

# **LAYING INSTRUCTIONS**

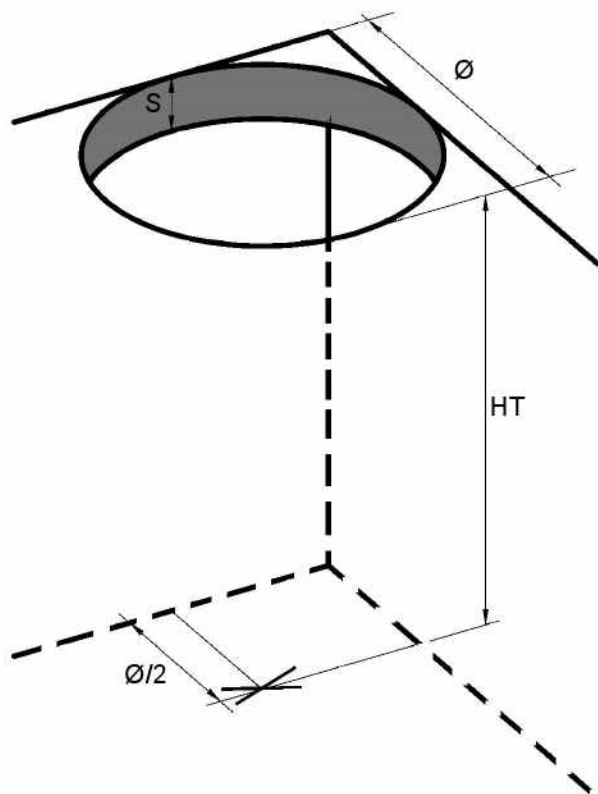
## **E20**

**- ENGLISH -**

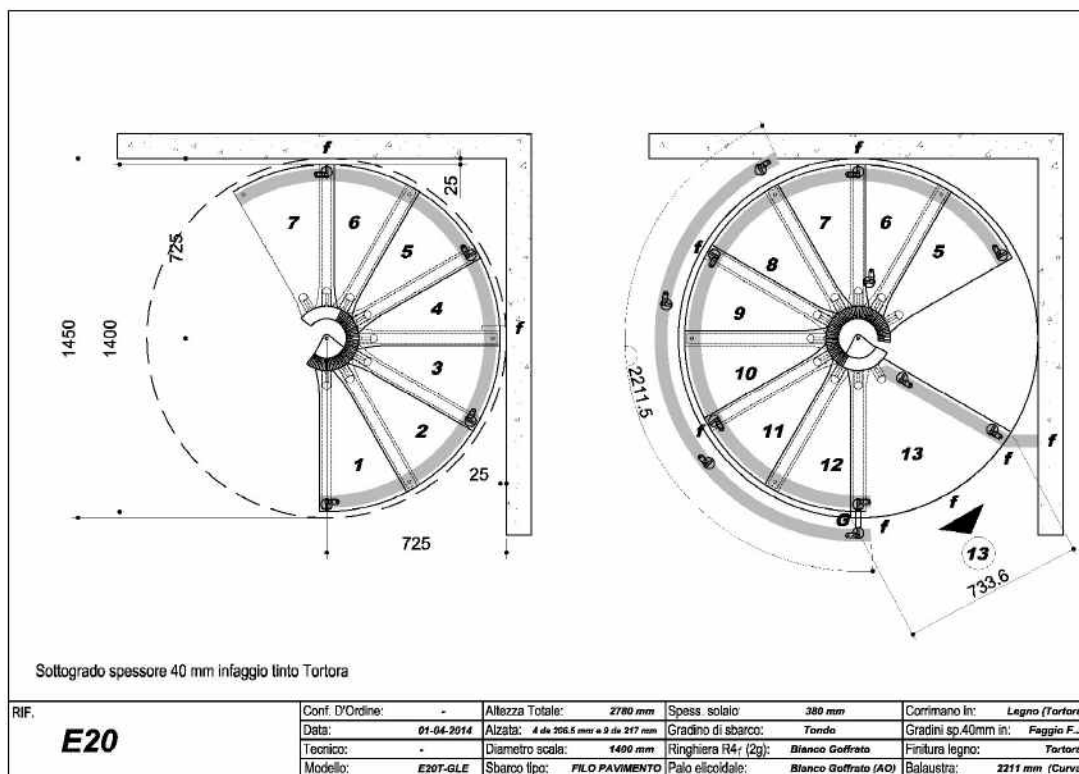


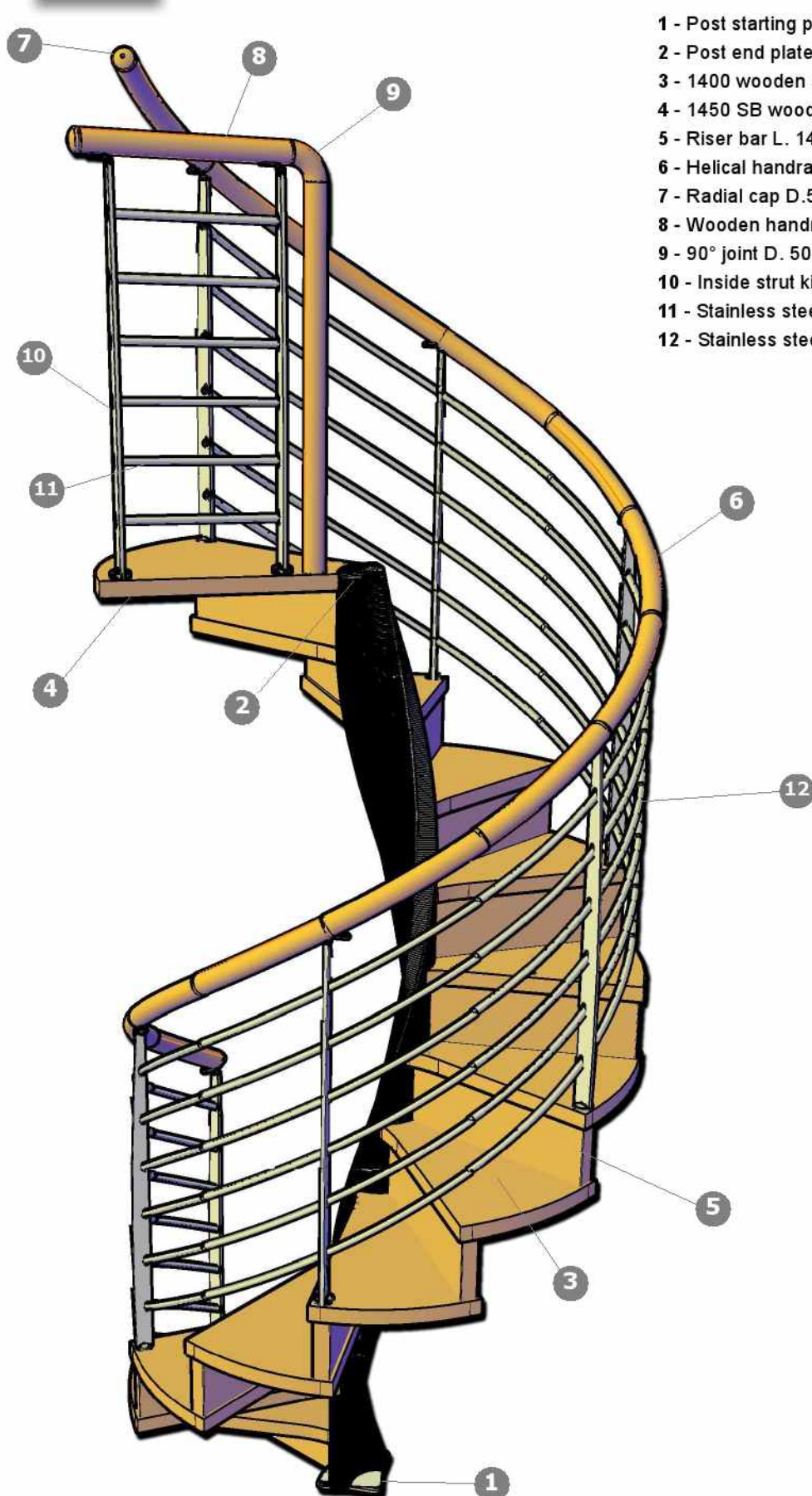
### "Staircase"

Check the size of the staircase and its total height, comparing them with the project. Use these dimensions to find the exact centre of the staircase, then mark it on the floor.



### "Staircase project"

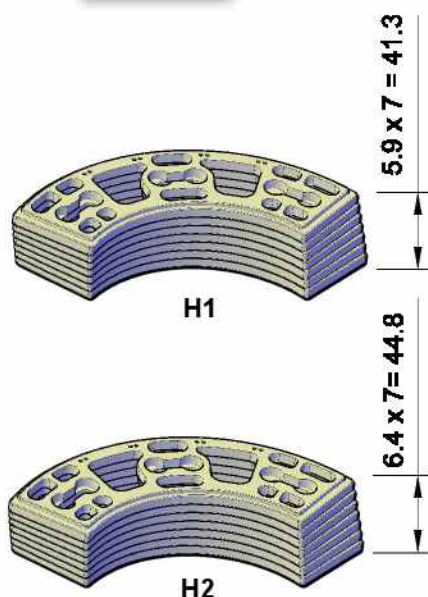




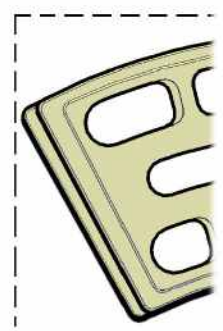
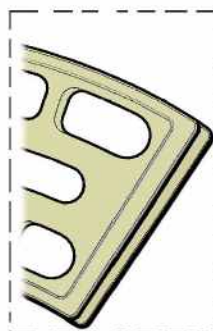
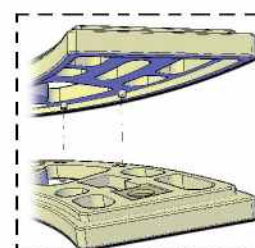
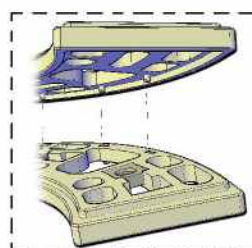
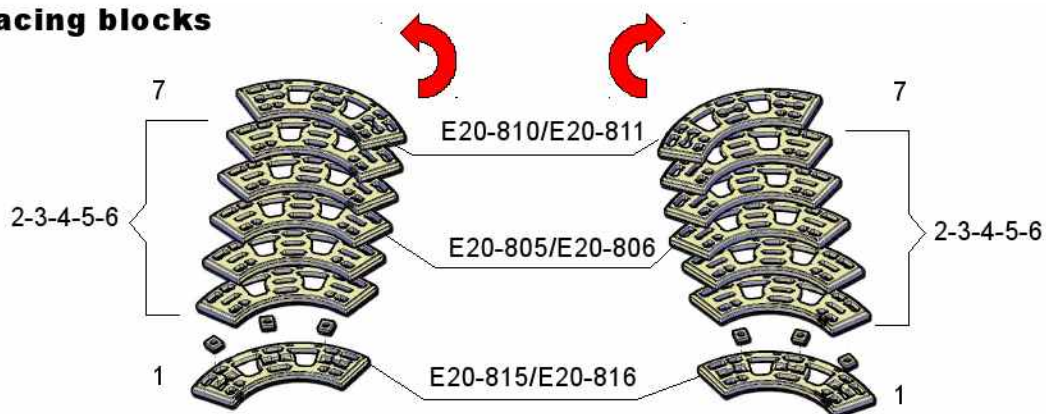
1 - Post starting plate E20	Cod. E20-820
2 - Post end plate E20	Cod. E20-835
3 - 1400 wooden step E20	Cod. E20-20
4 - 1450 SB wooden step TT E20	Cod. E20-71
5 - Riser bar L. 1400 th. 40 E20	Cod. E20-420
6 - Helical handrail 1400 C20	Cod. C20-110
7 - Radial cap D.50	Cod. LE-20
8 - Wooden handrail D. 50 L. 1000	Cod. LE-05
9 - 90° joint D. 50	Cod. LE-10
10 - Inside strut kit R4	Cod. R4-11A
11 - Stainless steel 1500 mouldings Ø12	Cod. FI -07A
12 - Stainless steel 3000 mouldings Ø12	Cod. FI-06A



## Small spacing blocks

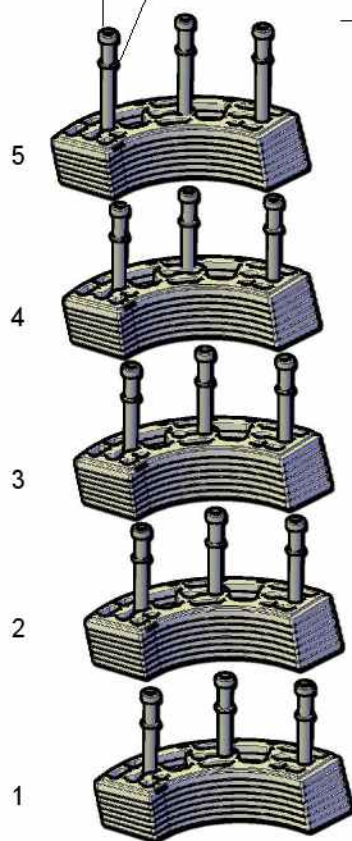


The small plates can have two thickness levels (th.): 5.9 mm or 6.4 mm



BU-861-ZB

BU-598-ZB



The spacing blocks consist of seven small plates:

- the first one contains three square nuts
- the small plates from the second to the sixth are all the same;
- on the seventh small plate it is possible to place the head of the screws without them protruding.

All the small plates can be assembled in a clockwise or anticlockwise climbing direction. In the package, the stairs are provided already assembled according to the climbing direction stipulated in the project. If it should become necessary to change the climbing direction of the stairs, the mutual position of the small plates should be reversed, using as reference the pins on the bottom side of each plate. Also the position of the square nut on the first plate needs to be reversed accordingly.

