



## **N-RATED ALUMINIUM GUIDE ROLLER DOOR**

### **INSTALLATION GUIDE**

***THESE INSTRUCTIONS ARE PROVIDED FOR THE  
USE BY EXPERIENCED INSTALLERS OF  
GARAGE DOORS***

***BY UNDERTAKING THE INSTALLATION OF THIS  
DOOR, THE INSTALLER UNDERSTANDS THE  
DANGERS ASSOCIATED WITH THE  
INSTALLATION.***

***Steel-Line Garage Doors IS NOT RESPONSIBLE  
FOR ANY AND ALL LIABILITY RESULTING IN THE  
INJURY AND OR DEATH DERIVED FROM AN  
IMPROPER INSTALLATION.***

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## GENERAL WARNING



**SPECIAL SAFETY WARNINGS OR REMARKS IN THIS MANUAL ARE INDICATED WITH THIS SYMBOL. PLEASE READ ALL WARNINGS CAREFULLY.**

To install this door safely, several precautions must be taken. For the safety of all concerned, please pay attention to all warnings and instructions given below.

- Please read this installation manual completely prior to installation. It is very important to install this door per the manual to achieve proper and safe operation
- The Steel-Line Series N-Rated roller doors are designed as light industrial chain operated doors to suit a maximum opening of 5100mm High x 5500mm Wide and depending on size can weigh as much as 226kg (500lbs). The forces generated in the springs are generally equal to the door weight. Proper care must be taken not to release those forces violently as it could result in serious physical injury.
- All the components which have been supplied are designed for this specific roller door. Replacement or additional components may have an adverse effect on the performance, safety, and the warranty of the door.
- Alterations to the spring tension should only take place when the door is in the open (up) position and undertaken by a trained installer.
- All instructions are given as if viewing the door from the **inside looking out**.

## SAFETY CHECK LIST

Care must be taken to avoid any chance of risk of accidents or injury. Please check for the following hazards before and during installation.

General Housekeeping		
Checklist item	Yes/No	Correction
1 Is the site housekeeping safe to install a door?		
2 Is the area around the installation site free of obstruction?		
3 Have appropriate signage and notices around the site to keep work area clear of people been put in place?		
Manual Handling		
Checklist item	Yes/No	Correction
1 Are the correct lifting techniques for different sized doors available? i.e. doors above 2.5m wide will require a lifting device		
2 Are two people available for lifting operations?		
3 Are mechanical aids available where required? i.e. lifting stands, forklifts, scissor lifts or cranes		
4 Are correct lifting techniques being practiced by installers? i.e. a lifting device is used for doors over 2.5m		
5 Is the top rung being avoided during use of ladders?		
6 Are ladders correctly placed and used during installation?		
7 Are correct techniques used for ropes and temporary fastening operations?		
Safety Equipment		
Checklist item	Yes/No	Correction
1 Are installers wearing the appropriate PPE?		
2 Are the operator manuals being followed?		
3 Are appropriate noise/hearing protection being used?		
4 Is everyone involved supplied with appropriate fire protection in the case that flammable liquids or materials are removed from the work area?		
Spring Tension		
Checklist item	Yes/No	Correction
1 Is the door correctly secured and in the up and open position?		
2 Is the stilsons fitted correctly to the axle and locked off against a wall?		
3 Are the stilsons of an adequate length?		
4 Are the correct nuts and bolts tightened and loosened to ensure the control of the tension of the spring to avoid any unexpected release of the spring?		
5 Are body parts i.e. arms and head, clear of the stilsons at all times?		
Door Position		
Checklist item	Yes/No	Correction
1 Has the door been fastened to the bracket on both ends using appropriate fixings?		
2 Are people safely maneuvering around the door while it is sitting on the brackets?		

# PRE-INSTALLATION CHECKS

## REQUIREMENTS

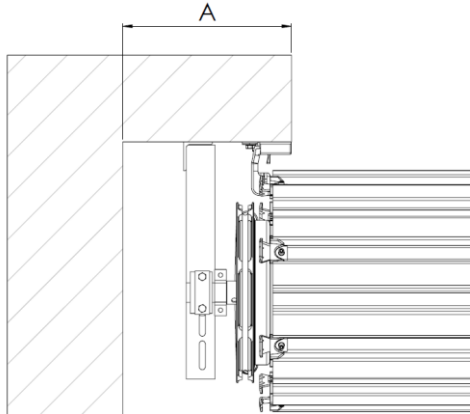
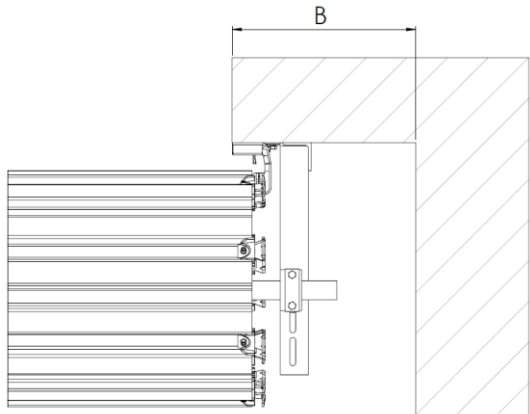
A roller door is designed to be fitted behind the opening and the following dimensions and conditions need to be checked before fully unpacking the door for installation.

### OPENING WIDTH

Check that the curtain is wider than the opening by a minimum of 35mm each side – 70mm overall

**NB:** For concrete/masonry fix, the curtain is wider than the opening by a minimum of 55mm each side – 110mm overall

### SIDE CLEARANCE

Door Type	Operator/Gear Driven Side Dim. 'A'	Minimum Non-Drive Side Minimum Dim 'B'
N-Rated	230mm	135mm
		

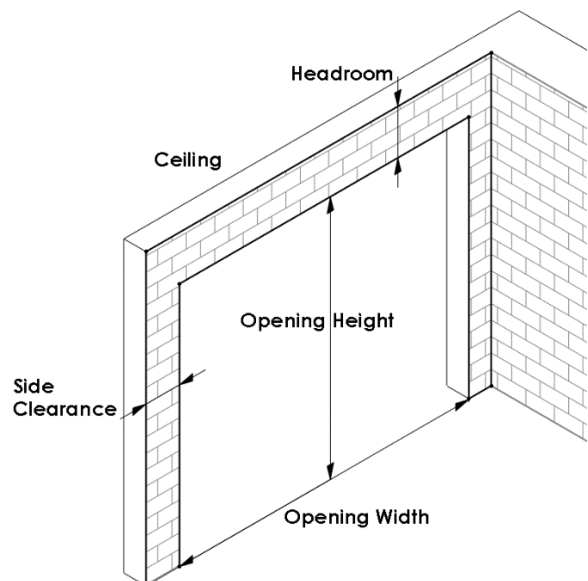
**NB:** If the door is to be motorised, check with the motor installation instructions for side room required for the motor.

