WAVETEK

MARINE ELECTRONICS LIMITED
ASSOCIATE STORE

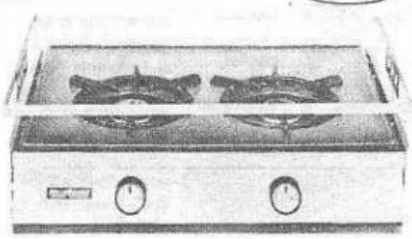
STOVE CATALOGUE

TO OUR CUSTOMERS

Welcome to our new SEAWARD catalogue. Like our marine electronics catalogue we believe you will find this one different and we hope helpful! Inside are descriptions, illustrations, and process of SEAWARD STOVES and PARTS which WAVETEK MARINE ELECTRONICS recommends. Your Wavetek Associate Store is able to supply you with these fine products with a full service passport.

When you buy from a Wavetek Associate Store
…… you don't gamble on warranty.

SEAWARD Model 2001, Alcohol 2 bronze burners, pressurized fuel. $324.50

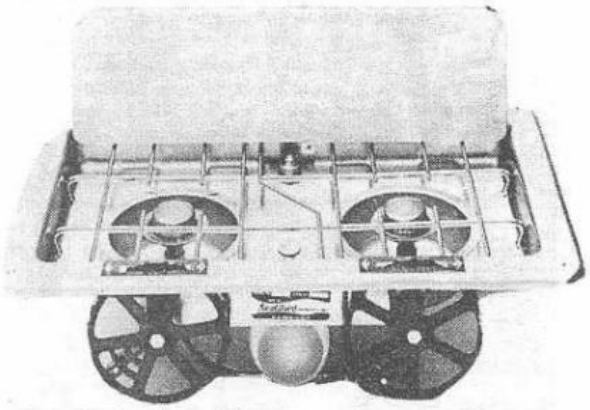


Uses 3 gal. remote tank option M 25 at $100.50

HILLERANGE designed specifically for the Sea

SEAWARD Model 2201 Alcohol 2 burner pressurized integeral fuel tank $254.50

Available with cutting board add $39.50



Gimbal Kit is available. $132.50

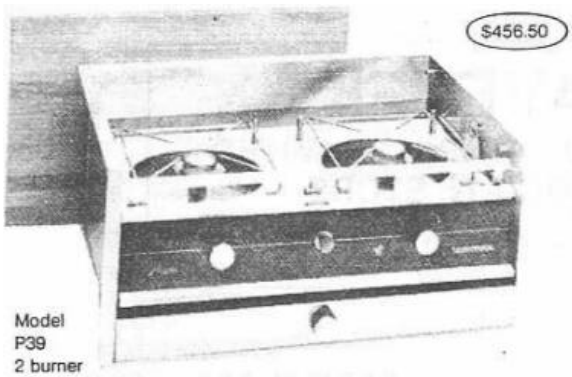
THE CARE AND FEEDING OF YOUR PRESSURE ALCOHOL STOVE

WAVETEK MARINE ELECTRONICS LTD.

SeaWard and similar alcohol fuelled stoves actually burn alcohol vapour. The liquid alcohol you pour into the tank, is transformed into its gaseous state by boiling. This boiling action takes place in the base of the burner. The burner must of course be hot – about 180°F for proper operation. In order to start a cold burner, it must therefore be preheated above the boiling point of alcohol if it is to produce the required vapour. The preheating operation is an extremely important step in obtaining satisfactory stove performance. We will say more about this in a moment.

The recommended fuel for galley stoves is 95% pure denatured ethyl alcohol. It can be found labelled as "alcohol stove fuel" (not to be confused with gasoline "stove fuel"), or "denatured alcohol shellac thinner". Satisfactory operation is also obtained with 91% isopropyl alcohol if it contains less than .003% non-volatile material. We find that most difficulties experienced with stove operation can be traced to impure fuel. Not recommended are wood alcohol, methanol or rubbing alcohol as they will not burn satisfactorily and will probably clog the fuel filters in the burners.

To start a pressure type alcohol stove the chosen fuel will be poured into the stove tank through the fuel fill nipple. Note that this nipple has a rather special cap. It includes a pressure relief valve that effectively prevents excessive pressure build up in the tank. The cap must never be replaced by any other type.



