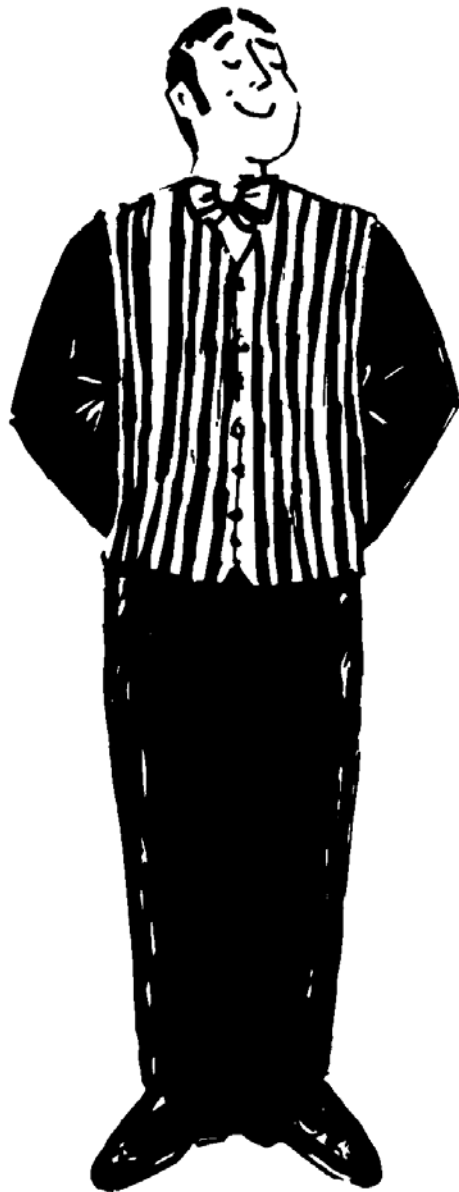


Assembly Instructions

Oyster Vision II



Issue: Mai 2006

ASSEMBLY INSTRUCTIONS

Don't worry – it does not require any witchcraft to assemble the mobile satellite system Oyster Vision II. Some points should be observed, however. Please accurately follow these assembly instructions so that afterwards your unit will operate to your full satisfaction.

If necessary, mounting and operating instructions can also be downloaded over the internet from www.ten-haaft.de.

Please completely read each point at least once before you begin to execute it.

In this way, complete point for point successively.

Note:

This is a sensitive device. Do not tear at the dish arm. Do not manually lift or turn the dish arm; the dish arm may only be moved by the motor. Only raise at plastic screen or aluminium plate. The screws at the plastic housing may be loosened only by the manufacturer of the unit.

Caution:

Never grip into the range of the external unit while it is moving!

Note for operation on caravans/trailers:

The 12 V board system power supply which is generated by voltage transformers built into caravans as a standard is frequently not stable enough for the operation of the satellite system.

We recommend the auxiliary transducer which can be ordered from us for installation into caravans.

Scope of delivery

The following items should now be in front of you:

Operating control device

Control unit

External unit

Dish

Mounting plate

Screw package

Cable set to the external unit (white coax cable together with control cable in black sheath)

Coax cable for connection of your satellite receiver with the control unit

Western cable (connection between control unit and operating control device)

Power cable (control unit)

Operating instructions

Assembly instructions

In addition required for television reception:

Satellite receiver (not comprised in the scope of delivery)

Disposal note for packaging material

Packaging materials and packaging auxiliaries are recyclable and must in principle be supplied to material recycling.

Packaging materials, e.g. plastic bags, should not be made accessible to children.

Please also observe the notes regarding environmental protection on page 20.

Assembly

1. Preparation

It is important that the roof of your vehicle is sufficiently stable.

In case of insufficient or doubtful roof stability, a piece of sheet metal with a thickness of approx. 2 mm and a size of approx. 100 x 100 cm should be attached on the roof's outer skin. Please consult your vehicle manufacturer.

