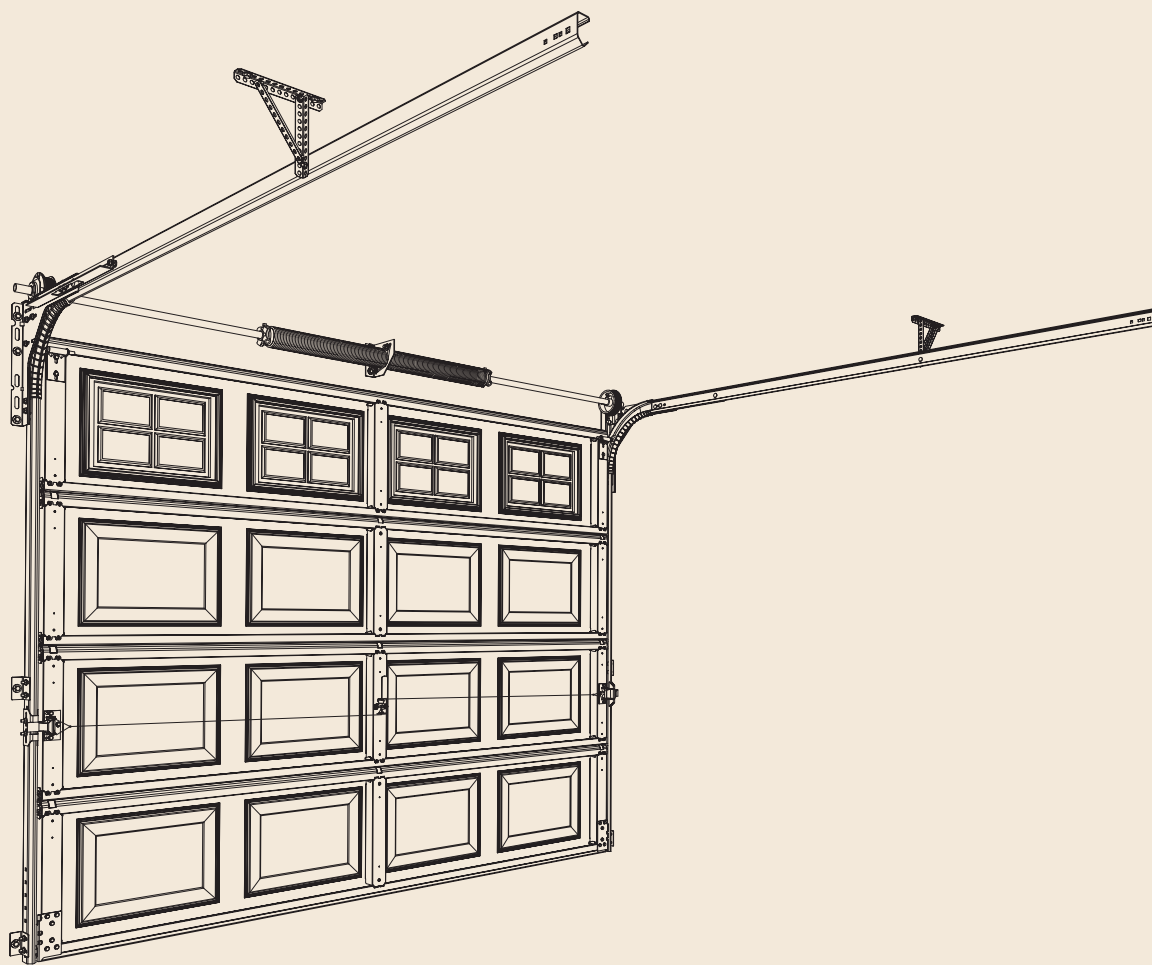




INSTALLATION INSTRUCTIONS



DISCLAIMER

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

Note: All references are taken from inside looking out



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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
- Housekeeping - risk of slip trip or fall - Housekeeping - risk of injury to other people or animals in the installers work area	- 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
- 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	- Pack sizes - Use of 2 person lifts - Use of mechanical aids - Avoid twisting (Practice correct lifting techniques) - Correct use of ladders while installing tracks
Working at heights and working with ladders, scissor lifts, scaffold - risk of fall from height	- Ladder check - Ladder placement - Do not work off the top rung
Sharp edges on door, tracks or related jewellery - risk of laceration	- 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
Pinch points - risk of cut, puncture or crush injury	- Wear appropriate PPE and keep hands well clear of pinch points - Ensure hands well clear of the panels
- 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	- 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
Tension spring - risk of release of stored energy (striking installer on the head or body)	- 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.

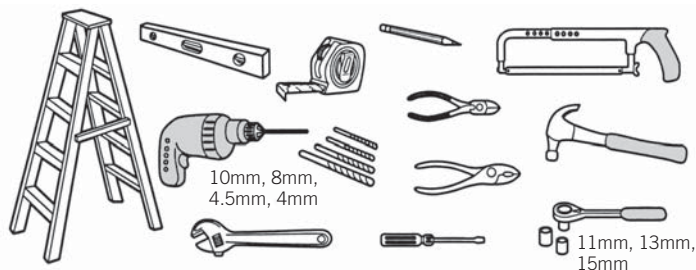
The installer must select and use fasteners appropriate to the material into which they are being fixed.

1.3 TOOLS CHECKLIST

The following tools are needed to install sectional overhead doors.

- Hammer
- Spirit level 1200mm/water level 7-8 metres (clear hose)
- Measuring tape
- Extension lead
- Step ladder
- Speed drill and drill bits (6mm)
- Impact drill and masonry bits (10mm)
- Hack saw
- Open end adjustable spanner
- A set of open end spanners
- Socket set and speed brace
- Set square
- Wood chisel
- Steel chisel
- Cutting knife

- Wood and steel punch
- Screw driver set
- Pliers
- Tin snips
- 2 vice grips
- Felt tip pen & pencil
- 2 winding bars OT5480-1



1.4 PARTS CHECKLIST

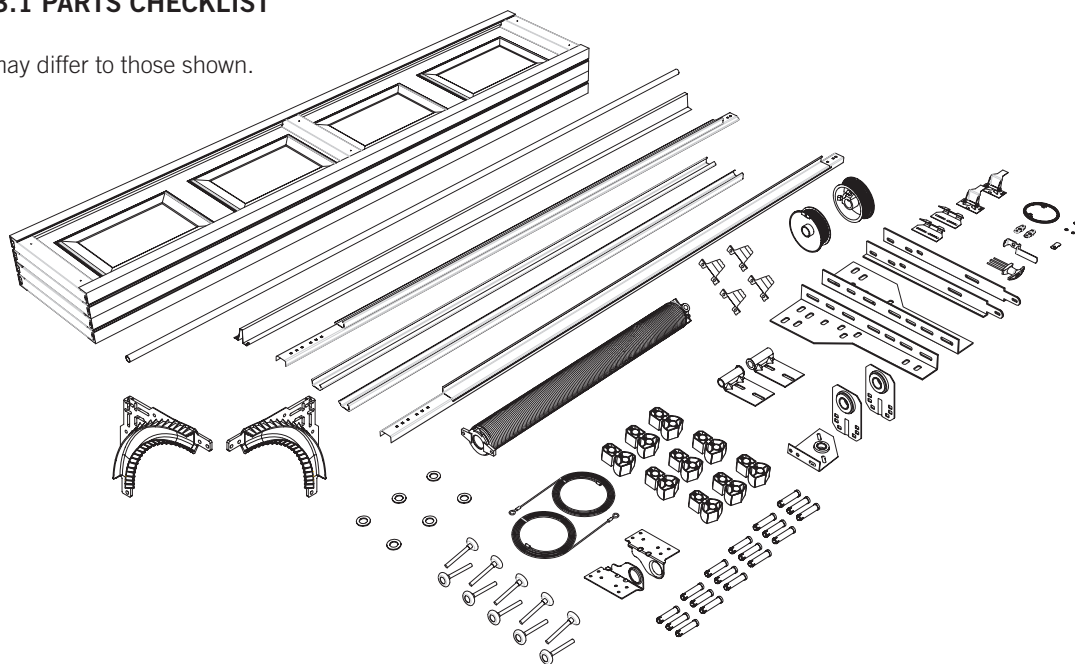
When taking delivery of your sectional overhead door you will be supplied with the following:-

- 1 package with door panels
- 2 pairs of tracks short for vertical use, and long for horizontal use
- 1 torsion bar
- 1 parts box (refer to chart below)
- 1 or 2 springs
- Panel Reinforcing (refer to chart below)

Panelift PPF, Standard Headroom, Parts Box Matrix																	
Number of Panels	Door Width Break Points (mm)														PPF4 & 5		PPF1, 2 & 3
	1750	3050	3055	3550	4705	4710	4895	4900	5285	5290	5570	5575	5740	5745	6100	6105	6600
4 Panels	Box S6		Box S7		Box S7		Box S10		Box S10		Box S10		Box S10		Box S10		
	Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		
5 Panels	Box S8		Box S9		Box S9		Box S11		Box S11		Box S11		Box S11		Box S13		
	Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		
6 Panels	Box S12		Box S12		Box S12		Box S13		Box S13		Box S13		Box S13		Custom Box (NSW)	Custom	
	Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Box S13 + Coupling (Qld)				
													Solid Torsion Shaft				
7 Panels	Custom		Custom		Custom		Custom		Custom		Custom		Custom		Custom		
	Torsion Tube		Torsion Tube		Torsion Tube		Torsion Tube		Solid Torsion Shaft		Solid Torsion Shaft		Solid Torsion Shaft		Solid Torsion Shaft		
Panel Reinforcing	Nil		Top Panel Only		All Panels												
	1750		3545	3550	4705	4710											6600

FIGURE 1.3.1 PARTS CHECKLIST

Note: Parts may differ to those shown.



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 one panel height and multiply by the number of panels to give you the door height.

For Standard Installations

Sideroom	120mm	
Headroom	250mm	(Doors 4 panels high) (including automatic opener)
		(Doors 5 panels high & 6600mm wide)
	390 mm	(All other sizes)

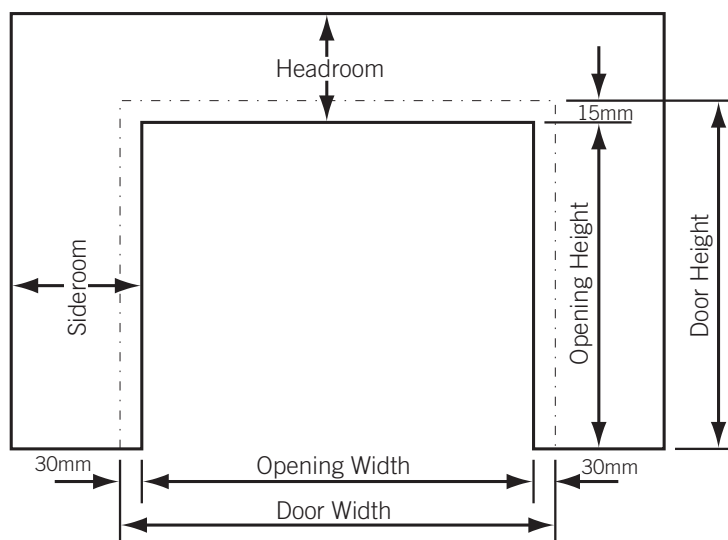
For Low Sideroom Installations (with or without automatic opener)

Sideroom	100mm
----------	-------

For Rear Torsion Installations

Sideroom	155mm	(doors up to 15m ²)
	295mm	(doors greater than 15m ²)
Headroom	190mm	(doors to 5285mm wide) (add 50mm for automatic opener)
	200mm	(doors over 5285mm wide) (add 50mm for automatic opener)

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

If installing taper please consult page 23. Open up the pack of door panels making sure the bottom panel (weather strip seal on the bottom of the panel and Bottom Hinge Hole see Figure 2.1.1) is on top of the pack.

If using a rear torsion system a different hanger is required, please consult Low Headroom / Rear Torsion Installation. Locate both bottom hangers and cables. Insert cable through the holes of the bottom hanger as shown in Figure 2.1.2A.

Remove existing screws in the two bottom corners of the panel near the weather strip and discard, see Figure 2.1.2B. Attach the bottom hangers to the lower end of the door using 6 TEK screws in each as shown in Figure 2.1.2C. Do not unwind lifting cable until specified later to do so.

Insert links into the recesses of the top of the panel and fix into place using the pins. Also insert wheel-axes into the bottom sides of the panel as shown in Figure 2.1.3.

