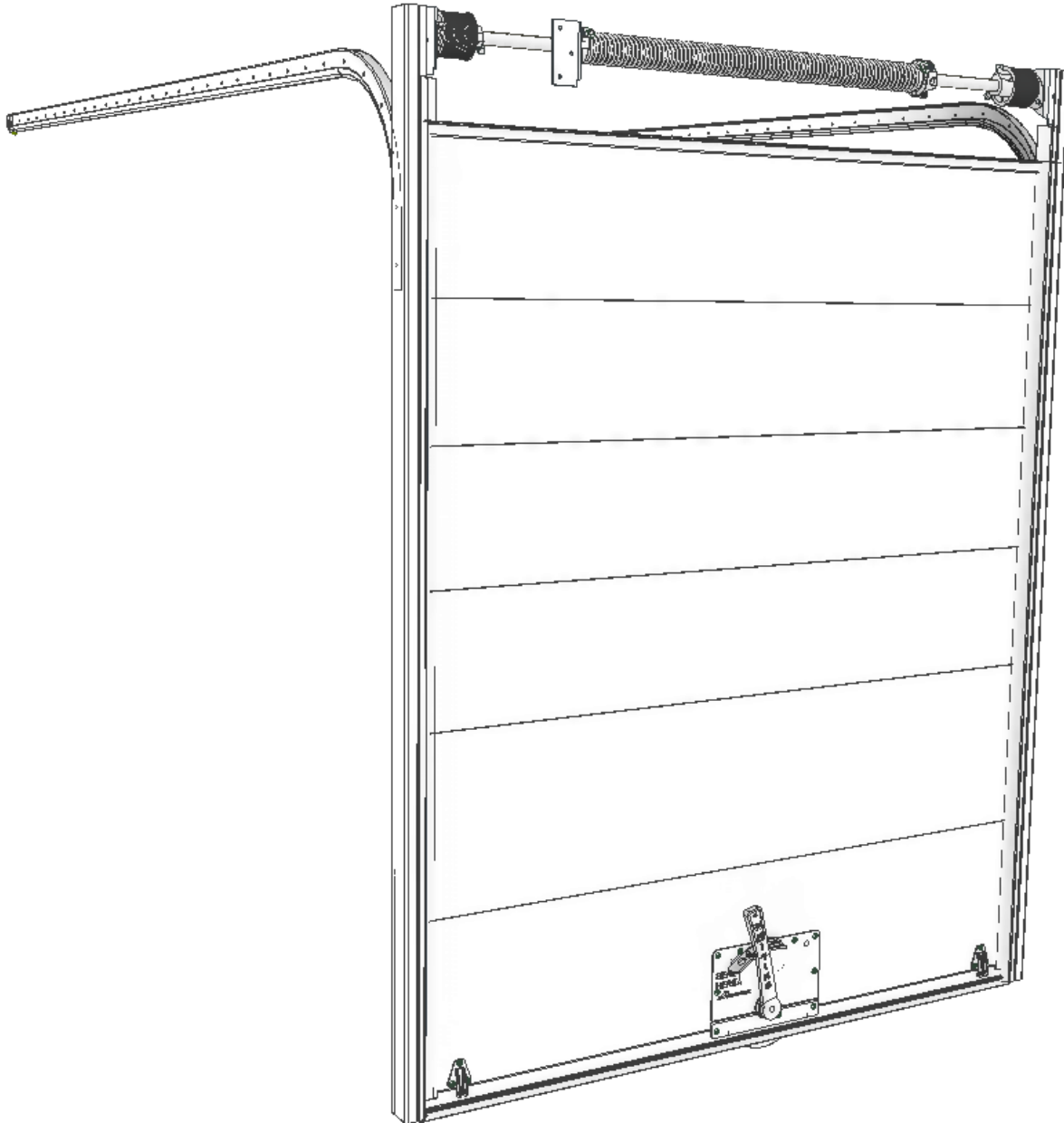




C4 Lite

Fitting Instructions



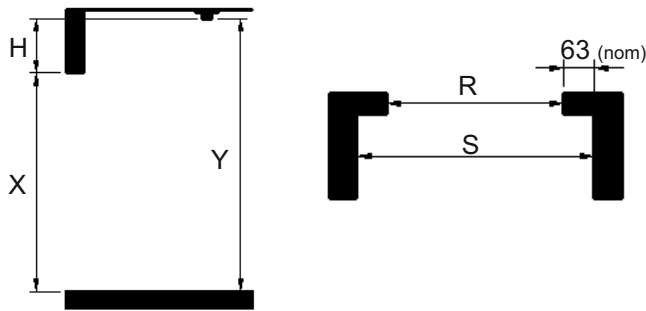
HEALTH AND SAFETY AT WORK ACT 1974

Users are reminded of their obligation to ensure that all persons involved in handling, installing, disposing of this product are made aware of these notes and that sufficient information is passed to your customer to comply with the Act. In particular, note that under no circumstances should the vehicle in which the shutter is fitted be driven or be in motion at all when the shutter is in the open position.

1 MEASURE DOOR OPENING

A Whiting Dry Freight door can be identified as usually having a two-spring balancer, 2" diameter (nominal) rollers, and steel end hinges with removable covers.

Check sizes on delivery note with your ordering information
Orders are processed using these 5 critical measurements:



Dimension X: Sill to header, vertical distance between underside of header and sill (surface on which door is resting when closed)
The shutter will accommodate some variation in height, please call if you are unsure. It is recommended that 3 measurements are taken along length (ie at ends and in the centre)

Dimension H: Header Depth, from under roof stick to underside of header.

Dimension Y: Interior height, from floor to under roof stick at wall

Dimension R: Aperture Width (from pillar to pillar) (The shutter will accommodate a deviation of $\pm 3\text{mm}$) It is recommended that 3 measurements are taken along length. (ie at ends and in the centre)

Dimension S: Width over channels, this is the finished dimension between vertical track assembly mounting surfaces
Note: the standard post width is 63mm.

It is important to understand each step in the installation procedure before attempting to install the door.

