PRESTIGE Excellence PE110
Indirect Tank Replacement Kit

Kit Part Number: PSRKIT56

Each PE110 Indirect Tank Replacement Kit includes the following items:

- Indirect tank body
- 4 boiler piping gaskets
- 1” Flange gasket
- 1 Air vent
- 1 O-ring
- 1 Dip tube
- 1 Heavy duty plastic bag

Required tools:

A. Pipe wrenches
B. Phillips and flat head screw drivers
C. 10 mm socket and/or 10 mm wrench
D. Crescent wrench
E. Needle nose pliers
F. Calibrated combustion analyzer
G. Source of compressed air

⚠ WARNING

Indicates a potentially hazardous situation which, if ignored, can result in serious injury or substantial property damage.

⚠ CAUTION

To prevent damage to the inner tank, the Installer must:

- **Always fill inner tank prior to outer tank**
- **Always drain outer tank prior to inner tank.**

⚠ WARNING

For your safety, turn off electrical power supply at service panel and allow unit to cool before proceeding to avoid possible electrical shock and scald hazard. Failure to do so can cause severe personal injury or death.

⚠ WARNING

Use a two wrench method when tightening piping onto the boiler piping connections. Use one wrench to prevent the boiler piping from turning / twisting. Failure to support the boiler piping and connections in this manner could cause damage to the boiler and its components.

NOTICE

Indicates special instructions on installation, operation or maintenance, which are important to equipment but not related to personal injury hazards.

⚠ WARNING

Failure to follow instructions below can result in severe personal injury or damage if ignored.

- **Instructions are for a qualified installer/ service technician only.**
- **Read all instructions before proceeding.**
- **Follow instructions in proper order.**

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Indirect Tank Replacement Kit

Preliminary Instructions

1. Turn power to the unit OFF at the main service panel and allow the unit to cool.

2. Remove boiler front jacket panel by removing the thumbscrew located on the upper edge of the unit. Lift front panel up and pull forward to remove from the unit. (Fig. 2).

3. Using a voltmeter ensure there is no electrical power to the boiler by checking for power on the boiler's high voltage terminals L and N.

⚠ WARNING

Ensure power to the boiler has been switched off prior to servicing the unit.

4. Shut off gas supply to the inlet of the unit at the external main manual shutoff valve to the unit.

5. Close external system isolation valves to the boiler supply and return piping and on the system make up / fill piping.

6. Attach a hose to external boiler drain and to drain located at the bottom of the tank. Place other end of this hose to a suitable drain.

7. Open external boiler drain valve and tank drain and begin draining the boiler and water heater outer tank.

NOTICE

To assist in the draining of the boiler, remove the air vent at the top of the unit or manually lift open the boiler pressure relief valve.

8. Close off the domestic cold supply to the internal tank.

9. Attach a hose to the drain connection installed on the cold inlet and route hose to a nearly floor drain or bucket.

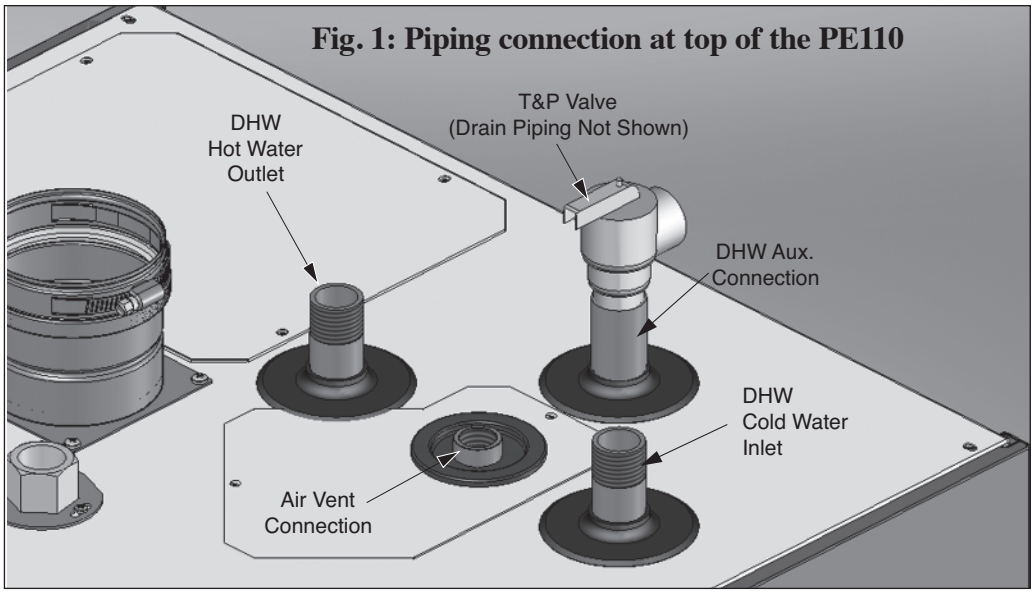
10. Carefully open up the domestic drain installed on the cold inlet side of the tank.

