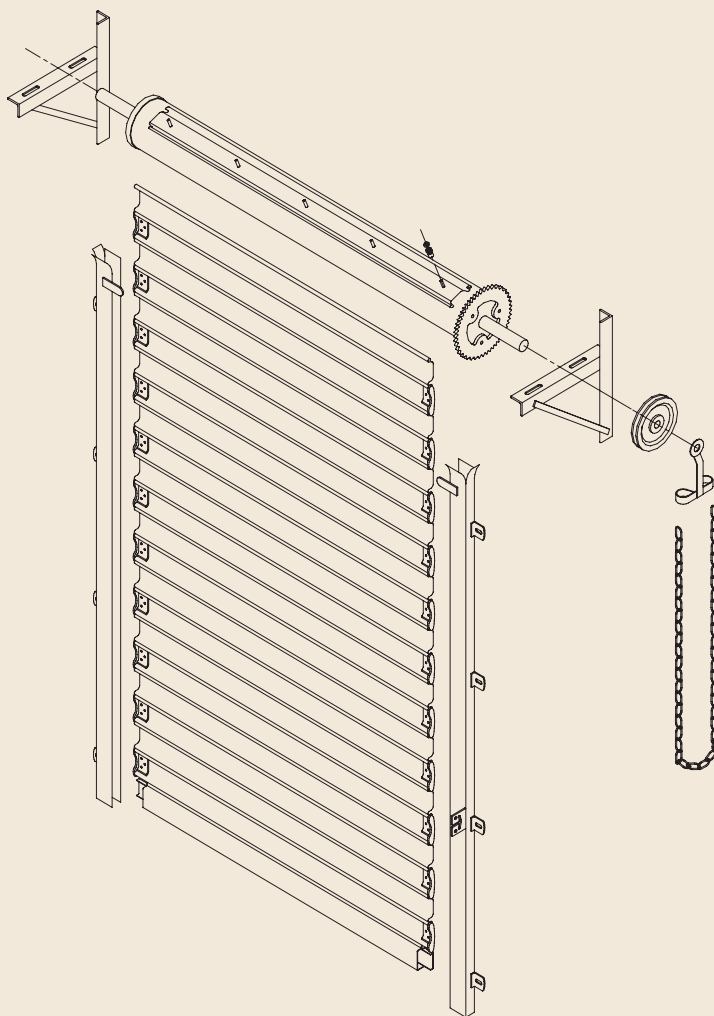




Roll-A-Shutter[®]

4/100 & Envir-A-Shutter Series

INSTALLATION INSTRUCTIONS



DISCLAIMER

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

Note: All references are taken from inside looking out



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1.0 BEFORE YOU START

1.1 SAFETY CHECKLIST

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

Hazard	Control
- Housekeeping - risk of slip trip or fall - Housekeeping - risk of injury to other people or animals in the installers work area	- Tidy up site prior to start work as a minimum area should be at least the area of the installation back into the garage and 2 metres in front - If the Site housekeeping is deemed to be unsafe do not install the door - Keep all people well clear of installers work area with appropriate signage and discussion with owner
- Manual or mechanical handling when moving the door from the Trailer or Ute to the installation area - risk of musculoskeletal injury - Manual or mechanical handling when installing Doors & Openers particularly above head height - risk of musculoskeletal injury or twisting - Manual or mechanical handling when installing tracks and torsion bars - risk of musculoskeletal injury - Manual or mechanical handling when installing the door opener - risk of musculoskeletal injury or twisting - Ensure product is secured to mechanical lifting device	- Correct lifting technique for Roller Door/Shutter - 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 - Use of correct slings, spreader bars etc.
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 some parts of the 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 (various door parts, tools, jewellery striking installer on the head or body)	- 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, bars or other equipment 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
Position the door on the brackets, there is a risk of the door falling from the brackets striking a person	- 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.