### HEADROOM

A minimum clearance between the underside of the lintel/headroom and the ceiling. This varies with the height of the door. See chart below.

Door Height (mm)	Minimum Headroom* (mm)
2200 – 2600	480
2700 – 3300	510
3600 – 4200	540
4800 – 5100	570

\*This clearance must extend for a minimum of 600mm for N-Rated doors horizontally back from the opening. The minimum headroom is required to reveal the complete daylight opening height. Fitting a door where less than the recommended headroom is supplied will result in less drive-through height.



## STRUCTURAL CONDITION OF OPENING



**IT IS THE INSTALLER'S RESPONSIBILITY TO ENSURE THAT THE AREA AROUND THE OPENING IS STRONG ENOUGH TO SUPPORT THE DOOR.**

The lintel and jamb surfaces where the door is to be fitted to must be flush and reasonably smooth (small irregularities are acceptable).

## FITTING NOTES

- a) For doors over 2.5m wide, it is recommended that two people are available for fitting.
- b) **The door must be installed SQUARE AND LEVEL irrespective of the shape of the opening. Under no circumstances should any compensation be made to the door to suit an irregular opening.**
- c) Ensure that all necessary tools are available at hand before starting.
- d) Ensure the area around the opening is free of any obstructions.
- e) The door package and its contents should be checked for obvious damage before removal of wrapping. The package should contain:
  - 1. The curtain rolled up and wrapped.
  - 2. One pair of guides – these come in standard lengths.
  - 3. One red bag containing the hardware required to fit the door.
  - 4. One N-Rated lead-in kit box for guide installation.
  - 5. For doors over 3000mm high, one accessories box for N-Rated doors includes chain operated drive, brackets, and fixings.

**NB:** Some of the hardware fixing supplied may not be suitable for fixing curtain brackets to the opening substrate. The installer should select suitable fixings to suit substrate and curtain size and weight.

**IF THERE IS ANY OBVIOUS DAMAGE OR PARTS MISSING, CONTACT YOUR STEEL-LINE SUPPLIER.**

# INSTALLATION



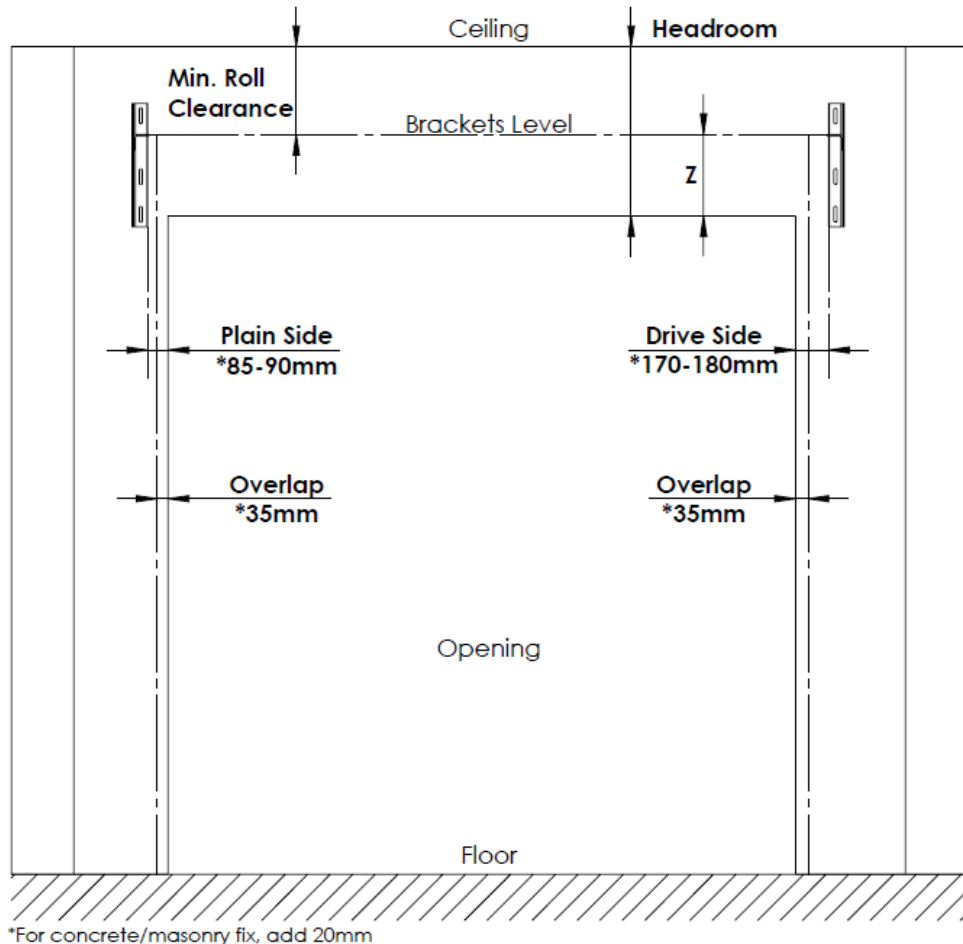
**DO NOT CUT PACKAGING AROUND ROLLED CURTAIN UNTIL INSTRUCTED TO DO SO IN STEP 6.**

## 1.0 MARK DOOR POSITION

1. Mark the curtain **overlaps** 35mm at each side of the opening.

## 2.0 INSTALL BRACKETS

1. Use the appropriate fixings to suit the opening substrate.
2. For motorised doors, check the motor instructions for the dimensions required from the edge of curtain (curtain overlap) to the inside of the bracket.
3. Fit the brackets and ensure the minimum clearance for plain side and drive side.
4. Use a levelling device to ensure that the brackets are level with each other and fix to the substrate.
5. Re-check level and fix both brackets securely.
6. The minimum dimensions from the lintel to the top of the bracket is as follows:



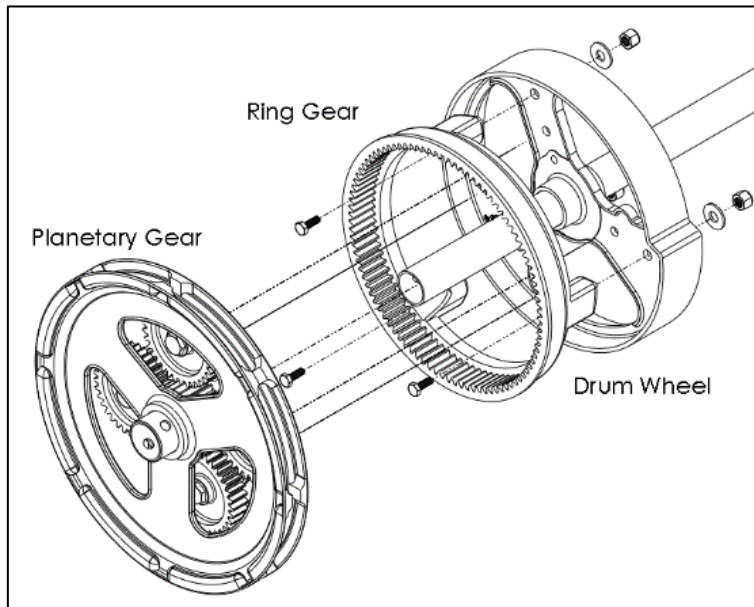
Specified Door Height (mm)	Minimum Roll Clearance (mm)	Dim. 'Z' Minimum Distance from Underneath Lintel to Top of Bracket (mm)
2200 – 2600	220	280
3300 – 3600	235	295
3600 – 4200	250	325
4800 – 5100	265	340

Note: if there is a lack of headroom, refer to the minimum roll clearance for bracket positioning. If the headroom is over the minimum, refer to Dim. Z for bracket positioning to ensure maximum daylight opening.

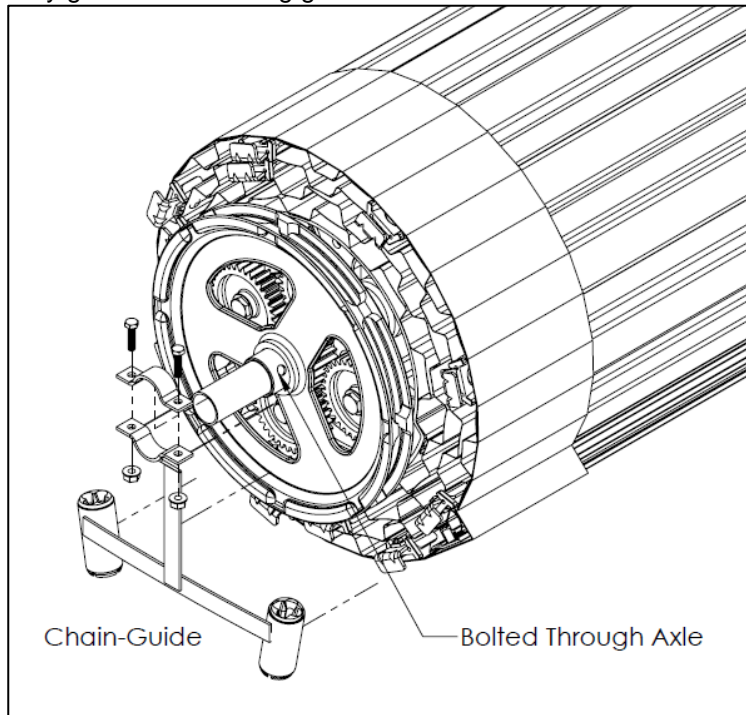
### 3.0 FIT DRIVE UNIT

Chain wheel drive or planetary gear drives are supplied with series N-Rated doors inside the accessories box depending on the height of the door. For operator drive units, fit the motor to the door according to the instructions provided.

#### 3.1 PLANETARY GEAR



1. Line up and fit the ring gear with provided bolts and nyloc nuts to drum.
2. Ensure the nyloc nuts are secured tightly.
3. Fit the planetary gear inside the ring gear.



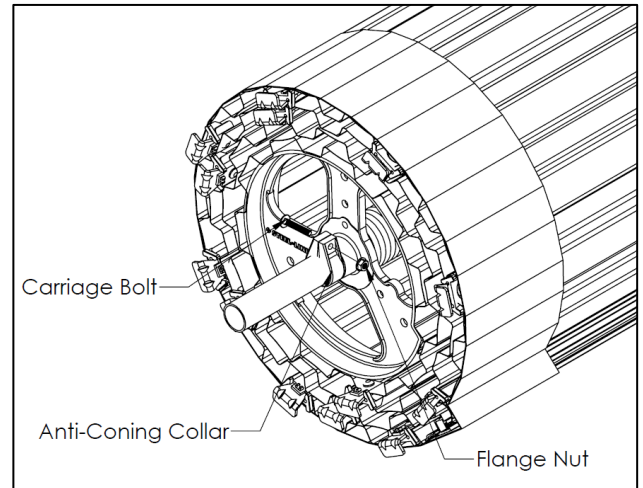
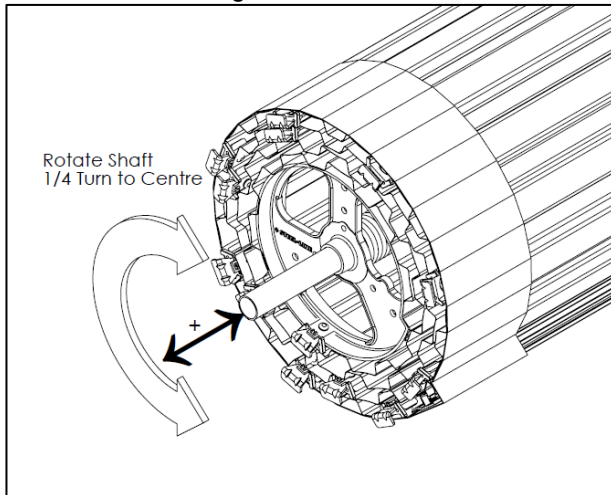
4. Mark on the axle, the position of the hole on the metal bush.
5. Remove and drill a 10mm hole through the axle.
6. Insert a 3/8" Hex Bolt through bush and axle and secure with nut.