PARTS USED

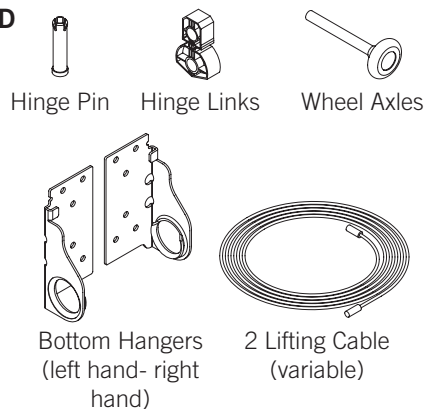


FIGURE 2.1.1

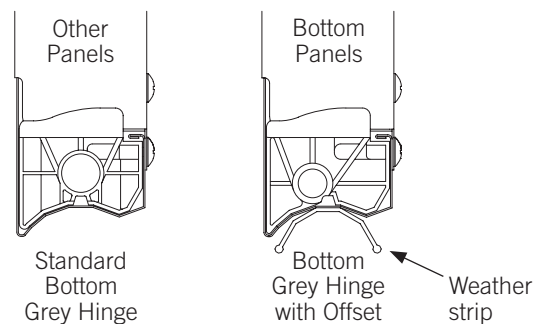


FIGURE 2.1.2

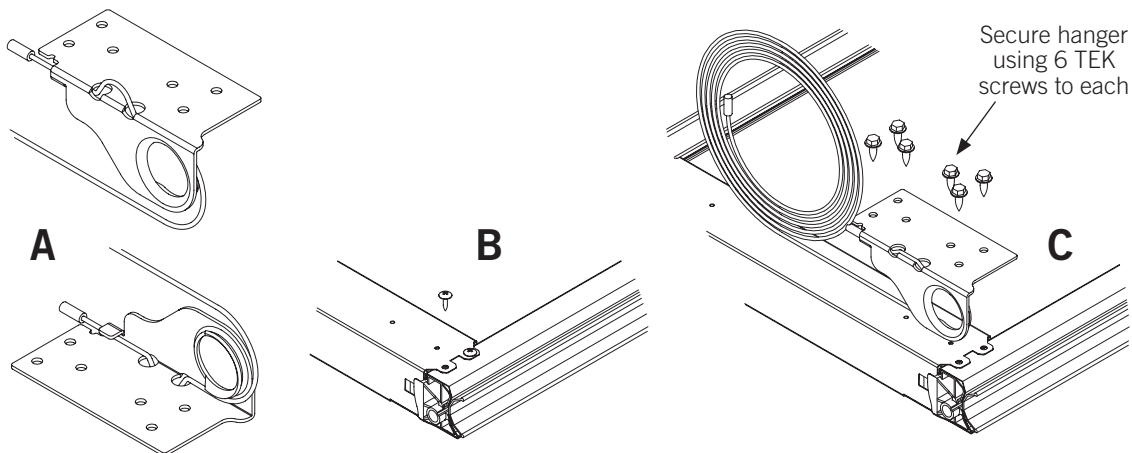
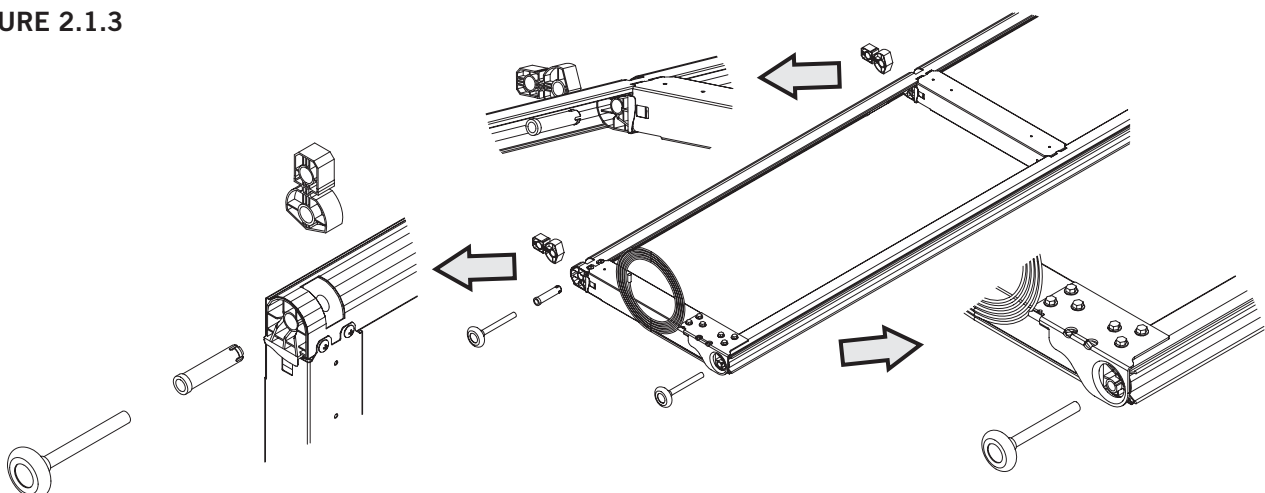
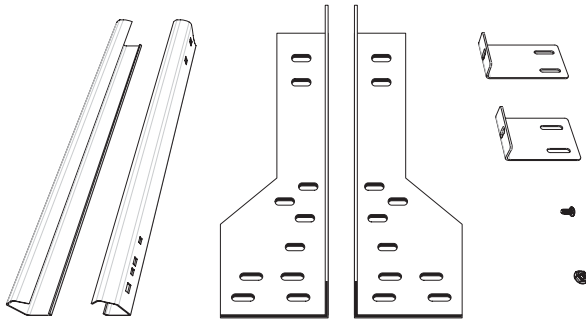


FIGURE 2.1.3



2.2 ASSEMBLING VERTICAL TRACKS

PARTS NEEDED



The vertical tracks should be:

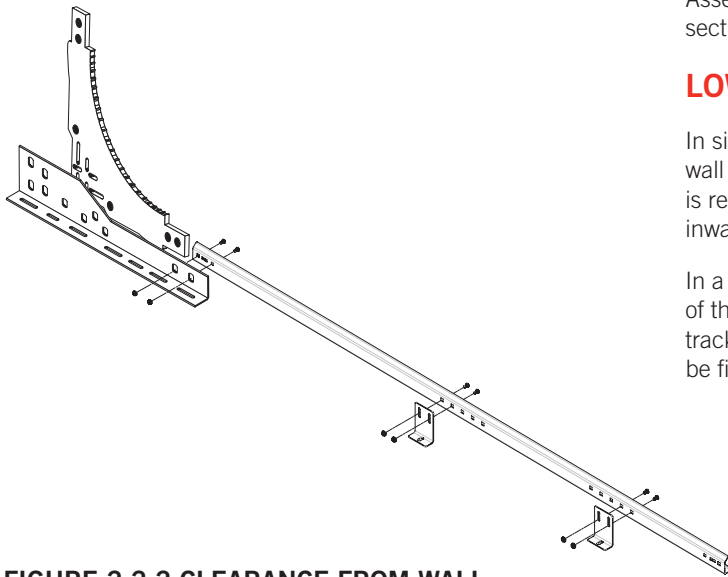
Door height less 177mm for standard and low headroom.

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

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 8mm – 5mm off the wall respectively when set against the door jamb as shown in Figure 2.2.2.

FIGURE 2.2.1 TRACK ASSEMBLY



Assemble the rest of the brackets onto the tracks ensuring the “V” section points away from the wall bracket.

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.

FIGURE 2.2.2 CLEARANCE FROM WALL

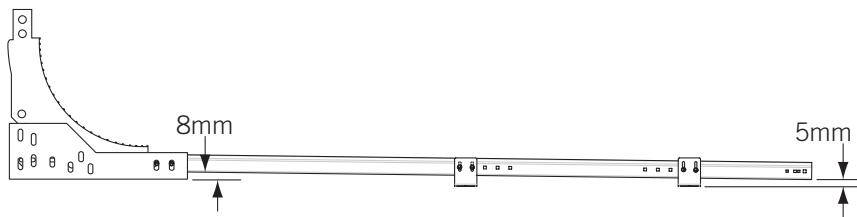
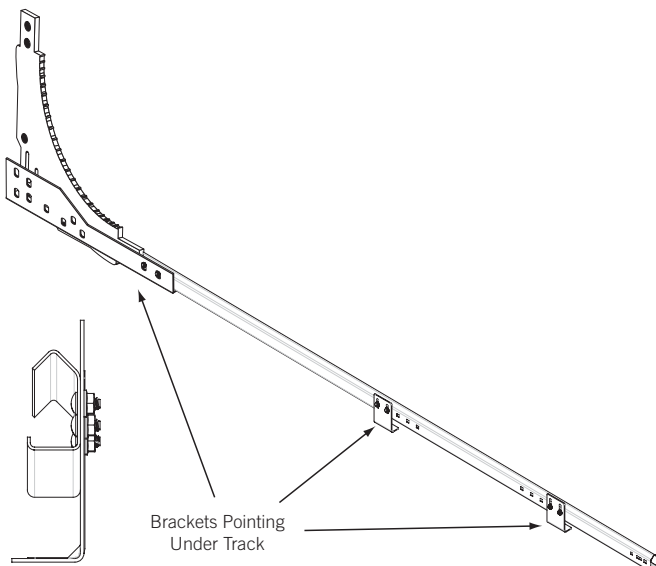


FIGURE 2.2.3 LOW SIDEROOM



2.3 INSTALLING BOTTOM PANEL

If installing taper please consult pages 23.

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

Vertical track height is door height less 177mm for both standard and rear torsion doors.

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 WATER LEVEL

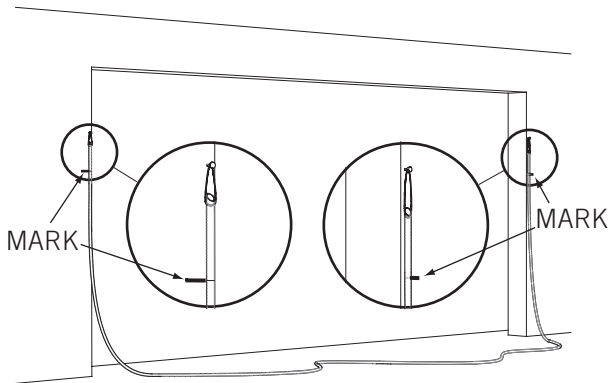
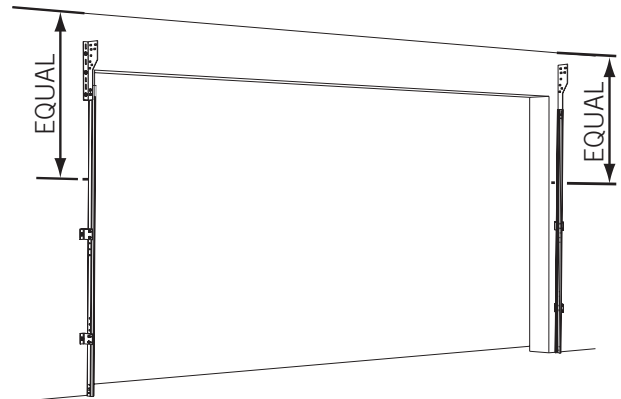
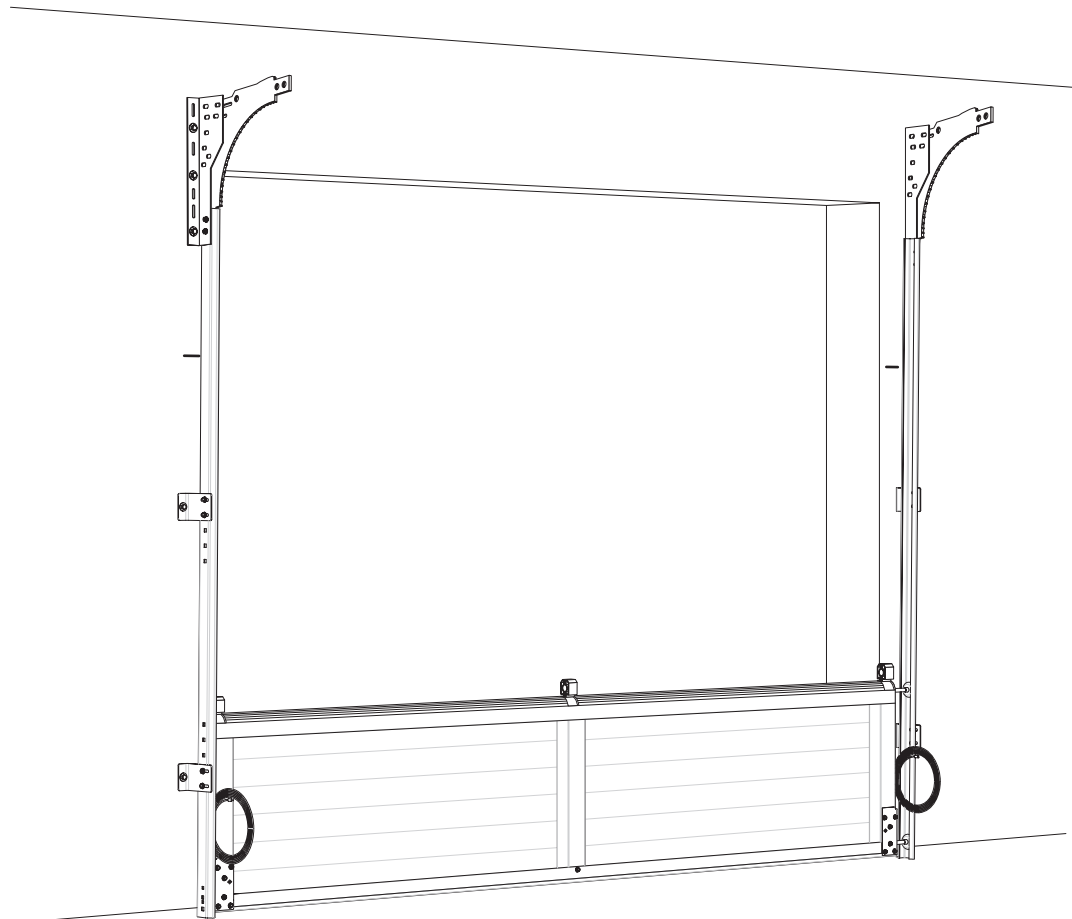


FIGURE 2.3.2 INSTALLING VERTICAL TRACK



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 (Figure 2.3.3). Once satisfied secure all fixing points on the vertical tracks.

