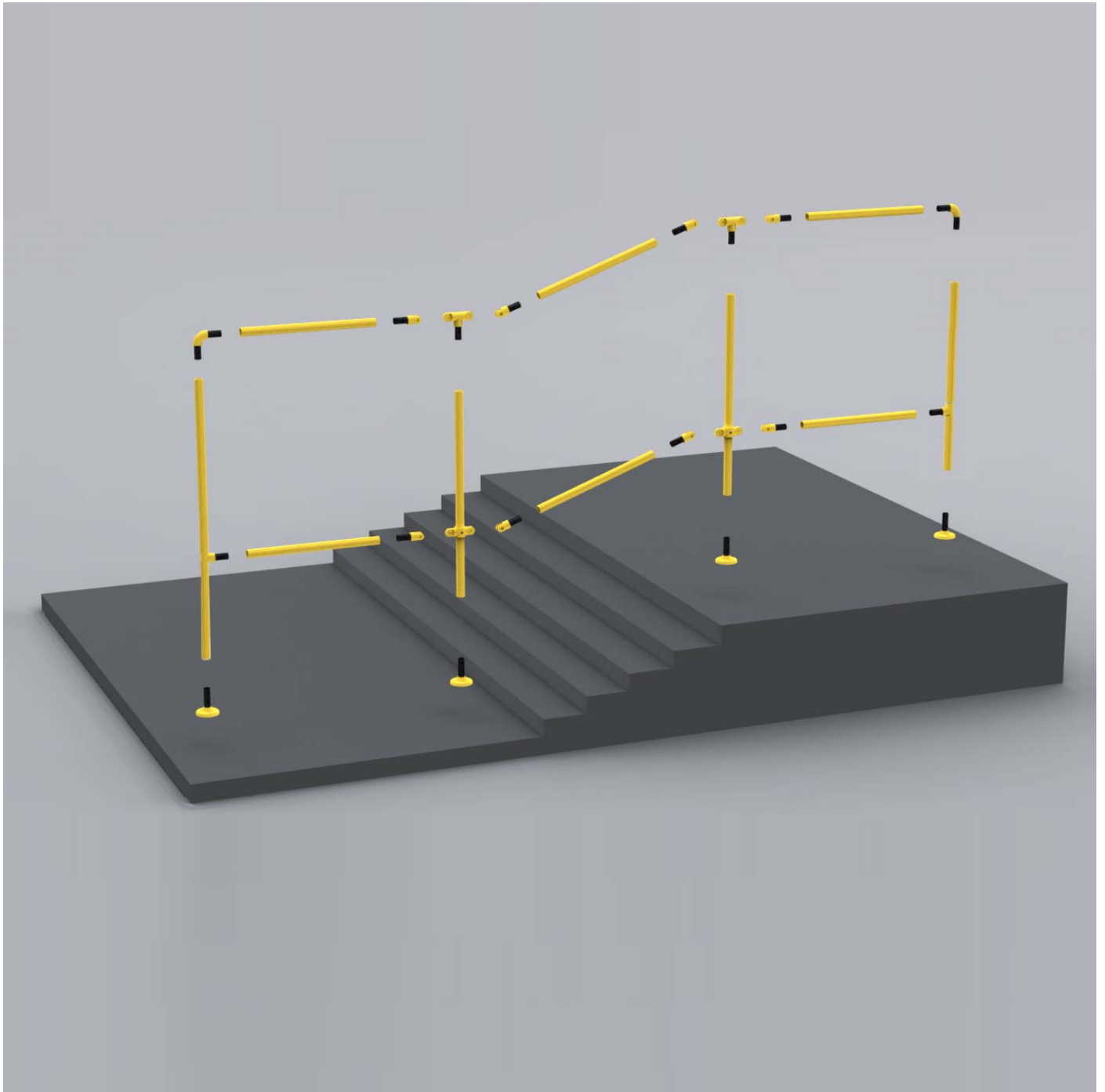


Modular Handrail Data Sheet & Installation Guide

12/2010



Modular Handrail Technical Data

Description

The modular handrail system is ideal for a variety of applications. Constructed from exceptionally strong steel with a unique high quality PVC coating, which offers the all important 'warm to touch' requirement as set down by the current building regulations the product is a breakthrough for handrail systems.

All connections fit flush, resulting in a pleasing, streamlined appearance. The internal connections allow the construction of continuous handrail systems without raised external fittings.

Characteristics

Meets Building Regs.	Modular internal connection
Strong construction	Quick and easy to install
UV Stable	Helps with DDA
Lightweight	45mm diameter tube
No snag points	Slip resistant surface
Not cold to the touch	Contrasting colour
Adjustable fittings	Choice of colours
Security fixings	Corrosion resistant

Applications

Walkways	Ramps
Fire escapes	All staircases
Industrial plants	Marinas
Schools	Hospitals
Warehouses	Factories

Ideal for use with single, double or multiple mid rails.

Typical Technical Data

Description:	Modular hand rail system.
Top Finish:	Tube & Fittings: 4mm PVC coat with max strength 2mm steel core. Base Foot & Side Mound: Powder coated cast steel. Component fixings: Two part security hex head interscrew (Black zinc coated). Floor fixings: M10 concrete anchor bolts (supplied with base feet).
Stock Colours:	Components & Tube: Safety Yellow (RAL 1003) and Grey (RAL 7004)
Tube Diameter:	External diameter: 45mm
Design Life:	All Tubes & Components have a design life of 40+ years
Testing Data:	BS6399-1:1996 - Testing carried out by British Research Establishment (Report available on request)

Minimum horizontal load (kN/m)	Examples of types of occupancy and specific uses	Test Result
0.22	Offices: Light access stairs and gangways.	PASS
0.36	Domestic: All areas service exclusively one single family dwelling Offices: Light pedestrian traffic routes	PASS
0.74	Offices: Areas not susceptible to overcrowding Domestic: All other domestic and residential not covered above Areas without obstacles: Stairs, landings, corridors and ramps External balconies	PASS

Safety

When installing the modular handrail system standard personal protective equipment should be worn as a minimum. Safety goggles, heavy duty gloves and overalls. It should be cut in a well ventilated area or close to extraction points. Always ensure that it is installed in manageable sections, preferably two men should be available for installation. No special permissions or licences are required at the time of going to print.

Preparation

Ensure that the areas to have the handrail system fitted are clean, dry and free from loose and friable material. Any "dished" or damaged surface areas should be patch repaired to provide a reasonably flat and consistent surface.

If required, it can be cut on site to suit, ideally using a chop saw with a metal cutting blade.