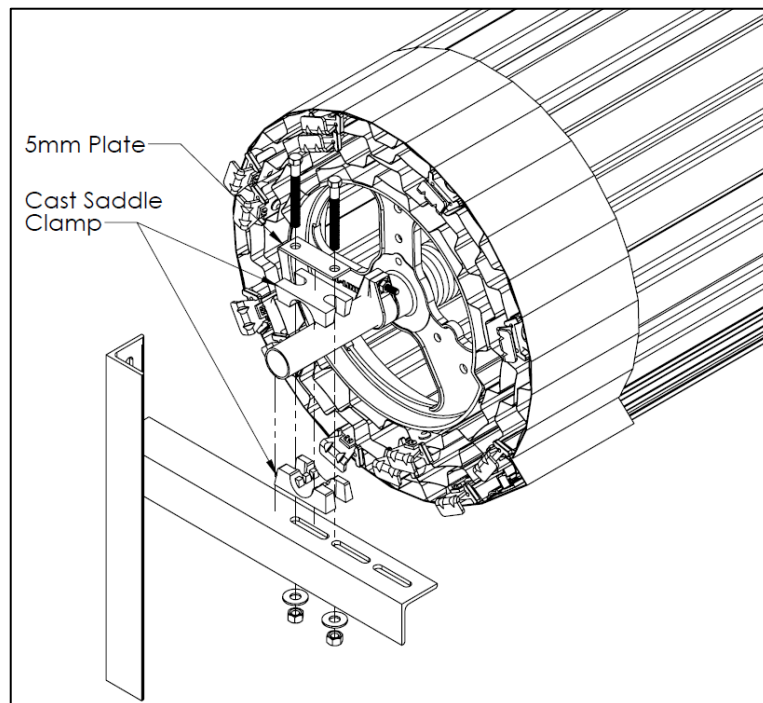
7. Insert chain guide onto shaft positioned under the planetary gear and secure with chain guide retainer and fix off with supplied  $\frac{1}{4}$ "x1 $\frac{1}{4}$ " hex bolt and flange nut

#### 4.0 MOUNT DOOR CURTAIN TO BRACKETS

1. Ensure there are no loose parts or packaging inside the door.
2. Float the shaft by rotating in either direction then releasing.
3. Fit anti-coning collar on the non-drive side of the door leaving a 1mm gap between the collar and drum wheel.



4. Check if shaft length has no interferences and fits within the side clearances. Trim the shaft if necessary.
5. Position the heavy-duty saddle on top of and in-line with the slots on the bracket.
6. Position the door to ensure the sheet unravels adjacent to the opening and lift door onto brackets.
7. Secure two heavy-duty saddle clamps and 5mm plate with provided bolts and nuts finger tight only.



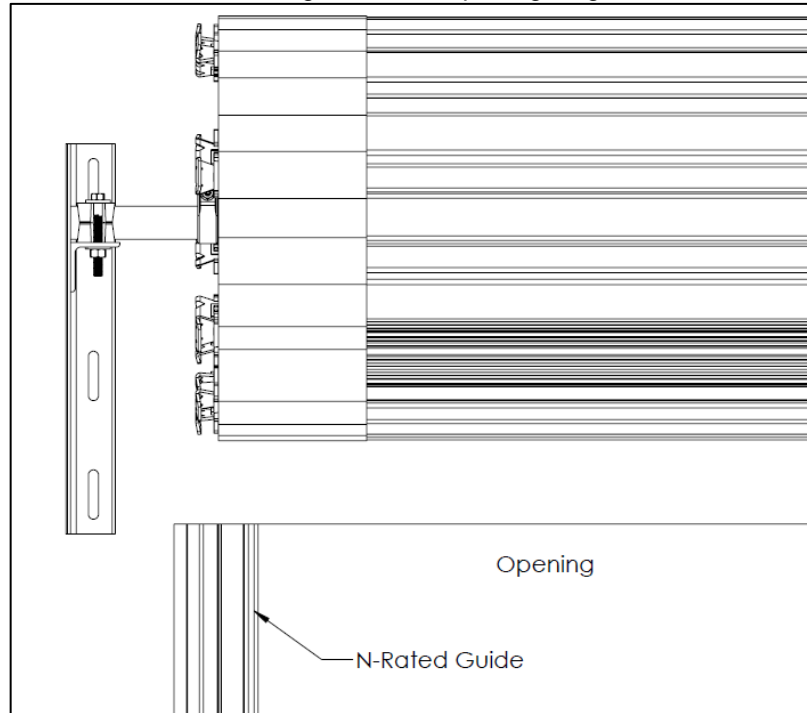
**DO NOT USE BRACKET AS A LIFTING DEVICE AS IT IS NOT DESIGNED FOR LIFTING**

## 5.0 CUT AND POSITION GUIDES

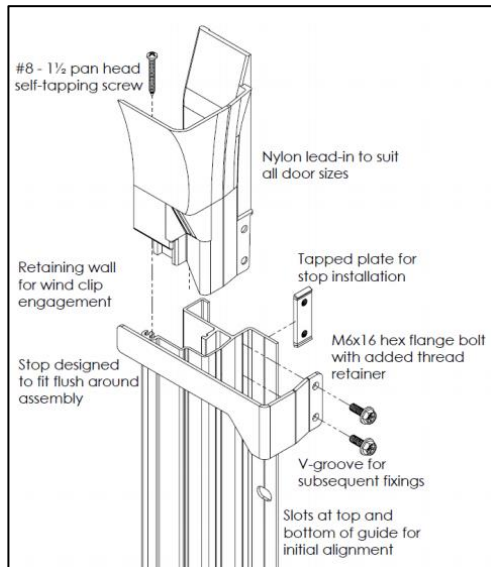


**BEFORE GUIDES ARE FITTED, BE VERY CAREFUL NOT TO ALLOW CURTAIN TO ROLL UP UNAIDED AS DAMAGE AND INJURY MAY RESULT.**

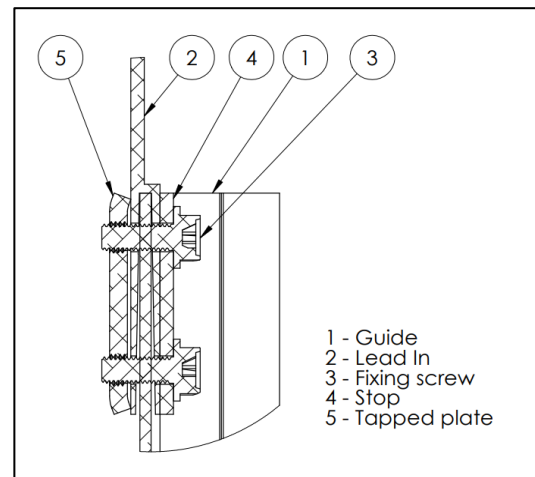
1. Cut the surplus from the bottom of the guide to the opening height.



2. Fix the nylon lead-in to the top of the guide with the provided 8G-18x1½" self-tapping screw.



3. Use the nylon lead-in holes as a guide to drill 6.5mm-7mm sized holes for fixings.
4. Fit the stop and fix the tapped plate with the 2nos. M6x16 hex flange bolt (item 3) to inside back of the guide.