11. Open a faucet in the house and allow domestic system to drain.

12. Once water stops draining, remove the T & P valve from the top of the boiler. (Fig. 1).

13. Close the faucet and add air pressure using an air compressor to the tank through the T&P valve connection.

Fig. 1: Piping connection at top of the PE110



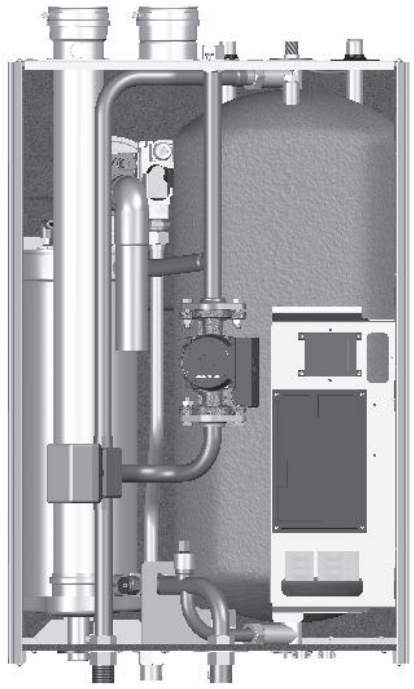


Fig. 2: Prestige Excellence PE110

14. Domestic water will move out of the inner tank through the internal dip tube out via the drain hose.

15. Drain inner tank until no more water comes out.

Instructions for inner tank draining in the State of Massachusetts

1. Install furnished dip tube with O-ring into the T & P connection.

2. Connect drain hose to this connection and route hose to a suitable drain.

3. Add air pressure via an external hot water faucet

NOTICE

The dip tube does not terminate at the very bottom of the tank. Be aware of a small amount of water still in the tank.

Removal of the Pressure Gauge Capillary Tube

1. Disconnect the pressure gauge capillary tube from the return piping. The capillary tube fitting can be dismounted from the brass check valve fitting on the return pipe.

Removal of Electrical Connections

NOTICE

Before disconnecting any wire connections mark and label all connections and location of the connections.

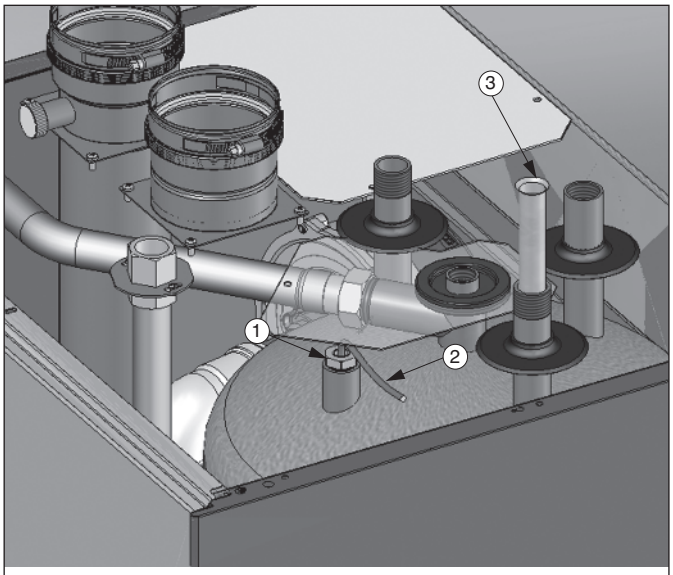


Fig. 3: Excellence Domestic Components

1. Remove 2 top access panels located above boiler heat exchanger and water heater on the top jacket panel.

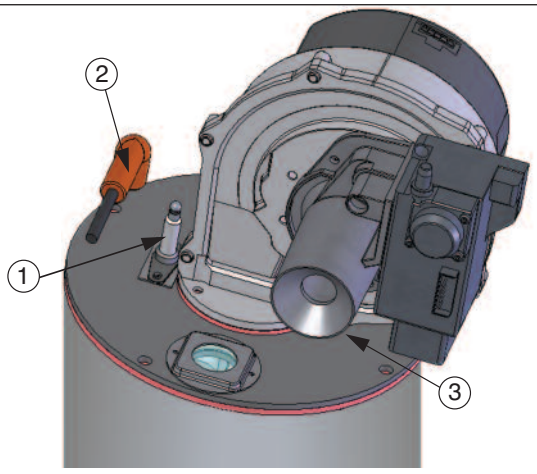
2. Remove the tank sensor (item 2 in Fig. 3) by removing the snap clip (item 1 in Fig. 3) from the drywell and carefully pull the indirect tank sensor from the drywell. DO NOT discard as items will be re-used. (Fig. 3).

