INSTALLATION AND SERVICE MANUAL

EPJ SERIES – INDIRECT WATER HEATERS

FOR MODELS EPJ-40 AND EPJ-56

SEE REAR COVER FOR INDEX

⚠WARNING

Read this instruction manual before installation, operation, or service. Failure to follow the instructions in this manual may result in severe personal injury, death or substantial property damage. Installation and service must be performed by a qualified service technician.

Allied Engineering Company
Division of E-Z-Rect Manufacturing Ltd.
Manufacturers of Gas and Electric Boilers, Heat Exchangers, Electric Boosters, Indirect Tanks
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PN11393615

TECHNICAL SPECIFICATIONS AND DIMENSIONS

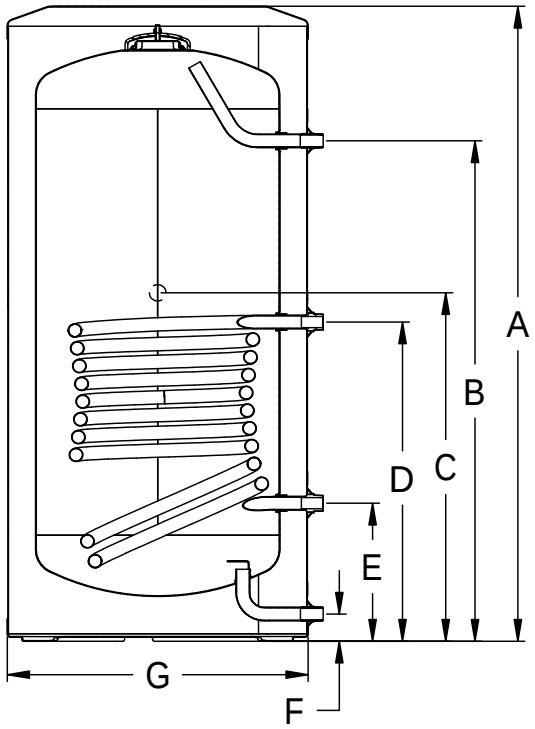
SPECIFICATIONS					
Model	**Storage Capacity**	**Standby Loss (Btu/h)**	**Standby Loss (°F/hr)**	**R value (ft^2h°F/Btu)**	**Shipping Weight (lb)**
EPJ-40-SC	38.8 US Gal.	192	0.6	11.6	66 lb
EPJ-56-SC	55.2 US Gal.	249	0.5	11.4	94 lb
Note: SC = Single Coil					

OPERATING LIMITS	
Maximum Tank Temp:	150°F
Maximum Coil Temp:	210°F
Maximum Pressure:	150 psi

MATERIALS OF CONSTRUCTION	
Tank:	AISI 444 Stainless Steel
Coil:	AISI 444 Stainless Steel
Insulation:	EPS Foam Insulation (2 inch thickness)
Jacket:	Polypropylene
Notes:	Each tank is Pickled and Passivated, and Factory Pressure Tested to 300 psi

RECOVERY (Based on Flow Rate of 10 GPM)*						
Model	**Inlet From Boiler Temp** (°F)	**1st 10 Min. Delivery @ 135°F** (US Gal.)	**1st Hour Delivery @ 135°F** (US Gal.)	**Continuous Delivery @ 115°F** (US GPH)	**Thermal Input Required** (Btu/h)	**Heat Source Friction** (ft w.c.)
EPJ-40-SC	200	63	206	221	129,000	3.8
	190	60	190	200	117,000	3.8
	180	57	174	180	105,000	3.8
EPJ-56-SC	200	79	222	221	129,000	4.6
	190	76	206	200	117,000	4.6
	180	74	190	180	105,000	4.6
***Note: Ratings are based upon 45ºF cold water inlet temperature**						

EPJ DIMENSIONS DIAGRAM



DIMENSIONS

Model	A	B[1]	C	D	E	F	G
EPJ-40-SC	46 7/8"	37	25 3/4"	23 5/8"	10 1/4"	2"	21 7/8"
EPJ-56-SC	62 3/4"	52 3/4"	28 7/8"	26 3/4"	10 1/4"	2"	21 7/8"

CONNECTIONS (NPT)

Model	B Hot Water Outlet	C Sensor Well	D Inlet from Boiler	E Outlet to Boiler	F Cold Water Inlet / Drain
EPJ-40-SC	3/4" M	1/2" F	1" M	1" M	3/4" M
EPJ-56-SC	3/4" M	1/2" F	1" M	1" M	3/4" M

Notes

1. T & P Relief valve connection (not shown) is at Dimension 'B' height and offset 30º counterclockwise
2. Aquastat, sensor well, and drain valve supplied as an option
3. Dimensions and Specifications subject to change without notice

Pre-Installation Section 1

1.1 RECEIVING

INSPECT SHIPMENT FOR POSSIBLE DAMAGE. All goods are carefully manufactured, inspected, checked and packed by experienced workers. The manufacturer's responsibility ceases upon delivery of goods to the carrier in good condition. Any claims for damage and/or shortage in shipment or non-delivery must be filed immediately against the carrier by the consignee.

Use care when receiving and unpacking the tank. Dropping the tank may cause damage and prevent safe and proper operation.

1.2 INSTALLATION CODES AND REQUIREMENTS

All applicable national, provincial/state, and local codes, laws, regulations, and ordinances must be followed. They expand on and take precedence over any recommendations in this booklet. Authorities having jurisdiction shall be consulted before installations are made.

If an external electrical source is utilized, the hot water tank, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70* (current edition) and/or the *Canadian Electrical Code, CSA C22.1 Part 1* (current edition).

If there is any conflict in the above requirements, the more stringent requirement applies.

The installation and service must also conform to the additional requirements in this manual. If there is any conflict with a requirement in this manual and a code requirement, the code requirement must be followed.

1.3 LOCATION

- This tank should not be placed where freezing might occur and is not to be installed outdoors.
- This tank is designed for vertical installation. Install the tank on an area that is stable, flat, level and capable of supporting the weight of the tank when filled with water. **WARNING:** Failure to support and stabilize the water heater could result in severe personal injury, death or substantial property damage.
- Although minimal clearance is required for this tank, ensure that there is sufficient room around the tank to access all of the fittings easily. We recommend a **service clearance of 24”** around the plumbing connections.
- **WARNING:** The tank should be located in an area where leakage of the indirect water heater or connections will not result in damage to the area adjacent to the appliance or to lower floors of the structure. When such locations cannot be avoided, it is recommended that a suitable drain pan, adequately drained (connected to a drain of adequate capacity), be installed under the tank. Failure to comply with the above could result in severe personal injury, death or substantial property damage.
- This tank must be installed such that any electronic components are protected from water (dripping, spraying, rain, etc.) during appliance operation and service.
- Avoid heat loss and friction loss by locating the tank as close to the boiler as possible. Further heat loss should be avoided by insulating the pipe.
- For the fastest delivery of hot water, locate the water heater in a position central to the points of use.
- **DANGER - Risk of Explosion:** Do not use or store gasoline or other flammable fuels or chemicals which have flammable vapors near the tank. The vapors may be ignited by the heat or electronic components of the tank.

1.4 OPERATING RESTRICTIONS

CAUTION: Single wall heat exchangers must use a heat transfer medium such as water or other non-toxic fluids having a toxicity rating of Class 1, as listed in Clinical Toxicology of Commercial Products (current edition). The pressure of the heat transfer medium must be limited to a maximum of 150 psi by an approved pressure relief valve.

- Maximum tank temperature: 150°F
- Maximum coil temperature: 210°F
- Maximum working pressure: 150 psi

1.5 WATER QUALITY

Always use good quality water to prolong the life of the tank. Water that is safe to drink and even city water is not necessarily good quality water for the tank. The use of water treatment and filters can prevent corrosion and reduce sediment in the tank. Water hardness, pH, and chlorides must be controlled to normal levels.

- **PH levels must be between 6.0 and 8.0**
- **Chlorine, chlorides and aggressive sulfates concentrations must be below 100 parts per million.**

If you are unsure, use a water softening system or consult a qualified water treatment expert.

NOTE: All improper use as detailed above could void the warranty of the tank.

Piping and Plumbing — Section 2

2.1 BOILER SIDE PLUMBING

Connect boiler out (hot) supply piping to the fitting marked “boiler water in” on the water tank. The “boiler water out” fitting on the tank should be piped to the boiler return. Use Teflon tape, pipe dope, or both on all threaded fittings. When installing the pump make sure that the direction arrow is pointing in the same direction as the flow. The use of shut off valves and brass or dielectric unions are recommended when installing your water tank to simplify future service requirements.

To prevent a back flow through the water heater when heating a radiant system, a check valve or back flow preventer must be installed.

The heat output of the tank is based on the *temperature* and *flow rate* from the boiler supply. To ensure that the minimum flow rate is provided, use at least 1 inch pipe size (from boiler to tank) and a zone valve with a minimum 1 inch diameter and flow coefficient of at least $C_V = 8$.

Hot Water Priority

A boiler system connected to multiple zones may be installed so that domestic water heating will be given priority over other zone heating. If hot water priority is used, preventative measures must be taken to ensure hot water priority during cold weather conditions does not result in freezing damage to the other zones.

