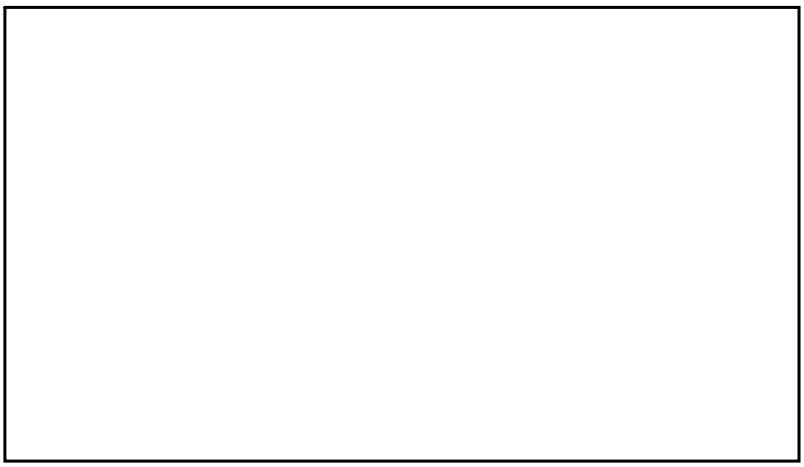
DISCOVERY 2 S500SS2
EXPLORER 2 S500MS2

DVB-S2 SATELLITE TV ANTENNAS FOR CARAVAN, MOTORHOME, BUS AND TRUCKS

USER AND INSTALLATION MANUAL

GLOMEX®
Emotion In Motion Antennas

ENGLISH



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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 vehicle.

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 Discovery 2 S500SS2 and Explorer 2 S500MS2 satellite antenna series against conformity defects for a period of 24 (twenty-four) months from the date of sales.

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 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 following are not covered by warranty: periodic monitoring, software updates, settings of the product, 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).

The warranty is provided by:

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

1.4 GENERAL SAFETY RULES

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 word *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.

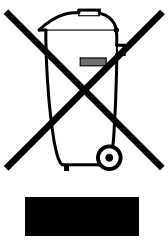

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Fig. 1

2. PRODUCT DESCRIPTION

2.1 DISCOVERY 2 S500SS2

Introduction of second generation digital video broadcasting DVB-S2 has updated the Discovery 2 S500SS2 satellite TV antenna in terms of technology and performance. This new technology lets you receive the satellite TV signal with perfect quality and watch all FULL HD and 4K channels.

Key points:

- Compact dimensions: a diameter of only 66 cm and a height of 39 cm, with a weight of only 8 kg.
- It operates with parked vehicle and with a very low current consumption (0.6 A/h with 12 V).
- Suitable for any weather condition, even strong wind.
- 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.
- Equipped with an elliptical feed-horn to prevent spillover (HPF High Performance Feed-horn).
- It can be updated by SD card, to be inserted into the relevant slot on the control unit side, in order to have a constantly updated SAT TV antenna over time.
- Its intuitive control unit makes it extremely easy to install and use.
- New low attenuation radome design.

The antenna covers the whole of Europe (see coverage areas on page 26) and the available preloaded satellites are Astra2, Astra1, Hotbird.

2.2 EXPLORER 2 S500MS2

Introduction of second generation digital video broadcasting DVB-S2 has updated the Explorer 2 S500MS2 satellite TV antenna in terms of technology and performance. This new technology lets you receive the satellite TV signal with perfect quality and watch all FULL HD and 4K channels.

Key points:

- Compact dimensions: a diameter of only 66 cm and a height of 39 cm, with a weight of only 8 kg.
- It operates both with parked and with moving vehicle.
- It has a maximum consumption (with moving vehicle) of approx. 1.2 A/h with 12V and 1 A/h with parked vehicle.
- Provided with new-generation electronic gyroscopes, it can compensate any kind of vehicle movement during travel, thus allowing you to watch your favourite TV programme during transfers and with parked vehicle.
- Suitable for any weather condition, even strong wind.
- 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.
- Equipped with an elliptical feed-horn to prevent spillover (HPF High Performance Feed-horn).
- It can be updated by SD card, to be inserted into the relevant slot on the control unit side, in order to have a constantly updated SAT TV antenna over time.
- Its intuitive control unit makes it extremely easy to install and use.
- New low attenuation radome design.

The antenna covers the whole of Europe (see coverage areas on page 26) and the available preloaded satellites are Astra1 and Hotbird.

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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).

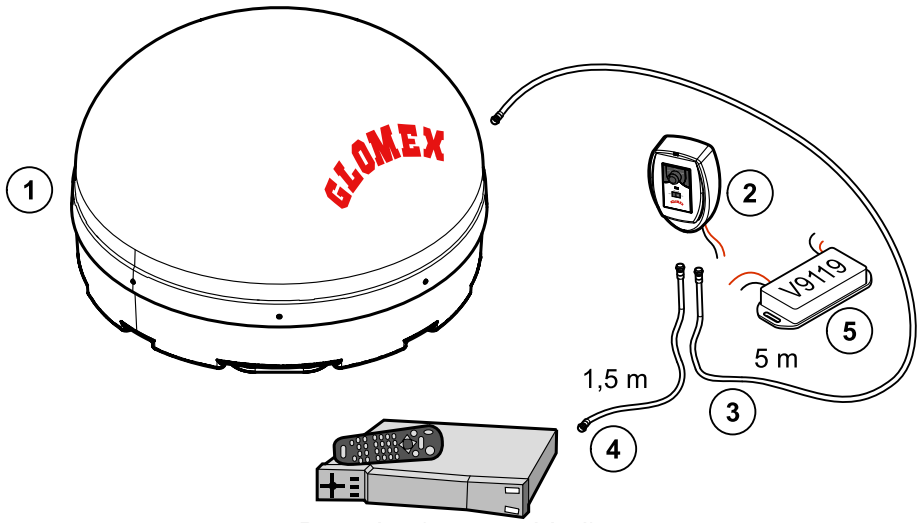

Fig. 1

DISCOVERY 2 S500SS2		EXPLORER 2 S500MS2	
Component	*GLOMEX code*	*Component*	*GLOMEX code*
Antenna unit (1)	3.010.0033	Antenna unit (1)	3.010.0034
Control unit with wall-mounting bracket (2)	4.120.0102A	Control unit with wall-mounting bracket (2)	4.120.0228
Coaxial cable, 5 m long, for antenna - control unit connection, with integrated protection (antenna side) (3)	V9140/5	Coaxial cable, 5 m long, for antenna - control unit connection, with integrated protection (antenna side) (3)	V9140/5
Coaxial cable, 1.5 m long, for control unit - sat decoder (4) connection	V9143	Coaxial cable, 1.5 m long, for control unit - sat decoder (4) connection	V9143
		Voltage stabilizer (5)	V9119
Frame for built-in installation	4.010.0432	Frame for built-in installation	4.010.0432
Roof fairlead (enables cable and connector passage)	T140	Roof fairlead (enables cable and connector passage)	T140

3.1 OPTIONAL ACCESSORIES (NOT INCLUDED) TO USE GLOMEX ANTENNAS

To be able to use your new GLOMEX satellite antenna for mobile vehicles, 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
SD card with new satellite	4.120.0077
SD card with software update	4.120.0078
Coaxial cable, 10 m long, for antenna - control unit connection, with integrated moisture protection	V9140/10M

4. NECESSARY TOOLS FOR ASSEMBLY (NOT PROVIDED)

- Electric drill (1).
- Drill tips: 3.5 mm (for fastening the control unit to solid wood or metal), 6 mm (for expansion plugs in lightweight or hollow furniture or chipboard, for fastening the control unit), 8 mm (for fastening the radome) (2).
- ø 25 mm hollow mill (for cutting the hole for fairlead assembly) (3).
- Phillips screwdriver (with adequate dimensions for control unit opening) (4).
- 11 mm wrench (for the installation of the coaxial cable connectors) (5).
- 2 mm Allen wrench (for M4 dowels) (6).
- Reciprocating saw (to drill a hole in case of wall built-in installation of the control unit; use the template provided on page 54) (7).
- Sealant like SIKAFLEX®252 (8).

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.

