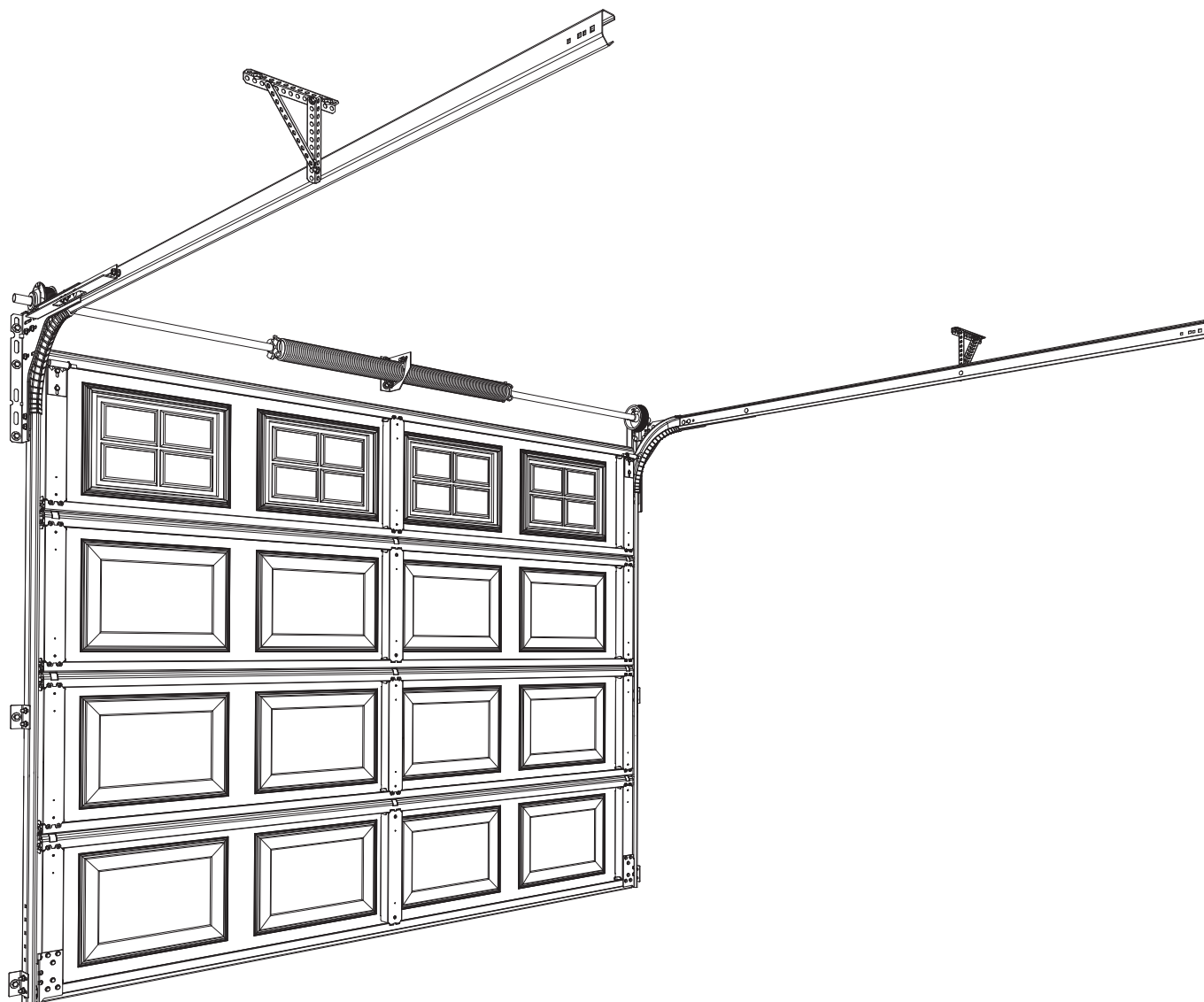# b&d

Panelift®

PFT, Icon™ PFI, Storm-Shield™ PFI & Insul-Shield™

installation instructions **PART NO: OT2515**

These instructions are intended for professional garage door installers. All references are taken from inside looking out.

b&d

contents

NOTE: roduct abbreviations used in these instructions are
Panelift® PFT, Panelift® Icon PFI and B&D Storm-Shield™ PFI.

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

b&d

1.2 checking measurements

headroom (standard) 4-8 & 4-13 cable drums (with and without B&D auto opener)

FTL = front torsion large curve   290mm with STD end bearing brackets   310mm with combo brackets
FTS = front torsion small curve   250mm with STD end bearing brackets   270mm with combo brackets
RTS = rear torsion small curve*   190mm without opener   250mm with opener

headroom (standard) 5-18 cable drums (with and without B&D auto opener)

FTL = front torsion large curve   330mm with STD end bearing brackets
FTS = front torsion small curve   290mm with STD end bearing brackets
RTS = rear torsion small curve*   190mm without opener

sideroom (with std door overlap)

STD single wheels and axles   120mm
smooth track double wheels and axles*   130mm - 140mm

sideroom rear torsion*

4-8 & 4-13 cable drums   155mm
5-18 cable drums   195mm

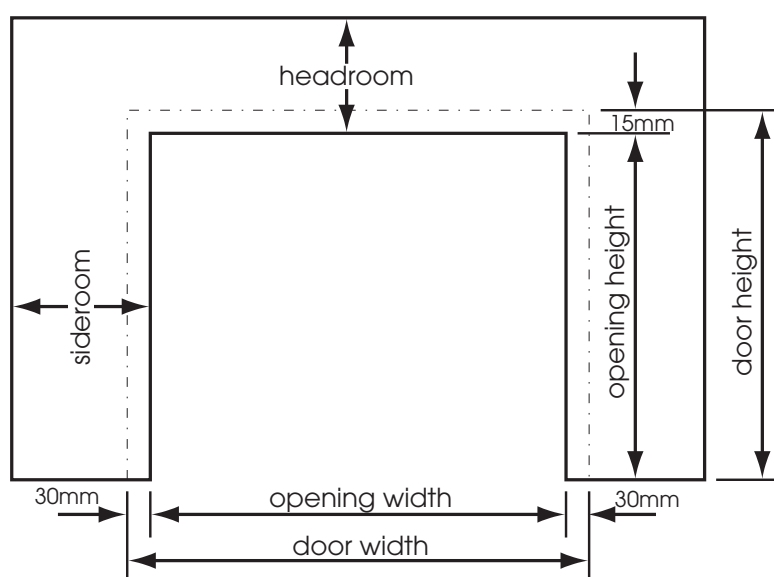**backroom (std headroom door only)**

recommended panel height plus   350mm
minimum panel height plus   100mm
minimum with opener panel height plus   600mm

backroom RTS (RTS rear torsion headroom door only)*

minimum panel height plus   350mm
minimum with opener panel height plus   950mm

* RTS is NOT available for B&D Storm-Shield™ PFI.

1.3 fastener recommendations for fitting Panelift® PFT & PFI doors only

unlined garage

substrate type	fastener required	washer required	plug required	drilled hole ø (mm)	min hole depth (mm)
solid brick (>10 MPa)	screw, coach 5/16-9tpix50	washer flat M8	plug, nylon 5/16x50	10	60
three hole brick (> 30 MPa)	screw anka m8x75 flange hex head	washer 3/8"	n/a	8	75
ten hole brick (>15 MPa)	screw anka m8x75 flange hex head	washer 3/8"	n/a	8	75
concrete block (> 8 MPa)	screw anka m8x75 flange hex head	washer 3/8"	n/a	8	75
concrete (> 15 MPa)	screw, coach 5/16-9tpix50	washer flat M8	plug, nylon 5/16x50	10	60
timber	screw, coach 5/16-9tpix50	washer flat M8	n/a	5	60
steel section (0.9-2mm thick)	screw tek 14g-20tpix25 flange hex head ZP	washer flat M8	n/a	n/a	n/a

lined garage (up to 13mm thick plasterboard)

substrate type	fastener required	washer required	plug required	drilled hole ø (mm)	min hole depth (mm)
solid brick (>10 MPa)	screw, coach 5/16-9TPIx80	washer flat M8	plug, nylon 5/16x80	10	90
three hole brick (> 30 MPa)	screw anka M8x75 flange hex head	washer 3/8"	n/a	8	75
ten hole brick (>15 MPa)	screw anka M8x75 flange hex head	washer 3/8"	n/a	8	75
concrete block (> 8 MPa)	screw anka M8x75 flange hex head	washer 3/8"	n/a	8	75
concrete (> 15 MPa)	screw, coach 5/16-9TPIx80	washer flat M8	plug, nylon 5/16x80	10	90
timber	screw, coach 5/16-9TPIx50	washer flat M8	n/a	5	90
steel section (0.9-2mm thick)	screw tek 14g-20TPIx25 flange hex head ZP	washer flat M8	n/a	n/a	n/a

mandatory fastener requirements for B&D Storm-Shield™ PFI doors

Please ensure you are complying to the latest details. To download the latest DTCM drawings visit their product page on our website **www.bnd.com.au** where you will be directed to the DTCM website.

The NT Deemed To Comply Manual (DTCM) is referenced in the Building Code of Australia.

available B&D standard fastener packs

fastener	standard fastener pack part no.	standard fastener pack description
screw, coach 5/16-9TPlx50	FK0011	kit, screw, coach 5/16-9TPIX50 100pk
	FK0012	kit, screw, coach 5/16-9TPIX50 500pk
screw, coach 5/16-9TPlx80	FK0013	kit, screw, coach 5/16-9TPlx80 100pk
	FK0014	kit, screw, coach 5/16-9TPlx80 500pk
plug, nylon 5/16x50	FK0015	kit, plug, nylon 5/16x50 100pk
	FK0016	kit, plug, nylon 5/16x50 500pk
plug, nylon 5/16x80	FK0017	kit, plug, nylon 5/16x80 100pk
	FK0018	kit, plug, nylon 5/16x80 500pk
screw tek 14G-20TPlx25 flange hex head ZP	FK0019	kit, screw tek 14-20x25 100pk
	FK0020	kit, screw tek 14-20x25 500pk
screw tek 14G-20TPlx35 flange hex head ZP	FK0021	kit, screw tek 14-20x35 100pk
	FK0022	kit, screw tek 14-20x35 500pk
screw masonary M8x75 flange hex head	FK0023	kit, screw anka M8x75 flange hex head 50pk
	FK0024	kit, screw anka M8x75 flange hex head 100pk
screw, coach M10x90	FK0037	kit, screw coach M10x90 100pk
plug nylon 14x70 M10	FK0038	kit, plug nylon 14x70 M10 100pk
screw masonary M10x75	FK0028	kit, screw masonary M10x75 100pk
bolt & nut 1/4"1/2"UNC	FK0040	kit, bolt & nut 1/4x1/2 UNC 100pk
bolt & nut 5/16"7/8"UNC	FK0041	kit, bolt & nut 5/16x7/8 UNC 100pk

important notes

1. For B&D Storm-Shield™ PFI doors ensure you are complying to the latest compliance details.

2. For installation to substrate materials not covered in the above chart, the installer should seek expert advice.

3. The above fasteners are specifically selected for B&D Panelift PFT & PFI doors only.

4. Substitute fasteners are not recommend unless approved.

5. The above chart specifies the fasteners for new substrate materials only. Seek specialist advice regarding pre-existing substrate materials.

6. It is important that correct washer and plug is used and the correct pilot hole drilled where specified.

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important information on fasteners
The installer must select and use fasteners appropriate to the material into which they are being fixed.
For B&D Storm-Shield™ PFI doors ensure you are complying to the latest high wind compliant details.
To download the latest drawings visit the B&D website at www.bnd.com.au

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1.4 tools

It is recommended that this door is installed by a professional door installer using a professional and specialised tool kit.

1.5 parts checklist

when taking delivery of your pft or pfi 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 (tube or solid)
- for parts boxes refer to PFT or PFI charts as there may be more than one box depending on the model and options
- 1 to 4 springs
- panel reinforcing (refer to charts below)

when taking delivery of your B&D Storm-Shield™ PFI sectional overhead door you will be supplied with:

- 1 package with door panels
- 2 pairs of tracks short for vertical use, and long for horizontal use
- 1 pair of Tracklocks
- 1 torsion bar (tube or solid)
- 1 pair of jamb spacers
- for parts boxes refer to PFT and B&D Storm-Shield™ PFI charts as there will be more than one box depending on the model and options
- 1 to 4 springs
- panel reinforcing (refer to chart below)

reo assignment all doors

	panel count	width ranges (from - to, mm)									
		1800 - 3500	3505 - 4500	4505 - 5000	5005 - 5400	5405 - 5600	5605 - 5800	5805 - 6000	6005 - 6200	6205 - 6400	6405 - 6600
Panelift® PFT	3	0	1	2					3		
	4	0	1	2		3			4		
	5	0	1	2	3			4		5	
	6	0	1	2	3	5	6				
Panelift® Icon PFI	3	0	2	3							
	4	0	2	3		4					
	5	0	2	4		4			5		
	6	0	2	3	4	6					
	7	0	2	3	4	7					
	panel count	**1800 - 5500**									
B&D Storm-Shield™ PFI	4	1 REO to all panels except the top which has 2									
	5										
	6										

If number of reo does not match panel number: 1 reo = top panel
                                                2 reo = top panel + bottom panel
                                                3 reo = top panel + bottom panel + middle panel

B&D Panelift® PFT doors and B&D Storm-Shield™ (PFT boxes have GREEN print)

	1750 3050	3055 3500	3505 4500	4505 4705	4710 5000	5005 5400	5405 5600	5605 5740	5745 5800	5805 6000	6005 6200	6205 6400	6405 6600
ALL PFT AND STORM-SHIELD™ DOORS - main hardware single box kits, front torsion, large radius curve (FTL) 290HR													
no. of panels	door width break points (mm)												
3	BOXPF-A1TC1	BOXPF-A1TC1	BOXPFA2TC1	BOXPFA2TC1	BOXPFA2TC1	BOXPFA2TC1							
4	BOXPF-A1TC1	BOXPF-A2TC1	BOXPFA2TC1	BOXPFA2TC1	BOXPFA2TC1	BOXPFA2TC1							
5	BOXPF-A4TC4	BOXPF-A4TC4	BOXPF-A4TC4	BOXPF-A4TC4	BOXPF-A5TC4	BOXPF-A5TC4	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7
6	BOXPF-A4TC4	BOXPF-A5TC4	BOXPF-A5TC4	BOXPF-A5TC4			BOX-A7TC7	BOX-A7TC7	BOX-A7TC7	BOX-A7TC7			
ALL PFT AND STORM-SHIELD™ DOORS - main hardware single box kits, front torsion, small radius curve (FTS) 250HR													
no. of panels	door width break points (mm)												
3	BOXPF-A1TB1	BOXPF-A1TB1	BOXPF-A2TB1	BOXPF-A2TB1	BOXPF-A2TB1	BOXPF-A2TB1							
4	BOXPF-A1TB1	BOXPF-A2TB1	BOXPF-A2TB1	BOXPF-A2TB1	BOXPF-A2TB1	BOXPF-A2TB1							
5	BOXPF-A4TB4	BOXPF-A4TB4	BOXPF-A4TB4	BOXPF-A4TB4	BOXPF-A5TC4	BOXPF-A5TC4	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7
6	BOXPF-A4TB4	BOXPF-A5TB4	BOXPF-A5TB4	BOXPF-A5TB4			BOX-A7TB7	BOX-A7TB7	BOX-A7TB7	BOX-A7TB7			
ALL PFT DOORS - main hardware box (independent of curve size and front or rear torsion)													
no. of panels	door width break points (mm) blank areas are replaced with single box kits												
3							BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3
4							BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3
5													
6					BOXPF-A6	BOXPF-A6					BOXPF-A8	BOXPF-A8	BOXPF-A8
PFT DOORS - front torsion, large radius curve (FTL) 290HR - supplementary parts box													
no. of panels	door width break points (mm) blank areas are replaced with single box kits												
3							BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3
4							BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3	BOXPF-TC3
5													
6					BOXPF-TC4	BOXPF-TC4					BOXPF-TC7	BOXPF-TC7	BOXPF-TC7
PFT DOORS - front torsion, small radius curve (FTS) 250HR (available at extra cost) - supplementary parts box													
no. of panels	door width break points (mm) blank areas are replaced with single box kits												
3							BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3
4							BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3
5													
6					BOXPF-TB4	BOXPF-TB4					BOXPF-TB7	BOXPF-TB7	BOXPF-TB7
PFT DOORS - rear torsion, small radius curve (RTS) 200HR + standard bearing brackets (available at extra cost) - 2 x supplementary parts boxes													
no. of panels	door width break points (mm) blank areas are replaced with single box kits												
3							BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3
3	+	+	+	+	+	+	+	+	+	+	+	+	+
3	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
4							BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3	BOXPF-TB3
4	+	+	+	+	+	+	+	+	+	+	+	+	+
4	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
5													
5	+	+	+	+	+	+	+	+	+	+	+	+	+
5	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
6					BOXPF-TB4	BOXPF-TB4					BOXPF-TB7	BOXPF-TB7	BOXPF-TB7
6	+	+	+	+	+	+	+	+	+	+	+	+	+
6	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R2	BOXPF-R2	BOXPF-R2
ALL PFT DOORS - supplementary Insul-Shield™ box													
no. of panels	door width break points (mm)												
3	BOXPF-F1	BOXPF-F1	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3
4	BOXPF-F1	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3
5	BOXPF-F4	BOXPF-F4	BOXPF-F4	BOXPF-F4	BOXPF-F5	BOXPF-F5	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7
6	BOXPF-F4	BOXPF-F5	BOXPF-F5	BOXPF-F5	BOXPF-F6	BOXPF-F6	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F8	BOXPF-F8	BOXPF-F8