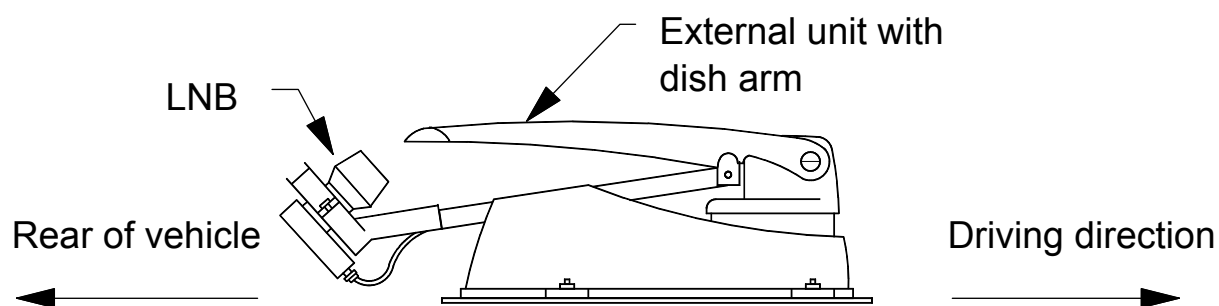
For the assembly of the unit you require a wrench of the sizes 13 mm and 27 mm each, a large Philips screwdriver, a drill with 25 mm in diameter or milling cutters, a drill press, a sharp knife (carpet knife), slotted screwdriver 3 mm, nipper pliers, industrial cleaner for cleaning the assembly plate, and a strongly sticking body sealing compound (e.g. Sikaflex).

2. Selecting the mounting position

After now all doubts are eliminated concerning roof stability and/or all necessary measures have been taken for proper assembly, provisionally put the external unit with assembly plate on the mounting position planned for it.

Correctly placed, the dish arm as well as the LNB must now be positioned toward the rear of the vehicle; other positions are not correct – see drawing below. With the CARO system, the LNB is integrated in the antenna surface and therefore not visible. Mount the CARO with the hinge pointing in the driving direction.

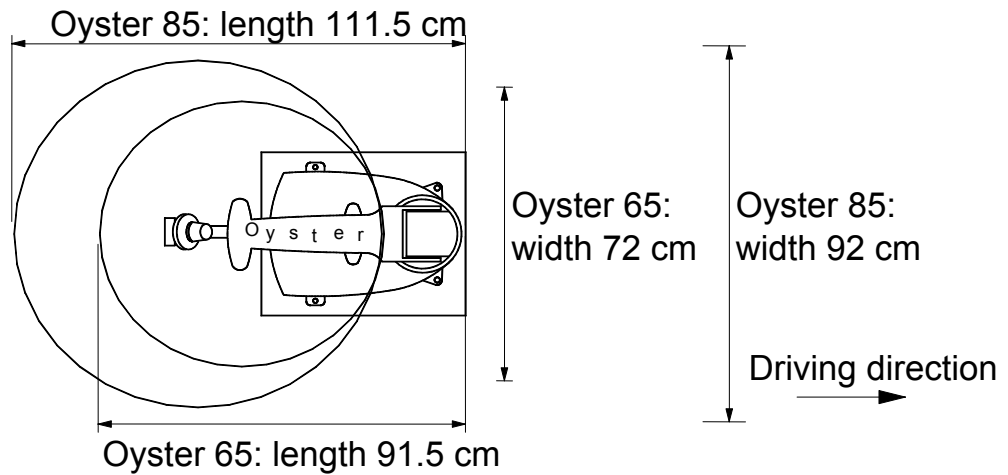
For the final choice of the mounting position, make absolutely sure of the necessary space requirements and consider the choice of location of the individual devices in order to later facilitate the installing of cables.



