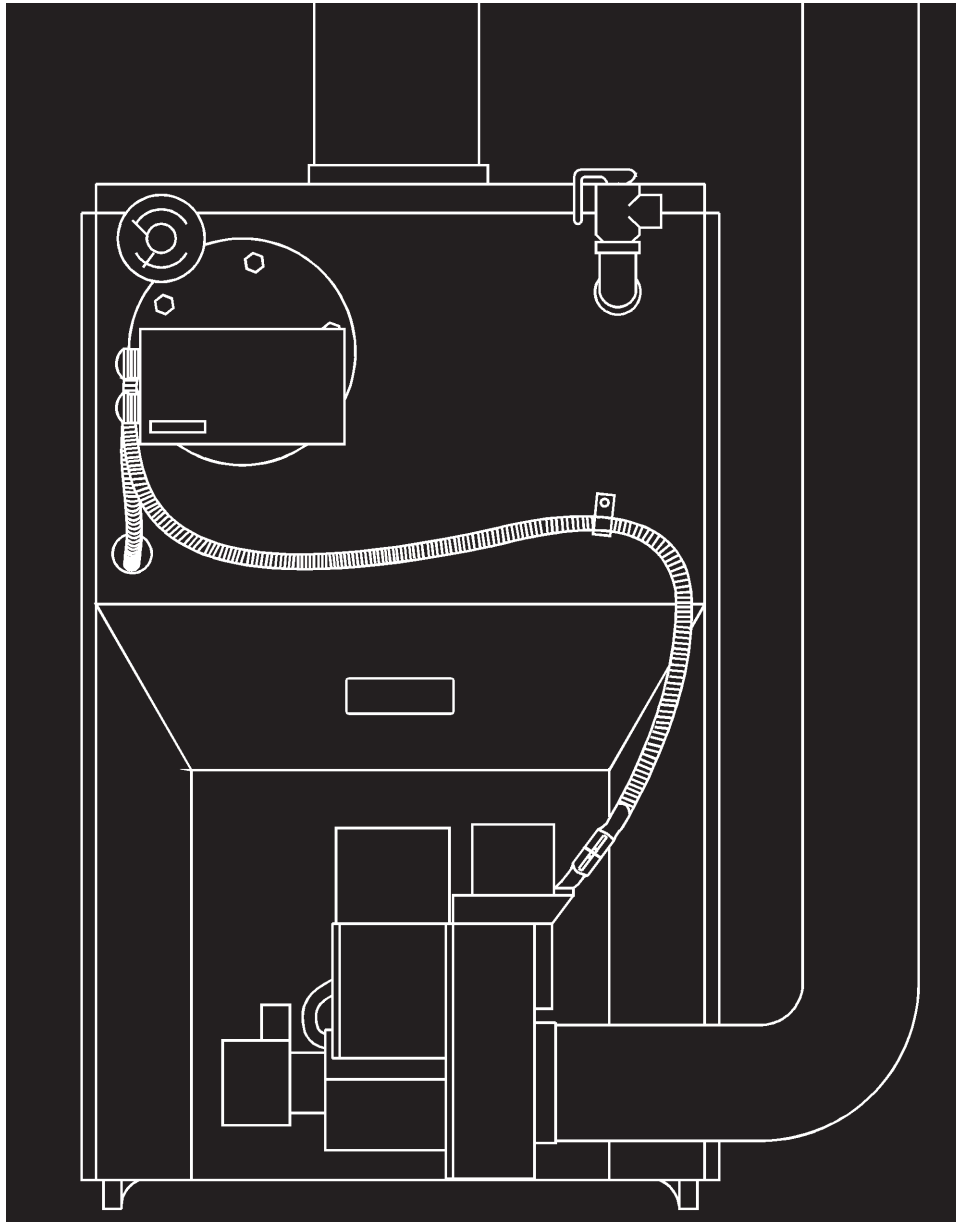


OSW

OIL FIRED DIRECT EXHAUST CAST IRON BOILER



Olsen
Heating & Cooling Products

Olsen Technology, Inc. • P.O. Box 900 • Wallaceburg, Ont. N8A5E5

INSTALLATION MANUAL AND OPERATING INSTRUCTIONS

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KEEP THIS MANUAL NEAR BOILER. RETAIN FOR FUTURE REFERENCE

SERIES OSW
CAST IRON
OIL FIRED BOILER

INSTALLATION MANUAL AND OPERATING INSTRUCTIONS

PUBLISHED JULY 2001
PRINTED IN USA
MADE IN USA



TESTED FOR 50 LBS.
ASME WORKING PRESSURE



Safety Symbols

The following defined symbols are used throughout this manual to notify the reader of potential hazards of varying risk levels.



DANGER

DANGER - Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING

WARNING - Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION

CAUTION - Indicates a potential hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT! **READ ALL INSTRUCTIONS BEFORE INSTALLING.**



WARNING:

1. Keep boiler area clear and free from combustible materials, gasoline and other flammable vapors and liquids.
2. **DO NOT** obstruct air openings to the boiler room.
3. Modification, substitution or elimination of factory equipped, supplied or specified components may result in property damage, personal injury or the loss of life.
4. To the owner: Installation and service of this boiler must be performed by a qualified installer.
5. To the installer: Leave all instructions with the boiler for future reference.
6. When this product is installed in the Commonwealth of Massachusetts the installation must be performed by a Licensed Plumber or Licensed Gas Fitter.



WARNING:

ALL INSTALLATIONS OF BOILERS AND VENTING SHOULD BE DONE ONLY BY A QUALIFIED EXPERT AND IN ACCORDANCE WITH THE APPROPRIATE OLSEN TECHNOLOGY MANUAL. INSTALLING OR VENTING A BOILER OR ANY OTHER GAS APPLIANCE WITH IMPROPER METHODS OR MATERIALS MAY RESULT IN SERIOUS INJURY OR DEATH DUE TO FIRE OR TO ASPHYXIATION FROM POISONOUS GASES SUCH AS CARBON MONOXIDE WHICH IS ODORLESS AND INVISIBLE.

INSTALLATION PROCEDURE



WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life.

All installations must conform to the requirements of the authority having jurisdiction. Such applicable requirements take precedence over the general instructions of this manual.

Where required by the authority having jurisdiction, the installation must conform to the American Society of Mechanical Engineers Safety Code for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME No. CSD-1. In Canada all installations must be in accordance with the authorities having jurisdiction and CSA B139.

LOCATE BOILER in front of final position before removing crate. Provide a level solid base as near to the vent outlet as possible and centrally located with respect to the heat distribution system as practical.

Allow 24 inches in the front and top for servicing and cleaning, or removing tankless water heating coil.

When installed in a utility room, the door should be wide enough to allow the largest boiler part to enter, or to permit replacement of another appliance such as a water heater.

FOR INSTALLATION ON COMBUSTIBLE FLOORS.

This boiler shall not be installed directly on carpeting, tile or other combustible material other than wood flooring. The boiler must not be installed on carpeting or vinyl flooring. Minimum clearances to combustible construction are:

TOP	0.0 IN.
FRONT	24.0 IN.*
FLUE CONNECTOR	2.0 IN.
REAR	0.0 IN.
LEFT SIDE	0.0 IN.
RIGHT SIDE	0.0 IN.

* "FOR ALCOVE INSTALLATION"

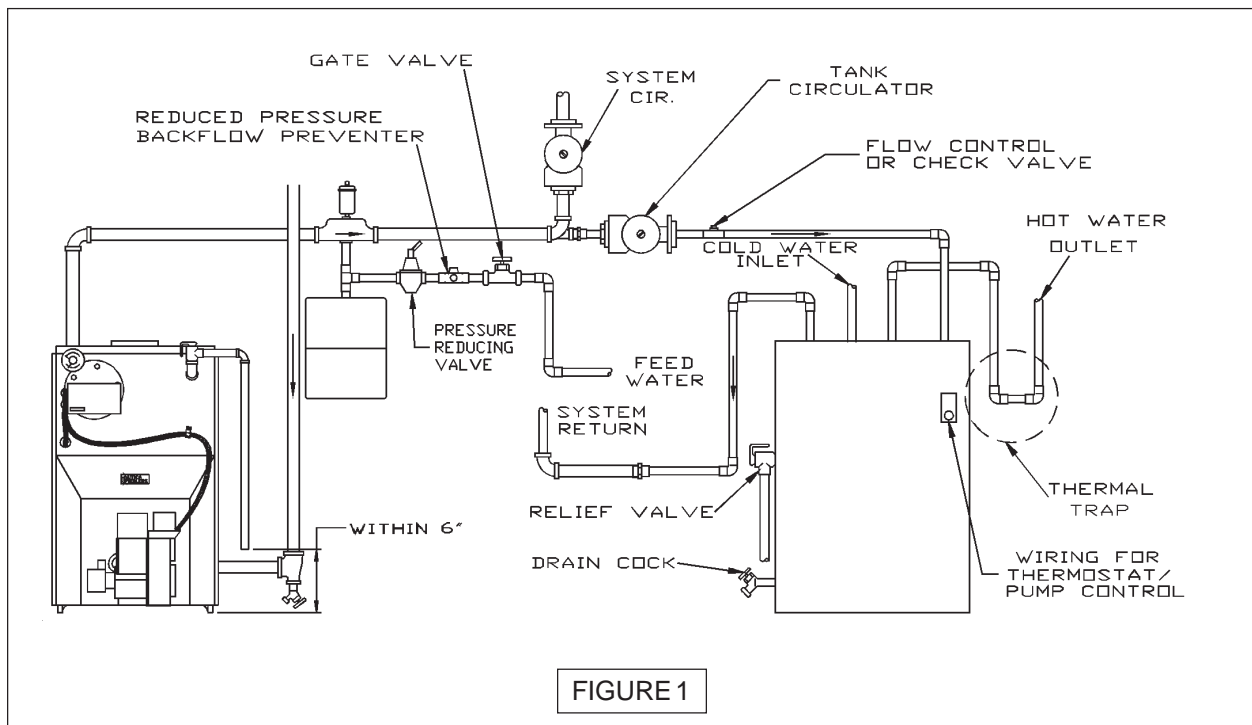
NOTE: RECOMMENDED CLEARANCE
FOR SERVICE ACCESS SHOULD EXCEED
FIRE PROTECTION CLEARANCE.

TOP	24 IN.
FRONT	24 IN.
FLUE CONNECTOR	9 IN.
REAR	6 IN.
LEFT SIDE	10 IN.
RIGHT SIDE	6 IN.

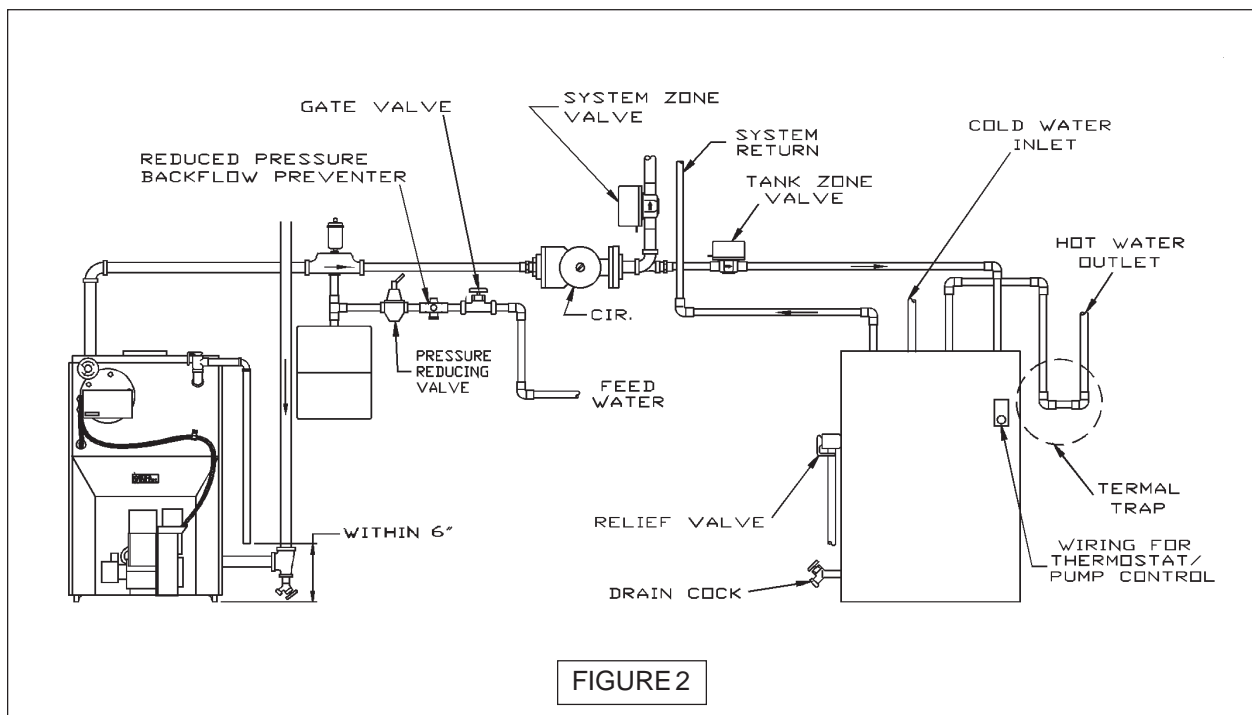
REMOVE CRATE and plastic protective wrapper and inspect for damage. All equipment is carefully manufactured, inspected and packaged by experienced workers. Our responsibility ceases upon delivery of the crated boiler to the carrier in good condition. Any claims for damage or shortage in shipment must be filed immediately against the carrier by the cosignee. Move boiler to permanent position by sliding or walking.

