

# CASSETTE AWNING DAKOTA

## 1. INTRODUCTION

The DAKOTA awnings are both closed and very compact cassette awnings. The system is characterized by its strong supporting back profile, which serves as a support on which the consoles, the projection arms and the roller tube are suspended or slid into. The standard type of this construction (2 arms) permits a projection of 3,5 meters and a width of 6 meters. The width can be up to 7 meters with 3 arms.



The awning was designed for use as a sun screen and must not be used for all-weather protection. During heavy rain or wind the awning must be retracted immediately. We strongly advise you to use the awning together with a wind and sun sensor.

## 2. GENERAL WARNINGS

**For a safe fitting, use and maintenance of this sun protection a number of precautions have to be taken. For the safety of everyone concerned, please do take notice of the following general warnings!**

This manual is meant to be used by professionals only! It is not to be used by DIY-enthusiasts or apprentice fitters.

Before you start, please do read these instructions thoroughly.

Be very careful and make sure of a solid footing whilst operating.

Provide sufficient light in the fitting area. Dispose of obstacles and dirt. Make sure that, except for the fitters, no other people are in the fitting area. Unauthorized people might be in the way or at risk themselves.

Whilst operating the system, you must be able to overlook the complete area and the whole of the sun protection. There are a number of places where people might get injured. Especially watch the following parts where people might risk getting jammed: the folding arms, the extension pole and the casing.

Folding arms are always under considerable tension, a tension created by their own springs. Therefore, be careful and work safely.

Electrical connections have to be made in accordance with the existing local norms and requirements.

Our products must be installed so that all parts remain accessible at all times for maintenance and eventual repairs. If this is not the case, ISOTRA cannot be held responsible for any additional costs (f.e. demolition activities, repairs to facades and interior walls) as a result of this.

### **Guarantee and conditions:**

- ISOTRA has endeavoured to design and manufacture the awning in compliance with the current CE standards. Always check that our version complies with your own national standards.
- No rights can be derived from these instructions whatsoever. Technical modifications are reserved without written notification.
- For large projects, we strongly advise you to first fit 1 complete awning before fitting the remaining awnings. This will help detect any potential faults early on and enable these to be remedied at the lowest possible cost.

### 3. LIST OF ACCESSORIES

- Ladder(s)
- Snap-off blade knife
- Measuring tape
- Drill
- Screwdriver and crosshead screwdriver
- Set open-ended spanners or ring spanners
- Pencil
- Set masonry drills
- Spirit level and water level tubing
- Voltmeter or test lamp 220 V
- Cord
- Set Allen keys
- Allen key 7 (special size)

### 4. ASSEMBLY INSTRUCTIONS

#### 4.1. CHECKING AND OPENING THE PACKAGING

First check the packaging for any external damage. Next open the cardboard packaging. Be careful when cutting the straps with a knife. The paintwork is easily scratched if the cardboard is opened unprofessionally, and there is even a risk of cutting through the fabric. It is recommended to remove the plastic film only from the ends. The plastic provides good protection during installation.

#### 4.2. CHECKING THE CONTENTS

The DAKOTA awnings are supplied ready to fit, together with all the required screws. Check that the required wall brackets and home electronics are included. Also check the bag with accessories. Check that the locking bolts with set screws are present, as well as the guarantee card and the table with the tensile forces on screws.

#### 4.3. CHECKING THE WIDTH

Measure the length of the folding arm awning and check that it corresponds with the ordered size. The drop can only be checked once the screen has been mounted.

#### 4.4. POSITION OF THE WALL BRACKETS

For this type of awning it is important that the mounting brackets are positioned directly behind the arm fixing support and also directly behind the bearing supports. The distance from the side of the box to the side of the wall bracket must be 75 mm. Mark the wall and mount the wall brackets exactly on the markings, using the correct fastening materials.

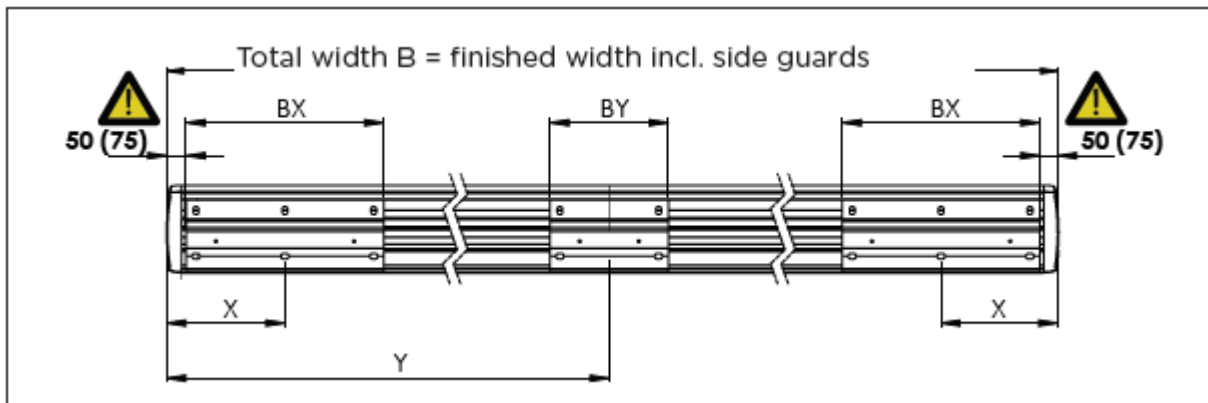


Fig.1 Fix distance: 75 mm – left and right

Pay attention to the following:

- a In relation to the window, the overhang of the awning should be identical on both the left and the right.
- b The brackets must be perfectly horizontal and in one straight line. If necessary, use a string and spirit level.
- c When starting, mount the awning sufficiently high against the wall, at least at 2500 mm, to have sufficient run-out height (Y) under the extension pole when the screen is open. Make sure the angle of inclination is at least 10° and at most 35° (see fig. 1).
- d If mounting the awning beneath an overhang, it is necessary to allow sufficient space between the top of the wall bracket and the bottom of the overhang, so the screen can be hooked into the brackets.