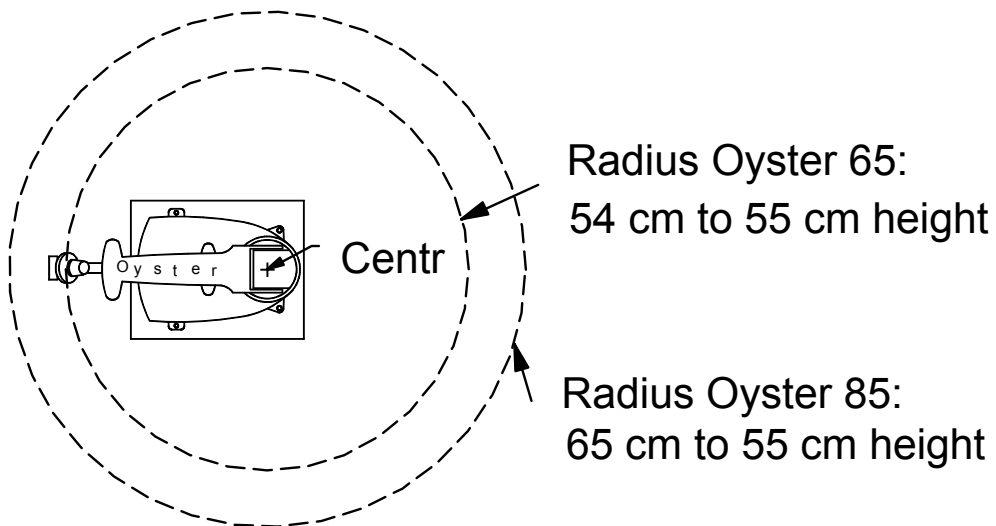
1. Space requirement of the external unit

Make sure that sufficient room is available for the folded-up system as well as for the radius of action (turning radius).

Generally, the following space is required for the folded-up system:



Later on, the system must be mounted in such a way that the LNB points to the rear of the vehicle (see drawing on previous page).



For **the radius of action** during the rotation of the antenna, likewise sufficient space must be planned. That means that roof systems, e.g. air conditioning systems, roof lights in opened state, roof suit-cases etc., must be located outside of the radius of action indicated above.

2. Mounting of the assembly plate

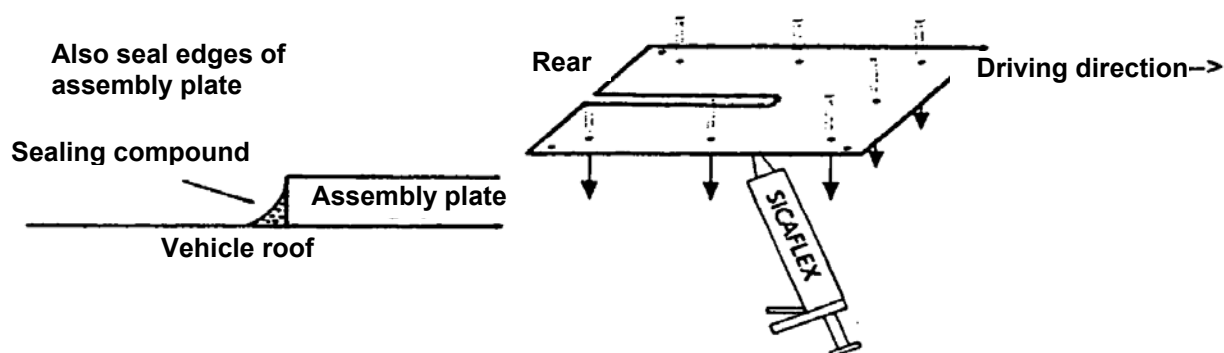
After the final mounting location for the unit has now been established and you have again verified the correct position in relation to the driving direction, mark the corner points of the assembly plate.

Attention!

Additionally, it is absolutely mandatory to mark with a line the assembly plate and the vehicle roof in order to exclude a directionally wrong assembly. The Oyster can be attached only in one position on the assembly plate. Thereby the LNB must show toward the rear of the vehicle. Every other position of the unit is incorrect and causes expiring of the guarantee.

Now remove the system from the assembly plate by means of the four assembly nuts.

The assembly plate is to be glued to the vehicle roof with commercially available body sealing compound, and afterwards bolted. For the cleaning of assembly plate and roof, please use a special cleaning agent which is recommended by the manufacturer of the body sealing compound (e.g. Sikaflex, Teroson 1K-Pur). After ventilating of the cleaner, apply the sealing compound to the bottom of the assembly plate, and after setting it on the roof bolt it with the included tapping screws (see drawing).



3. Elbow connector

The elbow connector on the roof must be aligned toward the rear of the vehicle, thus the cable input will point to the rear and is splash-proof.

