SERVICE VALVES

The Clean Air Act was designed to minimize ozone depletion from refrigerant leaks, both intentional and unintentional. Full service “reusable” service valves allow Lennox units to be serviced without having to recover refrigerant.

This manual outlines the different service valves used on Lennox heat pumps and air conditioners.

⚠ IMPORTANT

Torqued valves and caps may be difficult to loosen from the seat. Be sure to use a second wrench on the valve body to prevent damage to copper lines.

A - “Full Service” Valves

1 - Backseating Type

A full service liquid line valve made by one of several manufacturers may be used. All liquid line service valves function the same way, differences are in construction. Valves manufactured by Parker are forged assemblies. Valves manufactured by Primore are brazed together. Valves are not rebuildable. If a valve has failed it must be replaced. The liquid line service valve is illustrated in figure 1.

The valve is equipped with a service port. There is no schrader valve installed in the liquid line service port. A service port cap is supplied to seal the port. See figure 1.

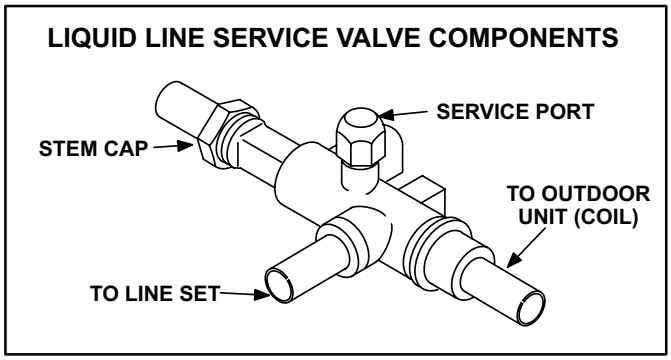


FIGURE 1

The liquid line service valve is a front and back seating valve. See figures 2 and 3. When the valve is backseated the service port is not pressurized. The service port cap can be removed and gauge connections can be made. In any other position than backseated the service port is pressurized. When the valve is front seated, liquid refrigerant flow is stopped and service port is open to the pressure of the indoor coil.

