

*All Hydro Flame Furnaces Offer You
These Outstanding Features*

Sealed Combustion Chamber — uses outside air for combustion, vents exhaust gasses outside. These furnaces are very stable against severe wind conditions and are almost impossible to blow out.

All Hydro Flame Furnaces are Unconditionally Guaranteed for a period of One Year against defects in workmanship and materials. Combustion Chambers are Unconditionally Guaranteed against burn-out for a period of Fifteen Full Years.

Extremely efficient combustion — Makes use of both radiant and circulating heat. Aluminized Steel Combustion Chambers, exclusive with Hydro Flame Furnaces, afford the utmost heat transfer to your living area.

Optional Fan Assemblies:

Small, Beautiful, Compact — Yet Plenty of Heat for SOLID COMFORT; Out of the way installation.

Aluminized Steel Burners, Combustion Chambers and Vent Cap guarantee LONG LIFE.

Completely Recessed Type Vent Caps.

Easy to install, Easy to service — Comes complete, nothing else to buy.

Fully automatic valve requires no electricity.

EVERY FURNACE TEST FIRED AT THE FACTORY

HYDRO FLAME. FURNACE

FOR MOBILE HOMES & TRAVEL TRAILERS

SERIES BRC-10

*Recessed Type — Rear Vented
Furnace*



Model BRC-10



**HYDRO VENT CAP
BRINGS COMBUSTION
AIR FROM OUTSIDE
AND EXPELS FLUE
GASES TO OUTSIDE.**



Optional
Fan Assembly

SPECIFICATIONS

FUEL — L.P.G. B.T.U. — 9,000

Dimensions — installation area required:

Height-17" Width-12½" Depth-8"

Distance — Flange to outside of outer wall-adjustable — 20" to 34½".

Approximate shipping weight — 30 lbs.

*Fully Automatic
Sealed Combustion
100% Safe
Guaranteed*



A. G. A. CERTIFIED

LISTED WITH THE CALIFORNIA HOUSING AUTHORITY

LIST PRICE (Automatic) **\$89.95**
(Manual) **\$79.95**

When ordering specify Complete Model Number and Vent Kit Desired. (see Vent Kit Selection Chart on other side.)



HYDRO FLAME CORPORATION
1874 South Pioneer Road
SALT LAKE CITY, UTAH 84104
MADE IN U.S.A.

www.ApacheOwners.com

PART NO. BRC-10

should be closed tightly after pilot is lit and before main burner is turned on.

PILOT OUTAGE

If the pilot flame will not stay lit when you release pilot knob, check ignition flame size. The flame should envelope the top $3/8''$ to $1/2''$ of thermocouple and should be approximately $1\frac{1}{2}''$ long. If pilot flame does not envelope the top $3/8''$ to $1/2''$ of the thermocouple, readjust pilot gas adjustment screw out, or counter clockwise, three full turns to obtain a normal size flame. See illustration.



CAUTION:

Never bend or try to force thermocouple into pilot flame.

If you have proper gas pressure and pilot flame is still not at normal size, remove pilot orifice by turning off pilot gas line nut located on bottom of pilot. Remove orifice from pilot, clean with the shank of a small drill or by blowing out with high pressure air and replace.

If furnace fails to function properly after making corrections outlined above, refer to service bulletin on controls and Hydro Flame Furnace combination service and installation instruction sheets. No vent extensions or elbows should be installed nor should orifices be altered.

HEAT OUTPUT UNSATISFACTORY

First, be sure you have alcohol in gas bottle and full gas pressure ($12''$) to furnace, then, disassemble bottom plate and clean main burner orifice. If problem still persists, locate sensing bulb further from heat.

For additional information, refer to the last page of the Robertshaw Field Bulletin for possible calibration of thermostat or actuator assembly replacement.

If you have any further problems, direct your correspondence to:

HYDRO FLAME CORPORATION

1874 South Pioneer Road
SALT LAKE CITY, UTAH 84104
Attention: Service Department

HYDRÓ FLAME FURNACES

FOR CAMPERS & TRAILERS



www.ApacheOwners.com



MAINTENANCE & SERVICE MANUAL

CAUTION:
CHECK ALL GAS LINE FITTINGS
BEFORE FIRING FURNACE!

