



## **- USE AND MAINTENANCE MANUAL -**

**- FOR AUTOMATIC SOFT-TOP WITH ELECTRIC MOTOR -**



***OPAC s.r.l.***



**OPAC S.r.l.**

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Dear Customer,

OPAC S.r.l. would like to thank you for choosing to buy one of their products.

We would like to point out, for your utmost protection, that this product is designed exclusively to be used on the boat where it is to be installed and that any other use is specifically forbidden, including further installations.

You are pleased to read carefully the following warnings for the best use of the product you bought and to avoid potentially damaging effects.

## **WARNINGS**

- A) Our product is made using materials which guarantee an excellent resistance to wear and tear and use at sea. However, so as to ensure the long life of the product, it is necessary to use and maintain the product correctly, and to follow the indications given in the use and maintenance manual, which is here attached, with the utmost attention.
- B) The mechanisms which enable the product to work are subject to wear and tear: in order to ensure their best preservation, it is thus necessary to keep scrupulously to the instructions contained in the use and maintenance manual.

OPAC S.r.l. declines any responsibility concerning equipment which has undergone repair work which they themselves have not specifically approved in writing.

- C) The material used to make the product, even if it is suitable for avoiding the spreading of flames in the case of fire, has not been designed to offer protection against fire. It is therefore necessary to keep the product and all components away from flames and/or sources of heat.

The materials normally used do not guarantee impermeability, unless this is specifically requested when ordering.

- D) The electric or hydraulic motors and the actuator which start up the product are such that they enable excellent functioning.

Moreover, given that the power used is potentially harmful to people, it is necessary, before starting and during any manoeuvres, to make sure that nobody is in the area of movement concerned.

It is also necessary that children are not permitted to activate the opening/closing devices of the product.

So as to preserve the efficiency of the motor or actuator, it is also appropriate that the product is only used when it is really needed.

It is however necessary that the opening/closing operations are not repeated with intense frequency in a short period of time, so as to avoid the possible overheating of the motor or actuator.

Attention: should the product or any of its parts be iced up, the device may not function: avoid activating the opening/closing device until all the ice has been removed.

- E) The product in the open position (i.e. used as a roof) and with the boat in movement, can only be used and moved, in winds less than 5 knots.

The use of the product in stronger wind conditions than the one mentioned above, can only be permitted after trials at sea, carried out by OPAC specialised technicians, within the limits and ways indicated by the latter in writing on the technical form issued by our company at the end of the trial.

- F) The product has not been designed to tolerate weights: it is therefore necessary to avoid placing any sort of materials which could damage and/or cause an obstacle to the proper functioning.

Attention: do not walk on the product in any circumstances.

In view of constant technological research, aimed at a continuous improvement of their product, and with the increasing experience gained, Opac S.r.l. reserves the right to vary and/or modify at any time the technical contents of their products and consequently of this document. These possible variations, should they be effected after the product has been delivered, will not in any way be able to influence this supplying.

## 01. GENERAL NOTES

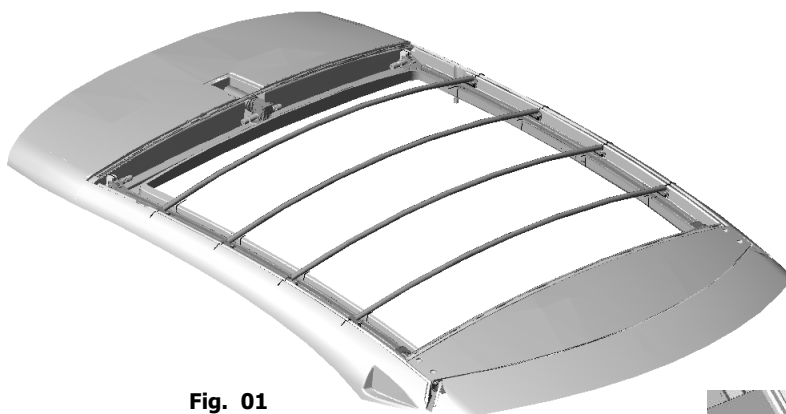
**01.** The mechanical and electronical driving parts of the soft-top, have been designed and manufactured to guarantee exclusively its operation.

Do not apply to the soft-top other parts which could weigh it down, thus increasing the work load of its parts, and compromise the immediate or long-term efficiency.

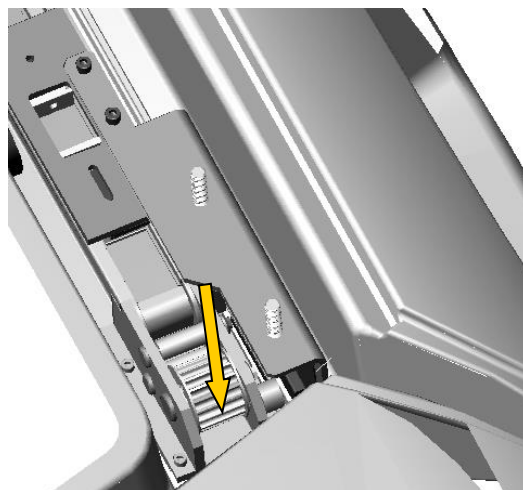
If needed, contact the technical department at Opac S.r.l., to carry out a correct assessment of variations and obtain the approval.

