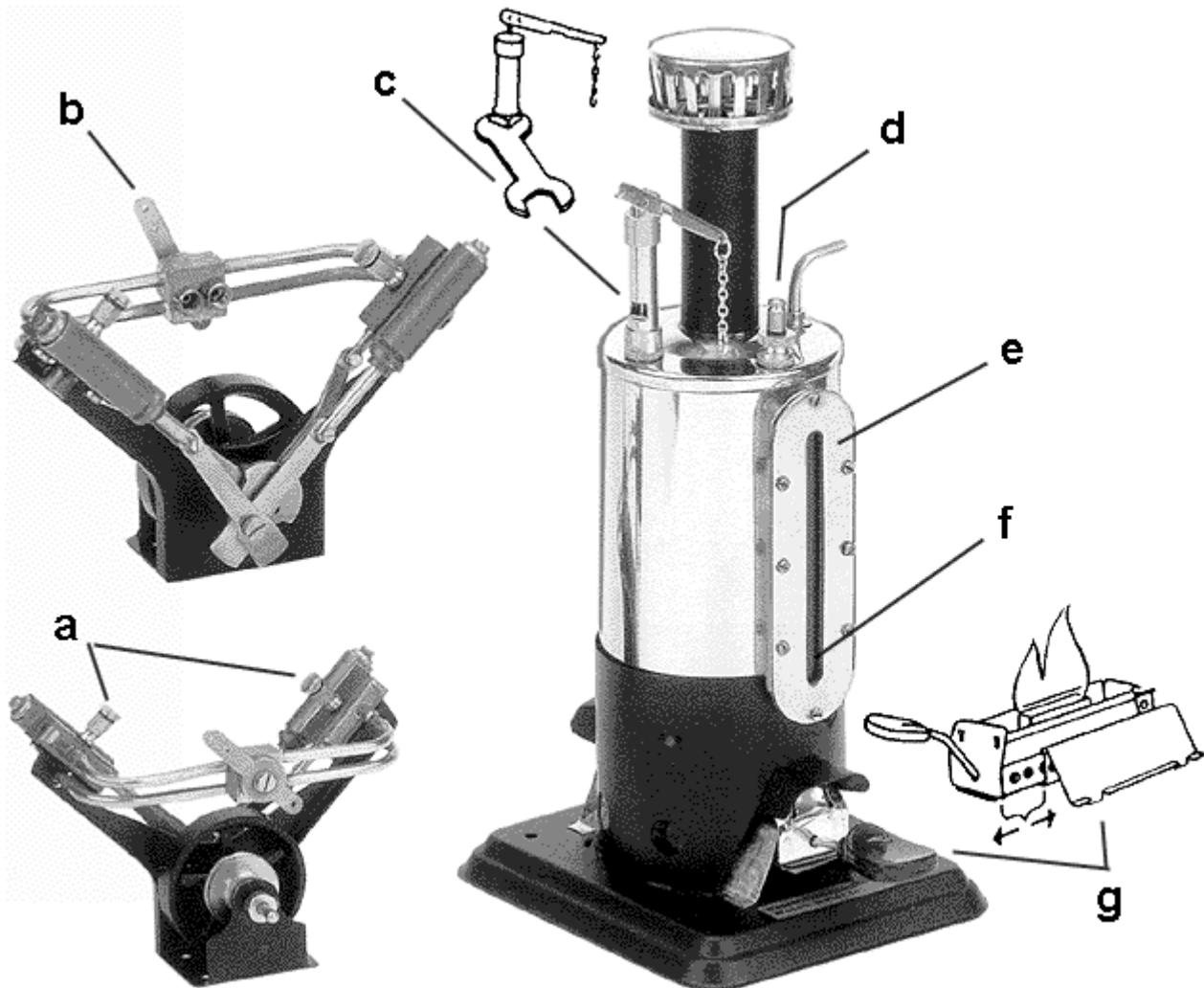


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a) Oil cap
b) Reversing lever

c) Steam whistle:
only tighten with spanner
d) Safety valve (filter cap)

e) Sight glass
f) Minimum water level
g) Burner slide

Important: Never operate the machine without safety valve! Only use WileSCO steam engine oil. Only use Esbit fuel tablets.



Important information and safety precautions!

1. For safety reasons, children should only use the steam engine under adult supervision. (Because of steam pressure, hot boiler, hot steam pipes and heating flames etc.). Do not leave the steam engine unattended either during operation or whilst the engine is cooling after operating.
2. If any problem occurs with the steam engine during operation, the matter should only be dealt with by a distributor or the WILESCO factory. Attempts to repair by other persons will invalidate the warranty.
3. Any alteration to the standard specification carried out by persons (other than WILESCO Agents) will also invalidate the warranty.

