify connections: hot water to "in" and cold water to "out". 7/8" OD stubs are provided for plumbing connections. Bleed the air flow system through the bleeder port or optional valve.

Purging The System

- 1) Open air vent and allow water heater to fill with water. Close air vent when water heater is full and all air has been purged.
- 2) Ignite water heater. Set thermostat on water heater to 140 degrees.
- 3) Close the valve on the hot water supply from the water heater ("A") and open the valve on the cold-water return to the water heater ("B"). Then open the air vent in the fan coil. Use a bucket or hose to discard water during purging process at air bleed valve. Purge air completely from line.
- 4) Once air is purged, close return valve ("B") and open supply valve ("A"). Purge the coil and lines of air completely.
- 5) After air is purged from the system and filled with water, open the return valve ("B") and the supply valve ("A"). Then close the air vent in the fan coil.
- 6) Apply power to the fan coil and set the room thermostat on heat. Raise the temperature setting to activate the circulating pump
- 7) Check the pump to ensure proper operation. The water inlet of the unit should be hot if the water temperature in the water heater has reached the set point. If water is not being circulated through the coil but the pump is running, then open the air bleed valve in the unit and purge any air left in the system.

- 8) Adjust the water heater thermostat so that the water temperature entering the hot water coils is 120 – 180°F depending on the amount of heat required by the structure. This is done with the unit energized and operating long enough for all temperatures to stabilize.



Note: Massachusetts applicable diagram at end of manual
Fig.11. Schematic of hydronic unit set up and typical "T" installation

After all connections are made, start-up and check-up must be performed before proper evaluation of the entire system can be made. Make sure that heat anticipator is properly set as noted on thermostat instructions.

Load requirements can vary in each residence and it may be necessary for the installer or homeowner to

make slight adjustments to the heat anticipator setting for longer or shorter cycles. It is recommended to change the setting no more than plus or minus 0.05 amps at a time. Greater changes can cause the unit to rapid cycle or remain on excessively. To properly check the unit's operation, the installer should have an electrical current measuring device (0-10 amp Amprobe, Fluke), air pressure measuring device (0-1.0 in slope gauge), and a temperature-measuring device (0-200°F thermometer).

Install the Amprobe to measure blower current, the slope gauge to measure static air pressure at the units and the temperature device to measure unit supply and return air temperature. Before taking measurements, be sure that all registers, grilles and dampers are open or set to their proper positions. Be sure that clean filters are in place. Temperature measuring device must be installed to obtain average temperature at both inlet and outlet. For outlet, measure temperature of each main trunk at a location far enough away to avoid heater radiation and read the average temperatures. Table 1 below shows the CFM that should be achieved at various external static pressures

MODEL	SPEED TAP	CFM V. External Static Pressure				
		0.10	0.20	0.30	0.40	0.50
HWCG24X0A	Tap 5	900	853	797	738	673
	Tap 4	670	646	613	592	553
	Tap 3	500	476	452	421	400
	Tap 2	900	853	797	738	673
	Tap 1	400	381	360	339	312
HWCG36/42X0A	Tap 5	1150	1087	1030	975	910
	Tap 4	1080	1048	1010	960	895
	Tap 3	900	862	825	796	745
	Tap 2	700	663	632	600	552
	Tap 1	500	473	449	421	395
HWCG48/60X0A	Tap 5	1850	1806	1752	1700	1652
	Tap 4	1704	1656	1600	1532	1479
	Tap 3	1494	1461	1426	1400	1364
	Tap 2	1350	1310	1272	1229	1175
	Tap 1	676	652	621	600	559

Table 1. CFM delivered at various external statics

Electric Heat Controls

- Turn on power supply. Set thermostat fan switch to on. Set the cooling indicator to maximum, heating to minimum. System switch may be on heat or cool. Check slope gauge measurement against appropriate air flow chart. Make damper, register and motor speed adjustments to obtain required airflow.
- Set thermostat fan switch to auto, system to heat and thermostat heating indicator to maximum heat. Blower should start and all heat be energized.
- Check air flow using temperature rise method.

$$CFM = \frac{OUTPUT (BTUH)}{1.08 \times TEMP RISE}$$

NOTE: BTUH output should be computed by VOLT x AMPS x 3.4 = BTUH OUTPUT. Since line volt can vary, do not use nameplate rating to determine output.