2 TOOLS REQUIRED

- !Safety Glasses
- !Step Ladders (x2)
- !Welder
- !Saw or cutting torch
- !Light
- !Locking Pliers
- !Tape Measure
- !9.5 x 300mm Winding Bars
- !Rivet Tool (track fixing) if required
- !Drill & drill bits (track fixing) if required
- !10mm & 13mm Spanners
- !Hammer
- !Approx 101 x 101 steel shim
- !Square
- !Scribing Tool
- !Sealant

3 CHECK COMPONENTS

The component parts should be checked to make sure you have all the necessary items and are familiar with them.

For a complete new installation, you should have (standard packaging):
bundle - containing the door, cables, hardware box, and side seals,
Balancer spring assembly,
Set of vertical tracks,
Set of horizontal tracks.

4 INSTALL VERTICAL TRACK & MOUNTING ANGLE

Temporarily secure track so that they are square against the sidewall and post. (See Figures 1 and 2)

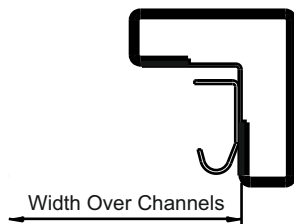


Fig 1
CORRECT

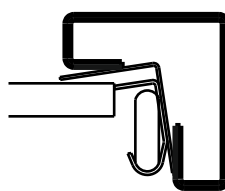


Fig 2
WRONG

!Check that they are parallel with each other by taking measurements at top, bottom and middle. (See Figure 3)

!Allow no more than 3mm difference.

!Shim accordingly, if necessary. Do not force.

!Secure in place by welding, riveting or bolting. (Caution: be very careful when putting anything into the tracks. Fasteners should be chosen that have a low head profile. They must be installed squarely - never at an angle. A protruding head will interfere with roller travel, causing the door to work hard. Such an installation will cause a door to develop hardware and maintenance trouble later on.) (See Figure 4)

!Secure vertical track to post and sidewall.

!Use sealant along seam, between mounting angle and post, and around floor to track

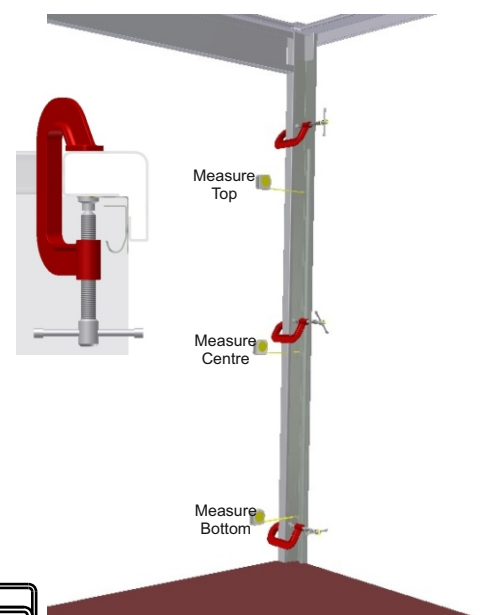


Fig 3

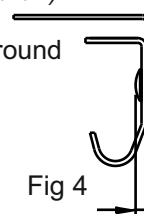
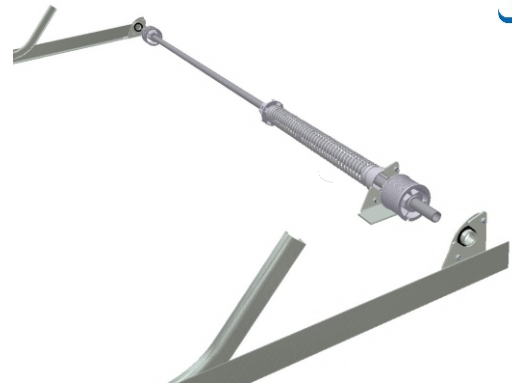


Fig 4 2.4 **Ensure no stem left protruding**

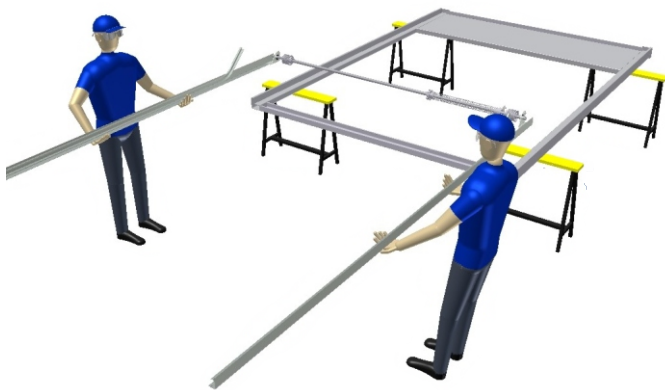
4a INSTALL VERTICAL TRACK & MOUNTING ANGLE
(REAR FRAME NOT ATTACHED TO BODY)



With the rear frame supported at a suitable and secure working height



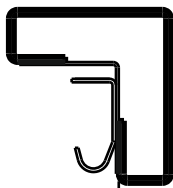
Lay out the vertical track assemblies. Check bearing assemblies are securely mounted to the brackets. Insert balancer shaft into bearing assemblies on both vertical tracks.



With assistance, lift vertical track assemblies & balancer. Locate in the rear frame in the correct orientation

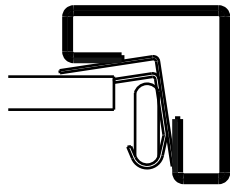


Make fine adjustments to vertical track maintaining the width over mounting angle dimension. Ensure assemblies are positioned to the correct height. Fix in position with shallow head fixings

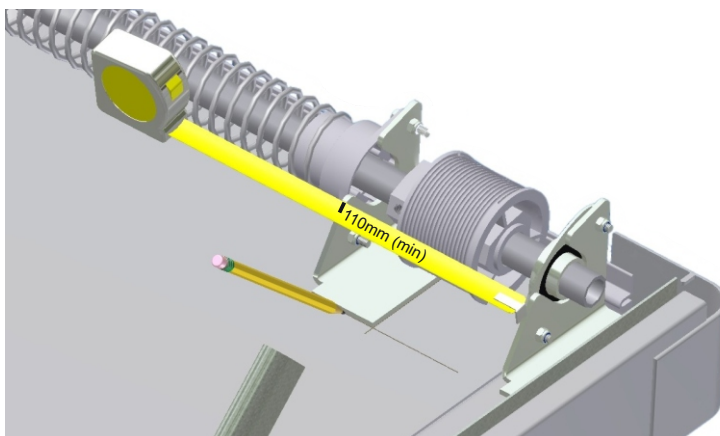
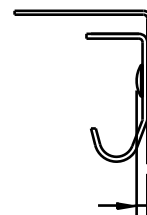


Width Over Channels

CORRECT



WRONG



Align 'centre' bracket with outer brackets and position 110mm (*min depending on spring length*) from near side bracket.