B&D Storm-Shield™ PFI additional parts

- SD0040 parts box for 4 panel door
- SD0039 parts box for 5 panel door
- SD0038 parts box for 6 panel door

- SD0041 L/H SD0042 R/H tracklock kit
- SD0041 L/H SD0042 R/H tracklock kit
- SD0403 L/H SD0404 R/H tracklock kit

B&D Panelift® Icon™ PFI doors (PFI boxes have RED print)

	1750 3050	3055 3500	3505 4500	4505 4705	4710 5000	5005 5400	5405 5600	5605 5740	5745 5800	5805 6000	6005 6200	6205 6400	6405 6600
ALL PFI DOORS - main hardware box (independent of curve size and front or rear torsion)													
no. of panels	door width break points (mm)												
3	BOXPF-A1	BOXPF-A1	BOXPF-A2	BOXPF-A2	BOXPF-A2	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3
4	BOXPF-A1	BOXPF-A2	BOXPF-A2	BOXPF-A2	BOXPF-A2	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3	BOXPF-A3
5	BOXPF-A4	BOXPF-A4	BOXPF-A4	BOXPF-A4	BOXPF-A5	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7
6	BOXPF-A4	BOXPF-A5	BOXPF-A5	BOXPF-A5	BOXPF-A6	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A7	BOXPF-A8	BOXPF-A8	BOXPF-A8
7	BOXPF-A4	BOXPF-A5	BOXPF-A5	BOXPF-A5	BOXPF-A6	BOXPF-A8	BOXPF-A8	BOXPF-A8	BOXPF-A8	BOXPF-A8	BOXPF-A8	BOXPF-A8	BOXPF-A8
All	if combo brackets set to NO, add BOXPF-D2												
PFI DOORS - front torsion, large radius curve (FTL) + combos 310HR - supplementary parts box													
no. of panels	door width break points (mm)												
3	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1
4	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1	BOXPF-IC1
5	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7
6	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC7	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8
7	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC4	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8	BOXPF-IC8
All	if combo brackets set to NO, add BOXPF-D2												
PFI DOORS - front torsion, small radius curve (FTS) + combos 270HR - supplementary parts box													
no. of panels	door width break points (mm)												
3	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1
4	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1
5	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7
6	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8
7	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8
All	if combo brackets set to NO, add BOXPF-D2												
PFI DOORS - rear torsion, small radius curve (RTS) 200HR + standard bearing brackets (available at extra cost) - 2 x supplementary parts boxes													
no. of panels	door width break points (mm)												
3	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1
	+	+	+	+	+	+	+	+	+	+	+	+	+
	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
4	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1	BOXPF-IB1
	+	+	+	+	+	+	+	+	+	+	+	+	+
	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
5	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7
	+	+	+	+	+	+	+	+	+	+	+	+	+
	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1
6	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB7	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8
	+	+	+	+	+	+	+	+	+	+	+	+	+
	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R2	BOXPF-R2	BOXPF-R2
7	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB4	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8	BOXPF-IB8
	+	+	+	+	+	+	+	+	+	+	+	+	+
	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R1	BOXPF-R2	BOXPF-R2	BOXPF-R2	BOXPF-R2	BOXPF-R2	BOXPF-R2	BOXPF-R2	BOXPF-R2
ALL PFI DOORS - supplementary Insul-Shield™ box													
no. of panels	door width break points (mm)												
3	BOXPF-F1	BOXPF-F1	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3
4	BOXPF-F1	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F2	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3	BOXPF-F3
5	BOXPF-F4	BOXPF-F4	BOXPF-F4	BOXPF-F4	BOXPF-F5	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7
6	BOXPF-F4	BOXPF-F5	BOXPF-F5	BOXPF-F5	BOXPF-F6	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F7	BOXPF-F8	BOXPF-F8	BOXPF-F8
7	BOXPF-F4	BOXPF-F5	BOXPF-F5	BOXPF-F5	BOXPF-F6	BOXPF-F8	BOXPF-F8	BOXPF-F8	BOXPF-F8	BOXPF-F8	BOXPF-F8	BOXPF-F8	BOXPF-F8

1.6 check & mark out the opening

1. Using a water or lazer level, mark both sides approx. 1.5m from the floor.

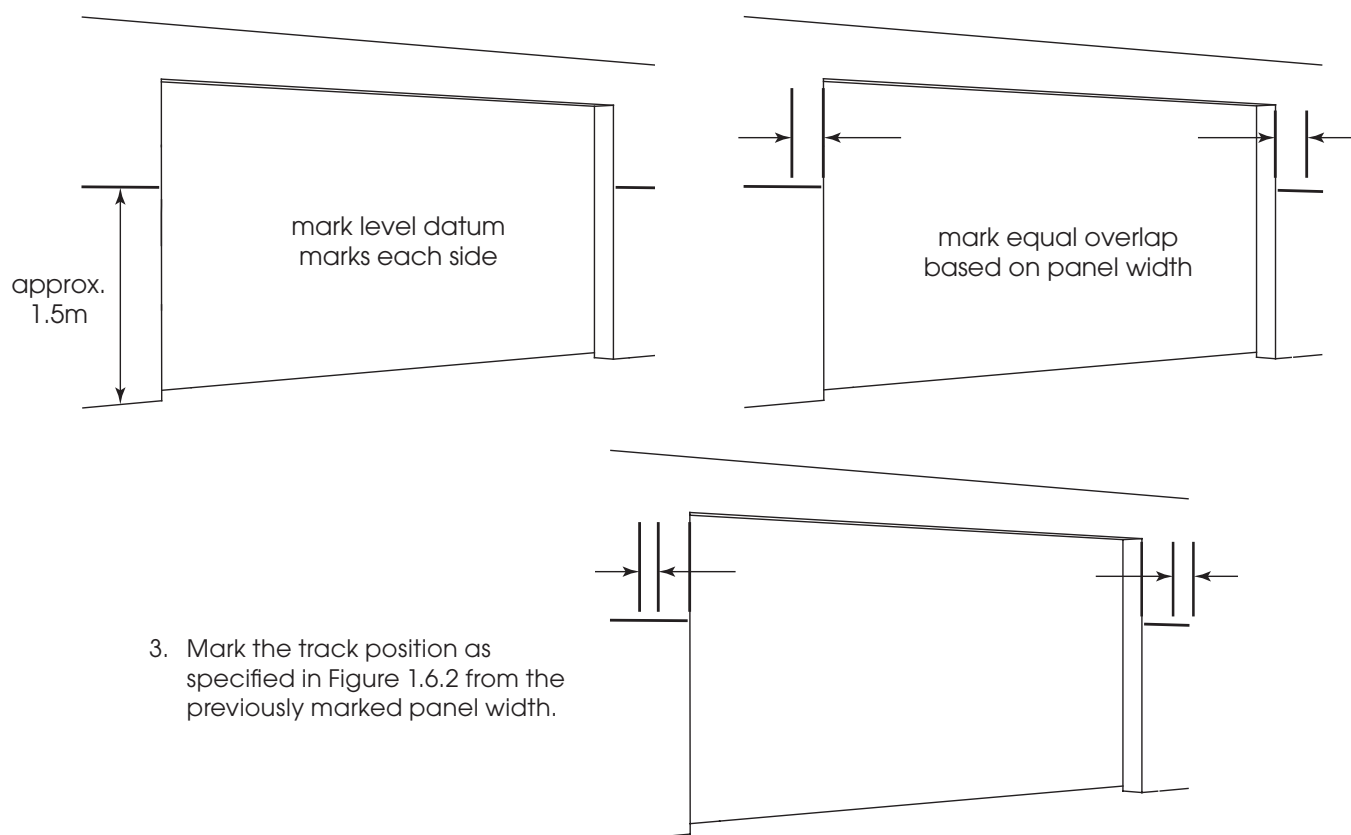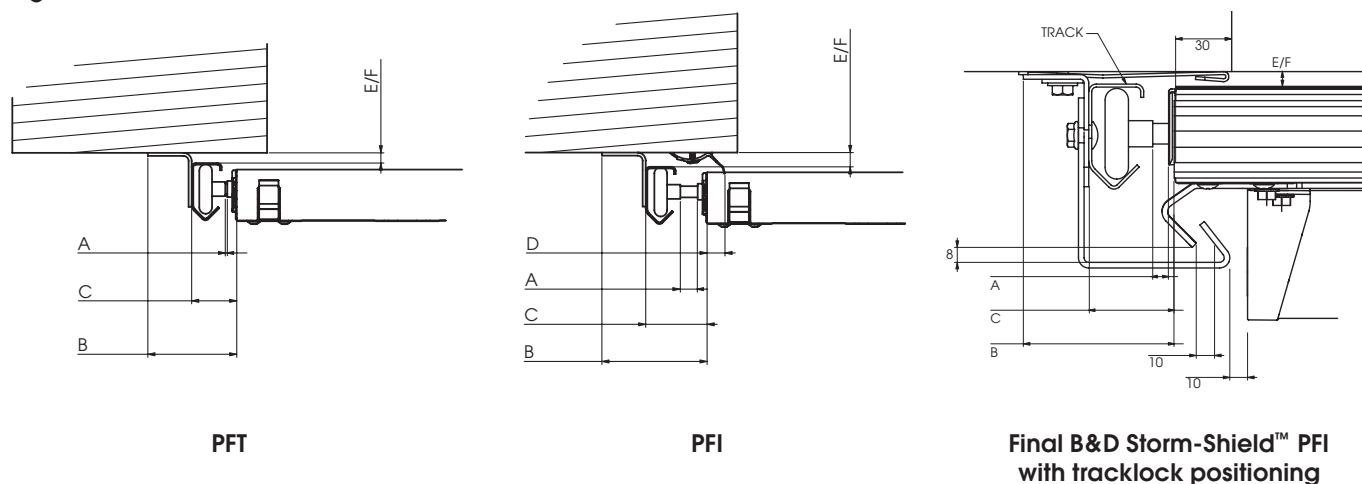2. Mark equal overlap at each side based on panel width.

mark level datum marks each side

approx. 1.5m

mark equal overlap based on panel width

3. Mark the track position as specified in Figure 1.6.2 from the previously marked panel width.

Figure 1.6.1 wheel-axle

PFT

PFI

Final B&D Storm-Shield™ PFI with tracklock positioning

Figure 1.6.2

detail	A at bottom axle	B	C	D	E/F (ref pg 11)
Panelift® PFT (single wheel)	5mm	95mm	60mm	n/a	10/5mm
Panelift® Icon™ PFI (double wheel)	20mm	105mm	70mm	15mm	20/20mm
B&D Storm-Shield™ PFI (single wheel)	5mm	95mm	60mm	n/a	17/12mm
NOTE: These measurements allow for final adjustment.					

2.0 installation

2.1 assembling PFT & PFI vertical tracks

parts needed
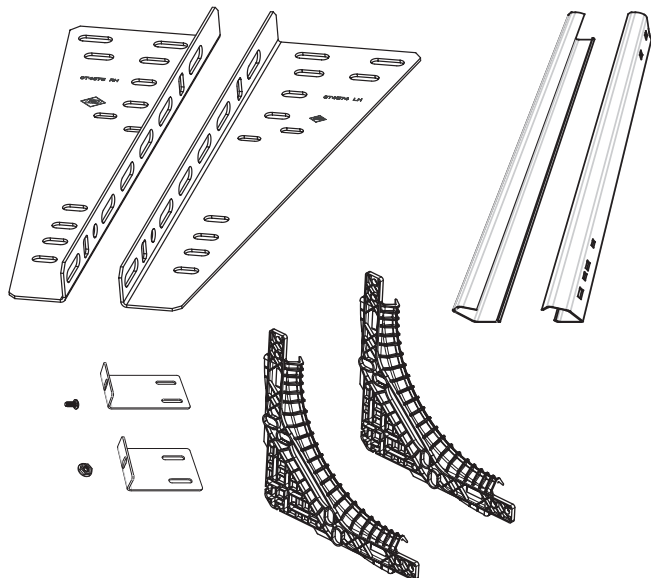
- 1 L/h & 1 R/h vertical straight tracks
- 1 L/h & 1 R/h short top track angle
- 2 polypropylene curves
- 4 or more small angle jamb brackets
- 6 x 5/16 flat head bolts with wiz nuts
- 4 x 1/4 domed head bolts and wiz nuts

The recomened vertical track cut height should be door height minus:

Standard large curves less 190mm
Small curves less 170mm

Assemble vertical track bracket, wall brackets and tracks together as shown in Figure 2.1.1.

Note Figure 2.1.2 when adjusting approximate track clearance from jamb.

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

Before fitting the assembled vertical tracks refer to the door type and mark out as per Figure 1.6.2 on page 10.

Figure 2.1.1 track assembly
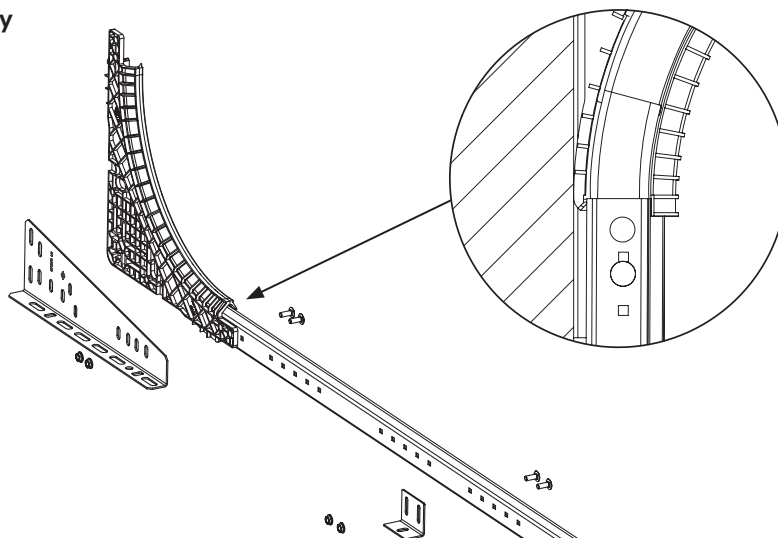
Figure 2.1.2 clearance from wall

Approx measurement from jamb:
No seals E = 10mm, F = 5mm
With seals E&F = 20mm

E

F

b&d
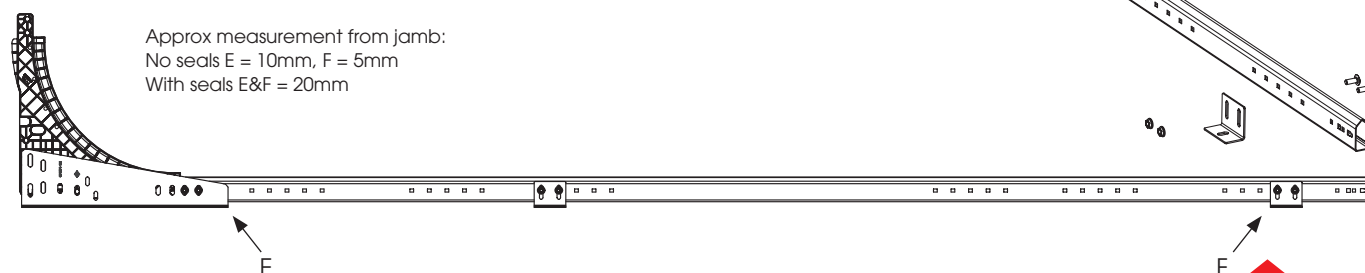
2.2 assembling B&D Storm-Shield™ PFI vertical tracks

parts needed

The vertical tracks (A) must be cut as a pair, the cut height should be door height minus:

