

WATER VALVE REBUILD

MODELS: 1000P, 1600P, 1600H
 260PN, 425PN, 425HN



WARNING

LP & NG ARE EXTREMELY FLAMMABLE SO
 TAKE EXTRA PRECAUTIONS WHEN
 PERFORMING ANY WORK TO THE HEATER

A. Preparation

Tools needed:

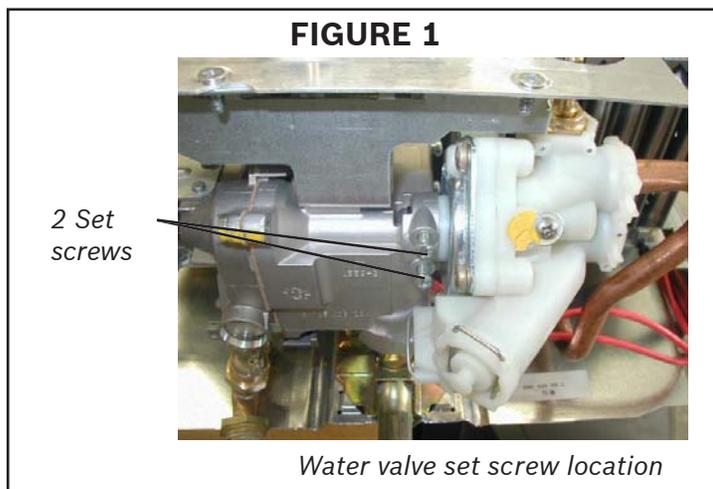
- Philips screwdriver
- Flat screwdriver
- Needle-nosed pliers
- Container to catch water

1. Shut off gas and water supply to heater.
2. Open faucet to relieve pressure.
3. Pull off temperature adjustment knob (all models) and gas control knob (1600H, 425HN only).
4. Unscrew cover screws and remove cover.
5. Unscrew cold water supply pipe from rear of water valve and catch remaining water.
6. Disconnect water pipe to heat exchanger by removing retaining clip and gently pulling pipe to the right.

B. Removing water valve

1. Support water valve with one hand while releasing water valve from gas valve by loosening 2 set screws from underneath. (Fig. 1) Do not loosen 3 larger screws holding plate onto bottom of gas valve or 1 screw holding on microswitch. Remove water valve from heater.
- If set screws do not unscrew easily do not force them as the gas valve may be damaged. Try a descaling solution (white vinegar, CLR® or other descaling solution) on screw threads. Let sit for 1 hour, try again to remove set screw(s) without forcing.
- If still unable to remove, call 800-642-3111 for help.

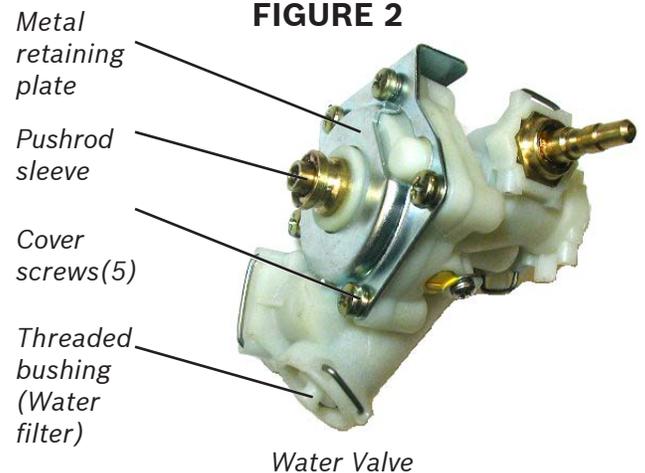
FIGURE 1



C. Removing old parts

1. Remove the 5 cover screws from metal retaining plate and separate 2 halves of water valve. (Fig. 2)
2. Remove and inspect diaphragm from water valve, clean if necessary, replace if damaged or warped by excessive heat. (Fig. 3, pos. 2)
3. Remove pushrod assembly by holding water valve cover and pressing pushrod sleeve firmly against a hard surface. (Fig. 3, pos. 10)
4. Remove retaining clip and threaded bushing to access inlet water filter. Remove and clean or replace filter. (Fig. 3, pos. 6)
5. Remove retaining clip (Fig. 3, pos. 7) and volumetric flow governor. (Fig. 3, pos. 8)
6. Remove venturi from outlet port to heat exchanger. Grasp with needle-nosed pliers and twist while pulling. (Fig. 3, pos. 9) Ensure that venturi passages are clean as well as passage in water valve body.
7. If the venturi or water valve body has evidence of mineral build-up, soak in straight white vinegar for ½ hour. Brush parts clean and flush with water.

FIGURE 2



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D. Rebuilding water valve

1. Place diaphragm in right side of water valve, ensuring that ring on outer edge is in recess.
2. Liberally lubricate both ends of new pushrod and install pushrod assembly into water valve cover, pressing firmly in place with thumbs. (Fig. 3 pos. 10)
3. Reassemble 2 halves of water valve with metal retaining plate. Install and tighten 5 cover screws (Fig. 2).
4. Install volumetric flow governor with plug and retaining clip. Lubricate O-ring on plug before reinserting.
5. Lubricate O-rings on venturi and install.
6. Install inlet water filter and threaded bushing with retaining clip.

E. Installing water valve

1. Remove, lubricate and reinstall water valve set screws in gas valve. Do not thread screws in fully. 1 to 2 revolutions maximum (Fig. 1).
2. Firmly seat water valve into right side of gas valve with temperature adjustment shaft facing outward (Fig. 3, pos 11).
3. Now tighten set screws fully and evenly.
4. Lubricate O-ring on pipe to heat exchanger, put into water valve and secure with retaining clip from top.
5. Reconnect cold water inlet flex pipe with washer.

F. Testing operation

Important: Before firing the heater, run water through heater to check for leaks and purge air.

1. Replace and tighten cover and reinstall knob(s).
2. 1000P, 1600P, 260PN, 425PN models: light pilot and slide control to the right to large flame position.
3. Shut off water at heater inlet and open hot water faucet.
4. Turn temperature adjustment knob to full clockwise position.
5. Slowly open inlet water supply just until burners ignite and no further.
6. Measure water flow at open faucet to verify proper activation rate of 0.6 gallon per minute (quart in 25 seconds or gallon in 100 seconds).
7. Shut water off at heater and observe burners to verify that they go out immediately when water flow stops.

FIGURE 3

1. Water valve cover screws (5)
2. Water valve diaphragm
3. Push rod
4. Push rod sleeve
5. Threaded bushing
6. Water filter
7. Flow governor retaining clip
8. Volumetric flow governor
9. Venturi
10. Water valve cover
11. Temperature adjustment shaft

