

ASTM

American Society for Testing and Materials. Publishes standard specifications for terminology, labeling, testing and production.

British Thermal Unit (Btu)

The British thermal unit is a unit of measure equal to the amount of heat necessary to raise the temperature of one pound of water one degree Fahrenheit.

Conduction

A process of heat transfer whereby heat moves through a material or between two materials that are in direct contact with each other.

Convection

The transfer of heat by movement of a liquid or a gas. Natural Convection is a result of movement caused by changes in density as temperature changes within a fluid medium such as a liquid or a gas. Forced Convection is the result of mechanical force moving a fluid or gas.

Crimp

An insert fitting for Central PEX tubing. A crimp requires a crimp ring or clamp of comparable quality.

Cross-Linking

A chemical process that changes the molecular structure of a plastic material by linking otherwise independent hydrocarbon chains. Cross-Linking creates a three-dimensional network of hydrocarbons.

Differential Temperature (ΔT)

The difference in temperature between two opposing masses used to describe the potential that exists for heat transfer.

FIP

Female iron pipe thread.

FPT

Female American National Taper Pipe Thread.

HDPE

Abbreviation for high-density polyethylene.

Head Pressure

The pressure available at the outlet side of a pump, or inlet side of a flow-conducting system. It is expressed in feet of head, which is the height of a column of water that can be supported by a pump against standard atmospheric pressure.

Heating Load

The amount of energy (in Btu/hr) required for space heating.

Heat Loss

The transfer of heat from a contained space to the atmosphere surrounding it. Heat loss is the result of thermal conductivity through walls, windows, roofs and other building envelope components, as well as infiltration losses due to the exchange of inside air with outside air.

Infiltration Losses

The loss of heat energy due to infiltration which is expressed in Btu/hr. Infiltration losses are calculated from the air changes per hour, differential indoor/outdoor temperature and the heat carrying capability of the lost air.

Mean Radiant Temperature

The average temperature of all the surfaces in a room.

MPT

Male American National Taper Pipe Thread.

NPT

American National Taper Pipe Thread is a standard thread used in the US.

PE

Abbreviation for polyethylene.

Perimeter Area

Describes the first four feet around the exposed perimeter of the slab.

PEX

Abbreviated for cross-linked polyethylene.

Pressure Loss

The loss of fluid pressure between any two points in a flow-conducting system, expressed in pounds per square inch (psi). The loss of pressure is caused by friction against the tubing walls and is further influenced by the tubing size, length and texture of the inside wall of the tube, fittings, valves and other components. Pressure loss is also influenced by the temperature and viscosity of the fluid.

R-Value

A measure of a material's ability to resist the flow of heat. R-Value is expressed in Btu/hr/ft² and calculated by the formula $1/U=R$.

Radiation

The process in which energy in the form of rays of light or heat is transferred from body to body without heating the intermediate air acting as the transfer medium.

Sweat Fitting

Soldered copper pipe fitting.

Upward Load

The amount of Btu•hr required to overcome the envelope losses of the room.

Under-Slab Insulation

The amount of insulation (expressed in R-Value) under the interior area of the slab.

Thermal Conductivity (K)

A property of materials that indicates the amount of heat (in Btu) that penetrates one square foot of a uniform material one inch thick in one hour for each degree Fahrenheit difference in temperature between the surfaces. It is expressed in Btu/(hr/ft²/°F). The thermal conductivity of PEX is 0.22 Btu/(hr/ft²/°F).

Thermal Mass

Any material used to store heat energy or the affinity for heat energy.

U-Value

The capability of a material to transfer heat. Used to describe the conductance of a material or composite of materials in construction. U-Value is expressed in Btu/hr/ft² and is the inverse function of R-Value.

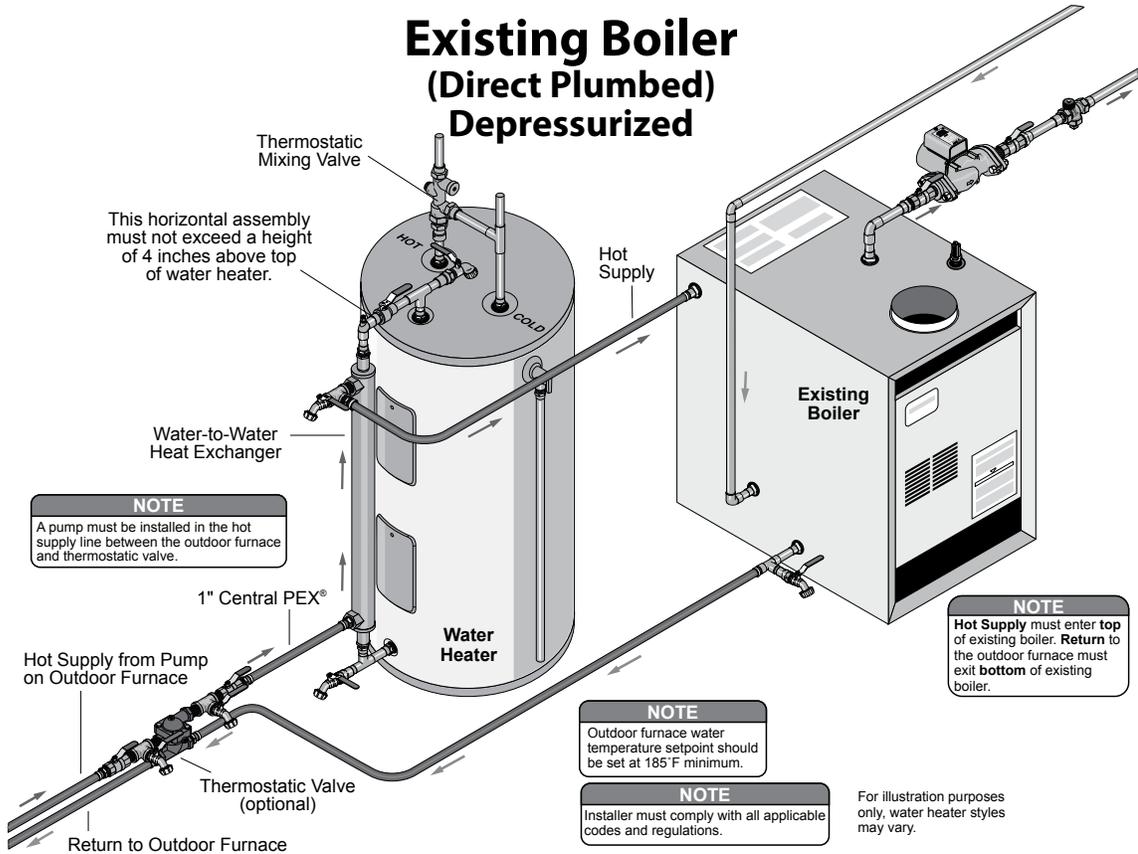
Velocity

The speed of fluid at a specific flow, expressed in feet per second (fps or ft/sec).