### Number of small blocks per riser (A)

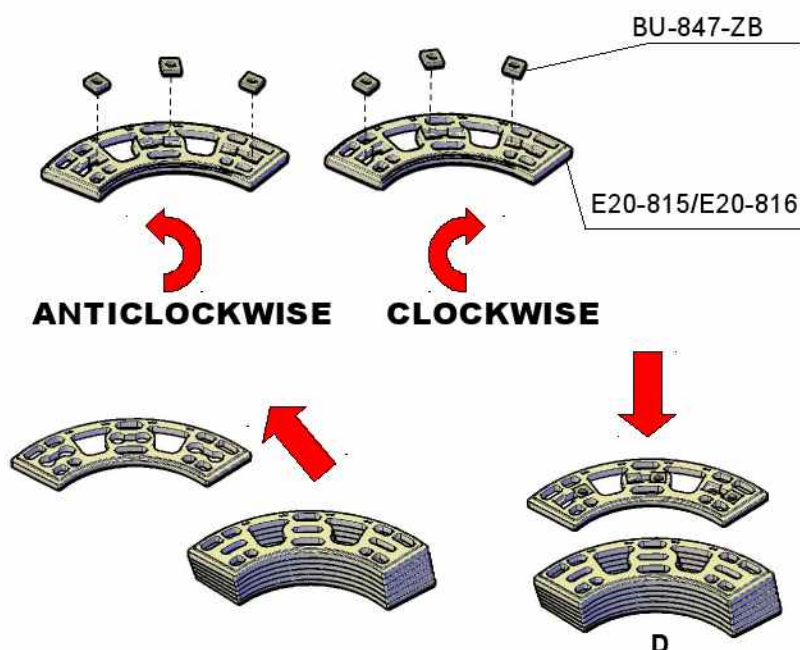
A= 206.5 mm	A= 217 mm	A= 224 mm
H1 x 5	H1 x 2 H2 x 3	H2 x 5

For a riser (A), you need five blocks, amounting to a total of 35 small plates. Inside the package, the blocks are already assembled and divided into groups of five, depending on the type of riser. The risers in the stairs can be all of the same size or of adjacent sizes.

Example:

$$H = 2541 \text{ mm} = \langle A \text{ min.} \times 6 \rangle + \langle A \text{ average} \times 6 \rangle$$

*It is advisable to proceed in order, without mixing the various risers.*



The starting plate is reversible and can be placed following either a clockwise or anticlockwise climbing direction.

*The arrows on the plate show the climbing direction of the stairs.*

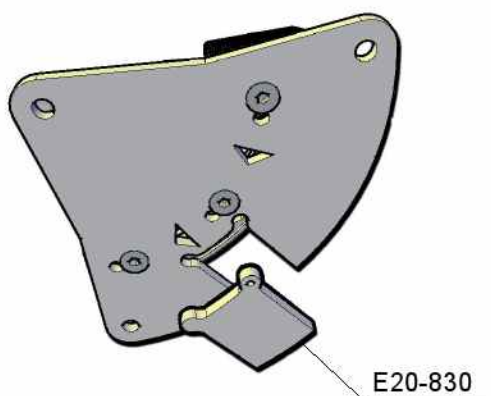
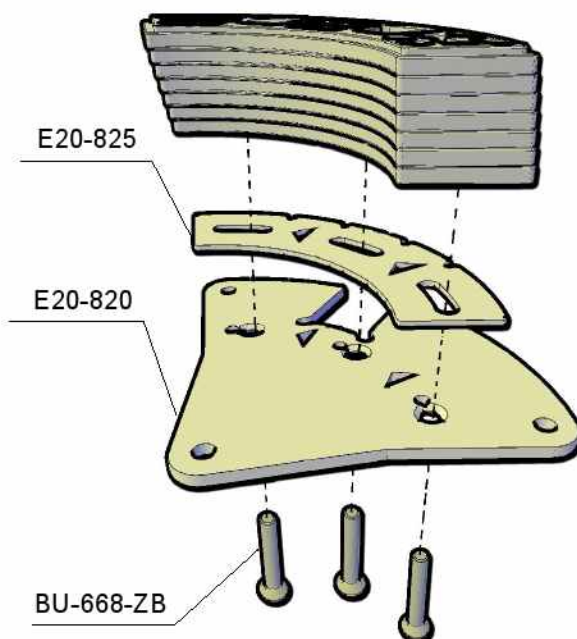
Assemble the plate with the balancing device E20-825 and the "starting" spacing block "D" using three TPS screws M8x55 mm.

The stair package includes one or more small blocks, from which you need to remove the first plate with the square nuts, using them to set up the first starting block.

If necessary, change the position of the nuts depending on the climbing direction of the stairs. The correct housing is in the reverse position compared to the one shown on page 5.

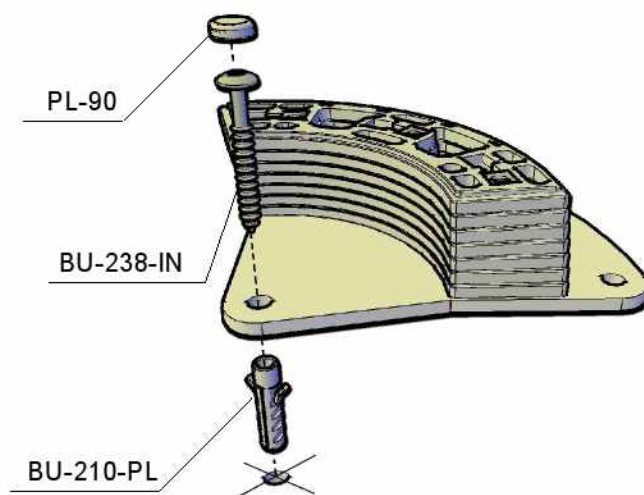
Take one spacing block and replace the seventh small plate with the one described above.

*Note: this needs to be done only on the first "starting" spacing blocks.*

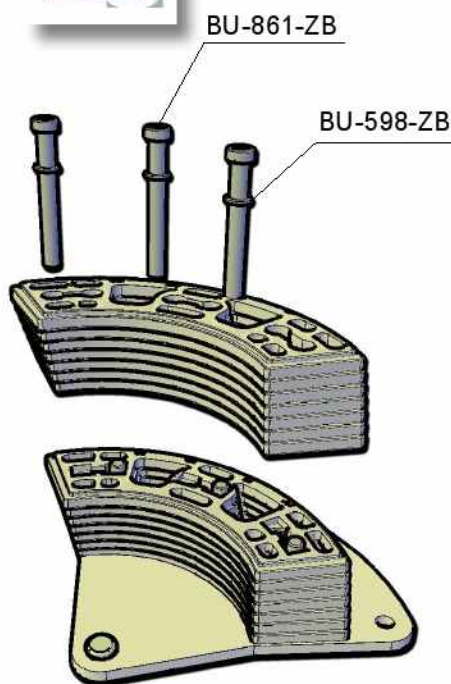


In the case of stairs WITHOUT a riser bar, it is necessary to assemble the shaped insert which closes the opening of the plate for the riser. In the case of stairs WITH a riser bar, it is not necessary to assemble the shaped insert.

Drill a hole using a Ø10 mm tip at the level of the mark showing the centre of the stairs, then fix the plate onto the central hole, using appropriate BU-238-IN and BU-210-PL nuts and bolts. Make sure that you do not tighten the screw completely in order to allow the plate to rotate and be perfectly adjusted, when fixing the landing step.



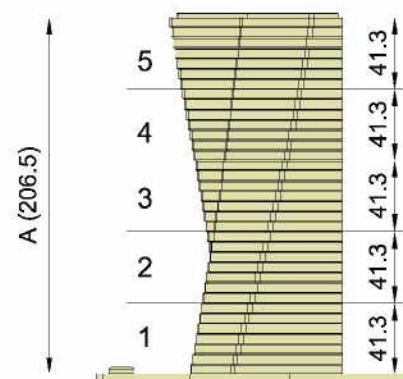




To complete the first riser, assemble the second small block, tightening it with the TCCE screws M8x84 mm and the relevant washers. (Tightening torque: 15 Nxm).

Continue with the other three spacing blocks.

*Note: join all the risers of the same kind in a sequence.*

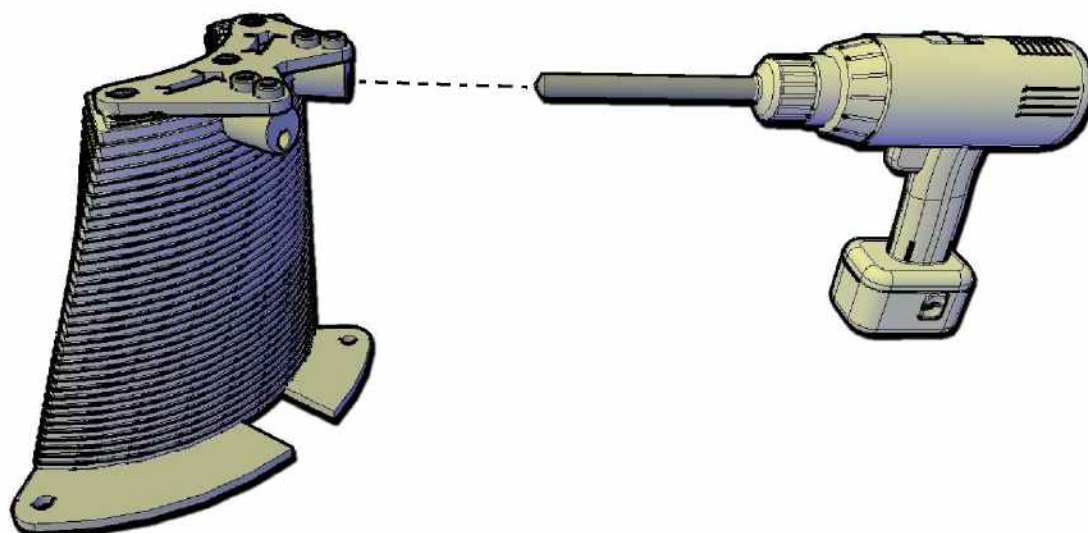
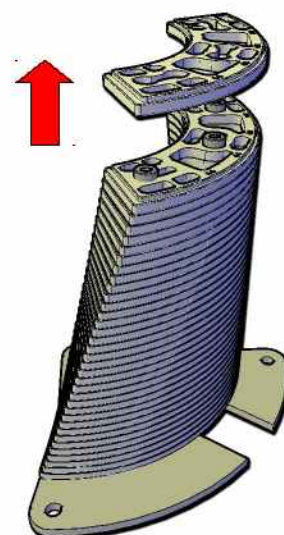
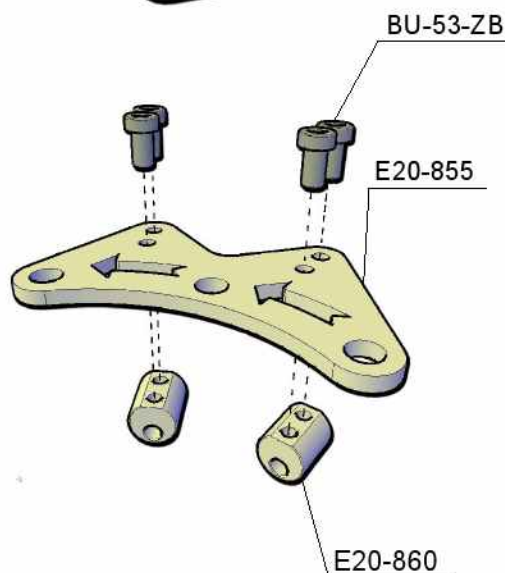


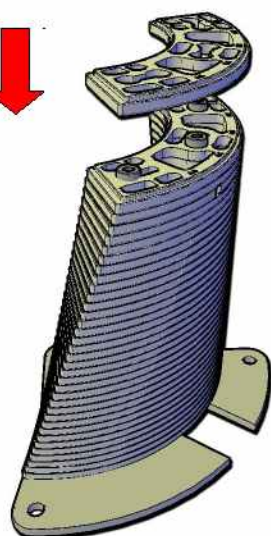
The sizes are given in millimetres

## "Drilling template"

Assemble the drilling template. The arrows on the plate show the climbing direction of the stairs. Tighten the two drilling bushes using four BU-53-ZB screws, in respect of the lower plate surface.

Remove the last small plate from the riser, then rest the drilling template using the head of the three screws as reference. Drill a hole at the level of the bushes reaching to the central channel in the structure, using a Ø10 mm drill tip.

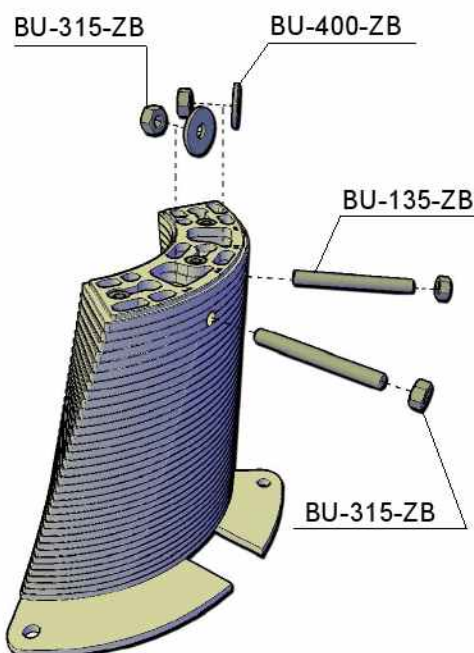




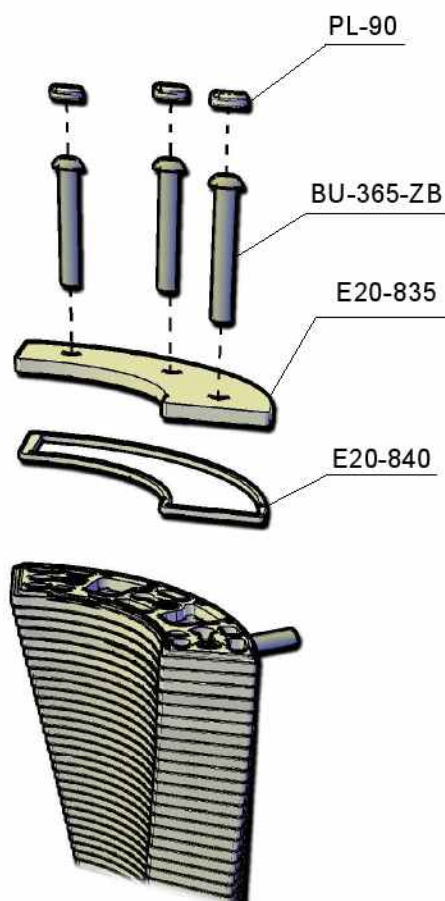
Remove the template, then replace the last small riser plate.

To fix the wooden step you will need BU-315-ZB, BU-135-ZB and BU-400-ZB. At this point it is possible to fix the wooden step, or to finish assembling the helical post, then fix all the steps (see page 11).

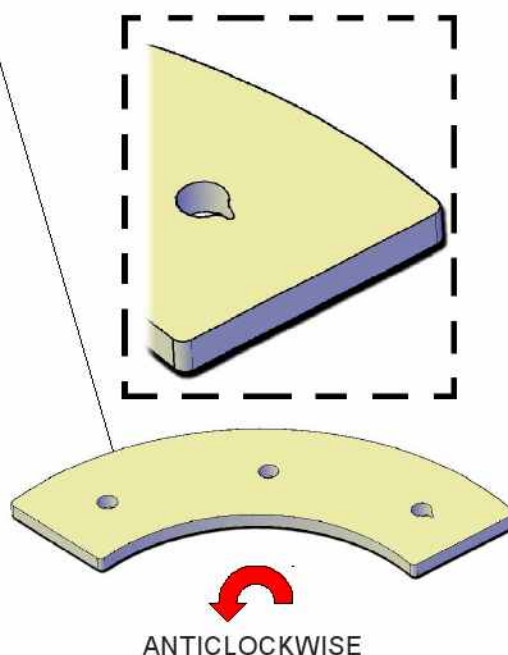
*Note: if the stairs have wooden steps, it is advisable to position them while assembling the post rather than later on (page 16).*



Continue in the same way until all the small blocks have been used. For each riser, repeat the actions described above (page 7).

