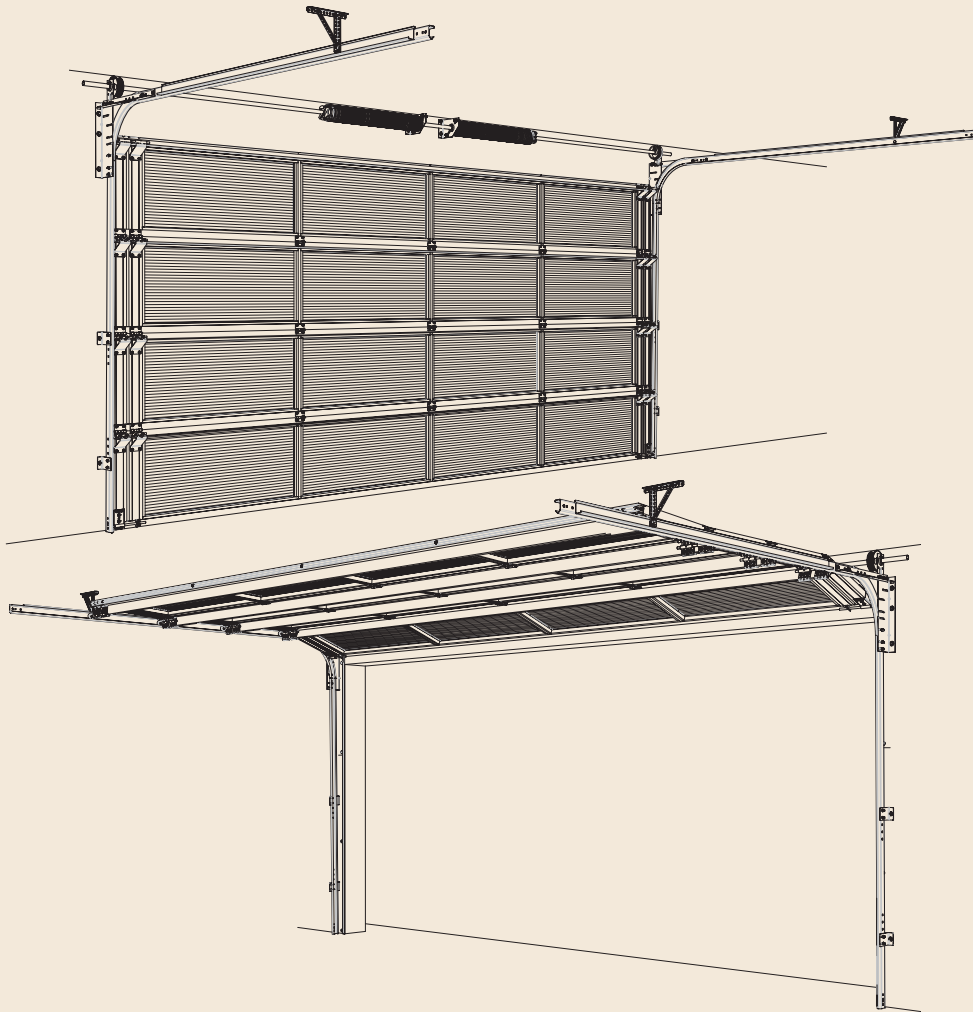




Design-A-Door[®]

& P7

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
<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 Manual Handling when installing the door opener - risk of musculoskeletal injury or twisting 	<ul style="list-style-type: none"> Correct lifting technique for Roller Door Use of 2 person lifts Use of mechanical aids such as lifting stands, forklift, cranes Avoid twisting (Practice correct lifting techniques) Correct use of ladders while installing tracks Use of correct technique of knotted rope installation aids
<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 some parts of the 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 (various door parts, tools, jewellery striking installer on the head or body) 	<ul style="list-style-type: none"> Ensure door is correctly secured Ensure that pipe wrench is fitted correctly to the axle and if it is gripped onto the axle do not underestimate the tension in the spring when undoing the clamps Ensure the correct length pipe wrench is utilised Ensure correct bolts are tightened or loosened to ensure there is no release or controlled release of energy from the spring through the pipe wrench Keep hands clear of the pipe wrench at all times Keep head clear of the pipe wrench at all times
<ul style="list-style-type: none"> Position the door on the brackets, there is a risk of the door falling from the brackets striking a person 	<ul style="list-style-type: none"> Ensure the door is immediately fastened to the bracket with the "U" Bolt Ensure no-one ever walks under a door sitting on a bracket

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.

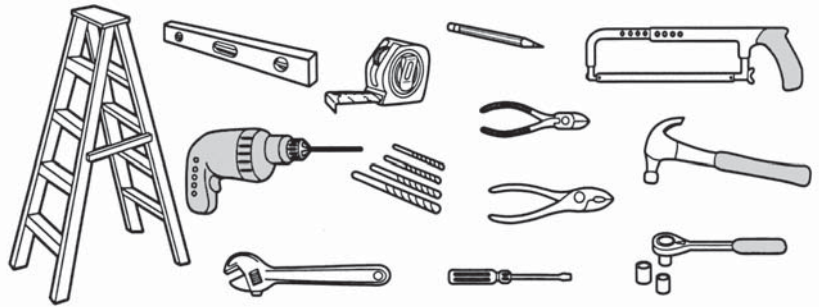
Correct and safe fastening to other materials may require different fasteners.

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 OT2457 or OT2458



1.4 PARTS CHECKLIST

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

- 1 package with door panels
- 1 pair of tracks for vertical use
- 1 pair of curved tracks for horizontal use
- 1 torsion bar
- 1 small parts box
- Spring Kit
- Cable Kit

Low Headroom Doors:

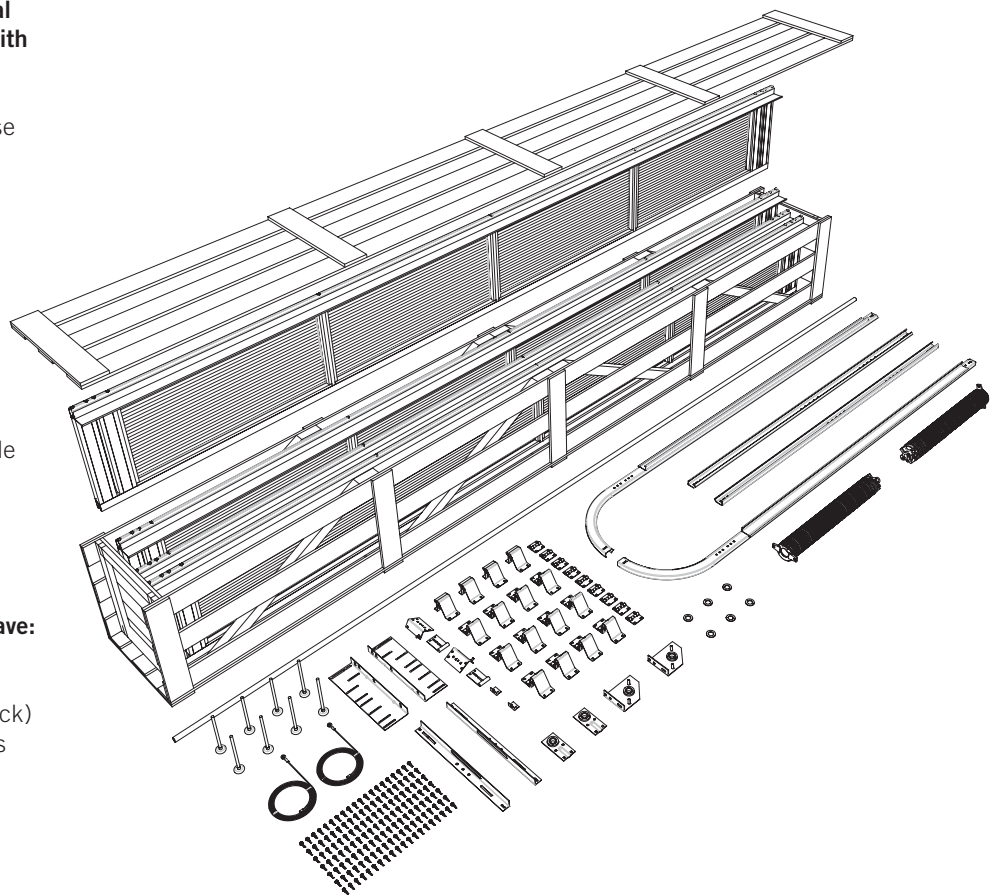
- An additional pair of left and right corner/wall brackets
- 1 pair of low headroom double tracks
- 2 pulley wheels
- 2 rear mount brackets
- Rear torsion parts bag

In your small parts box you should have:

- 2 side bearing brackets
- 1 left hand cable drum (red)
- 1 right hand cable drum (black)
- 1 or 2 spring anchor brackets
- 2 lifting cables
- Wheel axles
- Centre-stile hinges
- 2 top and bottom hangers
- 2 axle plate hangers
- Nuts and bolts to suit
- 4 cable drum spacers

Additional Hardware for Low Headroom:

- 2 pulley wheels
- 4 spacers
- 2 nuts, bolts and washers
- 2 bottom hangers BB5R



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 (add 50mm for automatic opener)

Sideroom	120mm	
Headroom	340mm	(Doors 4 panels high) (add 50mm for automatic opener)
		(Doors 5 panels high & 5285mm wide)
		(Doors 6 panels high & 4705mm wide)
	390 mm	(All other sizes)

For Low Sideroom Installations (with or without automatic opener)

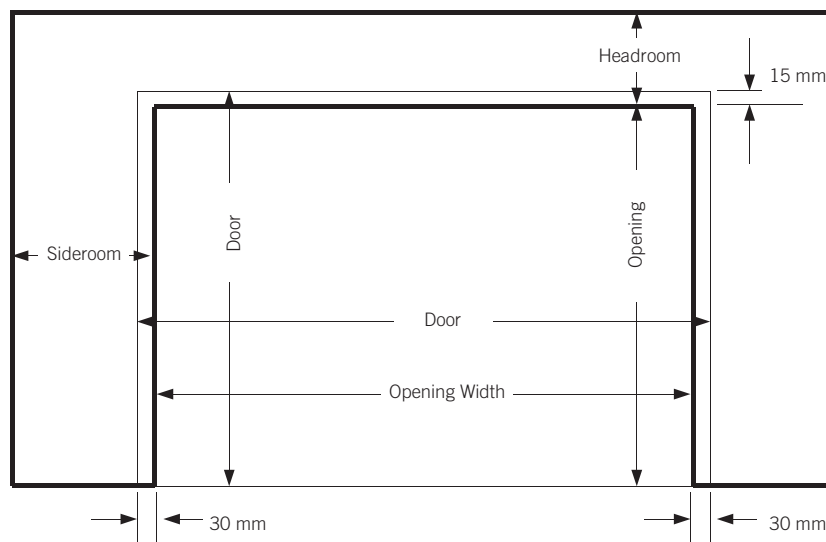
Sideroom	90mm	
Headroom	250mm	(doors to 5285mm wide);
	290mm	(doors over 5285mm wide)

For Rear Torsion Installations

Sideroom	155mm	(doors up to 15m ²)
	295mm	
Headroom (with opener)	280mm	(doors to 5285mm wide)
	330mm	(doors over 2280mm high)
	290mm	(doors over 5285 mm wide)
Headroom (without opener)	190mm	(doors to 5285mm wide)
	200mm	(doors over 2280mm high)
	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.

FIGURE 1



2.0 INSTALLATION

2.1 ASSEMBLING BOTTOM PANELS

If installing tapers familiarise yourself with this section then please consult page 20-21. Open up the pack of door panels, take out the bottom panel (weather strip 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.

If using a rear torsion system a different hanger is required, please consult Low Headroom / Rear Torsion Installation on Page 17.

Locate both bottom hangers assemblies and cables. Insert cable through the holes of the bottom hanger. Attach the bottom hangers to the lower end of the door as shown in Figure 2.1.2. Do not unwind lifting cable until specified later to do so. Assemble hinged hangers, which are adjustable with the axle position set closest to the panel (2.1.3), then insert wheel & axles.