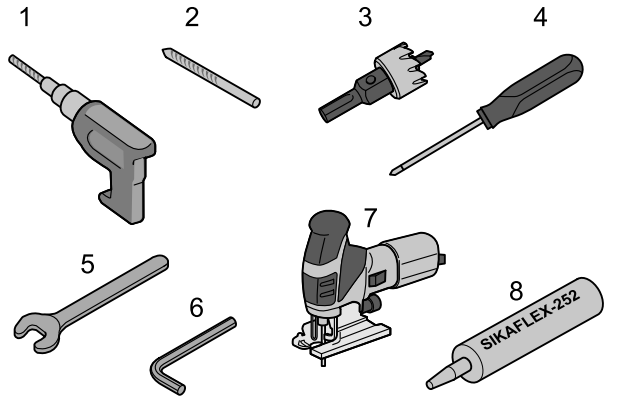

Fig. 2

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5. INSTALLATION

Since the GLOMEX satellite TV antenna requires a clear view of the southern sky to receive satellite signals, the ideal antenna site has an unobstructed view of the satellite/horizon all around.

Keep the antenna clear of any obstructions installed on the roof of the mobile vehicle (e.g., air conditioners).

Use the table below as a reference and install the antenna at a correct distance from the obstructions installed on the roof.

Obstacle height (**A**)	Minimum distance from the antenna (**B**)
20 cm	75 cm
25 cm	94 cm
30 cm	112 cm
35 cm	131 cm
40 cm	150 cm

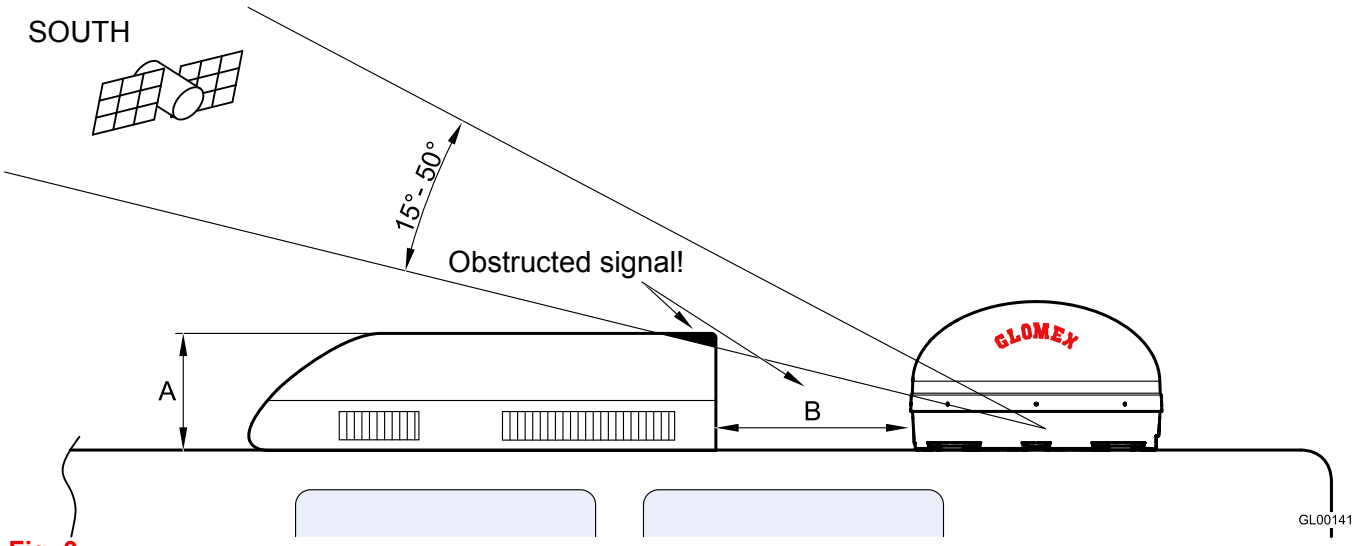

Fig. 3

Typical antenna lifting

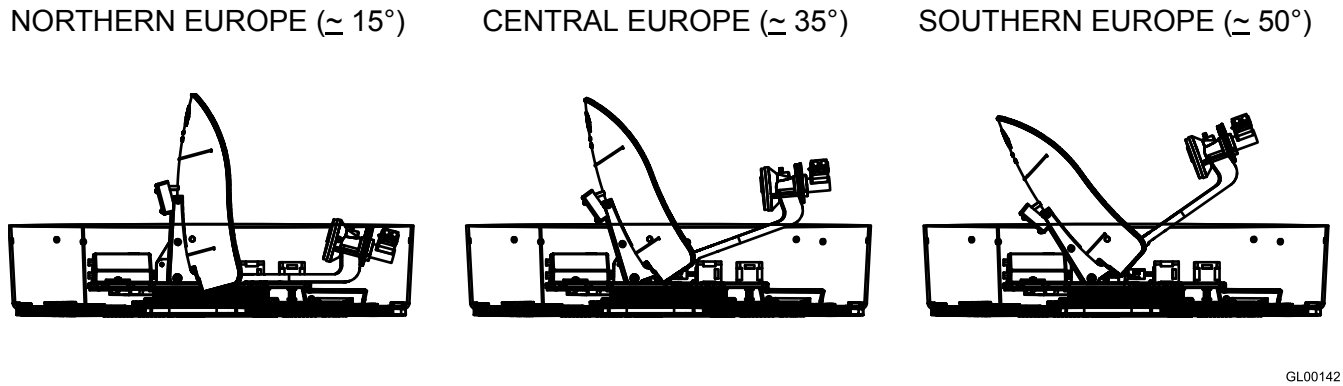

Fig. 4

The antenna requires a lifting angle between 15° and 50° to receive satellite signals.

Please also consider the position of the antenna with respect to the position of all various attachments or wiring harnesses necessary inside the vehicle.

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!

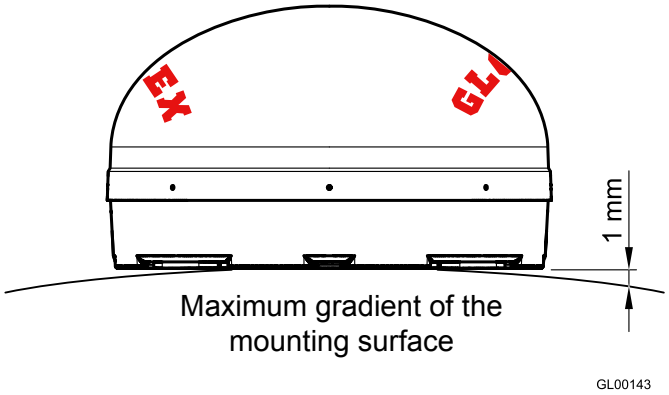

Fig. 5

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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 vehicle.

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 vehicle roof with alcohol and let evaporate before applying the sealant (**Fig. 6**).
4. Apply some sealant like SIKAFLEX®252 on the plates (**Fig. 7**).
5. Place the antenna in the appropriate position on the vehicle middle line, respecting the installation direction indicated in **Fig. 8** and apply a good pressure on the radome sides to make the plates correctly adhere to the mounting surface. Wait for the sealant 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.