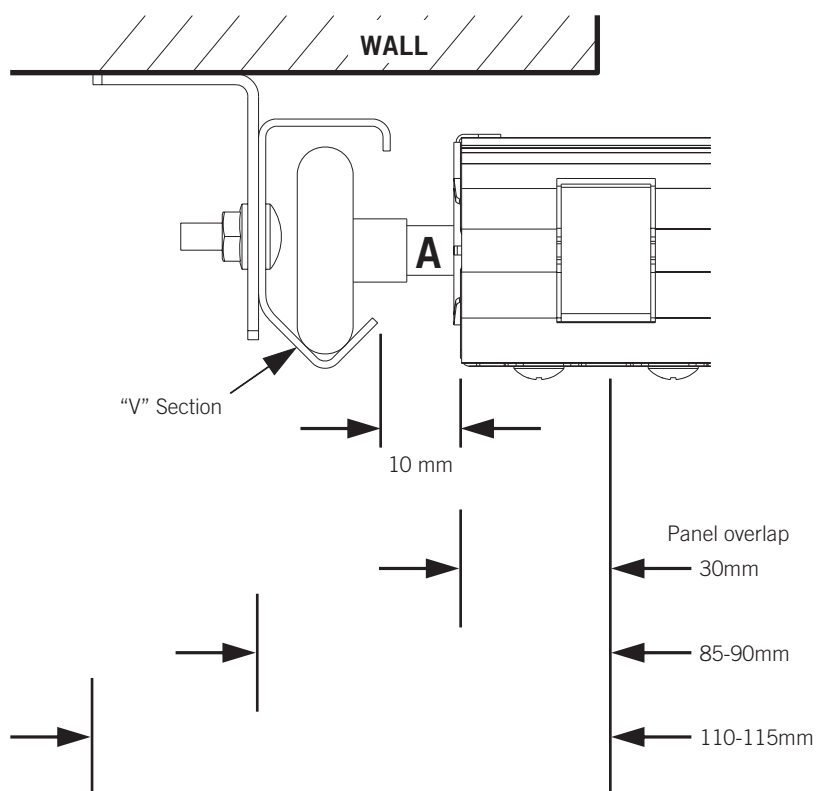
FIGURE 2.3.4 INSTALLING BOTTOM PANEL



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.

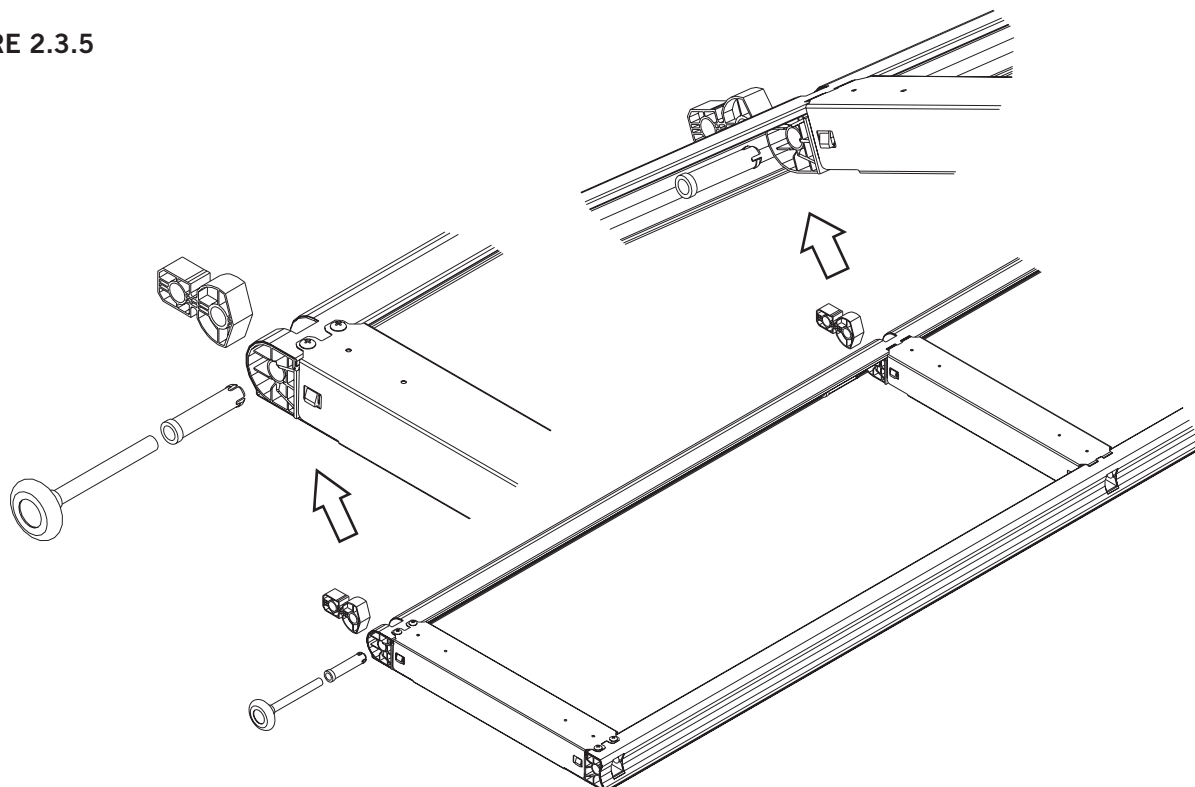
NOTE: Maximum axle end float at ‘A’ 5mm.

FIGURE 2.3.3 WHEEL-AXLE



NOTE: These measurements allow for final adjustments.

FIGURE 2.3.5



2.4 ADDING ADDITIONAL PANELS

Now you are ready to install the rest of the panels except the top panel which differs and is covered separately.

Assemble the link and pins to the panels as shown in Figure 2.3.5. There is a link 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 panel onto bottom panels, Figure 2.4.5.

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.

NOTE: Ensure all pins are inserted.

FIGURE 2.4.1 HANGERS



FIGURE 2.4.2 ASSEMBLE LINKS & PINS ONTO THE PANEL

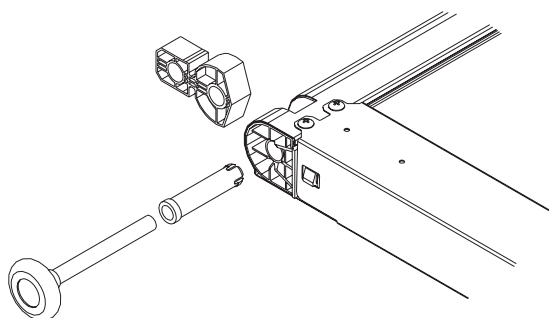


FIGURE 2.4.3 LABEL



NOTE: Ensure warning label is clearly visible.

FIGURE 2.4.4

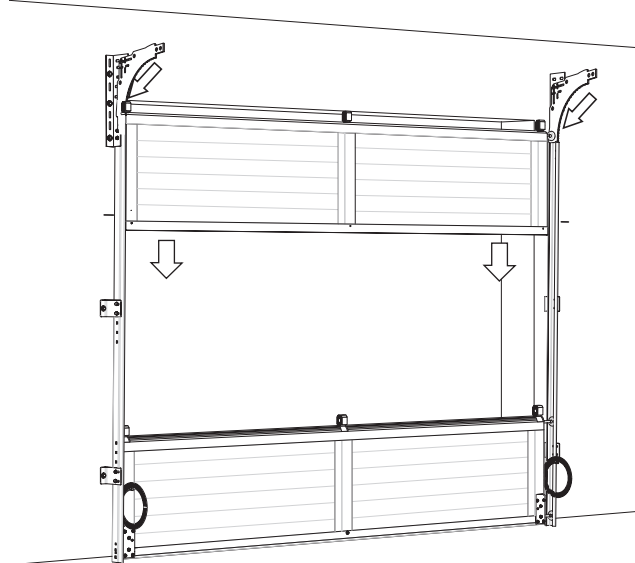


FIGURE 2.4.5

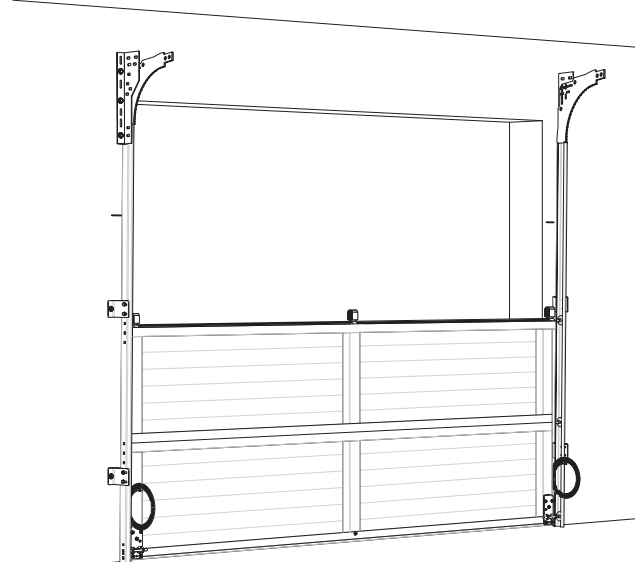
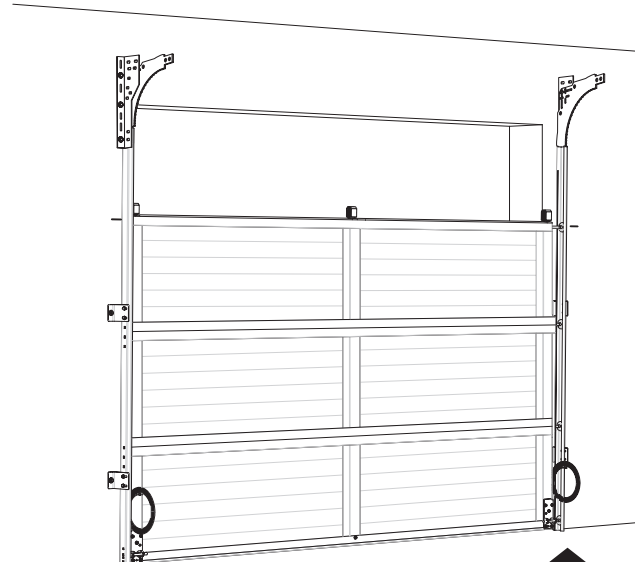


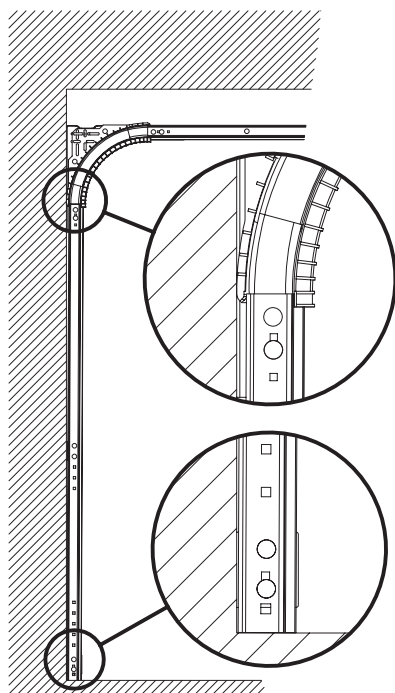
FIGURE 2.4.6



2.5 INSTALLING HORIZONTAL TRACKS

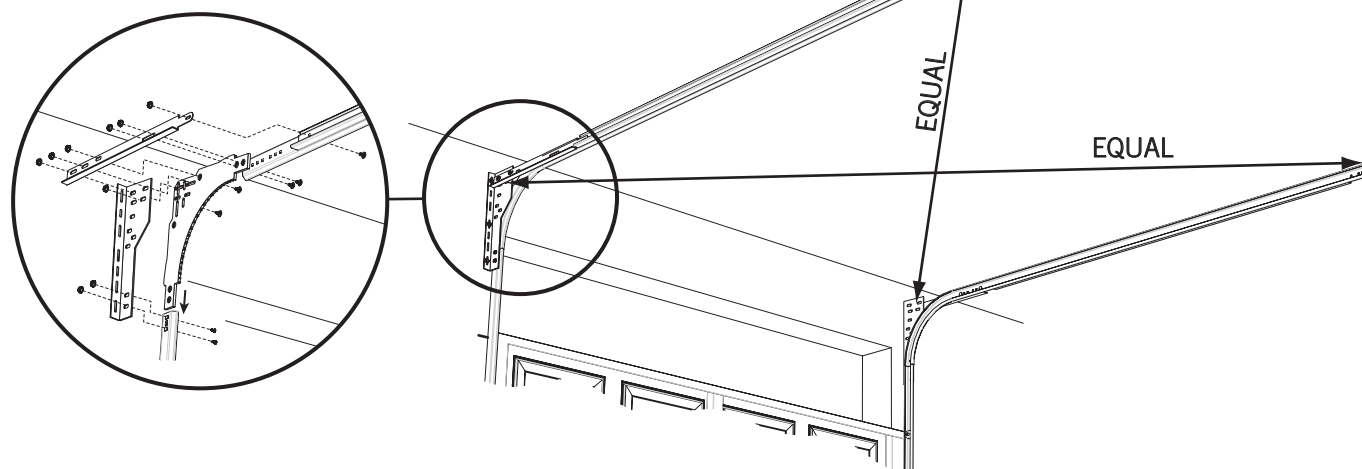
The horizontal tracks are identified by being the longer pair of tracks supplied and should be at least:

Door height + 350mm

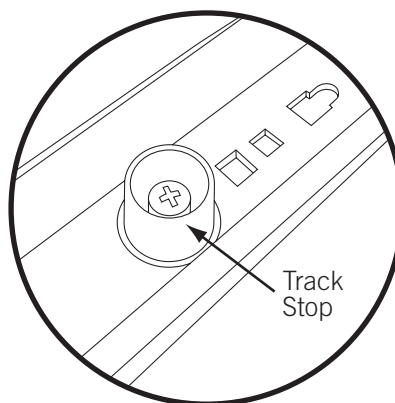


Assemble the track as shown in Figure 2.5.1, ensure that the plastic curve is aligned and butts up against the vertical track and horizontal track snugly.