PARTS USED

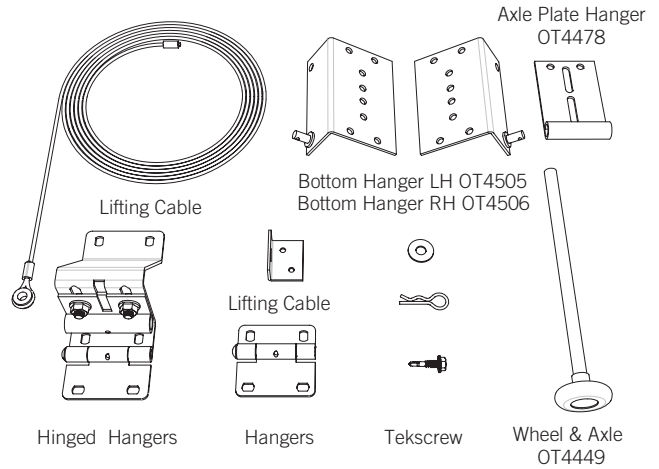


FIGURE 2.1.1

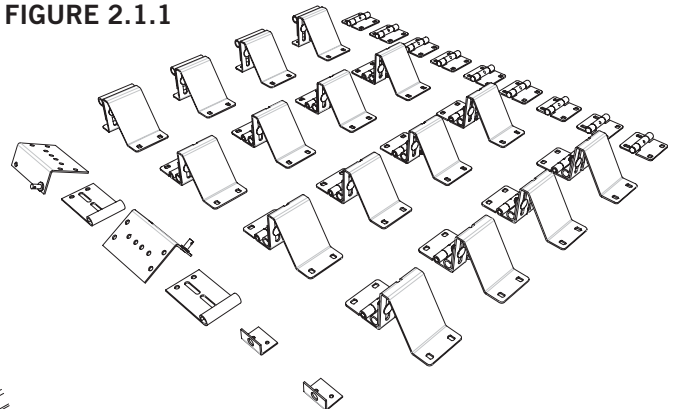


FIGURE 2.1.2

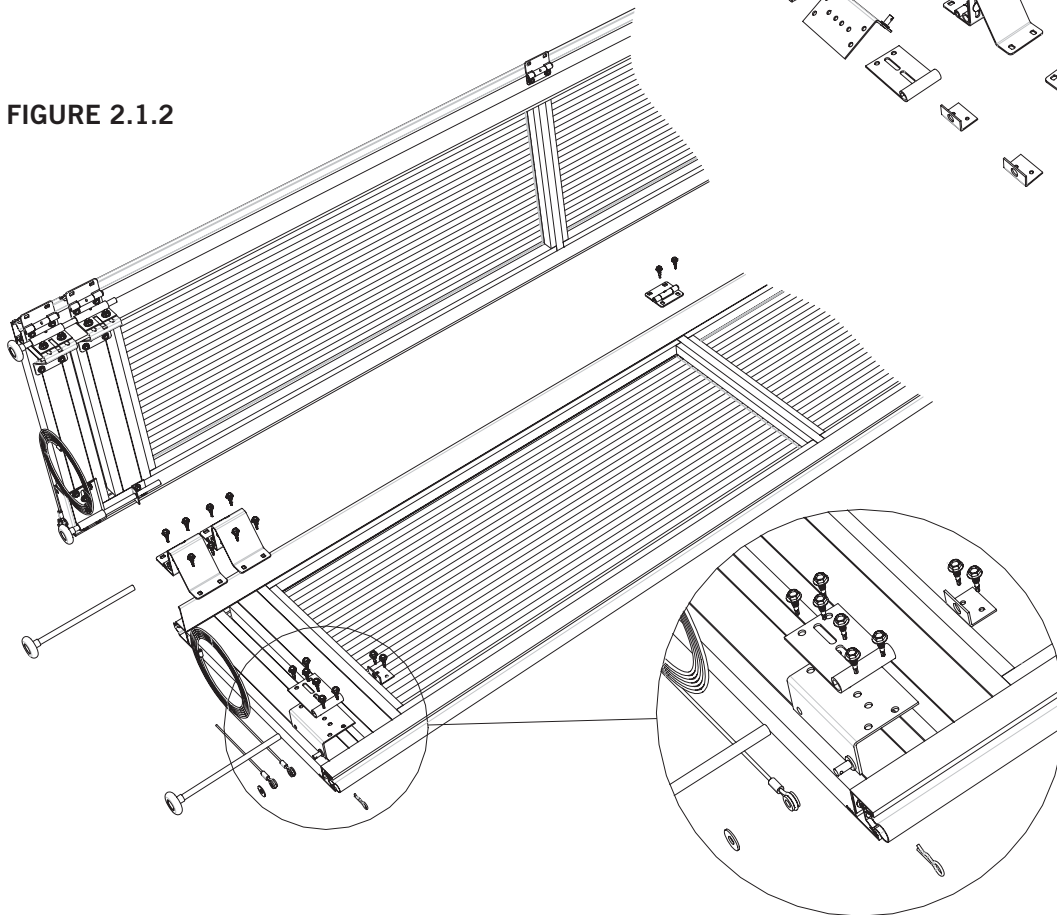
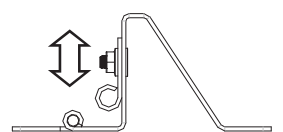
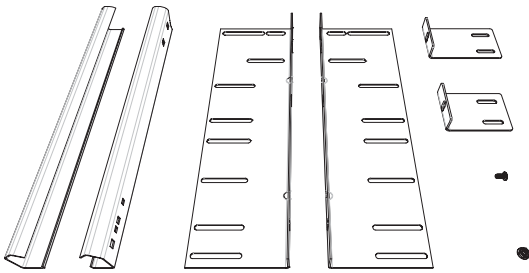


FIGURE 2.1.3



2.2 ASSEMBLING VERTICAL TRACKS

PARTS NEEDED



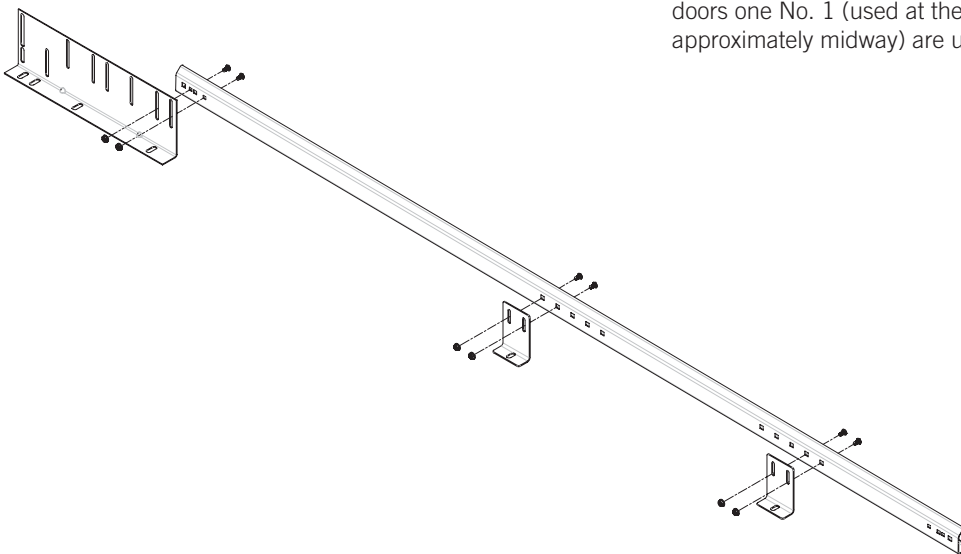
The vertical tracks should be **door height - 127mm long**.

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. Ensure that the track fits snugly into the curve.

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.

FIGURE 2.2.1 TRACK ASSEMBLY

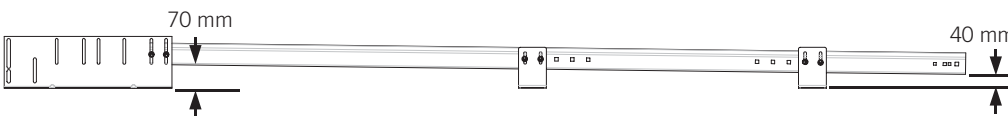


Assemble the rest of the brackets onto the tracks ensuring the "V" section points away from the wall bracket. For smaller doors two No. 1 brackets per side are used, for the larger doors one No. 1 (used at the bottom) and one No. 2 (placed approximately midway) are used.

LOW SIDEROOM INSTALLATION:

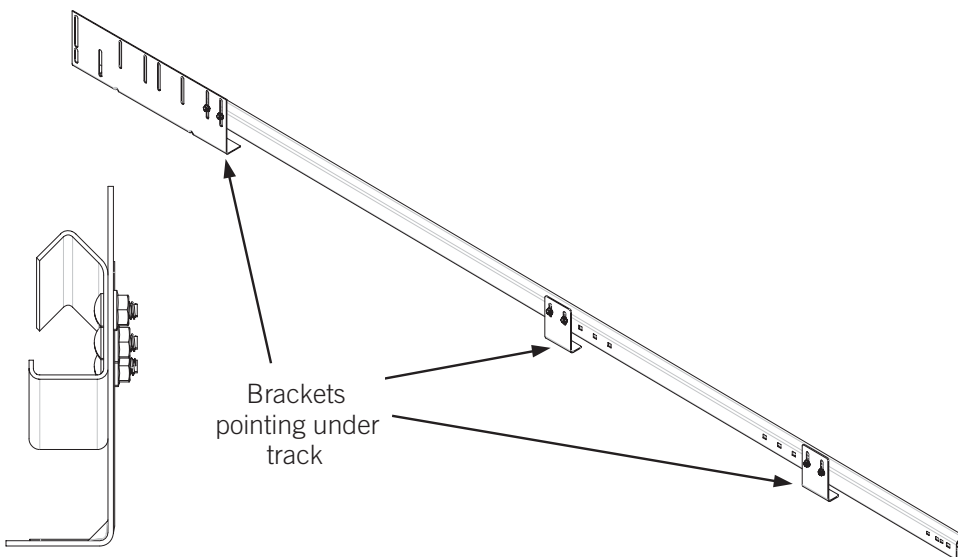
In situations with less than 120 mm from the door opening to a wall or other possible obstruction, then a low sideroom installation is required. This is achieved by having the wall brackets pointing inward under the track as shown in Figure 2.2.3.

FIGURE 2.2.2 CLEARANCE FROM WALL



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 2.2.3 LOW SIDEROOM



2.3 INSTALLING BOTTOM PANEL

If installing taper please consult pages 20-21.

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 .

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. The tracks should be **panel width + 20mm** apart and centrally placed.

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 2.3.1 WATER LEVEL

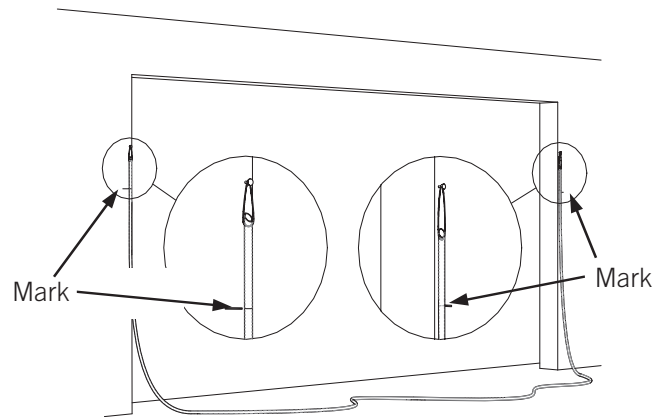


FIGURE 2.3.2 INSTALLING VERTICAL TRACKS

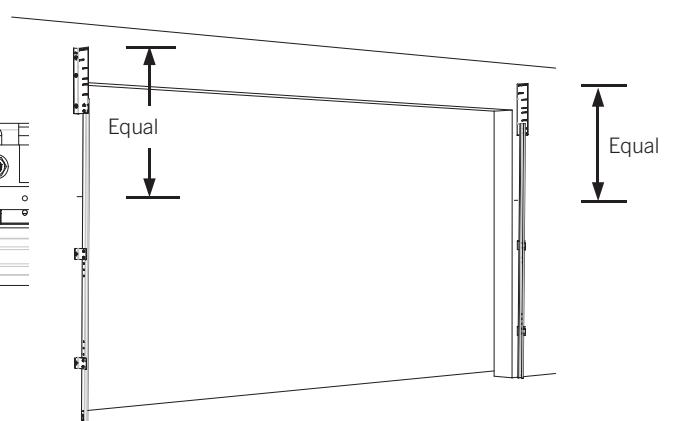
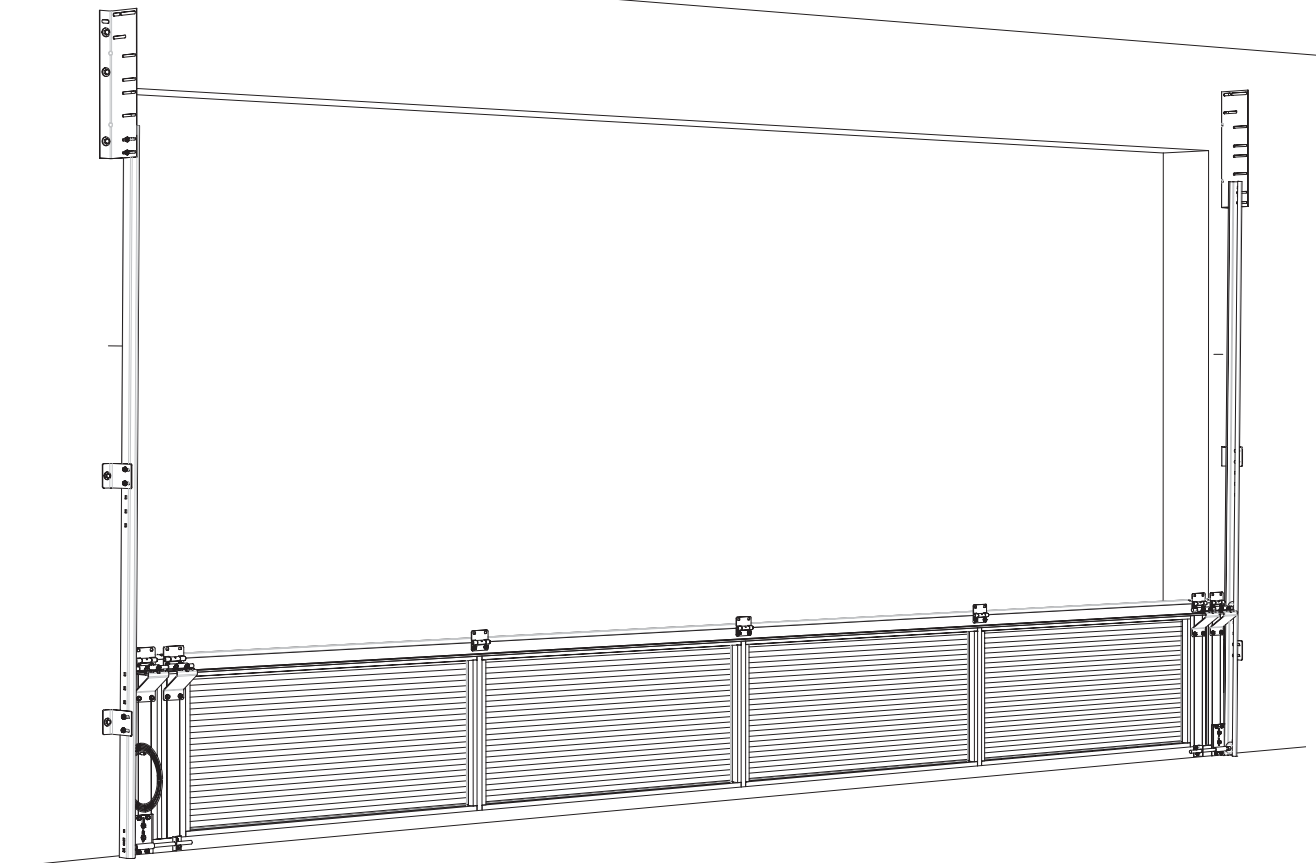
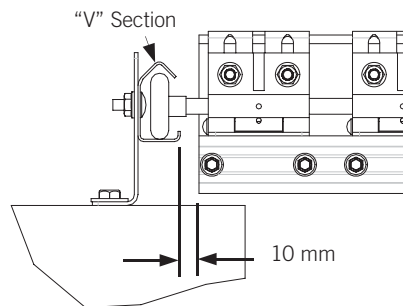


FIGURE 2.3.3



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 hinges and hangers to the panels as shown in Figure 2.4.1. There is a hinge for every point where there is a stile.

Fit a temporary spacer, 1-2mm thick, at each panel joint to give clearance between each panel in order to decrease paint rub.