CONNECTING SUPPLY AND RETURN PIPING

IMPORTANT: Circulators in the following illustrations are mounted on the system supply side, but mounting on the system return side is also acceptable practice.



1. Typical installation using circulators is shown in figure 1.
2. Typical installation using zone valves is shown in figure 2.



3. Hot water boilers installed above radiation level must be provided with a low water device either as part of the boiler or at the time of boiler installation.

4. When a boiler is connected to a heating system that utilizes multiple zoned circulators, each circulator must be supplied with a flow control valve to prevent gravity circulation.

* Reduced pressure back flow preventer must be present under provisions required by the Environmental Protection Agency, (EPA).

5. Bypass piping is an option which gives the ability to adjust the supply boiler water temperature to fit the system or condition of the installation. Although, this method of piping is not typically required for baseboard heating systems.

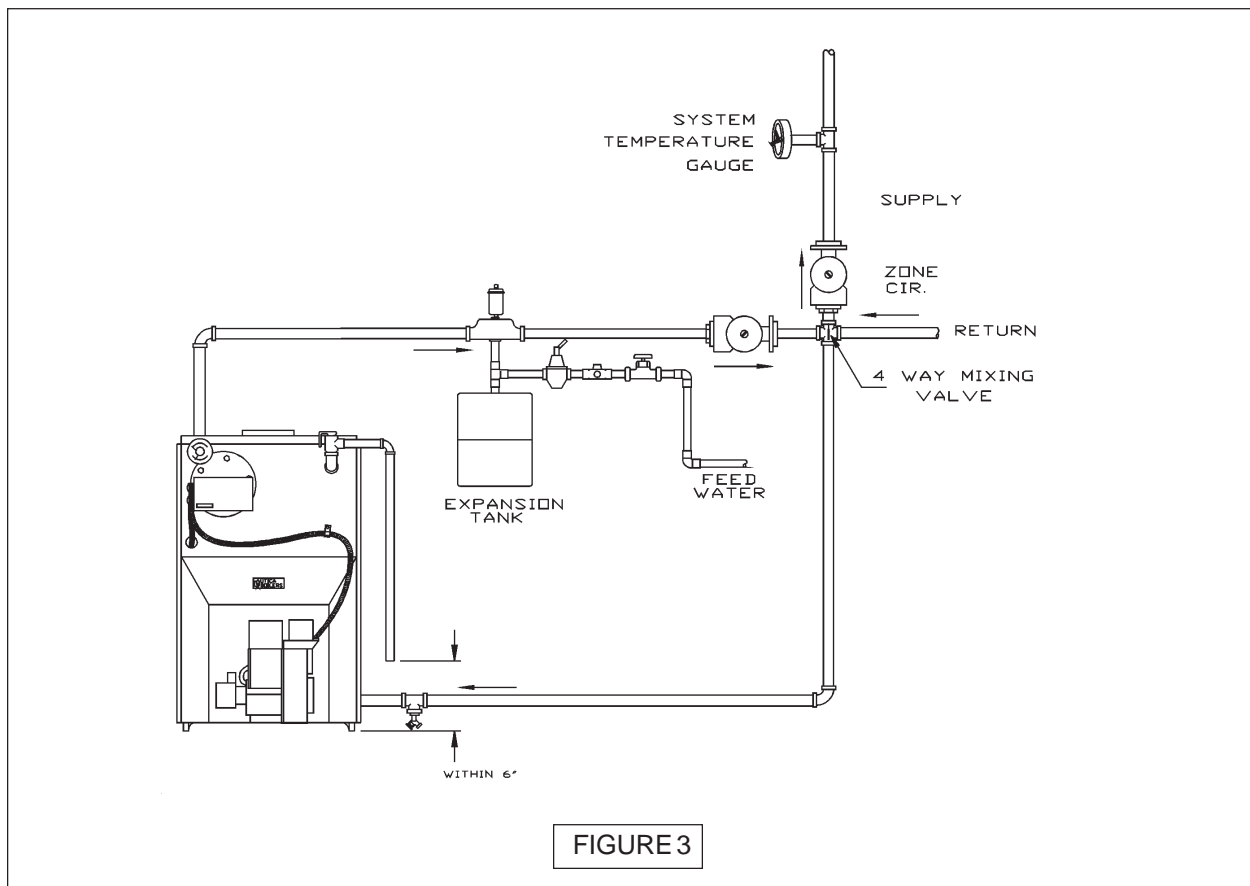
A. This method is used to protect systems using radiant panels and the material they are encased in from high temperature supply water from the boiler. See figure 3 below.

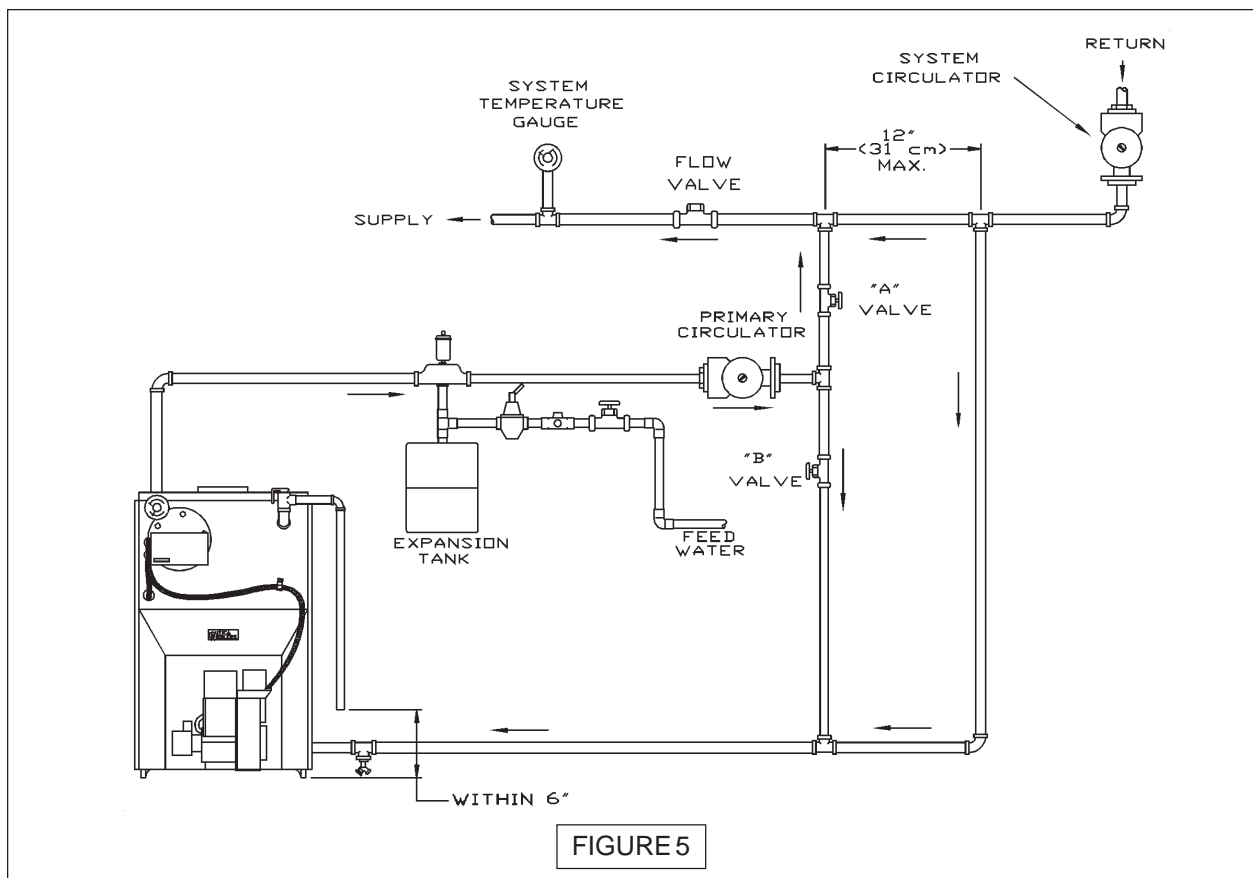
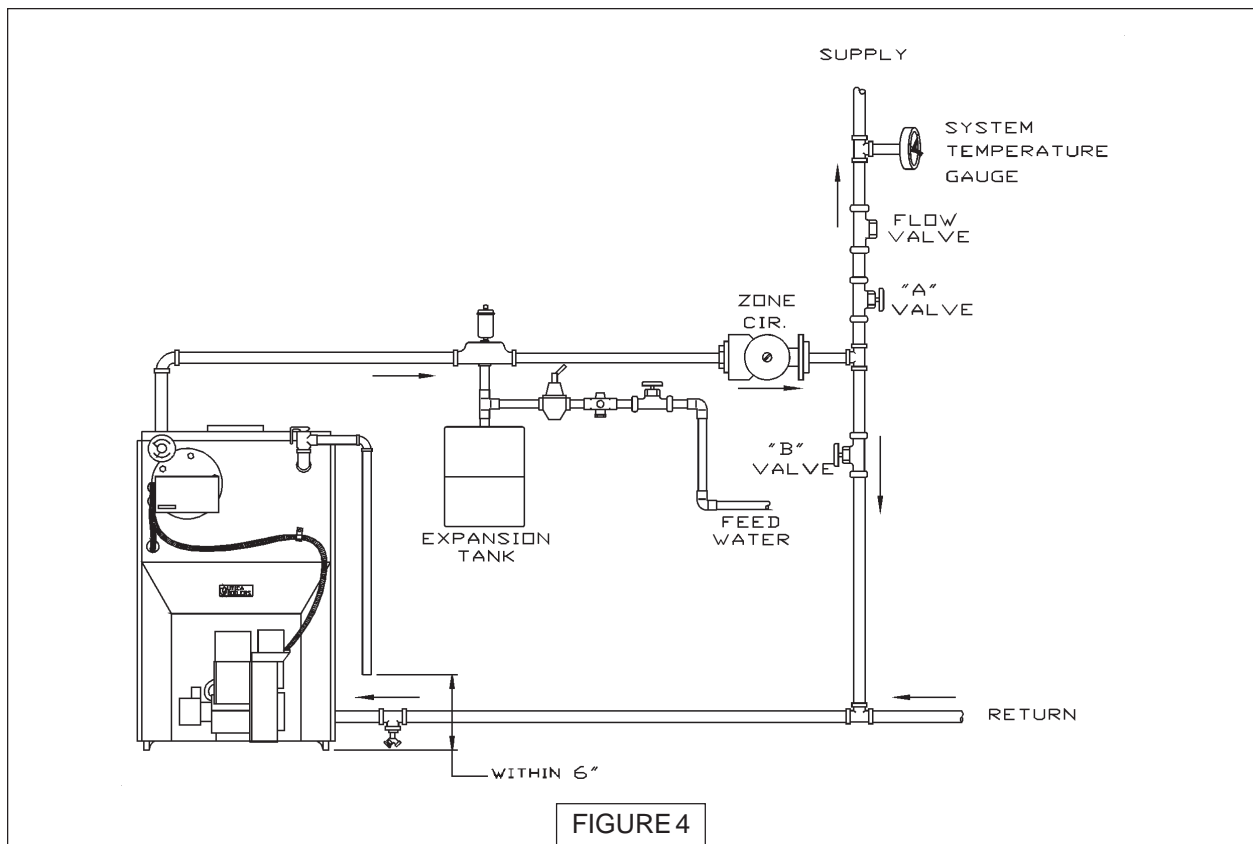
B. This method is used to protect boilers from condensate forming due to low temperature return water. Generally noticed in large converted gravity systems or other large water volume systems. See figure 4 on page 5.

