Crossbar Installation Instructions

PRO-RAILING®

The Stainless Steel Handrail Component System

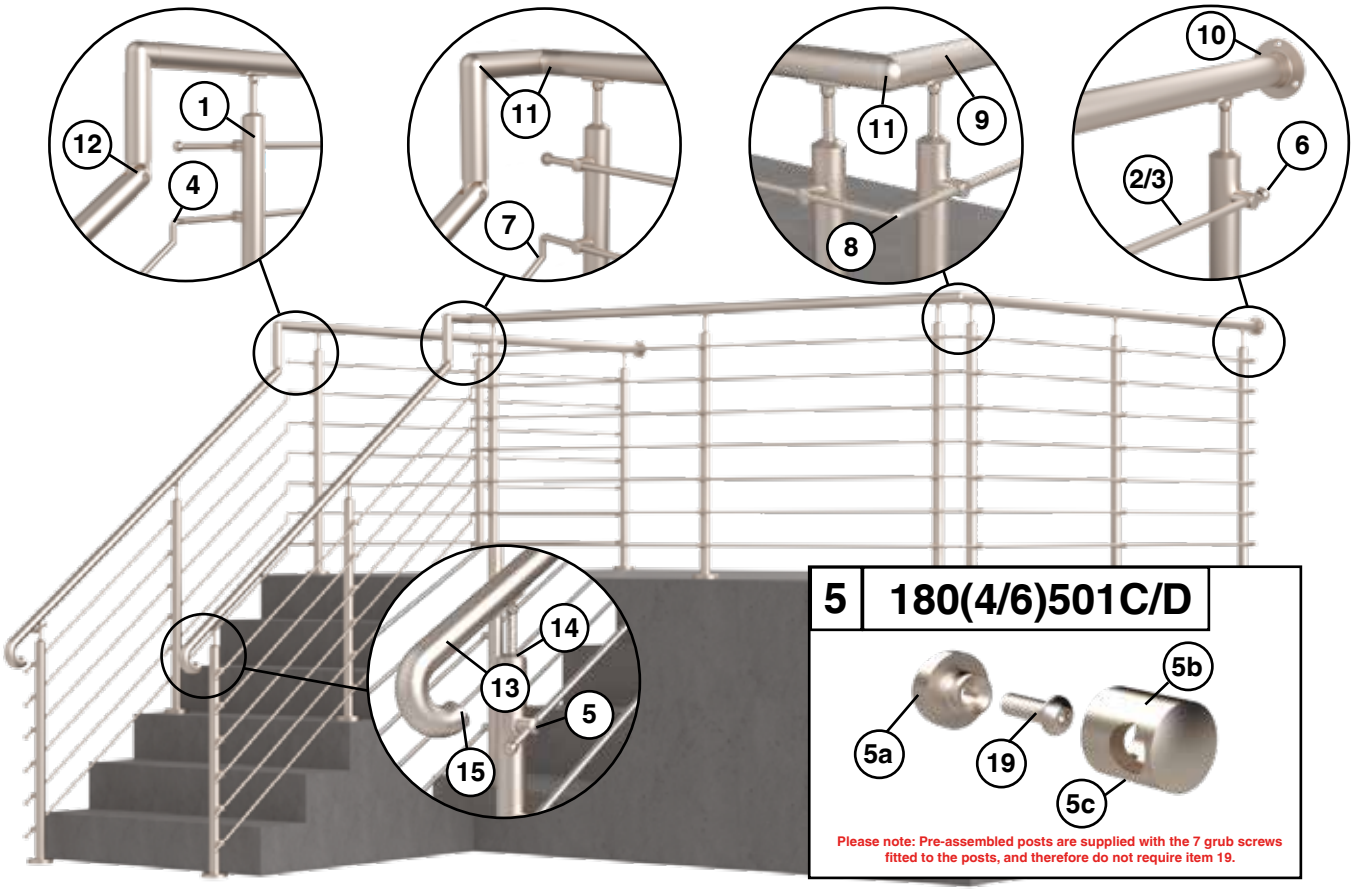
Crossbar System

Contents

Our pre-assembled posts allow for 7 cross bars to be fitted, but bespoke systems can also be achieved with our flexible components. This versatile system can be used on custom round, flat and square posts using out components, thus allowing our customers to choose how many bars they wish to have.

Disclaimer: Please note, that we cannot give accurate measurements on cutting instructions as we do not know the exact situation of installation. F.H. Brundle holds no responsibility for any errors made in installation and we advise you take caution in installation.

Great care should be taken not to contaminate new stainless steelwork during installation. Any work carried out in the vicinity should be done with due consideration to the care of the stainless steel product and it should not come into contact with mild steel.



ID	Description	Size	Code
1	7 Bar Rail Assembled Post	Ø 42.4mm	**1806737C**
		Ø 48.3mm	**1806737D**
2	Stainless Steel Solid Bar	Ø 12mm x 3m	**1804500**
			1806500
3	Stainless Tube - 1mm Wall Thickness	Ø 12mm x 3m	**1804510**
			1806510
4	Tube Connector	To suit Ø 12mm Tube	**1804524**
			1806524
5	Crossbar Holder (for round posts)	Ø 42.4mm	**1804501C**
		Ø 48.3mm	**1804501D**
		Ø 42.4mm	**1804501C**
		Ø 48.3mm	**1804501D**
6	Solid End Ball	Ø 20mm	**1301502**
			1804502
			1806502
7	Angle Joint Connector	To suit Ø 12mm Bar	**1804507**
			1806507
8	90° Elbow Radiused Corner	To suit Ø 12mm Tube	**1804525**
			1806525
9	Stainless Steel Tube x 1m (Available in 1.2, 1.5, 3 & 6m lengths)	Ø 42.4mm	**1804708CB**
		Ø 48.3mm	**1804708DB**
		Ø 42.4mm	**1806708CB**
		Ø 48.3mm	**1806708DB**

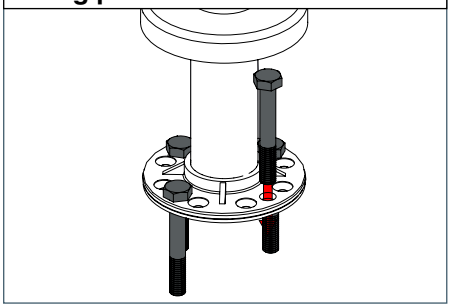
ID	Description	Size	Code
10	External Round Tube Flange	Ø 42.4mm	**1804209C**
		Ø 48.3mm	**1804209D**
		Ø 42.4mm	**1806209C**
		Ø 48.3mm	**1806209D**
11	Round Elbow 90° Corner	Ø 42.4mm	**1804201C**
		Ø 48.3mm	**1804201D**
		Ø 42.4mm	**1806201C**
		Ø 48.3mm	**1806201D**
12	Adjustable Elbow	Ø 42.4mm	**1804203C**
		Ø 48.3mm	**1804203D**
		Ø 42.4mm	**1806203C**
		Ø 48.3mm	**1806203D**
13	Extended Scroll End	Ø 42.4mm	**1804EA42180**
		Ø 48.3mm	**1804EA48180**
		Ø 42.4mm	**1806EA42180**
		Ø 48.3mm	**1806EA48180**
14	Handrail Saddle Bracket - Adjustable Spigot	Ø 42.4mm	**1804312CC**
		Ø 48.3mm	**1804312DD**
		Ø 42.4mm	**1806312CC**
		Ø 48.3mm	**1806312DD**
15	End Cap Raised Top (Hammer Fit)	Ø 42.4mm	**1804215C**
		Ø 48.3mm	**1804215D**
		Ø 42.4mm	**1806215C**
		Ø 48.3mm	**1806215D**

