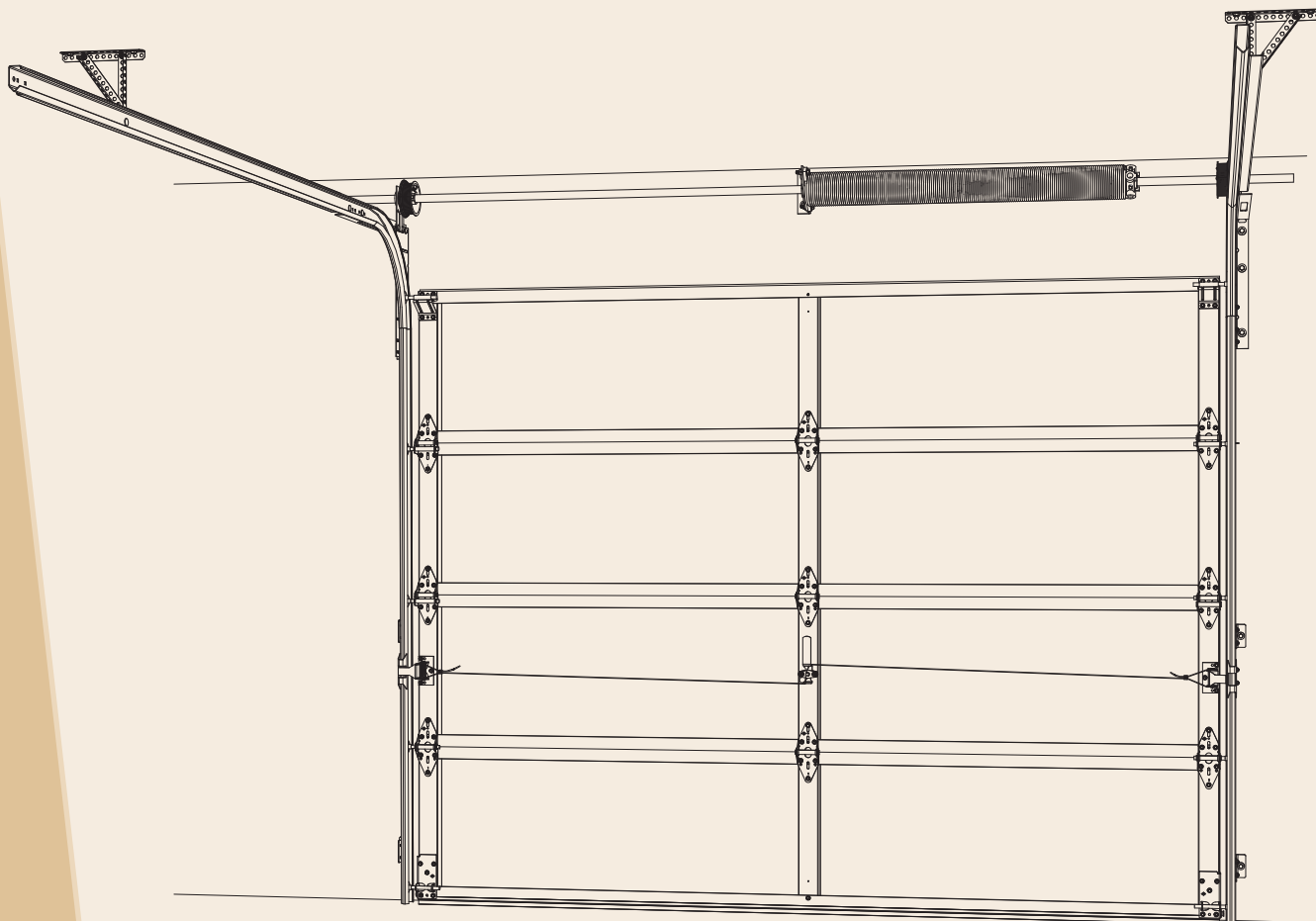




Enviropanel™

INSTALLATION INSTRUCTIONS



DISCLAIMER

***THESE INSTRUCTIONS ARE INTENDED FOR
PROFESSIONAL GARAGE DOOR INSTALLERS***

Note: All references are taken from inside looking out



CONTENTS

1.0	BEFORE YOU START	3
1.1	SAFETY CHECKLIST	3
1.2	FASTENER RECOMMENDATIONS FOR FITTING GARAGE DOORS	4
1.3	TOOLS CHECKLIST (GUIDE ONLY)	5
1.4	PARTS CHECKLIST (GUIDE ONLY)	5
1.5	CHECKING MEASUREMENTS	6
2.0	INSTALLATION	7
2.1	ASSEMBLING BOTTOM PANELS	7
2.2	ASSEMBLING VERTICAL TRACKS	8
2.3	INSTALLING BOTTOM PANEL	9
2.4	ADDING ADDITIONAL PANELS	11
2.5	INSTALLING HORIZONTAL TRACKS	12
2.6	INSTALLING TOP PANEL	13
2.7	LARGE DOORS - PANEL REINFORCEMENT	14
2.8	ASSEMBLING SPRING COUNTERBALANCE SYSTEM	16
2.9	LARGE DOORS - TWO PIECE SHAFTS	18
2.10	INSTALLING COUNTERBALANCE SYSTEM	19
2.11	REAR TORSION INSTALLATION	20
2.12	ADDING TENSION TO SPRING	24
2.13	EXTERNAL DOOR JAMB AND LINTEL SEAL INSTALLATION	25
3.0	OPTIONAL COMPONENTS	27
3.1	LOCK INSTALLATION	27
4.0	TROUBLESHOOTING	29
5.0	AFTER INSTALLATION CARE	30

1.0 BEFORE YOU START

1.1 SAFETY CHECKLIST

The following hazards and hazard controls have been identified for installers during the installation of this door.

Hazard	Control
<ul style="list-style-type: none"> Housekeeping - risk of slip trip or fall Housekeeping - risk of injury to other people or animals in the installers work area 	<ul style="list-style-type: none"> Tidy up site prior to start work as a minimum area should be at least the area of the installation back into the garage and 2 metres in front If the Site housekeeping is deemed to be unsafe do not install the door Keep all people well clear of installers work area with appropriate signage and discussion with owner
<ul style="list-style-type: none"> Manual handling when moving the door from the Trailer or Ute to the installation area - risk of musculoskeletal injury Manual handling when installing Doors & Openers particularly above head height - risk of musculoskeletal injury or twisting Manual handling when installing tracks and torsion bars - risk of musculoskeletal injury 	<ul style="list-style-type: none"> Pack sizes Use of 2 person lifts Use of mechanical aids Avoid twisting (Practice correct lifting techniques) Correct use of ladders while installing tracks
<ul style="list-style-type: none"> Working at heights and working with ladders, scissor lifts, scaffold - risk of fall from height 	<ul style="list-style-type: none"> Ladder check Ladder placement Do not work off the top rung
<ul style="list-style-type: none"> Sharp edges on door, tracks or related jewellery - risk of laceration 	<ul style="list-style-type: none"> Wear appropriate PPE (Dyneema cut off Gloves) Follow instruction explicitly particularly for the installation of windows in some panel doors as the unrolled cut out edges presents a very sharp edge
<ul style="list-style-type: none"> Pinch points - risk of cut, puncture or crush injury 	<ul style="list-style-type: none"> Wear appropriate PPE and keep hands well clear of pinch points Ensure hands well clear of the panels
<ul style="list-style-type: none"> Use of hand tools - risk of eye injury, laceration, cut, stab or puncture injuries (Tools checklist) Use of Electric/ Battery or pneumatic tools - noise hazard Use of cutting tools creating sparks - risk of fire 	<ul style="list-style-type: none"> Wear appropriate PPE and utilise operators manual Use appropriate noise/hearing protection in the form of ear plugs or ear muffs Ensure appropriate fire protection available and housekeeping to ensure that flammable liquids or materials are removed from the area of work
<ul style="list-style-type: none"> Tension spring - risk of release of stored energy (striking installer on the head or body) 	<ul style="list-style-type: none"> Ensure correctly fitting winding bar is used Ensure the correct length winding bar is utilised Ensure winding bar is placed appropriately in the torsion socket plug Ensure correct bolts are tightened or loosened (or clamp pliers) to ensure there is no release or controlled release of energy from the spring either through the torsion bar or the winding bar Keep hands clear of the torsion plug at all times Keep head clear of the tensioning bar at all times

1.2 FASTENER RECOMMENDATIONS FOR FITTING GARAGE DOORS

MATERIAL	FASTENER TYPE(S)	DIAMETER OR TYPE		LENGTH OF FASTENER (See Note)
New Solid Brick	Coach Bolts (Hex Lag Screw) - combined with wall plugs	5/16"	X	1½"
		3/8"	X	2"
	Macplugs (wall plugs) to suit above	5/16"	X	50mm
		3/8"	X	60mm
	HLC Sleeve Anchors (Dyna Bolts)	12mm	X	55mm
New Hollow Brick	HRD-VGK or HGK-VGS (Hex Head) Frame Anchors	10mm	X	60mm
New Solid Concrete	Coach Bolts (Hex Lag Screw) - combined with wall plugs	5/16"	X	1½"
		3/8"	X	2"
	Macplugs (wall plugs) to suit above	5/16"	X	50mm
		3/8"	X	60mm
	HLC Sleeve Anchors (Dyna Bolts)	12mm	X	55mm
Aerated Concrete e.g. (HEBEL)	Fischer Nylon Twist Lock Anchor Type GB 14	14mm	X	85mm
Steel Framing e.g. BHP Framing (with rear access)	Hex Head Bolt Zinc Plated, Hexagon Nuts Zinc Plated, Washers Zinc Plated	5/16"	X	1"
		3/8"	X	1"
		10mm	X	25mm
		12mm	X	25mm
Heavy Gauge Steel	Hex Head Tek	14-20	X	22mm
Light Steel Framing e.g. BHP House Framing (no rear access)	Heavy Duty Kap Toggle	10mm	X	100mm
		12mm	X	100mm
	Hex Head Tek	6-10	X	20mm
New Timber	Coach Bolts (Hex Lag Screw)	5/16"	X	1½"
		3/8"	X	2"
	Hex Head Tek	14-10	X	50mm

IMPORTANT NOTES:

- For installation to materials not covered in the above chart, the installer should seek expert advice from a qualified builder.
- Minimum length of fastener does not exclude use of longer lengths. Decision must be made by fitter to ensure adequate strength.
- Recommendations for old materials or materials not in good condition are not included. If in doubt about the strength of the material seek specialist advice.
- Fasteners for sectional door spring brackets and top track brackets in masonry should be at least 5/16" x 2.5" long or metric equivalent.
- HEBEL Fischer type fastener should be installed 150mm from edge of blocks. Minimum overlap of door should be approximately 115mm (S1), 110mm (S3) and 90mm (Panelift). Add 50mm more if mounted on panels instead of blocks.

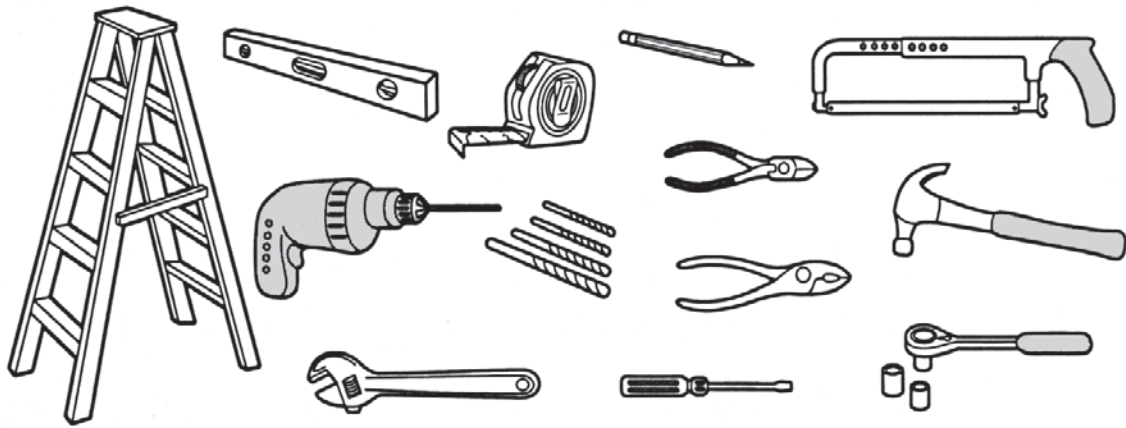
IMPORTANT INFORMATION ON FASTENERS

Coach bolts/screws supplied with this product are suitable for fastening to timber jambs.

Correct and safe fastening to other materials may require different fasteners.

The installer must select and use fasteners appropriate to the material into which they are being fixed.

1.3 TOOLS CHECKLIST (GUIDE ONLY)



1.4 PARTS CHECKLIST (GUIDE ONLY)

When taking delivery of your sectional overhead door you will be supplied with the following for standard headroom doors:-

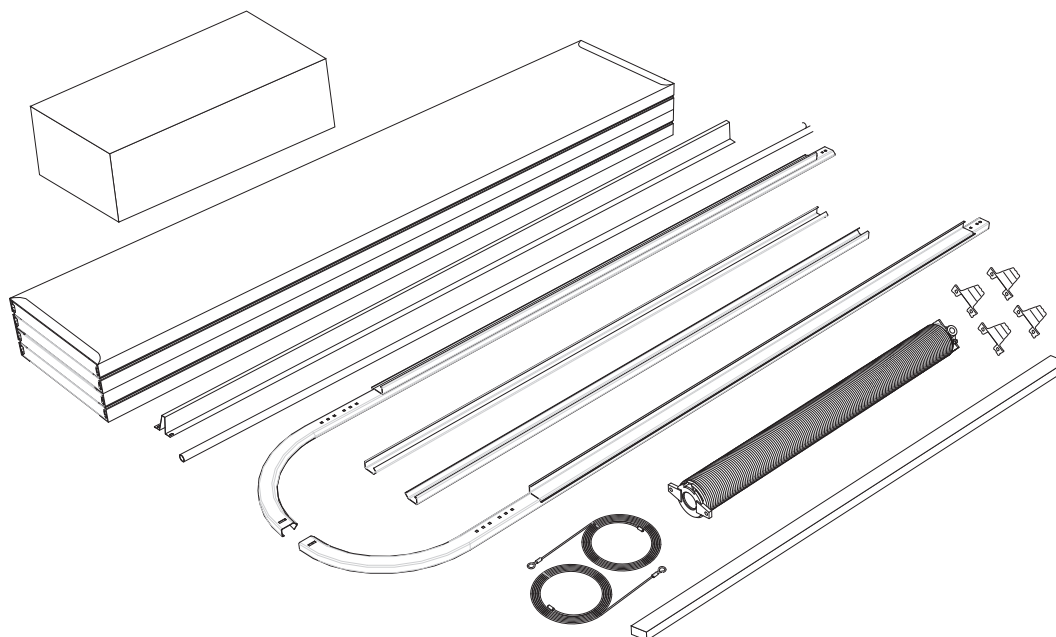
- 1 or 2 package with door panels
- 2 straight vertical tracks
- 2 longer curved horizontal tracks
- 1 torsion bar
- 1 parts box (doors over 150kg will have a solid shaft)
- Reinforcing (qty indicated below)
 - 1 package of plastic end caps
 - 1 package of lifting cables
 - 1 or more springs

Additional parts for low headroom doors and locking:-

- 2 pulley wheels & brackets
- 2 rear torsion brackets
- Rear torsion parts bag
- 1 lock set assembly (Optional)

ENVIROPANEL, STANDARD HEADROOM, PARTS BOX MATRIX

Number of Panels	Door Width Break Points (mm)					
	1600	3045	3050	5180	5185	5864
Door Height ≤ 2440 and 3 or 4 panels	BOXSE1 / BOXLE1		BOXSE3 / BOXLE3		CUSTOM	
Door Height > 2440 and 4 or 5 Panels	BOXSE4 / BOXLE4		BOXSE5 / BOXLE5		CUSTOM	
6 Panels	CUSTOM		CUSTOM		CUSTOM	
7 Panels	CUSTOM		CUSTOM		CUSTOM	
8 Panels	CUSTOM		CUSTOM		CUSTOM	
Panel Height 1	454	1600	3045	3050	5180	5185 5864
Panel Height 2	530					
Panel Height 3	608					
		Door Width Break Points (mm)				
Centre Stiles		1	3	5		
Panel Reinforcing	NIL		2	1 Reo Per Panel		
	1600	3550	3550	4710	4715	5864

FIGURE 1.3.1 PARTS CHECKLIST


1.5 CHECKING MEASUREMENTS

Before unpacking the door, check that the door width is furnished to that of the door opening with a measuring tape. Also measure the panel heights to give you the total height of the door (**NOTE:** panel heights are fixed sizes and additional headroom may be required to accommodate this).

NOTE: If an opener is to be fitted an additional 50mm for a domestic opener or 100mm for a commercial opener will need to be added to the headroom.