FIGURE 2.5.1 ASSEMBLING HORIZONTAL TRACK

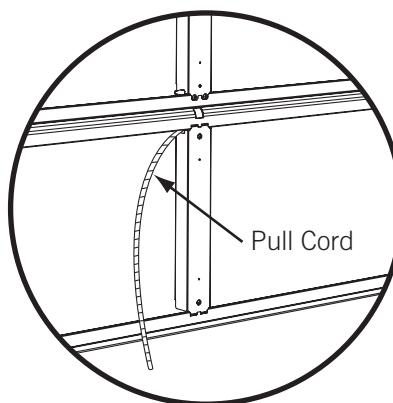


INSTALLING THE SAFETY STOP



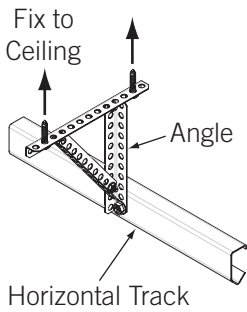
The safety stops must always be fitted at the end of the horizontal track to prevent the panels from accidentally exiting track.

INSTALLING THE SAFETY PULL CORD



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

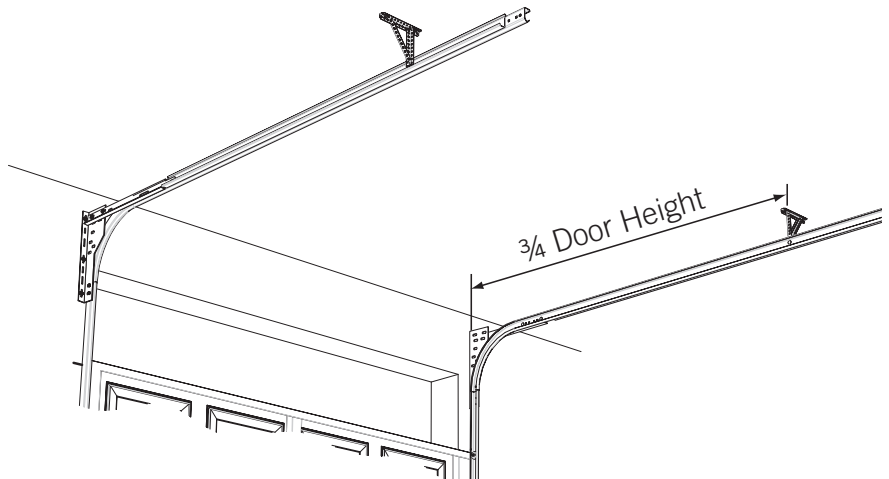
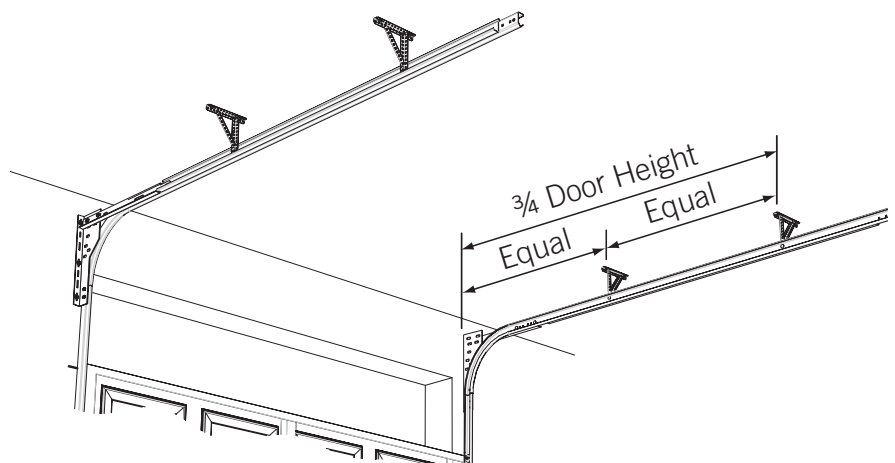
Pass the cord through the white hinge pin, tie in a loop and adjust length, ensure the cut end is sealed.

FIGURE 2.5.2 BRACING

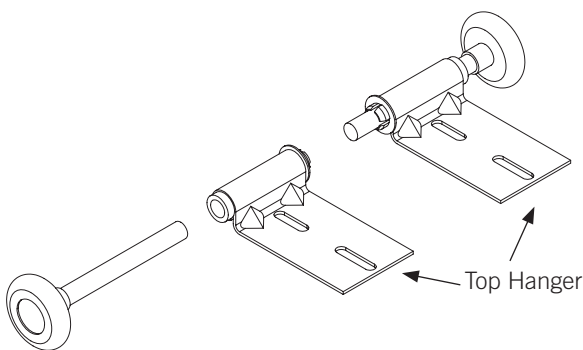
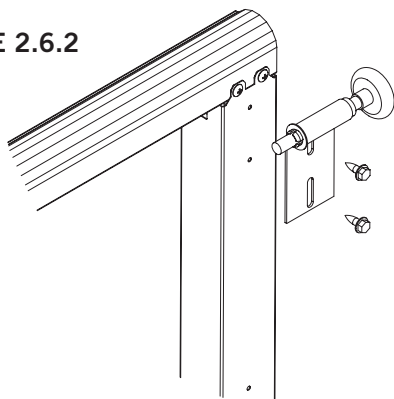
Before bracing the horizontal tracks, ensure that they are square to the opening and level. To check whether your diagonals are equal, measure from the top of the vertical track to the end of the horizontal track on both sides. Check both sides. Adjust if necessary and fix diagonal brace. Figure 2.5.1.

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 5000mm two supports will be required, Figure 2.5.4.

Each installation must be assessed individually for ceiling fixing requirements.

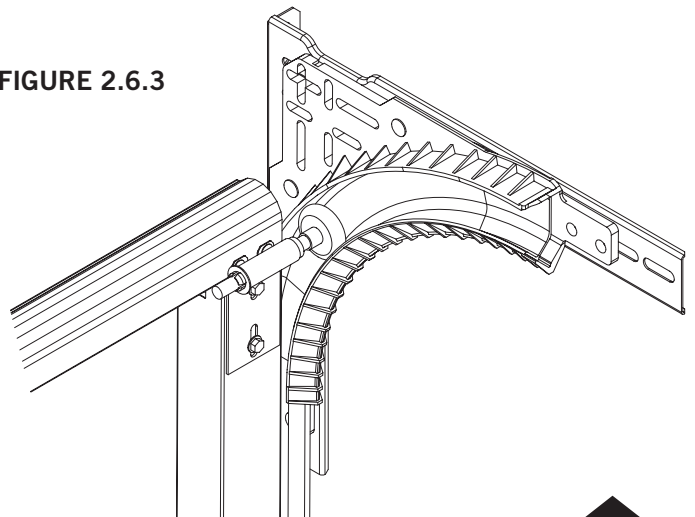
FIGURE 2.5.3 SINGLE BRACE**FIGURE 2.5.4 DOUBLE BRACE**

2.6 INSTALLING TOP PANEL

FIGURE 2.6.1 INSTALLING TOP PANEL**FIGURE 2.6.2**

The top panel can be easily identified by always having a centre stile for use with an opener and no hinge link cut outs in the curved top edge.

First insert the wheels into the top hangers as shown in Figure 2.6.1. Then assemble top hangers to top corners of the panel as shown in Figure 2.6.2. Lower the top panel into position, inserting the wheels into the tracks as shown in Figure 2.6.3. Insert links to fix the top panel to the lower panel as shown on page 10.

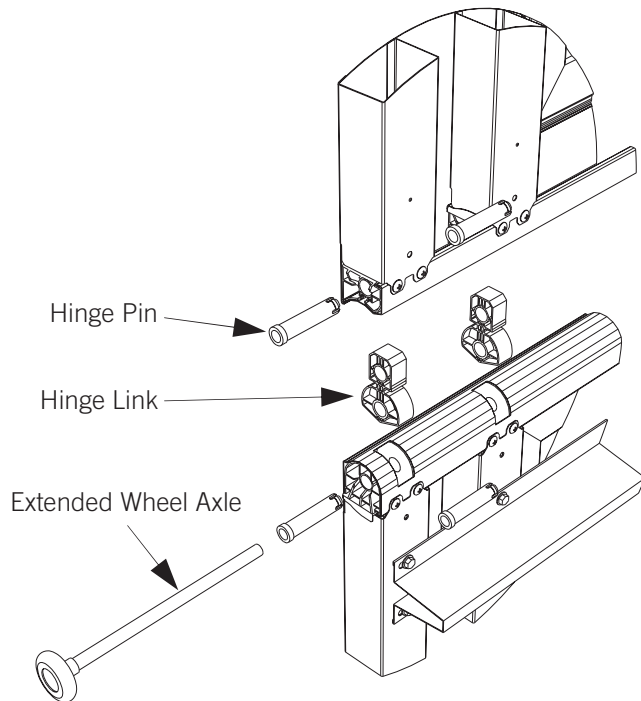
FIGURE 2.6.3

2.7 LARGE DOORS - PANEL REINFORCEMENT

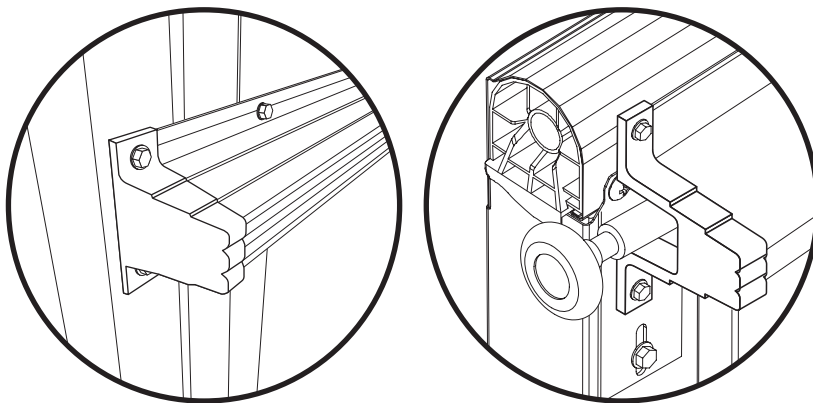
Doors wider than 3545 require panel reinforcing, the number and positioning of the reinforcing is shown on page 4.

Doors greater than 4900mm also require double end stiles and extended wheels.

DOUBLE ENDSTILE DOOR



STANDARD REINFORCING BATTEN



REINFORCEMENT PLACEMENT

The reinforcement is generally fixed across the centre of the panel. However there are three situations that require alternative placement. The top panel with automatic opener, the top panel with windows, the locking panel when a lock is to be installed.

It is important to secure reinforcing with 2 screws per stile.

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.

The top panel requires the reinforcement placed nearer to the top of the panel in order to better support the door against the workings of an automatic opener or when windows are fitted which tends to stress the topmost panel. Always install Reinforcement above operator arm.

When there are windows installed on the top panel it is best that the reinforcement is moved as far up the panel so as not to obstruct the windows.

Reinforcing installed on the top panel of the door.

