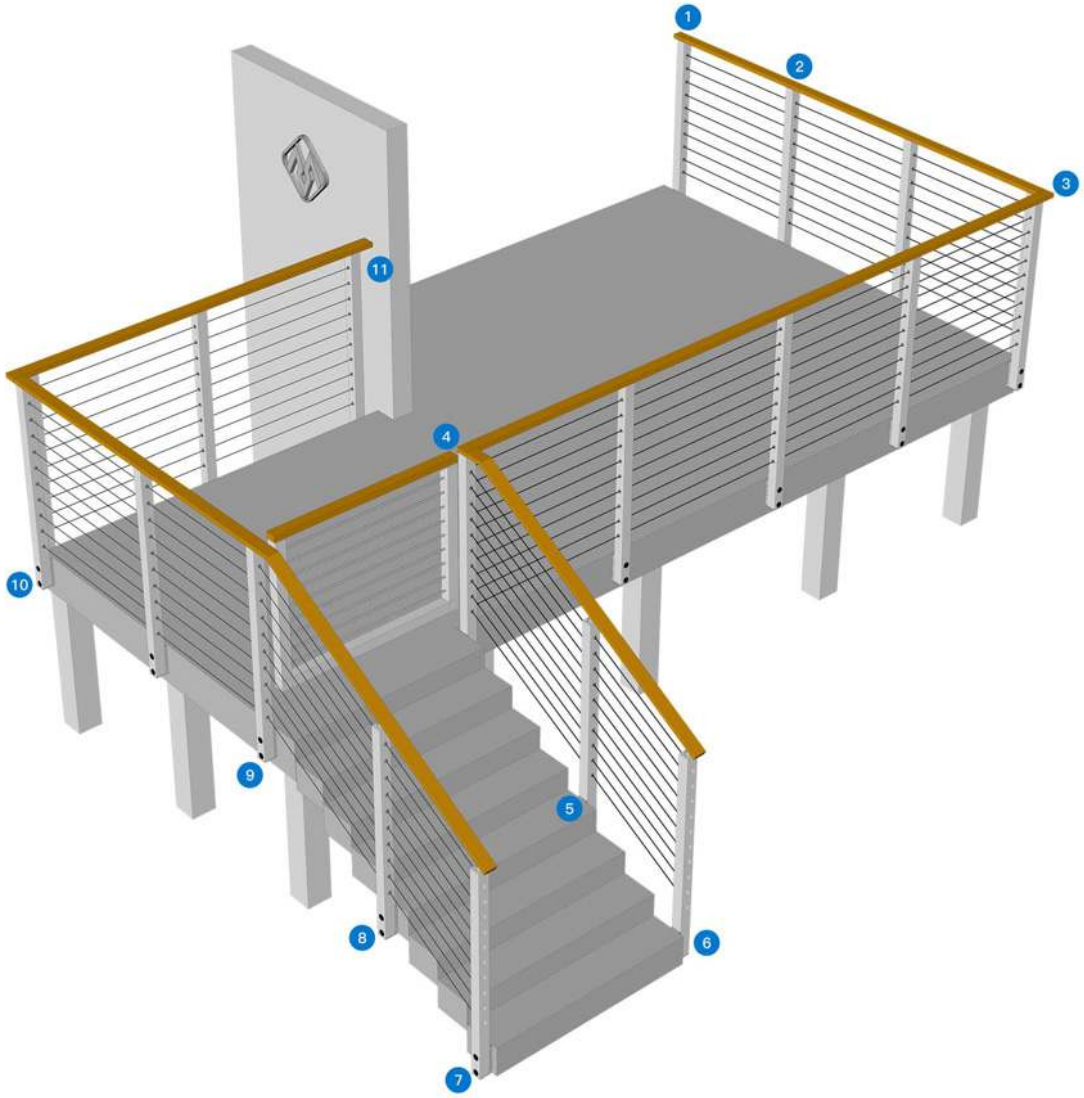
User guide
SpaceSaver
Cable railing system

01
Overview

Muzata-SpaceSaver system is designed with side mount posts to save more room for you. The stair treads will be at least 4" wider if you use side mount posts instead of top mount posts. Your deck will be neater, with the post feet hidden outside the deck.





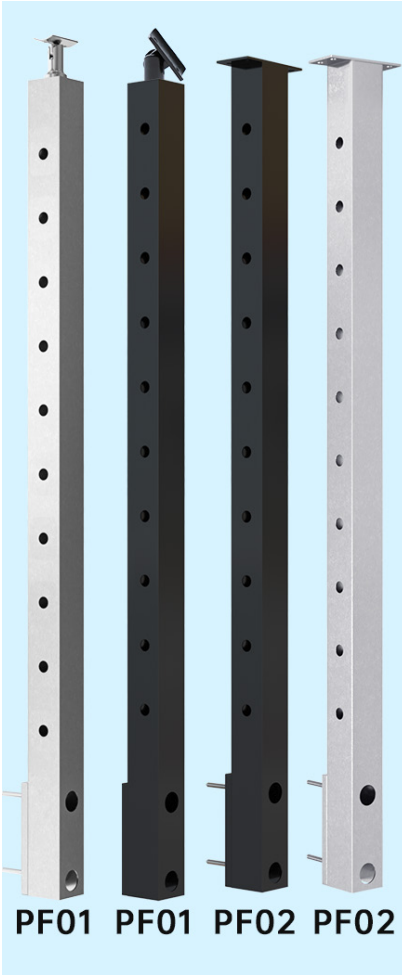


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02

Components

02-1 Posts



Post selection

Position	36" brushed	36" black	42"brushed	42" black
①	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L
②	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L
③	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L
④	PF02 LC4S	PF02 BC4S	PF02 LC4L	PF02 BC4L
⑤	PF01 LA4S	PF01 BA4S	PF01 LA4L	PF01 BA4L
⑥	PF01 LA4S	PF01 BA4S	PF01 LA4L	PF01 BA4L
⑦	PF01 LL4S	PF01 BL4S	PF01 LL4L	PF01 BL4L
⑧	PF01 LL4S	PF01 BL4S	PF01 LL4L	PF01 BL4L
⑨	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L
⑩	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L
⑪	PF02 LH4S	PF02 BH4S	PF02 LH4L	PF02 BH4L

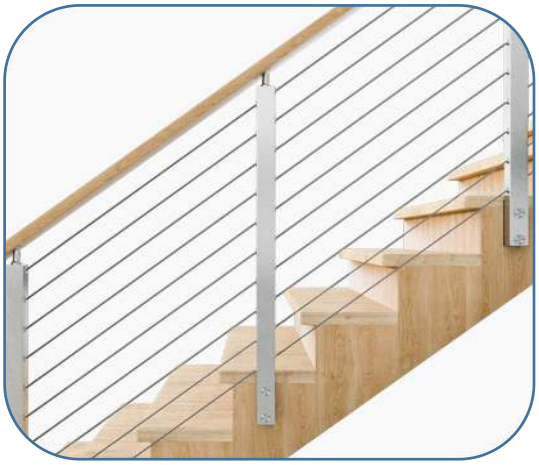
- PF02 - Side mounted posts with a flat top, only used for the horizontal installation
- PF01 - Side mounted posts with an adjustable angle top, works for both level and angle section (depends on the hole type)

Hole types

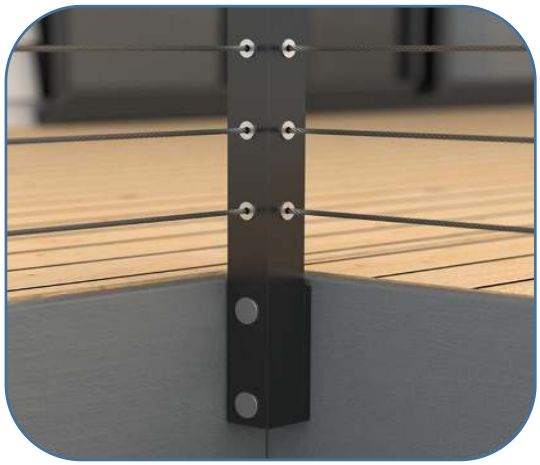
Our pre-drilled posts are designed with several hole types to work for different positions. Hole type selection is also related to the terminal type you decide to use.



