

# WATER HEATERS

**Suitable for heating water in diesel engines with closed circuit cooling**

**INSTRUCTION AND USE MANUAL**

**TYPE RA-0500**

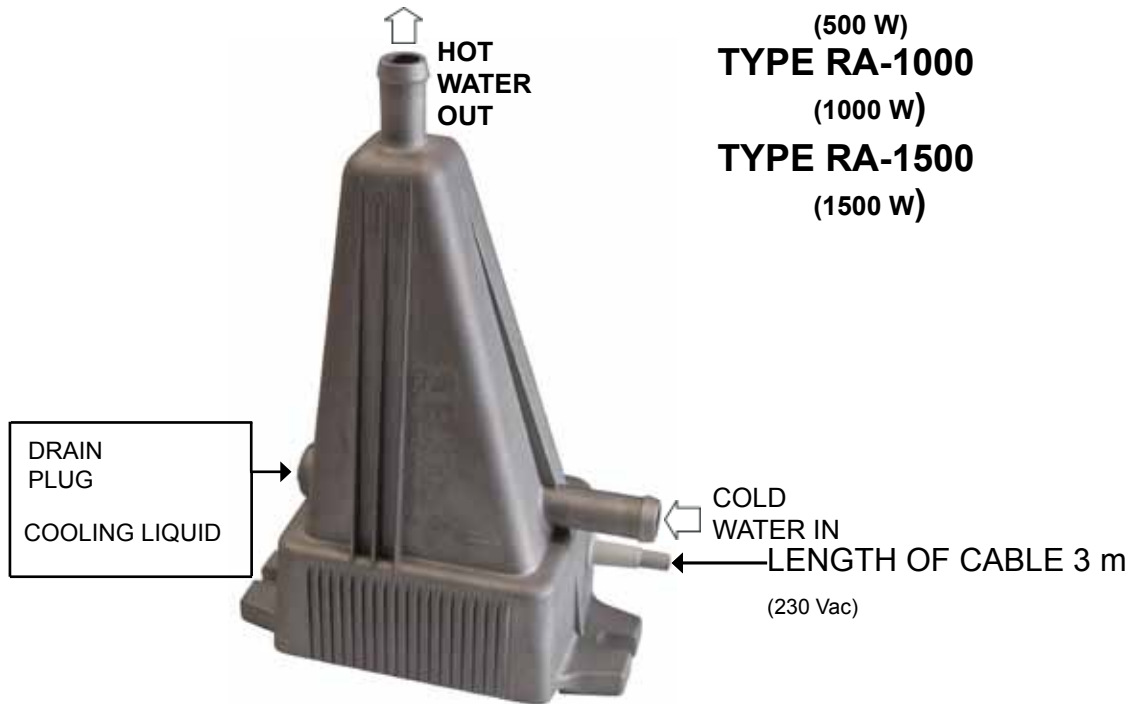
(500 W)

**TYPE RA-1000**

(1000 W)

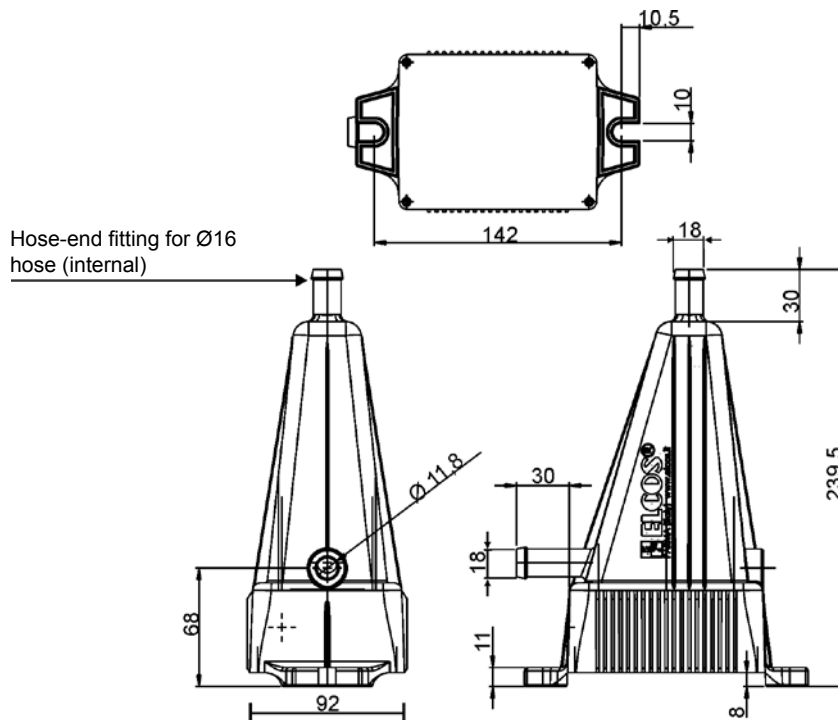
**TYPE RA-1500**

(1500 W)



- OPTIMUM DIELECTRIC STRENGTH (2000V).
- EASY CONNECTION VIA CABLE.
- TEMPERATURE MAINTAINED BY AN INTERNAL THERMOSTAT.
- CAN BE MOUNTED DIRECTLY ONTO THE ENGINE.