It is important that all 3 balancer bracket are aligned and flush with each other.

Weld or bolt bracket on inside of header or a suitable plate fixed to header.

! CAUTION

This bracket takes the full load of the spring torque and must be securely fixed and tested.

5 HORIZONTAL TRACKS (One Piece)

It is very important to maintain whatever track spacing on the vertical is, onto the horizontal as well (See Figure 5).

In order to do this, place a shim of proper thickness between track and mounting angle in the vertical, and allow it to extend past the end of the vertical track by approx. 250mm. (See Figure 6)

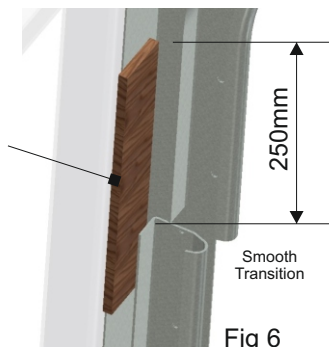


Fig 6

Align horizontal tracks with vertical. Make sure they do not overlap, this provides a smooth transition for rollers. (See Figure 7)

Check that top of track is parallel with roof along its length.

Secure in place with rivets, bolts or weld in a minimum of 4 places,

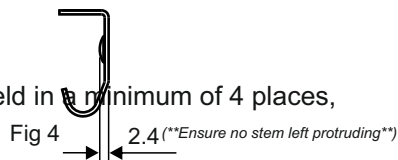


Fig 4

holes are provided for attachment at 100mm spacing. A variety of clips or shims can be used to ease attachment.



Fig 5

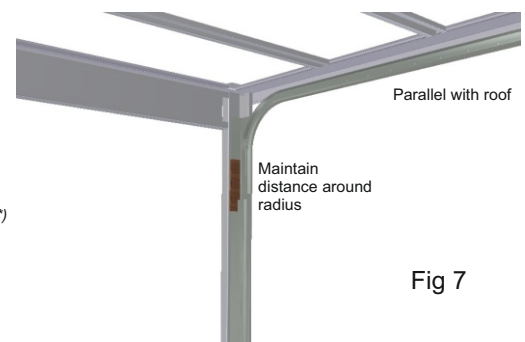
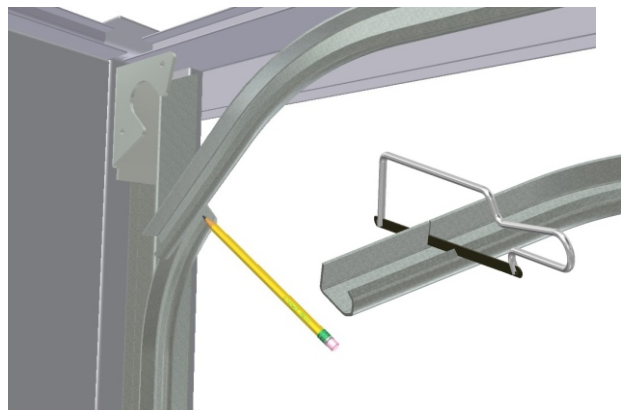


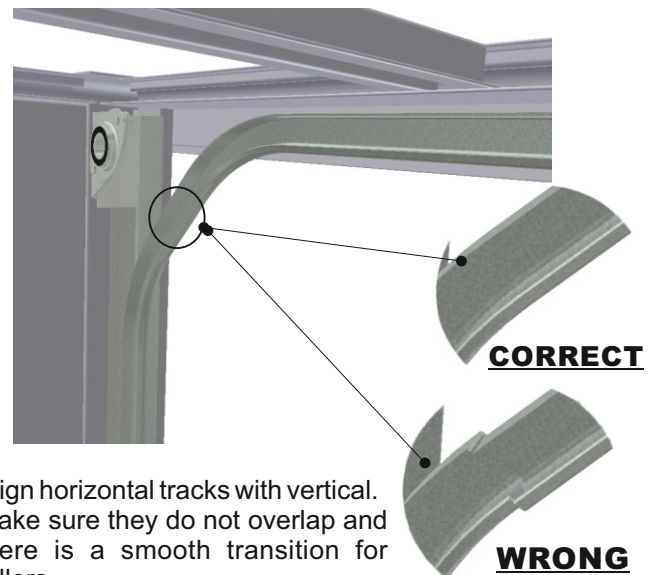
Fig 7

5a HORIZONTAL TRACKS (Two Piece)

It is very important to maintain whatever track spacing on the vertical



Align Horizontal track at the desired position below the roof panel, mark the 45 degree leg to align with the existing vertical leg cut to length at a 45 degree angle.



Align horizontal tracks with vertical. Make sure they do not overlap and there is a smooth transition for rollers. Check that top of track is parallel

Secure in place with rivets in a minimum of 5 places, holes are provided for attachment at 100mm spacing. A variety of clips or shims can be used to ease attachment.

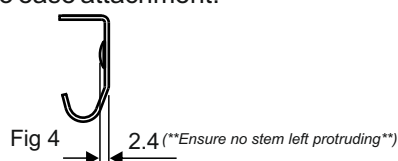


Fig 4

Make sure distance between tracks is maintained throughout, **especially in the radius**, this could be an area where door clearance is tight.

