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Технические характеристики на водомасляные нагреватели для дизельных двигателей RA, RO компании **ELCOS**

WATER HEATERS

Suitable for heating water in diesel engines with closed circuit cooling

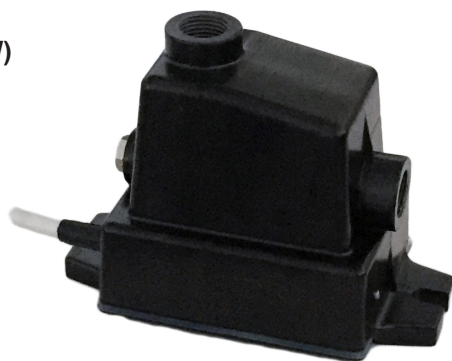
The heater prevents the cooling circuit temperature from falling below a certain value. This value is regulated by an internal thermostat. A second internal thermostat protects the appliance from any overheating.

Version with GAS ½" thread

Type

RA-0511 (500 W)

RA-1011 (1000 W)



The key features of our water heaters:

- > Direct assembly, without the use of brackets.
- > Presence of a coolant drainage plug.
- > Factory fitted 3-metre power feed cable.
- > Special electro-coating applied to body that protects from glycol corrosion

Version with hose connector-
for hose with 16 internal Ø

Type

RA-0500 (500 W)

RA-1000 (1000 W)

RA-1500 (1500 W)



Coolant drainage
plug

With tapered GAS ¼" thread

Version with GAS ½" thread

Type

RA-0501 (500 W)

RA-1001 (1000 W)

RA-1501 (1500 W)

RA-2501 (2500 W)

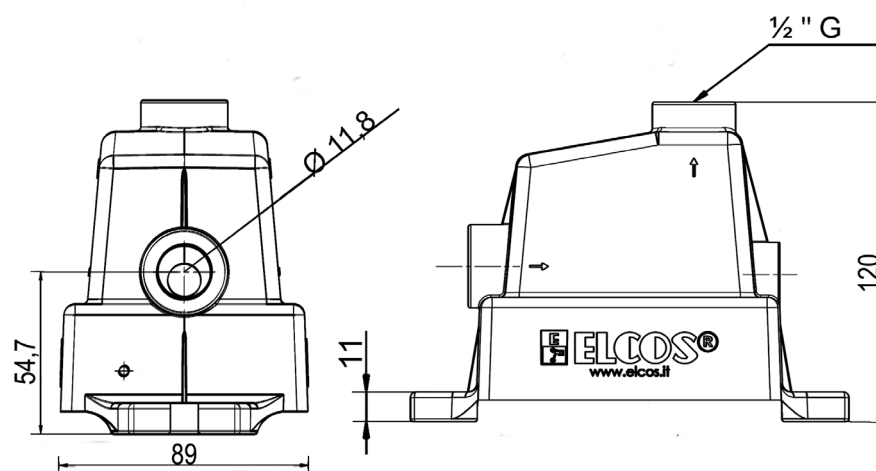
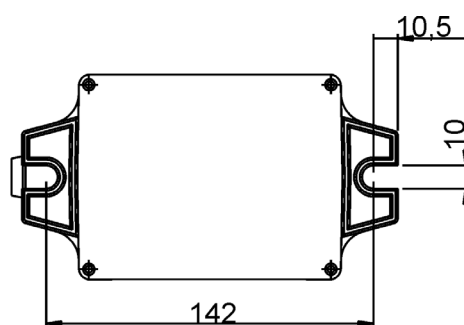


- OPTIMUM DIELECTRIC STRENGTH.
- EASY CONNECTION VIA CABLE.
- TEMPERATURE MAINTAINED BY AN INTERNAL THERMOSTAT.