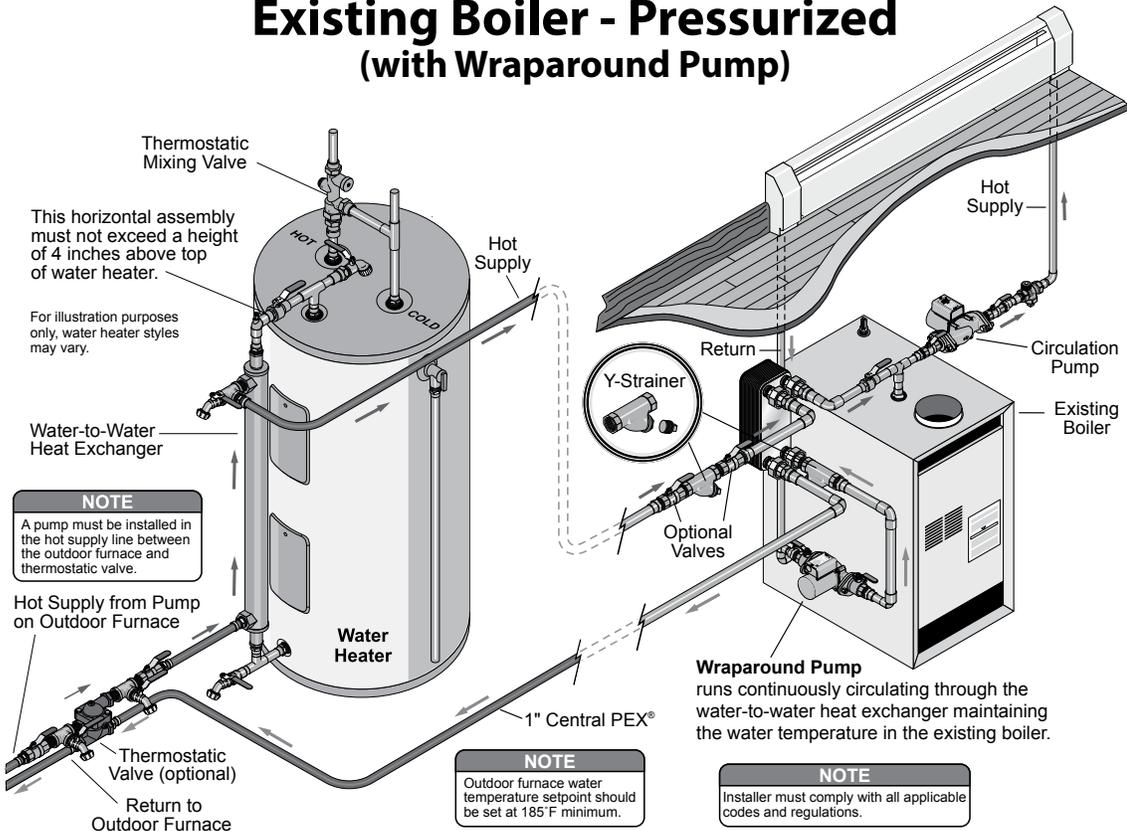
Zone

An area of a radiant panel served by one or more loops, and individually controlled (either manually or automatically).

Existing Boiler (Direct Plumbed) Depressurized

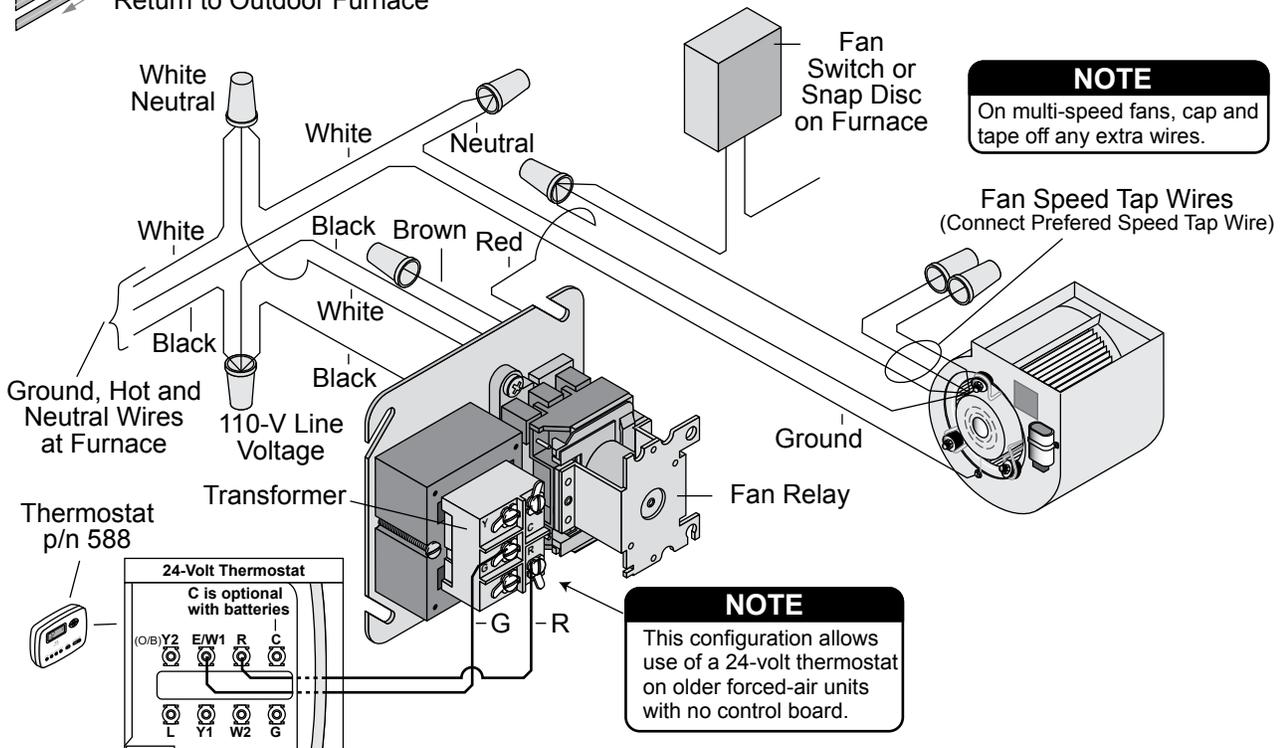
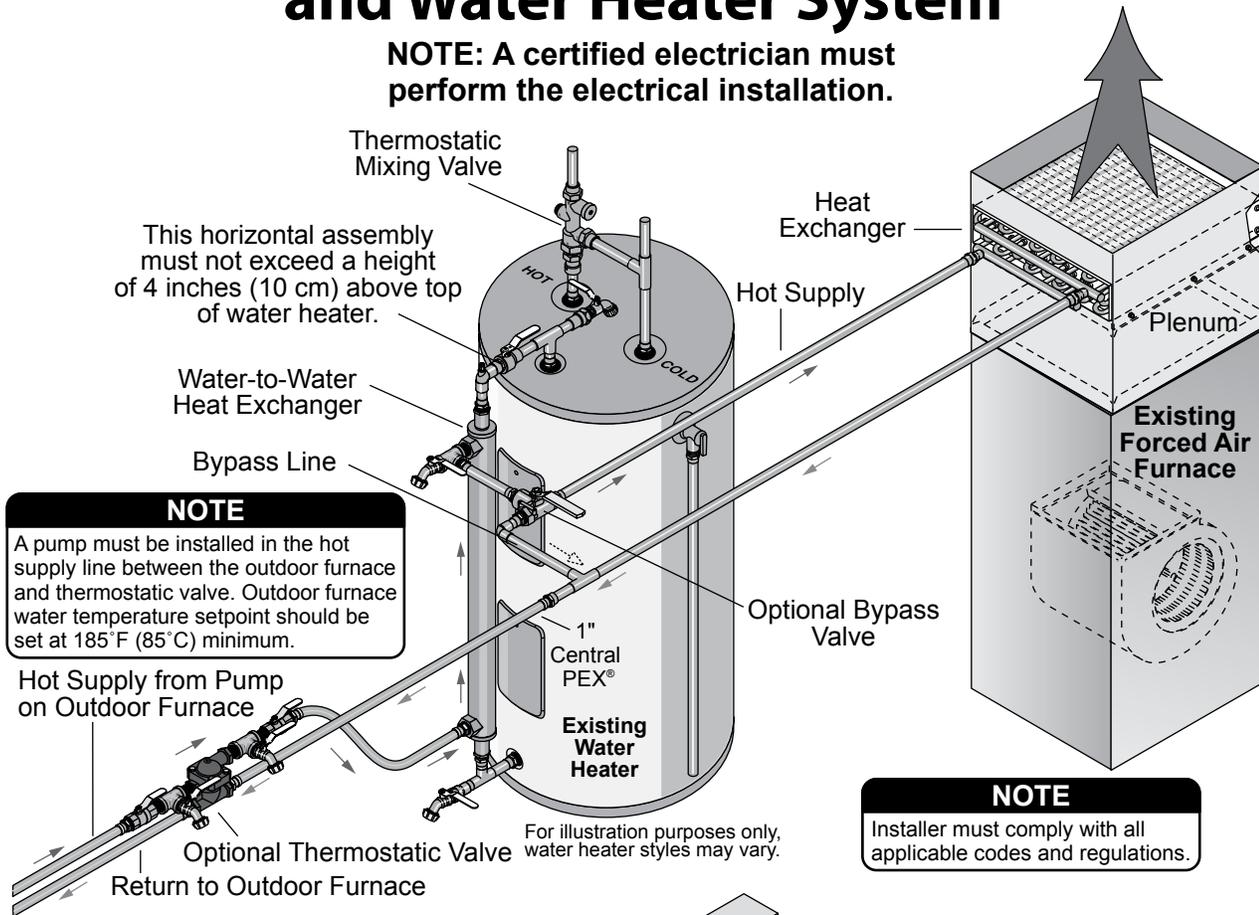


Existing Boiler - Pressurized (with Wraparound Pump)