Optional Components

ID	Description	Size	Code
16	Hex Head with Flange	M8 x 75	**5002HCS875**
17	Multi-fix Hex Head Bolt	M10 x 75	**5002MF10875**
18	Through Bolt	M8 x 95	**5006TB08100**
19	Button Head Bolt	M6 x 20	**5006BS06X20**
20	Allen Key For Pro-Railing Grub Screws	To Suit M5 Grub screw	**189900607**

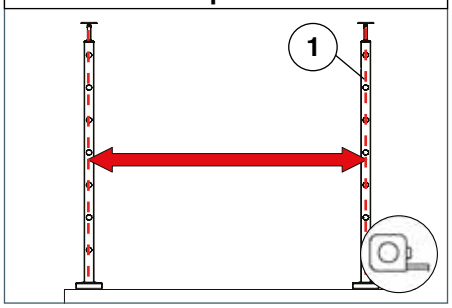
Description	Symbol	Information
Drill		To pre-drill and tap posts to suit components
High Strength Adhesive		Use **(**code: **1899007638)** as a high strength adhesive
Allen Key		To fix grub screws into crossbar holder **(**code: **1804/6501C/D)**
Measuring Tape		To measure post centres for system
Pipe Bender		For bending the Ø 12mm bar **(**code: **1804/6500)** or tube **(**code: **1804/6510)**

Fixing posts to the floor



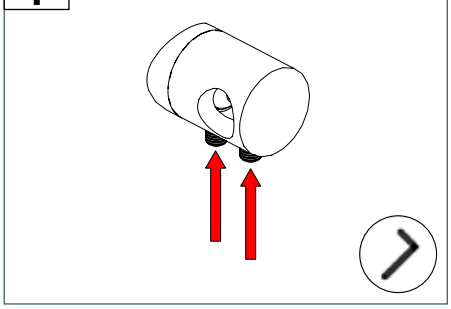
Use fixing bolts **16**, **17** or **18** depending on the substrate you are fixing into.

Pre-assembled posts



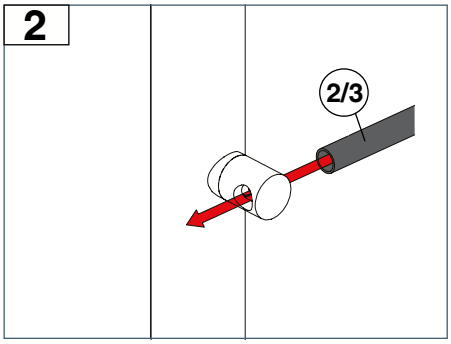
Set the posts at 1200mm post centres.

1



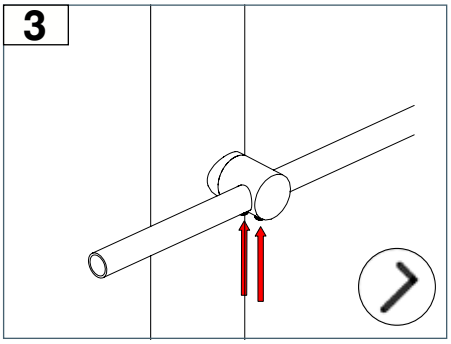
Loosen the grub screws in **5**.

2



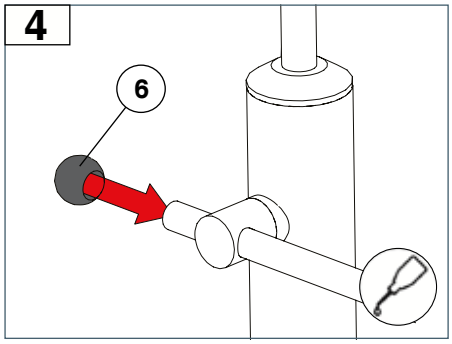
Allow **2** or **3** to slide into position.

3

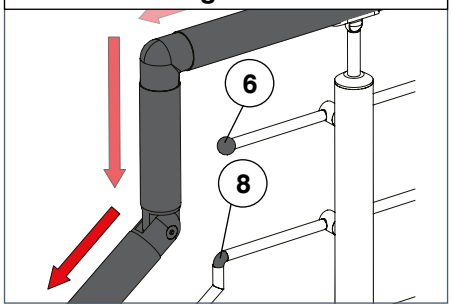


Tighten grub screws to lock in place.

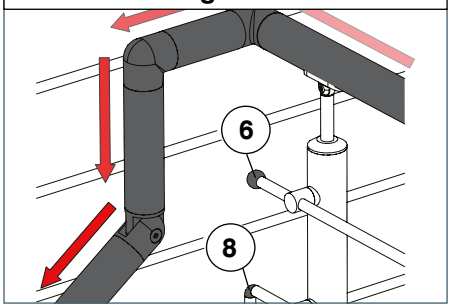
4

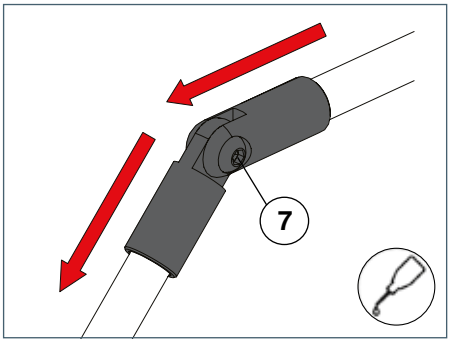


Transition straight to rake



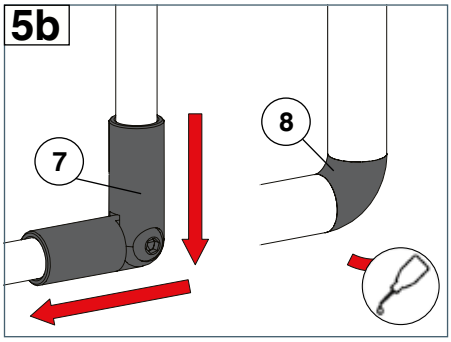
Transition straight corner to rake





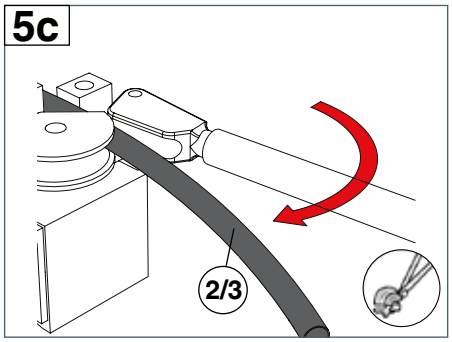
For transitions +/- 90 degrees, use **7**.

5b



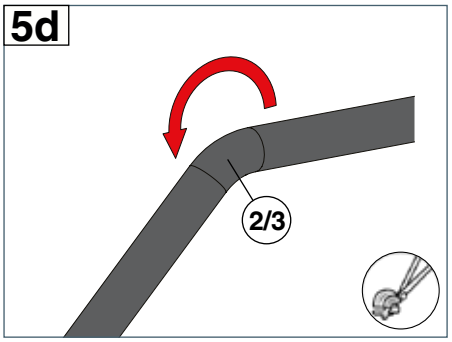
We have a variety of components to create joints in the transitions. To create a 90° transitions, use either **7** with **2** or **8** with **3**.