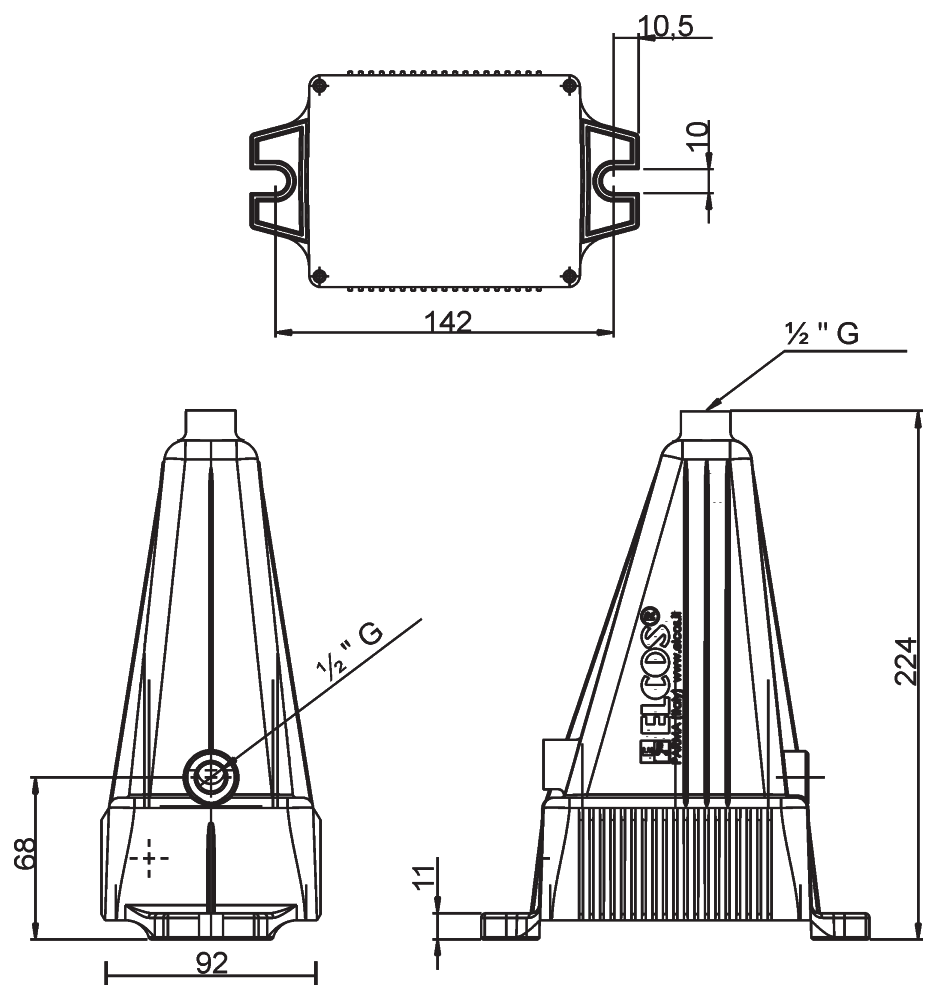
- A SECOND INTERNAL THERMOSTAT PROTECTS THE APPLIANCE FROM ANY OVERHEATING.
- CAN BE MOUNTED DIRECTLY ONTO THE ENGINE.