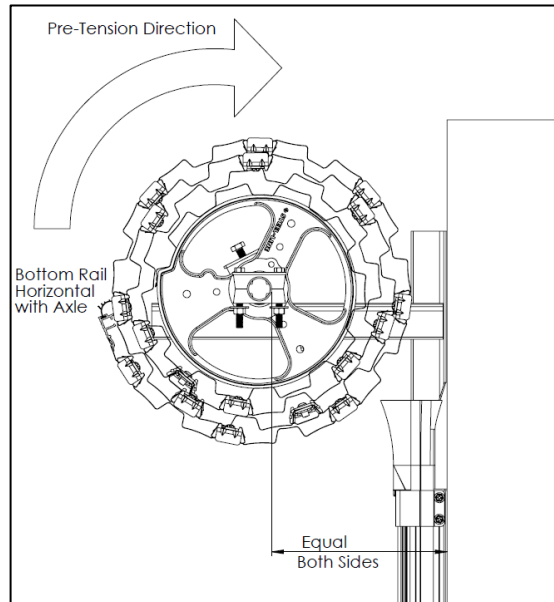
5. Fix the guide to the substrate through the top and bottom slots loosely.
6. Push the guide against the jamb ensuring it is vertical.



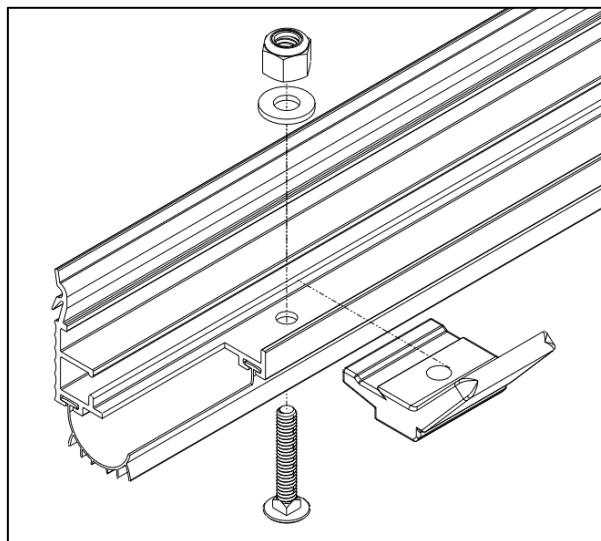
**THE EXTREME TOP EDGE OF THE GUIDE MUST NOT BE HIGHER THAN THE HORIZONTAL LEG OF THE SUPPORT BRACKETS TO ENSURE PROPER OPERATION.**

## 6.0 POSITION THE DOOR

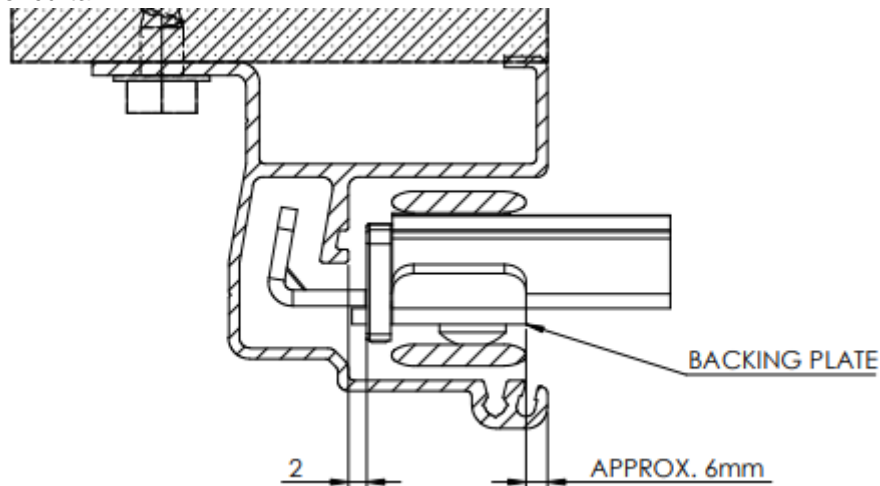
1. Ensure the curtain overlaps the opening equally on both sides. If not, centralise door by rocking back and forth ensuring the nuts are still secured finger tight only.
2. Rotate the rolled door in the direction shown until the bottom rail is level with the shaft.
3. Tighten the saddle clamp nuts on both sides.
4. If an operator drive unit has been installed tighten the fixings and disengage the drive for manual operation.
5. Pre-tension the door by rotating in the same direction as shown in the figure by  $1\frac{1}{4}$  to  $1\frac{3}{4}$  turns.



6. While holding the wrapped curtain, carefully cut and remove the packaging and slowly pull the curtain into the guides, removing any cardboard and tape.
7. Carefully re-roll the curtain ensuring the bottom rail stays horizontal, leaving 500mm unrolled.
8. For drive operated doors, lock off the motor.
9. For manual doors fit a soft wood chock (300-400mm long) between bottom rail and door roll to prevent door from winding back up.
10. Fix the door stop to each end of the bottom rail through the punched hole in the bottom rail as per instructions.
11. A small slit will be required to be made in the weather seal to insert the bolt.



12. Secure the guide at the top allowing approximately 2-3mm running clearance per side from the edge of curtain.



13. Lower the door and position the guide maintaining the clearance and secure at the bottom slot.
14. Remove any excess packaging and check the door runs freely to the floor, if not reposition guides as required and secure at the slots.
15. Use appropriate fixings to secure the guide to the jamb along the v-groove at centres given in tables below.
16. Fix the guide above the top slot with another fixing.

**Table 6.1 FOR FIXING TO CORE FILLED CONCRETE MASONRY**

Door Width	N1		N2		N3		N4	
	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval
Up to 1250	200	400	200	400	200	400	200	400
1251-2250	200	400	200	400	200	400	200	400
2251-2750	200	400	200	400	200	400	200	400
2751-3250	200	400	200	400	200	400	200	<b>200</b>
3251-4250	200	400	200	400	200	400	200	<b>200</b>
4251-4750	200	400	200	400	200	<b>200</b>	200	<b>200</b>
4751-5500	200	400	200	400	200	<b>200</b>	200	<b>200</b>