**large curves less 190mm
small curves less 170mm**

The long jamb fixing brackets (B) are **marked with a 'T'** indicating top, do not cut from this end. The jamb spacer (C) is cut to the full height of the assembled track with top track bracket fitted make sure they are cut left and right and from the bottom. Tracklock (D) are also **marked with a "T"** indicating the top. Tracklock cutting and fitting is shown on page 23.
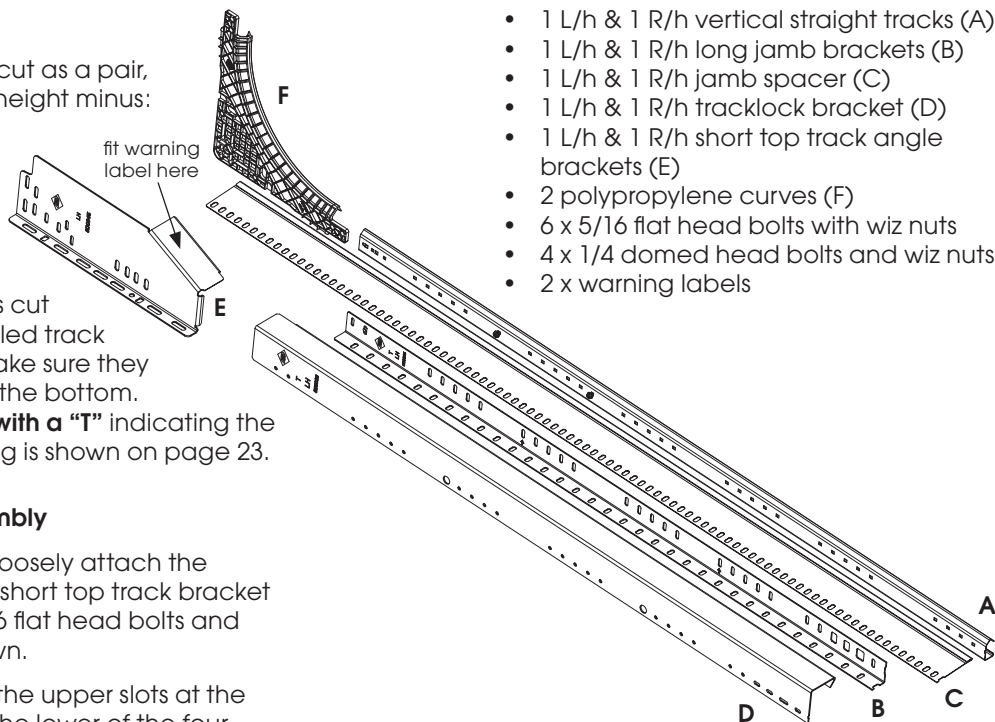
- 1 L/h & 1 R/h vertical straight tracks (A)
- 1 L/h & 1 R/h long jamb brackets (B)
- 1 L/h & 1 R/h jamb spacer (C)
- 1 L/h & 1 R/h tracklock bracket (D)
- 1 L/h & 1 R/h short top track angle brackets (E)
- 2 polypropylene curves (F)
- 6 x 5/16 flat head bolts with wiz nuts
- 4 x 1/4 domed head bolts and wiz nuts
- 2 x warning labels

fit warning label here

F

E

A

D   B   C

Figure 2.2.1 vertical track assembly

First assemble parts A,E and F, loosely attach the polypropylene curve (F) to the short top track bracket (E) using 2 long and 3 short 5/16 flat head bolts and nuts for each assembly as shown.

The small curves will align with the upper slots at the bottom and large curves with the lower of the four slots, repeat for the opposite side.

Attach the vertical tracks (A) to (E and F) ensuring the cut end is at the bottom use 2 x 5/16 flat head bolts and wiz nuts to each ensuring the ends fit snugly into the polypropylene curves

Now attach the long jamb brackets (B) to each vertical guide, only attach with 2 x 1/4 dome head bolts and wiz nuts as shown in the initial alignment holes, these will align with the larger holes in the tracklock (D) when fitting later.

Refer to measurement E and F (Figure 1.6.2 page 10) before tightening all nuts and bolts

TIP: To hold the jamb spacer (C) in place prior to fitting the assembly to the wall fit a 1/4 bolt and wiz nut (dome head to the wall) to the top this will allow it to hang in place whilst fastening to the structure.

Before fitting the assembled vertical tracks refer to the door type and mark out as per Figure 1.6.2 on page 10.

Figure 2.2.1

FTS (small curve)

2 x long 5/16 bolts

3 x short 5/16 bolts

initial alignment

no. of fasteners on vertical track: average should be minimum 5 sets/metre

assembled FTL large curve sample with jamb bracket and spacer shown in position.

(FTS)   (FTL)   this section will be cut when FTS small curves are used refer to Tracklock pg 23

track

jamb-bracket

jamb-spacer

tracklock-bracket

b&d
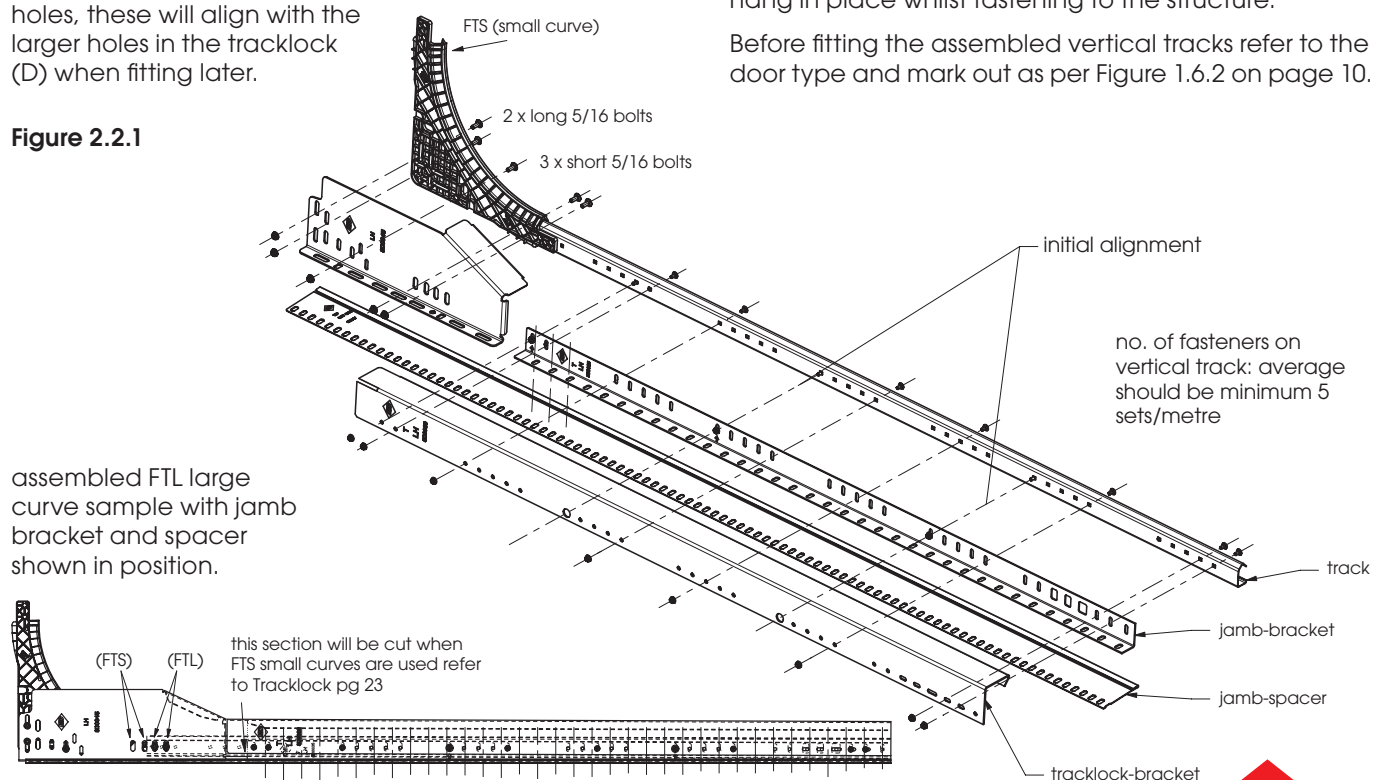
2.3 assembling bottom & middle panels

If installing taper please consult page 30. 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 2.3.1) is on top of the pack.

BOTTOM PANEL: Locate both bottom hangers and cables. Insert cable through the holes of the bottom hanger as shown in Figure 2.3.2A. Remove existing screws in the two bottom corners of the panel near the weather strip and discard, see Figure 2.3.2B. Attach the bottom hangers to the lower end of the door using 6 TEK screws in each as shown in Figure 2.3.2C.
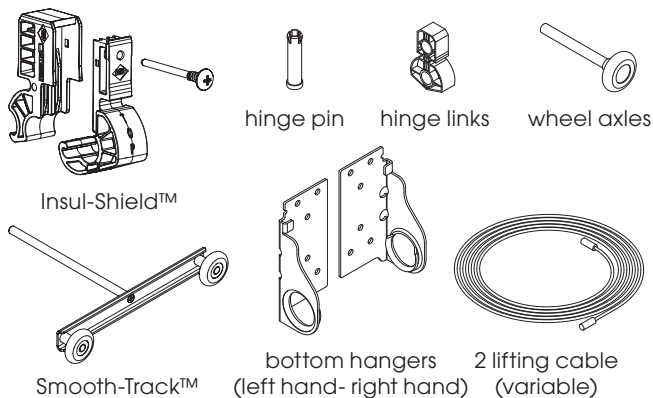
Insert the polyethylene hinge links into the recesses of the top of the panel and fix into place using the white pins. Insert four wheels and axles into the top of the panel (white pins) and the bottom of the panel (grey block). Insert appropriate wheels and axles, Figure 2.3.2C & 2.3.3. **Ensure the axles are lightly lubricated with lithium grease before inserting.**

INSULATED INSUL-SHIELD™: Hinge links are in two pieces and clip together when inserted. After the next panel has been lowered in place a special screw is inserted to hold in place as shown in Figure 2.3.3.

MIDDLE PANELS: Repeat the process for fitting links, pins and wheels and axles to the top of each middle panel.

parts used

Insul-Shield™

hinge pin   hinge links   wheel axles

Smooth-Track™

bottom hangers
(left hand- right hand)

2 lifting cable
(variable)

Figure 2.3.1

other panels

standard bottom black hinge

bottom panels

weather strip

bottom grey hinge with offset
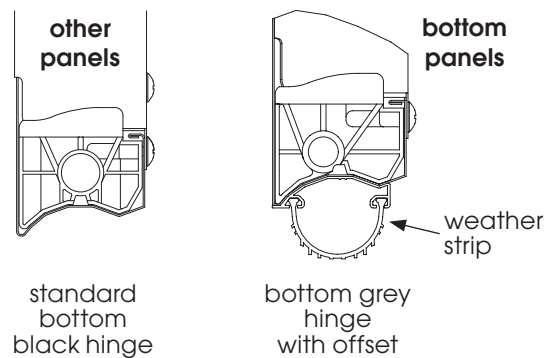
Figure 2.3.2

NOTE: DO NOT hold cable in place by squeezing the bracket around it as this will cause the cable to fracture and break. Should you need to temporally hold the cable in place during installation before spring tension is applied only secure with sticky tape.

A

B

C

secure hanger using 6 TEK screws to each
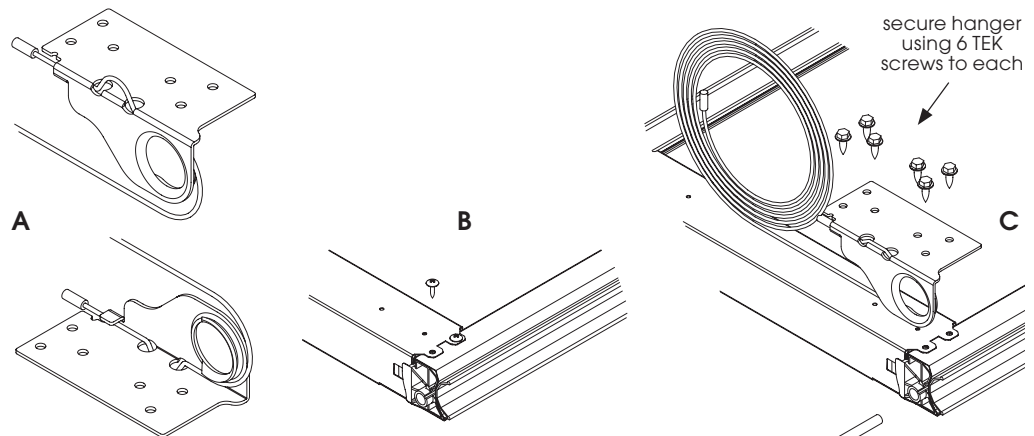
Figure 2.3.3

Fitting the insulated door split link from inside

1. Click the male section of the link marked TOP in first. Ensure TOP is facing you from inside looking out.

2. Insert the female part to the male and click together.

3. The screw is fitted after the next panel has been placed onto the link via the hole provided.
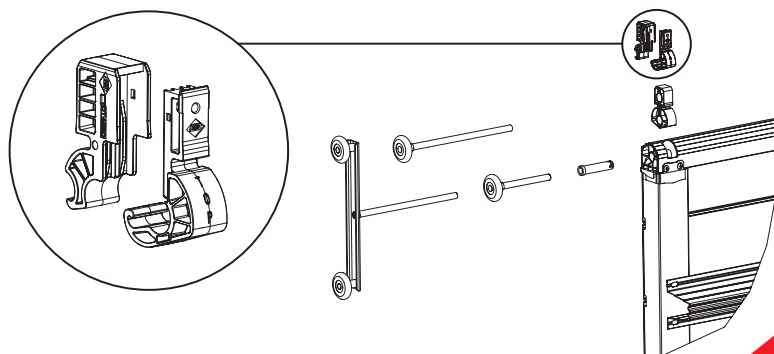
2.4 fitting PFT & PFI reinforcing

Doors wider than 3545mm require panel reinforcing, the number and positioning of the reinforcing is shown on page 7.

Some PFT & PFI doors and all B&D Storm-Shield™ PFI doors are supplied with double end stiles and extended wheels, Figure 2.4.1.

Figure 2.4.1 double endstile door

hinge pin

hinge link

extended wheel axle

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.

If a lock is to be fitted it 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.

Fit the top panel reinforcing as high as possible when windows and automatic openers are fitted (refer detail below).

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

Figure 2.4.2 reinforcing with safety end caps fitted
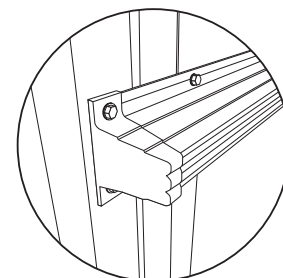
Figure 2.4.3 reinforcing installed on the top panel of the door

Figure 2.4.4 assemble links & pins onto the panel

Insert the polyethylene hinge links into the recesses at the top of the panel and fix into place using the white pins, insert appropriate wheels and axles, Figure 2.4.4.
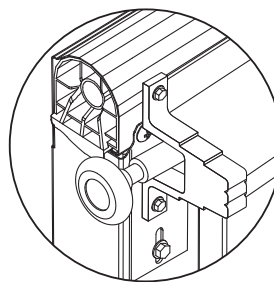
2.5 fitting reinforcing & end hooks to bottom & middle panel of B&D Storm-Shield™ PFI

Reinforcing and hook plates are fitted to the centre of the bottom and middle panels. Take special note of the detail shown and the position and quantity of the fixings. B&D Storm-Shield™ PFI reinforcing must be cut 80mm less than the panel width.