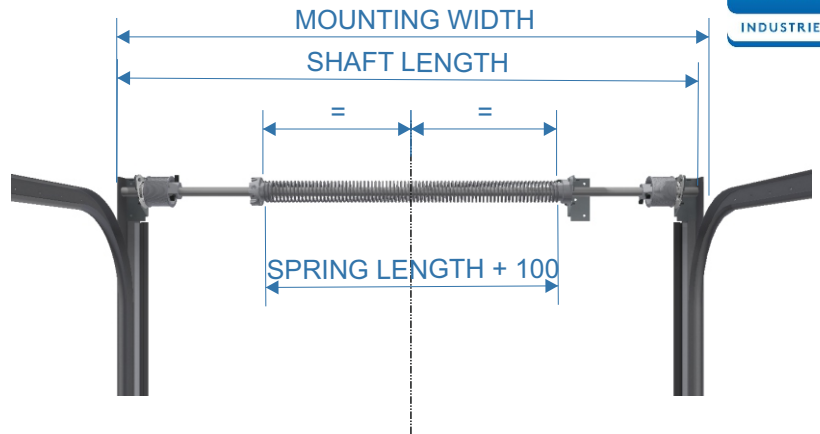
6 CENTER BRACKET & BALANCER INSTALLATION

Remove bracket from balancer assembly

Centre bracket position:

Where possible, we recommend the balancer spring be positioned centrally about the aperture

1. Measure spring length, add approximately 100mm (spring stretch) to this dimension.
2. From the centre line of aperture mark to the right hand side half the previously calculated dimension.
3. This is position of centre bracket.
4. Align 'centre' bracket with outer brackets (*It is important that all 3 balancer brackets are aligned and flush with each other*)
5. Weld or bolt bracket on inside of header or a suitable plate fixed to header.



CAUTION

This bracket takes the full load of the spring torque and must be securely fixed and tested.

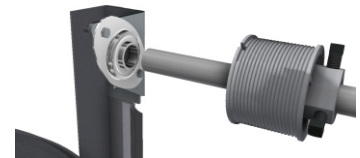
Mount balancer assembly to brackets



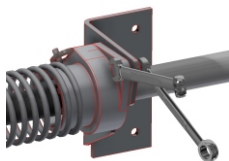
1. Remove nearside bearing plate assembly from the mounting bracket (*retain fixings*).
Leaving the spring assembly on the balancer shaft



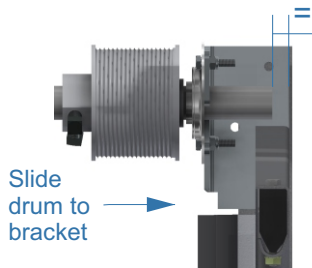
2. Loosen set screws on both cable drums.



3. Slide balancer shaft through offside bearing plate. Slide nearside bearing plate over shaft and secure to bracket



4. Attach spring assembly to bracket



Slide drum to bracket

5. Centralise shaft to brackets. Slide cable drums up to bearings and secure to shaft

Fully Secure all bearing fixings and torque to 6N/m.

7 FITTING BOTTOM SECTION OF DOOR

The following fitting method is adopted for a 'one man' installation. The shutters bottom three panels are installed, raised into the horizontal tracks and attached to the balancer first, this means the installer is not lifting the whole shutter.

Set two flange lap clamps or wooden blocks on the vertical tracks at a comfortable working height.

Gather together the bottom panel 2 rollers and 2 spacer washers

Place 1 spacer washer onto each roller shaft.

Insert one roller into bottom roller holder on bottom panel.

Standing inside the vehicle, with the lock facing out manoeuvre the roller into the vertical track.

Rest on clamp, and move to other end.

Taking second roller, position roller in vertical track.

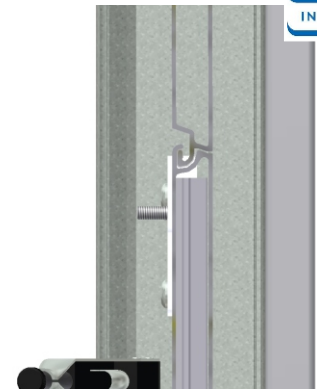
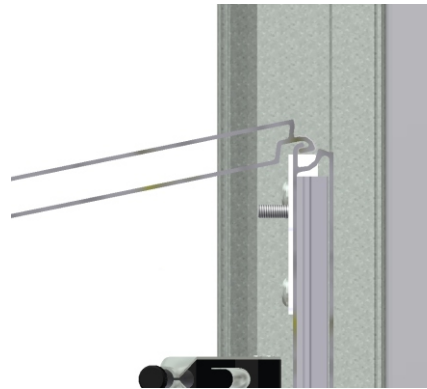
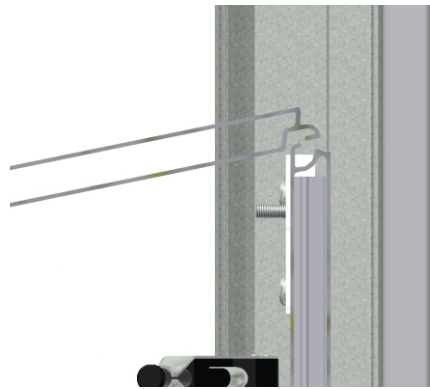
Carefully manoeuvre the bottom roller holder onto the roller shaft.

Rest the panel on clamps previously fitted in the vertical plane.

An additional clamp may be required to hold panel vertical



7a INTER-PANEL FITTING



You will need 2x rollers, spacer washers, 2x roller holders, 4x M6 nuts & 1 inter panel c/w inter seal.

Place 3 or 4 spacer washer (depending on aperture spacing) on to each roller & place in a convenient position near the tracks.

Taking the inter panel with the male hinge to the bottom.

Ensure the inter seal is in place clip onto the female hinge on the bottom panel.

Rotate panel upward until vertical.

7b FIT ROLLERS & ROLLER HOLDERS

Special spacer washers should be placed on roller shafts at first joint (second roller) from bottom, and top of door.

These washers are very important, as they accurately position the door centrally, keeping it from binding on the track, help cables wind on the drum, provide for correct side seal and lock operation.

Depending upon the amount of side movement, spacer washers (*as required*) should be installed. Washer should centralize shutter restricting side to side movement to a max 5mm total.

NOTE: This centralization must be checked through complete shutter open and close cycle when fully installed and spacer washers adjusted if and where necessary

These washers are very important, as they accurately position the door, keeping it from binding on the track, help cables wind on the drum, provide for correct side seal and lock operation.

There should also be a **single spacer washer** on all other roller shafts prior to assembly to shutter.