**Table 6.2 FOR FIXING M10 NUT & BOLT TO STEEL**

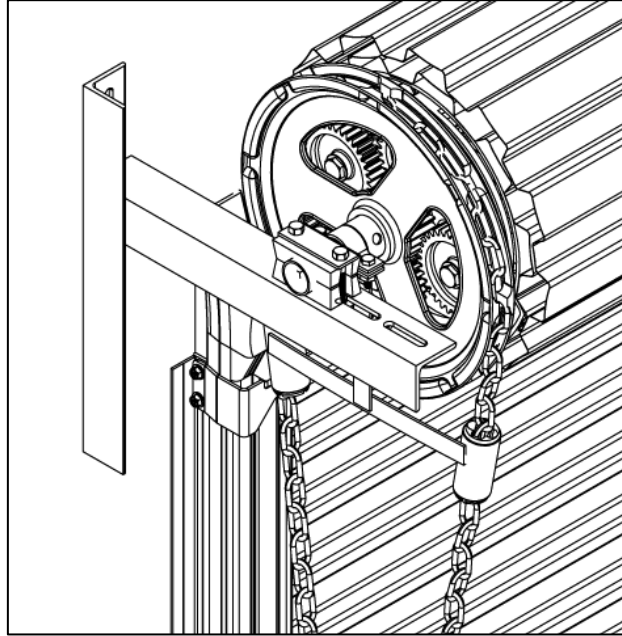
Door Width	N1		N2		N3		N4	
	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval
Up to 1250	200	400	200	400	200	400	200	400
1251-2250	200	400	200	400	200	400	200	400
2251-2750	200	400	200	400	200	400	200	400
2751-3250	200	400	200	400	200	400	200	<b>200</b>
3251-4250	200	400	200	400	200	400	200	<b>200</b>
4251-4750	200	400	200	400	200	<b>200</b>	200	<b>200</b>
4751-5500	200	400	200	400	200	<b>200</b>	200	<b>200</b>

**Table 6.3 FOR FIXING 14G TEK SCREW TO STEEL (MIN. 1.9mm THICK)**

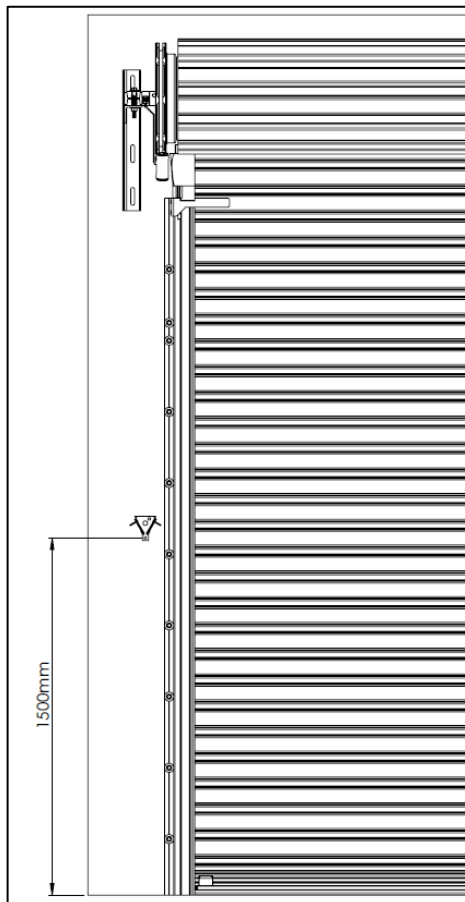
Door Width	N1		N2		N3		N4	
	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval	From top of Guide	Max. Interval
Up to 1250	200	200	200	200	200	200	200	200
1251-2250	200	200	200	200	200	200	200	200
2251-2750	200	200	200	200	200	200	200	200
2751-3250	200	200	200	200	200	200	<b>100</b>	<b>150</b>
3251-4250	200	200	200	200	200	200	<b>100</b>	<b>150</b>
4251-4750	200	200	200	200	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>
4751-5500	200	200	200	200	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>

## 7.0 FIT CHAIN

1. Fit the chain over the chain wheel or planetary gear.
2. Cut and bend one end link open and detach from the chain.
3. Feed the chain through the chain guide ensuring there are no twists in the chain
4. Connect the chain using the open link and bend to join the chain.



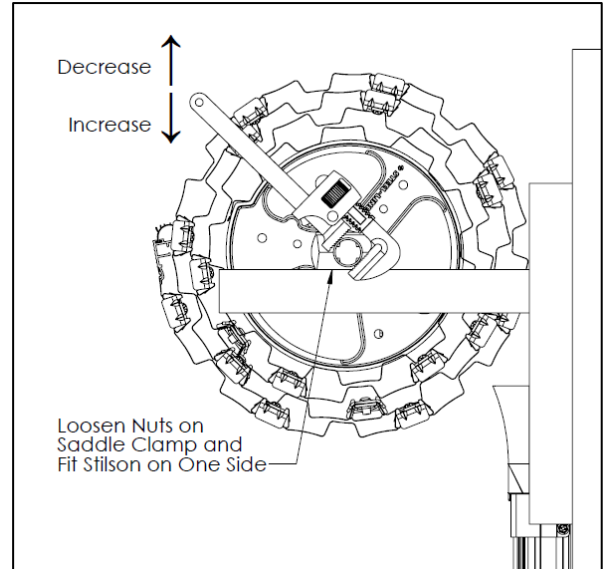
5. Fit chain lock onto the wall.
6. Secure the chain on the chain lock to lock the door.



## 8.0 ADJUST DOOR TENSION

The initial door tension on the springs may either be too great or too little, making the door feel either light or heavy. Ideal tensions make the door a little heavy in the down position ensuring it stays down and a little light in the up position ensuring it stays up. **Two people are required to adjust the tension.**