For Standard Installations

Sideroom	120mm	
Headroom	340mm	(doors up to 3205mm high)
	390mm	(all other sizes)

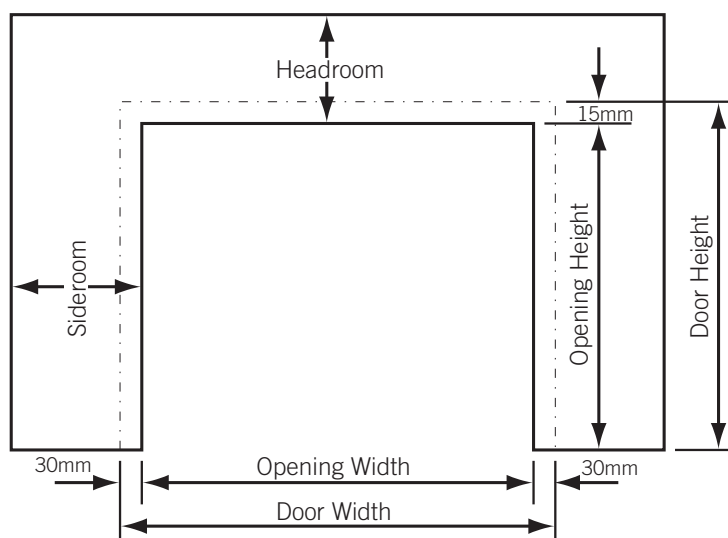
For Low Sideroom Installations

Sideroom	90mm
----------	------

For Rear Torsion Installations

Sideroom	155mm	(doors up to 3205mm high)
	295mm	(doors over 3205mm high)
Headroom	190mm	(doors to 5285mm wide)
	200mm	(doors over 5285mm wide)

For low headroom installations involving large doors, Rear Torsion becomes a viable alternative when the radius of cable drums and spring gear becomes large enough to start impacting on headroom.



2.0 INSTALLATION

2.1 ASSEMBLING BOTTOM PANELS

Open up the pack of door panels, take out the bottom panel (weather seal on the bottom of the panel).

Sort and organise hangers, this is recommended as it makes finding the proper hangers later much easier as you progressively add more panels, see Figure 2.1.1. **NOTE:** Some larger doors will have double width end stiles, therefore two hinges and longer wheels and axles will be supplied for each end of each panel.

If using a rear torsion system a different hanger is required, please consult Rear Torsion Installation on Page 18.

Remove existing screws in the corner of the panel near the weather seal, see Figure 2.1.2. Locate both bottom hangers assemblies and cables. Loop cable onto mushroom head knob on the bottom hangers. **NOTE:** Before fitting any hinges or hangers all holes must be pre drilled using a 4mm drill. Attach the bottom hangers to the lower end of the door as shown in Figure 2.1.3 A. Do not unwind lifting cable until specified later to do so. Assemble No. 1 hangers, which can be identified by the "1" pressed into the surface, and insert Wheel-Axles, Figure 2.1.3.B.

FIGURE 2.1.1

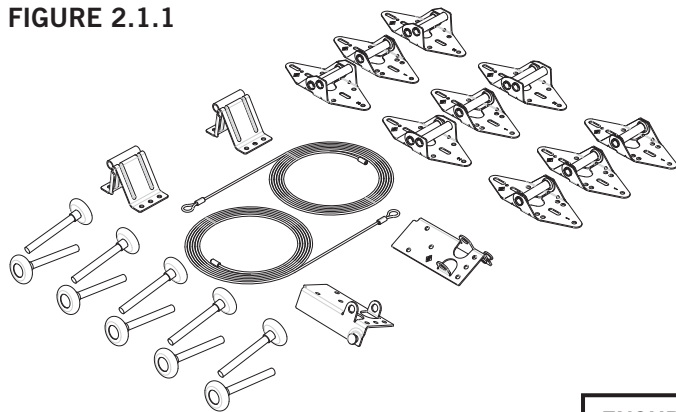


FIGURE 2.1.2

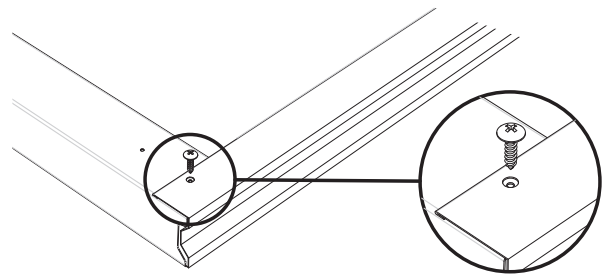
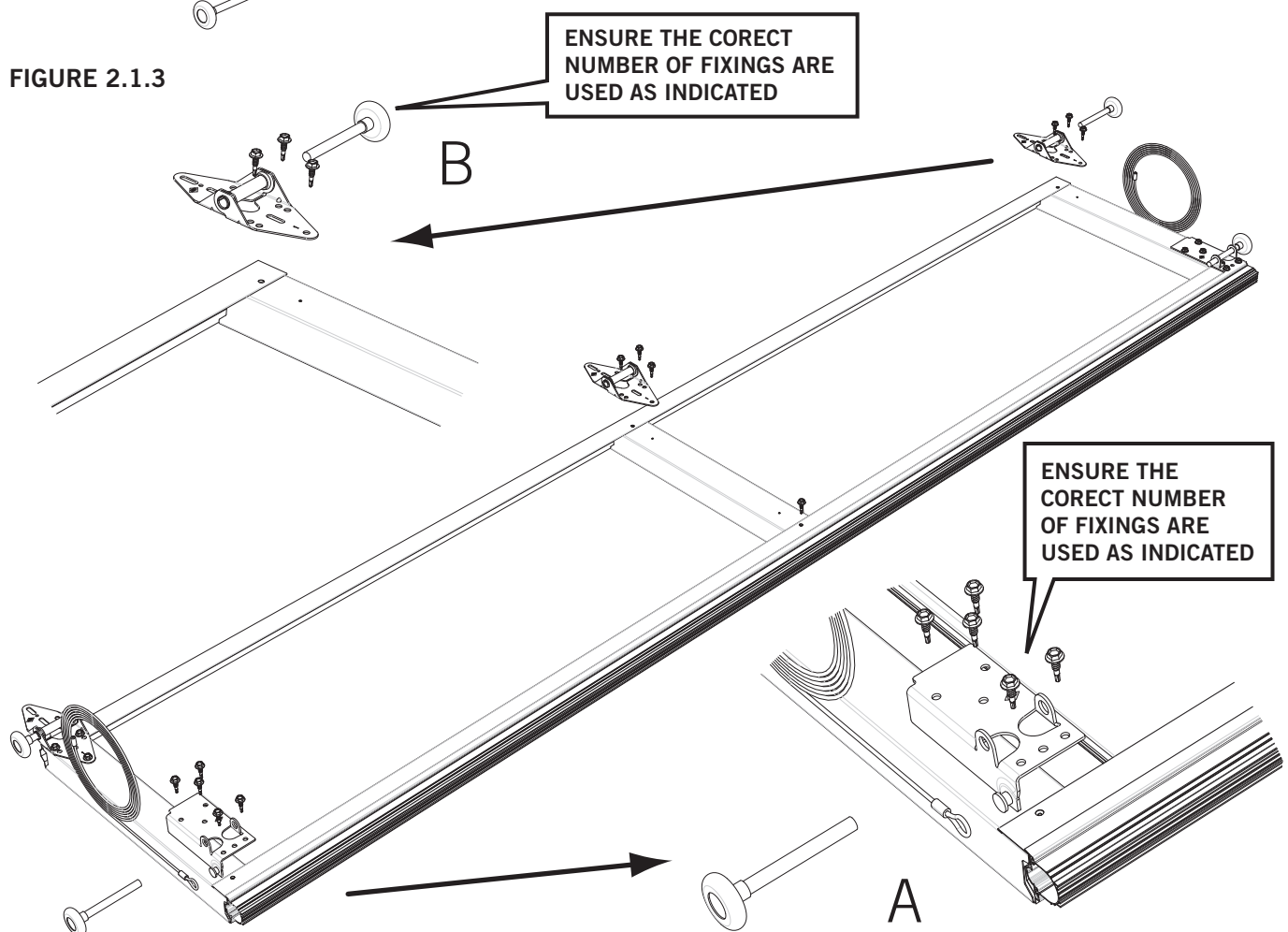


FIGURE 2.1.3



2.2 ASSEMBLING VERTICAL TRACKS

PARTS NEEDED (parts may differ to those shown)

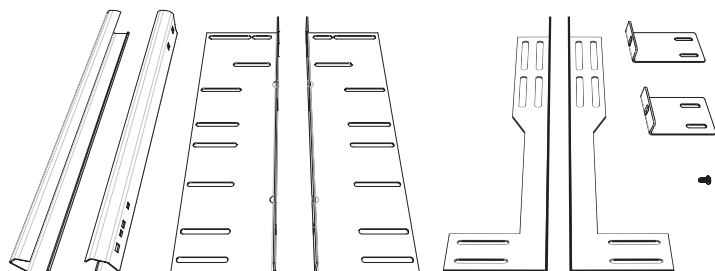


FIGURE 2.2.1 TRACK ASSEMBLY

The vertical tracks should be:

Door height - Door height less 127mm for standard headroom tracks.

Door height less 276mm for rear torsion tracks.

Remove vertical track brackets and wall brackets and fasteners from the parts box.

Assemble vertical track bracket, Wall brackets and tracks together as shown in Figure 2.2.1.

The top and bottom of the vertical track should be fixed so that it will be approximately 70mm and 40mm off the wall respectively when set against the door jamb as shown in Figure 2.2.2.

Assemble the rest of the brackets onto the tracks ensuring the "V" section points away from the wall bracket. For smaller doors two No. 1 brackets per side are used, for the larger doors one No. 1 (used at the bottom) and one No. 2 (placed approximately midway) are used.

NOTE: Higher doors will have more brackets which need to be fitted and equally spaced.

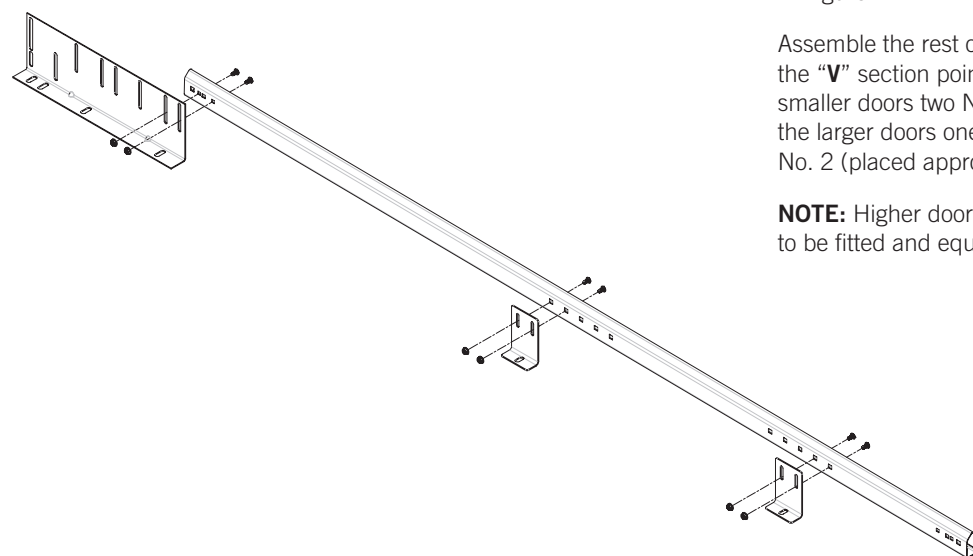


FIGURE 2.2.2 CLEARANCE FROM WALL

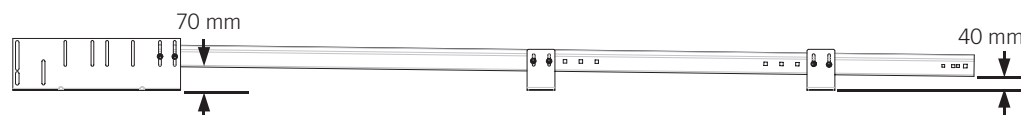


FIGURE 2.2.3 LOW SIDEROOM

LOW SIDEROOM INSTALLATION:

In situations with less than 120mm from the door opening to a wall or other possible obstruction, then a low sideroom installation is required. This is achieved by having the wall brackets pointing inward under the track as shown in Figure 2.2.3.

In a low sideroom door the track Brackets are reversed, in the case of the top track brackets swap sides, so that they fall under the track as opposed to the side, see Figure 2.2.3. The tracks can still be fixed onto the walls while assembled using a spanner.

2.3 INSTALLING BOTTOM PANEL (INDICATIVE ONLY AS SIZE AND PANEL QTY WILL VARY)

Using a water level, mark a point on the wall approximately half way up the door opening on both right and left hand sides, see Figure 2.3.1.

Install the vertical tracks, measure from the water level mark to the top most point of the top track brackets. If this is not equal, either lift the vertical track or cut the required amount from the bottom of the track to make both tracks level. Do not cut more than 20mm. Figure 2.3.1 and 2.3.2.

The tracks should be:

Standard headroom door height - less 127mm

Low headroom door height - less 276mm

FIGURE 2.3.2 INSTALLING VERTICAL TRACK

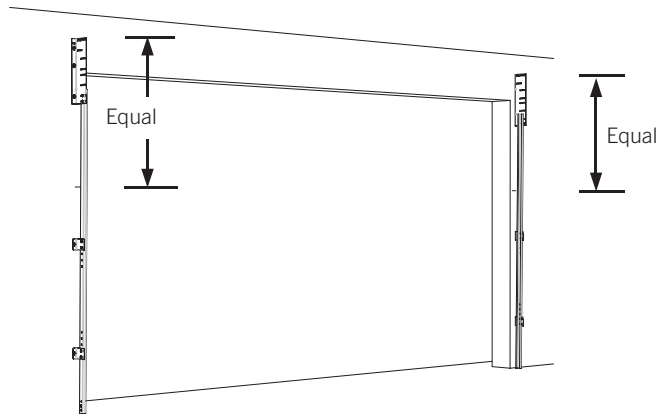


FIGURE 2.3.4 INSTALLING BOTTOM PANEL

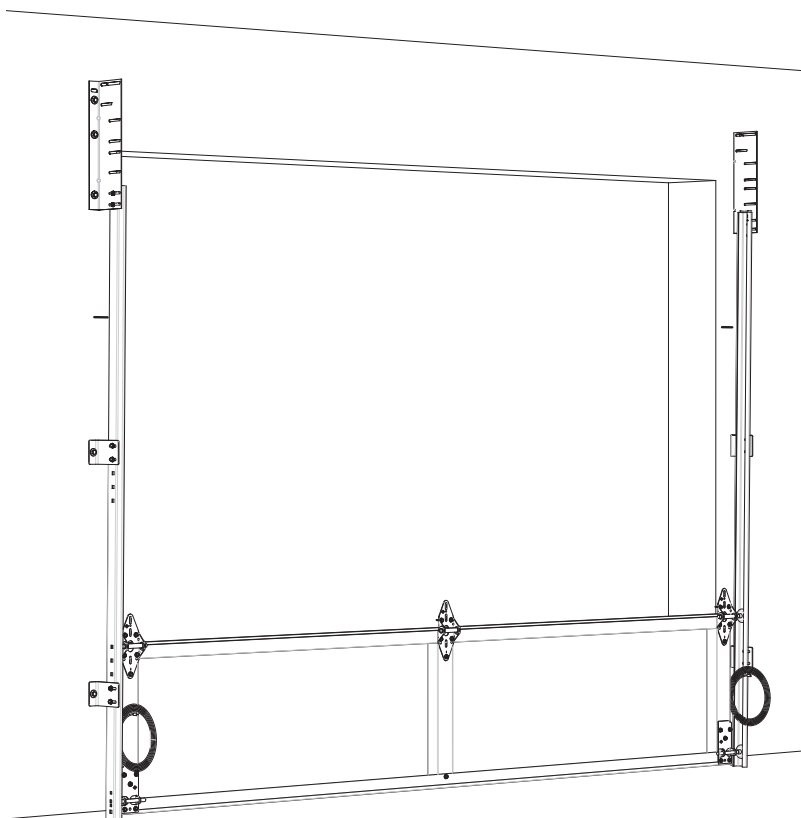
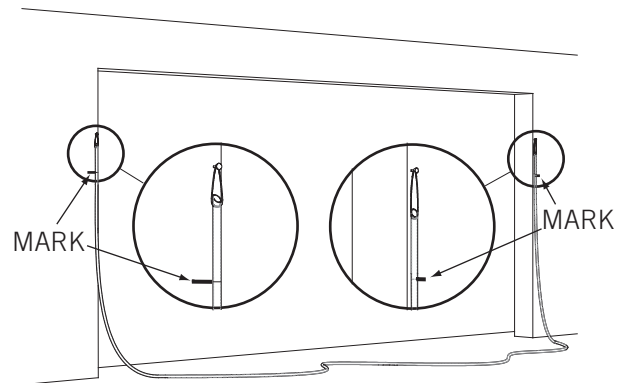


FIGURE 2.3.1 WATER LEVEL



Carefully thread the wheels of the Bottom Panel into the tracks. The bottom door panel is to sit squarely in the door opening. The wheels are to sit in the "V" groove of the vertical tracks and there should be 5-10mm clearance between panel and tracks, see Figure 2.3.3.