Sample Systems

Although there are unlimited possibilities for your indirect water heater system, a few typical installations are described and shown below. Note that all heating zones can be controlled either by using circulators (pumps) or zone valves as long as correct flow is provided.

- **Dedicated Single Boiler with Single Coil Tank**
- **Radiant Floor / Baseboard with 3 Port Zone Valve – Domestic Priority**
- **Radiant Floor / Baseboard with 2 Port Zone Valve – Domestic Priority**
- **Radiant Floor / Baseboard Using Circulator and Domestic Hot Water Priority**
- **Multiple Water Heaters – Domestic Priority**
- **Multiple Water Heaters Piped in Series**

Standard Circulators Zone:

Run the same as a standard heating zone except one zone is piped to the water heater and can be prioritized by correct use of the control valve. Ensure that the circulator is sized correctly to allow the boiler water to flow at the correct rate.

Zone Valve System:

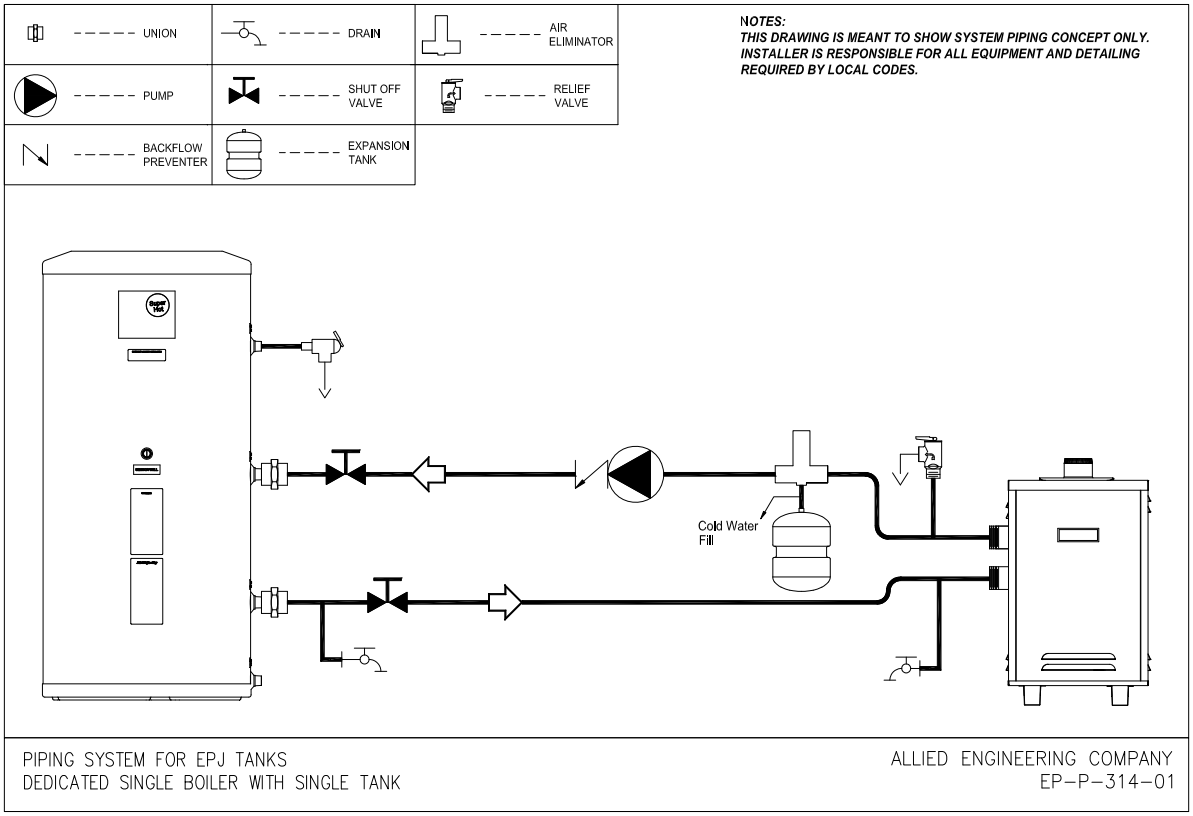
Run the same as a standard heating zone except one zone is piped to the water heater and can be prioritized with correct use of the zone valves. Ensure that the circulator is sized correctly to allow the boiler water to flow at the correct rate. Do not use a zone valve less than 1 inch diameter and $C_V = 8$.

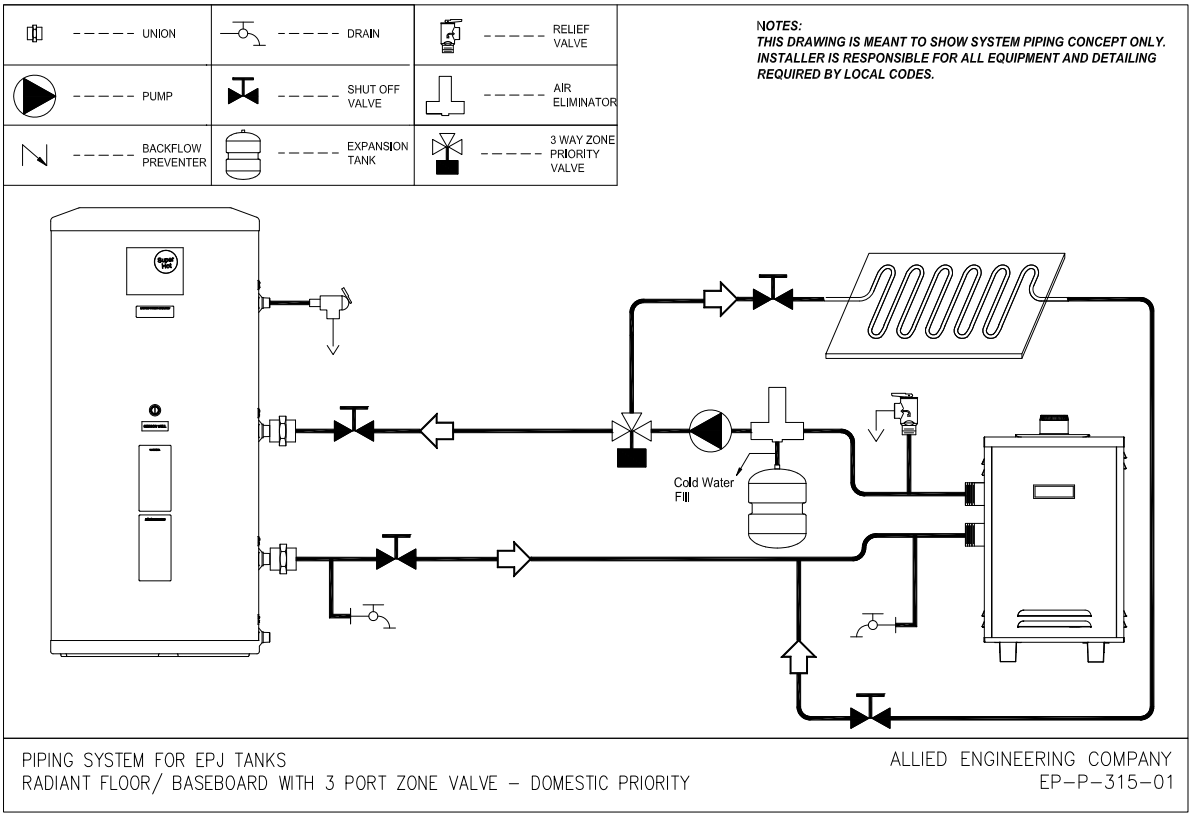
3-way Zone Valve System:

For prioritizing your water heater, a 3-way zone valve can be installed into your system. This system overrides all other “calls for heat” when there is a demand from the water heater aquastat. All the boiler water is then diverted to the water heater. There are three ports on a 3-way valve: a common port, a normally closed port, and a normally open port. The common port is connected to the boiler side, the normally open port is connected to the heating zone, and the normally closed port is connected to the water heater coil of the tank. The boiler water flows through the heating zone, until the water heater aquastat demands heat. The zone valve is then activated and the boiler water is diverted to the water heater; once the requested water temperature is achieved, the aquastat will shut off power to the zone valve and the boiler water will be diverted back to the heating zone.

