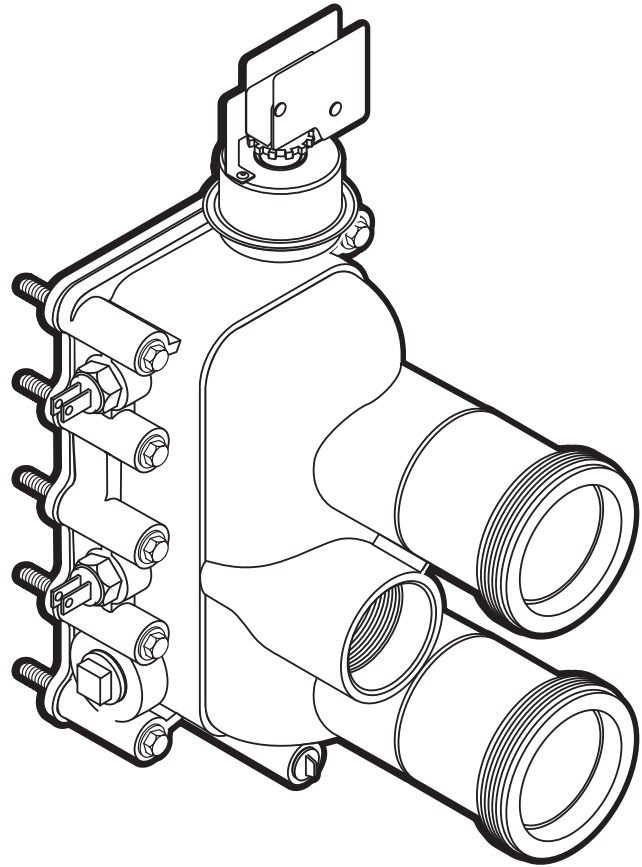




STA-RITE[®] MAX-E-THERM[®] HEATER MANIFOLD REPLACEMENT INSTRUCTIONS



HEATER KITS

- 200K Manifold Kit No. 77707-0014
- 333K Manifold Kit No. 77707-0015
- 400K Manifold Kit No. 77707-0016
- Connector Tube Kit No. 77707-0017
- O-Ring No. U9-226

SAFETY PRECAUTIONS

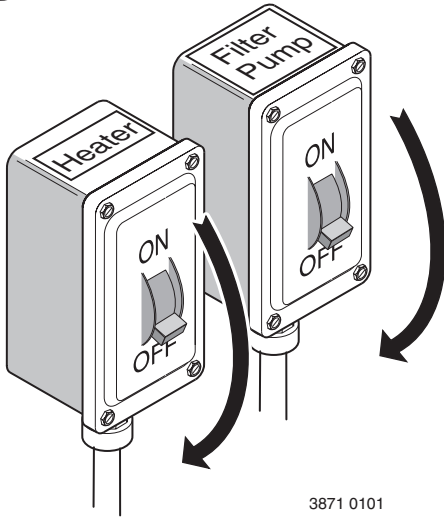
WARNING

Fire or explosion hazard. Disconnect all power to the heater and close the External Manual Gas Valve before starting this procedure.

CAUTION

Compressed spring hazard. The Thermal Regulator plug has a spring behind it. Restrain it when removing it from the Manifold to prevent it from flying and possibly injuring persons nearby (see Picture No. 9, Page 3).