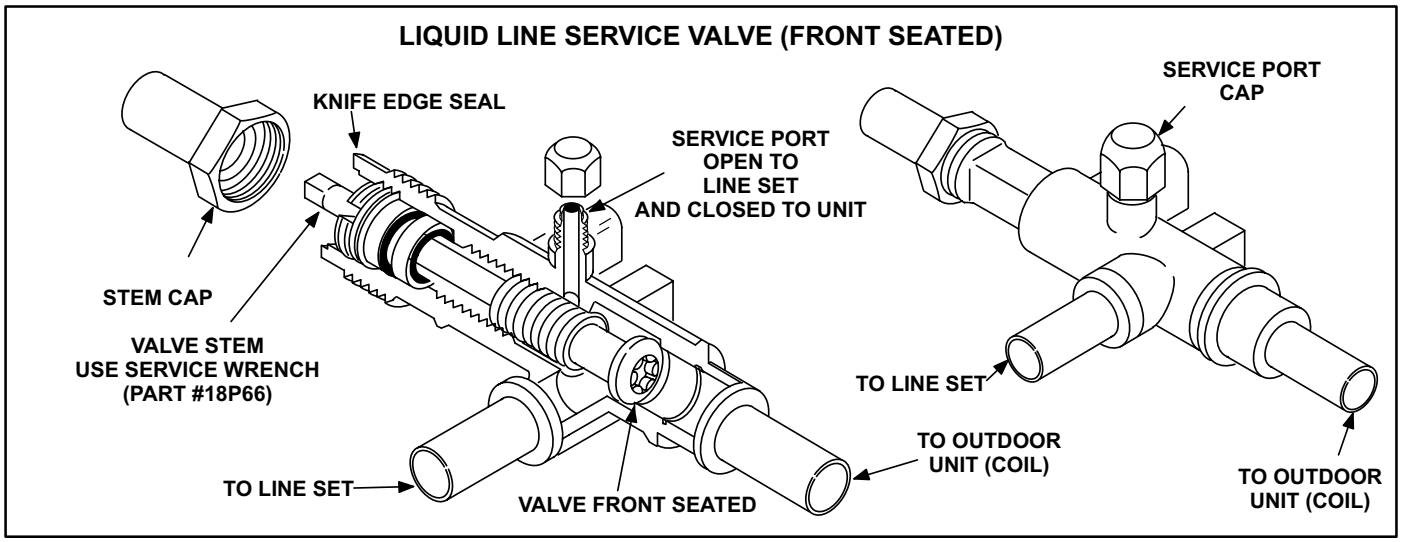


FIGURE 2

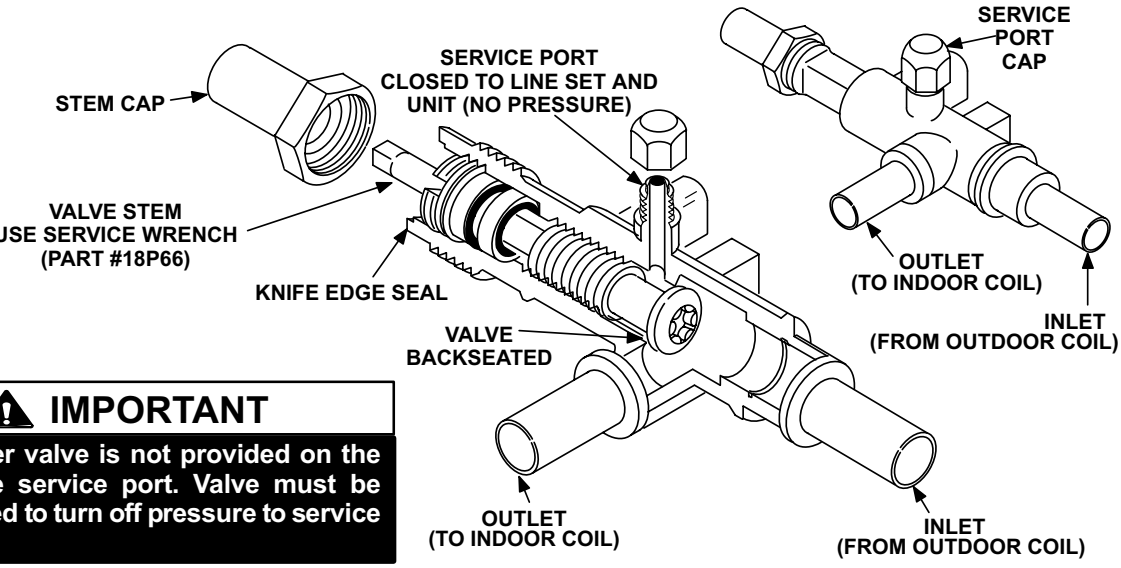


FIGURE 3

⚠ CAUTION

Liquid line service valve must be backseated for service gauge connection/removal. Failure to do so will result in personal injury or unit damage.

⚠ IMPORTANT

A schrader valve is not provided on the liquid line service port. Valve must be backseated to turn off pressure to service port.

To Access Service Port:

1 - Remove the stem cap. Use a service wrench (Part #18P66, 54B64 or 12P95) to make sure the service valve is backseated.

2 - Remove service port cap and connect high pressure gauge to service port.

3 - Using service wrench, open valve stem (one turn clockwise) from backseated position.

4 - When finished using port, backseat stem with service wrench. Tighten firmly.

5 - Replace service port and stem cap. Tighten finger tight, then tighten an additional 1/6 turn.

To Close Off Service Port:

1 - Using service wrench, backseat valve.
  a - Turn stem counterclockwise.
  b - Hand tighten firmly.

To Open Liquid Line Service Valve:

1 - Remove the stem cap with an adjustable wrench.

2 - Using service wrench, backseat valve.
  a - Turn stem counterclockwise until backseated.
  b - Tighten firmly.

3 - Replace stem cap, finger tighten then tighten an additional 1/6 turn.

To Close Liquid Line Service Valve:

1 - Remove the stem cap with an adjustable wrench.

2 - Turn the stem in clockwise with a service wrench to front seat the valve. Tighten firmly.

3 - Replace stem cap, finger tighten then tighten an additional 1/6 turn.