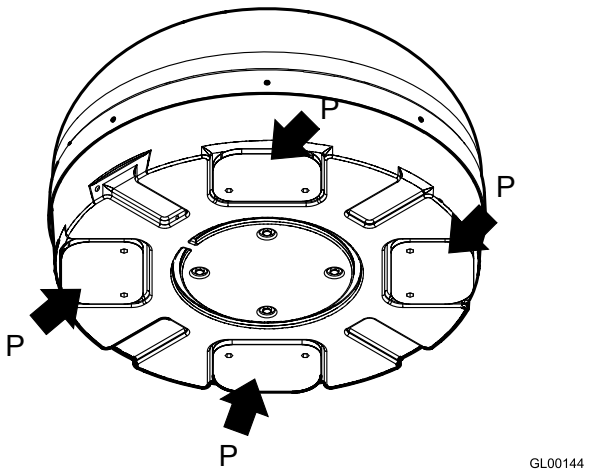

Fig. 6

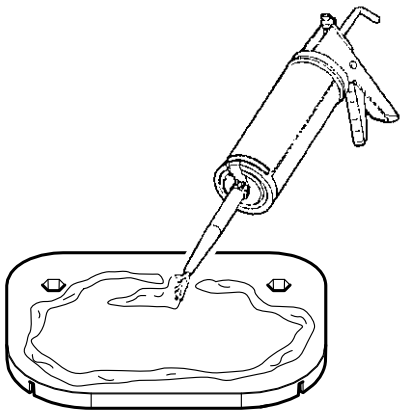

Fig. 7

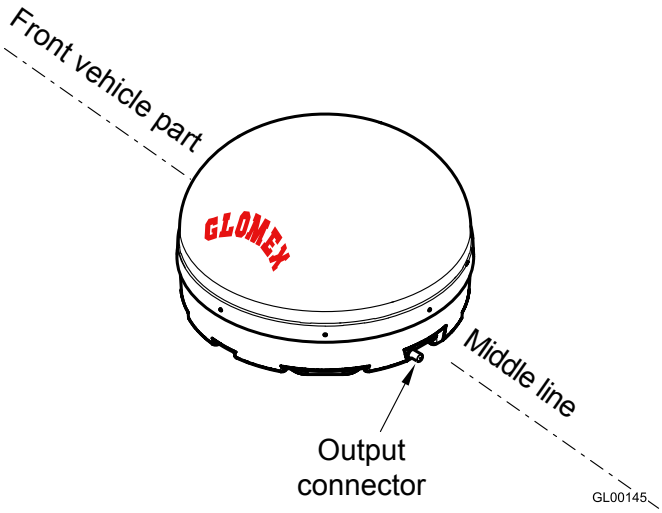

Fig. 8

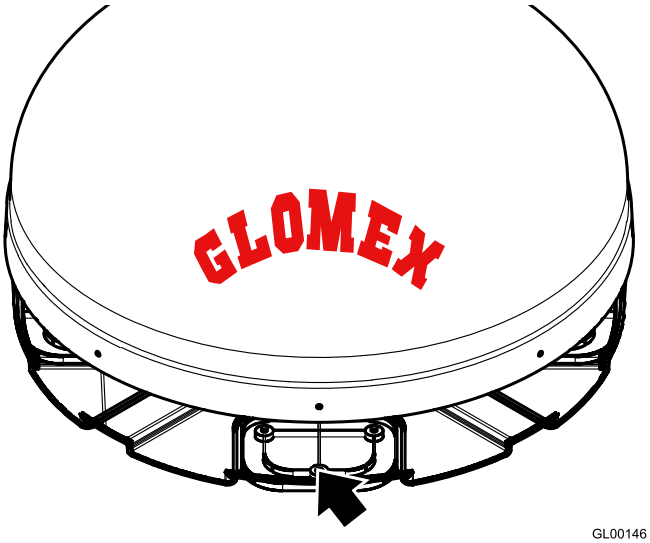

Fig. 9

7. Select the zone (on the vehicle roof) where to install the fairlead.
   Before drilling the hole, make sure not to damage possible pipes or cables.
   Drill a hole by means of an electric drill and a hollow mill with a diameter of 25 mm on the vehicle roof for the passage of the 5 m coaxial cable; use a fairlead code T140.
   Apply some sealant like SIKAFLEX®252 around the hole (**Fig. 10**).
   In case 2 cables are installed, by means of a knife or a blade, remove a plastic tongue from the fairlead, as indicated in **Fig. 11**.
   Then apply the sealant as previously described.

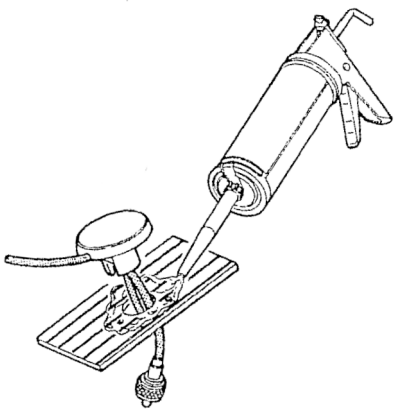

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Fig. 10

WARNING

Fastening with sealant is necessary and sufficient for the correct use of the equipment.
Fastening with the screws (not included) of the radome on the roof is optional.
Fastening with screws only does not guarantee a perfect coupling of the radome to the roof.
GLOMEX declines any liability for an incorrect coupling of the radome to the vehicle roof.

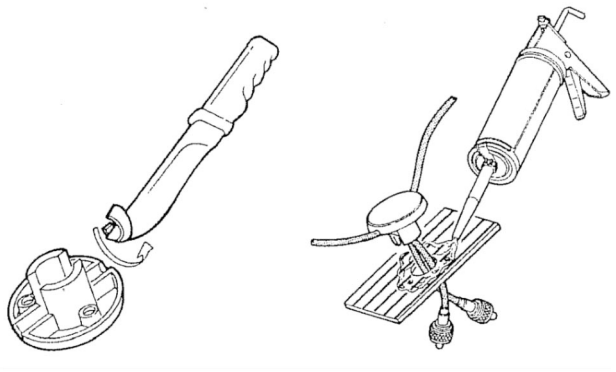

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Fig. 11

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8. 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 66 for fuse replacement);
   - manually screw in the ring nut of connector F;
   - once the ring nut has been manually screwed in, tighten by ¼ 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 vehicle roof.

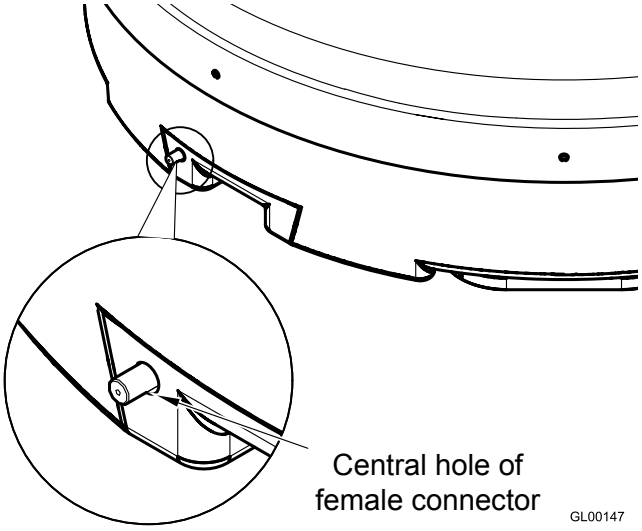

Fig. 12

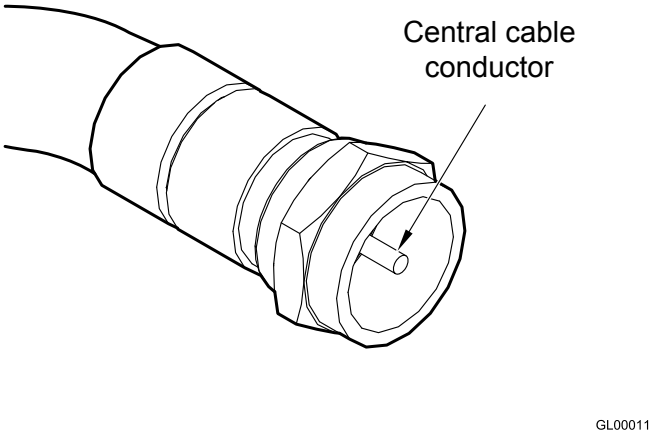

Fig. 13

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

9. Insulate with appropriate sealants the holes drilled in order to prevent the passage of water.

WARNING

For a correct assembly, respect the installation direction indicated in **Fig. 8**.
A different installation from the recommended one could cause an incorrect operation of the antenna due to the risk of water penetration into the radome.

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

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 **directly from the battery**;
   - it must be reached by the coaxial cable coming from the antenna (5 m long);
   - it must be located in a dry and ventilated area.
2. Open the control unit by loosening the screws with an appropriate screwdriver.

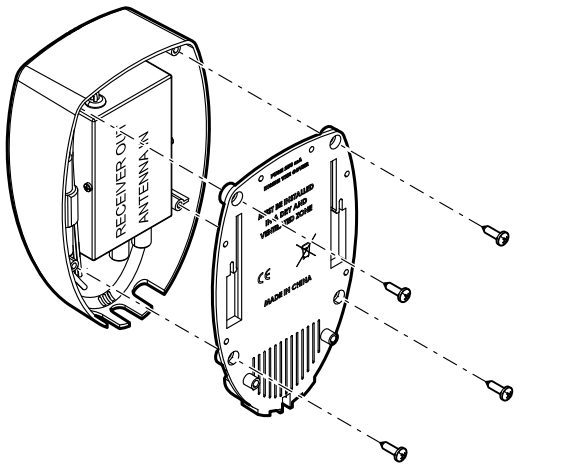

Fig. 14

WARNING

Should it be necessary to shorten the cable, please refer to the instructions given in Fig. 15.