$456.50

Model
P39
2 burner
gimeled alcohol range, butcher block included.

$546.50

Model
P35AE
combination
alcohol and
2 burner
Electric
range

Smooth
Glass
burner
top
illustrated

also
available as
Kerosenel Electric
one low and one high
speed electric burner

P35A like above alcohol only $303.50

P35K like above Kerosene only $303.50

REPLACEMENT PARTS for alcohol burners are available for
SeaWard - Hillerange - Optimus - Shipmate and Kenyon

2 Valve Spindle Assembly
3 Cleaning Needle
4 Nozzle
5 Inner Cap
6 Outer Cap
7 Filter
8 Washer

All other
replacement parts
always in stock call
or write
with model
and description

ALCOHOL
BURNER

SEA WARD WRENCH
for nozzle and
pump valve
$13.50

Fig. 2

A pump, placed near the front centre of the stove is used to pressurize the fuel tank, thereby pushing the fuel up through the burners. Satisfactory operation is usually obtained with the fuel pressurized between 8-15 lbs per square inch. This takes about 15 to 20 strokes of the pump. The exact number of strokes required for operation will vary depending on the amount of fuel in the tank and the condition of the burners. In some instances a few more strokes may provide even better burner operation. The burner controls are located on the front flange of most stoves. Clockwise rotation of the heat control know closes off the fuel in the burner. Counter clockwise rotation of the knob will open the jet allowing more fuel to flow. The extreme counter clockwise position is the "clean" position where the internal mechanism of the burner causes a small wire to push through the burner nozzle, removing any dirt which may have lodged there. The maximum heat position for this control is usually about half way between the "off" and "clean" positions.

To start the stove fill the tank about 3/4 full with denatured ethyl alcohol. Use a funnel. Replace the filler cap and tighten snugly. Pump 15 – 20 times to pressurize the tank. Next open the burner heat control knob allowing liquid alcohol to flow through the burner and dribble down into the preheating cup at the base of the burner. Close the burner control to its off position after about 3 or 4 seconds. About 3 tablespoons of alcohol will have overflowed the burner and trickled down into the cup or indentation at the base of the burner. Now with the burner still "off", ignite the alcohol in the cup. As the burner is warmed by the flame, the liquid alcohol trapped in the burner boils, causing a flame to appear at the burner cap as well. This will produce a relatively high flame at the burner for a brief period. Too much alcohol used for the preheat operation will produce a higher flare up than required but too little will not bring the burner to a high enough temperature. The preheating flame should probably burn for 2 – 3 minutes. When the preheating alcohol is completely consumed, open the burner control and light the vapourized fuel at the burner cap. A hot burner will produce a hissing sound when turned on. A cold burner will be silent or produce a squirting noise followed by liquid alcohol flowing down into the lower cup. After the preheating operation the upper burner must be lit without delay, before it cools off, or further preheating will be necessary. Attempts to ignite a cold burner will cause flare ups which are quite worrisome to the "galley slave". Place your cooking utensils over the burner only after you are sure it is functioning properly.

A normally operating burner will exhibit a flame having several stacked rows of little blue flame tips. There should not be a consistent yellow tip on the flame. Adjustment of the air/fuel ratio of the burner to produce flames having the required appearance will result in the most efficient fuel burn.

WE SHIP

Model 2101S 2 burner Alcohol & Oven	$714.50
Model 3101S 3 burner Alcohol & Oven	$803.50
Model 2111S 2 burner Kerosene & Oven	$938.50
Model 3111S 3 burner Kerosene & Oven	$1012.50

Above ranges use M15/16 or M25/26 tanks

LPG

Model 2021
2 burner $287.50

Model 2121
2 burner & oven $806.50

Model 3121
3 burner & oven $752.50

Tanks & Regulators
are available

To adjust burners for maximum fuel efficiency.