3. Remove ignition cable and green ground wire from the igniter.

4. Disconnect the ignition cable from the boiler control and remove air intake pipe from venturi. Place the intake piping and ignition cable aside, DO NOT discard as they will be re-used. (Fig.4)

5. Disconnect the red wire leads from supply sensor located at the top of the heat exchanger. Use care when disconnecting the wire leads as not to damage the sensor terminals or the wire leads.

6. Disconnect the yellow wire leads from the flue sensor. Use care when disconnecting the wire leads as not to damage sensor terminals or wire leads.



1. Ignitor
2. High Voltage Ignitor Cable
3. Venturi

Fig. 4: Top of Heat Exchanger

7. Disconnect the blue wire leads from return sensor located at the bottom of the heat exchanger. Use care when disconnecting the wire leads as not to damage the sensor terminals or the wire leads.

8. Remove the mounting screw and disconnect the black rectifier plug from the gas valve.

9. Disconnect the grey flat ribbon cable from the display board at the MCBA control module. Push up on display module assembly from front of the boiler. Place with ribbon cable in a dry location.

10. Disconnect the orange wire leads from the Low Water Cut-Off (LWCO) pressure switch. Use care when disconnecting the wire leads as not to damage the LWCO terminals or wire leads.

11. Disconnect the orange low voltage wiring terminal strip by unplugging the bottom strip from the upper portion.
12. Disconnect the orange high voltage wiring terminal strip by unplugging the bottom strip from the upper portion.

13. Remove the retaining screw for control board mounting plate and swing open the control mounting panel. The high voltage and low voltage terminals should pass through the lower cutouts of the panels to allow movement of the panel.

14. Remove 2 cotter pins and place swing out control in a dry location.

Removal of Water Connections

1. Disconnect the brass union on the boiler piping at the bottom of the DHW tank.

2. Remove the wiring to the internal circulating pump.

3. Remove cold water feed piping and DHW supply piping from the top tank connections (Fig. 5).

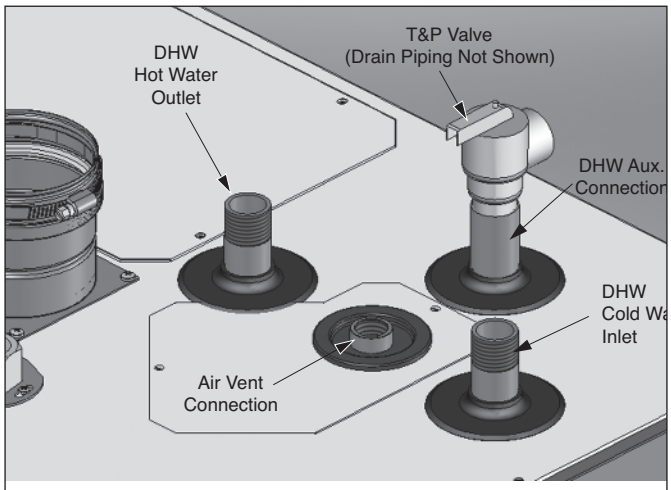


Fig. 5: Excellence Domestic Connections

4. Loosen the brass union nut located above the diverter valve body.

5. Dismount the upper flange of the internal circulator. Loosen the brass union nut on the diverter valve facing the internal pump. Now remove the internal pump and piping assembly.

6. Loosen the union nut on the boiler supply piping at the top of the heat exchanger to disconnect the boiler supply piping from the heat exchanger. Pull piping assembly down, remove the relief valve / air vent assembly and remove from cabinet.

7. Fully loosen the brass union nut on the top connection of the hot water tank. Loosen brass nut at top of diverter valve and remove piping from cabinet.

8. Remove the 3 hard plastic eschutcheons from the top of the tank. Remove drain valve from bottom of tank.

Removal of existing Insulated Tank Body

NOTICE

Obtain assistance in lifting the indirect tank body from the cabinet as 2 people will be required .

1. Lift the tank body about 4" to 6" to disengage from the rear jacket panel. Tilt tank slightly to clean boiler return piping. Pull bottom of tank out first from cabinet.

