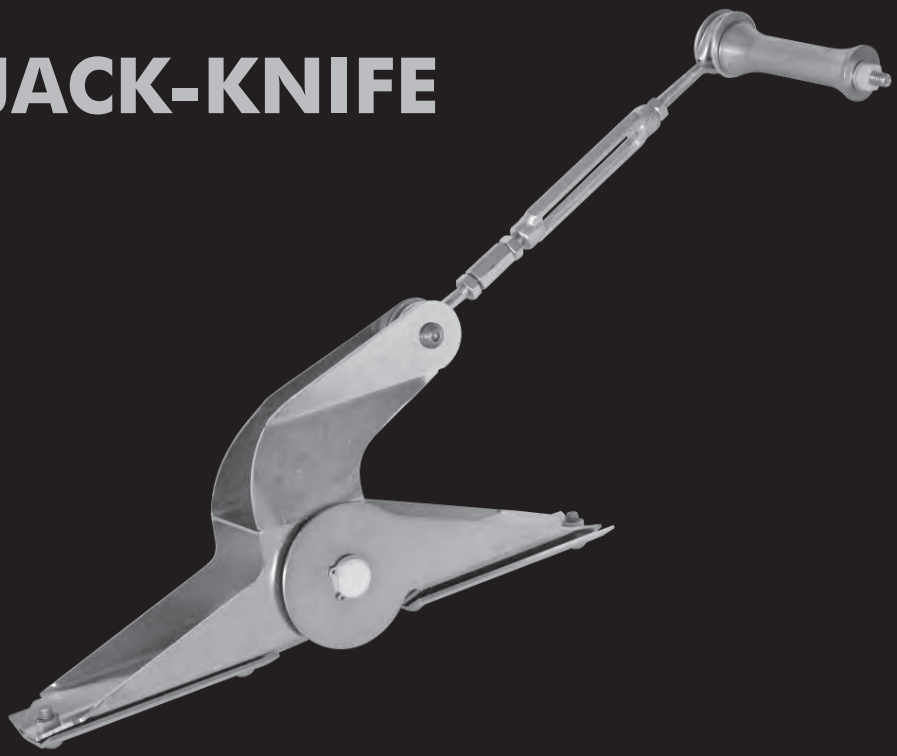
Jack-knife Assembly
Installation manual

JACK-KNIFE



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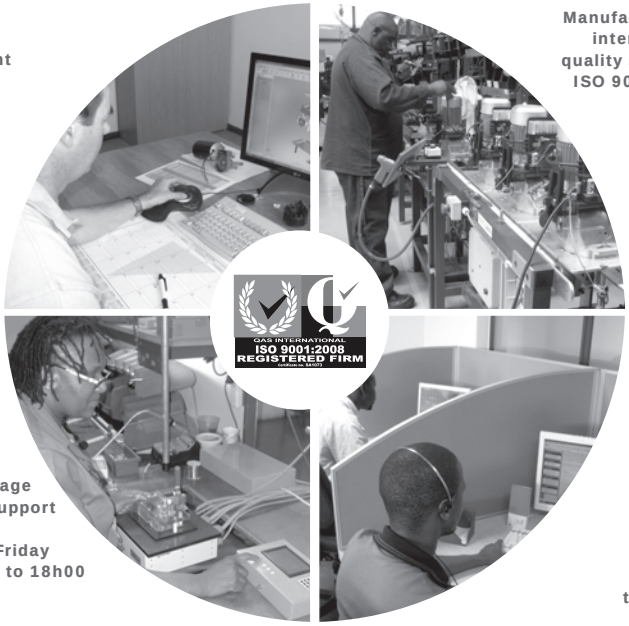

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Icons used in this manual

This icon indicates tips and other information that could be useful during the installation.

This icon denotes variations and other aspects that should be considered during installation.

This icon indicates warning, caution or attention! Please take special note of critical aspects that MUST be adhered to in order to prevent injury.

IMPORTANT
SAFETY INSTRUCTIONS

ATTENTION

To ensure the safety of people and possessions, it is important that you read all the following instructions.

Incorrect installation or incorrect use of the product could cause serious harm to people and / or property.

