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Operating instructions

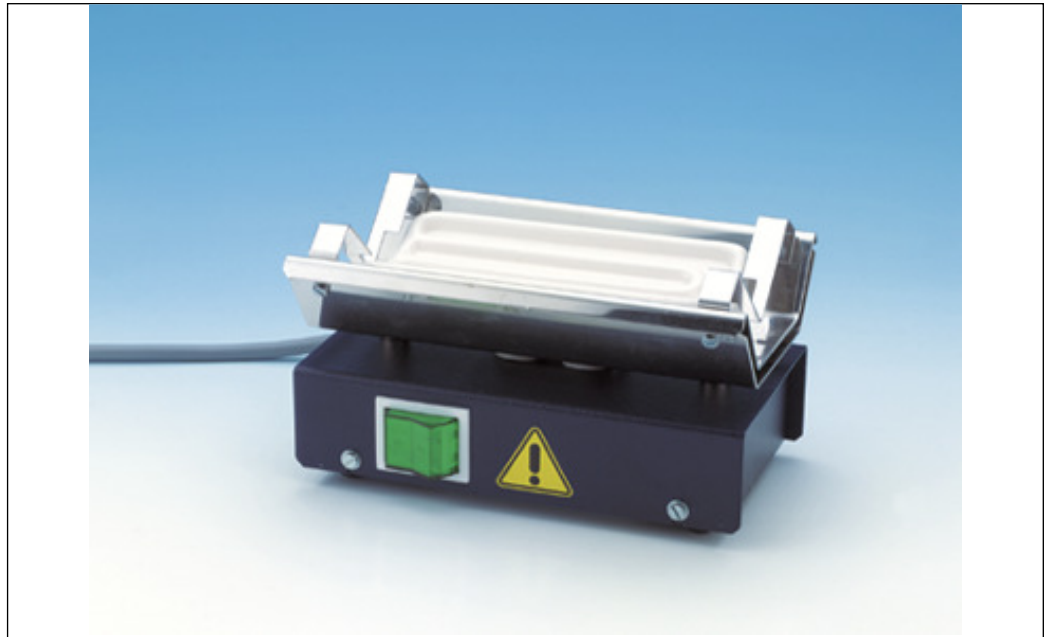
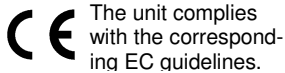


Abb. 1: 32246-93 Heating apparatus

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1 SAFETY PRECAUTIONS



Caution!

- Carefully read these operating instructions completely before operating this instrument. This is necessary to avoid damage to it, as well as for user-safety.
- Check that your mains supply voltage corresponds to that given on the type plate fixed to the instrument.
- Install the instrument so that the on/off switch and the mains connecting plug are easily accessible.
- Only use the instrument in dry rooms in which there is no risk of explosion.

- Do not start up this instrument in case of visible signs of damage to it or to the line cord.
- Only use the experimental set-up for the purpose for which it is intended.
- Do not open up the instrument.
- Protect the unit against moisture.
- Do **not** let the infrared radiator come into contact with moisture. The vapour pressure that would build up when the heater heats up could damage the surface of the radiator.
- Do **not** fill the glass jacket above the heater because the liquid could enter the device. Even very small quantities of liquid can damage the device.
- If the device has come into contact with liquid in spite of all the precautions, disconnect the heater immediately from the power supply and wait until the heating surface has cooled down. Then, remove the liquid from the device and let it stand for several days so that any residual liquid can escape or so that any liquid that has penetrated the housing can dry.



Warning, hot surface!

- **When in operation, keep the connecting cable well away from the ceramic radiator and reflector, as these have surface temperatures of about 500 °C! There is a danger of burns to hands.**
Keep the mains power connecting cable away from these parts.

2 PURPOSE AND CHARACTERISTICS

The Heating Apparatus (Fig. 1) is equipped with a 500 W infrared ceramic radiator. It serves to evenly heat cylindrical bodies or equipment made of metal, ceramics or glass, and is so gentle to the materials. It is particularly useful for heating up vessels which are filled with solid, liquid or gaseous substances, e.g. for gas syringes. The heating element is a 122 mm x 60 mm surface radiator, which is slightly curved around the longitudinal axis. The heating coils are completely embedded in ceramic material. A stainless steel reflector is situated below the radiator. Two angled pieces at the ends of the radiator serve to hold the body to be heated, which must be at least 130 mm long. Bodies of less than 36 mm diameter are heated exclusively by radiant heat. The radiator, reflector and angled pieces form a single unit, which is splash proofed and mounted on a housing with rubber footings to give adequate slip protection. The apparatus is fitted out with an approximately 1.5 m long mains connecting cable with earthed plug. Operation is started with an on/off switch on the housing.

3 NOTES ON OPERATION

This high-quality instrument fulfills all of the technical requirements that are compiled in current EC guidelines. The Characteristics of this product qualify it for the CE mark. This instrument is only to be put into operation under specialist supervision in a controlled electromagnetic environment in research, educational and training facilities (schools, universities, institutes and laboratories).