DIMENSIONS

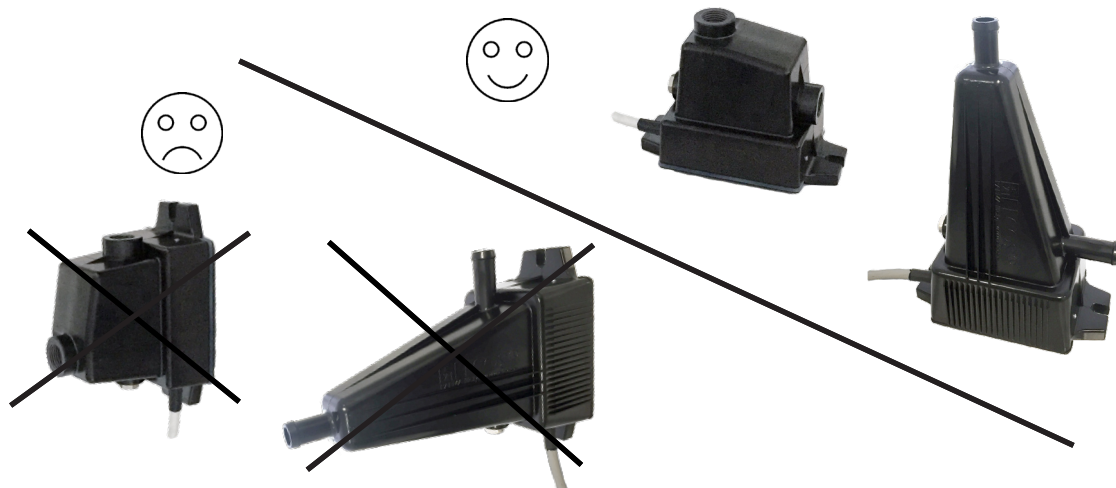
Type **RA-0511**
RA-1011



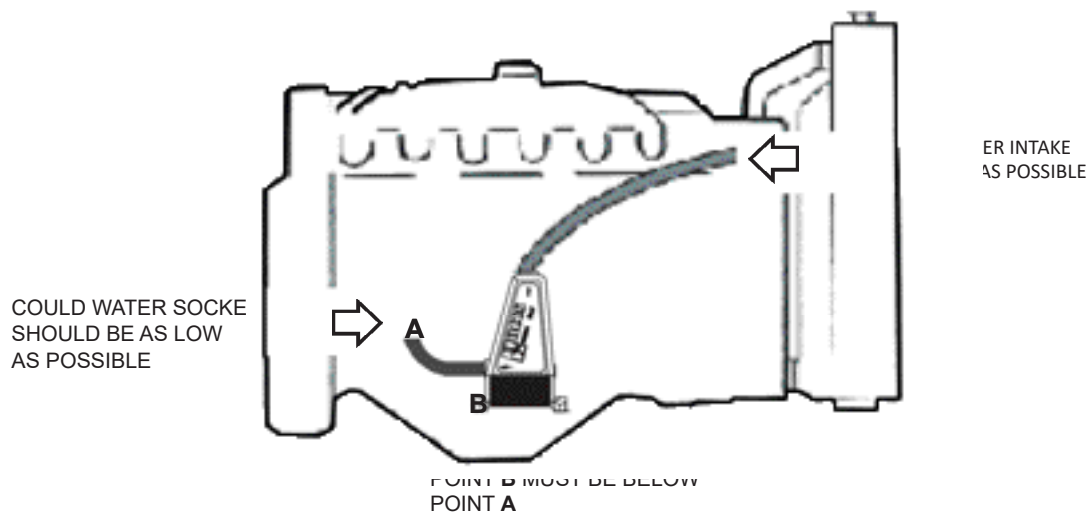
Type RA-0501
RA-1001
RA-1501
RA-2501



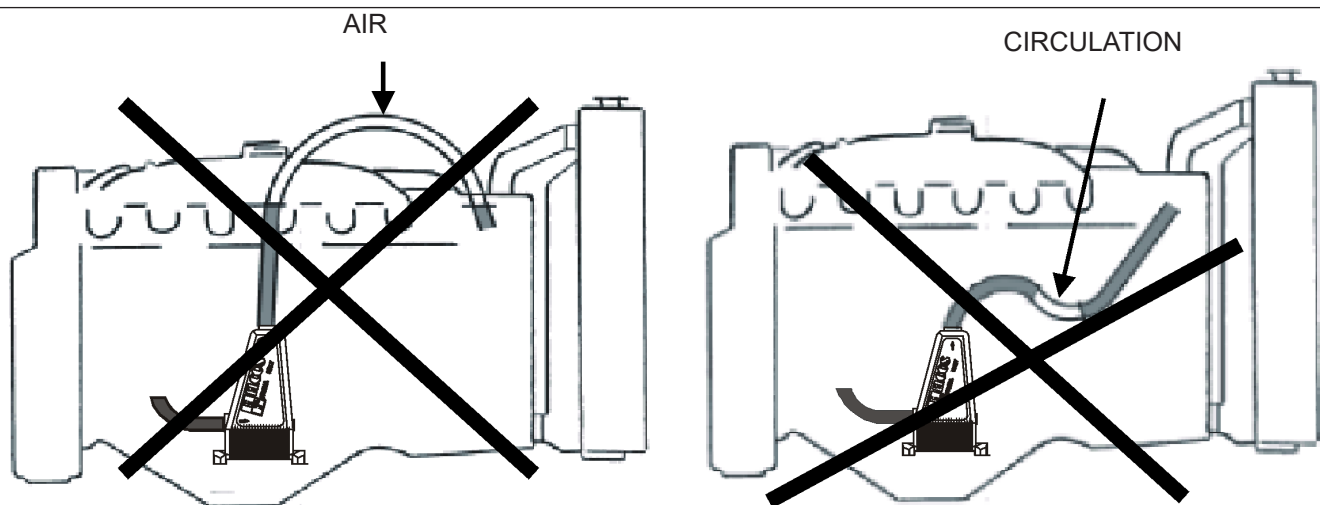
MOUNTING DIRECTION



INSTALLATION



BEFORE INSTALLING THE HEATER, CLEAN THE COOLING CIRCUIT



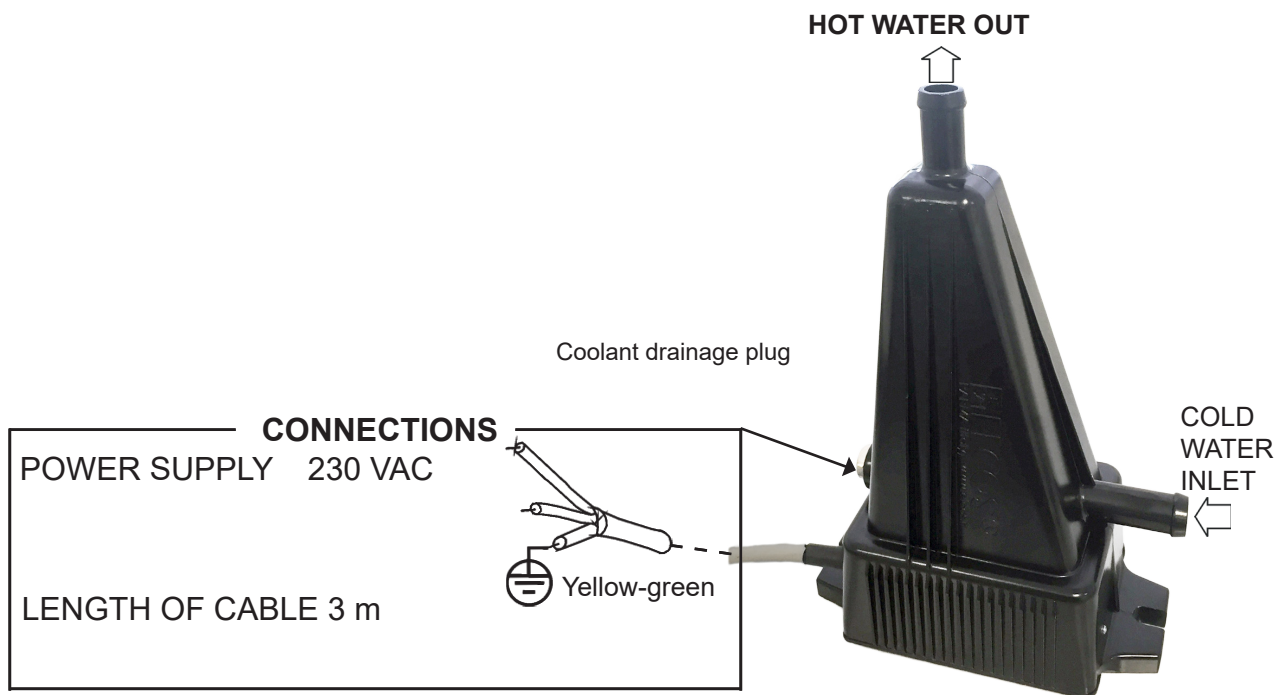
TO AVOID SIPHONS BEING PRODUCED; THERE SHOULD BE NO CURVES IN THE FLEXIBLE TUBES.