The installer, being either professional or DIY, is the last person on the site who can ensure that the operator is safely installed, and that the whole system can be operated safely.

Warnings for the installer

CAREFULLY READ AND FOLLOW ALL INSTRUCTIONS before beginning to install the product.

- Installation of the **Jack-knife Assembly** must be carried out by a suitably qualified person
- Do not in any way modify the components
- Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger
- Neither Centurion Systems (Pty) Ltd, nor its subsidiaries, accepts any liability caused by improper use of the product, or for use other than that for which the automated system was intended
- This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the service life/operation of the product and/or be a source of danger
- The installer must explain the operation of the **Jack-knife Assembly** and any safety hazards to the end-user. Refer to the 'Installation Handover' section
- **Anything not expressly specified in these instructions is not permitted**

1. General description

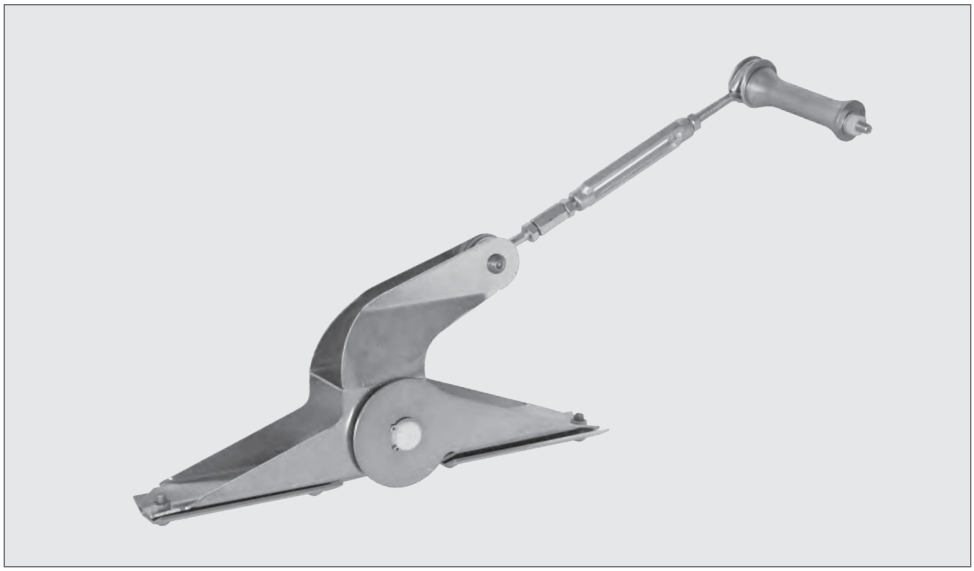

FIGURE 1

Certain installations may require that the boom pole of the SECTOR / SECTOR II barrier bend at an angle to allow sufficient clearance when raising. This could be due to a particularly low ceiling, for example, or a similar hindrance which has diminished overhead space.

The SECTOR / SECTOR II **Jack-knife Assembly** can be fitted to an existing boom pole which will allow the arm to bend at an angle by means of a metallic 'knuckle', and to become level again when in the lowered position.

The **Jack-knife Assembly** is easy to install and adjust. It is suitable for the 3m and 4.5m SECTOR and SECTOR II barriers, with certain modifications to the size of the barrier counterbalance spring. This instruction manual will guide the user through the installation process and provide graphic representation where applicable.