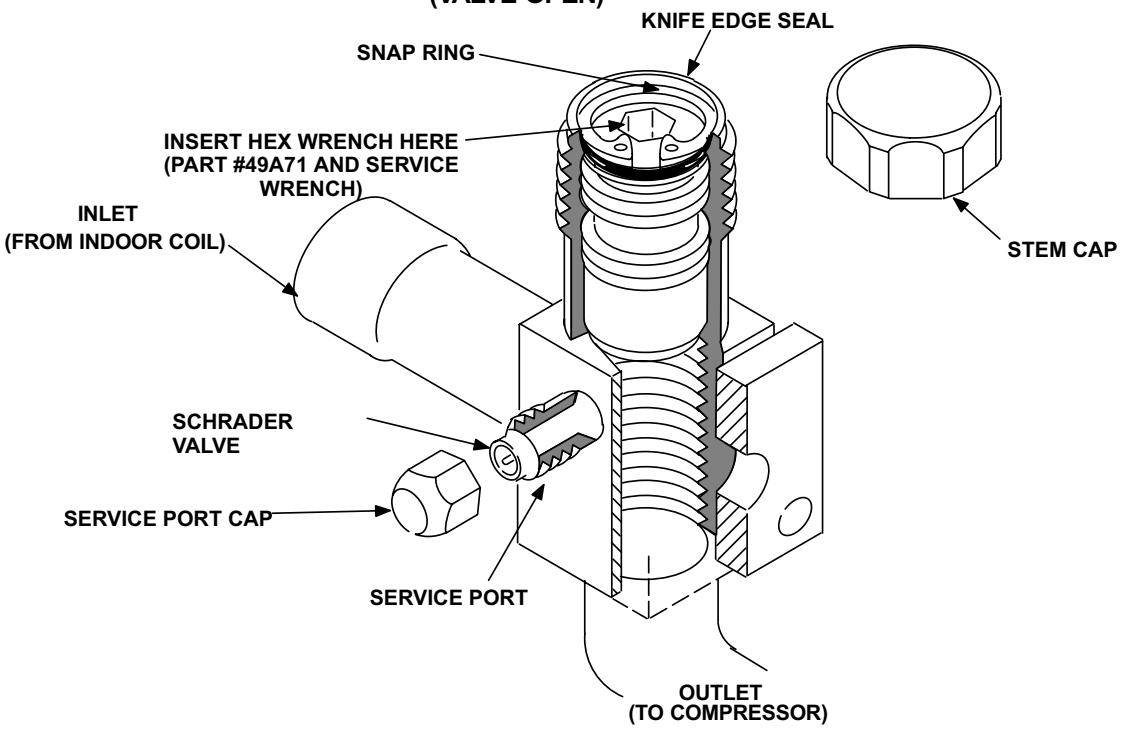
2 - Non-Backseating Type

NOTE-This valve may be used on the liquid line or the suction (vapor) line.

A full service non-backseating service valve may be used. Three different manufacturers of valves may be used. All suction (vapor)/liquid line service valves function the same way, differences are in construction.

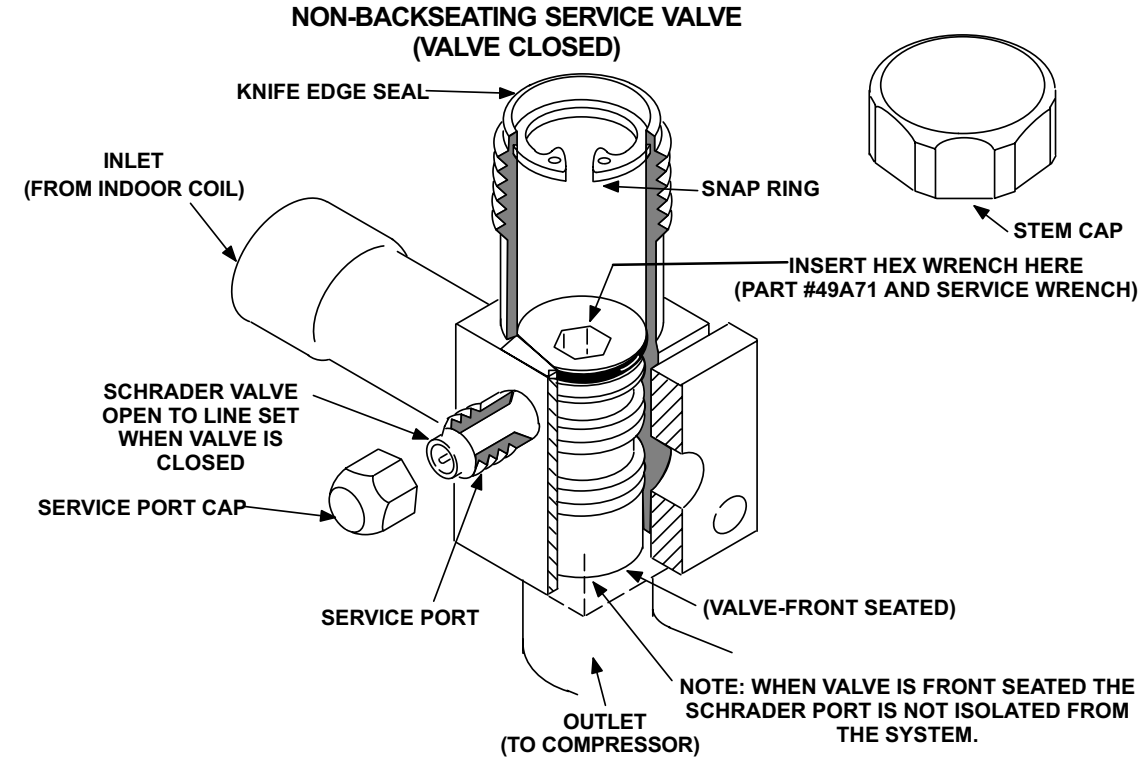
When the valve is front seated refrigerant gas/ liquid flow is stopped. The service port is open to the pressure of the indoor coil.