C. This method is used to protect boilers from condensate forming as well as protecting the heating system from high water temperature. See figure 5 on page 5.

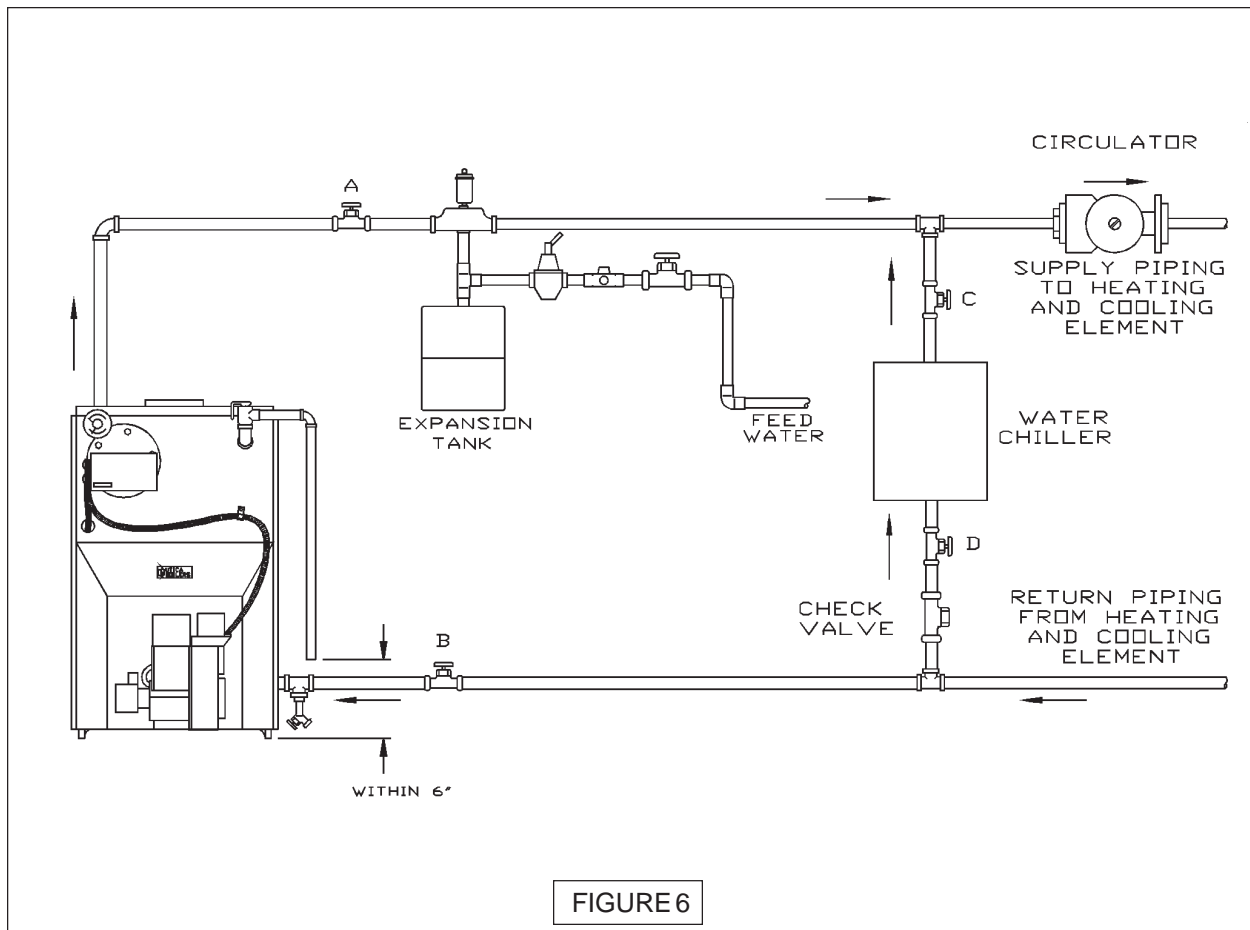
6. Note: When using bypass piping, adjust valves A and B until desired system temperature is obtained.

7. Bypass loop piping must be the same size piping for the supply and return.

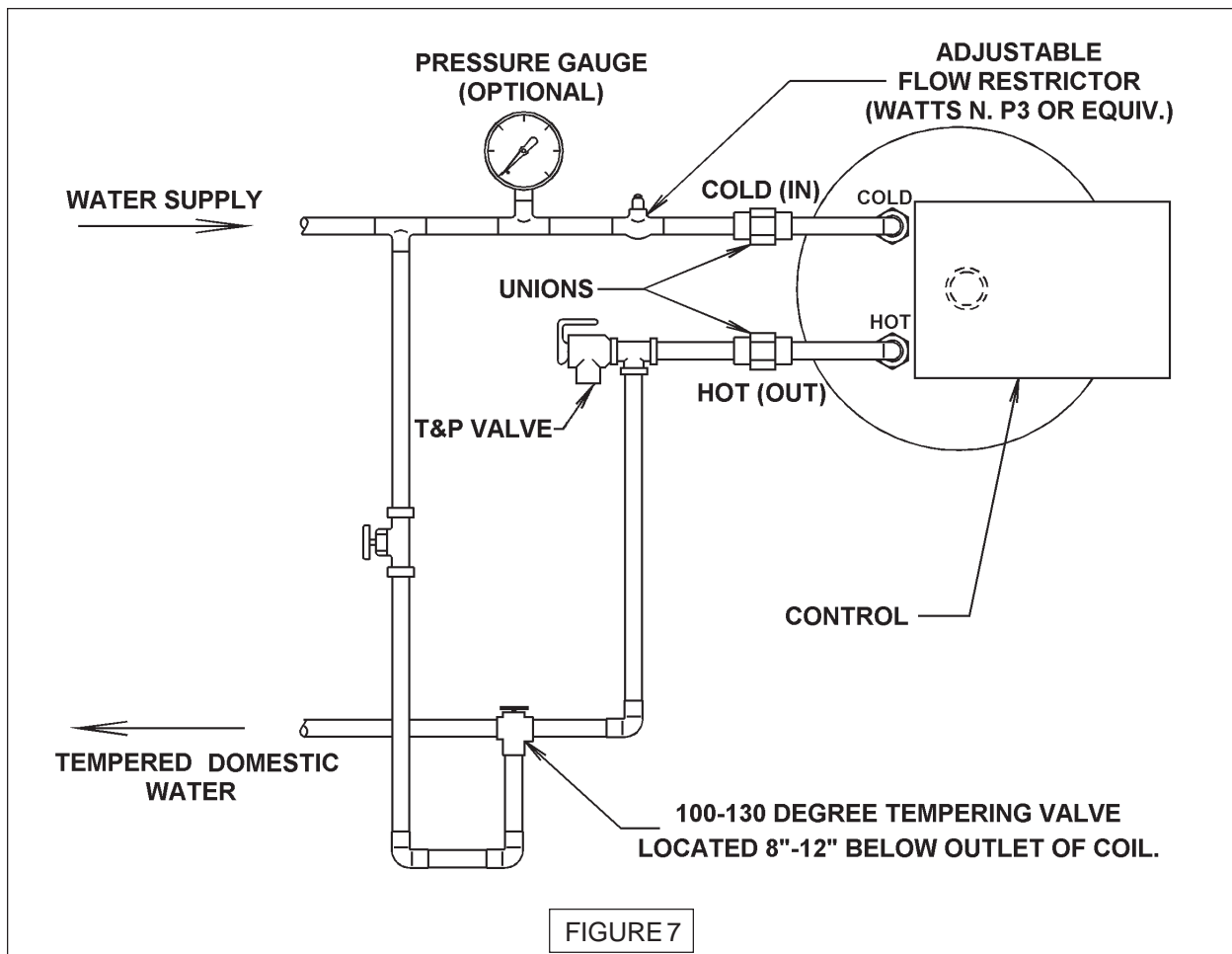




8. Connect supply and return piping as suggested in figure 6, below when the boiler is used in connection with refrigerated systems:
- A. The chilled medium **MUST BE IN PARALLEL** with the boiler.
 - B. Use appropriate valves to prevent the chilled medium from entering the heating boiler.
9. During the heating cycle open valves A and B, close valves C and D.
10. During heating cooling cycle open valves C and D, close valves A and B.
- A. Maintain a minimum clearance of one inch to hot water pipes.
- In air handling units where they may be exposed to refrigerated air circulation, the boiler piping system **MUST** be supplied with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.
11. For further piping information refer to the I=B=R installation and piping guide.



RECOMMENDED PIPING FOR BOILERS EQUIPPED WITH A P3 OR T4 TANKLESS HEATER



DANGER: Water temperatures exceeding 125° F will cause severe burns instantly or death by scalding.

- An automatic mixing valve must be installed on the outlet of the domestic coil. Installation must comply with the valve manufacture's recommendations, and instructions.
- Do not remove the bolts or aquastat at the time of installation.
- Pipe in accordance with the installation manual.
- Due to varying water conditions, an adjustable flow restrictor must be installed in the cold water inlet of this coil.

OPTIONS UTILIZING 3/4" TAPPING

OPTIONAL LOCATION FOR AIR VENT

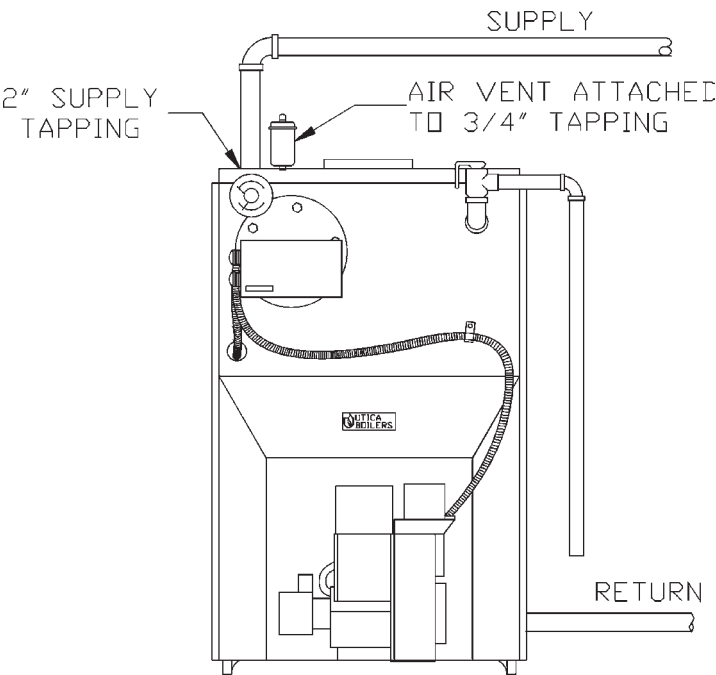


FIGURE 8

OPTIONAL LOCATION FOR EXPANSION TANK (NON-DIAPHRAM TYPE)