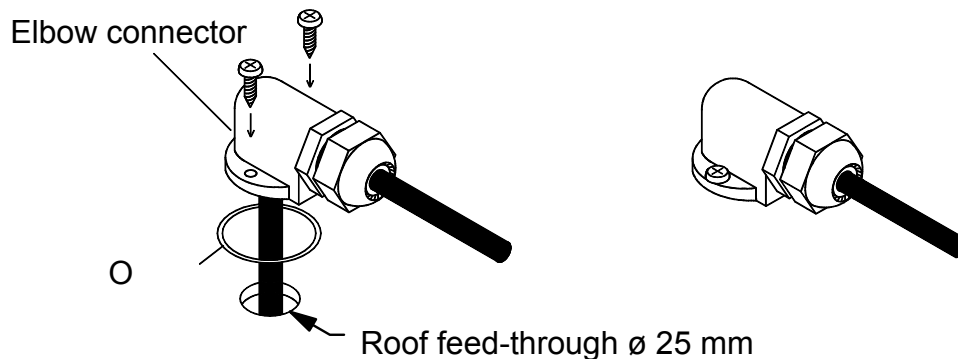
It is of advantage for an uncomplicated installing of cables inside the vehicle to have the distance between elbow connector and receiver as short as possible.

4. Mounting the system

First, connect the large cable set with the external unit. To do this, tilt the external unit on the side. The plug connection takes place in the pit in the bottom of the housing body. Now mount the external unit on the assembly plate and insert the cable into the small recess of the base plate to the rear. If earlier the assembly plate was mounted correctly, then the LNB now points toward rear of the vehicle. Do not yet bolt the external unit to the assembly plate.

5. Attaching the elbow connector (roof feed-through)

The elbow connector must be mounted on the vehicle roof in such a way that it points toward the rear of the vehicle, and accordingly the cable input will be located at the rear and is splash-proof.



a) Make a roof cut-out with approx. 25 mm diameter for the cable entry.

b) The small assembly plate for the elbow connector is glued to the vehicle roof with commercially available body sealing compound and afterwards bolted. For the cleaning of the small assembly plate and the roof please, use a special cleaning agent which is recommended by the manufacturer of the body sealing compound (e.g. Sikaflex, Teroson 1K-Pur). After ventilating of the cleaner, apply the sealing compound to the bottom of the assembly plate, and after setting it on the roof bolt it with the included 4 tapping screws

c) Now apply strongly sticking body sealing compound to the bottom of the elbow connector and mount it on the assembly position (small aluminium plate). Thereby pay attention to correct seat of the O ring!

d) Afterwards, the elbow connector is screwed to the roof with the two included tapping screws. However, do not yet fasten the nut of the elbow connector!

e) Seal the lower edge of the elbow connector as well as the tapping screws all-around likewise with sealing compound.

f) Now fasten the nut at the elbow connector with a 27 mm wrench in clockwise direction.

Finally check the tightness at the cable entry, at the tapping screws, and at the foot of the elbow connector.

6. Installing the cables

- a)** Lead the cable coming from the elbow connector downwards to the control unit.
- b)** For the cable distance between the external unit and the elbow connector on the vehicle roof, you can use the commercially available cable troughs.
- c)** Should the cable be too long within the vehicle, you can coil it up.

7. Power supply

Provide for a sufficient power supply of the system.

- a) The system requires connection to 12 V or 24 V on-board power.
- b) For the connection to the on-board power, the cable diameter must not be below 2.5 mm². For cable lengths of 6 m or more, use a cross section of at least 4.0 mm².
- c) In most cases, a connection to the on-board power over existing lines is not ideal. Often the cable diameter is too low and/or different users, e.g. the television set, are already being supplied via these lines. The available voltage is then usually not sufficient.
- d) Recommended and at the same time the optimal solution is to install a separate on-board power line for the unit to the battery. **The fuse protection of this line must be between 10 and 20 A.**