2. Product Identification

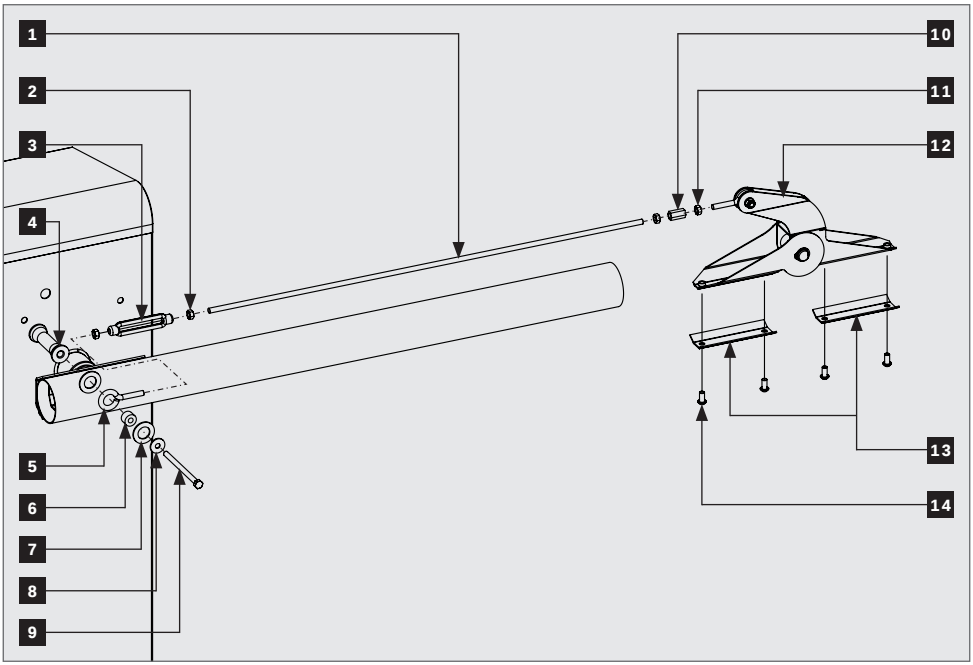

FIGURE 2. JACK-KNIFE ASSEMBLY

1. M8 2m stainless steel threaded bar
2. M8 nut
3. M8 turnbuckle
4. Mounting
5. Eye bolt Left Hand M8 x 60
6. Eye bolt bush
7. M20 (21 x 37 x 2) washer
8. M8 (8.4 x 25 x 2) washer
9. M8 x 120 Taptite screw
10. Joiner M8 x 25
11. M8 nut
12. **Jack-knife Assembly**
13. Support plate
14. Button-head cap screw M8 x 16

3. Required tools and equipment

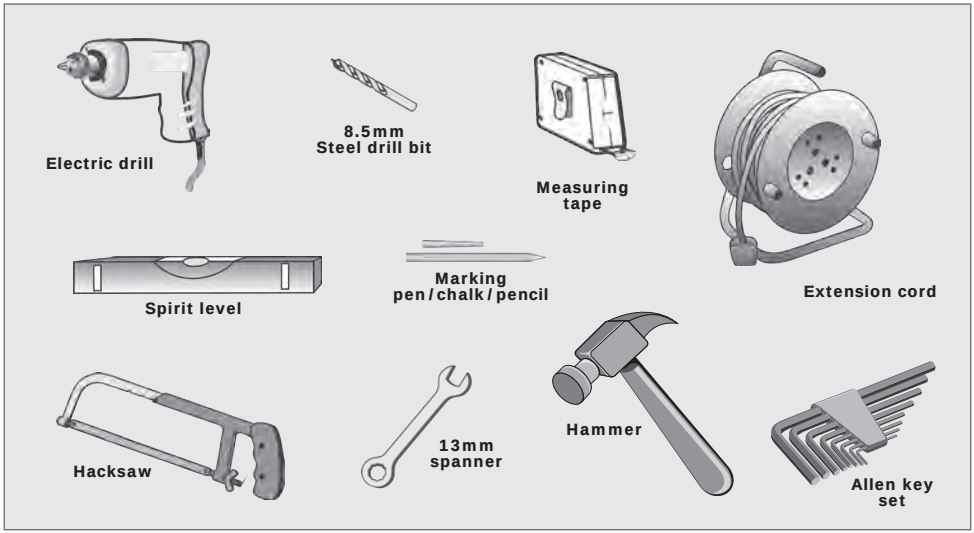

FIGURE 3. REQUIRED TOOLS AND EQUIPMENT

4. Site Considerations

4.1. General considerations for the installation

The barrier pole must be cut into two pieces using a hacksaw; the length of the individual pieces will be dependent upon the height of the ceiling – the lower the ceiling, the shorter the inner pole will be. It is not necessary to cut the pole into equal lengths.