Water-to-Air Heat Exchanger and Water Heater System

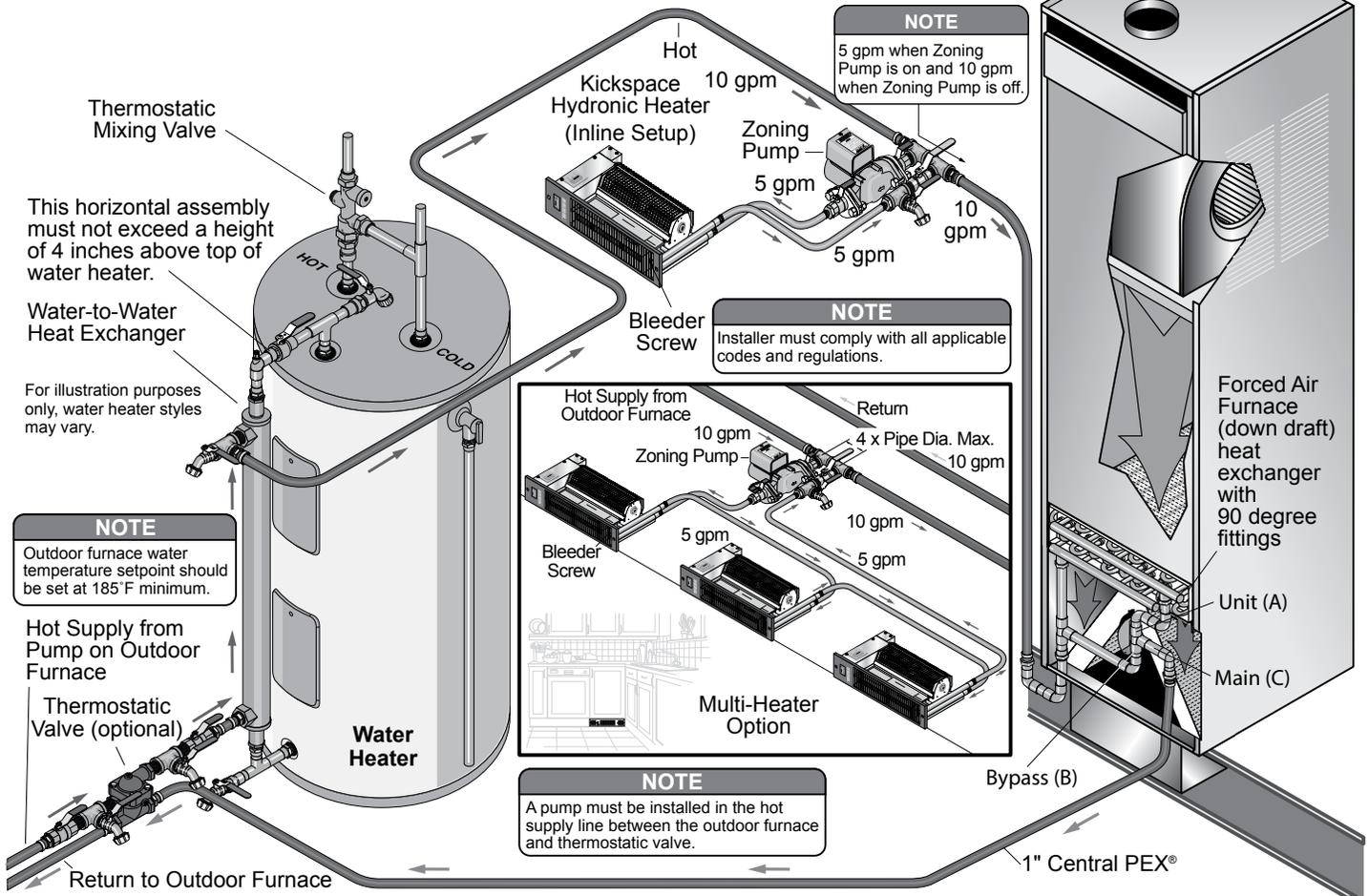
NOTE: A certified electrician must perform the electrical installation.



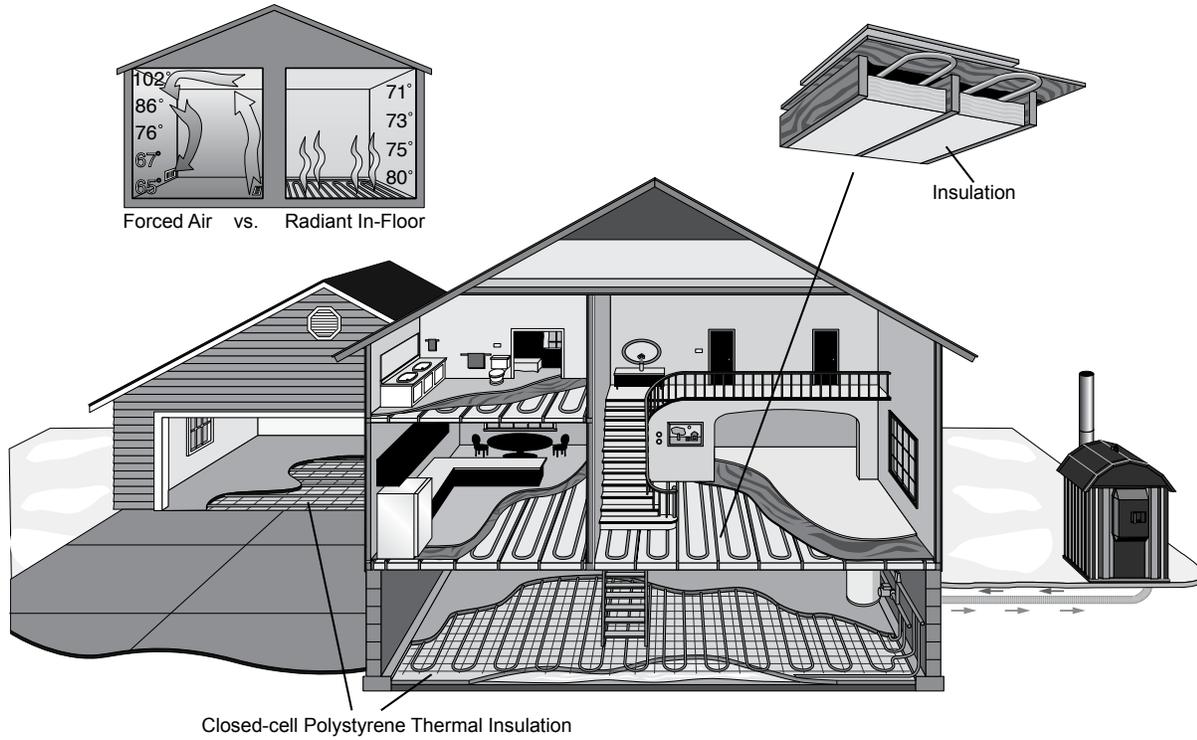
For illustration purposes only.

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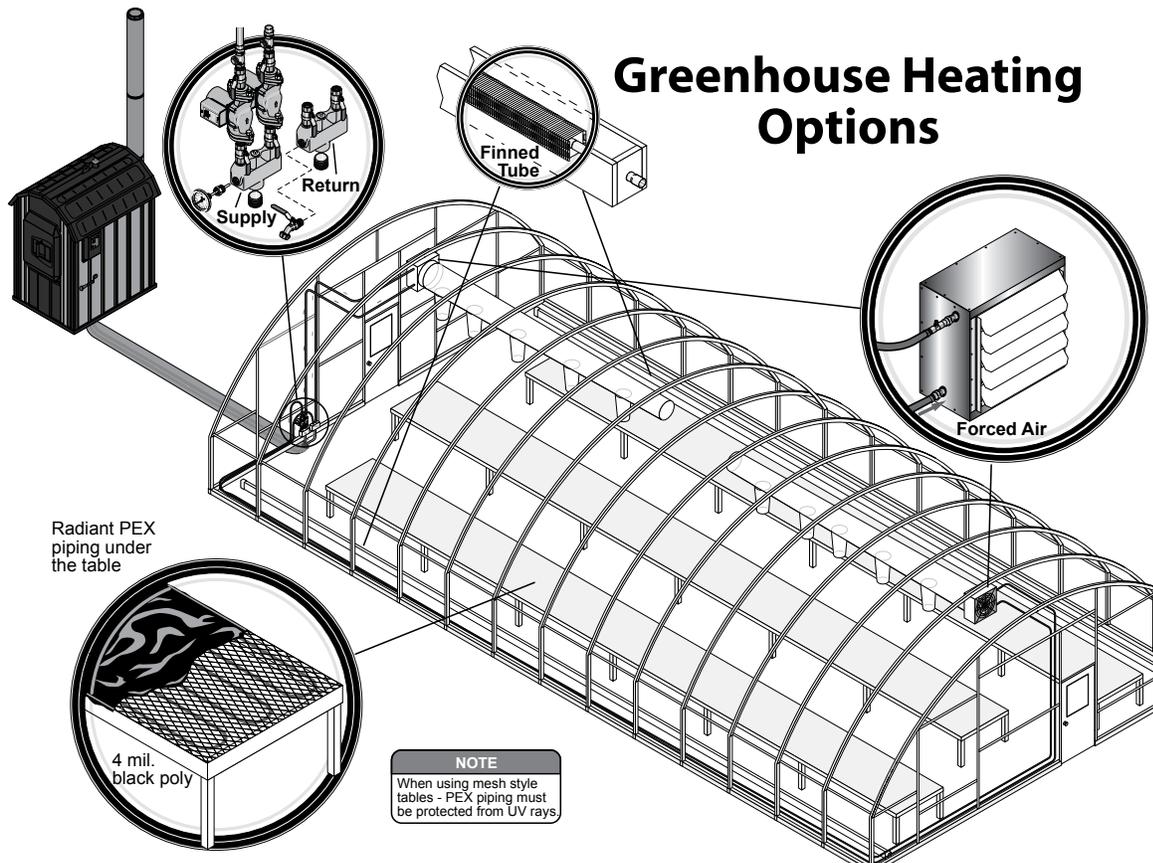
Kickspace Heater/Forced Air System (with Water Heater and Down Draft Furnace)