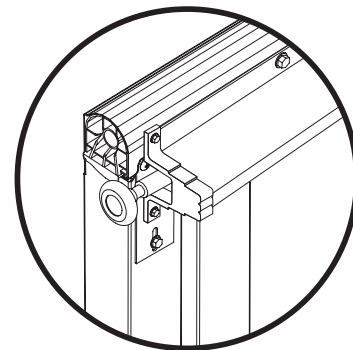
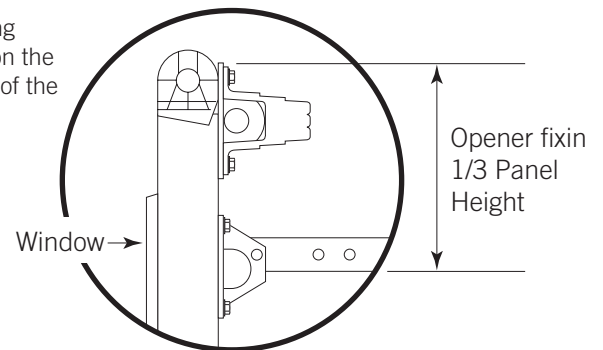
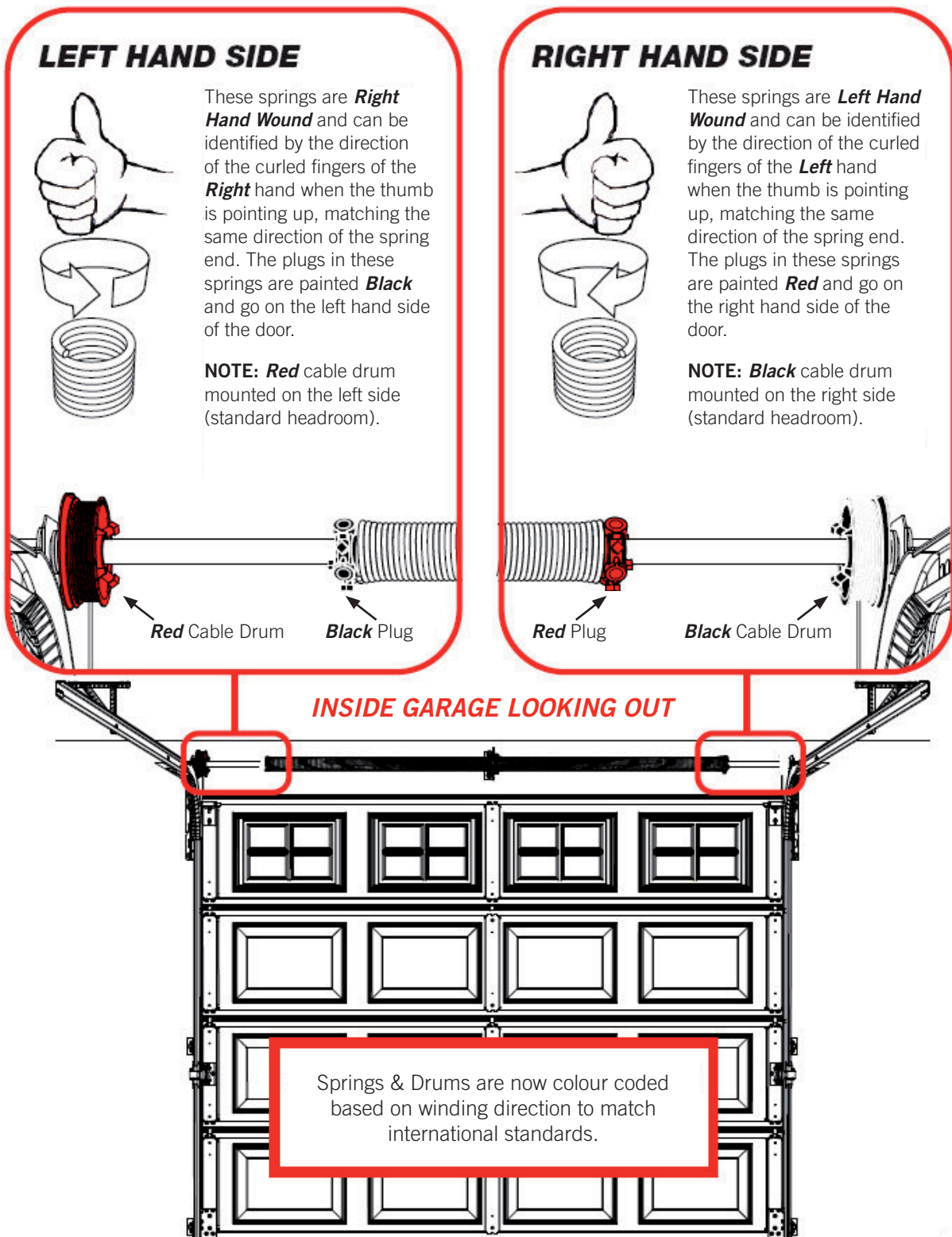


FIGURE 2.7.6

ATTENTION INSTALLERS!

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



2.8 STANDARD 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 37.

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 38. 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 red winding plug, and should be fitted to the left hand side of the spring anchor bracket. A right hand spring has a black winding plug. The winding plugs should face away from the spring anchor bracket, see Figure 39.

NOTE: It is important to use 2 of the 4 1¼ inch square necked bolts to secure each side bearing plates in position.

FIGURE 2.8.1 PARTS NEEDED - SINGLE SPRINGS

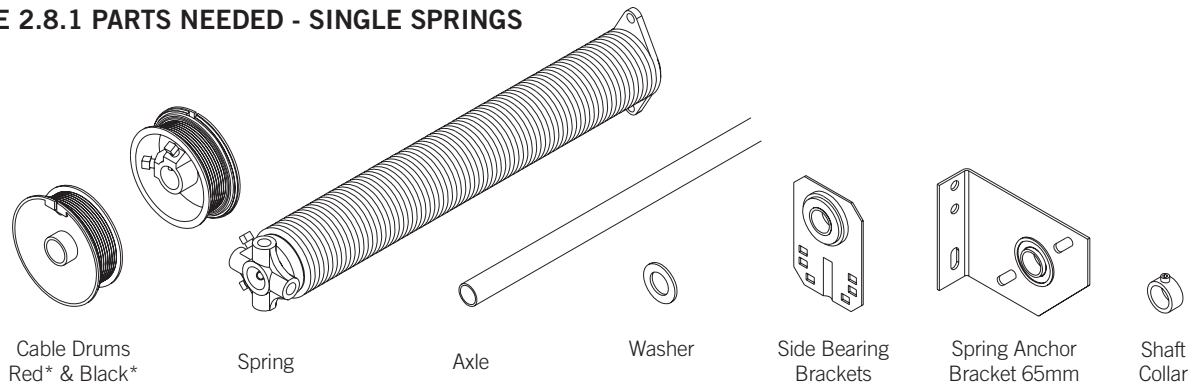


FIGURE 38

Shaft Collar to be butted up against Anchor Bracket and fixed to axle **on spring side** of Anchor Bracket

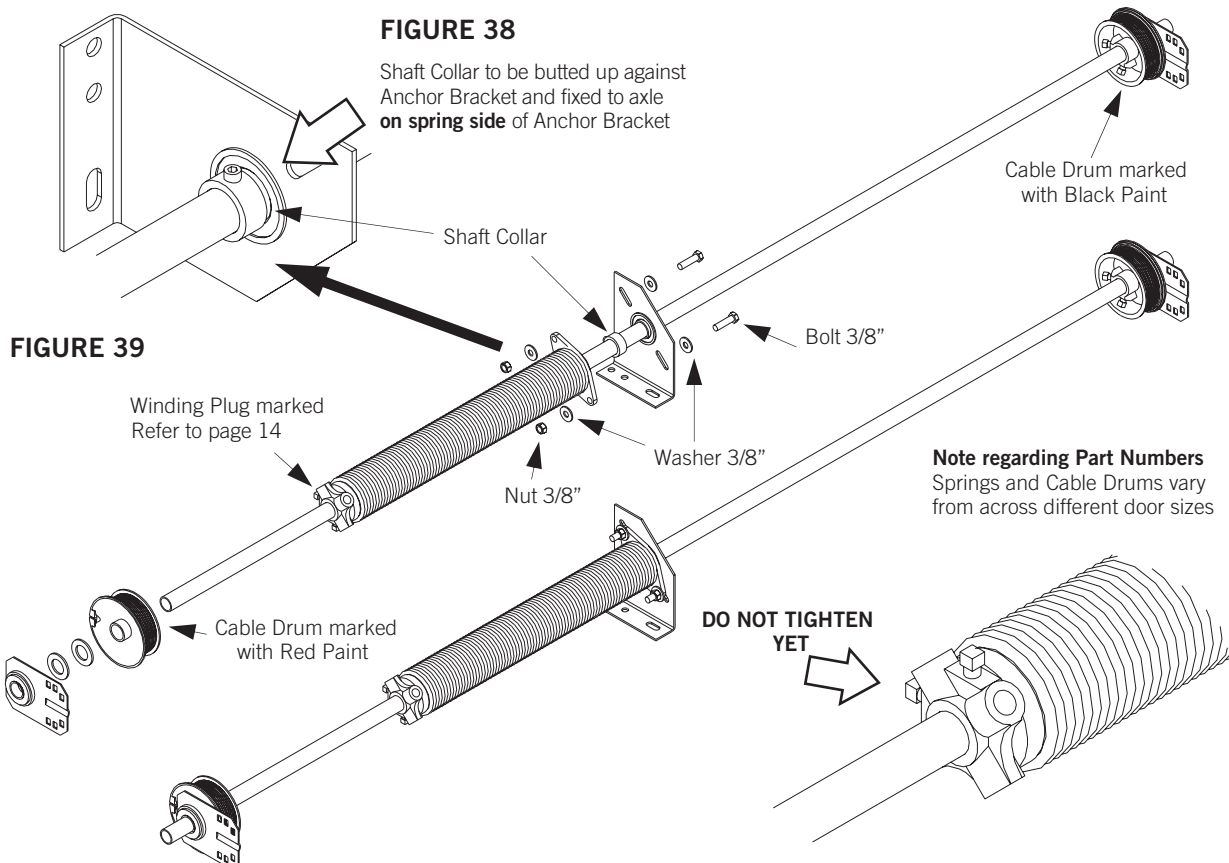
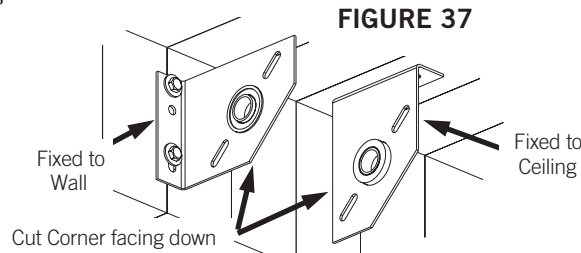


FIGURE 37



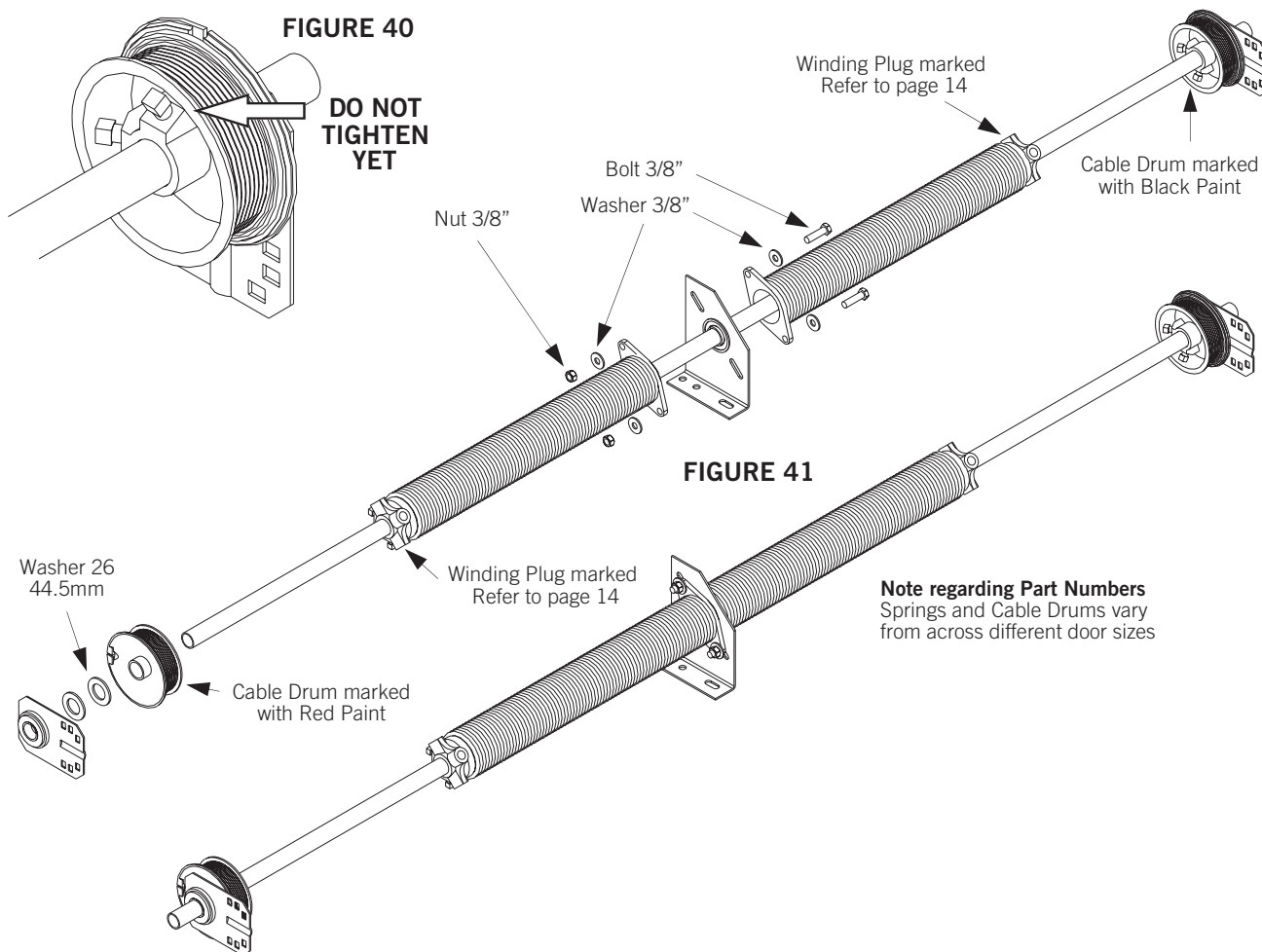
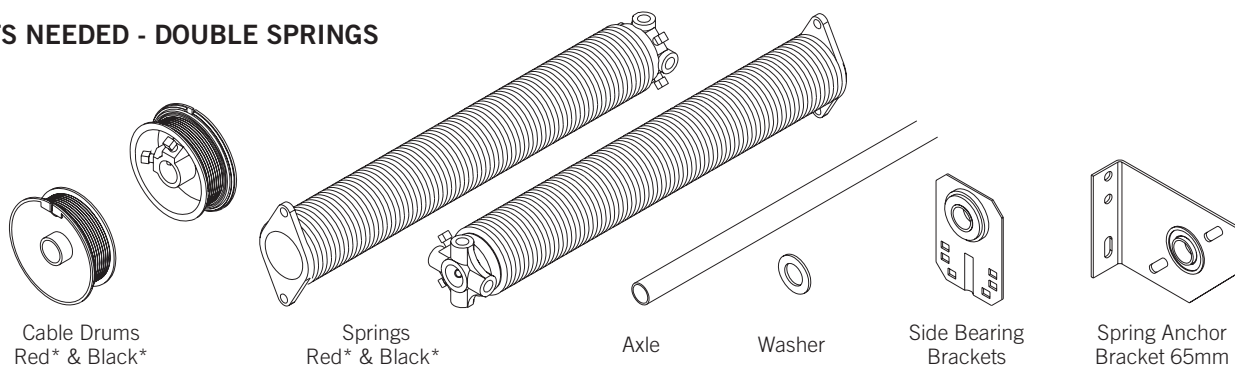
With two springs no shaft collar is necessary. Place the cable drum onto the torsion bar with the red cable drum on the left side and the black cable drum on the right side as in Figure 41.