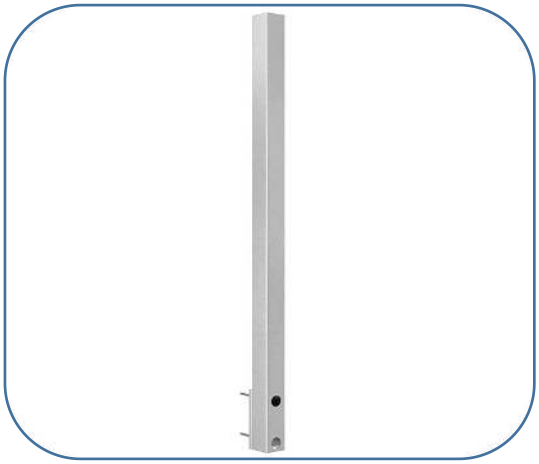
Level holes (H)- holes on two opposite planes for terminals and cables to go through in a horizontal direction.



Angle holes (A) & (L)- holes on two opposite planes for terminals and cables to go through on an angle direction around 30°. Holes on one side are higher than on the other side. And distinguish between using in right hand (A) and left hand (L).

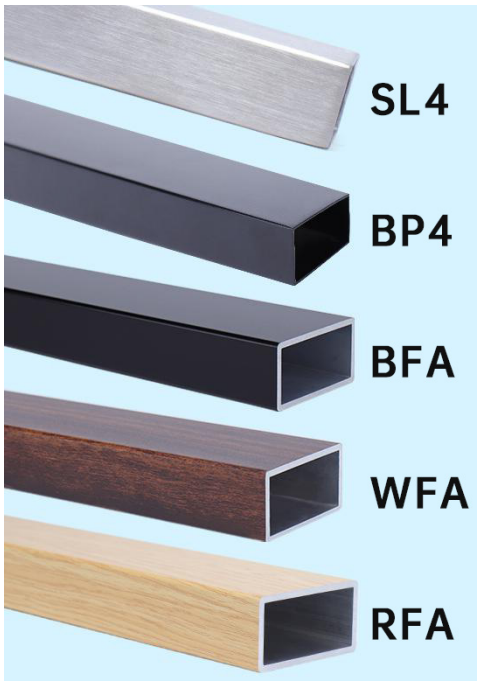


Neighbor holes(C) - holes on two adjacent planes for one post corner solution (internal corner).



No hole(N) - there are no pre-drilled holes. You can drill it yourself for any hole type.

02-2 Handrails



In this system, we recommend HT10 rectangle handrail. There are four color for your choice.

- HT10 SL4 - T304 Stainless steel with brushed finishing
- HT10 BP4 - T304 Stainless steel with black powder coated
- HT10 BFA- Aluminum with black fluoropolymer coated
- HT10 WFA- Aluminum with walnut wood grain
- HT10 RFA- Aluminum with red oak wood grain

Color	Handrail	End cap	Corner connector	Straight connector	Pivot connector
Brushed	HT10 SL4	HA09 SL4	HA02	HA01	HA23 HA24
Black(stainless steel)	HT10 BP4	HA09 BP4	HA02	HA01	HA23 HA24
Black(Aluminium)	HT10 BFA	HA10 PB1	HA02	HA01	HA23 HA24
Walnut wood grain	HT10 WFA	HA10 PB1	HA02	HA01	HA23 HA24
Red oak wood grain	HT10 RFA	HA10 PW1	HA02	HA01	HA23 HA24



HT10 SL4



HT10 BP4



HT10 BFA



HT10 WFA



HT10 RFA



HA09 SL4



HA10 PB1



HA10 PW1



HA01



HA02



HA09 BP4



HA23 HA24

02-3 Wire ropes

We suggest to use WR01/WR02 in this system.



WR01

WR01 - T304 stainless steel wire rope 1/8"



WR02

WR02 - T316 stainless steel wire rope 1/8"



WR17

Black vinyl coated T304 stainless steel wire rope 1/8" thru 3/16". For both indoor and outdoor projects.



WR19

Blackened T316 stainless steel wire rope 1/8". Only for indoor projects.

Notes

- We have two ways of packing. Wire rope in reel would be easier to control after you open it while wire rope in roll is cheaper.
- The cable in roll is recommended to open in a bucket, which could help to control the cable as it expands.
- 1/8" are recommended for code compliance in most states.
- We also have wire ropes with 5/32" or 3/16" size, vinyl-coated cables, blacken cables for your choice. Please search "muzata WP1" to find more. And remember that you should use terminals of the same size to go with wire ropes. For example, 1/8" cable should go with 1/8" terminals.

02-4 Cable terminals

Cable terminals will fix the cable on posts and fasten the cable to get enough tension as safeguards. In this system, we recommend the CR36 and CR07 to get a neat look at the railing. Please check the following images to see where and how they are used for.

Natural



Black



Tensioner

CR36 - Invisible tensioner for both metal and wood posts.

CR37 CB05 CB07- Invisible tensioner for metal posts.

Natural



Black



Fix end terminal

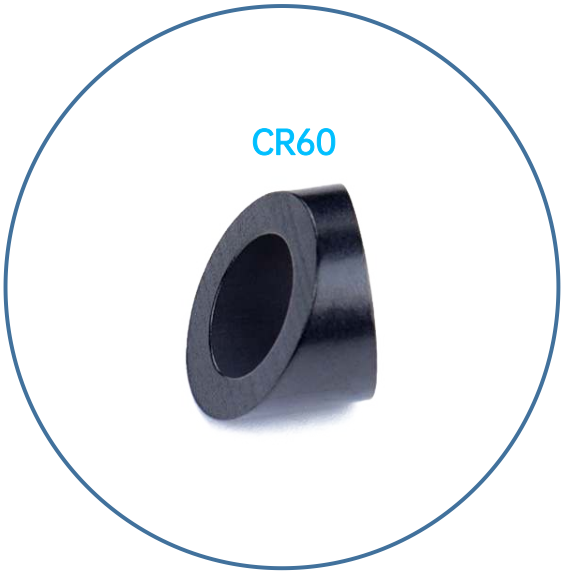
CR95: Invisible terminal for both metal and wood posts