**02.** After a prolonged period of non-use or refurbishing of the boat, before using the hard-top again on a regular basis, carry out thorough cleaning and lubricating, and do the function tests described in chapter 02. Should there be any problems, contact the Opac S.r.l. assistance service.

**03.** A progressive part number is stamped on each soft-top and it is provided on the warranty document to identify the progressive serial number along with the construction year and month. It can be found on the front left head/frame of the hood, (Fig. 02).



**Fig. 01**



**Fig. 02**

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### IMPORTANT!

The pictures of this manual may be general, not referred to the actual supplied product.

Thus it is necessary to compare the pictures with the actual configuration of the product provided and assembled on the boat.

## 02. USE OF SOFT-TOP

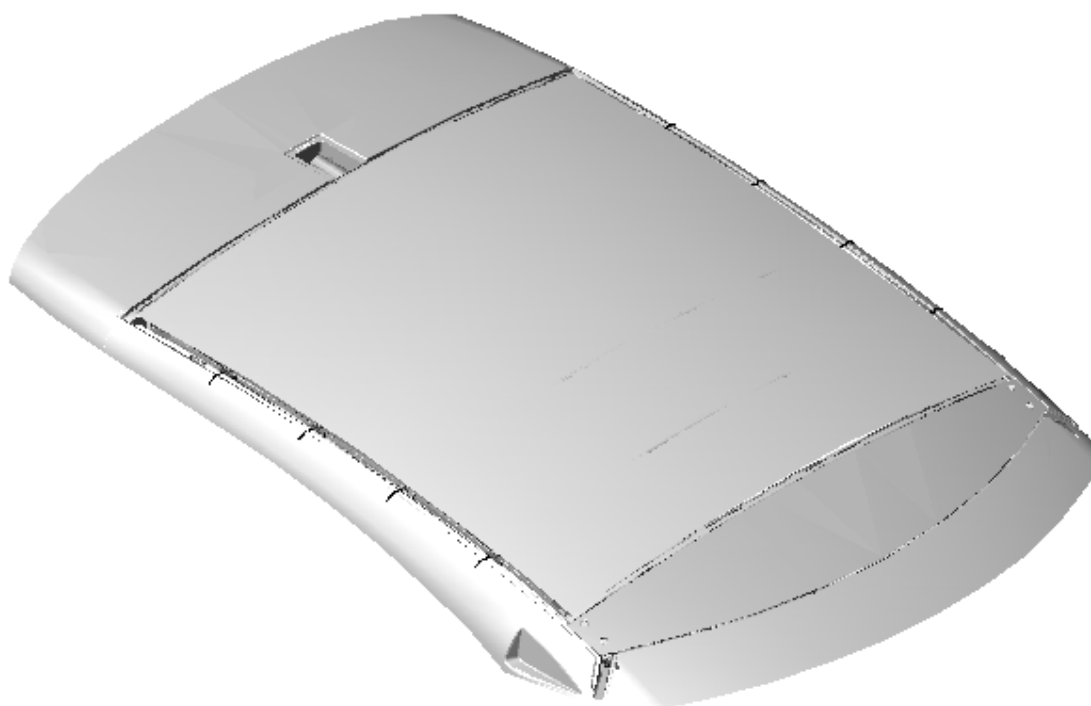
If the client requires the first assembling on board to be carried out by our specialised staff, OPAC will see to carrying out all the necessary operations for the complete setting up of the awning. Afterwards it will be the client's responsibility to guarantee the correct water draining, channeling it in a suitable way to make fluids flow into a special zone.

In the same way, it is necessary to arrange drain water facilities from side channels.

Should the first assembling be carried out by the client, please keep to the following instructions:

Generally, the awning is shipped already assembled within a template/frame of the same shape as the boat. The system is necessary to ensure that, during transport and handling, the awning is neither deformed nor warped.

If the soft-top, after being delivered is to stay in a warehouse, when you are ready to install it, clean and lubricate it thoroughly and carry out functional tests as described further on in this Chapter.



**Fig. 01**

### **ATTENTION!**

If at this stage any anomalies are noticed they will be recognised by the warranty issued by OPAC, according to what is laid down in the conditions.

Should any anomalies come out immediately after assembling on the boat, these could be caused by a non perfect assembling, or by unforeseen variables, connected to the configuration and construction of the boat.

In this case, OPAC shall have to analyse, together with the client's technicians, the problems that have arisen, so as to understand the causes and undertake the appropriate corrective measures.

The recognition of expenses for the costs borne by OPAC because of what was previously mentioned, (travel, stopovers and any modifications) shall be agreed upon beforehand with the client.