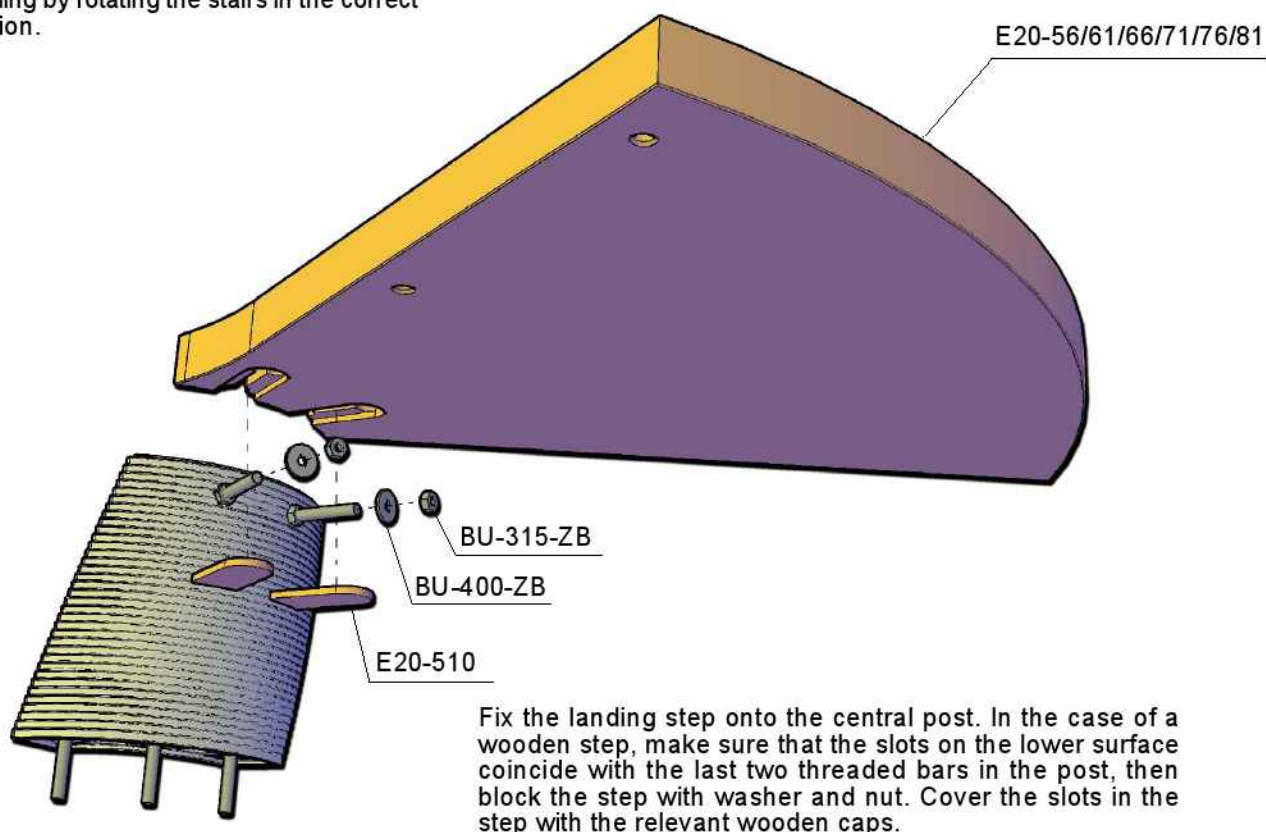


After setting up the post of the stairs, fix the balancing device E20-840 and the steel end cap E20-835. Assemble the end fitting E20-835, placing it with the slotted hole as shown in the figure. Use the three TBCE screws M8x55 mm with the relevant cap.

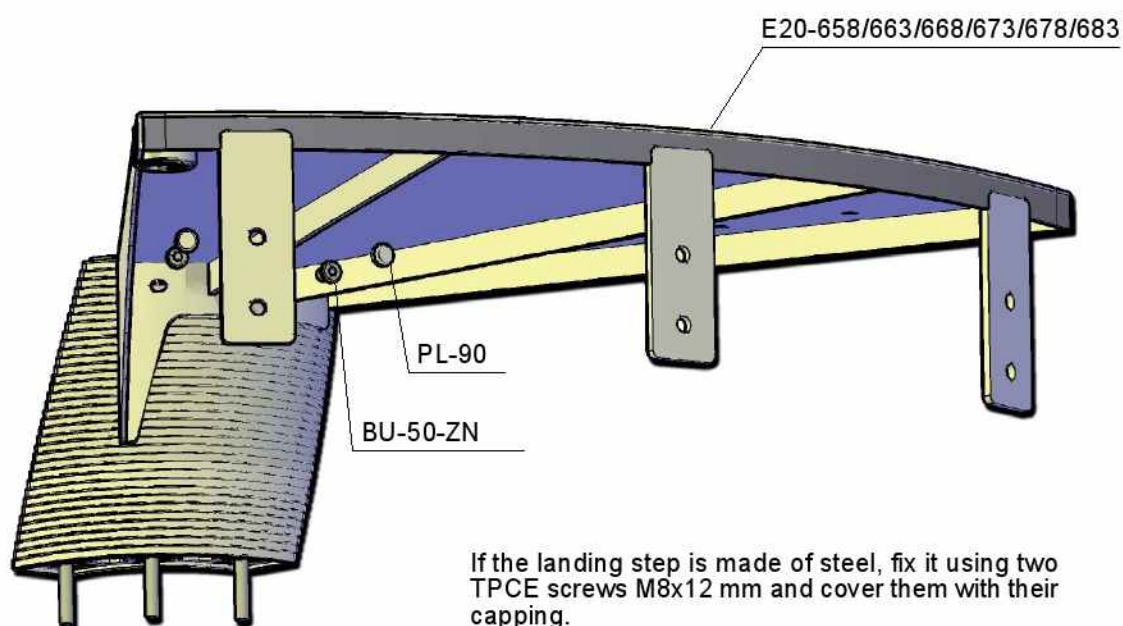


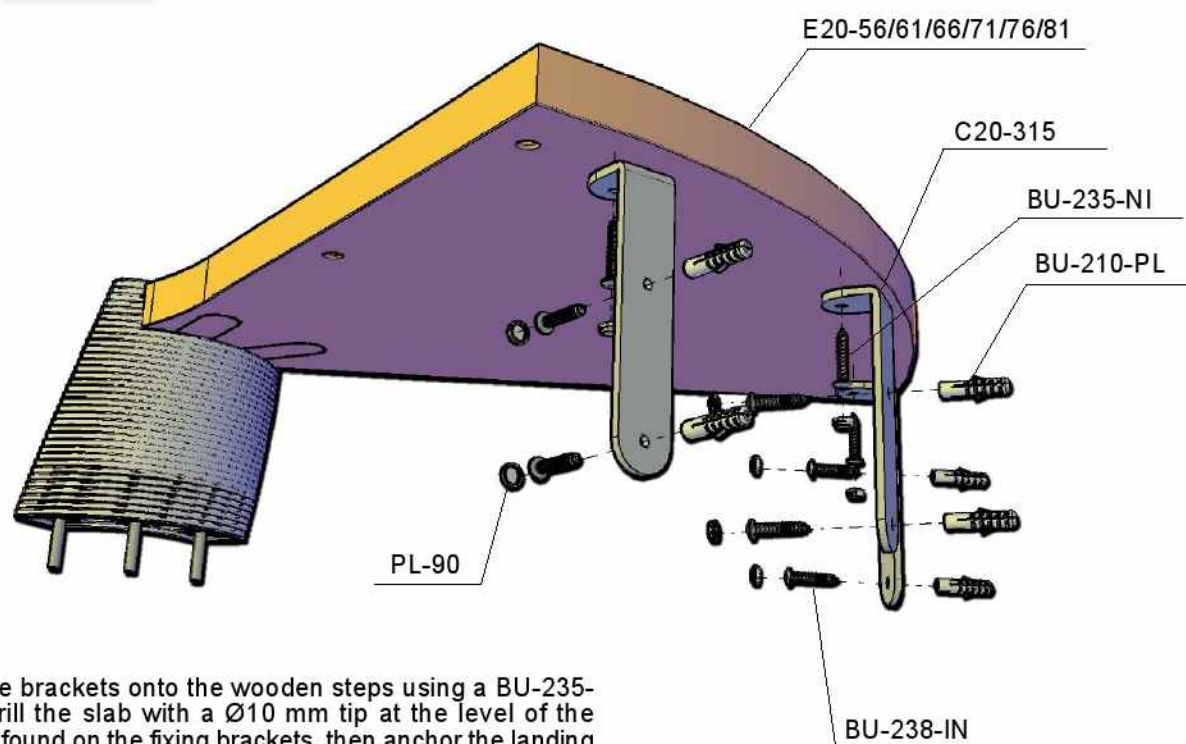


Position the landing by rotating the stairs in the correct outwards direction.



## Placing the metal landing

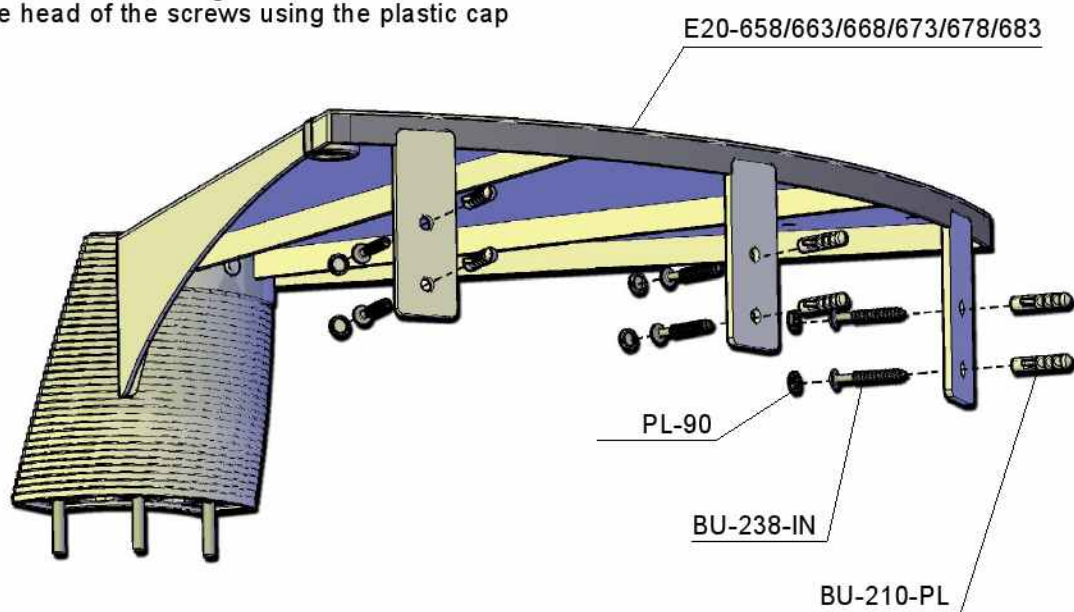




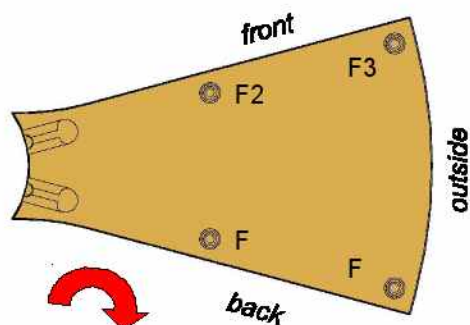
Fix the brackets onto the wooden steps using a BU-235-NI. Drill the slab with a Ø10 mm tip at the level of the holes found on the fixing brackets, then anchor the landing onto the slab using the appropriate screws: BU-238-IN and BU-210-PL. Cover the head of the screws with the plastic cap, PL-90.

## Placing the metal landing

Drill a hole in the slab, using a Ø10 mm tip, then fix the steel landing onto the slab, using BU-238-IN and BU-210-PL; cover the head of the screws using the plastic cap PL-90.



## "Step seen from below"



## Setting up the riser bar

The closed riser - RISER BAR - is only used in wooden stair versions, and its sizes are designed according to the stair and riser diameter.

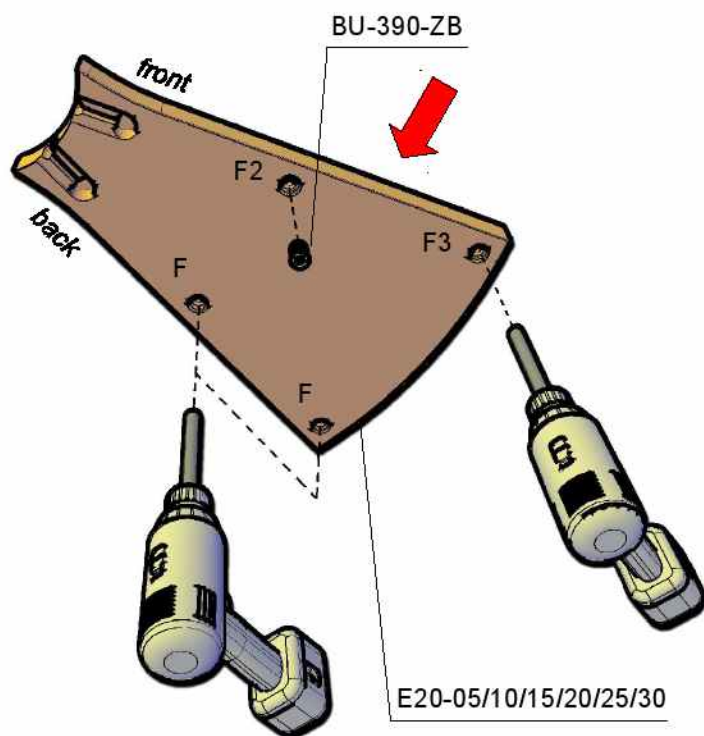
If the project for the stairs INCLUDES A RISER BAR, the steps shall include four non-through holes on the lower surface. Depending on the climbing direction of the stairs, the choice is made regarding the front side of the step.

In hole F2 (as shows in the figure on the side), it is necessary to use a BU-390-ZB bush; in hole F3, on the other hand, the said bush is used only if there is no banister strut on that step.