Insert panel into the guide up then down engaging the wheels into the vertical tracks, Figure 2.4.2, and nesting the groove onto the tongue of the bottom panels, Figure 2.4.3. 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 2.4.4.

Please note that the hangers have adjustable wheel height, Figure 2.4.5, this needs to be adjusted ensuring that the panels are parallel to the opening.

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 2.4.1

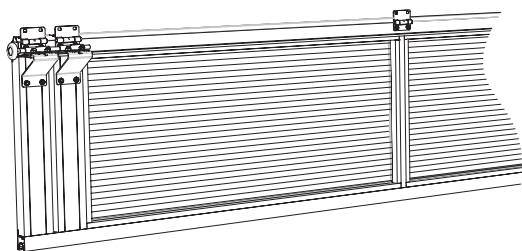


FIGURE 2.4.5

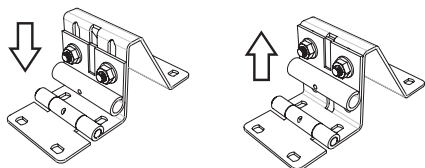


FIGURE 2.4.2

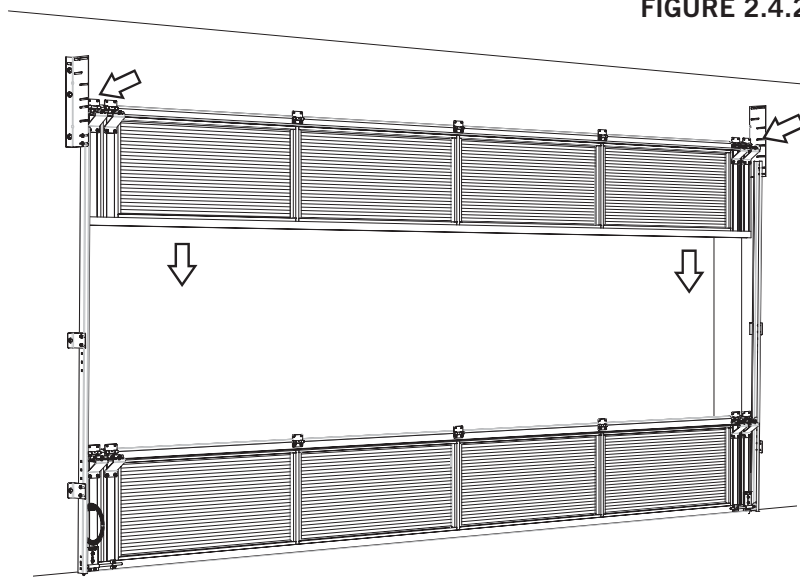


FIGURE 2.4.3

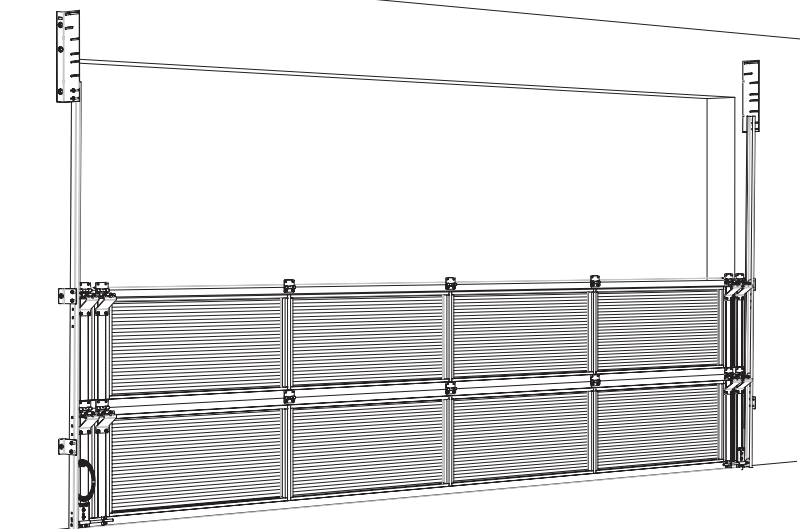
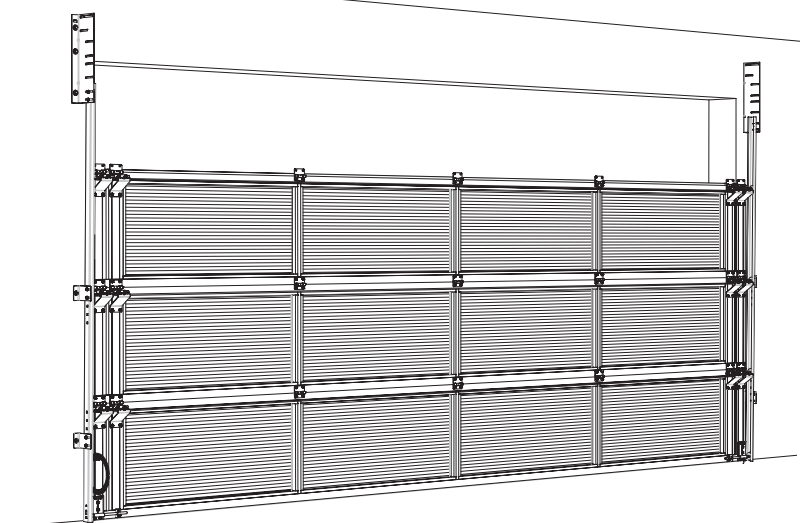


FIGURE 2.4.4



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.

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 2.5.2.

Use steel angle, Figure 2.5.3, 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 3/4 length of the track, Figure 2.5.4. **For doors higher than 2280mm and/or wider than 4700mm two supports will be required, Figure 2.5.5.**

FIGURE 2.5.1

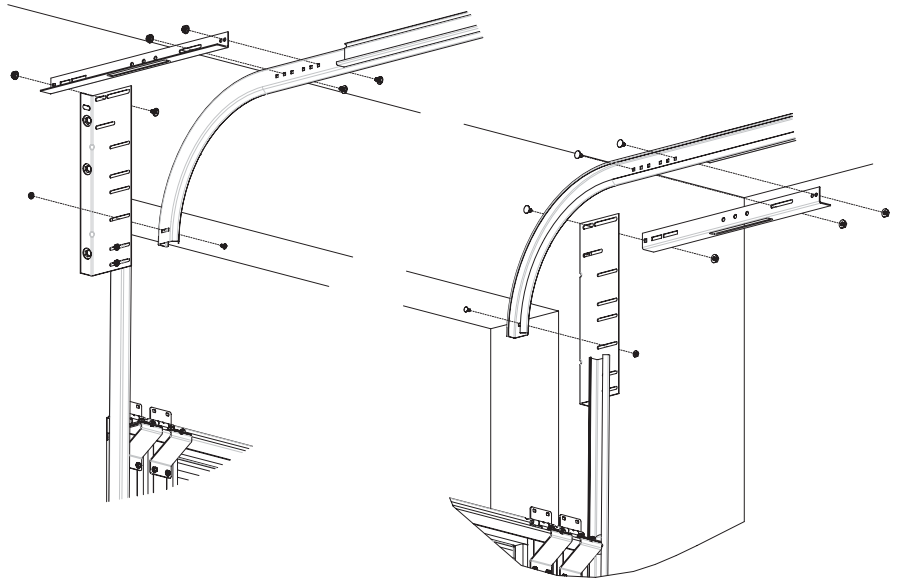


FIGURE 2.5.2

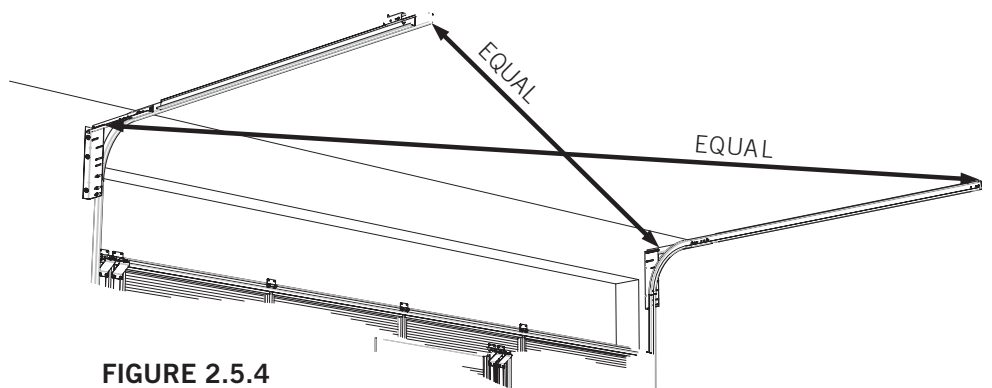


FIGURE 2.5.4

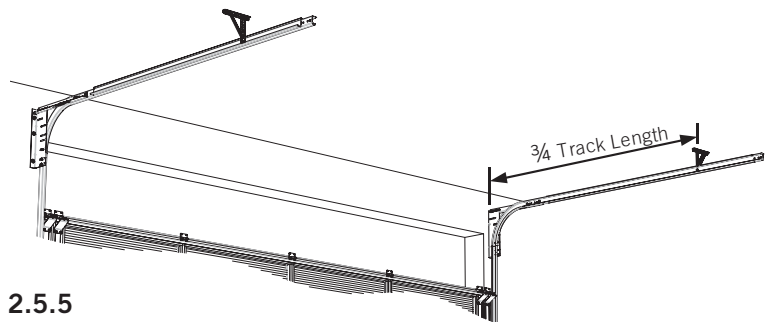


FIGURE 2.5.5

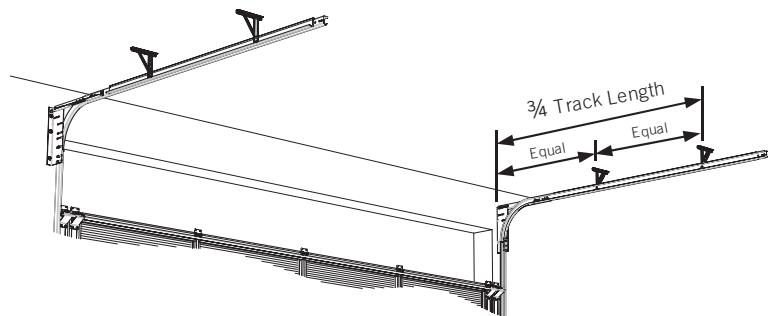
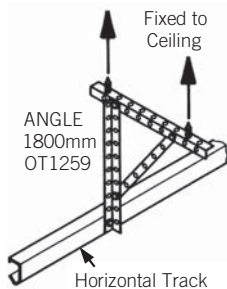


FIGURE 2.5.3



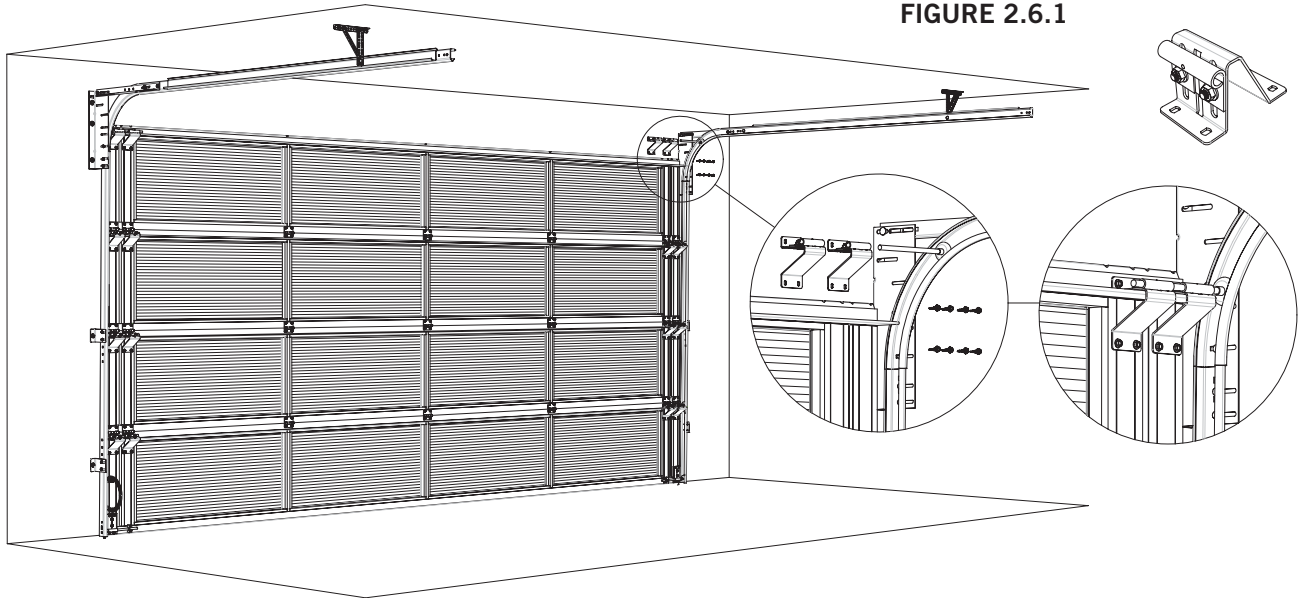
2.6 INSTALLING TOP PANEL

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 pages 16 & 17 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



2.7 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 2.7.1.

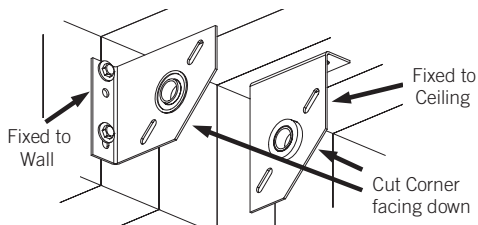
With single spring doors, slide a shaft collar against the spring anchor bracket. The bearing flange in the spring anchor bracket must face the spring. It may need to be reversed depending on whether a left or right hand spring is supplied, see Figure 2.7.2. The shaft collar is tightened against the 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 2.7.3.

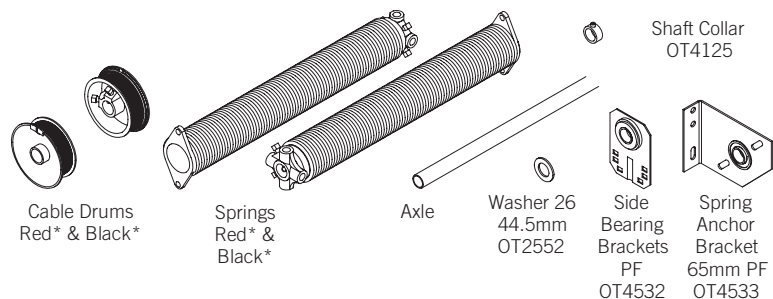
With two springs no shaft collar is necessary. Place the cable drum onto the torsion bar with the red cable drum on the left side and the black cable drum on the right side as in Figure 2.7.5.