4.2. Barrier - Jack-knife compatibility table

Barrier Variant	Barrier	Pole	Jack-knife
3m+Jack-knife	4.5m	3m	yes
4.5m+Jack-knife	6m	4.5m	yes
6m	6m	6m	no

5. Installation procedure

5.1. Configurations

The SECTOR / SECTOR II traffic barrier is available in two configurations, namely Left-hand and Right-hand orientation. To successfully fit the **Jack-knife Assembly**, it is necessary to first determine the orientation of the barrier it is to be installed on.

A Left-hand barrier is defined as a unit installed on the left-hand side of the road from which the vehicle approaches. The door always faces oncoming traffic.

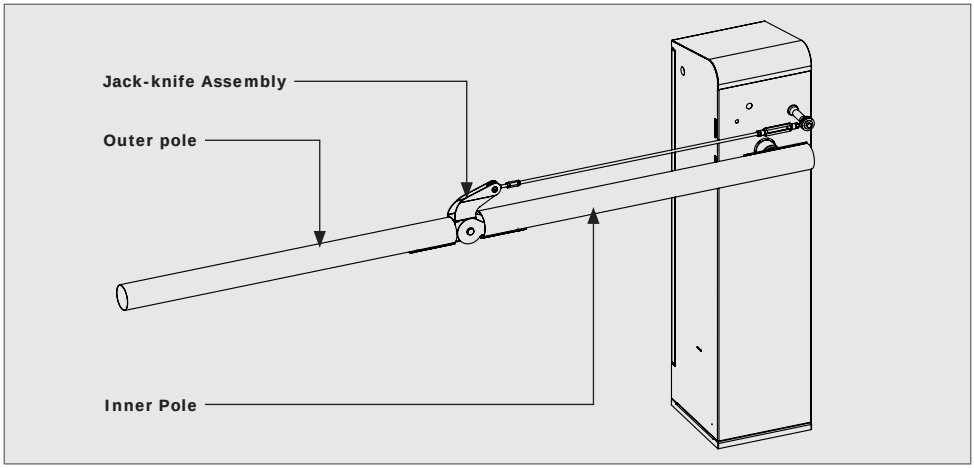

FIGURE 4. SECTOR / SECTOR II LEFT HAND CONFIGURATION

A Right-hand barrier is defined as a unit installed on the right-hand side of the road from which the traffic approaches. The door always faces oncoming traffic.

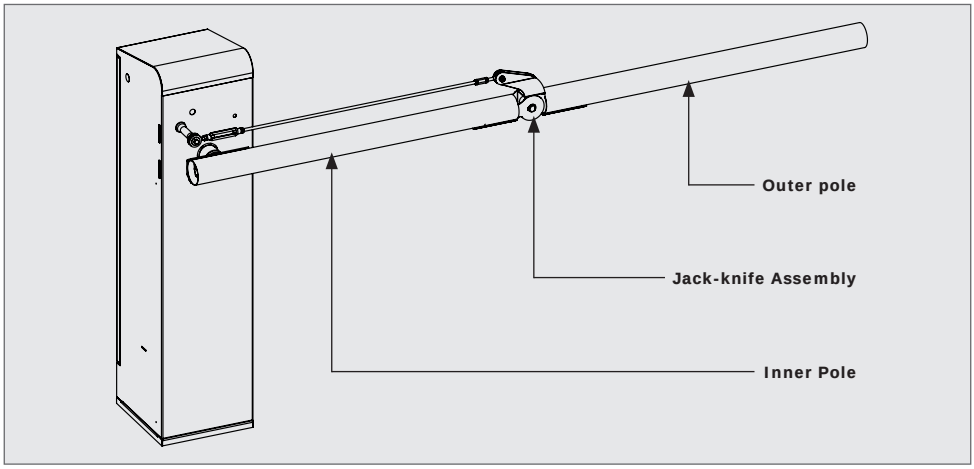

FIGURE 5. SECTOR / SECTOR II RIGHT HAND CONFIGURATION

5.2. Recommended vehicle clearance

Figure 6 shows the recommended minimum clearance when fitting the SECTOR Jack-knife Assembly, giving an indication of the length that the inner pole should be cut to.