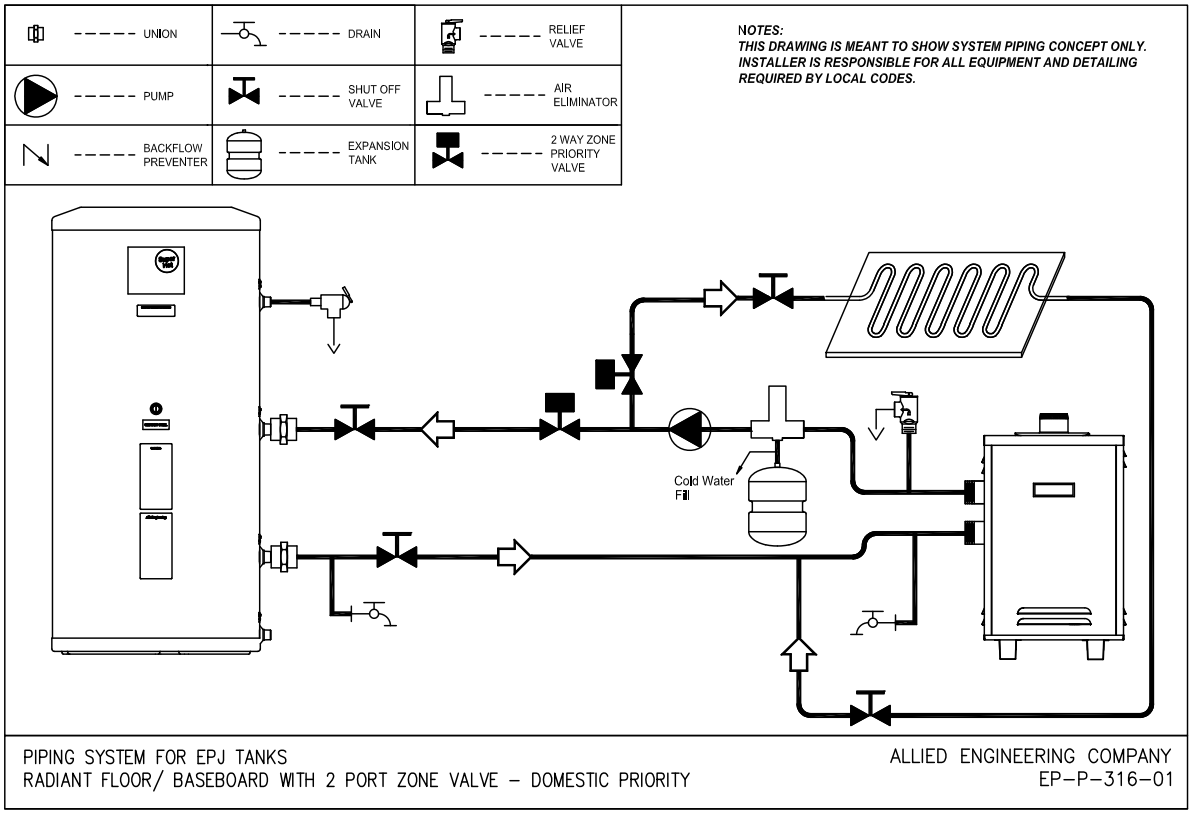
2.2 INSTALLATION DIAGRAMS

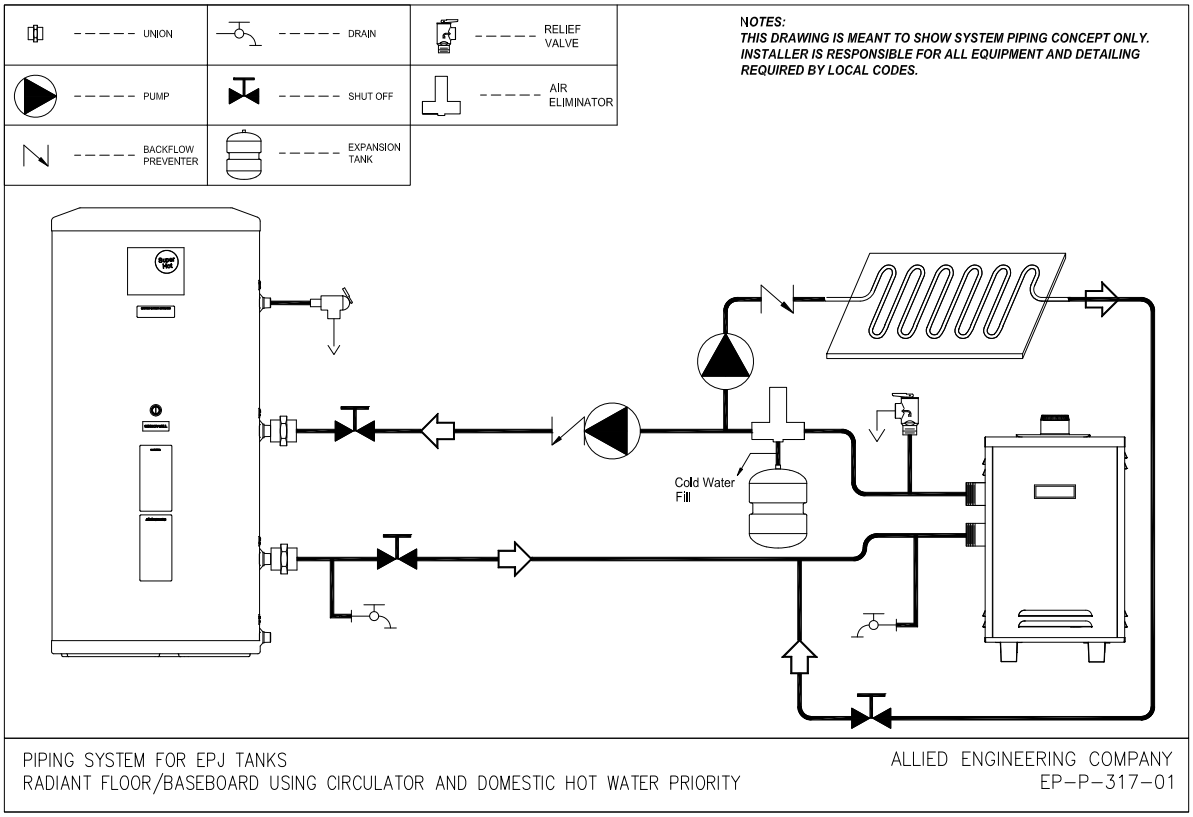
Sample Schematics Boiler Side Piping



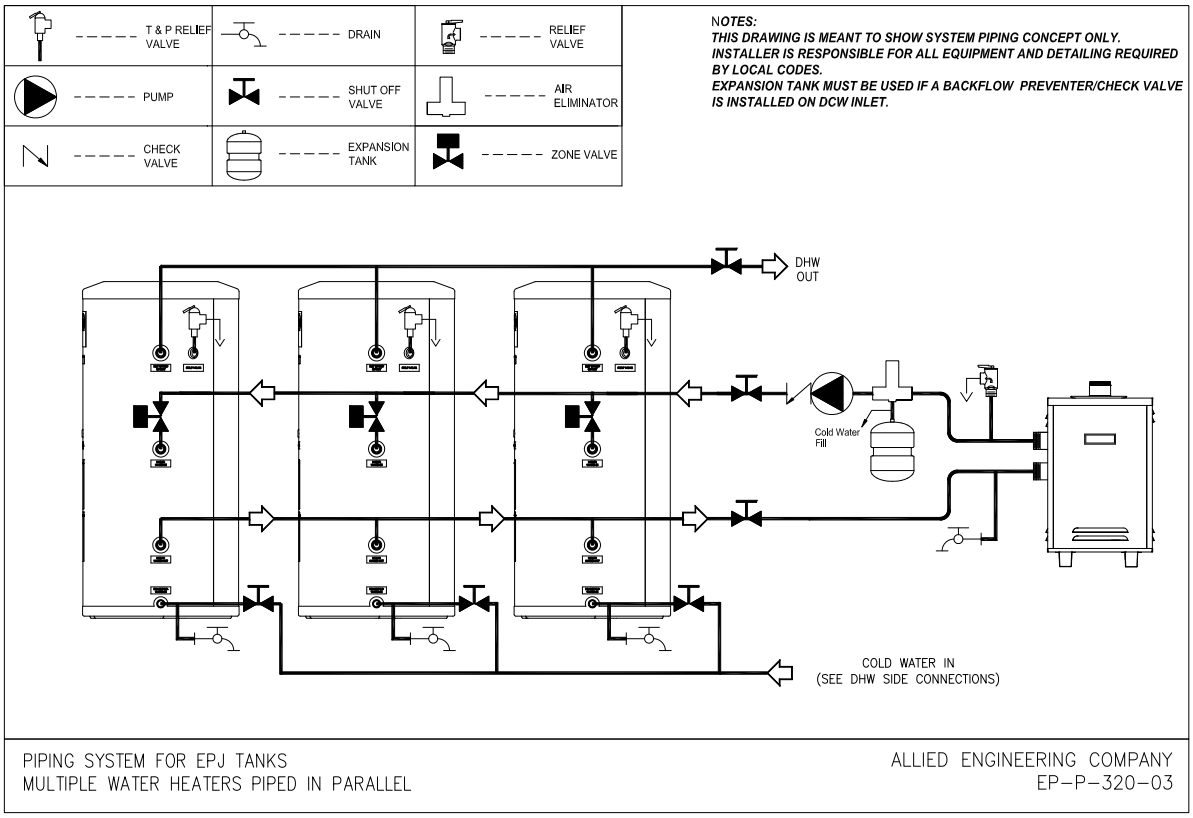


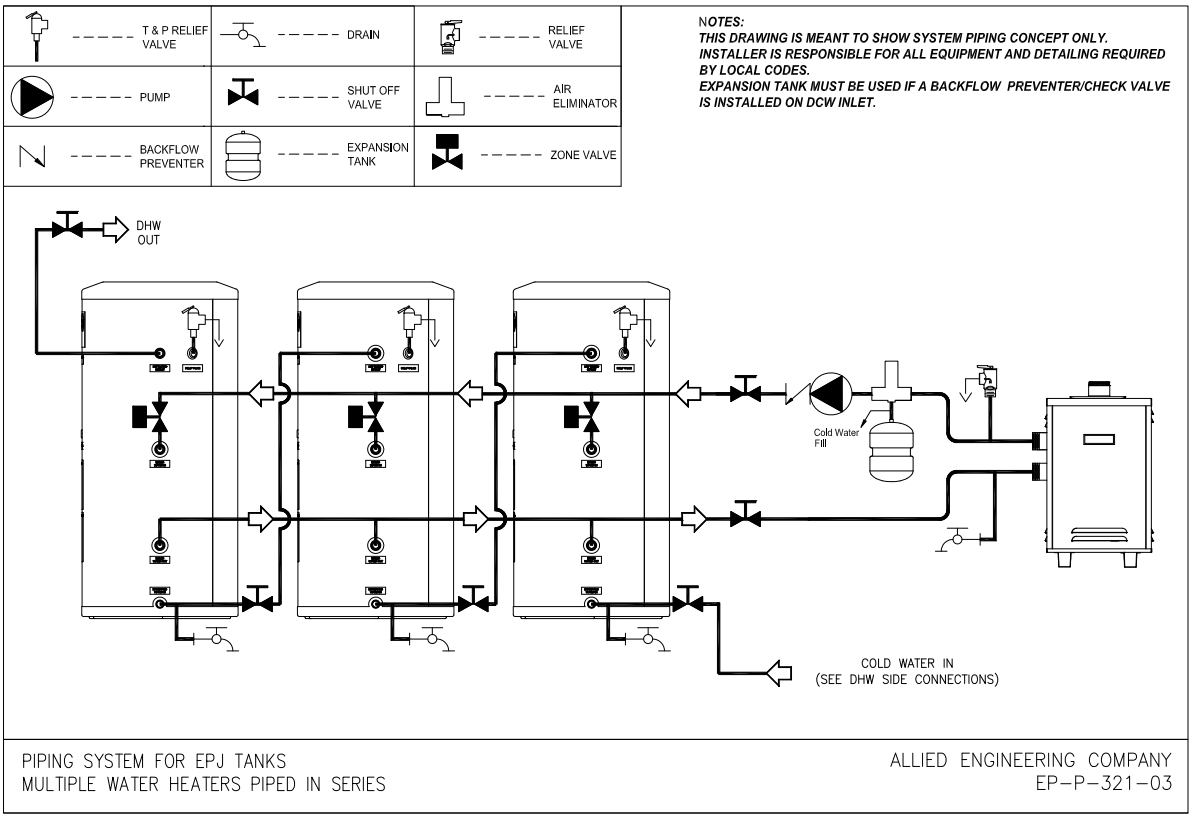
Sample Schematics Boiler Side Piping cont'd





Multiple Water Heaters





2.3 DOMESTIC SIDE PLUMBING

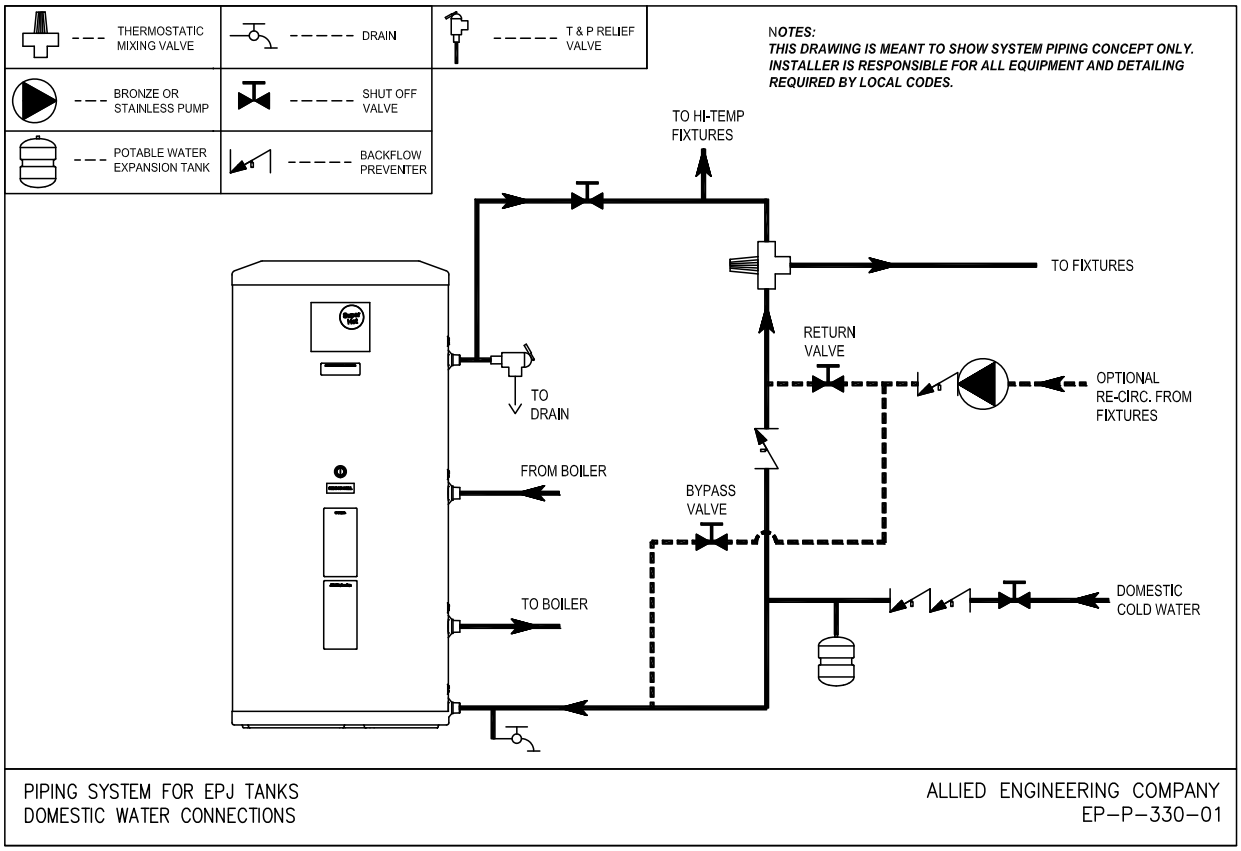
Connect domestic cold water in to the fitting marked “drain/cold water in” and domestic hot water out to the fitting marked “hot water outlet”. Use Teflon tape, pipe dope, or both on all threaded fittings. Connect a drain valve near the cold water inlet connection so that the tank can be drained. Connect a control aquastat and stainless steel thermowell to the coupling marked “sensor well”. Shut off valves and brass or dielectric unions must be used when installing your water tank to simplify future service requirements and prevent galvanic corrosion.

If a backflow preventer, check valve or pressure reducing valve is installed upstream of the tank on the cold water inlet, a potable water expansion tank of adequate capacity must be installed. Do not install any valve or restrictions between the expansion tank and the hot water tank. Improper piping of the expansion tank or backflow preventer could cause excessive pressure in the hot water tank, and could result in hot water tank failure and substantial damage to property.

Actual operating temperature and pressure should not exceed that of *operating restrictions* stated on the rating plate of the indirect water heater and in this manual. A T&P relief valve must be installed.

Domestic Side Piping

Domestic piping with optional re-circ. and thermostatic mixing valve



2.4 T&P RELIEF VALVE PLUMBING

WARNING: A T&P (temperature and pressure) relief valve must be installed to protect the tank from excessive temperature and pressure.