Please ensure that goggles and gloves are worn at all times when any form of cutting is required.

Fixings

A male & female Hex Head Security fixing 45mm long (these are used for top tube and base foot only).

A male & female Hex Head Security fixing 60mm long (these are used for Mid Rail components).

M10 floor bolts (used for wall mounting and base foot).

Tools Required

- 10mm Masonry drill bit (Not Supplied)
- Hex Head Security Allen key (2 required can be ordered)
- Hammer (Not Supplied)
- 17mm Spanner & Socket (Not Supplied)
- Tape Measure (Not Supplied)
- Spirit Level (Not Supplied)
- Hack saw or chop saw (if tube is required to be cut down) (Not supplied)
- 12mm Steel drill bit (if tube is required to be cut down & fixing hole re-drilled) (Not supplied)
- Stanley knife (If new fixing holes is required for recessing the PVC) (Not supplied)

Trouble Shooting

Potential problems:

- 1) The handrail after installation does not seem rigid enough and movement in the handrail system appears more than would be expected?
 - A) The first thing to check is that all floor fixings are on a flat even surface and are securely fixed. Always ensure either an anchor fixing or a bolt system is used. If fixing into timbers a simple wood screw would not be appropriate as this will cause movement overtime as the screw holes becomes enlarged. Even a small amount of movement in the base feet will multiply the movement at the top of the handrail.
 - B) It is important that the black fixing bolts are as tight as they can be. If the bolts are slightly loose, this will again cause the handrail to move. If the bolts cannot be tightened enough by hand a drill driver bit is available, which will allow the fixings to be tightened as much as they will go.

Components



Product Code	Colour
NFRYBF	Yellow
NFRGBF	Grey



Product Code	Colour
NFRY90E	Yellow
NFRG90E	Grey



Product Code	Colour
NFRYEB	Yellow
NFRGEB	Grey



Product Code	Colour
NFRY90T	Yellow
NFRG90T	Grey



Product Code	Colour
NFRY3WC	Yellow
NFRG3WC	Grey



Product Code	Colour
NFRY63T	Yellow
NFRG63T	Grey



Product Code	Colour
NFRYMRS	Yellow
NFRGMRS	Grey



Product Code	Colour
NFRYM RD	Yellow
NFRGM RD	Grey



Product Code	Colour
NFRY63MRD	Yellow
NFRG63MRD	Grey



Product Code	Colour
NFRYMRC	Yellow
NFRGMRC	Grey



Product Code	Colour
NFRYAMRD	Yellow
NFRGAMRD	Grey



Product Code	Colour
NFRYAT	Yellow
NFRGAT	Grey



Product Code	Colour
NFRYAC	Yellow
NFRGAC	Grey



Product Code	Colour
NFRYAMRS	Yellow
NFRGAMRS	Grey



Product Code	Colour
NFRYSMB	Yellow
NFRGSMB	Grey



Product Code	Colour
NFRYWEB	Yellow
NFRGWEB	Grey



Product Code	Colour
NFRYWTB	Yellow
NFRGWTB	Grey



Product Code	Colour
NFRYWSEB	Yellow
NFRGWSEB	Grey

Tube

Length	To Be Used Between	Yellow Code	Grey Code
19 790mm	2 Adjustable components	NFRYHT790	NFRGHT790
20 800mm	Non Adjustable and End Bend components	NFRYHT800	NFRGHT800
21 845mm	Adjustable and Non Adjustable components	NFRYHT845	NFRGHT845
22 890mm	Base Foot and End Bends	NFRYUT890	NFRGUT890
23 900mm	2 Non Adjustable components	NFRYHT900	NFRGHT900
24 990mm	Basefoot and all components (excluding End Bends)	NFRYUT990	NFRGUT990
25 1400mm	Between two Wall components	NFRYWT1400	NFRGWT1400

Tube Sizes Explained

Vertical Tubes

- 990 Tube - The standard tube for upright component installation with the exception of the handrail end bend.
- 890 Tube - The vertical tube used only with the HandRail End Bend component (be aware the middle hole is off centre).

Horizontal Tubes

- 1400 Tube – This tube is used for the on the wall fittings and can also be used as an upright where there is a requirement to bury the handrail uprights into the concrete (to be buried approx. 410mm down. Note if concreting in, it is recommended to cut away the PVC from the steel).
- 900 Tube – This tube is used between two non adjustable components.
- 845 Tube – This tube is used between a non adjustable and adjustable component.
- 800 Tube – This tube is used between a non adjustable component and a HandRail End Bend only.
- 790 Tube – This tube is used between two adjustable components.

Cutting the Tube

If you are ordering tubes which you know will need to be cut down to size, simply order the next size up. (Remember all standard sized tubes have a pre-drilled hole 35mm in from each end).

All tube sizes are calculated to achieve 1000mm centres and uprights to achieve 1100mm.

NOTE: If you cut the tube a suitable rust prevention coating should be applied to any cut ends. MP-90 anti rust coating (Code: 55AC1927) from www.fix8.co.uk or ZG-90 anti rust paint (214696) from www.ironmongerydirect.co.uk or similar would be suitable.

Q. What if my area does not fall exactly on a multiple of 1000mm?

A. Simply cut the tube down to achieve your overall length. E.g. 1800mm is 1 No. 1000mm section and 1 No. 800mm section (this section has been cut).

Bespoke tube sizes can be produced either during manufacturing or on-site, the simple procedure is;

1. Cut tube to required length using a chop saw with a metal cutting blade.
2. The pre-drilled fixing holes would usually be removed during the cutting process and will need to be re-drilled to allow for components to be fixed to the tube.
3. Measure 31mm in from the newly cut length of tube and mark centrally in accord with the pre-drill holes at the other end of the tube.
4. Pilot drill a hole between 3mm and 5mm through one side of the tube. (repeat this process on both sides of the tube)
5. Drill 12mm holes through both sides of the tube using the pilot holes as a guide.
6. Using a cutting knife, bevel the PVC outer around the 12mm drilled hole to allow security fixing to pull down flush to follow with the pre-drilled holes maintaining the aesthetics of the product.

