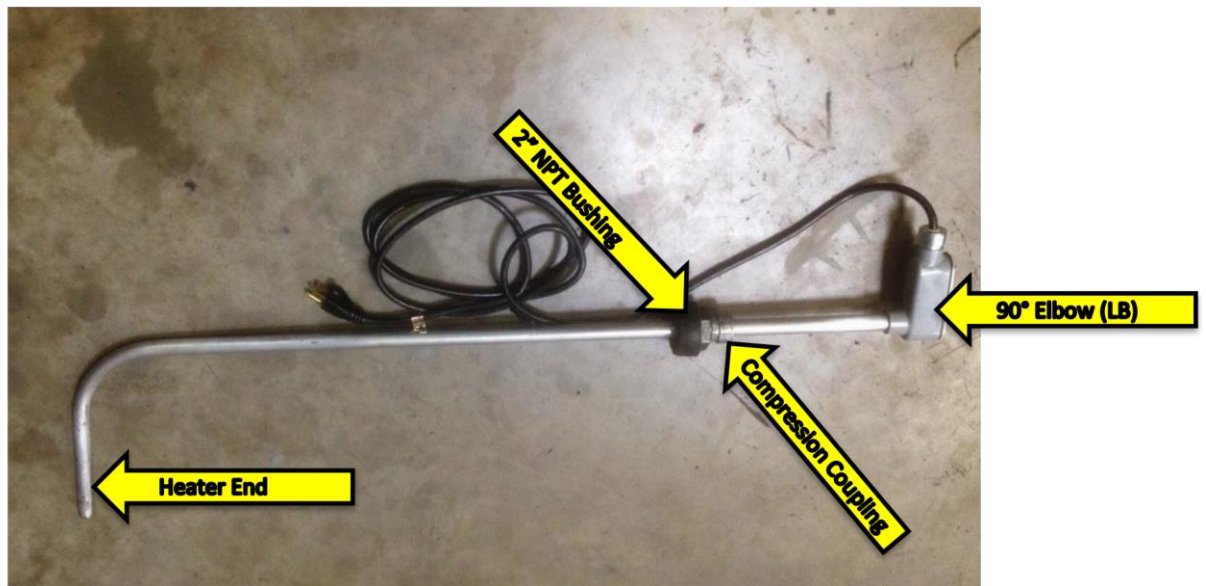


Used Cooking Oil Replacement HT-30 Heater Installation and Troubleshooting Instructions

These instructions have been created in order to assist with the replacement of the pad style heaters and failed immersion heaters on the used grease/cooking oil tanks at the Sam's Club and Neighborhood Market locations. These instructions involve a 5-step process in order to ensure the new heater is properly installed.

The 5 steps will include:

- Step 1 - Ensure the tank suction valve is in the closed position
- Step 2 - Disabling of the existing pad/immersion heater
- Step 3 - Removal of the existing float gauge
- Step 4 - Installation of a new immersion heater
- Step 5 - Cleanup of work area and tank



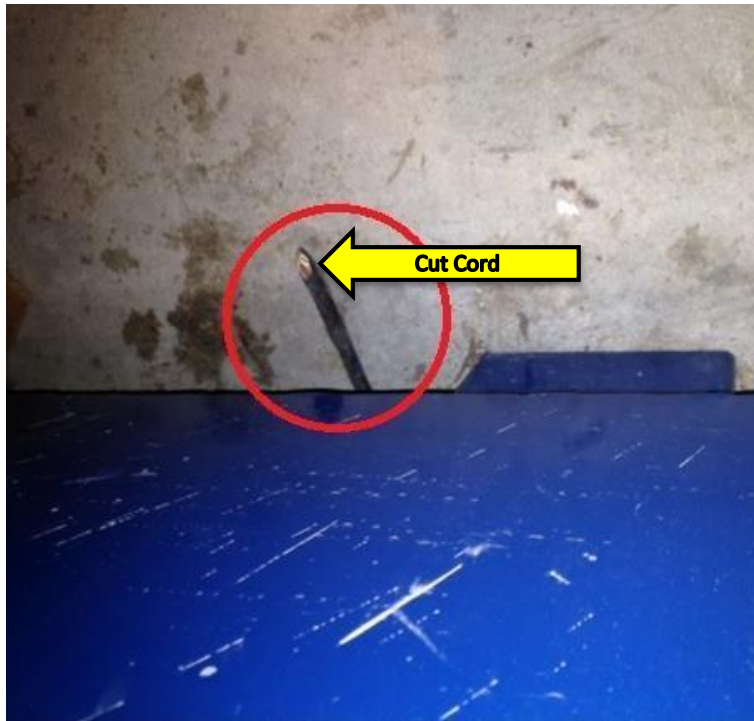
HEATER AND COMPONENTS

Step 1 – Close Tank Suction Valve

Inspect the suction line valve to ensure that the valve is in the closed position. The valve handle should be oriented in a position perpendicular to the suction line. If the valve is in the open position, close the valve before proceeding. The valve is depicted in Photograph #2 in the open position.