Figure 2.5.1

bottom panel

bent corner alignment

notch shows location of holes underneath reo

Figure 2.5.2

F   middle panel

A

Figure 2.5.4

3. line up reo evenly across panel and fasten all screws

2. fasten 3 locating screws

mid-panel

1. line up the fold to the 2nd endstile

Figure 2.5.3

fasten screws in diagonal location

view F:
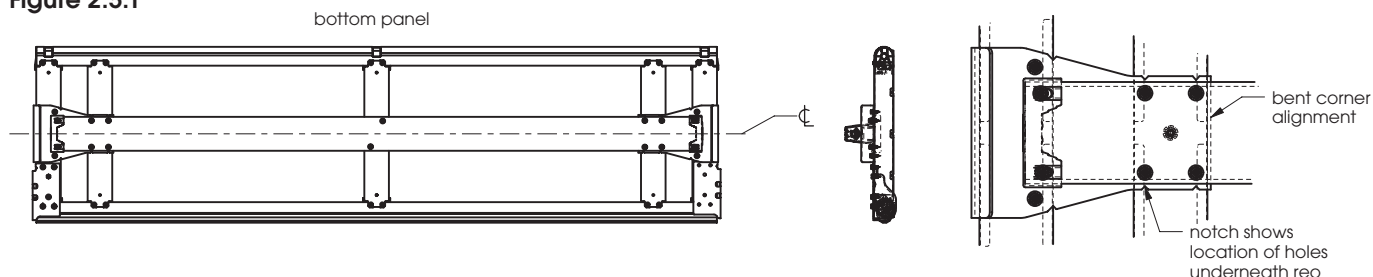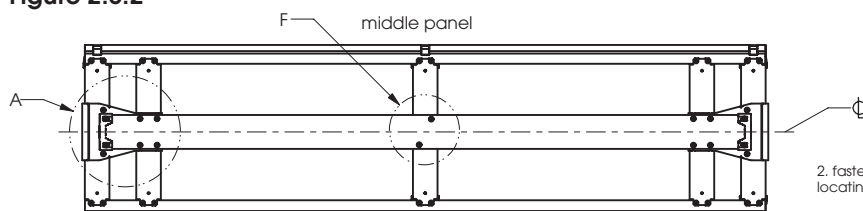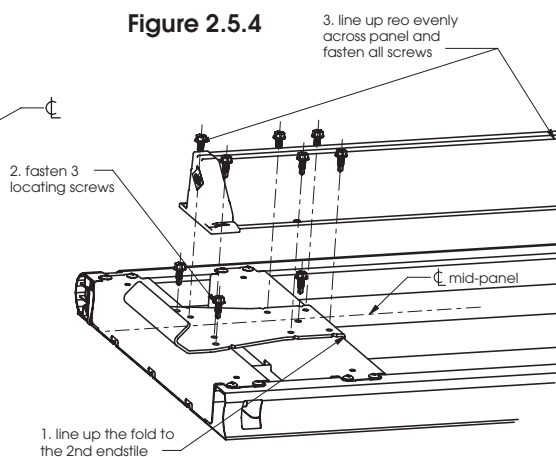
2.6 assembling top panel PFT, PFI & PFI seal

Figure 2.6.1 installing top panel

top hanger
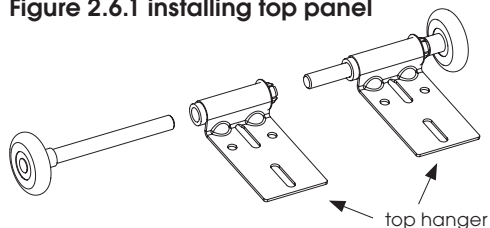
Figure 2.6.2

Ensure all tek screws indicated are fitted after adjusting.
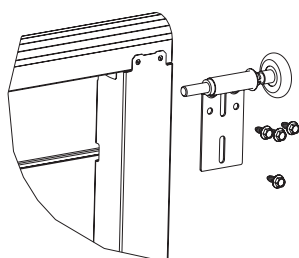
Figure 2.6.6
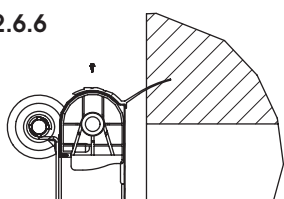
The top panel can be easily identified by always having a centre stile for use with an opener and no hinge link cut outs in the curved top edge.

Fit the PFI seal to the top of the top panel as shown in Figure 2.6.4 and Figure 2.6.6 or alternatively fit the seal to the lintel. The fixing points should be spaced at 300-400mm centres.

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 using the vertical slots only. The additional two fixings will be fitted to the left and right side after the panel is lowered into the tracks and adjusted to vertical. The top panel reinforcing should be fitted as high as possible, refer Figure 2.6.5.
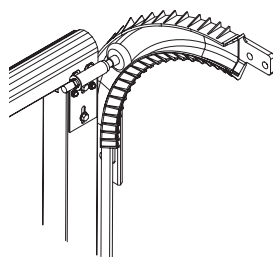
Figure 2.6.3   **Figure 2.6.4**   **Figure 2.6.5**
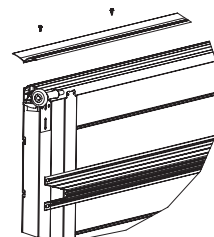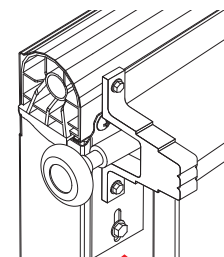
2.7 assembling the top panel & fitting reinforcing to B&D Storm-Shield™ PFI

Assembly of the top panel is the same as panelift PFT and PFI.The reinforcing must be fitted after the panel is in the tracks in a vertical position with the wheels and hangars fitted and adjusted.

Special care must be taken when fitting the lower reinforcing as the hook plates must align correctly with the tracklock of the short top track bracket Figure 2.7.1 and 2.7.3.

Fit the top reinforcing without hook plates over the top hangar as shown at section H and previously at Figure 2.4.3.

The second lower reinforcing with hook plates is fixed to align with the top section of the Tracklock. Refer to section B. This measurement is taken from the bottom of the folded safety edge note there is a different measurement for FTL (front torsion large curve) and FTS (front torsion small curve).

NOTE: Last step - line up reo on top panel with the Tracklock bracket.

Figure 2.7.1

lower reinforcing and hook plates must align correctly with the tracklock

Figure 2.7.2

reo   top panel   ₵   H   K   view H: G

B   refer to note   K

section K-K

Figure 2.7.3

4. line up top reo and fasten all screws

top reo

3. line up reo evently across panel and fasten all 6 tek screws

reo (on hook plate)

1. locate hook plate to position (refer to side view insert)

top panel hook plate

2. fasten 2 locating screws
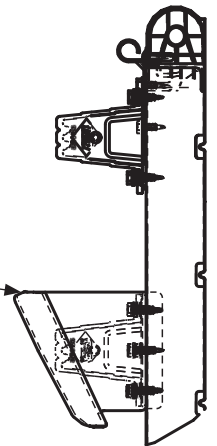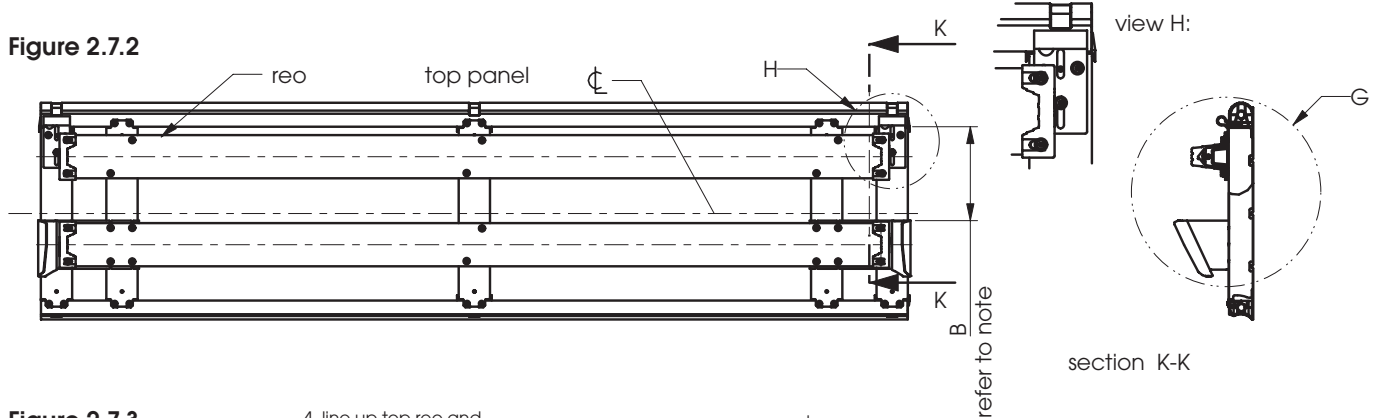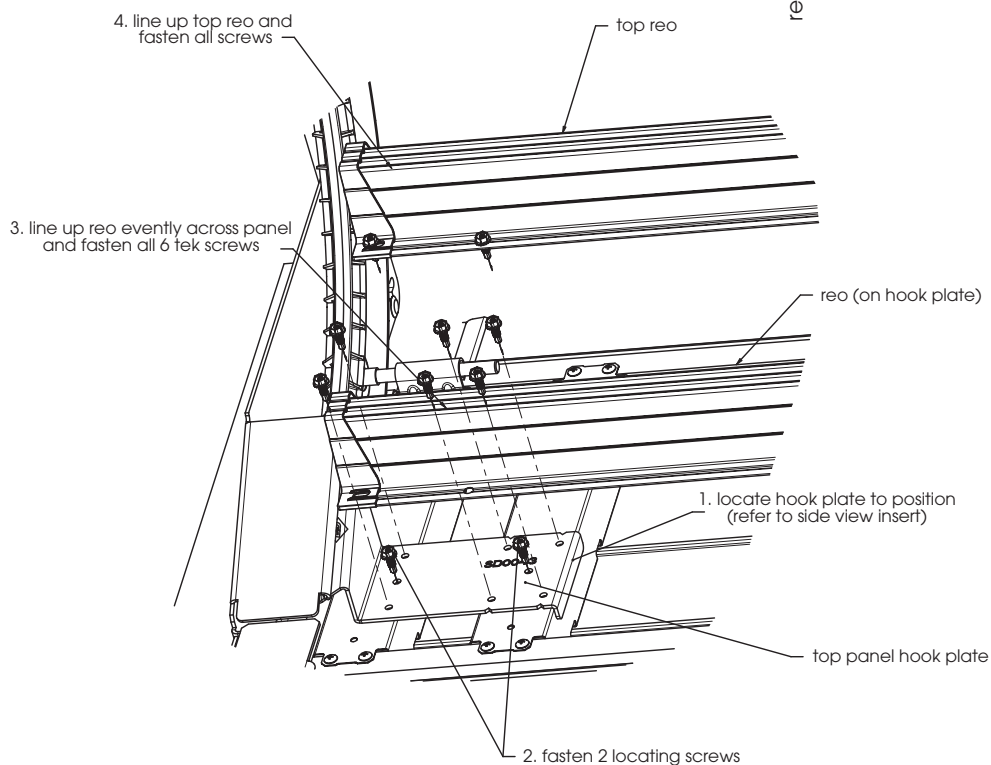
2.8 installing vertical tracks

NOTE: If jamb seals are being fitted they should be cut 100mm taller than the door height and fitted prior to fitting the vertical tracks. Refer to Figure 2.8.2 for correct position. The fixing points should be spaced at 300-400mm centres.

Set the vertical tracks parallel on both sides of the door. Use the level/datum marks to ensure the tracks are level with each other or the door will not function correctly. Ensure the detail at Figure 2.8.2 is followed. The set out measurements for B&D Storm-Shield™ PFI are the same as PFT but take note of the positioning for the jamb spacer as they must be fitted under the jamb bracket with the rolled edge facing you, as indicated at Figure 2.8.2. Once satisfied temporarily fix in position with at least two fixings to the top bracket and one to the bottom track bracket, these will hold the tracks in position and allow for minor adjustment. All fixings with washers will be fitted after the door is fully adjusted and operating satisfactorily. (For B&D Storm-Shield™ PFI doors refer to the DTCM compliance instructions). Ensure the B&D Storm-Shield™ pinch point warning stickers are fitted correctly as previously indicated.

Figure 2.8.1 installing vertical tracks

NOTE: There must be at least 3 fixings with washers to each top bracket and other fixings are to have washers fitted.

NOTE: The DTCM compliance fixing details for B&D Storm-Shield™ PFI vertical tracks must be followed however the initial set out is the same.

*tracks shown are indicative only.

Figure 2.8.2 wheel-axle

PFT & B&D Storm-Shield™ PFI

PFI

Final B&D Storm-Shield™ PFI with tracklock positioning
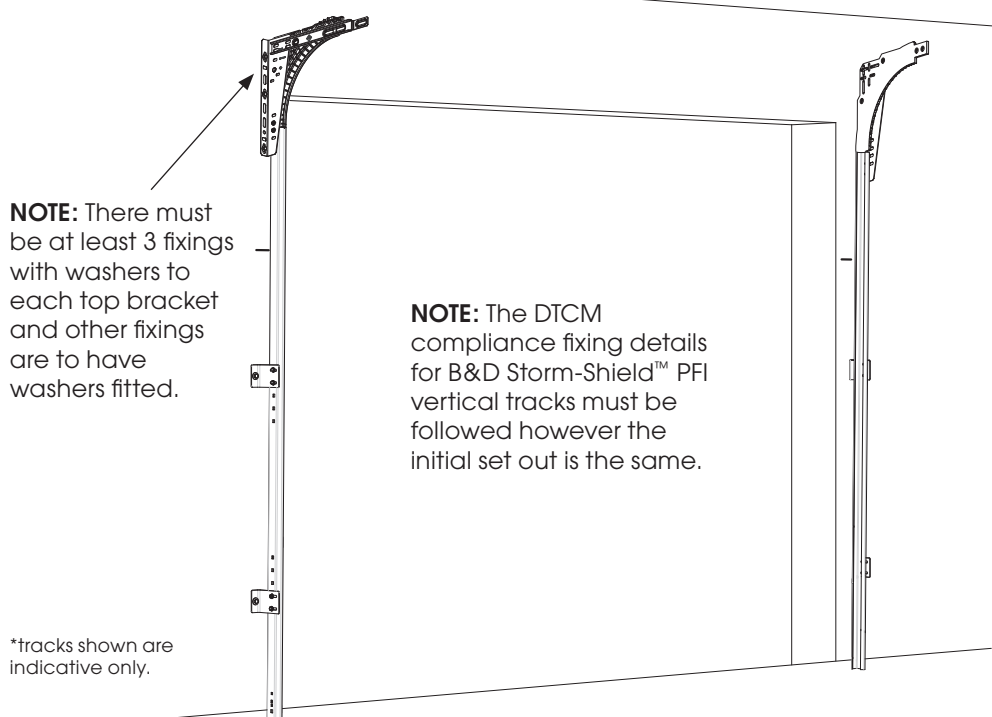
2.9 adding panels

This procedure is the same for PFT, PFI & B&D Storm-Shield™ PFI doors.

Carefully lower the wheels of the bottom panel into the tracks. The bottom door panel is to sit level in the door opening. The wheels are to sit in the "V" groove of the vertical tracks and there should be clearance between panel and tracks, see Figure 1.6.1.

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

There is a link for every point where there is a stile, which should all be folded down at this stage.

Insert panel into the guide engaging the wheels into the vertical tracks, Figure 2.9.3, and nesting the panel onto bottom panels, Figure 2.9.4. Starting at the centre, lift the panel enough to insert the link, repeat this one at a time for the remaining links.

Repeat this procedure for all other panels with the exception of the top panel which has externally mounted adjustable metal hangers (Figure 2.6.3) these allow for forward and backward adjustment of the top panel. When finally adjusted the additional two locking fixings must be added, Figure 2.6.2.

NOTE: Ensure all white pins are inserted in PFT & PFI panel or special screws if the panels are insulated, Figure 2.9.1.

Figure 2.9.1 assemble links & pins onto the panel
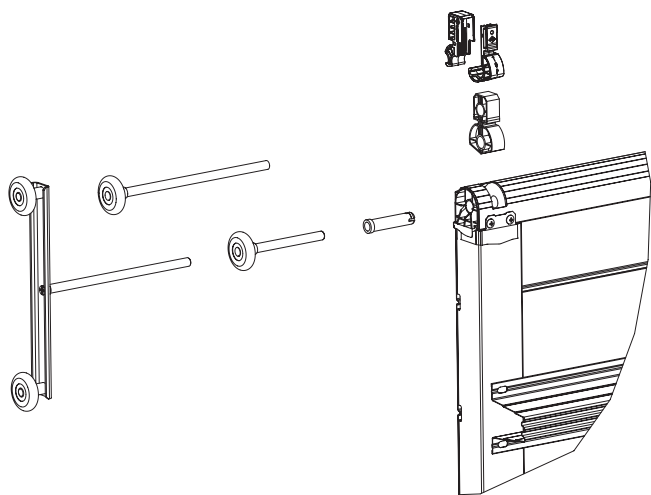
Figure 2.9.2 label

NOTE: Ensure warning label is clearly visible.

