
SHUTTER INSTALLATION INSTRUCTIONS

SEPTEMBER 2021



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2 Key to Symbols/ Meanings:



WARNING! **Risk of personal injury!**

This is an important piece of safety advice which must be observed to avoid a risk of personal injury!



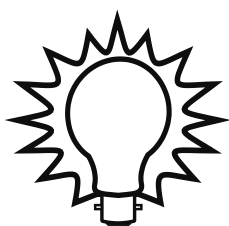
ATTENTION **Risk of material damage!**

This is an important piece of safety advice to avoid damaging the product you are installing!

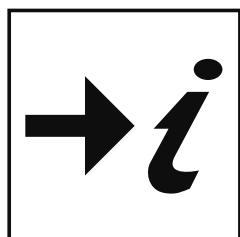


Operational check:

At this stage of the installation a component of the door, the operation of the door or the operator can be tested. This is very important as it can immediately identify an error which could take time to discover at a later stage.



Advice / Tip



Reference to further product information

Here a reference is made to another set of instructions which need to be used for installation of a particular component.

3 Warranty / Life Cycles

The warranty for this product is only granted if:

- **The installation is carried out by a competent installation engineer following these instructions.**
- **Only original parts are used.**
- **No additional objects are attached to the door.**
- **Regular maintenance checks are performed.**

For further details on the products warranties please refer to the products price list and our terms and conditions which are available upon on request.

To comply with the Construction Products Directive all products have been durability tested for a minimum of 11,000 cycles.

4 General Safety Advice

4.1 General Information



This document is intended for a qualified, trained installation engineer and should not be given to the owner of the door but should be kept by the installer.

To comply with the Construction Products Directive and the Machinery Directive the product must be installed in accordance with these instructions.

Please read all safety advice and relevant instructions carefully.

These installation instructions are intended for qualified and trained installation engineers. Installation, initial operation, servicing, repairs and dismantling of this product should only be carried out by a qualified and trained installation engineer.

When installing an electrically operated product ensure the mains power supply to the product is disconnected before any electrical connections are attempted.

Before operating a shutter you must always ensure that there are no persons or objects in the opening before and during the opening.

The shutter should only be operated when in view.

Upon completion of the installation the owner of the shutter must be trained how to operate the product safely paying special attention to the following points:

- **The shutter should only be operated when in view**
- **The operator should ensure there are no objects or persons in the opening before and during operation.**
- **The end user must read and follow the advice given in the operating and maintenance instructions.**
- **In the event of a malfunction the end user should follow the advice given in the operating and maintenance instructions and if applicable contact the installer.**

During the installation of the shutter you should follow safe working practices. Further advice is available from the Health and Safety Executive (HSE).

4.2 Repairing/ Dismantling / Maintenance

Always isolate the mains power before attempting any maintenance, repairs or dismantling. If you need to use the optional remote control during any maintenance, repairs or dismantling procedure you must engage the commissioning mode.

Before attempting to repair or dismantle a shutter you should check for the presence of any safety devices, for example:

- **Anti-fall back spring**
- **Anti-drop brake**
- **Bottom slat safety edge**
- **Safety photo cell**

Before attempting to remove an axle assembly which contains a spring you must release the tension in the spring.

When repairing or dismantling a shutter you should keep the opening and the surrounding area clear to prevent risk of injury to yourself and others.

When repairing or dismantling a shutter you should follow safe working practices. Further advice is available from the Health and Safety Executive (HSE).

Maintenance check list:

- **Curtain free running and clean**
- **All end locks are correctly and securely located in the curtain**
- **No debris in the guide rails**
- **Guide rails and end plates are securely fastened to the wall (check also the fascia if fitted)**
- **If applicable all axle collars and locking springs are in the correct original position**
- **Check action of applicable locking devices to ensure they are engaging correctly**
- **If applicable motor cable is correctly retained, has not been damaged or in danger of being damaged**
- **If a remote control has been supplied check the functionality of the safety devices**
- **If required view the service counter on the remote control**
- **If an anti-fall back spring is fitted check that the spring is under tension when the curtain is in the fully closed position. You should not be able to turn the spring shaft located in the u-cup.**
- **Check the operation of the manual override.**

Recommended service period

The recommended service period for a shutter which will operate on average two cycles per day is once every 12 months. If the shutter will perform a greater number of cycles per day the service period should be shortened accordingly. One cycle is a full open and close sequence.

5 Tools/ Fixings Required

This list of tools and fixings is a minimum guide, to be adapted for each installation.

- **Drill with pneumatic/hammer action to take the drill bits used below**
- **10mm & 22mm masonry bits up to 400mm long (or wall thickness)**
- **3, 4.2, 5, 10 & 13mm metal drill bits**
- **Countersunk posidrive type fixings or similar, with appropriate masonry drill bits and rawl plugs for guide rails and shutter box**
- **Guide rails and end plates require at least 2 1/2 inch 10s or 12s twin threaded screws with brown rawl plugs**
- **To secure the shutter box to the wall use at least 1 1/2 inch 8s screws with red plugs. A 250mm long masonry drill bit will be required**
- **Screw drivers and wire strippers**
- **4mm & 6mm Allen keys**
- **Pliers**
- **Tin Snips**
- **Metal files - round, half round and flat**
- **Spirit level**
- **Straight edge (square)**
- **Plastic hammer**
- **Tape measure**
- **Marker pen**
- **3 core and 4 core cable**
- **Junction box**
- **3 amp plug**
- **Surface trunking**
- **Motor test lead (YEC38400)**
- **Hacksaw**
- **Pop riveter with 4mm brown or white rivets**
- **Dust sheets**
- **Step ladders**
- **Workmate bench (optional)**
- **Silicone gun with brown, white or clear silicone**
- **If the fitting surface is not flat or there is a projecting door handle, painted timber may be required to form a sub frame. Alternatively 20/50 x 50mm aluminium packers or pieces of guide rail may be used**
- **If the shutter box is to fit up into a soffit, a circular saw or jigsaw will be needed to cut the soffit board.**

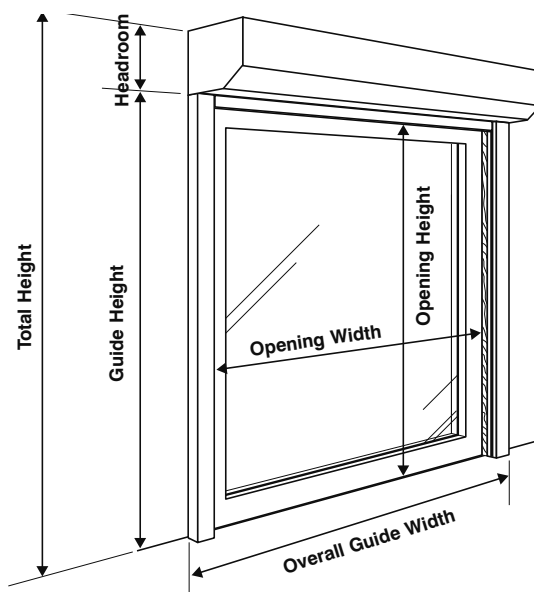
6 Preparation for the Installation

The structure of the opening must be adequate to take the weight of the door and suitable to take the appropriate fixings.



RISK OF MATERIAL DAMAGE Check that the opening is ready for installation. Surfaces should be flat and vertical to guarantee a parallel alignment of the guide rails. It is important that you check that the lintel does not bow inwards or have any projections that may catch on the curtain or could push the box back towards the curtain. If in doubt pack the guides and box out by at least 10mm.