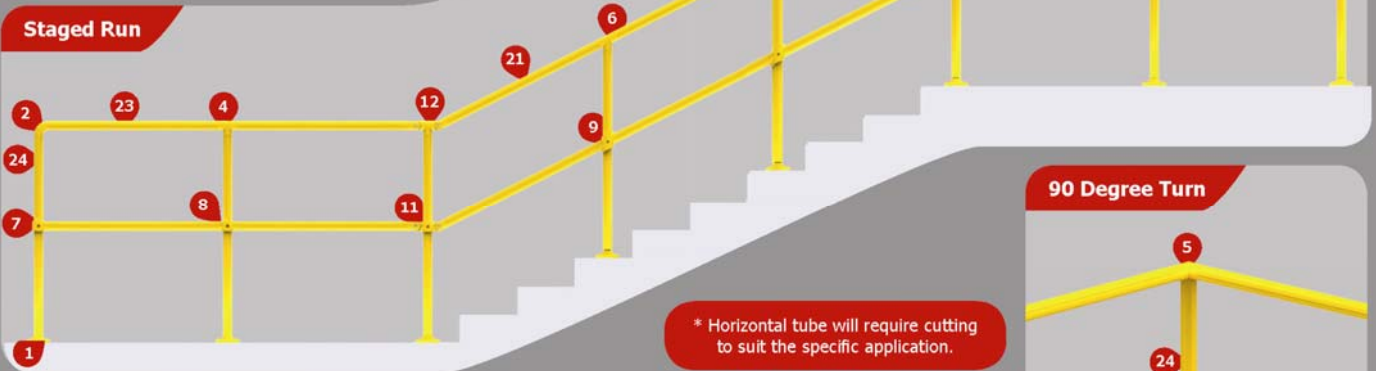


Scenerios – A small selection of applications

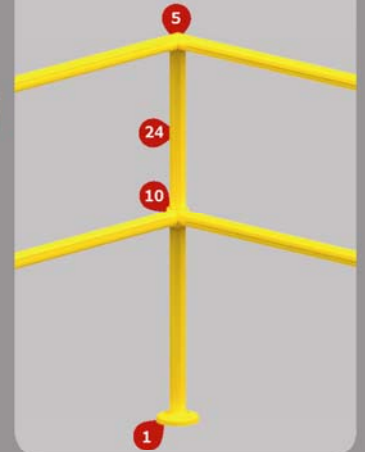
Modular Configurations

The railing system consists of many modular components that can provide a solution to a variety of applications.