CR96: Invisible terminal for both metal and wood posts

Natural



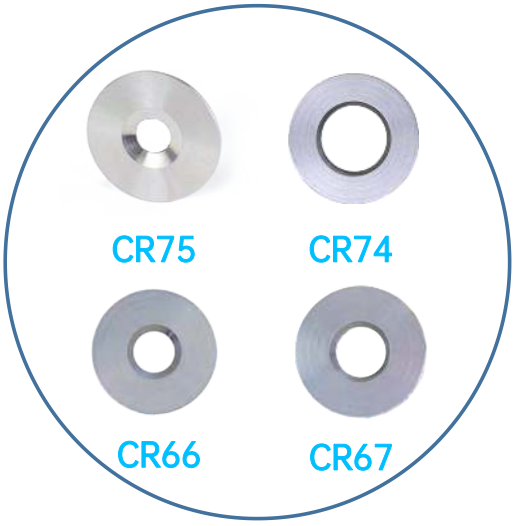
Black



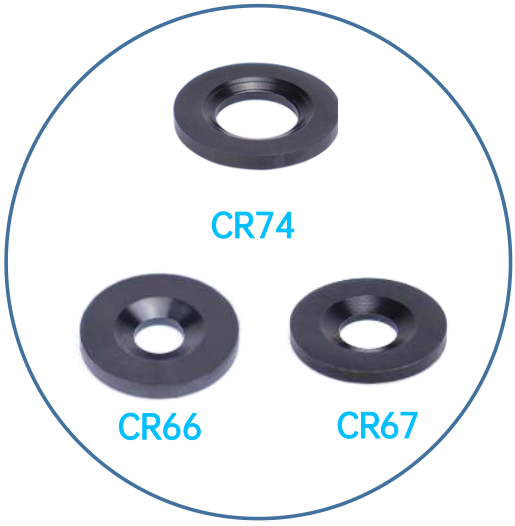
Angle washer

CR60 - Angle washers for stair railing around 30°

Natural



Black



Adhesive sleeve

CR75 /CR65/CR66 - To cover the level holes

CR67 - To cover the angle holes

Natural



Black



Protector sleeve

CR72 - Pressure bearing for metal posts

Natural

CR07



Inner terminal

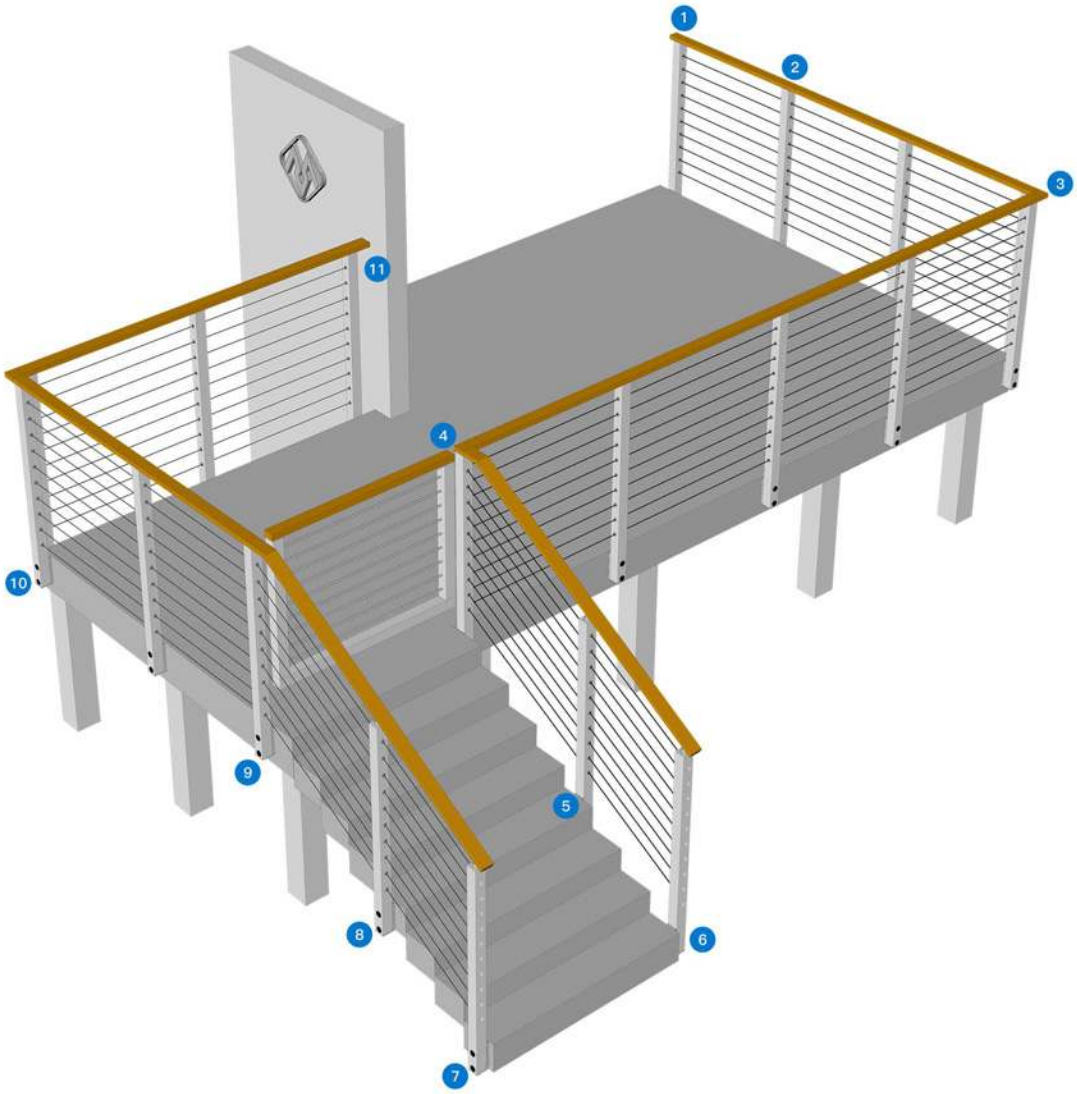
CR07-Invisible terminals for corner posts and one-side drilled end posts

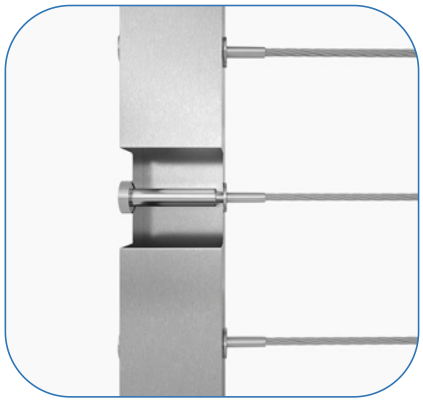
CB17-Patent swageless invisible terminals for corner posts and one-side drilled end posts

Notes

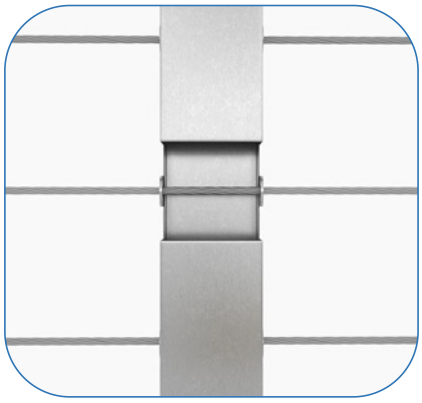
Concrete wall - if you need to install terminals on concrete/brick/stone walls.

Please use our expansion tensioner CB25 (1/8") / CB26(3/16")