5c

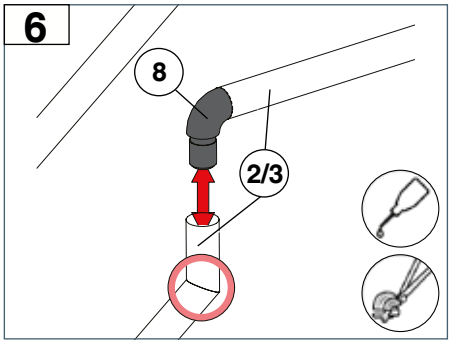


As an alternative option a standard pipe bender can also be used with to create bends for transitions in **2** or **3**.

5d

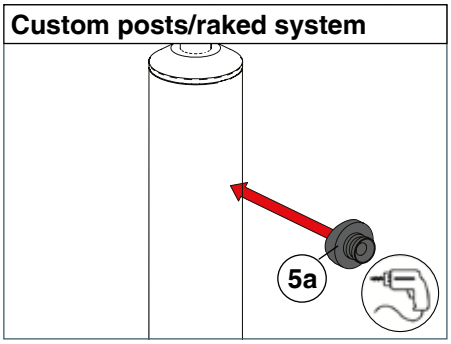


6



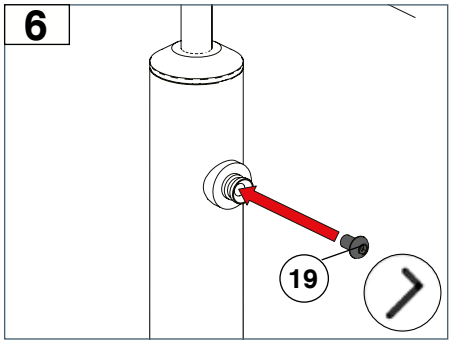
A combination of components and bends can also be utilized to create transitions.

Custom posts/raked system



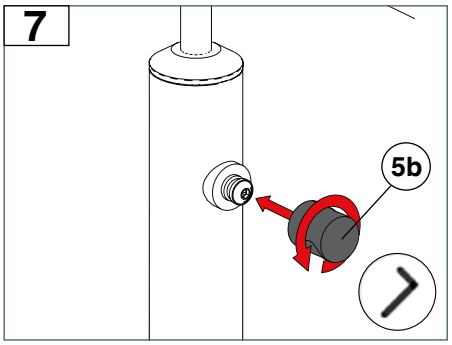
Drill and tap Ø 6.5mm hole into post

6



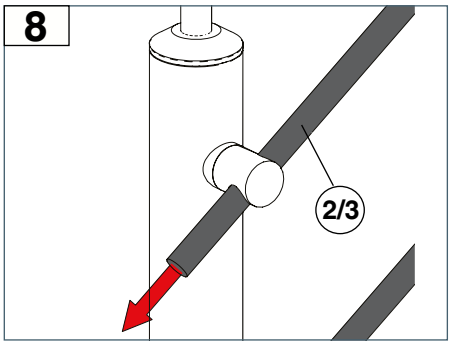
Fix **5a** using **19**.

7



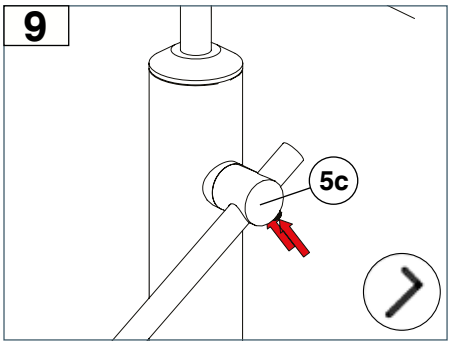
Loosen the grub screws (**5c**) in **5b** and set to correct angle.

8



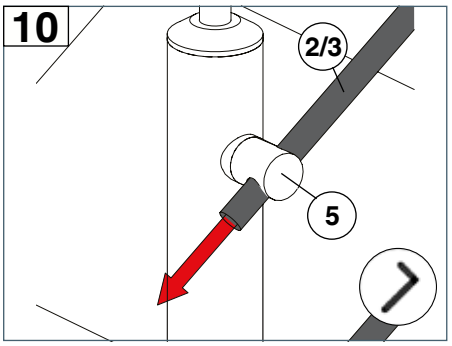
Allow **2** or **3** to slide into position.

9



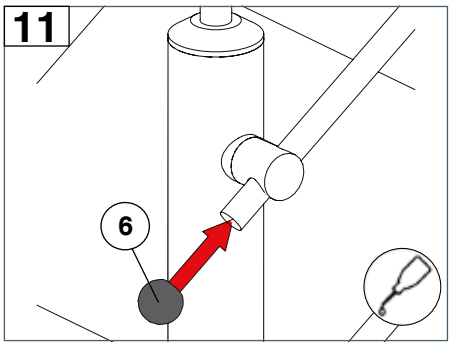
Tighten grub screws to lock in place.

10

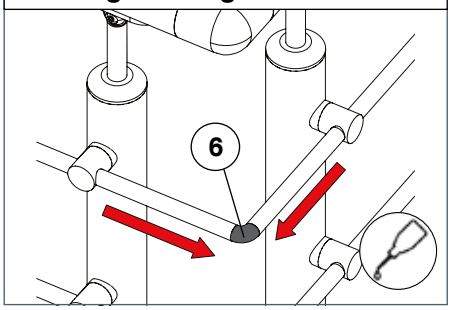


Continue through intermediate posts.