Staged Run



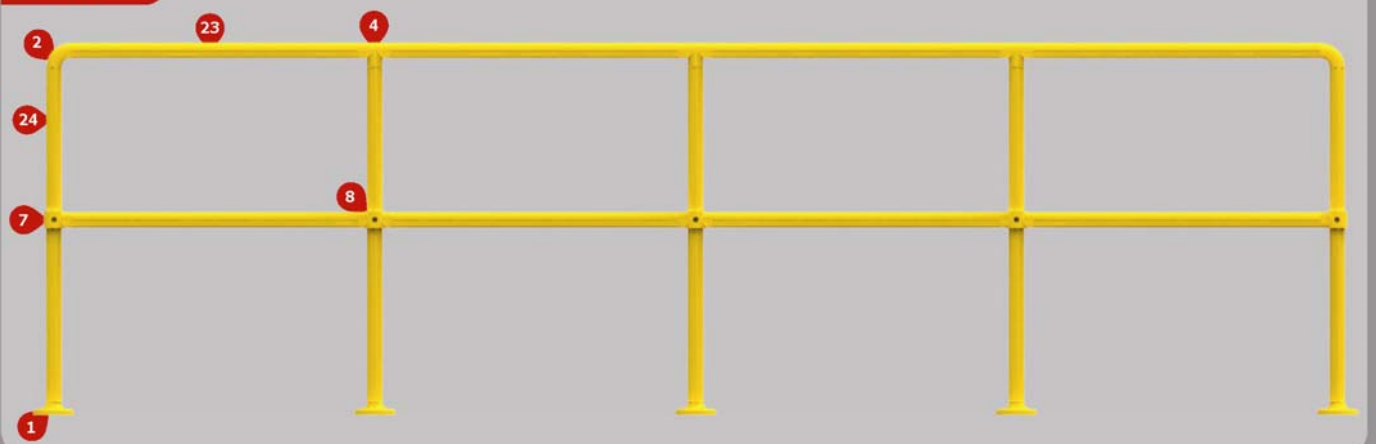
90 Degree Turn



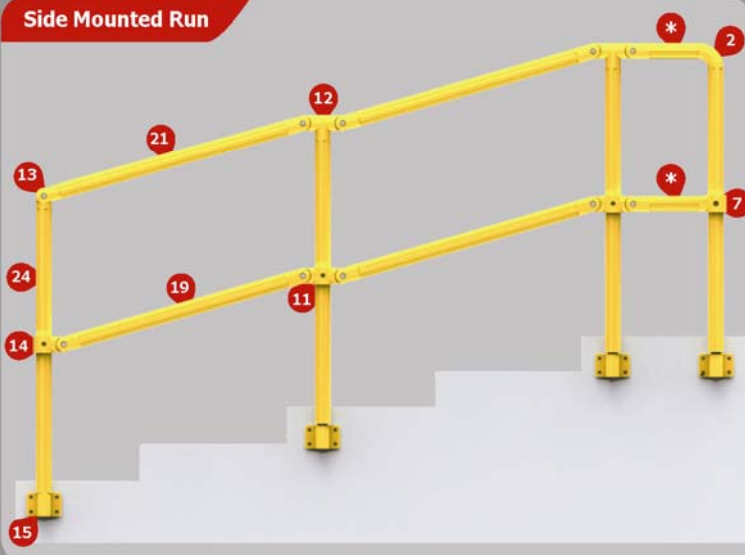
Wall Mounted Run



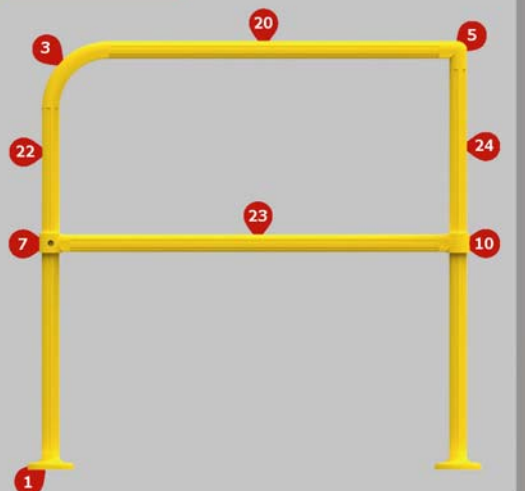
Straight Run



Side Mounted Run

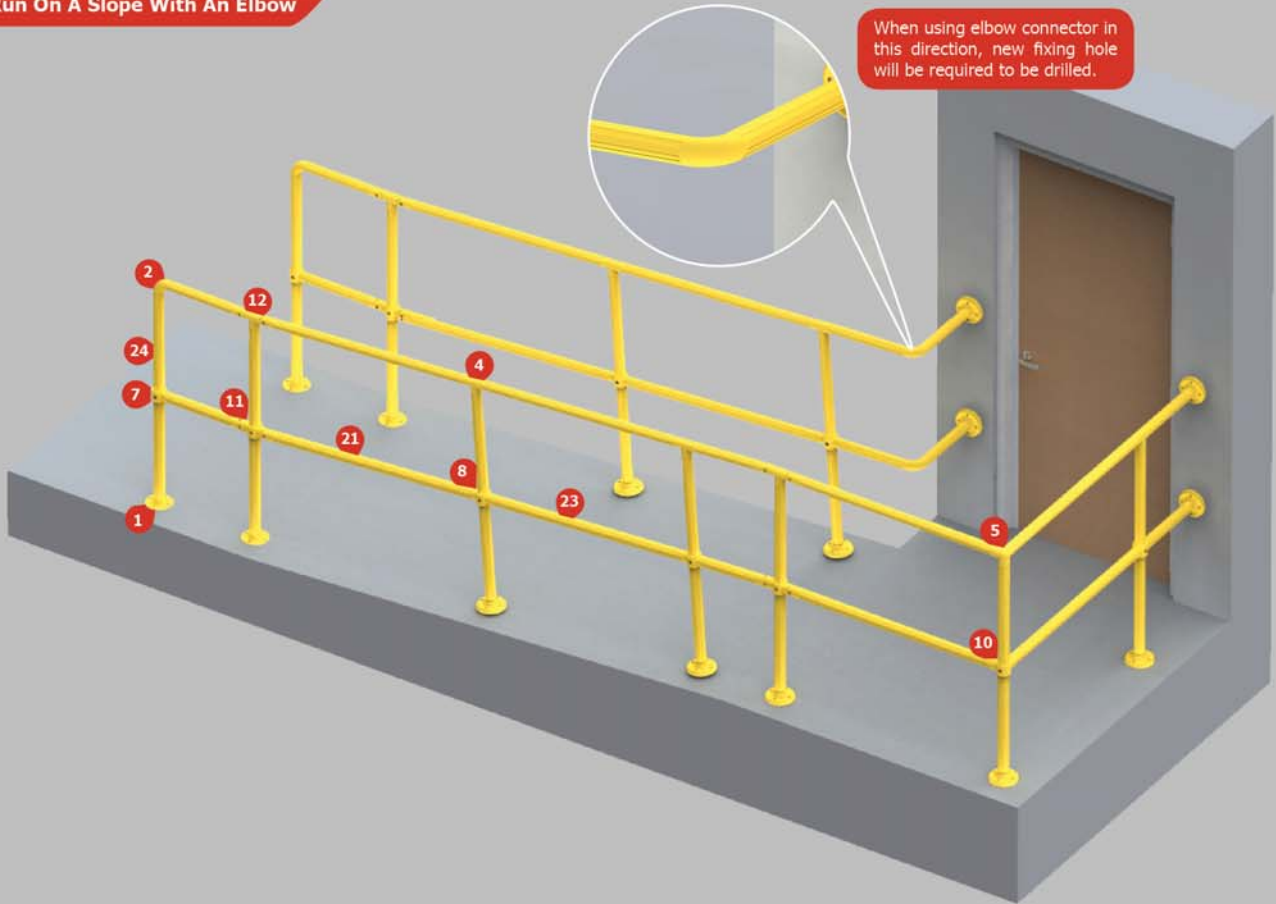


End Bend Finish

