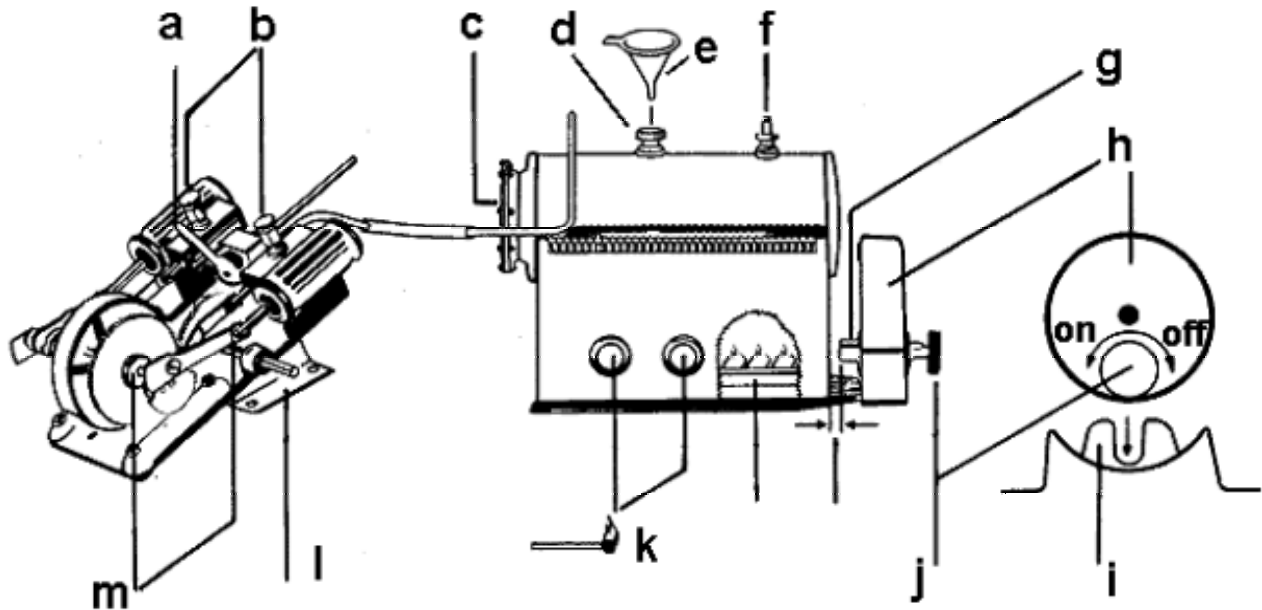


D 48

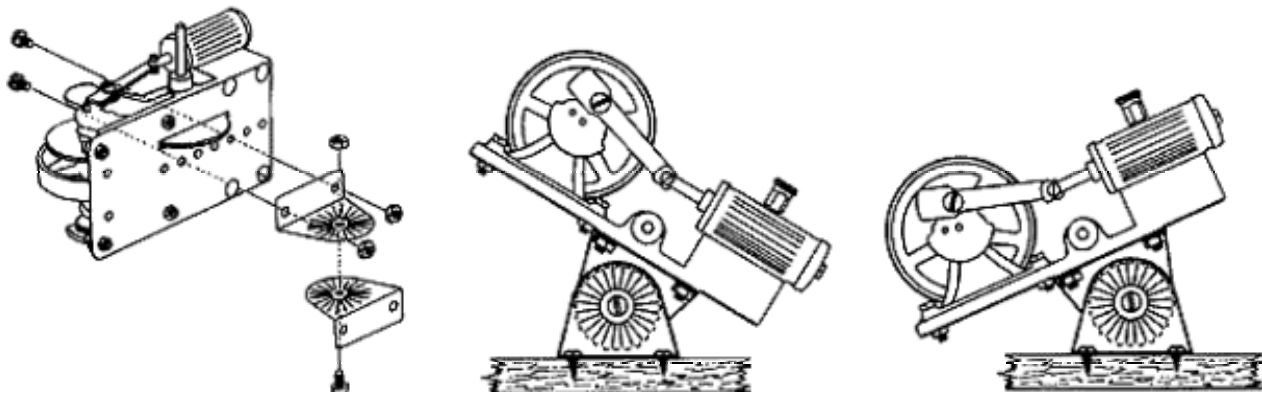


a) Reversing lever
b) Oil cap
c) Sight glass
d) Filter cap

e) Funnel
f) Safety valve
g) Nozzle top
h) Gas tank



i) Gas tank support
j) Gas regulation valve
k) Ignite here
l) Footplate/bracket
m) Lubricate




Mounting instructions:



Important: Never operate the machine without safety valve! Only use Wilesco steam engine oil.

