

HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

050 Kit #550002271

075 Kit #550002272

100 Kit #550002273

150 Kit #550002274

200 Kit #550002275

Kit installation shall be completed by qualified agency.

⚠ WARNING

Fire, explosion, asphyxiation and electrical shock hazard. Improper installation could result in death or serious injury. Read this instruction and understand all requirements, including requirements of authority having jurisdiction, before beginning installation. Installation not complete until appliance operation verified per Installation, Operation & Maintenance Manual provided with boiler.

Tools required:

- (2) Crescent Wrench
- Spring hose clamp pliers
- 11/32" Nut Driver, Wrench or Socket

1. Follow instructions TO TURN OFF GAS TO APPLIANCE found on Operating Instructions label on boiler or in Installation, Operation & Maintenance Manual. Verify all electrical power to boiler is turned off.

⚠ WARNING

Electrical shock hazard. Turn OFF electrical power supply at service panel.

2. Remove front jacket panel(s).

⚠ WARNING

Burn hazard. Verify heat exchanger has cooled or use appropriate personal protection equipment before removing heat exchanger.

3. Inspect combustion chamber through sight glass. Verify flame is not present. See figure 1.
4. Remove Igniter:
 - Remove two (2) 8-32 hex nuts using 11/32" nut driver, wrench or socket. See figure 1.
 - Pull igniter up and out of heat exchanger.
 - Remove old igniter gasket. Clean heat exchanger surface as needed.

Figure 1 - Sight Glass

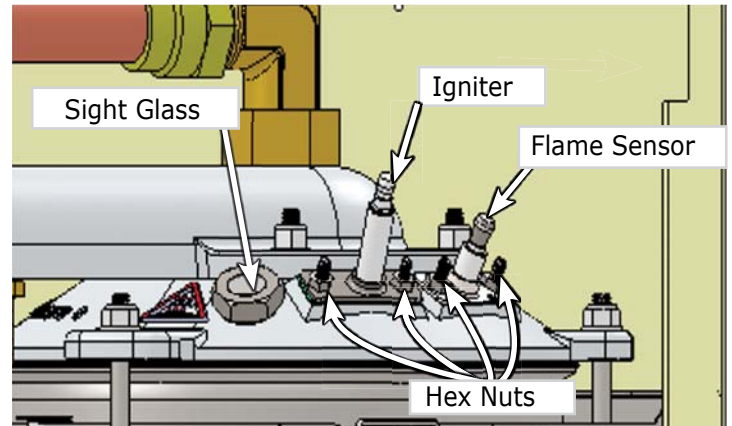
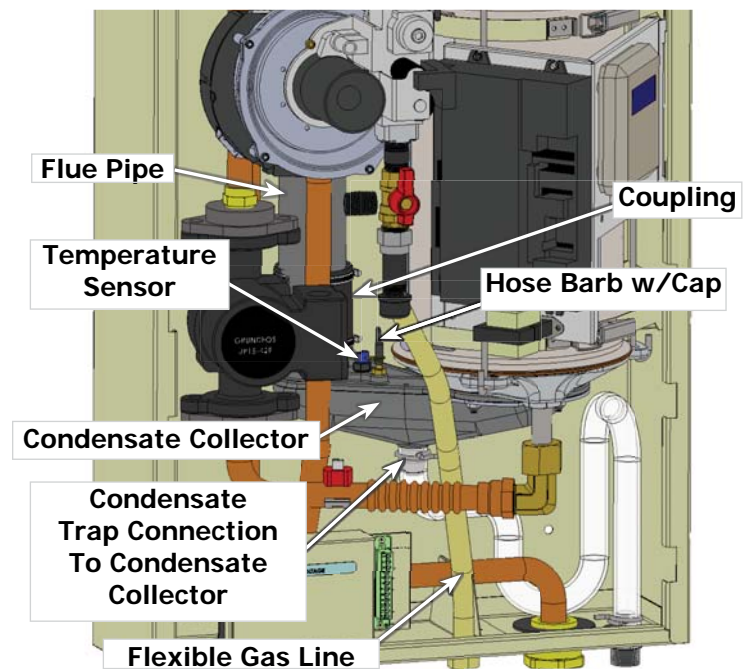


Figure 2 - Condensate Trap and Collector



HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

5. Remove Flame Sensor:
 - Remove two (2) 8-32 hex nuts using 11/32" nut driver, wrench or socket. See figure 1.
 - Disconnect ground wire from stud.
 - Pull flame sensor out of heat exchanger.
6. Remove Gas Valve Harness. Loosen retaining screw and disconnect harness from gas valve.
7. Disconnect Flexible Gas Line:
 - Turn off gas at main shutoff valve.
 - Disconnect flexible gas line from gas shutoff valve.