All Hydro Flame Furnaces are precision built. Please treat them accordingly. All air passages are fixed and cannot be adjusted. Do not make any physical changes in the furnace construction. The gas orifice, burner head and pilot light are all assembled on the bottom plate of the furnace.

Before furnace is put into operation, there are certain steps that must be followed to insure proper operation, efficiency and long life.

LACK OF ALCOHOL IN GAS BOTTLE

When a gas bottle is manufactured, the manufacturer is required by law to fill it with water and subject it to a Hydrostatic Pressure Test. It is seldom that all of this water is removed. The following sometimes happens when a furnace is in operation: The gas in a propane cylinder is liquid; as it is drawn off, it becomes a vapor as does a small amount of the water. There is then gas and water vapor combined coming to the small orifice in the pressure regulator at 100 lbs. P.S.I. or more. Passing through this orifice, the gas pressure is dropped to approximately eleven inches of water column, or six ounces pressure. This extreme expansion is the basic principle of refrigeration. Propane is an excellent refrigerant; therefore, the interior of the regulator will be cooled below freezing temperature and the water vapor will freeze, stopping the gas supply. Once the gas flow has stopped, the freezing action will also stop and the regulator will thaw out. The gas will flow again and the furnace can usually be relighted in a few minutes.

To keep this freezing action from occurring, simply add 1/2 cup of alcohol to each gas bottle. Alcohol need be added to a bottle only once and is done when the bottle is empty by opening the main valve on the bottle and pouring it in. The alcohol acts as antifreeze.

GAS BOTTLE OVERFILLED

All L.P.G. gases are put in bottles or cylinders under high pressure as a liquid. The top 10% of the interior area of the cylinder must be reserved for a gas vapor area. Each cylinder has a small round valve located either beside the main valve or on the side of that valve. This is called a 10% valve.

When the cylinder is being filled, this valve should be opened. It can be opened by hand—DO NOT use pliers or wrenches to open or close this valve. When the cylinder is being filled, with the 10% valve open, you will hear high velocity gas escaping. When you see

a white, frosty vapor coming out, the cylinder is over-filled. Allow gas to discharge until it becomes invisible. Close the 10% valve and the bottle is properly filled.

When the bottle is over-filled, liquid droplets of gas will get through the regulator and plug the pilot orifice and sometimes the valve and main gas orifice. If this happens it may be some time before the liquid will vapor out of the valves and orifices and the pilot can be relighted.

FUEL LINE STOPPAGE

When a camper or trailer is not in use and fuel lines are disconnected, always plug or protect them from foreign material. Mud Daubers love to plug them. Many times the lines are not completely blocked off, so appliances may run, but at a reduced rate.

SMALL TUBING

Use 3/8" tubing when installing Hydro Flame Furnaces. Smaller tubing can drop gas pressure and heat output can be seriously decreased.

FUEL LINE CHECKS

We recommend frequent checks on all lines, fittings and pressure regulators. Look for sharp bends or breaks in the tubing. Tighten all fittings and check for leaks. (use a soap and water solution, do not use matches.) Have pressure checked at each appliance to make certain that each has 11" to 12" W.C. or 6 to 6 1/2 ounces pressure for proper operation.

NOTE: Never subject the furnace to more than 8 ounces air or gas pressure when testing fuel lines.