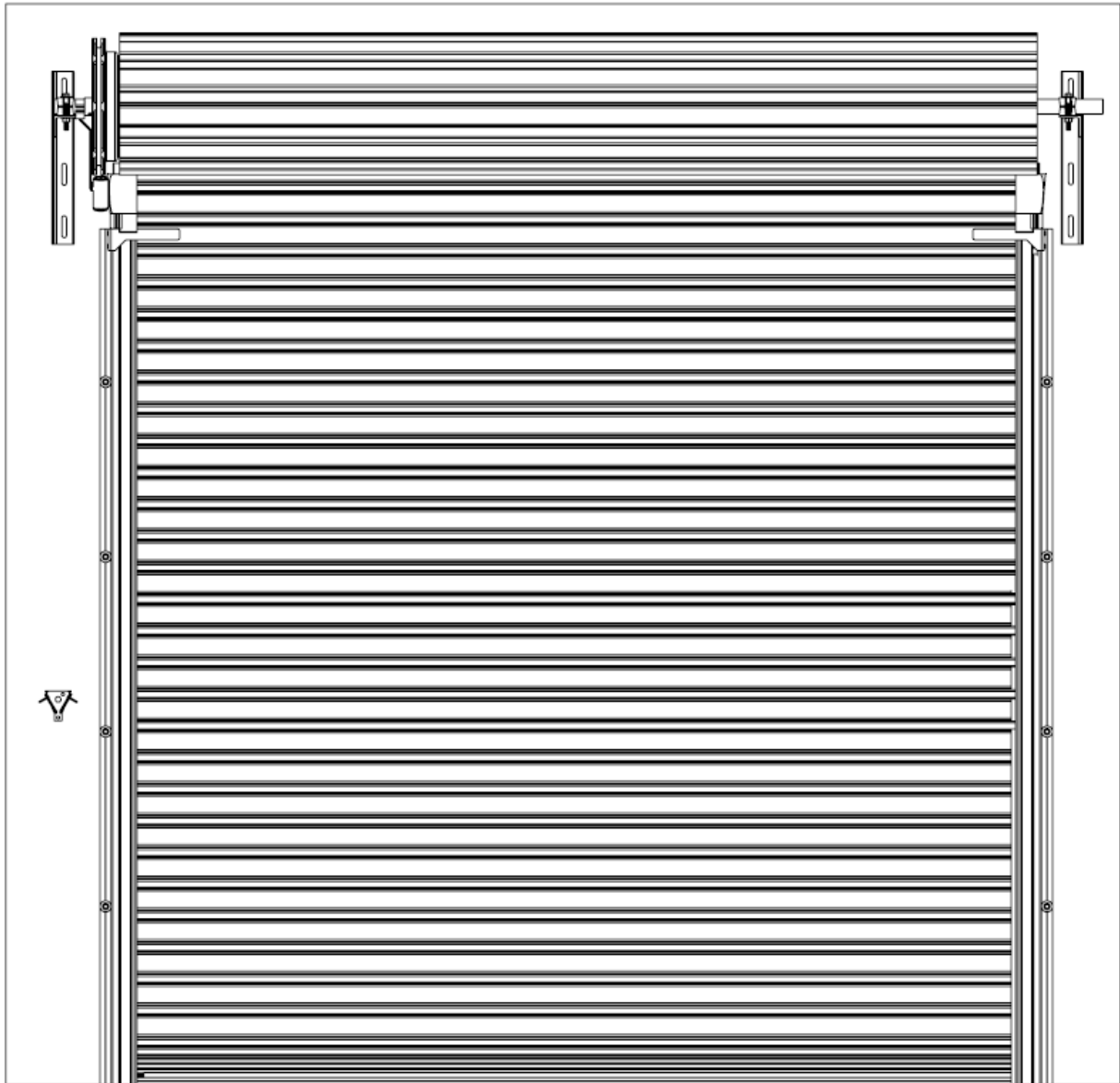
1. **Door must be fully open (up)** for one side to retain spring tension.
2. Roll up the door and tie a rope or strap around the door in the centre to prevent the door from accidentally running down.
3. Loosen the saddle bolts on one side and fit a set of 'stilsons' to the axle on this end. The axle will try to turn in the direction that decreases tension.
4. While holding the stilsons firmly, have your assistant loosen the nuts of the saddle bolts on the other side.
5. Increase or decrease tension as required by rotating the axle a quarter of a turn at a time.
6. Your assistant can now tighten the nuts on the other side.
7. When tight, tighten the bolts at your side as well and then remove the stilsons.
8. Carefully try the door again. It may be necessary to repeat steps 3-6 several times until the tension is correct.



**NEVER ALTER DOOR TENSION UNLESS THE DOOR IS FULLY OPENED AND SECURED WITH A ROPE. WHEN ADJUSTING TENSION, NEVER STAND CLOSE TO AND IN LINE WITH STILSONS. KEEP HEAD AND BODY AWAY FROM THE STILSONS.**

## 9.0 CONFIRM DOOR OPERATION

Operate the door several times and confirm that it runs smoothly.





# POST INSTALLATION

## 1.0 DIFFICULT TO OPERATE

- Decrease or increase spring tension (see step 8.0, P11)
- Check curtain isn't jamming in the guides
- Check running clearance in guide is ( $\approx 2\text{mm}$  per side)
- Check guides are upright and clean. Do not lubricate, if cleaned ensure guide is dry before door operation

## 2.0 DIFFICULT TO CLOSE OR OPEN

- Decrease OR increase spring tension (see step 8.0, P13)

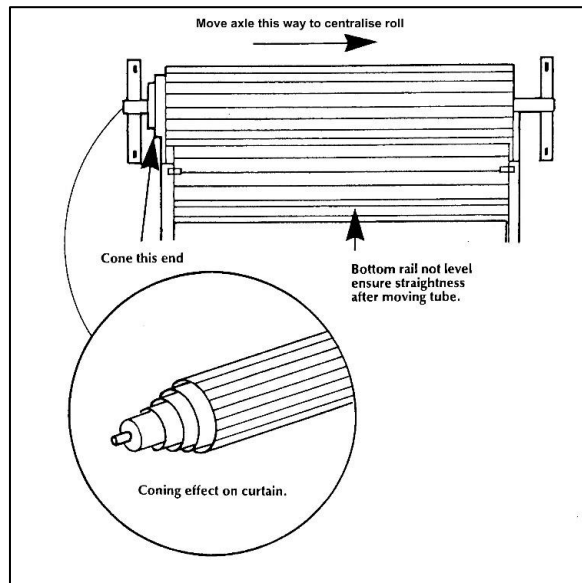
## 3.0 GUIDE/SHAFT RELATIONSHIP

If the door is very difficult to close the last 600mm, check the guides are fitted in correct relationship to the brackets and that the axle is the correct distance from the wall (210 – 250mm) (see step 6.0, P11)

## 4.0 CONING

If the curtain rolls up un-evenly (cones out at one end) and the bottom rail appears out of parallel with door roll and guides, confirm the following:

- Brackets are level with each other
- Axle is correctly centralised in roll (see step 3.0). If brackets are level, removing coning by moving the axle through the roll in the opposite direction to coning and distance roughly equal to length of coning.

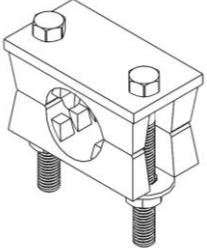
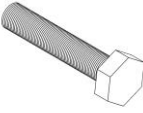



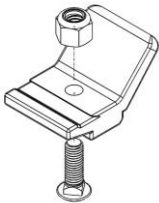



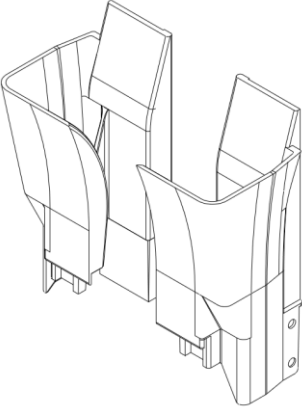
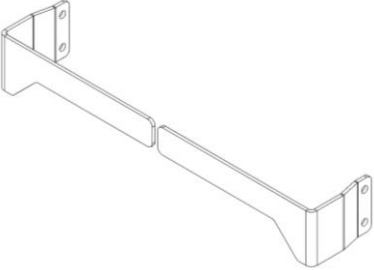
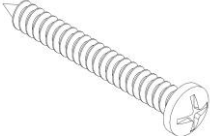
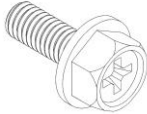

## 5.0 LOCKING BAR SLOT (MANUAL DOOR)

With the door in the closed position mark the location of the top of locking bar. Drill and file out a rectangular slot on the back of guide no longer than 25mm and no wider than 10mm. Ensure top of slot remains in line with top of locking bar.