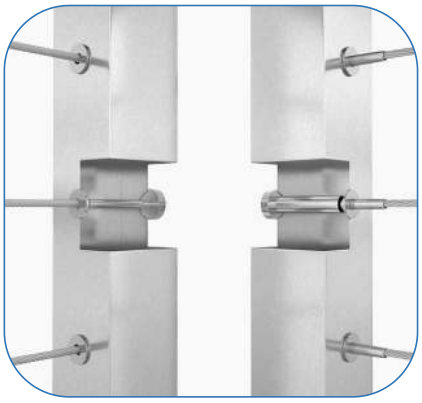




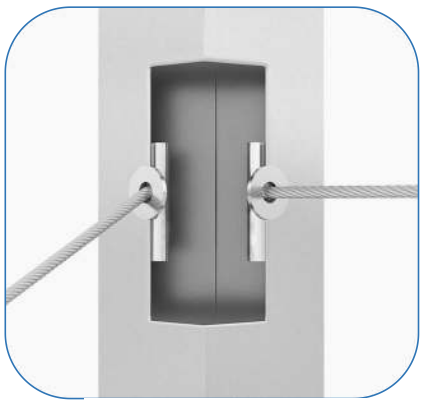
① CR36+CR67



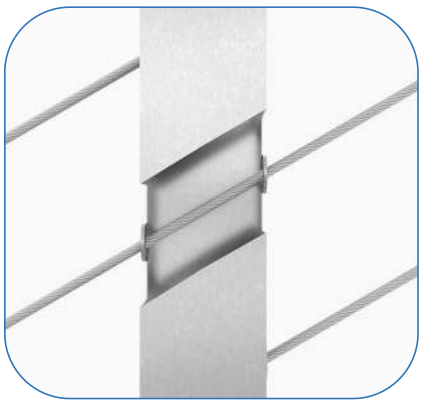
② CR75+CR75



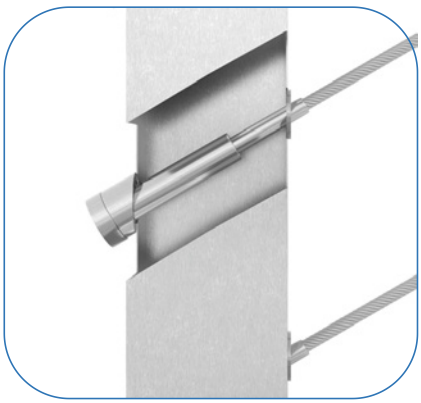
③ CR95+CR67+CR36+CR67



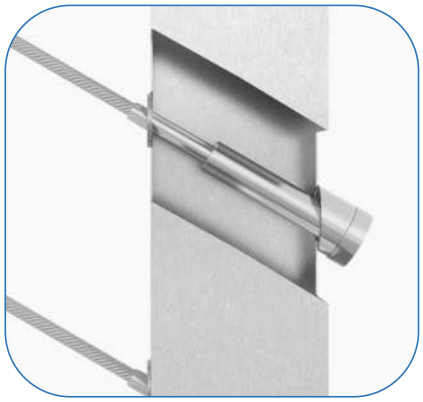
④ CR07+CR67+CR07+CR75



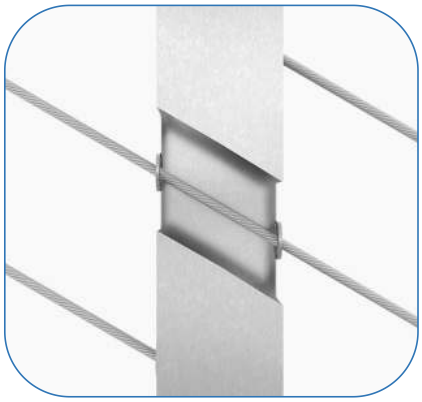
⑤ CR67+CR67



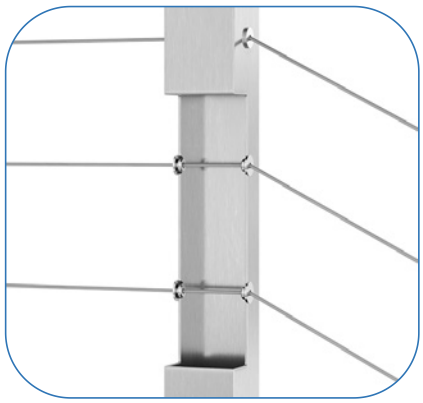
⑥ CR36+CR60+CR74



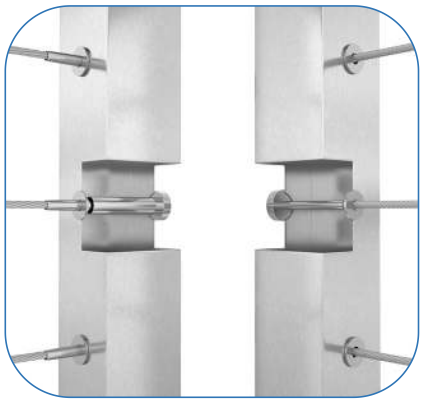
⑦ CR36+CR60+CR74



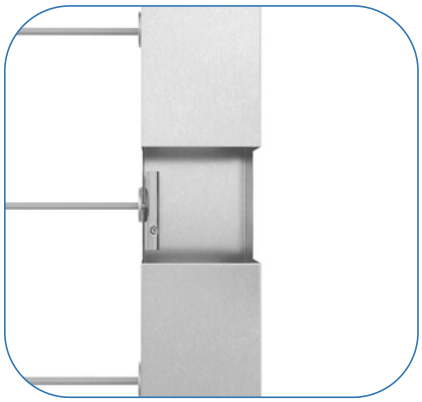
⑧ CR67+CR67



⑨ CR72+CR72



⑩ CR95+CR67+CR36+CR67



⑪ CR07

02-5 Tools



Cable cutter CT15

For cable cutting



Custom socket wrench CT16

For terminals tensioning



Adjustable wrench

For installing lag screws on post footon post foot



Allen wrench

For terminals tensioning and cable fixing. Attached.



Electric miter saw

For cutting handrails



Philips driver

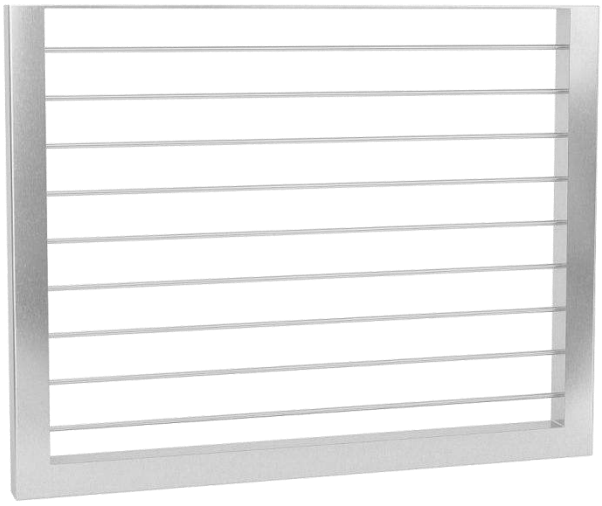
For installing handrails



Hydraulic crimper CT01

Crimping the terminals with cable

02-6 Optional components



Cable railing Deck gate DG01

Custom-made deck gates are designed to work with cable railing for consistent appearance.



HK26



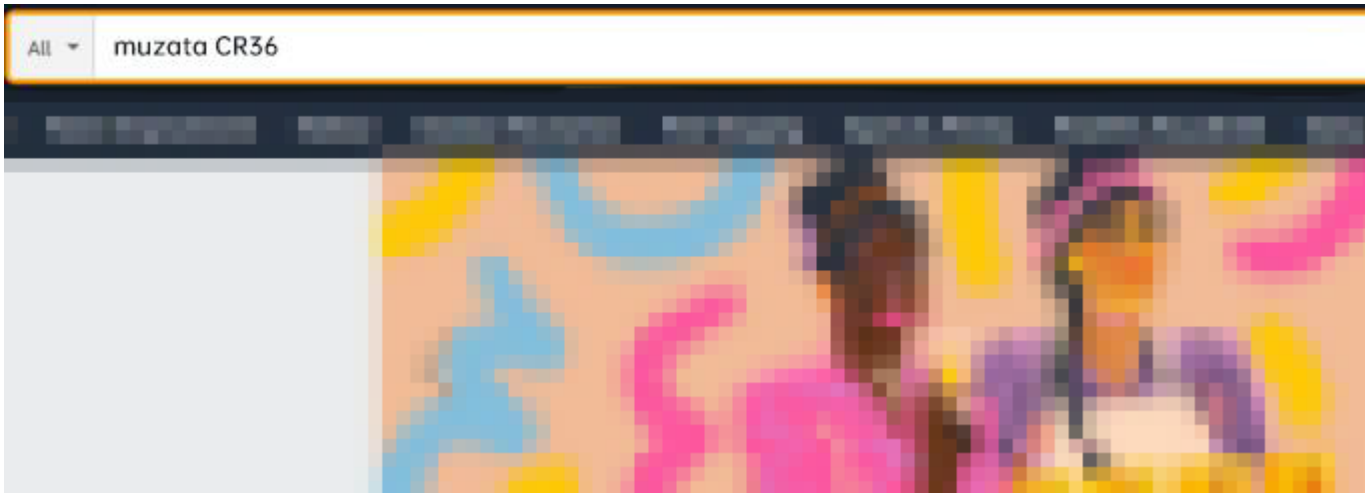
HK27



HK28

Wall mounted handrail kits

02-7 How to find the products?