The material covered above concerns problems which are not directly related to furnace responsibility. The following material covers problems that are directly related to controls or some other part of the furnace:

PILOT DOOR NOT BEING CLOSED TIGHTLY

When a Hydro Flame Furnace is in operation, the firebox is under a low pressure condition; therefore, if the pilot door is even slightly opened or cracked, air will be pulled into the firebox. This stream of air will force the pilot flame in toward center, which will cool the thermocouple and drop the furnace controls out on safety. Pilot door

Installation Instructions

Series BRC-10 HYDRO FLAME Furnaces

GRAVITY SEALED COMBUSTION SYSTEM WALL FURNACE

for Installation Mobile Homes and Travel Trailers — for Use with Liquefied Petroleum Gases

REAR VENTED FURNACES

1. Before starting the installation, check applicable state and local codes.
2. Select furnace location so that vent will terminate on an outside wall. Determine wall thickness. See Figure 3. Check VentKit Selection Chart shown below to assure that Vent Kit matches wall thickness. **OBSERVE ALL MEASUREMENTS SHOWN HEREIN.**

3. Provide a 12½" wide x 17" high opening in wall where furnace is to be mounted. The surface of an adjacent inside wall may not be closer than 1½" to one side of this opening. The bottom of opening may not be closer than 1" to the floor or the top closer than 24" to the ceiling. See Figure 1. **NOTE:** If wall where furnace is to be mounted is of thin material such as ½" plywood, the back of the opening must be framed with ½" x 1" (minimum) stock to assure sufficient support. See Figure 2.

4. Provide an 8" wide x 11½" high opening through outside wall to accommodate vent assembly. This opening must be as shown in Figure 1. Check the location and size of this opening very carefully.

5. Place furnace into opening provided under step 3. Secure into position with screws through holes provided in the mounting flanges.

6. From outside, insert vent box assembly through opening provided under step 4 until the tube engages the furnace tube. See Figure 3. Place exhaust tube assembly into vent box making sure the exhaust tube extension slides over outside of furnace exhaust tube. Push vent cap into vent box until mounting arms slide into channels located on each side of vent box. Attach vent box grill over vent cap assembly. See Figure 4.

NOTE: Matching screw holes are provided in the flanges of the vent box and the lowered plate.

NOTE: THE TUBES ON THE VENT BOX ASSEMBLY MUST OVERLAP THE TUBES ON THE FURNACE A MINIMUM OF 1½". The correct overlap is assured if the vent kit is selected to match the wall thickness in accordance with the vent kit selection chart.

7. Enclose body and furnace tubes as well as vent box assembly. See Figure 2. Enclosure must prevent combustible materials from contacting furnace parts as well as preventing objects from damaging the unit. If space for installation is limited, follow tables II and III for minimum clearance around the furnace and vent tubes.

In actual installation, however, the enclosure need not contact the outside surfaces of the unit and may be as simple as shown in Figure 2.

8. If furnace is equipped with a fan, attach 12 volt D.C. positive wire to the terminal block positive side. If furnace is not equipped with a fan assembly and fan is desired, for proper installation see Installation Instructions for Fan Assembly Part No. BRC-10F.

9. If furnace is equipped with automatic gas controls employing a bulb type thermostat, the bulb must be mounted in clip provided on flange at bottom of furnace casing. See Figure 5. The small tube between bulb and gas controls should be routed out the bottom of furnace adjacent to one of screws securing furnace in position. This will prevent tube from being pinched when trim panel is in position.

10. Install front trim panel by hanging it on the flange across the top of the furnace casing. While hanging the panel, hold bottom out approximately 3" from lower wall. Position panel securely on flange by "bumping" top downward with side of hand. Then lower bottom of panel carefully towards wall. Install screw in bottom center of panel. This screw secures the bottom of the trim panel to the furnace.

11. Connect gas supply to fitting provided at inlet of gas controls on furnace. Openings for gas line are provided in side and back of casing. See Figure 3. **CAUTION:** BE SURE ENTIRE GAS LINE SYSTEM IS TIGHT AND FREE FROM LEAKS. USE SOAP AND WATER SOLUTION FOR CHECKING FOR LEAKS. DO NOT FIRE ANY APPLIANCE UNTIL SYSTEM IS FULLY CHECKED OUT. HAVE ENTIRE GAS SYSTEM RECHECKED AT LEAST ONCE A YEAR FOR LEAKS. ALSO, WHILE CHECKING, DO NOT APPLY MORE THAN ½ PSI PRESSURE. (This would be 14" water column if using a water type gauge.)

