

Installation Manual

MobiSet 2 digital CAP 210 and Mobi Set 3 digital CAP 310



KATHREIN
Antennen · Electronic

Important information about MobiSet 2 digital CAP 210

Information for Owners of MobiSet 2 digital CAP 210!

The HTV 115 LCD/TFT television set is only included with the CAP 310!

If you have purchased a CAP 210, all safety instructions, installation and operating steps and instructions outlined in this installation manual are applicable (except the instructions and information relating to the HTV 115 television set).

Thank you for your understanding

Your KATHREIN Team

Foreign language installation instructions

Dear Customer, Chère Cliente, Cher Client, Gentile cliente, Estimado cliente,

GB

You can obtain an English version of our mounting instructions from our representatives in your country (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) or download one from our homepage (<http://www.kathrein.de/en/sat/products/englisch.htm>).

F

Vous pouvez obtenir un manuel d'installation en français chez notre représentant en votre pays (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) ou le télécharger de notre page d'ouverture (<http://www.kathrein.de/en/sat/products/franzoesisch.htm>).

I

Lei può avere la versione italiana delle istruzioni di montaggio dalla nostra rappresentanza (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) più vicina della sua città, oppure scaricarla dalla nostra homepage <http://www.kathrein.de/en/sat/products/italienisch.htm>

ES

Para obtener la versión española de nuestro manual de instalación, contacte nuestros representantes en su país (http://www.kathrein.de/include/kontakte_groups_eng.cfm?kontinent=1&gruppe=SAT) o bajela de nuestra página de Internet (<http://www.kathrein.de/en/sat/products/spanisch.htm>).



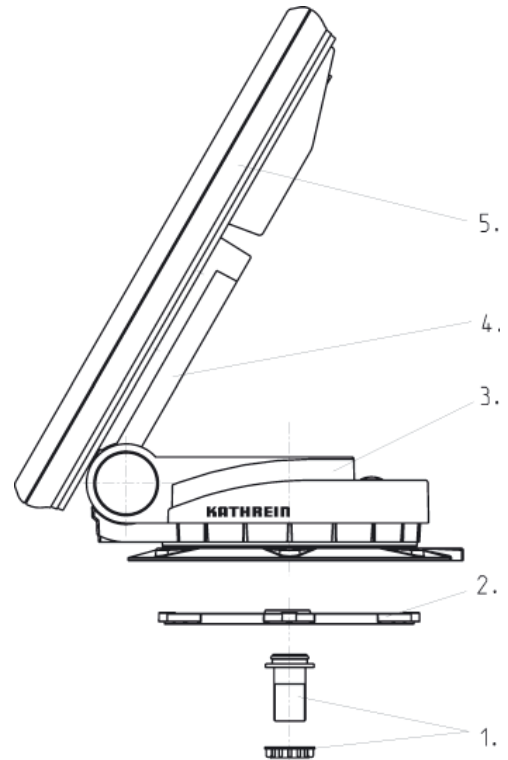
Electronic equipment is not household waste in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 on used electrical and electronic equipment, it must be disposed of properly.

At the end of its service life, take this unit for disposal at a relevant official collection point.

Components of MobiSet 3 digital CAP 310

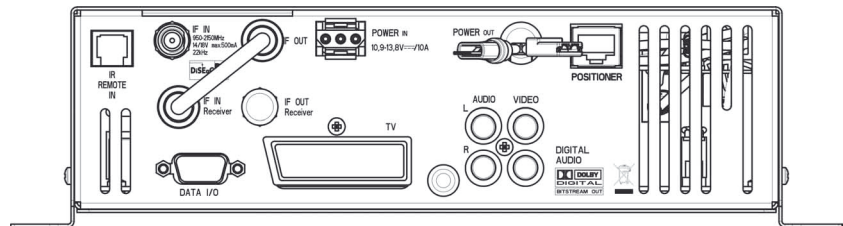
HDP 171

1. Roof duct with mounting nut
2. Mounting plate
3. Turntable
4. Antenna boom
5. BAS 60



UFD 170

For an explanation of the connections, see the "Connection Examples" section and operating manual UFD 170.



HTV 115

For an explanation of the connections, see the "Connection Examples" section and operating manual HTV 115.



Product package

Product package

- Turntable with fitted BAS 60 and ready for connection cables with a length of 3.5 m
- Power supply cable (10 m) for connection to on-board network
- Mounting plate
- Roof duct with sealing gasket
- Sikaflex® 291 sealing glue (100 ml tube)
- UFD 170 satellite combi receiver with connecting cables, infra-red sensor and infra-red remote control
- HTV 115 LCD/TFT television set with connecting cables and operating manual
- MobiSet 3 digital CAP 310 installation manual
- UFD 170 satellite combi receiver and HDP 171 turntable operating manual

Proper use

Proper use

Intended purpose

The MobiSet 3 digital CAP 310 is designed to receive digital TV and radio programs via satellite. The turntable is intended for the Kathrein planar antenna BAS 60. This antenna can be used to receive digital TV and radio signals in the frequency range from 10.70 to 12.75 GHz; the antenna cannot receive terrestrial signals (e.g. DVB-T).

The turntable can only be used in conjunction with a Kathrein UFD 170 combi receiver or the Kathrein UFD 540 digital receiver and HDS 160 control unit. In conjunction with these two receivers, the turntable provides fully automatic alignment of the planar antenna to receive digital satellite signals. The turntable is designed for use in stationary caravans or motorhomes.

Any use other than that specified above will void the warranty or guarantee.

The following circumstances result in the loss of all warranty and liability claims towards the manufacturer:

- Improper installation
- Use of non-specified mounting materials, which cannot guarantee the mechanical reliability of the antenna system
- Non-permissible use, e.g. use of the planar antenna for storage
- Structural changes or interference with the components and mounting accessories in the set, which could endanger both the mechanical and functional reliability
- Improper or forcible opening of the components
- Use of cleaners containing solvents, such as acetone, nitro-cellulose combination thinner, naphtha etc.
- Failure to observe installation and safety instructions in this manual

Note:

The maximum permissible speed for vehicles with a BAS 60/HDP 171 receiver unit mounted on the roof is 130 km/h. Before commencing a journey, the planar antenna must always be lowered into horizontal position (park position).

The turntable may be operated in an ambient temperature range of -10 °C to +40 °C. Operating the system outside these ranges can result in malfunctions or damage to the system.

Installation instructions

The turntable may only be assembled by qualified specialist personnel.

To prevent hazards during installation, operation or when driving on public highways, the instructions and information in this manual must be strictly adhered to. Proper installation and connection of the system are pre-requisites for conformity with the corresponding standards.

This has been documented in advance in the CE label and the declaration of conformity in the appendix to this manual.

Safety instructions - important notes

Safety during installation work



When carrying out installation work in locations with a risk of falling, take appropriate safety precautions, e.g. use of a working platform. Make sure that the vehicle roof is sufficiently strong and stable to carry out the installation work (risk of damage or collapse of roof).

In case of doubt, contact a qualified specialist dealer or the manufacturer of your vehicle to find an appropriate installation location.

Make sure that:

- The antenna and connected units are disconnected from the power
- The person carrying out the installation does not suffer from vertigo and can move around safely on the roof of the caravan or motorhome
- The person carrying out the repairs is wearing sturdy and non-slip shoes
- The person carrying out the repairs has a secure position to stand and hold on while working
- The roof and the climbing equipment used (e.g. ladder) are dry, clean and non-slip
- The roof can withstand the weight of the person carrying out the repairs

Attention! Risk of death or injury due to falling or roof collapse!

- Nobody should be below the antenna inside the caravan/motorhome during dismantling / installation.

Attention! Risk of death or injury due to possible roof collapse and falling parts!

Safety instructions - important notes

Proper installation and safety

Fundamental information

A crucial safety factor is proper performance of installation and electrical connection work, and the specified alignment of the turntable in the direction of travel (park position), see also installation and connection.

Heed as precisely as possible the installation conditions and steps described.

Modifications to the electrical installations in the vehicle should only be carried out by a specialist in vehicle electrics.

Do not make any individual changes to the turntable.

Sealing glue

The turntable is mounted on the roof of the vehicle by glueing and is secured by additional screws.

Note that the setting of the sealing glue depends on the temperature. It reaches its final strength after approximately five days. During installation work, follow the processing and safety instructions listed in the Sikaflex® 291 data sheet.

Road Traffic Licensing Regulations (StVZO)

The applicable regulations of the StVZO must be heeded with fixed installation of the turntable on a vehicle which drives on public highways.

In particular, this applies to §§ 19/2; 30 C; 32 (2) and the EC directive 74/483 EEC.

Briefly, they state that an entry in the vehicle documentation is not necessary if the antenna unit is not at a height of more than 2 m when the vehicle is laden and the antenna unit does not protrude outside the outer lateral outline of the vehicle. The maximum permissible height of 4 m (vehicle and antenna unit) may not be exceeded.

There is an increased risk of accidents if the normal vehicle height is increased by an extended antenna. The driver bears sole responsibility for the condition of the superstructure and external fittings!

Cable

Lay all cables such that nobody can tread on them or trip over them.

To prevent parasitic induction or interference emissions, when extending the antenna cable use 75 Ω coaxial cable with a screening factor of at least 75 dB.

If you have tied the cables with wire or something similar, disentangle this in order to prevent smouldering!

Safety instructions - important notes

Power supply, fusing

Operate the system from your vehicle's battery (12 V) or a suitable mains power pack. This mains power pack must guarantee a stable initial voltage of 12 V, 11 A continuous current and 15 A (300 ms) surge current.