ENGINE COOLANT

Use the same type of coolant to top up the cooling system.

DO NOT USE HARD WATER.

CONNECTIONS



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

- fuses 10A (16A version 2500W)- 250V or
- automatic switch 10 A - 250V (16A version 2500W).

NOTICES

TYPE	RA-0511	RA-1011
	RA-0500	RA-0501
	RA-1000	RA-1001
	RA-1500	RA-1501
		RA-2501

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 4-5.
- 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 7.
- 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**

TECHNICAL DATA

MAINS POWER SUPPLY	230VAC ($\pm 10\%$) 50+60 Hz
DIELECTRIC STRENGTH BETWEEN TERMINALS AND APPLIANCE	1250V x 1 MINUTE
POWER ABSORBED: TYPE RA-0511 RA-0500 RA-0501	500 W
RA-1011 RA-1000 RA-1001	1000 W
RA-1500 RA-1501	1500 W
RA-2501	2500 W
SERVICE	CONTINUOUS
OPERATIONAL THERMOSTAT	NON ADJUSTABLE
DISENGAGED HEATING	a 53° C $\pm 5\%$
ENGAGED HEATING	a 33° C $\pm 5\%$
SAFETY THERMOSTAT TRIPPING TEMPERATURE	96°C $\pm 5\%$
CONNECTION CABLES	FROR 450 / 750 V
DEGREE OF PROTECTION	IP54
TEMPERATURE LIMITS (ONLY IF SUPPLIED)	-20° C ÷ 120 °C
WEIGHT: TYPE RA-0511 RA-1011	1100 gr
RA-500 RA-501 RA-1000 RA-1001 RA-1500 RA-1501	1270 gr
RA-2501	1800 gr

ORDERING INFORMATION

HEATER

Type	Code
RA-0511	00706162
RA-1011	00706164
RA-0500	00706161
RA-1000	00706163
RA-1500	00706165
RA-0501	00706168
RA-1001	00706169
RA-1501	00706170
RA-2501	00706173

WATER HEATERS

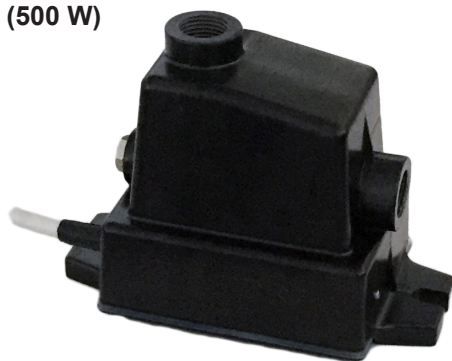
Suitable for heating water in diesel engines with closed circuit cooling

The heater prevents the cooling circuit temperature from falling below a certain value. This value is regulated by an internal thermostat. A second internal thermostat protects the appliance from any overheating.