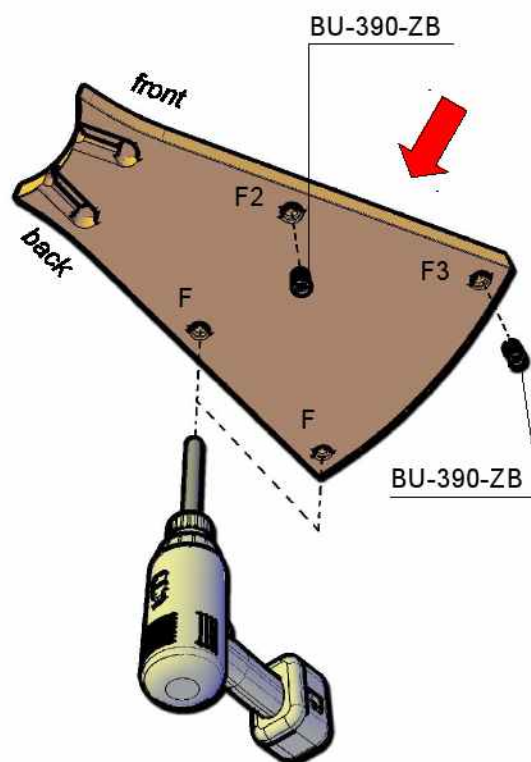
If there is a banister strut, then F3 needs to be drilled as a through hole using a Ø14 mm tip, in order to fix the strut.

The F holes on the back side of the step always need to be drilled through with a Ø14 mm tip.

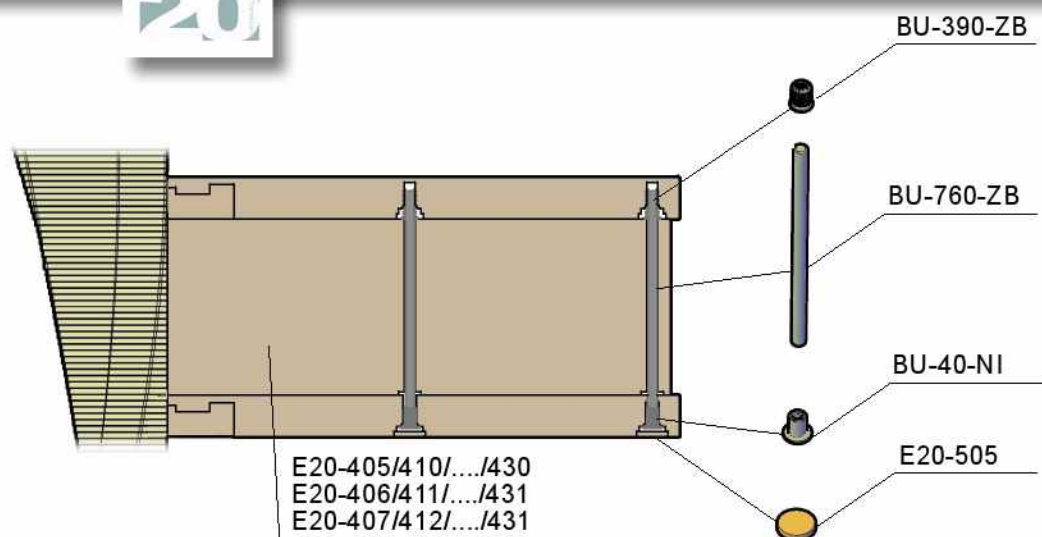
## "Step with banister"



## "Step without banister"



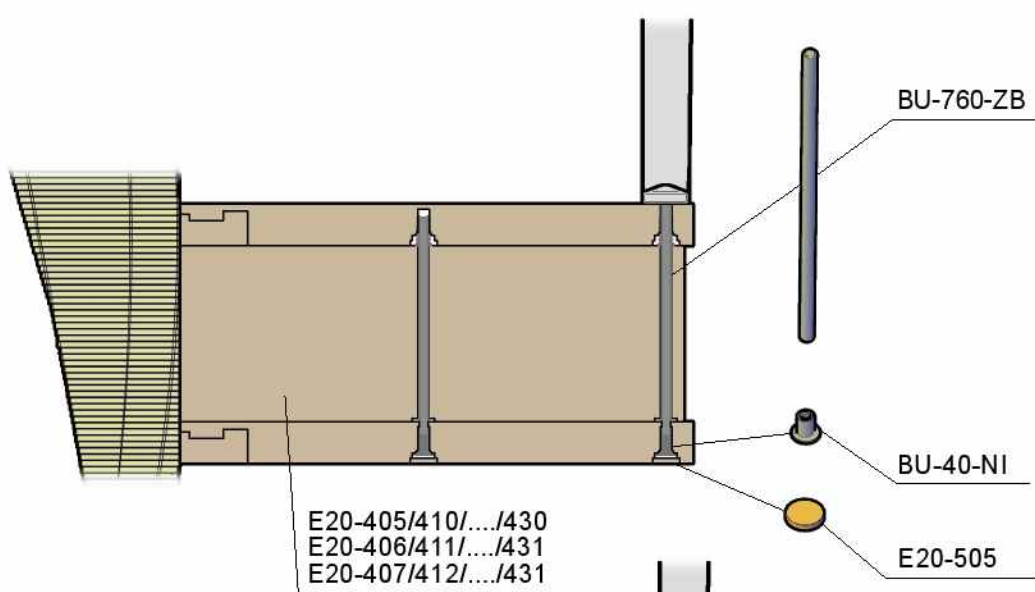




## "Step without banister"

The threaded bar BU-760-ZB needs to be cut to fit the size of the riser:

$A + 10 \text{ mm}$



## "Step with banister"

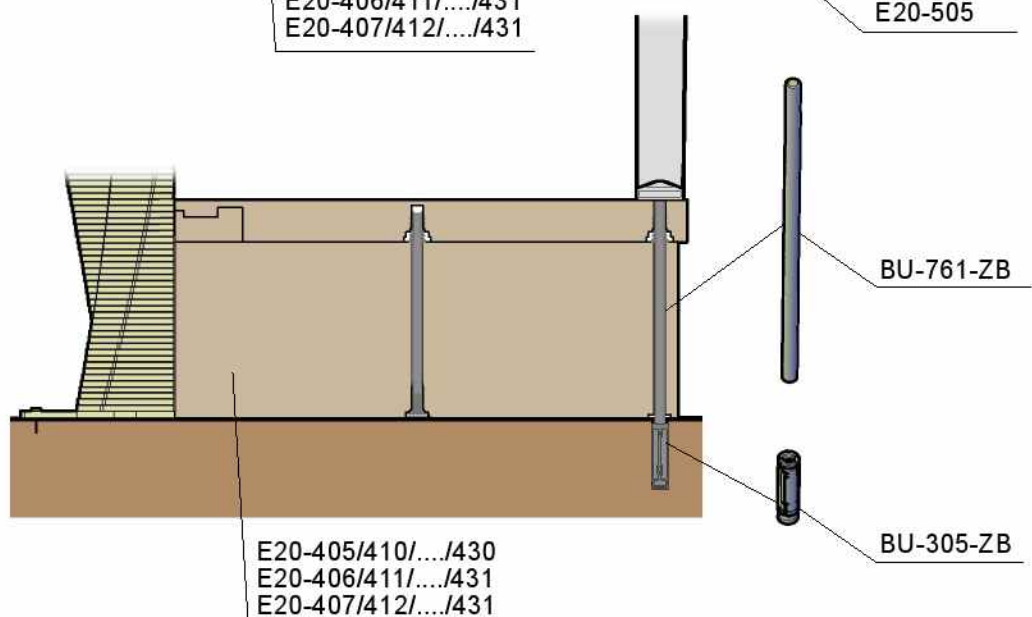
The threaded bar BU-760-ZB needs to be cut to fit the size of the riser and the kind of banister:

For struts R1 - R4 - R6

$A + 30 \text{ mm}$

For strut R5

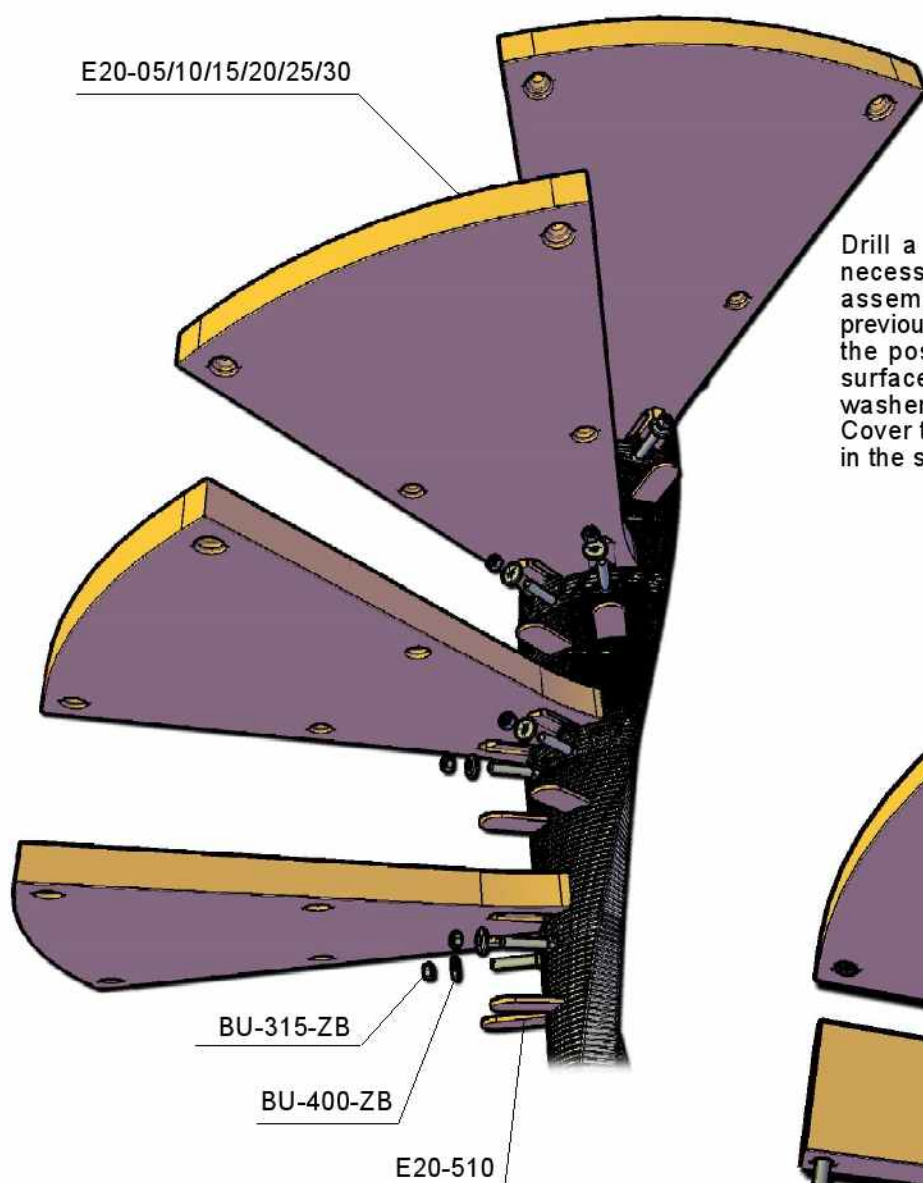
$A + 45 \text{ mm}$



## "Starting step"

The threaded bar BU-761-ZB needs to be cut to fit the size of the riser.

The nuts and bolts used to fix the small supports are covered using the relevant wooden cap E20-505. The structure is fixed onto the ground using a metal expander.



Drill a hole in the steps for the riser and, where necessary, place the relevant bush BU-390-ZB, then assemble the wooden steps. The nuts and bolts previously used on the riser modules when assembling the post, shall be housed in the slots on the lower surface of the step. Block the threaded bar with a washer BU-400-ZB and hexagonal nut BU-315-ZB. Cover the slots with the relevant wooden caps. Work in the same way on all the steps.

Block the riser bar using the specific nuts and bolts listed on page 12.

Work in the same way all along the stairs.

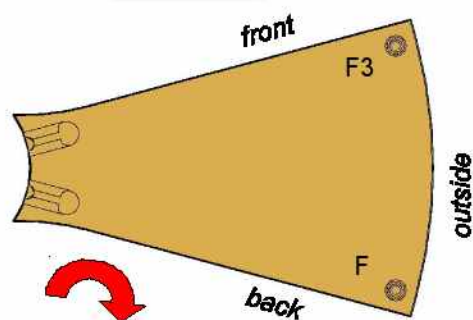
*Note: After having assembled all the steps, fix the starting plate onto the ground using the other two screws and expander.*