## DIMENSIONS



PARMA



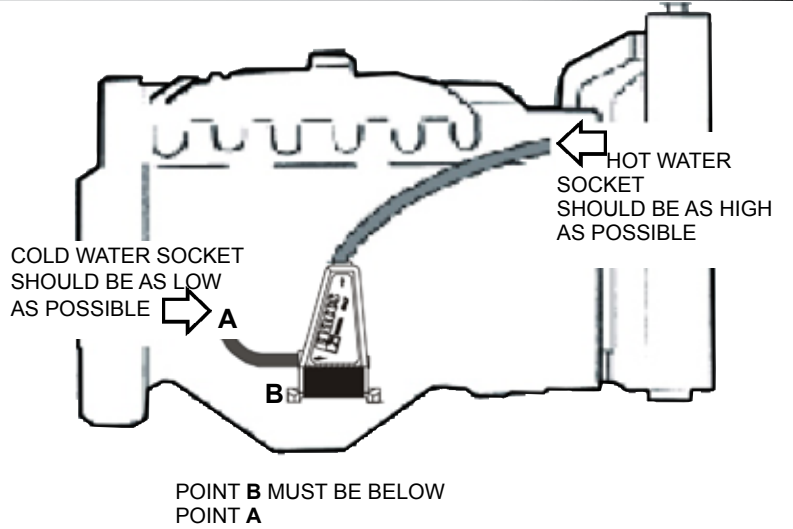
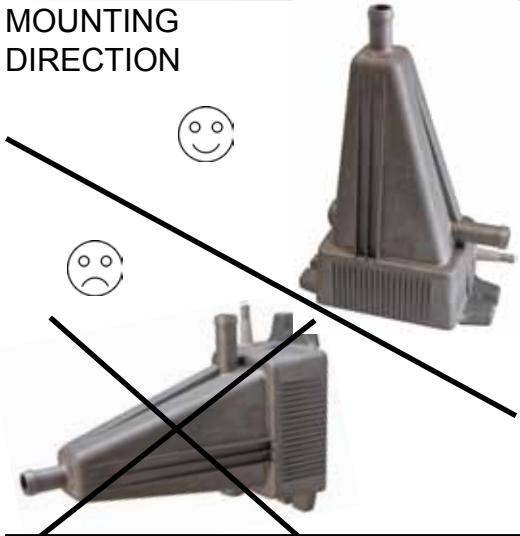
**ELCOS**®

ITALY

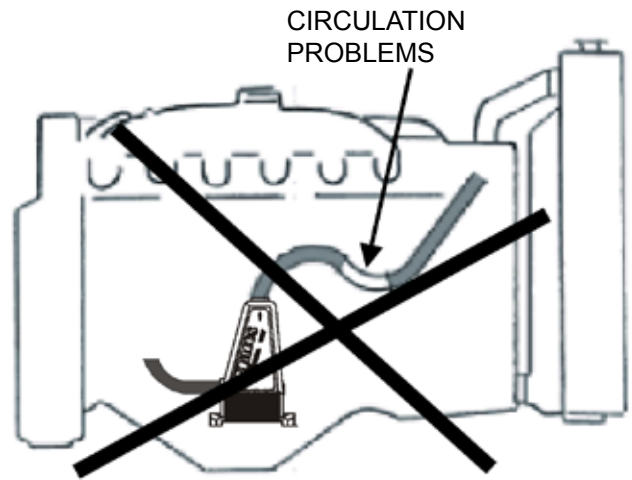
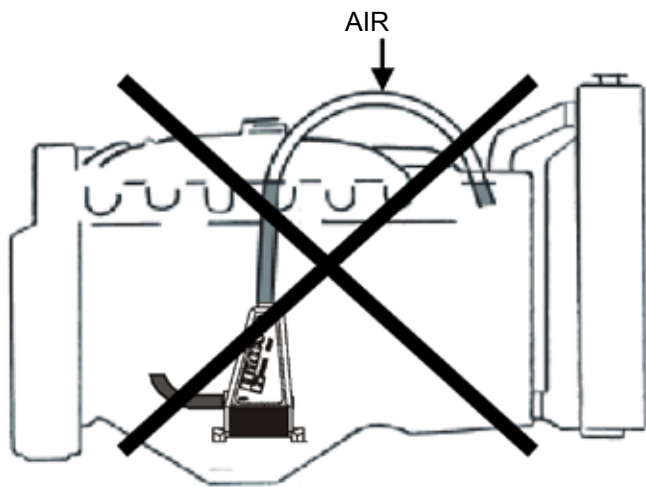
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# INSTALLATION

MOUNTING DIRECTION



TO AVOID SIPHONS BEING PRODUCED; THERE SHOULD BE NO CURVES IN THE FLEXIBLE TUBES.