Version with GAS 1/2" thread

Type

RA-0511/110 (500 W)



The key features of our water heaters:

- > Direct assembly, without the use of brackets.
- > Presence of a coolant drainage plug.
- > Factory fitted 3-metre power feed cable.
- > Special electro-coating applied to body that protects from glycol corrosion

Version with GAS 1/2" thread

Type

RA-1001/110 (1000 W)

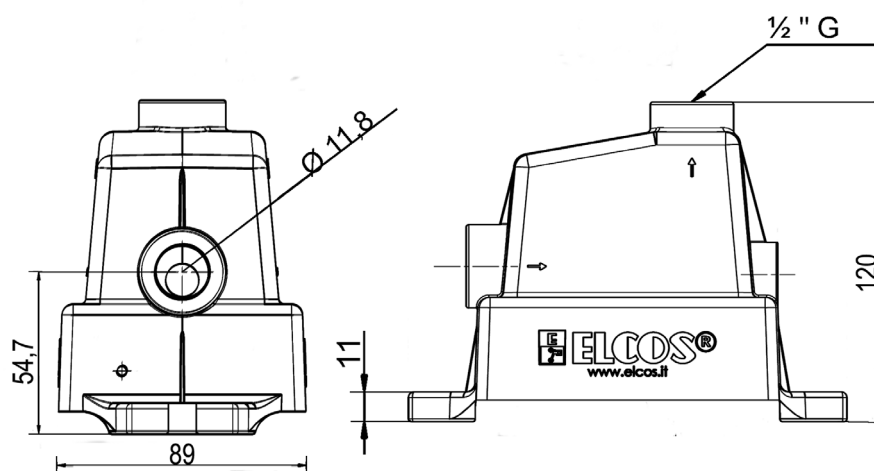
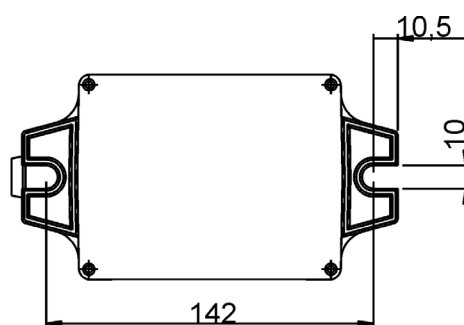


- OPTIMUM DIELECTRIC STRENGTH.
- EASY CONNECTION VIA CABLE.
- TEMPERATURE MAINTAINED BY AN INTERNAL THERMOSTAT.

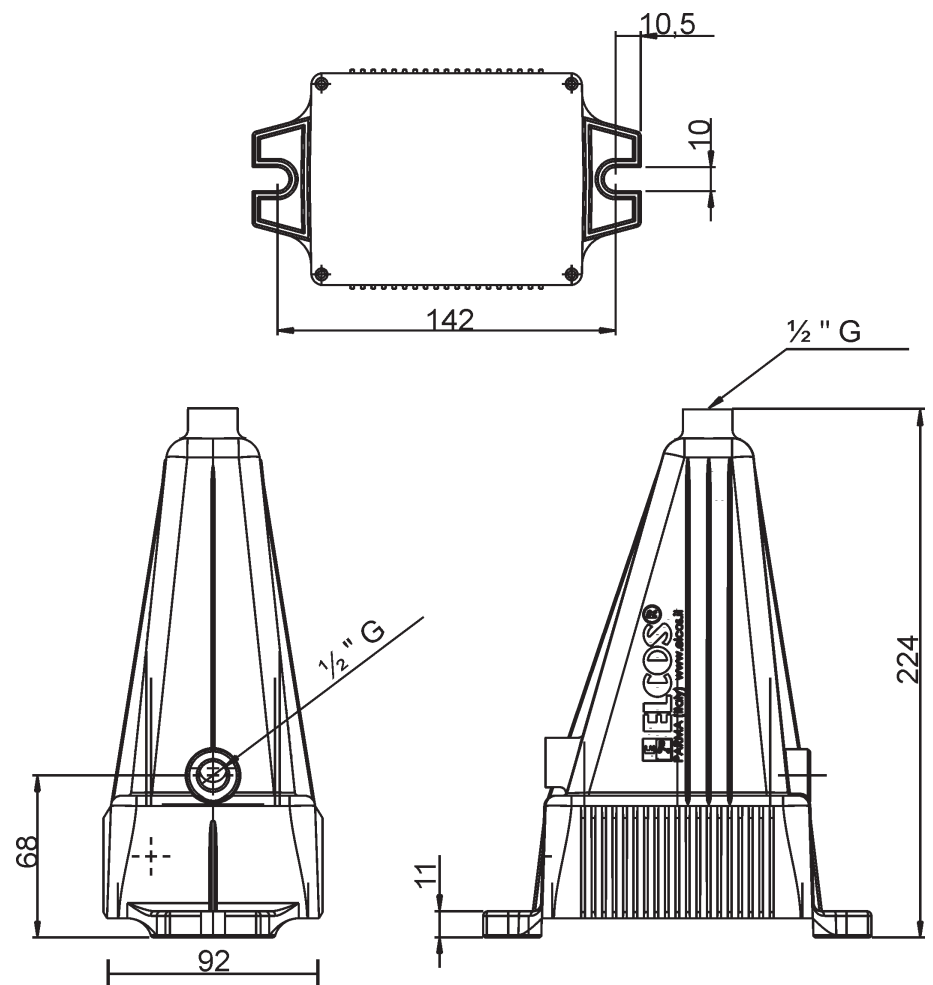
- A SECOND INTERNAL THERMOSTAT PROTECTS THE APPLIANCE FROM ANY OVERHEATING.
- CAN BE MOUNTED DIRECTLY ONTO THE ENGINE.