To stop the panel falling and causing an injury it is good practice to fit a clamp, or move up the previously fitted clamp.

Place required spacer washers and one roller holder over each roller shaft.

Taking each side in turn.

Gently push the shutter joint forward to expose the track.

Taking one roller sub assembly.

Insert roller into track.

Align holes in roller cover with studs on bracket.



Secure in place with M6 nuts.

Repeat on opposite side.



Repeat above inter panel fitting procedure with the exception of: -

Only fit 1 spacer washer to each roller and secure the roller clamps finger tight as they will need to be removed to finish the shutter

8 LIFT SHUTTER INTO HORIZONTAL TRACKS

Raise the shutter into the horizontal tracks.

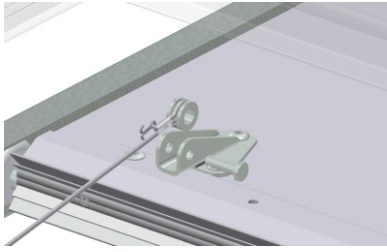
Leave a gap of approx 400mm from bottom of shutter to inside of header.

Clamp in position with flange lap clamps one either side to prevent the shutter falling into the vertical.

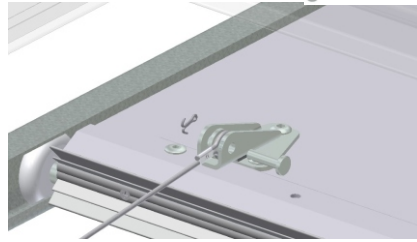
****These clamps must be secure as they will be taking some of the tension in the next**



9 FIT CABLES

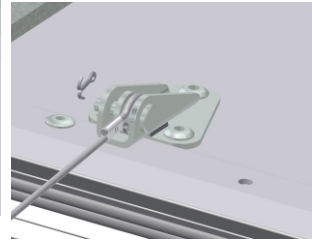


Starting on the left hand side (Nearside). Insert the thimble end of the cable into anchor bracket on front of shutter.

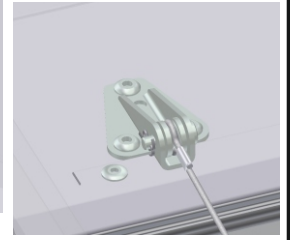


Retain in place with cotter pin

Parts Required
 X2
 X2

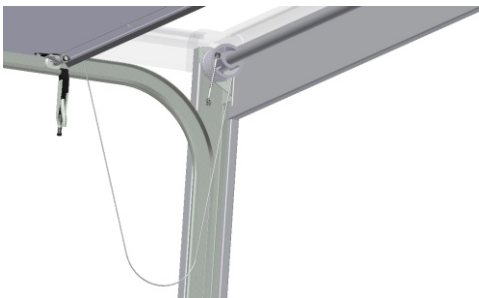


Retain cotter pin with split pin

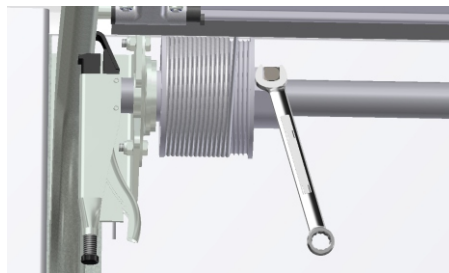


Repeat for other cable

10 FIT CABLES TO BALANCER



Slacken off cable drum set screws. Insert nipple end of cable into slot on drum. Wind cable on to drum following grooves until cable is taut. ****It is important that end of cable is inserted fully into notch. If this is not done properly, it could interfere with drum movement.****



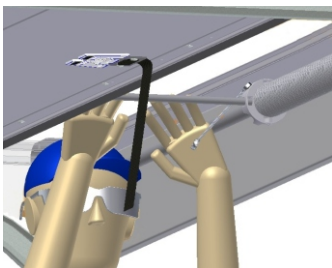
With cable taut. Push cable drum up to bearing. Secure in place with set screws. ****Ensure drum is securely fixed as this will take the balancer tension & weight of shutter**** Shaft must extend completely through bearings, an equal amount on each side, the shaft ends should not be in contact with the side walls



Before winding cable onto other drum. Place a pair of mole grips onto balancer shaft to prevent cable from unwinding. Repeat on other drum.

Balancer set screws
 20N/m (Mild Steel Shaft)
 27 N/m (Stainless steel Shaft)

11 PRE-TENSION BALANCER

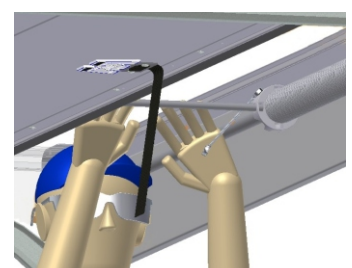
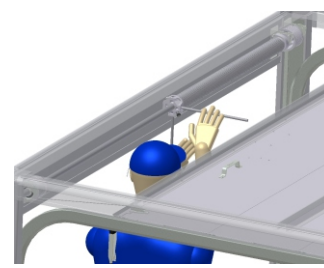


Slacken the two square head bolts in spring torque casting.

Shutter is now pre-tensioned.



Using the holes in spring torque casting & two tommy bars in a upwards direction add 3 to 4 turns. Now pull and stretch the spring by minimum of 75mm (3") (to allow for spring expansion during operation)



While holding the tension with a tommy bar. Re-tighten the two set screws in spring torque casting and remove the mole grip clamps on shaft. Carefully remove tommy bar

Remove the two clamps from the horizontal tracks to allow the shutter to enter the radius. **Be aware the shutter will rebound down to normal open position.**

Pull shutter into vertical tracks all the way down to the sill (as the shutter is pull closed tension is added to the balancer)

12 CONTINUING TO BUILD SHUTTER

With the shutter clamp in position the remaining panels can be fitted using the same procedure as previously

Please note that the top two roller holders will need to be removed to facilitate the fitting of the next panel.

Spacer washers:

All rollers should have one spacer washer fitted with the exception of the first joint up and first joint down here. (As previously stated in 8b.)

13 TOP PANEL

Fit the top panel to the door as previous panels, clip & pivot.