**FIGURE 2.3.3 WHEEL-AXLE
PLAN OF END SUPPORT**

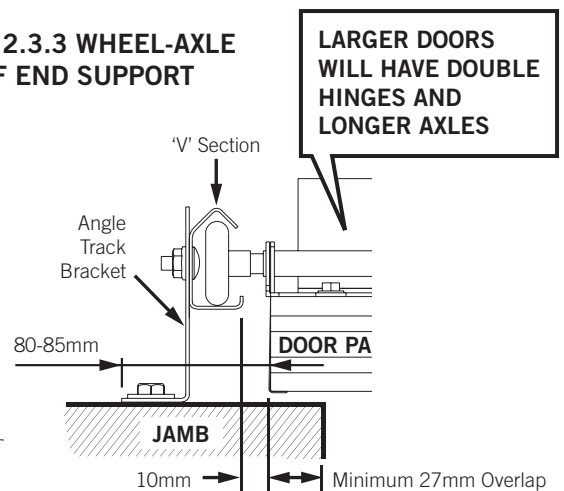


FIGURE 2.3.5 RIBBED PANEL HEIGHTS

Height incl. 25mm W/Strip	Panel Height		No. of Panels	Order of Panels for Installation 530 = 1 ; 608 = 2							
	530	608		Bottom Top							
1849	0	3	3	2	2	2					
2145	4	0	4	1	1	1	1				
2223	3	1	4	1	1	1	2				
2301	2	2	4	1	1	2	2				
2379	1	3	4	1	2	2	2				
2457	0	4	4	2	2	2	2				
2675	5	0	5	1	1	1	1	1			
2753	4	1	5	1	1	1	1	2			
2831	3	2	5	1	2	2	1	1			
2987	1	4	5	1	2	2	2	2			
3065	0	5	5	2	2	2	2	2			
3205	6	0	6	1	1	1	1	1	1		
3283	5	1	6	1	1	1	1	1	2		
3361	4	2	6	1	1	2	2	1	1		
3439	3	3	6	1	1	2	2	2	1		
3595	1	5	6	1	2	2	2	2	2		
3673	0	6	6	2	2	2	2	2	2		
3735	7	0	7	1	1	1	1	1	1	1	
3891	5	2	7	1	1	2	2	1	1	1	
3969	4	3	7	1	1	2	2	2	1	1	
4047	3	4	7	1	2	2	2	2	1	1	
4203	1	6	7	1	2	2	2	2	2	2	
4265	8	0	8	1	1	1	1	1	1	1	1
4281	0	7	7	2	2	2	2	2	2	2	
4343	7	1	8	1	1	1	1	1	1	1	2
4421	6	2	8	1	1	2	2	1	1	1	1
4499	5	3	8	1	1	2	2	2	1	1	1
4577	4	4	8	1	1	2	2	2	2	1	1

There are three standard panel width sizes which are to be cut down to the correct door width. These sizes are:

- 3045mm wide
- 5180mm wide
- 5874mm wide

2.4 ADDING ADDITIONAL PANELS (INDICATIVE ONLY AS SIZE AND PANEL QTY WILL VARY)

Now you are ready to install the rest of the panels.

Assemble the hinges and hangers to the panels as shown in Figure 2.4.2. There is a hinge for every point where there is a stile.

Insert panel into the guide up then down engaging the wheels into the vertical tracks, Figure 2.4.4, and nesting the groove onto the tongue of the bottom panels, Figure 2.4.5. Before fitting any hinges or hangars all holes must be pre drilled using a 4mm drill. Screw the panels together through the hinges and hangers.

Repeat this procedure for all other panels with the exception of the top panel which is positioned after the curve is installed, Figure 2.4.6.

Set the vertical tracks parallel on both sides of the door. Ensure that there is a 5-10mm gap between the edge of the wheel axle shoulder and the door panels. Once satisfied, secure all fixing points on the vertical tracks.

FIGURE 2.4.4

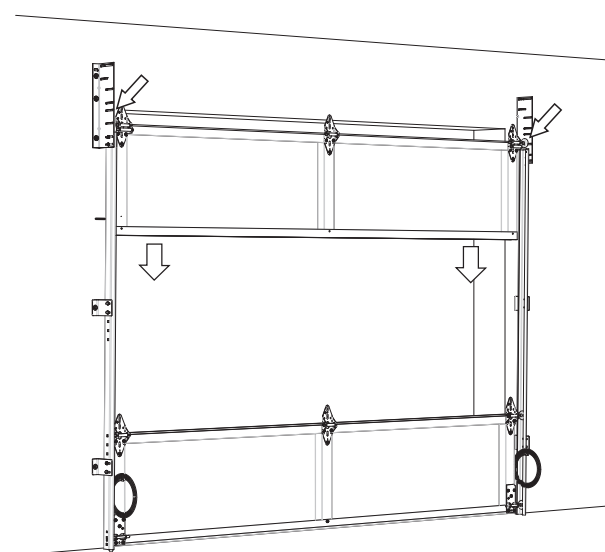


FIGURE 2.4.5

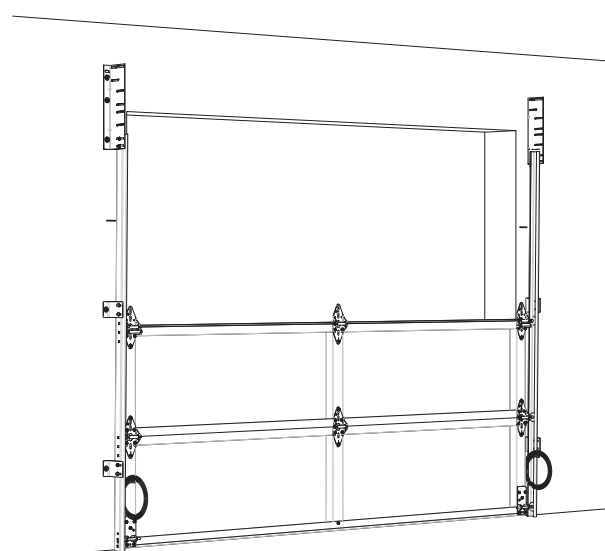


FIGURE 2.4.6

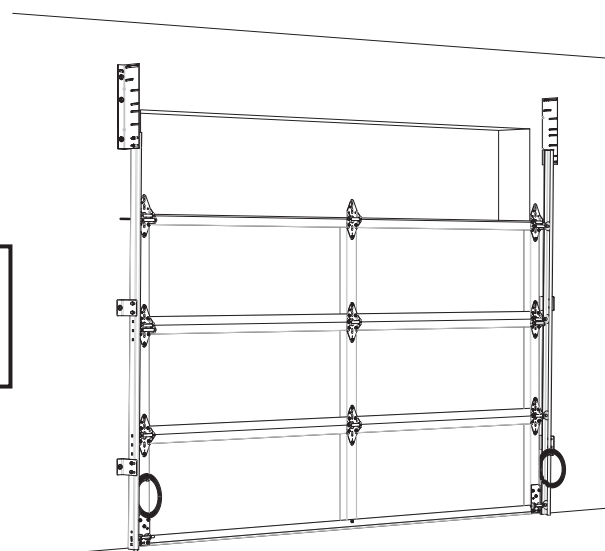


FIGURE 2.4.1 HANGERS

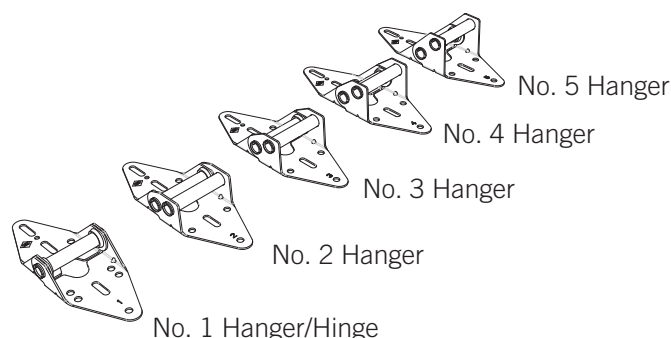


FIGURE 2.4.2 ASSEMBLE HANGERS ONTO PANEL

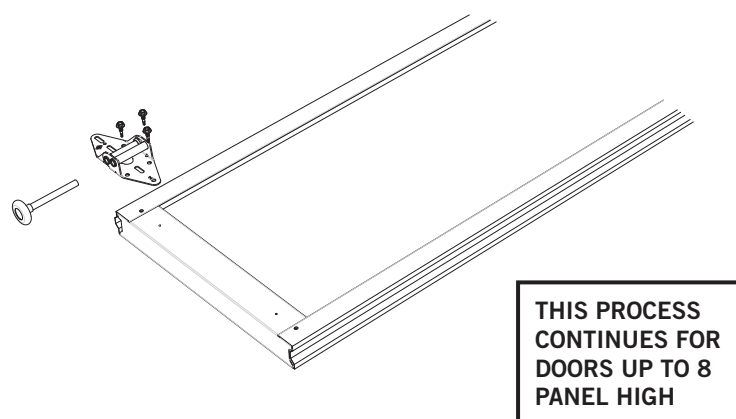


FIGURE 2.4.3 LABEL



2.5 INSTALLING HORIZONTAL TRACKS

The horizontal tracks are identified by being the curved pair of tracks supplied and should be at least:

Door height + 350mm

Assemble curved track as shown in Figure 2.5.1, ensure that the curve is aligned and butts up against the vertical track.

FIGURE 2.5.1 ASSEMBLING CURVED TRACK

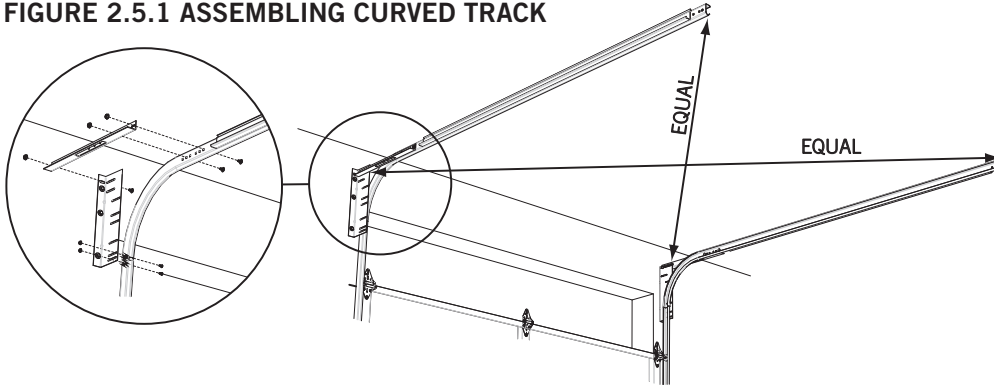


FIGURE 2.5.2 BRACING

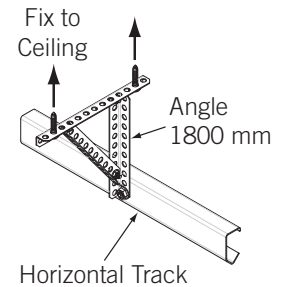


FIGURE 2.5.3 SINGLE BRACE

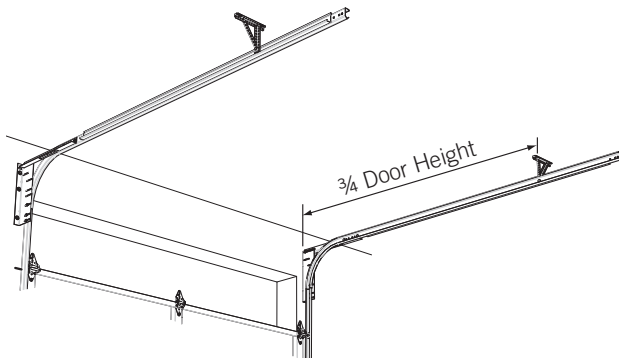
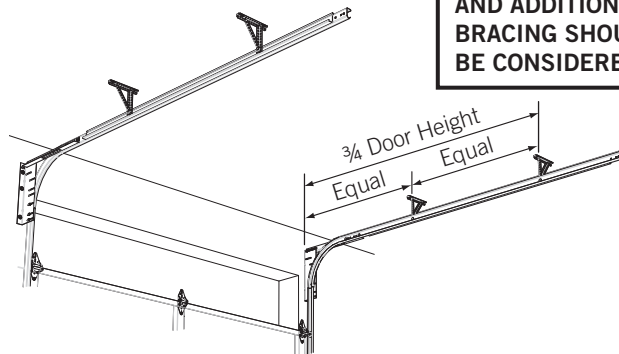


FIGURE 2.5.4 DOUBLE BRACE

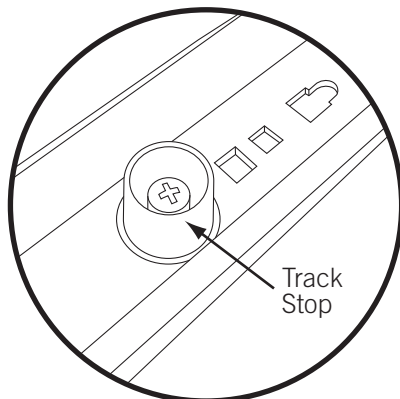


**USE HEAVY GAUGE
ANGLE FOR DOORS
OVER 3.0 X 3.6M
AND ADDITIONAL
BRACING SHOULD
BE CONSIDERED**

Before bracing the horizontal tracks, ensure that they are square to the opening and level. To check whether your diagonals are equal, measure from the top of the vertical track to the end of the horizontal track on both sides. Check both sides. Adjust if necessary and fix diagonal brace. Figure 2.5.1.

Use steel angle, Figure 2.5.2, to fix the horizontal tracks to the building. Find a structurally sound location to fix your angle to the ceiling or side wall. It is recommended that the track support angle be located approximately at $\frac{3}{4}$ height of the door, Figure 2.5.3. For doors higher than 2280mm and/or wider than 4700mm two supports will be required, Figure 2.5.4.

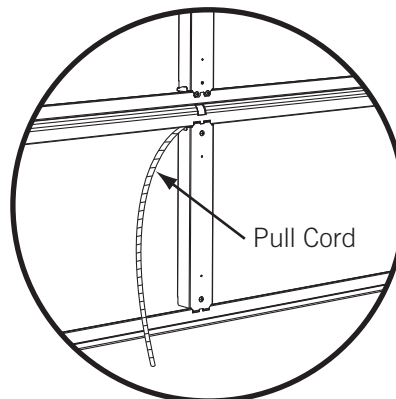
INSTALLING THE SAFETY STOP



NOTE: Larger doors may be supplied with a spring plunger type stop.

The safety stops must always be fitted at the end of the horizontal track to prevent the panels from accidentally exiting track.

INSTALLING THE SAFETY PULL CORD



The safety pull cord must always be fitted to the centre of the door.

Tie a knot in one end of the cord and pass the cord through the hinge pin, adjust for length and tie another knot cut of the excess cord and seal by melting the ends.

2.6 INSTALLING TOP PANEL (INDICATIVE ONLY AS SIZE AND PANEL QTY WILL VARY)

The top panel will always have a central stile for use with an opener, even if other panels don't.

If a rear torsion door please consult page 18 before proceeding. Assemble top hangers as shown in Figure 2.6.1, please note that the wheel distance can be adjusted. Rest top panel into position then thread top hanger with wheel axle down through curve into position, and screw into place in the top corners of the panels. Adjust as necessary. Don't forget to fix the top panel to the previous panel's hinges.