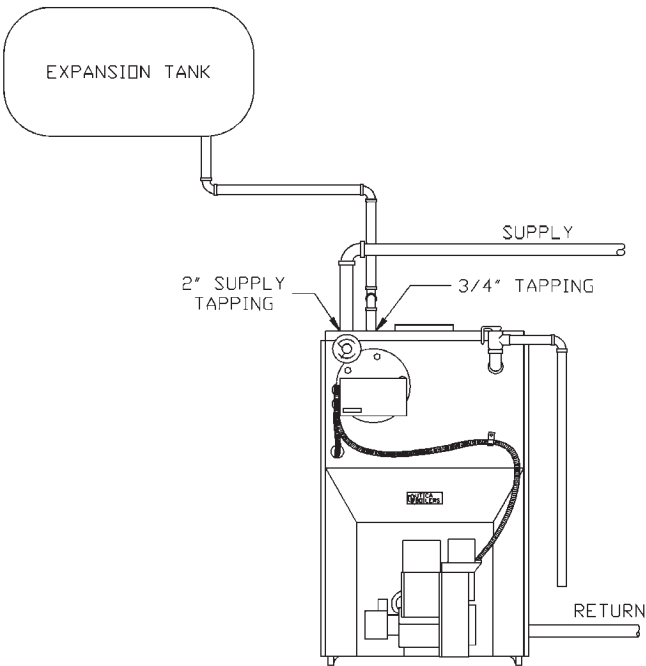


FIGURE 9

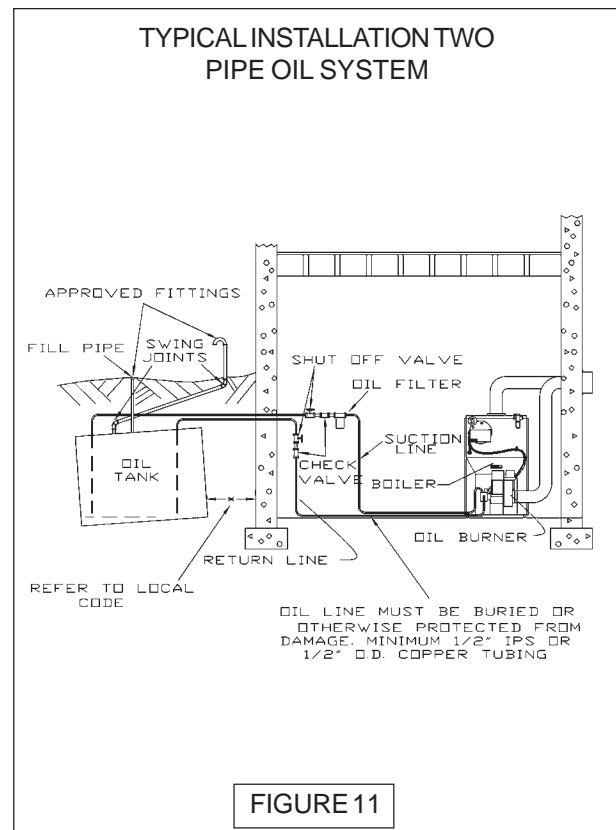
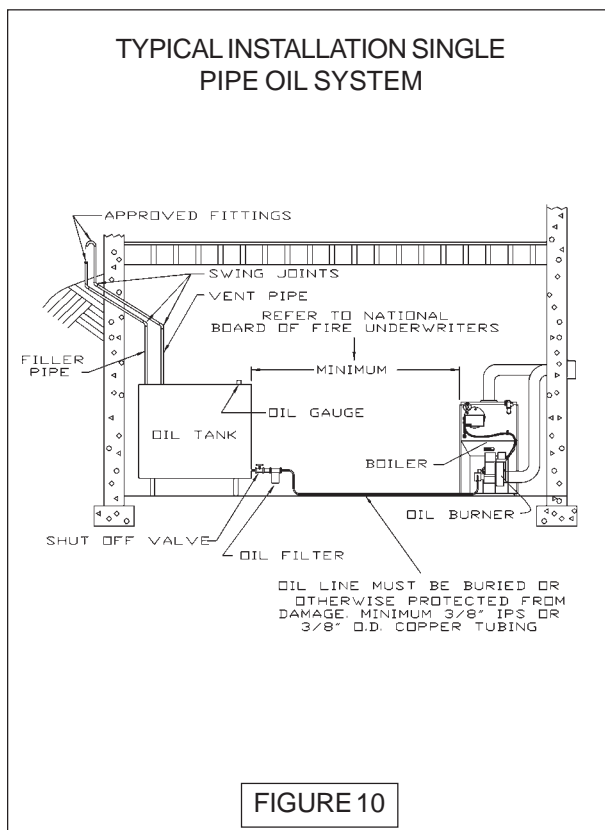
OIL TANK AND PIPING

OIL TANK AND PIPING should be installed in accordance with the National Board of Fire Underwriters and local regulations. Oil storage tank, vent, fill pipe and caps should be as prescribed by local codes. In no case should the vent pipe be smaller than 1-1/4" I.P.S. The fill pipe should not be less than 2" I.P.S.

The suction line from the tank to the burner should be one continuous piece of tubing to prevent air entering the line. The suction line, must be 3/8" O.D. copper tubing for runs of 50 feet or less, and 1/2" O.D. for longer runs. An oil return line, same size as the suction line, must be used on any installation where the bottom of the tank is below the fuel unit of the burner. Oil lines should be buried or otherwise protected from mechanical injury. Flare fittings on all oil lines are recommended. Compression fittings on the suction line often allow air to be drawn into the fuel pump, making it difficult to maintain oil pressure at the nozzle. Do not run overhead fuel lines from tank to oil burner.

Fuel pump connections and by-pass should be made according to instructions attached to the fuel pump. If tank is more than 20' from the boiler, a two stage fuel unit should be installed in place of the single stage pump supplied as standard equipment with the burner. Make certain the rotation and speed are the same and the pump is suitable for the burner horsepower rating.

An oil line filter and shut-off valve should be installed in the suction line. Shut-off valves should be installed in both the suction and return lines at the burner for convenience in servicing burner. Allow extra tubing at burner so burner may be removed from boiler for cleaning without disconnecting tubing. (See figures 10 & 11, below). A UL approved flexible oil line may be used.



ELECTRICAL WIRING

ELECTRICAL WIRING should conform with the latest edition of National Electrical Code ANSI/NFPA No. 70 in the United States and the CSA C22.1 Canadian Electrical Code in Canada and/or the local authority having jurisdiction. A separate electrical circuit should be run from the entry box with a fused disconnect switch in this circuit. See wiring diagram's in figures 12 below, & 13, page 12, for suggested circuitry and field wiring. Wiring for zone valve installations are furnished with zone valve packages.

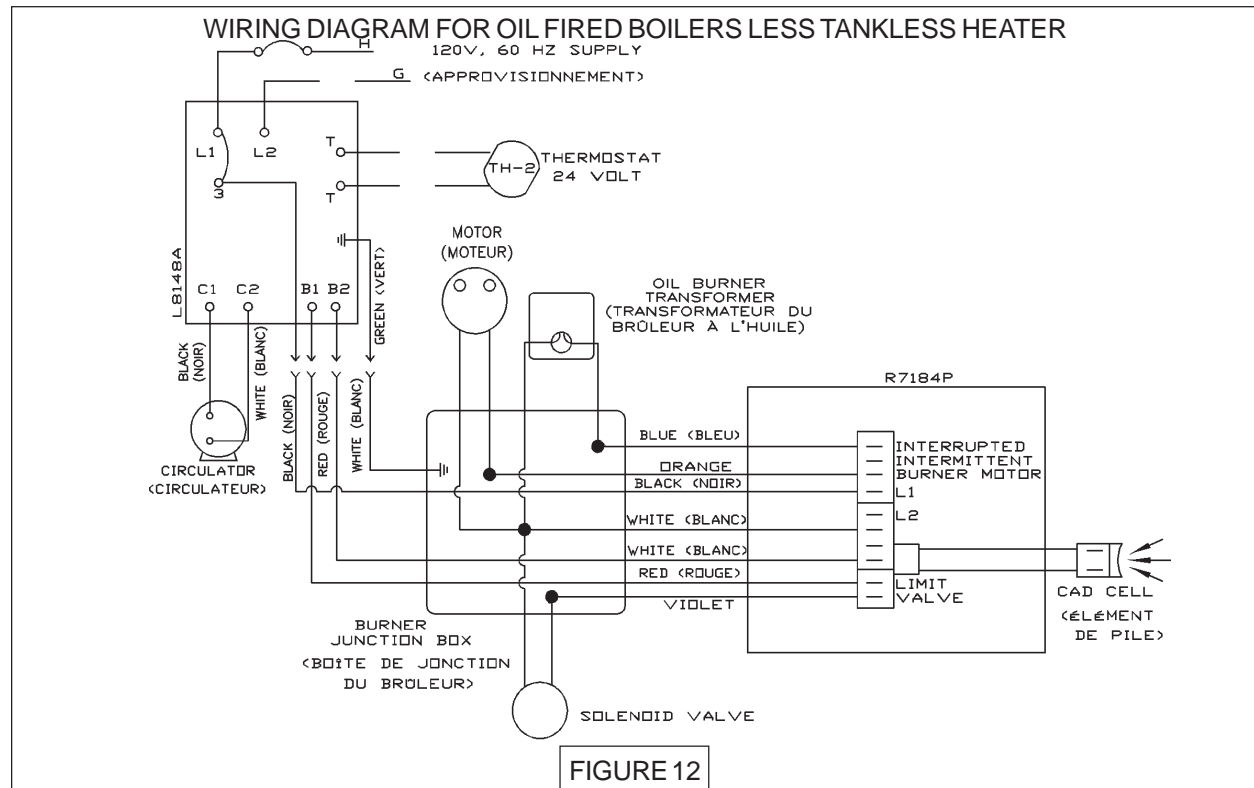
1. COMPONENT CODING

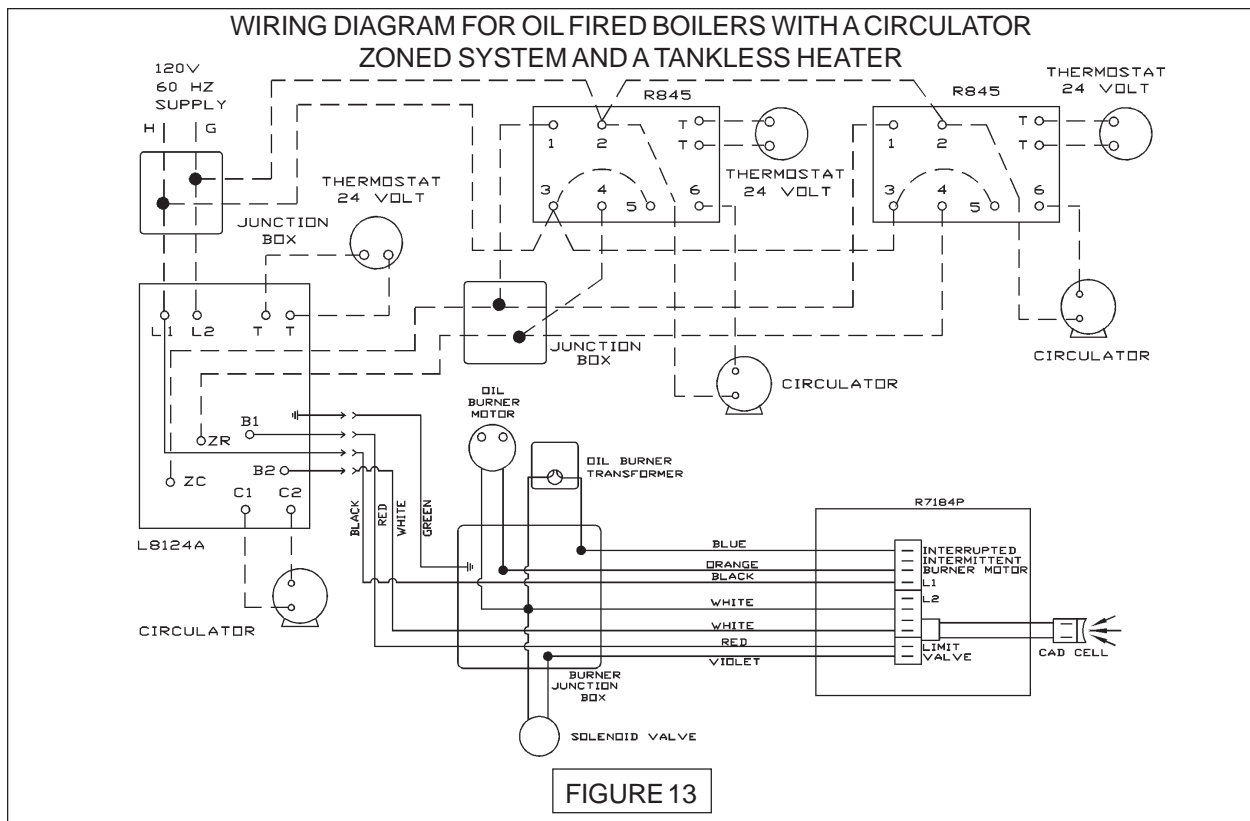
TH-1	Thermostat (millivolt)	1K1	Relay Contacts
TH-2	Thermostat (24 Volt)	1K2	Relay Contacts
TH-3	Thermostat (Line Voltage)	LS	Limit Switch
TR-1	Transformer (120V/24V 40VA)	MS	Manual Switch
TR-2	Transformer (120V/24V 50VA)	CIR	Circulator
LGV	24 Volt Gas Valve	ECO	Energy Cut-Off
PS	Pressure Switch	PSC	Pilot Safety Coil
MR-PS	Manual Reset Pressure Sw.	—●—	Wire Connection
—○—	Control Terminal	LWCO	Low Water Cut Off
1K	Relay Coil	EWF	Electric Water Feeder
		PG	Power Generator