(1) Click on the model number with link (blue) on this file to open the web page

(2) Search "muzata + model number", like muzata CR36

03

Installation

Things to Know Before You Get Started

- Please consult your local office for building codes and make sure you know all the requirements of the codes. Some states might have special rules of their own. You should choose carefully to comply with them. We can't promise everything to comply with all the codes of every state.

- It is recommended to do some planning work and estimate a budget. Please contact us if you need help with that. You might want to buy a few more materials than expected since some materials could be used by operation mistakes. Especially swage terminals and wire ropes.

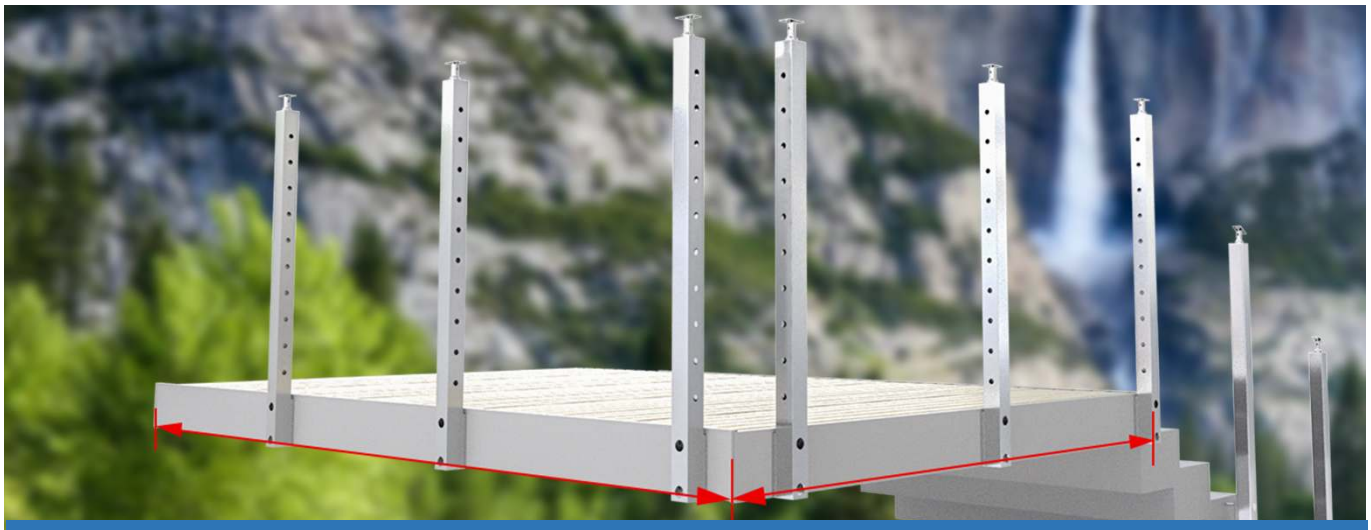
- It is suggested to be 2 person project.

- Please be careful when operating electric tools (power drill, cutting machine) and ask for help if you are not familiar with these tools.

- Products made of T304 stainless steel are not recommended for projects within 10 miles of sea. They will also get rusty easier than expected when being near salt water or in highly humid conditions.

03-1 Posts installation

03-1-1 General steps



Draw guidelines

1. Draw guidelines along the paths you want. The lines will keep your posts aligned.
2. Mark positions for posts, check the following notes for post distance.



Drill guide holes

- Mark the hole positions.
- Drill guide holes with a 1/4" drill bit for the depth of screw length.



Install with lag screws

- Put the base board under the post foot.
- Install lag screws with the attatched nut setter and a adjustable wrench



Level check

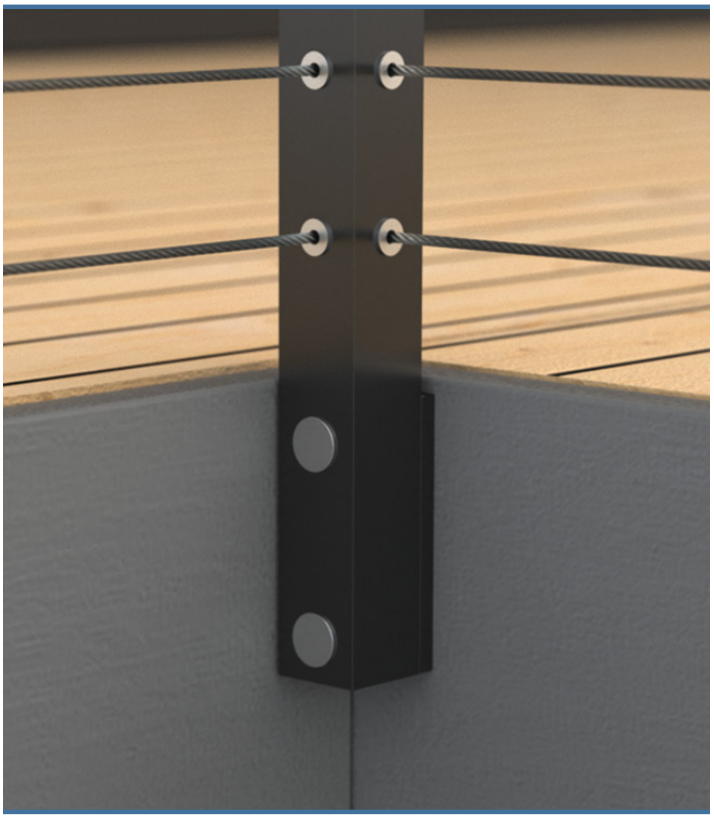
Check with a level tool. Make sure the post is vertical to the ground.



Cover the holes

Cover the holes with attached adhesive wafers

03-1-2 Corner solution





- We suggest using one-post at inner corner and two posts at exterior corner, which looks better and easier to install.

- All two-post corner solution will work too. Please contact us if you have questions about that.

Notes



PA13



PA14

- The base board is used to increase the distance between the post and floors incase the floors stands out of the side wall.We also have 1" (PA13) and 2"(PA14) base boards.
- Remember to install all the structural posts first before installing intermediate posts.
- Make sure your posts are aligned if they are in the same line.
- The guide holes will make it easier for lag screws to go in.
- For concrete/brick/stone surface, please replace the lag screws with expansion bolts .
- We recommend the max span of two structural posts to be 4 feet. If there is a stabilizer post between them, the max span can be up to 7 feet.
- There is a 4-inch sphere test for cable railing in some states. So there should be intermediate posts between structural posts to reduce the deflection. 3-4 feet post space is recommended.
- If you are going to drill holes by yourself, please make sure to comply with the codes.3" space between cable lines is recommended for most states.

03-2 Handrails installation

03-2-1 General steps



Cut the handrail

Measure and cut the handrails for the length you need with an electric miter saw.



Install

Install the handrails to the bracket of posts.