**Should the solution of the problems found aboard, entail the modification of the awning, depending on the nature of the modifications, OPAC shall judge whether these can be carried out on the sample that has been analysed, or else inserted into future production, with or without variations to the cost.**

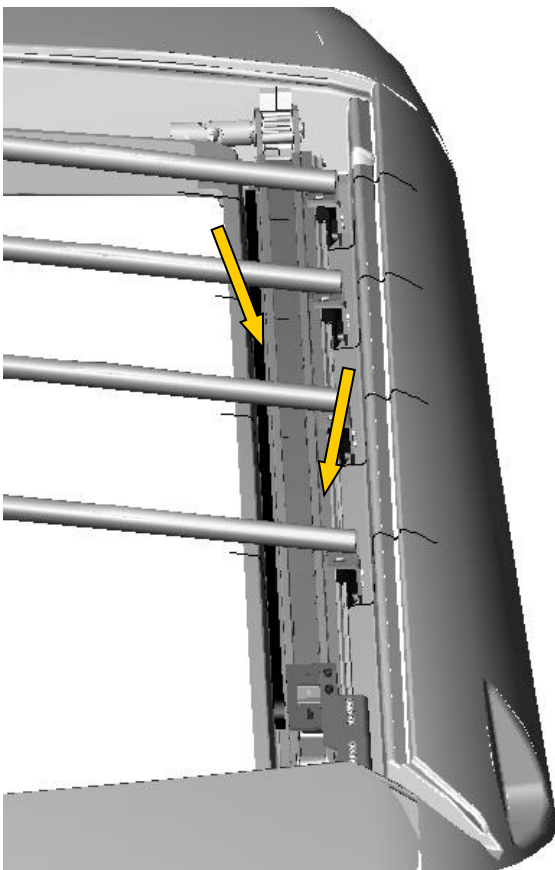
**01.** Remove any packaging from the hood and electric systems.  
In order to handle the awning, it has to be assembled on resin and harnesses have to be carried out.

**02.** To carry out the first testing cycles and to be able to move the soft-top, connect electric system temporarily, so as to be able to open it,  
(refer to chapter 5 of this manual for the connections).

**Do not try to move the awning in any way but by means of the specially intended electronics; failing to meet this requirement can compromise product warranty.**

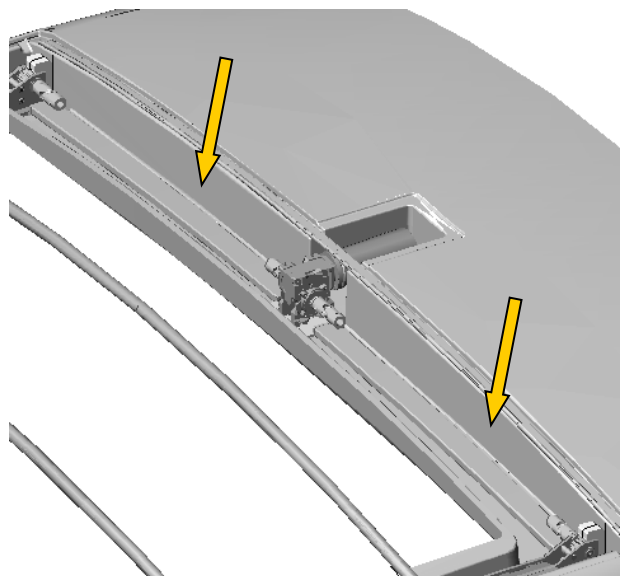
**03.** Put the structure in axis with the boat centre, paying particular attention to parallelism and planarity of support surfaces.

**04.** Fasten the handling frame on the boat, by means of holes provided along the side members and the rear cross-member where the motor assy is installed. (fig. 02 - 03).



**Fig. 02**

Holes provided for the  
STRUCTURE fastening on boat.



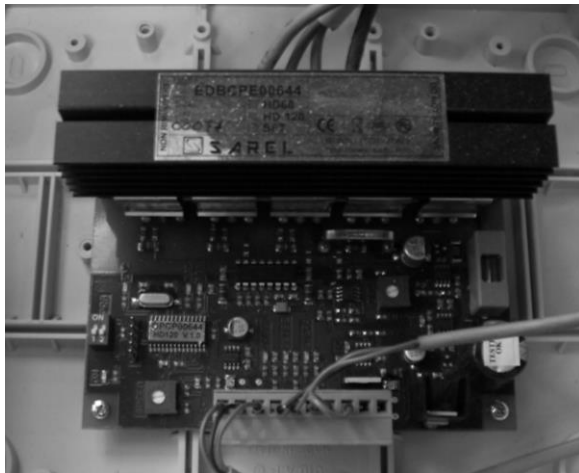
**Fig. 03**

**08.** After positioning the structure, determine the on-board location of the push-button control panel, (fig. 04). At the discretion of the shipyard, the push-button control panel can be replaced by another of different type, but with the same functions, so that it matches with the equipment and fittings provided on board the boat. (Inside you can find the acoustic buzzer signalling the movement of the awning).