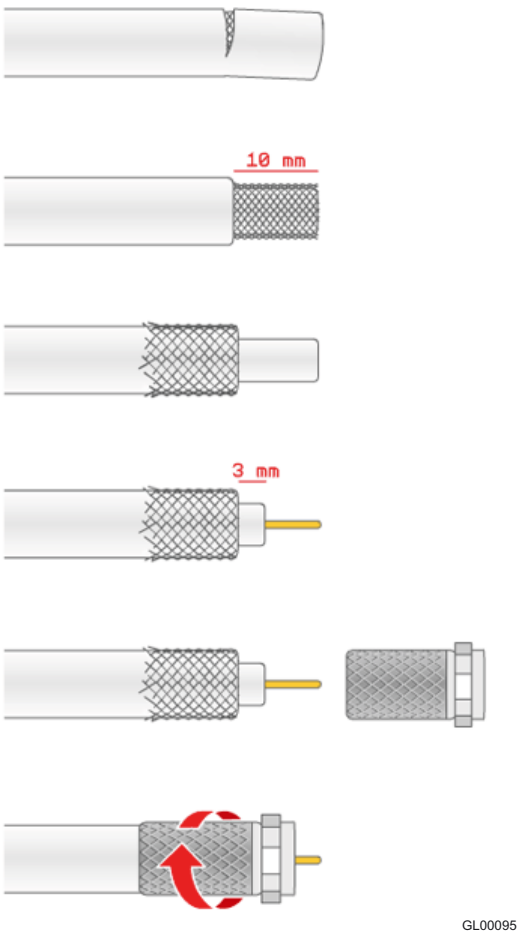

Fig. 15

3. 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 conductors 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, see page 66 for fuse replacement).
   Manually screw in the ring nuts of connectors F.
   Once the ring nuts have been manually screwed in, tighten by ¼ 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 inversion, GLOMEX will not be directly liable for the damage suffered by the receiver.

WARNING

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

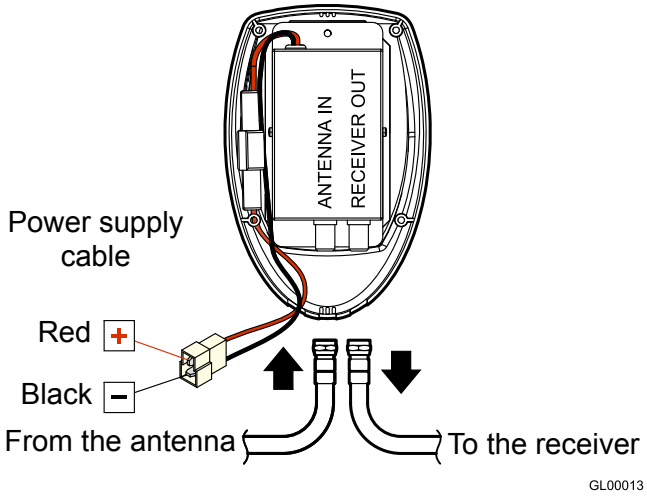

Fig. 16

4a. Only for Discovery 2 S500SS2 (Fig. 16)
   Connect the power supply cable of the control unit directly to the battery: connect the positive terminal of the vehicle battery to the red cable and the negative terminal to the black cable.
   The power supply line coming from the battery 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.

NOTA: With 5 m cable, MINIMUM power supply 11.5 V; with 10 m cable, MINIMUM power supply 12.5 V.

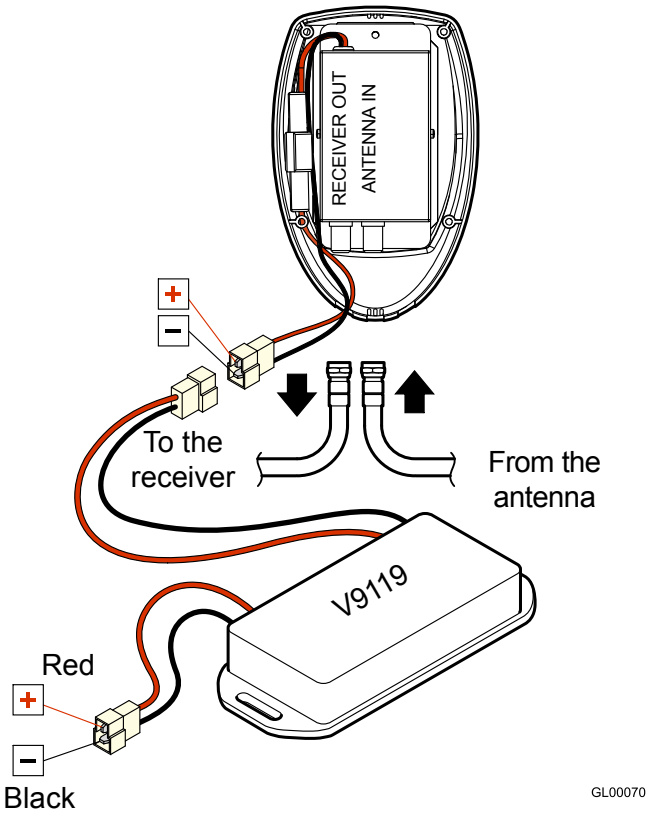

Fig. 17

4b. Only for Explorer 2 S500MS2 (Fig. 17)
Connect the power supply cable of the control unit to the connector of the power supply unit V9119. Connect the power supply cable of the V9119 unit directly to the battery: connect the positive terminal of the vehicle battery to the red cable and the negative terminal to the black cable. The power supply line coming from the battery 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.

NOTA: 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 vehicle battery.

WARNING

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

WARNING

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

NOTA: The polarity inversion on the power supply blows the fuse to prevent any damage to the antenna (see page 66 for fuse replacement).

WARNING

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

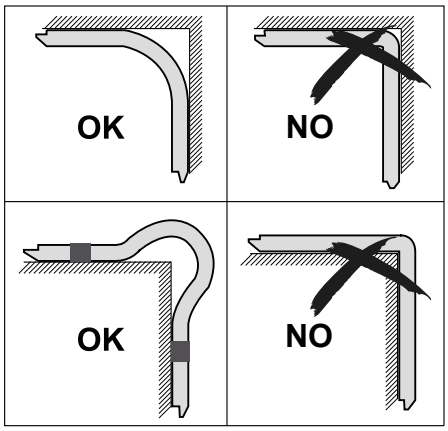

Fig. 18

NOTA: 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). In case a longer cable is needed, ask the authorized retailer for a 10 m coaxial cable, provided on demand. Do not use different cables, as it would jeopardize the operation of the equipment.

5. Close the control unit by tightening the screws in the rear cover.

6. Fasten the control unit to the wall by using the provided accessory (bracket) and screws.

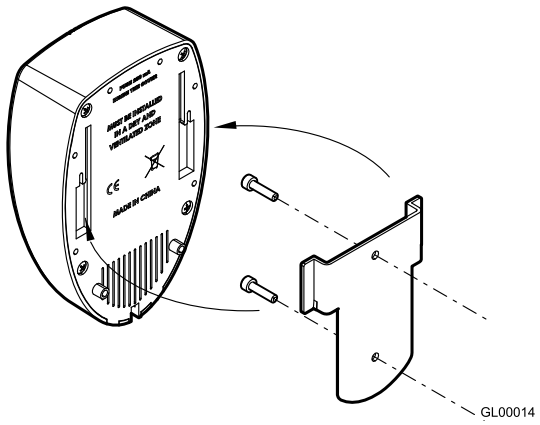

Fig. 19

7. As an alternative, the control unit can be built-in using off-the-shelf plates (3-module) or the GLOMEX accessory (code 4.010.0432, see **Fig. 20**) by boring a hole with a reciprocating saw and using the drill with 2.5 mm bit (use the cutting template on the following page for the correct dimensions).
8. Connect the 1.5 m coaxial cable to the LNB IN socket of the satellite receiver (not supplied).