BEFORE INSTALLING THE HEATER, CLEAN THE COOLING CIRCUIT

## OPERATION

The heater prevents the cooling circuit temperature from falling below a certain value. This value is regulated by an internal thermostat. The water circulates using the thermosiphon principle.

HOT WATER OUT



## CONNECTIONS

POWER SUPPLY 230 VAC

LENGTH OF CABLE 3 m

The installer has to mount the mains power supply circuit overcurrent protection:

- fuses 10A - 250V or
- automatic switch 10 A.

## WATER HEATERS

TYPE RA-0500

RA-1000

RA-1500

Used to pre-heat the water cooled Diesel engine, heating the cooling liquid.

Designed to be installed also on board the machine.



### **Warning:**

**adhere closely to the following advice**

- Take great care to connect correctly the conductors coming out of the equipment.
- Adhere closely to the installation indications on page 2.
- Never supply the equipment unless it has liquid inside.
- During operation the device is at high temperature (~ 70°C).
- During operation, if it is necessary to open the radiator plug, protect with Individual Safety Devices from any boiling water sprays.
- Do not use calcareous water as cooling liquid.
- Perform discharge actions only when device is cold and unsupplied.

THIS HEATER IS NOT SUITABLE FOR OPERATING IN THE FOLLOWING CONDITIONS:

- where the environmental temperature is outside the limits indicated in the technical sheet on page 4.
- where there are high levels of pollution caused by dust, smoke, vapour, salts and corrosive or radioactive particles.
- where attacks from mould or small animals are possible.
- where there is the risk of fire or explosions.
- where the panel can receive strong vibrations or knocks.

### ELECTROMAGNETIC COMPATIBILITY

This equipment functions correctly only if inserted in plants which conform with the CE marking standards; it meets the exemption requirements of the standard EN61326-1 but it cannot be excluded that malfunctions could occur in extreme cases due to particular situations.

The installer has the task of checking that the disturbance levels are within the requirements of the standards.

### CONDUCTION AND MAINTENANCE

The following maintenance operations should be performed every week:

- check the condition of the hydraulic connection tubes, sleeves and joints.
- check that the terminals to which the equipment is connected are tight.
- check the condition of the supply cable sheath. If the mains power supply cable is damaged, it has to be replaced by the manufacturer.

Every year the plant should be descaled and the operating thermostat should be checked.

UNLESS WE MAKE A WRITTEN DECLARATION STATING THE CONTRARY, THIS HEATER IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENT OR PLANTS RESPONSIBLE FOR KEEPING PERSONS OR OTHER LIVING BEINGS ALIVE.

Any use which differs from that which is indicated in this instruction and user manual must be authorized by the manufacturer.

YOUR ELECTRICAL TECHNICIAN CAN ASK US ANYTHING ABOUT THIS HEATER  
BY TELEPHONING ONE OF OUR TECHNICIANS

ORDERING INFORMATION		TECHNICAL DATA	
HEATER		MAINS POWER SUPPLY	RA-0500 RA-1000 RA-1500
Type	Code	230VAC ( $\pm 10\%$ ) 50 $\div$ 60 Hz	
RA-0500	00706161	DIELECTRIC STRENGTH BETWEEN TERMINALS AND CONTACTS	
RA-1000	00706163	2000V x 1 MINUTE	
RA-1500	00706167	POWER ABSORBED: TYPE RA-0500	
		RA-1000	500 W
		RA-1500	1000 W
			1500 W
		SERVICE	CONTINUOUS
		OPERATIONAL THERMOSTAT	NON ADJUSTABLE
		DISENGAGED HEATING	a 53° C $\pm$ 5%
		ENGAGED HEATING	a 33° C $\pm$ 5%
		CONNECTION CABLES	FROR 450 / 750 V
		DEGREE OF PROTECTION	IP54
		TEMPERATURE LIMITS (ONLY IF SUPPLIED)	-20° C $\div$ 120 °C
		WEIGHT	1270 gr

## CONFORMITY DECLARATION



The company Elcos s.r.l. assumes full responsibility for declaring that the equipment:

type **RA-0500**  
**RA-1000**  
**RA-1500**

installed and used in the ways and for the purposes described in the user instruction manual complies with the essential requirements and other relevant provisions laid down by the following directives:

- 2006/95/CE related to the electrical materials destined to be used within certain voltages limits,
- 2004/108/CE related to the electromagnetic compatibility and that repeals the directive 89/336/CEE,
- 2011/65/UE on the restriction of the use of certain hazardous substances in electrical and electronic equipment, because it is built and functions in accordance with the

harmonized Standards:

EN 50081-1, EN 50082-2, EN60204-1, EN 60529.

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Parma, 25/06/2013

President

Margini Enzo