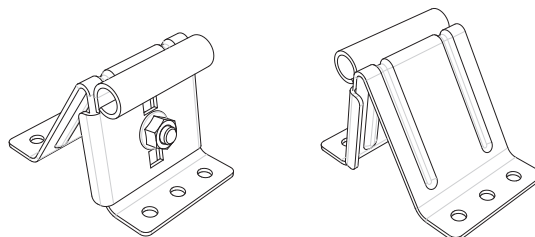
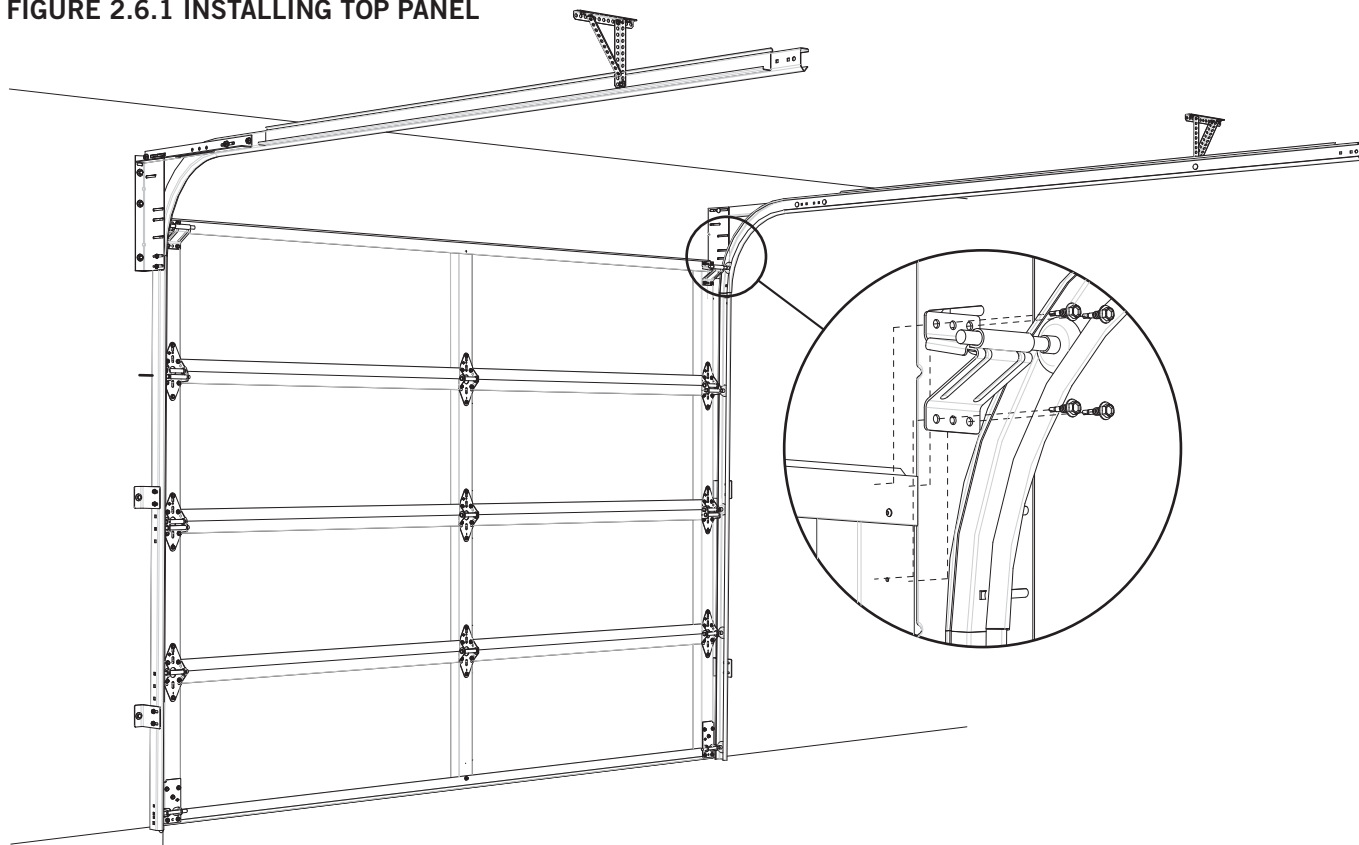


FIGURE 2.6.1 INSTALLING TOP PANEL



2.7 LARGE DOORS - PANEL REINFORCEMENT

Large doors greater than 4000mm require two installers for safe installation and prevent any damage to panels.

Doors great than 3045mm wide require panel reinforcement, the number of panel reinforcements are shown in Table 2.7.1. In situation where the number of reinforcements is 2 they are fitted to the top and bottom panel.

TABLE 2.7.1 PANEL REINFORCEMENT					
NIL		2		1 Reo Per Panel	
1600	3550	3550	4710	4715	5864

FIGURE 2.7.3 OPENER ARM

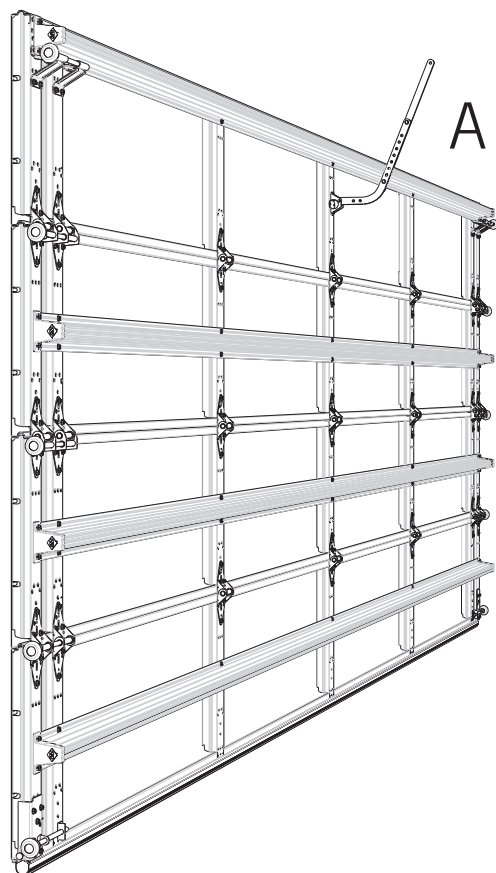
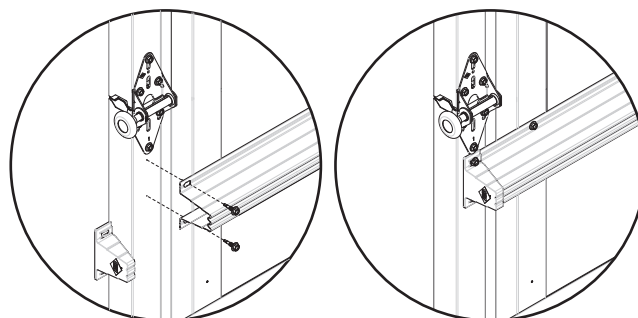


Figure A shows typical reinforcing assembled to a door.

The panel reinforcement can be mounted in any position on the panel but it is recommended to mount as high as possible to minimise problems with the following situations, the top panel with automatic opener, the locking panel when a lock is to be installed.

NOTE: Fixings fitted to the top and bottom flange of the reinforcing and plastic end caps fitted as Figure 2.7.2.

FIGURE 2.7.2 ASSEMBLING PANEL REINFORCEMENT



It is also recommended to mount the reinforcement consistently on the panels presenting a more professional appearance. With the exception of the top panel.

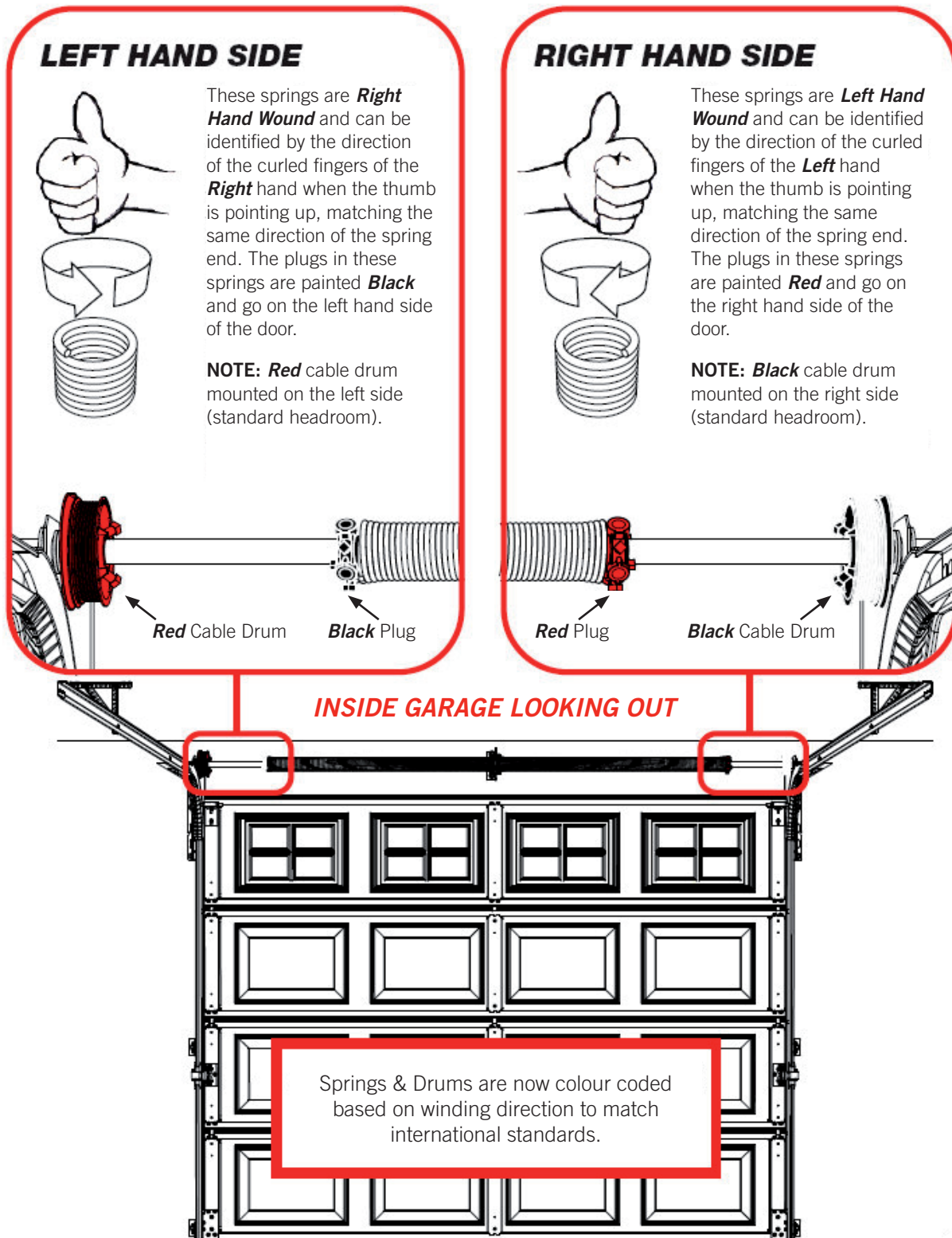
The top panel requires the reinforcement placed to the top of the panel in order to better support the door against the workings of an automatic opener which tends to stress the top most panel. It is recommended to always install reinforcement above operator arm, see Figure 2.7.3.

The lock generally straddles the centre of the panel so the reinforcement has to be offset to allow clearance for the installation and operation of the lock.

FIGURE 2.7.6

ATTENTION INSTALLERS!

NEW COLOUR CODING STANDARD FOR ALL B&D SECTIONAL DOOR SPRINGS



2.8 ASSEMBLING SPRING COUNTERBALANCE SYSTEM

Place the torsion bar on the floor and position the lifting parts in order. Place the spring anchor bracket onto the torsion bar, positioning it approximately half way along. The 'cut off' corner should face the floor if mounted on the lintel, or if mounted on the ceiling should face rearward, away from the lintel to allow the panels to clear as the door operates, see Figure 2.8.2.

With single spring doors, slide a shaft collar against the spring anchor bracket. The bearing flange in the spring anchor bracket must face the spring. It may need to be reversed depending on whether a left or right hand spring is supplied, see Figure 2.8.3A. The shaft collar is tightened against the bearing flange. Slide the spring onto the torsion bar and over the shaft collar. A left hand spring has a black winding plug, and should be fitted to the left hand side of the spring anchor bracket. A right hand spring has a red winding plug. The winding plugs should face away from the spring anchor bracket, see Figure 2.8.3B.

With two springs no shaft collar is necessary. Place the cable drum onto the torsion bar with the red cable drum on the left side and the black cable drum on the right side as in Figure 2.8.3D.

The set screws on the cable drums should face inwards see Figure 2.8.3C. Place the two 3mm cable drum spacers on each side. Then the side bearing brackets are positioned outside the cable drum spacers with the flange facing outwards.

FIGURE 2.8.1 PARTS NEEDED

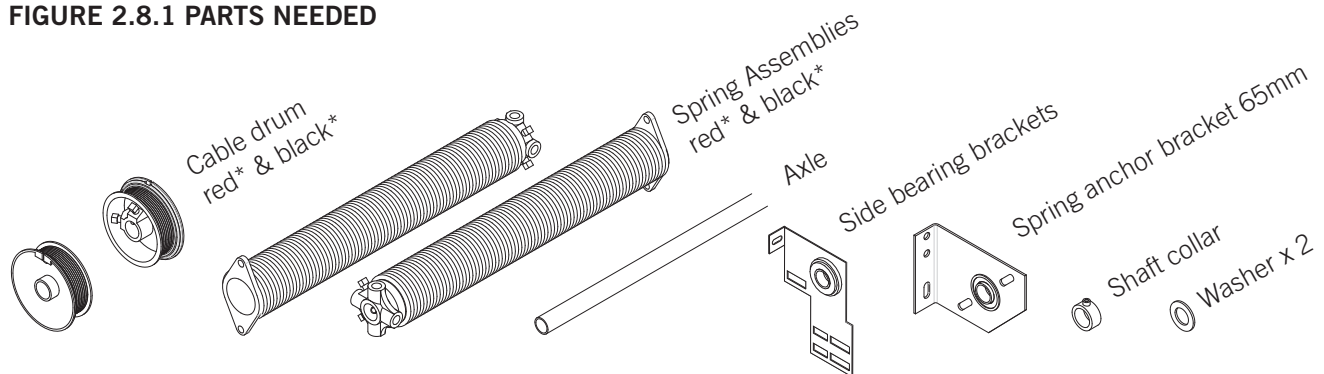


FIGURE 2.8.2 SPRING ANCHOR BRACKET

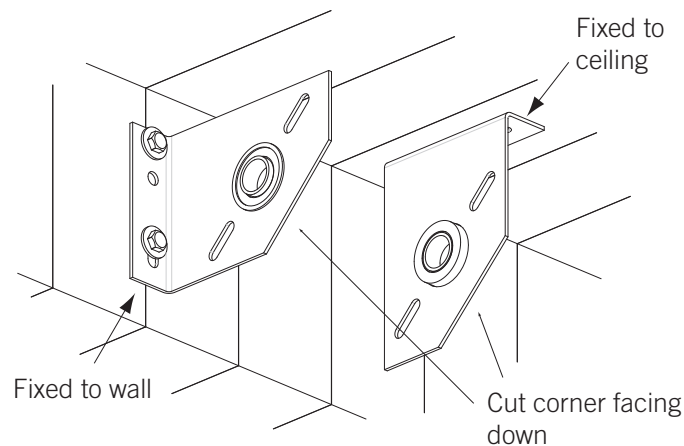
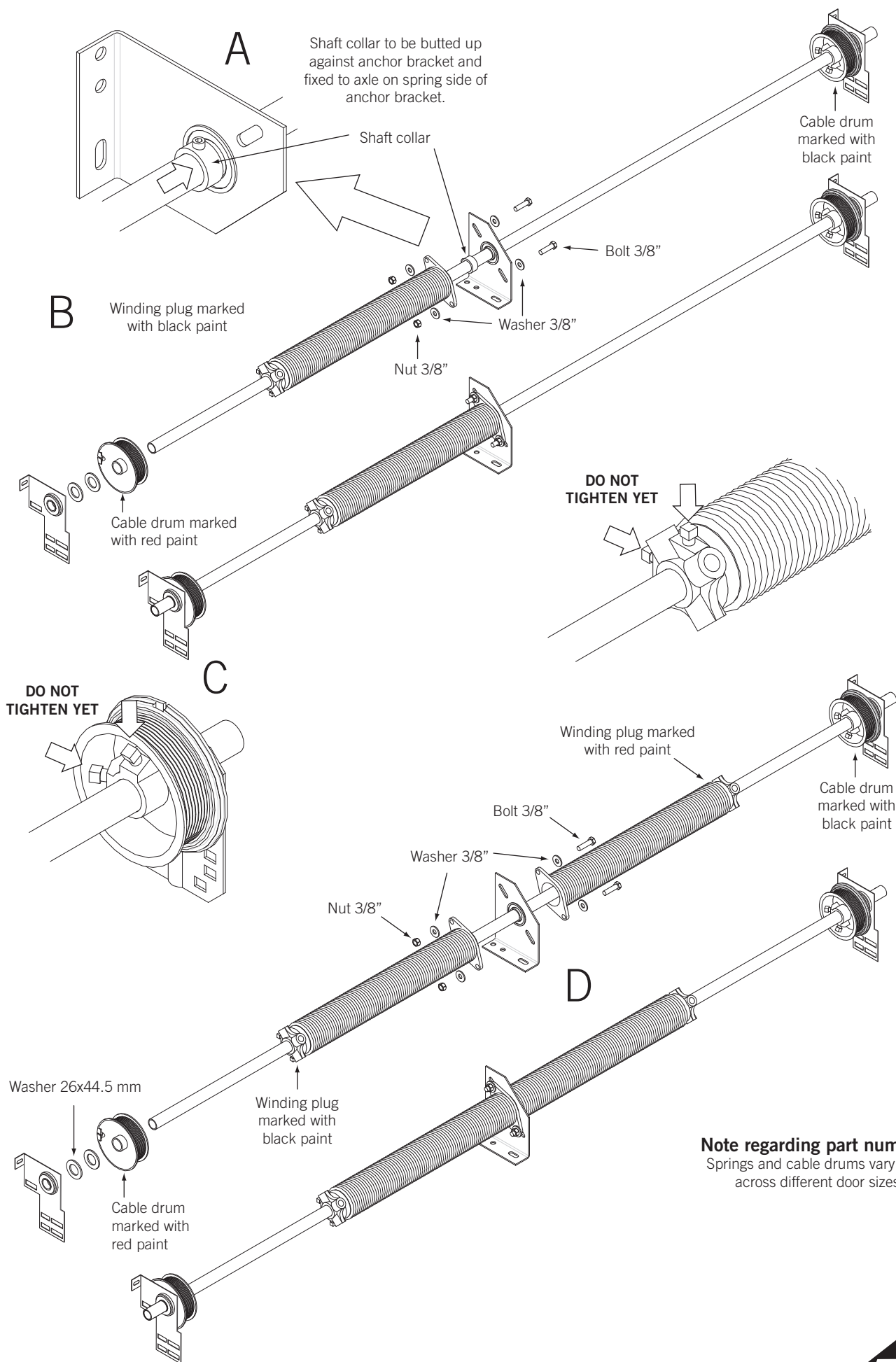


FIGURE 2.8.3 AXLE ASSEMBLY


2.9 LARGE DOORS - TWO PIECE SHAFTS

For very large doors whose springs simply become too large and heavy to handle in single axle assembly, two solid torsion axles are supplied with a coupling to allow easier installation.