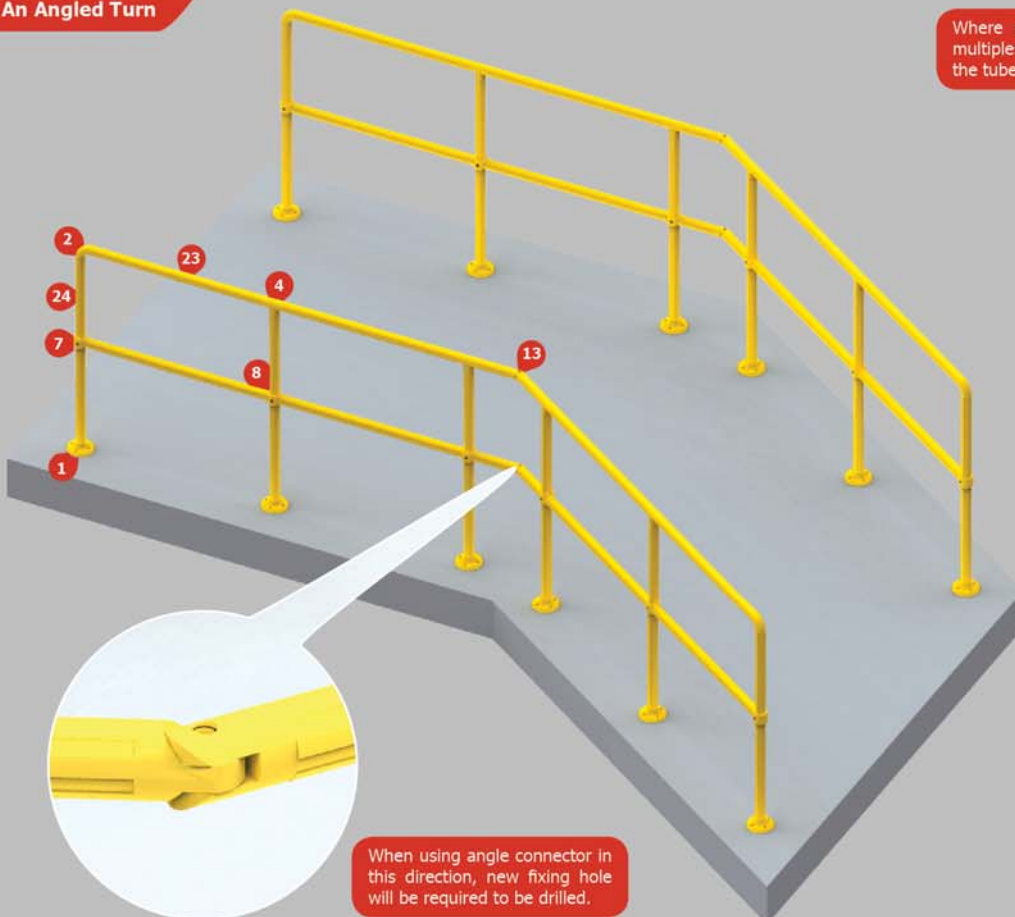


Modular Configurations Continued

Run On A Slope With An Elbow

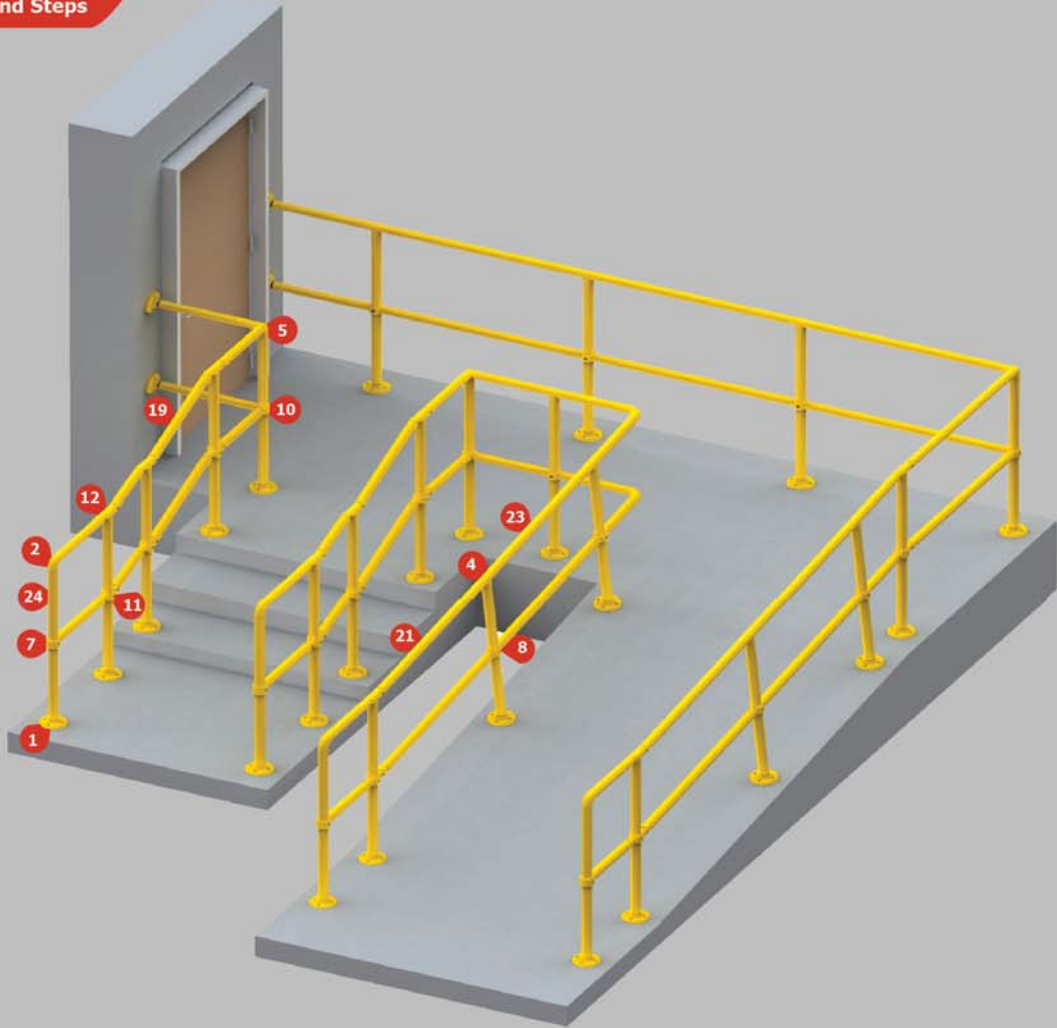


Run With An Angled Turn



Modular Configurations Continued

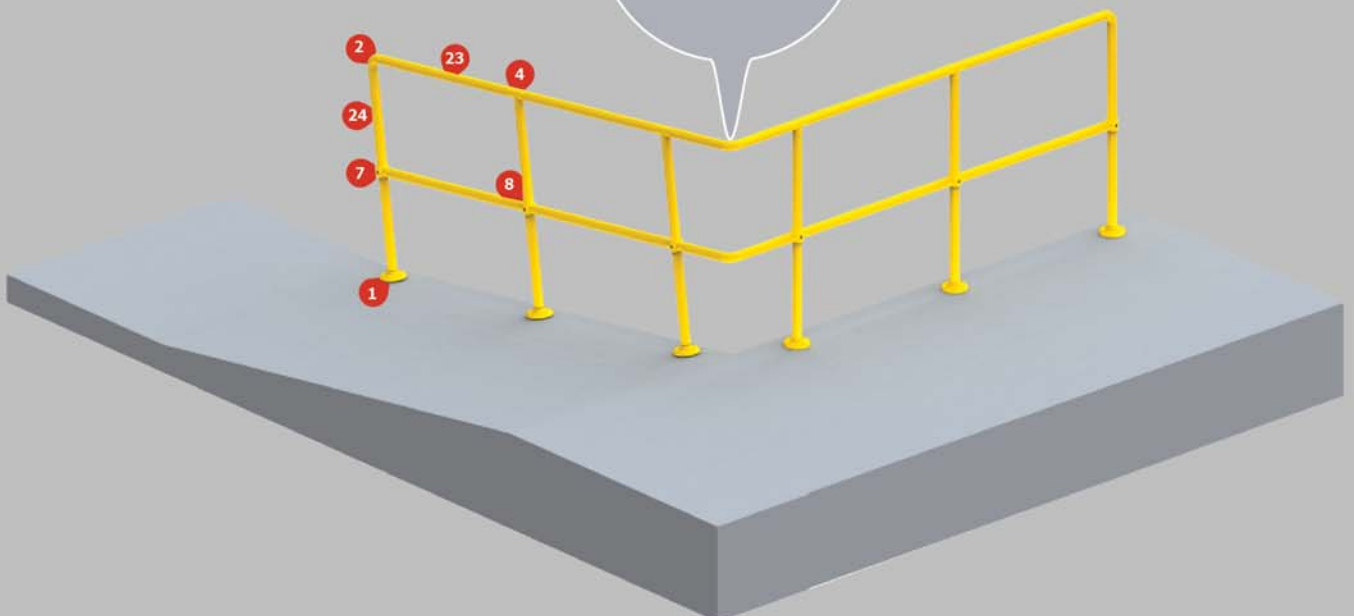
Run With Slope And Steps