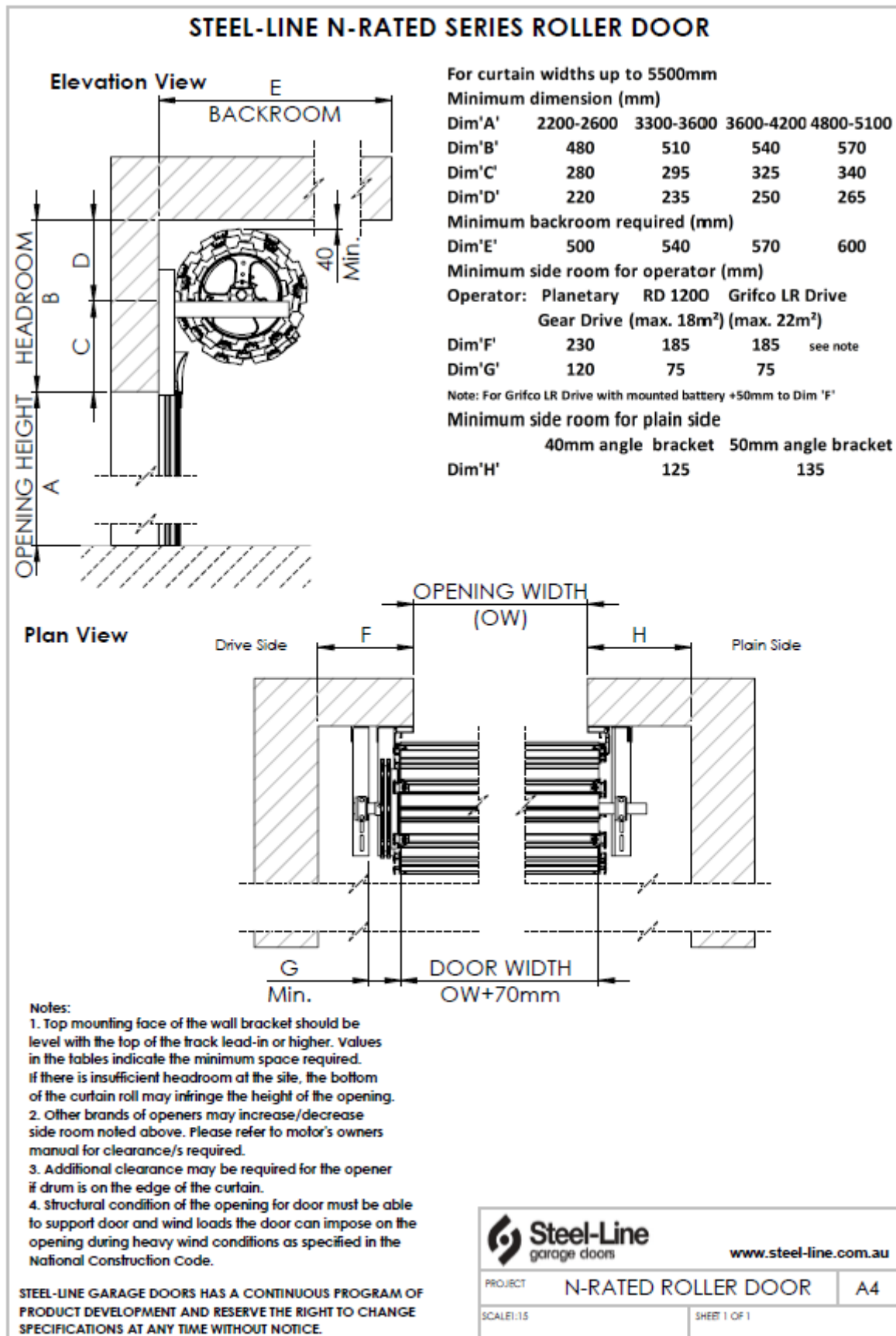


# APPENDIX A

BoM for Steel-Line Roller Door Hardware Boxes				
PICTURE	DESCRIPTION			RED 'C/N-RATED' QTY.
	CAST SADDLE CONFIGURATION	5mm OFF-SET PLATE	1	2
		CAST SADDLE	2	
		3/8"x3 HEX BOLT (GRADE 8.8)	2	
		3/8" HEX NUTS (GRADE 8.8)	2	
		3/8" WASHER	2	
	M10x50 SET SCREW Z/P (GRADE 8.8)			36
	M10 NUT Z/P			36
	M10 FLAT WASHER			72
	ANTI-CONING COLLAR CONFIGURATION	ANTI-CONING COLLAR	1	2
		NUT	1	
		CARRIAGE BOLT	1	
	AA/B DOOR-STOP CONFIGURATION	AA/B DOOR-STOPS	1	2
		1/4"-20x1" CUPHEAD BOLT	1	
		FLAT WASHER	1	
		NYLOC NUT	1	
	M10x140 Galv. TRUBOLT			36

BoM for Steel-Line Roller Door Kit Boxes		
PICTURE	DESCRIPTION	'N-RATED' Lead-in Kit Box QTY.
	N-RATED DOOR NYLON LEAD-IN PAIR (LHS & RHS)	1
	N-RATED STOPPER PAIR (LHS & RHS)	1
	#8 – 1½" PAN HEAD PHILLIPS DRIVE SELF TAPPING SCREW	2
	M6x12 HEX BOLT PHILLIPS HEAD MACHINE SCREW	4
	16x3mm TAPPED PLATE	2

## APPENDIX B



## APPENDIX C

### STRUCTURAL CONDITION OF OPENING

Ensure that the area around the opening is strong enough to support the door and the wind loads the door can impose on the opening during windy conditions as specified in the National Building Code (NCC).

The lintel and jamb surface where the door is to be fitted must be flush and reasonably smooth. Small irregularities are acceptable.

For wind classification N1 to N3:

Wind Classification	Door Width			
	<4m		≥4m	
	Inwards	Outwards	Inwards	Outwards
N1	0.69 kPa	-0.73 kPa	0.69 kPa	-0.63 kPa
N2	0.95 kPa	-1.02 kPa	0.95 kPa	-0.87 kPa
N3	1.49 kPa	-1.59 kPa	1.49 kPa	-1.37 kPa

Note:

1. Wind classification information from AS4505 – 2012 table 5.2.
2. Ultimate wind pressure includes appropriate local pressure factors.
3. For ultimate reactions see technical details.