Step 2 – Disable Existing Pad/Immersion Heater

- If the tank has a pad heater (bottom of tank) and is hard-wired into the Club's electrical system, **STOP**. Contact the store's electrician to properly disconnect the heater.
- If the pad or immersion heater is plugged into an electrical outlet, **unplug the power cord**. Ensure that the power cord has been unplugged **before** proceeding.
- If the heater is a pad heater and it has been verified that the power cord has been unplugged, follow the power cord to the pad heater (bottom of tank) and cut the cord with wire cutters approximately 6" from the pad heater. Discard the cut power cord properly.
- It is not necessary to remove existing pad heater from the tank. Refer to Photograph 1.



Photograph #1

Step 3 – Removal of the Existing Float Gauge

The grease/cooking oil tanks may be equipped with a float gauge installed in a 2" NPT port on top of the tank. The existing gauge must be removed and discarded. (See Photograph #2 below).

Remove the gauge by unscrewing it from the 2" NPT port. The new heater element will be installed in this 2" port.



Photograph #2

Step 4 – Installation of New Heater Element

- No preparation for the 2" NPT port is needed for the installation of the HT-26 heater, such as applying Teflon pipe joint compound to the heater's 2" NPT bushing. Clean the threads, if necessary.
- Insert the heater element into the tank port and tighten the 2" bushing firmly. Since this is not a pressure-bearing joint, no heavy torque requirement is needed. While tightening the heater's 2" bushing, ensure that the conduit elbow is being pointed to the right, rear corner of the tank (while standing in front of the tank). See *photograph #3*.
- Gently push the heater assembly down until the heater contacts the bottom of the tank and then raise it no more than ¼". The LB and heater shaft will protrude above the tank over the former level gauge's protective fence.
- Firmly tighten the conduit compression coupling. **IMPORTANT:** While performing the tightening procedure, hold the LB securely in order to lock down the position shown in photograph #3. (Pointing the LB to the upper, right corner will insure that the heater's probe is pointed to the tank's *center*, thus insuring maximum heating of the grease.)
- **NOTE:** If the grease is too solidified to allow the heater element to easily be lowered into the tank, plug in the heater. The heater will (slowly) melt the solidified grease and allow the unit to be **gently** positioned into place. Once the heater is in position, unplug the power cord and continue with the installation. Do not allow the heater to function while not immersed in the grease/oil.
- Ensure that the heater element is positioned as far down into the tank as possible (less ¼") and the conduit compression nut is sufficiently tightened to keep the LB pointed towards the rear, right corner of the tank.
- Once all of the fittings are properly tightened, plug power cord into the nearby 120V/20A outlet. **Note:** The two **red** lights on the LB cover will initiate when the cord is plugged into the receptacle. Two lights "On" indicate that the heater is in the process of heating the grease/oil. One light "On" indicates that the power is on only and the heater has reached full temperature and will not initiate again until the grease/oil is below the required temperature.
- Secure all of the excess power cord with electrical tape or wire ties and ensure that it is neatly secured behind or beneath the tank.



Photograph #3

Step 5 – Work Area Cleanup

- Please ensure that the work area is cleaned up and all excess materials are properly disposed. Ensure that the top of the tank area is wiped down.

Troubleshooting Steps:

- For heaters that are malfunctioning, perform the following tests and observations:
 - Is the LB pointed to the right, rear of the tank? (ref.: Photograph 3) ○ Is the heater pushed fully into the tank? If not, follow the procedure in **Step 4**. ○ Does the power cord have any damage?
 - Is the heater getting the proper voltage from the receptacle? The line voltage should be 120 VAC.
 - Is the receptacle a GFCI receptacle? Is the GFCI test button tripped? If so, measure for a maximum of 5 mA of leakage current. If the GFCI receptacle continues to trip, contact the Quest Engineer. ○ What is the resistance across the 2 plug leads? The accepted level should be around 40-70 ohms. ○ Measure the continuity between both plug leads and an open circuit should result. A closed circuit indicates a short and a defective heater.
 - What is the resistance between both plug lead and ground? The accepted level should be greater than 1 megaohm.
 - Remove the heater and visually assert that the heater is getting hot.
 - CAUTION: Do not touch the heater probe! If the heater is functioning properly, the heater will start to “smoke” any residue on the heater probe within approximately 30 seconds.
 - DO NOT leave the heater plugged in and operating while exposed to air only!
 - Tank inspection:
 - Is the heater covered by at least 2” of grease? This may be observed either through the filler box screen or by removing the 3” NPT Emergency Vent located in the center, rear of the tank. The vent is low-torque joint and provides a clear view of the heater and grease (with a flashlight).
 - What is the temperature of the grease in the tank? Probe several spots.
The minimum temperature allowable is 70° (interior grease).
 - Is there a crust on the top of the grease and approximately how thick is the crust? This answer will be helpful if you are talking to a Quest engineer.
- Once these steps are completed and the heater is still not heating properly, please call Quest RMG at 972-464-0004 for further instructions.