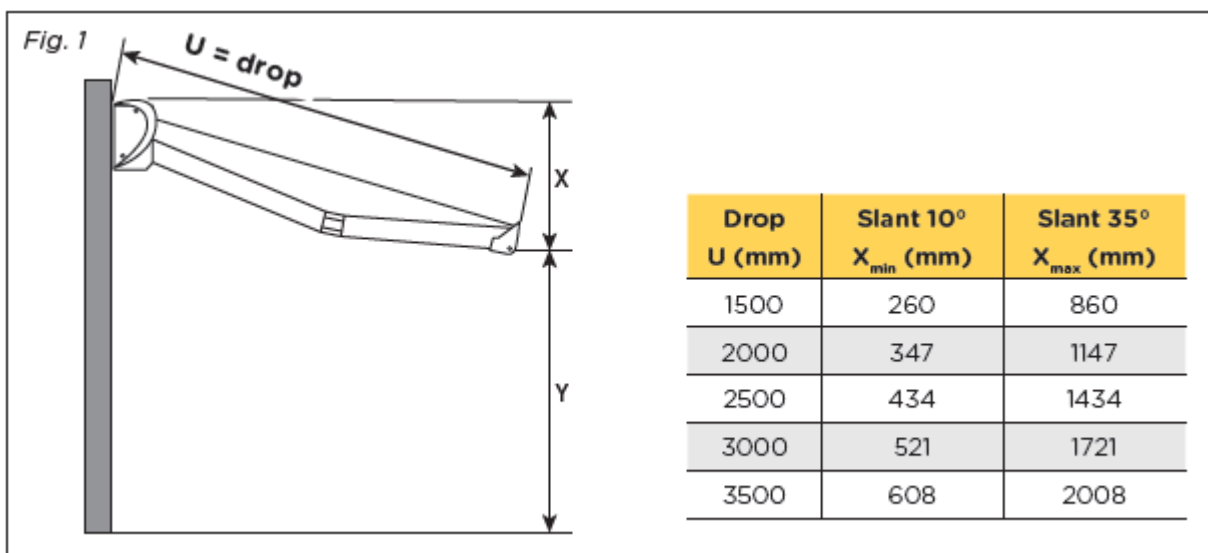


Fig.2 Minimum and maximum angles

First mount the left wall bracket, position it horizontally using a spirit level and tighten the screws. Next mount the right bracket in the same way at the same height using a hose level.

If you decide to use a third wall bracket, run a string across each end of the wall brackets and determine the middle between the two. The middle wall bracket is fastened in the same way as the other ones. With 3 arms, only the position of the middle wall bracket deviates (compare table 1).

Make sure the wall brackets have the correct length and if necessary, give them more depth.

Number of wall brackets, locking bolts and folding arms					
Awning width	2050–4050 mm	4051–6000 mm	6001–7000 mm	7001–8000 mm	8001–12000 mm
Number and type of bracket	2 × 300 mm	2 × 500 mm 1 × 300 mm	3 × 500 mm	2 × 300 mm 1 × 1000 mm	2 × 300 mm 2 × 500 mm 1 × 1000 mm
Number of drill holes	4	6	6	8	12
Number of folding arms	2	2	3	4	4

Position of the wall brackets BX260 (in mm) (BX270)				
Awning width	Distance X	Width bracket (sides) B <sub>X</sub>	Distance Y	Width bracket (middle) B <sub>Y</sub>
2000–4000	225	300	-	-
4001–6000	325	500	Width / 2	300
6001–7000			See table below	500
X a Y = distance side of box to centre point of wall bracket				

Position of middle wall bracket with 3 arms* BX260 (in mm) (BX270)				
Width / Drop	2000	2500	3000	3500
6001–6099	2928	2901	2401	2087
6100–6199	2977	2977	2500	2137
6200–6299	3027	3027	2600	2187
6300–6399	3077	3077	2700	2237
6400–6499	3127	3127	2800	2300
6500–6599	3177	3177	2900	2400
6600–6699	3227	3227	3000	2500
6700–6799	3277	3277	3100	2600
6800–6899	3327	3327	3200	2700
6900–6999	3377	3377	3300	2800
7000	3427	3427	3400	2900
• With left arm measured from the left, with right arm measured from the right				

Table 1: number of folding arms, locking bolts and wall brackets and their position relative to the side