2. Lift tank body up and remove the bottom first out of the cabinet. Make sure to clear boiler return piping.

NOTICE

Prior to installation of the new tank body, carefully check the interior of the boiler cabinet. Dry the cabinet / insulation when signs of moisture are present. Check integrity of all wiring. Repair / replace when necessary.

Preparation of new Insulated Tank Body

1. The new tank body is bolted down in the shipping box. Remove nuts and loosen blocking wood pieces and carefully remove tank body from its shipping box. Do not discard this hardware and packing materials, as the shipping box will be reused to secure and return the old tank body back to Triangle Tube for warranty consideration. Check for any damage to the new tank body.

Installation of new Insulated Tank Body

1. Guide tank body with the top first into the boiler cabinet and guide top piping through the top openings in the boiler jacket. Bring tank all the way to the top of the boiler jacket, then swing in lower portion of the tank body.

2. Lift tank body up to engage the hooks located at the rear of the tank body into the slots provided in the rear jacket panel. Make sure to engage both the bottom and top hooks of the tank body into the rear jacket panel.

Installation of Water Connections

1. Align bottom connection of tank body to brass nut of copper return piping. Install new tank gasket. Tighten brass nut by hand, then tighten firmly using a wrench.

2. Use a new boiler piping gasket between supply connection of the heat exchanger and the boiler supply piping assembly. Make sure to protrude relief valve connection from top of boiler cabinet. Tighten nut on supply connection of heat exchanger by hand first.

3. Reinstall piping from top of diverter valve to top of tank body. Use new boiler piping gasket at tank body connection. Tighten brass nuts at top of diverter valve and at top of tank body by hand.

4. Install boiler circulator assembly between boiler supply piping and horizontal facing connection on the diverter valve. Use a new 1" flange gasket at the upper flanged connection above the circulator. Tighten brass nut on diverter valve by hand. Install bolts and nuts on upper flanged connection. Ensure the flange gasket is not pinched between the flanges.

5. Check all brass nut connections for proper alignment, correct where necessary. Now tighten all connections firmly by using a wrench. Make sure to use the proper counter wrench at each connection.

6. Slide eschutcheons back over the piping connections at the top of the water heater. (Fig. 6).

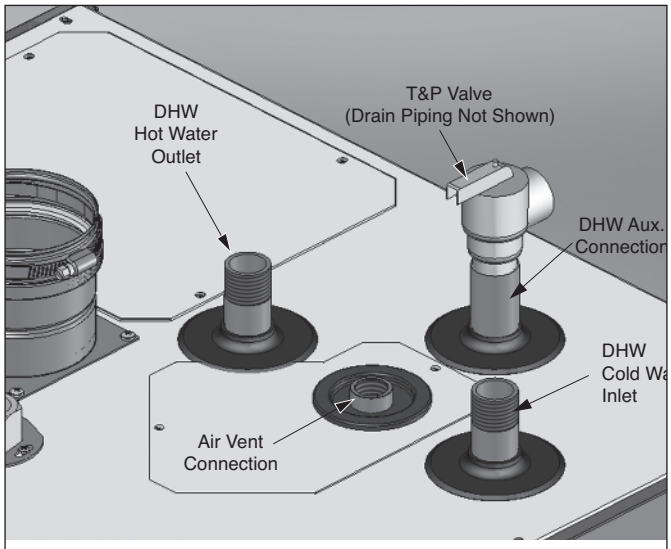


Fig. 6: Excellence DHW Water Connection

7. Reinstall DHW cold water inlet piping at the top of the water heater.

8. Reinstall DHW hot water outlet piping at the top of the water heater.

9. Install the T & P valve at its designated location. (Fig. 6).

10. Reinstall the drain valve at bottom of tank.

Installation of Electrical Connections

1. Reinstall the swing out control panel with the 2 cotter pins. Reconnect all wires.

2. Install ignition cable at the MCBA igniter connection and on the igniter.

3. Install the green ground wire onto the igniter ground terminal.

4. Install the air intake pipe back on the venturi blower air inlet connection. Make sure that the igniter cable is secured with a cable tie to the air intake pipe. Also make sure that the igniter cable is NOT in contact with any metal surfaces or is routed over the sightglass.

5. Reinstall red supply sensor leads to the temperature sensor connectors located near the supply connection at the top of the heat exchanger.

6. Reinstall blue return sensor leads to the temperature sensor connectors near the return connection at the bottom of the heat exchanger.