Figure 2.9.3
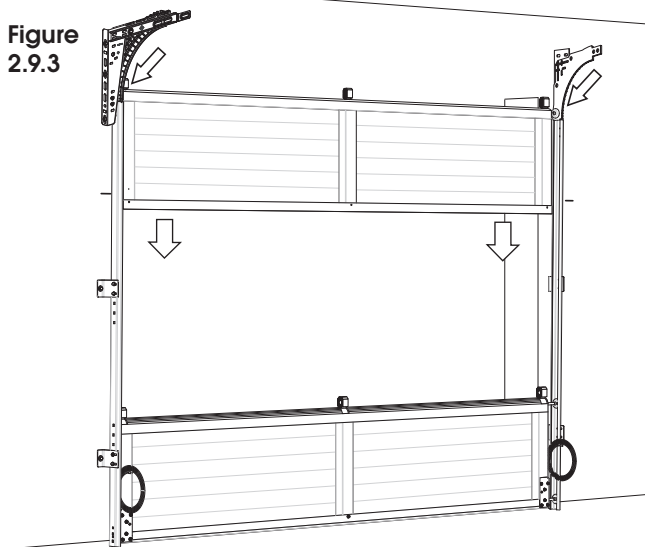
Figure 2.9.4
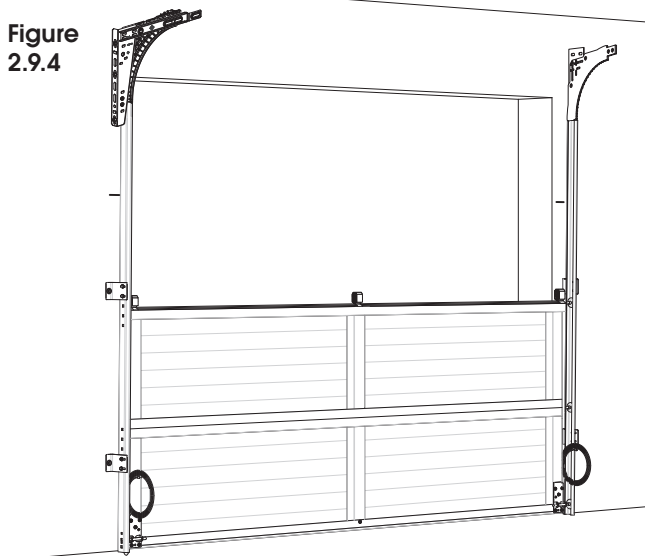
Figure 2.9.5
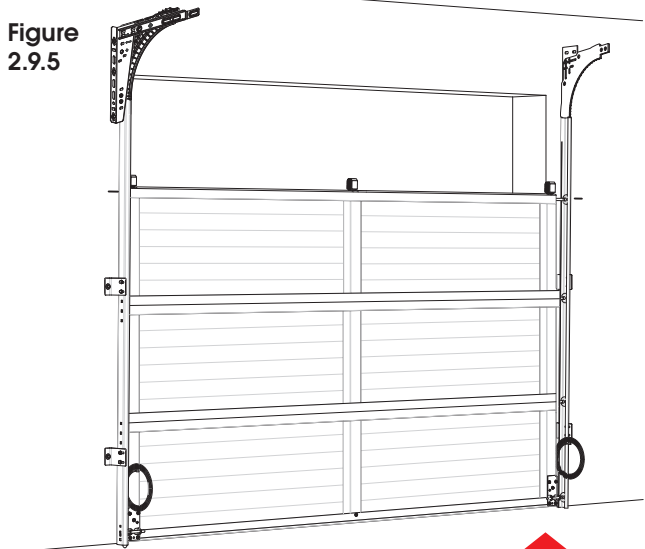
2.10 installing horizontal tracks

Assemble the track as shown in Figure 2.10.1, ensure that the plastic curve is aligned and butts up against the vertical track and horizontal track snugly.

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

door height + 350mm

**installing the
safety stop**

**installing the safety
pull cord or 'D' handle**

track
stop

pull cord

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

The safety pull cord must always be fitted to the door. Pass the cord through the white hinge pin, adjust length and tie in a knot at each end. Alternatively fit 'D' handle.

Figure 2.10.1 assembling horizontal track

ensure a washer is used under the wiz nut

ensure a washer is used under the wiz nut

EQUAL

EQUAL

Figure 2.10.2 bracing

fix to
ceiling

angle

horizontal track

¾ door height
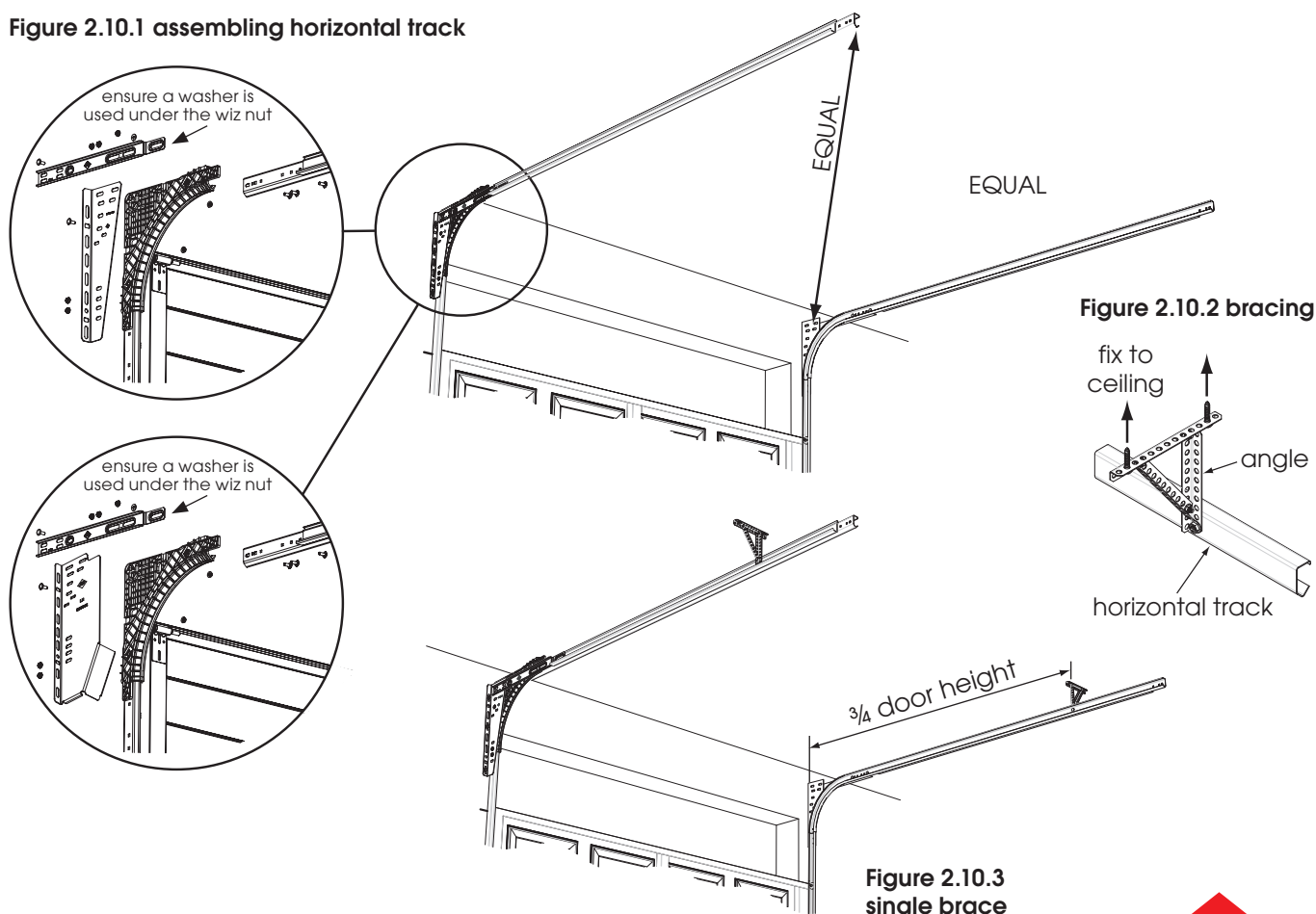
**Figure 2.10.3
single brace**

b&d

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 2.10.1.

Use steel angle, Figure 2.10.2, to fix the horizontal tracks to the building. Find a structurally sound location to fix your angle to the ceiling or side wall. The track support must be located approximately 3/4 height of the door, Figure 2.10.3. Failure to do this will result in the tracks twisting out. For doors higher than 2280mm and/or wider than 5000mm two supports will be required, Figure 2.10.4.

Each installation must be assessed individually for ceiling fixing requirements.

**Figure 2.10.4
double brace**
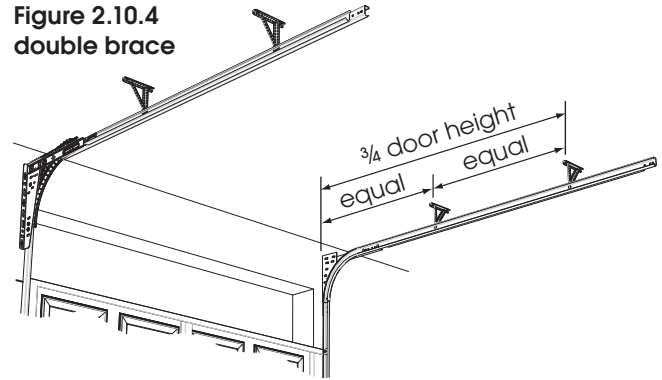
NOTE: For all insulated panels two (2) ceiling braces must be fitted per horizontal track for all doors over 2400mm x 3000mm.

Figure 2.10.5

ATTENTION INSTALLERS!
new colour coding standard for all B&D sectional door springs

LEFT HAND SIDE

These springs are **right hand wound** and can be identified by the direction of the curled fingers of the **right** hand when the thumb is pointing left, matching the same direction of the spring end and pointing to the red cable drum. The plugs in these springs are painted **black** and go on the left hand side of the door.

NOTE: Red cable drum mounted on the left side (standard headroom).

red cable drum   **black** plug
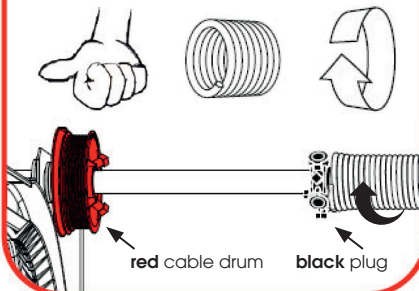
RIGHT HAND SIDE

These springs are **left hand wound** and can be identified by the direction of the curled fingers of the **left** hand when the thumb is pointing right, matching the same direction of the spring end and pointing to the black cable drum. The plugs in these springs are painted **red** and go on the right hand side of the door.

NOTE: Black cable drum mounted on the right side (standard headroom).

red plug   **black** cable drum
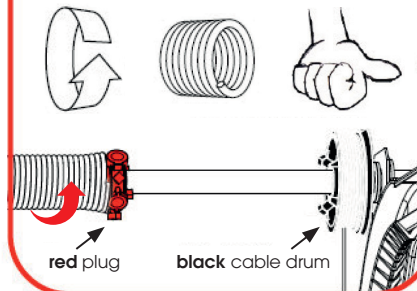
INSIDE GARAGE LOOKING OUT
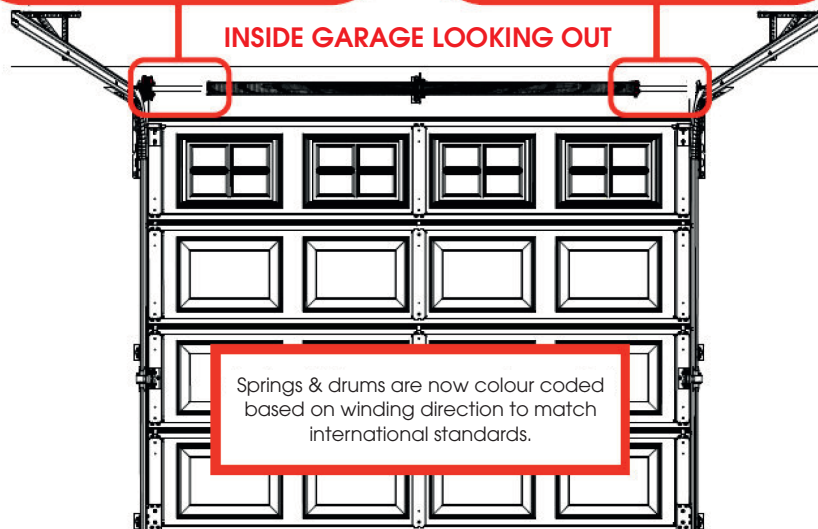
Springs & drums are now colour coded based on winding direction to match international standards.

2.11 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 comer 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.

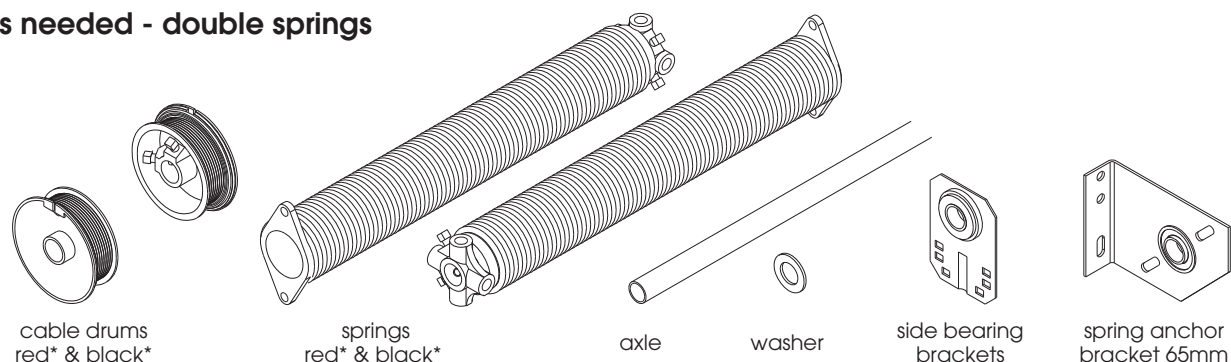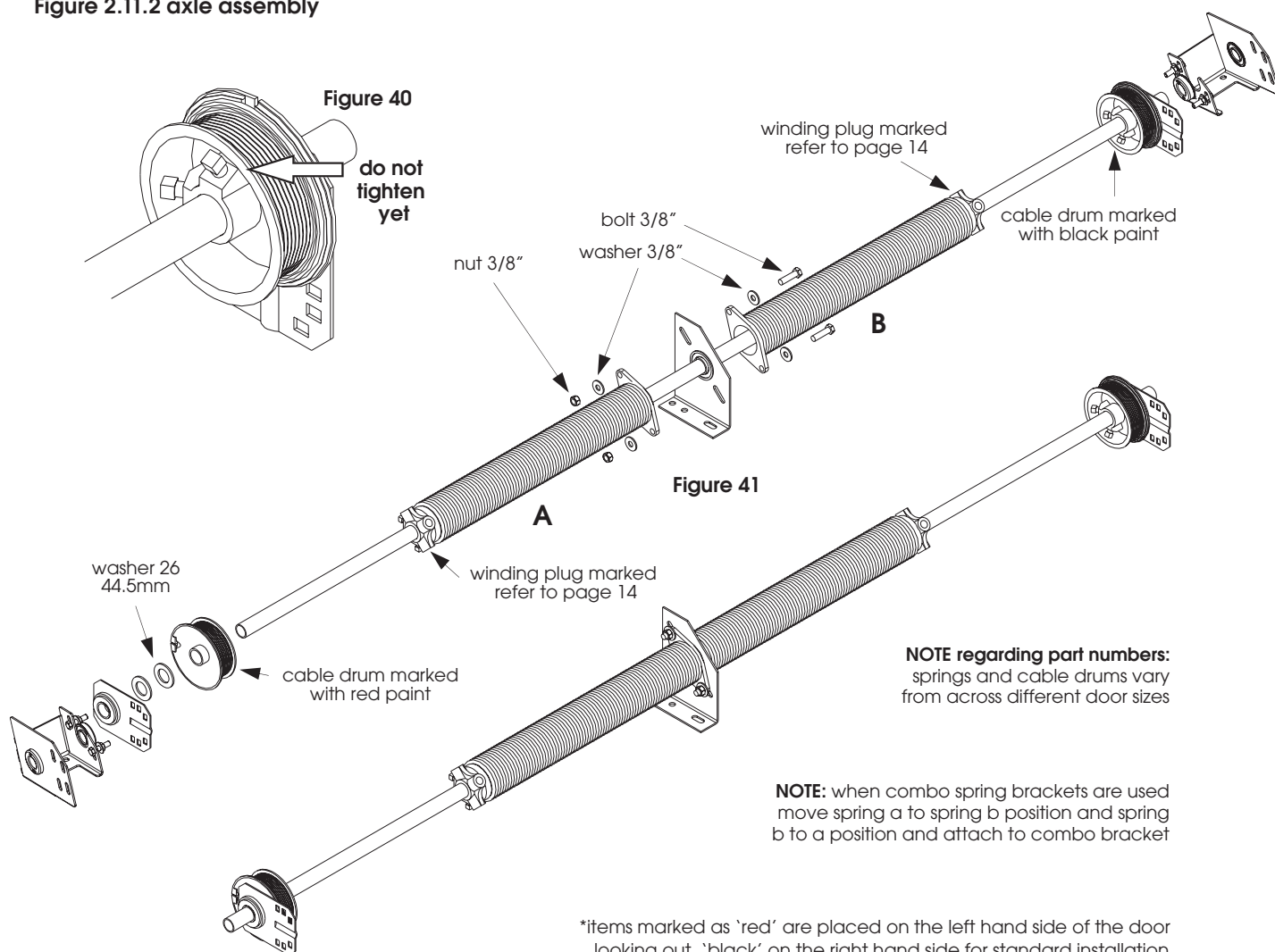Refer to page 28 when adding spring tension.