DIMENSIONS

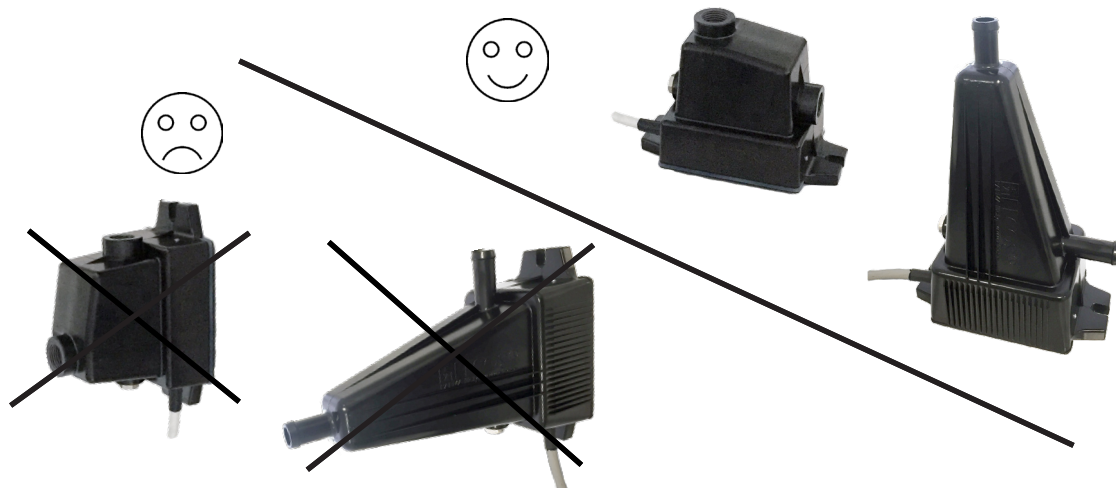
Type RA-0511/110



Type RA-1001/110

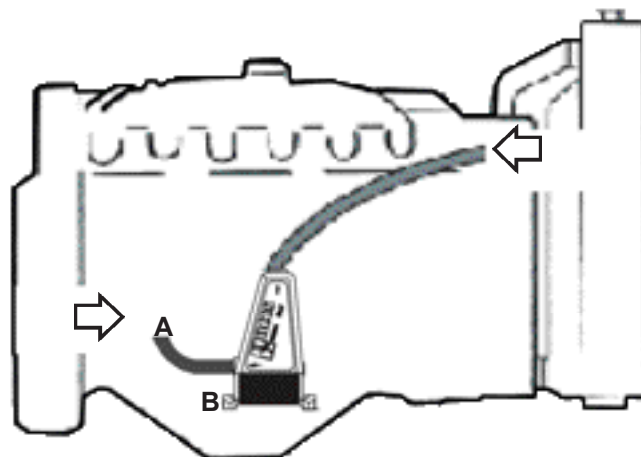


MOUNTING DIRECTION



INSTALLATION

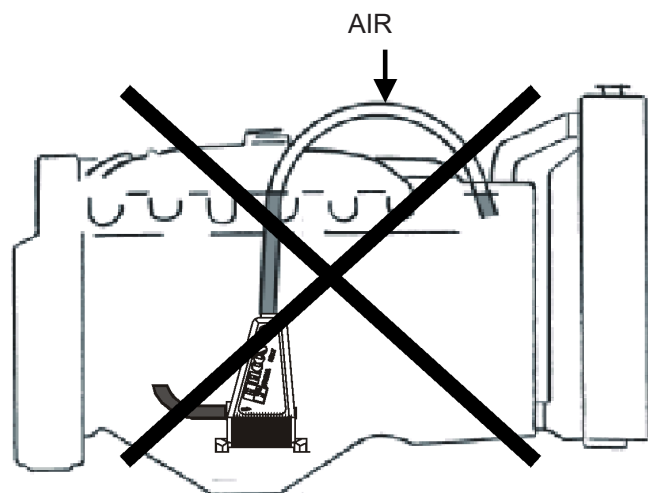
COUL水 SOCKET
SHOULD BE AS LOW
AS POSSIBLE