Assemble both axle assemblies on the floor, only one spring anchor bracket is used, the other spring anchor bracket is fixed in position at the wall. A) shows the right half of the axle assembly as it should look on the floor. The shaft collar should be butted up against the spring anchor bracket opposite of the spring and then firmly fixed into place.

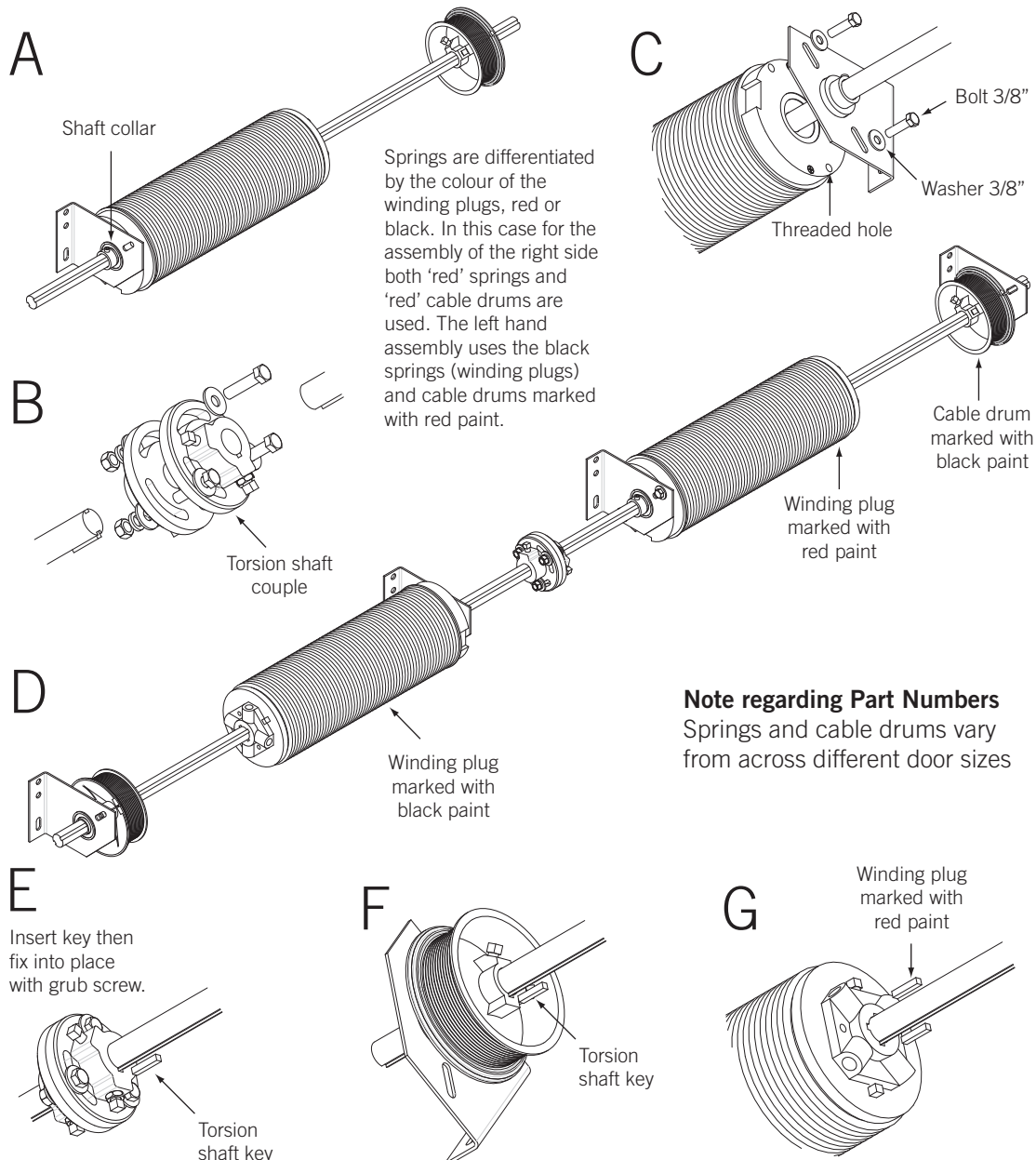
Lift and thread the axle on the cable drum side through the mounted spring anchor bracket and fix the loose spring anchor bracket securely to the lintel. You may need to rest the assembly end on a ladder or scissors lift.

Assemble the torsion shaft coupler engaging both left and right hand axle assemblies as shown in B), it will not be necessary to tighten the bolts as yet, allowing some adjustment. The axles should be flush with each couple allowing free rotation to occur.

Secure the spring assemblies to the spring anchor brackets as shown in C). The complete assembly should look like D) by this stage. Cut the key to the required lengths and then insert into the slots as shown in E) for the couple.

Attach lifting cable to cable drum in the same fashion described on page 17 and adjust as described, however a key needs to be inserted into place as shown in F) when tightening the grub screws, the couple should allow some adjustment before tightening the bolts connecting the two axles fully.

The springs are tensioned in the same fashion as described on page 20, however with the additional step of insertion of keys into the slots which should be lined up between the winding drum and axle then fixed firmly in place with grub screws, G).



2.10 INSTALLING COUNTERBALANCE SYSTEM

Place the torsion bar assembly into position, resting both ends over the top of the horizontal tracks. Ensure that the side bearing brackets are situated on the inside of the horizontal tracks, see Figure 2.10.1.

Ease the side bearing brackets as far forward toward the wall using the spring anchor bracket as a guide (the axle must be parallel with opening). Tighten into position, see Figure 2.10.2.

Now secure the spring anchor bracket firmly into a solid foundation of either brickwork, timber studs, head or into the ceiling, whichever will support the lifting system correctly, ensuring that the axle is straight - packing may be necessary.

FIGURE 2.10.1 RESTING AXLE ASSEMBLY

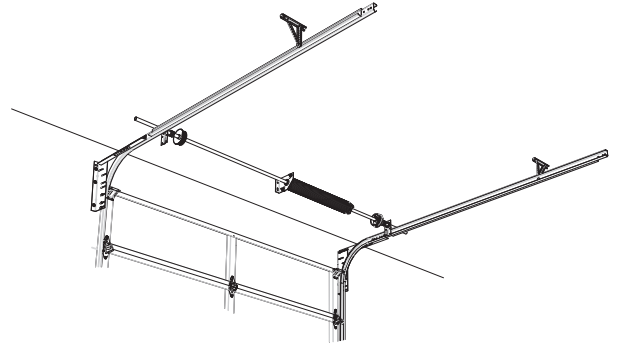


FIGURE 2.10.2 ATTACHING SIDE BEARING & SPRING ANCHOR BRACKETS

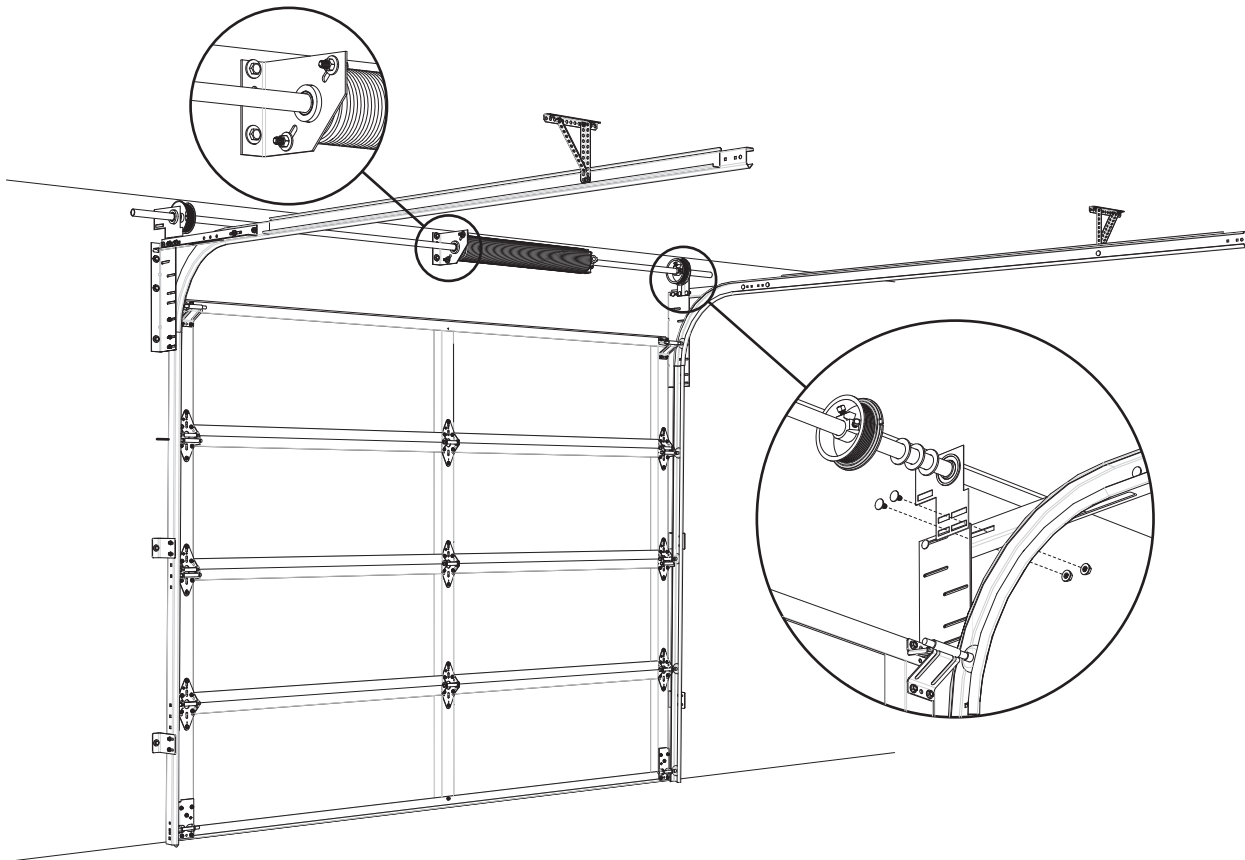
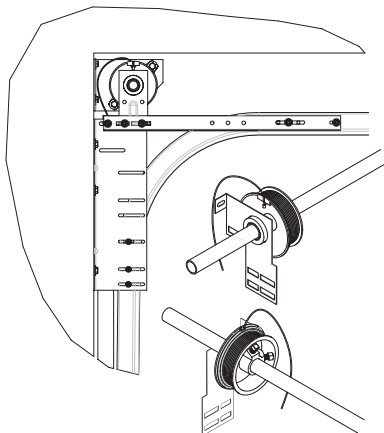


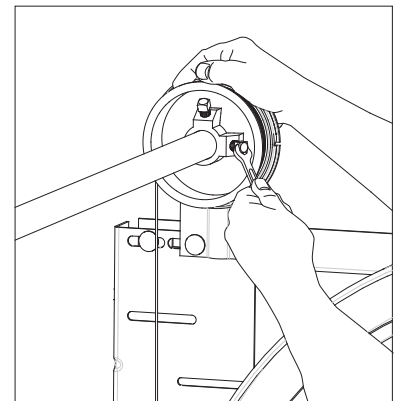
FIGURE 2.10.3



Now secure the springs to the spring anchor bracket using 9.5 x 38.1mm hexagonal head bolts and 9.5mm washers and nuts.

Attach the lifting cable to the cable drum by slipping the cable into the slot on the outside groove. (The ferrule will prevent the cable from coming out), Figure 2.10.3. Wind the cable by hand turning away from the door in an up and over direction. Once the cable is taut, slide the cable drum against the end bearing bracket and tighten the 9.5mm set-screws securely to the torsion bar. Be careful not to over-tighten the set-screws, Figure 2.10.4.

FIGURE 2.10.4



NOTE: Dimpling the shaft with a drill helps.

2.11 REAR TORSION INSTALLATION

BOTTOM HANGERS: Find the Low Lift Bottom Hangers, the cables, Clevis Pins, Humpback Spring Pins, and washers. Assemble Low Lift Bottom Hangers as shown in Figure 55 A. Then assemble onto the bottom panel as shown in Figure 55 B.

AXLE ASSEMBLY: The axle assembly for rear torsion is different in that the Side Bearing Brackets are replaced with Sheave Bracket Rear Torsion off which the springs are mounted and which are connected to the free ends of the horizontal tracks rather than directly over the opening.

Figure 57 illustrates the assembly of single spring rear torsion installation. A shaft Collar is still required and fixed on the spring side of the Flat Spring Anchor Brackets as shown in Figure 56.

Figure 58 demonstrates a double spring rear torsion installation, which like a single spring rear torsion door has the springs mounted off the sides on the Flat Spring Anchor Brackets rather than the centre.

For both variations the cable drums are mounted on the outside of the track and brackets with the grub screws pointing away from the centre as shown in Figure 59. Additionally the red and black springs are put on opposite sides of the axle than for a standard installation.