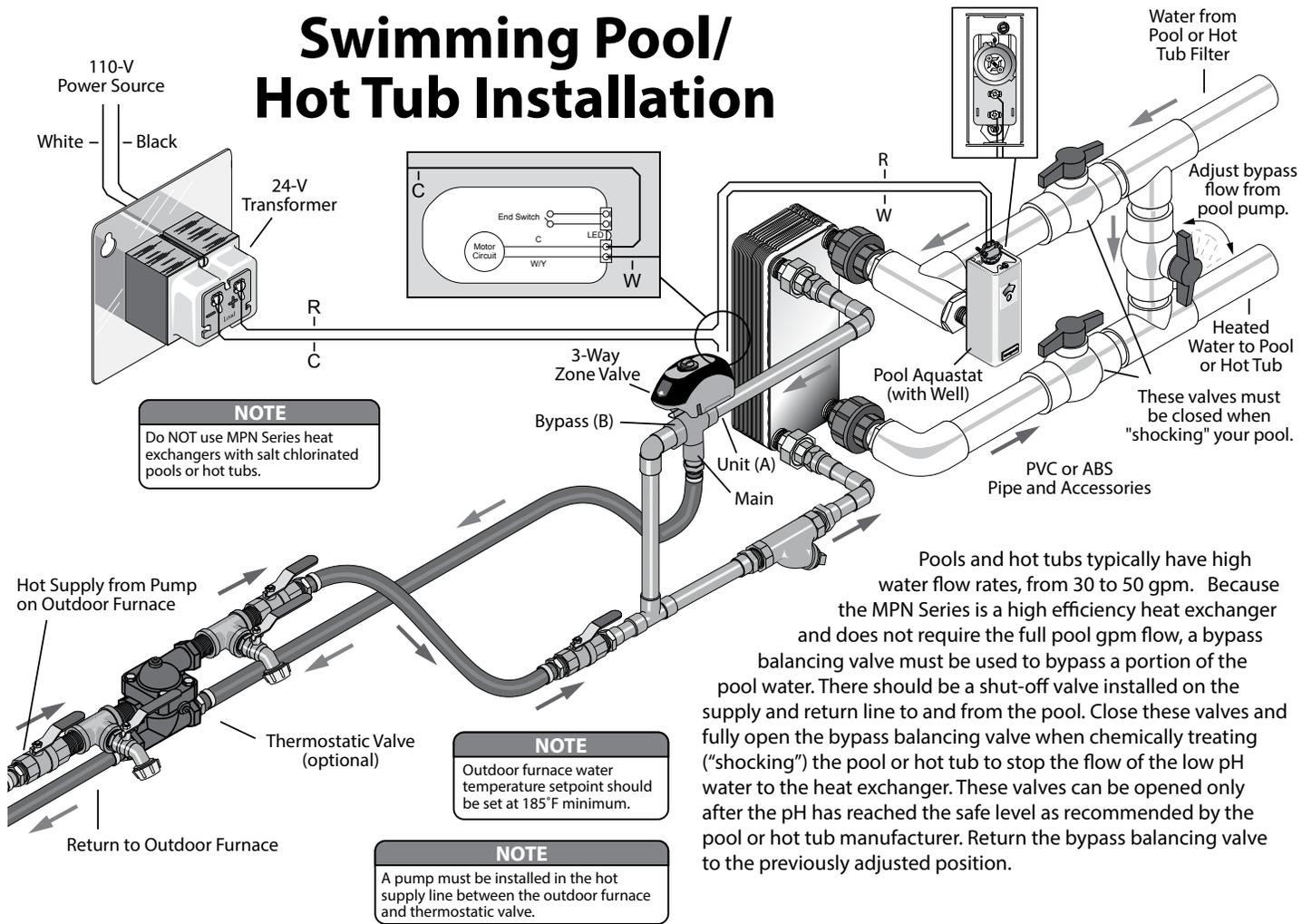
Radiant Heat Multi Zone In-Floor



Greenhouse Heating Options

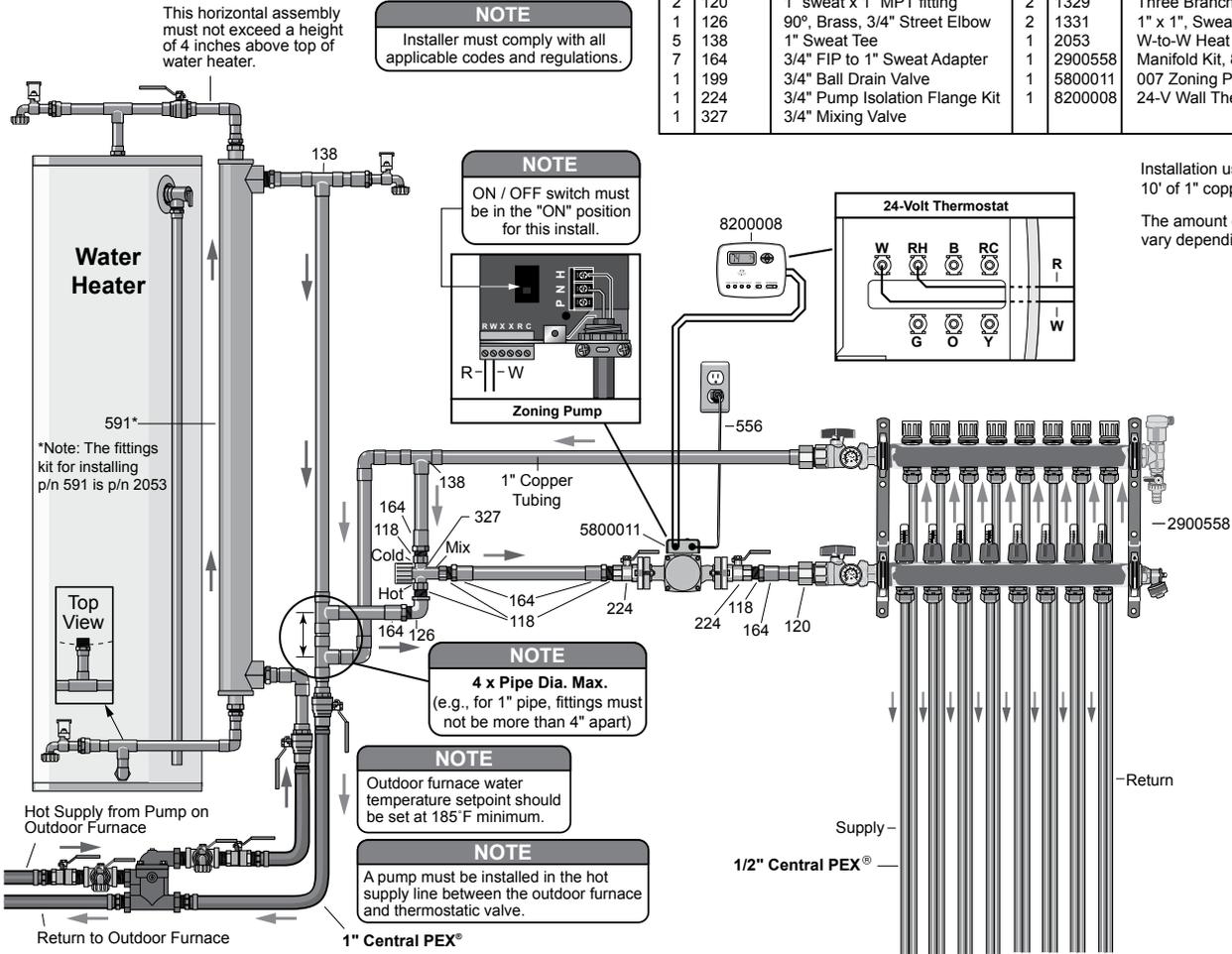


Swimming Pool/ Hot Tub Installation

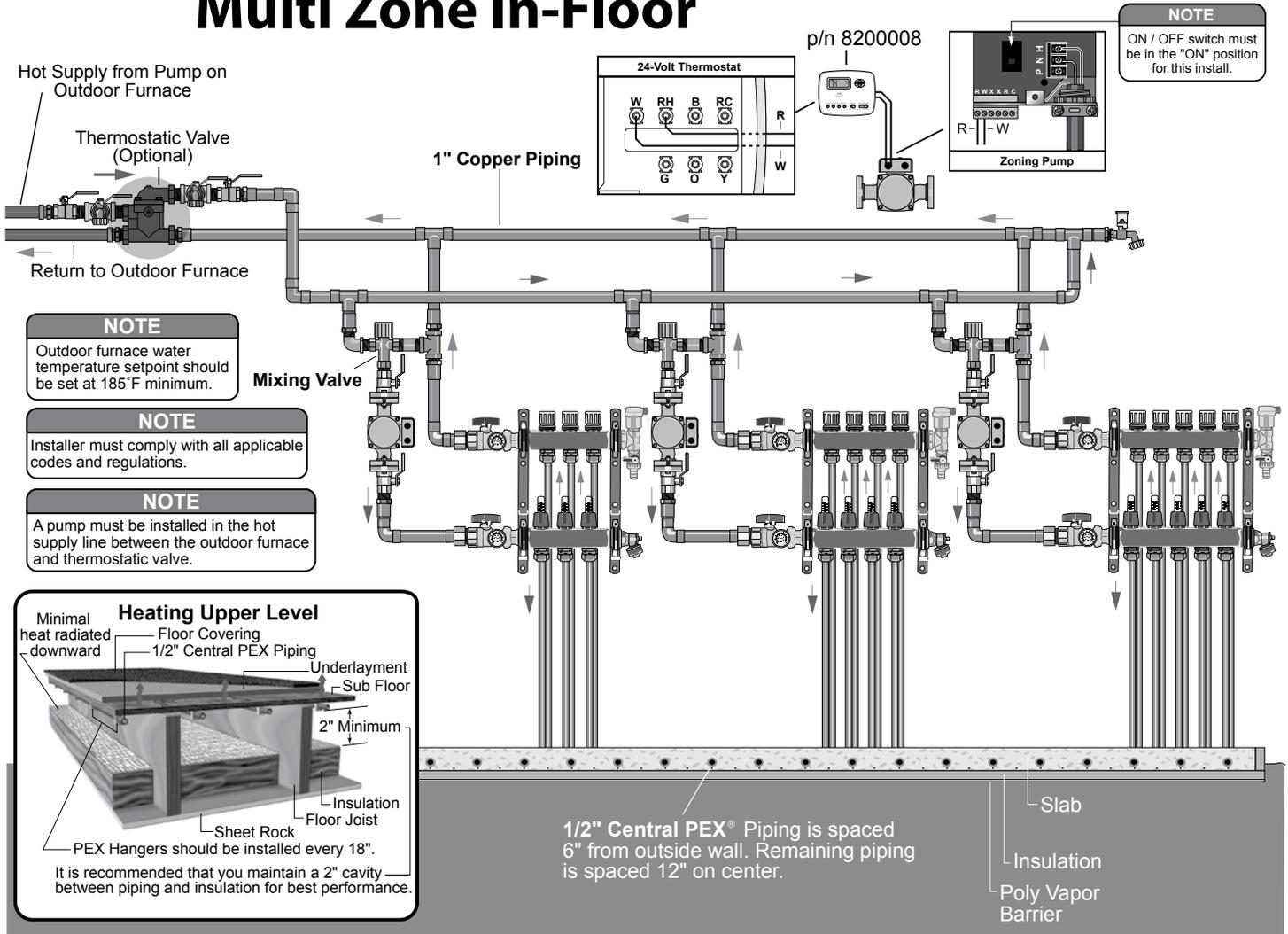


Radiant Heat Single Zone

Qty	p/n	Description	Qty	p/n	Description
1	103	90°, 1" Street Elbow	1	556	Power Supply Cord, 32"
5	118	3/4" Close Nipple	1	591	Water-to-Water Heat Exchanger
2	120	1" sweat x 1" MPT fitting	2	1329	Three Branch Valved Manifold