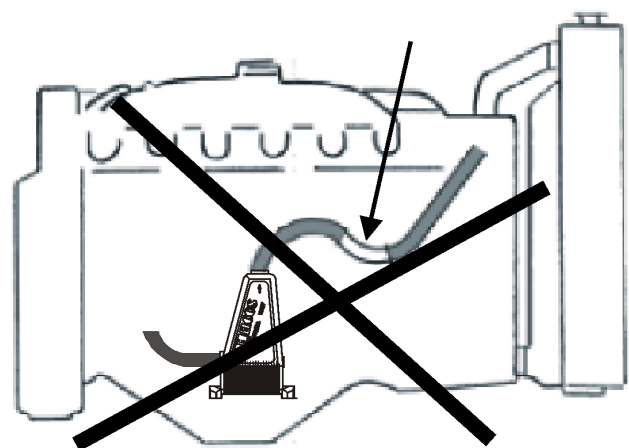
ER INTAKE
AS POSSIBLE

POINT B MUST BE BELOW
POINT A

BEFORE INSTALLING THE HEATER, CLEAN THE COOLING CIRCUIT



CIRCULATION
PROBLEMS

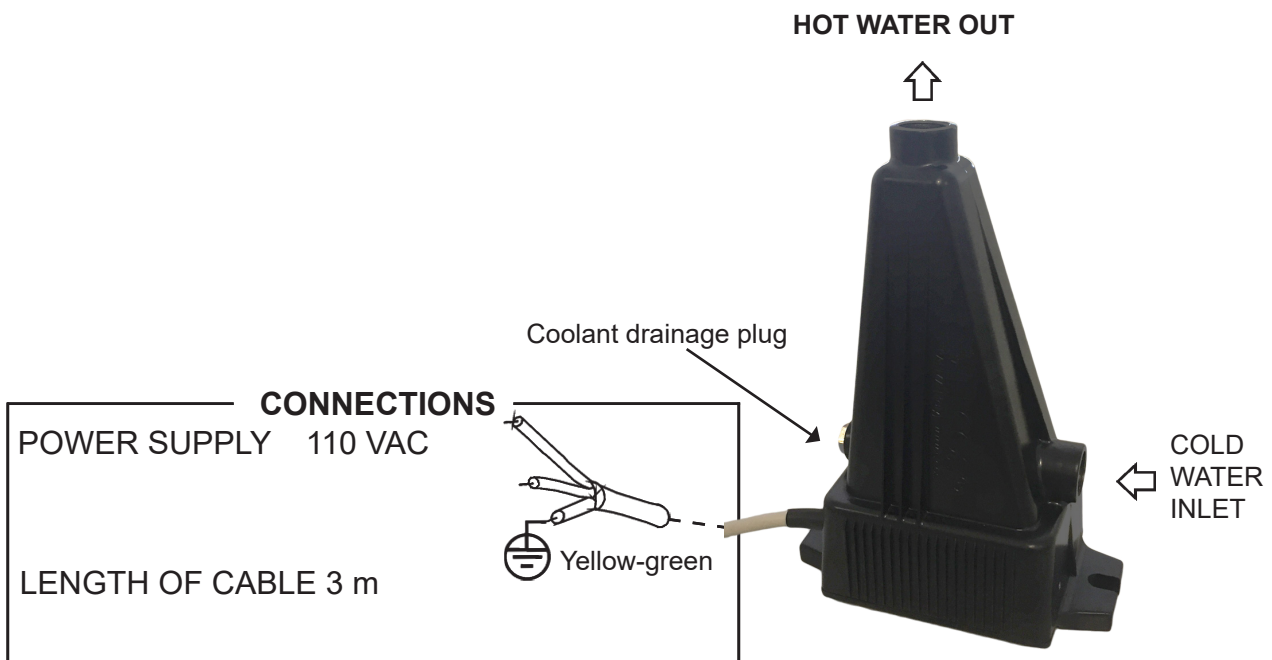


TO AVOID SIPHONS BEING PRODUCED; THERE SHOULD BE NO CURVES IN THE FLEXIBLE TUBES.

ENGINE COOLING LIQUID

For any topping up, use the fluid of the same type contained in the cooling system.
DO NOT USE CALCAREOUS WATER.

CONNECTIONS



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

NOTICES

TYPE RA-0511/110

RA-1001/110

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 4-5.
- 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 7.
- 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

TECHNICAL DATA

MAINS POWER SUPPLY	110VAC ($\pm 10\%$) 50÷60 Hz
DIELECTRIC STRENGTH BETWEEN TERMINALS AND CONTACTS	2000V x 1 MINUTE
POWER ABSORBED: TYPE RA-0511/110	500 W
RA-1001/110	1000 W
SERVICE	CONTINUOUS
OPERATIONAL THERMOSTAT	NON ADJUSTABLE
DISENGAGED HEATING	a 53° C $\pm 5\%$
IENGAGED HEATING	a 33° C $\pm 5\%$
SAFETY THERMOSTAT TRIPPING TEMPERATURE	96°C $\pm 5\%$
CONNECTION CABLES	FROR 450 / 750 V
DEGREE OF PROTECTION	IP54
TEMPERATURE LIMITS (ONLY IF SUPPLIED)	-20° C ÷ 120 °C
WEIGHT: TYPE RA-0511/110	1100 gr
RA-1001/110	1270 gr

