Honeywell

393691

LP GAS
CONVERSION KIT
FOR REGULATOR
ADJUSTMENT OF
8"-12" W.C.
FOR USE WITH
VR42/4300, V/VR82/8300
SV95/9600 TYPE
STANDARD AND
SLOW OPEN MODEL ONLY
NOT FOR USE WITH
STEP REGULATOR VALVE

0838

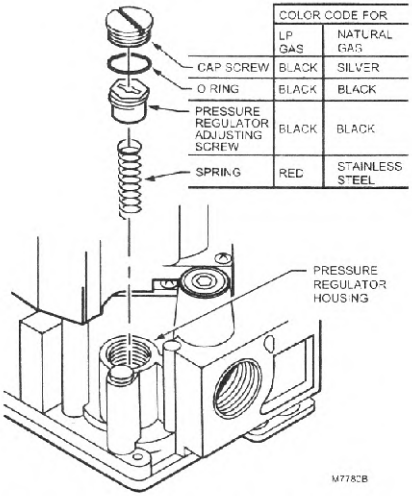

Fig. 2. Conversion kit installation in regulator.

5. Install the new plastic pressure regulator adjustment screw. Assure that the screw top is flush with the regulator top.
6. Turn pressure regulator adjustment screw clockwise ↷ eleven complete turns. The preliminary pressure setting is approximately 10.0 in. wc (2.5 kPa) for LP gas regulator (393691) and 3.5 in. wc (0.9 kPa) for natural gas regulator (394588).
7. Check the regulator setting using a manometer or by clocking the gas meter. See Check and Adjust Gas Input and Burner Ignition section.
8. Install the new cap screw and O ring.
9. Mount conversion label on the gas control.
10. Install the gas control and appliance according to appliance manufacturer instructions.

START-UP

Gas Control Knob Settings

OFF: Prevents pilot and main burner gas flow.

PILOT (On standing pilot controls only): Permits pilot burner gas flow when red knob is held down or thermocouple current is above power unit dropout value.

ON: Permits gas flow into gas control. Pilot burner gas is controlled as in the PILOT position for standing pilot and intermittent pilot systems. Main burner gas flow is controlled by thermostat and automatic valve operators.

Perform Gas Leak Test

⚠ WARNING

Fire or Explosion Hazard.
Can cause severe injury, death or property damage.
Check for gas leaks with soap and water solution any time work is done on a gas system.

Gas Leak Test

1. Paint pipe connections upstream of gas control with rich soap and water solution. Bubbles indicate gas leak.
2. If gas leak is detected, tighten all pipe connections.
3. Stand clear of main burner while lighting to prevent injury caused from hidden leaks that could cause flashback in the appliance vestibule. Light main burner.
4. With main burner operating, paint pipe joints (including adapters) and control inlet and outlet with rich soap and water solution.
5. If another gas leak is detected, tighten adapter screws, joints, and pipe connections.
6. Replace part if gas leak can not be stopped.

Light Pilot (Standing Pilot Models)

1. Turn gas control knob clockwise ↷ to OFF. Wait five minutes to dissipate any unburned gas. Smell for gas around the appliance near the floor. Do not relight pilot flame if you smell gas.
2. Turn gas control knob counterclockwise ↶ to PILOT. Push down and hold the knob while lighting the pilot flame.
3. Hold down the gas control knob about one minute, then release.
   a. If pilot flame goes out, turn gas control knob clockwise ↷ to OFF and repeat steps 1 through 3.
   b. If pilot flame remains lit, turn gas control knob counterclockwise ↶ to ON.

Turn on System (Intermittent and Direct Ignition Systems)

Rotate the gas control knob counterclockwise ↶ to ON.

Turn on Main Burner

Follow appliance manufacturer instructions or adjust thermostat setting to call for heat.

Adjust Pilot Flame

The pilot flame should envelop 3/8 to 1/2 in. (10 to 13 mm) of the thermocouple or igniter-sensor tip. Refer to Fig. 3. To adjust pilot flame:

1. Remove pilot adjustment cap screw. Refer to Fig. 1.
2. Turn inner adjustment screw clockwise ↷ to decrease or counterclockwise ↶ to increase pilot flame.
3. Always replace cap screw after adjustment and tighten firmly to safeguard proper operation.

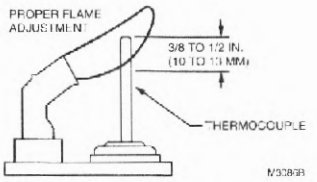

Fig. 3. Proper flame adjustment.

Check and Adjust Gas Input and Burner Ignition

⚠ CAUTION

Equipment Damage Hazard.
Exceeding input ratings can damage the equipment.

1. Do not exceed input rating stamped on appliance nameplate, or manufacturer recommended burner orifice pressure for size orifice(s) used. Make certain primary air supply to main burner is properly adjusted for complete combustion. Follow appliance manufacturer instructions.
2. IF CHECKING GAS INPUT BY CLOCKING GAS METER:
   a. Make sure that the only gas flowing through the meter is for the appliance being checked.
   b. Make certain that other appliances are turned off with their pilot flames extinguished (or deduct their gas consumption from the meter reading).
   c. Convert flow rate to Btuh as described in form 70-2602, Gas Controls Handbook, and compare to Btuh input rating on appliance nameplate.
3. IF CHECKING GAS INPUT WITH MANOMETER:
   a. Be sure the gas control knob is in the PILOT position before removing outlet pressure tap plug to connect manometer (pressure gauge).
   b. Turn the gas control knob back to PILOT when removing gauge and replacing plug.
   c. Shut off gas supply at the appliance service valve, or for LP gas, at the gas tank, before removing the outlet pressure tap plug and before disconnecting manometer and replacing outlet pressure tap plug.
   d. Perform Gas Leak Test at outlet pressure tap plug.