1	126	90°, Brass, 3/4" Street Elbow	2	1331	1" x 1", Sweat to PEX Adapter
5	138	1" Sweat Tee	1	2053	W-to-W Heat Exchr Fittings Kit
7	164	3/4" FIP to 1" Sweat Adapter	1	2900558	Manifold Kit, 8-Loop
1	199	3/4" Ball Drain Valve	1	5800011	007 Zoning Pump
1	224	3/4" Pump Isolation Flange Kit	1	8200008	24-V Wall Thermostat
1	327	3/4" Mixing Valve			



Multi Zone In-Floor



Baseboard System (Three Way Zone Valve Controlled)

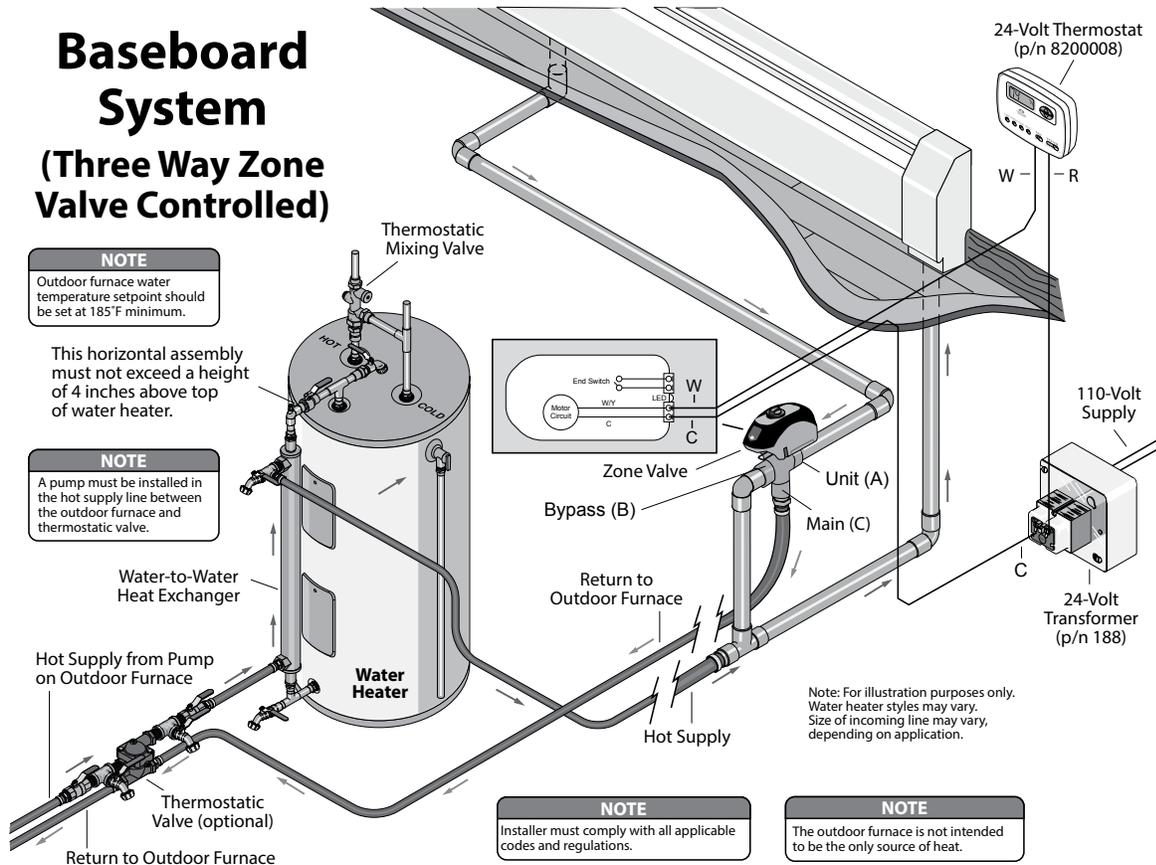
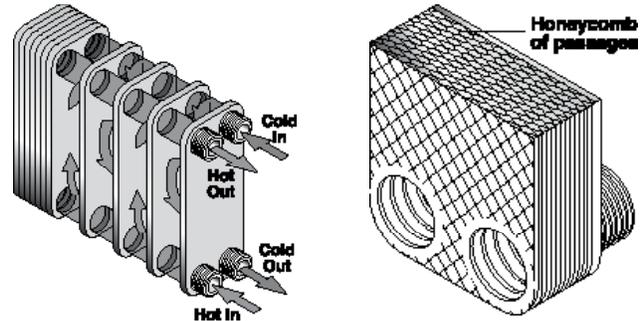
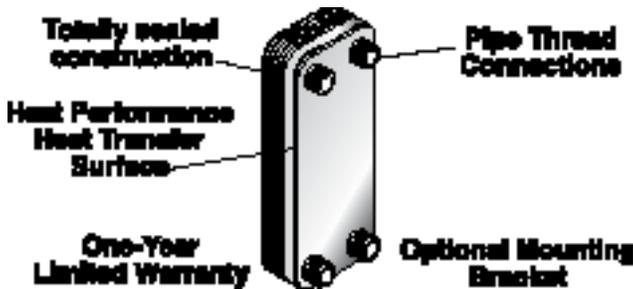