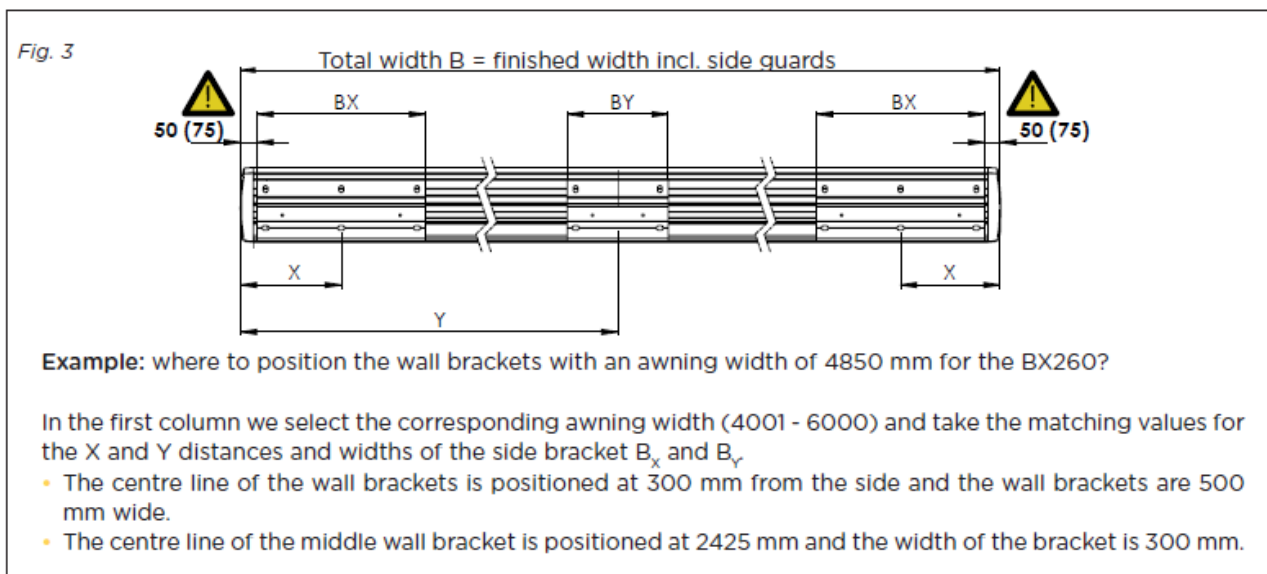
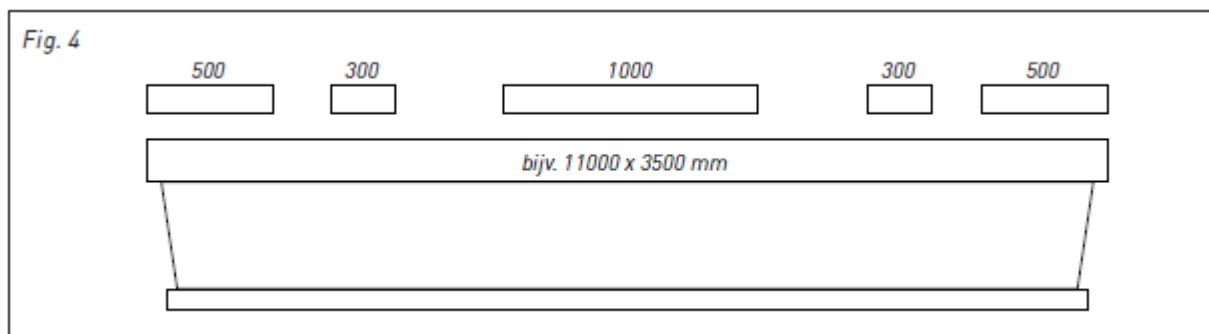


Fig.3: Detailed example for positioning the wall brackets



For walls made of cellular concrete, soft or hollow bricks, it is necessary to use the appropriate fastening materials such as key bolts, chemical anchors etc. This should be decided by the fitter. ISOTRA accepts no responsibility for fasteners that do not hold securely.

Do not use screws with large heads or thick washers to mount the wall brackets. Protruding heads may damage the fabric when it is rolled up.

!!For walls that are not strong, it is recommended that you order additional wall brackets and/or that you reinforce the wall.

## 4.5. HOOKING UP THE AWNING

Hold the awning at both ends and hook the rear side or back profile in the consoles. Check whether the awning is centred. Slide the clamping screws at the bottom between the awning and the consoles. Positioning the locking bolts per box: place one locking bolt below the bearing support, one locking bolt below the arm support so that the box, the bearing support and the arm support together form a solid and robust unit.

See also Table 1 for the number of locking bolts needed per folding arm awning.

If you have chosen for the option LED lighting, the locking bolts have extra material to fix the LED profile.

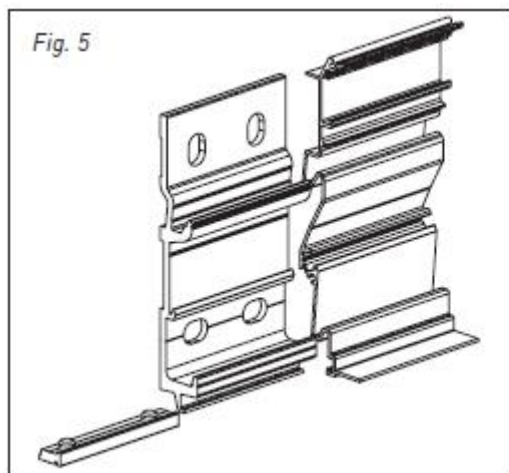


Fig.5: Locking bolts

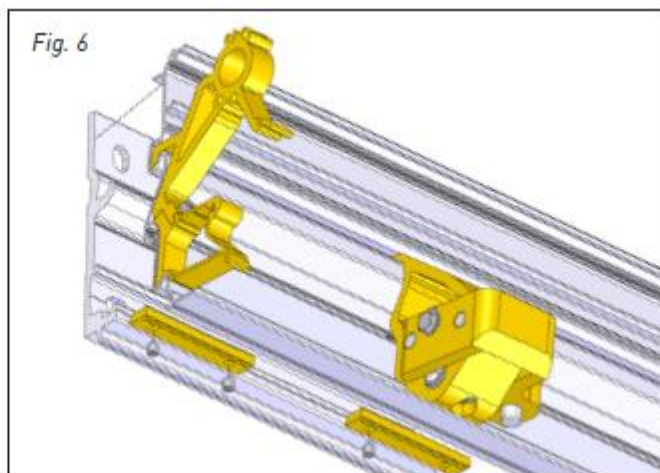


Fig.6: Position of 2 locking bolts



Immediately tighten the socket screws of the locking bolts before opening the screen!