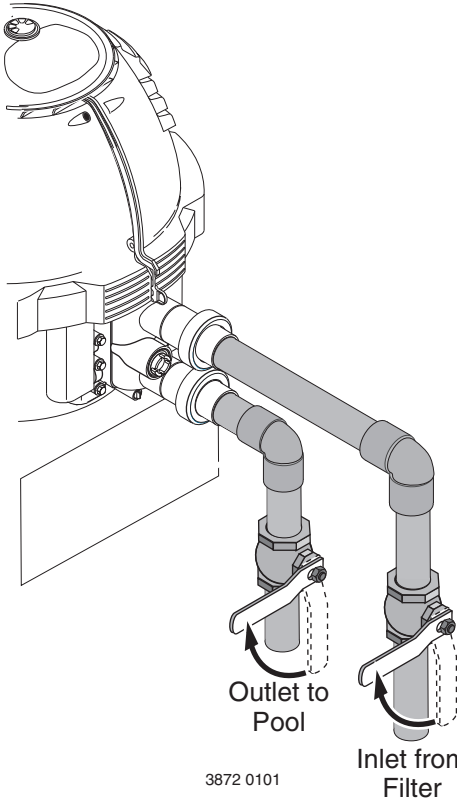
1



3871 0101

Turn off the power to the heater and the filter pump.

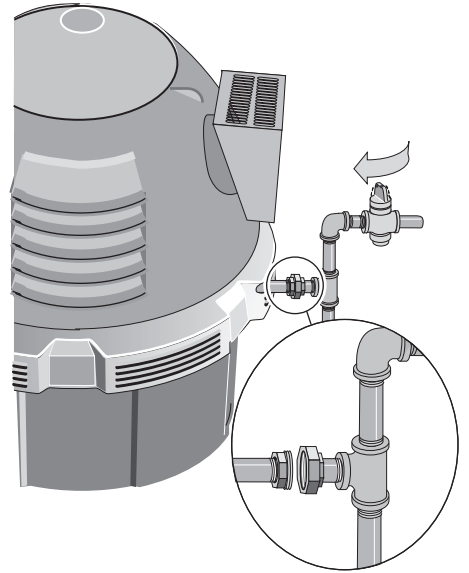
2



3872 0101

Close water inlet and outlet valves to isolate the heater from the system.

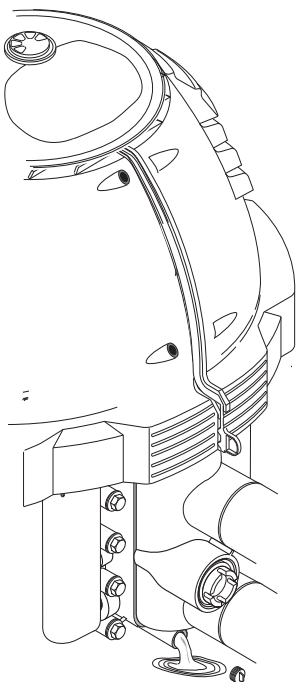
3



3873 0101

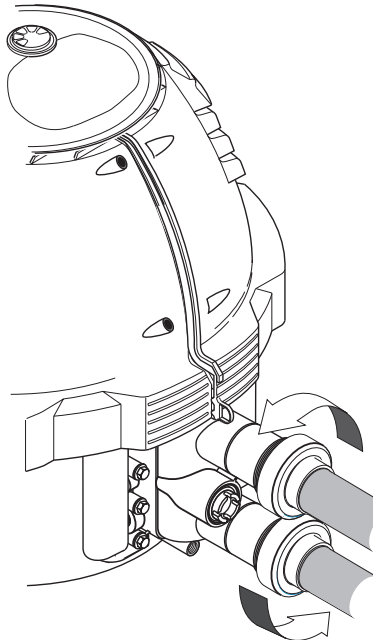
Close the gas valve. If it is necessary to move the heater, disconnect the union.

4



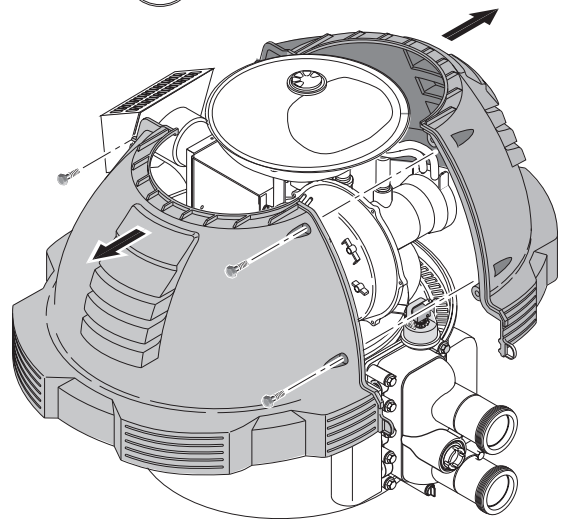
Drain the Heater.