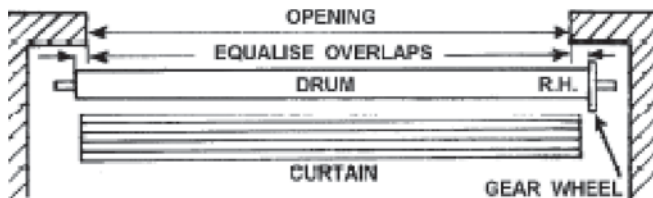
1.3 PREPARATION

Check the opening dimensions to ensure you have the correct door size. Check floor and lintel levels and work from the lowest side or from the side with the least headroom. Position the drum in front of the opening so that the drum tube (excluding the gear wheel) is exactly in the centre of the opening. Check the width of the curtain with the width of the opening and ensure that when the fixing holes in the curtain are lined up with the fixing studs on the drum, the curtain overlaps an equal distance on each side of the opening. Check that the headroom and sideroom clearances are in accordance with those shown in the Table 1 and 2.

1.4 REQUIREMENTS BEFORE INSTALLATION

B&D Roll-A-Shutters® are normally installed to operate behind the opening, overlapping as shown on Fig.1. Openings should therefore have sufficient return on both sides to accommodate the support brackets and door guides, with necessary working clearances.

FIGURE 1: GENERAL DRUM AND CURTAIN ARRANGEMENT



The door is supported on brackets above the opening at each end and requires headroom for the door to roll up (see Table 1). Piers or door posts must extend beyond the top of the opening to provide fixing for the support brackets.

It is preferable that lintels (or 'heads') be built flush with, or slightly forward of the back of the door posts. This avoids an excessive gap between door and lintel while allowing clearance to prevent the door rubbing against lintel.

WARNING! No guarantee will be given or responsibility accepted by the manufacturers if the door is not installed as instructed.

For satisfactory door operation please follow the instructions carefully.

2.0 INSTALLATION

2.1 FASTENER RECOMMENDATION

Wall fixings are not supplied with the door. The following items are recommended with minimum sizes and can be obtained from most hardware stores.

For Brackets: Use 12mm bolts with masonry anchors; (dynabolts or similar) for brick or concrete walls. For steel frame openings use 12mm bolts and 12mm coach screws or bolt for timber openings. The minimum recommended bolt length is 50mm (2").

For Guides: Use 10mm (3/8") coach screws or bolts with a good quality masonry plugs or suitable masonry anchors. The minimum recommended bolt length is 50mm (2").

NOTE: Minimum length of fastener does not exclude use of longer length. Decision must be made by installer to ensure adequate strength.

Refer to the Fig.2 for recommended methods of attaching brackets and guides.

When deciding the fixing method, dynamic loads on door brackets as well as the door weight must be considered.

NOTE TO BUILDERS

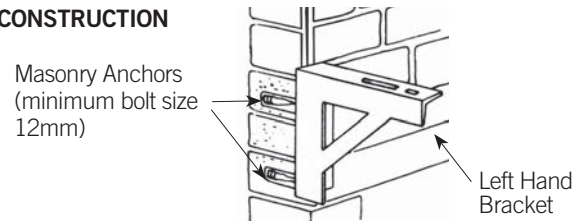
Masonry blockwork should be properly filled and reinforced if brackets are to be mounted directly to blockwork with masonry anchors. Where the blockwork is not solidly filled but structurally sound, long bolts should be passed through the blockwork using suitable steel plates under bolt heads.

Special consideration should be given to brick type and construction of wall, to ensure satisfactory fixing e.g. welding detail it fixed to steel. When installing onto brickwork special fittings will be required.

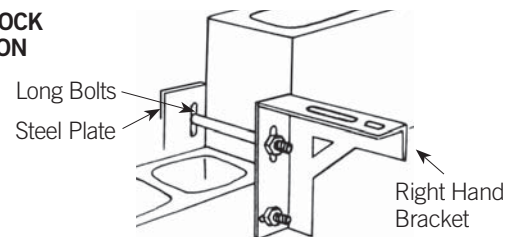
WARNING: Fixing surface must be in good condition, if in doubt test suitability or seek specialist advice. Fixing types vary depending on the building structure. It is the installers responsibility to determine the correct fixing and to ensure that the fixing methods are sound. For steel structures seek advice from the builder/manufacturer.