The awning is now ready for further adjustment.

#### 4.6. ADJUSTING THE ANGLE

Unfurl the screen completely and check the angle of inclination (on how to operate the awning, see G). The awnings are delivered from the factory at a standard angle of approximately 10 degrees to the horizontal. It will always be necessary to adjust the awning to compensate for any unevenness in the wall, even when the minimal sloping is acceptable. The awning is provided with two tilting mechanisms, to which the arms are fitted. First unscrew the inner-hexagonal pointed screw A near the two tilting pads. This adjusting screw is located on the lower side of the tilting mechanisms. These adjusting screws operate to block both mechanisms and prevent the awning from blowing over. Once the pointed screws A have been removed, the head of the adjusting screw B is freed and can be operated using an Allen key.

Attention! Be sure to use an Allen key 7.

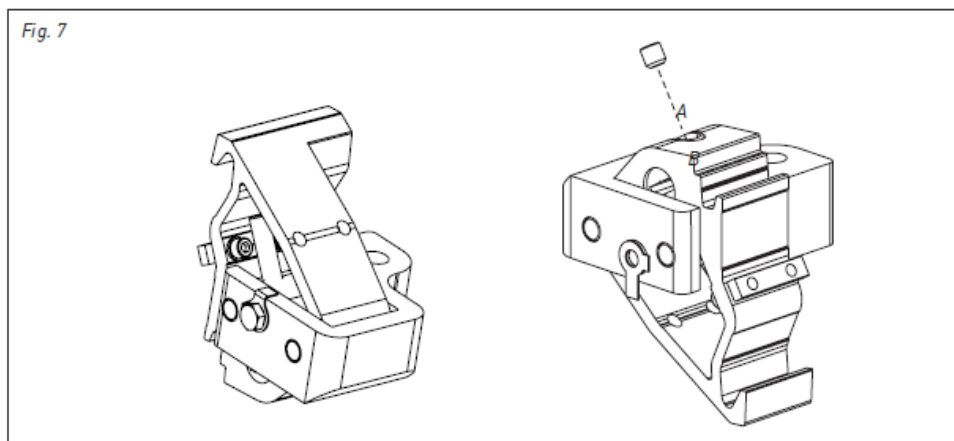


Fig. 7: Tilting mechanism

If adjusting screw B is turned to the right, the extension pole is raised, and if turned to the left, the extension pole is lowered. When turning, support the arm ends. A screw will turn more easily if it is not supporting the weight of the arm. This certainly will apply if the arms have to be raised.

To be sure that the pole is horizontal, stand in front of the middle of the awning. Look over the extension pole towards the cover to ensure that both sections are parallel. Once the angle is correct, both tilting mechanisms must be securely tightened. To do this, tighten both pointed screws 'A'. Now, replace the covers on the side consoles.

The adjusting mechanism of the BX260 and BX270 provides continuously controlled adjustments to the awning. The system delivers a fine-tuned, accurate and simple adjustment. For the awning to operate smoothly, it is very important that the tilting system is set correctly. Incorrect settings may result in faults to the system. Pay special attention to positioning the awning in a perfect horizontal position. By correctly adjusting both tilting systems you will ensure that the remainder of the installation can be completed without any problems.

#### 4.6. ADJUSTING THE EXTENSION POLE

The distance between the extension pole and the housing will depend on the angle of the arms. In order to vary the distance between the pole and the housing and to position the extension pole correctly, both arms are provided with a rotational system, always allowing the front frame to be correctly positioned.

Follow these instructions.

Roll back the awning. Study the position of the extension pole and see what adjustments are required to allow the extension pole to fit correctly.

Attention! The correct position of the extension pole can be assessed from the side guard and the plastic extension pieces. This is because the outline of the extension pole must be in the same position as the outline of the side guards.

The outline of the extension piece of the extension pole fits in the extension piece on the torque bar.

Next, swivel the awning sufficiently outwards so you can position yourself comfortably with your head and shoulders between the awning and the extension pole, making it easy to operate the C bolts of the rotation section. To be able to adjust the extension pole you need to unscrew screw C of the rotation mechanism on both arms.

Tip: The more the arms are closed, the less tension there is on the fabric, and the easier it is to make the adjustments.

When these screws are loose, the tension of the fabric will rotate the front frame, with the upper side towards the wall. The front frame can now be correctly positioned by rotating it. Then quickly tighten screw C.

The front frame is now fixed in position!

#### 4.8. OPERATING USING THE WINCH HANDLE

The standard operation device is a worm-screw mechanism supplied with a transmission ratio of 1 to 7. This mechanism requires no special adjustment.