03-2-2 Linear connection



Connect

Connect two handrails with a straight connector

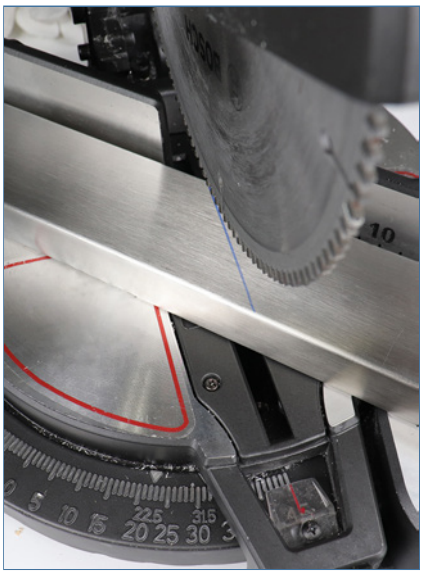


Install

Install the joint on a post for supporting

03-2-3 90° Corner

Option 1: Miter cutting



Cut the handrail into 45°end

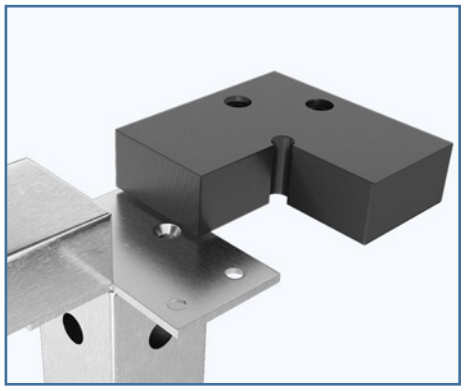


Connect the two handrails with a corner connector



Install them on posts with screws

Option 2: Cover kit



Place the corner bracket first then put the inner corner connector into handrails

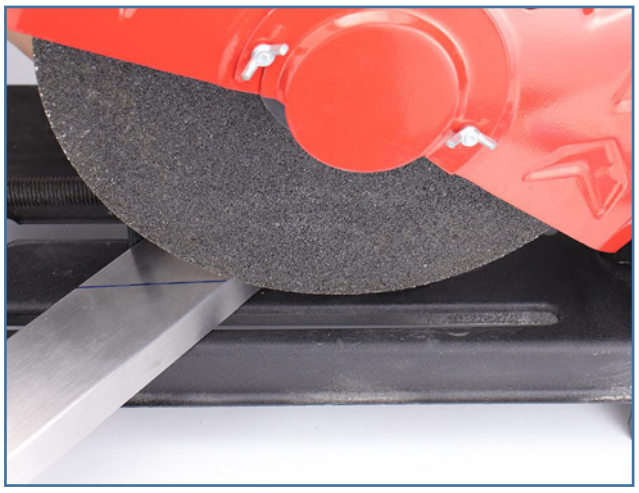


Install them on posts with the screws attached

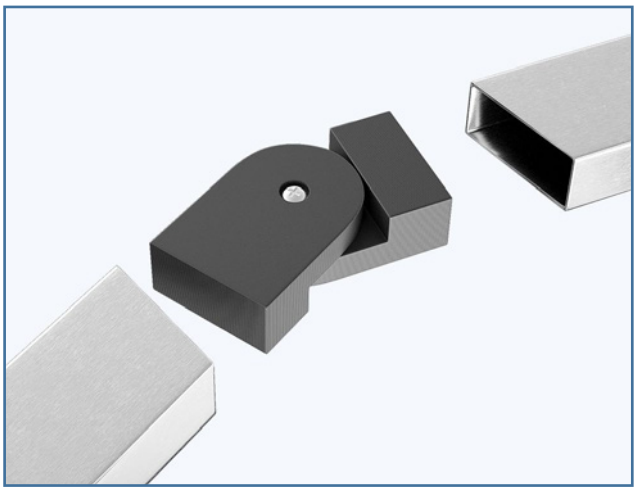


Place the cover.The cover will also help to cover the ugly miter cutting.

03-2-4　Random angle corner



①Cut the handrail end into the angle you want



②Put the pivot connector HA24 in

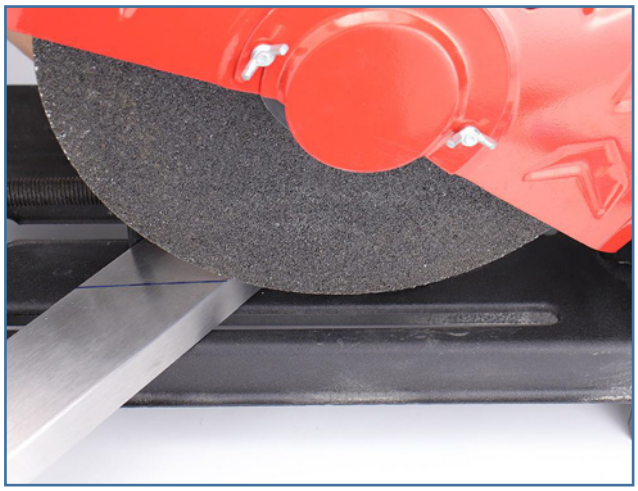


④Fix the connector and handrails with screws

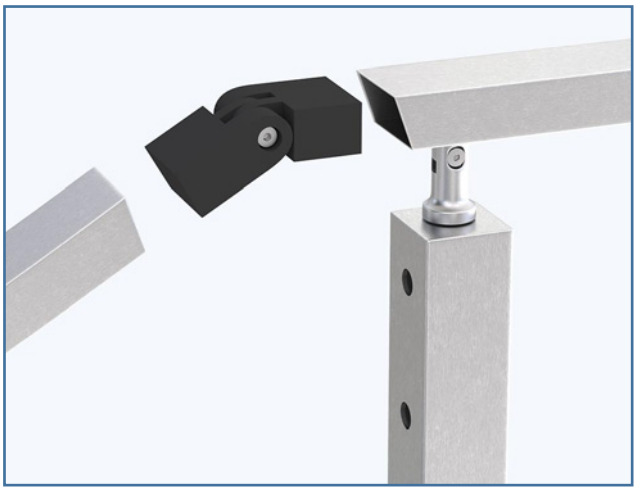


⑤Install them on posts

03-2-5 Random angle on vertical plane



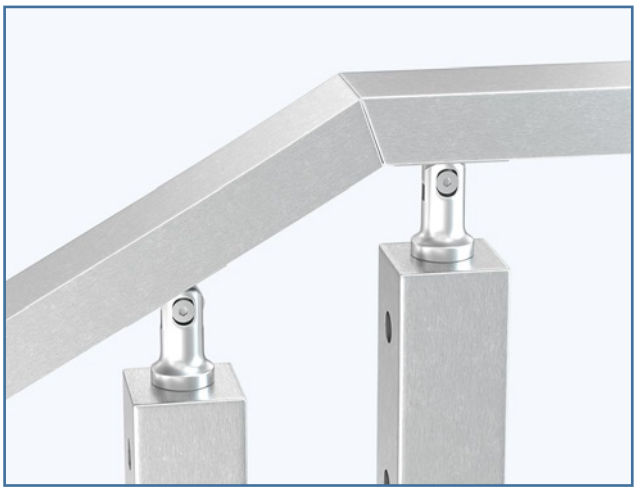
①Cut the handrail end into the angle you want



②Put the pivot connector HA23 in



③Fix the connector and handrails with screws



④Install them on posts

Notes

- You can make a connector for random angles with a straight connector if pivot connectors are not available.
- You should try your best to place a post under each joint. If it is not possilbe in some cases, at least there should be posts nearby.

03-3 Cable infilling installation

03-3-1 General steps



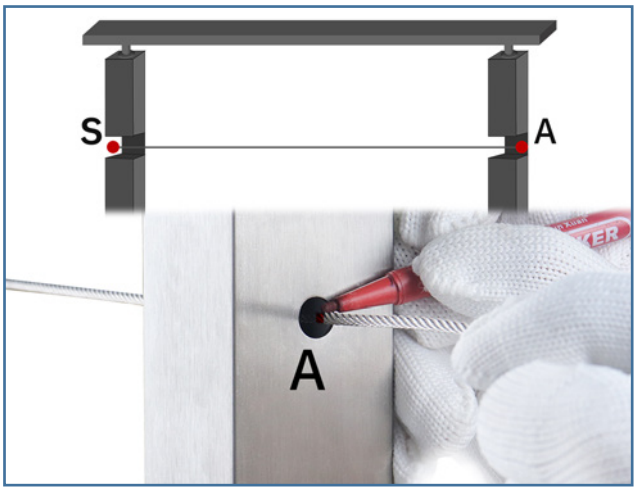
Install the cable

Install the cable end into fix end terminal CR07 or CR95, Crimp the terminal tight enough to fix the cable with hydraulic crimper CT01. Crimp twice to make sure the cable won't slip out while tightening. Remember to put the adhesive sleeves in before that.