Run With Slope With An Elbow Turn

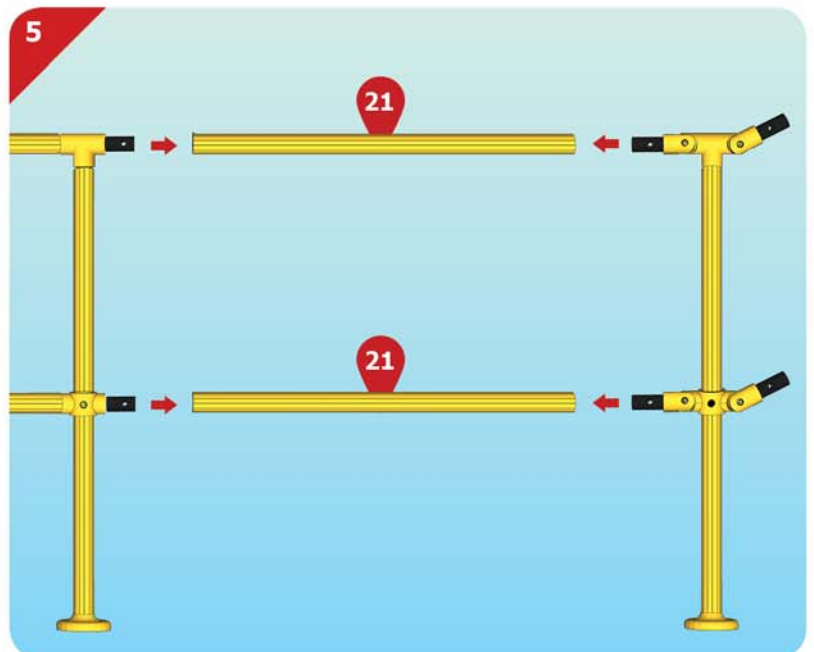
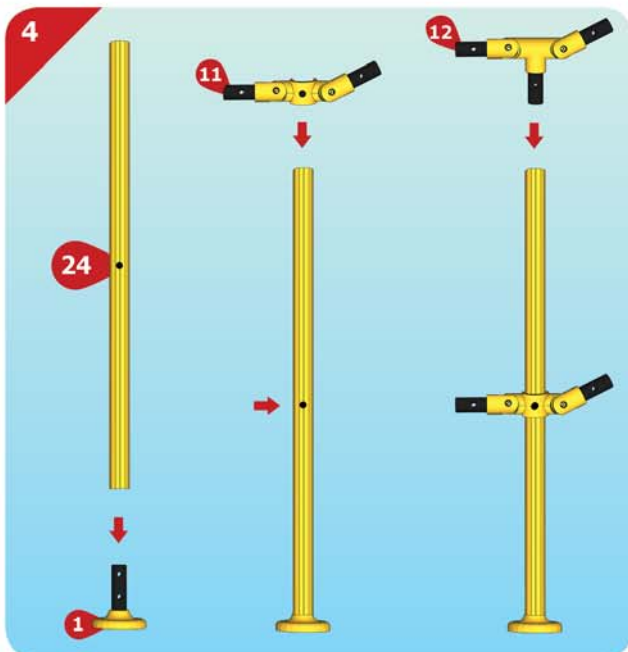
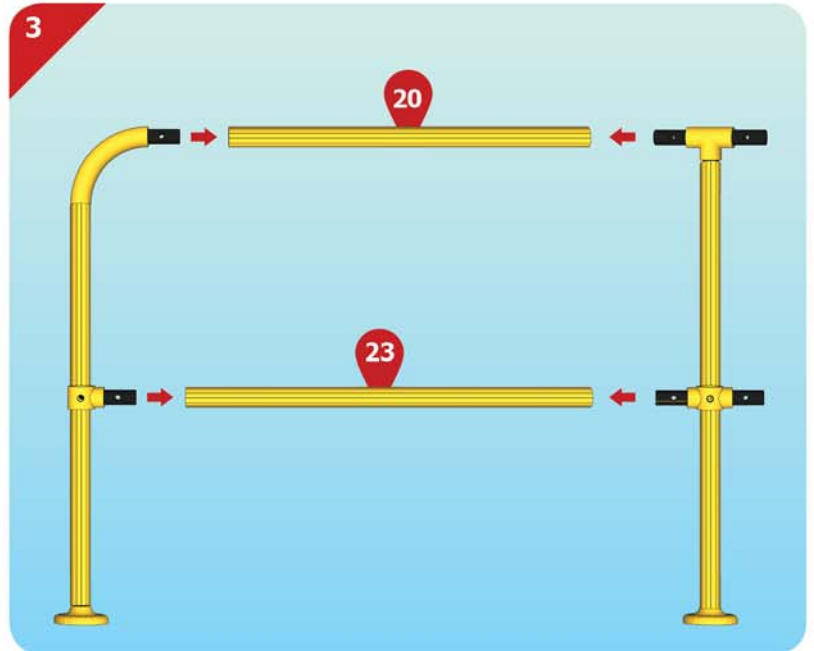
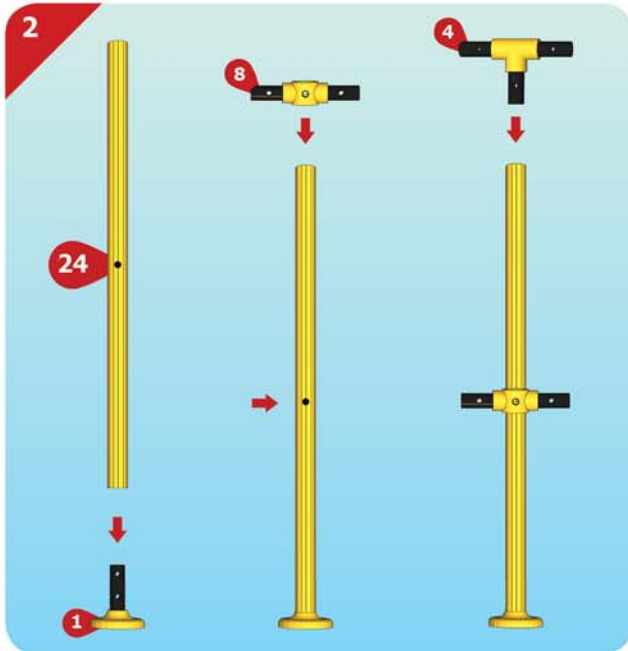
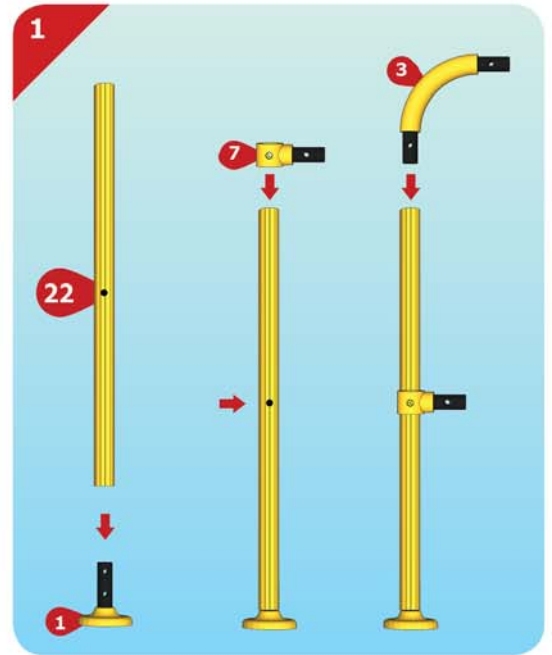
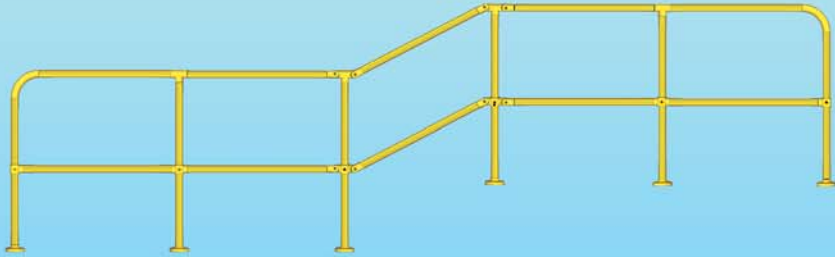