Before you begin installing the shutter you should check that the shutter will not foul on any opening doors or windows or projecting door handles.



RISK OF MATERIAL DAMAGE Check the dimensions of the opening to ensure that the product supplied is the correct size to suit the opening. This must be done before removing any existing products and before you begin installation of the shutter.

To avoid damages to the box and the curtain unpack the components very carefully. We recommend using the packaging supplied as a protective mat.

Check the packages you have received to ensure you have received all the parts you require and they are in a satisfactory condition before you begin installation of the shutter.

7.4 Electric operation Parts List

General Parts

- Assembled shutter box (1 per shutter)
- Pair of guide rails (1 pair per shutter)
- Assembled curtain (depending on the shutter size may be supplied in sections)
- Installation instructions
- Operating & Maintenance instructions

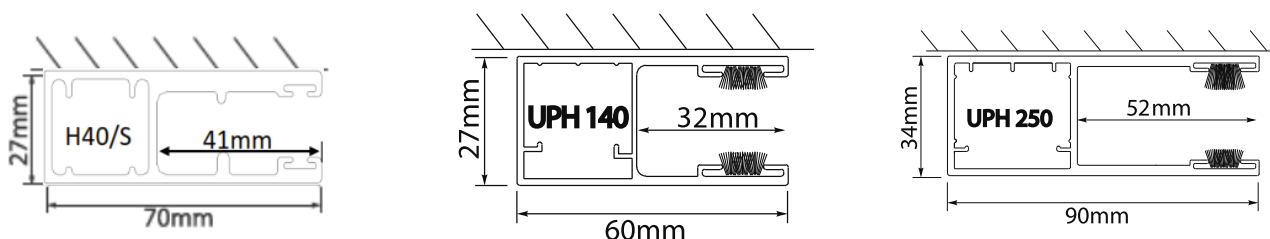
Accessories are packed in a separate box.

If applicable angle & packer are usually packed with the guide rails.

Operation Specific Parts

- Override handle (1 per shutter if manual override)
- Override handle clip (1 per shutter if manual override)
- Electric control method (depends on method requested):
- Switch (with back box surface / flush)
- Key switch
- Remote control kit
- Group command
- Battery back up

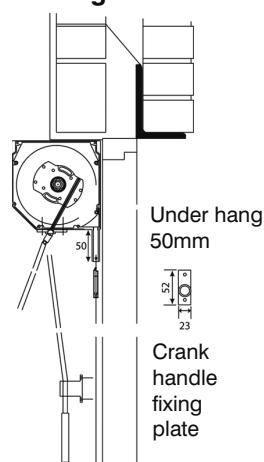
Guide to correct guide rail orientation



Certain guide rails have an internal and external face, due to their extrusion profile. These guide rails must be installed the correct way round. Please check the guide rails you have been supplied before you begin installing the shutter.

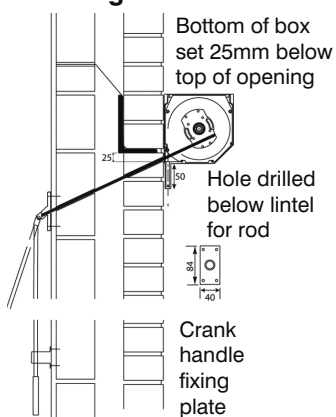
Rod crank and override handles

Fig. 1



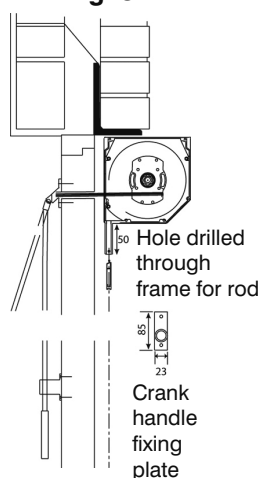
Override Crook

Fig. 2



Rigid Eye Joint

Fig. 3



Drop Eye Joint

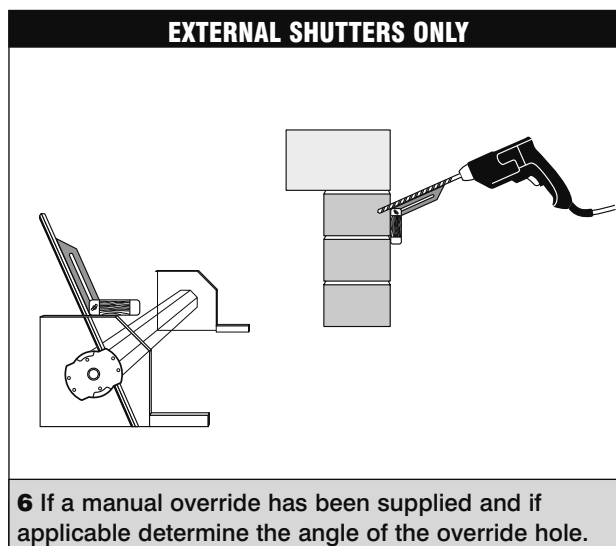
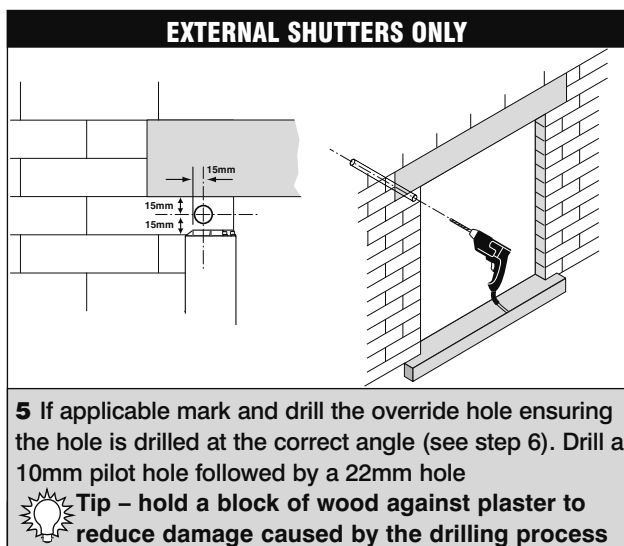
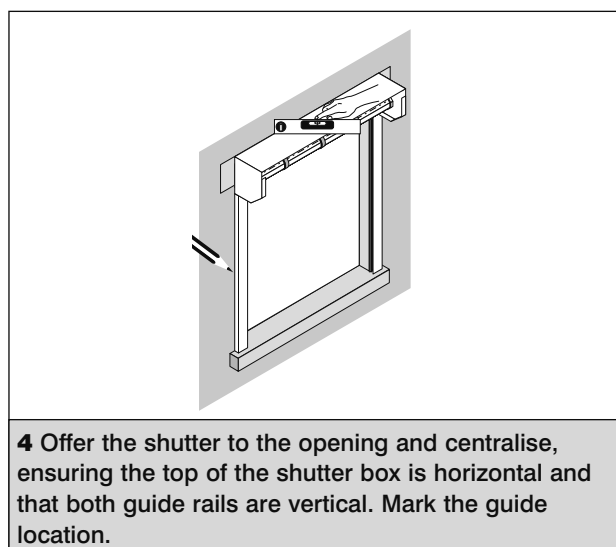
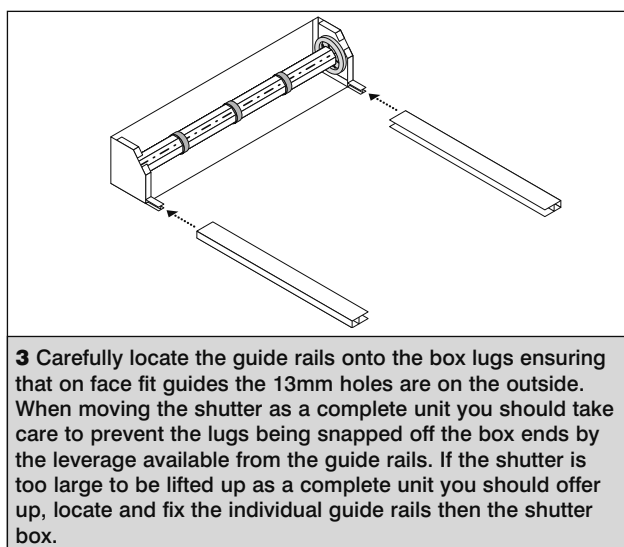
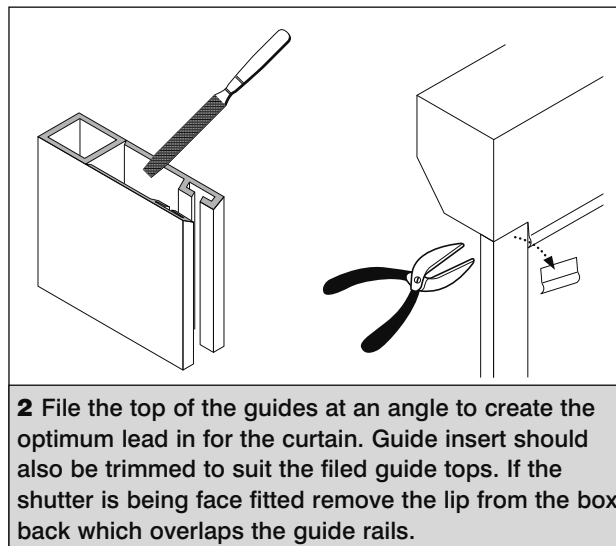
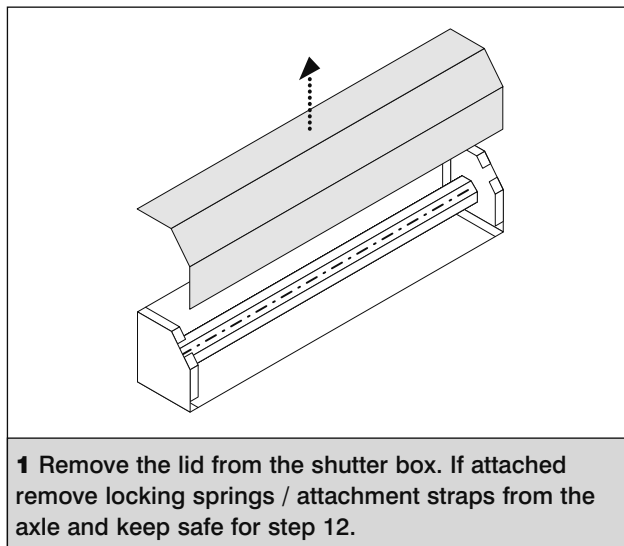
fig.1 is a 45° joint with 2 hole fixing plate, box exit F

