

DANUBE 2 R500



**SATELLITE TV ANTENNA
FOR
RIVER BOATS**

USER AND INSTALLATION MANUAL

GLOMEX[®]
The best in marine antennas



GL00002

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1. FOREWORD

1.1 DELIVERY LETTER

Welcome: with the installation of this antenna, the world of satellite television comes on board your fluvial boat.

This manual has been drafted in order to help you with the correct installation and operation of the antenna.

1.2 ANTENNA IDENTIFICATION

When calling GLOMEX or an authorized Service Centre, always provide the **serial number** and the **model** of the antenna, shown on the second page of the manual, on the packaging, on the backside of the control unit and on the backside of the parabolic dish.

1.3 WARRANTY

GLOMEX guarantees the DANUBE 2 R500 satellite antenna series against conformity defects for a period of 24 (twenty-four) months from the date of shipment.

Warranty is intended as the repair or replacement of the equipment showing conformity defects when entering the sales contract, with no charge for the materials.

In case of conformity defects, the customer is entitled to the replacement of the goods with no charge.

The warranty is only valid if the product **comes with a valid proof of purchase**, (receipt or invoice).

The non-conforming product must be sent back to a Service Centre or authorized retailer, who, if necessary, will forward it to:

GLOMEX S.r.l.
Via Faentina 165/G
48124, Ravenna (Italy)

along with all the accessories supplied at purchase.

The warranty is provided by:

GLOMEX S.r.l.
Via Faentina 165/G
48124 Ravenna (Italy)

The serial number must neither be erased nor made illegible, otherwise the warranty will be voided.



WARNING

Conserve the installation and user manual with care! Losing the serial number makes the warranty null and void!

The warranty does not apply in case of damage due to carelessness, use or installation not compliant with the instructions given, tampering, product or serial number modification, damage due to accidental causes or to the buyer's negligence.

Moreover, warranty does not apply in case of damage consequent to connections of the equipment to different voltages than those indicated or to sudden voltage variations of the network the equipment is connected to, as well as in case of damage caused by leakage, fire, inductive/electrostatic discharges or discharges due to lightning, use of cables different to those provided, overvoltages or other phenomena not related to the equipment.

The parts subject to wear consequent to use such as connection cables, driving belts, connectors, external parts and plastic supports are covered by a one-year period warranty.

The warranty does not include: periodical checks, software updates, product settings, maintenance.

After the expiration of the warranty period, the technical support activities will be carried out charging the customer for the replaced parts, the labour costs and freight charges, according to current rates.

The equipment will be replaced or repaired under warranty only and exclusively on Glomex quality department's approval.

Should any dispute rise, the place of jurisdiction will exclusively be Ravenna (Italy).

1.4 GENERAL SAFETY INSTRUCTIONS

Carefully read the instructions given and follow the precautions indicated to prevent potential hazards and to safeguard your health and safety, before carrying out any installation and maintenance operation.

This manual contains the following indications:



WARNING

This symbol warns against potential damage to the equipment which could involve the operator's safety.



DANGER

With specific warnings against potential dangers for the safety of the operator or other directly involved persons.

Failure to comply with the instructions preceded by the above-mentioned keywords (**WARNING** and **DANGER**) can cause serious accidents or even the death of the persons involved.

Moreover, in this Manual, some instructions are given with text in italics, preceded by the words **NOTE**.

The information and specifications given in this manual are based upon the information available at the moment it is written.

In case of doubts, do not hesitate to contact GLOMEX S.r.l.

1.5 ENVIRONMENT

Do not throw the appliance away with the normal household waste at the end of its life, but hand it in at an official point for recycling. By doing this, you will help preserve the environment.

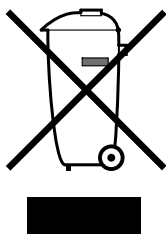


Fig. 1

GL00024

2. PRODUCT DESCRIPTION

2.1 DANUBE 2 R500

Danube 2 is the new generation of satellite TV antennas developed for river boats (barges, house boats, etc.). R500 provides outstanding performance with any weather condition thanks to a wider parabolic dish (+55% bigger than the previous version R8500), a high-performance LNB with low noise factor and to the innovative elliptic illuminator, specifically developed to prevent the spill-over effect (H.P.F.). Preventing the spill-over effect is very important to reach optimum performance with signal reception. This allows making the most of the illuminator and of the surface of the parabolic dish while preventing the presence of deflected signals which could reduce the performance of the antenna. R500 is designed according to the offset technology (the focus point is outside the parabolic area), so that the LNB may be supported by an arm which does not cast any shadow onto the parabolic dish. This guarantees the best possible performance of this antenna. Danube 2 is provided with new-generation electronic gyroscopes, capable of compensating any kind of boat movement, thus allowing you to watch TV with no interruption whatsoever. All Glomex antennas may be updated by anyone by means of the SD card reader (memory card), integrated in the control unit, by downloading the software for free from the website www.glomexmobile.com.

3. CONTENTS

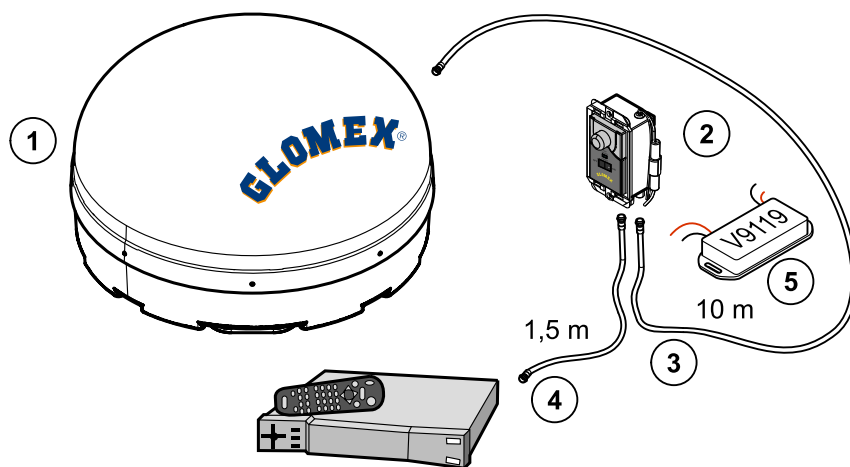
The satellite antenna is sent packed in a cardboard box and sealed with the GLOMEX "SAFETY SEAL" hoop, which has the function of CONTENT WARRANTY seal.

Upon receipt, check that:

- the packaging is whole and the warranty hoop is present;
- the supply matches the order specifications;
- the antenna and its accessories are not damaged.

In case of damage or missing parts, immediately inform the Retailer, if possible with appropriate photos.

The table below lists the components contained in the package, indicating the quantities and the GLOMEX code (if provided).



GL00164

Fig. 1

Satellite receiver (not provided)

DANUBE 2 R500	
Component	GLOMEX code
Antenna unit (1)	3.010.0022
Control unit with wall-mounting bracket (2)	4.120.0105
Coaxial cable, 10 m long, for antenna - control unit connection, with integrated protection (antenna side) (3)	V9140/10M
Coaxial cable, 1.5 m long, for control unit - sat decoder (4) connection	V9143
Voltage stabilizer (5)	V9119
Installation and user manual	4.150.0053
Warranty certificate	4.150.0044
Frame for built-in installation	4.010.0008

3.1 OPTIONAL ACCESSORIES (NOT INCLUDED) TO USE GLOMEX ANTENNAS

To be able to use your new GLOMEX satellite antenna for river boats, you will have to procure or buy also:

- a TV set;
- a satellite receiver for channel selection.

The table below lists all the GLOMEX optional components, with relevant code.

Optional accessory	GLOMEX code
Satellite receiver TIVUSAT I-CAN 1110 SV 230 VAC - 12 VDC	V9193
SD card with new satellite	4.120.0077
SD card with software update	4.120.0078

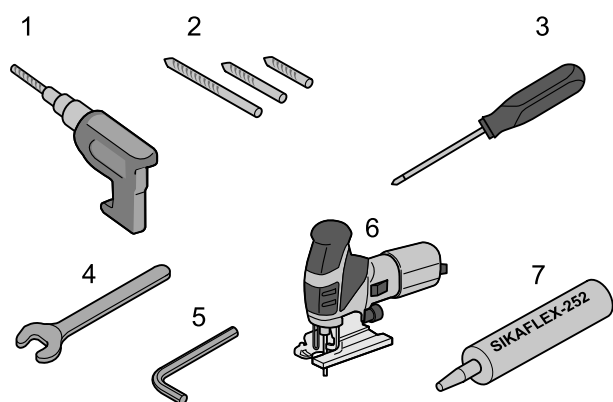
4. NECESSARY TOOLS FOR ASSEMBLY (NOT PROVIDED)

Procure all tools and materials listed below. They will be necessary to complete installation.

- Electric drill (1).
- Drill tips: 8 mm for fastening the radome, 2.5 mm for built-in installation of the control unit and 12 mm for the passage of the cable (2).
- Phillips screwdriver (3).
- 11 mm wrench (for the installation of the coaxial cable connectors) (4).
- 2 mm Allen wrench (for M4 dowels) (5).
- Reciprocating saw (to create the compartment for wall built-in installation of the control unit; use the template provided on page 51) (6).
- Sealant like SIKAFLEX®252 (7).

WARNING

Plan the whole installation before proceeding!
Please consider the lay-out of the various components, the distance between them, the length of the various cables and the accessibility to the equipment once it is installed.



GL00111

Fig. 2

5. INSTALLATION

Before proceeding with the installation, please respect the following guidelines:

- please remember that the best position for the satellite TV antenna is in the middle of the boat, in the lowest possible position.
- minimize obstruction. The antenna requires a clear view of the sky in order to receive satellite TV signals. The fewer the obstacles, the better the system operation.

Any foreign body (flags, antennas, radar antennas, sailboat masts, cranes, bridges, etc.) between the antenna and the satellite obstructs the signal and prevents correct receipt.