NOTICE

Use two (2) wrenches when loosening and tightening gas lines. Boiler components can be damaged if subjected to excessive torque.

8. Disconnect Condensate Trap. Expand upper collect clip using hose clamp pliers. Disconnect condensate trap from condensate collector.
9. Remove Air Inlet Assembly:
 - Disconnect two (2) harnesses from blower.
 - Support air inlet assembly. Remove four (4) ¼-20 hex flange nuts securing air inlet assembly to heat exchanger using 7/16" deep well socket. See figure 3.
10. Remove Condensate Collector:
 - Disconnect wire harness from vent temperature sensor. See figure 2.
 - Loosen upper hose clamp securing condensate collector to flue piping using 3/8" socket with 6" extension. See figure 2.
 - Remove ¼-20 hex flange nuts securing condensate collector to heat exchanger using 7/16" deep well socket. See figure 9.
 - Remove condensate collector assembly from heat exchanger and flue pipe.
11. Remove Heat Exchanger:
 - Isolate boiler from hydronic piping system. Drain water from boiler.
 - Disconnect upper and lower compression fittings on heat exchanger. See figure 6.

NOTICE

Use two (2) wrenches when loosening and tightening heat exchanger compression fittings. Boiler components can be damaged if subjected to excessive torque.

Figure 3 - Air Inlet Assembly

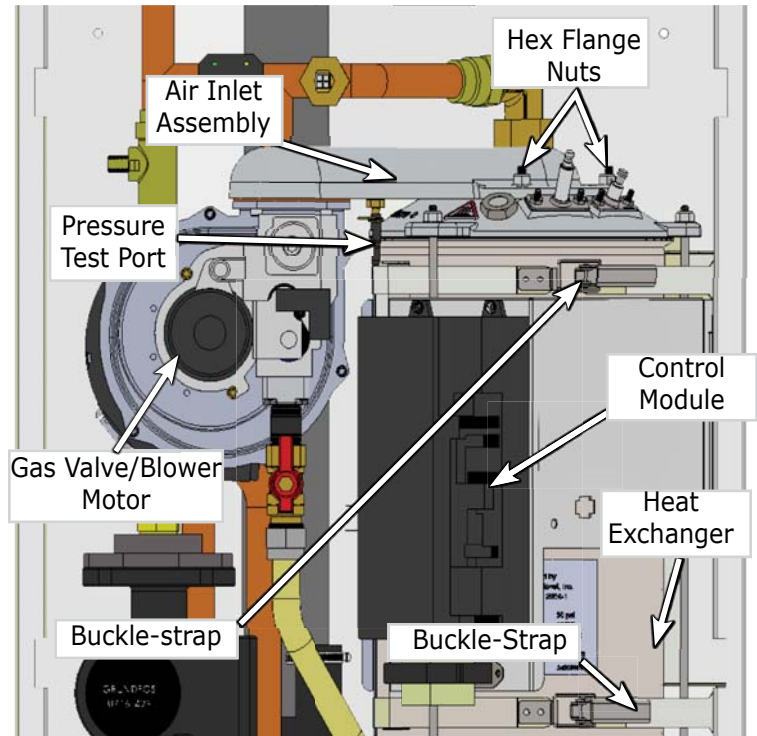
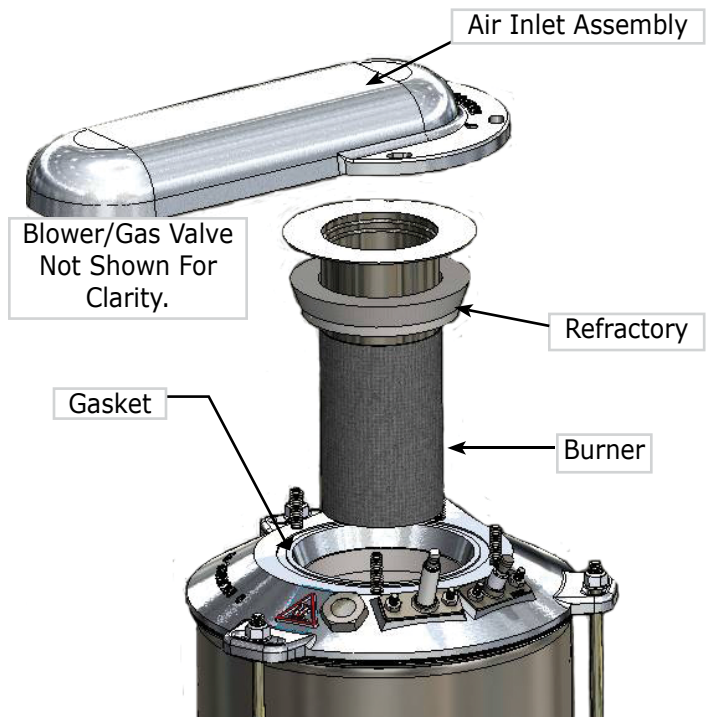
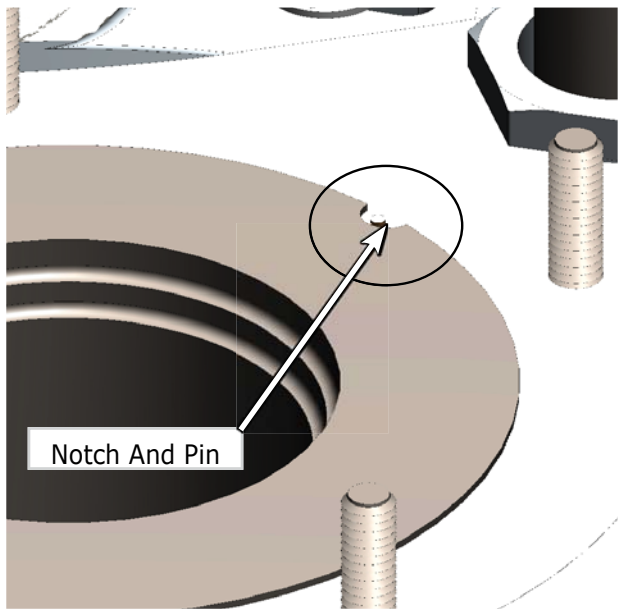