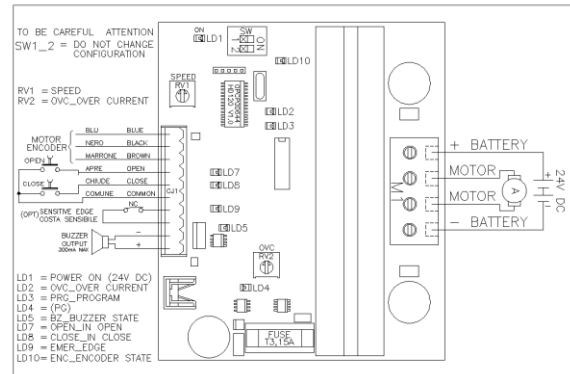
**Fig. 04**

- 09.** Define the position on board of the control box containing the electric system, (fig. 04). The electric connection diagram, similar to the one of chapter 08, is positioned on the lid inside.
- 10.** Determine the on-board location of the remote-controlled inverter, whose best positioning is near the control box.



**Fig. 05**

**INSIDE ELECTRIC DIAGRAM**  
motor with encoder



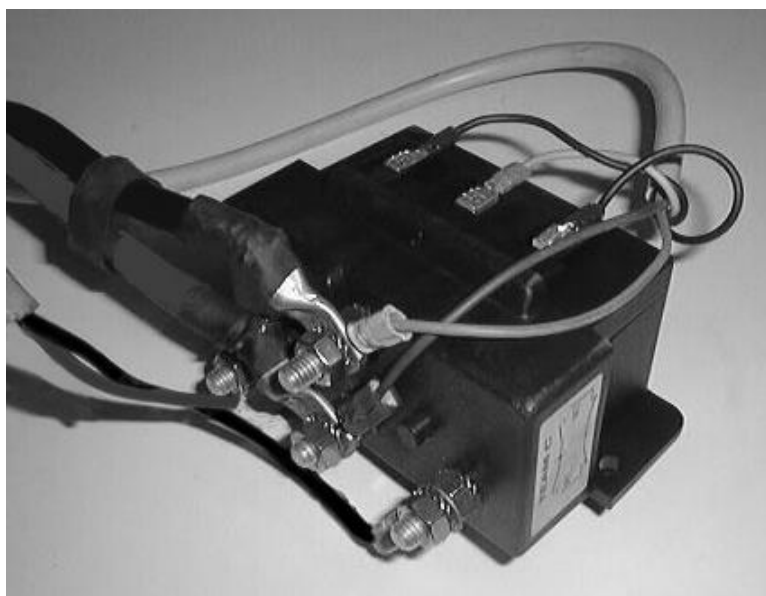
- 11.** Decide the onboard route of cables from the pushbutton control panel (fig. 04), to the control box (photo 05), and connect them following the diagram on the inside of the lid.

- 12.** Decide the onboard route of 24V cc supply cables, coming from the boat system.

### **For soft-tops provided with sensors:**

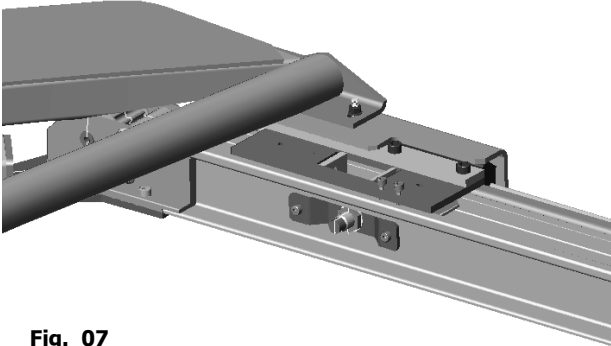
- 13.** Determine the on-board location of the control box, containing the electric system, (fig. 05). The same electric circuit diagram, as that you can find in Chapter 08, is applied inside the cover.

- 14.** Determine the on-board location of the remote-controlled inverter, (fig. 06), whose best positioning is near the control box.

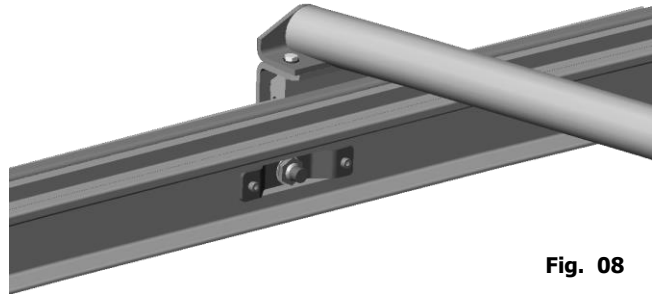


**Fig. 06**

**15.** Determine the on-board layout for the electric cables connecting the limit-switch sensors, (fig. 07 and 08), to the control box, (fig. 05bis), alongside the awning and connect them by following the wiring diagram applied inside the cover, (black cable A = open, black cable C = closed). (See also Chapter 08).