5



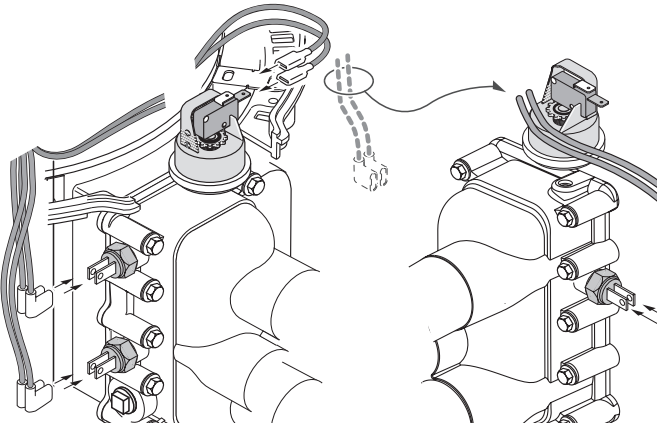
Loosen the union collars. When the heater is empty, disconnect the unions.

6



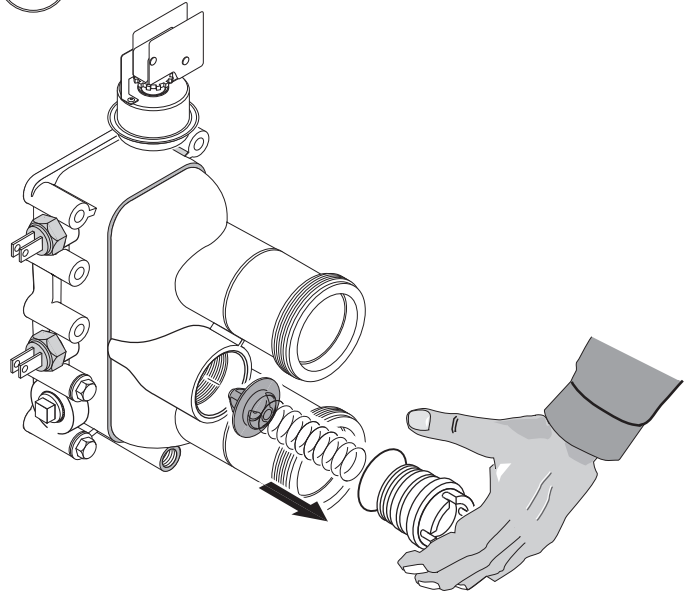
Separate and remove the covers.

7



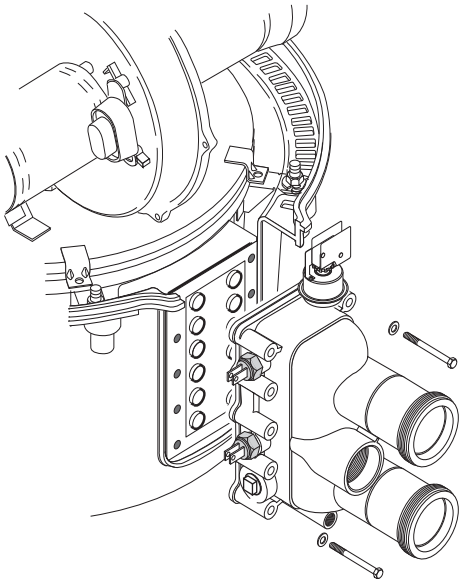
Remove the switch covers and disconnect the wires from the safety switches. The wires are color coded and marked for the switches they are connected to.