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

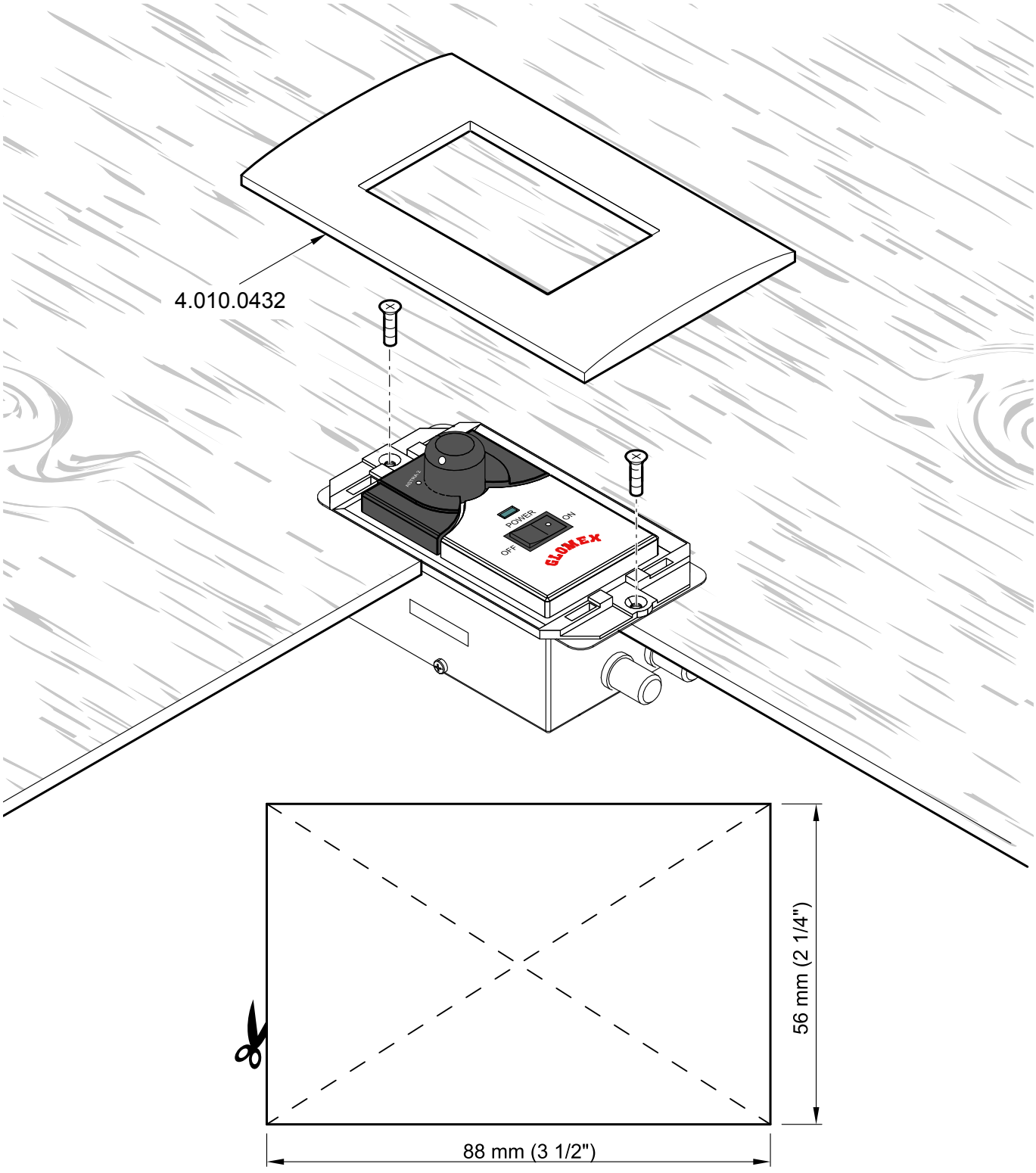


Fig. 20

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 +/- 10° (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 dish by using a 2 mm Allen wrench and manually move the LBN, 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.

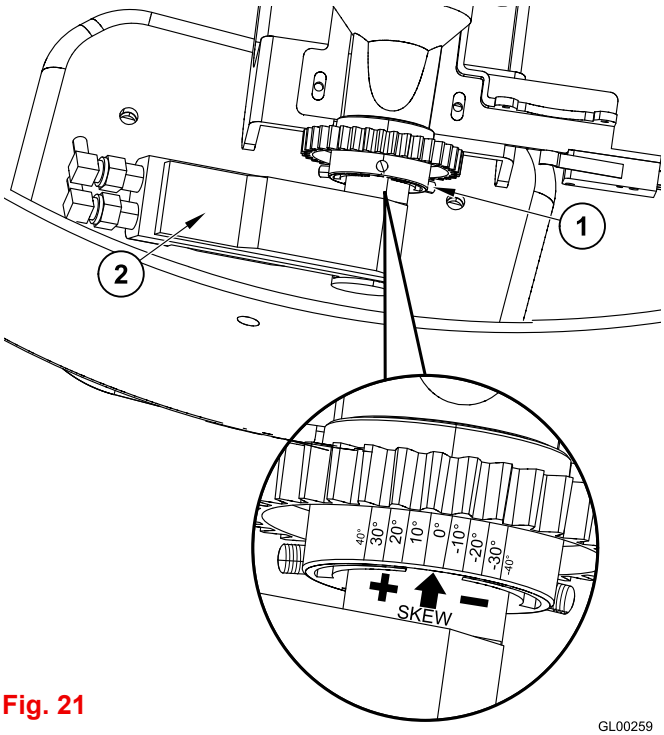


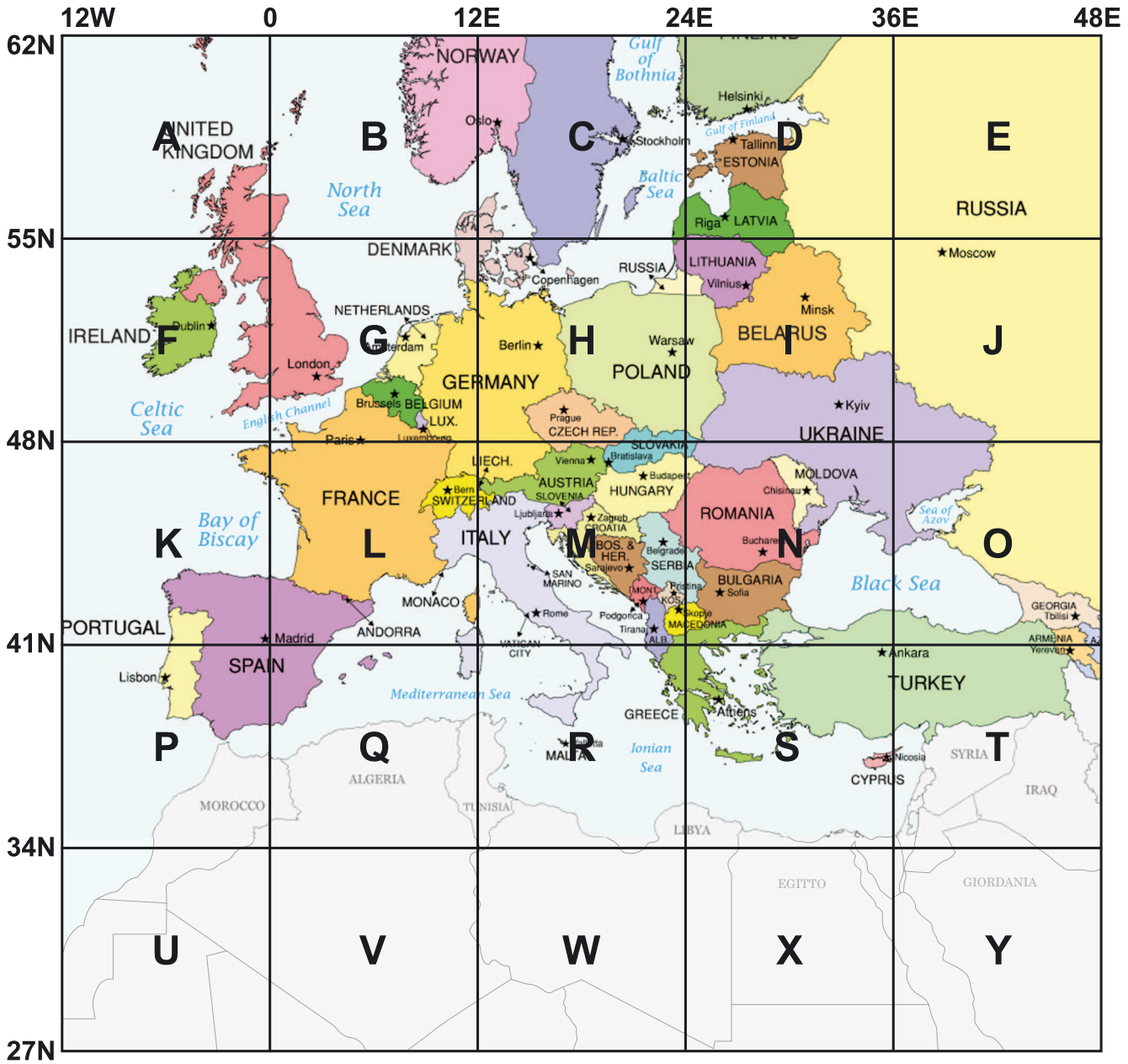
Fig. 21

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

ENGLISH

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.



GL00096

Fig. 22

We recommend obtaining the exact values for the adjustment of the skew by using the (free licence) app SMW Link (distributed by SWEDISH MICROWAVE AB) available for both iOS on the App Store and for Android on Play Store. Select the menu item “Antenna Alignment”.