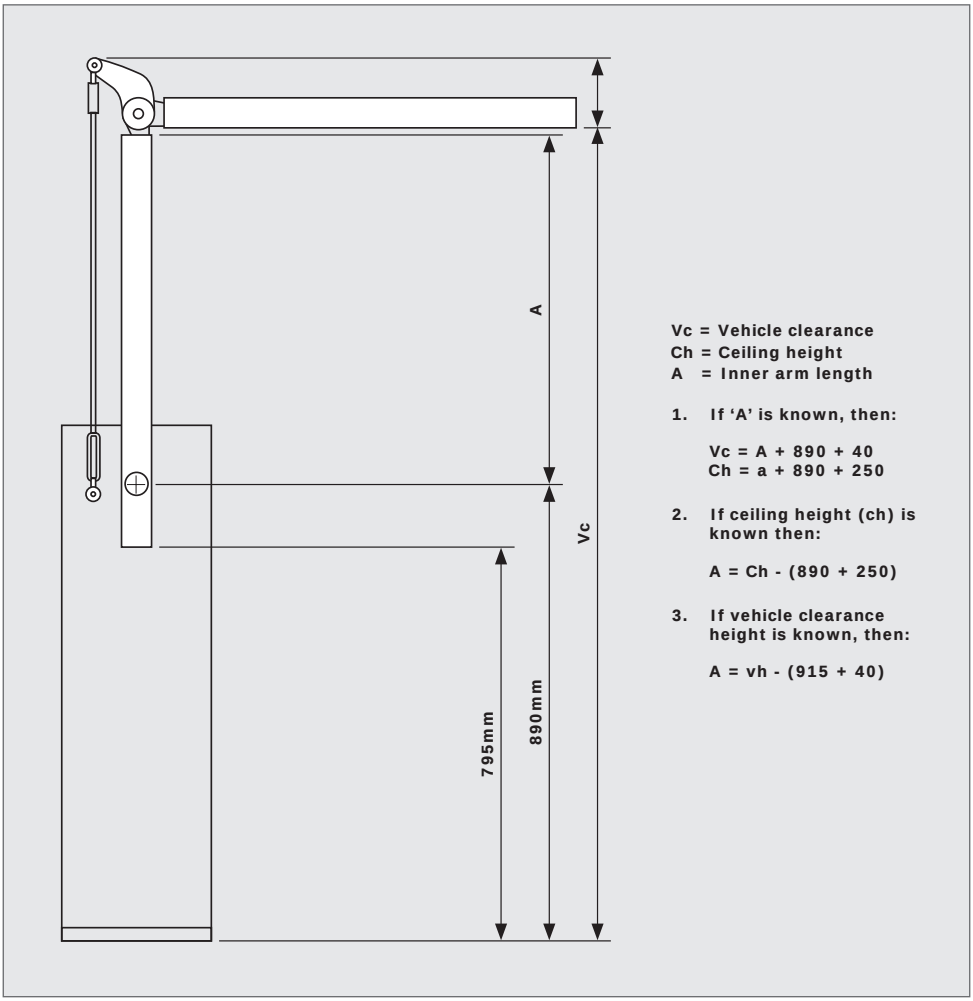

FIGURE 6. RECOMMENDED MINIMUM CLEARANCE

5.3. Drilling the holes

5.3.1. Exisiting SECTOR / SECTOR II installation

Step 1
Determine the orientation of the traffic barrier.

Step 2
Identify where you want to mount the Jack-knife Assembly and cut the boom pole into two pieces.

Step 3
On the inner pole (pole that is mounted onto the barrier housing), mark two holes, following the measurements as shown in Figure 7.

The boom pole should be in the lowered position when you mark the location of the two holes.

The holes must always be at the bottom and at 90° to the barrier mounting holes.

Step 4
Remove the pole from the barrier and drill the holes.

Ensure that the Jack-knife Assembly fixing holes are drilled at an angle of 90° to the holes for the coupler, as drilling them at a much greater or lesser angle could result in the outer pole leaning excessively to one side when raising.

