

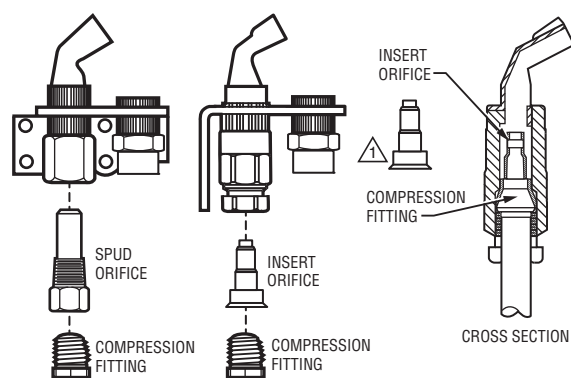
# Pilot Burner Replacement Orifices

## INSTALLATION INSTRUCTIONS

### APPLICATION

Replacement orifices to convert pilot burners between natural and LP gas applications and replace damaged or clogged orifices.

There are two types of pilot burner orifices; insert and spud. An insert orifice is a stamped metal piece that is held in the pilot burner by a separate threaded fitting. A spud orifice is a machined plug with a drilled orifice that is screwed into the pilot burner.



⚠ THE MARKING LOCATED ON THE SIDE OF THE ORIFICE INDICATES THE DIAMETER OF THE ORIFICE HOLE. FOR EXAMPLE, BCR-14 WOULD INDICATE A 0.014" ORIFICE AND NE22 WOULD INDICATE A 0.022" ORIFICE.

M33071

Fig. 1. Typical insert and spud orifices.

### INSTALLATION

#### When Installing This Product...

1. Read these instructions carefully. Failure to follow instructions can damage product or cause a hazardous condition.
2. Check ratings given in instructions and on product to make sure product is suitable for your application.
3. Make sure installer is a trained, experienced service technician.
4. After completing installation, use these instructions to check out product operation.

### ⚠ WARNING

**FIRE OR EXPLOSION HAZARD  
CAN CAUSE PROPERTY DAMAGE, SEVERE INJURY,  
OR DEATH**

Follow these warnings exactly.

1. Disconnect power supply to prevent electrical shock or equipment damage.
2. To avoid dangerous accumulation of fuel gas, turn off gas supply at appliance service valve before starting installation and perform Gas Leak Test after completion of installation.
3. Do not bend pilot tubing at the control or pilot after compression nut has been tightened. Gas leakage at the connection may result.

### ⚠ CAUTION

**LP gas orifices are identified by a red dot. In LP gas applications, ensure replacement orifice is identified by a red dot.**

Follow the appliance manufacturer's instructions if available; otherwise, use the instructions provided below.

#### Installing Insert Orifices

1. Disconnect pilot tubing from the pilot burner and remove insert orifice. Sometimes a light force is required to remove the orifice.
2. Cut off old compression fitting and discard.

NOTE: When replacing an orifice, cut off old compression fitting and replace with a new compression fitting. Never use old compression fitting as it may not provide a gas-tight seal. Refer to Fig. 2.

3. Square off end of pilot tubing and remove all burrs.
4. Insert new compression fitting over pilot tubing and slide out of the way.
5. Insert new orifice into pilot burner and push pilot tubing into the pilot burner until it bottoms.
6. While holding tubing all the way in, slide compression fitting into place and engage threads. Turn until finger tight.
7. Using a wrench, tighten compression fitting one turn beyond finger tight.

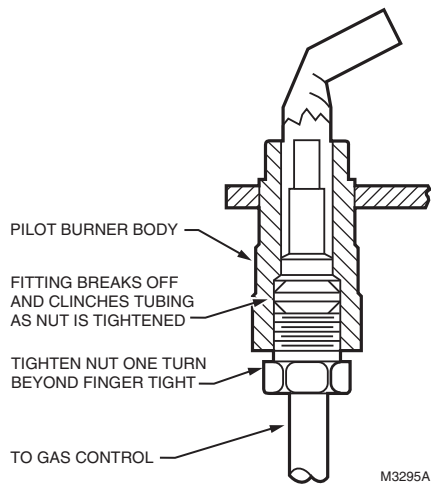


## Inserting Spud Orifices

1. Disconnect pilot tubing from orifice.
2. Unscrew old spud orifice and discard.
3. Cut off old compression fitting and discard.

**NOTE:** When replacing an orifice, cut off old compression fitting and replace with a new compression fitting. Never use old compression fitting as it may not provide a gas-tight seal. Refer to Fig. 2.

4. Square off end of pilot tubing and remove all burrs.
5. Insert new compression fitting over pilot tubing and slide out of the way.
6. Insert new orifice into pilot burner and tighten securely.
7. Push pilot tubing into orifice until it bottoms.
8. While holding tubing all the way in, slide compression fitting into place and engage threads. Turn until finger tight.
9. Using a wrench, tighten compression fitting one turn beyond finger tight.



**Fig. 2. Always use new compression fitting.**

## CHECKOUT

Follow the startup and checkout procedure for the gas control or the pilot burner. Refer to the specific instructions provided by the appliance manufacturer since the application and controls used may differ. However, the following steps must be performed during all checkout procedures.

## Perform Gas Leak Test



### WARNING

**FIRE OR EXPLOSION HAZARD  
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OR DEATH**

Check for gas leaks with soap and water solution any time work is done on a gas system.



Resideo Technologies, Inc.  
1985 Douglas Drive North, Golden Valley, MN 55422  
1-800-468-1502

www.resideo.com

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## Gas Leak Test

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

## Light Pilot Burner

1. Before lighting pilot burner, turn thermostat to its lowest setting. Wait for unburned gas to vent.

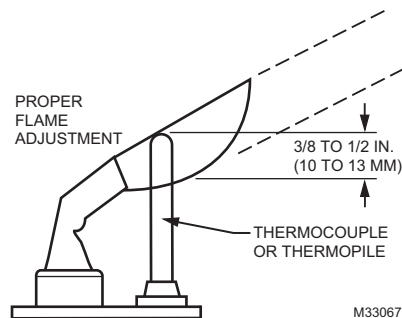
**NOTE:** LP gas is heavier than air and will not vent upward. Smell for LP gas next to floor. If you smell gas, shut off the main valve in the gas piping, or, ON LP, AT THE TANK. Perform Gas Leak Test to recheck all connections.

2. Light pilot burner according to appliance manufacturer's instructions.

## Adjust Pilot Flame

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

1. Remove pilot adjustment cover screw.
2. Turn inner pilot adjustment screw clockwise ↻ to decrease or counterclockwise ↺ to increase pilot flame.
3. Always replace pilot adjustment cover screw and tighten firmly after completing adjustment to ensure proper operation.



**Fig. 3. Proper pilot flame adjustment**