Grid position	TURKSAT 42°E	ASTRA 2 28.2°E	ASTRA 3 23.5°E	ASTRA 1 19.2°E	HOTBIRD 13.0°E	SIRIUS 4.8°E	THOR 1°W	HISPASAT 30°W	ATLANTIC BIRD 3 5°W
A (6°W 58°N)	-25°	-19°	-18°	-14°	-11°	-6°	-3°	14°	-3
B (6°E 58°N)	-20°	-13°	-12°	-8°	-4°	0°	4°	20°	4
C (18°E 58°N)	-14°	-6°	-4°	0°	3°	8°	11°	24	11
D (30°E 58°N)	-7°	1°	3°	6°	10°	14°	17°	28°	16
E (42°E 58°N)	0°	7°	10°	13°	16°	20°	23°	30°	21
F (6°W 52°N)	-30°	-24°	-21°	-18°	-14°	-8°	-3°	17°	-2
G (6°E 52°N)	-24°	-16°	-13°	-10°	-5°	0°	5°	24°	6
H (18°E 52°N)	-17°	-8°	-5°	0°	3°	9°	14°	34°	15
I (30°E 52°N)	-9°	1°	4°	8°	12°	18°	21°	36°	22
J (42°E 52°N)	0°	11°	12°	17°	20°	25°	28°	22°	26
K (6°W 45°N)	-36°	-29°	-27°	-23°	-18°	-10°	-5°	30°	-4
L (6°E 45°N)	-30°	-20°	-20°	-12°	-7°	0°	6°	31°	7
M (18°E 45°N)	-22°	-9°	-8°	-1°	4°	12°	18°	36°	18
N (30°E 45°N)	-11°	2°	5°	10°	16°	22°	27°	40°	26
O (42°E 45°N)	0°	13°	17°	21°	25°	31°	34°	43°	34
P (6°W 38°N)	-43°	-35°	-36°	-28°	-22°	-13°	-6°	27°	-5
Q (6°E 38°N)	-37°	-25°	-23°	-16°	-8°	1°	8°	36°	12
R (18°E 38°N)	-27°	-12°	-10°	-1°	6°	16°	22°	43°	23
S (30°E 38°N)	-15°	2°	8°	13°	20°	28°	33°	47°	35
T (42°E 38°N)	0°	17°	23°	26°	31°	37°	41°	50°	44
U (6°W 30°N)	-	-44°	-43°	-36°	-28°	-18°	-8°	35°	-7
V (6°E 30°N)	-	-33°	-34°	-21°	-11°	1°	11°	45°	17
W (18°E 30°N)	-	-16°	-11°	-1°	8°	21°	29°	52°	36
X (30°E 30°N)	-	3°	10°	18°	25°	36°	41°	56°	50
Y (42°E 30°N)	-	22°	28°	34°	38°	46°	49°	58°	54

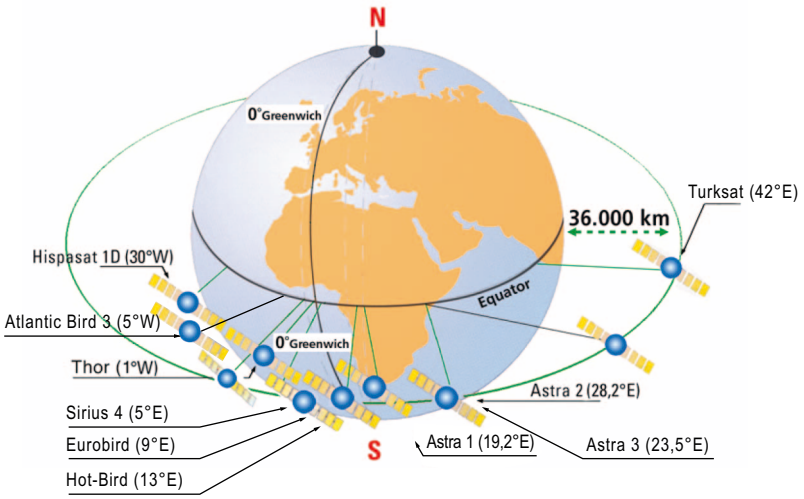


Fig. 23

GL00249

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7. USE

Flow chart

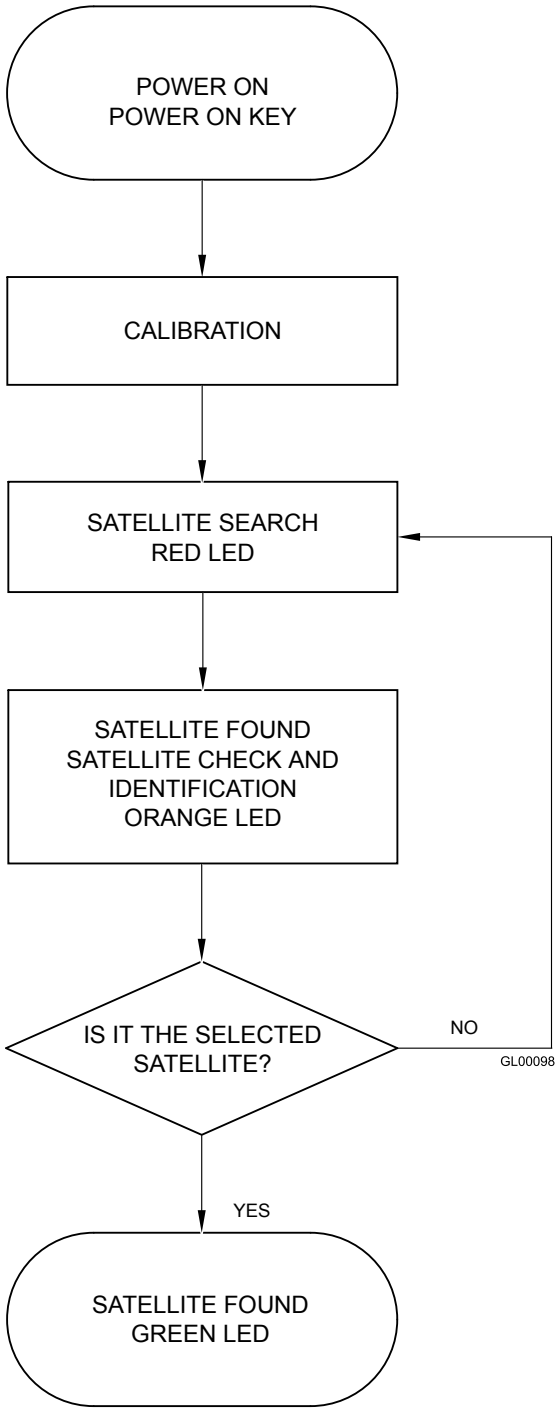


Fig. 24

1. In case of use with still vehicle, park the vehicle in an obstacle-free area.
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 relevant manufacturers.
3. On the control unit, by means of the relevant selector (A), select the desired satellite (ASTRA 1, ASTRA 2, HOTBIRD on S500SS2, ASTRA1 or HOTBIRD on S500MS2).
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 is the correct one. Otherwise, the led turns red again, and the satellite searching 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 (applies to S500MS2):**

   once the satellite has been verified (green led on the control unit), after about 2 minutes that the vehicle 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 vehicle of 6° in 2 minutes “wake the antenna up” in order that it recovers the maximum receivable signal level.

   People getting into, getting out of or moving inside the vehicle could make the antenna exit the standby mode.

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

   This function is useful at night to prevent the antenna from “waking up” and thus making undesirable noise.

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.

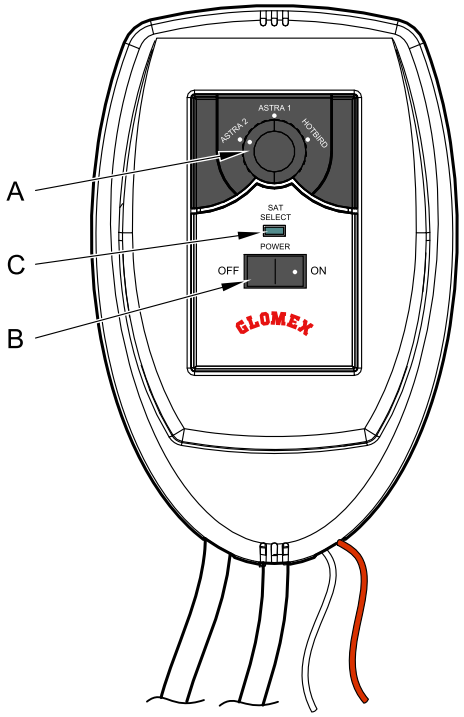
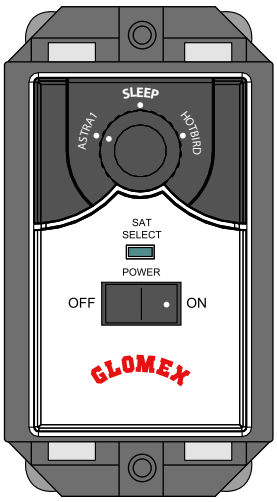


Fig. 25

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

7.1 HOW TO USE THE SLEEP MODE (S500MS2)

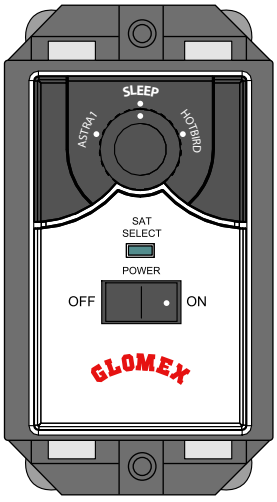
The first time you need to select the desired satellite (ASTRA1 or HOTBIRD).