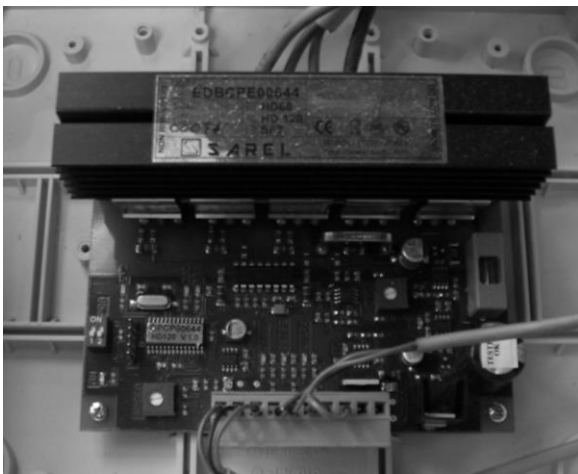


**Fig. 07**

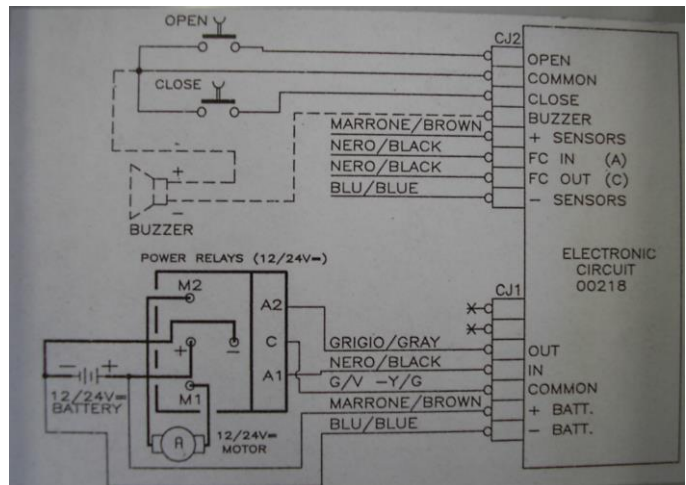


**Fig. 08**

INSIDE ELECTRIC DIAGRAM  
electronics with sensors



**Fig. 05bis**

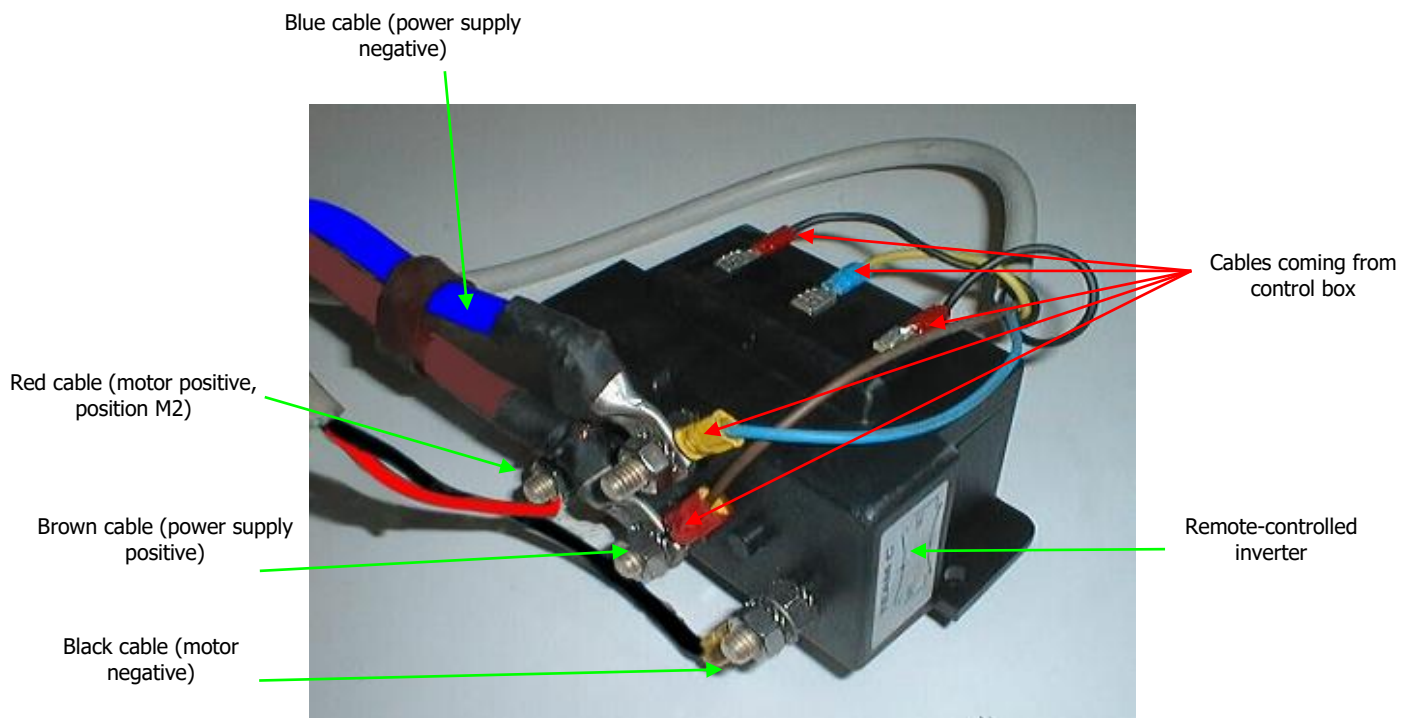


**16.** Decide the onboard route of cables from the pushbutton control panel (fig. 04), to the control box (fig. 05bis), and connect them following the diagram on the inside of the lid. (See also chapter 08).