parts needed - single springs

cable drums red* & black*

spring   axle   washer

side bearing brackets

spring anchor bracket 65mm
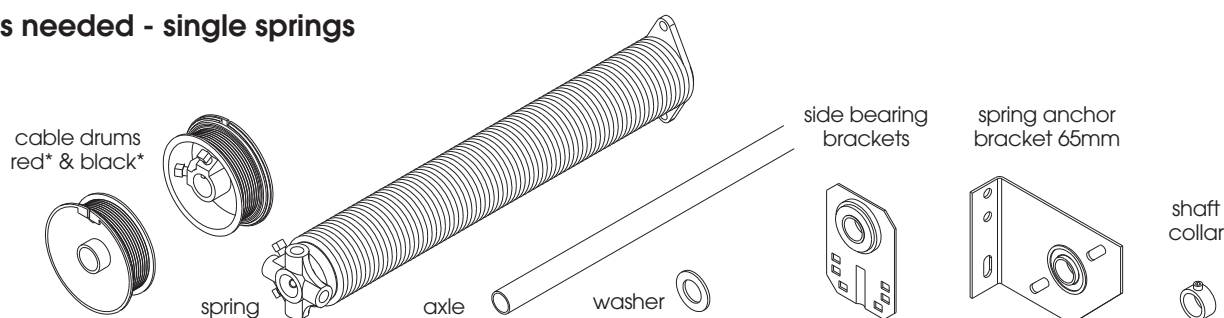
shaft collar

Figure 2.11.1

Figure 38

shaft collar to be butted up against anchor bracket and fixed to axle **on spring side** of anchor bracket

shaft collar

cable drum marked with black paint
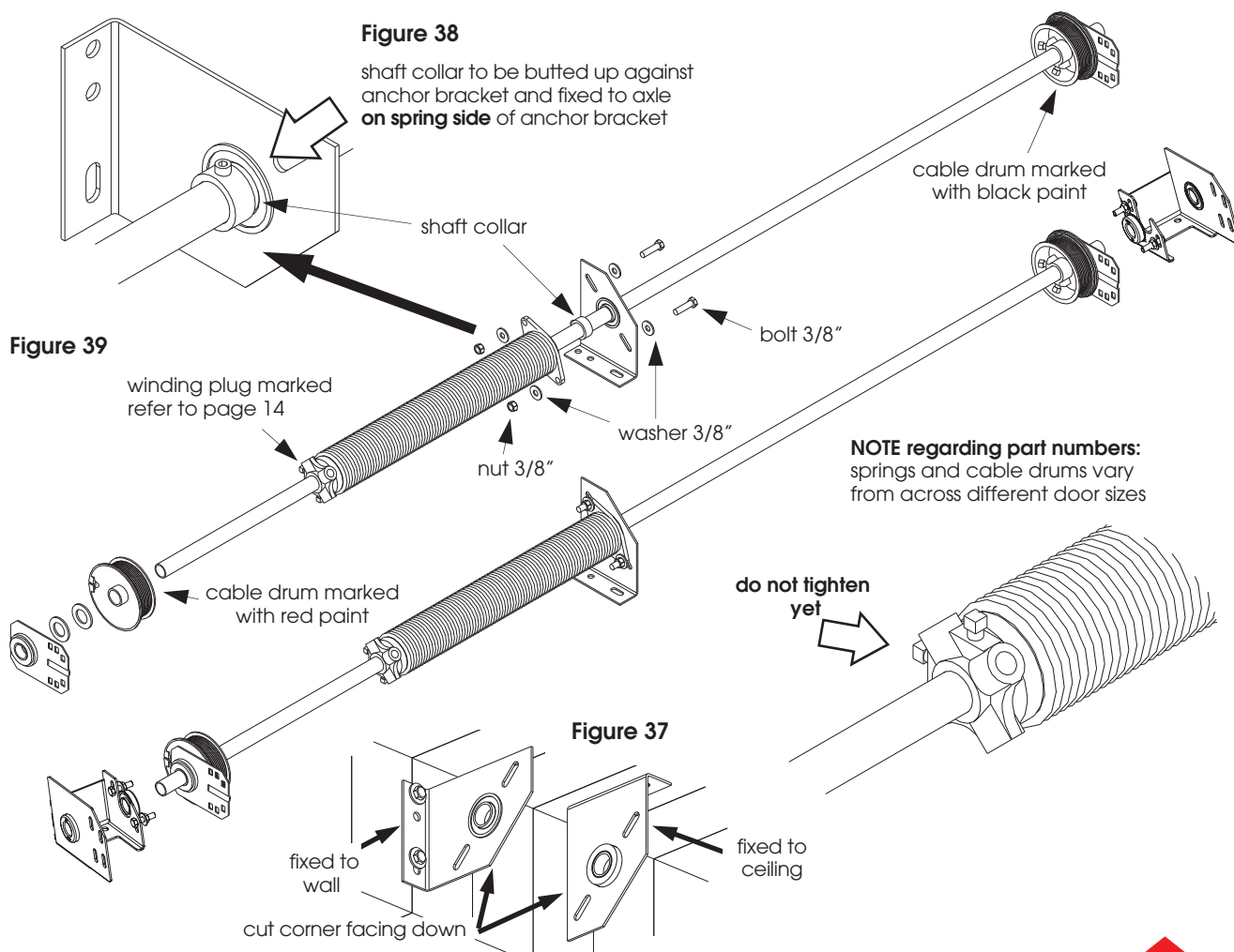
Figure 39

winding plug marked refer to page 14

bolt 3/8"

washer 3/8"

nut 3/8"

NOTE regarding part numbers: springs and cable drums vary from across different door sizes

cable drum marked with red paint

do not tighten yet

Figure 37

fixed to wall

fixed to ceiling

cut corner facing down

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 spaces 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.

Refer to page 28 when adding spring tension.

parts needed - double springs

| cable drums red* & black* | springs red* & black* | axle | washer | side bearing brackets | spring anchor bracket 65mm |

Figure 2.11.2 axle assembly

Figure 40

do not tighten yet

winding plug marked refer to page 14

bolt 3/8″

washer 3/8″

nut 3/8″

cable drum marked with black paint

B

Figure 41

washer 26 44.5mm

winding plug marked refer to page 14

cable drum marked with red paint

A

NOTE regarding part numbers: springs and cable drums vary from across different door sizes

NOTE: when combo spring brackets are used move spring a to spring b position and spring b to a position and attach to combo bracket

*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

2.12 fitting B&D Storm-Shield™ PFI tracklocks

Whilst fitting tracklocks is shown here it is preferable to leave until the door is fully functioning and you are satisfied with the operation.

for small curve

- The top of the Tracklock must be cut back 60mm as indicated at Figure 2.12.3. Only after removing this material can the tracklock be cut to length from the bottom as a pair.

- After cutting, align the Tracklock with the Jamb Bracket. The top of the cut Tracklock should be a snug fit with the bottom of the top track bracket. Figure 2.12.3.

for large curve

- if to long only cut as a pair from the bottom. Align the Tracklock holes with the Jamb Bracket as shown on page 12. The top of the uncut Tracklock should be a snug fit with the bottom of the top track bracket. Figure 2.12.3.

Attach via the key hole slots and ensure the clearance is correct refer Figure 2.12.2.

When satisfied with clearances and operation a minimum of 5 pairs of 1/4 bolts and wiz nuts must be fitted to every metre of track height.

When finally satisfied fit all substrate fixings and washers as requested by the DTCM compliance details.

Figure 2.12.2 wheel-axle
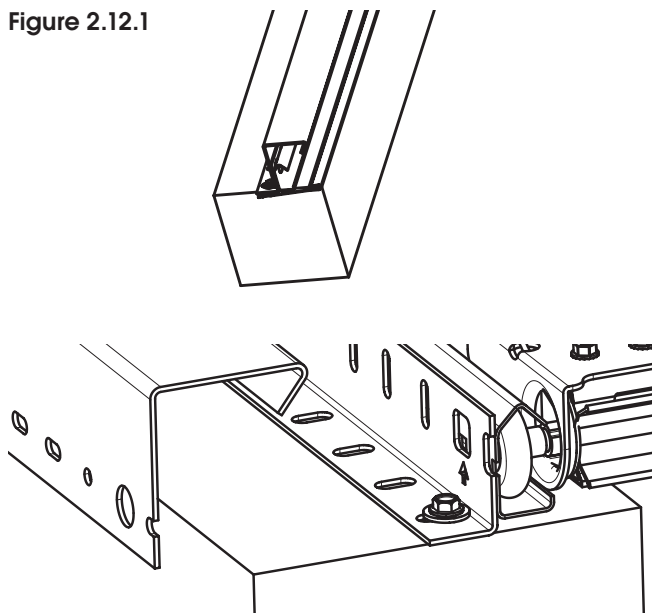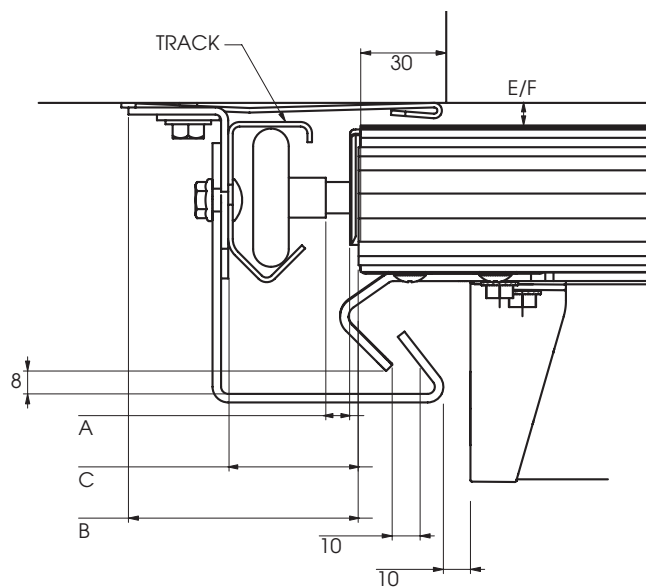
Final B&D Storm-Shield™ PFI with tracklock positioning

Figure 2.12.1

Figure 2.12.3

bend and round this edge if required to align joint

if using a small curve cut at 60mm before cutting to length

Figure 2.12.4

left side view projection

D
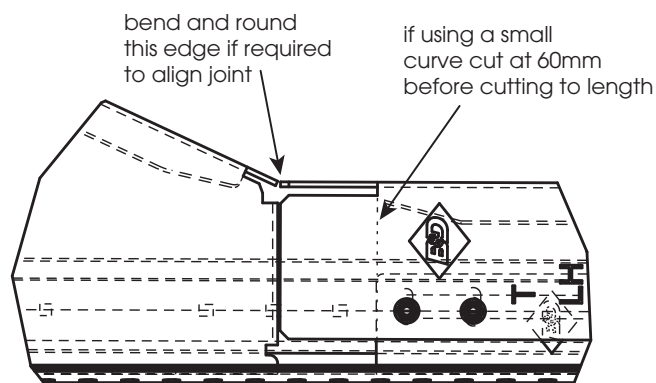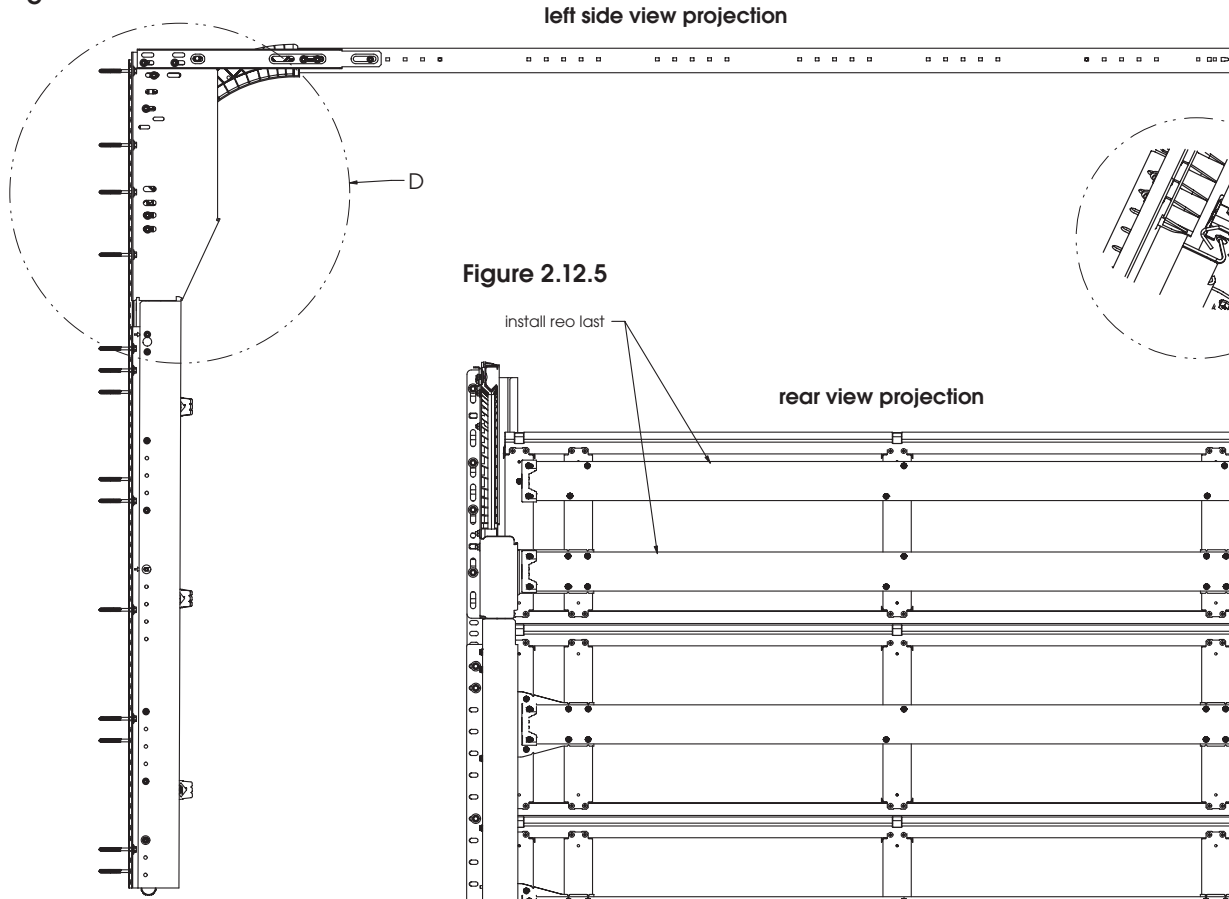
A = 170 (FTS), 190 (FTL)
length vert-track = door height - A