7. Reinstall yellow flue sensor leads to the terminal connectors of the flue sensor.

8. Reinstall the black rectifier plug onto the gas valve and secure with provided screw.

9. Snap display module assembly back in place.

9. Reinstall grey flat ribbon cable leading to display board into the left bottom MCBA control plug.

10. Reinstall orange LWCO switch leads to the terminal connectors on the LWCO device.

11. Secure the ribbon cable, yellow and orange leads into the plastic holding clip located at the front side of the tank insulation.

12. Reattach the access panels on the top jacket panel using the existing screws.

Start-up Procedures

1. Ensure the pressure relief valve / air vent is properly piped on the supply piping at the top of the boiler.

⚠ CAUTION

To prevent damage to the inner tank, the Installer must:

- **Always fill inner tank prior to outer tank**
- **Always drain outer tank prior to inner tank.**

2. Turn on the cold DHW supply to the tank and open a hot water faucet to purge the air from the domestic system.

3. Keep hot water faucet open until all air is purged from the hot water system. Then close the faucet.

4. Fill boiler with water and purge all air from the system. Set boiler pressure between 12 and 15 psi. Test for water leaks. Repair any leaks.

5. Turn on gas supply to the inlet of the unit at the external main manual shutoff valve to the unit.

6. Check and test all gas connections for leaks. Repair leaks if found.

⚠ WARNING

Do not check for gas leaks with an open flame. Use a bubble test. Failure to check for gas leaks can cause severe personal injury, death or substantial property damage.

7. Turn power to the unit "ON". The unit is now ready to be placed back in service.

8. It is recommended that the installer performs a complete combustion test to ensure combustion levels in Table 1 are met at HIGH and LOW Fire and the burner is operating at optimum conditions.

Table 1: Recommended Combustion Levels

	Natural Gas	Propane
O2 Min.	2.30%	2.70%
O2 Max.	5.30%	4.70%
CO2 Min.	8.80%	10.70%
CO2 Max.	10.50%	12.00%
CO Max.	100 ppm	100 ppm

⚠ WARNING

The combustion testing and adjustments must be performed by a qualified installer, service agency or the gas supplier. All combustion measurements must be performed with calibrated equipment to ensure proper readings and accuracy.

⚠ WARNING

Failure to perform a complete combustion test at high and low input rate may result in incomplete combustion and the production of carbon monoxide, which can cause severe personal injury, death or substantial property damage.

9. Manually place boiler into high fire mode by pressing MODE and "+" buttons simultaneously on control display while in the standby (STBY) mode.

NOTICE

The control panel will display an H followed by the current water temperature when placed in high fire test mode.

10. If the combustion levels during high fire are outside the recommended combustion settings, adjust the THROTTLE SCREW (See Fig. 7) using a flat blade screw driver as follows:

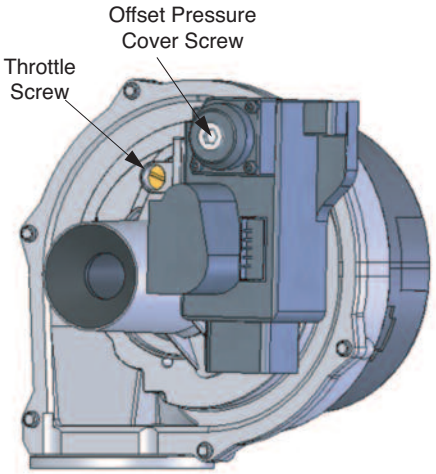


Fig. 7: Combustion Adjustment -Prestige Burner

⚠ WARNING

The throttle screw is highly sensitive and requires the use of a combustion analyzer for adjustment. An adjustment as small as 1/8 of a turn can produce a large change in the combustion levels.

11. Once the combustion level is set at high fire, manually place the boiler into LOW fire mode by pressing MODE and "-" buttons simultaneously on the control display while in the standby (STBY) mode.

NOTICE

The control panel will display an L followed by the current water temperature when placed in low fire test mode.

12. Verify combustion levels at LOW fire operation. Levels should be similar to HIGH fire setting (+/- .2). Contact Triangle Tube Technical Services in case of issues.

13. Press the "+" and "-" buttons simultaneously on control display to resume regular operation.

14. Reinstall the front jacket panel using the thumbscrew to secure it.

Return Shipment of Old PE110 Indirect Tank

1. Carefully secure the old indirect tank body onto the shipping platform. Make sure to secure the tank body with the wood blocking and hardware provided.

2. Place tank body and wood mounting return shipment into the large plastic bag provided to avoid accidental water spillage.

3. Place plastic bag and contents back into the original shipping box and insert packaging materials to securely hold the tank body in place.