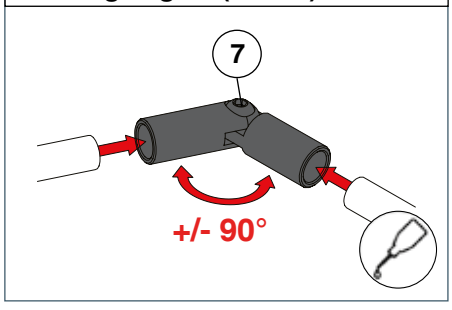
11



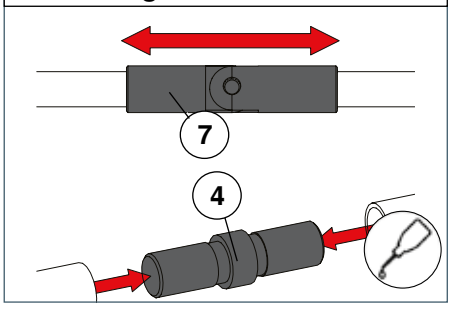
Creating a 90 degree corner



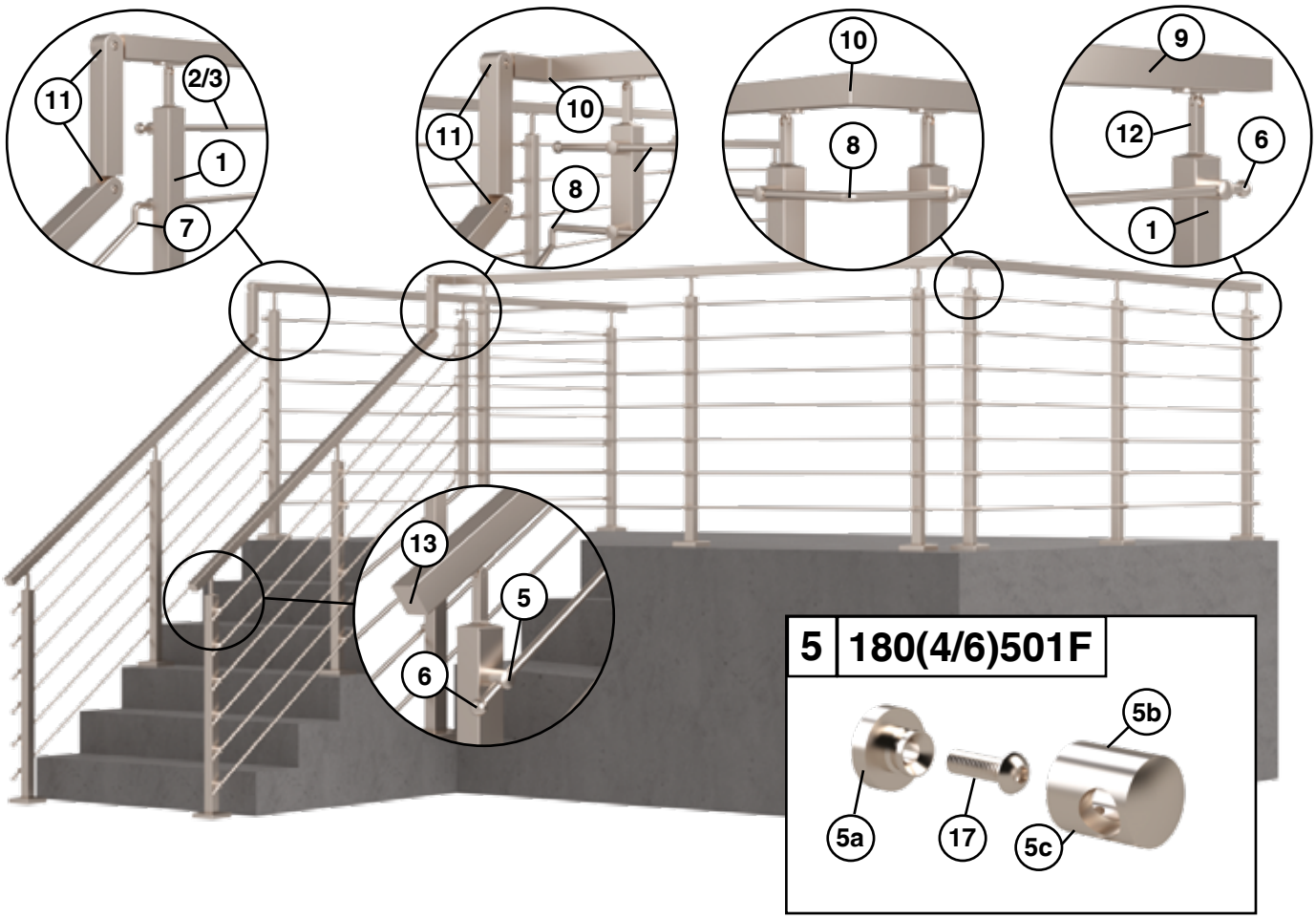
Creating angled (+/- 90°) corner



Connecting bar and tube



To connect the bar use **7** or for the tube use **4**.



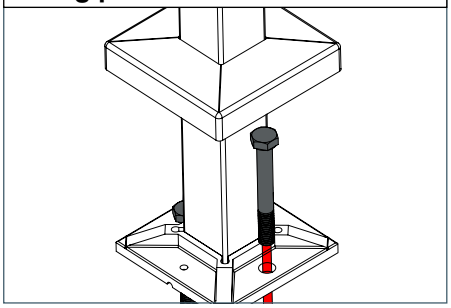
ID	Description	Size	Code
1	Custom Square Post (see pg. 11)	40 x 40mm	**N/A**
2	Stainless Steel Solid Bar	Ø 12mm x 3m	**1804500**
			1806500
3	Stainless Tube - 1mm Wall Thickness	Ø 12mm x 3m	**1804510**
			1806510
4	Tube Connector	To suit Ø 12mm Tube	**1804524**
			1806524
5	Crossbar Holder (for flat and square posts)	-	**1804501F**
			1806501F
6	Solid End Ball	Ø 20mm	**1301502**
			1804502
			1806502
7	Angle Joint Connector	To Suit Ø 12mm Tube	**1804507**
			1806507
8	90 Degree Elbow Radiused Corner	To Suit Ø 12mm Tube	**1804525**
			1806525
9	Stainless Steel Square Tube - 40 x 40mm	2.9m	**1806704S40**
		5.8m	**1806700S40**
10	90 Deg Corner	40 x 40mm	**1806202S40**
11	Adjustable Elbow	40 x 40mm	**1806227S40**
12	Handrail Saddle Bracket - Adjustable Spigot	40 x 40mm	**1806312S40F**
13	Raised End Cap	40 x 40mm	**1806215S40**

Optional Components

ID	Description	Size	Code
14	Hex Head with Flange	M8 x 75mm	**5002HCS875**
15	Multi-fix Hex Head Bolt	M10 x 75mm	**5002MF10875**
16	Through Bolt	M8 x 95mm	**5006TB08100**
17	Button Head Bolt	M6 x 20mm	**5006BS06X20**
18	Allen Key For Pro-Railing Grub Screws	To Suit M5 Grub screw	**189900607**

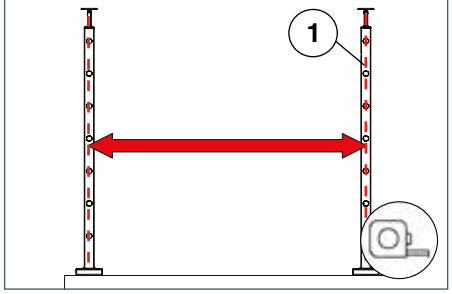
Description	Symbol	Information
Drill		To pre-drill and tap posts to suit components
High Strength Adhesive		Use **(**code: **1899007638)** as a high strength adhesive
Allen Key		To fix grub screws into crossbar holder **(**code: **1804/6501C/D)**
Measuring Tape		To measure post centres for system
Pipe Bender		For bending the Ø 12mm bar **(**code: **1804/6500)** or tube **(**code: **1804/6510)**

Fixing posts to the floor



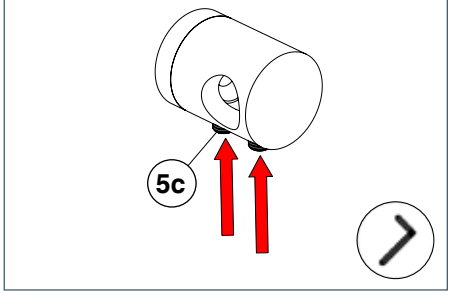
Use fixing bolts **14**, **15** or **16** depending on the substrate you are fixing into.

Pre-assembled posts



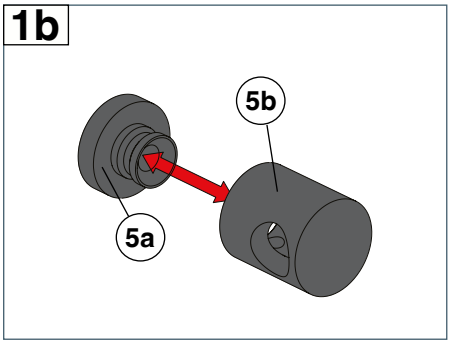
Set the posts at 1200mm post centres.