The transient power consumption is up to a maximum of 12 A.

To ensure reliable functioning of the connecting/control unit, the power supply cable must be connected directly to the battery. If the power supply is too low, the UFD 170 /UFD 540 receiver indicates this with the on-screen message "On-board voltage too low" on the television screen.

A 15 A fuse is integrated into the power supply cable.

If the fuse responds, the source of the fault must be eliminated and the defective fuse replaced with a fuse of the same rated value (15 A).

Never remove or bridge the fuse in the cable – cable fire hazard!

The UFD 170 (on the front side) and the HDS 160 (in the connection area on the back side) have a removable 10 A flat fuse.

If the fuse responds, the source of the fault must be eliminated and the defective fuse replaced with a fuse of the same rated value.

Connecting the power supply cable wire marked "Ignition" to the ignition circuit activates the turntable function for automatic lowering of the antenna. This lowering takes place as soon as the vehicle ignition circuit is turned on.

When connecting the control unit to the on-board network, it must be ensured that the "+12V", "Earth" and "Ignition" wires cannot be broken by switches connected in series, as this can deactivate the automatic lowering function.

The antenna lowers after max. 12 seconds after the switching on of the vehicle ignition circuit (if in stand-by and if the UFD 170 is switched off, otherwise the control unit lowers immediately in operation).



Checks before commencing a journey

- Before commencing a journey, the antenna must always be lowered into horizontal position (park position). If the antenna has collided with fixed or moving objects, you must check that it is still securely fitted.
- As the antenna is subjected to vibration loads during driving, at regular intervals, depending on the frequency of driving, you should check that the system is still securely fitted and tighten any parts that have come loose.
- The maximum permissible speed for vehicles with a BAS 60 receiver unit mounted on the roof is 130 km/h.
- Lower the antenna if it will not be used for a long period. This makes the securing bolts more difficult to access (protection against theft).

Safety instructions - important notes

Safety precautions during installation

During installation of the turntable, make sure that no persons, in particular children, are in the immediate vicinity of the turntable and that they do not touch any moving parts – **danger of crushing!**

Always unplug the power supply during installation work.

Lowering the antenna while driving

While driving, the antenna must always be lowered to the horizontal position (park position).

To remind yourself of this, please use the stickers in the visual area around your vehicle ignition switch.



Cleaning the antenna

To clean the antenna, use only water and cleansing agents typically used for vehicles.

Do not clean the equipment with steam jet or high-pressure washers.

Do not use any cleansing agents which contain solvents such as acetone, nitro-cellulose combination thinner, naphtha, etc. since this can damage individual components.



Instructions for installation and operation of the HDP 171 with the UFD 170

1. The turntable can only be used in conjunction with a Kathrein UFD 170 Caravan Digital Combi Receiver or a Kathrein UFD 540 Caravan Digital Receiver with HDS 160 control unit.
2. To ensure reliable functioning of the turntable, the power supply cable must be connected directly to the battery. If the power supply is too low, the receiver indicates this with the on-screen message "On-board voltage too low!" or with "HDP overload" on the television screen.

A fuse (15 A) is integrated into the power supply cable.

Safety instructions - important notes

If the fuse responds, the source of the fault must be eliminated. The defective fuse should only ever be replaced with a fuse of the same rated value.



Never remove or bridge the fuse in the cable or in the receiver (UFD 170)! Cable fire hazard!

3. Connecting the power supply cable lead marked "Ignition" activates the turntable function for automatic lowering of the antenna. This lowering takes place as soon as the vehicle ignition circuit is turned on. When connecting the control unit to the on-board network, it must be ensured that the "+12V", "Earth" and "Ignition" wires cannot be broken by switches connected in series, as this can deactivate the automatic lowering function.



Exceeding the normal vehicle height by not lowering the antenna increases the risk of accidents! The driver is responsible for the condition of the superstructure and external fittings!

4. While downloading software for the UFD 170 satellite combi receiver, the caravan ignition may not under any circumstances be turned on as this can result in impairment, faults or loss of function.

Never turn off the receiver (UFD 170) during the update process, as otherwise you could lose the entire software. You would then need to re-install it at a service centre or using a PC and null modem cable.

5. Note on satellite search: If the vehicle is not on supports during the satellite search process and people are moving around inside it, there is a danger that the oscillations of the vehicle will mean that the satellite cannot be found. It should also be ensured that the vehicle is not oscillating when software download via satellite, as otherwise the download may fail.

6. For installation, the turntable HDP 171 may be used in conjunction with the UFD 170 in manual mode (see "installation and connection", "installation of the BAS 60 planar antenna" sections).

After installation of the BAS 60 planar antenna, the HDP 171 must be put in the park position with the reset command. The reset command can be accessed via the receiver menu (menu element "HDP antenna set-up"). Only then is the HDP 171 released by the software for automatic searching. This concludes the installation of the HDP 171.



The instructions in the installation and operating manuals for these devices and for the extensions and superstructures must absolutely be heeded!

Installation and connection

Required tools and equipment

- Circular cutter, Ø 38 mm
- Flat-bladed screwdriver for M5 screws
- Drilling machine
- Galvanised tallow drop screws, depending on roof structure (Ø: 5 mm, sheet metal screws D 7981, depending on roof panel structure) or tallow drop screws D 7985 with shims and nuts
- Twist drill, Ø 2.5 or 5.5 mm
- Round file and/or emery paper
- Cleaning agent
- Fork or ring bolt with width of 10 and 11 mm
- Knife
- Cross recess screwdriver for M3 and M5 screws
- Torque wrench between 6 and 11 Nm
- Hexagon socket screw key (5 mm)
- Two wooden beams for supporting turntable

Unpacking and preparation

Remove the turntable from the packaging. Retain the original packaging, as if it is necessary to send the unit for repair transport damage cannot be ruled out and the manufacturer accepts no liability for possible damage.

Loosen the six fastening screws (width: 10 mm). Carefully lift the turntable off the mounting plate and place it on the prepared support beams. It must be ensured that the cable running out of the underside of the turntable is not crushed.

Selecting the installation location

Essentially, the cable lengths of the MobiSet 3 digital CAP 310 components allow you a free choice of installation location on your caravan or motorhome.

However, you should take note of the following points:

- Before installation, you should find out whether the operating manual for your vehicle permits the fitting of non-vehicle specific parts or what requirements need to be met in order to do so.
- For direct satellite reception, there should not be any obstructions between the antenna and the satellite. Therefore, make sure that the antenna is not shadowed by roof extensions such as baggage carriers, air conditioning units, solar panels, etc. The problem of shadowing applies also for the selection of the parking place for your vehicle. For interference-free satellite reception, the antenna needs an imaginary free view to the South at an angle of between 15° and 55° (depending on location) to the horizontal.
- The turntable has, together with the BAS 60 planar antenna, a circular action area with a diameter of approx. 96 cm. Make sure that there are no roof extensions within this range (collision danger).
- Choose a mounting position on the roof that is as flat as possible as, depending on the location of the vehicle, roof inclines greater than 10° may lead to problems searching for the satellite.

Installation and connection

- To ensure secure adhesion, the height difference of the roof curve may not be more than 1 cm over a length of 2 m, as otherwise the gap between the roof and the mounting plate would be too big to be filled by the sealing glue.
- As the vehicle is constantly subjected to vibration loads during travel, the roof below the antenna unit is also subject to significant loads. Please note given the nature and capacity of your vehicle roof (see also operating manual for the vehicle) that the weight of the antenna unit is approx. 14.5 kg. In case of doubt, consult a qualified dealer or your vehicle's manufacturer.
- The roof duct provides a waterproof channel to feed the three connecting cables (antenna, control unit and power supply cables) into the interior of the vehicle directly underneath the turntable. If you prefer a different method of laying the cables, they can be run out of the rear of the turntable via the channel provided in the mounting plate. The cables must then be run along the roof of the vehicle in a protected cable duct (not supplied).

Note:

The cables may not be cut, as otherwise the proper functioning of the unit can no longer be guaranteed.

Installation and connection

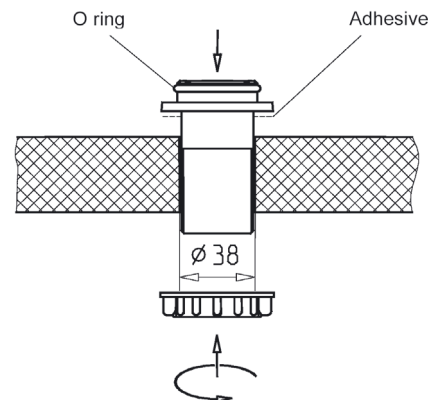
Installation steps

Installation of cable duct and mounting plate

Note:

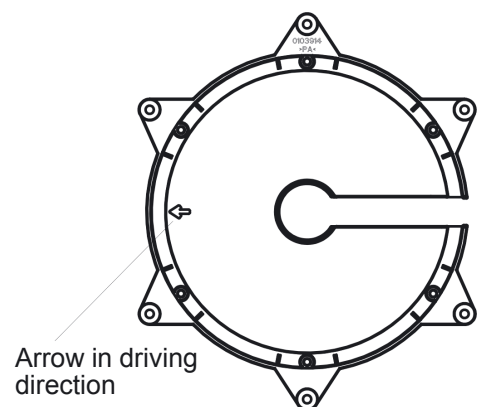
If you have previously used a Kathrein HDM140/141 flexible satellite mast or another mast with a diameter of 34 mm, you can continue using the existing duct hole in the roof (if space allows).