Plate Information



The popularity of brazed plate heat exchangers lies in their small size and highly efficient heat transfer surface. Brazed plate heat exchangers begin as stainless steel plates specially embossed to critical tolerances. The embossed surface increases fluid turbulence, thereby increasing the heat transfer coefficient and lowering potential fouling.

The plates are stacked for maximum use of the surface area and to form two independent circuits running in alternating layers. The two fluid circuits are configured to flow in opposite directions (counterflow) to further enhance the dissipation of heat. This honeycomb of passages provides high heat transfer, low fluid pressure drop and complete separation of the two fluids.

The assembled units are then brazed in a vacuum furnace for consistent quality. As a final step, a helium pressure test is used to ensure leak-free performance. The result is a very rugged, highly efficient and reliable heat exchanger, built to last.

Brazed plate heat exchangers are available in a variety of sizes and plate configurations (see page 7).

Smaller Size

Up to 60-percent smaller than traditional devices.

High Performance

Higher heat transfer coefficients and lower fouling rates.

Lower Installation Cost

Costs less than traditional devices.

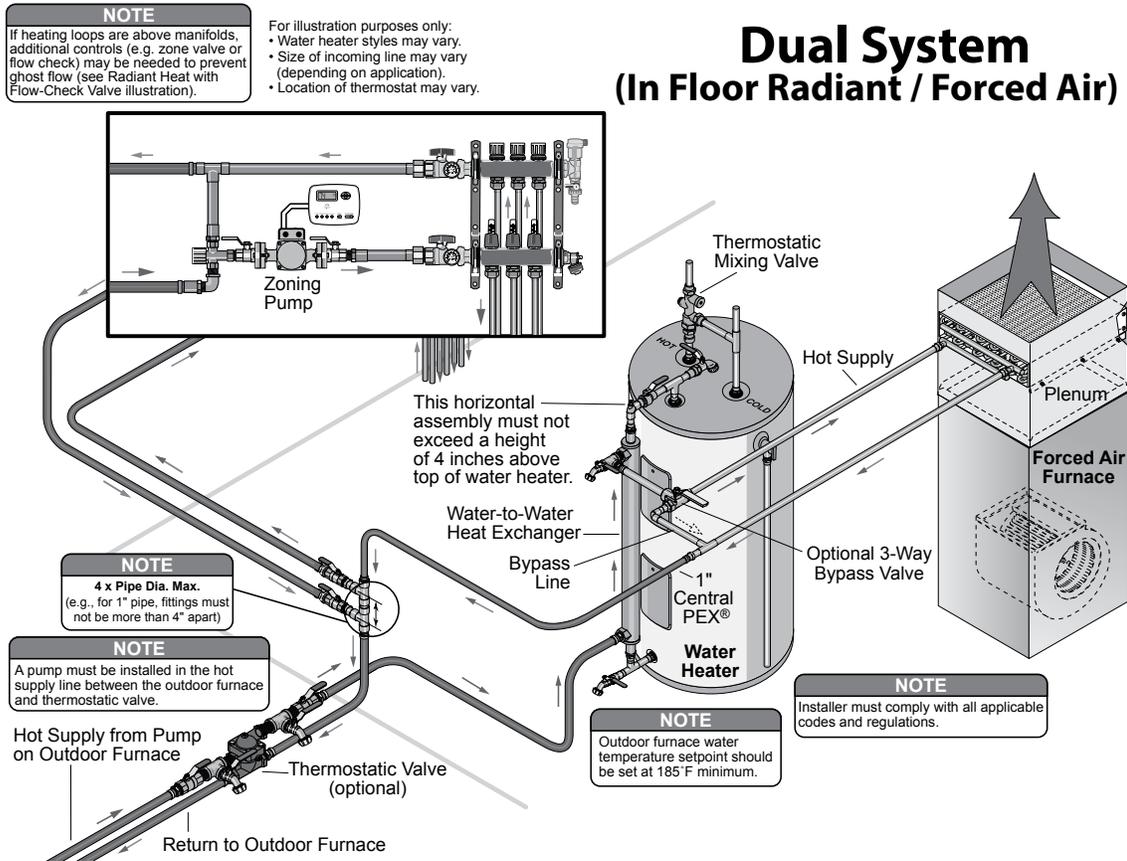
Easy Installation

Easier to install and connect.

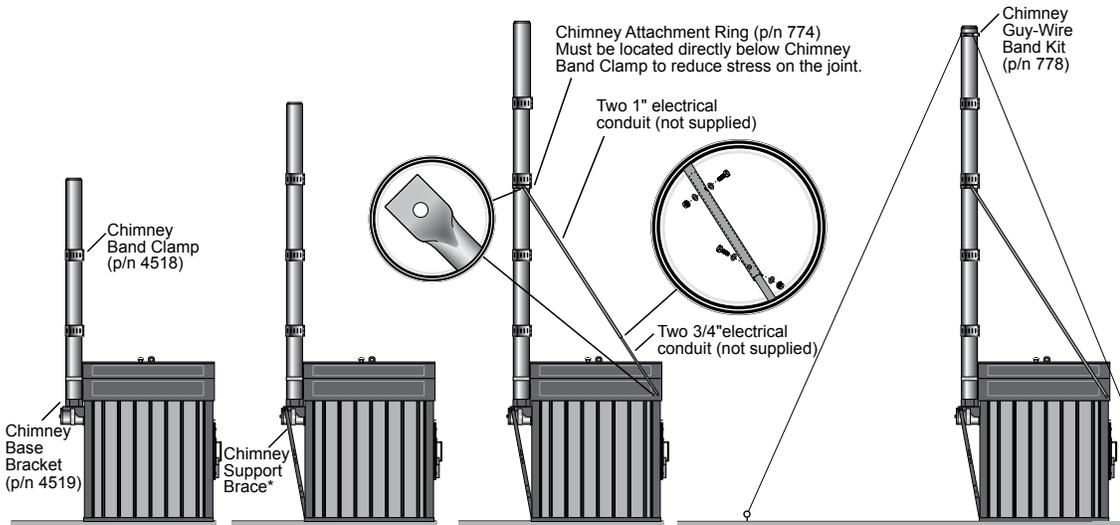
Lower Shipping Cost

Smaller size and less weight makes it easier and more inexpensive to transport.

System Diagrams



Chimney Reinforcement Recommendations for CL 4030, CL 5036, CL 6048, CL 7260 and Pallet Burner



Three Sections

When three sections of chimney are being used a Chimney Band Clamp Kit (p/n 4518) for each joint and a Chimney Base Bracket Kit (p/n 4519) are recommended.

Four Sections

When four sections of chimney are being used a Chimney Band Clamp Kit for each joint, a Chimney Base Bracket Kit and a Chimney Support Brace Kit* are recommended.

Five or More Sections

When five or more sections of chimney are being used a Chimney Band Clamp Kit for each joint, a Chimney Base Bracket Kit, a Chimney Support Brace Kit and a Chimney Attachment Ring (p/n 774) are recommended.