When using elbow connector or an angle connector in this direction, new fixing hole will be required to be drilled. The elbow will also have to be rotated to run parallel to the gradient of the ramp.



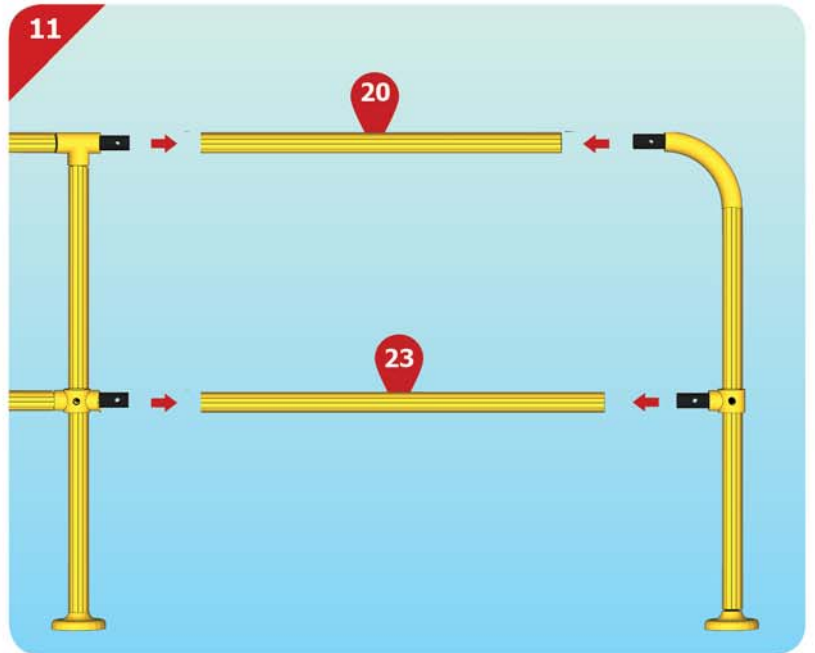
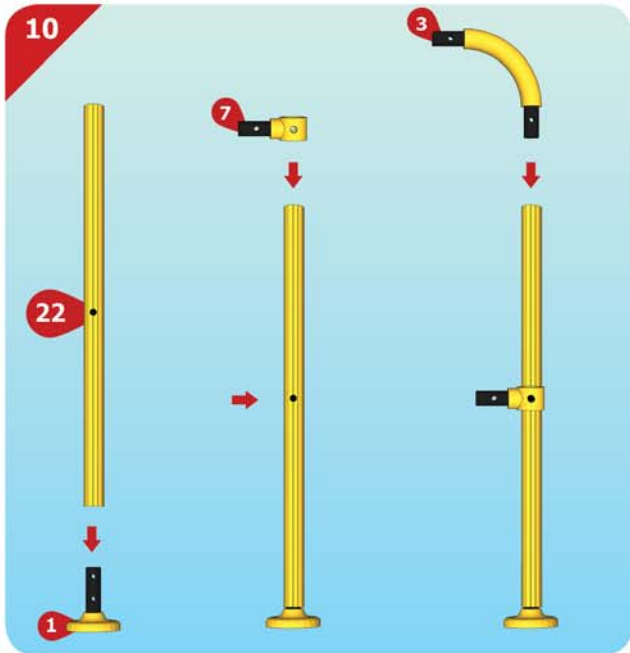
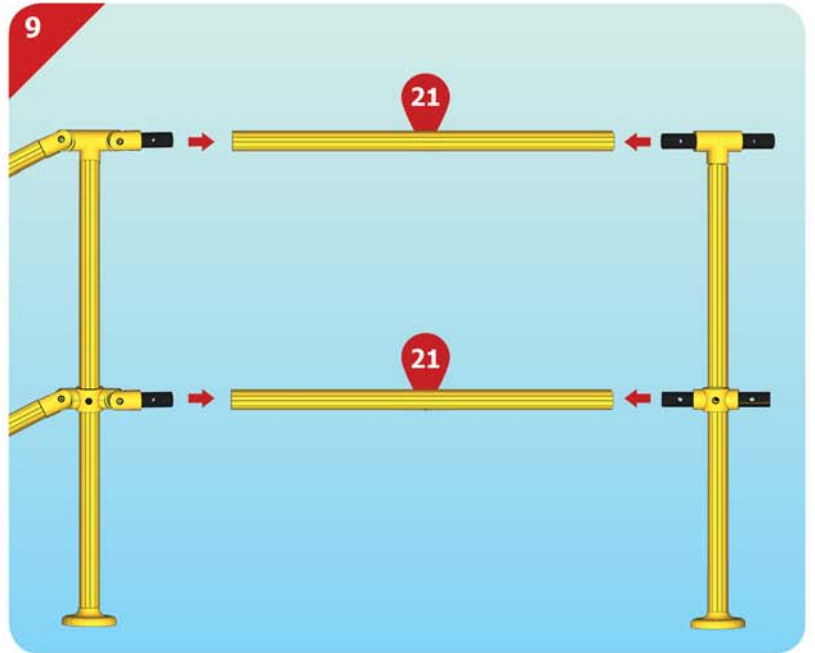
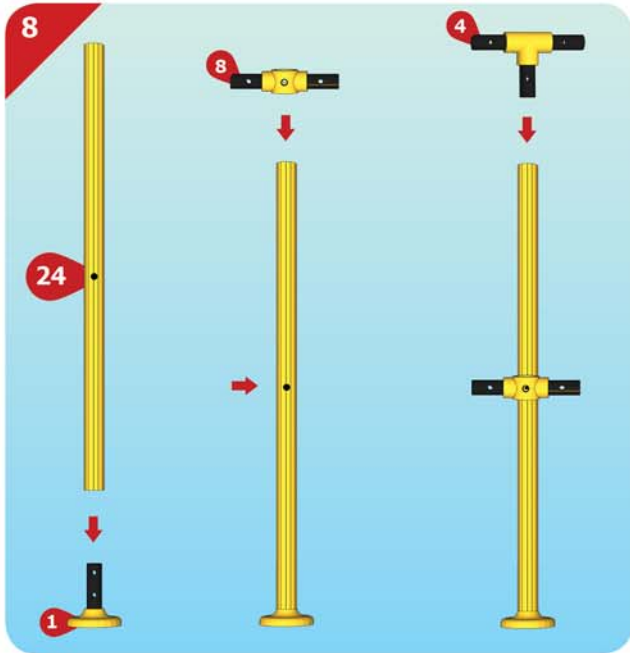
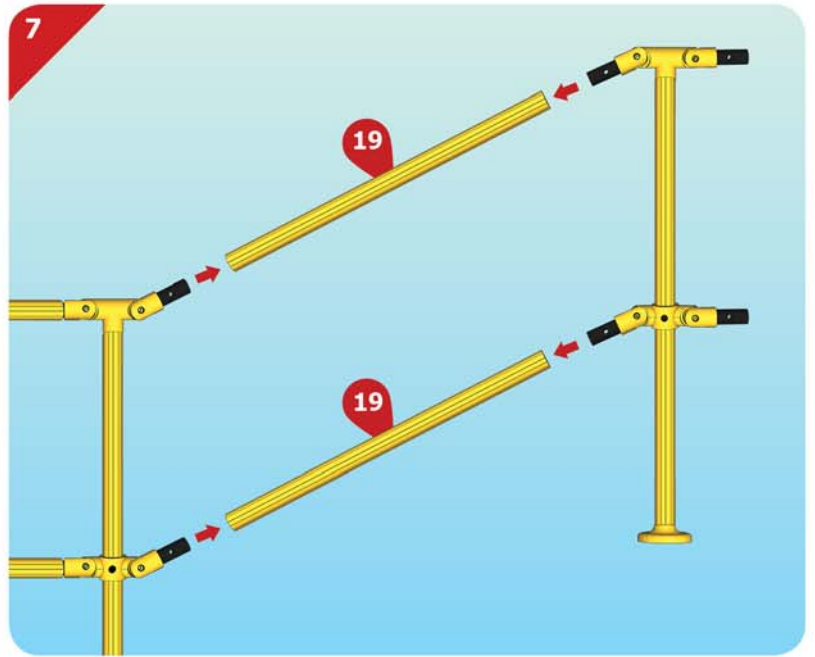
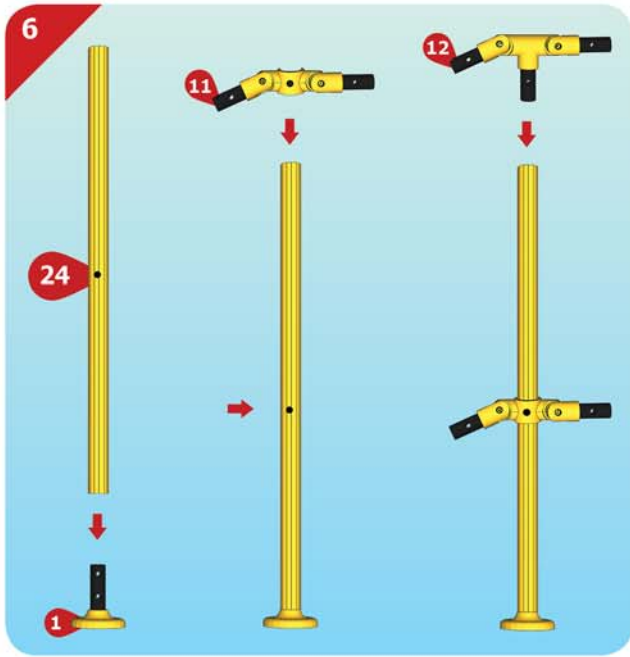
Standard Run Installation