Figure: A



- In the centre of the intended position of the turntable, drill the opening for the cable duct with a circular cutter (\varnothing : 38 mm). Deburr the hole with a round file or emery paper.
- Provisionally insert the roof duct into the drilled hole (Fig. A).
- Place the mounting plate on the roof of the vehicle, such that the centre hole is positioned centrally to the cable duct. The **arrow symbol** must be visible from above and point **forwards in the direction of travel** (Fig. B).

Figure: B



- Mark the positions of the six fastening holes on the roof of the vehicle in a circular pattern.

Note:

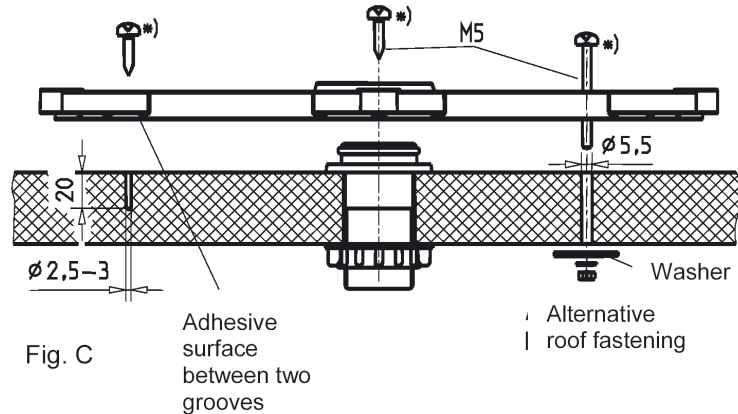
The size of the holes and the choice of fastening screws to be used (not supplied) depend on the type and thickness of the materials used in the roof structure. If the roof panelling (plastic roofs) is sufficiently strong, it is recommended that tallow drop screws, plain washers and self-locking nuts are always used to secure the glued mounting plate.

Installation and connection

- For very thin roof panel materials and insufficient support in the insulating material, through holes (\varnothing : 5.5 mm) into the interior of the vehicle are necessary and galvanised M5 tallow drop screws of sufficient length should be used.
Make sure that you use a sufficiently strong support that can absorb the screw forces (large plain washer or complete reinforcing plate).

Figure: C

*) (not included)



- Create the holes necessary to secure the mounting plate (Fig. C).
- In addition to the screwed connection, the mounting plate and roof duct must be bonded to the roof with adhesive and sealed. This is done using the Sikaflex[®] 291 sealing glue supplied, which is ideally suited for this purpose due to its broad range of adhesion.



Before you begin working with the Sikaflex[®] 291 sealing glue, make sure that you have carefully read the safety information for Sikaflex[®] products on page 34 and the technical data sheet on page 35 in this manual!

The prerequisite for good adhesive properties is a clean, dry and grease-free substrate. You should therefore clean the roof surface with a suitable cleaning agent within a circumference of 15 cm around the drilled hole and allow the surface to dry thoroughly.

For painted surfaces, it must be ensured that the coat of paint has the required adhesive properties with the substrate.

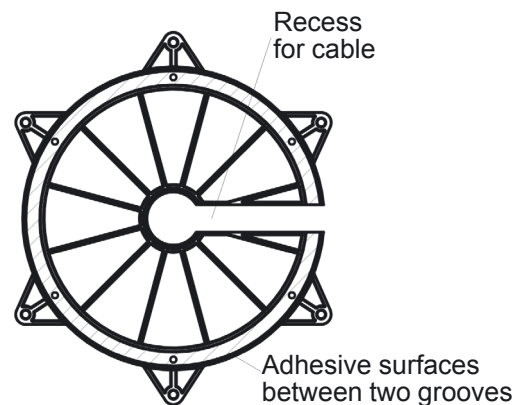
If the coat of paint is already loose or foliated, it must be removed down to a stable layer in the area of the adhesive surface. If you have any doubts concerning the adhesive properties, consult a specialist in painting and lacquering or the manufacturer of your vehicle.

Under certain circumstances, it may be necessary for you to improve the adhesive properties of the roof surface by pre-treatment with a cleaning agent available from specialist dealers (e.g. Sika[®] Cleaner) or a primer (e.g. Sika[®] Primer).

The procedure for glueing the mounting plate is as follows:

Installation and connection

Figure: D



- Note before starting glueing work that the optimal processing temperature of materials to be glued and the sealing glue is between +15 °C und +25 °C. Prepare all necessary fastening elements and tools.
- Prepare the tube of sealing glue in accordance with the instructions enclosed with the tube.
- Remove the roof duct (Fig. A) and apply the sealing glue evenly to the underside of the roof duct flange. Replace the roof duct in the drilled hole and press it firmly against the roof of the vehicle.
- Apply the sealing glue evenly to the underside of the mounting plate, covering the whole area between the grooves (Fig. D). This area must be completely glued onto the roof of the vehicle, in order to achieve the necessary adhesive force. Place the mounting plate on the roof of the vehicle, as you have done already when marking the drilled holes. Make sure that the arrow on the mounting plate points forward in the direction of travel. The fastening holes must be perfectly aligned with the prepared holes in the roof.
- Fasten the mounting plate in place with the prepared screws, making sure that all six screws are evenly tightened across the diagonals.

Note:

The sealing glue used is capable of bridging small gaps caused by the curve of the vehicle's roof. However, you should ensure that the mounting plate is not bent by tightening the screws.

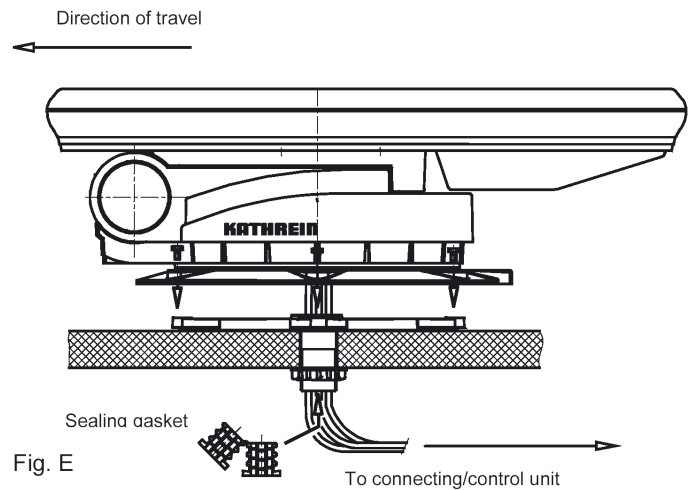
- Remove any sealing glue that leaks out at the sides with a clean cloth or if necessary with Sikaflex® Remover (available from specialist dealers). Do not use a cleaning agent or thinner containing solvents, as this could damage the sealing glue applied under the mounting plate. Only wash your hands with washing paste and water.
- Secure the cable duct by counter-tightening the knurled nuts supplied from inside the vehicle (Fig. A).
- Note that the setting of the sealing glue depends on the ambient temperature and the humidity. Final strength is reached after approx. five days. However, it is possible to carry out further installation work with no problems, as the mounting plate is held in place by the tightened screws.

Installation and connection

Installation of turntable

Version with cable duct below turntable (Fig. E)

Figure: E



- Check that the O ring is correctly positioned in the groove of the cable duct (Fig. A). An incorrectly positioned or missing O ring will allow water to penetrate.
- Feed the ends of the cables with the connectors as far as possible through the cable duct into the interior of the vehicle.

Do not step on the connectors or kink the cables!

- Lift the turntable and place it carefully on the mounting plate in the direction of travel.
The through holes on the turntable must be perfectly aligned with the threads on the mounting plate. When lowering, make sure that the cables are fed through the cable duct and are not crushed.
- Apply a little sealing glue to the six threaded holes in the mounting plate and screw the fastening screws into the thread. Tighten the screws to a torque of 6 Nm.
- To prevent water vapour from inside the vehicle reaching the turntable through the roof duct, place the three cables in the sealing gasket supplied and insert them as far as possible into the roof duct. Make sure that no tensile loads are acting downwards on the sealing gasket as this can cause it to fall out over time.



Installation and connection

Version with external cable duct (Fig. F)

Figure: F

*) (not included)

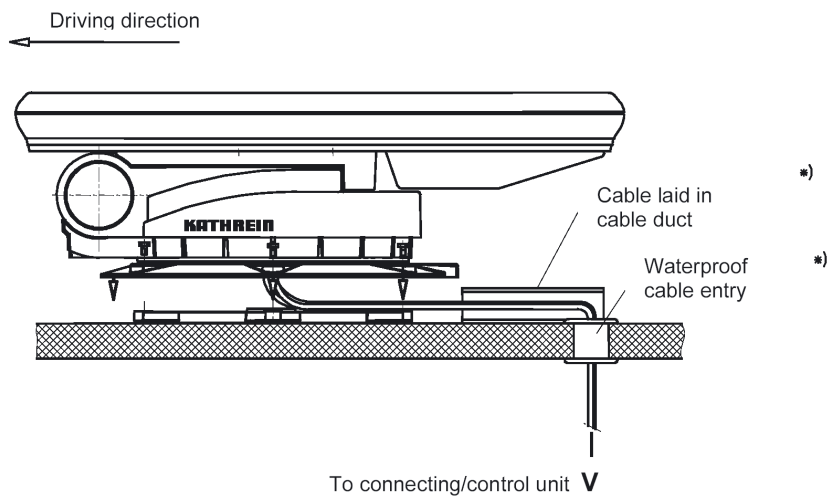


Fig. F

- Arrange the cables in the cable duct when placing the turntable onto the mounting plate. Make sure that the cables are not crossed over and that they are tightened so that they cannot be kinked. Do not try to pull the cable out of the unit. This could damage the cable or loosen the cable connections.
- Place the turntable carefully on the mounting plate. The through holes on the turntable must be perfectly aligned with the threads on the mounting plate.
- Apply a little sealing glue to the six threaded holes in the mounting plate and screw the fastening screws into the thread. Tighten the screws to a torque of 6 Nm.
- The connecting cables should be fed into the interior of the vehicle through a waterproof cable duct¹⁾. The cables may not be crushed, kinked or damaged.

