

GAS UNITS KITS AND ACCESSORIES

© 2020

508088-01
10/2020

INSTRUCTIONS FOR MANIFOLD, COMBUSTION AND SIGNAL PRESSURE CHECK FOR ULTRA LOW NOX 80% EFFICIENCY UNITS

⚠ IMPORTANT

**Disconnect power before servicing unit.
Shut off main gas supplies to appliance until installation is complete.**

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional installer (or equivalent), service agency or the gas supplier.

Manifold and Signal Pressure Check

- 1 - Turn off the electrical power and gas supply to the furnace.
- 2 - Remove the threaded plug from the outlet side of the gas valve and install a field-provided barbed fitting. Connect measuring device positive “+” to barbed fitting to measure manifold pressure. See figure 1 for manifold location.
- 3 - Install hoses and meter as shown in figure 3 for signal pressure measurement.
- 4 - After allowing unit to stabilize for **8 minutes**, record manifold pressure and compare to value in table 1. If manifold pressure is within range, rate check is complete move to step 6. If manifold pressure is not within range continue.
Valve is not adjustable. Do not adjust manifold pressure.
- 5 - Record signal pressure and compare to value in table 1. If signal pressure is within range continue. If the signal is not within range go to “Troubleshooting”.
- 6 - Shut off unit and remove manometer and signal meter after accurate readings has been obtained.
- 7 - Restart unit and check for gas leaks. Seal any leaks found.

If the unit has difficulty igniting or ignites with loud resonance the air orifice must be checked and replaced if necessary.

**TABLE 1
Manifold and Signal Pressure (inches w.c.)**

Model	Manifold		Signal	
	High Fire	Low Fire	High Fire	Low Fire
Two Stage				
060	3.0 - 3.8	1.3 - 1.7	0.77 - 0.85	0.34 - 0.42
080			0.78 - 0.86	0.35 - 0.43
100			0.62 - 0.70	0.29 - 0.37
Single Stage				
040	1.6 - 2.2	N/A	0.40 - 0.50	N/A
060	3.0 - 3.8		0.77 - 0.85	
080			0.78 - 0.86	
100			0.62 - 0.70	

Air Orifice Replacement

Do not replace the air orifice until the problem has been determined. If the unit has difficulty igniting the orifice is oversized and brings in too much air. If the unit ignites but with loud resonance the orifice is too small and needs more air. The air orifice is located inside the gray coupling between the clamps. Figure 2 show corresponding steps with the steps below.

- 1 - Turn off the electrical power and gas supply to the furnace.
- 2 - Remove the air hose fitting from the brass fitting on the air inlet screen.
- 3 - Use a 5/16” nut driver to loosen the clamps on the gray coupling.
- 4 - Remove the air inlet screen housing and coupling.
- 5 - Remove the air orifice. Check the “Part” number stamped on the air orifice. See table 3. If incorrect replace with proper air orifice. Repeat manifold check. If air orifice is correct then it must be replaced. See table 3 for replacement.
- 6 - Reinstall the air orifice on the **right side** of the coupling and push firmly into place.
- 7 - Reinstall air inlet housing and coupling making sure the coupling is fully seated against the air inlet elbow. Tighten clamps to secure the coupling.
- 8 - Reconnect the air pressure tubing..



9 - Repeat manifold and signal pressure check. If unit ignites and manifold and signal pressure are correct, move on to combustion check. If unit still does not ignite or ignites with loud resonance go to Troubleshooting.