2. WIRING CODE

————	LINE VOLTAGE BY FACTORY
————	LOW VOLTAGE BY FACTORY
----	LINE VOLTAGE BY INSTALLER
----	LOW VOLTAGE BY INSTALLER

* NOT ALL COMPONENTS LISTED ARE USED IN ALL CONTROL SYSTEMS.





THERMOSTAT INSTALLATION

1. Thermostat should be installed on an inside wall about four feet above the floor.
2. NEVER install a thermostat on an outside wall.
3. Do not install a thermostat where it will be affected by:
 - A. Drafts
 - B. Hot or cold pipes
 - C. Sun light
 - D. Lighting fixtures
 - E. Television sets
 - F. A fireplace or chimney
4. Check thermostat operation by raising and lowering thermostat as required to start and stop the burner.
5. Instructions for the final adjustment of the thermostat are packaged with the thermostat (adjusting heating anticipator, calibration, ect.).

NORMAL SEQUENCE OF OPERATION

1. The thermostat will activate, completing the circuit to the aquastat.
2. The circulator motor starts and power is switched to the limit. If the limit circuit is closed the burner motor circuit is energized.
3. The burner motor starts the prepurge and approximately 15 seconds after the solenoid valve opens and the ignition system is activated and ignition will begin.
4. In the event the boiler water temperature exceeds the high limit setting on the boiler mounted aquastat; Power will be interrupted between the aquastat and the ignition system. The burner motor will continue to run in the post purge mode for approximately 2 min. or until the water temperature drops below the high limit setting. The circulator will continue to operate under this condition until the thermostat is satisfied.
5. When the thermostat is satisfied power is interrupted to the boiler mounted aquastat and the burner will run in the post purge mode for 2 minutes.

OPERATING INSTRUCTIONS

The venting system should be inspected at the start of each heating season. Check the vent pipe from the boiler to the termination cap for signs of deterioration by rust or cracked silicone joints. Repair if necessary.

The lever of the pressure relief valve, shown in Figure 14, on page 15, on the boiler should be operated periodically to make sure that it is functioning properly. The pressure relief valve should open before the water pressure exceeds the 30 lb. reading on the gauge. If this pressure is exceeded and the pressure relief valve leaks water when the boiler is operating at normal pressures, it should be immediately replaced. Corrosion can build up rapidly at the valve seat and prevent its functioning as a safety device.

 **WARNING:** WATER WILL BE BOILING HOT.

START-UP AND ADJUSTMENT OF OIL BURNER (See oil burner instructions for nozzle and electrode setting).

A. Check oil burner nozzle to make certain it is tight in adapter. Burner mounting bolts should be tight.

B. Check electrode setting, as they may have been jarred out of position during transportation.

C. Lubricate burner motor and circulator motor if required. Some circulators are water lubricated and do not require oiling.

D. Set room thermostat to call for heat.

E. Open all oil line valves.

F. Turn service switch on. Burner should start.

G. On one pipe fuel systems only, vent pump as soon as burner starts. Allow oil to run until all traces of air in the suction line disappear.

H. Turn "OFF" burner and install pressure gauge in port on pump.

I. Start burner again and check oil pressure for 140 lbs. Adjust if necessary.

 **CAUTION:** DO NOT SET FIRE VISUALLY.

Instruments are the only reliable method to determine proper air adjustments. An improperly adjusted burner causes soot and high fuel bills because of incomplete combustion of the fuel oil. This in turn may require excessive boiler maintenance, service costs, and in some instances, house cleaning or redecorating. A competent service mechanic should be consulted to make the proper adjustments with a smoke tester, CO₂ indicator and draft gauge. Bacharach or Dwyer test kits include these instruments.

INSTRUCTIONS TO OBTAIN PROPER OPERATION OF THE BOILER-BURNER UNIT

A 1/4" diameter slot is provided in the inspection cover plate to take draft reading in the combustion chamber. A 3/8" hole is provided in the vent appliance adapter to take draft, CO₂, smoke, and temperature readings. Adjust air dial on the oil burner to obtain a trace of smoke. Measure the CO₂ at this point and increase the air setting until the CO₂ = 1-1.5% lower than the reading at the trace point. Check the draft over the fire and in the vent, the normal readings will be positive (+.01 Overfire & +.02 In Vent) W.C.

The table below is provided as a guideline for initial start-up. Final adjustments **MUST** be made using combustion instruments as previously mentioned.

REILLO SETTINGS

BOILER NO.	BURNER NO.	AIR DAMP	TURB. SETTING	PUMP PRESS.	HEAD	NOZZLE FURNISHED
OSW3	BF3	4.00	2	150 PSI	6 SLOT	.60 80 W
OSW4	BF5	4.25	3	150 PSI	9 SLOT	.85 80 W
OSW5	BF5	5.50	4	150 PSI	9 SLOT	1.10 60 B

BECKETT SETTINGS

BOILER NO.	BURNER NO.	AIR DAMP	PIN	PUMP PRESS.	HEAD	NOZZLE FURNISHED
OSW3	AFII 100	3.25	3	140 PSI	HLX 6	.60 45B
OSW4	AFII 100	7.50	5	140 PSI	HLX 6	.85 45B
OSW5	AF II 150	5.00	8	140 PSI	HLX 6	1.10 45 B



WARNING:

- Use only number 2 fuel oil.
- Do not use gasoline, crankcase drainings or any oil containing gasoline.
- Do not attempt to start the burner when excess oil has accumulated, when the unit is full of vapor or when the combustion chamber is very hot.

CHECK SAFETY CONTROL CIRCUIT after burner adjustments have been made for satisfactory performance.

A. HIGH LIMIT CONTROL: remove cover and note temperature setting. See figure 15 on page 15. With the burner operating, decrease this setting to the minimum point. When boiler water temperature exceeds this set point, the high limit switch will open, shutting off the power to the oil burner and starting the post purge cycle for approximately 2 minutes. Return setting to desired high limit point. Burner should restart.

B. PRIMARY CONTROL AND FLAME SENSOR:

To Check:

1. Flame failure - simulate by shutting off oil supply with hand valve while burner is on. 15 seconds after flameout, the safety switch locks out, ignition stops, motor stops and oil valve closes. To restart, open oil supply valve and reset safety switch.

2. Ignition failure - with burner off, unplug electrical disconnect on burner harness. Disconnect one wire from the transformer and put a wirenut on the disconnected wires. Restore power and run through start-up procedure, the safety switch should lockout as flame failure. Reconnect wires after this procedure is complete.

3. Power failure - Turn off main power supply switch while burner is operating. When burner stops, restore power and burner should start.

If operation is not as described as above, check wiring and controls.

PREVENTIVE MAINTENANCE of an oil fired boiler reduces operating costs. The boiler and vent pipe should be inspected for accumulation of soot or scale deposits periodically but at least once every year before the start of each heating season. When soot is present on the section walls and flueways, improper combustion will result, causing additional sooting and scaling until flueways are completely closed. To remove soot and scale from the flueways, remove top jacket panel, top clean-out plate, and open burner swing door. (figure 14 on page 15).

PERIODIC INSPECTION and tightening of the tankless heater/cover plate bolts will reduce the risk of leaks. See Figure 17 on page 19.

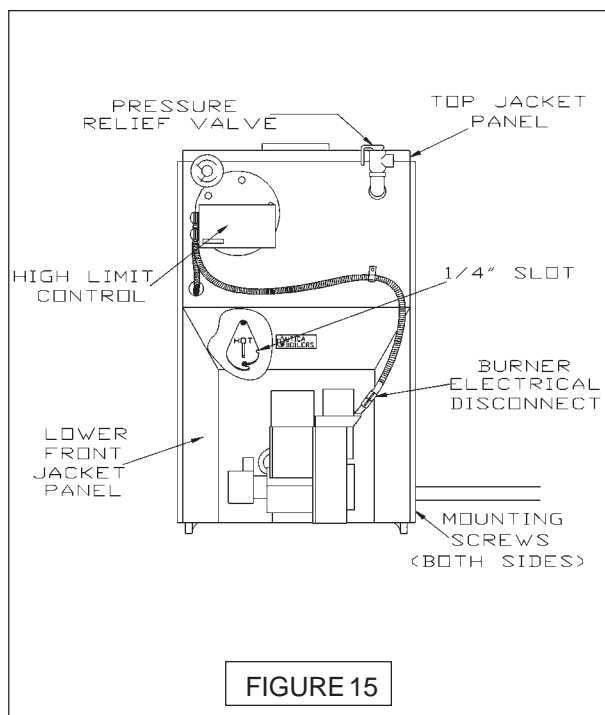
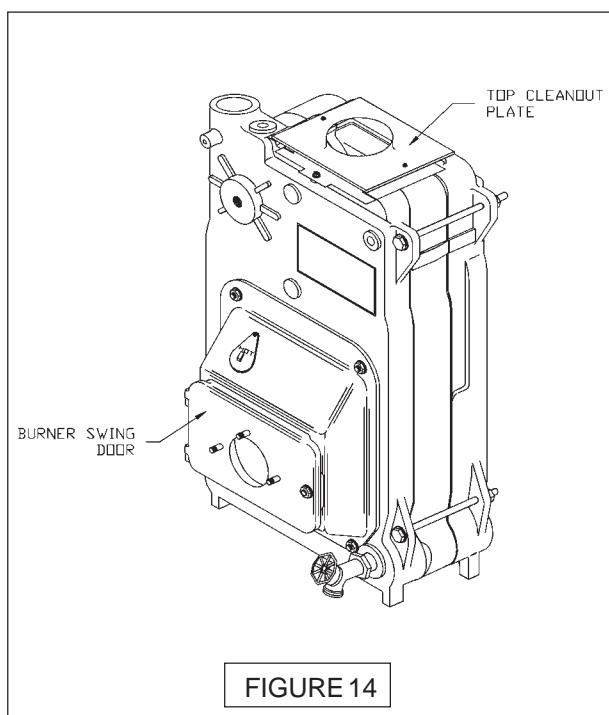
INSTRUCTIONS FOR OPENING BURNER SWING DOOR

1. Turn off power to boiler.
2. Allow boiler to cool down.
3. Disconnect power cable at factory supplied burner electrical disconnect.
See figure 15 below.
4. Loosen screws on the sides of the lower front jacket panel. See figure 15 below.
5. Pull the bottom part of the lower front panel forward.
6. Lift the lower front panel up and off the boiler. See figure 15 below.
7. Close oil valve. See figures 10, and 11 on page 9.
8. Disconnect oil line from burner.