- make sure that the mounting surface is wide enough for the antenna base to be installed.
- make sure that the mounting surface is resistant and rigid enough to support the weight of the antenna and the vibrations which could occur.
- do not install the antenna near speakers or magnetic sources. In case it is not possible, it is necessary to compensate the magnetic source, paying attention not to interfere with the on-board compass.
- the antenna requires a lifting angle between 15° and 50° to receive satellite signals (Fig. 3).

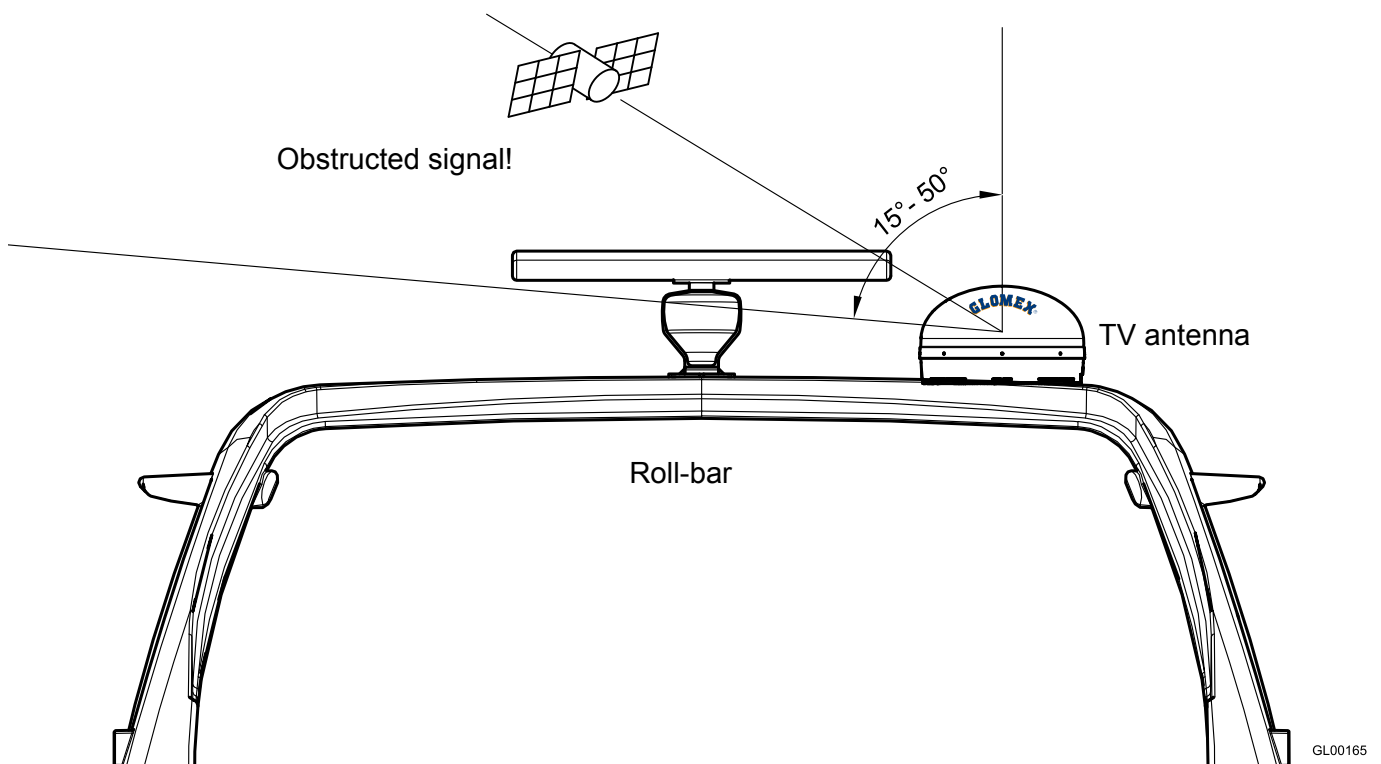


Fig. 3

Typical antenna lifting

NORTHERN EUROPE ($\approx 15^\circ$)

CENTRAL EUROPE ($\approx 35^\circ$)

SOUTHERN EUROPE ($\approx 50^\circ$)

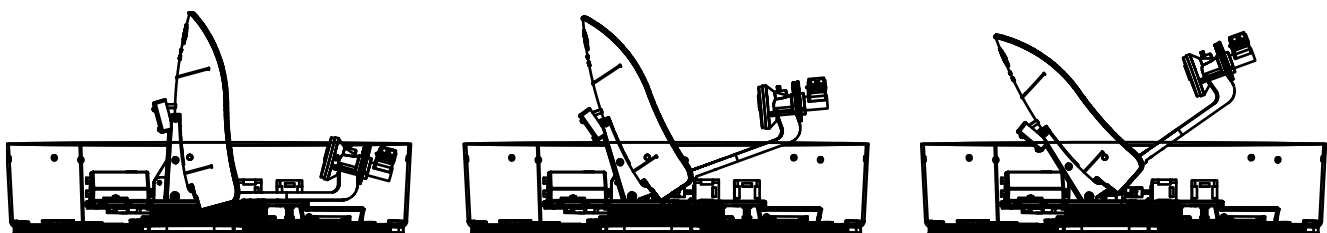


Fig. 4

- please also consider the position of the antenna with respect to the position of all various attachments or wiring harnesses inside the boat.
- the control unit should be mounted in a convenient position for the adjusting operations. It should be near the receiver/TV-set unit, so that the TV screen may be watched while carrying out the operations on the control unit.

We recommend not to install the antenna at the same level of the radar, as the radar's energy could damage the antenna. The antenna should be positioned at a distance of at least 1.5 m from the other transmitting antennas (VHF, radar) (Fig. 5).

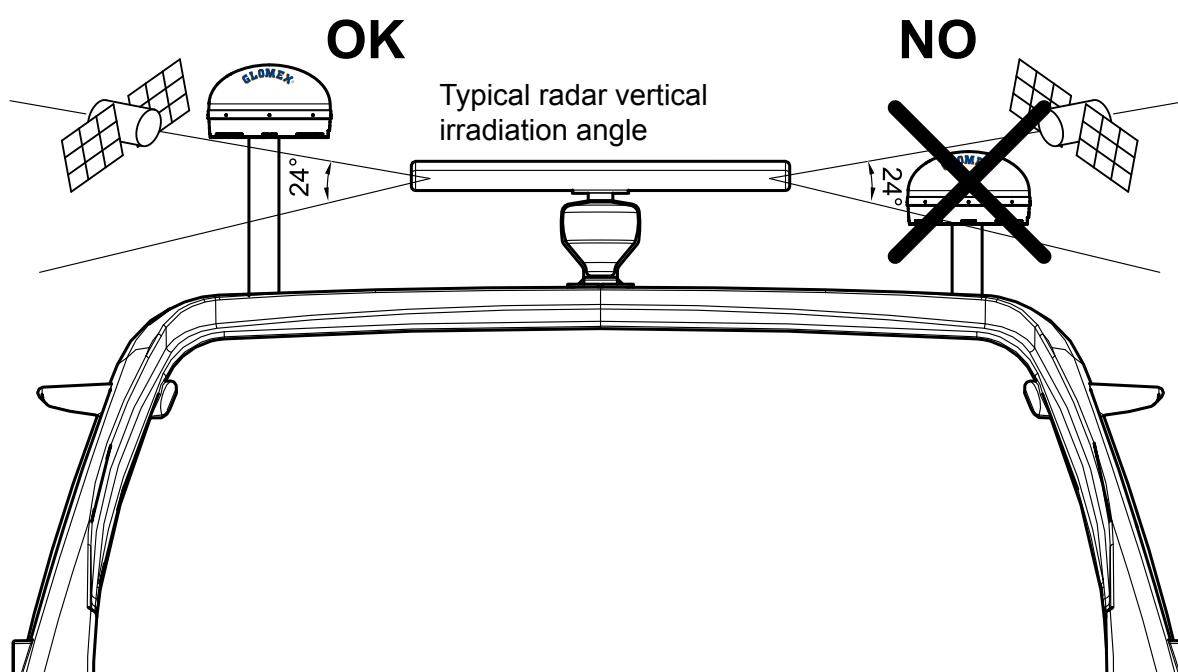


Fig. 5



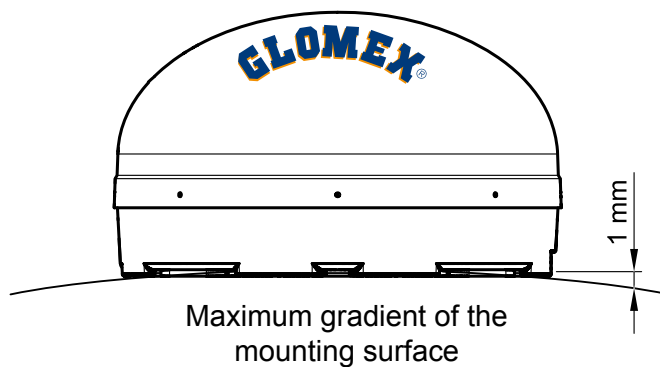
WARNING

The radio frequency beam transmitted by the radar may damage the inner electronics of the antenna, especially the LNB.

Make sure the antenna is installed on a flat surface. When correctly installed on a flat surface, the mounting plates should be positioned less than 1 mm from the surface.

**WARNING**

A higher distance than the one indicated will bend the mounting plates and will seriously damage the antenna!



GL00167

Fig. 6

6. ASSEMBLY

DANGER

While installing the antenna, wear the appropriate safety equipment for the job to be carried out.

Operations to be carried out **outside** the boat.

1. First of all, make sure you have chosen a correct position to install the antenna (see section 5: "Installation").
2. Remove the antenna from the packaging box.
3. Carefully clean the 4 mounting plates (P) on the antenna and the area in which the antenna will be located with alcohol and let evaporate before applying the sealant (**Fig. 7**).
4. Apply some sealant like SIKAFLEX®252 on the plates (**Fig. 8**).
5. Place the antenna in the appropriate position and apply a good pressure on the radome sides to make the plates correctly adhere to the mounting surface.
Wait for the silicone to solidify (time varies according to outer temperature).
6. OPTIONAL OPERATION: remove the plates by unscrewing the 2 nuts securing them to the lower radome. Drill the lower radome with an 8 mm bit near the punching, put back the plates and drill near the previously made holes, again using an 8 mm (**Fig. 9**) bit.