Parts Required



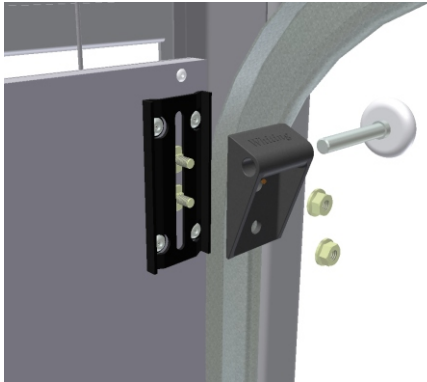
X2



X4



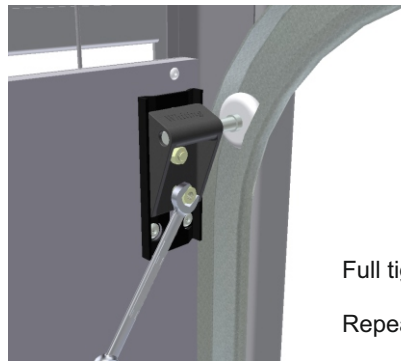
X2



Identify the 2 top closure slides, 2 rollers & 4 nuts.



Adjust. (Moving the bracket down will bring top seal closer to header. It will also seal against side seals better. Adjusting it down too far may also cause it to hit the balancer when door is opened).

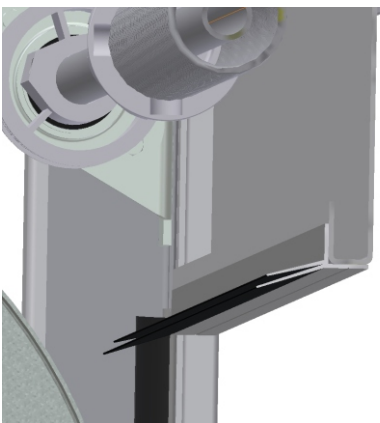


Tighten nuts
Repeat on opposite side

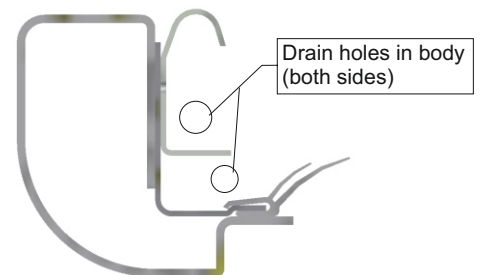
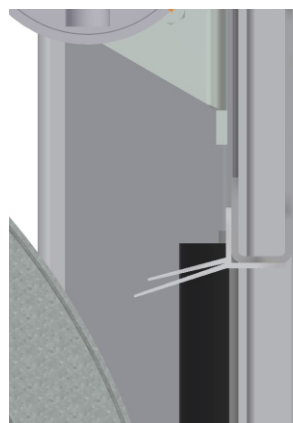
Full tighten nuts.

Repeat on opposite side.

14 SEALING



Top seal, fitted to underside of header



Side seals (x2) clipped full on to mounting angle joggle profile

Final Check List

!Lock operation

!Balancer adjustment

!Top panel adjustment

!Cables move unobstructed

!Door centred in opening and there is an appropriate number of spacer washer used.

!Door operates freely and does not rub against the tracks at any point.

With the door nearly closed, release it and allow the shutter to open. A properly adjusted balancer will cause the door to slowly open, neither fly open, nor dropping shut

****Remember, a new spring will lose a small amount of tension once it is used for a while.****

!Side, top and bottom seals function properly

!Cosmetics

!Check **ALL** fixings are secure and have the correct torque setting

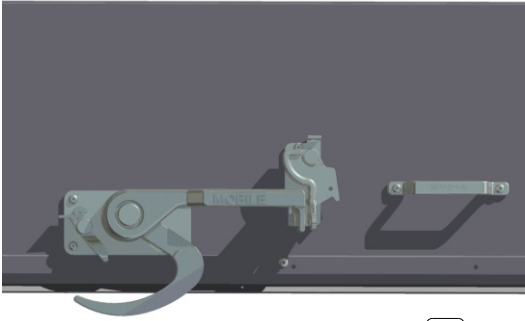
Torque Settings

M6 = 6N/m

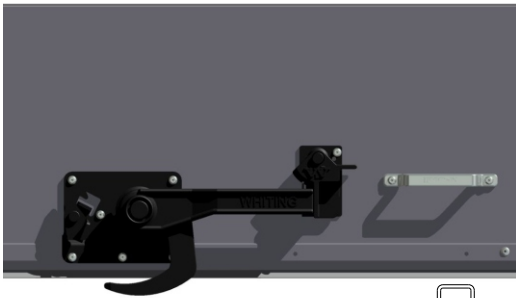
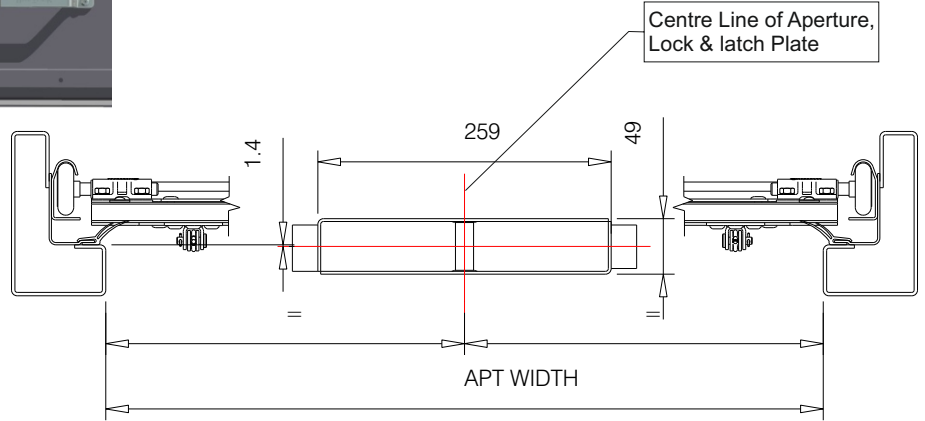
M8 = 10N/m

Balancer set screws = 20N/m (*Mild Steel Shaft*)
27 N/m (*Stainless steel Shaft*)