Operation and Maintainance

Below are breif descriptions of the key components of the unit and installation. This manual provides general idea of the components and recommended practices. The installer should use best judgement and ensure safe installation and operation of the unit.

- 1) Room Thermostat- This is the device that controls that operation of your heating and/or cooling unit. It senses the indoor temperature and signals the equipment to start or stop maintaining the temperature you have selected for your comfort. The room 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 comfort system. The thermostat can accumulate dust or lint which can affect its accuracy. It should be cleaned annually.
- 2) Air Filter(s) - All central air moving comfort systems must include air filter(s). These filters will be located either in the equipment or in the return air duct system upstream of the equipment. The filter(s) removes dust and debris from the air thus helping to keep your air-conditioned space clean. More important, the filter keeps dust and debris from collecting on the heat transfer surfaces thus maintaining optimum equipment efficiency and performance. Inspect and clean or replace filters every month. This routine maintenance procedure will pay big dividends in reduced operating cost and reduced service expense. Never operate comfort equipment without filter(s).
- 3) Fuses and/or Circuit Breakers- This comfort equipment should be connected to the building electric service in accordance with local and National Electric codes. This electrical connection will include over-current protection in the form of circuit breakers. Have your contractor identify the circuits and the location of over-current protection so that you will be in a position to make inspections or replacements in the event the equipment fails to operate.

WARNING

- 4)
 - a) Do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this appliance.
 - b) Do not operate the comfort equipment with panels removed.

- c) Have your contractor point out and identify the various cut-off devices, switches, etc., that serve your comfort equipment. There is a main switch that will cut off energy to your heating system. Know where they are so that you may cut off the flow of energy in the event of overheating.

- 5) Periodic Checkup and Service- This product is designed to provide many years of dependable, trouble-free comfort when properly maintained. Proper maintenance will consist of annual check-ups and cleaning of the internal electrical and heat transfer components by a qualified service technician. Failure to provide periodic checkup and cleaning can result in excessive operating cost and/or equipment malfunction.
- 6) Lubrication- Direct drive blower motors are equipped with permanently lubricated bearings and do not require further lubrication.
- 7) Air filter replacement: An air filter can restrict the airflow to the fan coil if it is not cleaned or replaced periodically. When replacing the air filter, always replace with the same type and size as originally furnished with the unit.

Hydronic Related General Information

1) Equipment Sizing

Select an air handler with a heating output that exceeds the space heating loss of the structure and that has a cooling coil sized to match the outdoor condensing unit.

Note: The heating output of the air handler or hot water coil will not be greater than the output of the selected hot water heater. Therefore, if the water heater is undersized the heating BTUH of the air handler will be LESS than its rated output.

2) Water Heater Selection

The following sizing information should only be used as a basic guide to adequate water heater sizing because of variations in each family's domestic hot water requirements. For additional assistance in water heater sizing contact a professional engineer.

Proper water heater sizing should consider both the gallon capacity **AND** the BTU input of the water heater.

a. To determine water heater GALLON CAPACITY: A minimum 40-gallon high recovery and/or high efficiency gas or oil-fired water heater is recommended. The following volume-sizing guide (Table 2) is satisfactory in most areas of the country:

Table 2. Volume Sizing Guide

CFM	Min Water Heater
600-800	40 gal
1000-1200	50 gal
1400-1600	2x40 gallons piped together
	High input 50 gallons (63-75k Btu)
	72-75gallons
2000	105k Btu

Table 2. Volume Sizing Guide

b. To determine water heater BTU INPUT (assumes a water heater recovery efficiency of 76%): For mild climates: BTU INPUT=structure's heat loss x 1.51. For colder climates: BTU INPUT=structure's heat loss x 1.58.

3) Pump Replacement

- Disconnect electrical power to the unit before servicing.
- Remove access door to reveal pump. Close supply valve ("A") and return valve ("B"). Open the air bleed valve to de-pressurize the system and drain water.
- Remove the metal pump housing by loosening the four screws on the pump. DO NOT UN-SOLDER PUMP.
- Replace the new pump housing assembly and reconnect components to the pump. Before assembling, make sure that the runner on the o-ring is in place on the pump housing.
- Purge the system of the air as described earlier and re-connect the electrical power.

Common Problems and Solutions

1) Noisy Pump

System may not be totally purged of air. Purge the system again as described in the start up section above.