1a

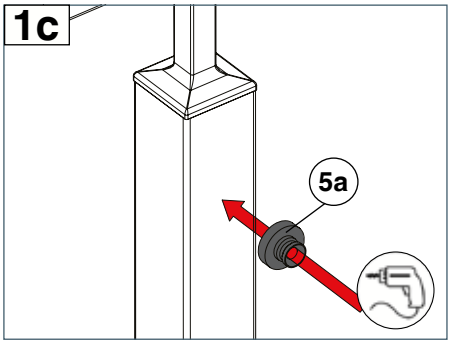


Loosen the grub screws (**5c**) slightly.

1b

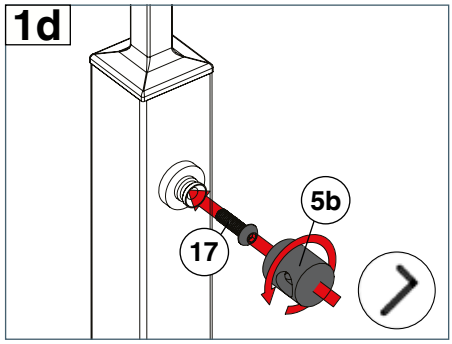


1c

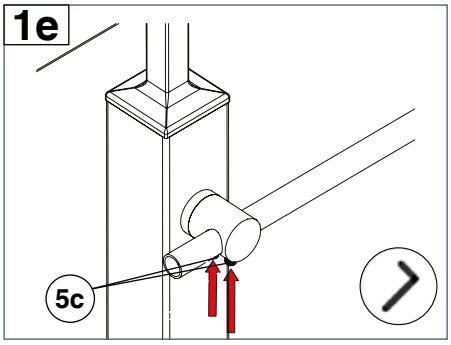


Drill and tap 6.5mm hole into post

1d

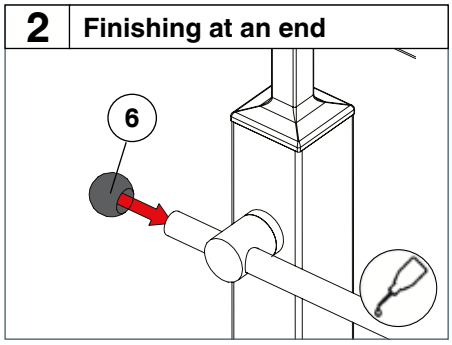


1e

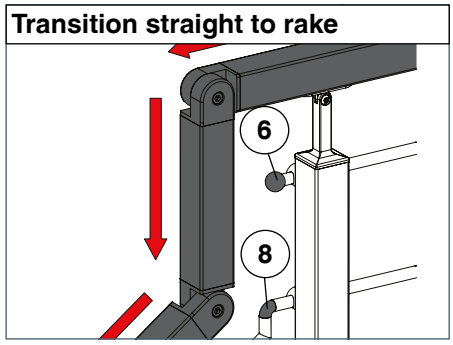


Slide **2** or **3** into **5** and lock the grub screws (**5c**) to fix into position.

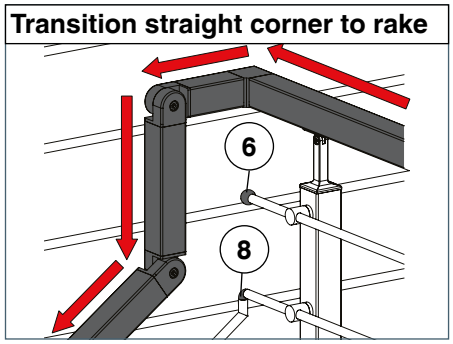
2 Finishing at an end



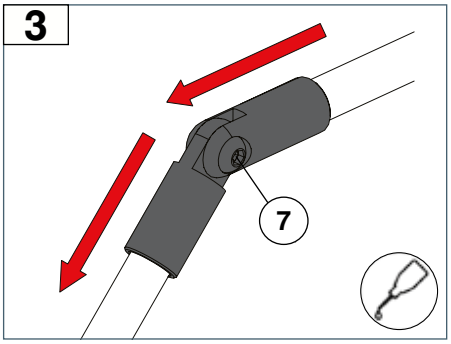
Transition straight to rake



Transition straight corner to rake

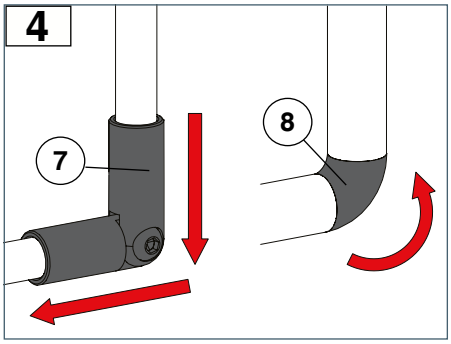


3



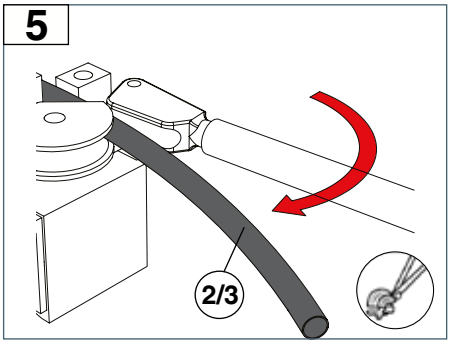
For transitions +/- 90 degrees, use **7**.

4



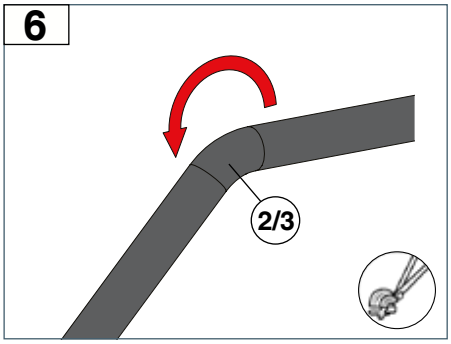
We have a variety of components to create joints in the transitions. To create a 90° transitions, use either **7** with **2** or **8** with **3**.

5

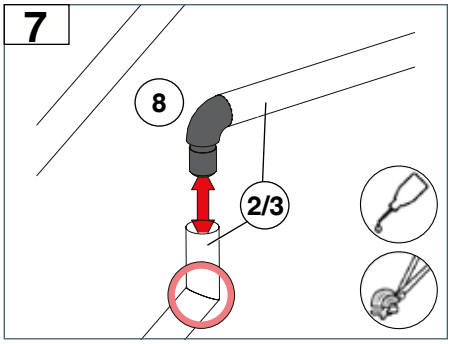


As an alternative option a standard pipe bender can also be used with to create bends for transitions in **2** or **3**.

6

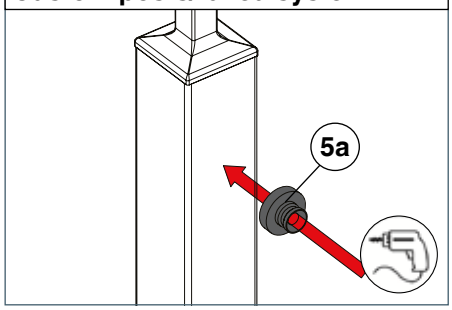


7



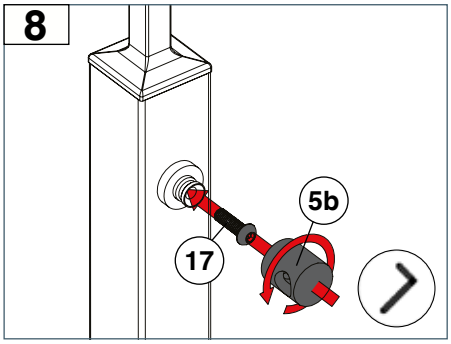
A combination of components and bends can also be utilized to create transitions.