Fall Zone

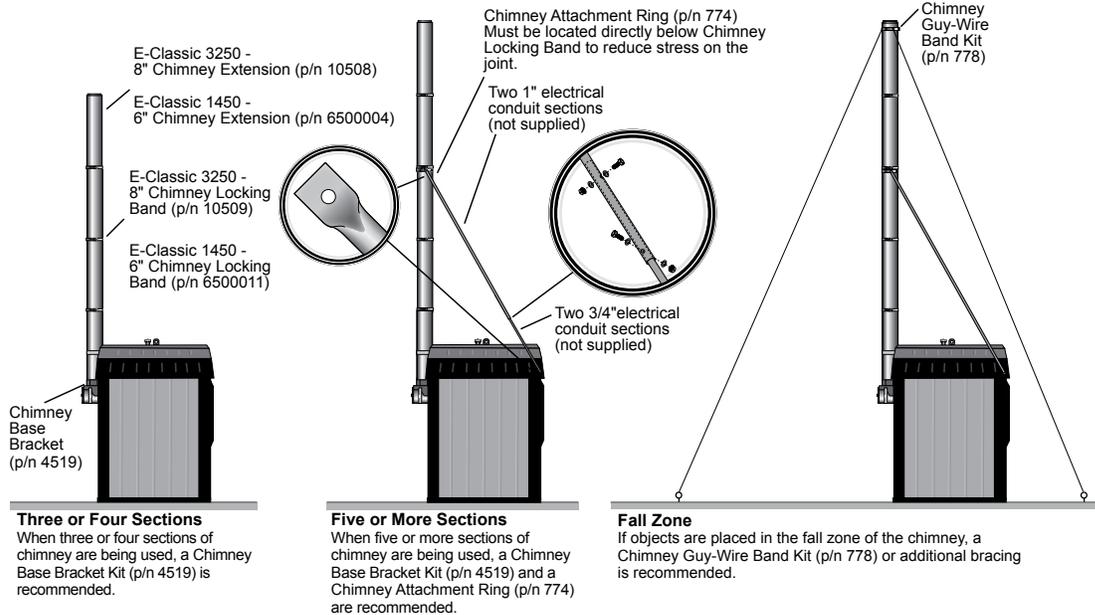
If objects are placed in the fall zone of the chimney, a Chimney Guy-Wire Band Kit (p/n 778) or additional bracing is recommended.

*Chimney Support Brace Chart	
p/n	Models
4554	CL 4030, CL 5036 & CL 6048
8402	CL 7260 & Pallet Burner

NOTE

- Additional bracing may be necessary in certain areas such as those subject to severe weather, winds, freezing rain, etc.
- Inspect all bracing bi-annually for integrity.

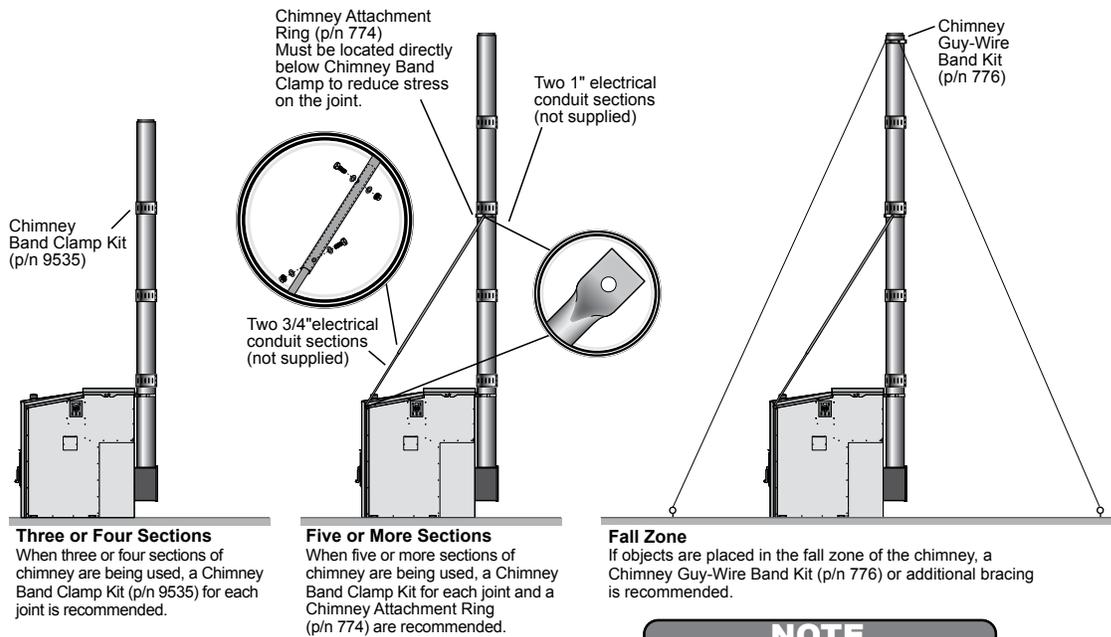
Chimney Reinforcement Recommendations for E-Classic 1450 and E-Classic 3250



NOTE

- Additional bracing may be necessary in certain areas such as those subject to severe weather, winds, freezing rain, etc.
- Inspect all bracing bi-annually for integrity.

Chimney Reinforcement Recommendations for Maxim M255

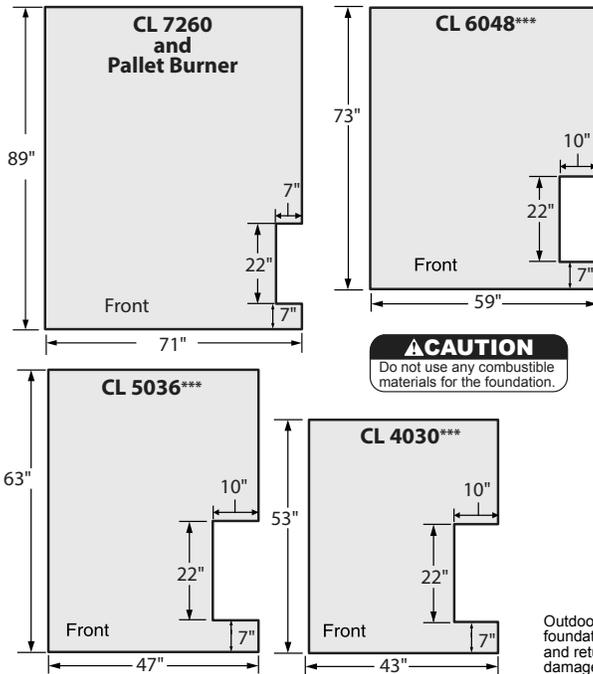


NOTE

- Additional bracing may be necessary in certain areas such as those subject to severe weather, winds, freezing rain, etc.
- Inspect all bracing bi-annually for integrity.

Dimensions & Measurements

Classic & Pallet Burner Furnace Base and Dimensions



CAUTION
Do not use any combustible materials for the foundation.

FURNACE MEASUREMENTS								
	A	B	C	D	E	F	G	H
CL 4030	42.5"	70"	52.5"	49"	53"	66"	144"	3" 24"
CL 5036	46.5"	79"	62.5"	51"	64"	76"	151"	3" 24"
CL 6048	58.5"	93"	72.5"	65"	74"	86"	163"	3" 24"
CL 7260	70.5"	93"	88.5"	78"	89"	104"	260"	4" 10"
Pallet Burner	70.5"	93"	88.5"	78"	89"	104"	260"	4" 8"

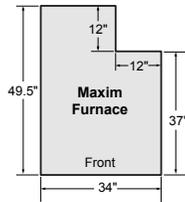
*Measurement includes two 4 ft. chimney sections.
**Measurement includes three 4 ft. chimney sections.

Outdoor furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundation may consist of concrete, crushed rock, or patio blocks.

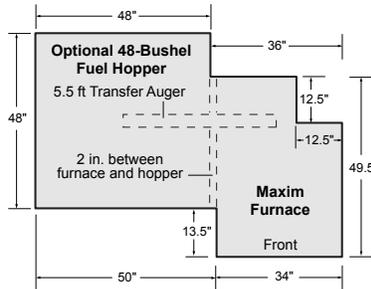
***Foundation optional on these models.

Maxim M255 Furnace Base Dimensions

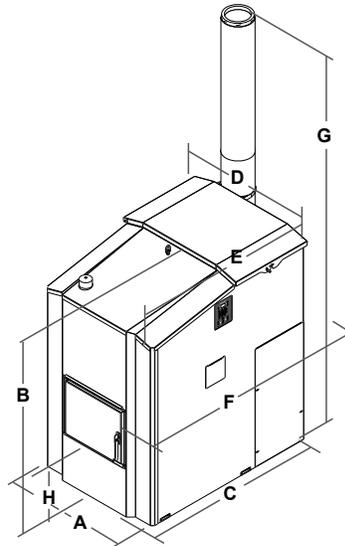
Furnace Base Dimensions
Shown without optional hopper.



Optional 2,440 lb
Hopper with Furnace Base Dimensions



CAUTION
Do not use any combustible materials for the foundation.