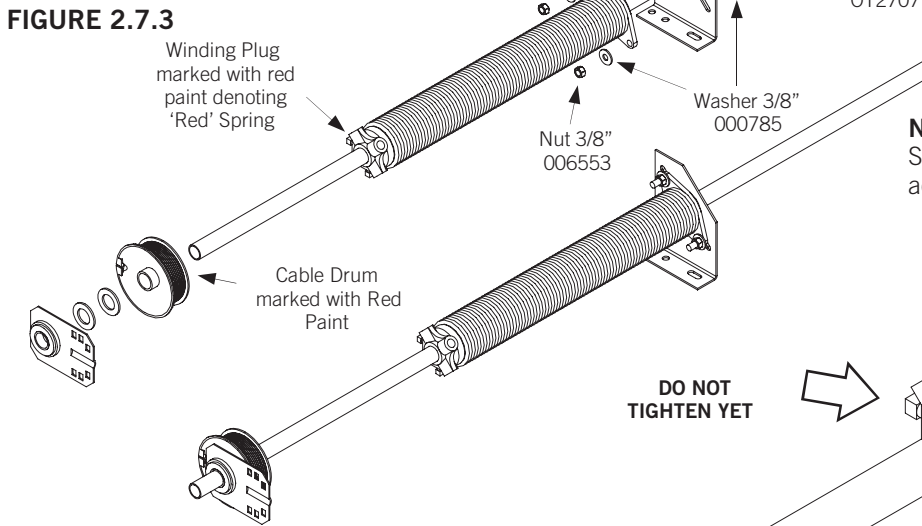
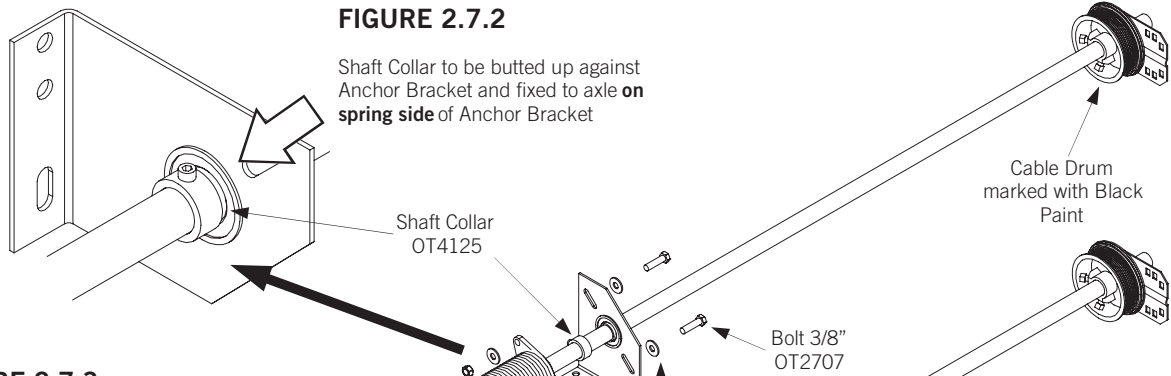
The set screws on the cable drums should face inwards see Figure 2.7.4. Place the two 3mm cable drum spacers on each side. Then the side bearing brackets are positioned outside the cable drum spacers with the flange facing outwards.

FIGURE 2.7.1

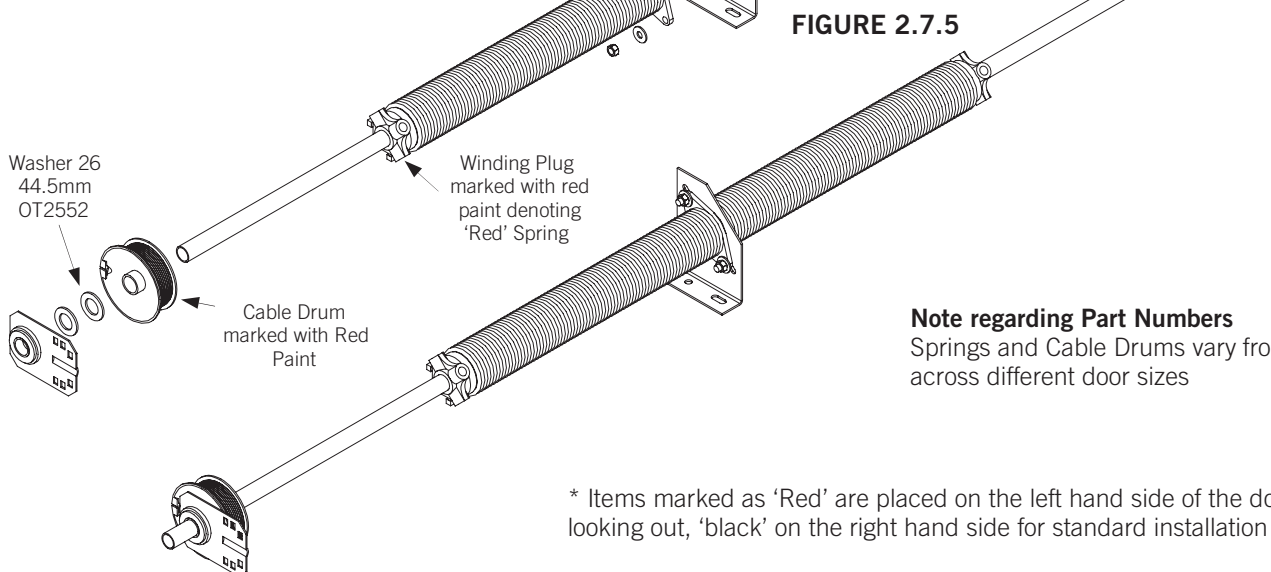
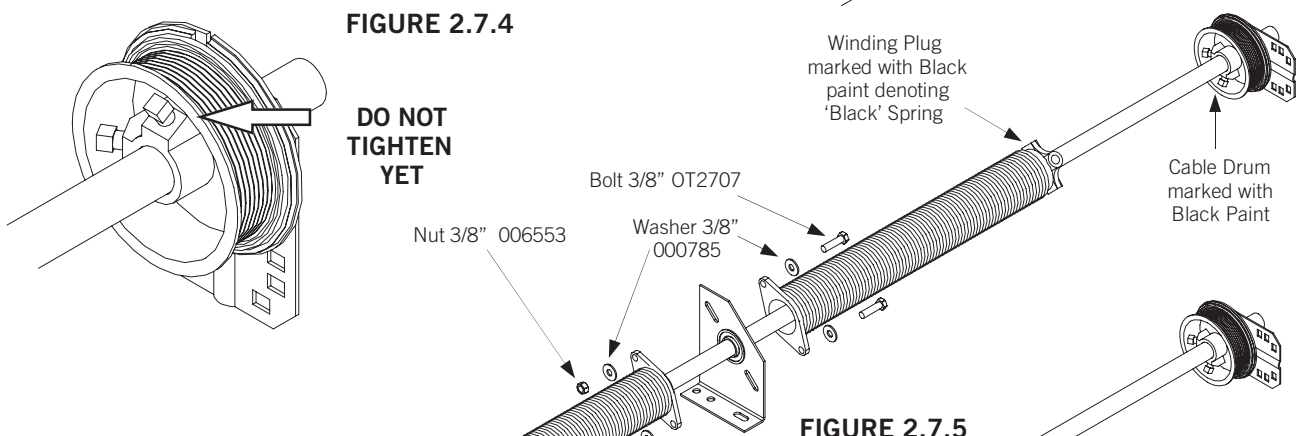


PARTS NEEDED





Note regarding Part Numbers
 Springs and Cable Drums vary from across different door sizes



* 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



2.8 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 2.8.1 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 Couple engaging both left and right hand axle assemblies as shown in Figure 2.8.2, 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 Figure 2.8.3. The complete assembly should look like Figure 2.8.4 by this stage. Cut the key to the required lengths and then insert into the slots as shown in Figure 2.8.5 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 2.8.6 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 2.8.7.

FIGURE 2.8.1

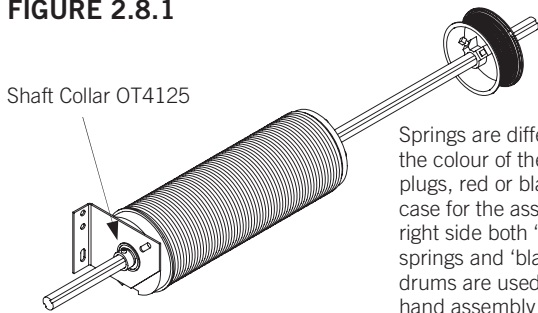


FIGURE 2.8.2

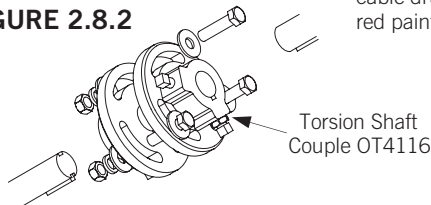
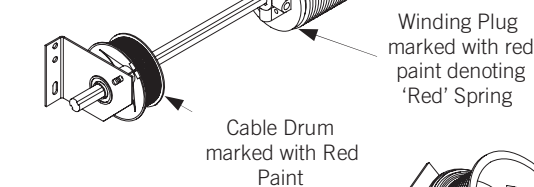


FIGURE 2.8.4



Insert key then fix into place with grub screw.

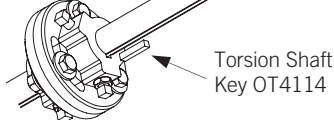
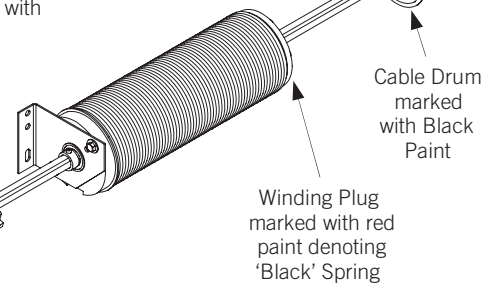
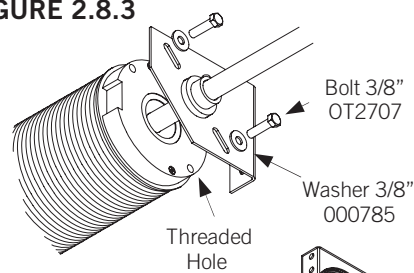


FIGURE 2.8.5

FIGURE 2.8.3



Note regarding Part Numbers

Springs and Cable Drums vary from across different door sizes

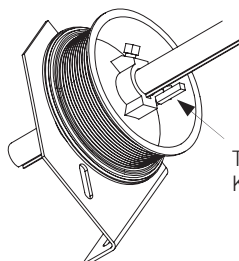


FIGURE 2.8.6

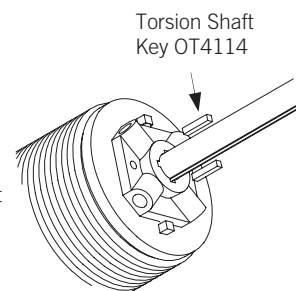


FIGURE 2.8.7



2.9 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 2.9.1.

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 2.9.2.

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 2.9.1

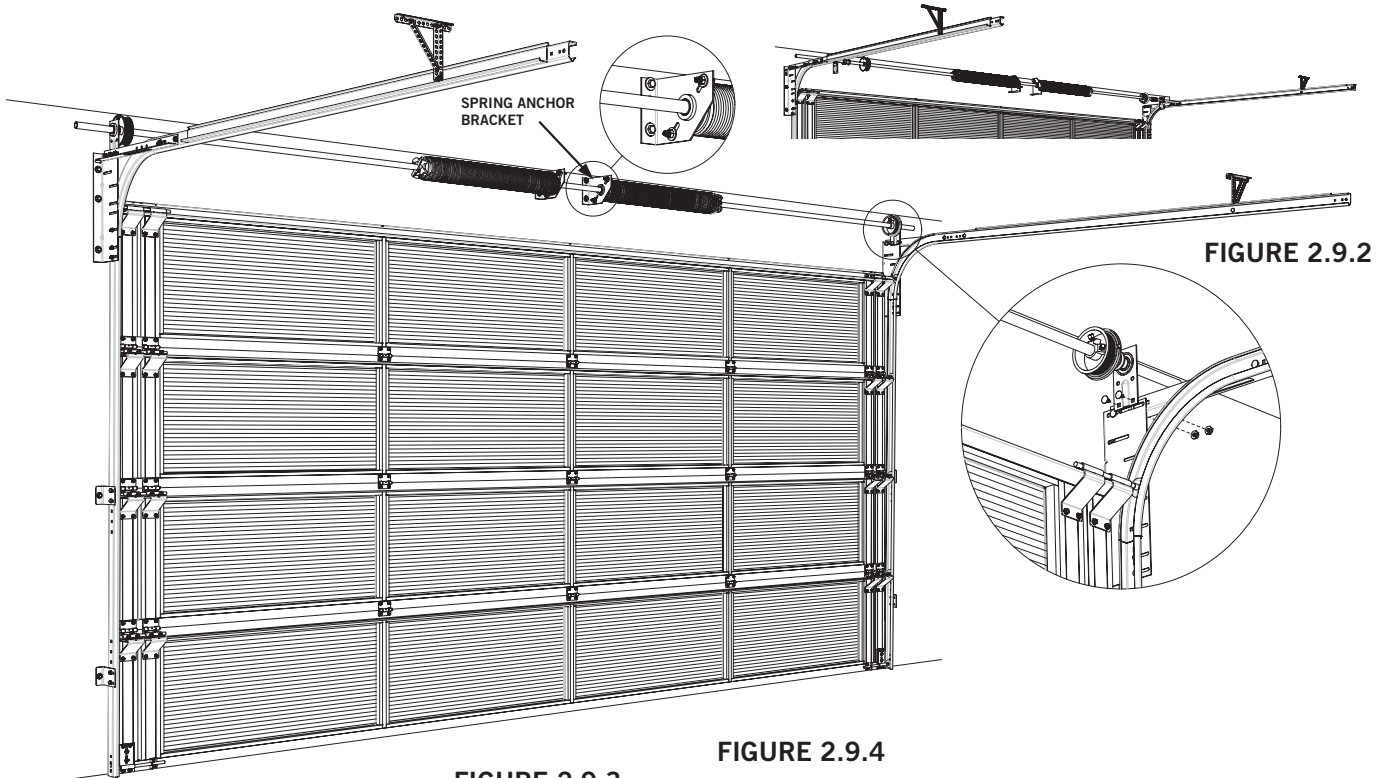
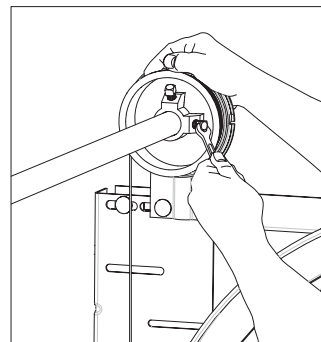
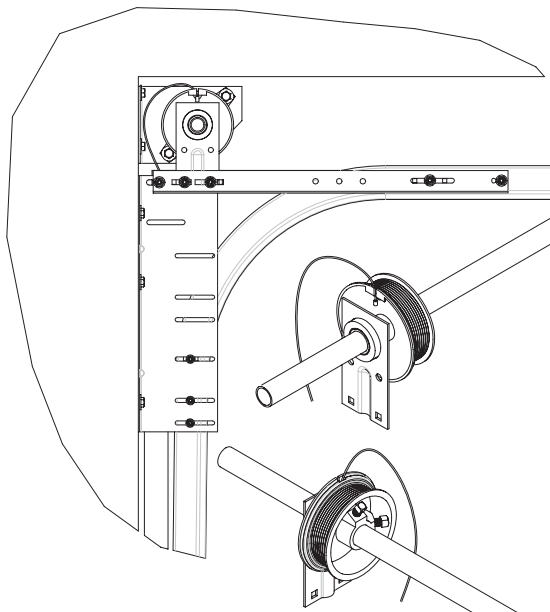


FIGURE 2.9.3

FIGURE 2.9.4



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 2.9.3.