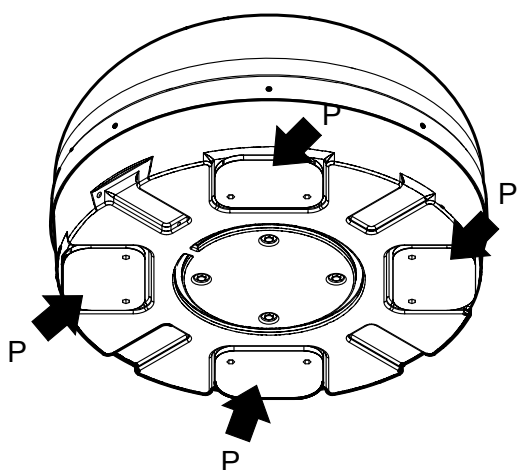


Fig. 7

GL00144

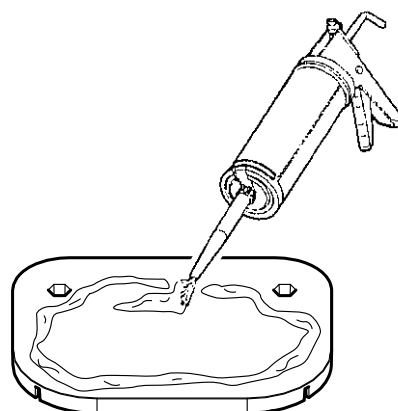


Fig. 8

GL00087

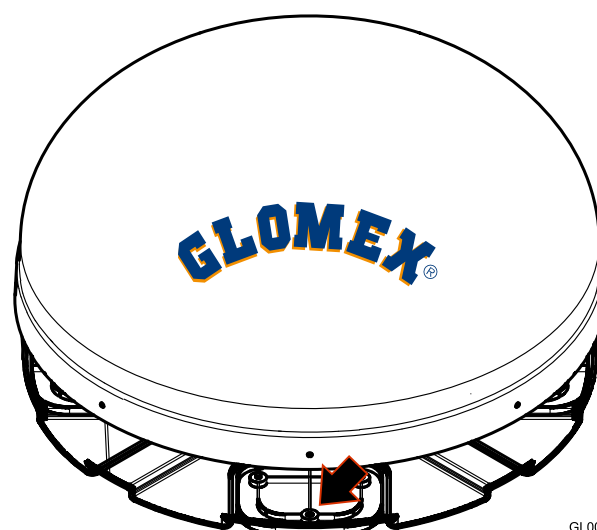


Fig. 9

GL00168

WARNING

Fastening with sealant is necessary and sufficient for the correct use of the equipment.
Fastening with the screws (not included) is optional.

Fastening with screws only does not guarantee a perfect coupling of the radome to the boat.
GLOMEX declines any liability for an incorrect coupling of the radome to the boat.

7. Mount the coaxial cable onto the antenna:
- make sure that the cable core is correctly inserted in the central hole of the female connector on the antenna (otherwise, there would be a short circuit and the fuse installed on the power supply line inside the control unit would trip, see page 63 for fuse replacement);
 - manually screw in the ring nut of connector F;
 - once the ring nut has been manually screwed in, tighten by $\frac{1}{4}$ turn by means of a 11 mm wrench;
 - insert the protection;
 - make the coaxial cable pass through the previously bored 12 mm hole on the boat.

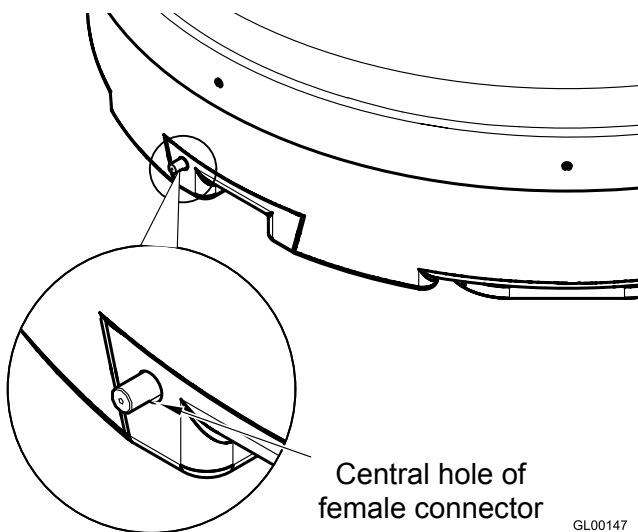


Fig. 10

GL00147

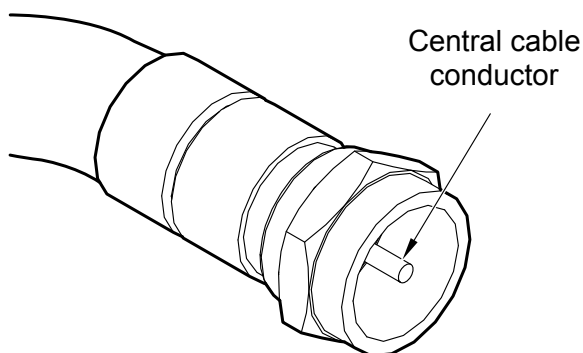


Fig. 11

GL00011

NOTE: For the connection of the antenna coaxial cable, it is not necessary to remove the dome!

8. Insulate with appropriate sealants the holes drilled in order to prevent the passage of water. Should it be necessary to shorten the cable, please refer to the instructions given in Fig. 12.

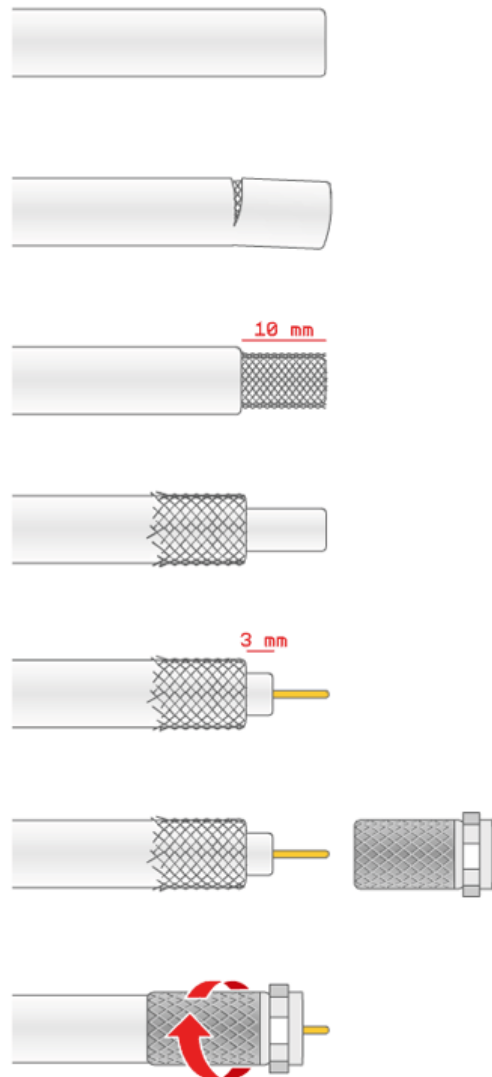


Fig. 12

GL00095

Operations to be carried out **inside** the boat.

1. Determine the correct position for the control unit:
 - it must be positioned near the satellite receiver, as the provided coaxial cable is 1.5 m long;
 - it must be reached by the power supply cables coming from the control panel;
 - it must be reached by the coaxial cable coming from the antenna (10 m long);
 - it must be positioned in a dry and ventilated area.

2. Connect the coaxial cable of the antenna (previously installed) to the ANTENNA IN input on the control unit and the 1.5 m coaxial cable to the RECEIVER OUT output on the control unit.

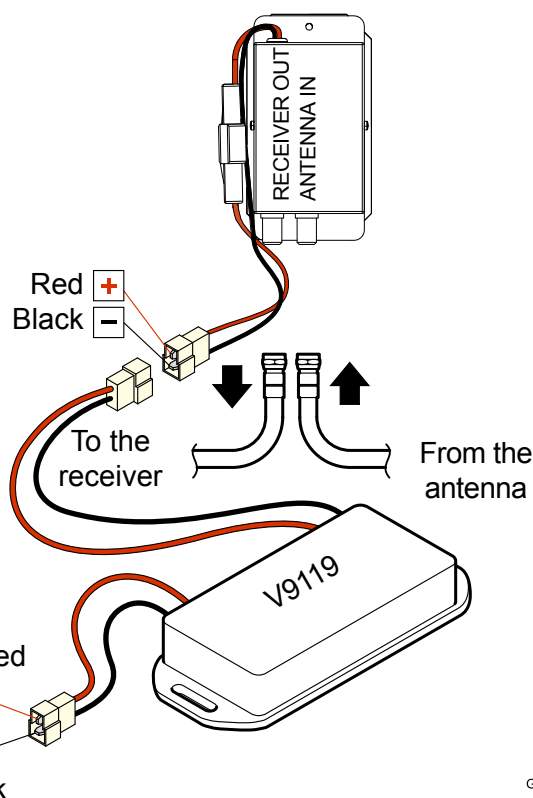
Make sure that the cable cores are correctly inserted in the central holes of the relevant female connectors on the control unit (otherwise, there would be a short circuit and the fuse installed on the power supply line inside the control unit would trip).

Manually screw in the ring nuts of connectors F. Once the ring nuts have been manually screwed in, tighten by $\frac{1}{4}$ turn by means of a 11 mm wrench.



WARNING

The inversion of the two cables jeopardizes the operation of the equipment. Make sure you have correctly installed the coaxial cables. In case of damage, GLOMEX will not be directly liable for the damage suffered by the receiver.