fig.2 is a 90° joint with 4 hole fixing plate, box exit A

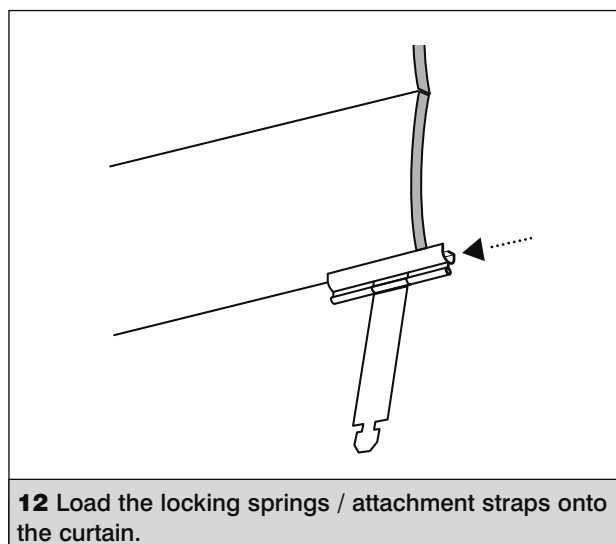
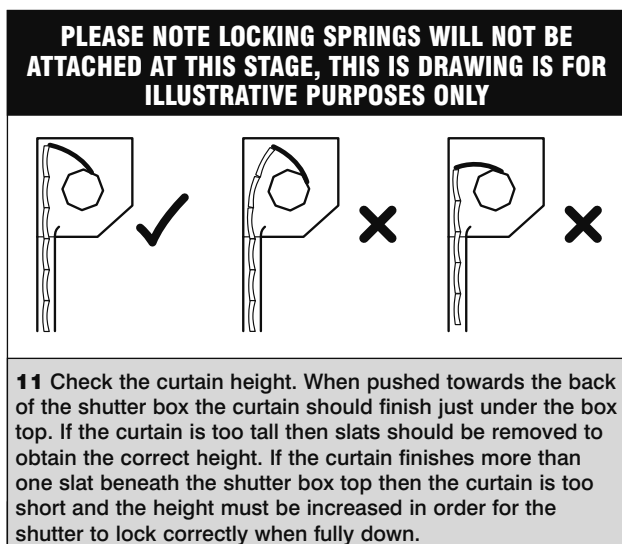
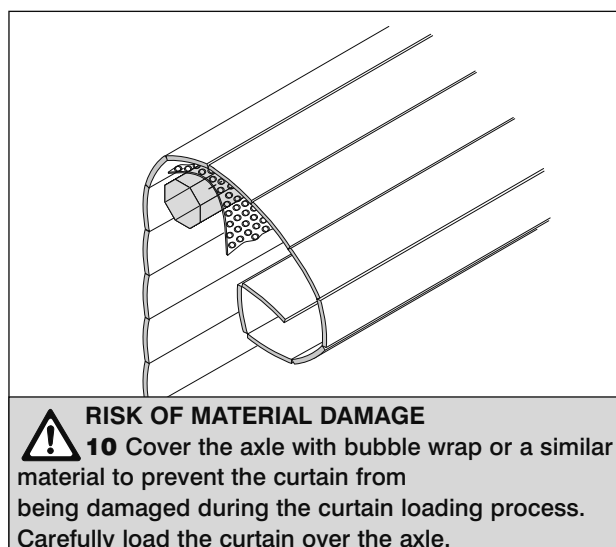
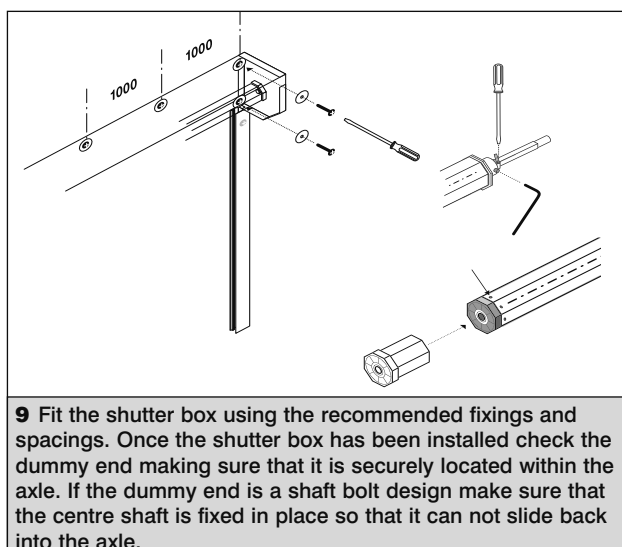
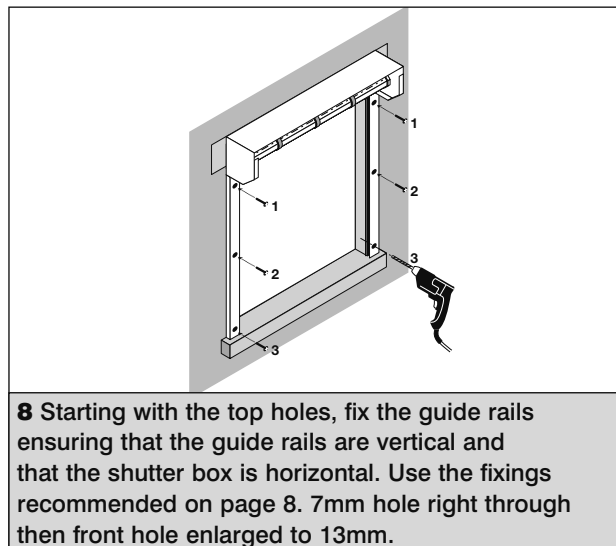
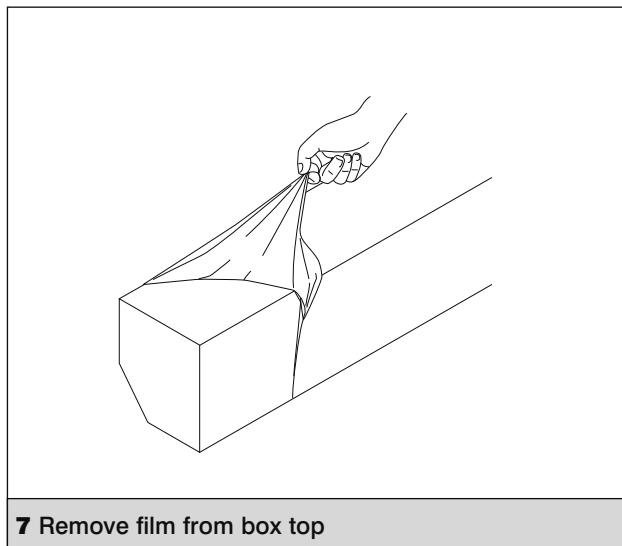
fig.3 is a 90° joint with 2 hole fixing plate, box exit H