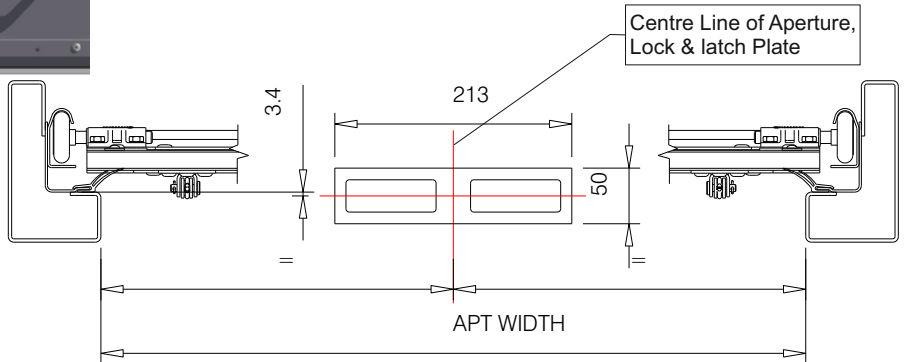
The C4 Lite shutter has various lock options, please find the appropriate lock for the latchplate fitting details below:



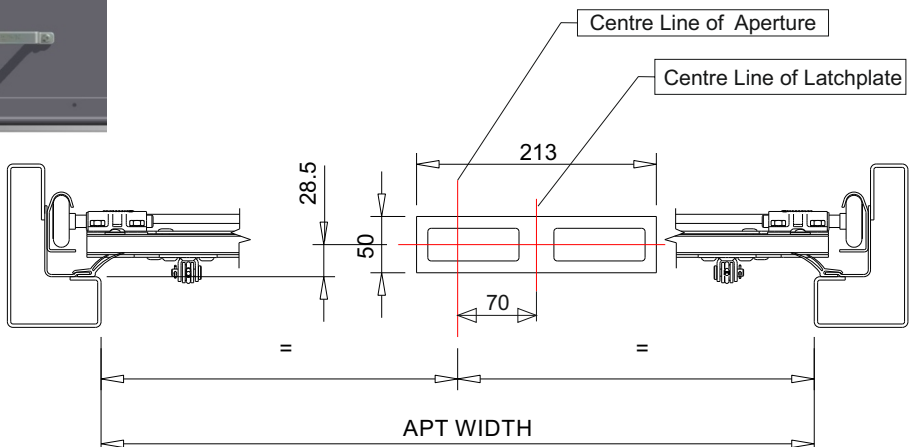
MAXI LOCK



77 TYPE



70 TYPE LOCK



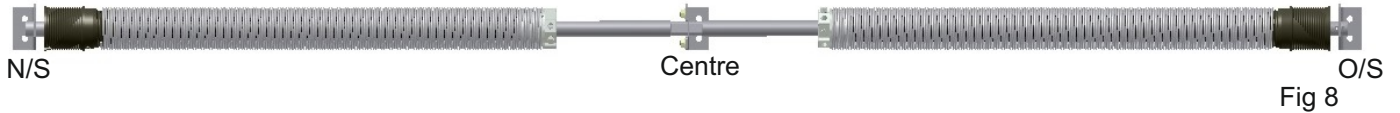
2376 BALANCER FITTING APPENDIX



The 2376 Open Spring Balancer is supplied with 2 mounting brackets and a centre torque bracket (normally fitted to balancer for transport purposes). The centre torque clamp comprises of a mounting bracket & a torque clamp, the torque clamp has two studs which fit into the mounting bracket and held in place with two nuts.

1 BALANCER BRACKET MOUNTING

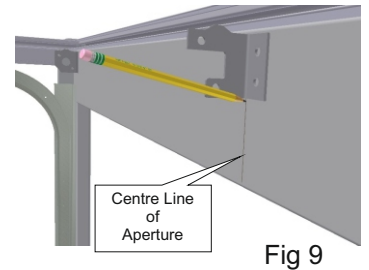
3 mounting brackets are required - center, nearside * and offside *. It is important that mounting surface is flush (in line) to all three locations. If necessary, install mounting plates of sufficient size to serve as a base for the balancer brackets. (See Figure 8)



b.) Locate center bracket at centerline of header. Position it so pointed tab is at top, angled section at bottom. (See Figure 9)

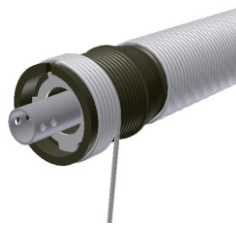
c.) The location from centerline for both end brackets can be determined by subtracting 32mm from shaft length and dividing by 2. For example: 2210mm shaft, less 32mm, equals 2178mm divided by 2 equals 1089mm.

d.) Attach brackets to header securely, again position so pointed tab is upper most.



2 WIND CABLE ON TO CONE

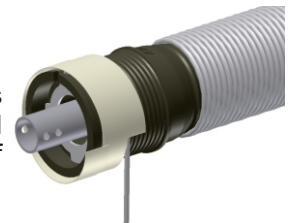
Taking each cable in turn
Wind cable onto cable drum following grooves. It is important that end of cable is inserted fully into notch. If this is not done properly, it could interfere with drum movement.
Continue until there is approx 30mm of free cable to eyelet



Secure cable to drum temporarily with tape.

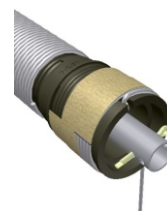
Repeat on opposite end.

(N.B. Ensure the free cable lengths will hang between cable drum and header after installation of balancer)



3 INSERT SPLIT PIN IN TO SHAFT

Install a split pin in end of balancer shaft, through hole closest to the cable drum painted red.



4 INSTALL BALANCER

- Insert non painted end of shaft into offside balancer bracket.
- Move balancer so that squared portion of shaft fits into centre bracket
- Mount the red end into nearside bracket and install second split pin to hold it from shifting sideways.
- Loosely fasten centre clamp on centre bracket, making sure the angled edge is towards the bottom.
- CHECK cable drums are positioned 6 to 8mm from end brackets.
- CHECK winding cone set screws are fully secure.