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 9.5 mm setscrews securely to the torsion bar. Be careful not to over-tighten the set-screws, Figure 2.9.4.

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 2.10.1. Then assemble onto the bottom panel as shown in Figure 2.10.2 and 2.10.3.

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

Figure 2.10.4 illustrates the first stage of assembling a single spring rear torsion installation. A shaft collar is still required and fixed on the spring side of the Flat Spring Anchor Brackets.

Figure 2.10.5 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.

DOUBLE TRACKS: Assemble double tracks and pulley bracket assembly as shown in Figure 2.10.6. Ensure curve butts up against and is aligned with the vertical track.

TOP PANEL: Please note the wheel on the top panel runs in the upper track, Figure 2.10.11, otherwise the assembly of the top panel is the same as a standard door.

FIGURE 2.10.1

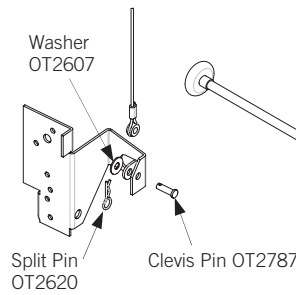
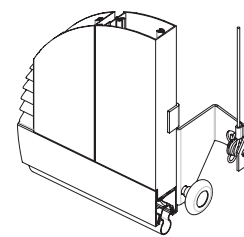
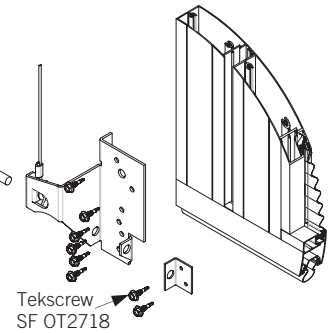


FIGURE 2.10.2



Bottom Hanger BB5R
Left Hand - OT4470
Right Hand - OT4471

FIGURE 2.10.3

FIGURE 2.10.4

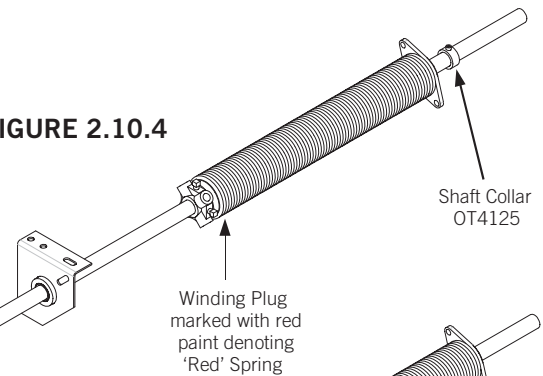
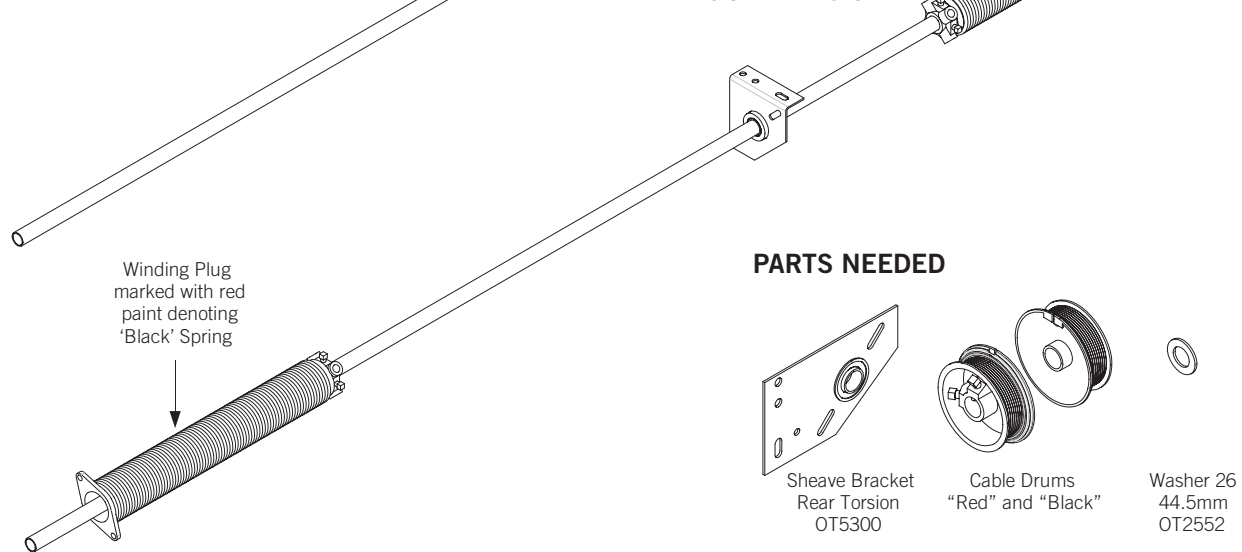
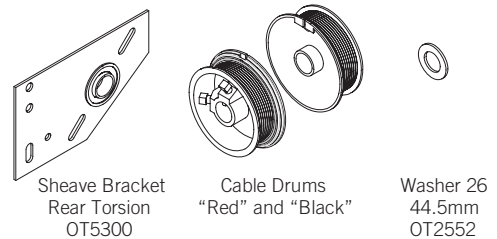


FIGURE 2.10.5

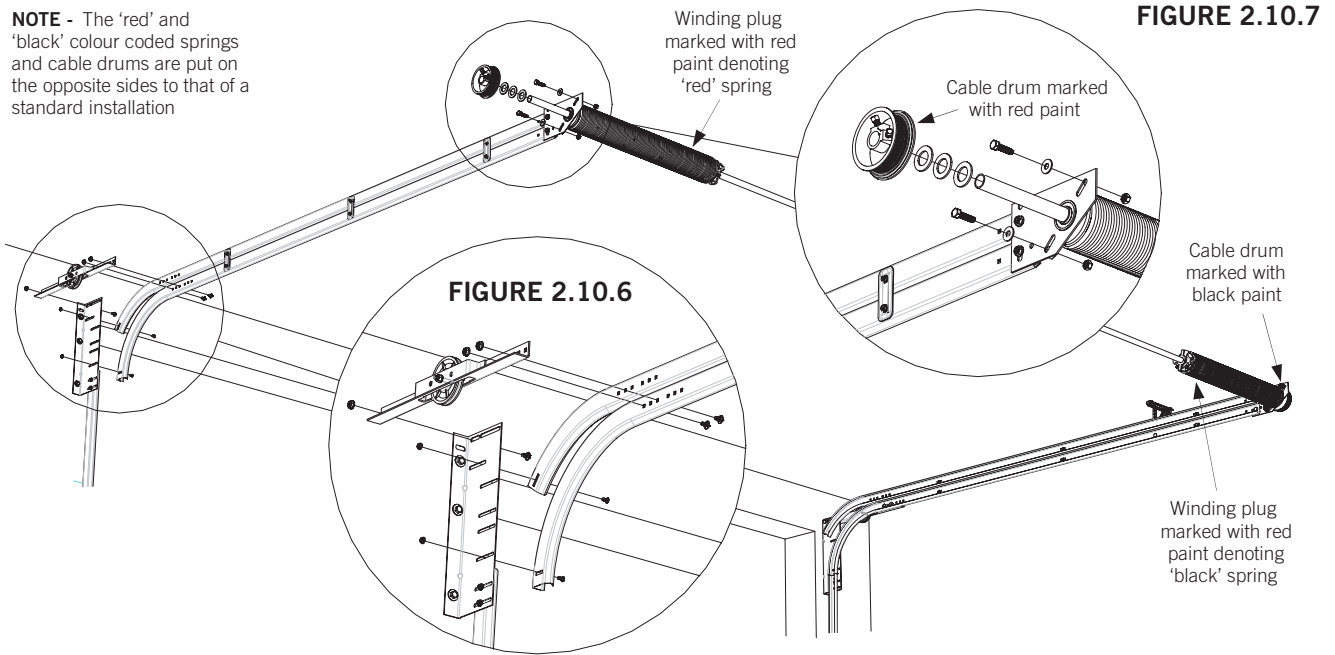
Note regarding Part Numbers
Springs and Cable Drums vary from across different door sizes



PARTS NEEDED



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 2.10.7. 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.

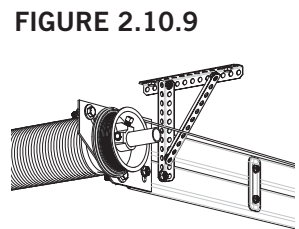
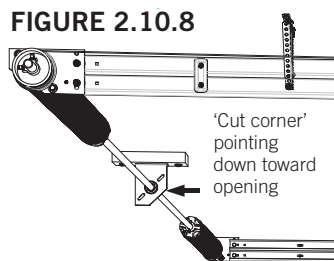


FIGURE 2.10.8

FIGURE 2.10.9

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 2.10.7. 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 2.10.8.

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 2.10.10.

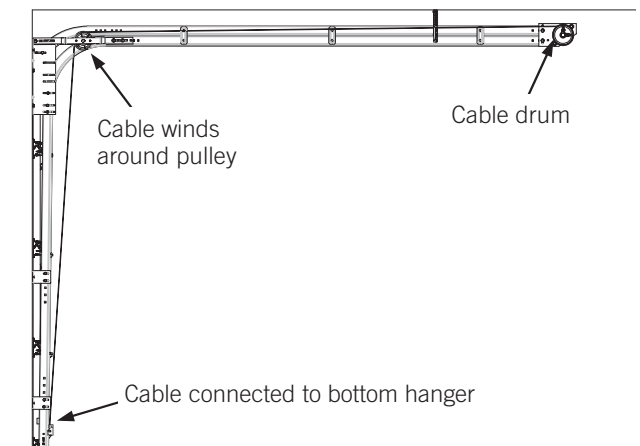


FIGURE 2.10.10

Attach the lifting cable to the cable drum by slipping the cable into the slot on the outside groove, see Figure 2.9.3 page 15. (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 overtighten the set-screws.

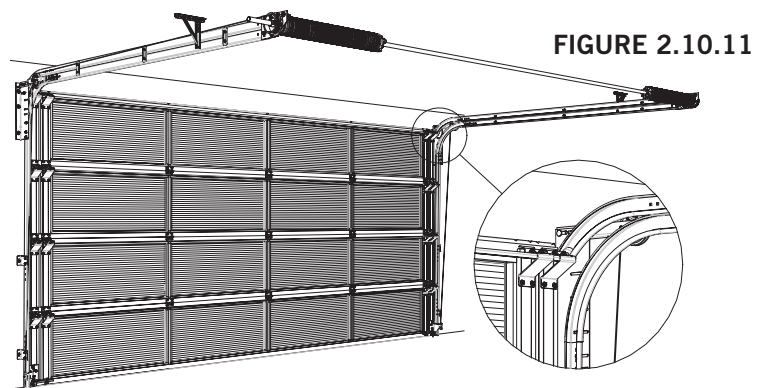


FIGURE 2.10.11

2.11 ADDING TENSION TO SPRINGS

Secure the torsion bar to prevent any rotation, as shown in Figure 2.11.1.

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 2.11.2.

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 2.11.3.

Turn the spring by inserting winding bars into the winding plug holes provided in the spring and wind up in an up and over direction towards the ceiling, Figure 2.11.4. Once you have completed the amount of turns required, remove one winding bar from the winding plug. Tap the other winding 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 2.11.5. 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 door.

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 2.11.6.