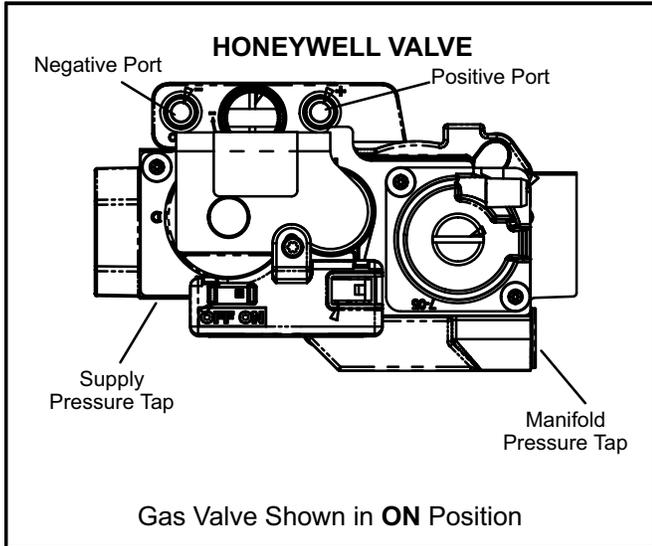


FIGURE 1

Proper Combustion

Furnace should operate minimum 15 minutes with correct manifold and signal pressure before checking combustion. Table 2 shows acceptable combustion for all EL180UHNE and SL280UHNV models. **The maximum carbon monoxide reading should not exceed 100ppm.**

TABLE 2

Two-Stage	High Fire CO ₂	Low Fire CO ₂
060	6.0 - 7.8	6.0 - 7.8
080		
100		
Single-Stage	6.5 - 7.5	N/A
040		
060		
080		
100		