Only a few factors must be taken into account:

- The crank handle should be positioned as near as possible in line with the eye-hoisting device while turning.
- Ensure with this type of awning that the fabric rolls down along the top.
- Fully unroll the awning until the arms are almost in straight line, at which

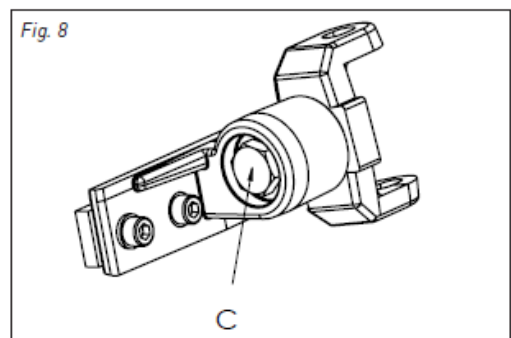


Fig.8: Fastening extension pole

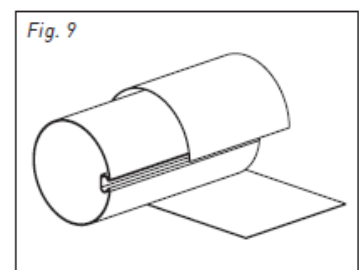


Fig.9: Rolling down



- point the arms have reached their maximum load-bearing limit.
- If you rotate a little further, the fabric will become slack. Then, briefly rotate in the opposite direction until the fabric is taut again.

## 5. COUPLED AWNINGS

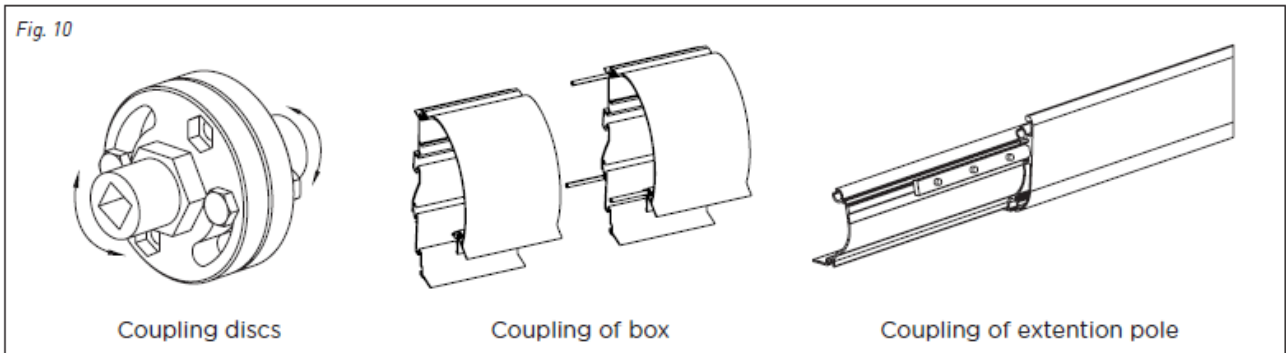


Fig.10: Cardan coupler between shafts, a coupler for cover profile and the extension pole coupler

There are two options for the coupled DAKOTA awnings: a cardan coupler without fabric split covering or a cardan coupler with fabric split covering. In both cases, each part has its own fabric.

Two complete awnings are supplied, of which one part is equipped with the common drive mechanism and the other part with a coupler. Position the wall brackets on the wall as described for a single awning and slide the part with the drive mechanism into these supports. Immediately securely tighten the socket screws on the locking bolts.

Then take the second half of the coupled awning and slide this into the supports as well. Install the coupler cogs to couple the box. Slide the couplings of the extension pole into the profile of the extension pole. Position the two halves opposite each other in such a way that the two grooves match. Use the bolts supplied to fasten the two coupling discs together.

If the awning is provided with a **fabric cover**, the assembly pole will be fitted with two supports to carry the fabric roller close to the coupling. The left support is provided with a round cut-away. The right support is provided with a longer hole, in which the spring-loaded axle fits.

Place the spring-loaded axle and the fabric in the supports. If required, shift the support to engage the spring roller. The fabric of the spring-loaded axle must always roll down from the top. This corresponds with the direction of the arrows indicated to the axle.

Apply approximately 7 bias strokes on the coiled spring, and then pull the end of the fabric all the way against the front of the extension pole. Then slide the fabric in the groove of the coupling device of the extension pole. Fasten both sides of the fabric using a torpedo plug.

If the extension is 350 cm, the fabric split covering can make 28 revolutions before the spring will reach maximum tension.

Once everything has been mounted correctly, the small piece of fabric at the bottom will move as a covering between the two large pieces of fabric when the extension pole moves in and outwards.

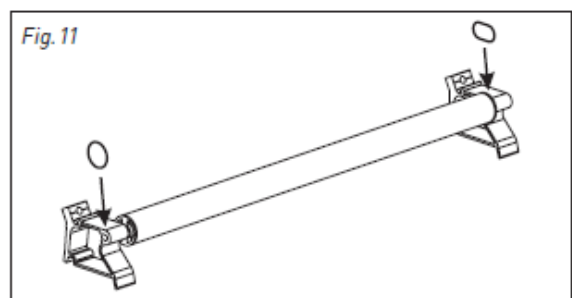


Fig.11: Rolling down



## 6. LED LIGHTING

### 6.1. MOUNTING THE LED PROFILE

Click the LED profile onto the custom mountings. For single screens, the cable outlet of the LED profile is situated on the operating side. For linked screens, the cable outlets are situated on the side guards.