The connecting cables between the turntable and the connecting/control unit may not be extended!

- ¹⁾ These watertight cable ducts exist in the area of boating and yachting technology, for example, so-called "cableports" and they can be purchased in boating and yacht outfitting stores.



Installation and connection

Brief instructions for installing the HDP 171



The other detailed instructions in this operating manual must also be followed!

For ease of illustration, we have dismantled the BAS 60 on these photographs.

As supplied, the BAS 60 is pre-mounted on the HDP 171.

The sequence of pictures shown illustrates all the necessary installation steps that are required to assemble the HDP 171 turntable and the BAS 60 planar antenna on the roof of the vehicle.



Determination of installation location.
Caution! System has a turning range of 96 cm (Ø). Drill hole with Ø 38 mm. Deburr sharp edges of hole.



Apply Sikaflex® 291 adhesive to roof duct supports. Insert supports into hole and secure from below with knurled nuts.



Unscrew screws (x6, SW 10) in mounting plate and remove mounting plate.



Place turntable on prepared support beams to protect the roof of the vehicle.



Align mounting plate with arrow in direction of travel. Mark the six drilling holes for securing the mounting plate.



Apply Sikaflex® 291 adhesive in a sinuous line between the two grooves and spread with spatula or similar. **Avoid skin contact!**



Place mounting plate on roof duct and secure with appropriate screws (choose screws according to thickness/structure of roof).



Screw turntable onto mounting plate using torque wrench.
Caution!
Tightening torque: 6 Nm

Installation and connection

Set up electrical connections. Connect UFD 170/UFD 540 receiver. Connect connecting/control unit to battery.



The antenna must always be lowered into horizontal position (park position) while driving!

Maximum driving speed of the vehicle: 130 km/h



Installation of UFD 170

The turntable is actuated exclusively by the UFD 170 combi satellite receiver.

The cable lengths must be taken into account when choosing the installation location.

The UFD 170 is equipped with a power saving circuit and a separate infrared transmitter, which means that the unit does not need to be placed where it is visible. You can therefore fit the UFD 170 out of sight in any location, e.g. on cupboard walls, side walls or the base of storage compartments.

Note:

When choosing the installation location, bear in mind that the on/off switch, the fuse for subsequent monitoring and the slots for inserting common interface modules should always be accessible.

In addition, the following points should be taken into account:

- The wall thickness at the installation location must be at least 12 mm, as otherwise the screws will emerge on the other side or damage the surface
- The receiver must be placed in such a way as to allow sufficient air circulation behind, above and next to the unit. Installation on carpet-covered walls is therefore unsuitable
- Ensure that the cupboard or storage compartment in which the unit is housed is adequately ventilated, to prevent a build up of heat
- No cables etc. placed behind or in the wall should be damaged when tightening the screws
- The receiver is designed exclusively for installation in dry, interior locations. The installation location must be protected against moisture
- The connecting cables must be strain relieved

Installation and connection

Laying cables and connecting the turntable HDP 171

- Lay the control cable (8-pole Western connector), the coaxial cable and the power supply cable (2-pole connector) to the UFD 170. Avoid laying the cables across sharp edges and secure the cable against possible abrasion points.
- Connect the control cable to the "POSITIONER" connecting socket on the rear of the UFD 170. Repeat for the power supply cable, which has to be connected to the two "POWER OUT" cables.
- Connect the coaxial cable (coming from the turntable) to the "IF IN" F socket on the rear panel of the UFD 170.
- Place the infrared sensor close to or directly on top of the TV set and lay the cable to the UFD 170. Connect the 6-pole Western connector on the rear to the socket marked "IR REMOTE IN".

Note for CAP 210:

Lay the AV cinch enclosed with the CAP 210 to the Scart cable. Here you must absolutely note the assignment of the connectors! The cinch connector must be assigned to the UFD 170 and the Scart connector to the TV set. Reversal is not possible – unit will not function!

Note for CAP 310:

Lay the AV cinch enclosed with the CAP 310 from the HTV 115 TV set AV cinch cable to the UFD 170 receiver.

Connecting the UFD 170 to the on-board power network

Isolate the on-board network (master switch "off" or disconnect negative pole of on-board network battery) before commencing the following work:

- Connect the included 3-pin cable to the receiver's "POWER IN" plug connector.

Make sure that the "inline" integrated fuse (15 A) of the cable is completely plugged in and intact. If the fuse responds, the source of the fault must first be eliminated. The fuse may only ever be replaced by a fuse with the same rated value (15 A).



The fuses in the cable and in the receiver may never be bridged – cable fire hazard!

- At the connecting point for the positive and negative wires, the voltage may not fall below 10.9 V even with a load of 12 A. Otherwise optimum functioning can no longer be guaranteed.
- Connect the connecting cable wires marked "EARTH" (white wire) and "+12 V" (brown wire) to the corresponding battery contacts.

Installation and connection

Only for connection in a motorhome, not in a caravan!

- The third, green connecting cable wire, marked "IGNITION" allows you a free choice of connection to a circuit in the vehicle that is activated when the ignition key is turned and then carries a constant 12 V voltage. This type of connection ensures that when the engine is started the antenna is automatically lowered into the park position (the receiver does not need to be turned on).
- Check the connections before you re-connect the on-board network.
- For commissioning and more detailed information on additional operator functions, we refer you to the separate operating manual enclosed.

Connecting the HTV 115 LCD TV Set

Connect a HTV 115 and the receiver with the included cinch/cinch cable included with the UFD 170.

Make sure that you heed the colour identification of the connectors and outlets on the back side of the receiver.

Connect the TV with the included connection cable for 230V power supply and with the connection cable (identification: HTV 115) for 12 V norm outlets (DIN ISO 4165).

Function information for connection to on-board network

Under certain circumstances, problems can arise when the units are connected to different connecting sockets or circuits/earth potentials. If none are available, it is recommended as depicted in Figure "H" that you connect the connecting sockets for receiver and TV set to the same cable. The current capacity of the circuit used must be checked with respect to the intended application.

For additional information about operating the UFD 170 receiver and the HTV 115, please see the instructions included with the equipment.

Important safety information for CAP 310



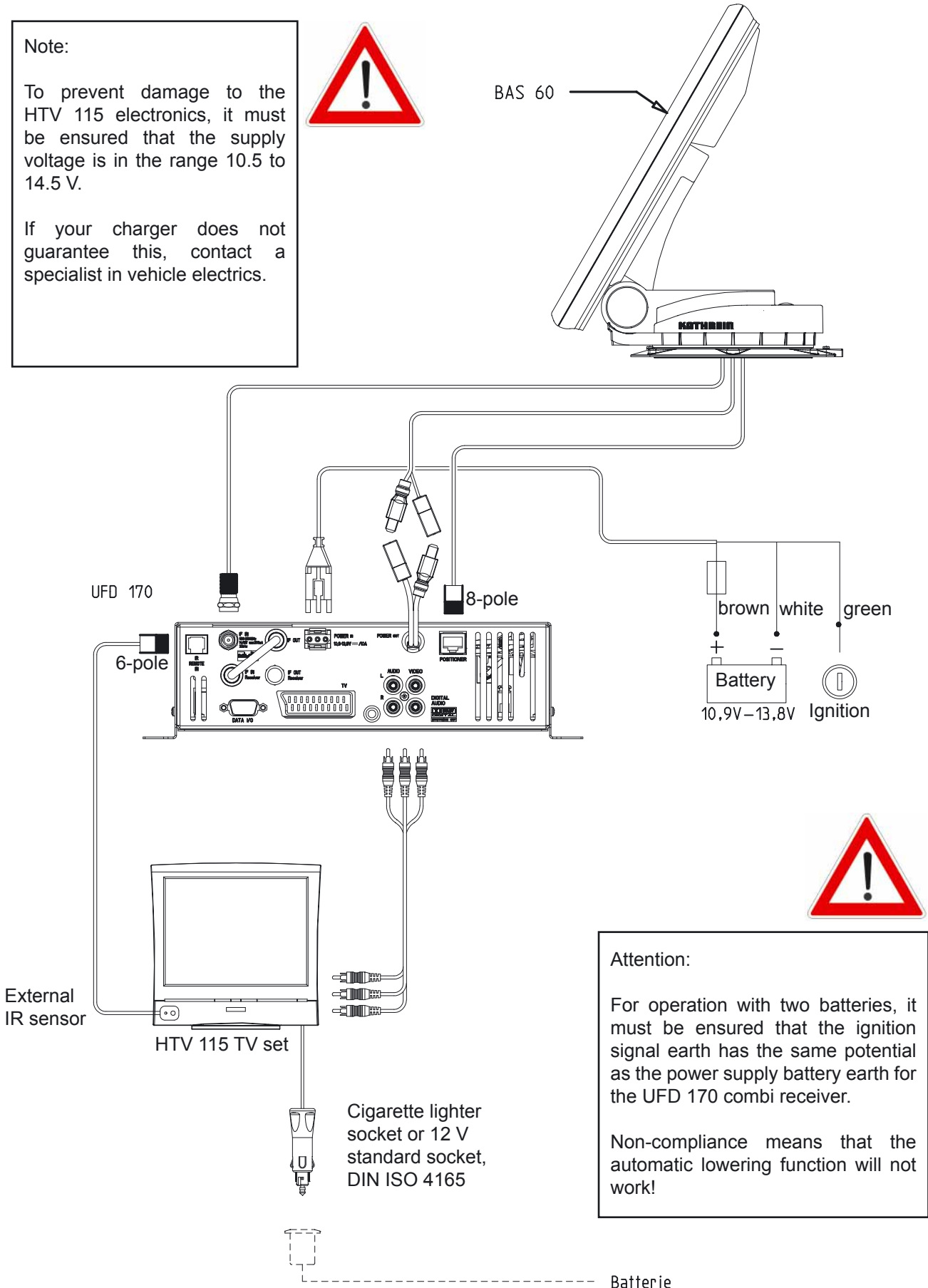
The HTV 115 TV set may not be operated while driving or in a moving vehicle (similar to the situation in aircraft, where mobile phones or other electronic devices may not be operated)!