FIGURE 2: ALTERNATIVE METHODS OF ATTACHING BRACKETS AND GUIDES

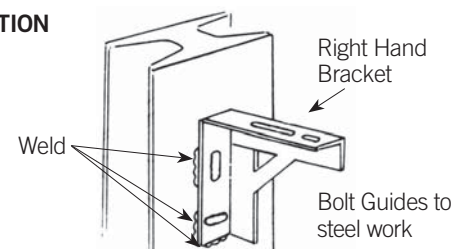
BRICK CONSTRUCTION



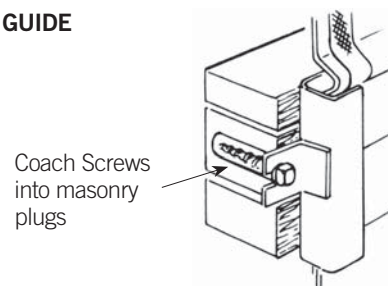
MASONRY BLOCK CONSTRUCTION



STEEL CONSTRUCTION

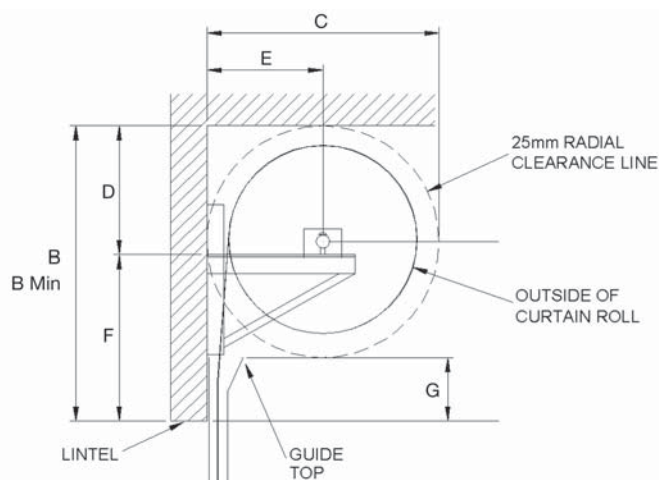


SECURE GUIDE



2.2 BRACKET POSITION REQUIREMENTS

FIGURE 3: HEADROOM AND BACKROOM DIMENSIONS



General Dimensions

- A:** Daylight opening edge to end of drum
A1: Drive side measurement from edge of drum to centre line of fixing bolts
A2: Plain side measurement from edge of drum to centre line of fixing bolts
B: Standard headroom required
B min: Minimum headroom required
C: Minimum backroom required
G: Top of guide height above lintel:
 Standard 4/100 steel guides = 150mm
 Standard Envir-A-Shutter aluminium guides = 9mm
D: Top of mounting arm bracket to nearest obstruction above + 25mm

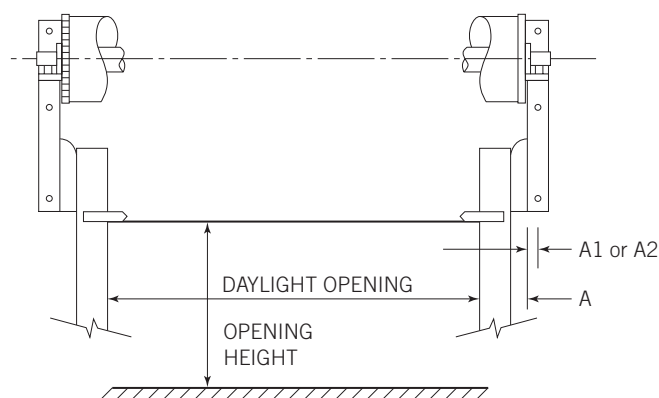
Bracket Mounting Position

E: Axle centre line distance to the nearest obstruction + 25mm
F: Lintel to bracket arm for standard installation

NOTE: All dimensions shown represent the **minimum recommended** clearances. If the headroom dimension (B) is less than the given amount, the bottom rail of the door will intrude into the opening by the difference. (All values in mm)

OPENING HEIGHT	B	B min	C	D	E	F	A	A1	A2
Planetary gear drive for doors under 4500mm high or wide									
2200mm	630	580	405	205	205	360	110	145	80
3000mm	680	630	455	230	230	360	110	145	80
3600mm	700	650	475	240	240	360	110	145	80
Hand winder drive for doors over 4500mm high or wide									
4500mm	720	670	495	250	250	360	110	145	145
5500mm	720	670	495	250	250	360	110	125	80

NOTE: Bracket and drum detail is indicative only.