Figure 4 - Burner with Refractory



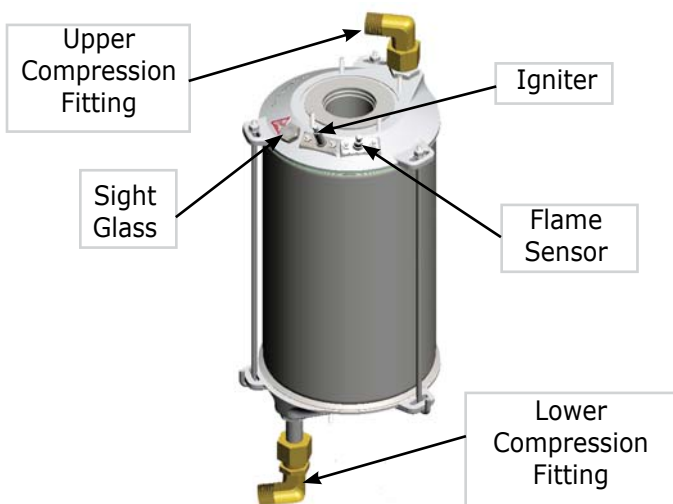
HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

Figure 5 - Notch and Pin



- Hold bottom half of lower compression fitting with one hand, position other hand on return water pipe and separate lower pipe by bending down and away. Lower return water pipe has flexible section to allow bending. Bend only as far as necessary to gain clearance of heat exchanger.
- Unfasten two (2) heat exchanger buckle straps. Remove Control Module from buckle straps and move out of way. Guide heat exchanger down out of upper compression fitting.

Figure 6 - Heat Exchanger



HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

1. Install New Heat Exchanger

NOTICE

Install heat exchanger with condensate collector removed.