Under unfavourable circumstances, it cannot be completely ruled out that other electronic devices could interfere with the sensitive vehicle electronics and could result in triggering of the airbag, for example.

Installation and connection

Connection example motorhome - 12 V battery connection (UFD 170)

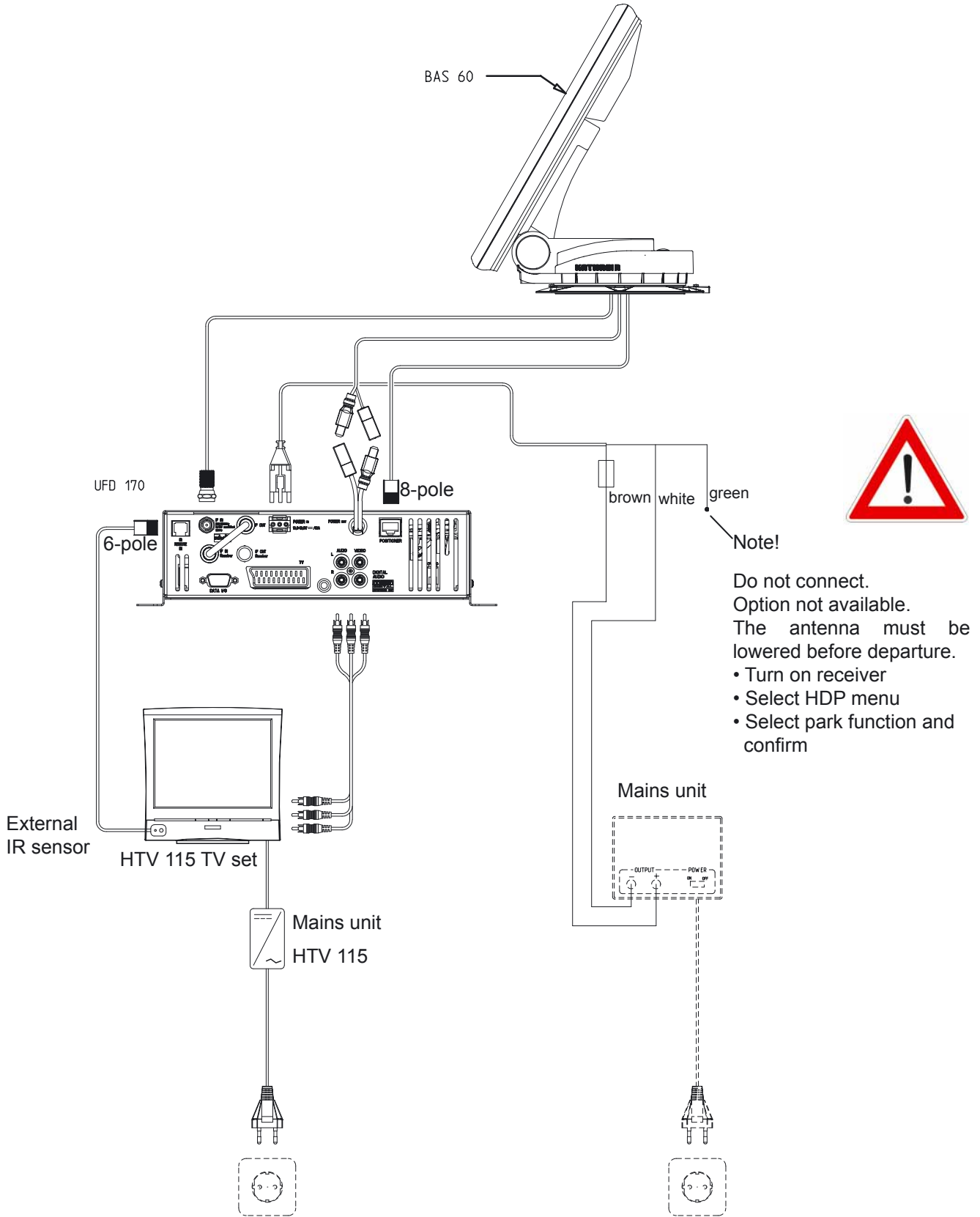
Fig: G



Installation and connection

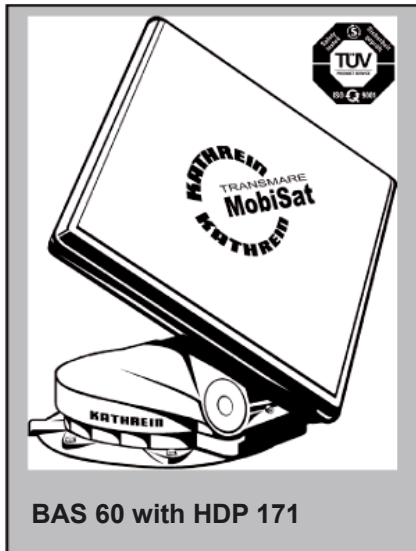
Connection example caravan - 230 V battery connection (UFD 170)

Fig: H



BAS 60 planar antenna

Proper use



The BAS 60 flat antenna is used to receive digital TV and radio signals in the frequency range from 10.70 to 12.75 GHz.

It cannot receive terrestrial signals.

The BAS 60 has been designed for mobile use, to receive satellite signals in stationary caravans, motorhomes or trucks.

The antenna's fastening was attuned to the HDP 171 turntable.

The alignment of the antenna occurs automatically when you switch on the UFD 170 receiver and select the TV programme.

Important information for use

The following circumstances result in the loss of all warranty and liability claims towards the manufacturer:

- Improper installation
- Use of non-specified mounting materials, which cannot guarantee the mechanical reliability of the antenna system
- Non-permissible use, e.g. use of the planar antenna for storage
- Structural changes or interference with the components and mounting accessories in the set, which could endanger both the mechanical and functional reliability
- Improper or forcible opening of the components, which can cause malfunctions
- Use of cleaners containing solvents, such as acetone, nitro-cellulose combination thinner, naphtha etc.
- Failure to observe installation and safety instructions in this manual

Safety notes

- Before commencing a journey, the antenna must always be lowered into horizontal position (park position).
- If the antenna has collided with fixed or moving objects, you must check that it is still securely fitted.
- As the antenna is subjected to vibration loads during driving, at regular intervals, depending on the frequency of driving, you should check that the system is still securely fitted and tighten any parts that have come loose.
- The maximum permissible speed for vehicles with a BAS 60/HDP 171 receiver unit mounted on the roof is 130 km/h.
- Lower the antenna if it will not be used for a long period. This makes the securing bolts more difficult to access (protection against theft).

BAS 60 planar antenna

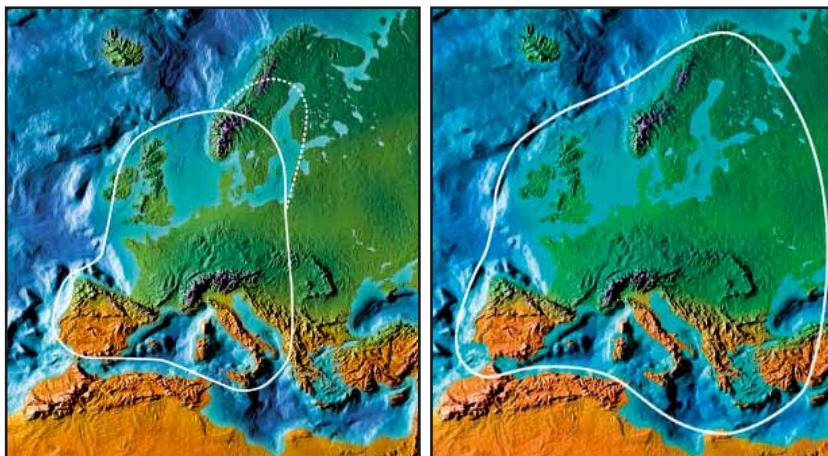
Reception range/footprint

The footprint is the reception area on the earth that a satellite covers with its transmission beam (spot), within which satellite reception is possible. The transmission power is at its greatest in the centre of this spot – it becomes progressively weaker moving outwards.

You should preferably align your antenna to the position of the ASTRA satellite 19.2° East (picture below left), EUTELSAT/HOTBIRD 13° East (picture below right). The spots for these satellites are shown below.

The inner line of the footprint here shows the area covered with digital signals by the ASTRA satellites.

The outer dashed line of the footprint displayed here shows the area that is covered by individual Astra satellite. Therefore, within this footprint not all programmes are available.