Step 5
Drill holes in the outer pole following the measurements shown in Figure 7.

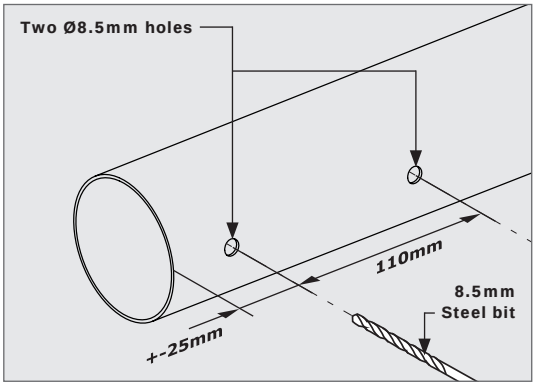

FIGURE 7

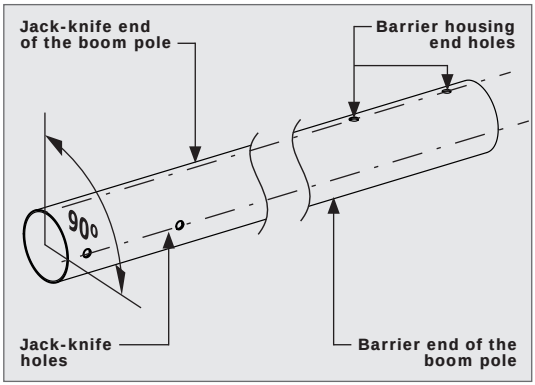

FIGURE 8

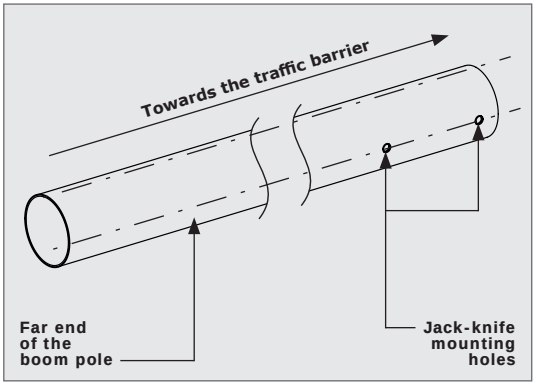

FIGURE 9

5.3.2. New SECTOR / SECTOR II installation

Step 1
Identify the position on the pole where you want to mount the **Jack-knife Assembly** and cut the pole into two pieces.

Step 2
Measure and drill two holes as shown in Figure 10 and mount the pole onto the traffic barrier to the boom coupling as per standard boom replacement procedure.

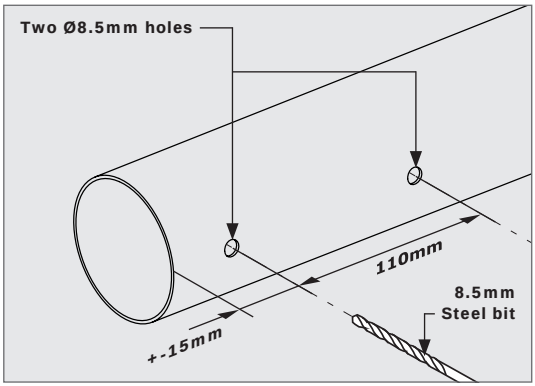

FIGURE 10

Step 3
Follow the same process of measuring, marking and drilling as per the method used on an existing installation.

5.4. Fitting the Jack-knife Assembly to the pole

Step 1
With the threaded eye bolt facing the barrier as shown in Figure 11, slide and align the **Jack-knife Assembly** onto the inner pole.

Step 2
Secure the **Jack-knife Assembly** using the fixing brackets and four button-head screws provided. Use an Allen key to tighten the button heads.