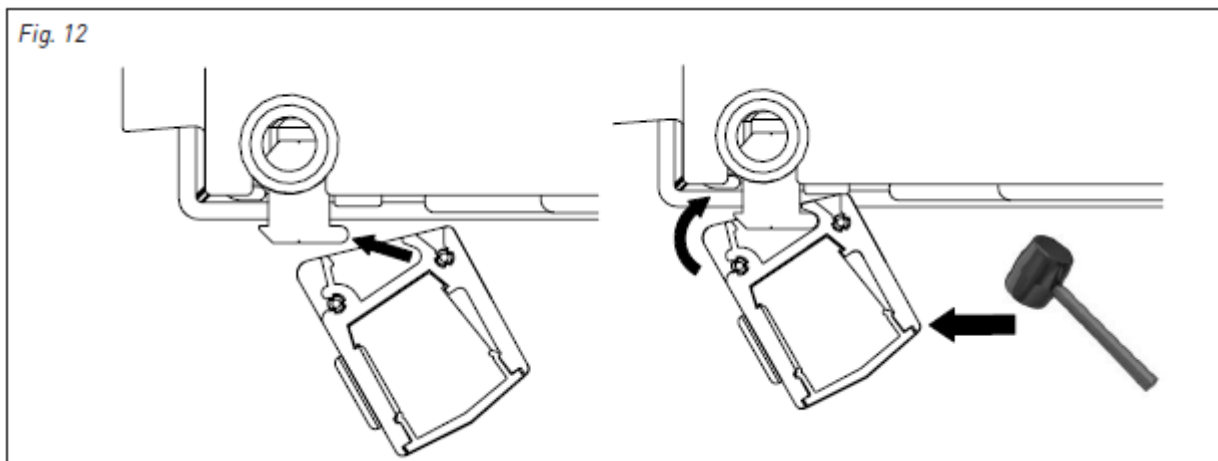


Fig.12: LED profile

### 6.2. CONNECTING THE LED STRIP

Remove the side guard on the operating side (for a linked screen do this on both sides).

Connect the connector (Fig. 13).

Replace the side guard and ensure that the cables are not pinched. Affix the ISOTRA logo into the recess (Fig. 14).

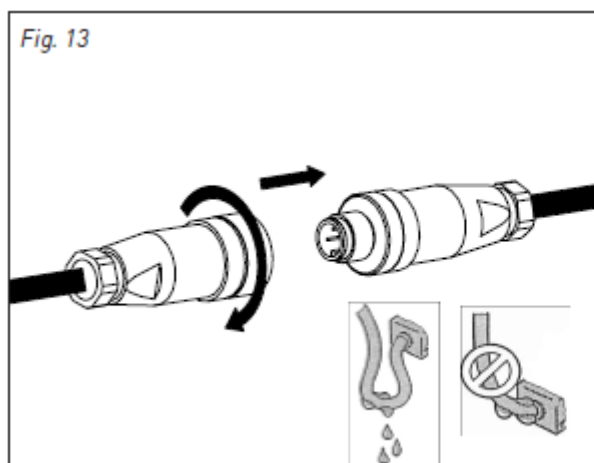


Fig.13: Connector LED strip

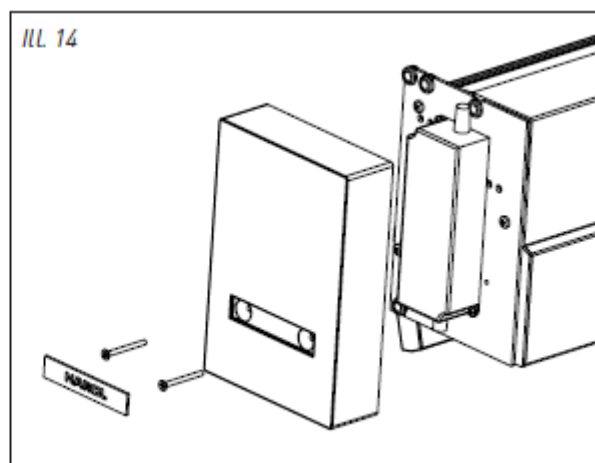


Fig.14: Side guard LED

## 6.3. CONNECTING THE POWER

The supply cable of the LED lighting is connected to the mains. For standard versions without a receiver, it is necessary to install your own switch to operate the LED lighting. In the case of RTS or IO-operated LED lighting, please observe the set-up instructions supplied with the remote control.

You have to connect the second power supply in case of coupled awnings. There is a cable foreseen at the operating side, connect it with the second power supply.