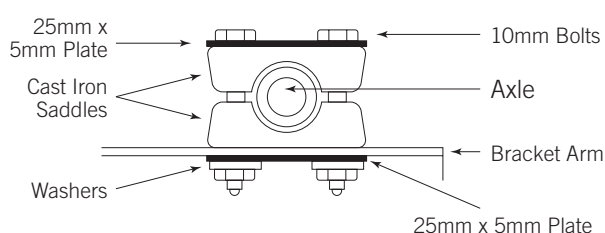


NOTE: On larger shutters the axle ends are reinforced with solid bar inserts welded in place. If the axle must be cut, the solid bar must be re-welded in place.

2.3 POSITION DRUM ASSEMBLY ON BRACKETS

With the drum assembly the correct way around (the shutter curtain rolls down the rear of the opening), carefully lift door onto the brackets using suitable lifting equipment – avoid curtain damage.

Rest axle between two cast iron saddles and immediately loosely secure to bracket arm with bolts, plates, nuts and washers as shown below. This will prevent the axle rolling from the brackets and causing injuries.



If manual Drive chain operation is fitted, ensure that the chain is placed around the chain/wheel and hangs down freely.

Before tightening the bolts, position the door so that:

- It overlaps the opening evenly on both sides
- The axle is positioned on the bracket arm as far forward as possible while still allowing the bottom rail to pass the lintel when the door is rotated.

Rotate both drum and axle so that the bottom rail is level with the bracket arm.

Now tighten the saddle bolts very tightly ensuring that there are washers under the nuts to a torque of 40Nm or 30 ft.lb.

WARNING: The axle must be securely clamped otherwise the door will lose tension.

2.4 GUIDES INSTALLATION

4/100 STANDARD 70MM GUIDE INSTALLATION

Guides must be correct length. 4/100 = Opening ht + 150mm and Envir-A-Shutter = Opening ht + 90mm. Guides can be shortened by cutting the bottom of guide. Position guides true and plumb at each side of the opening. Allow 3-5mm of working clearance between the door and the inside of each guide (Fig. 10), mark, drill and fix both guides. Use 10mm bolts (min.) and washers with suitable plugs for masonry application or other fixings to ensure satisfactory attachment). Drill holes and loosely fix the guides. See special notes for Envir-A-Shutter guides.

NOTE: The guides must be perfectly level and plumb for correct door operation.

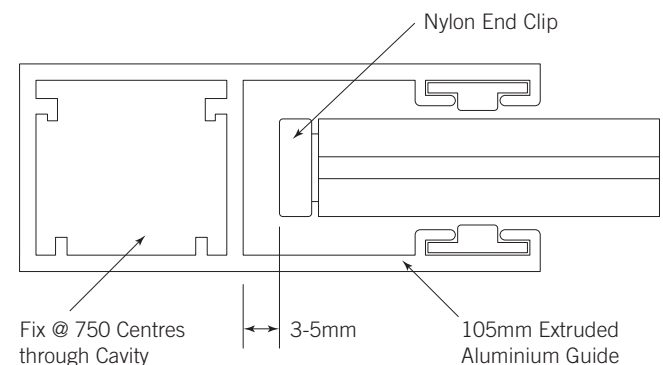
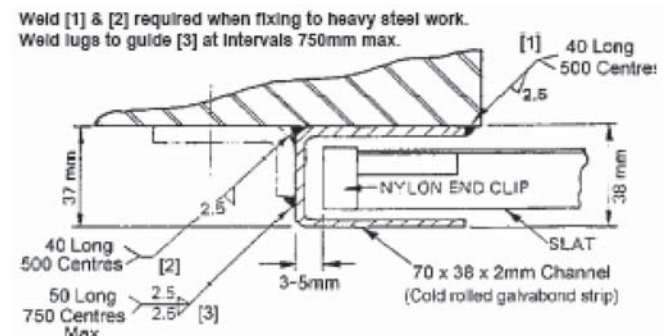
ENVIR-A-SHUTTER STANDARD 105MM GUIDE INSTALLATION