Valves manufactured by Parker are forged assemblies. Valves manufactured by Primore and Aeroquip are brazed together. Valves are not rebuildable. If a valve has failed it must be replaced. The suction (vapor) line service valve is illustrated in figures 4 and 5.



NOTE-This valve may be used on the liquid line or the suction (vapor) line.

FIGURE 4



NOTE-This valve may be used on the liquid line or the suction (vapor) line.

FIGURE 5

The valve is equipped with a service port. A schrader valve is factory installed. A service port cap is supplied to protect the schrader valve from contamination and assure a leak-free seal.

To Access Schrader Port:

1 - Remove service port cap with an adjustable wrench.

NOTE-This valve may be used on the liquid line or the suction (vapor) line.

2 - Connect gauge to the service port.

3 - When testing is completed, replace service port cap. Tighten finger tight, then tighten an additional 1/6 turn.

To Open Suction (Vapor)/ Liquid Line Service Valve:

1 - Remove stem cap with an adjustable wrench.

2 - Using service wrench and 5/16" hex head extension (part #49A71) back the stem out counterclockwise until the valve stem just touches the retaining ring.

⚠ DANGER

Do not attempt to backseat this valve. Attempts to backseat this valve will cause snap ring to explode from valve body under pressure of refrigerant. Personal injury and unit damage will result.

3 - Replace stem cap tighten firmly. Tighten finger tight, then tighten an additional 1/6 turn.

To Close Suction (Vapor)/ Liquid Line Service Valve:

1 - Remove stem cap with an adjustable wrench.

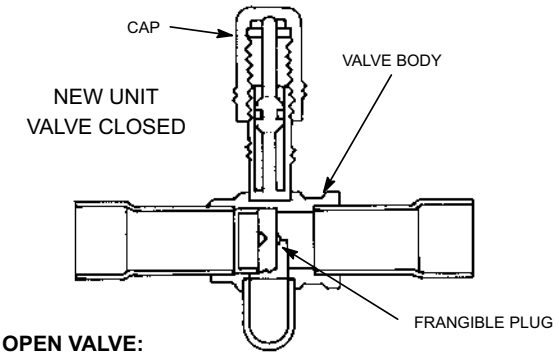
2 - Using service wrench and 5/16" hex head extension (part #49A71) turn stem in clockwise to seat the valve. Tighten firmly.

3 - Replace stem cap. Tighten finger tight, then tighten an additional 1/6 turn.

B - "One Shot" Suction (Vapor) Line Service Valve

Lennox heat pumps and air conditioners may be equipped with a "one shot" suction (vapor) line service valve. The "one shot" service valve cannot be closed once it has been opened. See figure 6. It is equipped with gauge ports for leak testing, evacuating, charging and checking charge.

"ONE SHOT" SUCTION (VAPOR) LINE VALVE

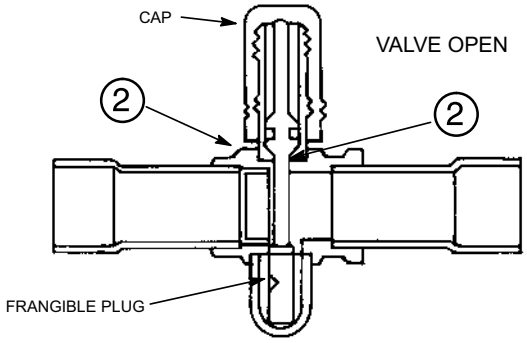


TO OPEN VALVE:

1-Tighten opening cap until cap bottoms out.
NOTE-Cap will be 1/8" (3 mm) or less from valve body.
2-Tighten cap an additional 1/4 turn to make the metal to metal seal.
NOTE-When tightening, the torque will increase then drop off as the frangible plug shears.

⚠ IMPORTANT

The "one shot" valve cannot be closed once it has been opened.



LENNOX HEAT PUMPS AND AIR CONDITIONERS MAY USE ONE-SHOT SUCTION (VAPOR) LINE VALVES. ONCE OPENED, THEY CANNOT BE CLOSED.

FIGURE 6