GL00126

Fig. 26

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



GL00127

Fig. 27

In sleep mode, the antenna will stop and it will not enter the tracking mode. It means that, if the vehicle moves, the antenna will lose the signal.

Once the antenna is switched off, if the vehicle 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.

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.

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 antenna should be cleaned periodically. Dust or dirt accumulated on the radome could affect the satellite signal receipt. Clean the radome with a cloth damped 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 trees, buildings, overpasses, mountains, bridges and galleries. GLOMEX antennas also do not operate inside garages.

NOTA: (S500MS2) Upon start-up, the antenna calibrates the sensors.
Should the signal be unstable during travel, we recommend turning off and on again the antenna while travelling.
In this way, the antenna calibrates the sensors again.

NOTA: (S500MS2) Environmental temperature changes may influence the response of the sensors inside the antenna (gyroscopes), making signal pointing less precise.
Should the signal be unstable during travel, we recommend turning off and on again the antenna while travelling.

Fig. 28

- Heavy rain or snow could temporarily interrupt signal receipt from the satellite.
- The vehicle 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.

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.

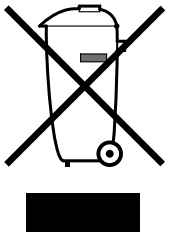


Fig. 29

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.

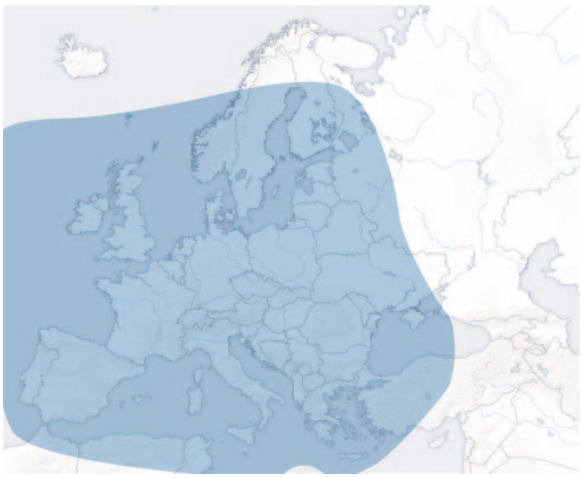
The signal transmitted by the satellite is also affected by weather conditions (storm clouds or ice clouds).

The footprints show the satellite coverage areas on the Earth for satellite antennas Discovery and Explorer under favourable weather conditions.

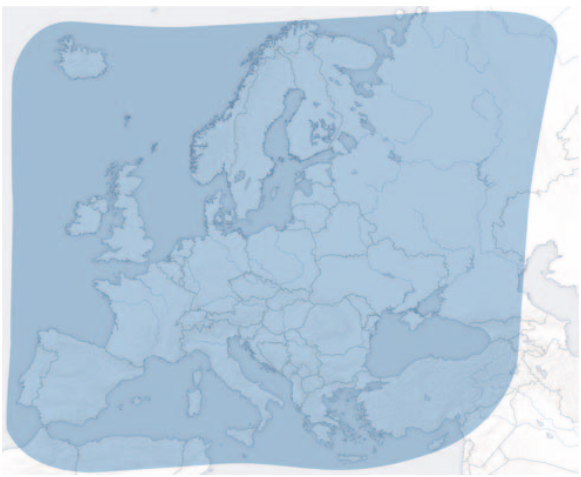
WARNING

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).

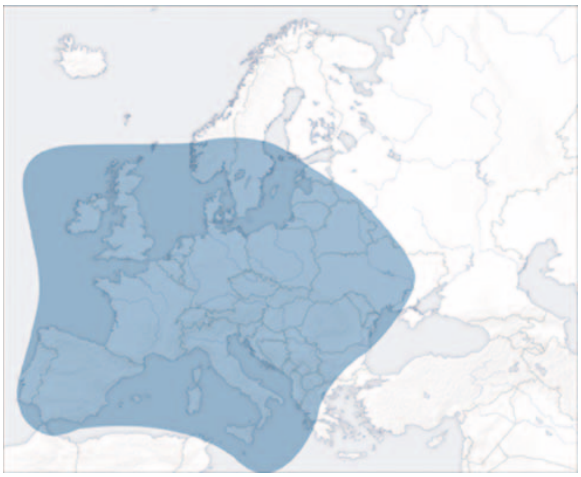
HOTBIRD - 13° E



ASTRA 1 - 19° E



ASTRA 2 - 28° E



ASTRA 2 UK - 28° E

GL00260

Fig. 30

9. MAINTENANCE

9.1 PREVENTIVE MAINTENANCE

GLOMEX DISCOVERY 2 S500SS2 and EXPLORER 2 S500MS2 antennas require 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 travel

- Check that the mounting plates of the radome are correctly glued
- Check for the correct installation of the 5 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.

GLOMEX DISCOVERY 2 S500SS2 and EXPLORER 2 S500MS2 antennas have been designed for a long life and for minimum maintenance.

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!

Spare parts	GLOMEX code
Lower radome S500SS2	S500SS2-LR
Upper radome S500SS2	S500SS2-UR
Lower radome S500MS2	S500MS2-LR
Upper radome S500MS2	S500MS2-UR
Fastening foot for antenna base	4.010.0250
Fuse for control unit T3A15 5x20	4.120.0076

ENGLISH

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 file DATA2.NID (DISCOVERY 2 S500SS2) or the file S500M2.DAT (S500MS2 EXPLORER 2) provided onto the SD card, proceeding as follows:

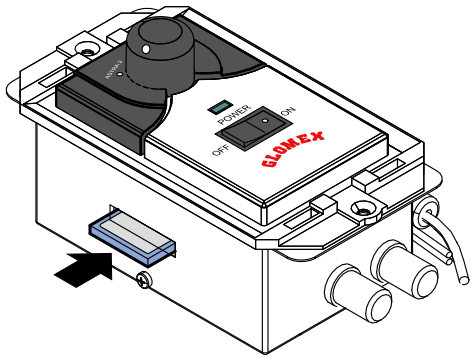
1. Turn off the decoder, the TV set and make sure that the switch on the control unit is set to OFF.
2. Remove the control unit from the wall-mounting bracket (see **Fig. 19**), open the box by loosening the screws (see **Fig. 14**).
3. OPTIONAL (in case of built-in installation): remove the wall-mounting plate (see **Fig. 20**), loosen the screws and remove the built-in control unit.
4. Insert the SD card into the relevant slot on the control unit side, as indicated in **Fig. 31**, respecting the direction (side with manufacturer label up) and making sure you have completely inserted it.
5. Turn on the control unit (set B key, **Fig. 25**, to ON).
6. 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.
7. 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 5.

NOTA: 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 5.

8. 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 5.
9. Turn off the control unit, remove the SD card and reinstall the rear cover onto the control unit.
10. OPTIONAL (in case of built-in installation): 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.



GL00019

Fig. 31

NOTA: it is possible to download the necessary software updating file from the Glomex website (www.glomexmobile.com) in section “Technical Support - Download Area”.