Temperature and pressure settings of the T&P relief valve are factory set and are not adjustable. The T&P valve must be of sized capacity to handle the maximum heat input to the indirect water tank and not greater than the operating restrictions stated on the rating plate of the indirect water heater and in this manual. Furthermore, the service pressure should be at least 25 psi less the setting stamped on the T&P relief valve.

Install the T&P relief valve directly into a tee on the hot water outlet of the tank so that the temperature sensing element is immersed in the water at the top of the tank. No valve, reducing coupling or other restriction is to be placed between the T&P relief valve and the tank connection. No valve, reducing coupling, pipe plug, pipe cap or other restriction is to be placed in the discharge piping. Improper placement or piping of the T&P relief valve can cause severe personal injury, death or substantial property damage.

The discharge line shall be installed to allow the complete drainage of both the valve and the line. It shall be independently supported or arranged so as to avoid undue stress on the valve. The discharge line must be installed to allow complete drainage of both the valve and line. **Do not pipe in any area where freezing may occur.**

The termination of the T&P relief valve discharge line shall be downward and not directly connected to a sewer line. The outlet of the discharge line shall terminate in the vicinity of a point of drainage within 6” of the floor to eliminate potential risk of scalding.

DANGER: Do not plug T&P relief valve or discharge piping. Plugging T&P relief valve or discharge piping can cause excessive pressure in water heater, resulting in severe personal injury, death or substantial property damage. Also, the T&P valve may discharge pressurized hot water which can turn into steam. Steam exiting the discharge outlet can explosively expand in any direction. Always maintain a safe distance from the discharge pipe outlet in order to avoid potential contact with exiting hot water or steam.