4. Only WILESCO genuine parts or accessories should be used (boiler, spring-loaded safety valve etc.) for these having been factory tested.



5. **High temperatures:** The principles on which your steam engine operates mean that the burner tray, the boiler housing, the spring-loaded safety valve, the steam pipes etc. become very hot. Do not touch, in order to avoid the risk of burns!
6. **Safety precautions:** Do not touch and in particular do not let the children touch any of the moving parts while the steam engine is in operation.




7. **Do not heat the boiler without sufficient water!**
Always ensure that the steam engine has sufficient water in the boiler during operations. Also check the water level carefully when adding new dry fuel tablets. The water **must be visible at the lower end of the sight glass** (minimum). If this instruction is ignored the boiler will be damaged and have to be replaced. We will not accept any claims whatsoever, including consequential damage, in this matter. If a leak occurs in the boiler, or any other part, **stop using the steam engine immediately**. Any necessary repairs should only be carried out by trained staff or at the WILESCO factory.
8. The steam engine meets all safety standards and requirements. Every boiler has been submitted to a bursting pressure and water test of 5 bar (approx. 70 psi). Boiler capacity: 300ccm. Operating pressure: max. 1,5 bar (approx. 21 psi).
Please read all instructions carefully! The principles on which your steam engine operates have been tried and tested for almost two centuries and it is perfectly safe when used according to the instructions.


Operating instructions

9. Unscrew the spring-loaded safety valve and, using the funnel, fill the boiler approx. $\frac{1}{2}$ full (upper level to the sight glass) with hot water if possible. Raise the funnel slightly when pouring in the water so that the air can escape from the boiler. Use boiled water or rain water if possible (low chalk content).
10. The boiler and cylinder assembly should be connected with the steam pipes supplied. These can easily be shaped. Use soft solder when soldering. If soldering is not possible a heat resistant plastic steam pipe can be used.
11. Screw the steam whistle onto the boiler using the spanner provided. Do not tighten by turning the lever, as this could cause damage. When screwing in the steam whistle, the lever with the chain should point outwards (use washers if necessary) so that the chain which operates the whistle does not come into contact with the boiler. Pull the chain gently to operate the whistle.
Note: The steam whistle can be used to check for any overpressure in the boiler or, before oiling, to check whether the boiler is still under pressure.

Starting-up procedure

12. Before each operation the steam jet oiler 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 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. 2-3 drops of WILESCO steam engine oil or car motor oil are sufficient for a working period of approx. 10 minutes.
All bearings and flexible couplings should be lubricated with thin motor oil. Before every refilling of the boiler it has to be checked by opening the steam whistle that there is no more pressure in the boiler.

13.  Place two layers of ESBIT fuel tablets on the burner slide, the lower tablets flat and the upper tablets on their sides. Then light the tablets. **Caution:** Because of the risk of danger from an open flame, always take the necessary safety precautions. The burner slide is adjustable. The oxygen supply and the flame height can be adjusted by moving the burner slide in relation to the air holes (see illustration). Before adding new fuel tablets always check the water level and refill the boiler with water to ensure that the boiler does not run dry. The ratio of fuel tablets to the amount of water in the boiler is designed so that the boiler cannot run dry without fuel tablets being added. The fuel slide must be completely pushed in; otherwise the sight glass may be damaged. **Important:** After completing the heating process, remove the burner slide from the guide whilst it is still hot, otherwise un-burnt fuel may cause the slide to jam. If the slide becomes jammed, it can be removed by tilting it slightly to the left or right. Widen the guide slightly using a standard pair of flat pliers.

-  **NOTE:** ESBIT tablets require plenty of oxygen to burn properly. This means if used indoors the room should be well ventilated. To prevent unpleasant smells, the fuel tablets should be allowed to burn out - they should not be blown out. If there is insufficient water in the boiler, place the burner slide on a metal plate until the tablets have burnt out completely.
14. 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 its own accord, when sufficient steam pressure is present, the flywheel should be turned by hand so that the condensation in the pipes can escape. 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 ratio 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 癩 chimney, from which the steam will be seen to rise.
15. 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 14). When installing the boiler house in the ship, it must be ensured that sufficient fresh air can enter the burner chamber, so 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.

Warranty:

16. Finally, a few comments on the warranty. All WILESCO steam models are carefully checked before leaving the factory. However, should a fault occur, we will assist and undertake any necessary repair immediately. You can return the steam engine directly to WILESCO or to the distributor. We are sure you will appreciate fired models cannot be exchanged but we undertake to repair any fault immediately. The above information has given to you to obtain the maximum enjoyment from your steam engine. WILESCO wishes you lots of fun and "**full steam ahead**"!