Power supply in caravans / trailers

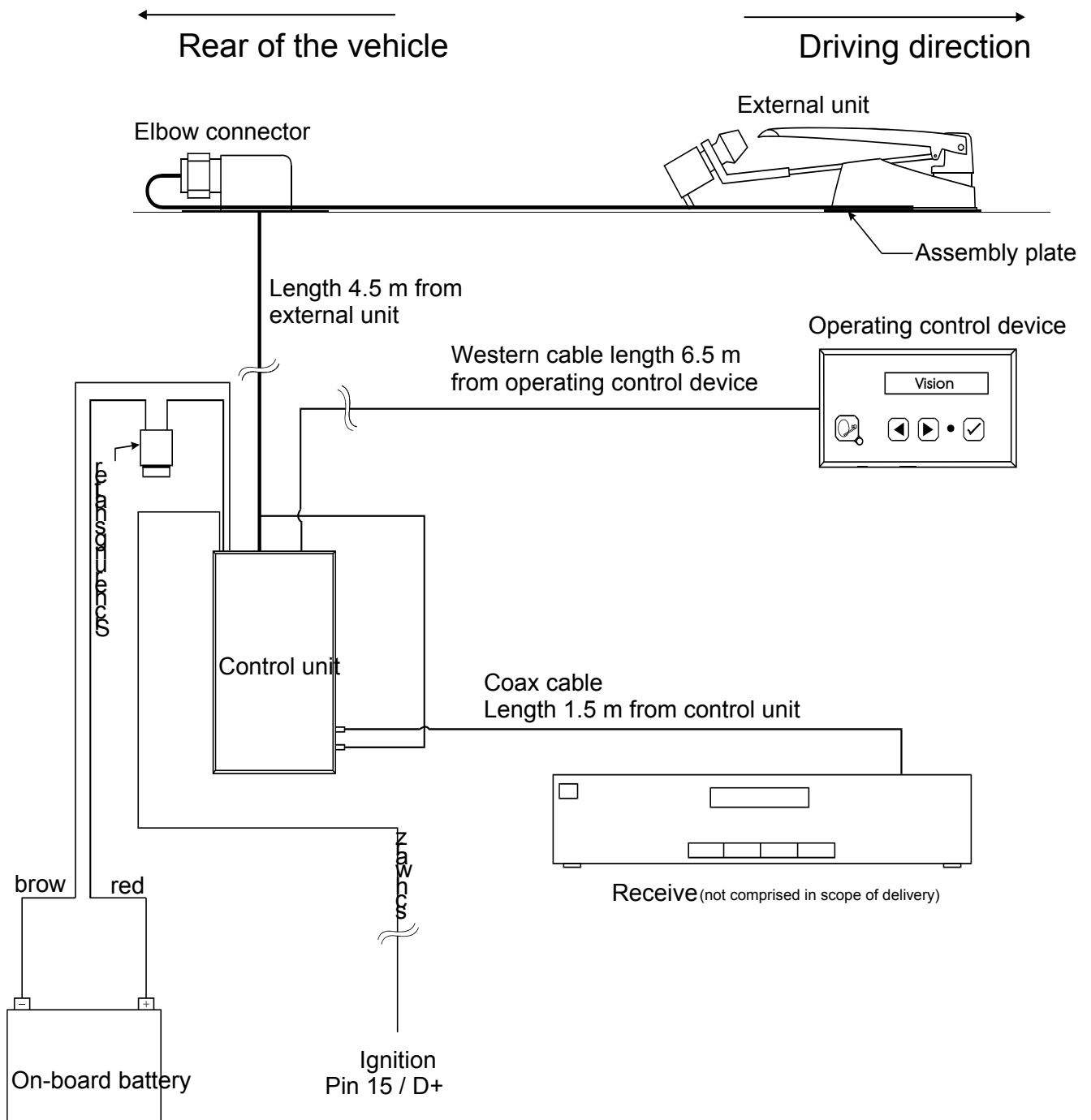
In caravans there is frequently no stable and/or battery backed-up 12 V board power supply available. In this case it is necessary to supply the system via a suitable voltage transformer 220 V/12 V from the mains power net.

Do not use under any circumstances battery chargers, simple transformers, or non-stabilized power packs. Suitable are exclusively electronically controlled stabilized power packs with a nominal voltage of 13,8 V and a permanent current load capability of at least 6 A.

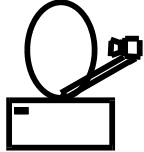
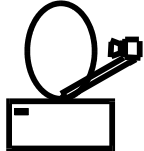
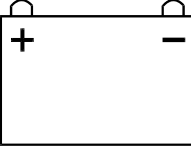
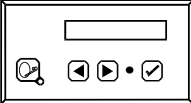
We strongly recommend the use of the auxiliary transducer which can be obtained from us.