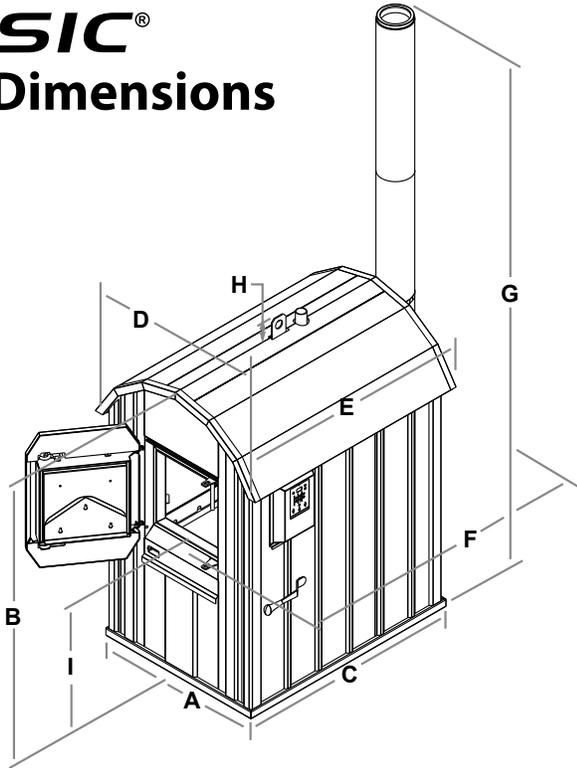
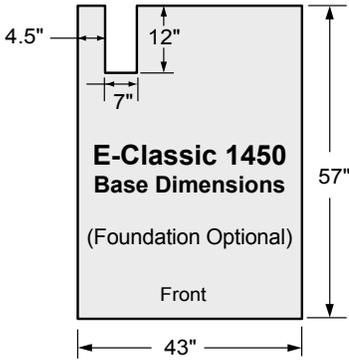
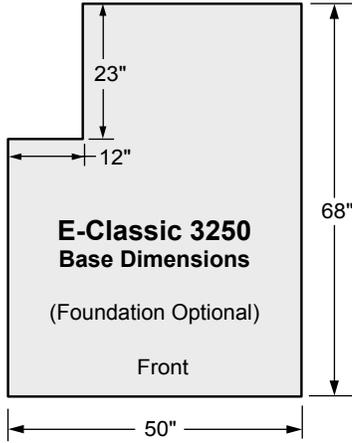


NOTE
Furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the furnace enclosure.

Maxim M255 Measurements							
	A	B	C	D	E	F	G
in.	34	57	49.5	36	48	59.5*	117.5**
cm	86	145	126	91.5	122	151*	298.5**

* Measurement (F) is from firebox door to chimney inspection cover.
** Measurement (G) includes two 4 ft. chimney sections.

CENTRAL BOILER
E-CLASSIC®
Furnace Base and Dimensions



E-Classic Measurements									
	A	B	C	D	E	F	G	H	I
E-Classic 1450	42.5"	73"	57"	47"	59"	71"	150"	5"	34"
E-Classic 3250	49.5"	87"	68"	54"	70"	86"	167"	5"	37"

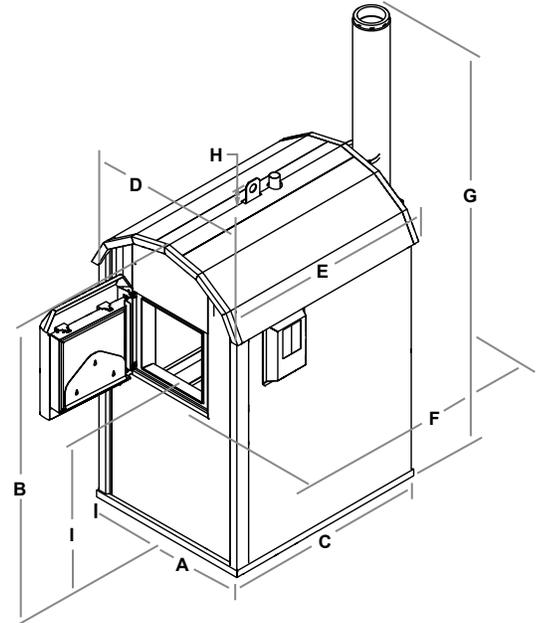
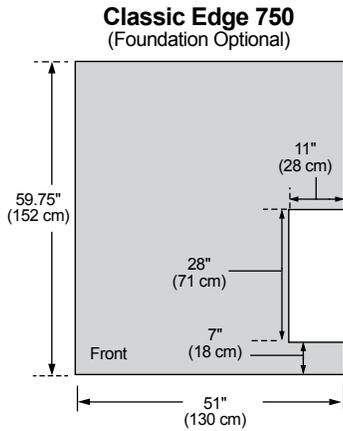
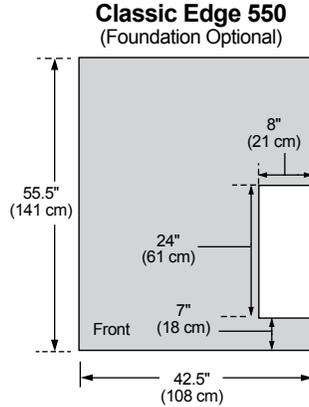
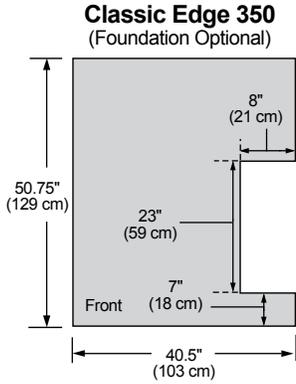
- Measurement (F) is from firebox door to chimney inspection cover.
 - Measurement (G) includes two 4 ft. chimney sections.

CAUTION
 Do not use any combustible materials for the foundation.

Outdoor furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundation may consist of concrete, crushed rock, or patio blocks.

Dimensions & Measurements

Classic Edge Furnace Base and Dimensions



Classic Edge Measurements									
	A	B	C	D	E	F	G	H	I
Classic Edge 350	40.5"	72"	50.75"	43"	51.5"	69"	150"	5"	38"
Classic Edge 550	42.5"	76"	55.5"	45"	56"	73.5"	151"	5"	37.5"
Classic Edge 750	51"	84.75"	59.75"	53.5"	60.5"	79"	164"	5"	39"

- Measurement (F) is from firebox door to chimney inspection cover.
- Measurement (G) includes two 4 ft. chimney sections.

CAUTION
Do not use any combustible materials for the foundation.

Outdoor furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundation may consist of concrete, crushed rock, or patio blocks.

Sample Parts List

Sample Parts List for Forced-Air Heating System

NOTE: These lists are intended to be examples only. Actual installations will vary. See your dealer if you have questions concerning your application.

QTY.	P/N	DESCRIPTION
1		Central Boiler Outdoor Wood Furnace
1	107	Heat Exchanger Coil, 125k Btu
1	5600018	Side-Arm Heat Exchanger Kit
1	2053	Fittings Kit
1	5000392	Water Heater Mixing Valve, 3/4"
1	5800033	Taco 0015e3 Pump
1	224	Isolation Flange Kit, 3/4"
1	588	24-Volt Thermostat
1	198	Ball Valve, 3/4"
1	118	Nipple, 3/4" x close
1	296	Brass Swing Check Valve, 3/4"
6	1330	PEX Adapter, 1" PEX x 3/4" MIP
6	1333	PEX Coupling, 1"
6	1334	PEX 90° Elbow, 1"
20	5978	Central Boiler Clamp, 1"
		30' ThermoPEX Pipe, 1" (NOTE: distance between outdoor furnace and installation to be heated will determine quantities)
1	5700082	Central PEX 1" Pipe, ten 8' straight sections
1	2443	ThermoPEX Cap, 1"
1	556	Power Supply Cord, 32"
-	1650	1650XL Inhibitor Plus (amount varies per model; see Owner's Manual)
1	297	Ashtrol, 6.25 lb
2	6054	Temperature Gauge (optional)
2	180	Hex Bushing (optional)

Sample Parts List for Additional Buildings

QTY.	P/N	DESCRIPTION
1	2900545	100k Btu Fan Coil Unit
1	5800033	Taco 0015e3 Pump
1	1267	Line Voltage Thermostat
1	198	Ball Valve, 3/4"
4	1334	PEX 90° Elbow, 1"
8	1330	PEX Adapter, 1" PEX x 3/4" MIP
10	5978	Central Boiler Clamp, 1"
1	199	Brass Hose Bib, 3/4" MPT
1	133	Black Tee, 3/4" NPT
1	556	Power Supply Cord, 32"
1	296	Brass Swing Check Valve, 3/4"
1	118	Nipple, 3/4" x close
2	6764	Brass Offset Tee, 4"
1	6054	Temperature Gauge (optional)
1	180	Hex Bushing (optional)

