

# P-130 Burner Replacement Instructions

## - SL 80-399



### Warning

This replacement kit shall be installed by a qualified service agent in accordance with these instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, an explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life.

The qualified service agency is responsible for the proper installation of this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in these instructions.








### Warning

The IBC heat exchanger has a small amount of combustion chamber insulation (refractory), which contains ceramic fibers. When exposed to extremely high temperatures, the ceramic fibers that contain crystalline silica can be converted into cristobalite, classified as a possible human carcinogen. Avoid disturbing or damaging the refractory.

If damage occurs, contact the factory for directions. Avoid breathing and contact with skin and eyes and follow these precautions:

1. For conditions of frequent use or heavy exposure, respirator protection is required. Refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for selection and use of respirators certified by NIOSH. For the most current information, NIOSH can be contacted at 1-800-356-4676 or on the web at [www.cdc.gov/niosh](http://www.cdc.gov/niosh).
2. Wear long sleeved, loose fitting clothing, gloves and eyes protection.
3. Assure adequate ventilation.
4. Wash with soap and water after contact.
5. Wash potentially contaminated clothes separately from other laundry and rinse washing machine thoroughly.
6. Discard used insulation in an air-tight plastic bag. NIOSH stated first aid: Eye contact - Irrigate and wash immediately. Breathing - Provide fresh air

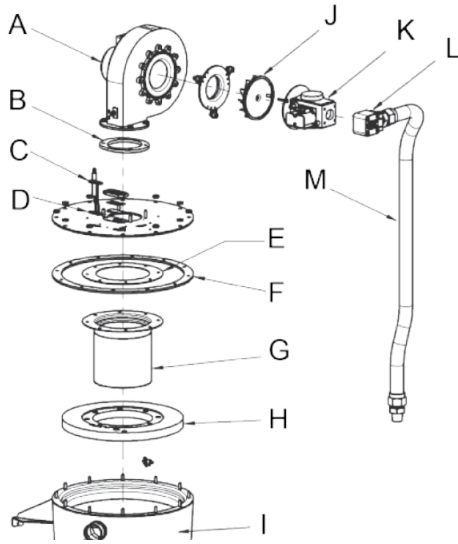
Included in this kit:

Burner Kit - SL 80-399			
	Part #	Description	Quantity
	250-319	Gasket, heat exchanger lid	1
	250-022	Refractory	1
	180-004	Burner (NG or LP)	1
	250-049	Burner gasket	1
	150-076	Burner screws M 5 x 10 mm	8

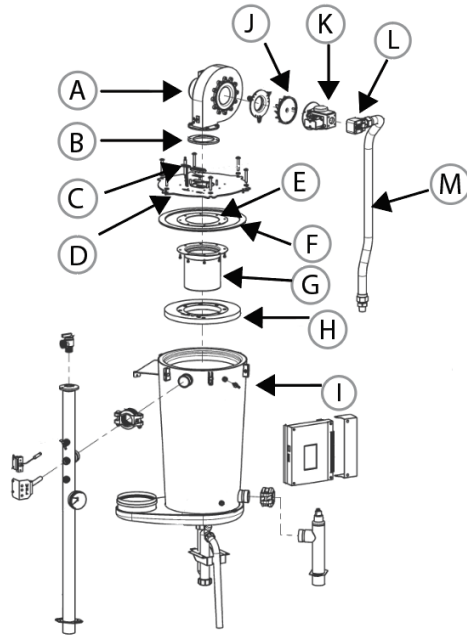
**Note**

A ladder or step may be required to have a clear vertical view of the work area. Do not attempt to remove the assemblies without a clear view, as damage to the connectors, screws or refractory may occur.

**SL 80-399 12-Bolt Lid**



**SL 80-399 G2.5 Saddle-Bolt Lid**



Item Number Description

A	Fan
B	Fan gasket
C	Ignitor
D	Heat exchanger lid
E	Burner gasket
F	Heat exchanger lid gasket
G	Burner
H	Refractory
I	Heat exchanger
J	Swirl plate
K	Gas valve
L	Gas inlet block
M	Gas line

## Burner removal

### Preparing the boiler for service

1. Remove call(s) for heat.
2. Remove power to the boiler at a wall switch or a breaker.
3. Shut off gas supply to the boiler. Do not drain the boiler unless freezing conditions are expected during this procedure.
4. Allow the boiler to cool down to the ambient temperature.
5. Remove the front cover.
6. Remove the upper-front cover by removing the two yellow thumbscrews at the top left and right corners of the boiler.

## Removing the fan and gas valve assembly

1. Disconnect the upper and lower electrical connectors from the fan (A).
2. Disconnect the electrical connector from the gas valve (K) by removing the ¼" screw.
3. Position the wiring harnesses out of the way of the heat exchanger lid (D).
4. Disconnect the clear tube from the swirl plate pressure reference port (J).
5. To disconnect the gas inlet block (L) from the gas valve (K):
  - a. Loosen the four hex socket screws slightly in a cross sequence to prevent the mating parts from deforming.
  - b. Remove the screws using a 4 mm hex (Allen) key or driver.