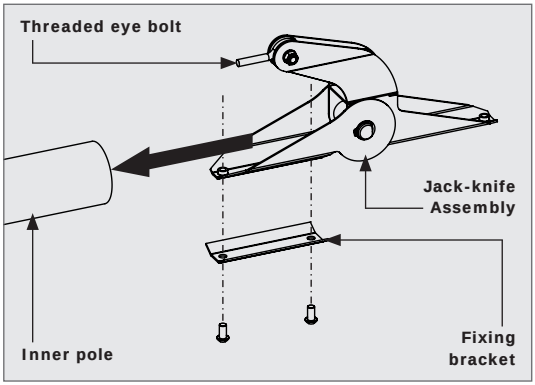

FIGURE 11

Step 3
Slide the outer pole onto the **Jack-knife Assembly**, align the holes and secure using the fixing brackets and four button-head screws provided.

Use an Allen key to tighten the button heads.

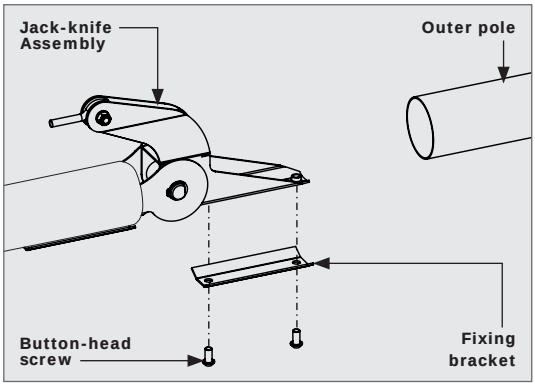

FIGURE 12

Step 4
Assemble the pivot pillar components onto the barrier as shown in Figure 13.

Holes are provided in the SECTOR / SECTOR II housing to accommodate both left- and right-hand orientations.

The M8x120 mounting screws supplied with the pivot assembly are Taptite screws, meaning that they will cut their own thread in the holes as they are screwed in.

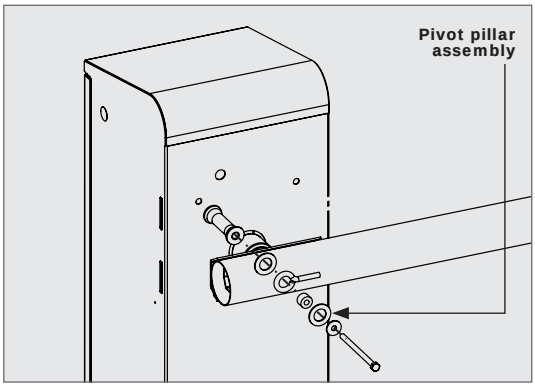

FIGURE 13

Step 5
Using a hacksaw, cut the threaded linkage arm to the necessary length - which will correspond with the length of the boom pole – and assemble the linkage arm and link it to the **Jack-knife Assembly** first as per Figure 14.

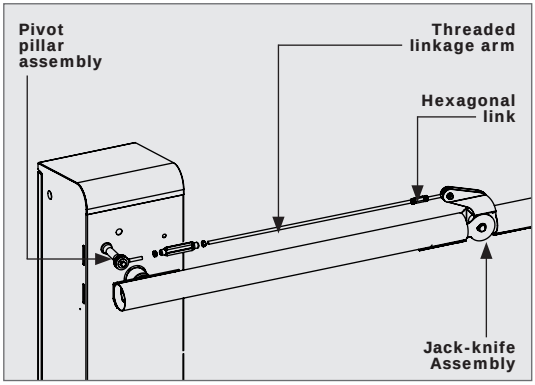

FIGURE 14

Step 6
To accomplish this, remove the nut from the Jack-knife linkage (pictured), adjust the hexagonal link to the necessary position and fit the linkage arm to the **Jack-knife Assembly**. Secure with the nut provided.

Step 7
The panel can now be adjusted to face the most favourable angle.

Step 8
Fit the other end of the arm to the adjustable link connected to the pivot pillar.

Ensure that the linkage arm and barrier arm are perfectly parallel, as failing to do so may result in the SECTOR / SECTOR II gearbox being unnecessarily loaded.