8



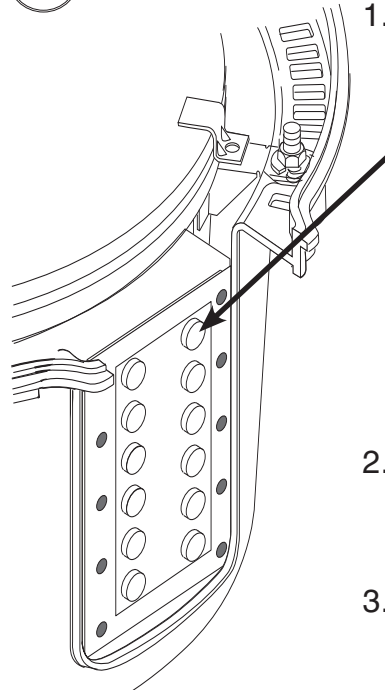
Carefully remove the spring-loaded thermal regulator.

9



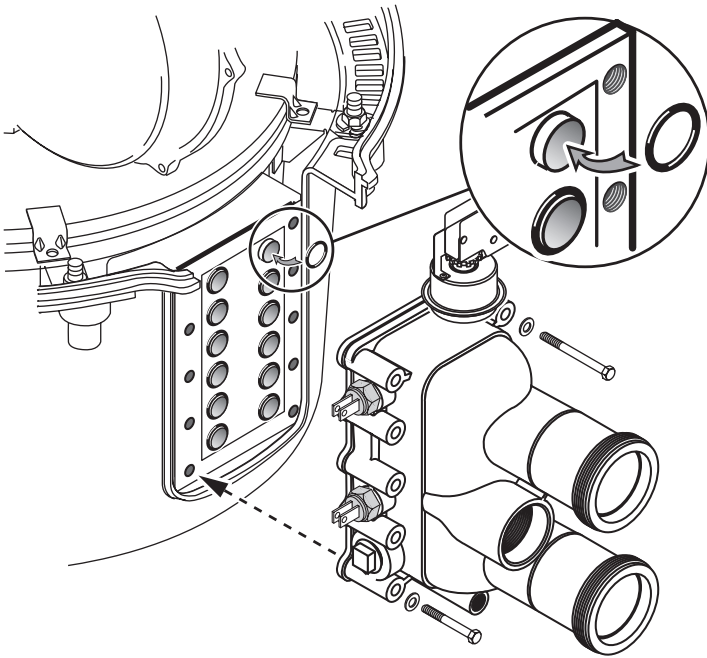
Carefully remove the MANIFOLD and ADAPTER.

10



1. Clean the tube sheet and O-ring sealing surface with a nylon brush, then brighten the tube sheet surface with 320 grit emery cloth. NOTE: When cleaning, be careful not to push the tube sheet into the combustion chamber. If you do, thread a couple of bolts into it and pull it back in place.
2. Brush off all dust and debris with a brush and wipe it down with a cloth.
3. Apply silicone grease (supplied) to O-Rings.

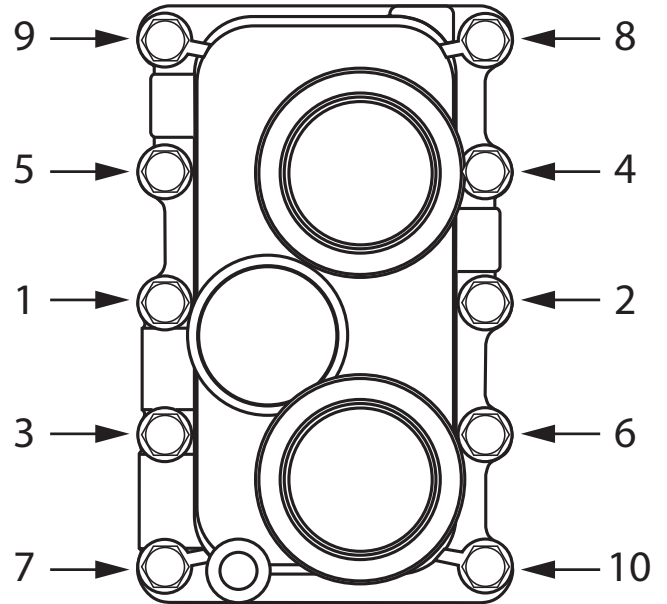
11



- Install O-rings on tube ends; install manifold.
- Install bolts and hand tighten.