GL00116

Fig. 13

3. Connect the power supply cable of the control unit to the connector of the power supply unit V9119. Connect the power supply cable of unit V9119 (12V) to a free switch for the on-board electronic devices (min. 5A): connect the positive terminal to the red cable and the negative terminal to the black cable. The power supply line must have cables with a minimum cross section of 2.5 mm² with a length up to 4 m, of 4 mm² for longer cables.

NOTE: The connection of power supply unit V9119 is necessary for a correct operation of the appliance. Its presence guarantees a stabilization of the voltage coming from the boat battery.



WARNING

Make sure you have installed power supply unit V9119 between boat battery and control unit for the correct operation of the appliance!

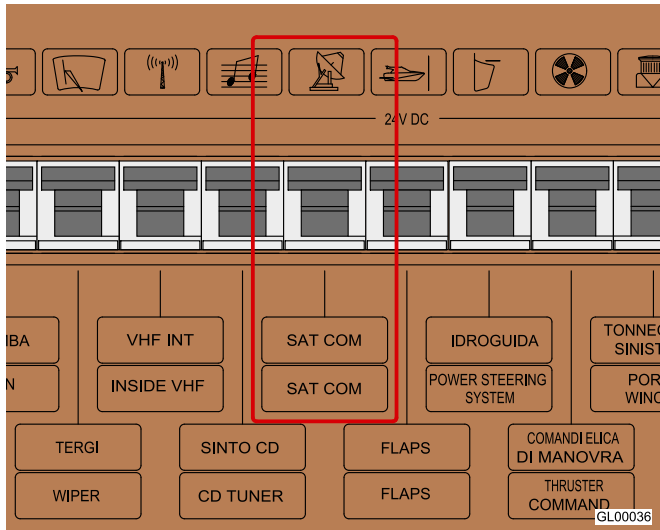


Fig. 14

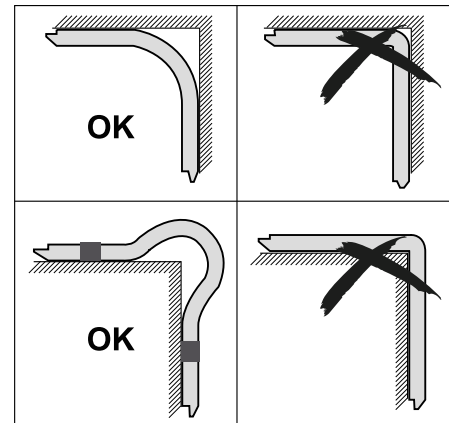
**WARNING**

Do not use power supply from secondary circuits. This could jeopardize the operation of the equipment.

NOTE: The polarity inversion on the power supply blows the fuse to prevent any damage to the antenna.

**WARNING**

Pay attention not to bend the coaxial cables at a right angle; the bending angle must always be higher than 120°.



GL00006

Fig. 15

NOTE: Do not cut the connectors of the coaxial cables (the operation would not be guaranteed any more) and always use the original GLOMEX cables supplied, even with inappropriate dimensions (too long). **Do not use different cables, as it would jeopardize the operation of the equipment.**

4. Build in the control unit by using the GLOMEX accessory (code 4.010.0008) by boring a hole with a reciprocating saw and using the drill with 2.5 mm tip (use the cutting template in Fig. 16 for correct dimensions).
5. Connect the 1.5 m coaxial cable to the LNB IN connector of the satellite receiver (not included).

NOTE: Maximum wall thickness for mounting the control unit: 20 mm.

**WARNING**

The antenna is designed to operate with one single receiver; therefore, do not install signal splitters upstream or downstream the control unit.

6.1 CUTTING TEMPLATE FOR BUILT-IN INSTALLATION OF THE CONTROL UNIT

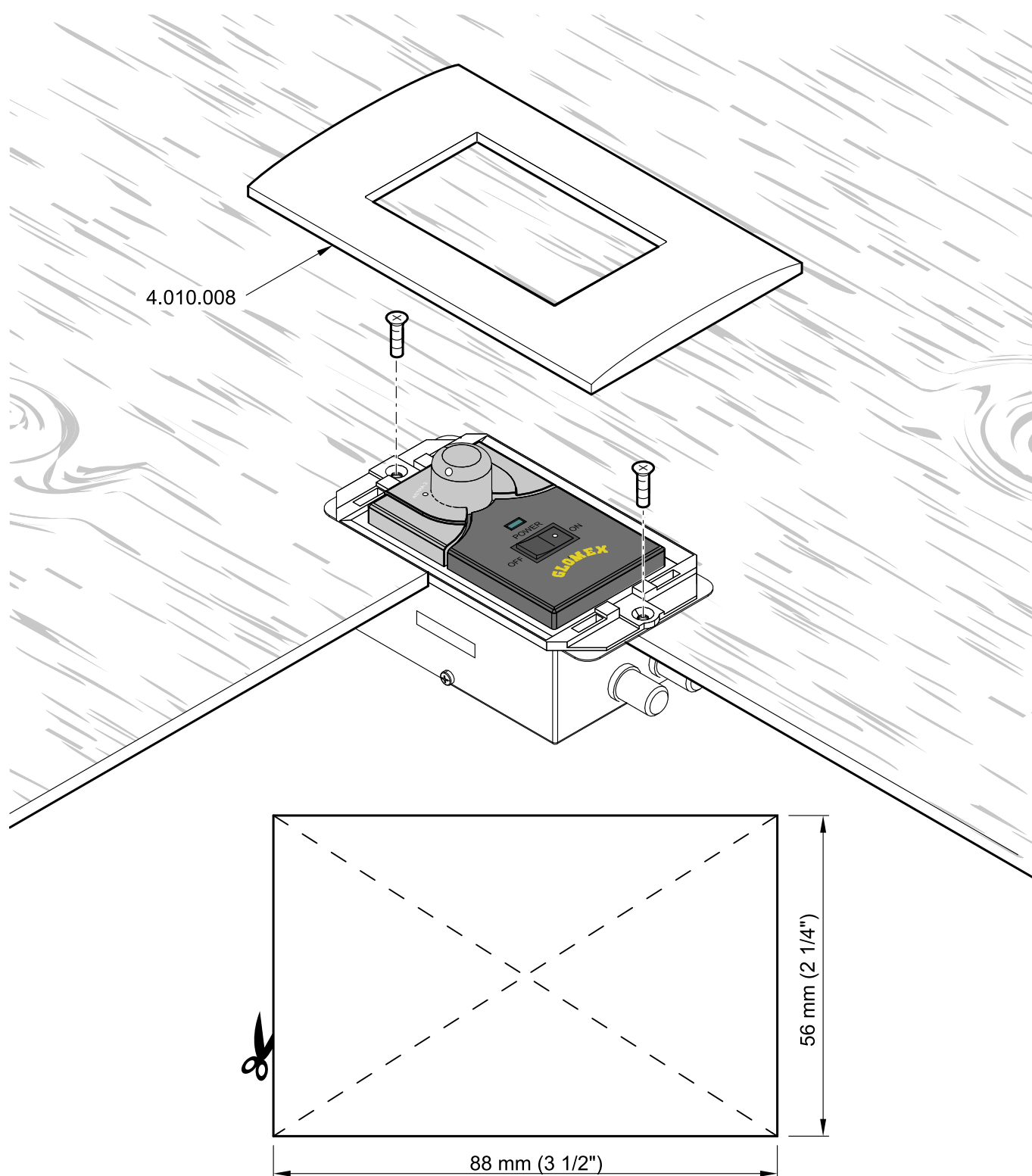


Fig. 16

GL00062

6.2 SKEW CALIBRATION (MANUAL)

Satellites can transmit in linear (Europe) or circular (USA) polarisation. GLOMEX antennas are designed to operate with a linear or circular polarisation according to the installed LNB, depending on the satellite whose transmission you want to receive and on where you are positioned.

Circular polarisation does not require any calibration for the optimization of the received signal.

On the contrary, LNB operating with linear polarisation need calibrating upon installation, in order to optimize the alignment of the LNB with the satellite whose transmission you want to receive.

When you are at the same longitude of the satellite, its horizontal and vertical signals are aligned with the horizon. When the satellite is east or west of your position, the signal of the satellite will appear as clockwise or counterclockwise shifted. Both the horizontal and the vertical signal will be shifted by the same angle, and therefore they will always be perpendicular to each other.

The degree of rotation will depend on the distance to the east or to the west between the position of the antenna and the position of the satellite, and on your distance from the equator.

Once you move to an area with a longitude more than $\pm 10^\circ$ (corresponding to about 1000 km) from the previous position, the LNB must be manually adjusted in order to obtain the best possible signal.

Antennas are delivered with the LNB optimized for an area with longitude 12° East while receiving satellite 13° East.

For the adjustment of the LNB, proceed as follows:

- loosen the 8 screws on the radome and remove it from the base;
- loosen the 3 M4 dowels (1) fastening the LNB (2) to the disk by using a 2 mm Allen wrench and manually move the dish, using the parameter of **signal quality of the digital receiver** in use as a reference for correct calibration (please refer to the receiver's manual). Calibration does not need to be changed if the vehicle remains in the same area and receives transmission from the same satellite.

Once the desired adjustment has been carried out, tighten the 3 M4 dowels, position the radome onto its base again and tighten the 8 fastening screws again.