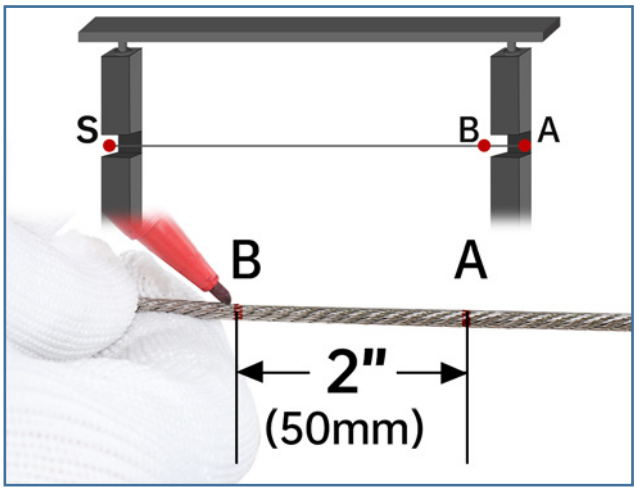
Install fix end terminal

Install CR07(CR95) into the post



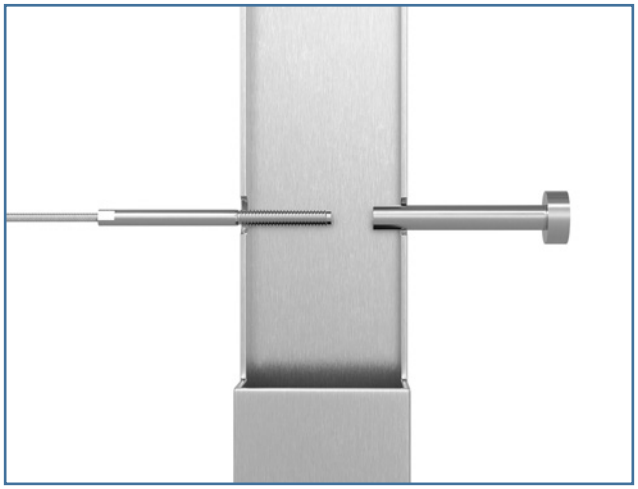
Measure the cable

Draw the cable to the other end and let it go through the post hole. Pull the cable tightly and mark point A.



Trim and cut

Subtract the trim length (about 2 inch) and mark point B. Cut on point B to get the correct length. The trim length is based on general conditions. Sometimes you might need to adjust it according to your project.



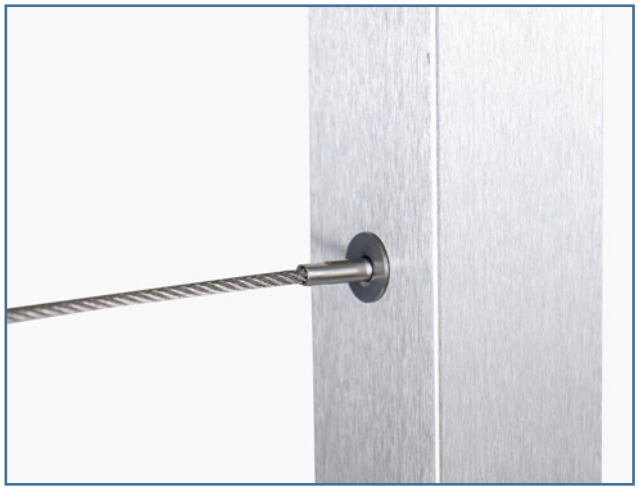
Install tensioner

Place the other cable end into the tensioner CR36. Crimp the terminal as the previous step. Then install the tensioner to the post. Remember to put the adhesive sleeves in before that.



Tensioning

Tighten the cable to proper tension with CT16 and an Allen wrench.

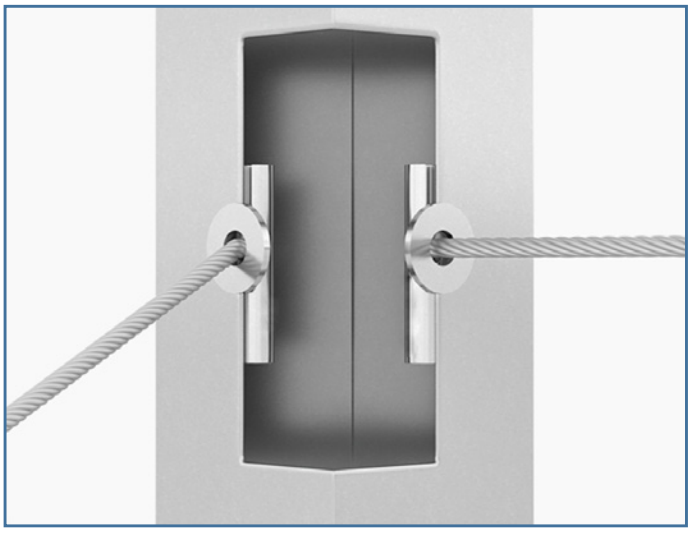


Cover the holes

Cover the holes with adhesive sleeves

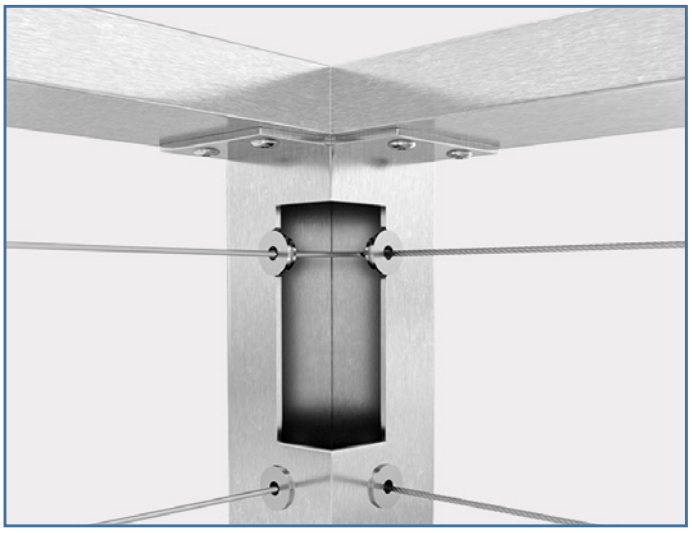
0-3-2 Corner solution

Single post



Option 1

When it's inside 90 degree cornor, swe crewsrecommend to use a pre-drilled corner post with 2 inner terminals.