FIGURE 2.11.1 BOTTOM HANGERS

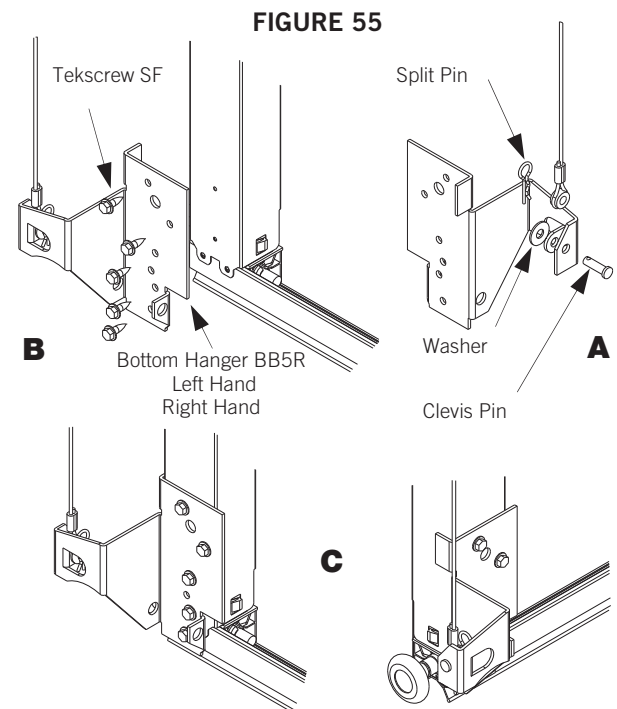


FIGURE 2.11.2 AXLE ASSEMBLY

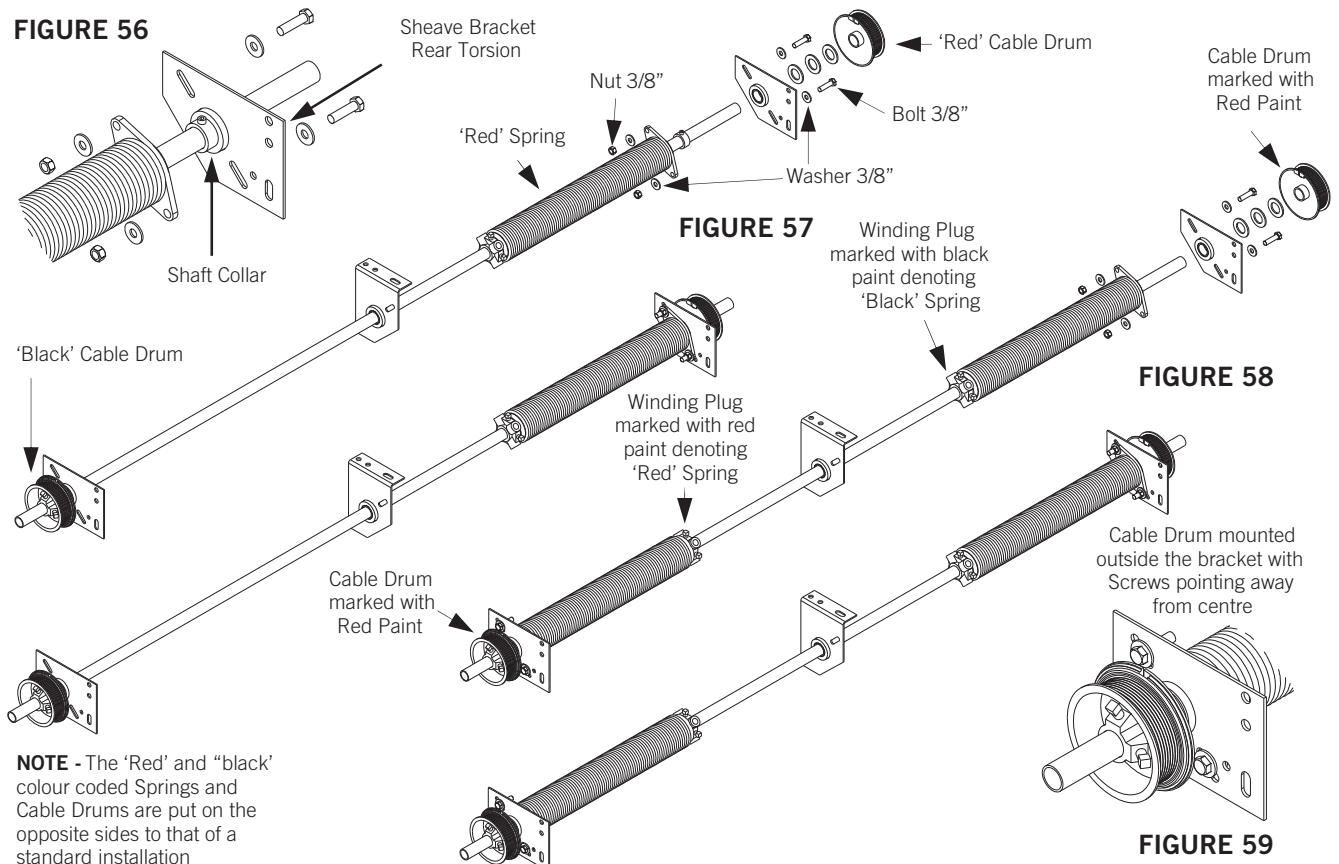
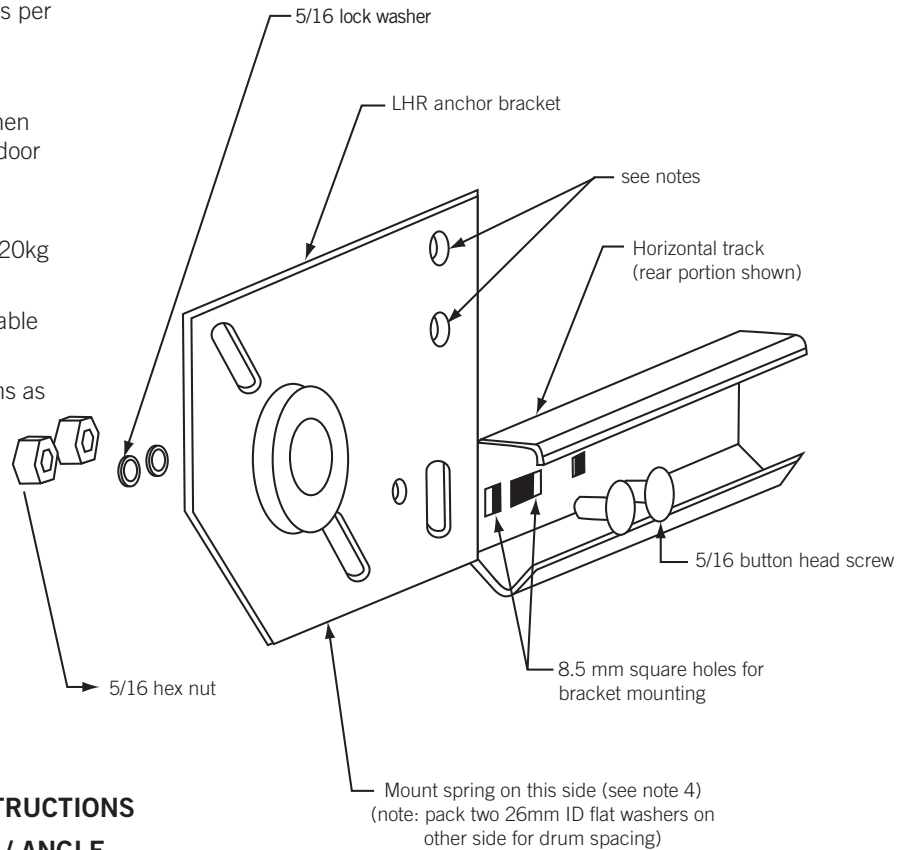


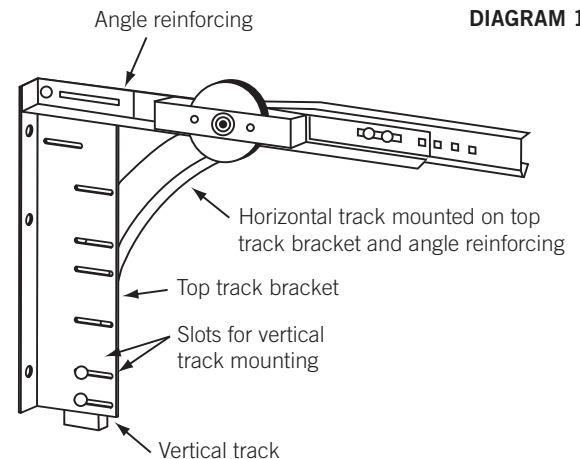
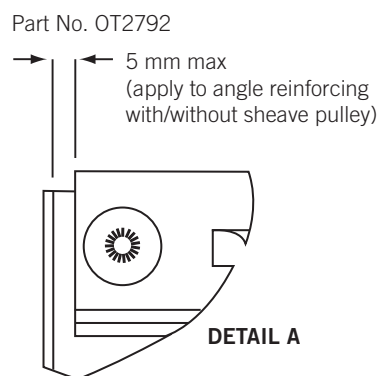
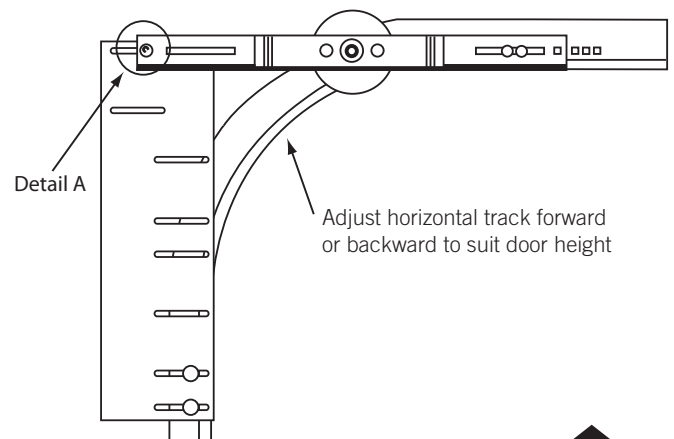
FIGURE 2.11.3 REAR TORSION LOW HEADROOM BRACKET INSTALLATION INSTRUCTION

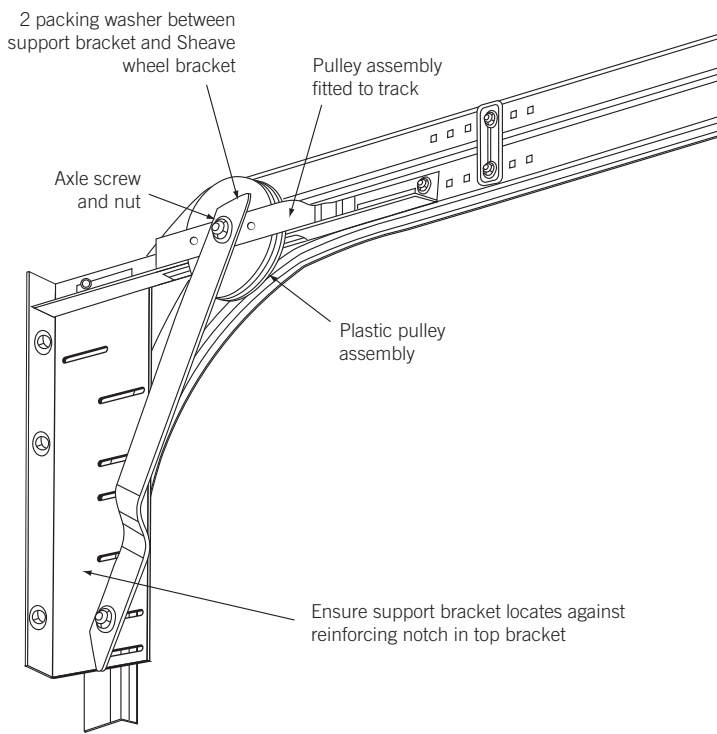
1. Mount LHR brackets on horizontal tracks as per diagram on right.
 - (1) Left hand mounting shown only.
 - (2) Use perforated angle lines to strengthen middle portion of horizontal tracks if door weight is over 100g.
 - (3) Extra holes provided on bracket for strengthening if door weight is over 120kg or double track installation.
 - (4) The bearing flange should face the cable drum.
2. Mount torsion bar, spring/s and cable drums as normal.


**FIGURE 2.11.4 LOW HEAD ROOM INSTRUCTIONS
SHEAVE PULLEY BRACKET ASSEMBLY / ANGLE
REINFORCING INSTALLATION INSTRUCTION
(P/NO.T2791)**

NOTE: Use angle reinforcing for standard head room doors.

1. Mount vertical track on top track bracket by using two (2) #1/4 nuts and bolts (see Diagram 1).
2. Mount top track bracket (with vertical track) on wall as normal.
3. Mount one end of the LHR sheave pulley bracket assembly (P/No. T5244) on top track bracket to a position as shown in Diagram 2 by using one (1) #6/16 nut and bolt. **NOTE:** Use angle reinforcing (P/No. T5482) instead of sheave pulley bracket assembly for SHR doors.
4. Mount Horizontal track on top track by using one (1) #1/4 nut and bolt and on angle reinforcing by using two (2) #5/16 nuts and bolts (see Diagram 1 and 2).
5. Adjust vertical and horizontal track position as normal.


DIAGRAM 1

DETAIL A

DIAGRAM 2



1. Mount sheave pulley and angle reinforcing bracket sub-assembly as per instructions for Bracket (OT2791).
2. Unscrew sheave pulley axle screw, then remove nut and lock washer (DO NOT REMOVE SCREW).
3. Place two spacing washers and support bracket on to the sheave axle screw and replace lock washer and nut. Tighten to finger tightness.
4. Position support bracket to reinforcing notch in top bracket (see diagram).
5. Mark-off two bolt hole positions and drill two holes 10 mm diameter in top track bracket.
6. Fit support bracket bolts through the bracket and top track support bracket screw on the nylon nut.
7. Tighten all bolts and sheave axle screw and nut.
8. Continue installation to normal procedure.

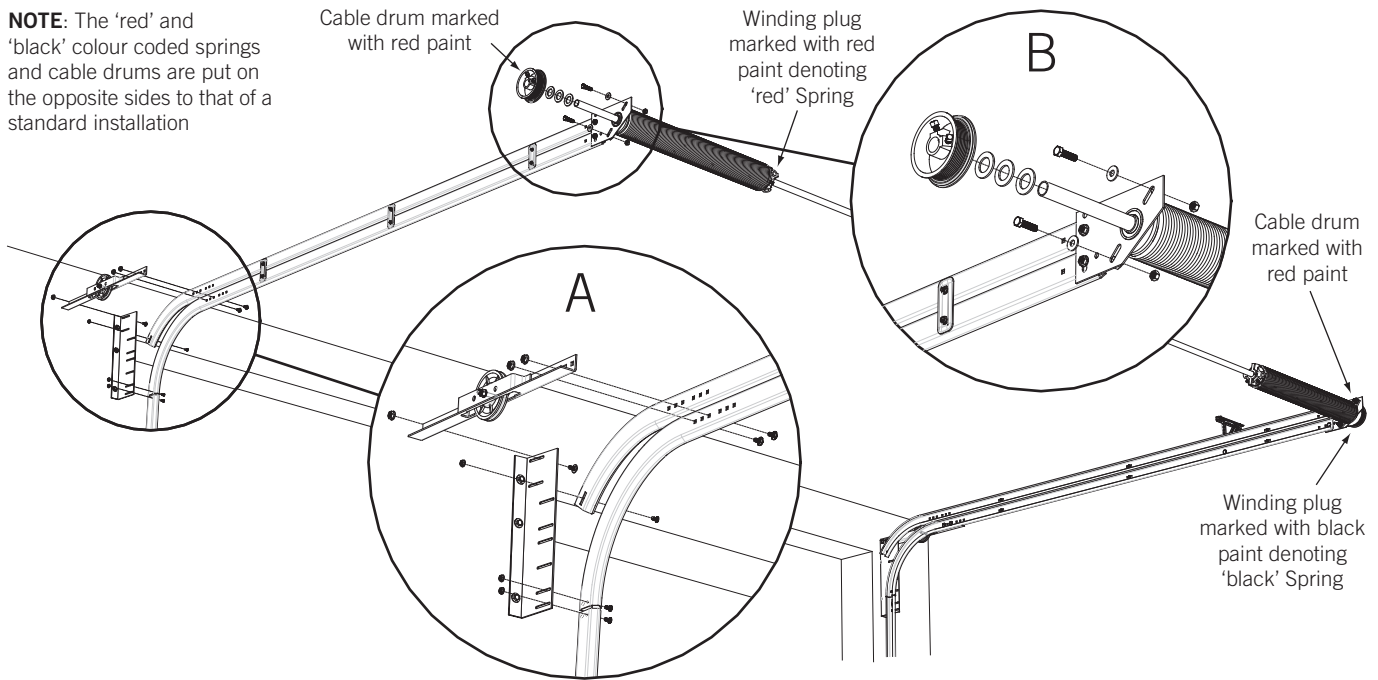
RETRO FIT INSTALLATION INSTRUCTION FOR NEW SHEAVE PULLEY ASSEMBLY (OT5200)

Instructions given here for an experienced door installer.

1. Close door.
2. Release spring tension from door.
3. Remove cables from door.
4. Remove old pulley brackets OT5208 and OT5209.
5. Remove ANGLE REINFORCING OT5482 from track.
6. FIT NEW SHEAVE WHEEL AND BRACKET ASSEMBLY SUPPLIED into this position.
7. MARK OFF TWO HOLE POSITIONS through the support brackets to the vertical track top bracket (OT4670) already installed.
8. Drill two holes each side for the support bracket bolts 10mm diameter.
9. Fit the support bracket bolts through the track and support bracket.
10. Tighten all bolts.
11. Re-assemble the door to normal procedure.

FIGURE 2.11.5 ASSEMBLING ONTO TRACK

NOTE: The 'red' and 'black' colour coded springs and cable drums are put on the opposite sides to that of a standard installation



TORSION BAR INSTALLATION: Fix the flat spring anchor brackets to the free ends of the horizontal double tracks, see Figure 2.11.3B. Rest torsion bar assembly on top of the tracks, then slide axle assembly through one bearing and then through the other bearing. Now secure the springs to the spring anchor bracket using 3/8" x 1 1/2" hexagonal head bolts and 3/8" washers and nuts.

The cable drums are mounted on the outside of the track and brackets with the grub screws pointing away from the centre as shown in Figure 2.11.3B. Additionally the red and black springs are put on opposite sides of the axle than for a standard installation.

Now secure the spring anchor bracket firmly into a solid foundation directly or through the use of steel angle to timber beams onto the ceiling, whichever will support the lifting system correctly. Ensure that 'cut corner' is pointing down in the direction of the opened door, Figure 2.11.4.

Unwind the lifting cable on both sides and thread the cable through the pulley brackets around the pulley wheel and over to the rear drums, Figure 2.11.6.

Attach the lifting cable to the cable drum by slipping the cable into the slot on the outside groove, see Figure 2.10.3 page 18. (The ferrule will prevent the cable from coming out). Wind the cable by hand turning away from the door in an up and over direction. Once the cable is taut, slide the cable drum against the end bearing bracket and tighten the 9.5 mm set-screws securely to the torsion bar. Be careful not to over-tighten the set-screws.

NOTE: The centre of the sheaf pulley wheel and the cable fixing point to the bottom hanger should align when the door is fully open.