**17.** Determine the on-board layout for the electric cables connecting the motor to the remote-controlled inverter, (fig. 09), fit for supporting a power equal to the motor one as it can be detected on the same motor: make them pass along with those of the sensors and connect them by following the indications on fig. 09.

**18.** Determine the on-board layout for the power cords, coming from the boat's main electric system, fit for supporting a power equal to the motor one as it can be detected on the same motor and connect them to the remote-controlled inverter, (fig. 09), by following the indications on Figure.





**Fig. 09**

**When the support frame has been fixed, before using the soft-top, carry out a few tests to check its correct operation.**

**19.** To check that the black cables connected to the remote inverter, coming from the control box, (fig. 05 – 05bis), are not inverted, move the awning by means of the push-button control panel, operating on *"open"* or *"closed"* button. The movement must comply with the command given to the push-button control panel, otherwise invert the cables.

**20.** Verify the correct operation of the limit-switch sensors, by moving the awning approximately to half of its stroke.

**21.** Moving the awning fore, approach a metal object, (screwdriver point, knife blade, etc.) at a distance of about 1/1.5 mm. from the blue head of the relevant sensor. The awning should stop, even if you keep the corresponding control push-button pressed. Otherwise, check whether cables are correctly connected.

**At this point, the soft-top is ready to be used**

### **ATTENTION!**

In order not to adversely affect in the long run the correct operation of the awning and to observe the warranty conditions, ensure that water is correctly drained from the inside of the channels where the runners are located.

It is equally essential to ensure drainage facilities and watertightness to the electro-hydraulic control unit compartment to protect electrical parts, and especially the motor itself, against atmospheric agents.

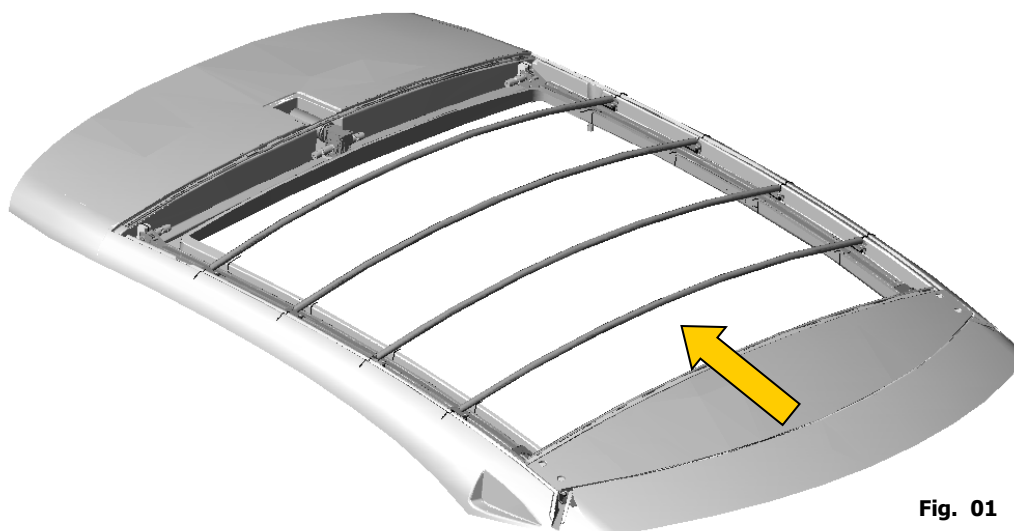
If there is stagnant water which penetrates into the runners and the mechanical sliding parts in general, it may in the long run cause the system to block.