Option 2

An adjacent pre-drilled post screws to go with 2 wheel protector sleeves to bear force and let the cable go through the corner

Two posts

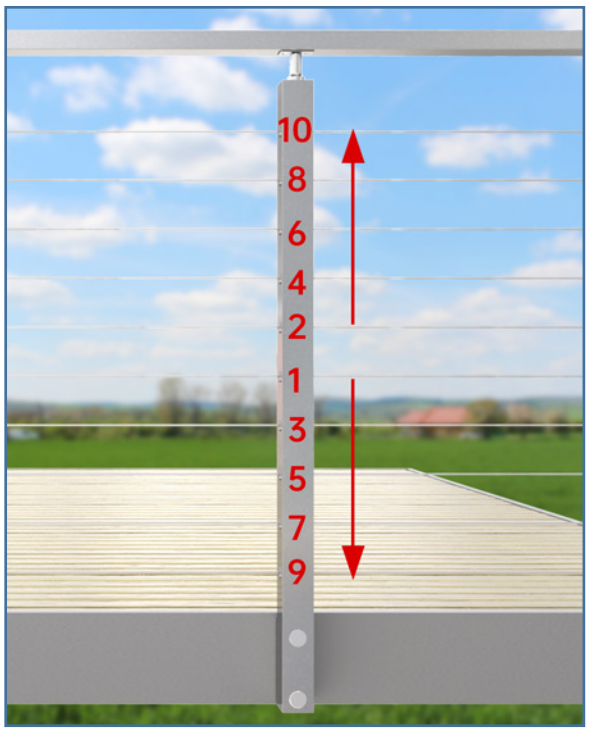


The cable go through the corner, you will need two wheel protector sleeves



The cable end on one post and start with another one, you will need two terminals

Notes



1. Please follow the sequence to tighten the cables as shown in the left image.

2. For swage tensioners, please preserve some tensioning range in case the cable gets loose due to temperature change in years.

3. Remember to expand the tensioner before measuring to make sure there is enough room for the tensioner to shrink while tightening.

4. When using wheel protector sleeves to bear force and let the cable go through the corner. Remember that the cable should not go through corners less than 90°. And it is not recommended to let the cable go through more than one corner continuously since it will be difficult to tighten the cable.Install infilling on stairs is pretty much the same as level sections. Only you have to add an angle washer for each terminal that is not multi-angle.

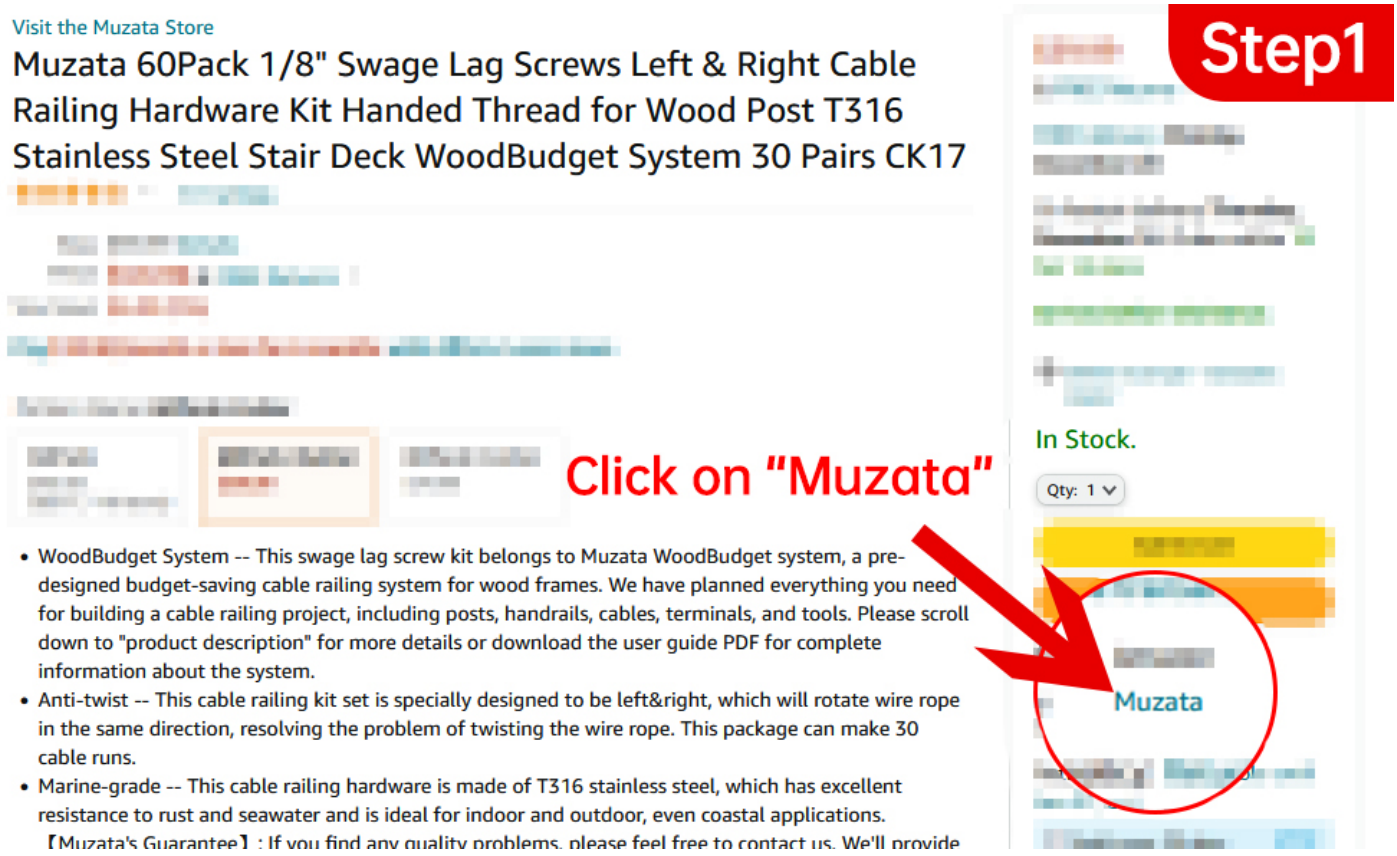
5. Install infilling on stairs is pretty much the same as level sections. Only you have to add an angle washer for each terminal that is not multi-angle.

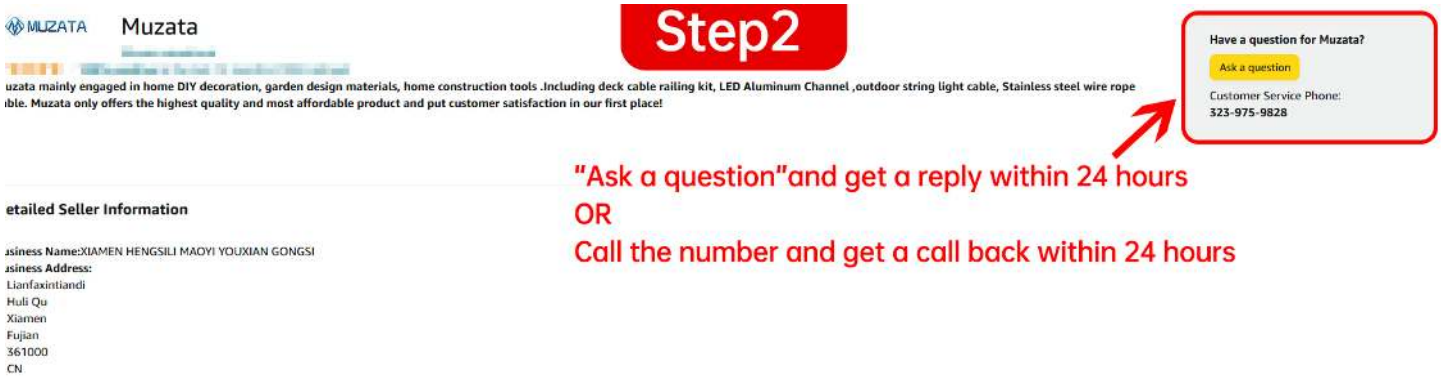


6. If your local building code requires 4" sphere test, The tension is recommended to be around 200 lbs to pass the test. You can buy a tension gauge from online or local store.

Reach us

If you are a beginner or not sure about how to do it. Please feel free to contact us. Our experts can do all the planning, designing and budget work for you without extra charging. Then you can follow the shopping list to buy all the materials in 3 minutes.





Congratulations !
You're done