The satellites emit the various channel packages in different footprints. In the main reception area (inner lines), all channels can be received with good sound and picture quality (exception: EUTELSAT II F1 – wide beam). In the marginal zones (outer lines), reception is possible, although the quality of the signals received can vary considerably.

BAS 60 technical data

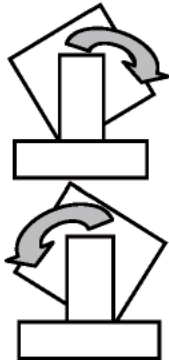
Typ		BAS 60
Bestell-Nr.		216195
Einsatzgebiet		Mobile Anwendung
Befestigungsmöglichkeit an		Autom.-Positioner HDP 170
Empfangsbereich	GHz	10,70-12,75
LNB-Rauschmaß	dB	Typ. 0,8
Verstärkung	dB	> 50
Halbwertsbreite	°	< 3 ¹⁾
LNB		1 Ausgang schaltbar, H/V, high/low
Umschaltung		
Low-Band	kHz	0
High-Band		22
Ausgangsfrequenz	MHz	950-1.950/1.100-2.150
Oszillatorfrequenz	GHz	9,75/10,6
Güte (G/T) 11,3/12,5 GHz	dB/K	13,3/13,7
LNB-Versorgungsspannung		Vert.: 11,5-14,0 Horiz.: 16,0-19,0
Max. Stromaufnahme	mA	160
Windlast	N	240 ²⁾
Einstellbereich		
Elevation	°	10-90
Azimut		360
Gewicht	kg	5,8

1) Bei Bandmitte

2) Bei einem Staudruck von 800 N/m² nach EN 50083-1 bzw. VDE 0855

Polarisation setting

Polarisation setting



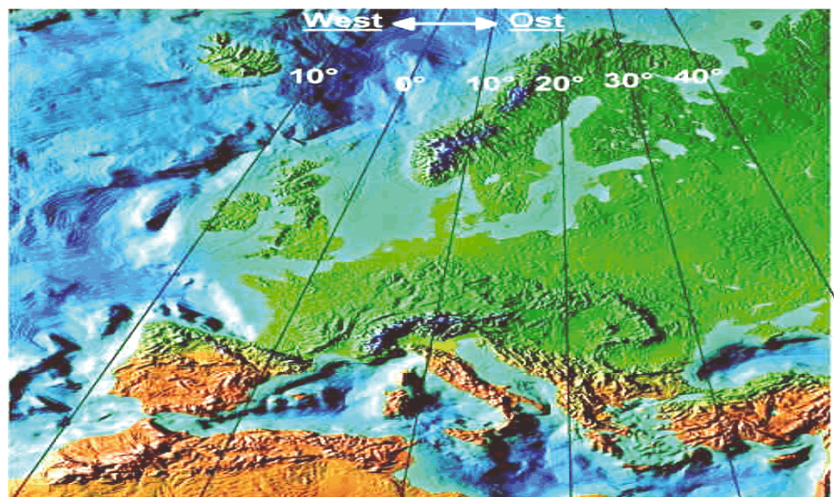
As supplied, the BAS 60 is mounted centrally on the turntable. In this position, you can also receive signals from satellites with deviations in the degree of longitude (of the typical reception range) of between 15° and 20° from the orbit position of the satellite. Deviations in the preferred reception range degree of longitude or more than 15-20° from the orbit position of the satellite allows the BAS 60 polarisation setting to be changed by changing the mounting position.

However, explicit attention is drawn to the fact that positioning the BAS 60 antenna at a deviation of +15° or -15° from the centre position only makes sense if a satellite to the far West or the far East is actually preferred for reception.

+15° if the satellite is more than 15° to 20° to the west of the preferred reception area and -15° if the satellite is more than 15° to 20° to the east of the preferred reception area.

The overview below shows the recommended BAS 60 mounting position for selected locations and typical satellites. This overview does not constitute a guarantee of reception of all channels from the satellites listed here.

Satellit		HISPASAT	HOTBIRD 13° Ost	ASTRA 19,2° Ost	ASTRA 28,2° Ost EUROBIRD 28,5° Ost	TÜRKSAT 42° Ost
Aufenthaltsort	Längengrad					
Belgrad	20° Ost	+15	0	0	0	
Bordeaux	0°	+15	0	0	-15	15
Cagliari	10° Ost	+15	0	0	0	-15
Diyarbakir	40° Ost					0
Hamburg	10° Ost	+15	0	0	0	-15
Istanbul	30° Ost		0			0
Kiew	30° Ost		0		0	
Kiruna	20° Ost		0	0	0	
Krakau	20° Ost	+15	0	0	0	
Lissabon	10° West	+15	-15	-15	-15	
London	0°	+15	0	0	0	-15
Mailand	10° Ost	+15	0	0	0	-15
Odessa	30° Ost		0			
Oslo	10° Ost	+15	0	0	0	
St. Petersburg	30° Ost		0	0		
Tirana	10° Ost	+15	0	0	0	
Tralee	10° West	+15	0	-15	-15	-15
Valencia	0°	+15	0	0	-15	



Polarisation setting

Safety notes

We strongly advise that users who are not familiar with the installation work should not reassemble the BAS 60 independently. They should contact a technician or engineer. They may find a suitable person on the campsite.

Make sure that:

- The antenna and connected units are disconnected from the power
- The person carrying out the installation does not suffer from vertigo and can move around safely on the roof of the caravan or motorhome
- The person carrying out the repairs is wearing sturdy and non-slip shoes
- The person carrying out the repairs has a secure position to stand and hold on while working
- The roof and the climbing equipment used (e.g. ladder) are dry, clean and non-slip
- The roof can withstand the weight of the person carrying out the repairs

Attention! Risk of death or injury due to falling or roof collapse!

- No persons, especially small children, should be in the immediate area of the turntable and touch movable parts during dismantling/installation of the planar antenna. Nobody should be below the antenna inside the caravan/motorhome during dismantling/installation.

Attention! Risk of death or injury due to possible roof collapse and falling parts on the motorhome/caravan.

Continue to heed the “safety instructions - important notes“ section!

No impediments may be in the turning range (see “safety information - important notes”)!

Installation process

The explanation of this installation process is based on the assumption that the entire CAP unit has been properly put together, installed and set up, as described in this installation manual. The safety instructions in the detailed operating manual for the UFD 170 must also be followed!

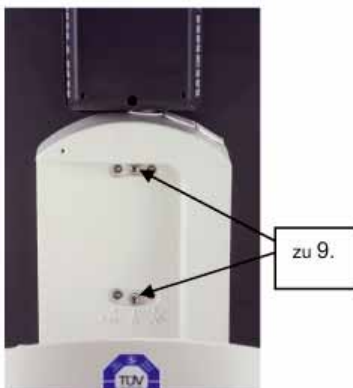
Polarisation setting

In motorhome/caravan

To dismantle/install the planar antenna from the turntable, proceed as follows: (the key names refer to the remote control for the UFD 170 receiver)

1. Turn on the receiver with the main switch on the front of the unit.
2. Press the Standby button (⏻) to start up the receiver.
3. First of all, "Welcome UFD 170" and you will then see the message "Please wait, initialising HDP".
4. Wait until you see the message "Astra position unknown, press OK to start search mode" and cancel this operation with the (L) button.
5. Next, press the (M) button to go to the main menu, use the (⏮) (⏭) buttons to navigate to the option "HDP antenna setup" and confirm your selection by pressing the (OK) button.
6. Use the (⏮) (⏭) buttons to select the Elevation option and use the number keys on the remote control to enter "400".
7. Press the (OK) button and the turntable will move to the selected elevation angle.
8. Turn off the UFD 170 using the main switch on the front and disconnect it from the power.
9. Unscrew the antenna fastening screws on the turntable with a suitable hexagon socket key (size 5), see photograph on left.
10. Carefully lift the antenna off the turntable and exchange the slot for the rubber bushing with cable and the relevant dummy bushing (depending on the direction you want to move the antenna).
11. You can now refit the antenna with the desired change of angle (+15° or -15°) (see picture below).
12. Tighten the hexagon socket screws to a torque of 6-7 Nm.
13. Leave the installation location and reconnect the UFD 170 to the power supply.
14. Turn on the receiver, first with the main switch and then with the Standby button (⏻).
15. "Welcome UFD 170" appears.
16. You will then see the message "Please wait, initialising HDP". Wait until you see the message "Astra position unknown, press OK to start search mode" and cancel this operation with the (L) button.
17. Change to the main menu with (M), use the (⏮) (⏭) button to change to the "HDP antenna set-up" menu element, and confirm with (OK). Use the (⏮) (⏭) button to change to the "Reset/park" menu element, change the selection to "Reset" with the buttons and confirm with (OK). After the antenna has been reset, you can return to the normal TV picture with the (L) button.

On the turntable



Installation and connection

View after installation +15°



View after installation
in the middle (standard)



View after installation -15°



Dismantling for servicing

If repairs to the system or individual components are necessary, contact your specialist dealer or our service centre (see below for address).



Never open the turntable yourself!

Dismantling



- **The cables may not be cut!**
- Disconnect the power, coaxial and data cables from the UFD 170
- Remove the sealing gasket from the roof duct (Fig. E)
- The cables laid inside the vehicle can remain there
- Unscrew the six M6 screws securing the turntable on the mounting plate
- Place the turntable on the prepared support beams with the three 3.5 m long cable harnesses
- Carefully pull the three connecting cables out of the roof duct
- To ship the turntable, use the original packaging which you have saved
- Seal the opening in the vehicle roof appropriately to protect against penetrating moisture

Note:

Before replacing the UFD 170 receiver, the turntable should first be moved to park position.