Custom posts/raked system



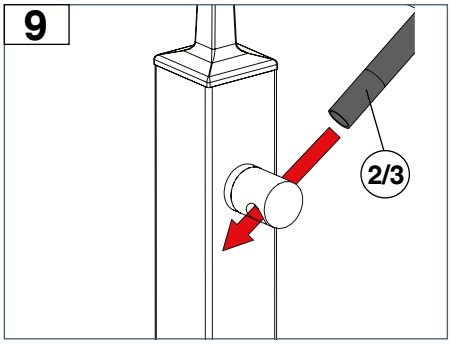
Drill and tap 6.5mm hole into post.

8



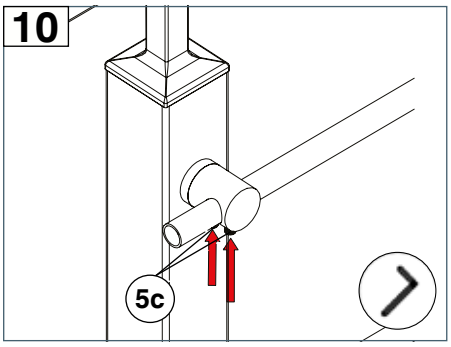
Fix **5a** using **19**. Loosen the grub screws (**5c**) in **5b** and set to correct angle.

9



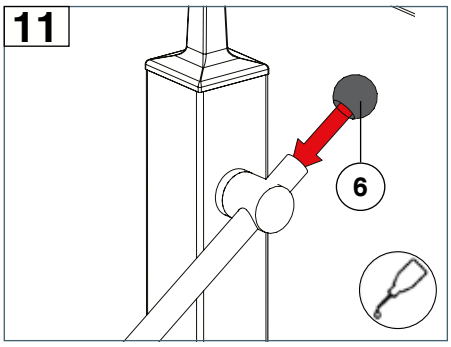
Allow **2** or **3** to slide into position.

10

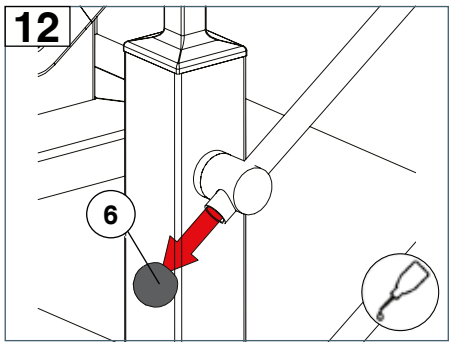


Tighten grub screws to lock in place.

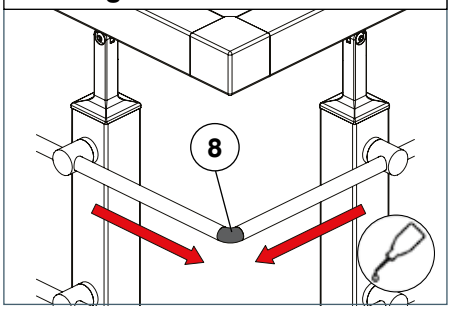
11



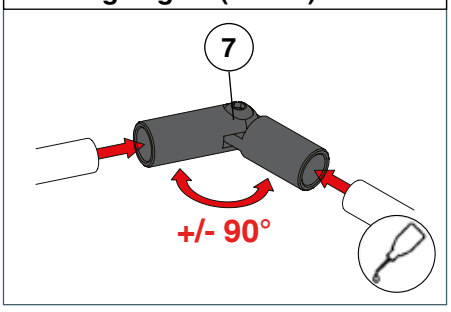
12



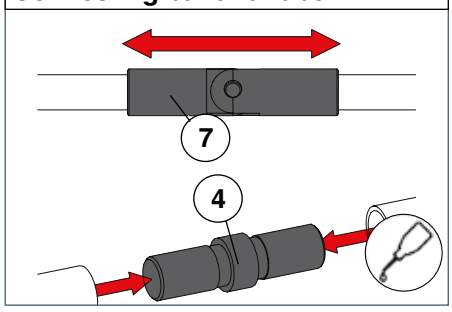
Creating a corner



Creating angled (+/- 90°) corner

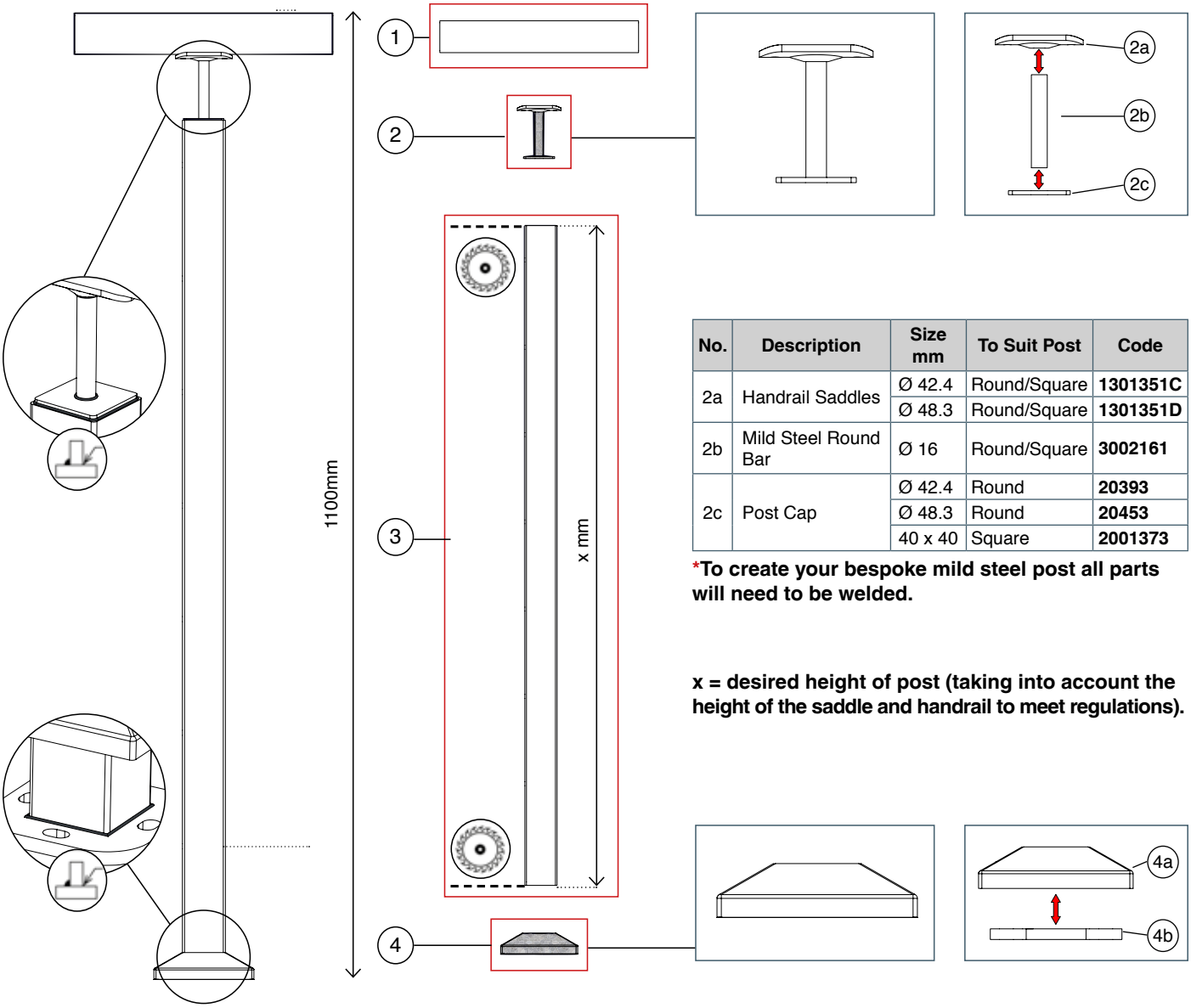


Connecting bar and tube



To connect the bar use **7** or for the tube use **4**.