*Finish tightening the "first" screw, previously fixed (see page 6).*

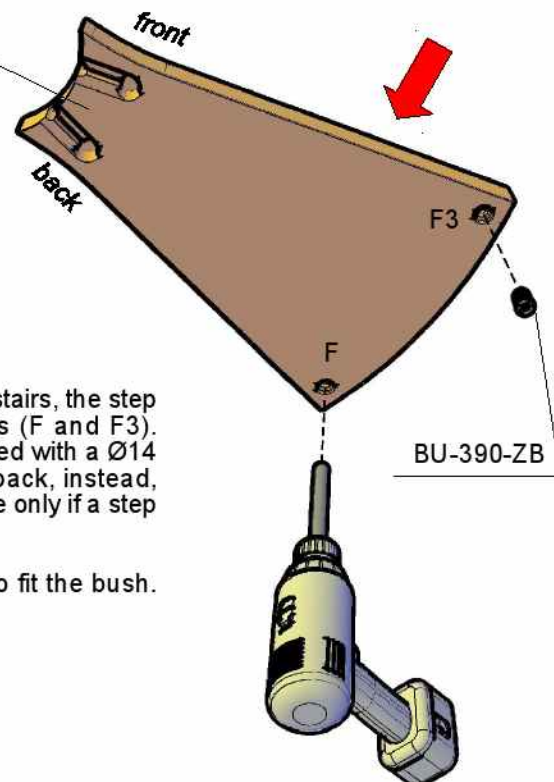


## "Step seen from below"

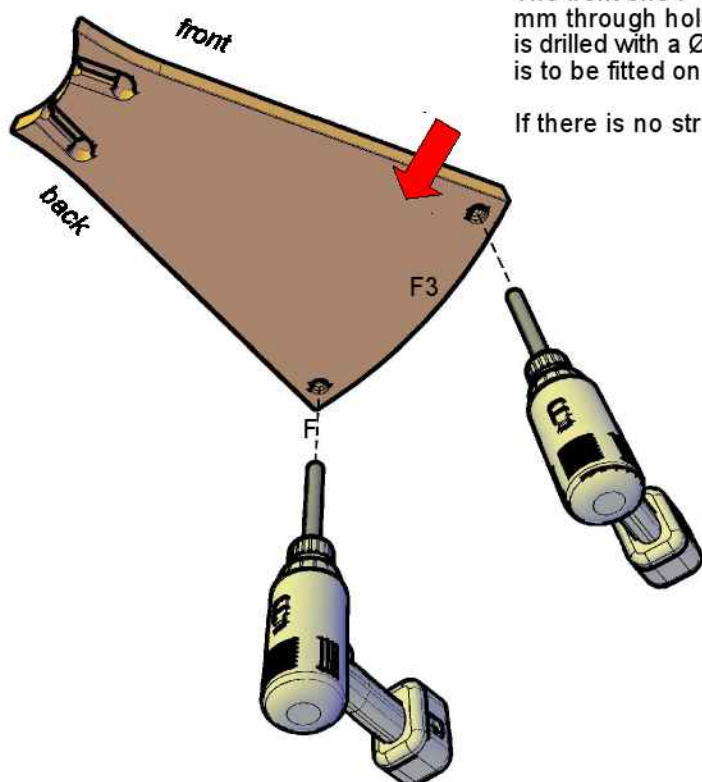
E20-05/10/15/20/25/30



## "Step without banister"

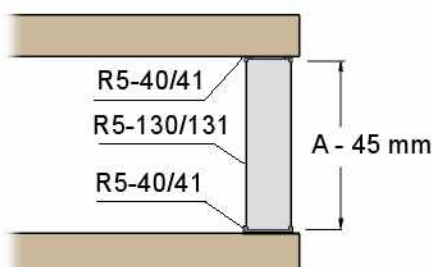


## "Step with banister"

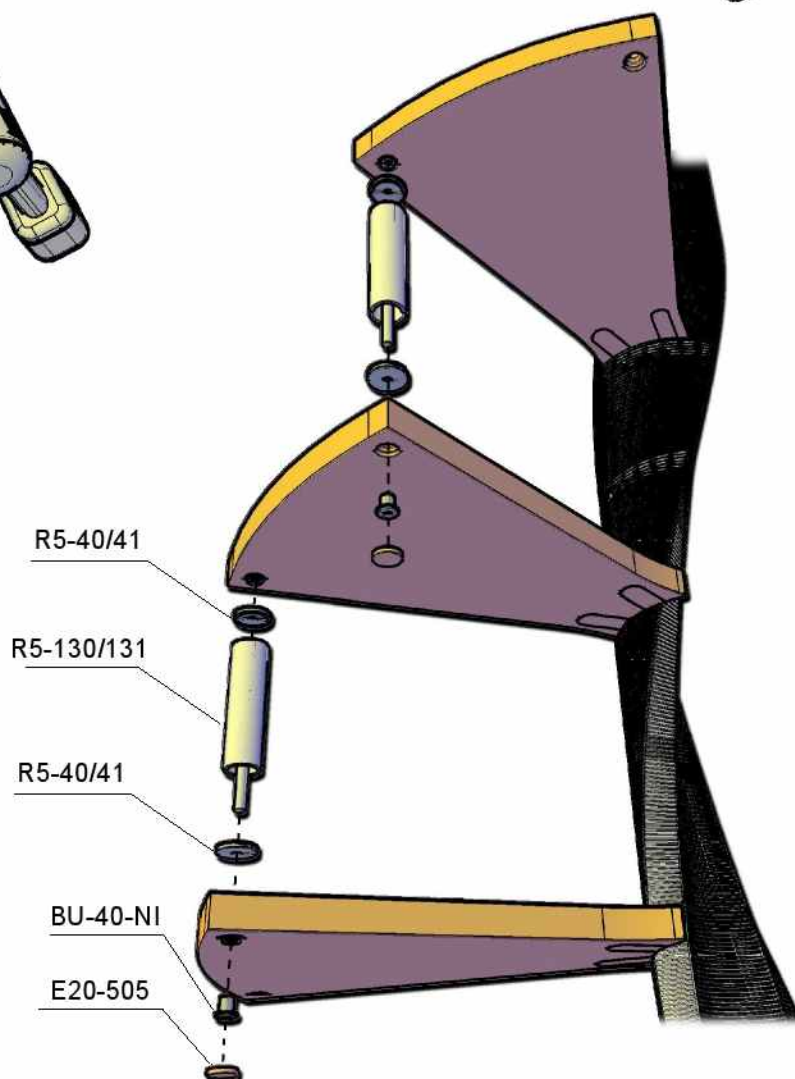


If THERE IS NO RISER BAR in the stairs, the step only has the two "outermost" holes (F and F3). The front one F shall always be drilled with a Ø14 mm through hole; F3 on the other back, instead, is drilled with a Ø14 mm through hole only if a step is to be fitted on that step.

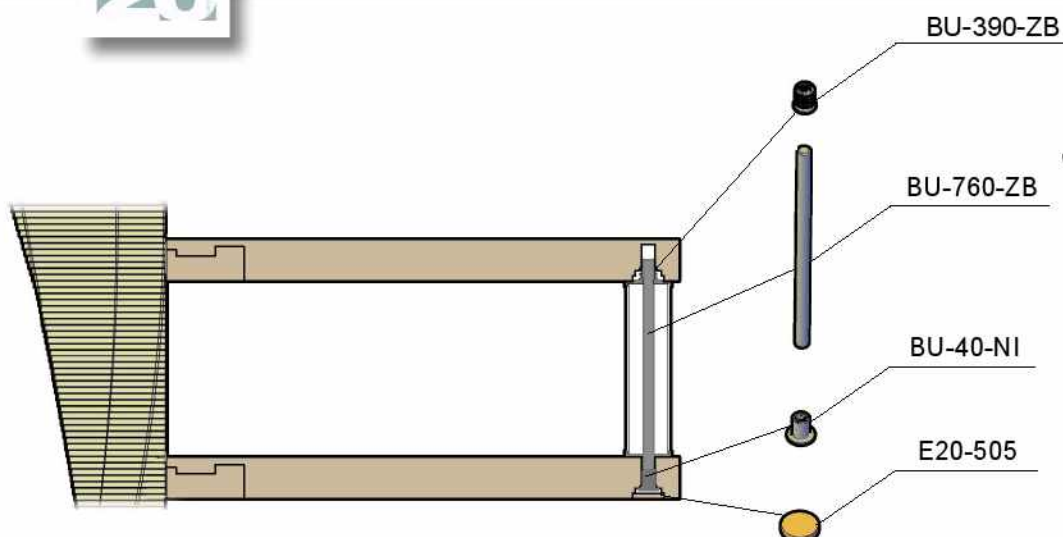
If there is no strut, it is necessary to fit the bush.



A small metal support shall be placed under each step, to be cut to fit the riser, using an A-45 mm formula.  
Block the small support between the steps, using specific nuts and bolts.  
(See also the following page).  
Work in the same way all along the stairs.



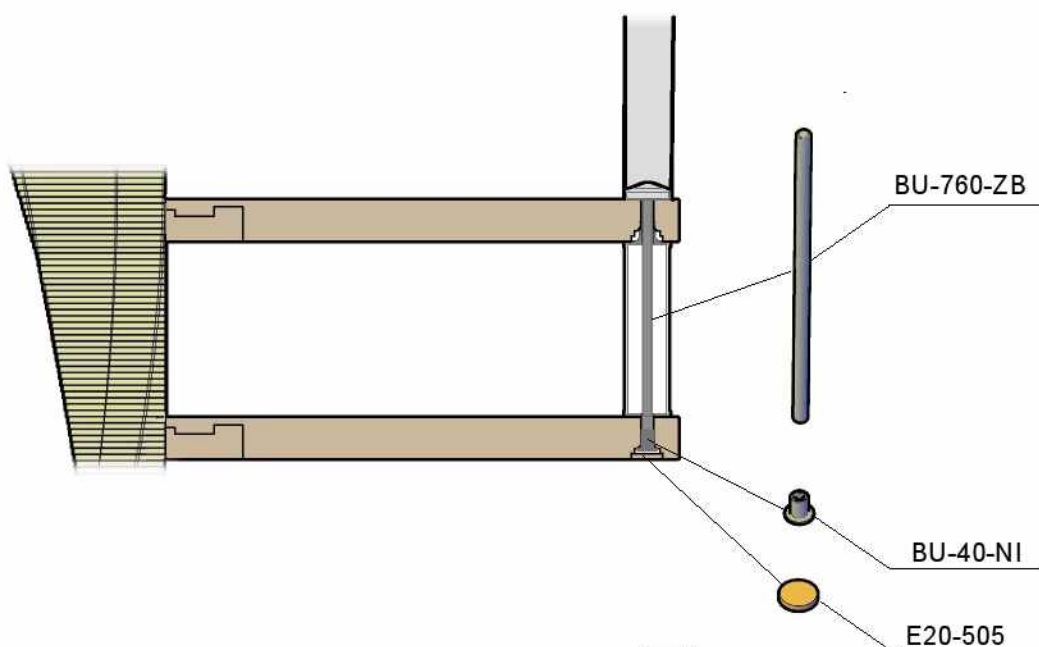




## "Step without banister"

The threaded bar BU-760-ZB needs to be cut to fit the size of the riser:

$A + 10 \text{ mm}$



## "Step with banister"

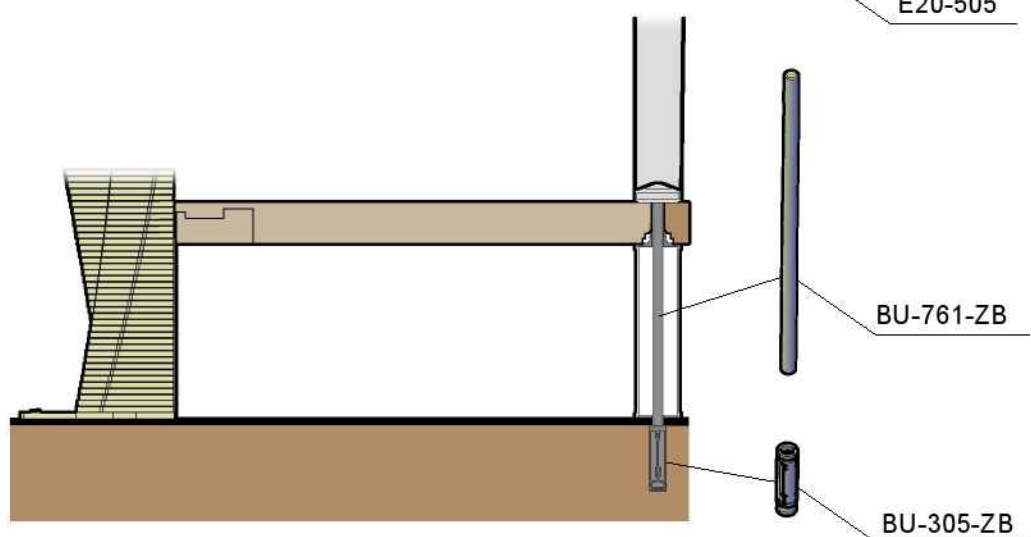
The threaded bar BU-760-ZB needs to be cut to fit the size of the riser and the kind of banister:

For struts R1 - R4 - R6

$A + 30 \text{ mm}$

For strut R5

$A + 45 \text{ mm}$



## "Starting step"

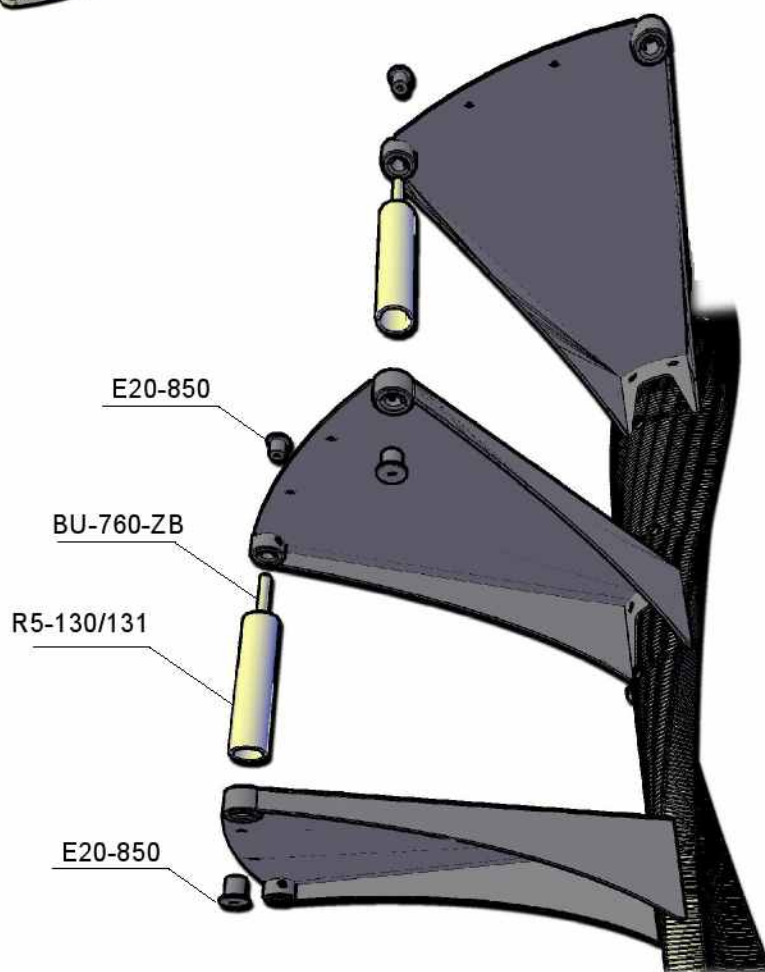
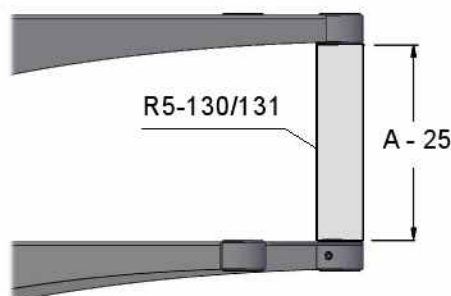
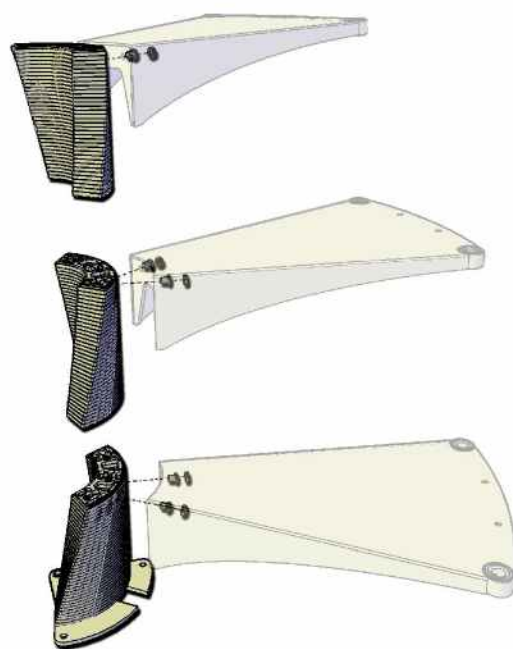
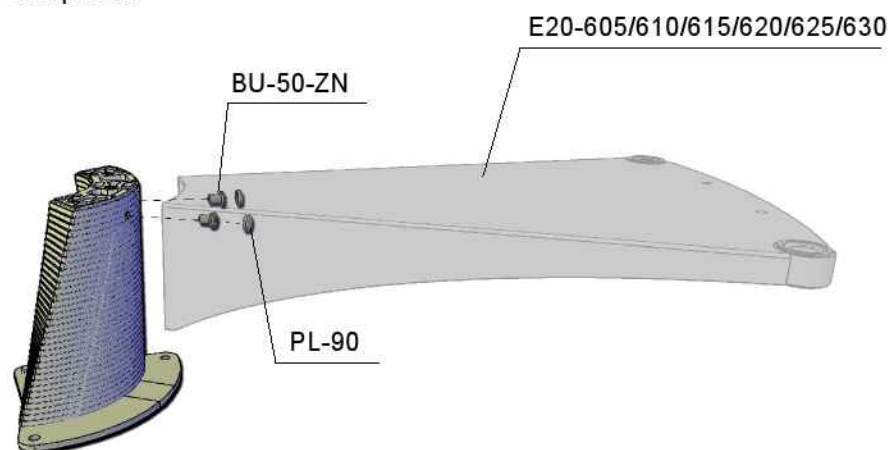
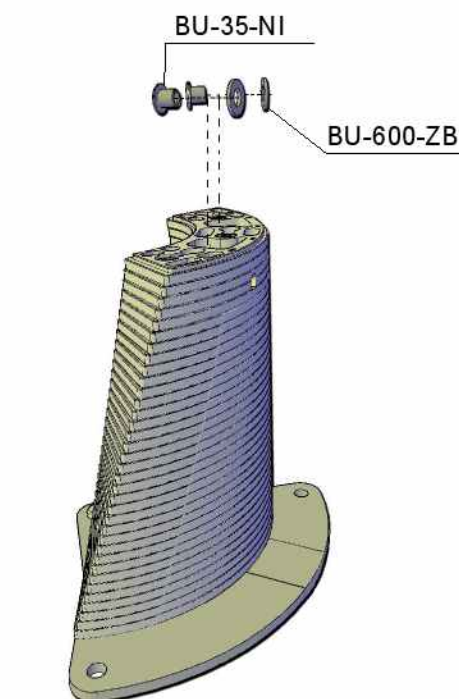
The threaded bar BU-761-ZB needs to be cut to fit the size of the riser.