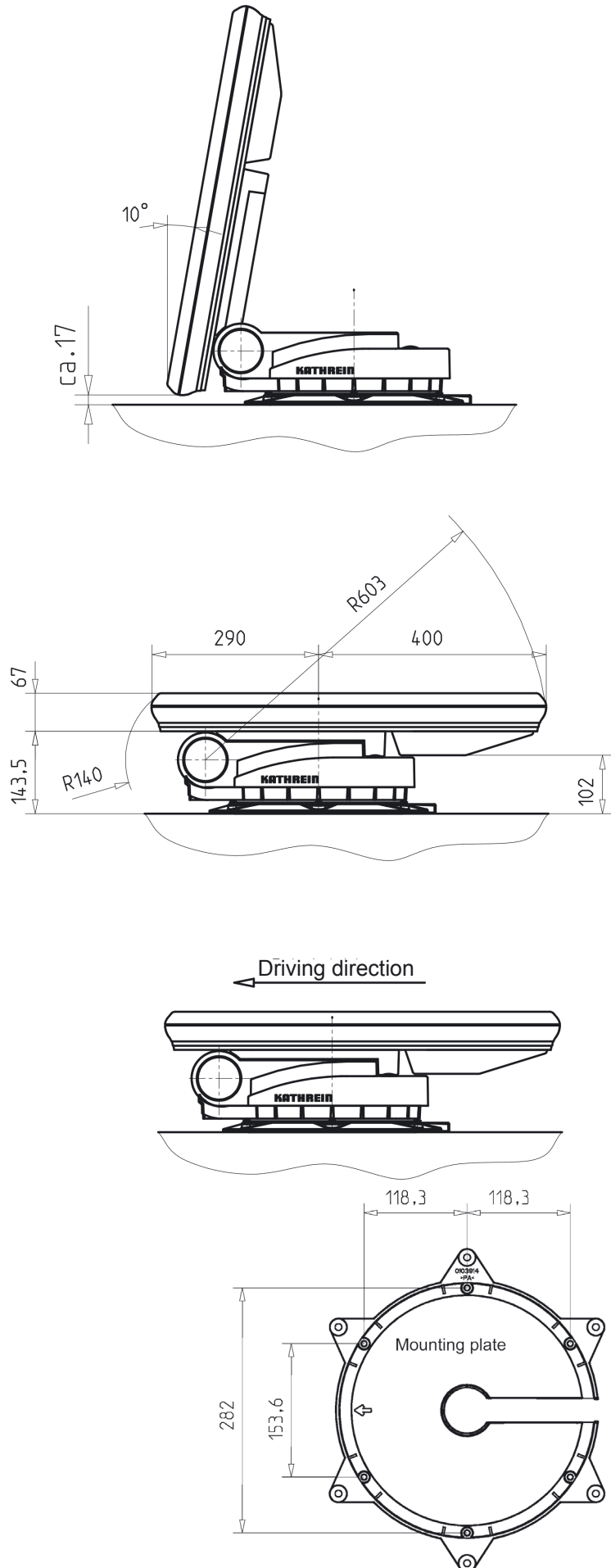
Address of the service centre

ESC
Electronic Service Chiemgau GmbH
Bahnhofstrasse 108
83224 Grassau, Germany

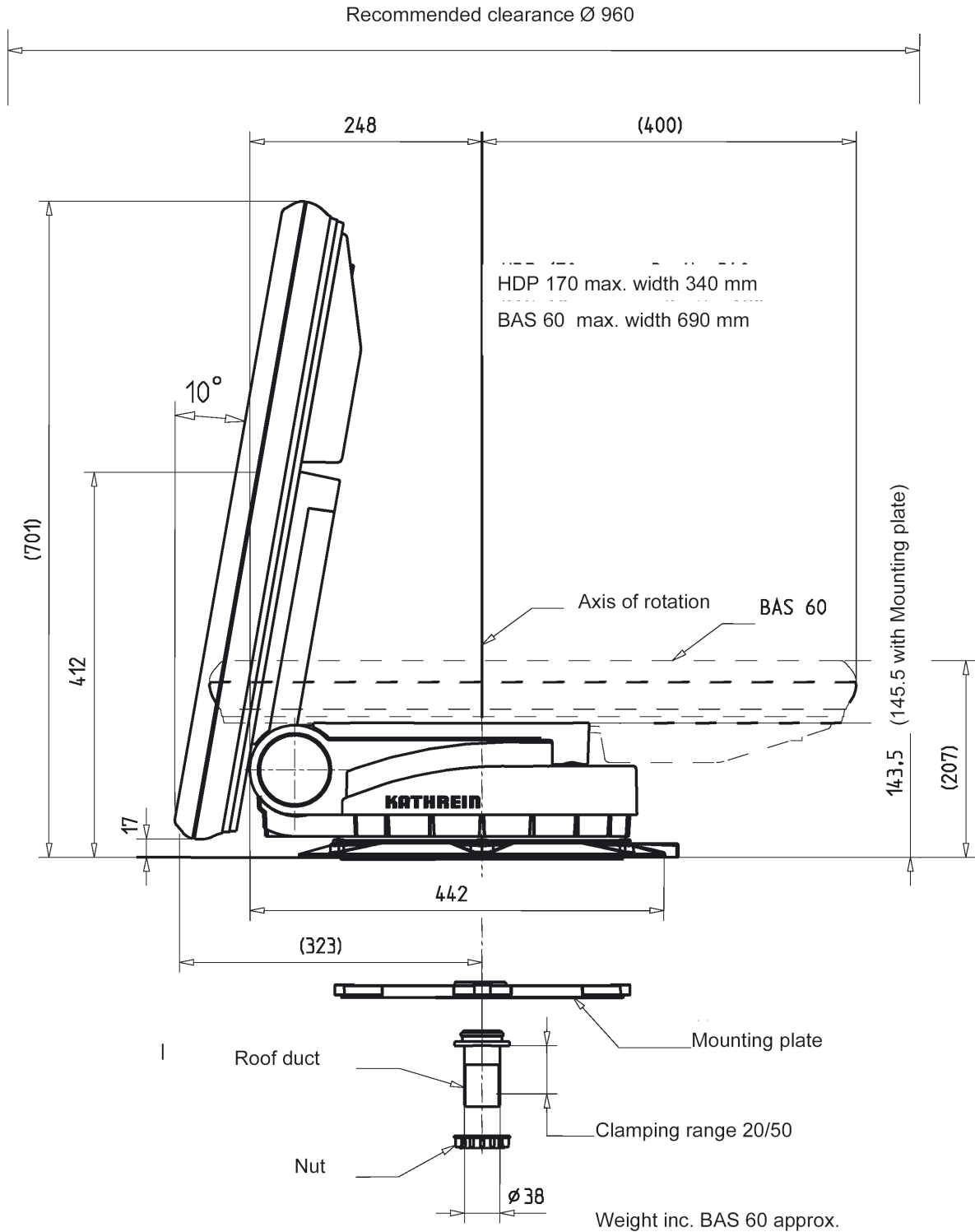
Phone: +49 8641 9545-0
Fax: +49 8641 9545-35 and -36
Internet: <http://www.esc-kathrein.de>
E-mail: service@esc-kathrein.de

Technical data

Dimensions (mm)



Technical data



Electric data

Supply voltage	10.9...13.8 V
Ignition signal	12...24 V
"Standby" current	20 mA
"ENGINE ON" current	5...8 A
Transient start-up current	12 A
Azimuth rotation range	0...370°
Elevation rotation range	10...90°
Search time for first satellite	(typ.) 10...120 s
Search time for additional satellites	(typ.) 2...30 s
LSM start-up time	2...15 s

Sikaflex® 291 data sheet

Sicherheitshinweise in Kurzform

Beachten Sie unbedingt auch das beiliegende Technische Merkblatt.

Sikaflex® ist ein gefülltes reaktives PUR-Polymer.

Gefährliche Inhaltsstoffe:

Bezeichnung gemäß 67/548/EWG

CAS-Nr.	Konzentration	Gefahrsymbole	R-Sätze
Xylol			
1330-20-7	2.5 - 10%	Xn	10,20/21,38
4,4'-Methyldiphenyldiisocyanat			
101-68-8	0.1 - 1%	Xn	20,36/37/ 38,42/43

Wenn im Zusammenhang mit Sikaflex®-291 Beschwerden auftreten, unbedingt sofort einen Arzt aufsuchen und beiliegendes Technisches Merkblatt mitnehmen.

Achtung!

- Vor Kindern unzugänglich aufbewahren!
- Nicht verschlucken!
- Nicht einatmen!
- Für Frischluft sorgen!
- Bei der Arbeit nicht rauchen, essen oder trinken!
- Hautkontakt vermeiden!

- Dichtschießende Schutzbrille tragen!
- Bei Berührung mit den Augen sofort mit viel Wasser 15 Minuten lang spülen!
- Gummihandschuhe tragen!
- Vor den Pausen und nach Arbeitsende Hände gründlich waschen!
- Beschmutzte Kleidung sofort ausziehen!
- Von Zündquellen fernhalten!
- Bei Brand Personen in Sicherheit bringen!
- Löschen mit alkoholbeständigem Schaum, Löschpulver, Kohlendioxyd oder mit Wassersprühstrahl!
- Bei Brand werden giftige Gase freigesetzt! Schutzausrüstung und unabhängiges Atemschutzgerät (Isoliergerät) verwenden!
- Bei Eindringen in Gewässer, Boden oder Kanalisation zuständige Behörden verständigen!
- Tube bzw. Restmenge dicht verschlossen an einem trockenen, kühlen, gut belüfteten Ort aufbewahren!
- Getrennt von Nahrungs-, Genuss- und Futtermitteln lagern!
- Vor Frost, Hitze, Sonneneinstrahlung, Luftfeuchtigkeit und Wasser schützen!
- Restmenge nicht in den Hausmüll, sondern als Sondermüll bei Ihrer Probemüll-Sammelstelle abgeben!