## 03. ORDINARY MAINTENANCE

### ***OPERATIONS TO BE PERFORMED EVERY 3 MONTHS***

IN CASE OF STORAGE OR INACTIVITY PERIOD  
BEFORE USE, AFTER STORAGE OR INACTIVITY PERIOD



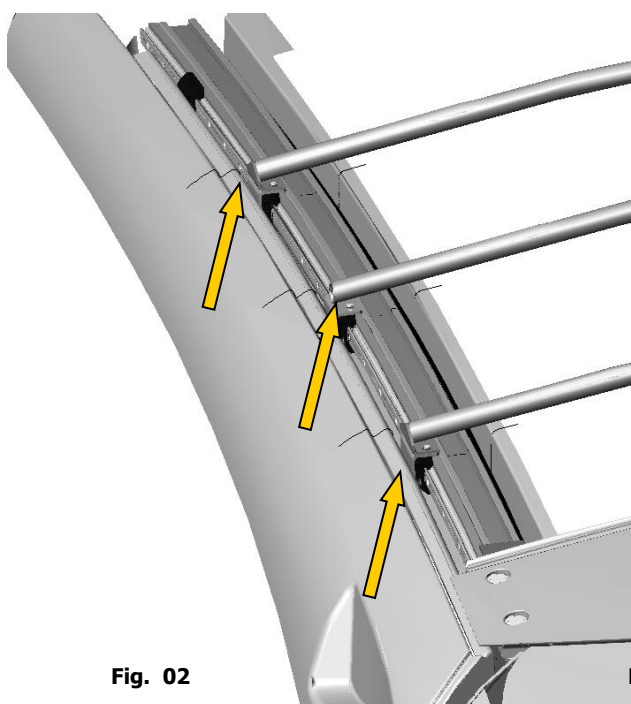
**Fig. 01**

**01.** Open the hood, (fig. 01).

**02.** Lubricate rails and carriages pulleys, (fig. 02 - 05), following the recommendations of the Manufacturer "HARKEN®", using the dry lubricant spray TEAM MCLUBE® SAILKOTE®, (fig. 03).

**03.** Periodically check that no residual of water is present inside channels and motor compartment, (fig. 04).

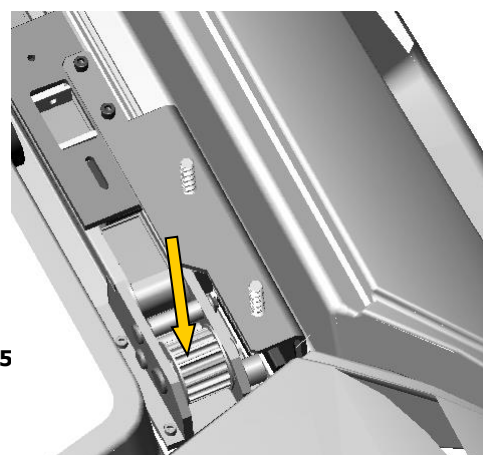
**04.** Periodically check the tightness of screws and bolts, (fig. 04).



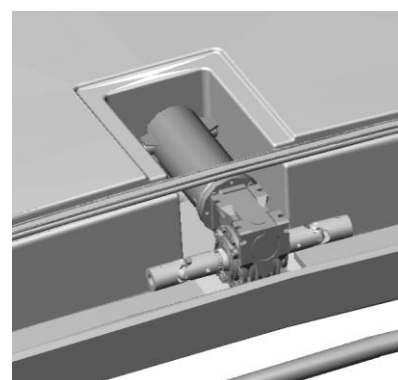
**Fig. 02**



**Fig. 03**



**Fig. 05**



**Fig. 04**

## 04. EMERGENCY RELEASE

### IN CASE OF LOCK OF THE DRIVING BELT OR REPLACEMENT OF THE SAME

- 01.** From the lower edge of the awning and slightly move the canvas near the front cross member sliding carriage, (fig. 01).
- 02.** Find the two red Allen screw heads and unscrew them, (fig. 02).
- 03.** Repeat the same operations on the opposite side as well.

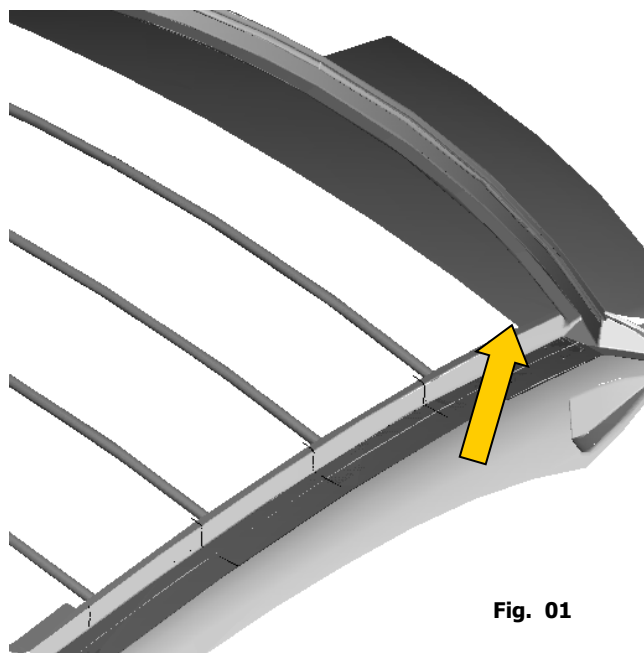


Fig. 01

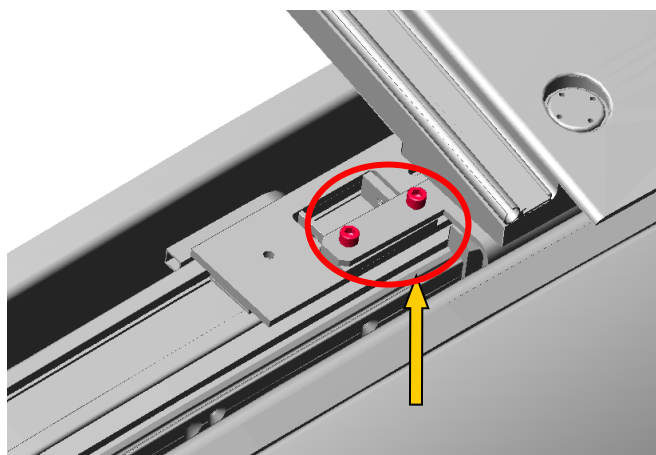


Fig. 02

- 04.** In this way the sliding of the carriages is released from the driving belt. **WARNING!** With this operation the awning is released. Therefore it must be fastened to carry out the operation safely.