- Remove 90° elbow of compression fitting from top of heat exchanger and straight compression fitting from bottom. Discard fittings. See Figure 6.
- Insert heat exchanger into boiler. Attach compression nut to existing 90° compression fitting.
- Place control module bracket onto replacement buckle straps. Secure heat exchanger with provided upper and lower buckle straps.
- Carefully engage top and bottom compression nuts, ensuring not to cross-thread.
- Hand tighten both top and bottom compression nuts. Use marker to mark reference line on top and bottom compression nuts and fittings. Tighten additional 1/3 turn beyond handtight using a crescent wrench and second crescent wrench to counter hold.

2. Install Burner

- Slide new refractory sleeve onto new burner. See figure 4 for orientation.
- Insert new burner into heat exchanger. Align U-shaped notch on burner flange with pin on heat exchanger. See figure 5

3. Install Condensate Collector

- Apply thin film of silicone to condensate collector recess. Place new o-ring into recess. See figure 8. Use silicone sealant sparingly - helps hold o-ring in place and is not necessary for sealing.
- Position condensate collector assembly under heat exchanger. Push assembly over heat exchanger studs while engaging flexible coupling onto flue pipe. Secure with 1/4-20 hex flange nuts. Do not over tighten. See figure 9.
- Verify flue pipe is fully seated into flexible coupling. Tighten upper hose clamp.
- Attach wire harness to vent temperature sensor.

4. Install Air Inlet Assembly

- Install burner gasket provided with kit. Align gasket with studs in heat exchanger.
- Place air inlet assembly onto heat exchanger. Secure hand tight with four (4) 1/4-20 hex flange nuts. See figure 4.
- Verify minimum 1/8" clearance between blower and internal piping. Complete tightening nuts.

Figure 7 - Condensate Collector

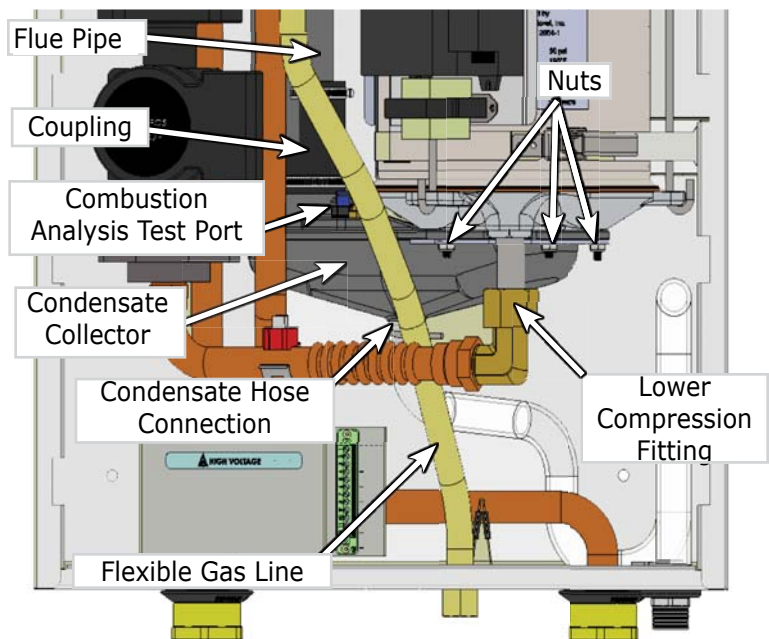
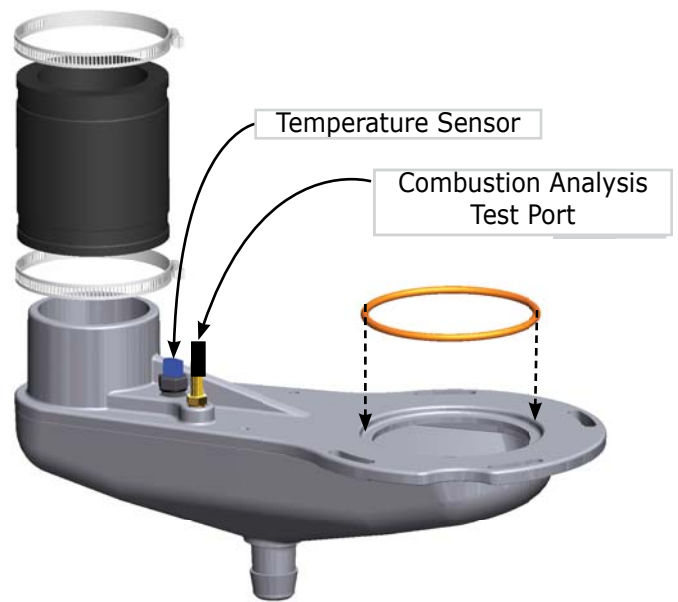