12

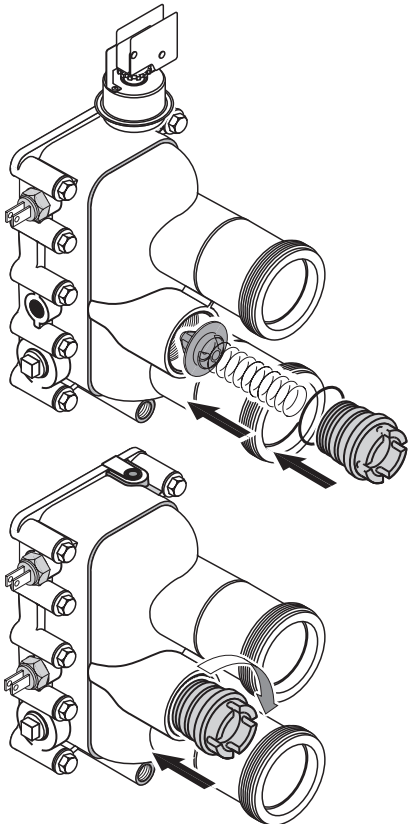
Torque Pattern - All Models



75-115 in.-lbs./8.4-12.9 N-m

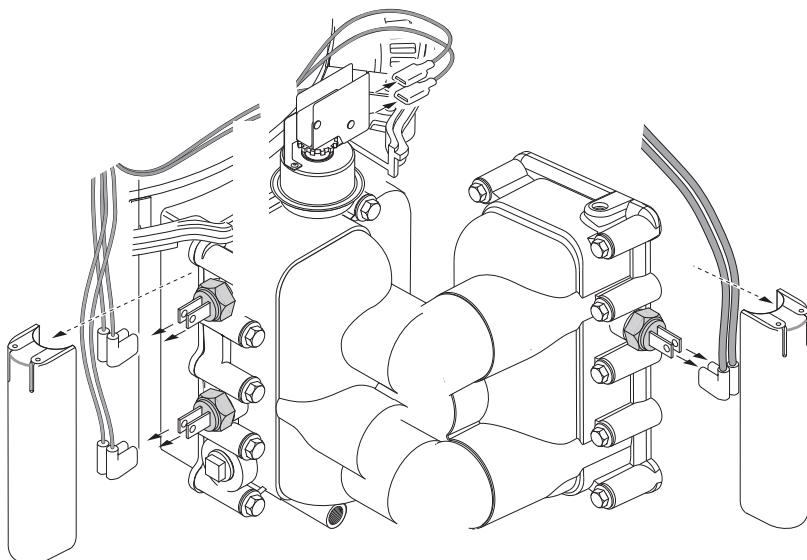
1. **Be sure** that all bolts are engaged and hand tight.
2. Torque the bolts in sequence as shown. Some noise (pop- ping, etc.) is normal as you tighten.
3. Go around the manifold and retighten the bolts as needed to 75-115 in.-lbs. (8.4-12.9 N-m) (you may have to do this several times).

13



Install the Thermal Regulator in the Manifold.