Watch the polarity! 2: Brown  
4: Blue

## 7. ELECTRICAL CONNECTIONS

### 7.1. CONNECTING THE SINGLE POLE SWITCH

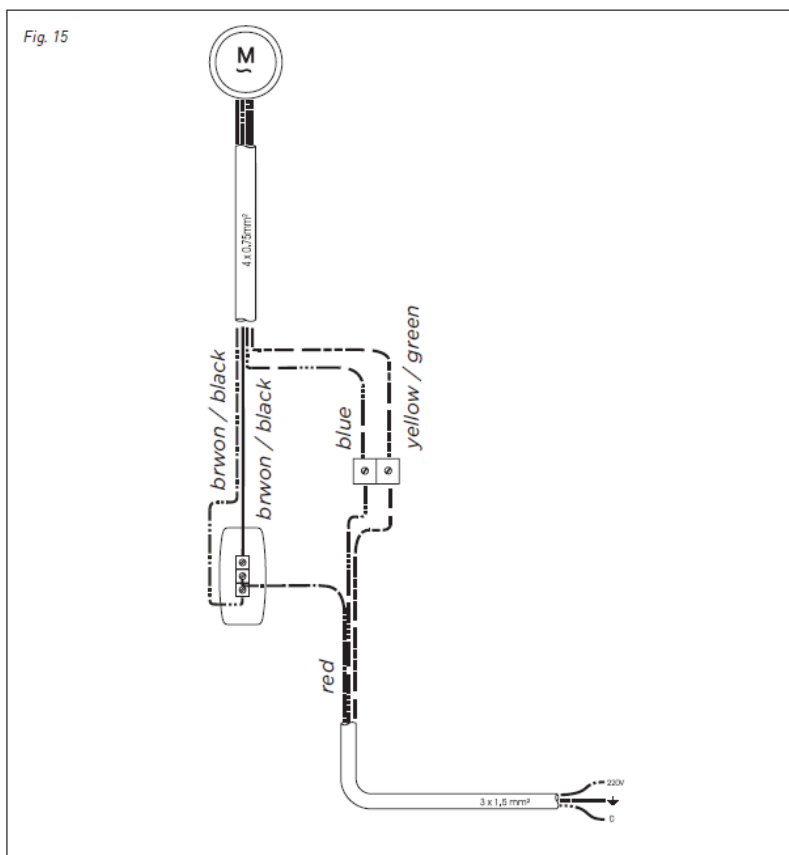


Fig.15: Diagram

Firstly, connect the electric cable of the motor to a test cable.

The motor cable has 4 wires: yellow-green (earth), blue (neutral), brown and black (up and down control). There are 3 wires from the supply mains: yellow-green (earth), blue (neutral) and the phase wire.

Connect the wires according to the diagram. The phase wire exiting the fuse box is to be connected to clamp P. If necessary, reverse the brown and black wire of the motor within the switch, so that the arrows on the switch correspond to the raising and lowering direction of the awning.

Connect the two blue wires in the housing of the switch by means of a cable clamp. Do the same for the two earth wires.

## 7.2. SETTING OF THE END SWITCHES OF THE MOTOR

In principle, the motor is already set at the factory, but it may be necessary to change the setting.

For this proceed as follows:

- First remove the yellow cap from the adjusting buttons.
- Press in both buttons fully to against their stops so that they remain a little deeper. The end settings are then fully removed in both directions.
- Now allow the awning to roll out until the desired position is reached.

### Attention!

Never allow arms to go past their straightened position but stop them a little before. Then place the switch to its neutral.

- Press the white or yellow button (depending on the building-in side) so that it rises slightly. Then roll up the awning again and stop at a distance of 10 cm before the closing of the awning.
- Then press the blue setting button. You will hear the motor throb for a few more seconds and then eventually cut (to absorb any subsequent stretch of the fabric).
- Close the awning completely. One can hear the motor hum for a few seconds then switch itself off.
- Replace the cover cap on the buttons.

The end switches of the motor are now set.

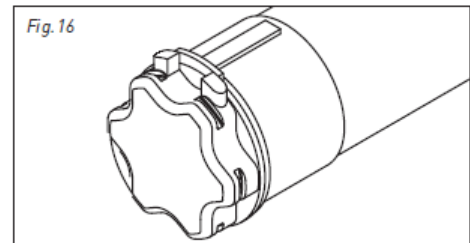


Fig.16: Adjusting buttons

## 7.3. WHY USE A MRI 2?

When the same switch operates different motors a relay box must always be used.

If relay boxes are not used, the built-in limit switches of the motor will very quickly burn due to the high inductive and capacitive voltages that can be generated between them.

Good advice: always use the switches and relay boxes supplied by us.

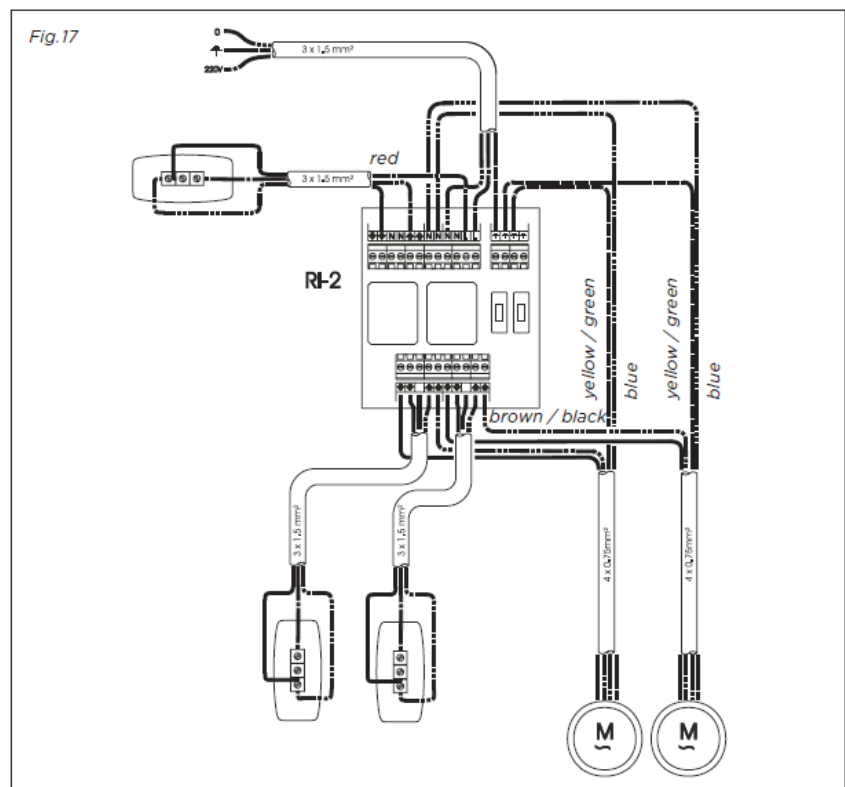


Fig.17: Wiring diagram with relay box

## 7.4. OTHER MOTORS

The DAKOTA awning is also available with the Orea WT, Orea RTS or Sunea IO motor for the awning.