FIGURE 2.11.1

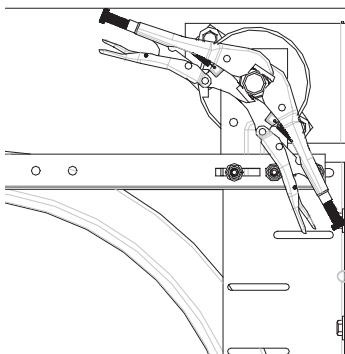


FIGURE 2.11.4

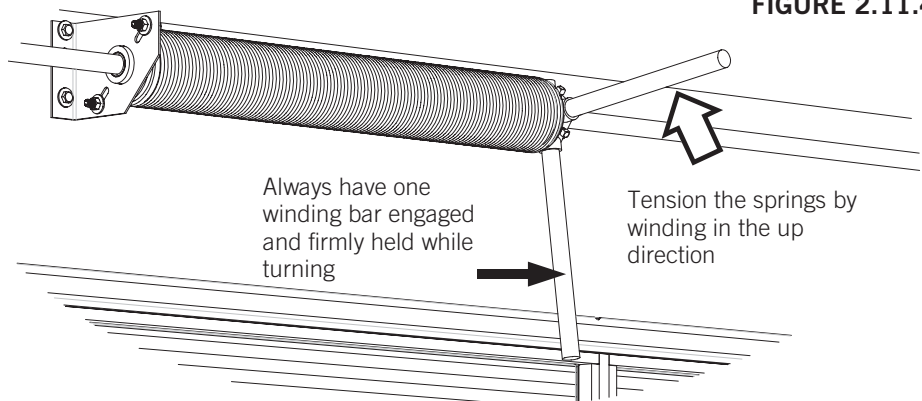


FIGURE 2.11.2

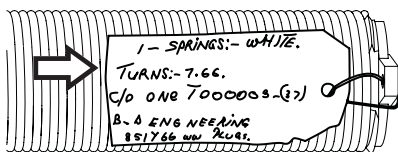


FIGURE 2.11.5

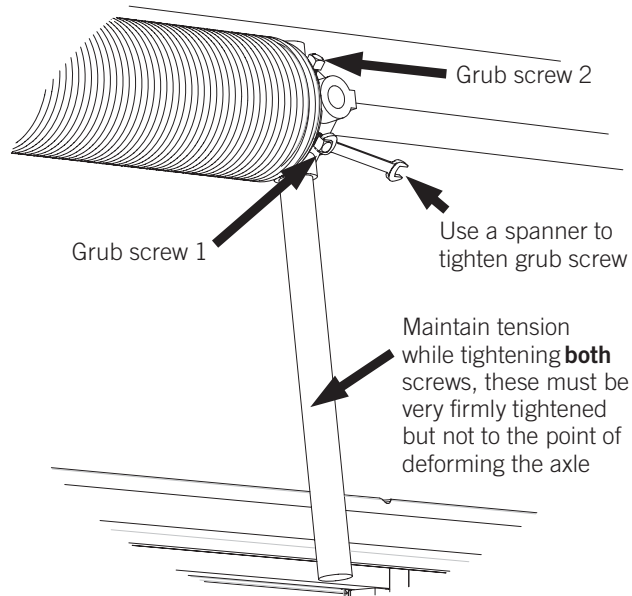


FIGURE 2.11.3

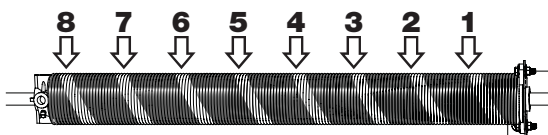
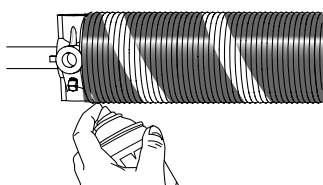


FIGURE 2.11.6



3.0 OPTIONAL COMPONENTS

3.1 JAMB SEAL KIT

A 5-10 mm gap is required between the door and the jamb, for the installation of Jamb Seal Kit.

Open the door. Cut the jamb seal extrusion and its aluminium support to suit the door height opening. (Standard supply lengths are 2.4m). For doors higher than 2.4m, and less than 2.6m, one kit should be adequate, leaving a space at the top. Doors above 2.6m high require an additional kit.

Slide the jamb seal extrusion into the aluminium extrusion. The plastic extrusion should point away from the opening as in Figure 3.1.1.

Place the aluminium extrusion on the wall between the door and the jamb. When the door closes, it should close up against this extrusion (see diagram below). The ribbed section of the aluminium extrusion is to face away from the opening. Use the clips provided to fix the aluminium extrusion to the back of the jamb, Figure 3.1.2.

Repeat for the other side.

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.

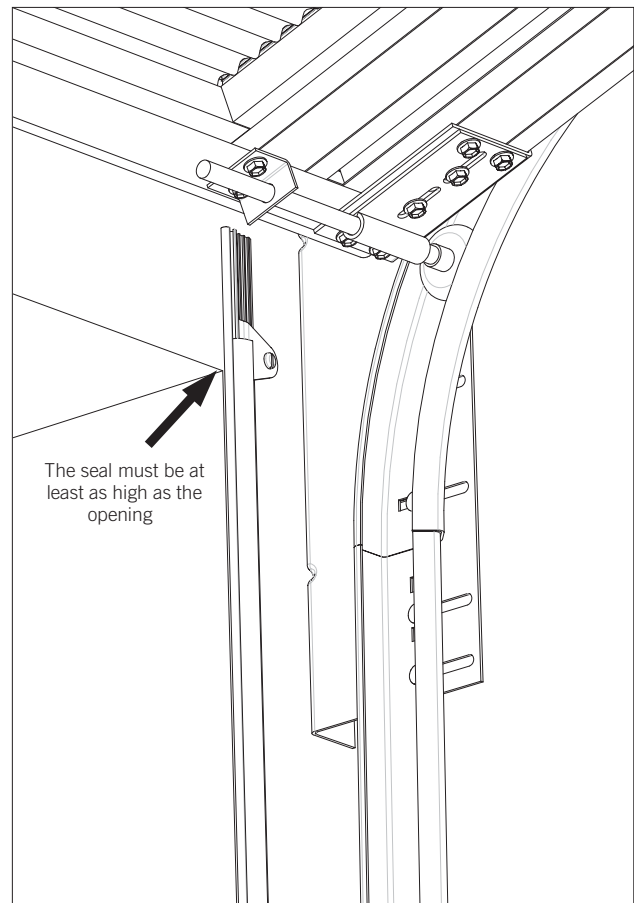


FIGURE 3.1.1

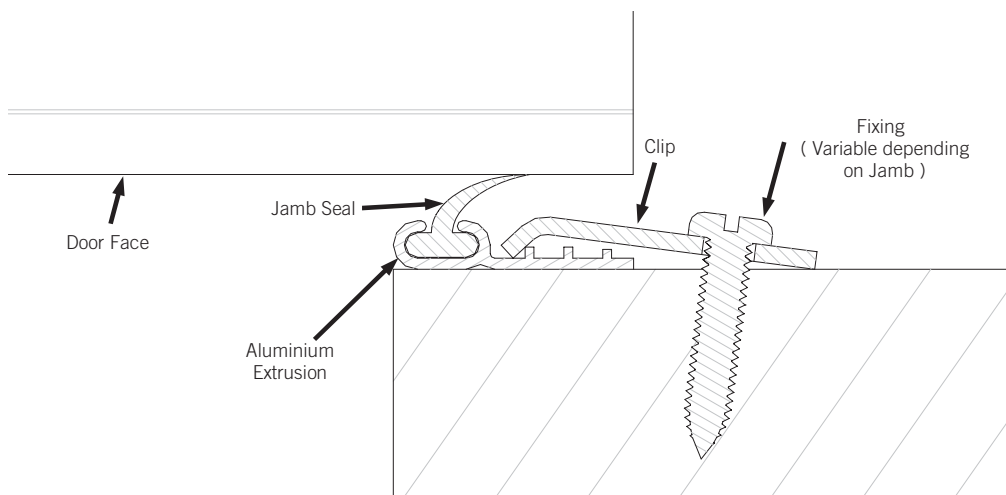
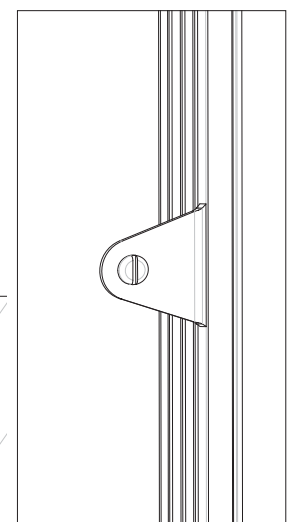


FIGURE 3.1.2



3.2 FIXED TAPERS

Fixed Tapers consist of a modified bottom panel, Figure 3.2.1. Please familiarise yourself with the standard bottom panel assembly on Page 7. The installation is almost identical to that of the standard Bottom Panel but for one significant difference.

The wheel and lifting gear will have to be on the same level as each other as opposed to being fixed to the bottom corners of the panel. The shorter panel side is assembled as normal,

but a measurement must be taken from the top of the panel to the Wheel Axle. Now when assembling the lifting gear on the longer side of the panel use this measurement for the correct placement of the lifting gear and Wheel Axle, see Figure 3.2.2.

FIGURE 3.2.1

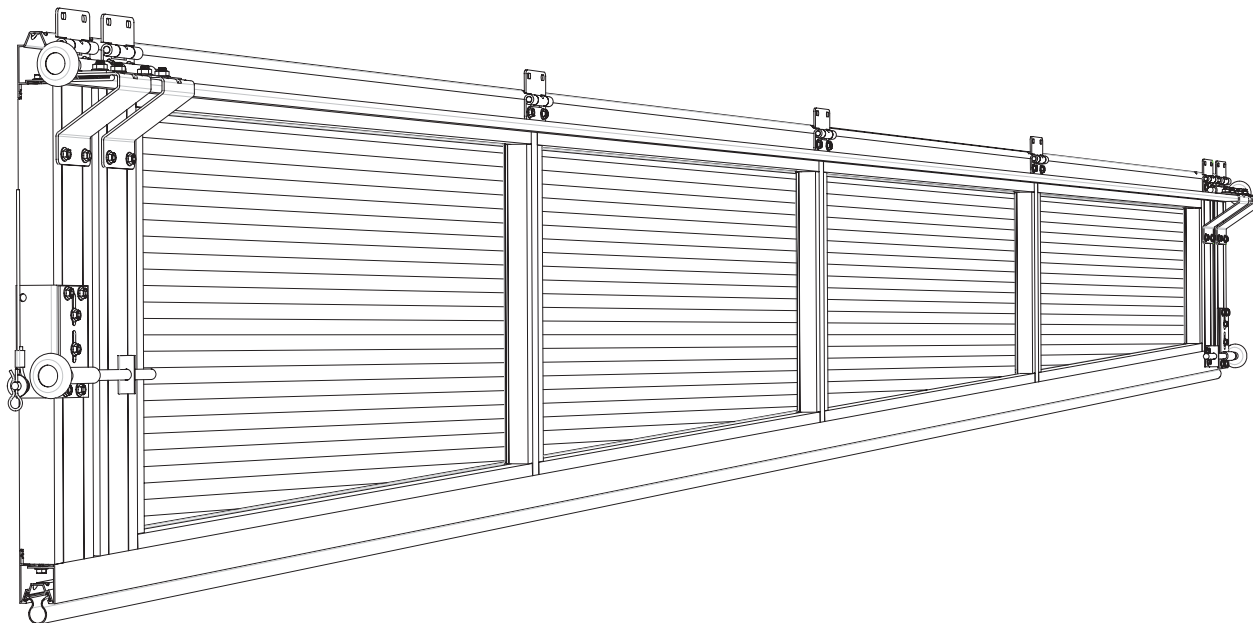
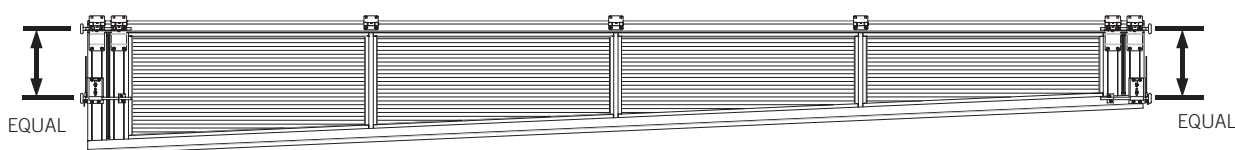


FIGURE 3.2.2



3.3 HINGED TAPERS

Hinged 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.

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.

The tapered panel comes assembled with hangers and hinges, Figure 3.3.1. The lifting panel is different from the standard Bottom Panel shown on page 7 in that there is no weather seal it's part of the taper panel. Assemble bottom hanger onto the Lifting Panel as shown in Figure 2.1.2 on page 7.

Simply assemble Tapered Panel onto Lifting Panel using the hinges provided on the tapered panel. Figure 3.3.2.

FIGURE 3.3.1

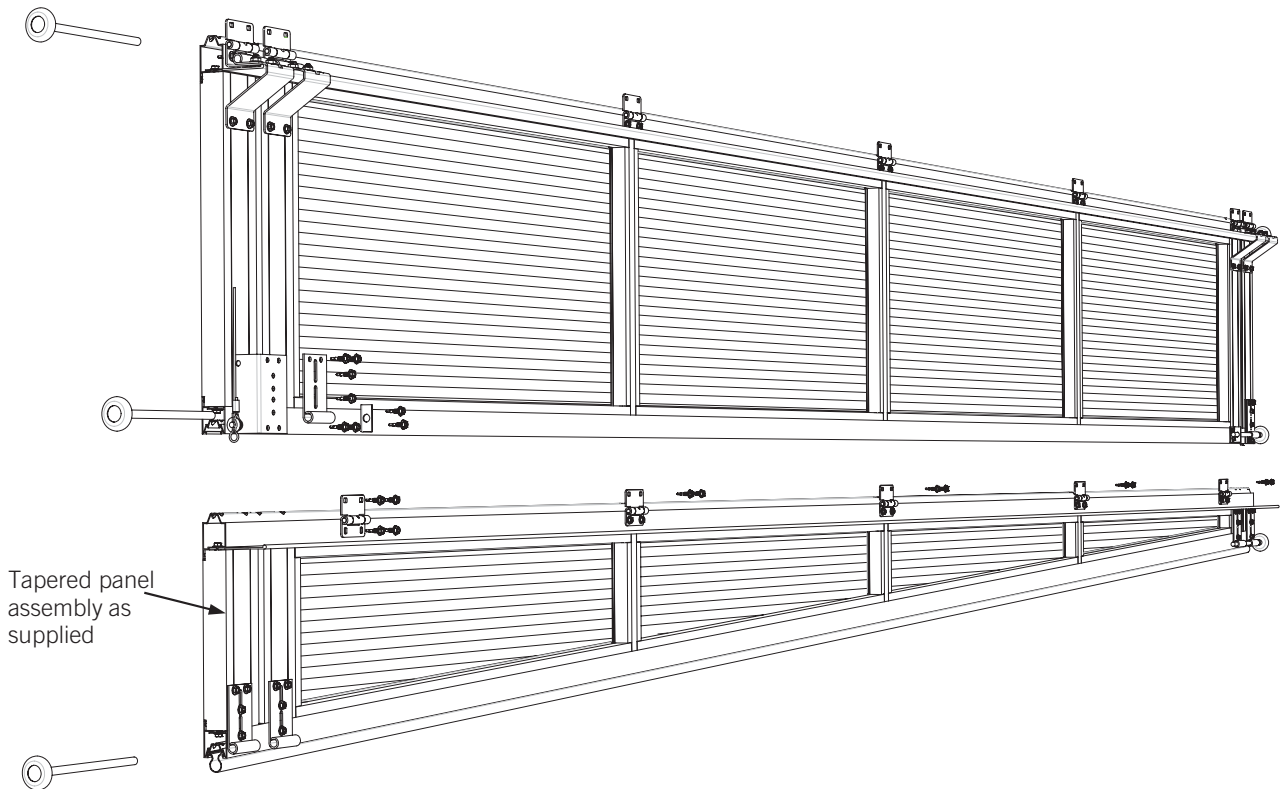
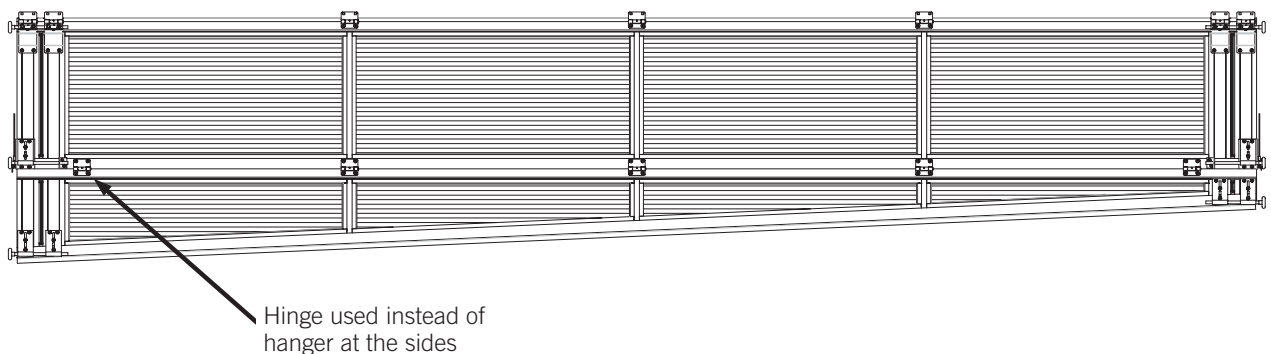