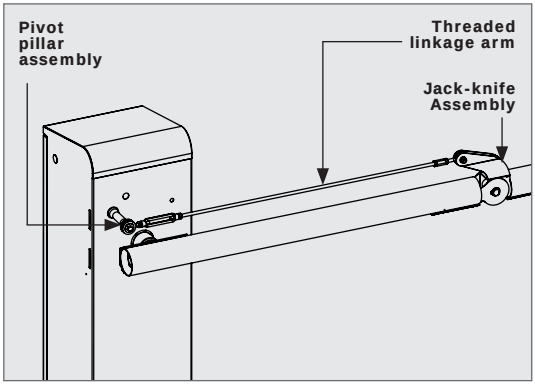

FIGURE 15

5.5. Adjustments

The barrier pole can now be adjusted using the turnbuckle connected to the pivot pillar. Turning the link in a clockwise direction will result in the outer arm raising, while turning it anti-clockwise will cause it to lower. Once optimal alignment of the barrier pole has been obtained, the turnbuckle can be locked in place using the nut provided.

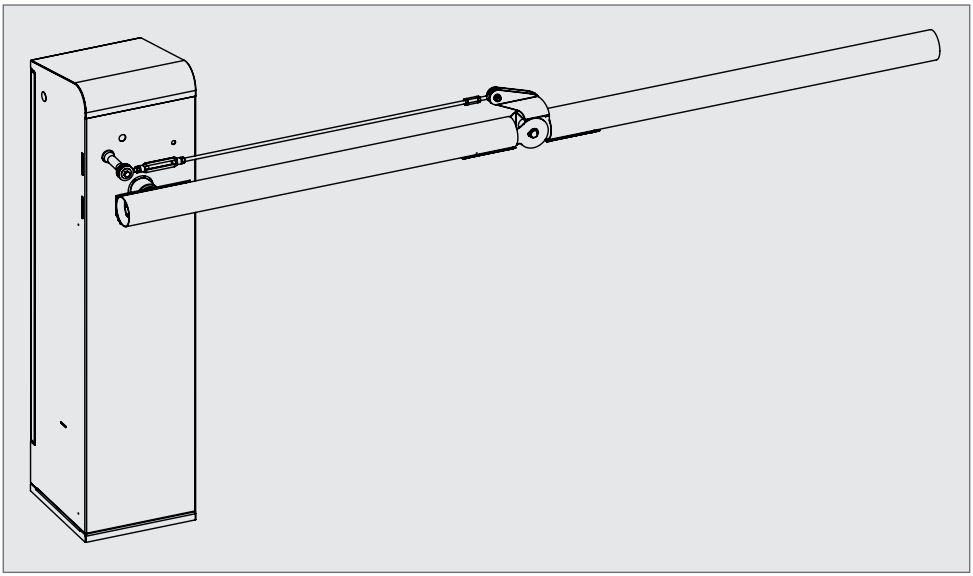

FIGURE 16

Test the operation of the barrier, ensuring that the outer pole does not droop excessively nor foul against the ceiling. An angle of approximately 90° should be present between the inner and outer poles.

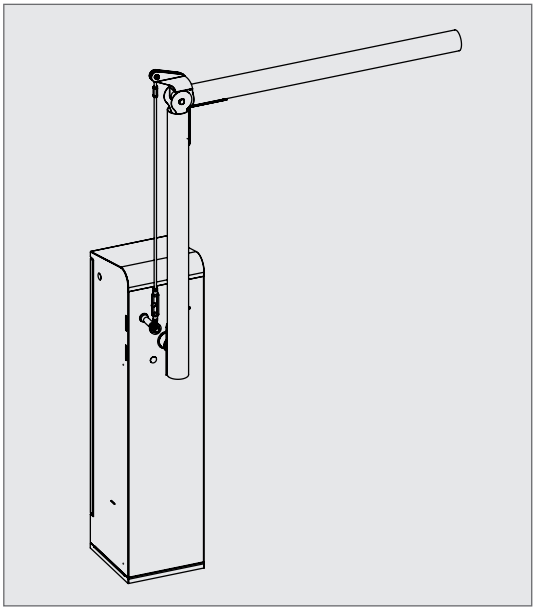

FIGURE 17

6. Installation Handover

Once the **Jack-knife Assembly** has been successfully installed and its operation tested, it is important that the operation and safety considerations are explained to the end-user.

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