2.5 WATER HAMMER

Water hammer is a damaging pressure shock wave created when the flow of water is suddenly stopped or reduced (possibly induced by a fast-closing faucet, reducing valve, or solenoid valve in a clothes/dish washing machine). This condition is commonly associated with hammering noises and vibrations; however, lack of noise does not assure that water hammer is not present. Risers or air chambers must not be used. To prevent damage to pipes and appliances: (1) install water hammer arrestors of adequate size at all required locations and (2) adequately size pipes to ensure a maximum water velocity less than 5 ft/s.

Wiring Diagrams — Section 3

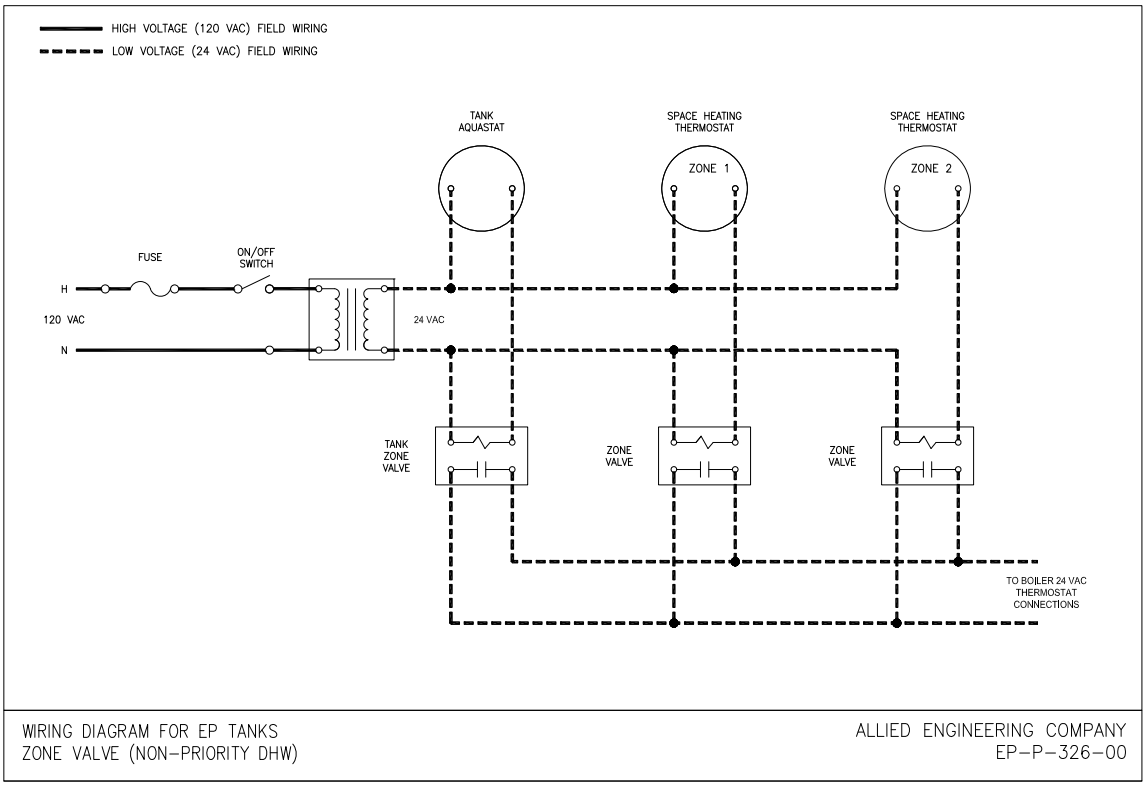
WARNING: Turn off all electric power before attempting any wiring or service. All circuit breakers ahead of or related to the boiler and tank operation must be switched off.

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

When installed, the tank must be grounded in accordance with local codes or, in the absence of local codes, with the National Electrical Code ANSI/NFPA 70, and/or the CSA C22.1 Electrical Code.

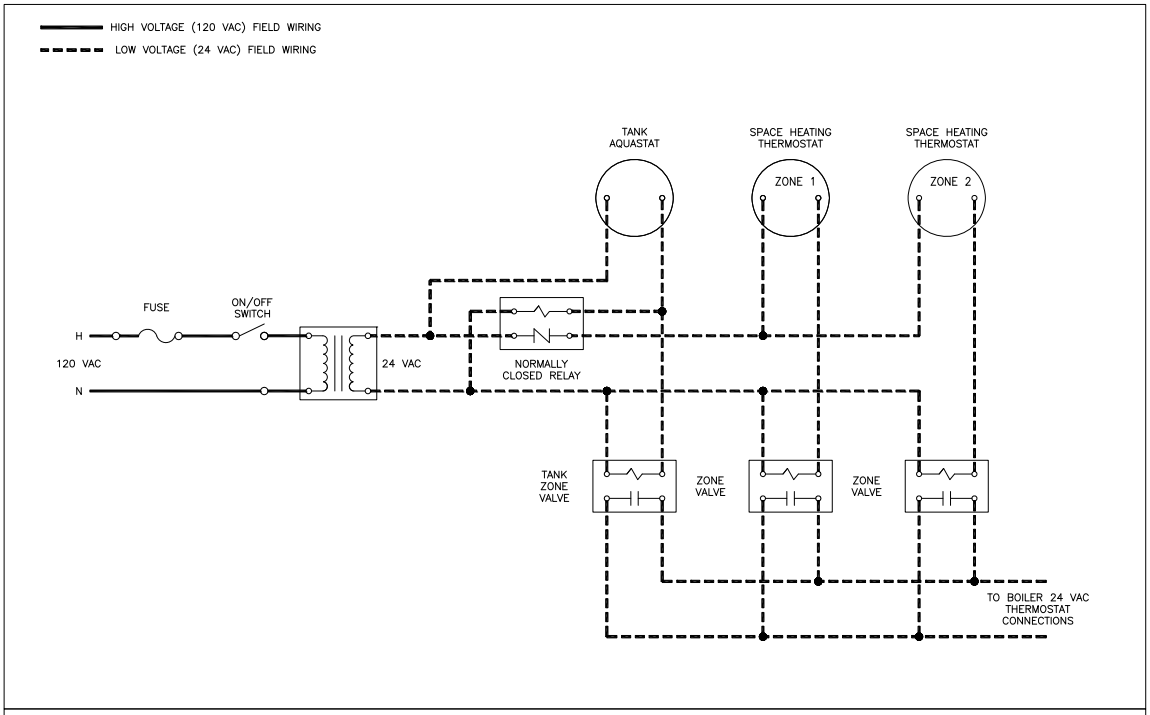
All wiring is to be done in accordance with all applicable local and state/provincial codes. They expand on and take precedence over any recommendations in this manual.

Wiring for the aquastat is to be connected through the junction box below the aquastat opening. The aquastat is to be connected in parallel with the zone valve motor. For line voltage connections over 30 volts, wiring must be securely fastened at the junction box opening (not provided).



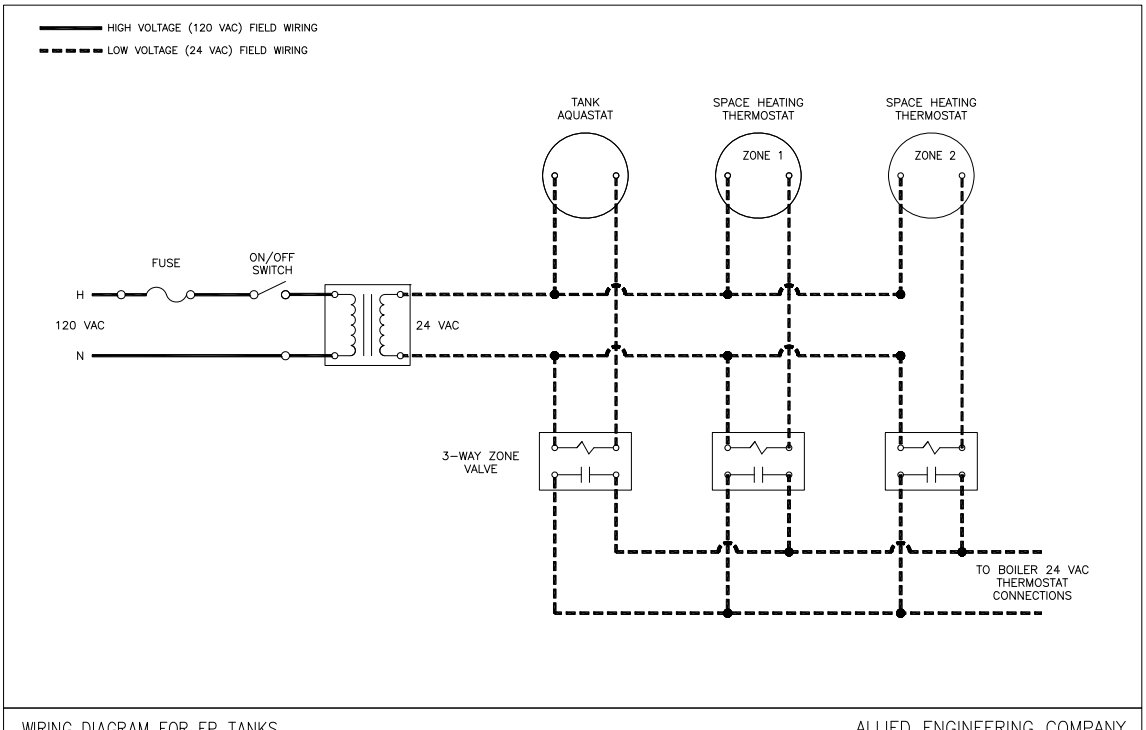
WIRING DIAGRAM FOR EP TANKS
ZONE VALVE (NON–PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–P–326–00