Since the experiment can cause inevitable HF disturbances, the operating time should be as short as possible.

4 HANDLING



Warning, hot surface!

When in operation, keep the connecting cable well away from the ceramic radiator and reflector, as these have surface temperatures of about 500°C! There is a danger of burns to hands.

Keep the mains power connecting cable away from these parts.

Maintenance

The Heating Apparatus does not require any specific maintenance, but before operating it, however, a check should be made that the radiator is undamaged, i.e. that there are no cracks or splits in the ceramic surface.

5 TECHNICAL SPECIFICATION (TYPICAL FOR 25°C)

Operating temperature range 5...40°C
Relative humidity < 80%

Connecting voltage (+6%/-10%)	see type plate
Power consumption	500 W
Surface temperature of the ceramic radiator	max. 500°C
Dimensions (mm)	160 x 95 x 90
Weight	approx. 1 kg

Requirements for bodies:

Minimum length (mm)	120
Diameter (mm)	36 mm* ... 100
Maximum weight	2 kg

* with bodies of smaller diameters, the heating is in part by the conduction of heat.

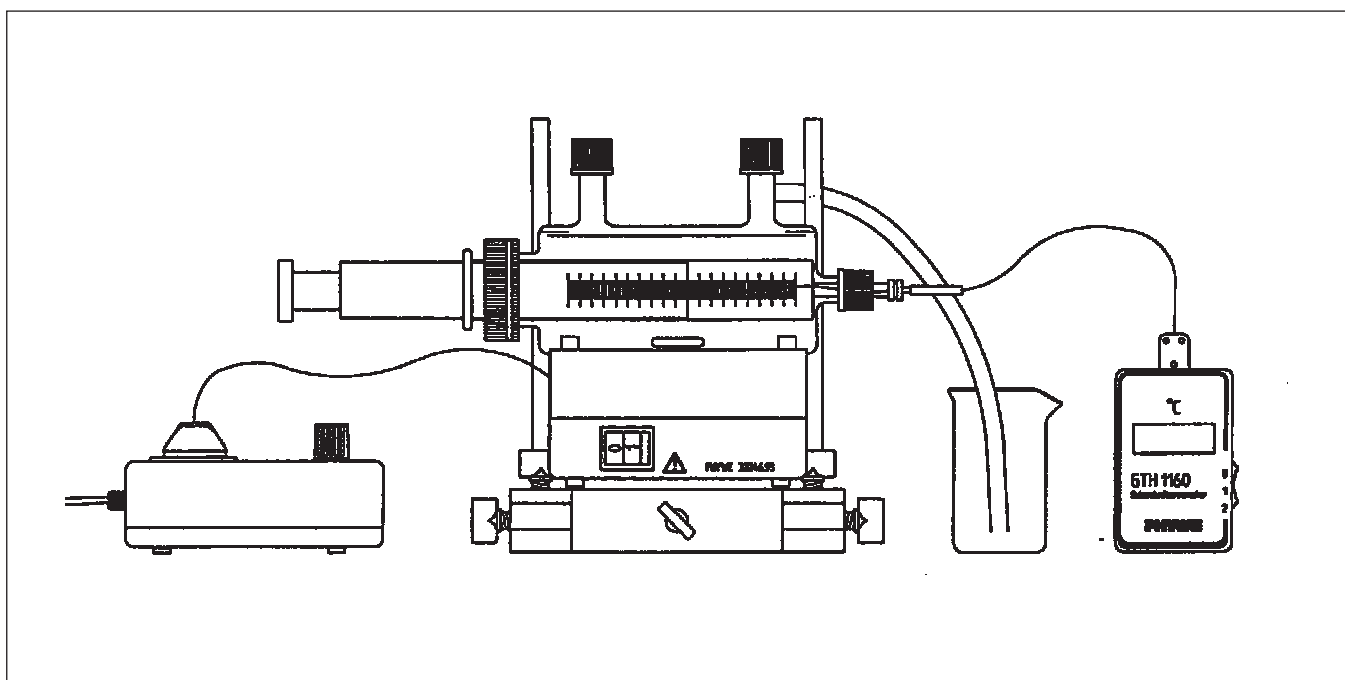


Fig. 2: The Heating Apparatus holding a glass jacket 02615-00 containing a 100 ml gas syringe 02614-00 surrounded by a liquid bath in which it is to be heated.

6 NOTES ON THE GUARANTEE

We guarantee the instrument supplied by us for a period of 24 months within the EU, or for 12 months outside of the EU. Excepted from the guarantee are damages that result from disregarding the Operating Instructions, from improper handling of the instrument or from natural wear.

The manufacturer can only be held responsible for the function and technical safety characteristics of the instrument, when maintenance, repairs and alterations to the instrument are only carried out by the manufacturer or by personnel who have been explicitly authorized by him to do so.

7 WASTE DISPOSAL

The packaging consists predominately of environmentally compatible materials that can be passed on for disposal by the local recycling service.



Should you no longer require this product, do not dispose of it with the household refuse.

Please return it to the address below for proper waste disposal.

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