7.4 Electric operation Installation Instructions

Before you begin installing the shutter please ensure you have read pages 4–9.

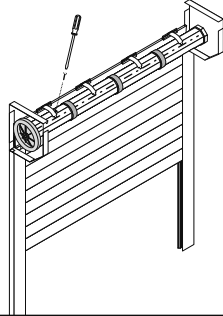


7.4 Electric operation Installation Instructions (cont.)



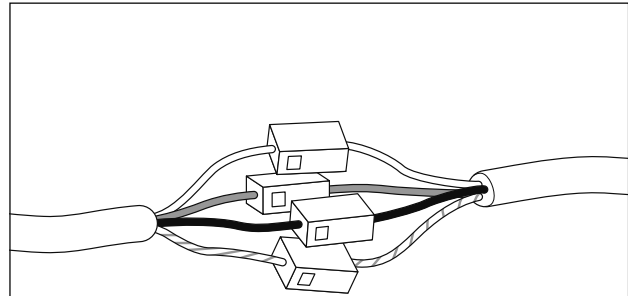
7.4 Electric operation Installation Instructions (cont.)

LOCKING SPRINGS – NO. 8 X ¼ PAN FLANGE POZI – TYPE C ATTACHMENT STRIPS– NO. 10 X ¾ PAN POZI – TYPE C



ATTACHMENT STRIPS
If the shutter has been supplied with attachment strips these must be used to connect the curtain to the axle. If the axle has collars the attachment strips should be located in between the collars.

13 Please note if this shutter has been supplied with an anti-fall back spring then the spring should be tensioned before you attach the curtain to the axle (see section 13.2)
Attach the locking springs / attachment strips to the axle using the screws supplied.

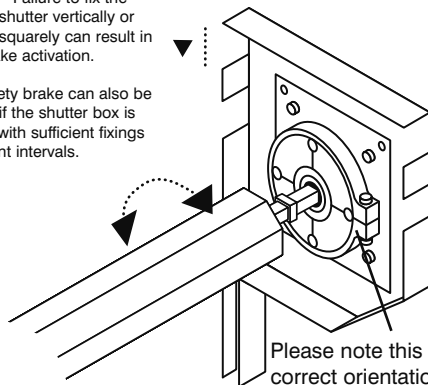


14 It is recommended that you use a test lead to set the motor limits or if a remote control is being supplied set the remote control into commissioning mode (see section 11.2).
If a remote control is not being used or if you do not have a motor test lead the motor should now be wired to the switch supplied (see section 11).



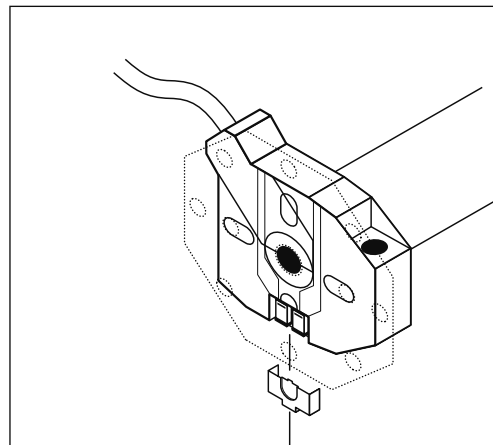
- Failure to fix the shutter vertically or squarely can result in safety brake activation.

- The safety brake can also be activated if the shutter box is not fitted with sufficient fixings at sufficient intervals.

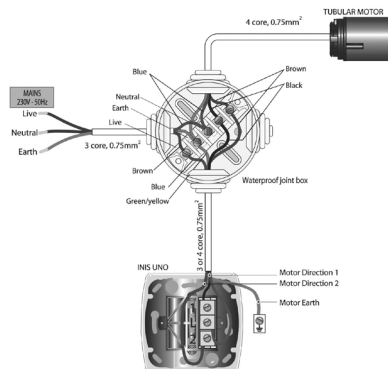


Please note this is not the correct orientation please refer to section 13

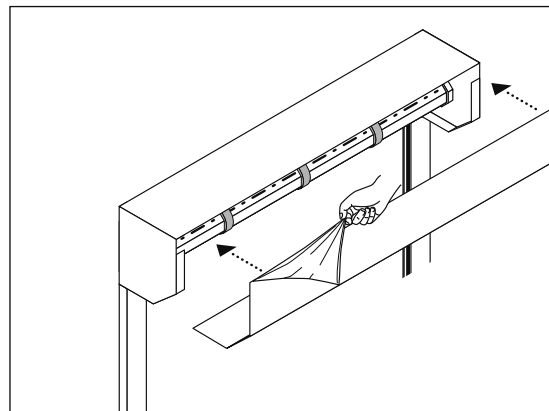
15 If applicable check anti-fall back device (see section 13.1 page 68)



16 Set the motor limits (see section 12)

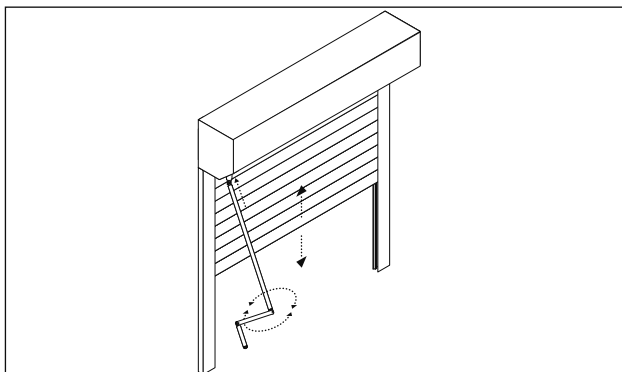


17 Wire the control method supplied to the shutter (see section 11 for further details). If an anti-drop brake has been supplied with a micro limit switch (wire attached to the anti-drop brake) this will also require wiring in at this stage (see section 13.1).