Checking Gas Pressure Using Meter Clocking Method

NOTE: Use this method when manometer is not available or when manifold pressure is not specified in in. wc (kPa) by the burner manufacturer.

1. Make sure that the only gas flowing through the meter is for the appliance being checked.
2. Make certain that other appliances are turned off with their pilot flames extinguished (or deduct their gas consumption from the meter reading).
3. Turn gas control knob to ON position.
4. To obtain an accurate outlet pressure reading, cycle main burner on and off several times to stabilize the pressure regulator diaphragm.
5. Using a watch with a second hand, carefully clock the gas meter to determine the time per revolution. Use Table 1 to determine the exact main burner gas flow rate in cubic feet per hour (cfh).
6. Compare actual input with burner manufacturer recommended input (stamped on burner nameplate). To convert Btuh rating to cfh (m^3/hr) use the following formula:

   $$\frac{\text{Input Rating in Btuh (MJ/hr}}{\text{Btu Content of Gas per ft}^3 \text{ (MJ Content of Gas per m}^3\text{)}} = \text{cfh } (m^3/hr) \text{ or gas}$$

7. If necessary, adjust pressure regulator to match appliance rating. (On step-opening regulators, match the full rate outlet pressure.)
   a. Remove pressure regulator adjustment cap screw.
   b. Using a screwdriver, turn inner adjustment screw clockwise ↷ to increase or counterclockwise ↶ to decrease gas pressure to main burner.
   c. Always replace cap screw and tighten firmly to prevent gas leakage.
8. Turn gas supply back on to other appliances and relight all pilot flames according to appliance manufacturer instructions.
9. Proceed to Checkout section.

Checking Gas Pressure Using a Manometer (Pressure Gauge)

1. Turn gas control knob to PILOT (standing pilot systems) or OFF (intermittent and direct ignition systems).
2. Remove outlet pressure tap plug from gas control and connect pressure gauge. Refer to Fig. 1.
3. Turn gas control knob to ON position.
4. To obtain an accurate outlet pressure reading, main burner must be cycled on and off several times to stabilize the pressure regulator diaphragm.
5. Light main burner and read pressure gauge.
6. If necessary, adjust pressure regulator to match appliance rating. (On step-opening regulators, match the full rate outlet pressure.)
   a. Remove pressure regulator adjustment cap screw.
   b. Using a screwdriver, turn inner adjustment screw clockwise ↷ to increase or counterclockwise ↶ to decrease gas pressure to main burner.
   c. Always replace cap screw and tighten firmly to prevent gas leakage.
7. Turn gas control knob to PILOT (standing pilot system) or OFF (intermittent and direct ignition systems).
8. Remove pressure gauge and replace outlet pressure tap plug and pressure regulator cap screw.
9. Proceed to Checkout section.

a. For one ft^3 per revolution gas meter dials, use Table 1 directly.
b. For 1/2 ft^3 per revolution gas meter dials:
   (1) Determine time for two dial revolutions
   (2) Use Table 1 directly.
c. For two ft^3 per revolution gas meter dials:
   (1) Determine time for one complete dial revolution.
   (2) Divide time by two.
   (3) Use Table 1 directly.

Table 1. Converting Gas Flow Rate.

Time (sec)	Flow (cfh)	Flow (m^3/hr)
40	90	2.55
41	88	2.50
42	86	2.44
43	84	2.38
44	82	2.32
45	80	2.27
46	78	2.21
47	77	2.18
48	75	2.12
49	73	2.07
50	72	2.04
51	71	2.01
52	69	1.95
53	68	1.93
54	67	1.90
55	65	1.84
56	64	1.81
57	63	1.78
58	62	1.76
59	61	1.73
60	60	1.70
62	58	1.64
64	56	1.59
66	54	1.53
68	53	1.50
70	51	1.44
72	50	1.42
74	49	1.39
76	47	1.33
78	46	1.30
80	45	1.27
84	43	1.22
88	41	1.16
92	39	1.10
96	38	1.08
100	36	1.02
105	34	0.96
110	33	0.93
115	31	0.88
120	30	0.85
125	29	0.82
130	28	0.79
135	27	0.76
140	26	0.74
150	24	0.68
160	23	0.65
170	21	0.59
180	20	0.57

CHECKOUT

1. Make certain the primary air supply to the main burner is properly adjusted for complete combustion at final pressure regulator setting. Main burner must light reliably under all conditions.
2. Place system in operation and observe through at least one complete cycle to assure all controls are operating properly.
3. If manometer (pressure gauge) method is used, perform Gas Leak Test at outlet pressure tap plug.
4. Apply the conversion label in the conversion kit to the gas control, heating appliance, and any other controls to show conversion to a new type of gas.

Honeywell

Automation and Control Solutions
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422

Honeywell Limited-Honeywell Limitée
35 Dynamic Drive
Scarborough, Ontario
M1V 4Z9