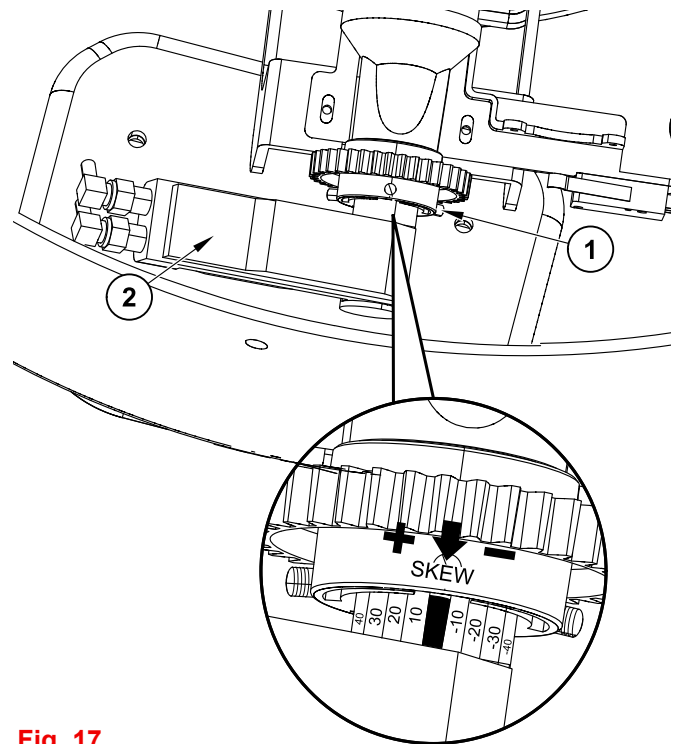


Fig. 17

GL00148

NOTE: Incorrect skew adjustment may cause a number of problems, from no reception of some channels up to the impossibility to find the selected satellite.

6.3 SKEW ADJUSTMENT GRID FOR EUROPE

To determine the values for adjusting the LNB, it is possible to use the grid below and the relevant table.

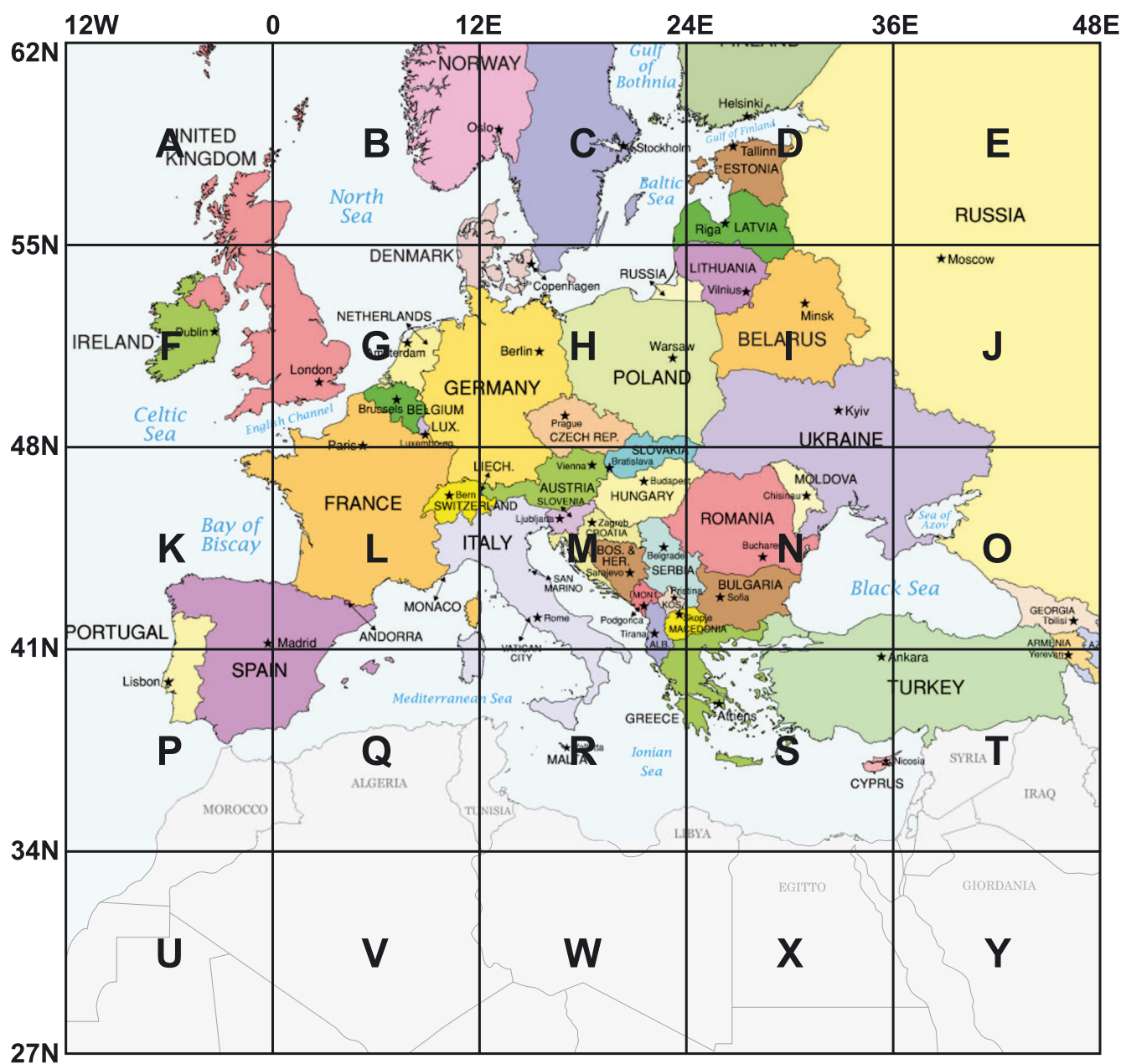


Fig. 18

GL00096

We recommend obtaining the values for the adjustment of the SKEW consulting the website www.satbeams.com/footprints.

Grid position	TURKSAT 42°E	ASTRA2 28.2°E	ASTRA3 23.5°E	ASTRA1 19.2°E	HOTBIRD 13.0°E	SIRIUS 4.8°E	THOR 1°W	HISPASAT 30°W
A (6°W 58°N)	-25°	-19°	-18°	-14°	-11°	-6°	-3°	14°
B (6°E 58°N)	-20°	-13°	-12°	-8°	-4°	0°	4°	20°
C (18°E 58°N)	-14°	-6°	-4°	0°	3°	8°	11°	24
D (30°E 58°N)	-7°	1°	3°	6°	10°	14°	17°	28°
E (42°E 58°N)	0°	7°	10°	13°	16°	20°	23°	30°
F (6°W 52°N)	-30°	-24°	-21°	-18°	-14°	-8°	-3°	17°
G (6°E 52°N)	-24°	-16°	-13°	-10°	-5°	0°	5°	24°
H (18°E 52°N)	-17°	-8°	-5°	0°	3°	9°	14°	34°
I (30°E 52°N)	-9°	1°	4°	8°	12°	18°	21°	36°
J (42°E 52°N)	0°	11°	12°	17°	20°	25°	28°	22°
K (6°W 45°N)	-36°	-29°	-27°	-23°	-18°	-10°	-5°	30°
L (6°E 45°N)	-30°	-20°	-20°	-12°	-7°	0°	6°	31°
M (18°E 45°N)	-22°	-9°	-8°	-1°	4°	12°	18°	36°
N (30°E 45°N)	-11°	2°	5°	10°	16°	22°	27°	40°
O (42°E 45°N)	0°	13°	17°	21°	25°	31°	34°	43°
P (6°W 38°N)	-43°	-35°	-36°	-28°	-22°	-13°	-6°	27°
Q (6°E 38°N)	-37°	-25°	-23°	-16°	-8°	1°	8°	36°
R (18°E 38°N)	-27°	-12°	-10°	-1°	6°	16°	22°	43°
S (30°E 38°N)	-15°	2°	8°	13°	20°	28°	33°	47°
T (42°E 38°N)	0°	17°	23°	26°	31°	37°	41°	50°
U (6°W 30°N)	-	-44°	-43°	-36°	-28°	-18°	-8°	35°
V (6°E 30°N)	-	-33°	-34°	-21°	-11°	1°	11°	45°
W (18°E 30°N)	-	-16°	-11°	-1°	8°	21°	29°	52°
X (30°E 30°N)	-	3°	10°	18°	25°	36°	41°	56°
Y (42°E 30°N)	-	22°	28°	34°	38°	46°	49°	58°