Operating Instructions for Marine Steam Engine D48

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Important General Hints
 (must be observed prior to the first operation)

- A.  For safety reasons children below the age of 8-10 should never operate the steam engine without supervision.
- B.  **Dry Operation:** The engine must only be run with a filled boiler (water must be visible at the lower rim of the sight glass). If this instruction is not carried out, no claim can be considered for damage to the boiler, or any other consequent damage. Also, it is most important, if due to improper use, steam or water leaks occur, the steam engine must be switched-off immediately. Any repairs that are then necessary should only be carried-out by a competent person or WILESCO themselves.
- C. **Precautionary Measures:** During operation it must be ensured that children do not put their hands into the moving parts.
- D. **Excess Temperatures:** Due to the nature of the operation, the burner, boiler, boiler housing, safety valve, steam pipes etc. become very hot. Take care not to touch them.
- E.  **Gas Tank:** The gas tank is pressurized and must be protected from excessive heat. Never fill near a naked flame or when smoking. Never try to force open the gas tank or throw into a fire, even when empty.
- F. **Igniting the Gas Burner:** If the following assembly sequence (full description under item 3, Starting-up Procedure) is not adhered to, the boat could be damaged.
1. Fill the gas tank in accordance with the instructions and insert the gas tank with valve closed into the mounting.
 2. Light a match (or use lighter with high flame) and hold this into the round opening of the burner chamber.
 3. Open the gas regulating valve slowly, **only** after applying lighted match.
 4. When the flame is visible it is adjusted to the required height by means of the gas regulating valve.
- Please take Note • Important !**
If the gas valve is opened before applying light, the gas could escape into the ship 癩 hull and explode (shooting flame), which could possibly damage the ship.

1. Assembly Hints

It is recommended that the engine is fixed to a secure surface. When using a ships hull made of plastic, there should be a gap between the boiler housing and the ship 癩 bottom of approx. 10mm. The base of the gas tank should be assembled in such a way that the gas nozzle is in a central position from the edge of the burner entrance at a distance of 0-1mm (see sketch). The drive unit is fitted as required. The loose brackets supplied with the accessories must be fitted in order to secure the aggregate as follows. First screw one bracket to the fixing plate of the aggregate base, as required. The fixing plate ensures that the aggregate lies at the center of gravity in any required position. Next the second bracket is temporary fitted, in order to mark-out the screw holes for fixing it to the ship 癩 base. Then dismantle again and secure the second bracket with the screws, to the ship 癩 hull in the marked-out positions. Now the two brackets are tightened by the center screw, at the required angle. We recommend the distance between the boiler and the unit is kept as short as possible. The steam connections to the unit (inlet/outlet) are interchangeable (also see additional explanation under item 4). When installing the boiler house in the ship, it must be ensured that all the gas is burnt up. This is also necessary for heat circulation.

It is possible to operate the reversing lever of the unit with a servo (actuator) and corresponding rods.

3. Starting-up Procedure

Before each operation the steam jet oiler (two) should be lubricated, for this purpose the oil nipples should be removed. **No steam pressure should be present in the boiler; existing steam**

pressure must be released by opening the dome steam whistle.

Furthermore the reversing lever should be in the neutral position (pointing vertical). When filling with WILESCO steam engine oil, the flywheel is turned with the operating lever in the open position (to the left or right), in such a way for the oil to be distributed. All bearings and flexible couplings should be lubricated with tin motor oil. Remove the dome steam whistle and safety valve, then fill the boiler with distilled water (to avoid scaling, tap water is not recommended), refit safety valve and dome steam whistle. The separate gas tank should be filled with butane gas/lighter gas, only when the regulating valve is shut and for safety reasons, the gas tank, should only be filled, out of it 痴 mounting support. The inlet valve of the gas tank fits all standard EURO-gas filler valves.



Attention:

Do not fill the tank near naked flames, or when smoking.

Do not use force when closing the regulating valves as the sealing surface of the valve could be damaged.

When filling is completed, replace the gas tank into it 痴 mounting. To light the burner, insert a match through the opening of the housing and only then, slowly open the gas regulating valve, until the gas is ignited. The flame is infinitely variable by means of the regulating valve. Before the gas tank is refilled the boiler must also be topped-up. During the start-up, the reversing lever should be in the neutral position (vertical).

4. **Operation**

After approx. 5 minutes the unit will be operational. Move the reversing lever to the right or left. Should the steam engine fail to start on it 痴 own accord, when sufficient steam pressure is present, the flywheel should be turned by hand so that the condensation in the pipes and cylinders can escape. When starting the unit the gas flame should be re-adjusted. The revolutions in comparison between the right/left operations are different in as much as the number of revolutions is lower for the reverse. Should this ration be the other way round, (i.e. reverse speed faster) then the steam connections to the unit should be switched over. The condensation can be channeled into a collecting tank underneath the ship 痴 chimney, from which the steam will be seen to rise.

Volume of the boiler: 320 cm³

Operating pressure: 1,5 bar

Text & illustrations: WileSCO Wilhelm Schröder GmbH & Co., Germany