Figure 8 - O-Ring Placement



HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

Figure 9 - Push Upward Onto Studs

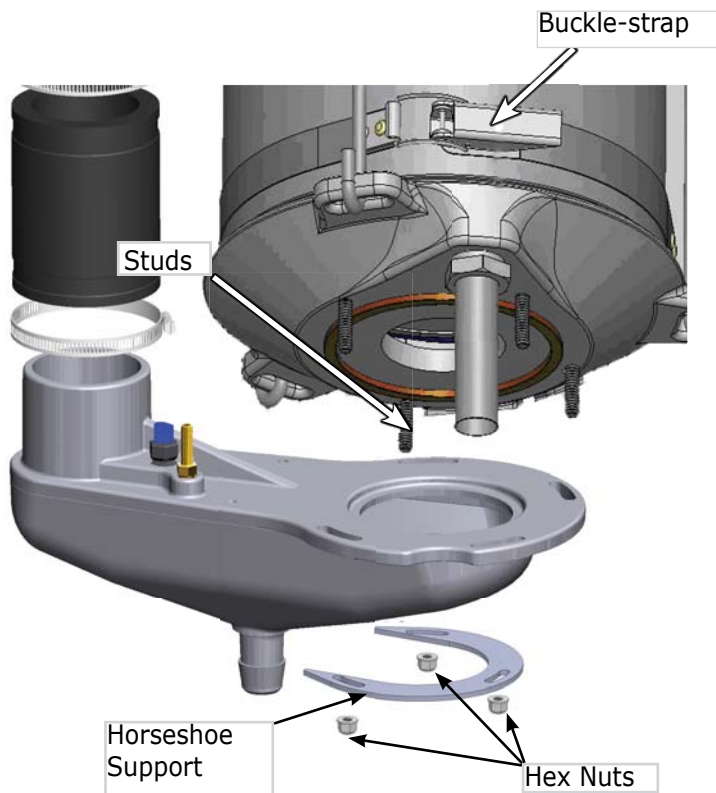
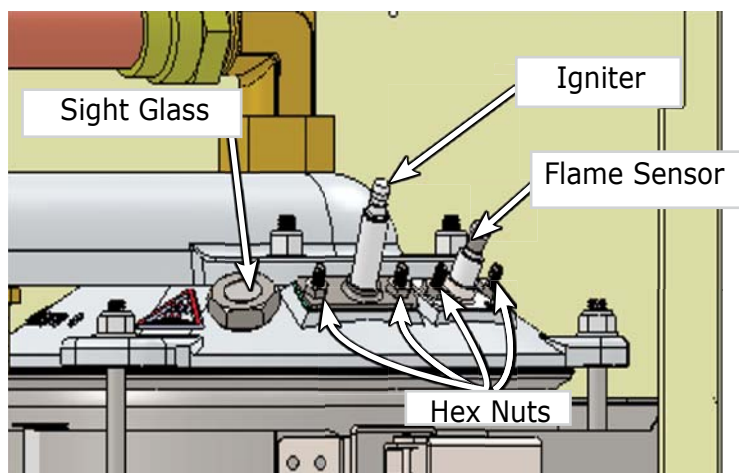


Figure 10 - Igniter, Gasket and Hex Nuts



5. Connect Condensate Trap. Expand collect clip and place over end of condensate trap. Insert condensate trap onto condensate collector barb. Secure with collet clip.
6. Connect Flexible Gas Line. Connect flexible gas line to gas shutoff valve. See figure 3.

NOTICE

Flexible gas line uses flare connection. No thread (joint) compound (pipe dope) necessary.

7. Install Gas Valve Harness. Attach gas valve harness to gas valve. Secure with integral screw.
8. Install Flame Sensor:
 - Insert flame sensor into heat exchanger. Flame sensor bracket is offset and will only allow insertion in proper orientation.

NOTICE

Flame sensor does not require gasket. Flame sensor o-ring seals flame sensor to heat exchanger.