### Note

The gas inlet block should only be separated from the gas valve by a maximum of 1 inch (25 mm) for removal. The yellow flexible gas line (M) and the O-ring between the gas inlet block and gas valve should remain in place during this process. If the O-ring becomes displaced, it must be repositioned in the gas inlet box's groove or retained for reassembly.

6. Remove the four hex nuts attaching the fan to the heat exchanger lid with a 10 mm wrench or socket.
7. To remove the fan and gas valve assembly:
  - a. With the gas valve and swirl plate attached, pull the fan straight up.
  - b. Ensure that no wires are caught and the gas line remains in place.
  - c. Place removed parts in a clean, dry area for reinstallation.

## Removing the heat exchanger lid

1. Disconnect the ignitor cable boot from the ignitor (C) and move the cable out of the way.
2. Remove the two screws securing the ignitor to the heat exchanger lid.
3. Carefully remove the ignitor by sliding it straight up.
4. Remove the ignitor gasket.
5. Place the ignitor parts on a clean, dry area for reinstallation.
6. Remove the heat exchanger lid directed as below:
  - » **For SL 80-399 12-Bolt Lid:** Remove the 12 hex nuts attaching heat exchanger lid to the heat exchanger with a 10 mm wrench or socket.
  - » **For SL 80-399 Saddle-Bolt Lid:** Loosen the 6 straddle bolt nuts located around the top edge of the heat exchanger and swing the bolts off the lid and let hang down.
7. Mark the alignment between the lid, lid gasket (F) and heat exchanger (I) with a permanent marker or equivalent.

### Note

Position yourself directly above the heat exchanger lid before removal to ensure a straight, vertical extraction. Failure to do so may result in refractory damage.

8. Slowly lift the lid-burner assembly (D, G) off the heat exchanger. The refractory (H) should remain in place in the heat exchanger's combustion chamber shoulder. There is less than 1/8" (3 mm) of clearance between the burner walls and the refractory; ensure that there is minimal contact between them to prevent the refractory from cracking.
9. Place the lid with the burner attached on a clean, dry surface.

## Removing the burner from the heat exchanger lid

1. Mark the refractory, with a permanent marker or equivalent, so that it lines up with the same mark made earlier between the lid and heat exchanger.
2. Carefully remove the refractory and place in a clean dry area. (See warning above regarding the refractory).
3. Gradually loosen and remove the 8 screws securing the burner to the heat exchanger lid, with a #2 Phillips screwdriver.
4. Remove the burner (G).
5. Remove and discard the old burner gasket (E).

# Burner installation

## Attaching the burner to the heat exchanger lid

1. Place the heat exchanger lid on a flat surface.
2. Position the new burner gasket on the lid, aligning it with the screw holes.
3. Install the new burner in place:
  - a. Use the eight screws to secure the burner and gasket onto the new heat exchanger lid.
  - b. Tighten the screws gradually by hand, plus an additional  $\frac{1}{2}$  turn in a cross pattern. Do not over-tighten.
4. Replace the refractory with the one included in this kit. (See warning above regarding the refractory).
5. Place the refractory onto the lid, aligning at the ignitor hole.
6. Mark the refractory, with a permanent marker or equivalent, so that it lines up with the same mark made earlier between the lid and heat exchanger.
7. Carefully insert the refractory into the heat exchanger combustion chamber, using the alignment marks for proper positioning.
8. Replace the heat exchanger lid gasket with the new one included in this kit, and ensure that it is in good condition, flat, and free of debris.

## Reinstalling the burner and heat exchanger lid assembly

1. Carefully insert the lid-burner assembly straight down, ensuring that:
  - » There is limited contact between the burner and refractory
  - » The markings made previously on the lid, lid gasket, heat exchanger, and refractory are aligned.
2. Attach the heat exchanger lid and burner assembly onto the new heat exchanger as directed below:
  - » **For SL 80-399 12-Bolt Lid:** Install the 12 hex nuts to secure the lid in place, and perform the following:
    - a. Tighten nuts by hand in a cross pattern, similar to how the burner was tightened
    - b. Tighten an extra  $\frac{1}{2}$  turn.



### Caution

Over-tightening will warp the heat exchanger lid and lid gasket, allowing fumes or flames to leak.

- » **For SL 80-399 Saddle-Bolt Lid:** Swing up the 6 straddle bolts ensuring the nuts and the washers are above the lid.
  - a. Evenly tighten the nuts in a cross pattern.
  - b. Ensure the lid is securely tightened.

3. Re-install the ignitor:
  - a. Position the ignitor gasket on the heat exchanger lid, aligning it with the screw holes.
  - b. Carefully insert the ignitor into the heat exchanger assembly by sliding it straight down.
  - c. Tighten the screws screws by hand, then an extra  $\frac{1}{2}$  turn.
4. Reconnect the ignitor cable to the ignitor.
5. Reinstall the fan-gas valve assembly by following the above steps backwards from [Removing the fan and gas valve assembly on page 4](#).
6. Open the gas supply valve, and test for leaks.
7. Restore the call for heat.
8. Test for leaks after 10 minutes of continuous operation.
9. Test for proper operation.