CAUTION: Do not try to swing door with oil line attached.

9. Disconnect inlet air pipe from side of burner.
10. Remove nut from swing door stud on right hand side of door.
11. Swing open burner and door to the left.

Using a flue brush, brush the soot and scale into the combustion space where it can be removed through the swing door opening.





CAUTION: USE CAUTION WHEN VACUUMING IN THE CHAMBER AREA. DAMAGE TO CHAMBER COULD RESULT.

It is recommended to replace the nozzle at the start of each heating season. Lubricate the burner motor and circulator motor - if required - with a few drops of a good grade of light motor oil. Do not over oil. Have a competent service person service the burner and check the controls and check the electrodes for carbon or cracks in the insulators. Burners should be adjusted to produce the conditions shown in Start-up and Adjustment of Oil Burner procedure.

INSTRUCTIONS FOR CLOSING BURNER SWING DOOR.

1. Swing burner and door to the right until insulation is slightly compressed and the stud is exposed.
2. Attach nut to the stud and tighten it until the built in stop contacts the mounting door.
3. Replace oil line to burner.
4. Replace inlet air pipe.
5. Replace lower jacket panel, and tighten the screws.
6. Connect the power cable at the factory supplied burner electrical disconnect.
7. Turn on power to boiler.
8. Bleed oil line.

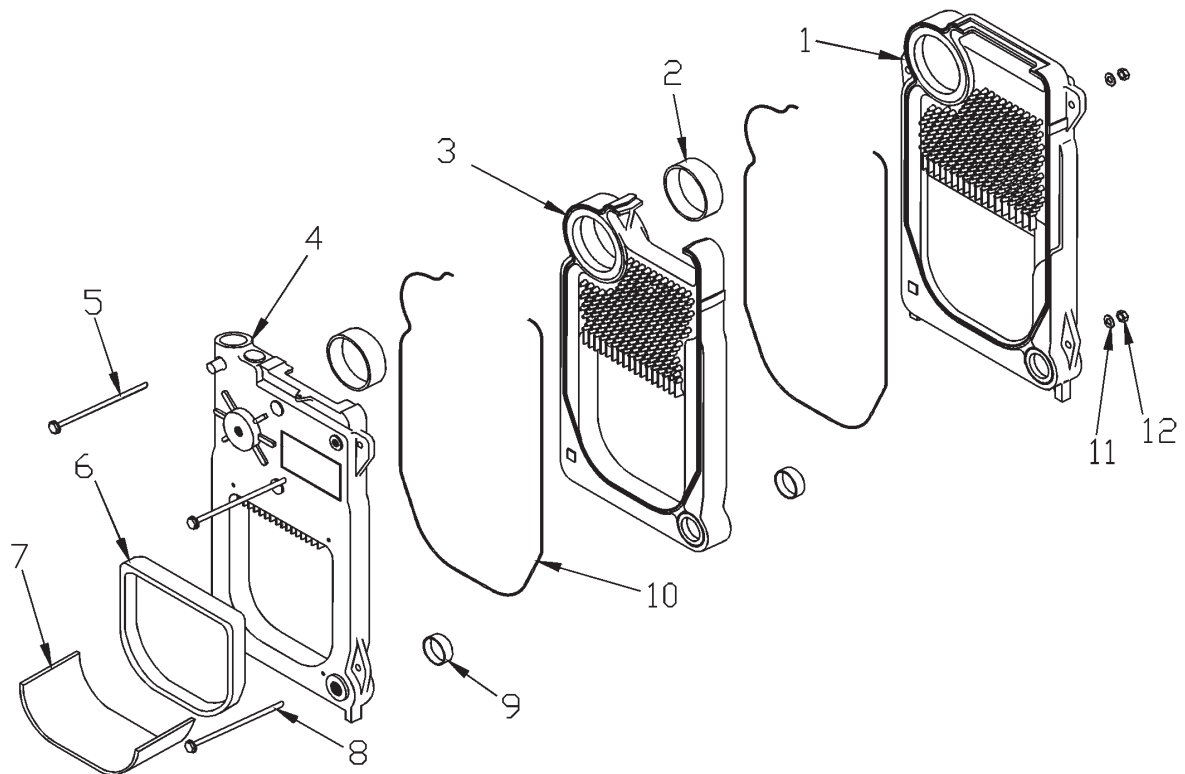
SERVICE CHECK LIST

- | | |
|---|--|
| <input checked="" type="checkbox"/> Pump Pressure/Vacuum | <input checked="" type="checkbox"/> Inspect Chimney and Flue pipe |
| <input checked="" type="checkbox"/> Line Voltage/Motor Amps | <input checked="" type="checkbox"/> Inspect and Clean Appliance |
| <input checked="" type="checkbox"/> Smoke Test | <input checked="" type="checkbox"/> Inspect Oil Line - Size/Leaks |
| <input checked="" type="checkbox"/> Draft-Overfire/In Flue | <input checked="" type="checkbox"/> Inspect Electrical Connections |
| <input checked="" type="checkbox"/> CO ₂ or O ₂ | <input checked="" type="checkbox"/> Install New Filter |
| <input checked="" type="checkbox"/> Flue Gas Temperature | <input checked="" type="checkbox"/> Room Make-up Air |
| <input checked="" type="checkbox"/> Proper Light-Off (Hot & Cold) | <input checked="" type="checkbox"/> Electrode setting |
| <input checked="" type="checkbox"/> Controls and Safety Devices | <input checked="" type="checkbox"/> Nozzle-Size, Angle, Type |

☒ Measure with Instruments and Record results on chart provided below.

Date	Nozzle			Pump Pressure PSI	Smoke NO.	Draft		CO ₂ or O ₂	Flue Temperature °F
	Size	Angle	Type			O.F.	INF		

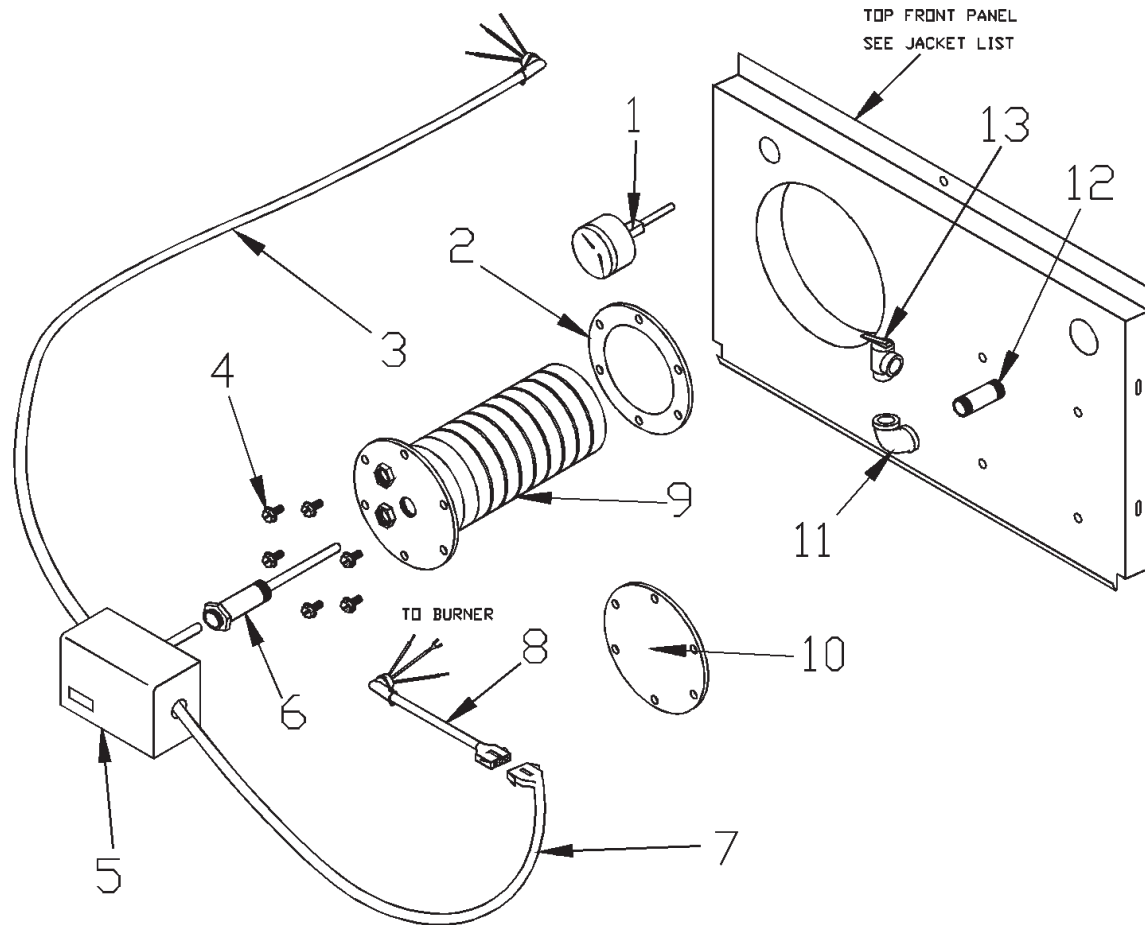
OSW SERIES REPLACEMENT PARTS - HEAT EXCHANGER



ITEM NO.	PART NO.	DISCRIPTION	QTY	ITEM NO.	PART NO.	DISCRIPTION	QTY
1	10051701	REAR SECTION	1	FULLY ASSEMBLED HEAT EXCHANGERS			
2	100-1-8.01	#60 PUSH NIPPLE		10023701		3 SECT. WITH TANKLESS COIL	
3	10051101	CENTER SECTION		10023702		4 SECT. WITH TANKLESS COIL	
4	10051201	FRONT SECT. CASTOVER	1	10023703		5 SECT. WITH TANKLESS COIL	
5	10051301	FRONT SECT. TANKLESS COIL		10023601		3 SEC. WITH CAST OVER	
6	HW02510	TIE ROD 1/2X10.5/8 (3 SEC)	2	10023602		4 SEC. WITH CAST OVER	
7	HW02511	TIE ROD 1/2X14.1/4 (4 SEC)		10023603		5 SEC. WITH CAST OVER	
8	5611508	KIT - TARGET WALL & INSULATION BLANKET	1				
9	N/A	N/A	0				
10	HW-025.01	TIE ROD 1/2X12.1/2 (3 SEC)	1				
11	HW-025.01	TIE ROD 1/2X12.1/2 (4 SEC)					
12	100-1-5.01	#22 PUSH NIPPLE					
	3 SECTION (2)	4 SECTION (3)	5 SECTION (4)				
	MS-006.00	ROPE MED DENSITY	1				
	3 SECTION (13')	4 SECTION (19.5')	5 SECTION (26')				
	HW-008.03	WASHER 1/2 ID FLAT	3				
	HW-003.05	NUT 1/2-13 HEX HEAD	3				