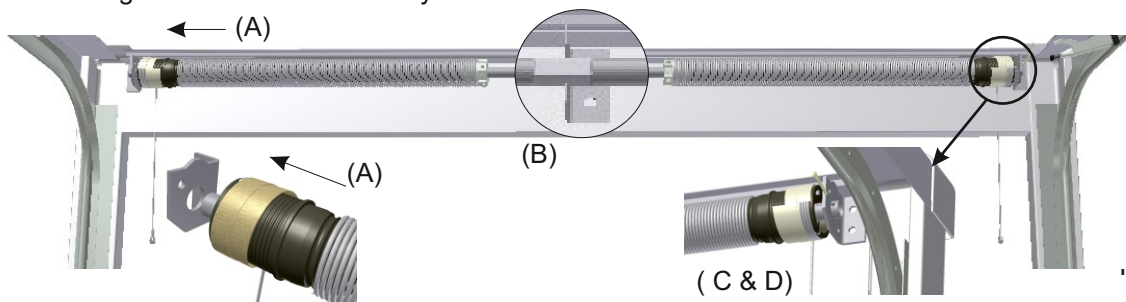


Fig 7

5 PRE-TENSION BALANCER

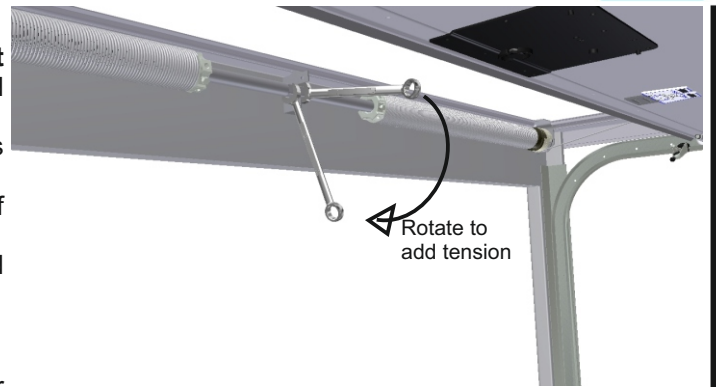
With the lower section of the shutter secured in the horizontal tracks, and both cables attached to the bottom panel.

To wind both springs at the same time, **do not loosen set screws**, remove centre torque clamp, (keep close to hand until later).

Rotate the entire balancer shaft and all by hand, until cables are tight.

Use two 20mm open ended spanners on the centre section of the shaft or two 9.5mm bars in the winding cones.

Turn the shaft by pulling **down** until **3 to 4** turns are wound onto the spring.



Whilst holding this light tension, with a single spanner or tommy bar place the centre torque clamp on square portion of shaft and secure to bracket with the two nuts.

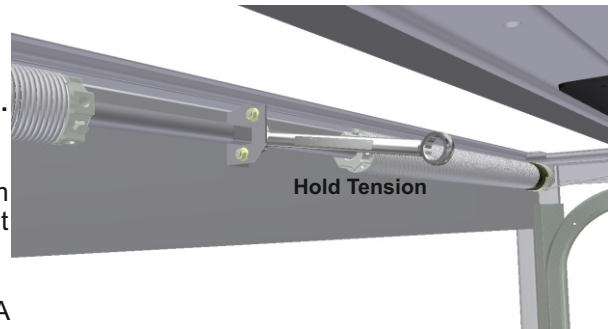
Carefully remove clamps from track.

Be aware the shutter will rebound down to normal open position.

Check door operation.

Check through full door opening cycle that the cables wind onto drum evenly and are not pulled over onto spring area, or on top of cable that is already on the drum

Adjust turns if necessary by adding or subtracting 1/4 turns. A properly balanced door will not fly up, will stay full open, and close easily. Adjust each side equally.





**STAND CLEAR OF
OPENING WHEN DOOR IS
MOVING**

**Leave the copy of
maintenance/fitting
instructions provided in the
cab of the vehicle together
with the remainder of the
vehicle documentation or in
the case of a semi-trailer
together with any
documentation relating to the
trailer.**

WARNING



**DO NOT USE PULL
STRAP TO LEAVE
VEHICLE**

**ALWAYS CLOSE AND LOCK THE DOOR BEFORE DRIVING VEHICLE
DO NOT MOVE VEHICLE WITH DOOR IN THE UNDER ROOF POSITION.**

IMPORTANT MAINTENANCE INFORMATION

The following should be read and included in the Maintenance Schedule

This door is constructed of high quality components intended to provide years of continued service. When in operation it is a large moving object, therefore, to ensure safe, reliable and continued operation, the following cautionary directions and periodic maintenance instructions must be observed.

1. While door is moving do not stand within opening or walk through doorway.
2. Operate door only when correctly adjusted and free from obstructions.
3. High-pressure cleaners or solvents can damage the door.
4. If door becomes difficult to operate or completely inoperative, it must be repaired immediately by an approved agent. Particular care should be given to the counter balance and cables. Repair and adjustment can be **hazardous** and should only be performed by an **approved agent**.
5. **Daily:** - A general visual inspection of the shutter should be carried out with specific attention to the cable along the full length.
6. Replace any frayed or otherwise damaged cables.
7. Ensure regular checks and maintenance on items shown below **(Every 6-8 weeks)**
 - All nuts, bolts, screws and rivets to be checked for tightness.
 - Check all rollers operate smoothly, replace worn or damaged rollers.
 - Replace frayed or worn Pull Straps. **DO NOT** attach anything to the Pull Strap.
 - Where the lock mechanism is fitted or controlled by a keyed cylinder lubricate the cylinder **ONLY** with manufacturer's recommended lubricant.
 - Other parts of the lock mechanism can be lubricated with light oil.
 - Tracks must be clear of grease and dirt.
 - Check roller shutter operation, lubricate roller shafts, bearings, hinges, tracks and spring with light oil (**not grease**) the use of aerosol sprays is not recommended as this may wash away the lubricant packed in the roller bearings.
 - Check door panels (inside and out) for gouges or paint chips, and repaint as needed.
 - If you repaint, check and if necessary re-adjust tension on lifting mechanism to restore ease of operation.

Use only genuine JR Mobile spare parts; the use of any other manufactured parts or not following the above will invalidate the warranty. In the unlikely event of an operational or warranty concern please contact

Customer Services 029 20546135

Mobile 07974 390511

JR Mobile has a network of Agents for your nearest Agent please contact

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