FIGURE 3.3.2



3.4 CHANGING INSERTS

FIGURE 3.4.1 REMOVING EXISTING INSERTS

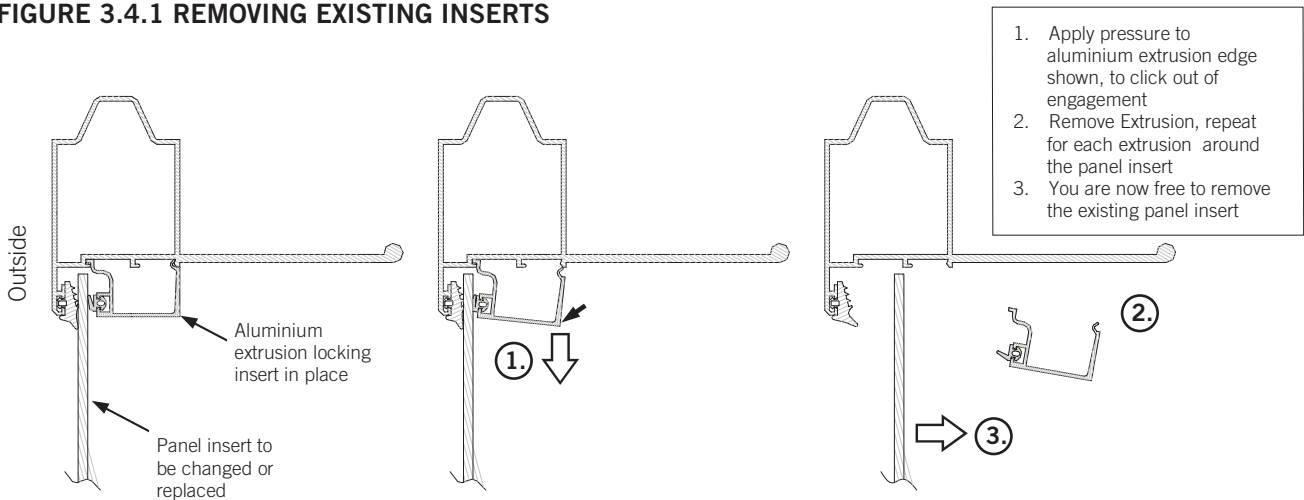
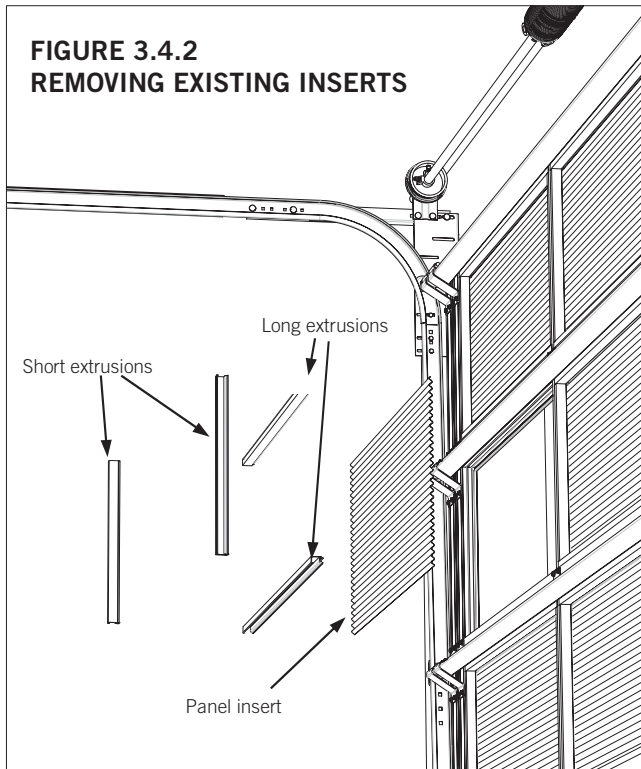


FIGURE 3.4.2 REMOVING EXISTING INSERTS



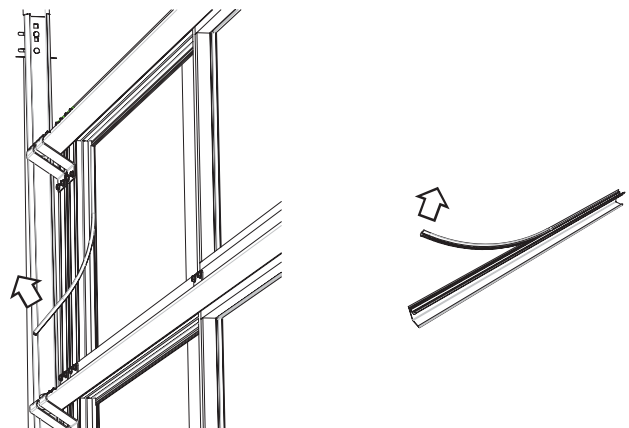
The inserts are held in place through the use of aluminium extrusions that are clicked into position around the rim of the insert.

The insert(s) should be changed or replaced from inside the garage and when the door is secured in the down position. When inserts are removed the door will become lighter thus wanting to lift up presenting possible safety issues unless secured in place, through lock or opener (the opener should be unplugged during this process to prevent accidental activation).

Follow the sequence in Figure 3.4.1 to remove the panel insert, removing all four extrusion around the circumference of the panel insert. Figure 3.4.2, shows an exploded view of a panel insert assembly.

If you are simply replacing a damaged insert or changing to a new one of similar thickness, you will not need to replace the seals. Starting on an end of a seal, simply pull out as shown in Figure 3.4.3, from both the frame and the snap on rails.

FIGURE 3.4.3 REMOVING EXISTING SEALS



Regarding the thickness of the replacement insert(s), there are two different seals that can be used for the various thickness materials, Figure 3.4.4, two smaller seals would be used for thick inserts such as the Cedar Wood, a small and large would be used for moderately thick inserts such as the Mini Corrugated, and two large inserts for thin inserts such as the Aluminium Ribbed sections. When inserting the seals ensure that they are fully engaged into the channel by applying pressure with a thumb along the entire length, Figure 3.4.5.

Consulting Figure 3.4.6 to assemble the new inserts. Please note that the upper and lower extrusions should be assembled before the two side extrusions.

After the necessary inserts have been replaced, operate the door manually to determine if the springs need adjustment as on page 18.

FIGURE 3.4.4 REMOVING EXISTING SEALS

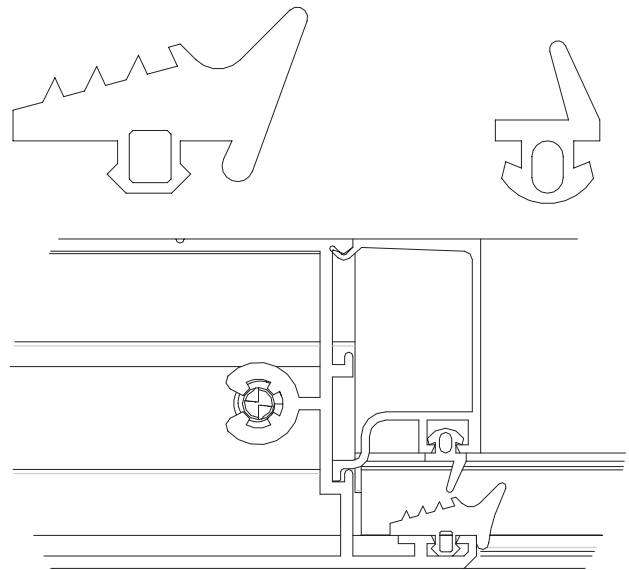


FIGURE 3.4.5 REMOVING EXISTING SEALS

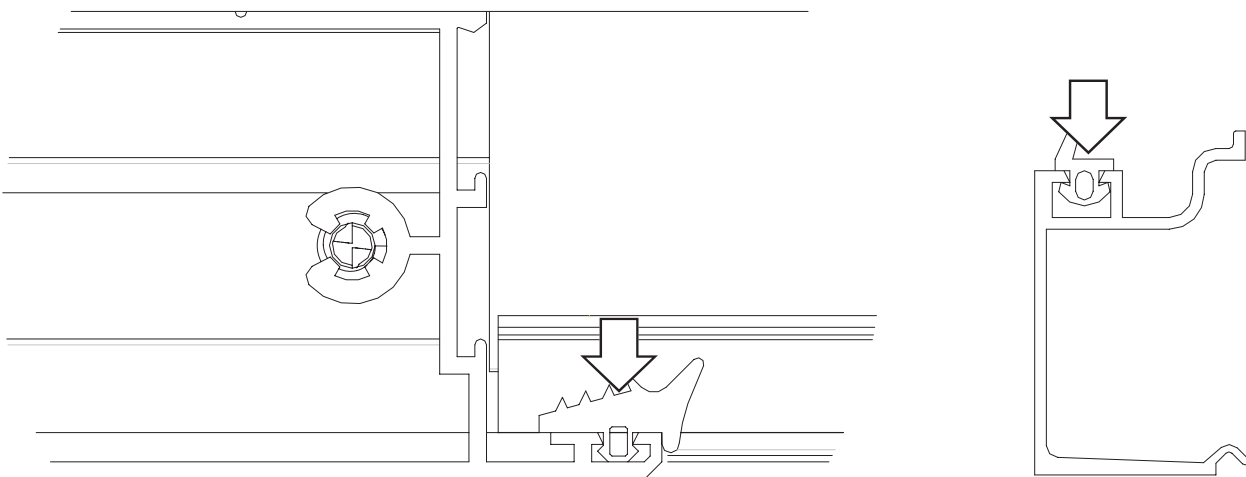
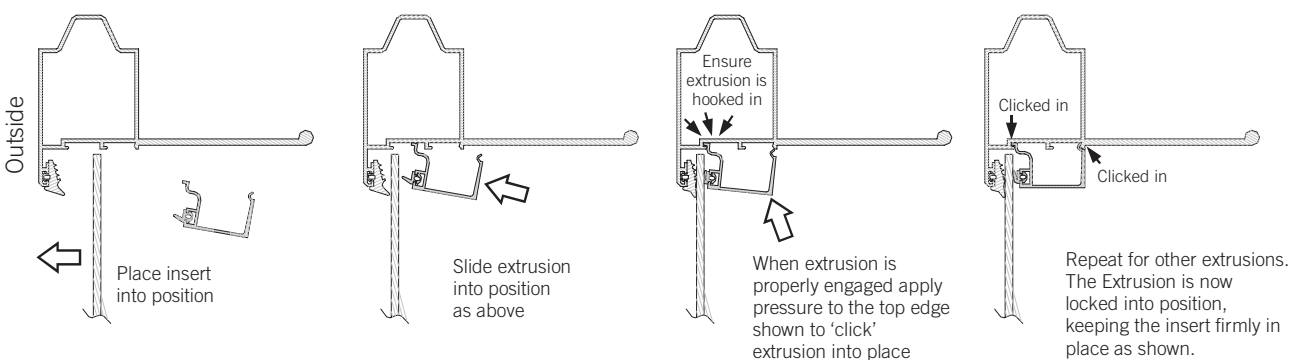