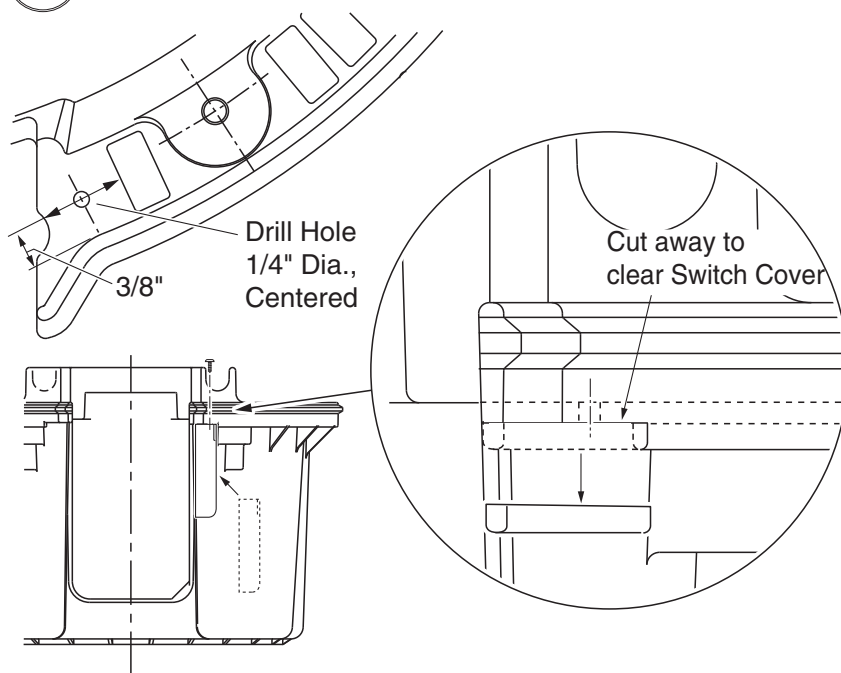
14



Reconnect wires to switches.

NOTE: You may have to reroute the AGS wire to the opposite side of the manifold (depending on your heater's production date). If so, be sure that the wire crosses ahead of the Water Pressure Switch as shown and does not touch the Combustion Chamber.