The following guide depicts our standard Handrail run, the majority of hand rail applications will use similar components to the ones shown. The standard run below is just one of the many different combinations that can be achieved when using this modular handrail system.

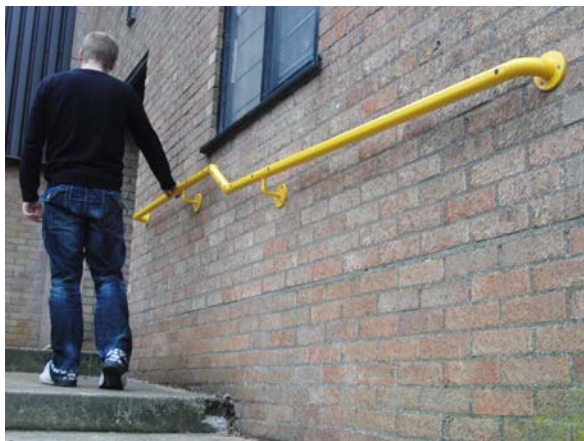


All components are supplied with the correct bolt fixings attached, simply remove bolts and re-fix components to the specified tube.

Standard Run Installation Continued



Application pictures



Cleaning Guide and Tips

Whilst the system is extremely resilient to dirt and contaminants, it can, as with most other things, become dirty.

Dirt and debris can easily be removed using a cloth and a simple chemical free cleaning agent. This method of cleaning should be carried out on a regular basis.

It is always advisable to test any cleaning product before starting the cleaning procedure. This can be done in an inconspicuous area of the installation or, if preferred, a sample can be sent, free of charge for testing purposes.

General Routine Maintenance

The security of the fixings/adhesive should be checked on a regular basis. Circumstances will vary, based upon the volume of traffic etc, but, as a guide, monthly inspections would be advisable.