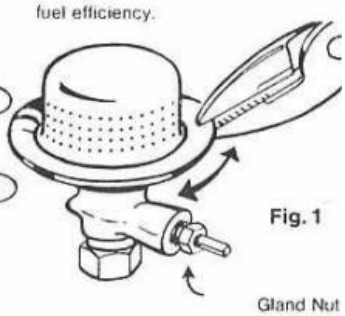
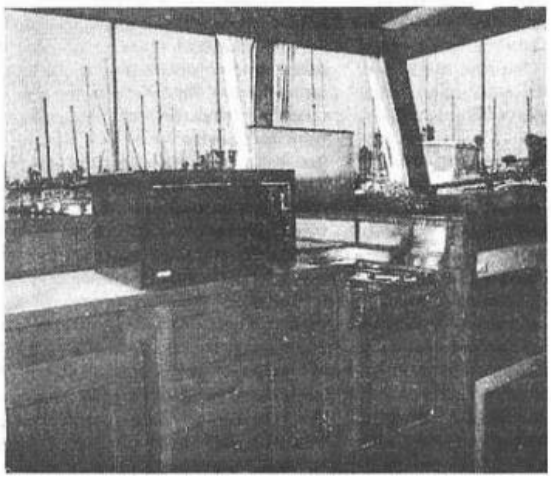


Fig. 1

MICROWAVE model M100
600 watt 1.1 cubic feet 120V 10A $712.50



The adjustment is accomplished by rotating the burner flange with a pair of pliers until the yellow flame tips are eliminated. See figure (1). A correctly adjusted burner will boil 2 cups of water in an open pan in approximately 8 minutes.

Pressure alcohol stoves are generally trouble free for long periods of time if kept free of dirt and other fuel contaminants. Occasionally, however, a small flame mat appear where the heat control system enters the burner. Tighten the gland nut at this point slightly until the flame no longer appears. This adjustment may be necessary on a new stove after a few hours of burner operation, and therafter at infrequent intervals.

Should the pump bounce back when you try to pump or if the pump handle is pushed back towards toy after a pump stroke, the check valve in the fuel tank is probably clogged, usually a result of dirty fuel. Replacement of the check valve is relatively simple with the correct tool providing no one has had a go at it with a pair of pliers. A little trick we use is with the correct tool try tightening the valve a wee bit first to break the seal, then turn in the opposite direction to remove the valve.

If your pumping produces little or no pressure in the tank check the u-cup on the bottom of the pump shaft. Replacement of this part takes about 30 seconds.

Should the burner light properly but go out after a short time you may be out of fuel or you didn't pump enough or your filler cap leaks. In the latter case, replace the rubber gasket or relief valve assembly. If no alcohol comes through the burner when you attempt to start the preheat operation, either you have no pressure in the tank or a filter has been clogged by dirty alcohol. Replacement of this filter is accomplished by removal of the burner from the stove and in most cases it will be found necessary to drill out the old filter assembly. This is a time consuming job requiring some care to assure the burner is not damaged. We would recommend this operation be accompanied by a complete burner overhaul. A 2 burner stove takes about 1½ hours to complete a factory authorized overhaul.

The procedure for those wishing to perform this maintenance themselves is as follows:

Start by completely removing all fuel from the tank, then remove the burner assembly by following these steps. Remove the pin in the stem of each heat control (see figure 2) to disengage the control shaft from the burner. After pulling out the control shaft, remove the fuel pipe connected to the base of the burner. Next remove the burner from its base and position it upside down in a vice. Clamp the vice jaws on the lower burner body. For models having an internal sintered filter, use an 11/64" drill bit and bore into the exact centre of the filter element to a depth not exceeding 5/8". Don't go any deeper as this could damage the burner assembly beyond repair. From time to time as you drill, remove the burner from the

POPULAR REPLACEMENT PARTS

SEAWARD	STOVE	PRICE
Complete pump assembly …	P351 2201 P39 …….	
Pump washer only)		
Check valve)	**Always in stock**	
Filler cap)		
Burner Assembly Alcohol …	P35A P39A …….	$49.50
Burner Assembly Alcohol …	2001 2201 …….	$79.50
Burner Assembly Kerosene	P35K P39K …….	$59.50
Burner Assembly Kerosene	2111 3111 …….	$59.50
Wavetek Brand Marine Alcohol …….……..……..		$10.50

The Only Canadian Brand Recommended for SeaWard

STOVE SERVICE FOR A COMPLETE OVERHAUL
✳ OUR FACTORY TRAINED TECHNICIANS

Remove pump and clean. Inspect lower pump valve. Overhaul safety valve and cap seal. Remove burners. Install new filters. Renew valve washer and packing nut. Replace cleaning needle and nozzle. Clean tank and piping, reassemble and calibrate fuel/air ratio.