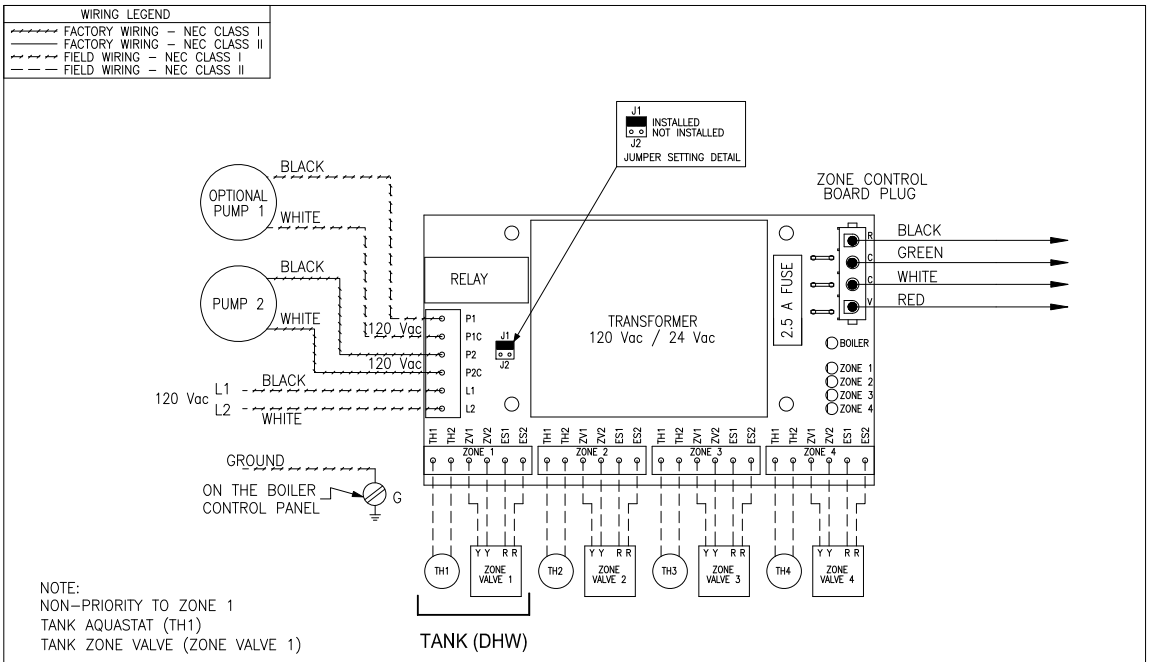
WIRING DIAGRAM FOR EP TANKS
ZONE VALVE (PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–P–327–00



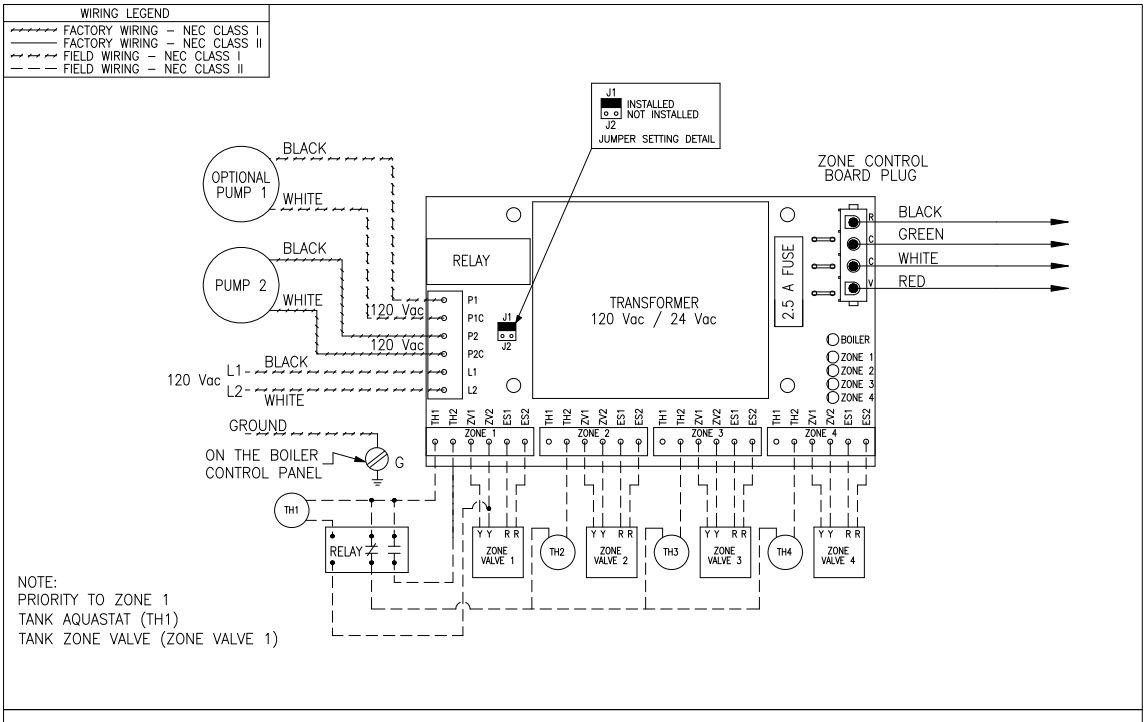
WIRING DIAGRAM FOR EP TANKS
THREE–WAY ZONE VALVE (PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–P–328–01



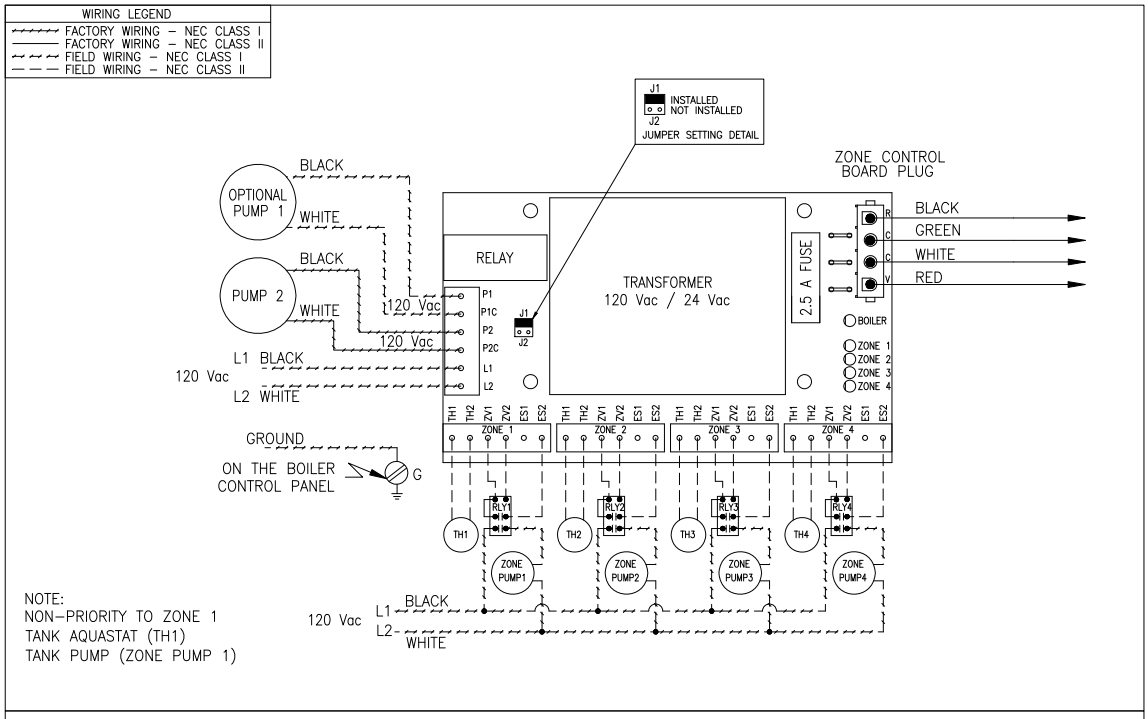
WIRING DIAGRAM FOR EP TANKS
ZONE VAVES WITH ZCB (NON–PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–W–001–01