2) T&P valve on water heater weeps

This normally occurs when a backflow preventer has been installed in the cold water supply line to the water heater. An expansion tank may be necessary to correct this problem. Please contact a qualified plumbing professional for assistance.

3) Hot water is circulating through the water coil during cooling cycle

The check valve may be stuck open and allowing hot water to circulate through the coil.

4) Little or no heat from water coil

- Purge the system
- The inlet connections may be reversed at the fan coil
- Water heater thermostat is not set at proper temp
- Water heater thermostat is not calibrated
- Dip tube in the water heater may not be installed correctly or could be restricted.
- Look for restrictions in heating system from water heater to fan coil. Some water heaters are supplied with

check valves. Remove any extra check valves except for the one supplied with the fan coil

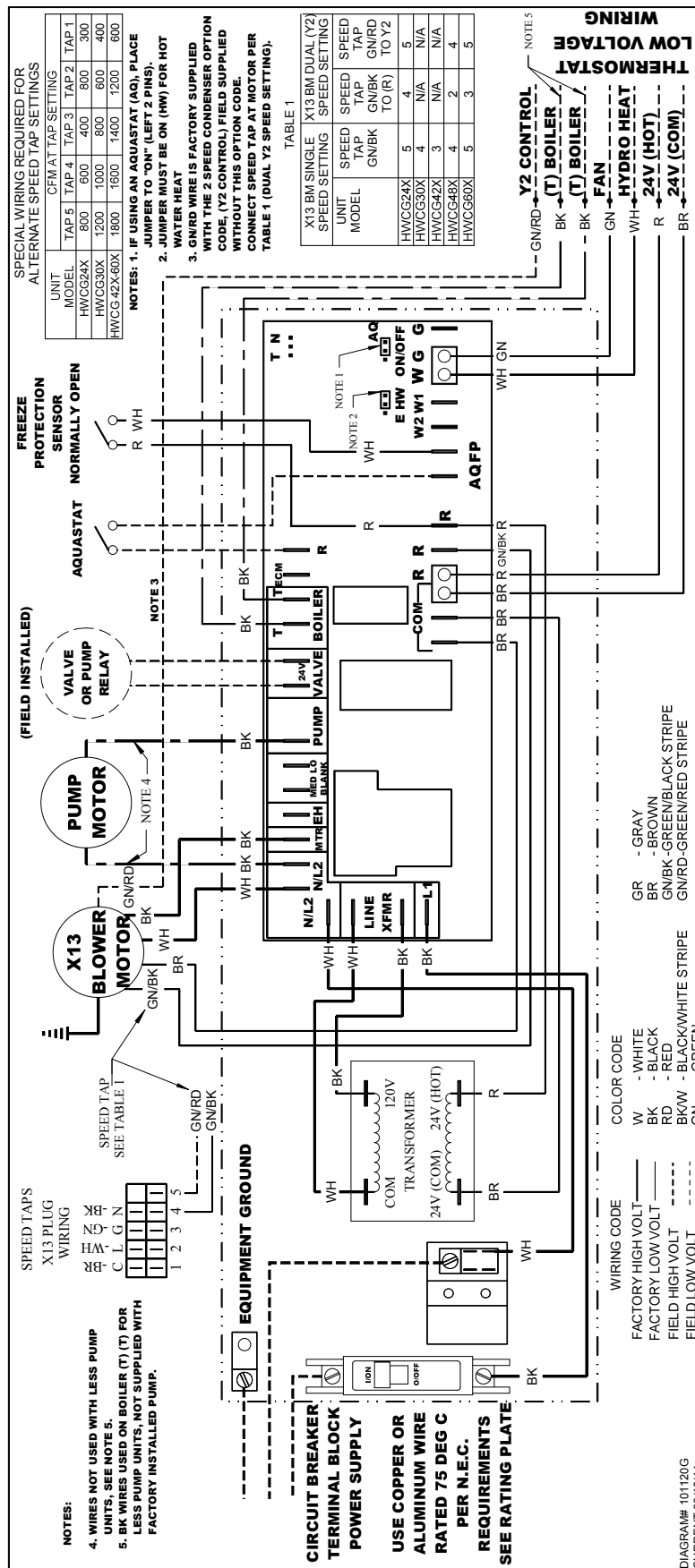
g. The air handler is undersized for space being heated

h. Water heater is undersized

Note: All units installed in Massachusetts are required to be in compliance with CMR 248 Massachusetts State Plumbing Code and/or Massachusetts Fuel Gas Code.