The nuts and bolts used to fix the small supports are covered using the relevant wooden cap E20-505. The structure is fixed onto the ground using a metal expander.

As already pointed out (page 8), if the project for the stairs includes steel steps, it is advisable to assemble the steps at the same time as the post is being assembled.

Use the template and drill a hole in the riser package using a  $\varnothing 10$  mm tip. Fit the nut BU-35-NI and the washer BU-600-ZB inside it, then place the step and tighten it onto the blind nut using BU-50-ZN. Cover the head of the screw with the plastic cap PL-90.

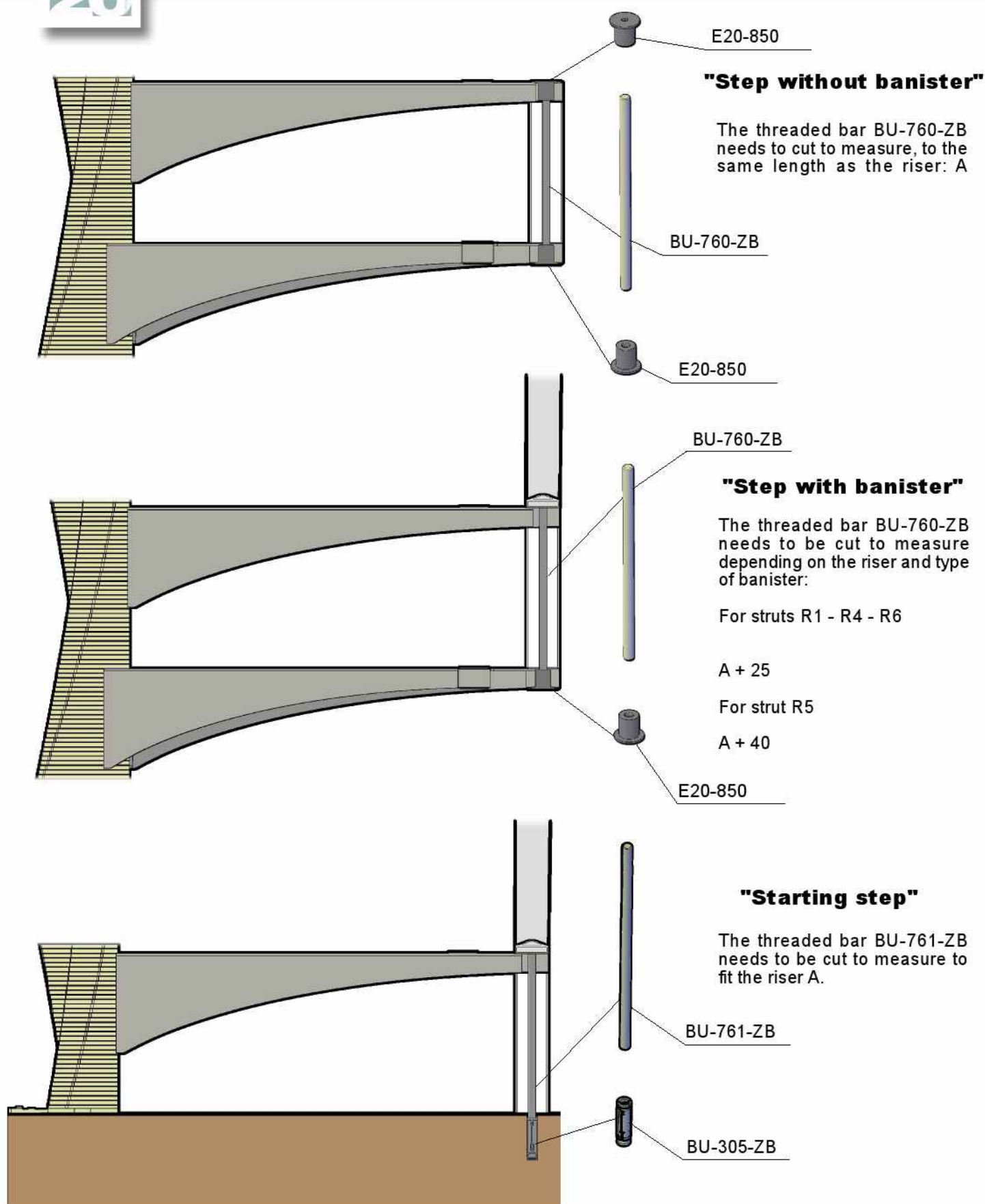
Work in the same way for the other steps, until the stairs have been completed.



Below each step it is necessary to place a small metal support, cutting it to a size that fits the riser, using the formula  $(A - 25 \text{ mm})$ . Block the small support between the steps, using specific nuts and bolts.

(See also the following page).

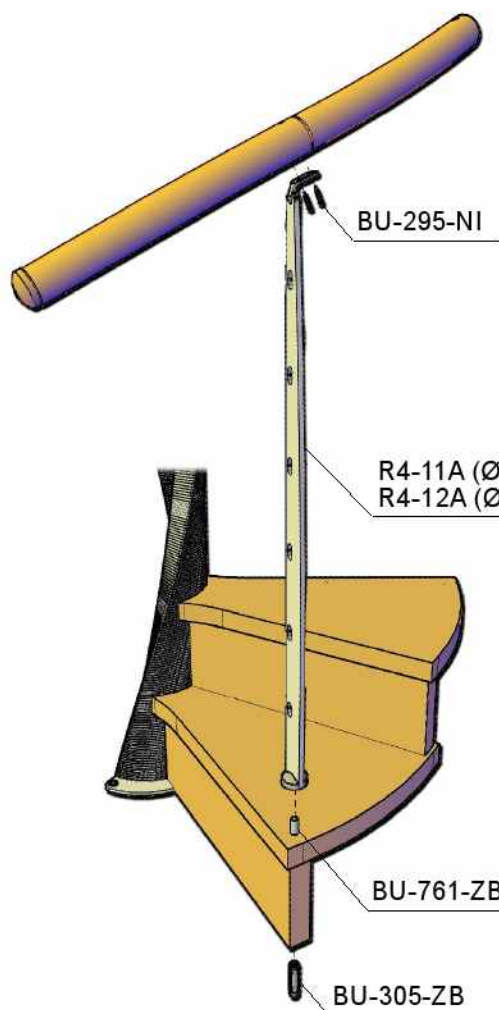
Continue in the same way all along the stairs.



The small supports are blocked between the steps, with blind nuts and threaded bar. The structure is fixed onto the ground using a metal expander.



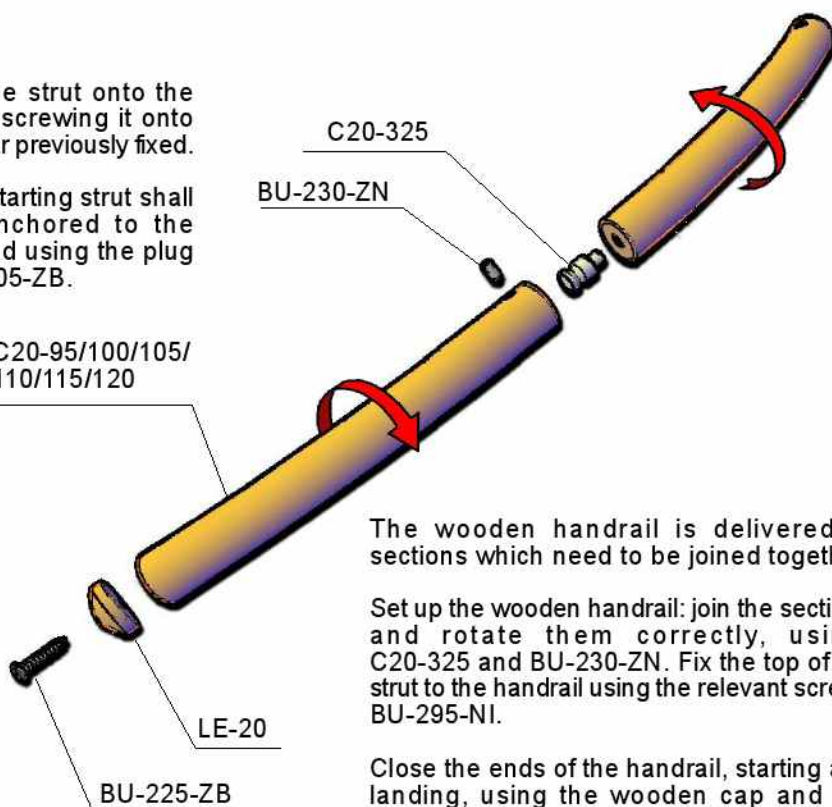
## Wooden handrail C2



Fix the strut onto the step, screwing it onto the bar previously fixed.

The starting strut shall be anchored to the ground using the plug BU-305-ZB.

C20-95/100/105/110/115/120



The wooden handrail is delivered in sections which need to be joined together.

Set up the wooden handrail: join the sections and rotate them correctly, using C20-325 and BU-230-ZN. Fix the top of the strut to the handrail using the relevant screws BU-295-NI.

Close the ends of the handrail, starting and landing, using the wooden cap and the relevant screw.

## Plastic handrail C1

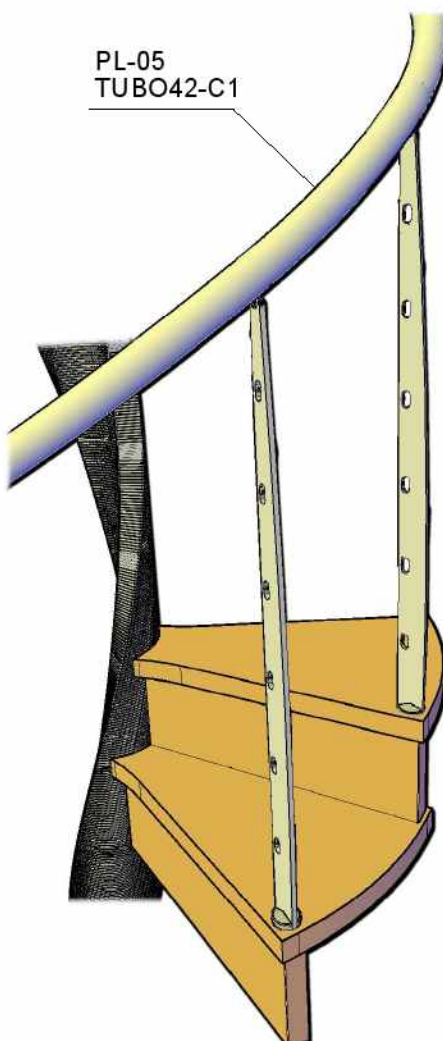
The plastic handrail is delivered as a whole spool which needs to be unrolled and fixed onto the struts as described for the wooden handrail.

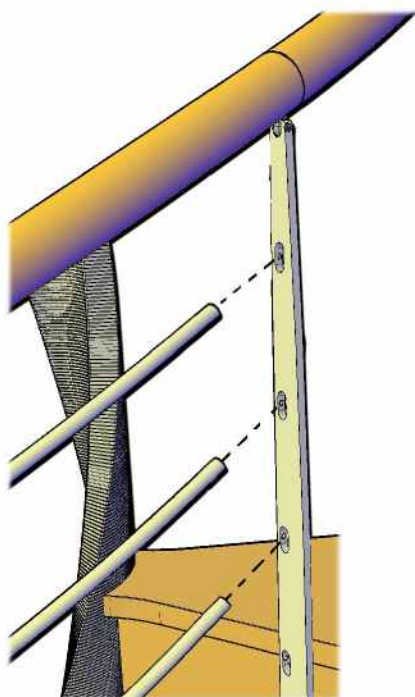
## Stainless steel handrail C3

The stainless steel handrail is delivered as one or more calendared pieces, which are fixed onto the struts as described for the wooden handrail.