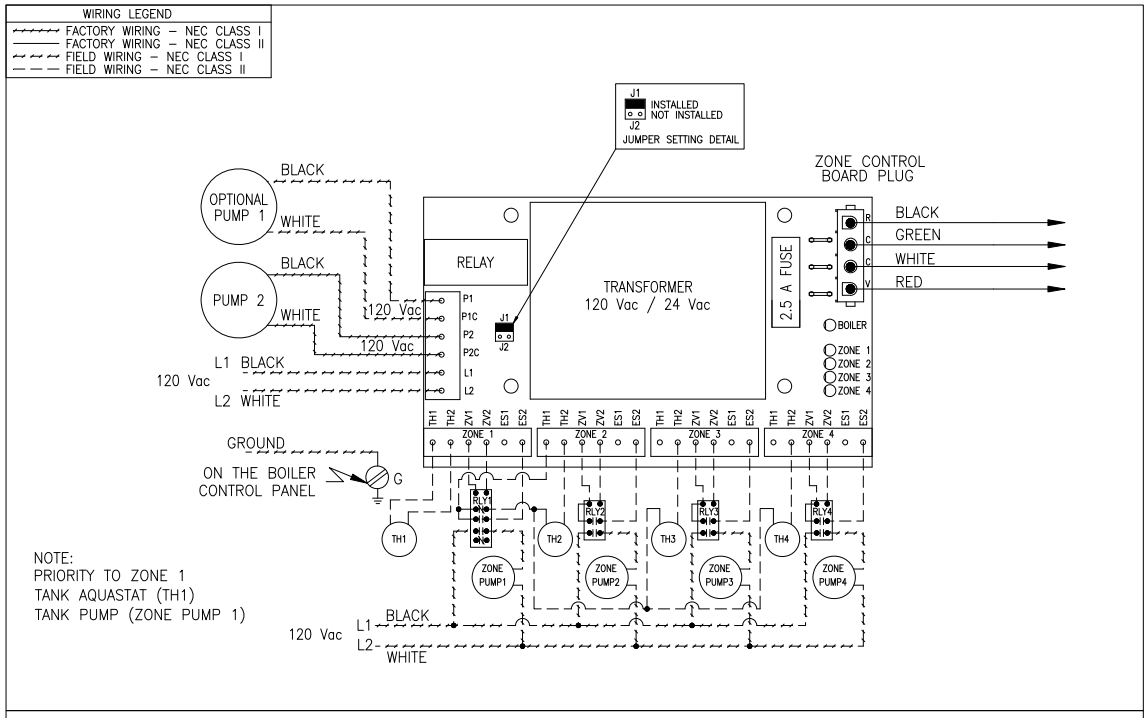
WIRING DIAGRAM FOR EP TANKS
ZONE VAVES WITH ZCB (PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–W–002–01



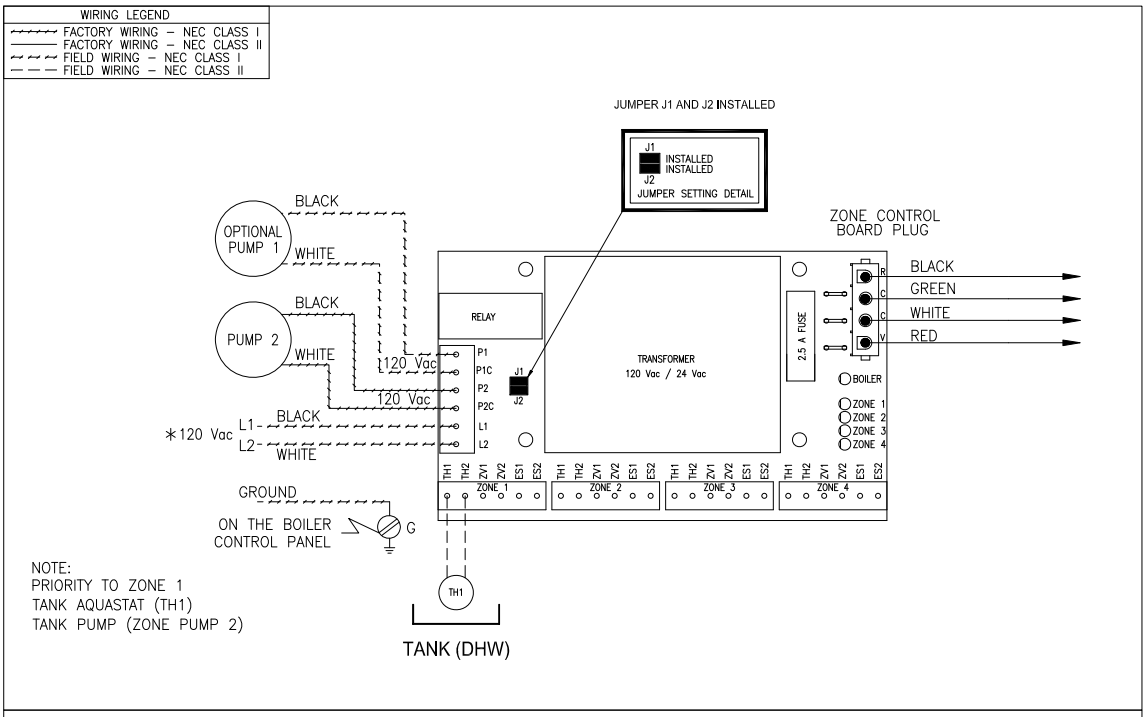
WIRING DIAGRAM FOR EP TANKS
PUMPS WITH ZCB (NON–PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–W–003–01



WIRING DIAGRAM FOR EP TANKS
PUMPS WITH ZCB (PRIORITY DHW)

ALLIED ENGINEERING COMPANY
EP–W–004–01


WIRING LEGEND
FACTORY WIRING – NEC CLASS I
FACTORY WIRING – NEC CLASS II
FIELD WIRING – NEC CLASS I
FIELD WIRING – NEC CLASS II
JUMPER J1 AND J2 INSTALLED
J1
INSTALLED
INSTALLED
J2
JUMPER SETTING DETAIL
ZONE CONTROL BOARD PLUG
OPTIONAL PUMP 1
PUMP 2
BLACK
WHITE
120 Vac
∗120 Vac
L1
L2
GROUND
ON THE BOILER CONTROL PANEL
G
RELAY
TRANSFORMER
120 Vac / 24 Vac
2.5 A FUSE
P1
P1C
P2
P2C
L1
L2
J1
J2
R
C
C
V
BLACK
GREEN
WHITE
RED
BOILER
ZONE 1
ZONE 2
ZONE 3
ZONE 4
TH1
TH2
ZV1
ZV2
ES1
ES2
NOTE:
PRIORITY TO ZONE 1
TANK AQUASTAT (TH1)
TANK PUMP (ZONE PUMP 2)
TANK (DHW)
WIRING DIAGRAM FOR EP TANKS
DEDICATED SINGLE BOILER WITH SINGLE TANK
ALLIED ENGINEERING COMPANY
EP–W–005–01

Startup and Adjustment Section 4

DANGER: Before filling the tank, make sure that the T&P relief valve is installed and that the unit is properly grounded.

CAUTION: Never use tank until it is filled with water and connected to the domestic water piping and boiler piping.

4.1 PRE-START UP CHECKLIST

- ❑ T&P relief valve is properly installed and drain discharge is directed away to a drain.
- ❑ Domestic cold and hot water lines are correctly connected to domestic water system.
- ❑ Boiler supply and return piping is correctly connected from boiler to tank.
- ❑ Domestic and boiler water systems are set at the correct operating pressure.
- ❑ All wiring is installed correctly, no exposed high voltage wiring is present and the unit is properly grounded.

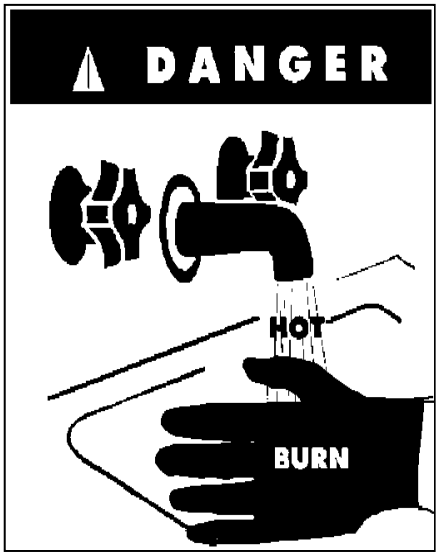
4.2 STARTUP INSTRUCTIONS

1. Make sure all electrical power is OFF.
2. Close the drain valve on tank.
3. Open domestic water supply valve.
4. Open the closest hot water faucet to vent air from the system.
5. Close faucet when there is a constant flow of water.
6. For boiler side piping, follow boiler instructions to purge air.
7. The tank, domestic water piping, and boiler water piping should be completely filled with water and all air purged from both domestic and boiler water systems.
8. Set aquastat on water heater.
9. Power up boiler (following boiler instructions) and water heater.
10. Check boiler is operating normally.
11. Check zone valve or circulator is in good condition.
12. Check all connections, fittings and piping for leaks.
13. Adjust the temperature at the faucets as described in the next section.

Water Adjustment Section 5

DANGER: Water Temperatures over 125°F (52°C) can cause severe burns instantly or death from scalds. Feel water before bathing and showering. Homes that have small children, elderly and disabled persons may wish to lower the water heater setting to 120°F (49°C) to prevent potential scalding. Below is a table showing the approximate time it takes to have a scalding accident for different temperatures of hot water:

Water Temperature	Length of Time to Cause Scalding
125ºF (52ºC)	1 1/2 to 2 minutes
130ºF (54ºC)	about 30 seconds
135ºF (57ºC)	about 10 seconds
140ºF (60ºC)	less than 5 seconds
145ºF (63ºC)	less than 3 seconds
150ºF (66ºC)	about 1 ½ seconds



Maximum coil (boiler) water temperature is 210ºF.