Model ……..	P35A/K, 2001,2201, 45	1½ hours
Model ……..	P39, P35AE, 2102	2 hours
Model ……..	3101, 3111	2½ hours

WAVETEK ALSO STOCKS PARTS FOR SHIPMATE HILLERANGE OPTIMUS KENYON HOMESTRAND GALLEY STOVES

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vice and attempt to tap the filter element out of the burner base. After it has been removed carefully clean out all foreign particles from the base of the burner. Be sure nothing remains in there which could eventually clog the jets or nozzle.

If the burner is to be completely overhauled while it is apart, remove the outer burner cap on top by prying up with the corner of a screwdriver, then lift off the inner burner cap. Now you may unscrew the burner nozzle. An exact fitting wrench is recommended.

Remove the cleaning needle which is now visible, by turning the burner valve spindle counter clockwise. This will disengage the gear teeth of the cleaning needle from the valve spindle. The cleaning needle will now drop out if the burner is turned upside down.

Next, unscrew the gland nut from the burner body using a 3/8" wrench, then turn the burner valve spindle counter clockwise until its threads disengage from the burner body. At this point the spindle can be pulled out. The internal packing and washers will come out with the valve spindle.

You are now ready to install the new filter and any other parts required for the overhaul. Make sure the burner is free from foreign matter inside before pushing the new filter into the burner base. The new filters are rolled screen which fits quite snugly in the space formerly occupied by the sintered filter.

To install a new valve spindle insert it into the burner and screw it in as far as it will go. The gear on this valve spindle should show all the way across one side of the top hole in the burner body. Push in the washers and packing following the same sequence as in the original and re-install the gland nut. Rotate the control stem back and forth while tightening the gland nut until the packing is sealed and a slight but definite resistance can be felt when turning the control stem.

Installation of a new cleaning needle is accomplished in the following manner. Turn the control stem clockwise until the burner is closed and the needle valve is seated. Then put the cleaning needle into the top of the burner with the needle point up and the teeth facing the gear on the valve spindle. Rotate the burner control knob very slowly in a counterclockwise direction while lightly pushing the cleaning needle down into the burner. The lowest rack tooth will be resting against the gear teeth of the valve spindle. As each gear tooth moves by a click can be heard and a slight jolt felt through the cleaning needle. Stop turning the valve spindle after 5 clicks are produced. Now rotate the control stem slowly clockwise so that the cleaning needle rack and valve spindle teeth engage. As the control stem is rotated still further to clockwise to the close or "off" position the cleaning needle will be drawn down into the burner. No increase in resistance should be felt during this operation. If the needle jams it will have to be removed and the previous step repeated. Note that when the burner valve is fully closed the top tooth of the cleaning needle rack should remain above the centre of the gear on the valve spindle. If the cleaning needle is too deep in the burner it may bottom out before the needle valve is closed completely. This would produce inability to completely shut off the burner. If you are not sure repeat the procedure of installing the needle, being certain that only 5 clicks are heard during installation.

You are now ready to install the nozzle in place – tighten it firmly. As a check, turn the valve spindle to its fully closed position and then counterclockwise until it stops. This should be just over half a turn of the valve spindle. If less than half a turn is found from "off" to "clean" positions the cleaning needle has not been properly installed and that portion of assembly should be performed again. In the "clean" position, that is fully counterclockwise, the cleaning wire will be seen protruding slightly through the nozzle hole.

Complete the burner overhaul by placing the inner cap in position on the burner. The outer cap may then be snapped into place. A slight tap with a wooden block or screwdriver handle may be required to seat the cap.

You are now ready to re-install the burner. A new copper washer for the base is recommended. Tighten the burner until the copper washer just begins to be compressed. From this point the burner must be turned at least half a turn to make a tight seal and then further until the valve spindle is pointing towards the control knob shaft. From here on, re-assembly is the reverse of the disassembly procedure previously discussed.

After assembly of the stove, pressurize the fuel system and check for any fuel leaks at the burner base or piping to the fuel tank. If all is well, proceed through the preheat operation to adjustment of the fuel/air ratio of the burners. You will now find your pressurized alcohol stove to be operating in "as new" condition and should give you safe and satisfactory operation for many years.

A WAVETEK STOVE IS A BETTER STOVE
….. and we'll prove it!