Kennwerte	Sikaflex®-291
	Haftstarke Marine-Dichtmasse
Chemische Basis	1-K-Polyurethan
Standfestigkeit	Gut
Hautbildezeit 23 °C, 50% Rel. LF	60 min.
Durchhärtengeschwindigkeit	3 mm/24 Std.
Härte Shore A (DIN 53505) bei 23 °C	Ca. 35
Bruchdehnung (DIN 53504)	> 400%
Zugfestigkeit (DIN 53504)	1,8 N/mm ²
Verarbeitungstemperatur	+5 °C bis +25 °C
Gebrauchstemperatur	-40 °C bis +90 °C
Anwendung	Dichten, Abfugen, Isolieren, Verkleben von Stabsdeckplatten
Verbrauch	310 ml für 10-m-Fuge, 5 x 5 mm, bei Flächenanwendung ca. 600-1000 ml/m ²
Lieferform und Farben	310-ml-Kartusche, Schwarz, Weiß, Holz 400-ml-Beutel, Schwarz, Weiß, Holz 100-ml-Tube, Schwarz, Weiß

Sikaflex®-Marine-Kleb- und -Dichtstoffe sind speziell auf die Anforderungen im Marinebereich abgestimmte Polyurethan-Produkte, die mit Luftfeuchtigkeit zu einem Elastomer aushärten. Das Programm beinhaltet Marine-Dichtmassen, Vergussmassen sowie Konstruktions-, Flächen- und Kunststoffglas-Klebstoffe. Die Produkte eignen sich sowohl für den Neubau als auch für die Werterhaltung und Instandsetzung von Sportbooten, Motor- und Segelyachten.

Produktmerkmale:

- Einkomponentig
- Seewasserfest
- Witterungsbeständig
- Schlagabsorbierend
- Korrosionshemmend
- UV-beständig
- Alterungsbeständig
- Gasdicht
- Überlackierbar
- Schleifbar
- Elastisch
- Vibrationshemmend

Chemische Beständigkeit

Sikaflex®-Marine-Kleb- und -Dichtstoffe sind **beständig** gegen Süß- & Meerwasser, wässrige Reinigungsmittel sowie gegen schwache Säuren und Laugen, **kurzzeitig beständig** gegen Treibstoffe, Mineralöle, sowie pflanzliche und tierische Fette und Öle, **nicht beständig** gegen organische Säuren, Alkohol, stärkere Mineralsäuren und Laugen sowie Lackverdünner.

Anwendungsbereich

Sikaflex®-Marine-Kleb- und -Dichtstoffe zeigen ein breites Haftspektrum und sind je nach Produkt geeignet für elastische, dauerhafte, haftstarke Verklebungen und Dichtungen.

Geeignete Untergrundmaterialien sind Holz und Holzderivate, Aluminium, GFK, Buntmetalle, Edelstahl, Metallgrundierung und -lackierung (2-K-Systeme), keramische Materialien, Glas, Kunststoffe (mit Ausnahme von Polyethylen, Polypropylen, Teflon und Silikon). Bei Anwendung auf Kunststoffen, die zu Spannungsrissbildung neigen, wie Polymethylmethacrylat (Plexiglas ect.) oder Polycarbonat (Makrolon ect.), ist unbedingt die Arbeitsanleitung „Einbau von Scheiben aus Kunststoffglas“ zu beachten bzw. eine objektbezogene Beratung erforderlich.

Verarbeitungshinweise

Untergrundvorbehandlung: Die zu verklebenden bzw. abzudichtenden Teile müssen sauber, trocken und frei von Fetten, Ölen und staubförmigen Ablagerungen sein. Bei vielen Untergründen ist eine Vorbehandlung mit einem Sika Primer oder Haftreiniger erforderlich.

Die Sika-Arbeitsanleitungen für Marineanwendungen sind unbedingt zu beachten.

Verarbeitung: Boden am Kartuschenende entfernen, Kartuschenmembrane einstecken und vollständig öffnen. Beutel in die Verarbeitungspistole einlegen und mit Einstich öffnen. Tubenmembrane mit Tubendeckel durchstoßen. Die Sika Arbeitsanleitungen für Marineanwendungen sind unbedingt zu beachten.

Lagerung

Ungeöffnete Gebinde sind bei trockener, feuchtigkeitsgeschützter Lagerung zwischen 10 °C und 25 °C mindestens 9 Monate lang mit herkömmlichen Hand- oder Druchluftpistolen verarbeitbar. Angebrochene Gebinde müssen innerhalb kurzer Zeit verarbeitet werden.

Schutzmaßnahmen

Für den Umgang mit unseren Produkten sind die wesentlichen physikalischen, sicherheitstechnischen, toxikologischen und ökologischen Daten den stoffspezifischen Sicherheitsdatenblättern zu entnehmen.

Die Vorschriften der Gefahrstoffverordnung sind zu beachten.

Bei der Verarbeitung sind die Gefahrenhinweise und Sicherheitsratschläge auf dem Gebinde sowie die jeweiligen Unfallverhütungsvorschriften der zuständigen Berufsgenossenschaft zu beachten.

Unsere Erzeugnisse sind in der Regel wassergefährdend und dürfen deshalb nicht in Kanalisation, Gewässer und Erdreich gelangen.

Entsorgung

Unausgehärtete Produkte sind Sonderabfall und müssen ordnungsgemäß entsorgt werden. Ausgehärtetes Material kann nach Absprache mit der zuständigen Behörde oder Deponie als Haus-/Gewerbemüll entsorgt werden.

Auskunftspflichtig für die korrekte Entsorgung sind die zuständigen örtlichen Behörden wie Landratsamt, Abt. Umweltschutz, oder Gewerbeaufsichtsamt.

Die Abfallschlüsselnummer entnehmen Sie bitte unseren aktuellen Sicherheitsdatenblättern.

Weitere Informationen

- ◆ Sika-Primertabelle Yacht- und Bootsbau
- ◆ Sikaflex-Anwendungsbeschreibungen Marine:
 - Verkleben von Stabdeckplatten/Stabdeckleisten
 - Verlegen von Deckbelägen aus Kunststoff
 - Verklebung Deck-Rumpfschale
 - Süllabdichtung/Schottverklebung
 - Verkleben von Scheuerleisten
 - Kiel-/Rumpf-Verbindung
 - Kleben und Dichten von Beschlägen
 - Verkleben von Holzbauteilen
 - Einbau von Scheiben aus Kunststoffglas
 - Fenster aus Sicherheitsglas
- ◆ Sicherheitsdatenblatt
- ◆ Hinweise zum Arbeitsschutz beim Umgang mit Produkten der Sika Chemie GmbH

Hinweis

Die vorstehenden Angaben, insbesondere die Vorschläge für Verarbeitung und Verwendung unserer Produkte, beruhen auf unseren Kenntnissen und Erfahrungen im Normalfall. Wegen den unterschiedlichen Materialien, Untergründen und abweichenden Arbeitsbedingungen kann eine Gewährleistung eines Arbeitsergebnisses oder eine Haftung, aus welchem Rechtsverhältnis auch immer, weder aus diesen Hinweisen, noch aus einer mündlichen Beratung begründet werden; es sei denn, dass uns insoweit Vorsatz oder grobe Fahrlässigkeit zur Last fällt. Hierbei hat der Anwender nachzuweisen, dass er schriftlich alle Kenntnisse, die zur sachgemäßen und erfolgversprechenden Beurteilung erforderlich sind, rechtzeitig und vollständig zu unserer Kenntnis übermittelt hat.

Schutzrechte Dritter sind zu beachten.

Im Übrigen gelten unsere jeweiligen Verkaufs- und Lieferbedingungen. Es gilt das jeweils neueste Technische Merkblatt, das von uns angefordert werden sollte.

Declaration of conformity



EC Declaration of Conformity

Manufacturer: KATHREIN-Werke KG

Address: Postfach 10 04 44
83004 Rosenheim

Product designation: Automatic positioner for mobile home/caravan Sat systems

Type designation: **HDP 170**

Kathrein Werke KG hereby confirms that the designated product corresponds to the directive(s) of the Council of the European Union for the harmonisation of the statutory regulations of the member states.

- a) Electromagnetic compatibility (89/336/EEC as of May 3, 1989)
The following standards are complied with:
EN 55013: 1990 + A12: 1994 + A13: 1996 + A14: 1999
EN 55020: 1994 + A11: 1996 + A12: 1999 + A13: 1999 + A14: 1999
- b) Machines (98/37/EC as of June 22, 1998)
The following standards are complied with:
EN 292-1: 1991
EN 292-2: 1991 + A1: 1995
EN 294: 1992
EN 349: 1993

Possible restrictions for the use of the product are to be observed.
Refer to the appropriate instructions for proper operation in accordance with the requirements.

Development, production, quality assurance and marketing are based on the standard EN ISO 9001. Certificate register no. Q1 99 10 11297 015 for Kathrein Werke KG dated Jan. 17, 2000, issued by TÜV product service GmbH.

Place, Date: Rosenheim, 02.28.02

On the behalf of the
development department: i.V. 

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<http://www.4manuals.cc>

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<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

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