ORDERING INFORMATION

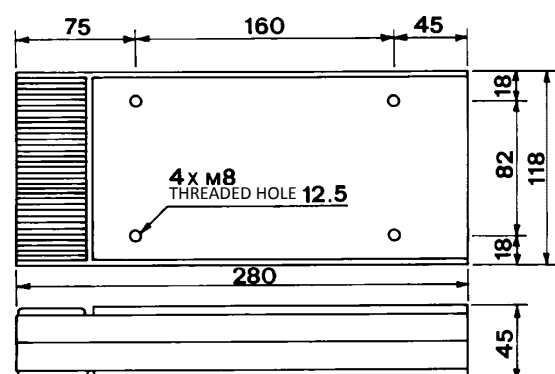
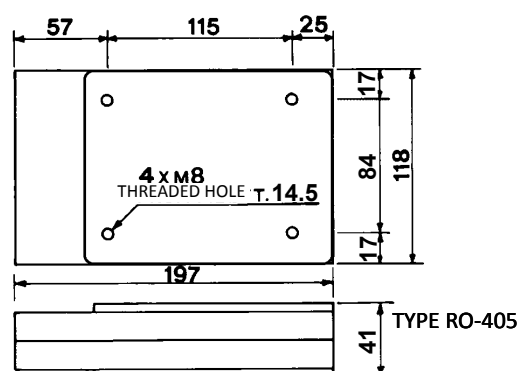
HEATER

Type	Code
RA-0511/110	00706171 (500W)
RA-1001/110	00706172 (1000W)

OIL HEATERS

TYPE RO-405 RO-803/00

MOUNTING AND CONNECTING



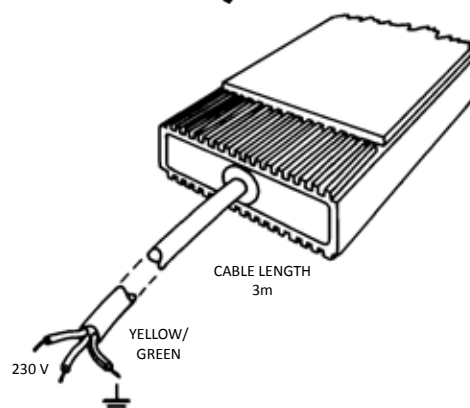
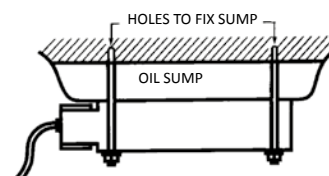
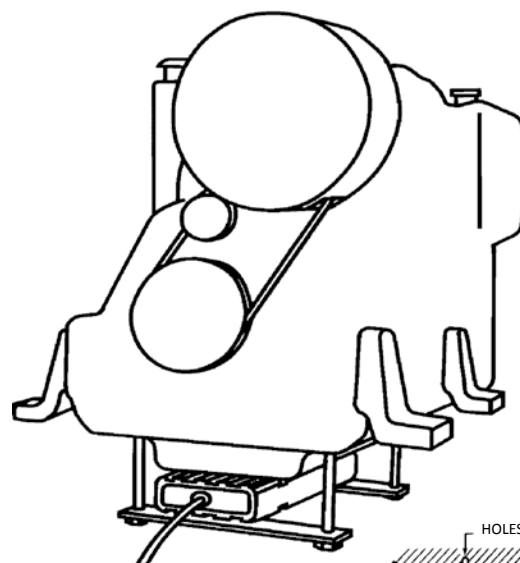
OPERATION

The heater, once it has been mounted in contact with the engine oil sump, prevents the temperature of the oil from falling below a certain set value. This value is maintained via the internal thermostat. All of the electrical connections are rendered easy by the presence of a cable.

ORDERING INFORMATION

Type RO-405 230V 350W code 00706017

Type RO-803/00 230V 700W code 00706016



TECHNICAL CHARACTERISTICS

- Power supply	230 VAC (± 10%) 50÷60 Hz
- Insulation voltage	250 V
- Dielectric strength between terminals and contactor	2000 VAC x 1 minute
- Power absorbed	RO-405 350 W RO-803/00 700 W
- Service	continuous
- <u>Work thermostat</u>	non-adjustable
- disengaged heating	at 72°C ± 10%
- engaged heating	at 57°C ± 10%
- Silicone cable LD-PE	with braiding
- Degree of protection	IP 54
- Temperature range	-20 ÷ +120°C
- Weight	RO-405 1500 g RO-803/00 3600 g

NOTICES

Used to keep the diesel engine lubricating oil cup heated.



Warning:

Adhere closely to the following advice

- Take great care to connect correctly the conductors coming out of the equipment.
- Adhere closely to the enclosed installation indications.
- The equipment must be earthed using the relevant wire.
- Never try to open the equipment, as this will have a negative influence on its degree of protection.
- Only install by pressing it in contact with the engine oil cup, supplying it in other conditions will reduce its working life.

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

- Where the environmental temperature is outside the limits indicated in the enclosed technical sheet.
- Where there is the risk of fire or explosions.
- Where the panel can receive strong vibrations or knocks.
- Where attacks from mould or small animals are possible.

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 that the securing screws and bolts are tight.
- Check that the terminals to which the equipment is linked are tight.
- Check the condition of the supply cable sheath.

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

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

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