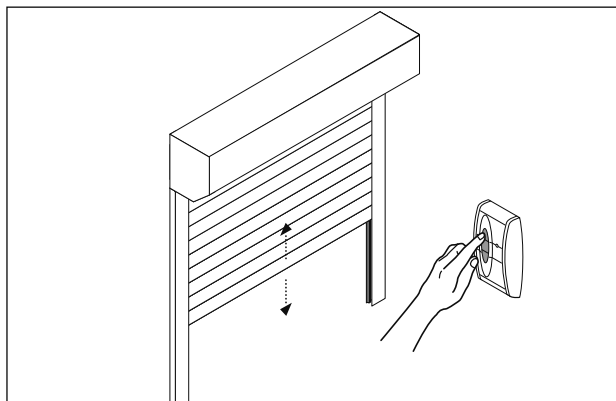


18 Remove the protective film from the box lid then fit the box lid to the shutter box. If the shutter is externally fitted the box lid should be fastened using appropriately coloured 4mm rivets.

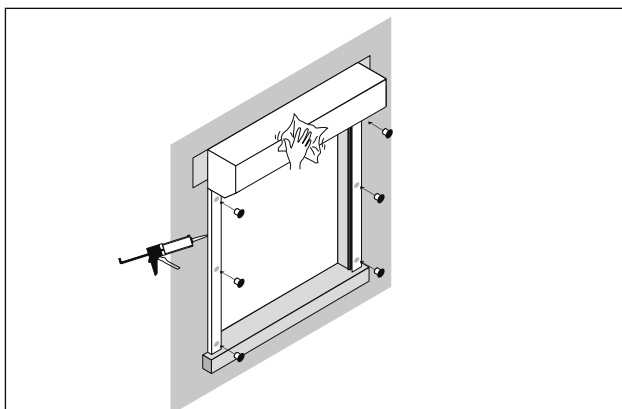
7.4 Electric operation Installation Instructions (cont.)



19 If applicable attach the override handle / rigid eye / drop eye to the shutter and test the manual override facility. Once you have identified which direction will open the shutter attach the label supplied to the override handle showing the end user which direction to wind the manual override to operate the shutter.



20 Test the operation of the shutter to ensure that the shutter moves freely up and down in the guide rails and that the shutter stops at its preset fully open and fully closed limits. If a remote control has been supplied with safety devices these should also be checked at this stage.



21 To complete the installation you should fit cover caps to the guide rails (if applicable), mastic around the edges of the shutter then give the shutter a final clean and tidy.

Upon completion of the installation the owner of the shutter must be trained how to operate the product safely paying special attention to the following points:

- **The shutter should only be operated when in view**
- **The operator should ensure there are no objects or persons in the opening before and during operation.**
- **The end user must read and follow the advice given in the operating and maintenance instructions.**
- **In the event of a malfunction the end user should follow the advice given in the operating and maintenance instructions and if applicable contact the installer.**

If applicable complete CE documentation and label the product to comply with the Machinery Directive.

11 Electric Control Options

11.1 Connecting Hold To Run Switches

- 1 Mount switch box, in sight of the shutter
- 2 Connect to motor/mains
- 3 You must ensure you incorporate drip loops in your wiring before any control device and the motor to prevent water from running down the cables and into the control device or motor. Failure to do this will invalidate the products warranty.

For further details refer to separate wiring instructions.

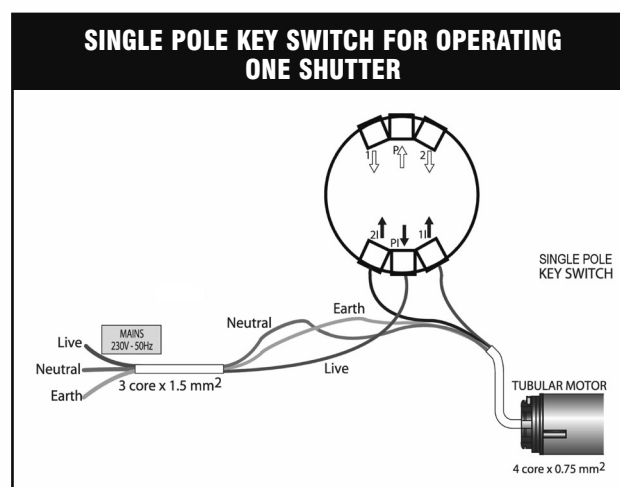
N.B. If fitting two or more switches to the same door a Group Command control box will be required to prevent accidental damage to the motor. Only the keyswitch is suitable for external fitment.

Electrical Requirements

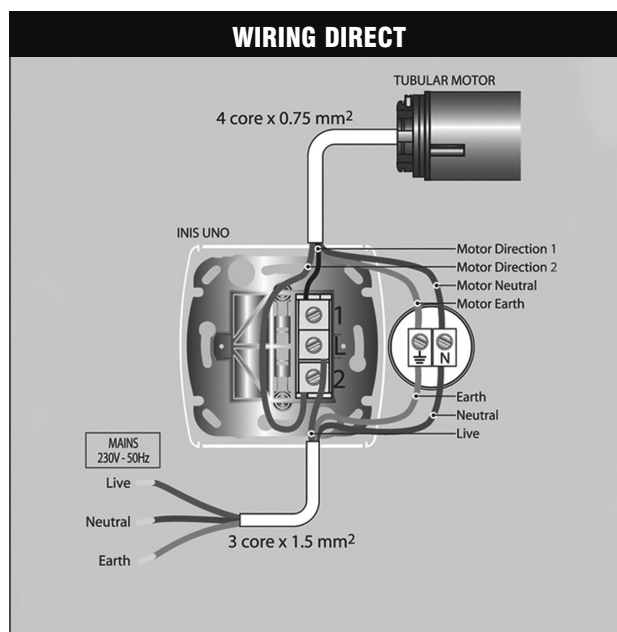
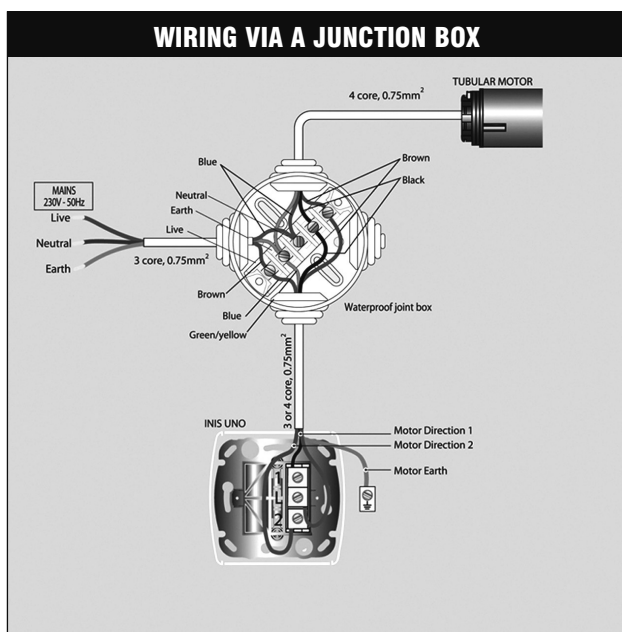
- All connections should be made in accordance with the 16th edition IEE Regulations.
- 5 Amp fuse recommended for fused mains supply for door
- Cable requirements
Mains supply cable; 3 core 1.5 sq mm
Motor cable; 4 core 1.5 sq mm
- There is a surge of current each time the door is operated, therefore, switches used in conjunction with any of the above motors should have contacts rated at a minimum of 16 amps to ensure trouble free operation.