If you wish to create a custom round or square Crossbar system, this will require bespoke posts and components to suit whichever post. Bespoke posts allow the flexibility to design to your systems specific installation needs. Below is a break down of our components that can be used to create bespoke posts and how to assemble them.



No.	Description	Size mm	To Suit Post	Code
2a	Handrail Saddles	Ø 42.4	Round/Square	**1301351C**
		Ø 48.3	Round/Square	**1301351D**
2b	Mild Steel Round Bar	Ø 16	Round/Square	**3002161**
2c	Post Cap	Ø 42.4	Round	**20393**
		Ø 48.3	Round	**20453**
		40 x 40	Square	**2001373**

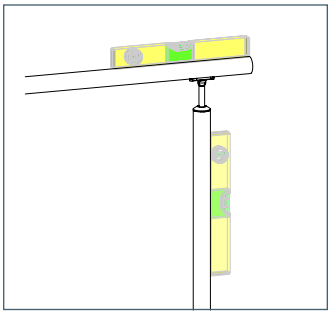
***To create your bespoke mild steel post all parts will need to be welded.**

x = desired height of post (taking into account the height of the saddle and handrail to meet regulations).

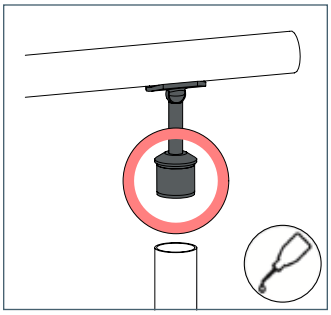
Posts	1. Handrail	+	2. Spigot	+	3. Box Section	+	4. Base
Ø 42.4mm	Stainless Steel						
	1806700C		1806310CC (Fixed) 1806312CC (Adjustable)		1806708CL		1806207C (Base Plate) 1806208C (Cover Plate)
	Mild Steel						
	300642432		*see **Item 2** table above		300642432		1301207C (Base Plate) 1301208C (Cover Plate)
Ø 48.3mm	Stainless Steel						
	1806700D		1806310DD (Fixed) 1806312DD (Adjustable)		1806708DL		1806207D (Base Plate) 1806208D (Cover Plate)
	Mild Steel						
	300648332		*see **Item 2** table above		300648332		130120740 (Base Plate) 130120840 (Cover Plate)
Square	Stainless Steel						
	1806704S40 (Square) 1806700C (Round)		1806312S40F (Square) 1806312S40C (Round)		180670S40 (Square) 1806700S40 (Square)		1806207S40 (Base Plate) 1806208S40 (Cover Plate)
	Mild Steel						
	300540403 (Square) 300642432 (Round)		*see **Item 2** table above		300540403 (Square)		130120740 (Base Plate) 130120840 (Cover Plate)

In addition to our Crossbar components, we have a selection of components for your handrail to accompany your balustrade. Below we have outlined some simple instructions to help you fit your handrail easily and effectively.

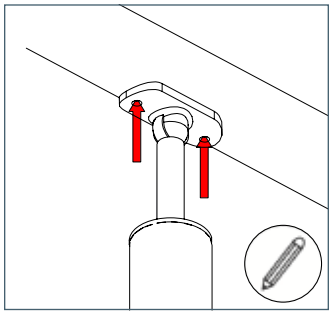
Fitting a wall flange and spigot to the handrail



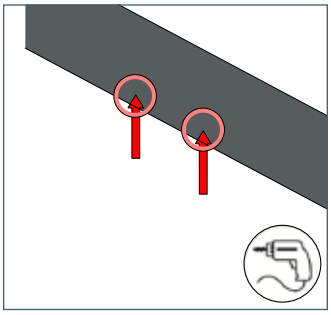
Position and fix the posts.



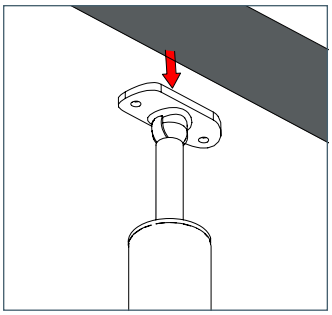
Fit the handrail spigots and glue in place.



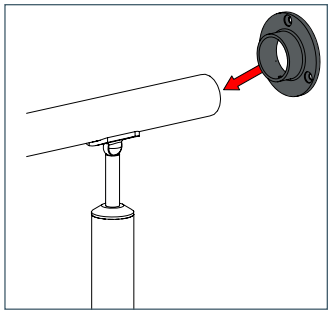
Mark through the fixing holes of the saddle.



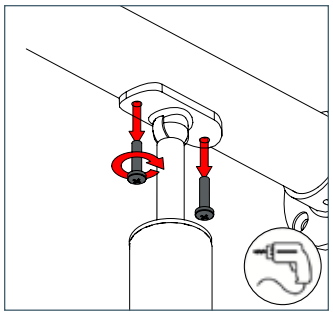
Remove the handrail, dot punch and drill all fixing holes.



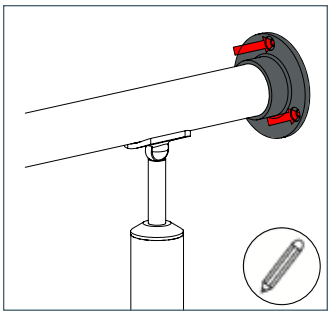
Fit the handrail working from left to right.



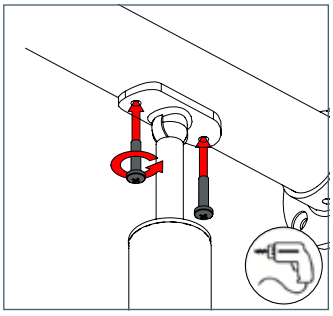
Use a wall plate where required.



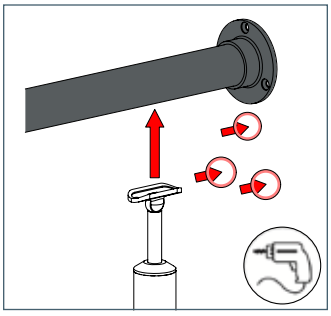
Fix the saddles using self tapping screws code: **189900620** or code: **5006BS05X20**



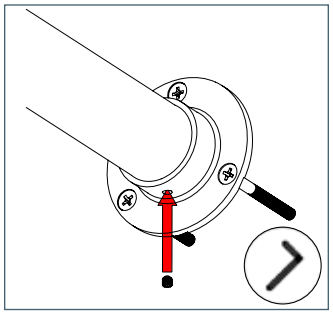
Mark through the fixing holes on the wall plate.