The set screws on the cable drums should face inwards see Figure 40. Place the two 3 mm cable drum spacers on each side. Then the side bearing brackets are positioned outside the cable drum spacers with the flange facing outwards.

NOTE: It is important to use 2 of the 4 1¼ inch square necked bolts to secure each side bearing plates in position.

FIGURE 2.8.3 AXLE ASSEMBLY

PARTS NEEDED - DOUBLE SPRINGS



*Items marked as 'Red' are placed on the left hand side of the door looking out, 'black' on the right hand side for standard installation

2.9 LARGE DOORS - TWO PIECE SHAFTS

For very large doors whose springs simply become too large and heavy to handle in a complete 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. Figure 48 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 the ladder or scissors lift.

Assemble the Torsion Shaft Couple engaging both left and right hand axle assemblies as shown in Figure 49, 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 springs assemblies to the Spring Anchor Brackets as shown in Figure 50. The complete assembly should look like figure 51 by this stage. Cut the key to the required lengths and then insert into the slots as shown in Figure 52 for the couple.

Attach lifting cable to cable drum in the same fashion described on page 20 and adjust as described, however a key needs to be inserted into place as shown in Figure 53 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 24, 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, Figure 54.

FIGURE 48

Note regarding Part Numbers

Springs and Cable Drums vary with door size

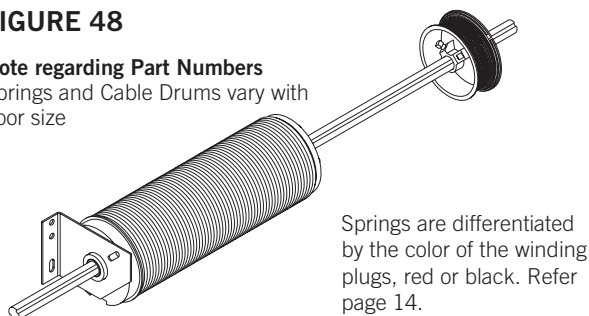


FIGURE 49

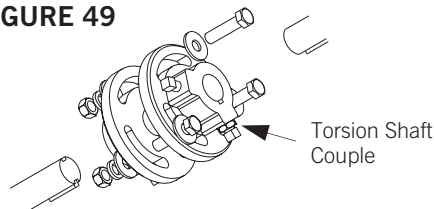
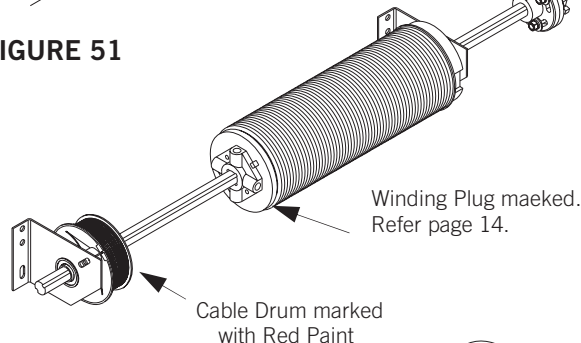


FIGURE 51



Insert key then fix into place with grub screw.

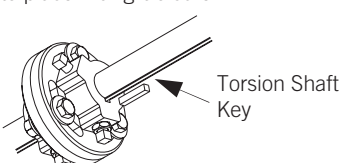


FIGURE 52

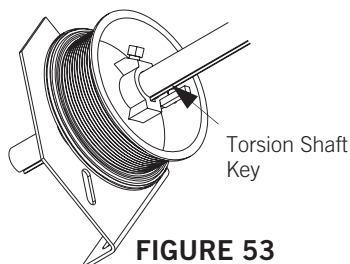
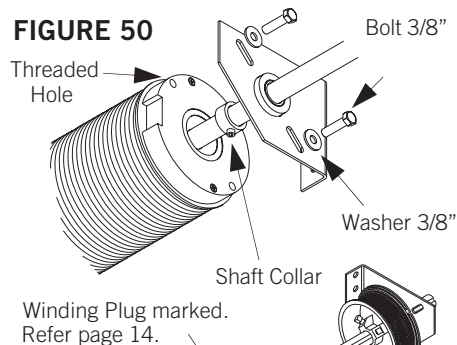
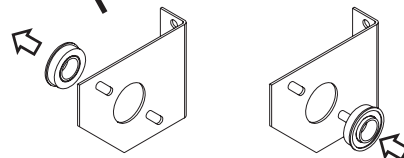


FIGURE 53

FIGURE 50



Check the orientation of the bearings in Spring Anchor Brackets. The Flange side must be on the same side as the Shaft Collar, Figure 50.



The bearing can be 'popped' out and reversed, if this is not the case.

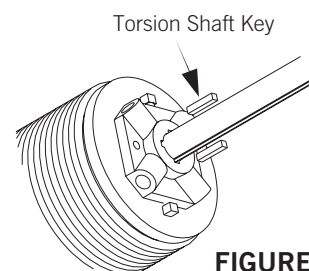


FIGURE 54

2.10 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.

CURVE ASSEMBLY: Insert plastic curve onto the inside of the top brackets and secure onto bracket using 2 nuts and bolts per curve insuring that the “V” of the vertical track lines up with the curve. From the Rear Torsion Parts Bag assemble each pulley wheel with the spacers sandwiched between opposite handed corner brackets and held with a nut, bolt and washer as shown in Figure 60. The two corner brackets should overlap and be secured into place. Secure against the wall in 3 points and connect to vertical tracks at two points as shown.

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

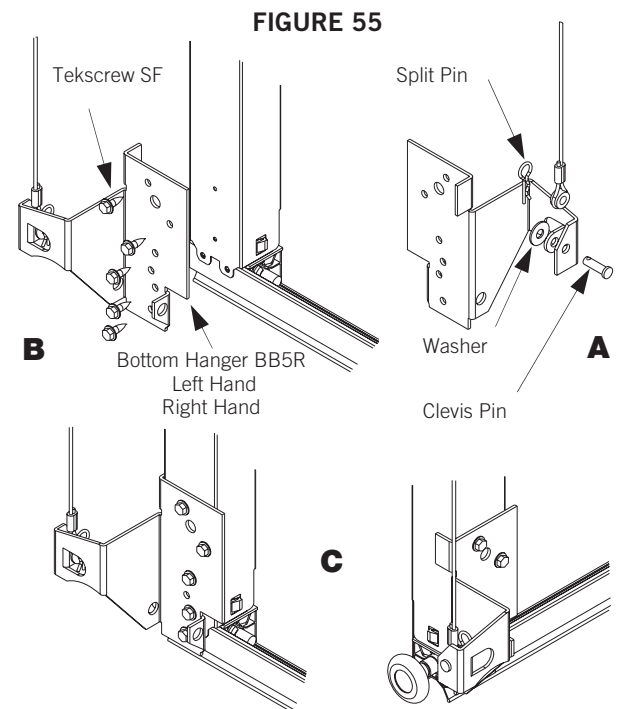
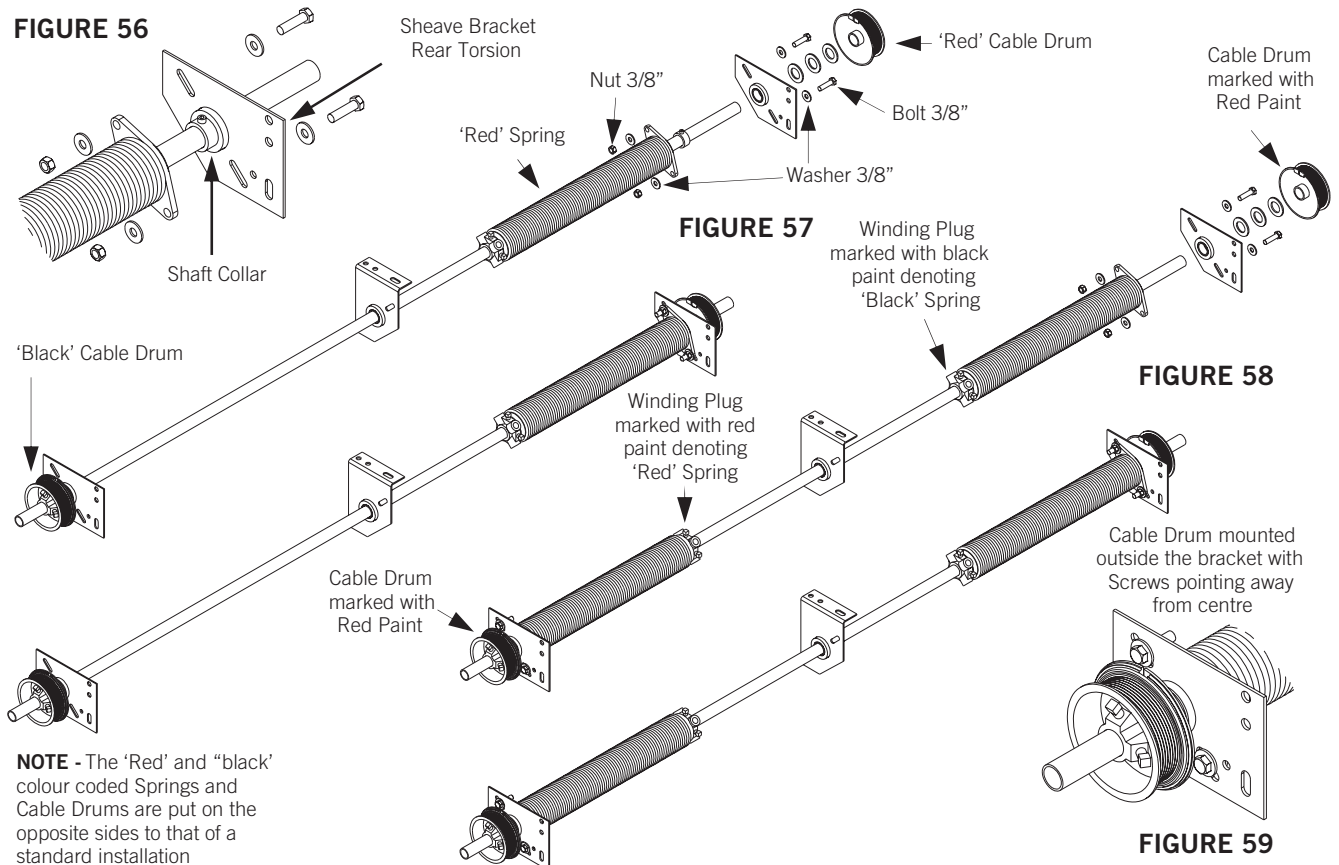


FIGURE 2.11.2 AXLE ASSEMBLY



TORSION BAR INSTALLATION: Ensure that the ceiling fixing points are suitable to accept the weight of the torsion and spring assembly.

Fix the flat spring anchor brackets to the free ends of the horizontal tracks Fig 61. Rest the assemble torsion bar on top of the tracks, then slide one axle end into one bearing and then through the other bearing. Secure the centre bearing plate into a solid foundation either directly or by the use of suitable steel angle.

Now secure the springs to the spring anchor bracket using 3/8" x 1½" hexagonal head bolts and 3/8" washers and nuts.

Unwind the lifting cable on both sides and thread the cable behind the wheel axles around the ring on the bottom hanger, through between the pairs of corner brackets around the pulley wheel and over to the rear drums, Figure 61.

Attach the lifting cable to the cable drum by slipping the cable into the slot on the outside groove, see Figure 44 page 20. (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.

FIGURE 60

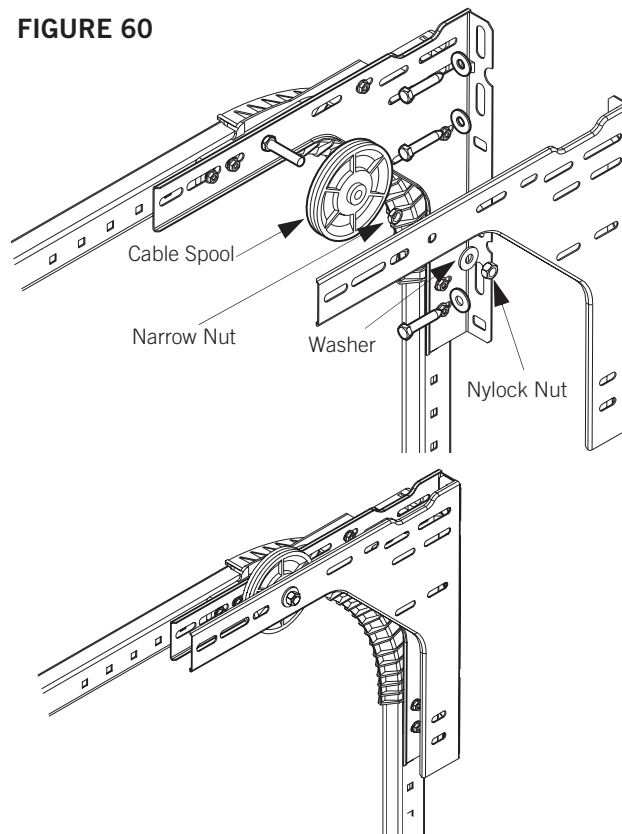
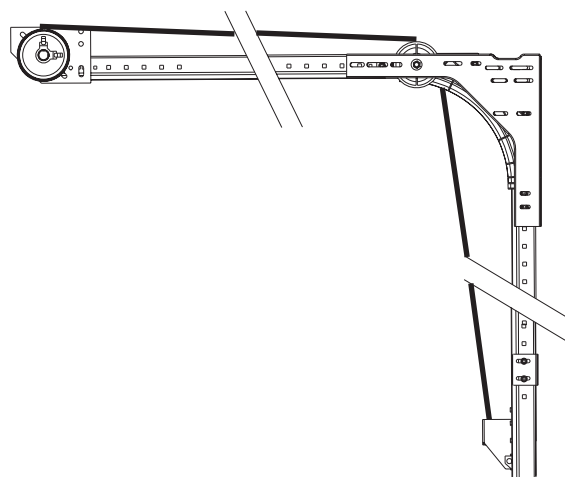


FIGURE 61



2.11 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.