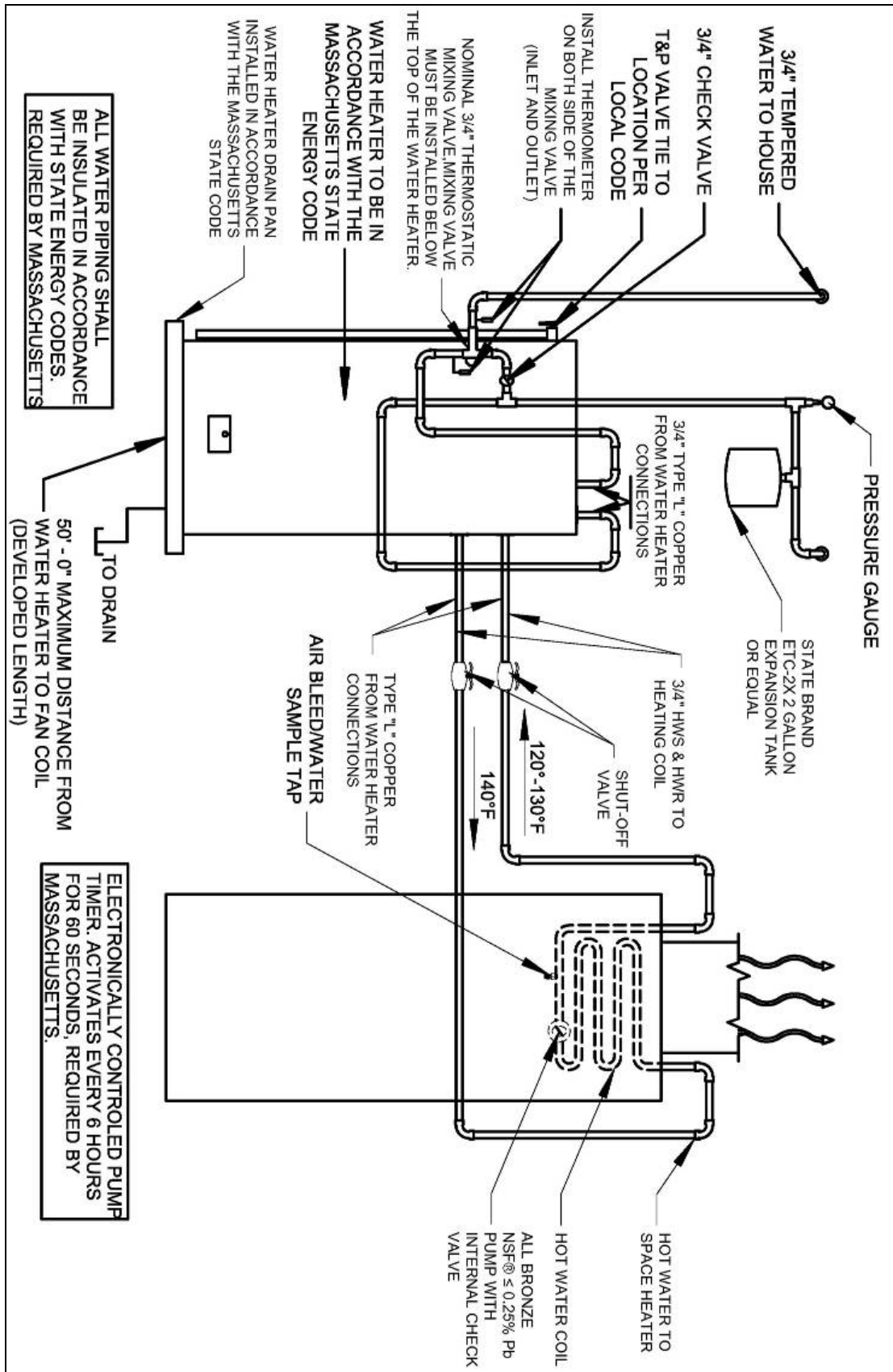
These codes require the use of an optional pump timer to circulate the hydronic loop independent of the thermostat.

Wiring diagram



⚠ WARNING **HIGH VOLTAGE** disconnect all power sources prior to servicing. Failure might lead to safety hazard

Massachusetts applicable installation diagram



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Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.

Incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

HEAT CONTROLLER

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