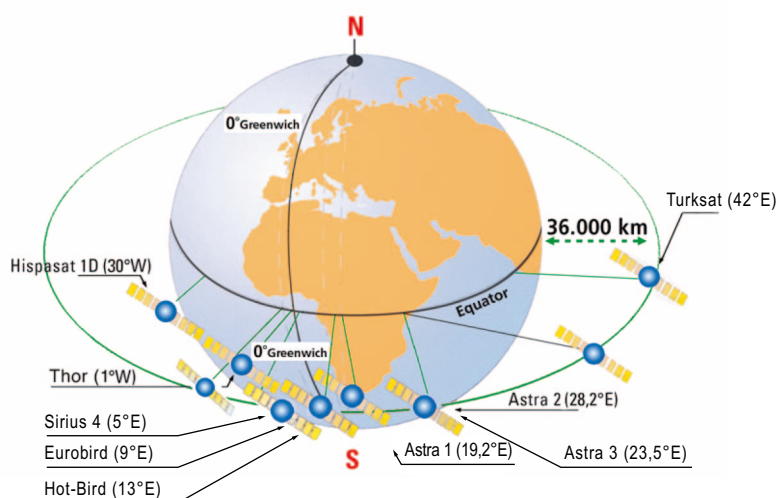


Fig. 19

GL00069

7. USE

Flow chart

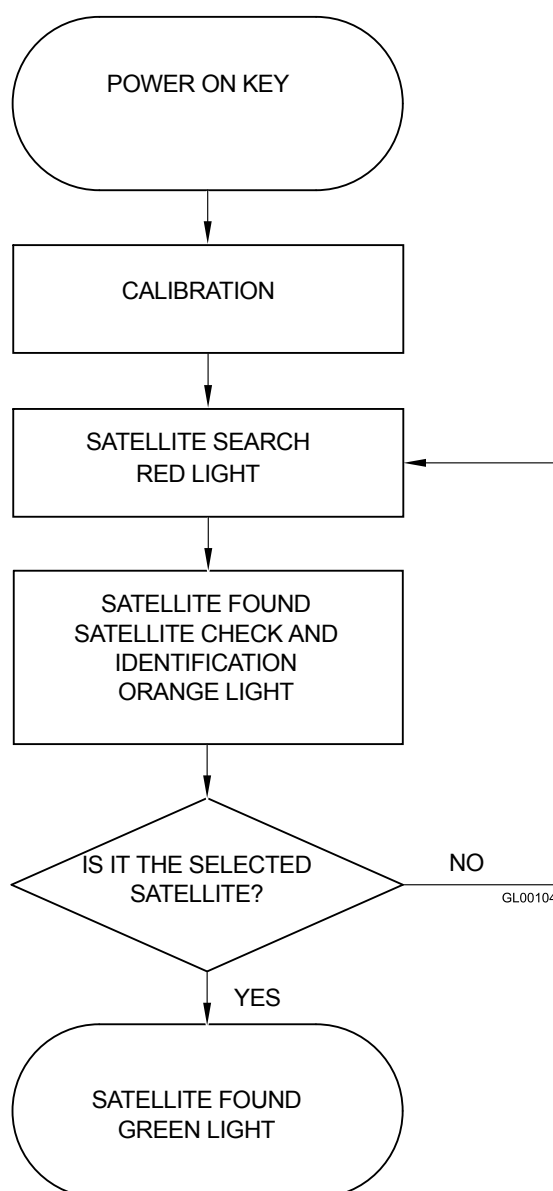


Fig. 20

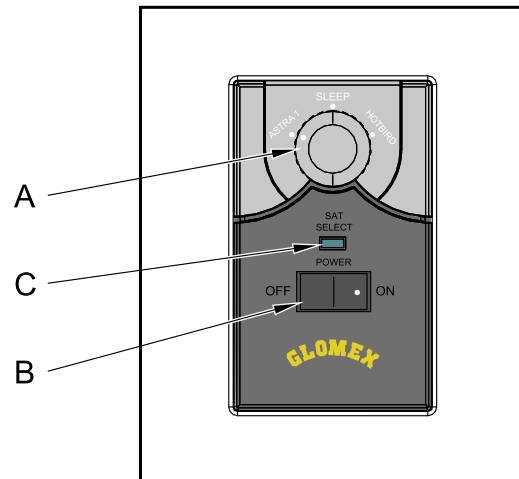
1. Make sure that the antenna has a clear view of the sky in order to receive satellite signals.
2. Turn on the receiver and the TV set. For details about the use of the receiver and the TV set, please refer to the relevant user manuals provided by the manufacturers.
3. On the control unit, by means of the relevant selector (A), select the desired satellite (ASTRA1 or HOTBIRD).
4. Turn on the control unit (set (B) key to ON).
5. After a few seconds, the led (C) turns red, and this means that the antenna is searching for the signal.
6. If the antenna has found a satellite signal, the led turns orange and starts checking that the found satellite is the selected one. Verification can take up to 30 seconds.
7. If, after a few seconds, the led turns green, it means that the found satellite was the correct one. Otherwise, the led turns red again, and the procedure is restarted.
8. With green led, after a few seconds, the image will appear on the TV set. Follow the instructions appearing on the screen to set the parameters for a correct operation of the receiver.

9. Automatic stand-by function:

once the satellite has been verified (green led on the control unit), after about 2 minutes that the boat did not move, the antenna stops in the position where signal reception from the satellite is maximum.

A level decrease of the received signal or a total shift of the boat of 6° in two minutes "wake the antenna up" in order that it recovers the maximum receivable signal level.

This function can be disabled by positioning the satellite selector on the middle "Sleep" position (see the following page).



GL00169

Fig. 21

- A. Satellite selector
- B. Power on key
- C. Led



WARNING

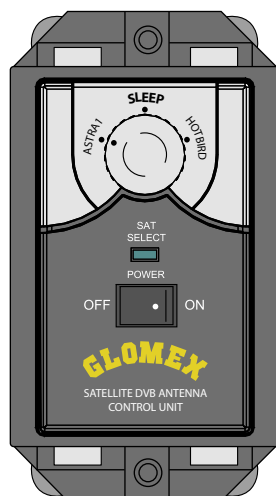
If the led flashes alternately red and green, this means that the antenna is not connected to the control unit or that a failure has occurred. See section "Troubleshooting" or contact the Service Centre.

7.1 HOW TO USE THE SLEEP MODE

The first time you need to select the desired satellite (ASTRA1 or HOTBIRD).

When you want to select the other satellite you have to switch off the antenna, select the desired satellite on the control unit, switch on the antenna and it will search again for it.

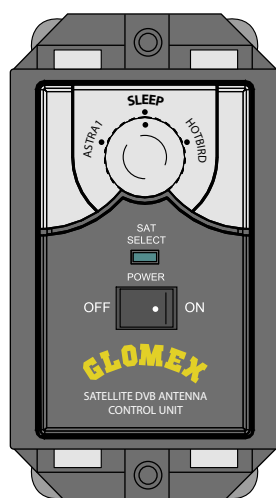
Then you can select the SLEEP mode again to stop the antenna.



GL00117

Fig. 22

The antenna will search for the satellite and, after recognizing it correctly (GREEN light), you can select the SLEEP position.



GL00118

Fig. 23

In sleep mode, the antenna will stop and it will not enter the tracking mode. It means that, if you move with the boat, the antenna will lose the signal.

Once the antenna is switched off, if the boat did not move, you can switch the antenna on again directly in sleep mode.

When you move to a different location you have to switch off the antenna, select the desired satellite on the control unit, switch on the antenna and it will search again for it.

Then you can select the SLEEP mode again to stop the antenna.

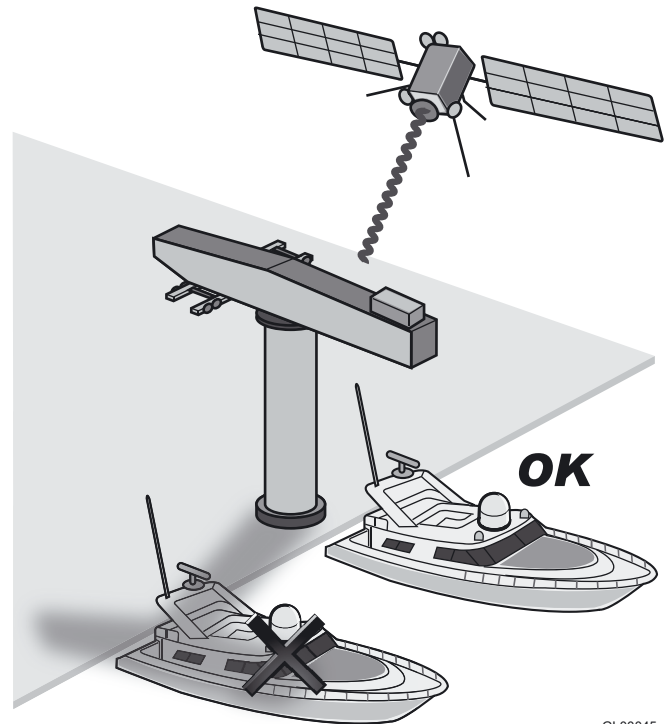
8. TIPS FOR CORRECT USAGE

GLOMEX recommends observing the following indications for a correct use of the equipment.

- The receiver must be activated before receiving the satellite programmes.
- Keep the radome always mounted on the antenna. Its task is to protect all inner (fixed and moving) parts from wind, rain and dust.
- Do not lean against and/or sit on the antenna!
- Pay attention not to spill liquids of any kind into the antenna.
- The radome should be cleaned periodically. Dust or dirt accumulated on the radome could affect the satellite signal receipt. Clean the radome with a cloth dampened with water. **DO NOT USE BRUSHES, ABRASIVE PRODUCTS, DETERGENTS OR ALCOHOL-BASED LIQUIDS.**
- Do not paint the surface of the radome! This would negatively affect signal receipt.
- The antenna requires a clear view of the sky to receive satellite signals. Possible very common signal obstructions include masts of other boats, bridges, on-board equipment, etc. GLOMEX antennas also do not operate inside storage areas.
- Heavy rain or snow could temporarily interrupt signal receipt from the satellite.
- The boat must be within the coverage area of the selected satellite to receive the desired signal. Please refer to the satellite coverage footprints on the following page.

NOTE: Environmental temperature changes may influence the response of the sensors inside the antenna (gyroscopes), making signal pointing less precise.

Should the signal be unstable, we recommend turning the device off and on again. A new calibration will be performed by the antenna.



GL00045

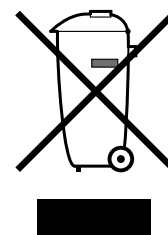
Fig. 24



WARNING

Bad weather conditions affect the quality of the signal and reduce image quality!

- At the end of its life, do not scatter the antenna or its components into the environment, but take advantage of specialized waste disposal agencies.



GL00024

Fig. 25

8.1 FOOTPRINTS: SATELLITE TRANSMISSION AREAS

Satellite television is one of the few means which allow receiving information in any part of the world within the coverage area of the satellite you wish to receive.

The signal transmitted by the satellite generally has a wide coverage area, as shown in the purely indicative footprints below, and thus guarantees vision of the same TV programmes in various areas.

However, it is important to remember that ground obstacles are the main causes of satellite antenna malfunction.

Ground obstacles include all bodies which could be located between satellite and antenna, such as trees, cranes, buildings, overpasses, bridges, galleries, etc.

The signal transmitted by the satellite is also affected by weather conditions (storm clouds or ice clouds).

The footprints show the satellite coverage areas on the Earth for DANUBE 2 R500 used under favourable weather conditions.