FIGURE 2.11.6

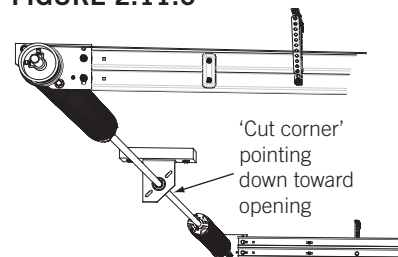


FIGURE 2.11.7

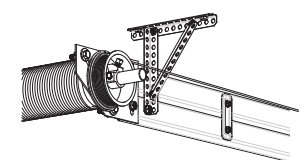


FIGURE 2.11.8

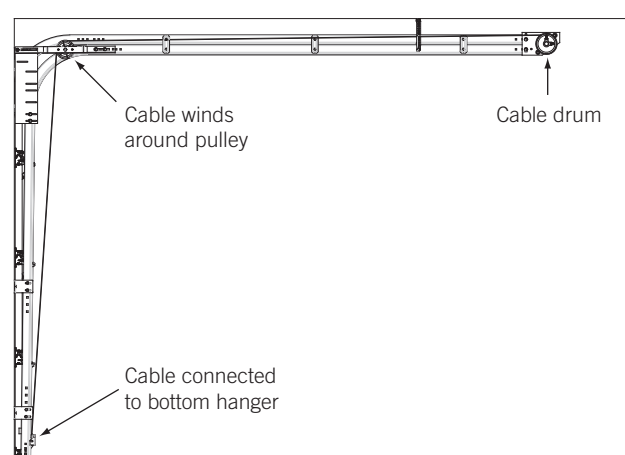
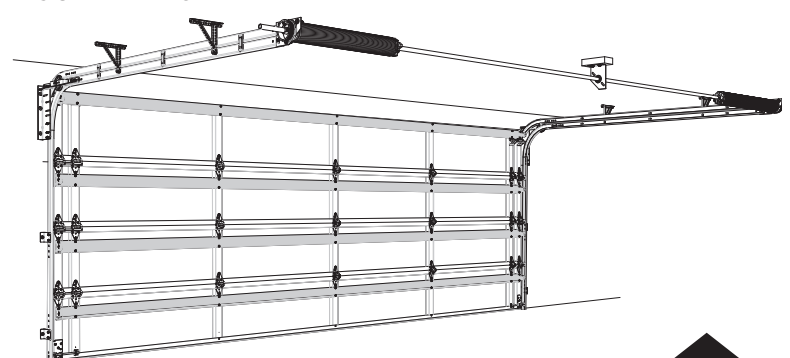


FIGURE 2.11.9



2.12 ADDING TENSION TO SPRING

Secure the torsion bar to prevent any rotation, as shown in Figure 2.12.1.

WARNING: TORSION SPRINGS CAN CAUSE SERIOUS INJURY! IF YOU ARE NOT SURE, STOP NOW! ASK TRAINED PERSONNEL.

The number of turns required for each spring is shown on a paper tag attached to the springs Figure 2.12.2. If the spring is required to have 7.5 turns for example, these are full turns and are equivalent to 30 quarter turns. Alternatively, a line is painted along every spring. If the spring is turned for example 8 times, then 8 lines can be counted along the spring, See Figure 2.12.3.

Turn the spring by inserting winding bars into the winding plug holes and wind up in an up and over direction towards the ceiling, Figure 2.12.4. Once you have completed the amount of turns required, remove one winding bar then tap the remaining bar back towards the spring anchor bracket if spring snaking occurs. Now you can tighten the two set screws with an open ended spanner, Figure 2.12.5. Again be careful not to over-tighten the set screws.

Repeat this procedure if there is more than one spring but remember, always wind the springs, whether left or right hand, in an up and over direction towards the opening.

WARNING: KEEP HANDS CLEAR OF THE SPRING AND THE SPRING WINDING PLUG AT ALL TIMES.

Double check that the set screws are properly tightened, before removing the restraints on the torsion bar.

Test the balance of the door. Put the door into the open position and view along the horizontal tracks. Check that the clearance in the vertical tracks (5-10mm) is also in the horizontal tracks. If you find that the door is binding, open out the horizontal tracks slightly to create the correct tolerance. Once satisfied that the operation of the door is as near perfect as possible, check that all nuts and bolts are tight and oil the springs full length to prevent noise and reduce friction, 'TAL 5' or similar oil rich lubricant in a pressure spray can is acceptable, Figure 2.12.6.

**FIGURE 2.12.1
SECURING TORSION BAR**

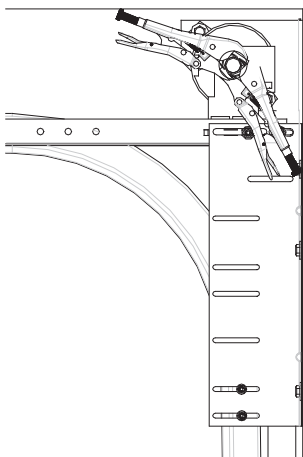


FIGURE 2.12.2 SPRING LABEL

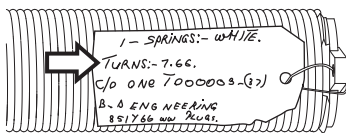


FIGURE 2.12.3 COUNTING THE TURNS

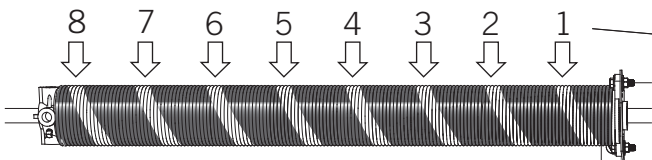


FIGURE 2.12.4 ADDING TENSION

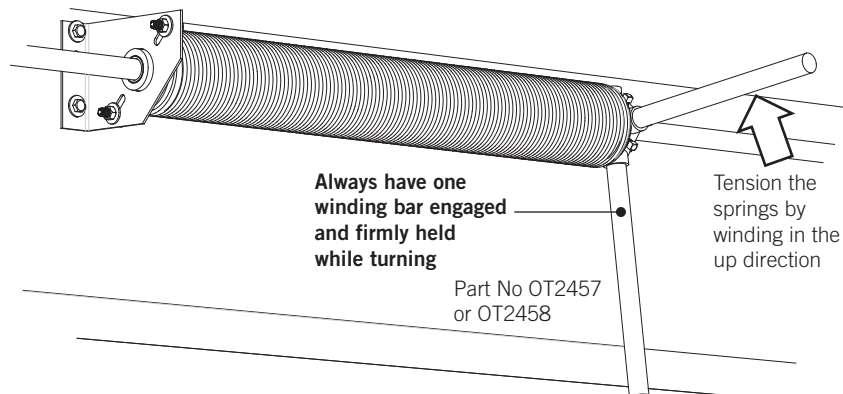
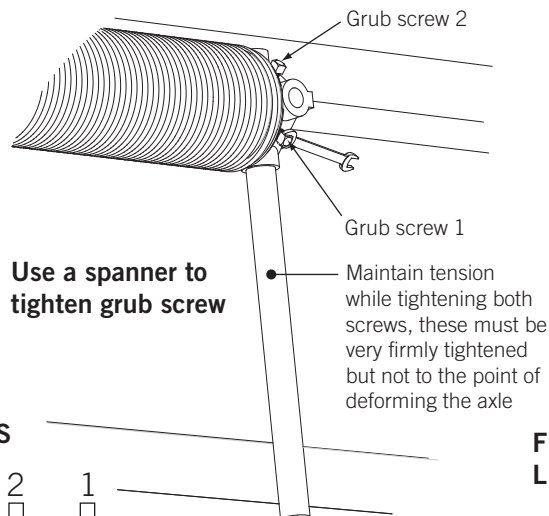
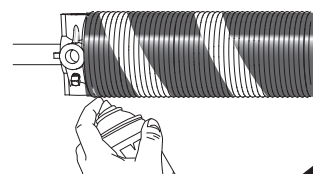


FIGURE 2.12.5 TIGHTENING GRUB SCREWS



**FIGURE 2.12.6
LUBRICATING SPRINGS**



2.13 EXTERNAL DOOR JAMB AND LINTEL SEAL INSTALLATION

The head seal will need to be cut to suit the opening width, it may be necessary to have a join in this section.

Lightly mark the fixing points at approx. 400mm centres, see Figure 2.13.1. Larger spaces will cause sagging and gaps between the seal and the structure. Counter sunk fixings are supplied but it may be necessary to use an alternative fixing depending on the structure.

The solid part of the seal should be flush with the opening so that the flexible section seals firmly to the external face of the door. Begin fixing from one end of the seal, in this way it will fit tighter to the structure without leaving unacceptable gaps. See Figure 2.13.2.

The left and right jamb seals are treated in the same way.

After all seals are fitted neatly cut an internal mitre in the flexible seal at the top left and right corner.

NOTE: When fitting to uneven surfaces it will be necessary to use an appropriate sealant between the back face of the seal and the structure. See Figure 2.13.3.

FIGURE 2.13.1 MARK THE FIXING POINTS

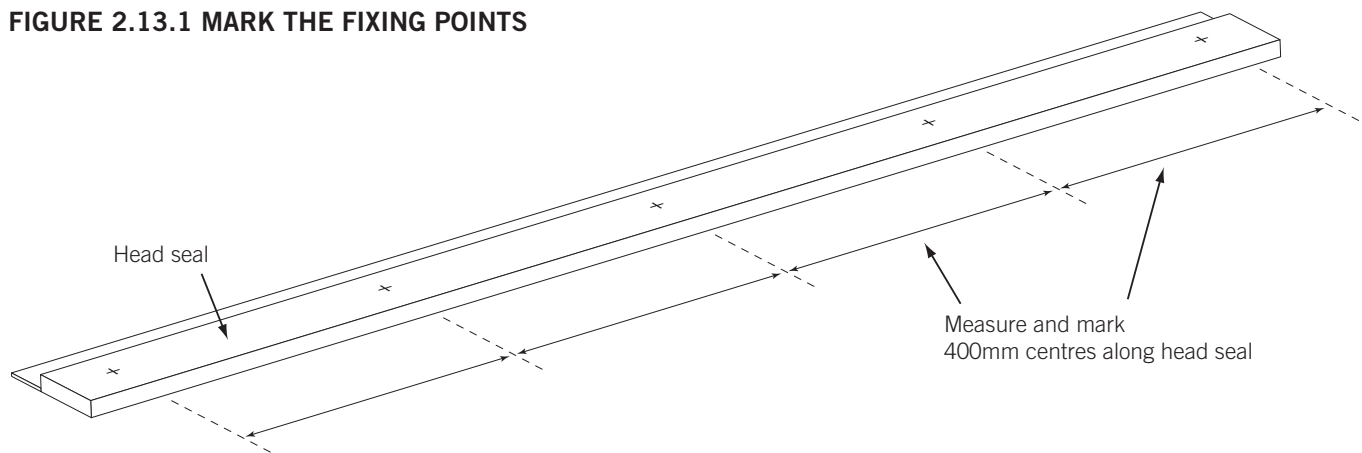
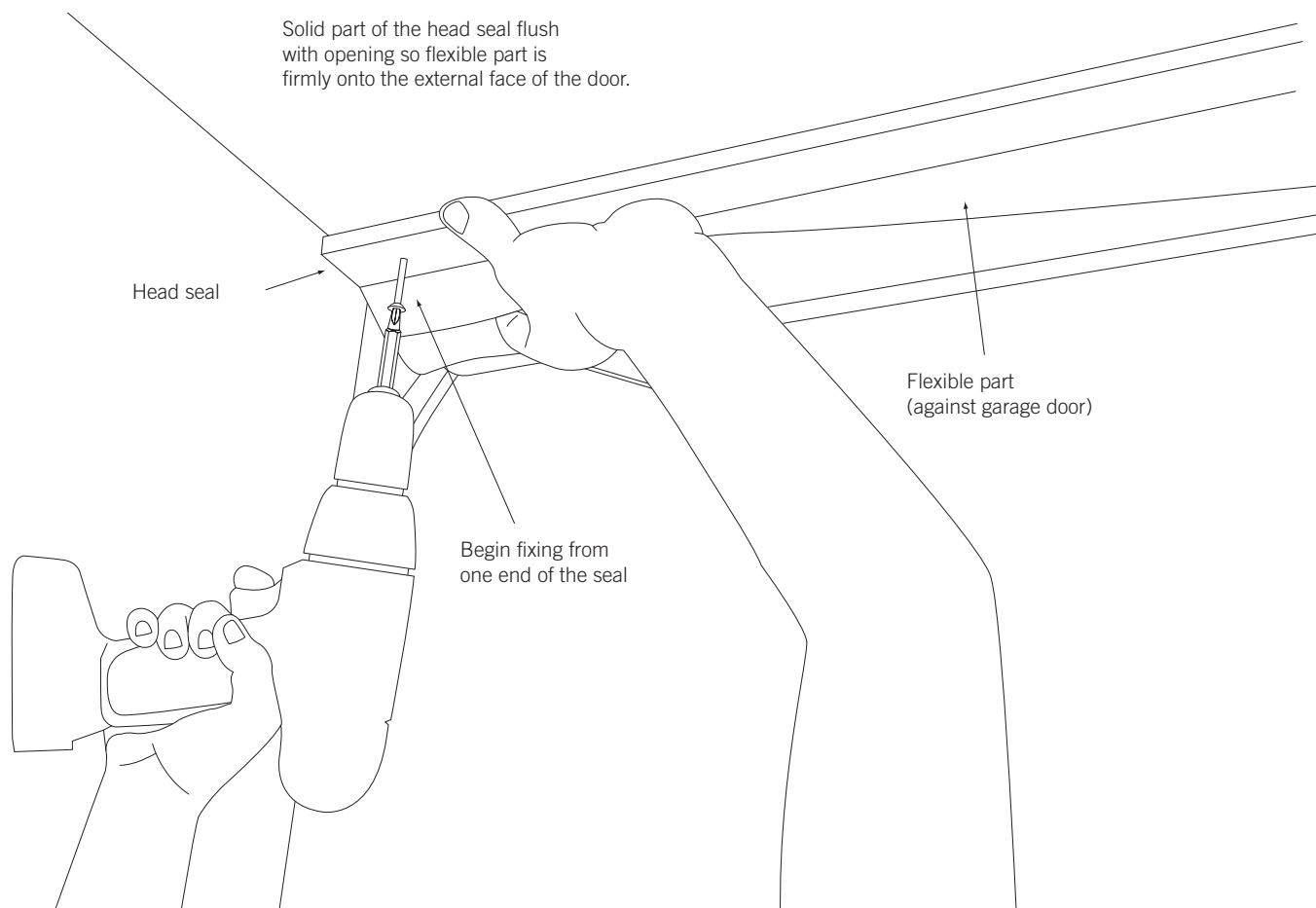
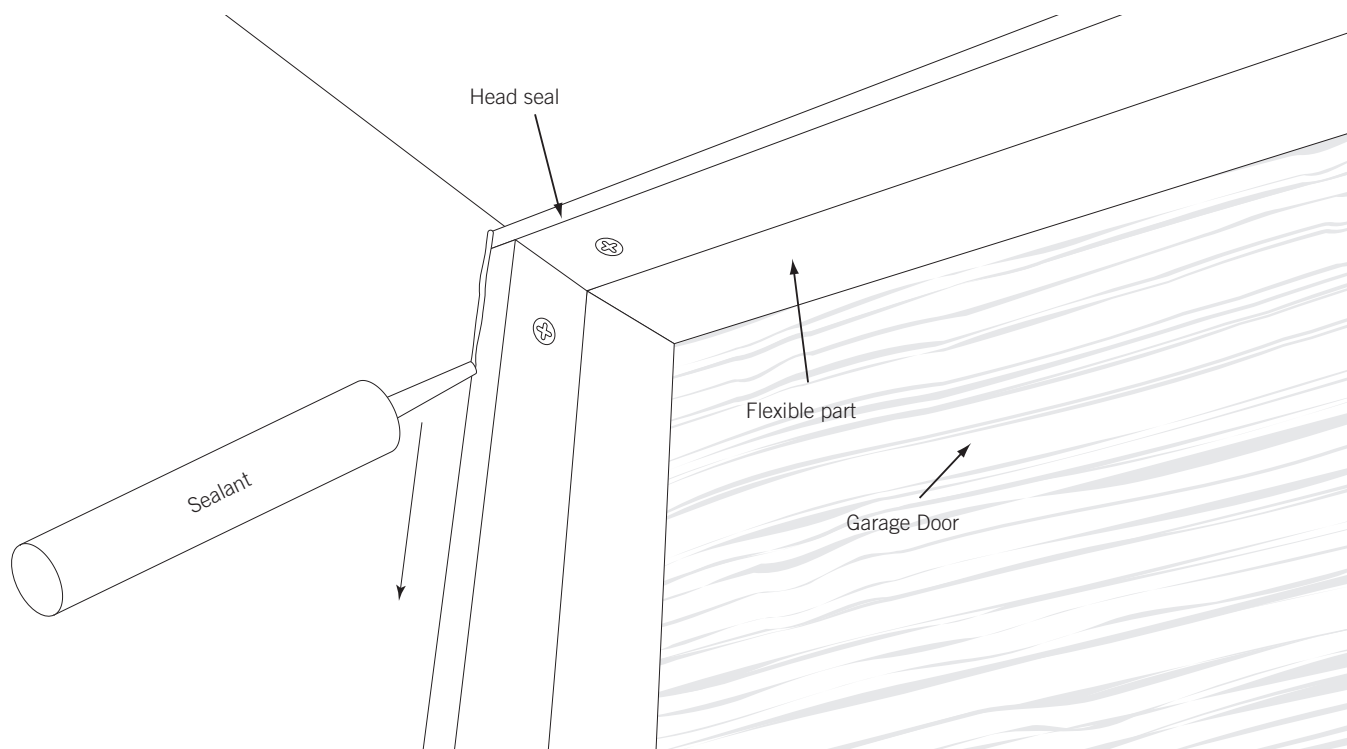


FIGURE 2.13.2 FIXING THE HEAD SEAL

FIGURE 2.13.3 APPLY APPROPRIATE SEALANT


3.0 OPTIONAL COMPONENTS

3.1 LOCK INSTALLATION

NOTE: In coffin garages (those with no access other than the garage door), the lock handle should be installed immediately after fitting the lock panel.