- Place flame sensor ground wire onto right-side stud.
 - Secure flame sensor and ground wire with two (2) 8-32 hex nuts. Do not overtighten (maximum 5 lb-ft).
 - Attach flame sensor cable to flame sensor.
9. Install Igniter. See figure 10.
 - Position igniter gasket over igniter.
 - Orient igniter with ground rod to left side.
 - Insert igniter into heat exchanger. Secure with two (2) 8-32 hex nuts. Do not overtighten (maximum 5 lb-ft).
 - Attach igniter cable to igniter.
 10. Gas Line Leak Test
 - Turn on gas at manual main gas shutoff valve.
 - Check for gas line leaks using gas detector, noncorrosive detection fluid, or other leak detection method acceptable to authority having jurisdiction. Correct leaks immediately and retest.

⚠ DANGER

Fire hazard. Do not use matches, candles, open flames, or other methods providing ignition source. Failure to comply will result in death or serious injury.

HEAT EXCHANGER REPLACEMENT KIT INSTRUCTIONS

11. General Finish Instructions

- Resume operation using OPERATING INSTRUCTIONS found on Operating Instructions label on boiler or in Installation, Operation & Maintenance Manual.
- Operate boiler for 30 minutes. Check for water leaks at condensate collector and compression fittings. Repair any leaks.
- Verify proper operation by following START UP PROCEDURE in Installation, Operation & Maintenance Manual.
- Install front jacket panel(s).

PARTS LIST

050 Heat Exchanger Kit # 550002271		
DESCRIPTION	PART #	QTY
Heat Exchanger	-	1
Flame Sensor	-	1
Igniter	-	1
Igniter Gasket	-	1
Burner	-	1
Burner Gasket	-	1
Refractory Sleeve	-	1
Fitting, Compression 90°, 20 mm tube x 3/4 NPT	-	1
O-ring	-	1
¼-20 Hex Flange Nut	-	8
8-32 Hex Nut	-	4
Collect Clip 1⅛	-	1
Instructions	240008928	1

075 Heat Exchanger Kit # 550002272		
Heat Exchanger	-	1
Flame Sensor	-	1
Igniter	-	1
Igniter Gasket	-	1
Burner	-	1
Burner Gasket	-	1
Refractory Sleeve	-	1
Fitting, Compression 90°, 20 mm tube x 3/4 NPT	-	1
O-ring	-	1
¼-20 Hex Flange Nut	-	8
8-32 Hex Nut	-	4
Collect Clip 1⅛	-	1
Instructions	240008928	1
* Not Shown		

PARTS LIST

100 Heat Exchanger Kit # 550002273		
DESCRIPTION	PART #	QTY
Heat Exchanger Module	-	1
Flame Sensor	-	1
Igniter	-	1
Igniter Gasket	-	1
Burner	-	1
Burner Gasket	-	1
Refractory Sleeve	-	1
Fitting, Compression 90°, 20 mm tube x 3/4 NPT	-	1
O-ring	-	1
¼-20 Hex Flange Nut	-	8
8-32 Hex Nut	-	4
Collect Clip 1½	-	1
Instructions	240008928	1

200 Heat Exchanger Kit # 550002275		
DESCRIPTION	PART #	QTY
Heat Exchanger Module	-	1
Flame Sensor	-	1
Igniter	-	1
Igniter Gasket	-	1
Burner	-	1
Burner Gasket	-	1
Refractory Sleeve	-	1
Fitting, Compression 90°, 25 mm tube x 1 NPT	-	1
O-ring	-	1
¼-20 Hex Flange Nut	-	1
8-32 Hex Nut	-	4
Collect Clip 1½	-	1
Instructions	240008928	1
* Not Shown		

150 Heat Exchanger Kit # 550002274		
DESCRIPTION	PART #	QTY
Heat Exchanger Module	-	1
Flame Sensor	-	1
Igniter	-	1
Igniter Gasket	-	1
Burner	-	1
Burner Gasket	-	1
Refractory Sleeve	-	1
Fitting, Compression 90°, 25 mm tube x 1 NPT	-	1
O-ring	-	1
¼-20 Hex Flange Nut	-	8
8-32 Hex Nut	-	4
Collect Clip 1½	-	1
Instructions	240008928	1
* Not Shown		

Check our website frequently for updates: www.ecrinternational.com