WARNING: ONLY USE AUTHORISED WINDING BARS AS LISTED ON PAGE 4.

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**

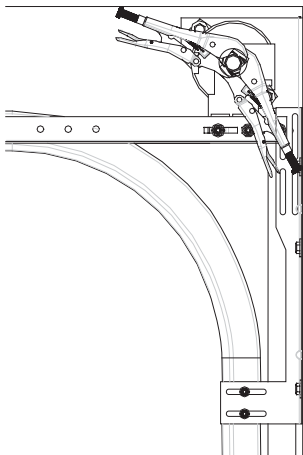


FIGURE 2.12.4 ADDING TENSION

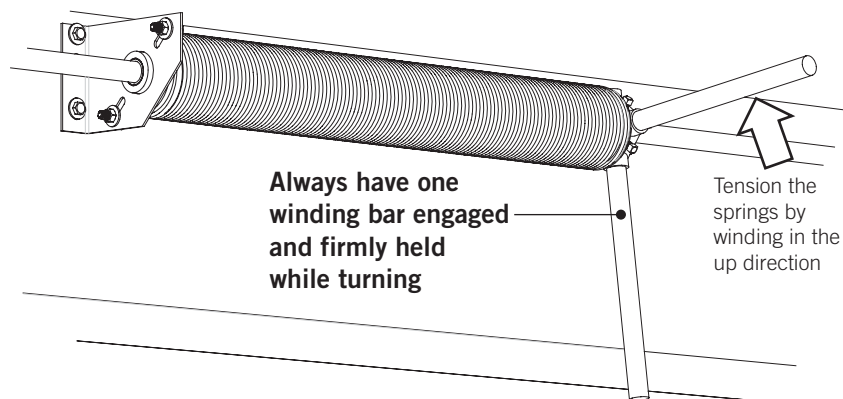


FIGURE 2.12.2 SPRING LABEL

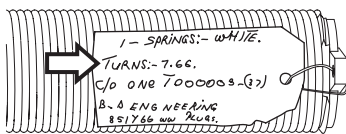


FIGURE 2.12.3 COUNTING THE TURNS

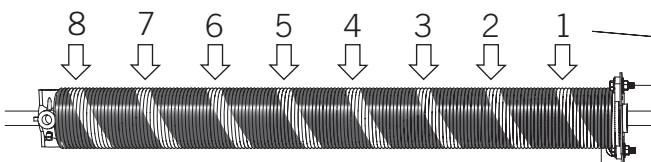
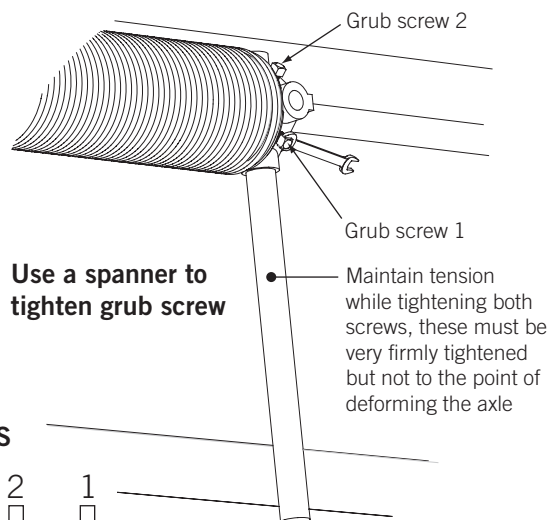
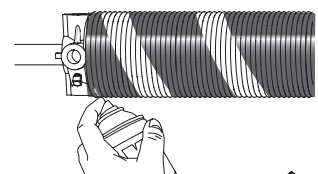


FIGURE 2.12.5 TIGHTENING GRUB SCREWS



**FIGURE 2.12.6
LUBRICATING SPRINGS**



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

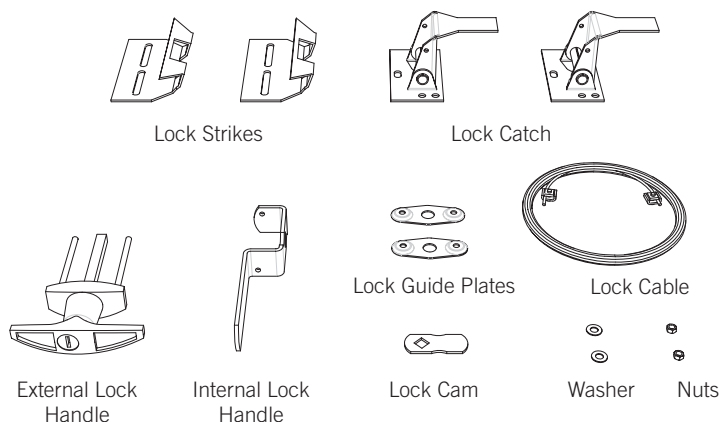
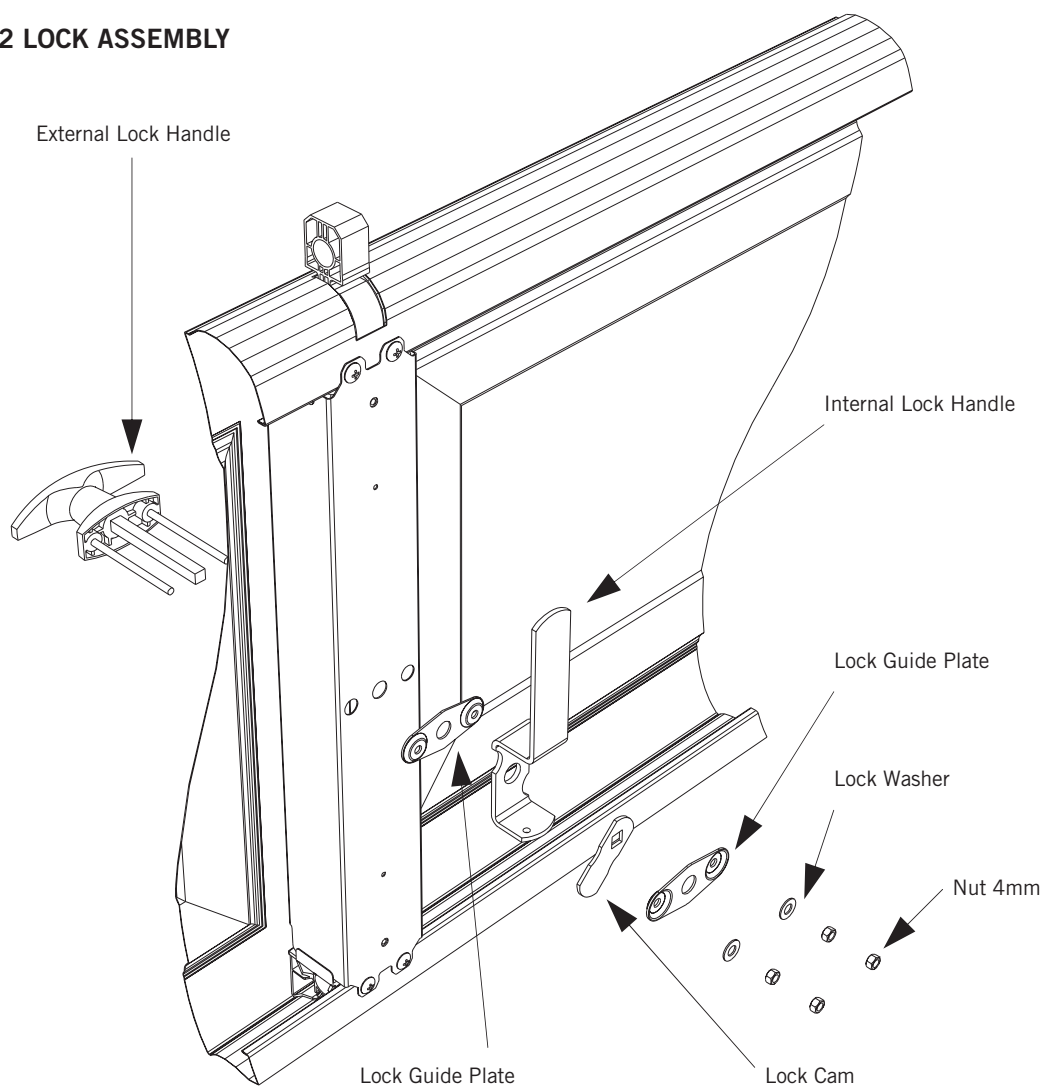


FIGURE 3.1.2 LOCK ASSEMBLY



3.2 WINDOW INSTALLATION

Windows all occur on the top panel and these panel can be identified by cutout areas on each pattern with some of the central pattern held in place with 3 tabs.

Remove the central panelling from each of the window areas on the top panel as shown in Figure 3.5.2 A) Use a hammer and a small block of timber to slightly depress the right-hand side of the embossments' removable section. B) Use a pair of tin-snips to cut the right hand tab on the end of the removable section. C) Slightly depress the left-hand side of the embossment by hand. D) Use a pair of tin-snips to cut the left-hand tabs on the end of the removable section. E) To avoid the frames buckling, ensure that the tabs are cut flush with the edge of the embossed section.

FIGURE 3.5.1 PARTS NEEDED

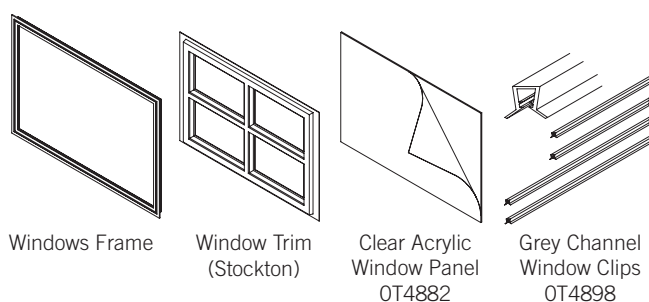


FIGURE 3.5.3 WINDOW ASSEMBLY

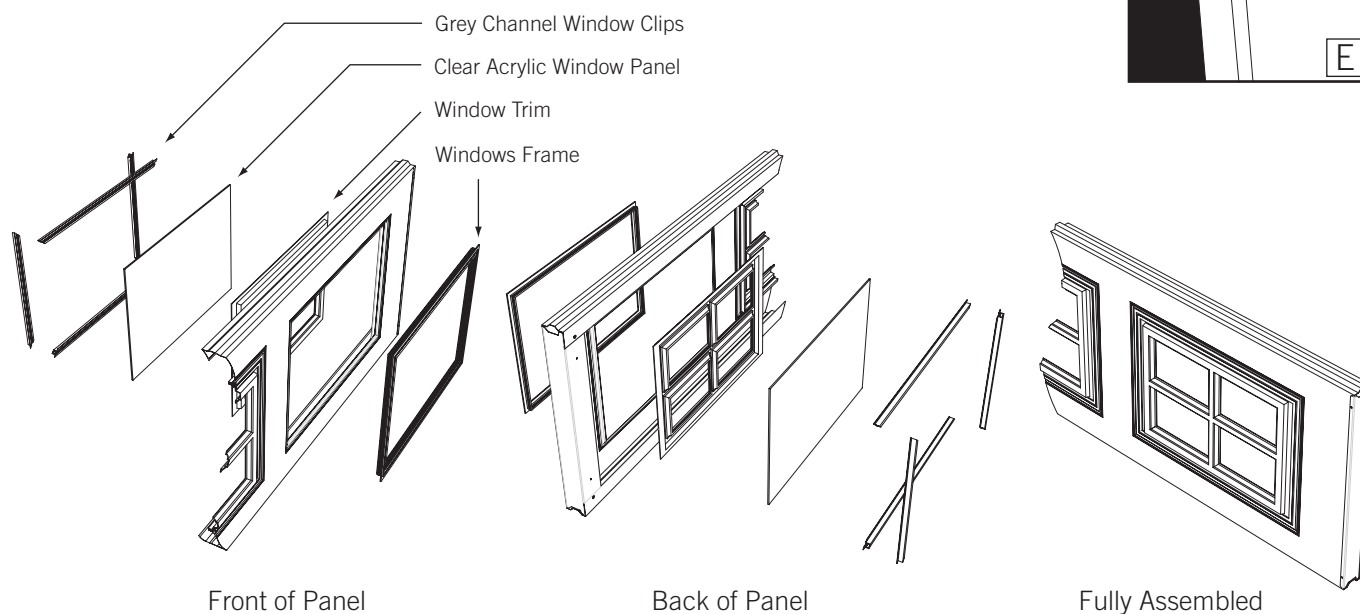
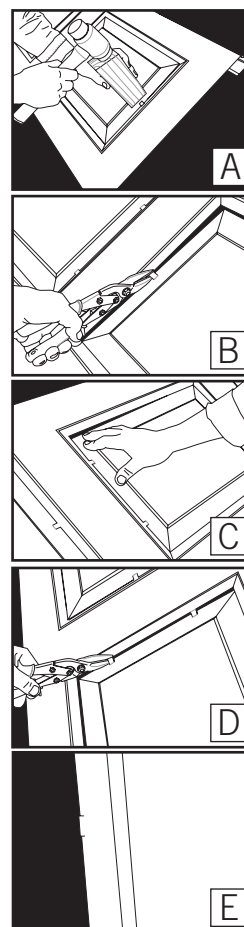


FIGURE 3.5.2



Peel the backing off both sides of the Perspex sheets. Insert trim onto front face of the panel and lay it flat face down on a non-abrasive, non-staining surface. Then insert the trim, the Perspex sheet which should be both resting within the frame and fix into place with the clips which should be pressed into place along the frames edge until they are firmly engaged, consult Figure 3.5.3.