The lock handle is to be fixed to the middle of the second panel. Using lock plate as a guide, centre on central end stile and drill through the end stile and the panel using a 1/2" (13 mm) drill bit for the large hole and a 3/16" (5 mm) bit for the two holes on either side.

Fit the "T" handle to the panel by inserting the lock shaft and the two 3/16" thread bolts into the panel from the outside, through the lock muntin. Attach the 3/16" or 4.7 mm nuts and washers securing the 'T' Handle in place. Next insert the lock guide plate (dimples facing away from door) followed by the internal handle, the lock cam and the second guide plate (dimples facing the door). Lock together with 3/16" nuts and washers, see Figure 3.1.2 and Figure 3.1.3.

FIGURE 3.1.1 PARTS

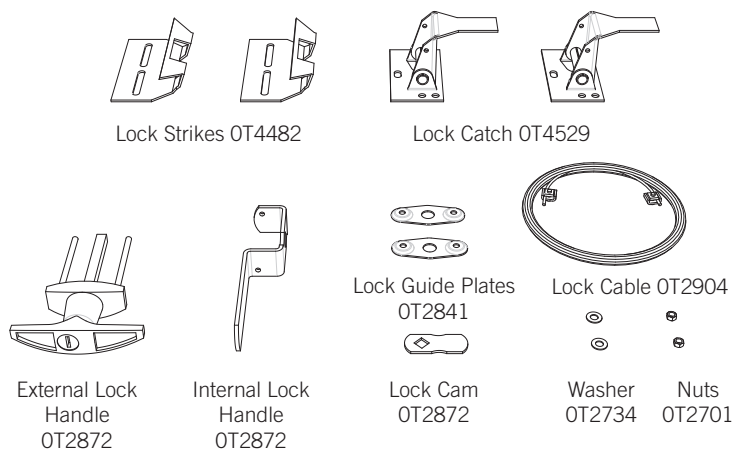


FIGURE 3.1.2 LOCK ASSEMBLY

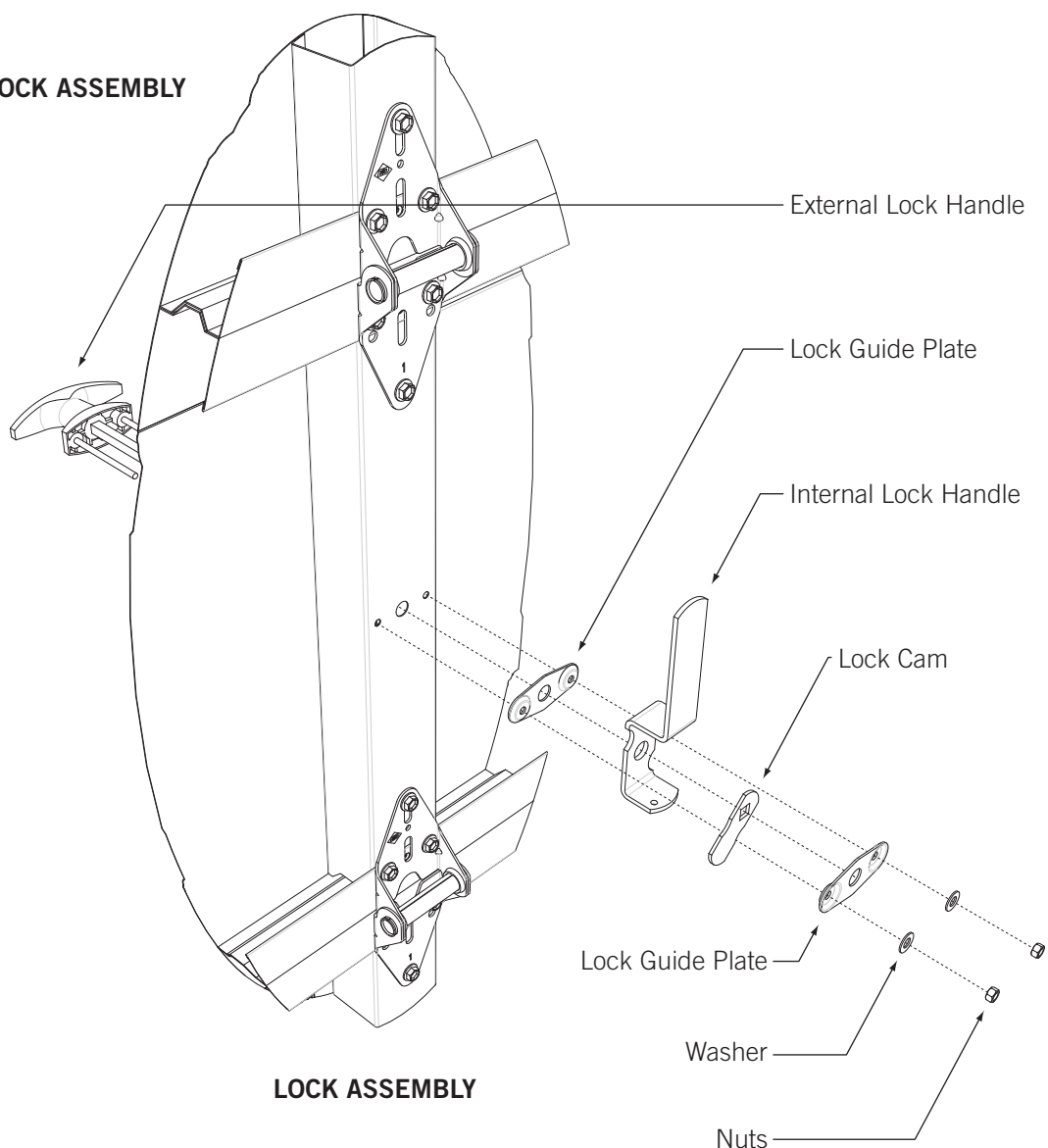
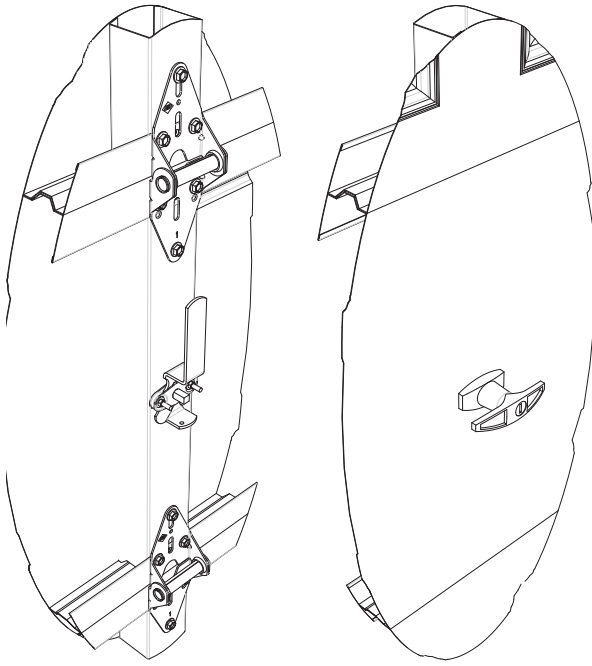
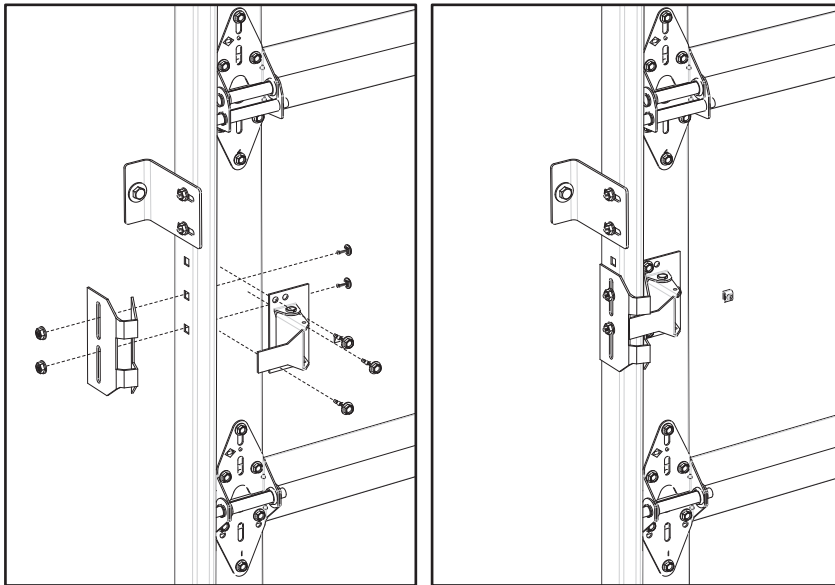
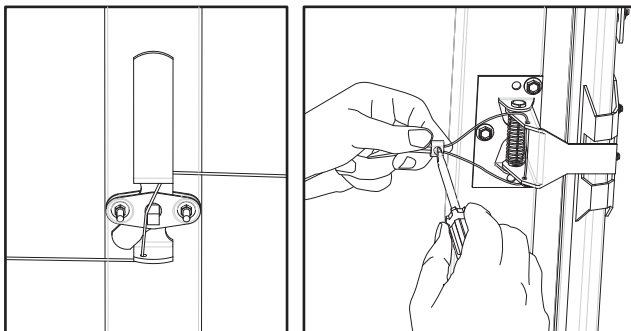
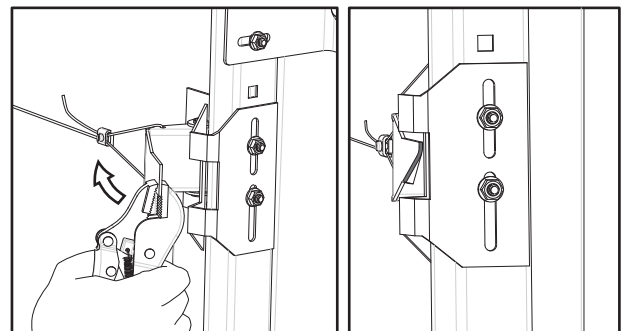


FIGURE 3.1.3

**ASSEMBLED LOCK
INTERNAL VIEW**
**ASSEMBLED LOCK
EXTERNAL VIEW**

Fix the lock catch brackets to each end stile on the lock panel approximately one third to half way up the panel. Drill holes in each (top and bottom) and fix using 1/4" BSW x 1/2" cup-head bolts and nuts. Position the lock strike centrally on each lock catch. Fix into the vertical tracks with the 1/4" BSW x 1/2" cup-head bolts and nuts, Figure 3.1.4.

Fix the lock cable to one of the lock catch arms with the cable clamp. Then slip the lock cable through the internal lock handle and into the other lock catch arm. Make sure to tighten cable clamps, Figure 3.1.5.

To further facilitate smooth operation, the lock strike can be twisted slightly so that it easily slides over the lock catch as shown in Figure 3.1.6, make sure that on the upward movement that the lock strikes becomes firmly engaged.

FIGURE 3.1.4 LOCK STRIKE & CATCH

FIGURE 3.1.5 LOCK CABLE

FIGURE 3.1.6 BENDING LOCK STRIKE


4.0 TROUBLESHOOTING

LIFTING CABLES LOOSE WHEN DOOR IS OPENED

- Cable drums have slipped
- Diagonals out of square
- Check length of lifting cables

TORSION BAR MOVING

- Cable drums not adjusted correctly
- Springs not adjusted correctly
- Shaft collar not fitted (single spring)
- Check end bearing brackets are square and vertical

DOOR WILL NOT HOLD UP IN OPEN POSITION

- Adjust tension on door
- Incorrect springs
- Panel reinforcing fitted incorrectly

DOOR NOT LEVEL

- Check water level marks are correct
- Lifting cable not equally taut

DOOR MOVING TO ONE SIDE

- Clearances incorrect
- Cable drum not hard up against end bearing brackets

DOOR PANELS JAMMING/RUBBING ON TRACKS

- Incorrect clearance between wheel and vertical track
- Door out of level
- Cable drum not lined up correctly
- Vertical tracks not parallel
- Lifting cables slipping

DOOR HARD TO LIFT

- Incorrect tension on springs
- Spring may have slipped on set screws
- Wrong spring
- Check all panel reinforcing on door panel

If all points have been checked please seek manufacturer for service.

COMMON SPRING PROBLEMS

SYMPTOM	CAUSE	SOLUTION
Door raises from the floor and hangs down in opening	Cable length too long with cable not on high portion of drum Springs may be too strong (too short) Wrong cable drums for springs (too small)	Shorten cable length until the cable rolls onto the flat portion of the drum when the door starts into the horizontal position Replace spring Replace cable drums
Door lifts from the floor and runs away at the top	Door is over tensioned. Too many turns on spring or wrong spring Wrong cable drums for spring, (too small)	Ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns applied Replace cable drums
Door falls to the floor and hangs down in the opening	Door is under tensioned too few turns on spring or wrong springs Wrong cable drums for springs (too large)	Ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns have been applied Replace cable drums
Door falls to the floor and runs away at the top	Lifting cable may be too short for high lift cable drum or vertical lift drum and is sitting too high on the spiral portion of the drum Torsion springs too long	Increase the cable length to bring the cable down lower on the spiral Shorten springs
Door balances at the floor but runs up or down in between	Cables in wrong position on spiral of the drums	Adjust cable length
Poor balance throughout	Winding spring in wrong direction Door weight incorrect Springs binding Door not level	Wind in correct direction Supply correct springs Fit torsion bar collar Lubricate springs Cable lengths are equal Equal turns on both springs Level door during installation

5.0 AFTER INSTALLATION CARE

GENERAL CARE OF YOUR ENVIROPANEL™

CLEANING

COLORBOND® & COLOURED STEEL FINISH Your B&D Enviropanel™ has been pre-painted with a silicone modified polyester formulation, which is one of the best paint films commercially available today. However, all exposed surfaces require some attention to guard against the premature onset of corrosion and any other harmful atmospheric effects. In our atmosphere there are harmful deposits that gather on the door surface and if not removed regularly, will seriously affect the appearance and life of the door.

Washing of the door with clean water and a cloth every 14 days is recommended – particular care should be taken to clean areas of the door not normally washed by rain.

LOCK

Your lock does not require special maintenance, however, if the keyway becomes stiff, the application of powdered graphite is recommended – do not grease or oil the lock.

WARNING! Do not disassemble the lock mechanism and do not allow paint to enter the lock keyway.

HINGES & HANGERS

If the hinges and hangers squeak and squeal during operation then the hinges haven't been greased or the grease has dried up. Please apply some grease to the shaft to minimise this.

CABLES

Check the cables regularly for corrosion, fraying or tangling, if any of these are evident call your service provider.

REGULAR MAINTENANCE REQUIRED

B&D recommends that you check the operation of your Enviropanel™ at least every six months (more regularly in extreme environments or frequent use). The effort required to manually open and to manually close the door should be about the same (if door has an automatic opener, put into manual mode before testing door).

If the door is difficult to operate in either direction (up or down) then check that the inside surfaces of the guides are clean and free of obstructions.

If the door is still difficult to operate, then your door will need a service to adjust the spring tension and possibly other operational parts of the door.

This service should only be carried out by an experienced door technician, using the correct tools.

If you have an automatic opener fitted to your door, it is particularly important that you ensure the optimum operation of the door, otherwise you may reduce the effective life of the opener.

To keep your door running well, it is recommended that your door be serviced, by an experienced door technician, every 12 months (more regularly in extreme environments or frequent use), or earlier if required.

SPRING TENSION

It is natural for springs to lose tension over time. When spring tension is adjusted or when your door is first installed it is usual to apply a little more tension than is required for balanced operation, to allow for the normal "settling in" of the springs.

WARRANTY

The B&D Enviropanel™ in residential use is covered by a 12 month warranty for complete door and parts, surface (excludes salt corrosion).

Warranty conditional on proper care as recommended above. Full details of the warranty are available from www.bnd.com.au

B&D Doors Office Locations:

New South Wales:	34 Marigold St, Revesby 2212.	Phone: (02) 9722 5555
Queensland:	17 Oasis Court, Clontarf 4019.	Phone: (07) 3883 0200
Newcastle:	Unit 1/108 Mitchell Rd, Cardiff NSW 2285.	Phone: (02) 4956 8533
Victoria:	147-153 Canterbury Rd, Kilsyth 3137.	Phone: (03) 9237 7766

South Australia:	23 Frederick Rd, Royal Park 5014.	Phone: (08) 8440 4747
Western Australia:	96 Mulgool Rd, Malaga 6090.	Phone: (08) 9247 8777
International/Export:	34 Marigold St, Revesby 2212.	Phone: +61 (0)2 9722 5555



Prefixed trademarks are the property of B&D Australia Pty Ltd
B&D Doors & Openers is a division of B&D Australia Pty Ltd
ABN 25 010 473 971
Copyright 2013 B&D Australia Pty Ltd.

www.bnd.com.au

YOUR REPRESENTATIVE IS