Switching Requirements

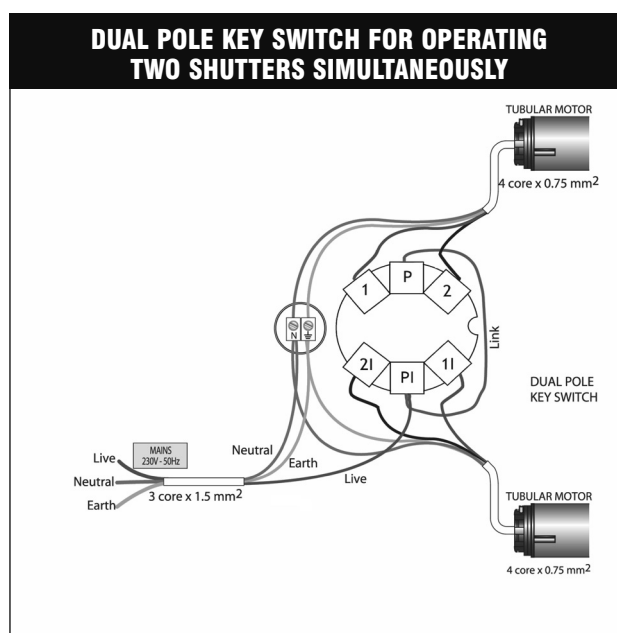
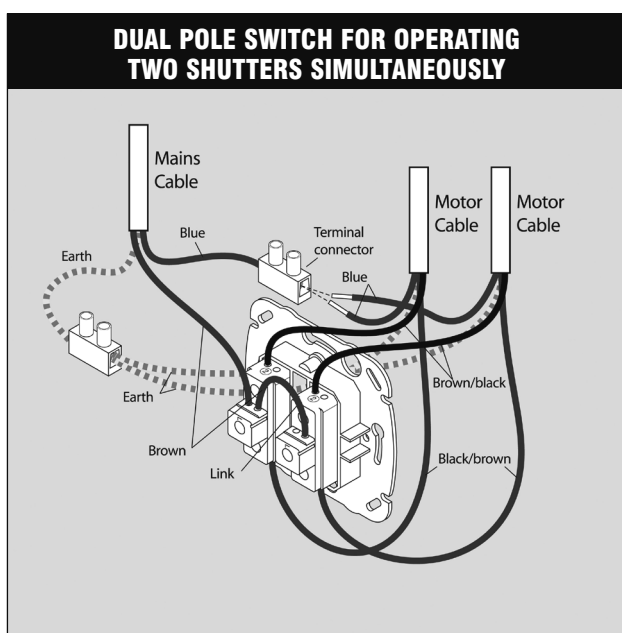
- 1 Disconnect power to motor before undertaking any work.
- 2 Only one motor to be attached to a single pole switch.
- 3 A sequencing relay / group controller is required when operating one door by more than one switch.
- 4 Safety measures must be provided when doors are operated from out of sight of the main switch.
- 5 Group commands must be used where multiple motors are to be operated from one switch
- 6 Only approved momentary switches may be used on door installations. Otherwise all guarantees will be made null and void. Surface mounted switches are supplied as standard for all installations.
- 7 Warranty period on switches five year.



11.1 Connecting Hold To Run Switches (cont.)



Either method of wiring is acceptable however the junction box method is recommended



TROUBLESHOOTING		
FAULT	CAUSE	SOLUTION
The shutter/door fails to operate when the button is pressed/key is turned.	<ol style="list-style-type: none"> 1. There has been a power failure. 2. The wrong direction is been selected on the control equipment. 3. The thermal trip in the motor may have activated if the door has been operated several times recently. 	<ol style="list-style-type: none"> 1. Wait for power to come back on or operate the shutter/door with the manual override if installed. 2. Select the correct direction. 3. Allow the motor to cool for approximately 30minutes before attempting to operate the shutter/ door again.
The shutter/door stops before fully opening or closing, or fails to stop when reaching its final open or closed position.	The limits in the motor have failed to operate or may not have been set correctly.	Contact your installer.

11.3 Alternative Control Methods

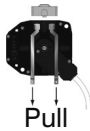


For information on the following electric control options please refer to the individual instructions supplied with the accessory:

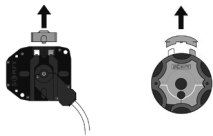
- **Group Command**
- **Battery backup**
- **Digital key pad**
- **KS02 - Anti-tamper key switch**

12 Setting Motor Limits

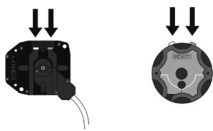
In some instances, due to the handing of the motor and the override position required, it may be necessary to supply the motor with limit setting tools fitted. If they are fitted as shown in the diagram below then the limit setting tools will need to be pulled rather than pushed when following the instructions below.



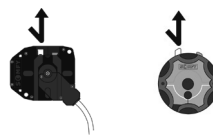
1. Ensure the control switch is in the OFF position.



2. Remove the protective cap from the head of the motor.

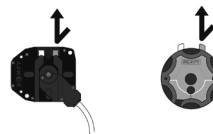


3. Fully depress both limit switch push buttons. They will automatically lock in the down position. Operate the control switch and check the direction of rotation. If it is incorrect, turn the switch OFF, reverse the black and brown motor direction wires and try again.

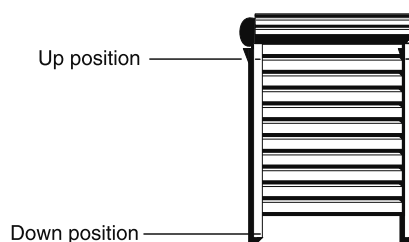


4. Identify the UP limit switch push button. Press the control switch to the UP direction until the required position is reached then turn the switch OFF.

Unlock the UP limit switch push button by depressing and releasing it to set the limit.

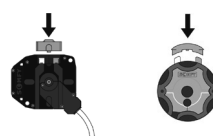


5. Repeat the above operation to set the lower limit.



*Two positions have to be set :
the UP and DOWN positions, this is where the motor will stop automatically.*

6. Check with the control switch that the motor stops at the UP and DOWN positions just set.



7. Refit the protective cap (take care not to depress the push buttons).

When checking the operation of manual override turn off the power prior to operating crank handle.

The Roller Shutter Door is manufactured with the curtain height to suit the length of guide supplied. The door will not lock down properly if the curtain is either too tall or too short. If the guide height has been adjusted on site, check that the top of the curtain is neither below the top of the guide nor more than one slat above (see *drawing A & B below*). Both limits require setting along with a final adjustment of the locking springs.