Figure 2.12.5

install reo last

rear view projection

E

Figure 2.12.6

top of panel

10

a

top of
vertical track

proj-view E

adjust hook plate aligned
within tracklock

dash-line inside indicates approximately
to cut here for small curve

Figure 2.12.7

top-panel
hook plate

top-panel
tracklock

8-11

8-11

b&d
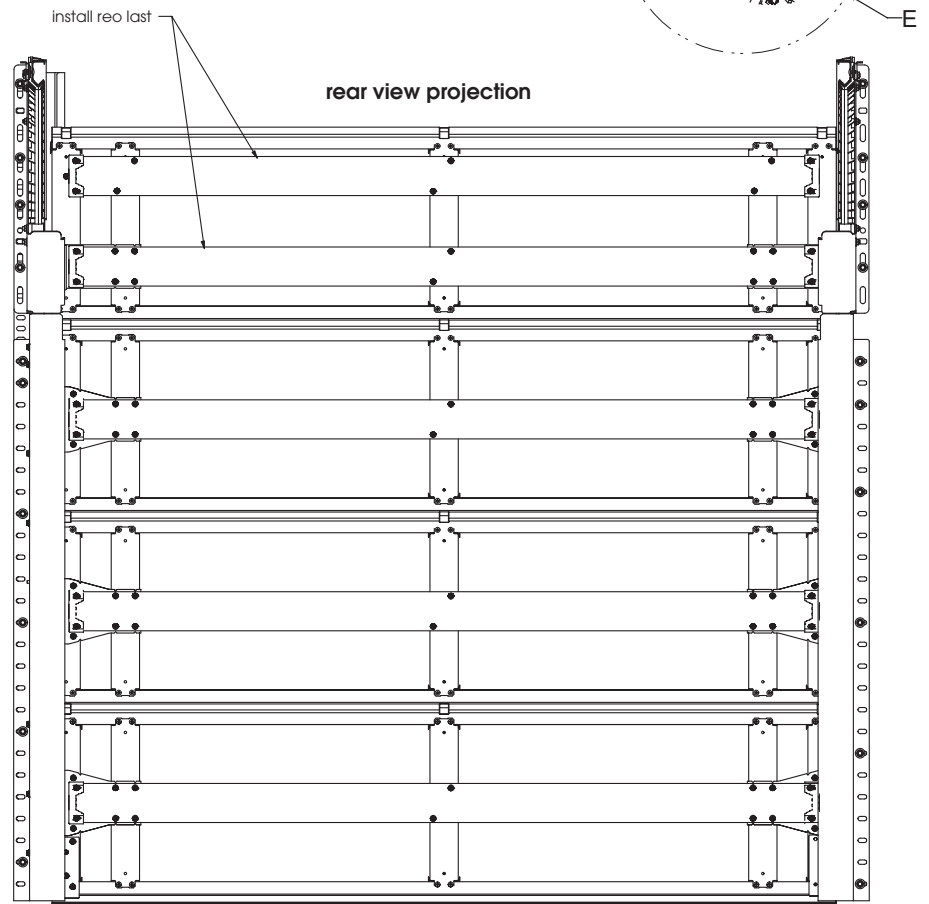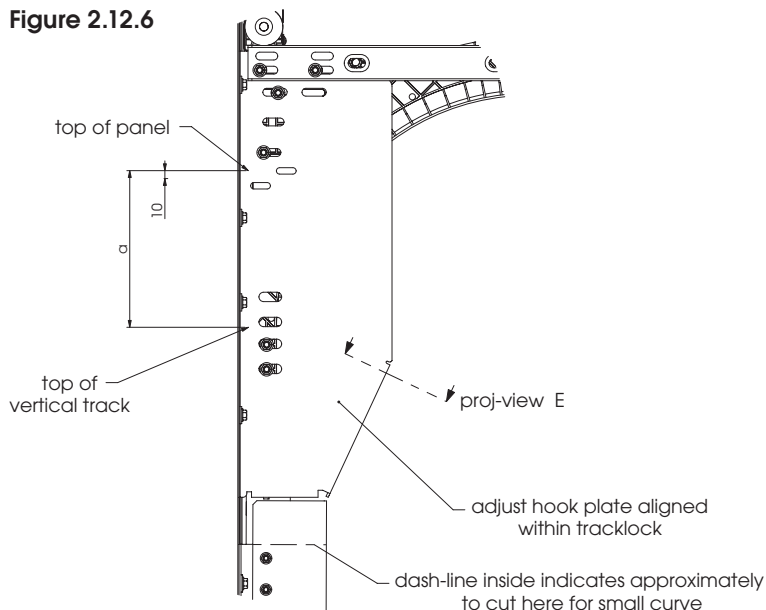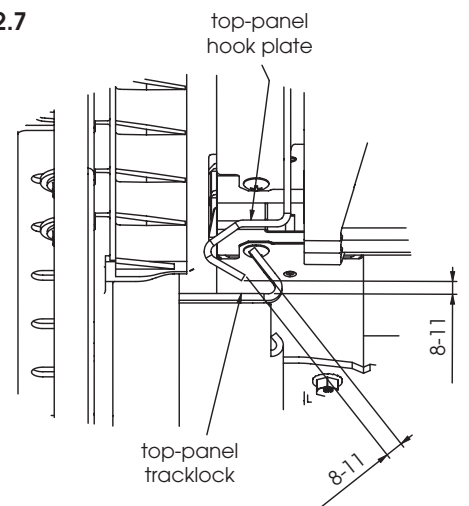
2.13 large doors - two piece shafts

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 23 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 28, 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
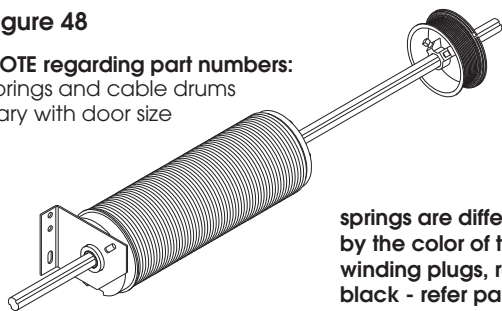
springs are differentiated by the color of the winding plugs, red or black - refer page 14
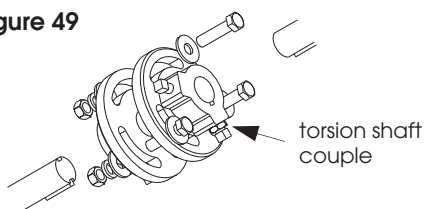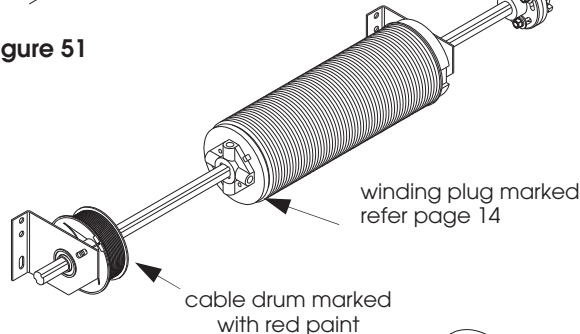
Figure 49

torsion shaft couple

Figure 51

winding plug marked refer page 14

cable drum marked with red paint

insert key then fix into place with grub screw

torsion shaft key

Figure 52

Figure 50

bolt 3/8″

threaded hole

washer 3/8″

shaft collar

winding plug marked refer page 14

cable drum marked with black paint
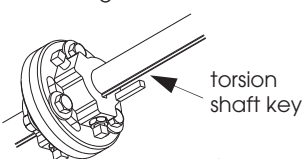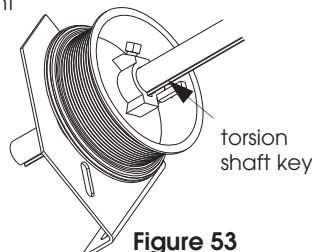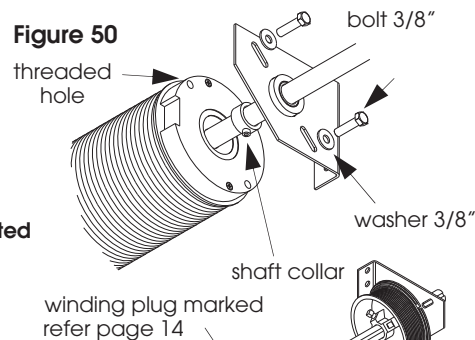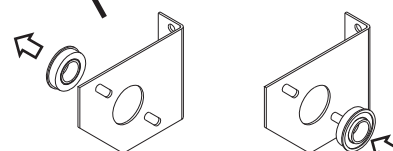
check the orientation of the bearings in spring anchor brackets. the flange side must be on the same side as the shaft collar, Figure 50

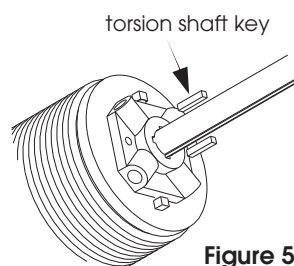the bearing can be 'popped' out and reversed, if this is not the case

torsion shaft key

Figure 53

torsion shaft key

Figure 54

2.14 rear torsion installation (PFT & PFI only)

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.
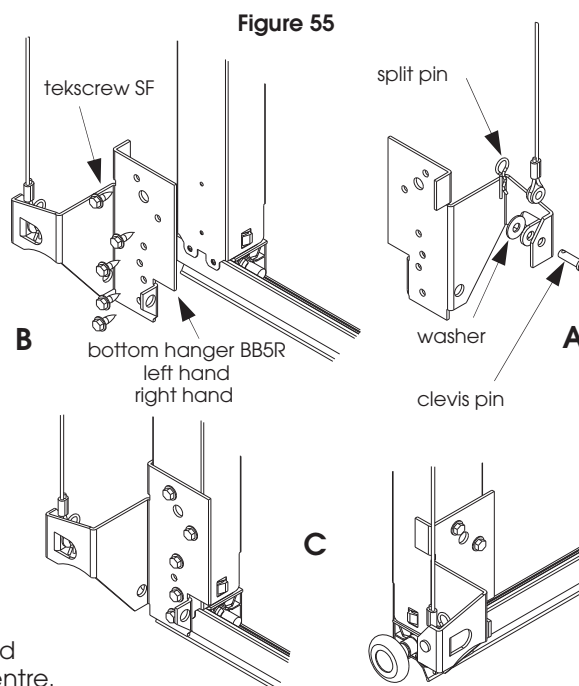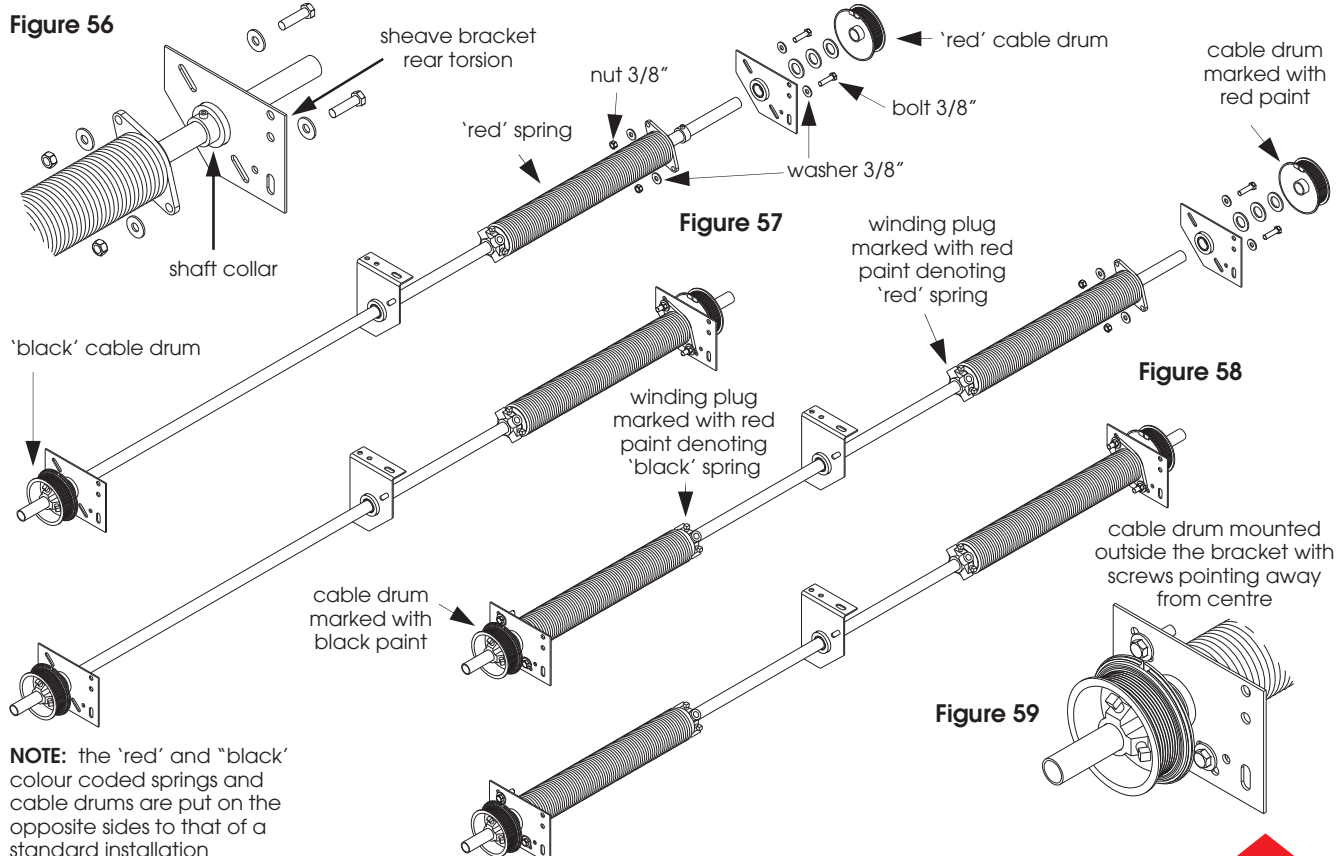
Figure 2.14.1 bottom hangers

Figure 55

tekscrew SF

split pin

bottom hanger BB5R
left hand
right hand

washer

clevis pin

B

A

C

Figure 2.14.2 axle assembly

Figure 56

sheave bracket rear torsion

nut 3/8"

'red' spring

'red' cable drum

bolt 3/8"

washer 3/8"

cable drum marked with red paint

shaft collar

'black' cable drum

Figure 57

winding plug marked with red paint denoting 'red' spring

winding plug marked with red paint denoting 'black' spring

Figure 58

cable drum marked with black paint

cable drum mounted outside the bracket with screws pointing away from centre

Figure 59

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

b&d

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, Figure 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. (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.

Refer to page 28 when adding spring tension.