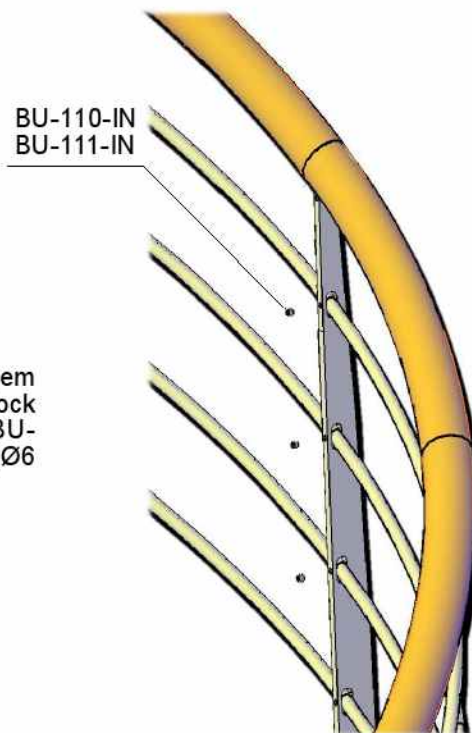
*Note: if the handrail is made of plastic, it is necessary to place the struts on all the steps.*

*If the handrail is made of wood or stainless steel, it is possible to place one strut every two steps.*

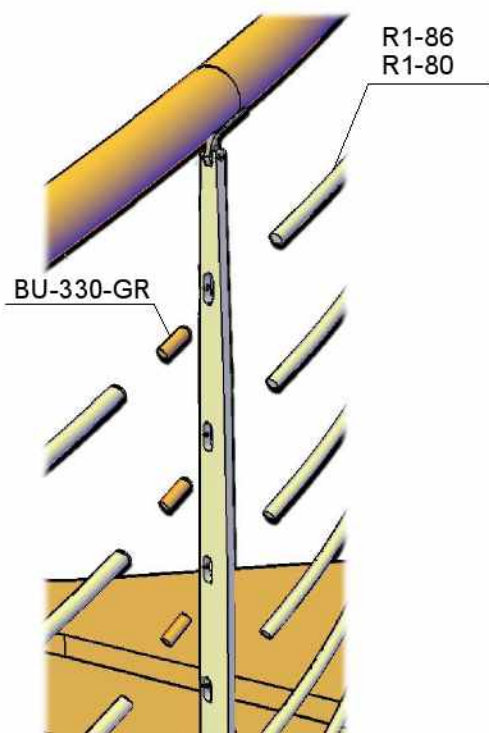




Set up the mouldings by inserting them into the slots in each strut, then block them with the relevant dowels BU-110-IN (Ø12 mm) , or BU-111-IN (Ø6 mm).

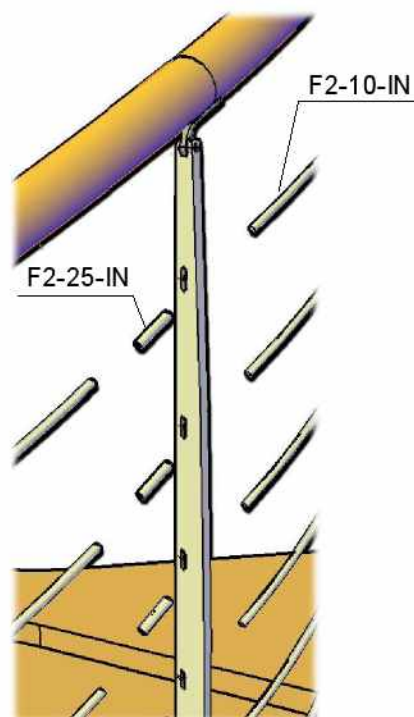


## Mouldings Ø12 mm F1



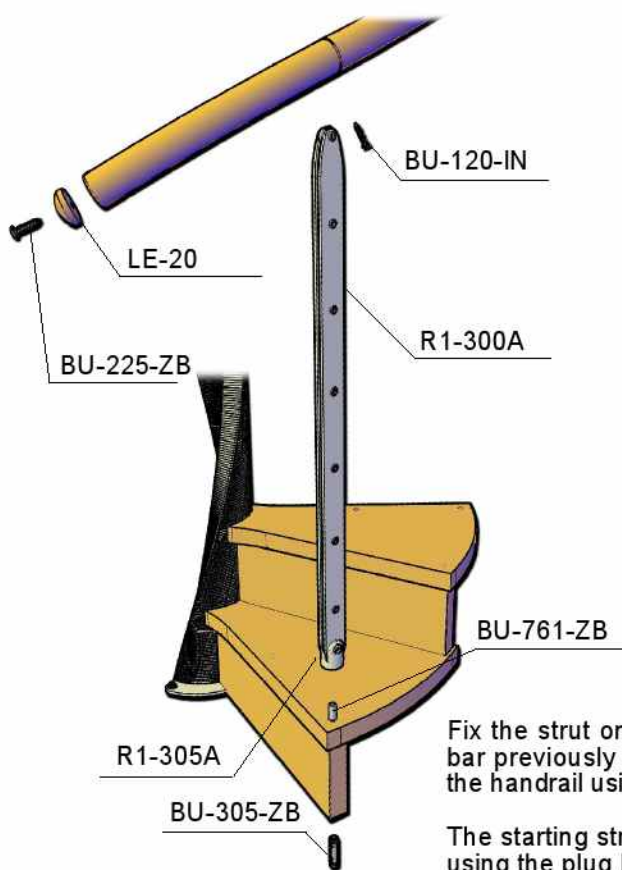
The mouldings Ø 12 mm are delivered as calendared elements with a length of 1500/3000 mm, to be joined together using a wooden pin BU-330-GR.

## Mouldings Ø6 mm F2



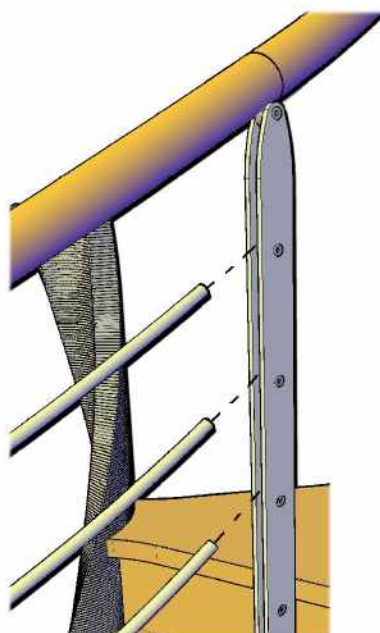
The mouldings Ø 6 mm are delivered as a 6-metre spool and can be linked one with the other using the relevant joint F2-25-IN.





Fix the strut onto the step, screwing it onto the bar previously set up. Fix the top of the strut to the handrail using the relevant screw BU-120-IN.

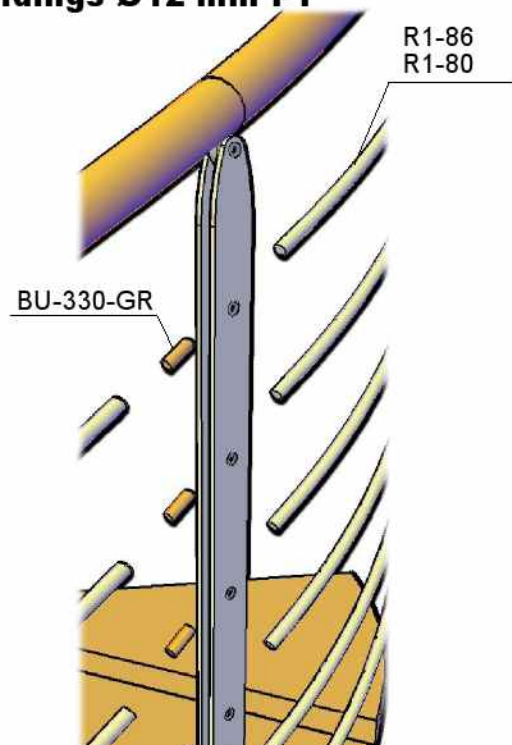
The starting strut shall be fixed onto the ground using the plug BU-305-ZB.



BU-370-IN

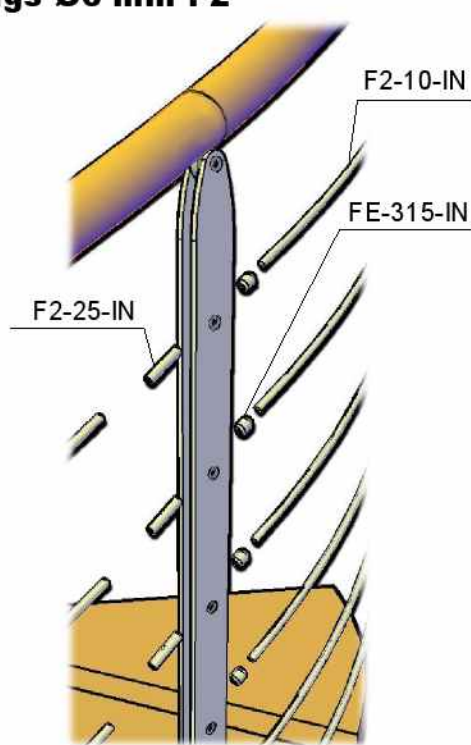
Place the mouldings, inserting them into the gap on the strut and block them using the relevant screws.

## Mouldings Ø12 mm F1



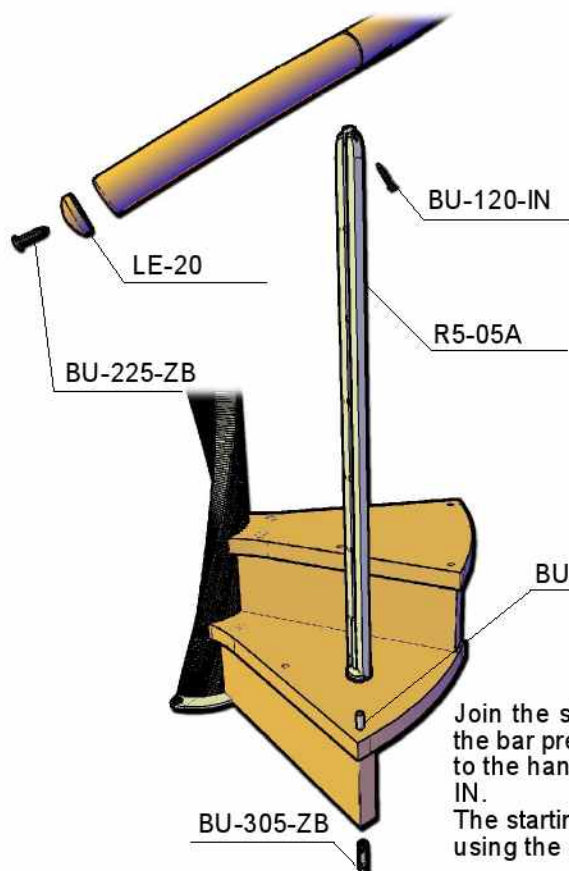
The mouldings Ø 12 mm are delivered in calendared elements with a 1500/3000 mm length, to be linked one with the other using a wooden joint BU-330-GR.

## Mouldings Ø6 mm F2

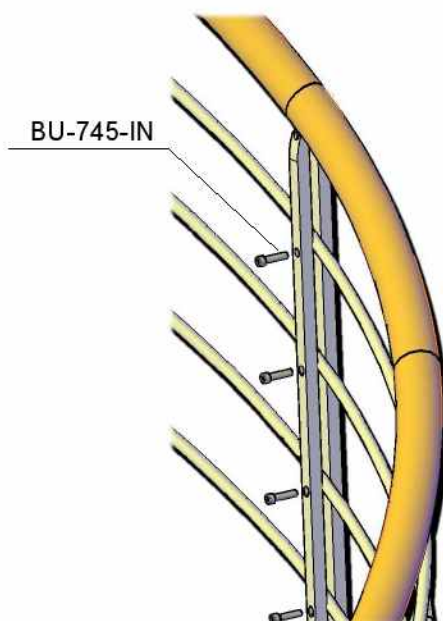
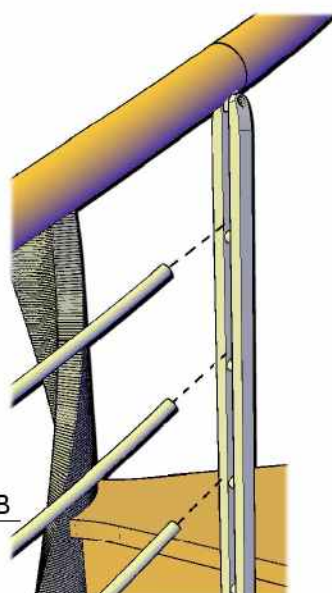


The mouldings Ø 6 mm are delivered in a 6-meter spool and can be joined together using the relevant coupling F2-25-IN. For each moulding Ø6 mm it is necessary to fit six FE-315-IN reducers in order to block the moulding inside the strut.



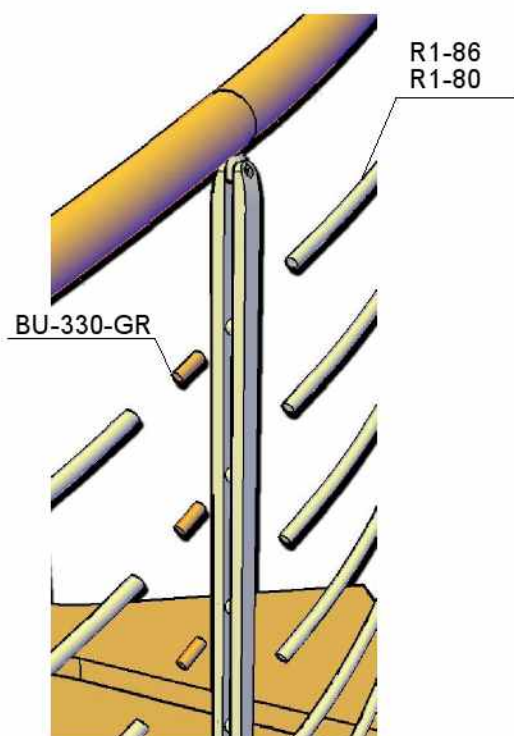


Join the strut onto the step by screwing it onto the bar previously fixed. Attach the top of the strut to the handrail using the relevant screw BU-120-IN.  
The starting strut shall be anchored to the ground using the plug BU-305-ZB.



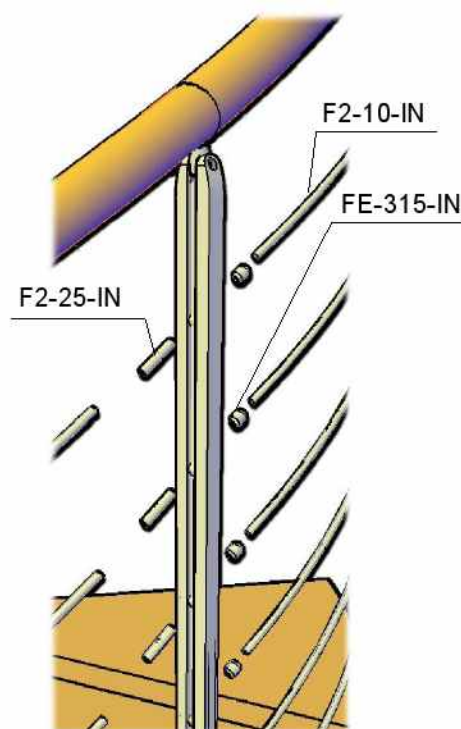
Set up the mouldings inserting them into the gap in the strut and block them inside using the relevant screws.