N.B: Incorrect setting of the limits risks damage to the motor, curtain and attachment devices.

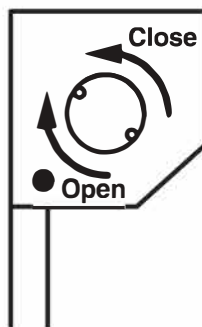


WHICH LIMIT IS UP AND WHICH LIMIT IS DOWN?

The up and down limit is determined using the direction arrows next to the limit adjusters and the direction of axle rotation to either close or open the door.

CLOSED / DOWN LIMIT SETTING AND LOCKING SPRING ADJUSTMENT

- Carefully close the door using either a motor test lead or the remote control unit so that the curtain is fully down and the top slat is pushed forward. The metal attachment springs should be taut but not bent or distorted (see *drawings A, B & C*).
- Turn the down limit in the '+' direction to **increase** the **travel** of the door.
Turn the down limit in the '-' direction to **reduce** the **travel** of the door.



limit adjusting tool (green)

direction of axle rotation

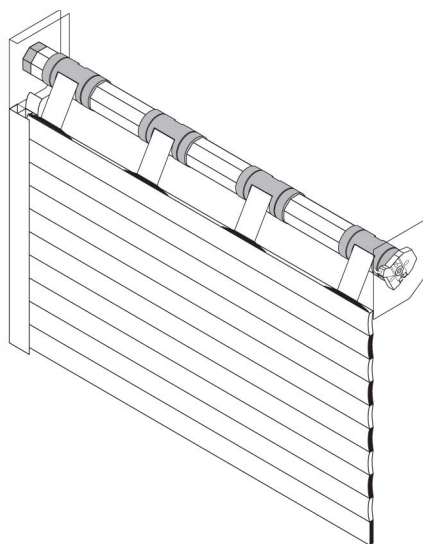
- + increase the travel in this direction
- reduce the travel in this direction

limit adjuster

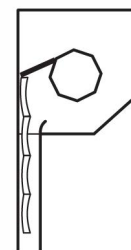
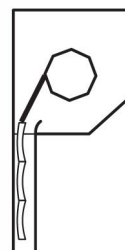
override exit

**CLICK HERE
TO WATCH
A VIDEO**

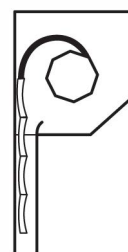
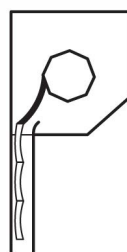
A



B



C



OPEN / UP LIMIT SETTING

- Carefully open the door using either a motor test lead or the remote control unit so that the curtain is fully open.
- Turn the up limit in the '+' direction to **increase** the **travel** of the door.
Turn the up limit in the '-' direction to **reduce** the **travel** of the door.

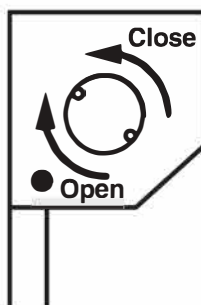
limit adjusting tool (green)

direction of axle rotation

- + increase the travel in this direction
- reduce the travel in this direction

limit adjuster

override exit



13 Anti-fall Back Devices

Introduction

If required the shutter you have received will have been supplied with an anti-fall back device. This anti-fall back device could either be an anti-fall back spring or an anti-drop brake depending on the type of shutter and the method of operation. If a safety device has been supplied there will be labels located inside the shutter box indicating which safety device has been installed.

Please find following information on the anti-drop brake and anti-fall back springs to assist you with the installation of the shutter.

13.1 Anti-drop Brakes Electric Operation

General information

The anti-drop brake supplied is essentially a bearing which allows the axle to rotate freely until the axle reaches a speed of approximately 22 revolutions per minute. When the axle speed reaches 22RPM the anti-drop brake will lock preventing the axle from rotating. If the brake is also fitted with a micro switch this will cut the power to the motor at the same time as the brake locks.

Please note this device will only function correctly when the shutter box is in the standard upright position.

Installation

If an anti-drop brake is required it will be supplied attached to the end plate inside the pre-assembled shutter box.

The anti-drop brake may have a micro switch fitted. If this is the case it will need wiring as per the wiring diagram.

If there is no micro switch fitted there is no requirement for any further set up and the shutter can be installed as normal.

Resetting after activation

In the event of an anti-drop brake activation you must follow the procedure below to reset the brake:

For safety reasons please ensure there are no people or objects in the shutter opening before and during the process of resetting the anti-drop brake.

Check the fixings which hold the shutter box in place to ensure the activation process has not weakened any of the fixings.

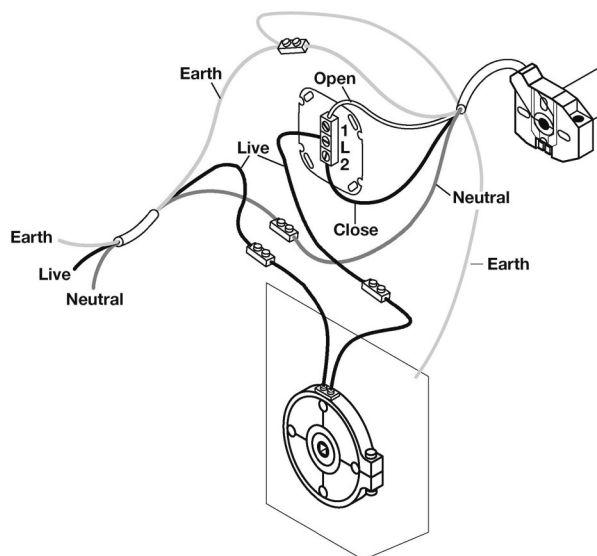
Make sure there are no objects trapped in the shutter guide rails or shutter box which could be preventing the shutter from moving.

If the anti-drop brake has a micro switch fitted you will need to isolate the mains power supply to the shutter. Unwire the anti-drop brake from the wiring circuit and link the neutral from the motor to the neutral from the power supply.

Once this is complete, or if the anti-drop brake does not have a micro switch fitted, you can attempt to operate the shutter in the up direction.

When you attempt to operate the shutter in the up direction there are three possible outcomes:

Wiring a safety brake into a circuit with a motor and a standard switch



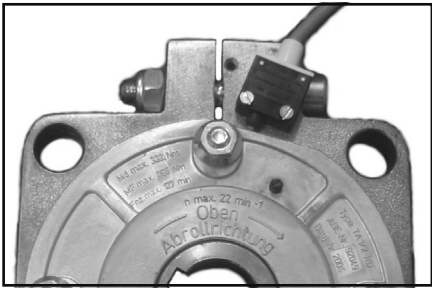
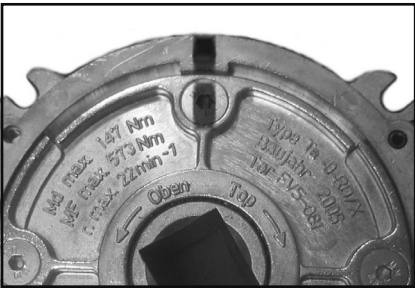
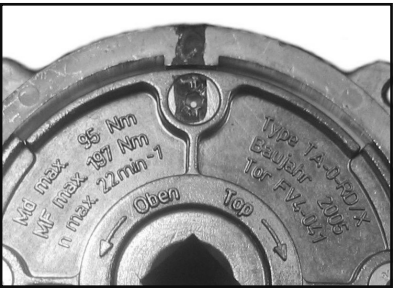
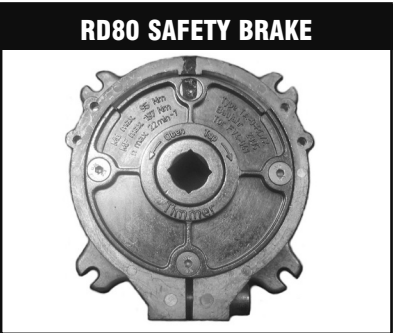
13 Anti-fall Back Devices (cont.)