A thermostatic mixing valve or tempering valve should be installed on the domestic hot water supply and set to a maximum of 120°F (49°C).

Valves for reducing point of use temperature by mixing cold and hot water are available. Consult a licensed plumber or local plumbing authority.

WARNING: *Studies show that dangerous bacteria can form in domestic water distributions systems if a minimum water temperature is not maintained. For example,* legionella pneumophila*, can form in hot water maintained at 115°F (46°C) or lower. We recommend a domestic water temperature not lower than 122°F (50°C) at faucets and a tank temperature not lower than 140°F (60°C) to limit the potential for* legionella pneumophila *growth. Contact your local health authority for more information.*

5.1 CONTROL AQUASTAT

A control aquastat and stainless steel thermowell must be installed in order to control the maximum temperature of the tank.

First, install a stainless steel well, then insert the control aquastat into the well and secure the set screw on the aquastat body or as per the aquastat manufacturer's instructions. Thermal paste is recommended but not required.

The tank water temperature and aquastat setting will be close most of the time, but unusual usage patterns may cause the outlet water temperature to rise significantly above the aquastat setting. To control fluctuating temperature, a thermostatic mixing valve (tempering valve) must be installed.

5.2 AQUASTAT TEMPERATURE

- Use the aquastat to control the maximum water temperature in the tank.
- Household water usage patterns will affect water temperature at any faucet or shower. Always check temperature at every point after adjusting aquastat.
- When hot water is used in repeated small quantities the upper layer of water in tank can be much hotter than lower layers. When adjusting the aquastat, be sure boiler limit control is set a minimum 20°F (11°C) higher. However, in no case should boiler limit control be set above 210°F (99°C).

- Maximum tank temperature is 150°F.

5.3 TEMPERATURE ADJUSTMENT

Allow the water heater to operate several heat-up cycles and check the water temperature at the faucet to verify proper operation.

- If the water at the faucet is hotter than needed:
    1. Adjust the aquastat to a lower temperature setting or thermostatic mixing valve if used.
    2. Draw sufficient water or allow the water to sit until another heat-up cycle is initiated.
    3. Wait until the heat-up cycle is completed.
    4. Recheck the water temperature at the faucet.
- If the water at the faucet is colder than needed:
    1. Adjust the aquastat to a higher temperature setting.
    2. If a heat-up cycle begins, wait until the heat-up cycle is completed and recheck the water temperature at the faucet.
    3. If a heat-up does not begin, draw sufficient water or allow the water to sit until a heat-up cycle is initiated. Wait until the heat-up cycle is completed. Recheck the water temperature at the faucet.

Service and Maintenance Section 6

The *EPJ Series Indirect Hot Water Tank* has been designed to provide years of trouble-free performance in normal installations and requires minimal routine maintenance to ensure a reliable and safe supply of hot water.

6.1 GENERAL OPERATION

- **DANGER:** Before operating the T&P relief valve, make sure no person is near the T&P relief valve discharge piping.
- **DANGER:** Do not plug T&P relief valve or discharge piping. Plugging T&P relief valve or discharge piping can cause excessive pressure in water heater resulting in severe personal injury, death or substantial property damage.
- If the temperature and pressure relief valve on the appliance discharges periodically, this may be due to thermal expansion in a closed water supply system. Contact the water supplier or local plumbing inspector on how to correct this situation. Do not plug the temperature and pressure relief valve.
- Hydrogen Sulfide gas can be produced in a hot water system that has not been used for a long period of time (generally two weeks or more). Hydrogen Sulfide gas is extremely flammable. To prevent the possibility of injury under these conditions, we recommend the hot water faucet to be open for several minutes at the kitchen sink before you use any electrical appliance which is connected to the hot water system. If hydrogen is present, there will probably be an unusual sound such as air escaping through the pipe as the hot water begins to flow. There should be no smoking or open flame near the faucet at the time it is opened.
- Verify proper operation after servicing.

6.2 ELECTRONIC ANODE

- Most installations do not require the use of an anode, however, in extremely corrosive water conditions, we recommend the use of an **Electronic Anode** that is non-sacrificial (e.g. “Corro-Protec”). A sacrificial anode, such as magnesium or aluminum, is not recommended and may result in accelerated corrosion.
- The Electronic Anode should be installed in the top of the tank using the factory supplied kit. Please contact the factory for details.
- Follow the anode manufacturer’s instructions regarding installation and inspection to ensure continuous and proper operation. The inspection should be performed annually but may need to be more frequent in areas with water having low pH values or high hardness.

6.3 ANNUAL SERVICE

The owner or user should have a qualified heating technician perform annual service as follows:

1. Water Piping: Check all domestic water and boiler water piping for signs of leakage at joints, valves, unions and other fittings.
2. Controls and Valves: Check function of controls and valves as per the control/valve manufacturer's instructions. If the circulator is oil-lubricated, follow the instructions on the circulator to oil it.
3. Flushing the tank:
    - When draining tank use caution as water will be hot.
    - Shut off power.
    - Shut off domestic water supply to tank. To relieve pressure in tank, open a hot water faucet.
    - Open drain valve. Allow water to flow until it runs clear or empties.
    - For chemical flushing, remove the T&P relief valve and apply the chemical flushing technique as per the manufacturer's instructions. Replace T&P relief valve after treatment.
    - Close drain valve.
    - Open domestic water inlet shut-off valve. Close hot water faucet after flow is established.
    - Resume power.
4. T&P Relief Valve: **DANGER: Before operating T&P relief valve, make sure no person is near the T&P relief valve discharging piping.** Hot discharge water can cause severe personal injury or substantial property damage. Check T&P relief valve is in accordance with manufacturer's instructions. If short of such instructions, perform the following: move operating lever to open position for a few seconds and then move it back, allowing it to snap closed. If the relief valve continues to release water, close cold water inlet to water heater immediately. Follow "Flushing the tank" instructions to drain water and replace T&P relief valve.

6.4 MONTHLY SERVICE

Visual Check: Visually check joints, valves and other fittings for leaks. Call a qualified service technician to repair any leaks found.

These instructions are for general guidance only; please contact a technician or plumber for required local codes and standard procedures.

Troubleshooting Guide — Section 7

Problem	Possible Cause	Solution
No Hot Water	Tank control failure	• Check wiring and power supply • Replace control
	Aquastat not calling for heat	• Check wiring • Replace aquastat
	Air lock in domestic water loop	• Purge and bleed piping
	Circulator not operating	• Repair or replace circulator
	Zone valve not operating	• Check wiring and power supply / open manually to check • Replace zone valve
	Boiler not operating	• Boiler control too low • Check wiring • Check disconnect switch • Check fuse or circuit breaker • Check wiring and power supply
Insufficient Hot Water	Temperature setting too low	• Adjust aquastat or tempering valve to higher setting
	Defective aquastat or improper calibration	• Replace aquastat
	Undersized water heater	• Install adequate water heater
	Undersized boiler with no priority to domestic hot water	• Rewire for priority / check sizing
Slow Hot Water Recovery	Undersized boiler with no priority to domestic hot water	• Rewire for priority / check sizing
	Inadequate boiler water flow	• Check circulator sizing • Ensure valve is open • Purge and bleed piping
	Circulator capacity too low	• Replace circulator with correct one
	Scale build-up in tank	• Chemical cleaning or repeated flushing
Water Too Hot	Aquastat setting too high	• Adjust aquastat to lower setting
	Aquastat continuously runs	• Check wiring • Replace aquastat
	Improper system piping and/or control	• Check piping and flow control valve
	Improper system wiring	• Check wiring
	Tempering (mixing) valve	• Read valve instructions or consult with manufacturer
Discharge From T&P Relief Valve	Inlet cold water pressure too high	• Install pressure reducing valve
	Excessive water pressure when heating	• Install properly sized potable thermal expansion tank on cold water inlet
	T&P Relief valve leaking	• Replace T&P relief valve

WARRANTY REGISTRATION Section 8

IMPORTANT

Registration is required to validate your warranty.

Option 1: Please visit www.alliedboilers.com and go to the "Warranty Registration" section of the website to register your product warranty.

Option 2: Please fill out the required information on the card below, detach, insert in an envelope and mail with appropriate postage to Allied Engineering (address provided on opposite side of card).

Note: The 'Serial No.' and 'Model' can be found on the rating plate. The rating plate is located on the jacket of the tank near the sensor well.

CARD MUST BE RETURNED TO VALIDATE WARRANTY
Cette forme doit être complétée et retournée pour valider votre garantie

Serial No. _____ **Model** _____
No. du Série *Modèle*

Date of Purchase _____
Date de l'Achat

Owner's Name _____
Nom du Propriétaire

Owner's Address _____
Adresse

_____

Installed by _____
Nom de l'Installateur

Dealer's Name _____
Nom du Distributeur

Dealer's Address _____
Adresse du Distributeur

NOTE: This card must be filled out and mailed within 30 days of purchase to validate your warranty.
NOTE: Cette forme doit être complétée et envoyée en dedans 30 (trente) jours de l'achat pour valider votre garantie.

POSTAGE
STAMP

ALLIED ENGINEERING COMPANY
94 RIVERSIDE DRIVE
NORTH VANCOUVER, B.C. V7H 2M6

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