Figure 60 top bracket LH assembly (parts may differ to those shown)

spacer 0T5252

nut flanged 5/16"-UNC 45713

washer 000785

nut 3/8"-UNC 006553

140mm sheave pulley 0T5251

nut 1/4" flanged 0T2702

bolt SQ neck 5/16"-UNCx7/8" 0T2714

plastic curve OT3170

bolt 1/4"x1/2"-UNC 0T2709
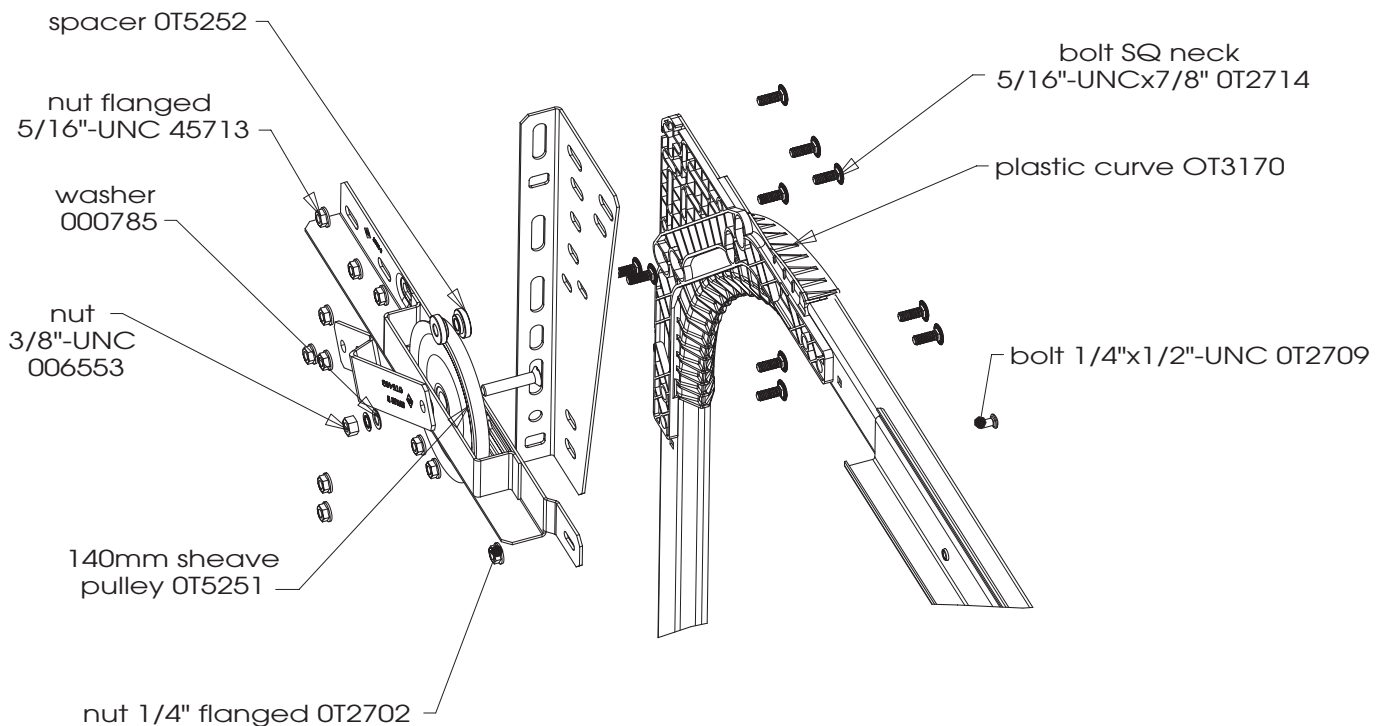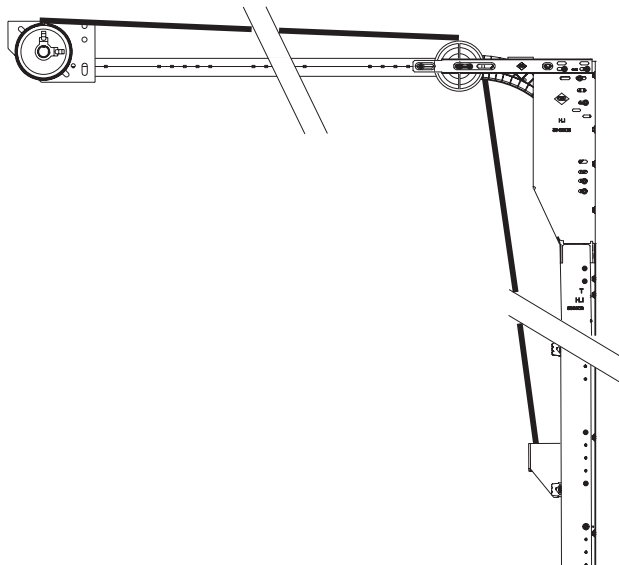
Figure 61

2.15 adding tension to spring

Secure the torsion bar to prevent any rotation, as shown in Figure 2.15.1.

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 2.15.2. 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 2.15.3.

WARNING: ONLY USE AUTHORISED WINDING BARS AS LISTED ON PAGE 5.

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 2.15.4. 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 2.15.5. 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 2.15.6.**

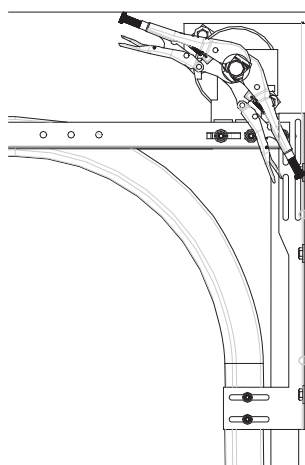**Figure 2.15.1 securing torsion bar**
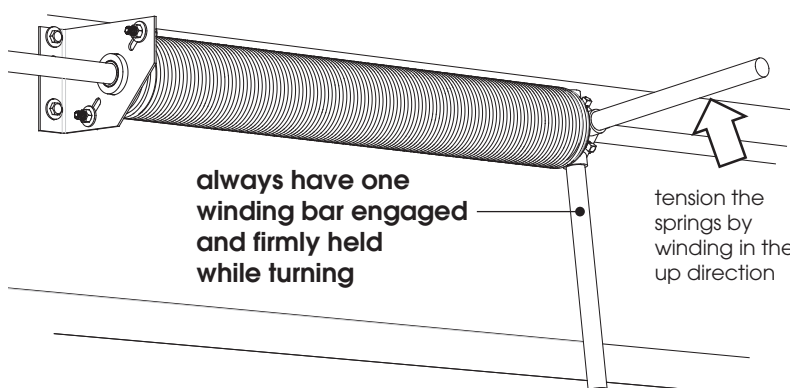
Figure 2.15.4 adding tension

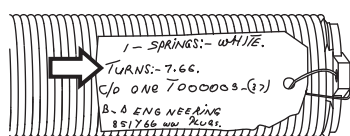always have one winding bar engaged and firmly held while turning

tension the springs by winding in the up direction

Figure 2.15.2 spring label

Figure 2.15.6 lubricating springs

Figure 2.15.5 tightening grub screws

grub screw 2

grub screw 1

use a spanner to tighten grub screw

maintain tension while tightening both screws, these must be very firmly tightened but not to the point of deforming the axle

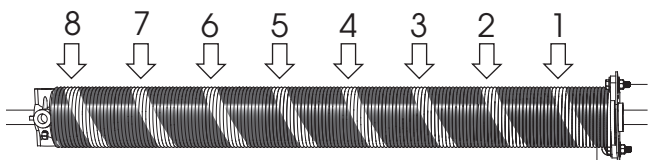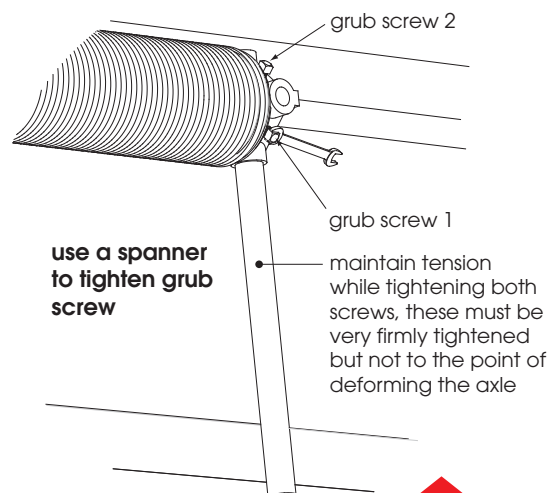**Figure 2.15.3 counting the turns**

8   7   6   5   4   3   2   1

3.0 optional components

3.1 lock installation (PFT & PFI only)

NOT suitable for B&D Storm-Shield™

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.
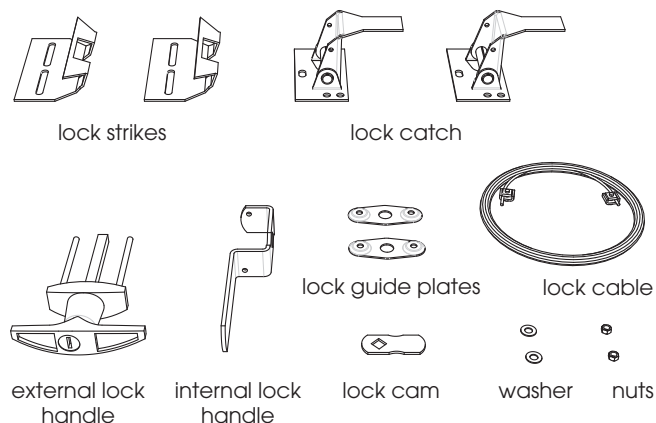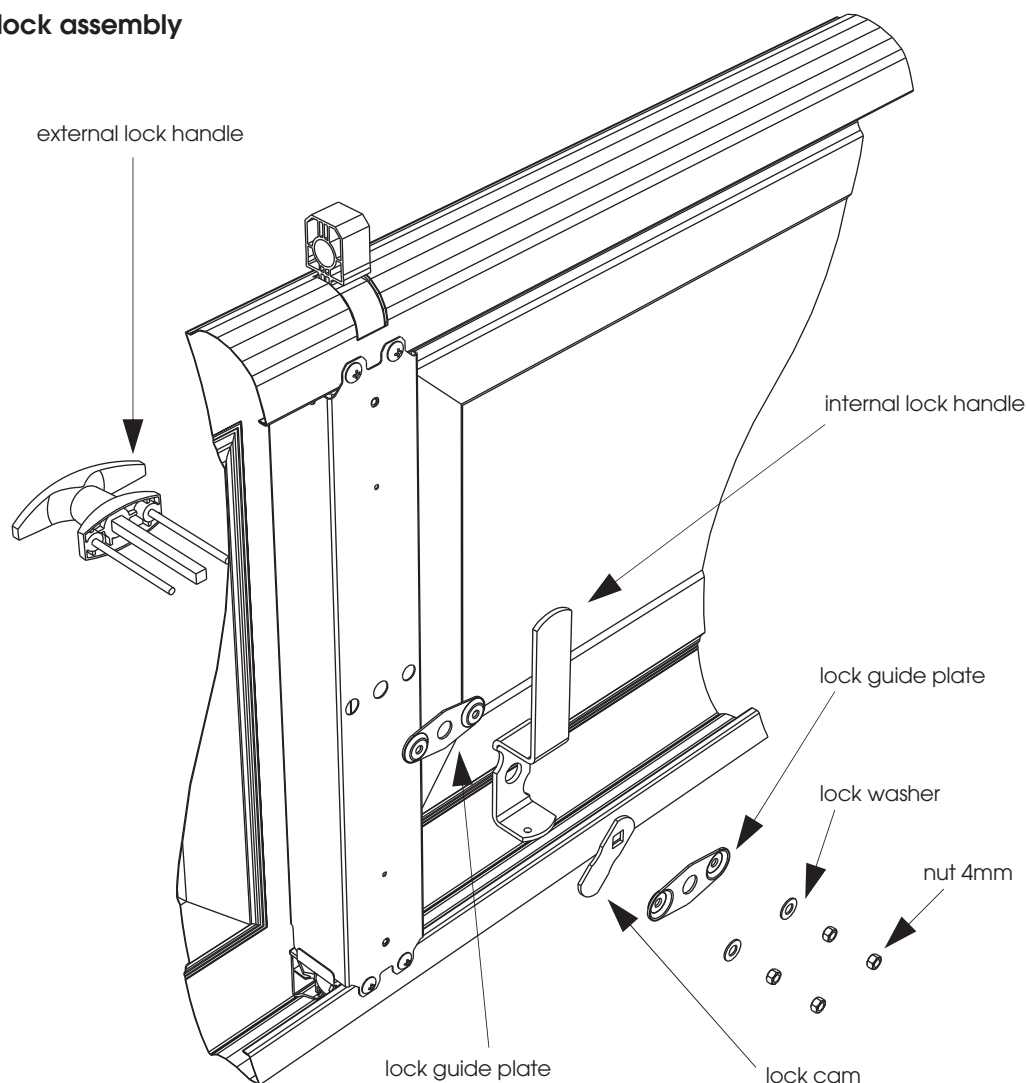
Figure 3.1.1 parts

lock strikes   lock catch

external lock handle   internal lock handle   lock guide plates   lock cable

lock cam   washer   nuts

Figure 3.1.2 lock assembly

external lock handle
internal lock handle
lock guide plate
lock washer
nut 4mm
lock guide plate
lock cam

3.2 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.

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 3.2.1 - the 2 spacers required are to be cut 10-12mm long from a white link pin and fitted one to each side as

shown. Insert into tracks as shown in 'Installing Bottom Panel' on page 19.

The lifting panel is different from that shown on page 12 in that there is no weatherstrip (it's part of the taper panel) and slots are present to connect to the tapered panel.

Assemble bottom hanger as shown in Figure A and B on page 13. Modify bottom hanger as in Figure 3.2.2. 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 3.2.3 when these as attached.

Simply assemble lifting panel onto the tapered panel as standard as shown on page 19 'Installing Additional Panels', see Figure 3.2.4.
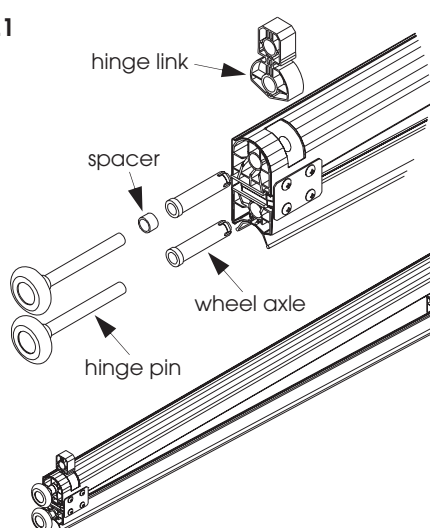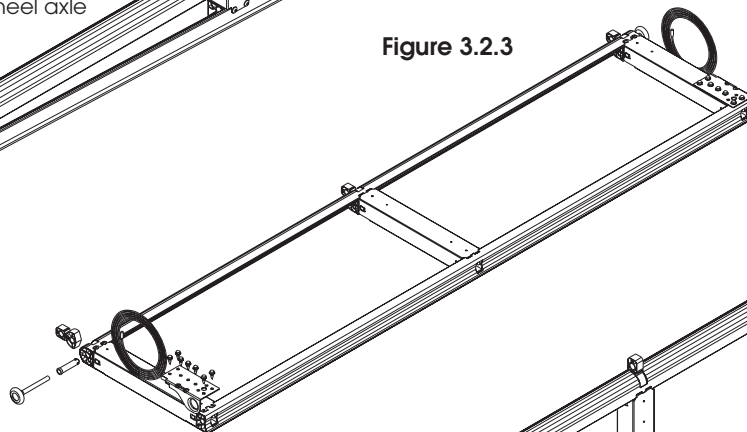
Figure 3.2.1

hinge link

spacer

wheel axle

hinge pin

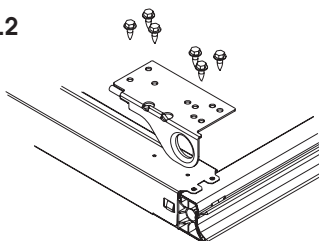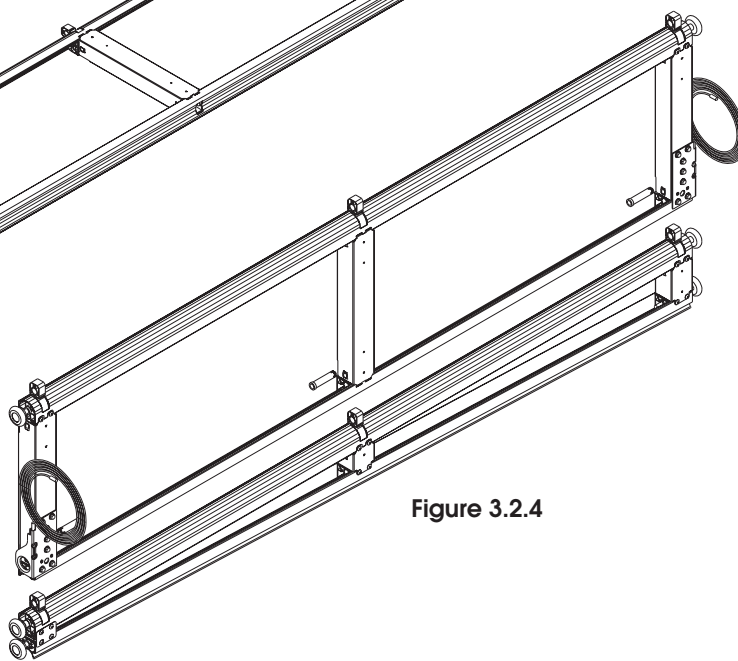**Figure 3.2.3**

Figure 3.2.2

Figure 3.2.4

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

PLASTIC HINGES: No lubrication is generally required, however silicon spray or lithium grease may be used if necessary.

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. Lightly lubricate to prevent friction between the coils.

warranty

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

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