FIGURE 16

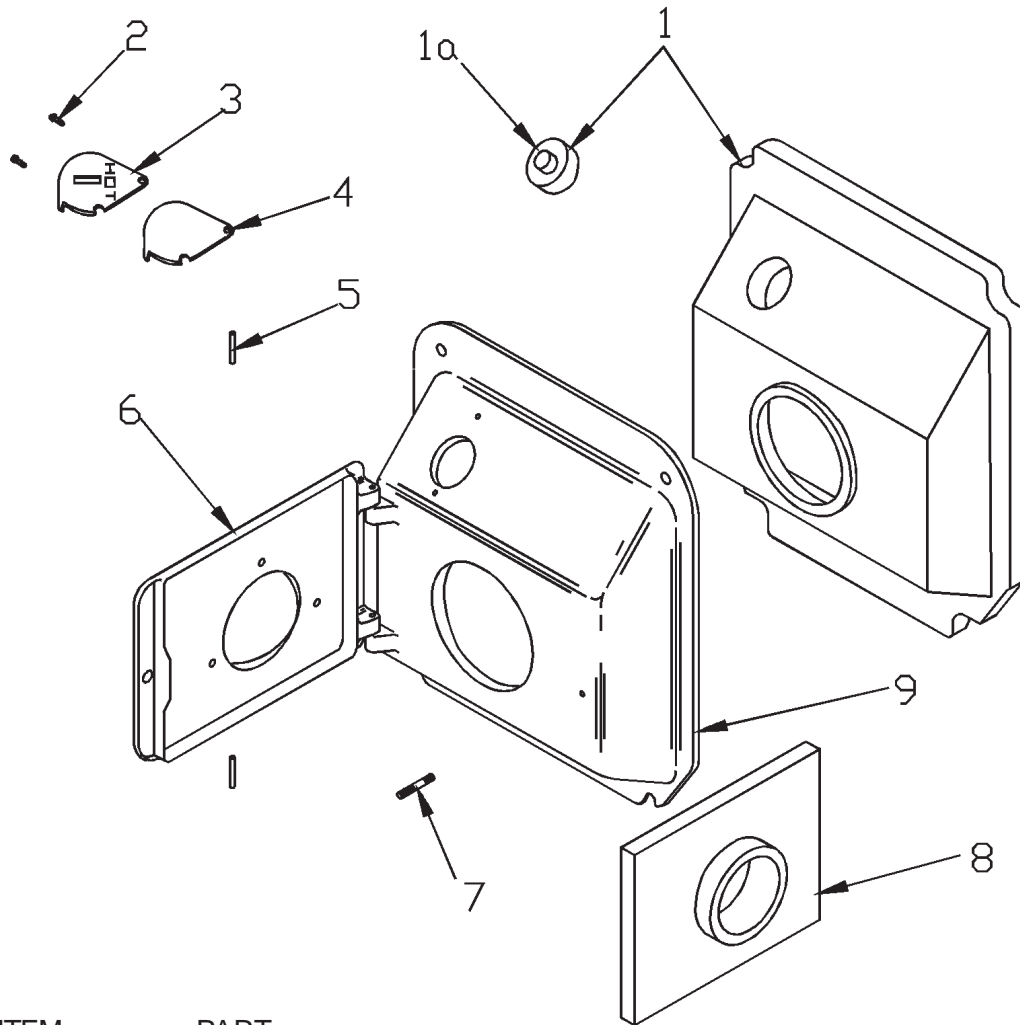
OSW SERIES REPLACEMENT PARTS - COIL



ITEM NO.	PART NO.	DISCRIPTION	QTY
1	GA-001.00	GAUGE THERALTIMETER, WATER	1
2	2551401	GASKET - SILICON/DURO 70	1
3	37519501	HARNESS CIRCULATOR	1
4	HW08001	BOLT 5/16" X 3/4"	6
5	1010001	CONTROL L8148A (FOR BOILERS WITHOUT A TANKLESS COIL)	1
	AQ-010.00	CONTROL L8124A (FOR BOILERS WITH A TANKLESS COIL)	
6	AQ-020.01	WELL	1
7	28512201	HARNESS, AQUASTAT	1
8	28512301	HARNESS, BURNER (BECKETT)	1
	1263011	HARNESS, BURNER (RIELLO)	
9	5612001	TANKLESS COIL KIT P3 (FOR 3 SECTION BOILERS)	1
	5612002	TANKLESS COIL KIT T4 (FOR 4 & 5 SECTION BOILERS)	
10	27511401	TANKLESS - COVER KIT	1
11	PF-002.04	PIPE FIT ELBOW 3/4" NPT	1
12	PF-005.11	PIPE FIT - NPL 3/4" X 4" NPT	1
13	VR-001.01	RELIEF VALVE 30#	1

FIGURE 17

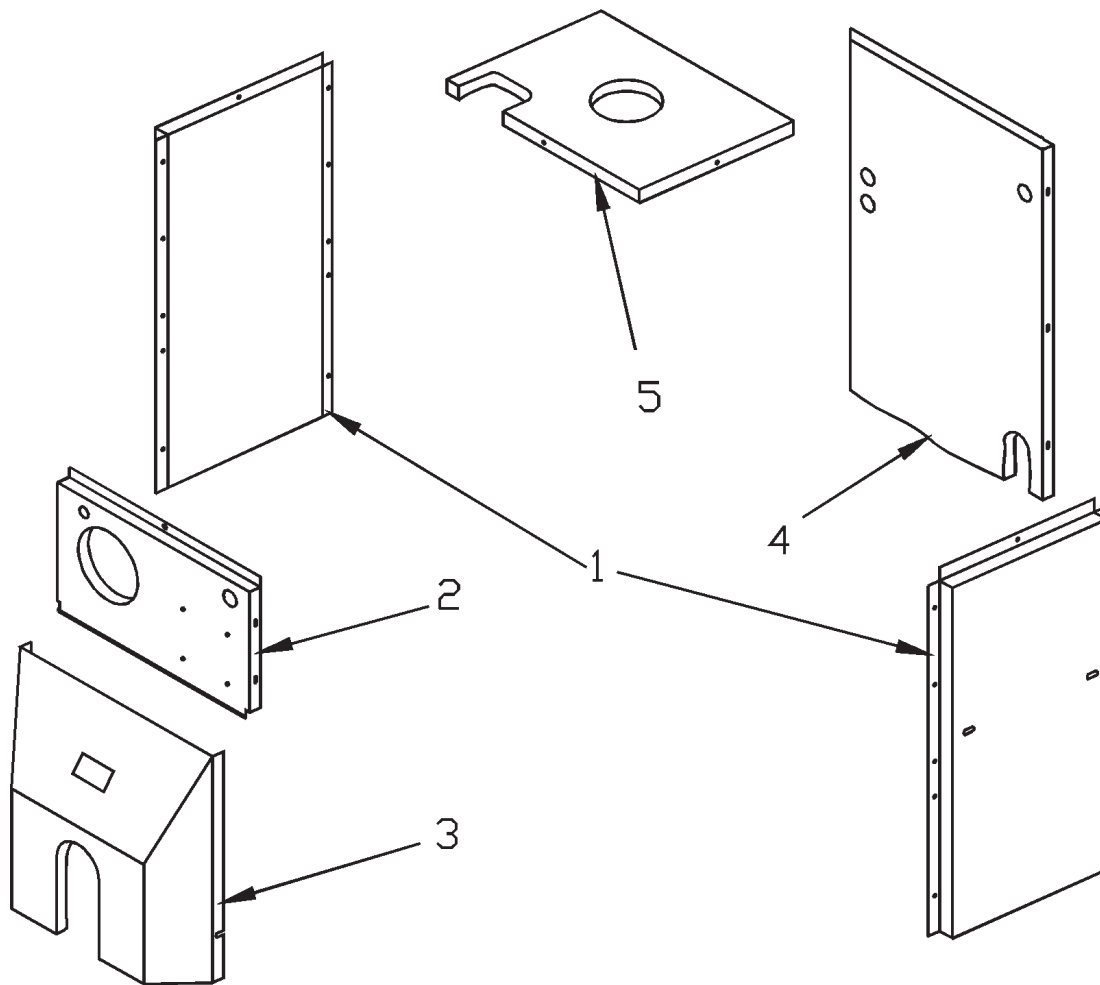
OSW SERIES REPLACEMENT PARTS SWING DOOR AND MOUNTING DOOR COMPONENTS



ITEM NO.	PART NO.	DESCRIPTION	QTY
1	2552901	MOUNTING DOOR INSULATION & PLUG	1
2	HW-005.01	SCREW 1/4-20X1/2 SELF TAPPING	2
3	10011701	OBSERVATION DOOR	1
4	25511101	OBS. DOOR GASKET	1
5	HW06801	1/4X1.3/4 DRIVE LOCK PIN	2
6	10011501	SWING DOOR	1
7	HW06701	5/16X18X2.3/8 STUD	1
8	2553301	INSULATION-SWING DOOR	1
		(FOR BOILERS WITH RIELLO BURNERS ONLY)	
	2553303	INSULATION-SWING DOOR	
		(FOR BOILERS WITH BECKET BURNERS ONLY)	
9	10011301	MOUNTING DOOR	1

FIGURE 18

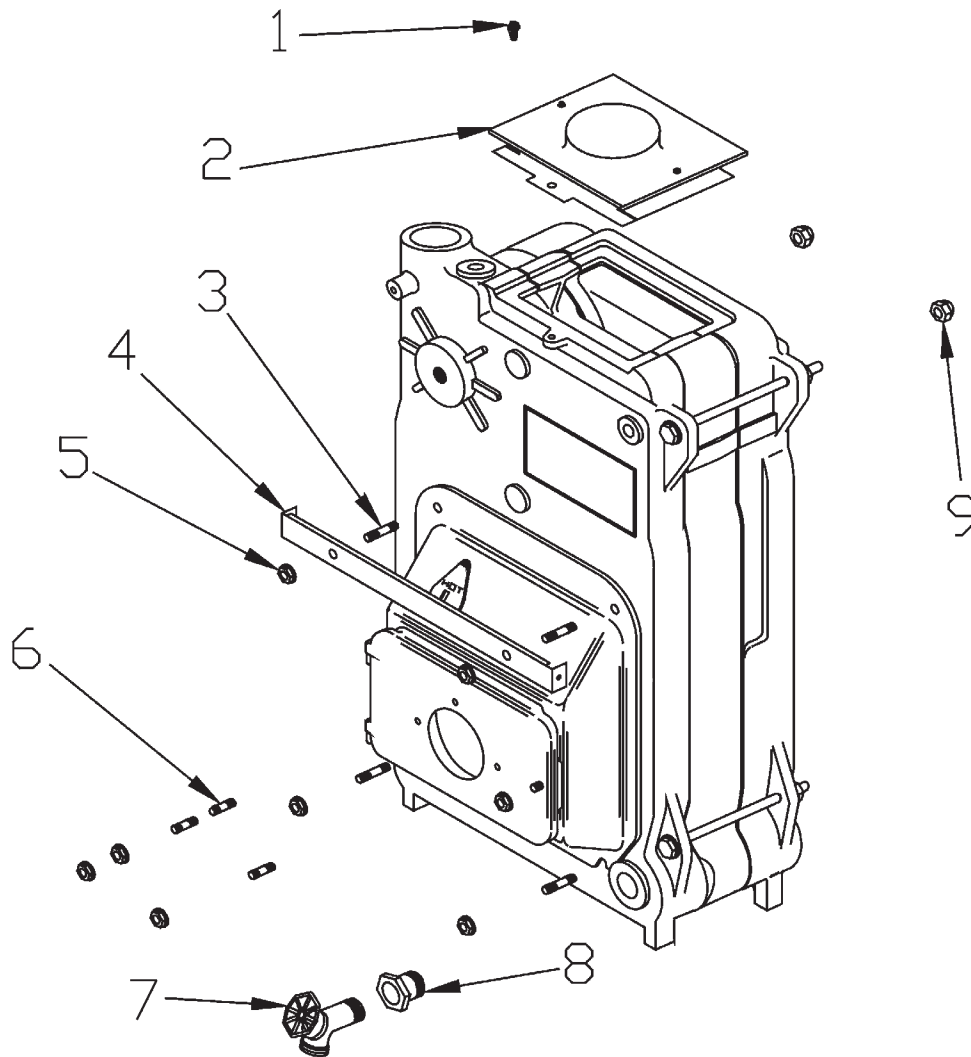
OSW SERIES REPLACEMENT PARTS - JACKETS



ITEM NO.	PART NO.	DISCRIPTION	QTY
1	21521802	SIDE PANEL 3 SECTION	2
	21521803	SIDE PANEL 4 SECTION	
	21521804	SIDE PANEL 5 SECTION	
2	21522401	TOP FRONT PANEL C/O	1
	21522402	TOP FRONT PANEL TNKLS COIL (SHOWN)	
3	21521901	LOWER COWL	1
4	21521501	REAR PANEL	1
5	215-1-3.02	TOP PANEL 3 SECTION	1
	215-1-3.03	TOP PANEL 4 SECTION	
	215-1-3.04	TOP PANEL 5 SECTION	