- 05.** Move the awning manually, seizing it by the front cross member and making sure to move it in parallel at both sides, (fig. 01).

- 06.** After troubleshooting, restore the automatic operation by repositioning the front cross member carriage to the striking plate for the emergency release.

- 07.** Retighten the red-head Allen screws.

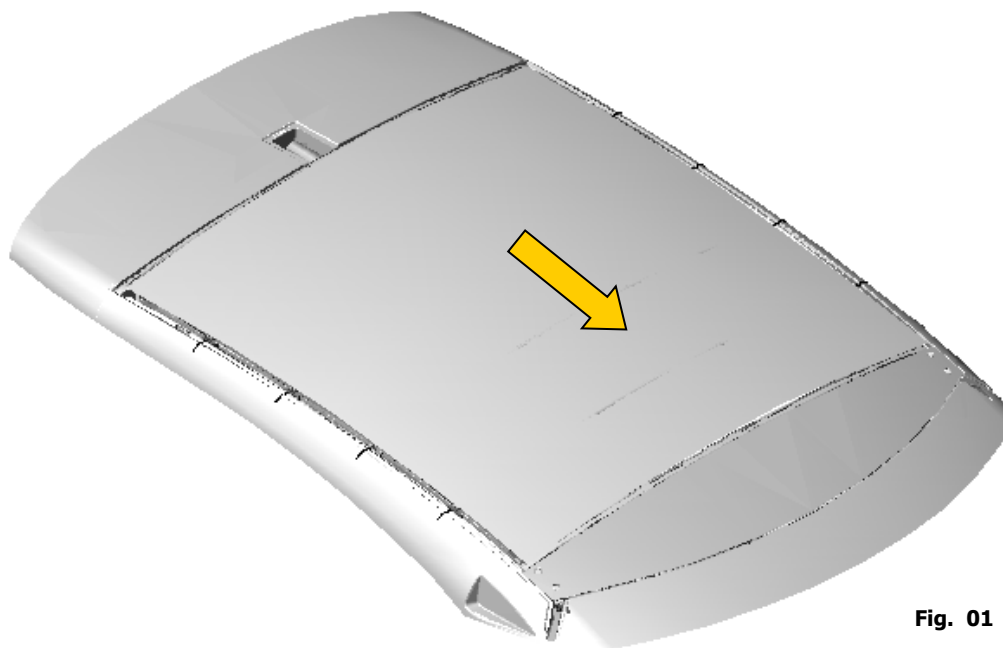
### **ATTENTION!**

Even in this case, after releasing the front cross member carriage from the driving belt, moving manually the awning, it will not be possible to obtain a full closure: the awning, in fact, will stop at a distance of about 5/10 cm from the end of its stroke.

What said before is indirectly caused by the initial canvas tension, which is necessary to obtain a surface without excessive undulations.

Operating by hand, in fact, it will not be possible to apply the same torque as that exerted by the electric motor which pulls the belt and, moreover, the motion irreversibility property, ensured by the motor itself, will be missing, with consequent release of the awning as soon as the torque applied is no longer exerted.

## 05. CANVAS CLEANING



**Fig. 01**

- 01.** To clean the outer and inner canvas, keep the awning stiff, (fig. 01).
- 02.** Take off any dirt and stains using a sponge or brush, with water and neutral soap.
- 03.** Do not use products with solvents at all, as they could corrode the surface treatments of the materials (anti-mould, anti-guano, UV protection, flame retarders, etc.).
- 04.** In case of canvas disassembly, clean the teeth of the zippers, as they could be encrusted with salt or damaged as a result of marine climatic conditions, with consequent breaks or malfunctionings.

### **ATTENTION!**

The material used for the awning is waterproof.

Along the edges, you can feel possible draughts, increasing with the growing running speed, which cannot be completely avoided, since the canvas tends naturally to become less firm, not being fully rigid.

Eliminate promptly any pools of water which may form on the surface of the material.

Leaving these pools of water on the stitching, in the long run can cause greater dirtiness and permanent deformation to the material due to the weight of the stagnant water.

The situation can be worsened by possible conditions of high temperatures which can cause stable heat dilations at the same time to the material.

In certain types of roofing, over time slight yellowing may occur where there is the stitching, due to unavoidable atmospheric phenomena.

When washing the boat, never spray the surfaces of the canvas using high pressure blasts of water, which could cause the weft of the material to open up, making filtering easier.