After the correct connection of the system to the battery has been established, the system will perform a self-test.

Should you now see any error messages appearing on the display of the control device, look up the cause on page 19.



Connector identification at the control unit:

Receiver	Connect this socket with the input socket of your satellite receiver using the included shorter coax cable.
 F-Plug	Connect here the antenna plug (BNC plug) of the provided control cable to the external unit. (Control cable and coax cable to the external unit are together in a black sheath.)
	Connect here the white 15 pin plug of the provided control cable to the external unit. (Control cable and coax cable to the external unit are together in a black sheath.)
 30/3 1/15	<p>Connect here the provided power cable.</p> <p>ATTENTION! Make sure beforehand that the power cable is correctly connected to electricity mains of the vehicle at the other end; in case of wrong polarity the control unit can be destroyed!</p>
	Connect here the provided Western cable (similar to a telephone line), and plug the other cable end into the operating control device.
GPS antenna	Without meaning
GPS extern	Without meaning

8. Protection circuit

In order to prevent damage by inadvertently driving with a folded-up external unit, the black line of the voltage supply of the receiver must be connected to "pin 15" (pin 15 is a line which does lead voltage during switched-on ignition and no voltage with switched-off ignition). The unit will then automatically retract as soon as the ignition is switched on.

In addition, the unit cannot be extended with switched-on ignition.


Note:


Use for the connection only a switched plus wire, not the D-plus line of the generator. With many vehicles, the D-plus line does not switch through a clean DC voltage; in addition there are not immediately available approx. 12 volts on this line but often a voltage is only slowly built up. This can lead to functional problems with the processor in the receiver.

9. Mounting the dish antenna

After now all devices have been connected, next the dish antenna will be mounted.

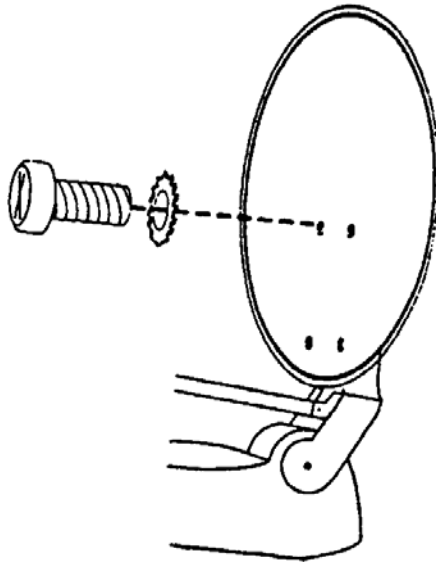
Attention: First make sure that within the range of the external rotating unit no tools or the like prevent rotary motions of the system.


a) Switch on the control unit with the  key. The external unit must now extend.

b) When the external unit is in approximately vertical state, interrupt the movements by pressing the key .

Absolutely wait until the system does not move any longer before you start with the assembly of the dish.

Now the antenna dish should be bolted onto the dish arm with the four Philips bolts and lock washers.



Retract the system again by pressing the key  on the operating control device.

10. Receiver connection

Now you can connect the system to your receiver (not comprised in the scope of delivery) by screwing the F-plug at the white coax cable to the F-socket of the satellite input.

Now you must fasten the cap nut at the cable entry on the roof.

Now bolt the external unit to the assembly plate by means of the 4 assembly nuts.

11. Adjusting TV set and receiver

There are two possibilities of interconnecting receiver and television set. Follow the instructions of **one** of the two points only!

Either: Connection with a TV coax cable (generally available in stores, not comprised in the scope of delivery); sound reproduction will be only in mono.

First, the receiving channel of the satellite receiver must be stored at the TV set. (Refer to the operating instructions of your TV set regarding the procedures for channel selection and storage.) The system must be switched on (see menu option 12) in order to transfer a menu or a television picture to the TV set. Now the receiving channel can be searched at the TV set (see TV operating instructions). If a picture (menu text or TV programme) appears on the TV, the correct channel has been found. You should now store this channel at a program place of your choice.

Or: Connection via the TV Scart socket with a Scart cable (generally available in stores, not comprised in the scope of delivery). Over this connector a stereophonic sound play-back is possible.