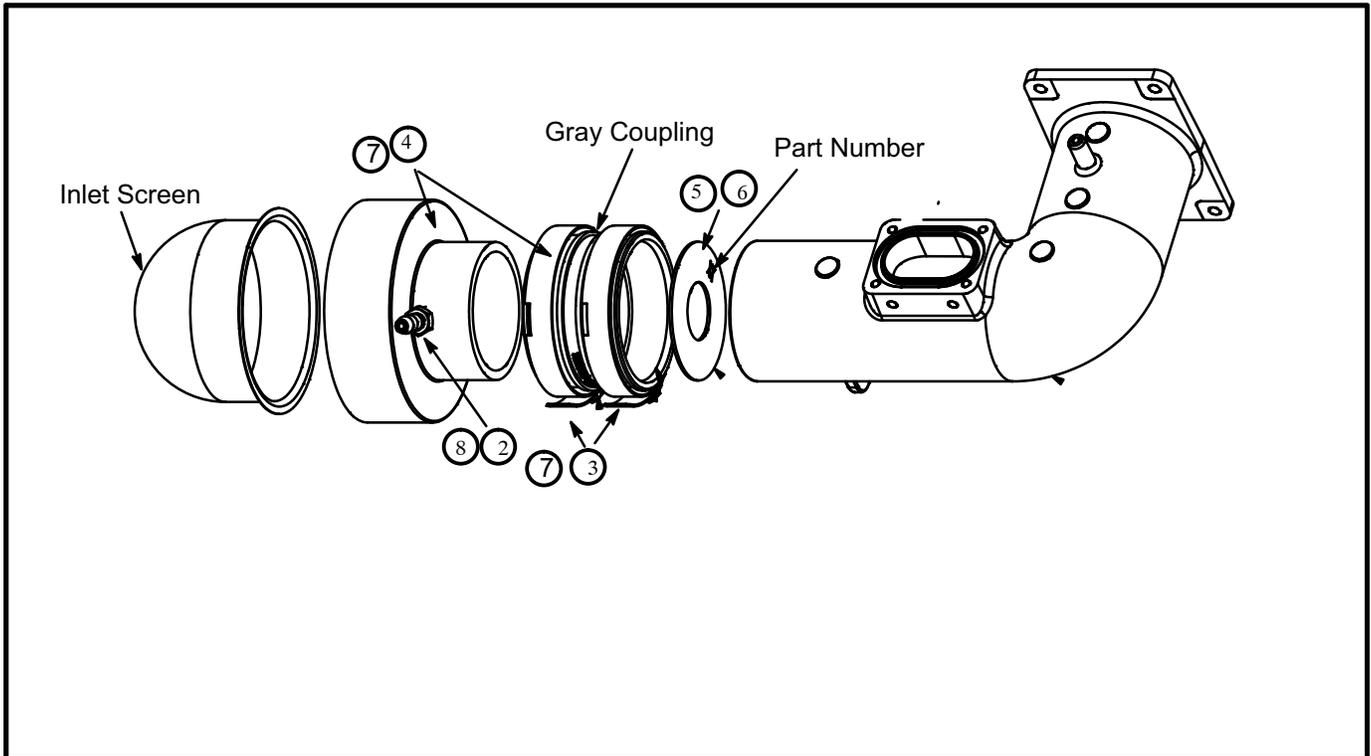


FIGURE 2

**Operating Signal Pressure Measurement
Honeywell Valve**

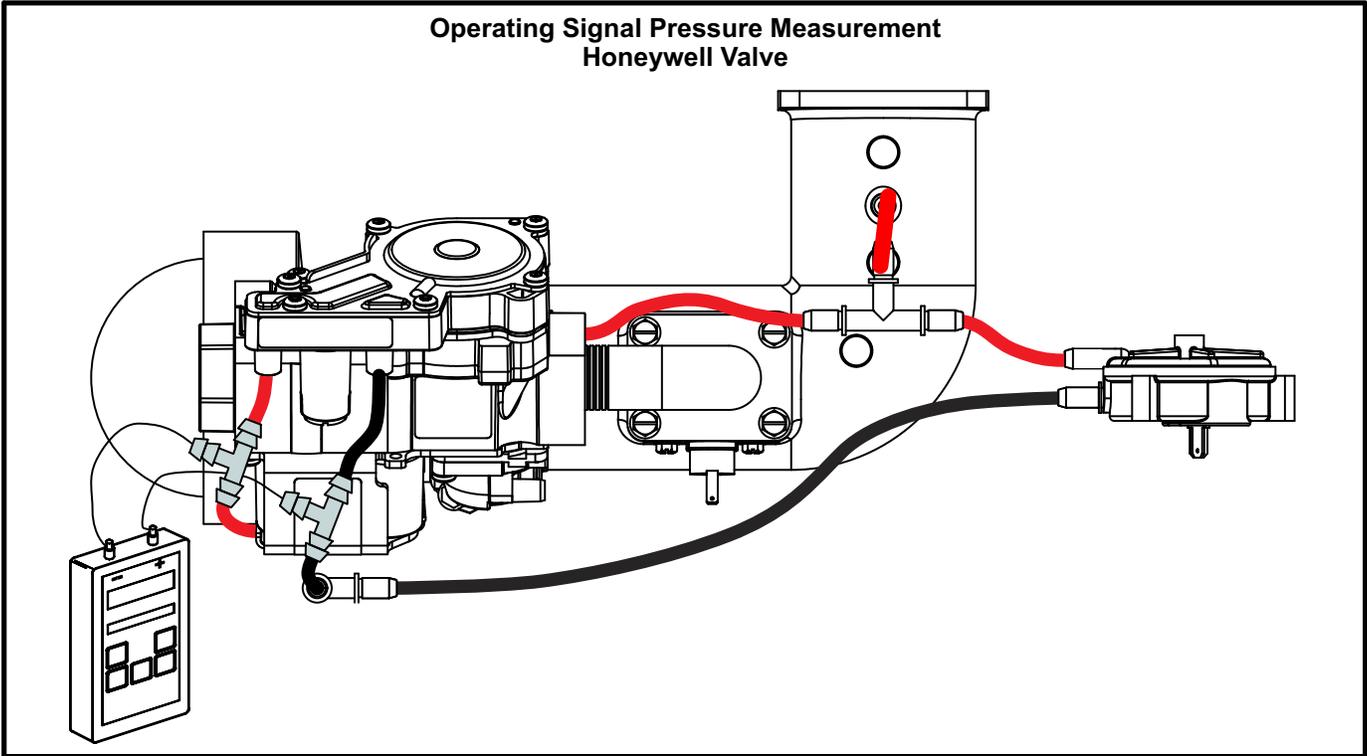


FIGURE 3

TABLE 3

Single-Stage	Production	Resonance (more air)		Difficulty Igniting (less air)	
	Orifice Size (Part No)	Orifice Size	Cat No	Orifice Size	Cat No
040	0.969 (08)	1.000	19X30	0.937	19X37
060	0.969 (08)	1.000	19X30	0.937	19X37
080	1.094 (07)	1.125	19X31	0.995	19X36
100	1.250 (06)	1.281	19X39	1.219	19X32
Two-Stage	Orifice Size	Orifice Size	Cat No	Orifice Size	Cat No
060	0.969 (08)	1.000	19X30	0.937	19X37
080	1.094 (07)	1.125	19X31	0.995	19X36
100	1.250 (06)	1.281	19X39	1.219	19X32

Troubleshooting

Troubleshooting Poor Ignition or Combustion Resonance Issues