THE FURNACE IS NOW READY FOR USE. TO OPERATE, FOLLOW INSTRUCTIONS PROVIDED ON METAL PLATE LOCATED INSIDE OF FURNACE. IT IS IMPORTANT THAT THE CONTROL COMPARTMENT BE KEPT CLEAN AT ALL TIMES.

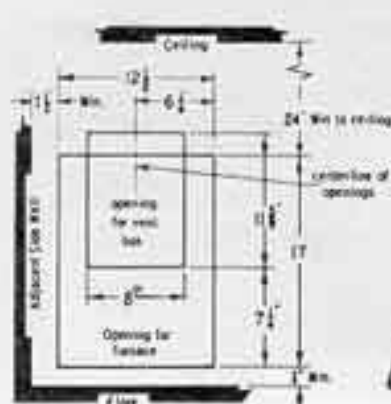


FIG. 1 Front view showing furnace cabinet and outside wall cutout for vent box

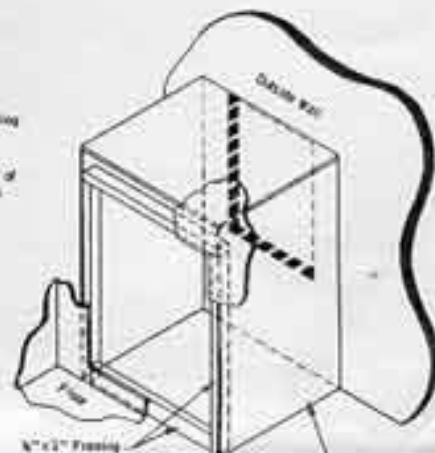


FIG. 2 Recommended enclosure if desired, combustible material

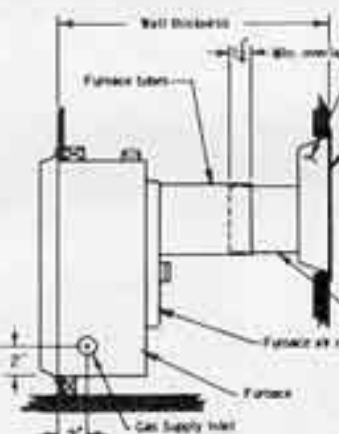


FIG. 3

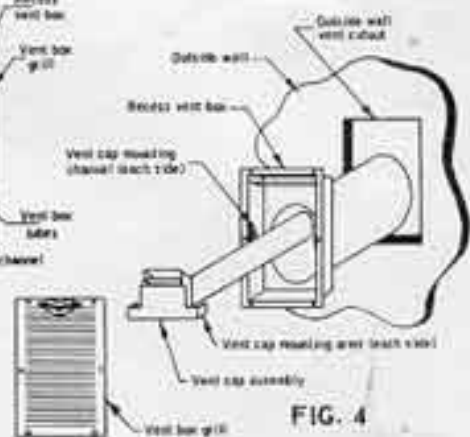


FIG. 4



FIG. 5 Thermostat Bulb Position

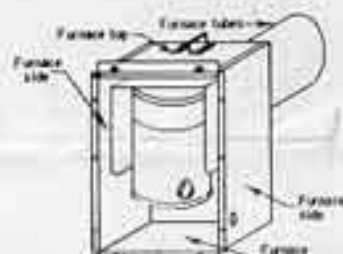


FIG. 6

TABLE I
VENT KIT SELECTION CHART

| VENT KIT NO. | WALL THICKNESS | |
|--------------|----------------|------|
| | MIN. | MAX. |
| BRC-10V-1 | 20" | 27½" |
| BRC-10V-2 | 27½" | 34½" |

TABLE II

Minimum Clearances for furnace enclosure by requirements

| MODEL | TOP | BACK | SIDES | BOTTOM |
|--------|------|------|-------|--------|
| BRC-10 | 3/4" | 2" | 0" | 0" |

TABLE III

Minimum Clearances for vent tube enclosure by requirements

| MODEL | TOP | SIDES | BOTTOM |
|--------|-----|-------|--------|
| BRC-10 | 3½" | 1" | 2" |

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100% SAFE



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