To connect and operate these motors, follow the instructions in the supplied manuals for motors and/or remote controls.

## 8. FITTING THE LATERAL FABRIC

To attach the lateral fabric, the folding arm awning must be fully opened. Before closing the awning, always first remove the lateral fabric.

## 9. TROUBLESHOOTING

Your ISOTRA awnings are given a 100 % inspection before leaving the factory. It is only in very exceptional cases that errors may occur, for example, that the electric motor does not work after assembly. Before contacting our services, it is advisable to run through a number of points first. Most probably the following points will resolve any problems you may have.

### 9.1. THE MOTOR DOES NOT STOP ON TIME OR STOPS TOO SOON

Adjust the motor correctly according to the method described.

With the SLT engine, please note that approximately 5 or so seconds after reaching the box, the motor will cut out automatically. This can be ascertained by the humming sound that can still be heard in the box after a short period of time.

### 9.2. THE MOTOR DOES NOT RUN UP OR WIND DOWN

- Is there 230V at the switch?
  - Check this with a voltmeter or a test lamp.
- Check whether the motor has not thermally fused.
  - In this case it is sufficient to wait 15 minutes until the motor cools off.
- Check in the two directions whether the motor is in its extreme position.
- Check that the cable is not broken between the motor and the switch.
- Directly test the motor using a regulating cable.

Note: Should the motor be faulty, then it is important to specify whether the motor is for left or right hand mounting. The fact is that the motors cannot be swapped around.

### 9.3. THE END PROFILE IS DEEPER AGAINST THE COVER ON ONE SIDE THAN THE OTHER

- This may be because the fabric has not been rolled up evenly.
- Check that the fabric on the top roller and the extension pole are exactly parallel.
- If necessary, adjust the fabrics on the pole.

- Fabrics are attached to the border of the extension pole by a plug.
- If the fabric continues to roll up unevenly, add an extra piece of fabric to one of the side seams.

#### 9.4. THE ARMS WILL NOT COME IN SIMULTANEOUSLY

- If the attachment points of the arms on the extension pole are not at a correct distance from each other, one of the two arms will close slightly quicker than the other.



**The arms are under constant tension and may slide in the groove !**

- Roll the fabric up almost fully but ensure that sufficient space is left to apply the Allen key to the clamping plate on the inside of the extension pole.
- Roll the awning up a bit further and shift the arms, ensuring that the central articulated points of the arms are in line.
- If necessary, shift the extension pole in its entirety and move it to the middle of the two lateral plates.
- Tighten the screws in the clamping plate with the Allen key.

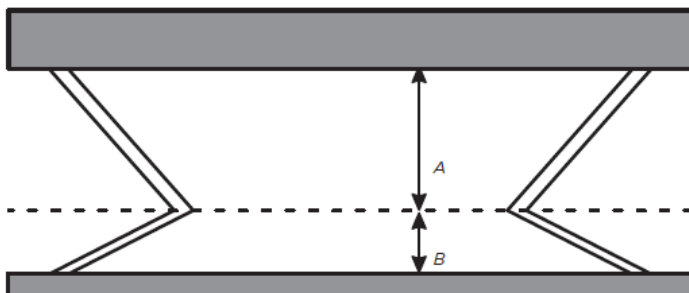
#### 9.5. THE AWNING MAKES A CRACKING SOUND

Tighten the clamping screws of the side consoles very well.

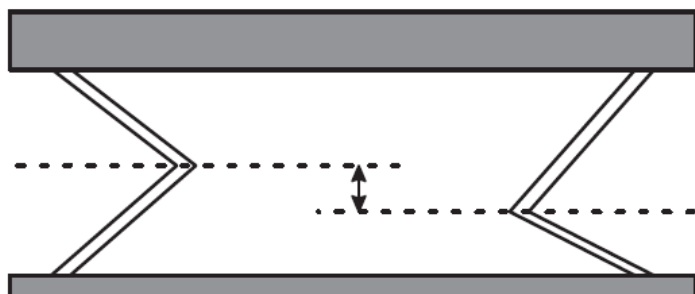
#### 9.6. THE ARMS ARE NOT PARALLEL IN THE BOX

This is often the case if the wall brackets are not positioned vertical. By twisting the bracket, you can return the arm to the correct height. The wall brackets are positioned along the arm supports and are insufficiently wide. Reposition the wall brackets or if necessary move the box in the brackets.

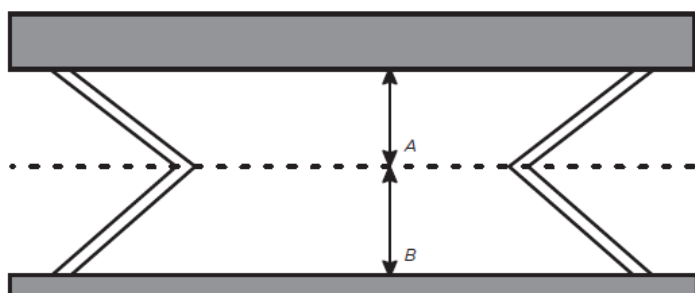
#### 9.7. SOME MOUNTING EXAMPLES



**Incorrect:** there is no symmetry, distance A is not proportionally equal to distance B.



**Incorrect:** the hinge points are not positioned in one horizontal line.



**Correct:** the hinge points are positioned in one horizontal line and the distance A = distance B

Harol reserves the right to make any changes to the construction at all times without having to inform the client beforehand and therefore without having to adapt existing installations.