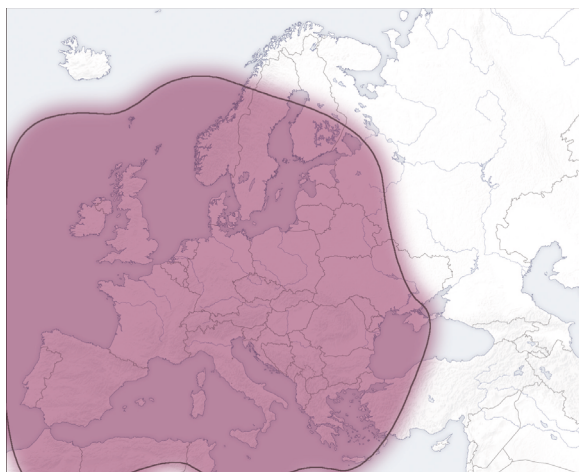


WARNING

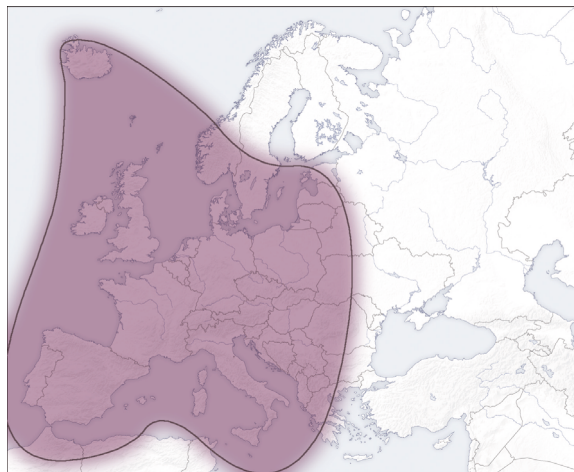
In case of bad weather, signals will be weaker; therefore, the image quality could be reduced, up to completely fading away. It is also very important to make sure, upon purchase, that the dimensions of the satellite antenna are the most appropriate ones to receive the signal in the areas where you spend your holiday. Footprints are indicative and referred to the satellite with the strongest E.I.R.P. (Equivalent Isotropic Radiated Power).

ENGLISH

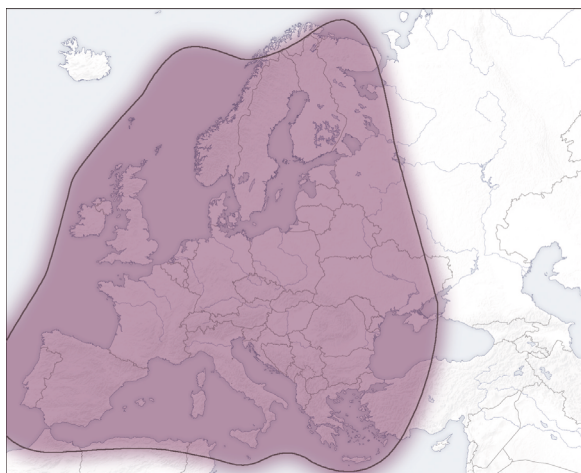
ASTRA 1 - 19° E



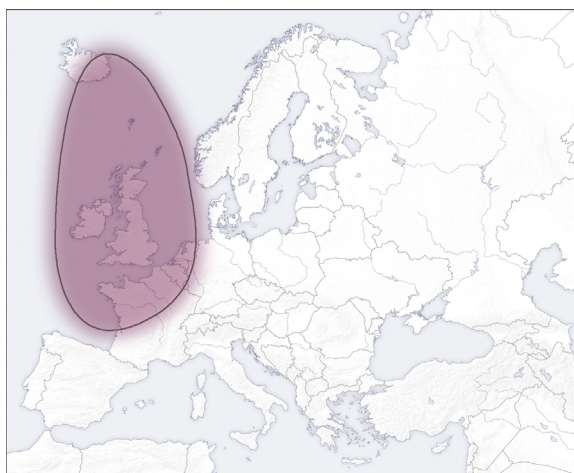
ASTRA 2 - 28° E



HOTBIRD - 13° E



ASTRA 2 UK - 28° E



GL00150

Fig. 26

9. MAINTENANCE

9.1 PREVENTIVE MAINTENANCE

The GLOMEX DANUBE 2 R500 antenna requires minimum preventive maintenance.

Observing the following instructions is sufficient to maintain a high equipment performance.

Monthly checks

- Wash the radome surface with a cloth damped with fresh water; do not direct pressurized water jets onto the radome.



WARNING

Do not use brushes, abrasive products, detergents or alcohol-based liquids.

Yearly checks

- Check the outer conditions of the radome. Clean from dust and dirt if necessary.

Checks before any long cruise

- Check that the mounting plates of the radome are correctly glued
- Check for the correct installation of the 10 m coaxial cable protection on the antenna.



DANGER

Before carrying out any maintenance or cleaning operation, or after each use, ALWAYS turn off the antenna by means of the switch located on the control unit.

9.2 SPARE PARTS

The following table lists the codes of the components which can be supplied as spare parts directly by the Retailer.

Spare parts	GLOMEX code
Lower radome	R500-LR
Upper radome	R500-UR
Fastening support for antenna base	4.010.0250
Fuse for control unit T3A15 5x20	4.120.0076

Should you have problems with the operation or in case you need technical support, first of all contact the authorized Retailer. Keep at hand the serial number of your antenna (on page 2 in this manual) and a list with the failure symptoms. Should no Retailer be available, contact the GLOMEX Service Centre (see section "Technical Support").



WARNING

You will be asked the serial number of your antenna during any service or troubleshooting phone call. The serial number is found on page 2 of the user manual of your antenna, on the packaging, on the backside of the control unit and on the parabolic dish.



WARNING

Conserve the installation and user manual with care, as it contains the serial number of your antenna!

9.3 SOFTWARE UPDATE BY SD CARD

The SD card must be inserted into the relevant slot on the control unit side.

The SD CARD used for updating must be formatted in FAT32, cluster size 4096 bytes (4k) and with empty volume label. It is therefore necessary to copy the two provided files S5000M.DAT onto the SD card, proceeding as follows:

1. Turn off the decoder, the TV set and make sure that the switch on the control unit is set to OFF.
2. Remove the wall-mounting plate (see **Fig. 16**), loosen the screws and remove the built-in control unit.
3. Insert the SD card into the relevant slot on the control unit side, as indicated in **Fig. 27**, respecting the direction (side with manufacturer label up) and making sure you have completely inserted it.
4. Turn on the control unit (set B key, **Fig. 21**, to ON).
5. If the control unit detects the presence of a SD card with original GLOMEX software, the led turns orange and automatically starts the software updating procedure.
6. If the led stays red and the antenna moves, this means that no original GLOMEX software has been detected, or that the SD card has not been inserted completely. Turn off the control unit and repeat the procedure from step 4.

NOTE: if the control unit is not immediately turned off, in a few seconds the led will turn orange and then green, according to the standard satellite searching procedure; turn off anyway and repeat the procedure from step 4.

7. If the update is correctly carried out, the led turns green. Otherwise, the led turns red and it is necessary to turn off the control unit and to repeat the procedure from step 4.
8. Turn off the control unit, remove the SD card, insert the control unit into the wall, reinstall the fastening screws and the installation plate.



WARNING

In case of repeated failures in the software update procedure, please contact the GLOMEX Service Centre.

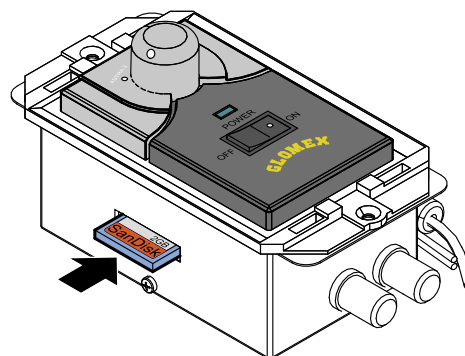


Fig. 27

GL00067

NOTE: it is possible to download the necessary software updating file from the Glomex website (www.glomex.it) in section "Technical Support - Download Area".