FIGURE 19

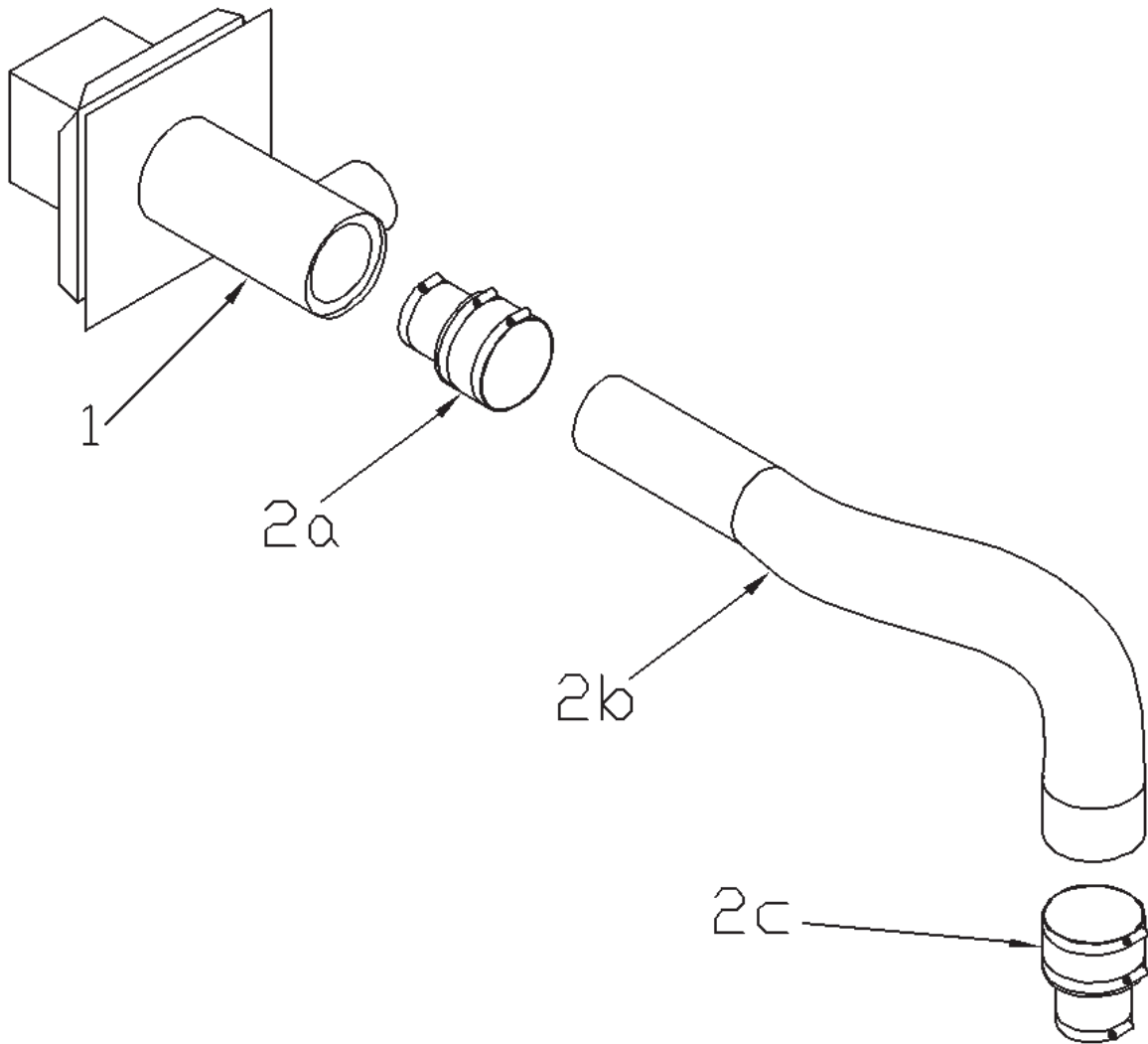
OSW REPLACEMENT PARTS - HARDWARE



ITEM NO.	PART NO.	DISCRIPTION	QTY
1	HW-005.01	SCREW 1/4-20X1/2 SELF TAP	1
2	24521301	FLUE COLLECTOR ASSY (3 SECT)	1
	24521302	FLUE COLLECTOR ASSY (4 SECT)	
	24521303	FLUE COLLECTOR ASSY (5 SECT)	
3	HW06701	STUD 5/16"-18 X 2.3/8"	4
4	2252501	SUPPORT JACKET BRACKET	1
5	HW06901	NUT 5/16-18 WISLOCK	8
6	HW07001	STUD 5/16"-18 X 1.3/8"	3
7	HW-016.02	DRAIN LONG	1
8	PF-004.04	PIPE FIT BUSHING 1.1/4" X 3/4"	1
9	HW06401	NUT - ACORN 1/2"-13 UNC YELLOW	2

FIGURE 20

OSW SERIES REPLACEMENT PARTS TERMINATION KIT ASSEMBLY



ITEM NO.	PART NO.	DISCRIPTION	QTY
1	27522301	TERMINATION VENT ASSY OSW	1
2	#1580005	TERM. KIT 4" FLEX-L CFK104-UT	1
		a.) TERMINAL ADAPTER CFAT44	1
		b.) 10' x 4' VENT KIT CFV104/6	1
		c.) APPLIANCE ADAPTER CFAA44P	1

FIGURE 21

OSW REPLACEMENT PARTS - BURNER COMPONENTS

ITEM NO.	PART NO.	DISCRIPTION	QTY.
1	BN08701	BURNER OIL UT1601 AFII 100 (OSW3)	1
	BN08702	BURNER OIL UT1602 AFII 100 (OSW4)	
	1050012	BURNER OIL UT1603 AFII 150 (OSW5)	
2	BN08001	BURNER OIL FLANGE GASKET #3616	1
	30A055901	GASKET OB MT FLG #3416	1
3	CD-001.01	CAD CELL (FOR BOILERS WITH BECKETT ONLY)	1
4	RY00501	CONTROL R1784P1031	1
5	NZ01001	NOZZLE .60 45B (OSW3) (BECKETT)	1
	NZ01101	NOZZLE .85 45B (OSW4) (BECKETT)	
	1320021	NOZZLE 1.10 45B (OSW5) (BECKETT)	
	1320022	NOZZLE .60 80W (OSW3) (RIELLO)	
	1320023	NOZZLE .80 60W (OSW4) (RIELLO)	
	1320024	NOZZLE 1.10 60B (OSW5) (RIELLO)	
6	CALL	BURNER OIL 40BF3 - (OSW3) (RIELLO)	1
	CALL	BURNER OIL 40BF5 - (OSW4) (RIELLO)	1
	CALL	BURNER OIL 40BF5 - (OSW5) (RIELLO)	

BECKETT AFII BURNER PARTS

ITEM NO.	PART NO.	DISCRIPTION
1	RP03801	BLAST TUBE AF2
2	RP03901	FUEL PUMP AF2 DANFOSS
3	RP04001	7" DRAWER ASSY TRANSFORMER AF2
4	RP04101	OIL BRN TRANSFORMER AF2
5	RP04201	OIL BRN MOTOR AF2
6	RP03701	FUEL PUMP
7	RP04401	SOLENOID VALVE COMB.

RIELLO BURNER PARTS

ITEM NO.	PART NO.	DISCRIPTION
1	30A064701	BRN PUMP DRIVE KEY RIELLO
2	30A064801	BRN PRIMARY CTRL-530SE RIELLO
3	30A064901	BRN COIL RIELLO
4	30A065101	BRN MOTOR RIELLO
5	30A065201	BRN CAPACITOR 12.5uF RIELLO
6	30A065301	BRN ELECTRODE PORCELAIN RIELLO
7	30A065401	BRN PUMP RIELLO
8	30A065501	BRN HYDRAULIC JACK RIELLO
9	30A065601	BRN O-RING PUMP PRESS RIELLO
10	30A065701	BRN PHOTO CELL RIELLO
11	10500015	BRN K7R POST PURGE CONTROL

RATINGS AND DATA

(1) BOILER MODEL NUMBER	(2)* I=B=R OIL BURNER INPUT		D.O.E. HEATING CAPACITY	(3)* I=B=R NET RATINGS	PUMP PRESSURE	A. F. U. E. RATING
	G.P.H.	MBH		WATER MBH		
OSW3	.65	91	79	68.7	140	86
OSW4	1.00	140	120	104	140	86
OSW5	1.25	175	150	130	140	86

NOTE: For altitudes above 2,000 ft. ratings may be reduced at the rate of 4% for every 1,000 ft. above sea level.

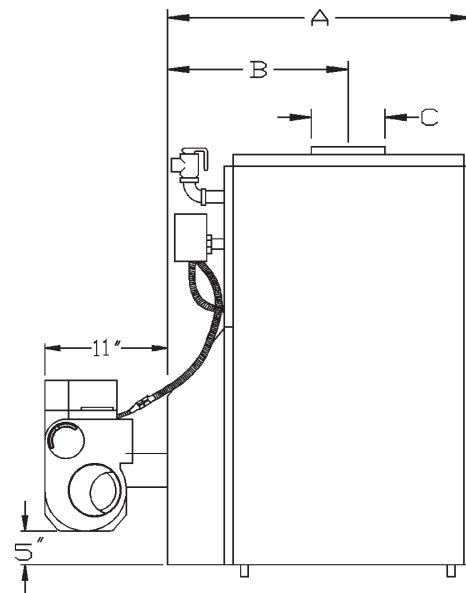
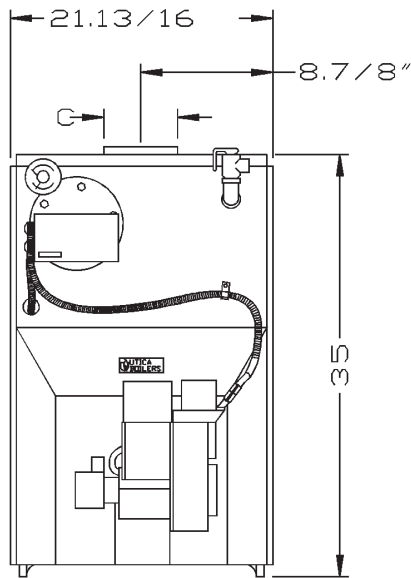
STANDARD EQUIPMENT: Crated Boiler, Flush Jacket, Oil Burner, Target Wall/Liner, Circulator-1.1/4", ASME Relief Valve, Thermitimeter Gauge, Drain Cock, Wiring Harness, Burner Electrical Disconnect, Plastic Cover, Supply Tapping-2", Return Tapping-1.1/4", High Limit and Circulator Control, Primary Control. For Tankless Heater Units-add Tankless Hot Water Coil, Flow Restrictor and Triple Aquastat Relay.

TANKLESS WATER HEATER CAPACITIES

BOILER MODEL NUMBER	FIRING RATE G.P.H.	TANKLESS HEATER NUMBER	TANKLESS HEATER CAPACITY INTERMITTENT DRAW G.P.M.	BOILER WATER CONTENT GALS.
OSW3	.65	P3	AVAILABLE ON REQUEST	10.5
OSW4	1.00	T4	3.25	13.5
OSW5	1.25	T4	3.75	16.5

DIMENSIONS

BOILER NO.	A LENGTH OF FLUSH JACKET	B FRONT OF CASTING TO CENTER LINE OF FLUE OUTLET	C DIA. OF FLUE OUTLET
OSW3	17.7/8"	11.1/4"	4"
OSW4	21.1/2"	12.5/8"	4"
OSW5	25.1/8"	14.1/4"	4"



NOTES:

1. Add suffix "T" to denote boiler with tankless heater.
2. I=B=R burner capacity is based on an oil heating value of 140,000 Btu/gal. and with 13% CO².
3. Net ratings based on 170 ° F temperature in radiators and include 15% allowance for normal piping and pickup load. Consult manufacturers for unusual piping and pick-up requirements.
* All ratings subject to verification.
4. 120 Volts, 15 Amps, & 60 Hz. required to operate this boiler.
5. The MEA number for the SFH-W series is 182-86E
6. The MEA number for the Beckett burners used on the SFH-W are as follows:

AFII 100	456-90-E
AFII 150	456-90-E