Fixing lugs are not supplied for these guides, fixing is attained by drilling at no more than 750mm centre through the guide cavity and securing with suitable fixings. Using a water level, transfer position of first guide to the opposite side of the opening, then drill and fix the second guide.

The guides must be perfectly level and plumb for correct door operation.

NOTE: The guides must be perfectly level and plumb for correct door operation. Do not counter bore the guide cavity.

FIGURE 10:
4/100 STANDARD 70MM GUIDE INSTALLATION



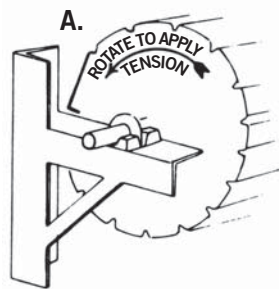
2.5 TENSIONING AND BOTTOM RAIL STOPS

Check the top of the guide lead in to make sure that the door curtain enters the top of the guide smoothly.

Apply tension to the springs by rotating the door approximately two (2) complete turns in the forward direction (see diagram on right). The amount of tension required for satisfactory operation may vary with individual doors depending on size. Final adjustment should be made later.

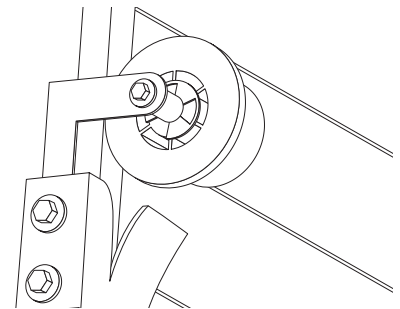
WARNING: When the bands holding the door curtain rolled up are cut, there will be a strong tendency to rise and revolve. If uncontrolled, the rapidly unrolling door could cause damage or injury. Therefore it must be securely held until bottom rail stops are fitted. Chain operated doors can be held in position by locking the chain in the chain cleat.

Bottom Rail Stops - 4/100: The aluminium bottom rail acts as a bottom rail stop.

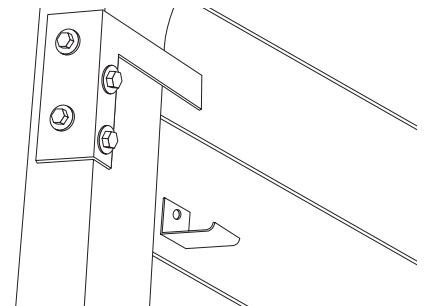


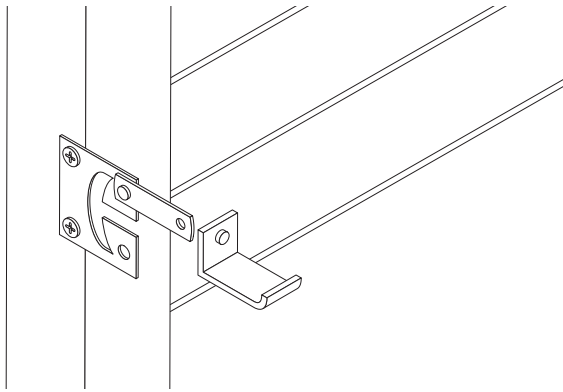
ENVIR-A-SHUTTER

Aluminium extruded guides should have the guides flared and the rollers attached.



The extruded guide head stops should be attached as shown using self drilling screws to the cavity section of the guide.





Attach the round bottom rail stop to the bottom rail with the bottom edge of the stop level with the bottom edge of the bottom rail.

If using S2 Roll-A-Door style bottom rail stop, attach the round bottom rail stop to the bottom rail with the bottom edge of the stop level with the bottom edge of the bottom rail.

NOTE: The curtain will intrude approximately 15mm into the daylight opening.