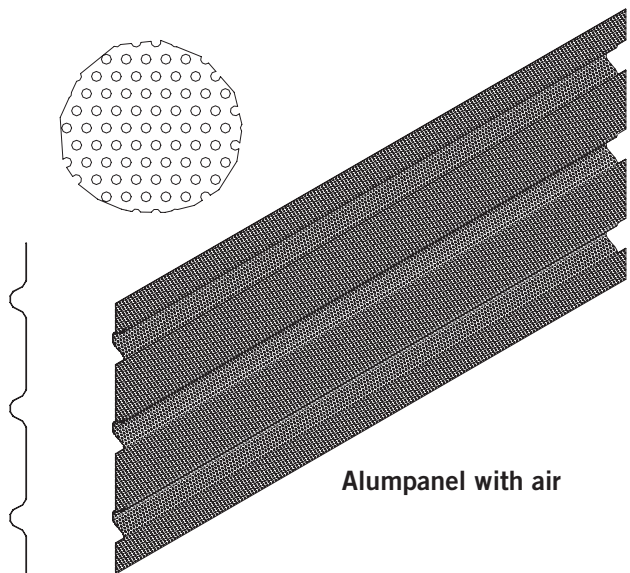
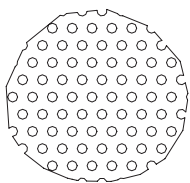
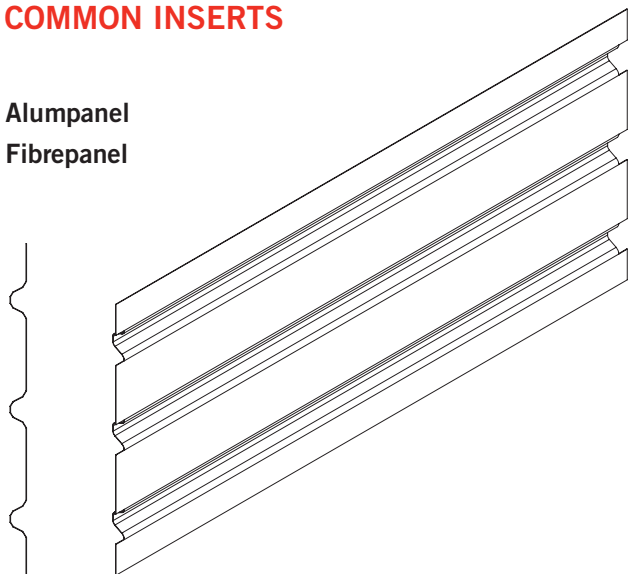
FIGURE 3.4.6 INSTALLING NEW INSERTS



3.5 INSERT OPTIONS

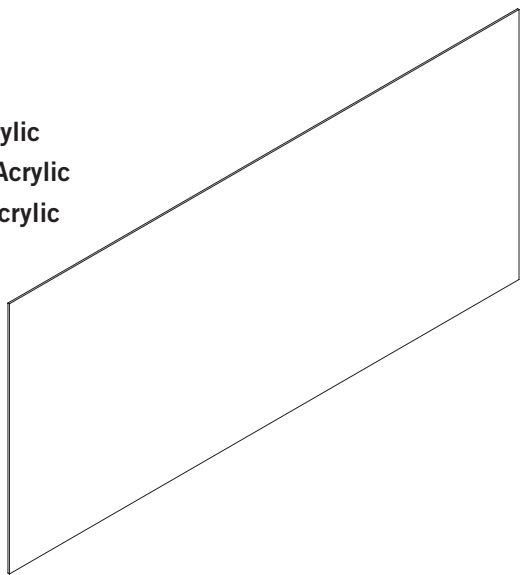
COMMON INSERTS

Alumpanel
Fibrepanel



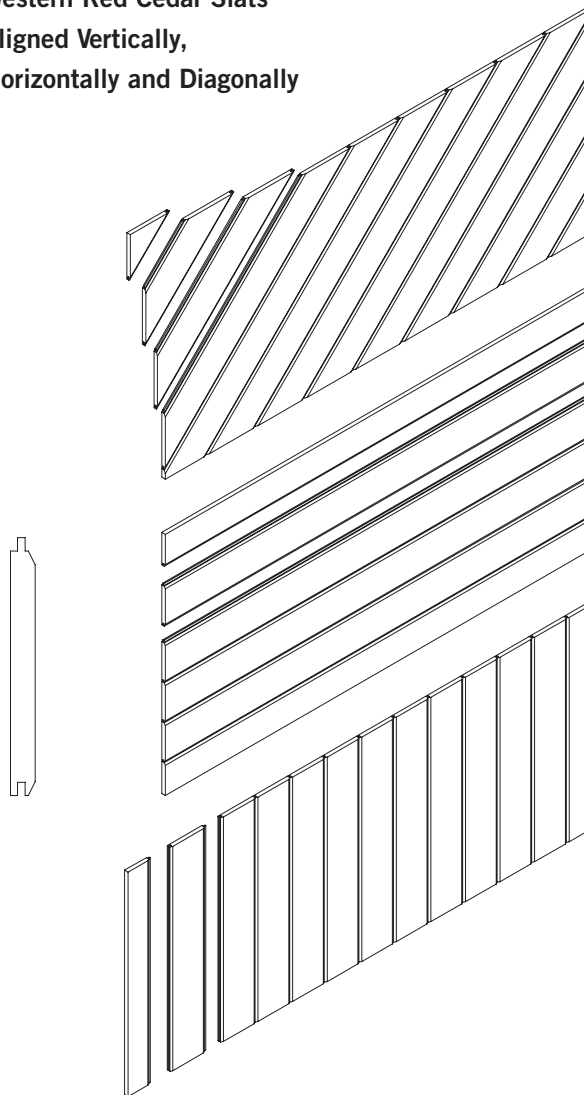
Alumpanel with air

Clear Acrylic
Opaque Acrylic
Smoke Acrylic

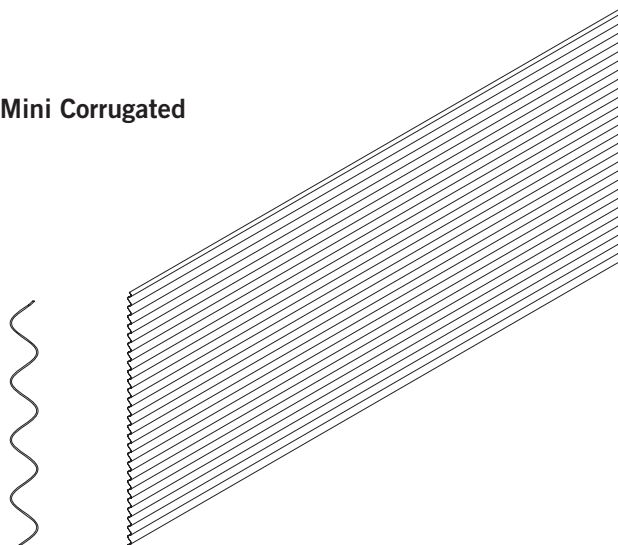


DESIGN-A-DOOR EXCLUSIVE INSERTS

Western Red Cedar Slats
Aligned Vertically,
Horizontally and Diagonally

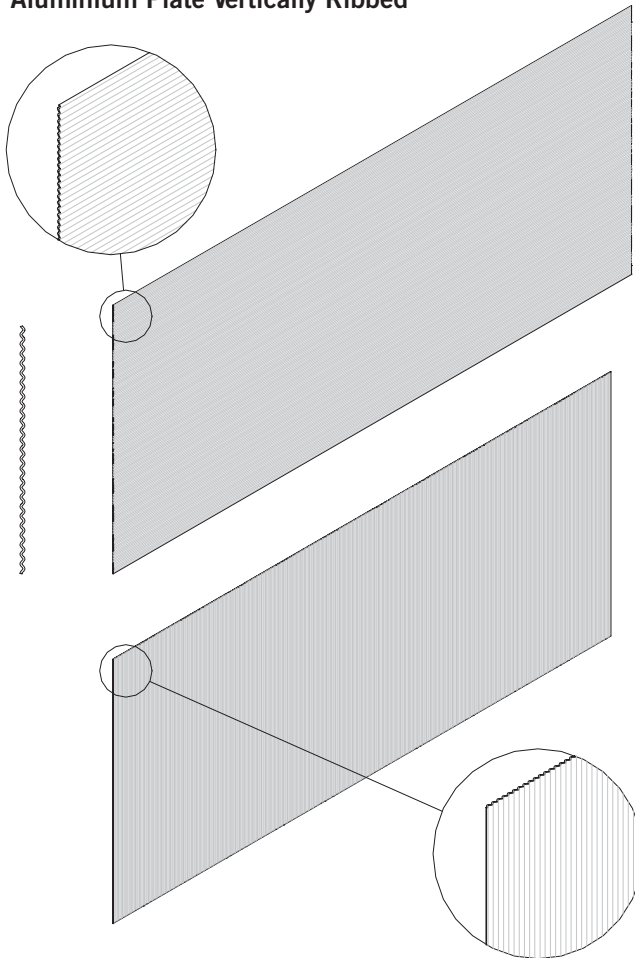


Mini Corrugated

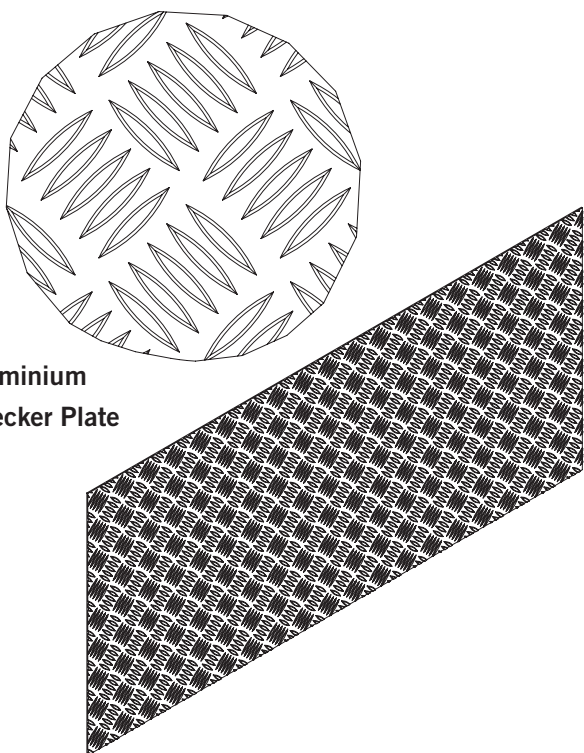


DESIGN-A-DOOR EXCLUSIVE INSERTS

Aluminium Plate Vertically Ribbed



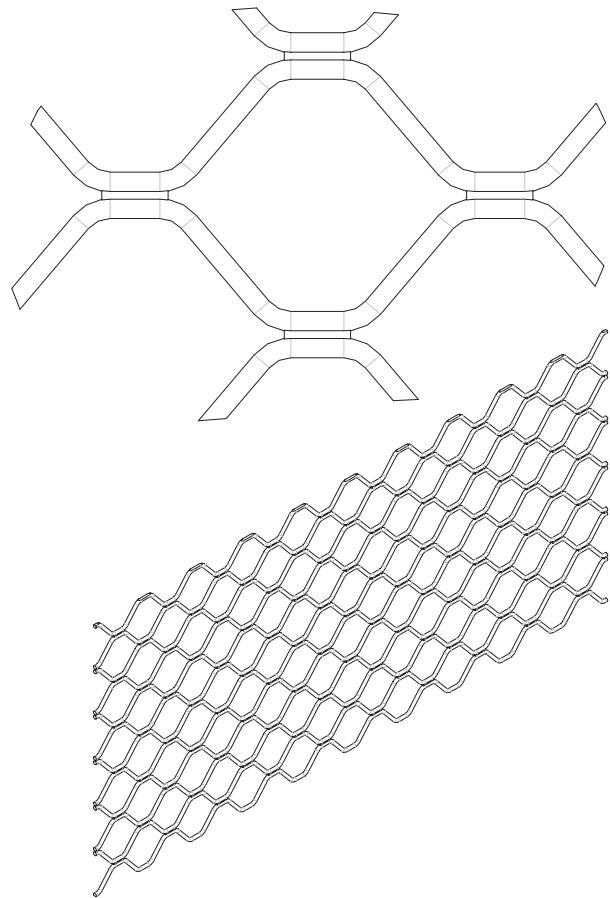
Aluminium Plate Horizontally Ribbed



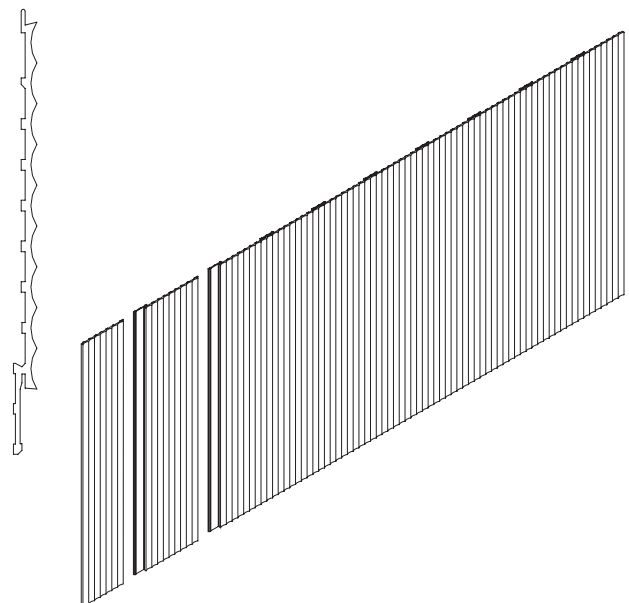
Aluminium Checker Plate

P7 INDUSTRIAL EXCLUSIVE INSERTS

Air Panel



Vertipanel



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

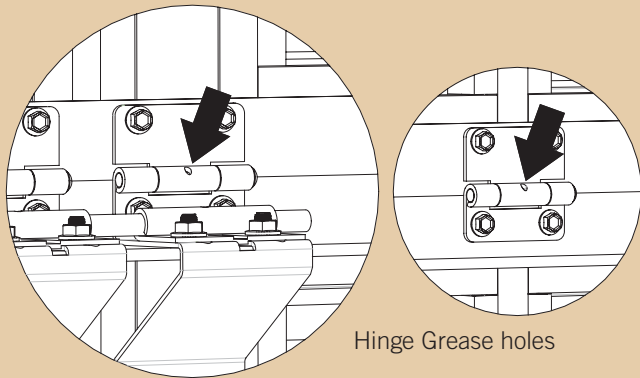
GENERAL CARE OF YOUR DESIGN-A-DOOR®

CLEANING

Your B&D Design-A-Door®/P7 panels are made from aluminium extrusions and are hence resistant to corrosion, however in our atmosphere there are harmful deposits that gather on the door surface and if not removed regularly, will seriously affect the appearance. Touch up paint is available for blemishes in the paintwork where damage has been done in powder coated doors.

HINGES

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 into the holes in the hangers and hinges as pointed out in the diagram below.



INSERTS

Should any insert suffer damage, replacements are available from B&D, please consult pages 23 to 25 to identify the type of insert required.

REGULAR MAINTENANCE REQUIRED

B&D recommends that you check the operation of your Design-A-Door®/P7 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 Design-A-Door®/P7 in domestic and industrial/commercial 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, on request, from your nearest B&D office.

NOTE: Warranty will be voided if inserts are not installed or changed by a recognised B&D installer.

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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