Flow chart

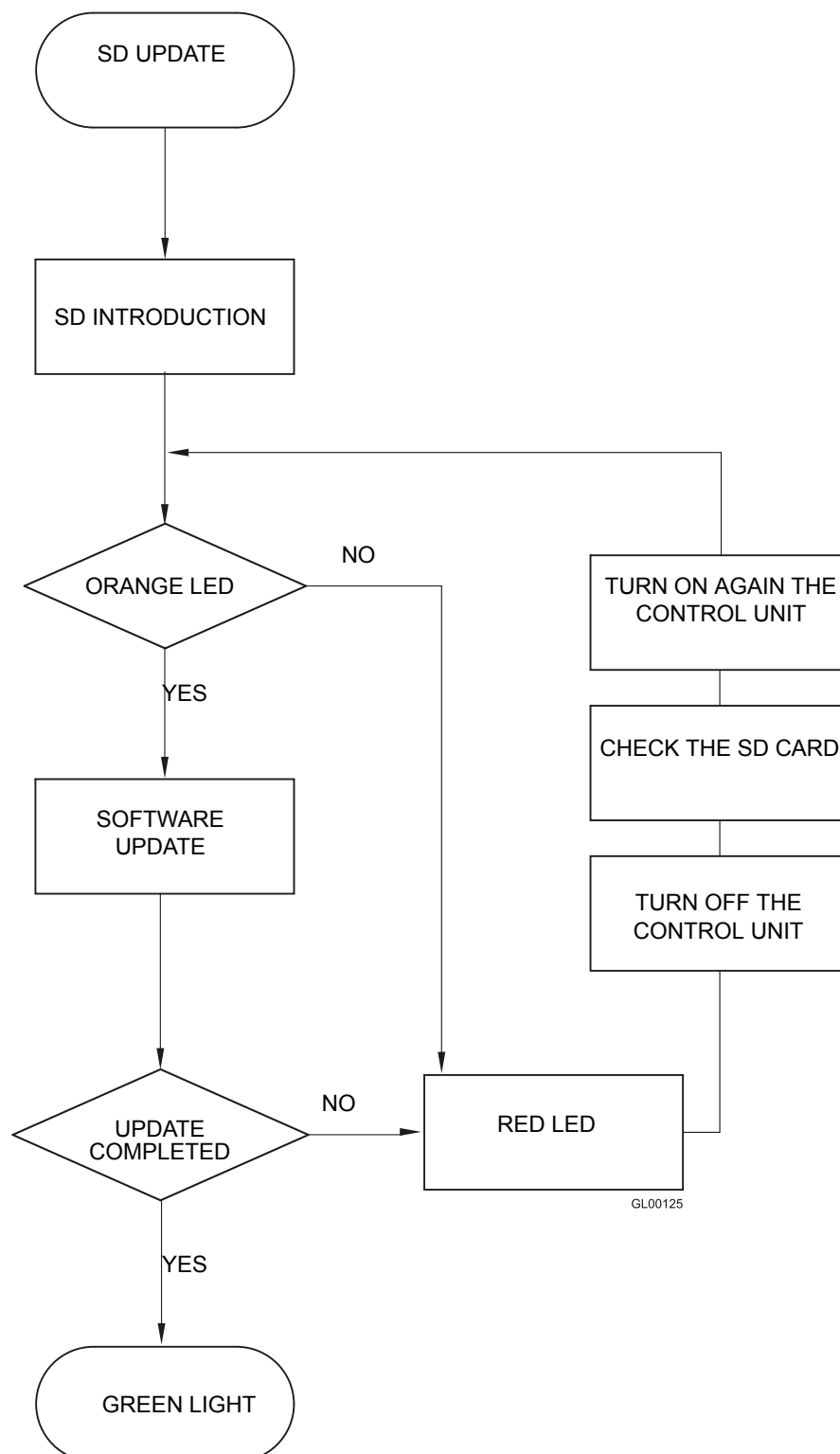


Fig. 28

9.4 REPLACING THE POWER SUPPLY PROTECTION FUSE

In case the fuse on the power supply line has blown, proceed as follows to replace it:

- Turn off the decoder, the TV set and make sure that the switch on the control unit is set to OFF.
- Remove the control unit from the wall-mounting bracket, open the box by loosening the screws.
- OPTIONAL: (in case of built-in installation): remove the wall-mounting plate (see **Fig. 16**), loosen the screws and remove the built-in control unit.
- Disconnect the power supply cable from the battery.
- Remove the blown fuse from its seat indicated in **Fig. 29** and replace it with a new one (**type T 3A15 5x20**, i.e. delayed-action tube fuse, with 5 mm diameter and 20 mm length, 3 A rated current and 15 V rated voltage).
- Connect the power supply to the battery again.
- Reinstall the rear cover onto the control unit.
- OPTIONAL (in case of built-in installation): insert the control unit into the wall, reinstall the fastening screws and the installation plate.

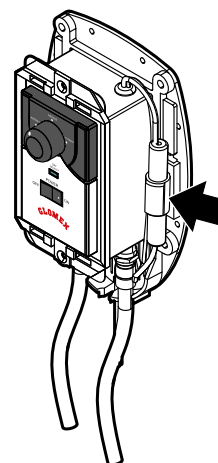


Fig. 29

GL00020



WARNING

In case the fuse blows again, a short circuit on the coaxial cable or on the power supply cable could be the cause.

Check that the cables are not short-circuited.



DANGER

Do not supply the antenna by connecting the 2 wires of the positive pole without using the fuse. This could cause a fire.

10. TROUBLESHOOTING

When a malfunction of your satellite system occurs, it is very important to make a rapid check to understand the nature of the malfunction and, if possible, to find a remedy.

To analyze a malfunction, it is appropriate to carry out the following verifications:

- the malfunction has been generated through human mistake;
- the malfunction is due to a weather problem;
- the malfunction is due to a failure of the equipment itself or it is caused by an anomaly of another external appliance, but in some ways connected to the equipment;
- in which phase the malfunction occurs: upon start-up, during normal operation, upon shut-down;
- the malfunction is repeated; if so, according to what criteria;
- what the malfunction determine from a functional point of view;

- whether the malfunction produces signals (light signals) and/or anomalous noise (such as hissing, buzzing, etc.) and/or anomalous odours (smell of burning) or not;
- the malfunction interferes with the operation of other appliances;
- the malfunction is an apparent failure (i.e. it disappears, for example, by turning off and then on again the equipment).

The better you are able to answer the above-mentioned questions, the deeper the malfunction analysis will be.

The following table analyzes the most probable causes which can lead to malfunctions of your DANUBE 2 R500 antenna. For any analyzed possible cause, a corrective measure is proposed, to efficiently solve, as much as possible, the trouble.

Anomaly	Cause	Remedy
1. The antenna does not operate (the led on the control unit does not turn on)	- the fuse is blown - wrong power supply cable connection - short-circuited coaxial cable - proper failure	- replace the blown fuse with a new one (see section "Maintenance") - check the polarity on the power supply line - check the correct mounting of the coaxial cables - contact the Service Centre
2. The antenna does not operate (the led on the control unit flashes alternately red and green)	- the coaxial cable has loosened or has disconnected from the antenna or from the control unit - inner failure	- check the connection of the coaxial cables - contact the Service Centre
3. No status message on the decoder	- the satellite receiver is not installed correctly - alternating current fluctuations	- check the receiver connection - refer to the user manual of the receiver for support

4. No image on the TV (the led on the control unit is green)	- the receiver is off - the TV set is off or has not been tuned to AV - wrong cable connection on the receiver - the channel list is not up-to-date - the selected satellite is not the correct one	- turn off the control unit, turn on the receiver and then turn on the control unit again - turn on the TV set and tune to AV channel - check that the SCART socket between the TV set and the receiver is installed correctly - carry out the automatic channel search in the receiver menu - check the selected satellite
5. Intermittent images for short periods	- the satellite signals are obstructed by trees, buildings, overpasses, mountains - the boat is at the boundary of the coverage area - bad weather conditions - wrong SKEW adjustment - temperature change greater than 10°C - it is necessary to calibrate the sensors again	- move the boat to allow an unobstructed view for the antenna - go back within the coverage area; refer to the footprints of the coverage areas on page 59 in this manual - adjust the SKEW by following the instructions on page 52 - turn off and on again the antenna - turn off and on again the antenna
6. The equipment does not find the satellite (the led on the control unit is red)	- the satellite signals are obstructed by trees, buildings, overpasses, mountains or attachments installed on the boat - the boat is outside the signal coverage area - the boat is moving within the first 60 seconds after turning on the equipment - bad weather conditions - wrong SKEW adjustment - inner failure	- move the boat to allow an unobstructed view for the antenna or correctly position the antenna on the boat - go back within the coverage area; refer to the footprints of the coverage areas on page 59 in this manual - turn off the equipment for 10 seconds, turn it on again and make sure that the boat is still or moves in a straight line during the first 60 seconds after being turned on - adjust the SKEW by following the instructions on page 52 - contact the Service Centre

7. The equipment does not find the satellite (the led on the control unit flashes alternately red and orange)	- the satellite signals are obstructed by trees, buildings, overpasses, mountains - the equipment software is not up to date - wrong SKEW adjustment - bad weather conditions	- move the boat to allow an unobstructed view for the antenna - please contact the Service Centre to ask for the software update by SD card - adjust the SKEW by following the instructions on page 52
8. Disturbed images	- failure of the receiver	- refer to the user manual of the receiver for support, spare parts and warranty conditions.
9. Confused, incomplete and obstructed images	- condensate or rain on the radome, which can disturb the signal with still vehicle - bad weather conditions	- remove the condensate deposits from the radome with a fresh water jet (not under pressure) - periodically apply a liquid detergent suitable for dishes (no alcohol-based detergent) to the radome surface and let dry up
10. The decoder blocks	- alternating current fluctuations	- refer to the user manual of the receiver for support
11. The equipment operates with still boat but not with moving boat	- the satellite signal is obstructed - failure in the gyroscope system	- move away from possible obstacles obstructing the satellite signal - contact the Service Centre

For further information, please address to the GLOMEX Service Centre (see section “Technical Support”).

11. RESHIPPING

Should you need to return the antenna to GLOMEX, place it in a box, possibly the original one, making sure it is well packaged and that the upper and lower side are well recognizable.

In order to prevent any damage to the antenna during transport, it is necessary to send it inside the original radome (upper and lower).

Together with the antenna, please also send the control unit, so that a verification of the whole system is possible.

NOTE: GLOMEX will not be liable for possible damage occurred during transport due to incorrect packaging.



WARNING

Do not ship the antenna to GLOMEX for repairs without having received a corresponding authorization to return the material (RMA), as reported in the general warranty/support conditions.

NOTE: to remove the antenna from the boat, just remove the upper radome by unscrewing the 8 screws near the base, unscrew the 2 screws on each fastening foot and lift the antenna from the lower radome.

The feet remain glued to the boat for a subsequent new installation. After its removal from the boat, fasten the upper radome onto the lower one again using the 8 screws previously removed.

12. TECHNICAL SPECIFICATIONS

DANUBE 2 R500	
Min E.I.R.P.	48 dBW
Antenna gain	35 db
Dish size	58 cm x 32 cm
Radome dimension	66 cm x 39 cm
Antenna type	OFFSET + H.P.F.
Antenna Polarisation	Linear V/H
LNB frequency range	10.7 to 12.75 GHz
Radome type	UV resistant
Antenna weight (including radome)	8 kg
Power supply	11,5 ÷ 13.8 VDC 1.2 a/H with moving vehicle 1 A/h in stand-by
Peak	2.5 A
Operating temperature range	-20°C to +55°C
Elevation range	15° to 50°
Azimuth turn range	Unlimited
Acquisition time (stationary)	< 40 sec
Tracking time (In-motion)	< 50 sec
Tracking rate	AZ 25° / sec EL 15° / sec
Loaded satellites	2 satellites + 1 standby
Type of transmission	With gear
Standby	Automatic + Manual
Type of stabilization	Gyroscopes on 2 axes + 3° axis by interpolation

ENGLISH

13. TECHNICAL SUPPORT

In case technical support is needed, please contact the GLOMEX SERVICE CENTRE:

Glomex Divisione Marine

Via Faentina 165/G
48124 Ravenna (Italy)
Tel. +39 0544 1935911
Fax +39 0544 500420
Email: service@glomex.it