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Flowchart software update

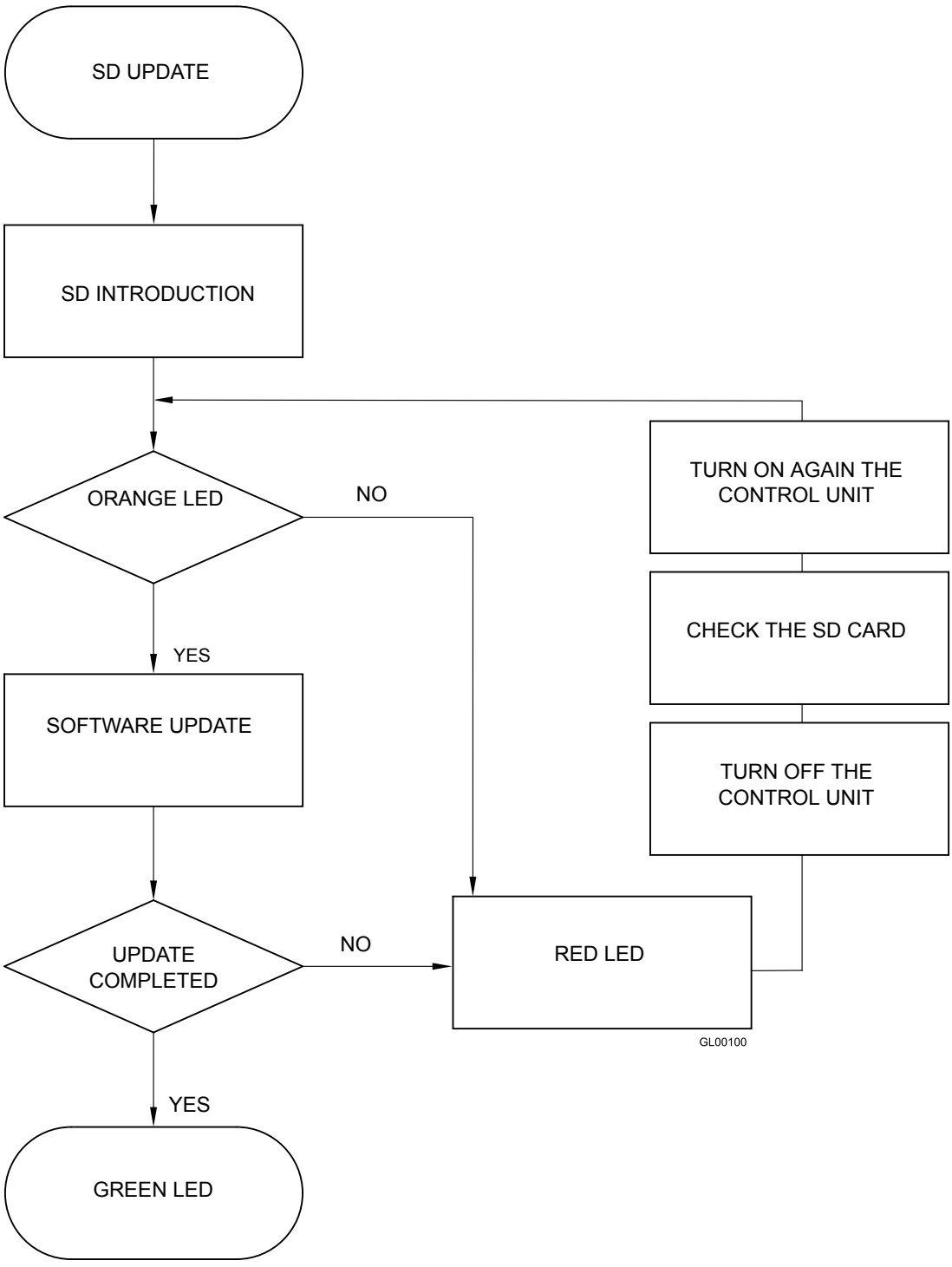


Fig. 32

ENGLISH

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:

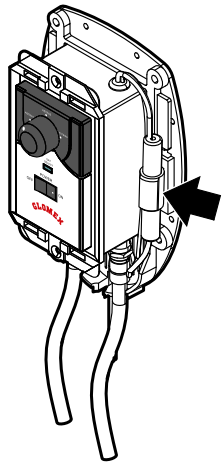
- Turn off the decoder, the TV set and make sure that the switch on the control unit is set to OFF.
- Remove the control unit from the wall-mounting bracket, open the box by loosening the screws.
- OPTIONAL: (in case of built-in installation): remove the wall-mounting plate (see **Fig. 20**), loosen 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. 33** and replace it with a new one (**type T 3.15A L 250 VAC 5x20**, i.e. delayed-action tube fuse, with 5 mm diameter and 20 mm length, 3.15 A rated current and 250 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.

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.
A fire could break out as a result of a short circuit.



GL00020

Fig. 33

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 GLOMEX DISCOVERY 2 S500SS2 or EXPLORER 2 S500MS2 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	- replace the blown fuse with a new one (see section “Maintenance”)
	- wrong power supply cable connection	- check the polarity on the power supply line
	- short-circuited coaxial cable	- check the correct mounting of the coaxial cables
	- proper failure	- 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	- check the connection of the coaxial cables
	- inner failure	- contact the Service Centre
3. No status message on the decoder	- the satellite receiver is not installed correctly	- check the receiver connection
	- alternating current fluctuations	- 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 vehicle is at the boundary of the coverage area - bad weather conditions - wrong SKEW adjustment - temperature change greater than 10°C (for S500MS2 models) - it is necessary to calibrate the sensors again (for S500MS2 models)	- move the vehicle to allow an unobstructed view for the antenna - go back within the coverage area; refer to the footprints of the coverage areas on page 62 in this manual - adjust the SKEW by following the instructions on page 55 - 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 vehicle roof - the vehicle is outside the signal coverage area - the vehicle is moving during the first 60 seconds after starting the equipment (for S500MS2 models) - bad weather conditions - wrong SKEW adjustment - inner failure	- move the vehicle to allow an unobstructed view for the antenna or correctly position the antenna on the vehicle roof - go back within the coverage area; refer to the footprints of the coverage areas on page 62 in this manual - turn off the equipment for 10 seconds, turn it on again and make sure that the vehicle is still or moves in a straight line during the first 60 seconds after being started - adjust the SKEW by following the instructions on page 55 - 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 vehicle 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 55
8. The equipment does not find the satellite (the led on the control unit is orange and remains orange also when moving the vehicle)	- parameters in satellite communication have changed - wrong SKEW adjustment	- please contact the Service Centre to ask for the software update by SD card - adjust the SKEW by following the instructions on page 55
9. Disturbed images	- failure of the receiver	- refer to the user manual of the receiver for support, spare parts and warranty conditions.
10. 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) or with a rag - periodically wash using a liquid detergent suitable for dishes (no alcohol-based detergent) on the radome surface and let dry up
11. The decoder blocks	- alternating current fluctuations	- refer to the user manual of the receiver for support
12. The equipment operates with still vehicle but not with moving vehicle (S500MS2)	- the satellite signal is obstructed - the antenna is only for stationary use - failure in the gyroscope system	- move away from possible obstacles obstructing the satellite signal - check the antenna model - 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.

NOTA: 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.

NOTA: to remove the antenna from the vehicle, 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 vehicle for a subsequent new installation. After its removal from the vehicle, fasten the upper radome onto the lower one again using the 8 screws previously removed.

12. TECHNICAL SPECIFICATIONS

DISCOVERY 2 S500SS2		EXPLORER 2 S500MS2	
Min E.I.R.P.	48 dBW	Min E.I.R.P.	48 dBW
Antenna gain	35 dB @ 12 GHz	Antenna gain	35 dB @ 12 GHz
Dish size	58 cm x 32 cm	Dish size	58 cm x 32 cm
Antenna type	OFFSET + H.P.F.	Antenna type	OFFSET + H.P.F.
Antenna Polarisation	Linear V/H	Antenna Polarisation	Linear V/H
LNB frequency range	10.7 to 12.75 GHz	LNB frequency range	10.7 to 12.75 GHz
Radome type	UV resistant	Radome type	UV resistant
Radome diameter	66 cm	Radome diameter	66 cm
Radome Height	39 cm	Radome Height	39 cm
Antenna weight (including radome)	8 kg	Antenna weight (including radome)	8 kg
Transmission	Gear	Transmission	Gear
Power supply	11.5 ÷ 13.8 Vdc/ 0.6 A/h	Power supply	11.5 ÷ 13.8 Vdc/ 1.2 a/H with moving vehicle 1 A/h in stand-by
Peak	2.5 A	Peak	2.5 A
Operating temperature range	From -20°C to +55°C	Operating temperature range	From -20°C to +55°C
Elevation range	15° to 50°	Elevation range	15° to 50°
Azimuth turn range	Unlimited	Azimuth turn range	Unlimited
Operating conditions	Stationary	Operating conditions	Stationary and in-motion
Acquisition time	40 sec (approx.)	Acquisition time (stationary)	< 40 sec
	-	Tracking time (In-motion)	< 50 sec
	-	Tracking rate	> 50° / sec
Loaded satellites	ASTRA1 19°E ASTRA2 28°E HOTBIRD 13°E	Loaded satellites	ASTRA1 19°E HOTBIRD 13°E
Working	Only when the vehicle is parked	Type of stabilization	Gyro on 2 axis +3° axis by interpolation
Skew	Manual	Skew	Manual
Standby	Automatic	Standby	Automatic + Manual

13. TECHNICAL SUPPORT

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

Glomex Divisione Mobile
Via Faentina 165/G
48124 Ravenna (Italy)
Tel. 199 30 11 30 (only from Italy)
Fax +39 0544 500420
Email: service@glomex.it

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