CURTAIN ACTION	CAUSE	SOLUTION
Curtain goes up and stays up	The shutter is OK.	Lower the curtain to its fully closed position then reset the anti-drop brake as described below.
The curtain will not go up	1) The wiring has been damaged or a wire has been disconnected. 2) If you can hear the motor turning but the axle is not rotating the motor gear box may have failed or the drive wheel has detached from the axle	1 Check the wiring to ensure there are no damaged cables and every wire is connected correctly. 2 Carefully release the collar on the anti-drop brake using a 6mm allen key. As you release the collar the curtain will begin to lower to the ground. Once the curtain has reached the ground you will be able to remove the axle assembly, repair / replace the faulty item then reset the anti-fall back device.
The curtain goes up but when you stop the shutter it begins to fall again	The brakes in the motor may have failed	Press the up button to raise the curtain then quickly press the down button to lower the curtain to the ground in a controlled manner. Once the curtain has reached the ground you will be able to remove the axle assembly, repair / replace the faulty item then reset the anti-fall back device.

To reset the anti-drop brake you must rotate the inner section of the brake until the black lines on the inner and outer sections of the anti-drop brake are in line with each other. If you are unable to rotate the inner section release the collar using a 6mm Allen key. Once realigned the collar should be tightened using the appropriate amount of torque as stated right. If the collar is not tightened to the correct amount it will prevent the safety device from working correctly.

	TORQUE
RD80 Anti-drop brake without micro switch	15 Nm
RD150 Anti-drop brake with micro switch	8 Nm
1/2 Anti-drop brake with micro switch	20 Nm

Correct Alignment Of Safety Brakes



If after activation you are unable to reset the brake as shown above you will need to reorder a replacement brake, which will be chargeable. Once you have swapped the brakes over the activated brake should be returned to your supplier for inspection. As long as the safety brake has not been damaged the brake will be reset and returned to you for use as a spare.

13 Anti-fall Back Devices (cont.)

13.2 Anti-Fall Back Springs Electric Operation

General information

The anti-fall back spring is supplied in addition to the standard motor and will be supplied fitted in the opposite end of the axle to the motor. The spring supplied will prevent the curtain from falling in the event of a motor failure.

Installation

If an anti-fall back spring is required it will be supplied inside the pre-assembled shutter box.

If an anti-fall back spring has been supplied fitted in the axle you must tension the spring as follows before you can attach the curtain to the axle:

- 1 Connect the motor to either a test lead or the remote control. The remote control must be in commissioning mode see separate instructions.
- 2 Remove and retain the limit cover cap from the motor. Fully press in the limit switches on the motor. Using either the test lead or remote control rotate the axle in the close direction (see drawing A and label on axle).
- 3 The number of turns required will be clearly stated on a label.
- 4 When complete the axle will be fully tensioned and will be ready for installation and attachment of the curtain in the fully closed position.

Replacing the motor or anti-fall back spring

- 1 Lower the curtain to the fully closed position.
- 2 Disconnect the curtain from the axle.
- 3 As the axle contains an anti-fall back spring the tension must be removed from the spring before attempting to remove the axle. To remove the tension you must rotate the axle in the direction which would open the door the number of turns stated on the label provided.
- 4 Isolate the mains power then disconnect the motor leads from the control unit.
- 5 Remove screws securing motor octagonal fixing plate and lever out retaining tabs with a screwdriver
- 6 Remove split pin from the spring shaft and slide shaft free of fixing plate.
- 7 Lift axle out
- 8 If you need to replace or remove the motor, unbolt the octagonal fixing plate and drill out rivets in the axle securing the motor, make sure that any loose drilled out rivet 'slugs' are removed from inside the axle to prevent them making an unnecessary rattling noise.
- 9 The anti-fall back spring are also held in place by rivets and should be removed in a similar manner.
- 10 Replace the motor / anti-fall back spring, re-rivet and refit the octagonal fixing plate to the motor end.
- 11 Install the axle assembly remembering to tension the anti-fall back spring as per the instructions above.
- 12 Re-connect motor lead to the control unit.
- 13 Reset motor limits.
- 14 If a remote control has been supplied you will need to follow the set up procedure outlined in section 11.2.

13.3 Anti-Fall Back Springs (Double Spring) Spring Loaded Operation

General information

The anti-fall back spring is supplied in addition to the standard spring so a spring will be supplied fitted in

13 Anti-fall Back Devices (cont.)

both ends of the axle. The second spring supplied will prevent the curtain from falling in the event of a spring failure.

Installation

If an anti-fall back spring is required it will be supplied inside the pre-assembled shutter box.

If an anti-fall back spring has been supplied fitted in the axle you must follow the standard instructions.

Replacing a spring

In the event of a spring failure the curtain will be lowered to the ground.

If there is only one spring in the axle the curtain can be detached from the axle and the axle assembly removed to enable the spring to be replaced.

If there are two springs in the axle and one of the springs fails the second spring will still be under tension and so care must be taken whilst removing the axle assembly using the procedure below:

If possible lock the spring which is still under tension using a spring retaining pin (supplied with every spring loaded shutter, removed during installation). The curtain can be detached from the axle and the axle assembly removed.

If you are unable to lock the tensioned spring you must hold the axle whilst detaching the curtain then carefully release the axle which will rotate until the tension in the spring has been released. The axle assembly can now be removed.

16 technical details

TERMINAL DESCRIPTION			
T1	Live	T11	0 Vdc
T2	Neutral	T12	Stop switch input
T3	Earth	T13	Open switch input
T4	Motor earth	T14	Switch common
T5	Lamp live	T15	Close switch input
T6	Lamp neutral	T16	PEC auto test output
T7	Motor neutral	T17	Switch common
T8	Motor close	T18	PEC input
T9	Motor open	T19	Antenna
T10	+12Vdc	T20	Screen

SWITCH DESCRIPTION			
SW1	Reset	SW4	Close
SW2	DIP switches	SW5	Stop
		SW6	Open

TERMINAL DESCRIPTION	
Supply Voltage	230 VAC / 50Hz
Supply Current	6 Amps (Max)
Transformer power	VA 6VA
Operating temperature (Centigrade)	-10 / +30
Relay	10A @ 230VAC
Triac	1A @ 230VAC
Courtesy light enclosure	40 watts maximum
Short circuit protection	6.3A 20mm HRC fuse
Auxiliary 12VDC	20mA
Photo Electric Cell Input	NPN
Self Check Output	5 VDC
Safe Edge Input	Wireless
Receiver frequency	433.92Mhz
Security (Rolling Code)	Keeloq
IP Rating	44
Dimensions (mm)	H 200 / W 134 / D 68
Connections T1 to T18	Removable

BULB DETAILS
25 watt, round bulb with bayonet fitting supplied

BATTERY DETAILS
Hand transmitter: CR2016 (two per transmitter)
Bottom slat transmitter: CR2016 (four per transmitter)