If installing a window configuration set such as Sunshine or Sherwood please consult Figure 3.5.4 to ensure the proper placement of the window trim across the panel.

Now you are ready to install the top panel onto the opening as standard. If reinforcement is being used please avoid obstructing the windows by installing the reinforcement as high up the panel as is possible.

FIGURE 3.5.4 SET CONFIGURATIONS

SUNRISE SET



SHERWOOD SET



When dealing with either the Sunrise or Sherwood window styles, be sure that the complete E set has been supplied and that they are installed in the appropriate configuration shown above

3.3 HINGED TAPERS

Tapers are accomplished using a small customised panel, which results in a slight variation in the installation process, please familiarise yourself with the standard installation before proceeding.

The Lifting gear is now attached to a standard central panel, which can be identified by a) having no weatherstrip at the bottom and b) having the slots on the bottom edge to connect with the tapered panel. This is different to the standard installation as shown in page 7.

Tracks are assembled as standard with the only difference being that one vertical track needs to be cut down to accommodate the uneven floor. Both vertical tracks need to start from the ground and end level with each other. Cut the track as necessary from the ground end.

Assemble the tapered panel as shown in Figure 78, and insert into tracks as shown in 'Installing Bottom Panel' on pages 9-10.

The lifting panel is different from that shown on page 7 in that there is no weatherstrip (it's part of the taper panel) and slots are present to connect to the tapered panel, make sure that it is not the lock panel as described in page 10, "Installing Additional Panels".

Assemble bottom hanger as shown in Figure 1A and B on page 7. Modify bottom hanger as in Figure 79. The bottom hanger will thus sit slightly higher up the panel than normal, so as not to interfere with hinging movement. Also no wheel or links are connected at the bottom as shown in Figure 80 when these are attached.

Simply assemble lifting panel onto the tapered panel as standard as shown on page 11 'Installing Additional Panels', see Figure 81.

FIGURE 78

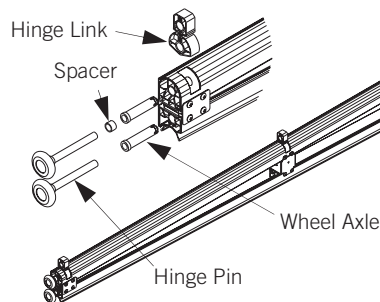


FIGURE 79

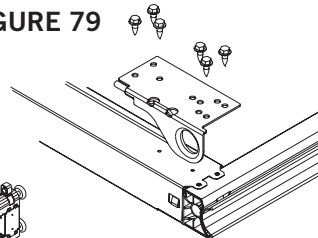


FIGURE 80

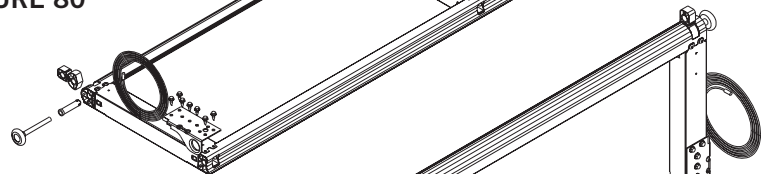
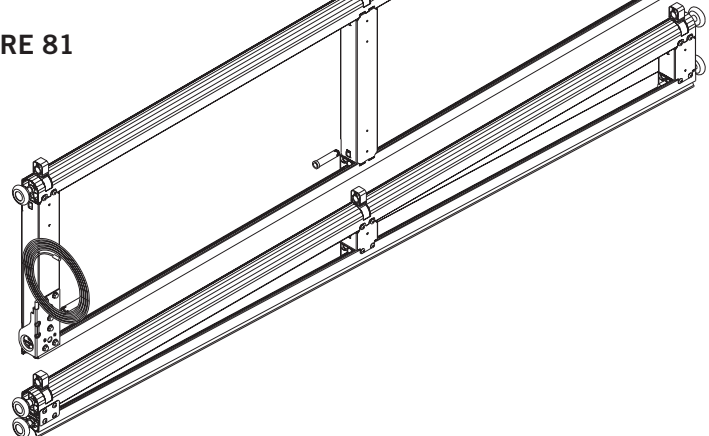


FIGURE 81



3.4 LOW SIDE ROOM INSTALLATION

Mark the opening with a water level as standard. Assemble the tracks, track wall brackets and top wall bracket and plastic curve with the brackets reversed under the track as shown in Figure 19.

Place tracks against door in the position required, with panels centred across the opening and appropriate clearance between panel and track insuring that tracks are level vertically. 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 20 mm. Mark the outline of the wall-track brackets and corner bracket on the wall.

Disassemble the tracks. Now attach the wall-track brackets and corner bracket - without the plastic curve - to the wall in the positions marked. Now re-assemble the tracks onto the wall.

Unlike the previous method the tracks are fully secured at this point. Panels are now lowered down into the track by inserting the wheels on both sides into the track. Links are then engaged in the same manner as shown previously.

This is repeated with all panels except the topmost which is installed in the same fashion as the standard installation. From here on in the installation progresses along the standard steps.

Door curtain overlap should be reduced from 60mm to 40mm
Minimum side room can then be reduced to 100mm.

3.5 EMB-A-SEAL KIT

A 16-17 mm gap is required between the door and the jamb, for the installation of Emb-A-Seal Kit.

Open the door. Slide the two 13mm high brushes into the “H” carriers, and the 19mm brush into the “F” carrier, see Figure 3.4.1. Cut the “F” carrier & brush to suit the door height opening, cut the “F” carrier to suit door opening width.

Place the “H” aluminium extrusion on the wall between the door and the jamb. When the door closes, it should close up against this extrusion with 0-1mm clearance, see Figure 3.4.3. The ribbed section of the aluminium extrusion is to face away from the opening. Fix to door jamb using an appropriate fixing method, screws, plugs and clips should be provided. If fixing to a steel beam, common with lintels, use 10g x 16mm hex-head self drilling screws for steel. It is important to lubricate thread before fitting. Drill 4mm pilot holes for beams over 6mm thick, see Figure 3.4.2.

NOTE: if the seal presses too hard against the door damage to the panel surface may occur over a period of time.

Place the “F” carrier under the lintel so that the brush has 0-1mm clearance, Figure 3.4.3. The ribbed section of the aluminium extrusion should be pointing out of the opening. Fix to lintel using an appropriate fixing method.

Open and close the door, checking smooth operation. Adjust the tracks if required. If installing seal in a post installation door with an electric opener fitted, adjust its sensitivity if necessary.

FIGURE 3.4.1

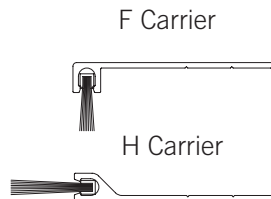


FIGURE 3.4.2 ATTACHMENT METHOD

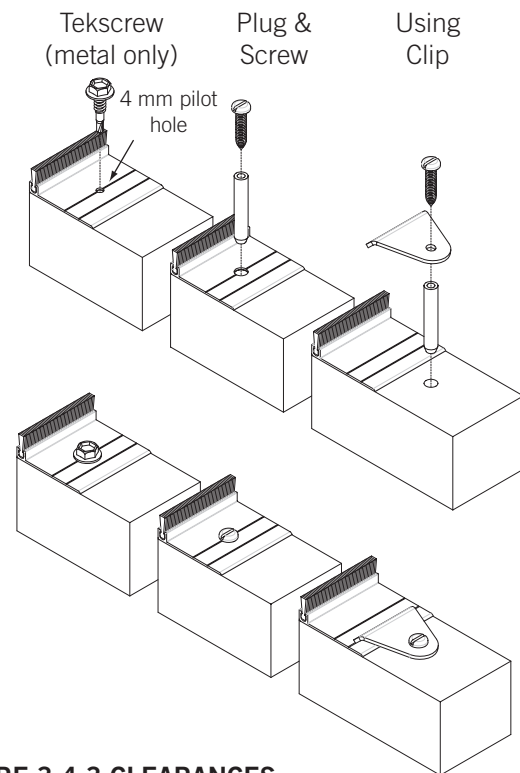


FIGURE 3.4.3 CLEARANCES

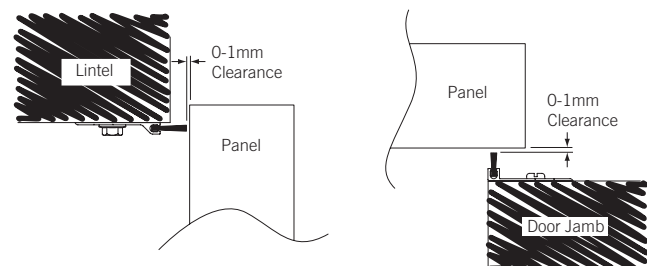
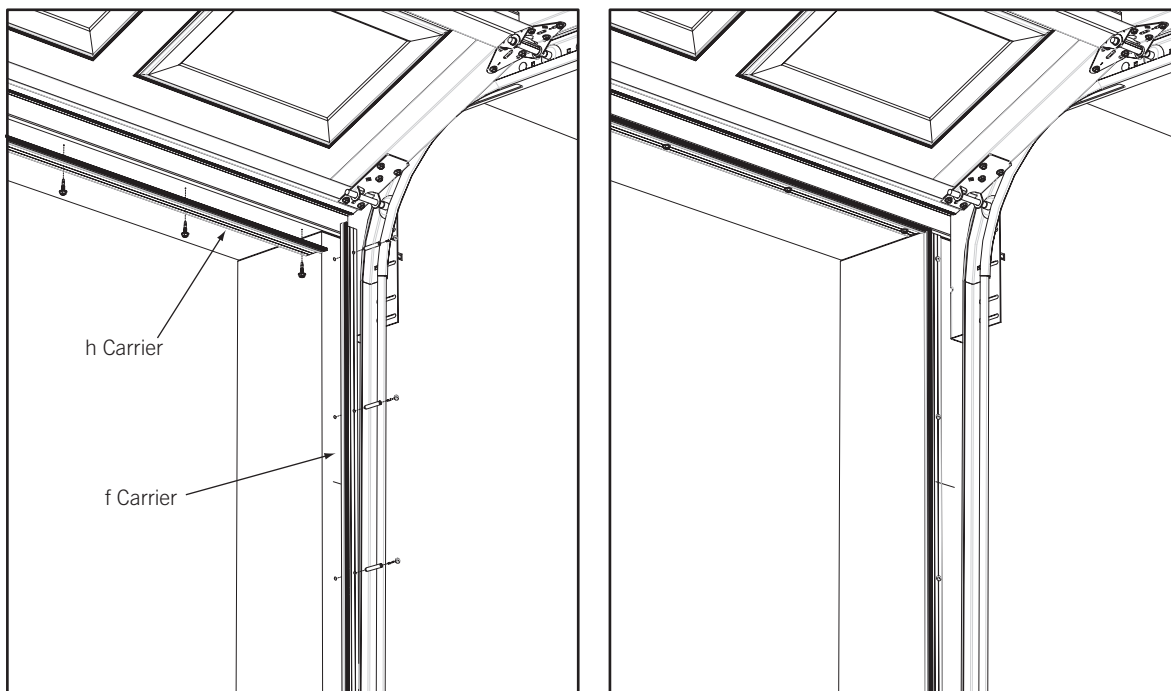


FIGURE 3.4.4 EMB-A-SEAL INSTALLATION



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	Shorten cable length until the cable rolls onto the flat portion of the drum when the door starts into the horizontal position
	Springs may be too strong (too short)	Replace spring
	Wrong cable drums for springs (too small)	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	Ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns applied
	Wrong cable drums for spring, (too small)	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	Ensure that the correct spring is supplied (if not replace) and that it has the correct number of turns have been applied
	Wrong cable drums for springs (too large)	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	Increase the cable length to bring the cable down lower on the spiral
	Torsion springs too long	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	Wind in correct direction
	Door weight incorrect	Supply correct springs
	Springs binding	Fit torsion bar collar Lubricate springs
	Door not level	Cable lengths are equal
		Equal turns on both springs Level door during installation

5.0 AFTER INSTALLATION CARE

GENERAL CARE OF YOUR PANELIFT

CLEANING

COLORBOND® & COLOURED STEEL FINISH Your B&D Panelift 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 Panelift 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 Panelift in residential use is covered by a 5 year 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



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