15

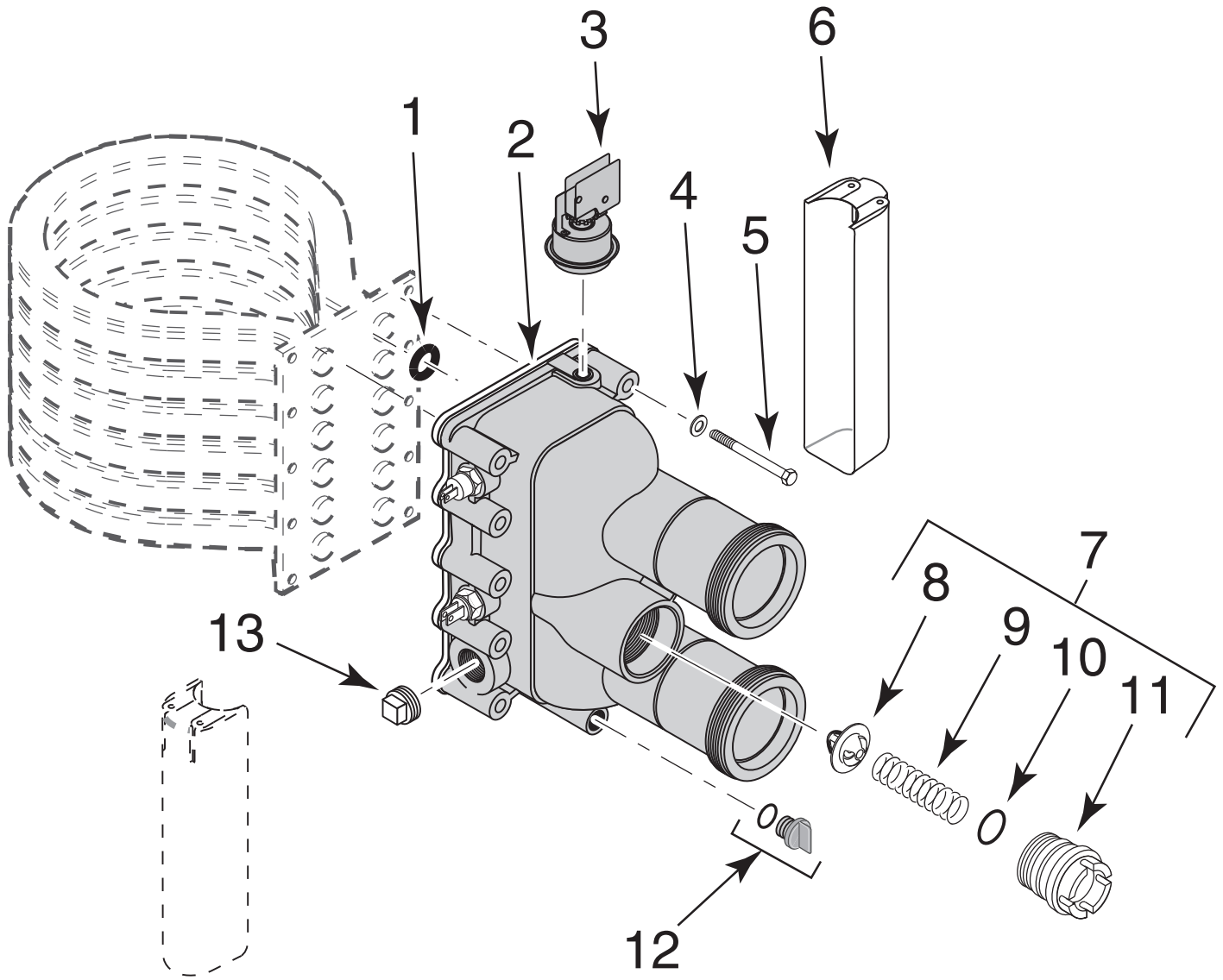


Install the second switch cover as shown when retrofitting a new manifold.

NOTICE

- Start and run the filter pump for several minutes before starting the heater in order to purge all air from the system. Open all air vents in the system (on Filter, Strainer, etc.) while purging the air. Run the pump with the vents open until all vents run a solid stream of water.
- Check gas union(s) for leaks with soapy water before firing the heater.
- **⚠ WARNING** Explosion and fire hazard. Be sure that all gas connections are tight and do not leak before attempting to start the heater.
- See Step 15, above, for switch cover installation instructions.
- Have a No. 77707-0008 Insulation Kit on hand in case the heating coil shifts during manifold installation and requires opening the combustion chamber cover to realign it.

Illustrated Parts



Parts List

Key	Part Description	Qty.	200 Manifold Conversion Kit 77707-0014	333 Manifold Conversion Kit 77707-0015	400 Manifold Conversion Kit 77707-0016
1	Coil/Tube Sheet Seal O-ring	()	35505-7222 (6)*	35505-7222 (10)*	35505-7222 (12)*
	• Manifold O-Ring	1	35505-7437	35505-7437	35505-7437
3	Water Pressure Switch	1	42001-0060*	42001-0060*	42001-0060*
2	Manifold/Connector Tube Assy	1	*	*	*
4	Flat Washer	10	U43-41SS	U43-41SS	U43-41SS
5	5/16x2-3/4" SS Hx Hd Capscrew	()	37007-0214(8)*	37007-0214(10)*	37007-0214(8)*
6	Switch Cover	1	42001-0007*	42001-0007*	42001-0007*
	• Switch Cover Screw	1	U30-742SS	U30-742SS	U30-742SS
7	Thermal Regulator Assembly (Purchase Separately; Includes Key Nos. 8,9,10,11)	1	77707-0010	77707-0010	77707-0010
8	Thermal Regulator	1			
9	Thermal Regulator Spring	1			
10	Thermal Regulator Cap O-Ring	1			
11	Thermal Regulator Cap	1			
12	Drain Plug	1	U178-920P	U178-920P	U178-920P
13	3/4" Plug	1	U78-60ZPS*	U78-60ZPS*	U78-60ZPS*
	• Relief Valve	**	473715Z	473715Z	473715Z
	• Connector Tube Kit (Includes O-Ring)	2	77707-0017	77707-0017	77707-0017
	• Connector Tube O-Ring	2	U9-226	U9-226	U9-226

- Not illustrated.

* Not available separately. If the manifold body fails, purchase a complete Manifold Conversion Kit, which includes all safety switches and all internal components except the Thermal Regulator (Key No. 7, above). Does not include relief valve.

** Purchase separately; required on Canadian installations.



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