Attach the chain cleat directly to the aluminium guide using 2 self-drilling screws.

FINAL ADJUSTMENT

Operate the door up and down a number of times to check operation. If operation is uneven or not smooth, rectify as below:

Door hard to operate in one direction:

- Adjust spring tension. (See right)

Door hard to operate in both directions:

- Check guide clearances (see that door is not jamming in guides)

Door is stiff to work and rattles over lead-in on top of guides:

- Check that guides are not too long.
- Move door closer to lintel: with door fully open and chain secured, loosen off the saddle bolts on one side only. Push the door on that side as close to the opening as possible without it scraping on the lintel. Tighten the saddle bolts and repeat the procedure on the other side, ensuring that the axle is still parallel to the opening.
- Pack out the top lug of the guide.

Door is scraping in the guides:

- Check that the guides are plumb, the clearances are correct and that the door is correctly centred in the opening.
- Check that the brackets are level.

ADJUSTING SPRING TENSION

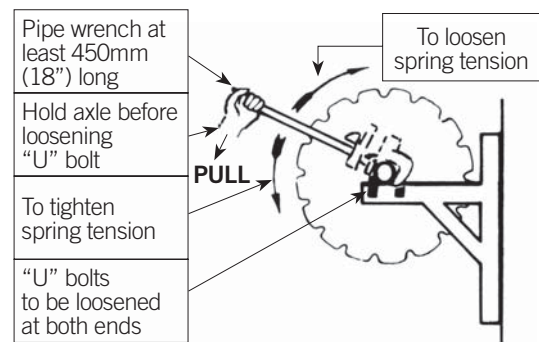
Hand operated doors:

With the door in the fully open position (rolled up), tie two ropes around the door curtain approximately 300mm from each end. With a man at each end, secure a firm hold on the axle with a Stilson or pipe wrench and loosen the axle clamps with a socket spanner. The axle can then be rotated in the required direction (see diagram below) until approximately the correct tension is achieved.

It is recommended that alteration to spring adjustment be only by small degrees until the best position is found.

The axle clamps must then be tightened to a torque of 40Nm or 30 ft.lb. before releasing the hold on the pipe wrench.

Repeat the process until door operation is satisfactory.



DO NOT use files or similar brittle steel tools as Tommy-bars.

Chain operated or motorised doors:

- Fully close the door.
- Securely fix the door curtain in the guides using either slide bolts or clamps in the guides.
- For chain operated doors, lock both sides of the hauling chain in the chain clip. As a safety precaution, always keep a section of the chain locked in the clip to restrict the chain to short movements.

NOTE: The full force of the springs is now acting on the chain.

- To increase spring tension, carefully pull down on the chain side that would normally lower the door. This will require considerable effort and should only be attempted if an assistant is present.
- To decrease spring tension, hold the chain side that would normally lower the door firmly, release the chain from the clip and allow the chain to slowly move upwards.
- Once completed, lock the chain in the clip.

When the tension is correct, secure the chain in the clip and re-tighten the axle bolts.

The correct tension can only be found by trial and error. Adjustments should be restricted to a maximum of one quarter revolution of the axle at a time.

3.0 AFTER INSTALLATION CARE

GENERAL CARE OF YOUR ROLL-A-SHUTTER®

CLEANING

Your B&D Roll-A-Shutter® has been manufactured from galvanised or colorcoated steel, 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 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 mechanism becomes stiff, the application of powdered graphite is recommended – do not grease or oil the lock.

REGULAR MAINTENANCE REQUIRED

B&D recommends that you check the operation of your Roll-A-Shutter® 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).

NOTE: The door guide grease should be cleaned out and replaced least annually or more frequently in extreme conditions.

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.

WARNING: The springs on the door are under extreme tension. On NO account should they be adjusted by an inexperienced person. B&D recommends regular servicing and safety checks be carried out at least annually, more frequently in extreme conditions or in high use environments.

WARRANTY

B&D Roll-A-Shutter® is covered by a 12 month warranty for complete door and parts, surface (excludes salt corrosion).

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

B&D Doors Office Locations:

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

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



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