You do not need to connect the provided TV coax cable in this case. You need to do nothing further than to plug the Scart cable into the respective TV Scart sockets of the devices. At the TV set, you need then only switch to the programme designated "AV".

Switch the system off again by pressing the key  on the operating control device.


The external system returns now into its folded-down position.

The system is now ready for use.

You can find the most important functions for the operation on the summary operating instructions on the next page.

Before switching on please make sure that you have an unobstructed line of view toward the south because otherwise no satellite reception is possible.

12. OPERATION OF THE SYSTEM (quick guide)

1. Switch on your TV set and the receiver.
2. To power-on the system, press the key  at the control device.

From now on everything else up to the picture transmission will be fully automatic.


In principle, at first the antenna extends into the last receiving position. If you are using the system for the first time and/or if you have changed your location, then the system cannot evaluate a picture in the last receiving position and it starts the "fully automatic search" mode. Subsequently, you will immediately get your TV picture.

If you have already used the system at the same location and in the same vehicle position, then it will receive immediately in the last reception position without searching.

German-language programming is usually transmitted over the Astra1 satellite which can also be received in most parts of Europe with a dish size of 65 cm.

In some regions (e.g. in parts of Greece or in Turkey), the Astra satellite transmits no sufficiently strong signals and therefore cannot be received. In this case, select another search satellite, e.g. Hotbird/Eutelsat (see detailed operating instructions).

After successful satellite identification, you can change programmes with your receiver's remote control.

The system is switched off by pressing the key  at the control device. The system then retracts and switches off.

Disassembling the system

You can take the system from the roof, e.g. in order to install it separately with the optionally available ground assembly set.

To disassemble the external system you need a wrench SW 13.

It is not necessary to dismantle the cable.

Proceed as follows:

- Unscrew the 4 nuts M8 with which the system is bolted to the assembly plate.
- Lift the system a little bit, press on the nose of the 15 pin plug and pull it off.
- Turn at the BNC plug of the coaxial cable and pull it off.
- Now you can lift off the system.

In order to assemble the system again, proceed in reverse order.

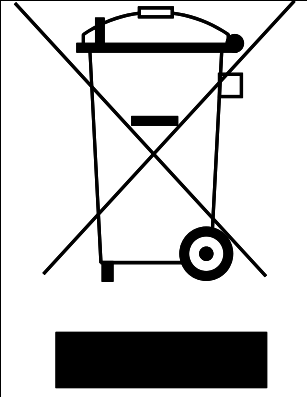
First help with malfunctions

During the operation of the automatic antenna system there might occur malfunctions, e.g. if the unobstructed movement of the antenna is not ensured (branches, snow etc.).

In part, such malfunctions are automatically identified and represented on the display of the control device.

Error description	Fault correction
During the search for a satellite, no signal could be received.	Do you have free line of view towards the south? Are you within the reception range of the selected search satellite? Should the skew angle of the LNB be modified with reference to your location (page 11)?
"Y motor error" or "X motor error" appears in the display.	Are any objects interfering with the movement of the antenna? Is the supply voltage too low (weak battery)?
Antenna does not react after switching on, or does not react to commands.	Is the fuse OK? Are all cables correctly plugged in?

Notes regarding environmental protection

 A black and white icon of a trash bin with a lid and a wheel, crossed out with a large 'X'. Below the icon is a solid black rectangular bar.	<p>At the end of its service life, this product may not be disposed of through the normal household waste but must be brought to a collection point for recycling of electrical and electronic devices. The symbol on the product, in the instructions, or at the packaging refers to this.</p>
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The materials are reusable in accordance with their identification. With recycling, material reutilization, or other forms of reutilization of old devices, you make an important contribution to the protection of our environment.

Please inquire the respective disposal locations at your local administration.

If you have any questions regarding the assembly of the satellite reception system, please call our service hotline:

Telephone: +49 7237 48550

We are at your service:

Monday – Thursday	9:00 – 12:00 a.m. and 1:00 – 4:30 p.m.
and Friday	9:00 a.m. – 2:00 p.m.

We hope you will enjoy your Oyster Vision II !

ten Haaft GmbH

Oberer Strietweg 8

D-75245 Neulingen-Göbrichen

info@ten-haaft.de

www.ten-haaft.de