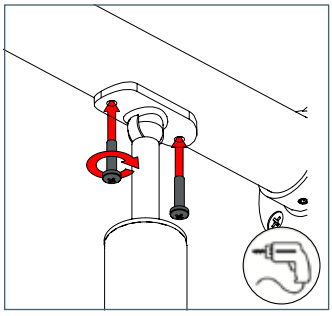
Remove the saddle screws.



Remove the handrail and wall plate, drill and fix securely using the appropriate fixings.

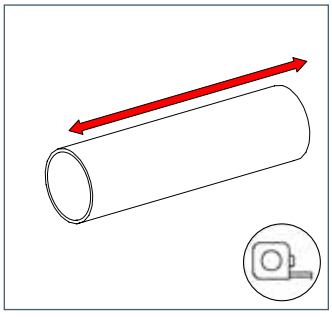


Once positioned, fix the grub screw (provided) and tighten until handrail is firmly fixed in place.

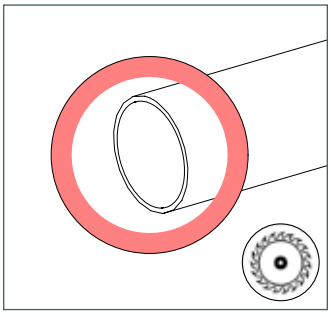


Refit the screws.

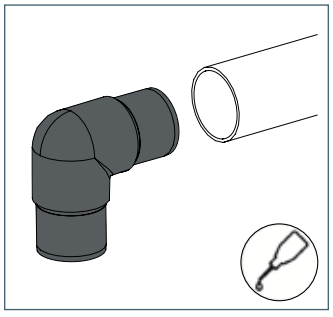
Using general tube fittings withIn a handrail



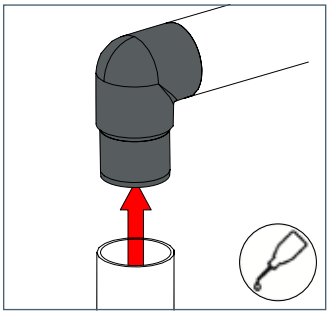
Measure the desired tube length using your posts and component positions as a guide.



Cut tube to size using a circular saw suitable for stainless steel. Polish the ends of the tube using code: **189901101** or **189901102**.



Apply high strength adhesive code: **1899007638** then slot the tube fitting into the end of the tube and secure in place.



Do the same on the opposite side of the tube fitting. This method can be used with all tube fittings listed in this instruction manual.

For further information on how to fit a handrail, please refer to our Pre-Assembled Posts Installation video:
https://www.fhbrundle.co.uk/videos-images/demonstration-videos

Our Crossbar systems look stylish and professional. It is important for customers to carry out maintenance from time to time to uphold this appearance for years to come.

Care & Maintenance

Stainless steel is often selected for corrosion resistance and appearance. However, the term stainless is somewhat misleading as stainless steel will discolour or stain over time due to surface deposits. It may stain less, but it will still stain and should be treated correctly to avoid contamination.

The amount of cleaning required will vary according to the finish; local conditions, location and use, and therefore it is not a maintenance free product. To gain the maximum resistance against corrosion, cleaning must be carried out on a regular basis, resulting in good performance and a long life.

Basically, the only rule is that if the metal is dirty, then it should be cleaned to restore its original appearance.

For external stainless steel Grade 316, we would recommend that inspection and maintenance should be carried out every 6 – 12 months depending on location and appearance requirements.

There are a number of cleaning agents available which are safe to use when manufacturers instructions are followed, however if used incorrectly (e.g. too concentrated) they may cause discolouration or even corrosion. Stainless steel will not wear out from excessive cleaning.

Further Cleaning Products:

3 part tea staining treatment cleaner kit (code: **189900902**) is especially suitable for maintenance of aesthetic stainless steel objects; the Pro-Railing® protect spray provides protection and a natural shine.

Pickling gel (code: **18990094023**) helps remove rust, dirt and grime from stainless steel.

Loctite 7063 cleaner (code: **18990097063**) degreases and cleans surfaces ready for gluing, which could be helpful with our swaged components that require the instant adhesive (code: **1899007454**).

Click here for information on product selection

Click here for information on care and maintenance

Click here for LOCTITE 5366 clear general purpose silicone safety data sheet

BSSA

The British Stainless Steel Association (BSSA) exists to promote and develop the manufacture and use of stainless steel across the UK and Ireland. Based in Sheffield, the Association provides marketing support, technical advice, information, training and education in all aspects of stainless steel.

Our Crossbar system provides a contemporary handrail or balustrade system for many different environments. However, it is important to consider the rules and regulations for different locations, as set out in BSI Standards Publication (**BS 6180:2011**). As our system has gaps between the bars and tubes, it is important to make the following considerations in places that are regularly accessed by children. Always consult with your local building control for approval, before installation.

5.3 Hazard reduction

The barrier adopted should be designed so as to minimize the risk of persons falling, rolling, sliding or slipping through gaps in the barrier. In dwellings and other buildings which can be accessed by children under the age of 5, gaps in a barrier or infill should not be large enough to permit a sphere of 100 mm diameter to pass through, making due allowance for deflection under load.

NOTE 1 Except inside dwellings and common stairs in blocks of flats, this does not apply to the triangular opening formed by the tread and riser and the bottom edge of the barrier or infill, if that bottom edge is not more than 50 mm above the pitch line.

The barrier and infill should be constructed so that a child cannot easily climb it. These recommendations should also be applied to barriers for stairs and landings which give access to the building.

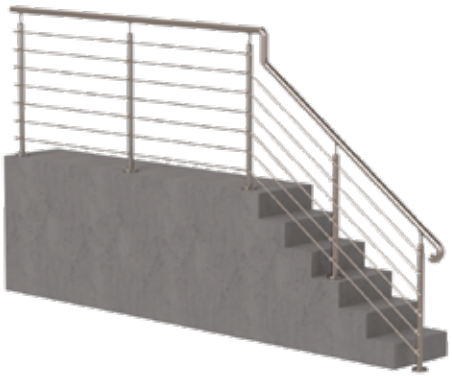
NOTE 2 In non-domestic buildings, manifestation could be applied to clear glass barriers or infill panels that reach the floor (or nearly reach the floor), at an appropriate height to make them visible to children whose eye level is below the top of the barrier (see 8.1.1).

Where a higher standard of safety is thought necessary, consideration should be given to the requirements of BS EN 1930.

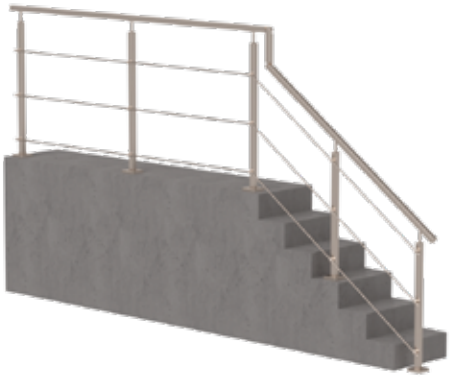
Different Design Options

Taking into account the application of the system, with rules and regulations considered, our Crossbar system can offer far more options than simply using our standard pre-assembled posts with 7 bar. We offer a range of components that suit round posts, both 42.4mm and 48.3mm, in addition to suiting flat posts, such as square systems. Below are just a few examples of some of the designs that can be created using our components.

7 Bar System
Ø 48.3mm Pre-Assembled Posts



3 Bar System
40 x 40mm Square Custom Posts



2 Bar System
Ø 42.4mm Custom Posts