## Mouldings Ø12 mm F1

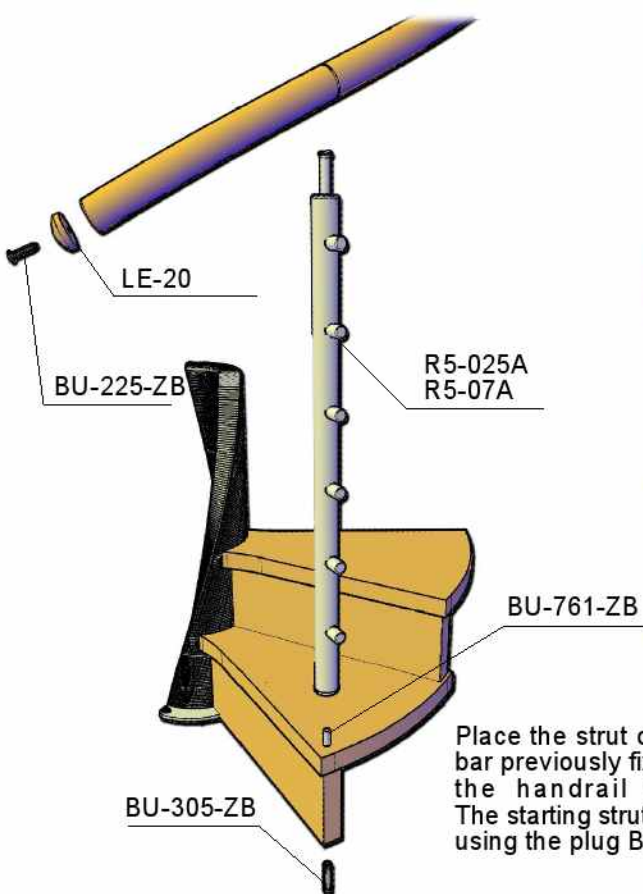


The mouldings Ø 12 mm are delivered as calendared elements with a 1500/3000 mm length, to be joined together using a wooden pin BU-330-GR.

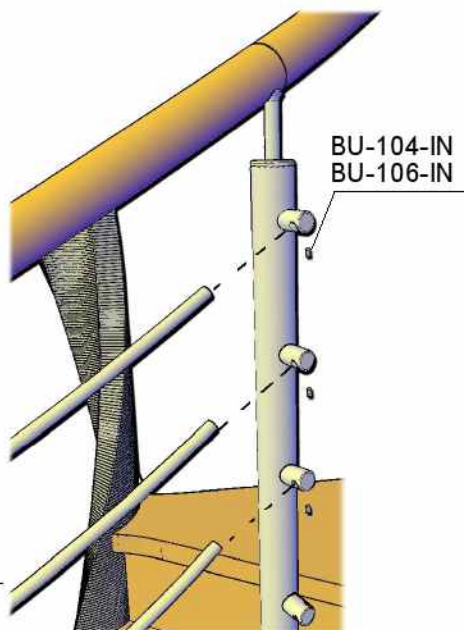
## Mouldings Ø6 mm F2



The mouldings Ø 6 are delivered as a 6-metre spool and can be joined together using the relevant coupling F2-25-IN. In each moulding Ø6 mm, it is necessary to fit six FE-315-IN reducers in order to block the moulding inside the strut.

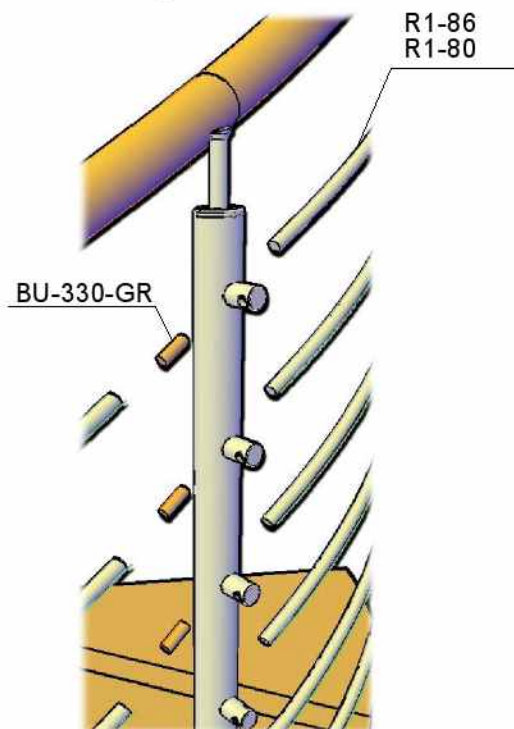


Place the strut on the step, screwing it onto the bar previously fixed. Fix the top of the strut onto the handrail using the relevant screw. The starting strut shall be anchored to the ground using the plug BU-305-ZB.



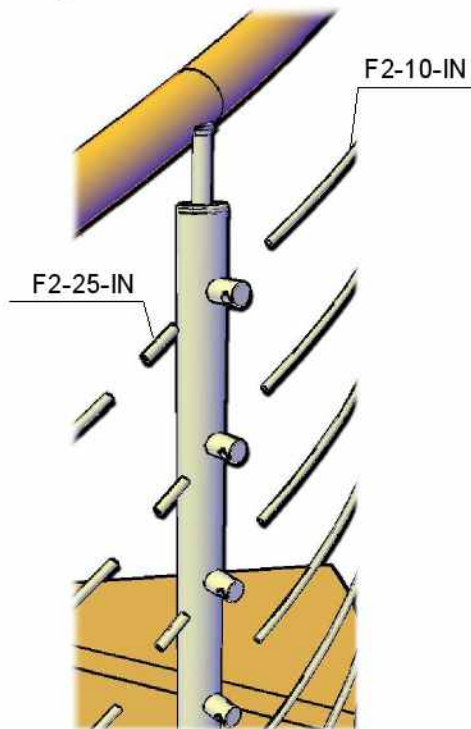
Place the mouldings by inserting them through the holes in each strut and block them using the dowels BU-104-IN (Ø12 mm), or BU-106-IN (Ø6 mm)

## Mouldings Ø12 mm F1



The mouldings Ø 12 mm are delivered as calendared elements with a 1500/3000 mm length, to be joined together using a wooden pin BU-330-GR.

## Mouldings Ø6 mm F2



The mouldings Ø 6 mm are delivered as a 6-metre spool and can be joined together using the relevant coupling F2-25-IN.



## Column quantity and size

STAIR Ø	OVERRIDING COLUMN	COLUMN 1	COLUMN 2
1100/1200	910 mm	1013 mm	-
1300/1400/ 1500/1600	910 mm	977 mm	1050 mm

Place in the lower part of each column the plastic bush and the small base-cover ring.

Screw the first column onto the starting bar, previously fitted into the step, also fixing it to the ground using the relevant expander BU-306-ZB.

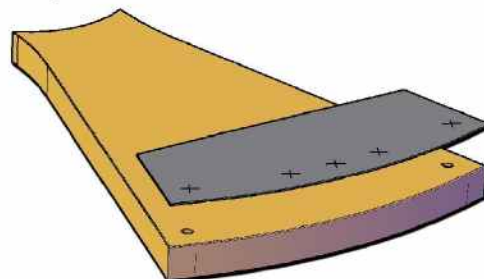
Assemble the middle columns (type 1 and 2, in the table), fixing them onto the step using a threaded bar M8x80 mm BU-135-ZB and blind nut BU-35-NI.

The overriding columns are fixed below the step using a washer BU-600-ZB and a blind nut BU-35-NI. The hole in the step is then closed using the wooden cap E20-505.

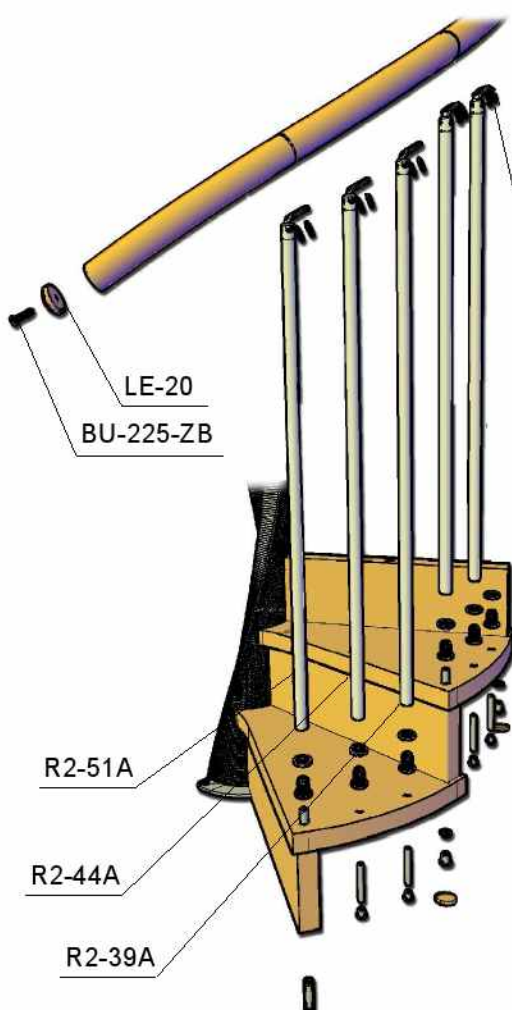
The number of columns per step and their height varies depending on the diameter of the stairs. See the table on the side.

Use the paper template provided to mark the position of the holes to be drilled into the steps, depending on the banister in the project.

Drill holes in the marked spots using a Ø10 mm tip.



## Stairs with riser bar



Fix the top of each column to the handrail using two screws BU-295-NI.

BU-295-NI

LE-20

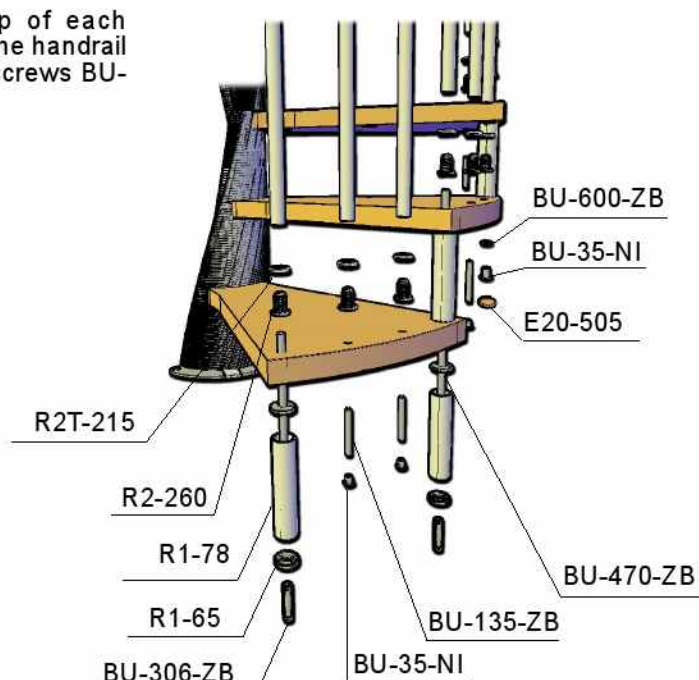
BU-225-ZB

R2-51A

R2-44A

R2-39A

## Stairs without riser bar



BU-600-ZB

BU-35-NI

E20-505

R2T-215

R2-260

R1-78

R1-65

BU-306-ZB

BU-470-ZB

BU-135-ZB

BU-35-NI

If there is no riser bar on the stairs, the banister is fixed in the same way as described above, with the addition of a small support at the start.

*Note: the type of handrail – wood, plastic or metal – does not affect the position and number of columns to be assembled.*



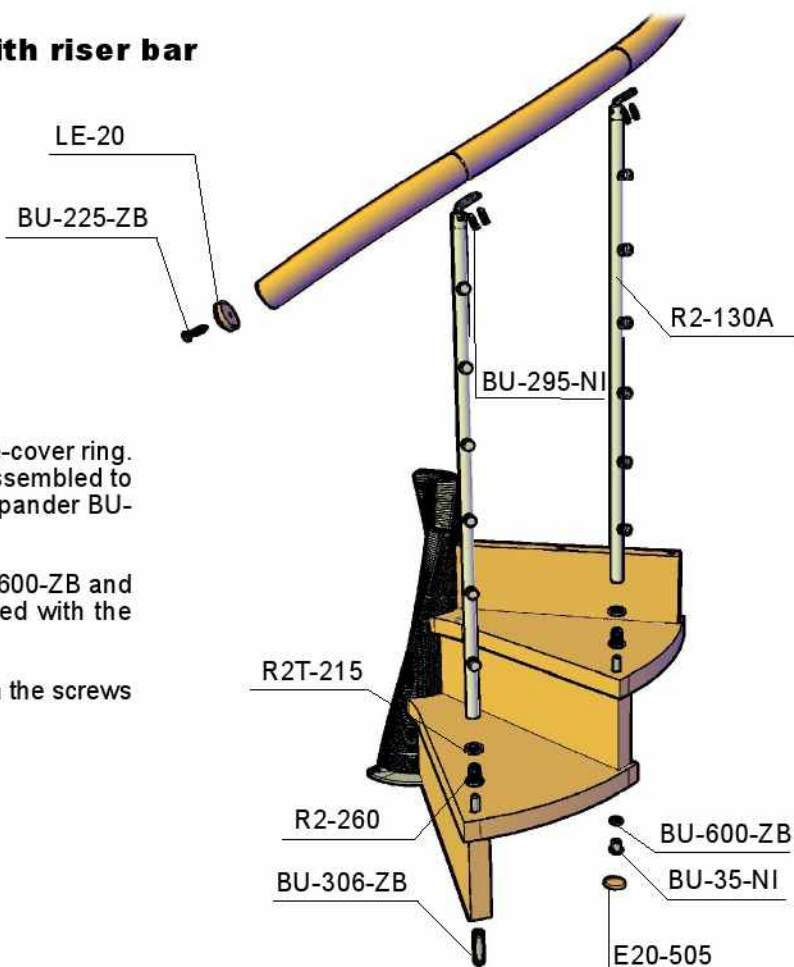
## Stairs with riser bar

Regardless of the type of handrail (wood, plastics or metal), the handrail of the R2C type consists of only one column per step (the one placed on the steps' overriding).

Insert in each column the plastic bush and the small base-cover ring. Screw the first column onto the starting bar previously assembled to the step, also fixing it to the ground using the relevant expander BU-305-ZB.

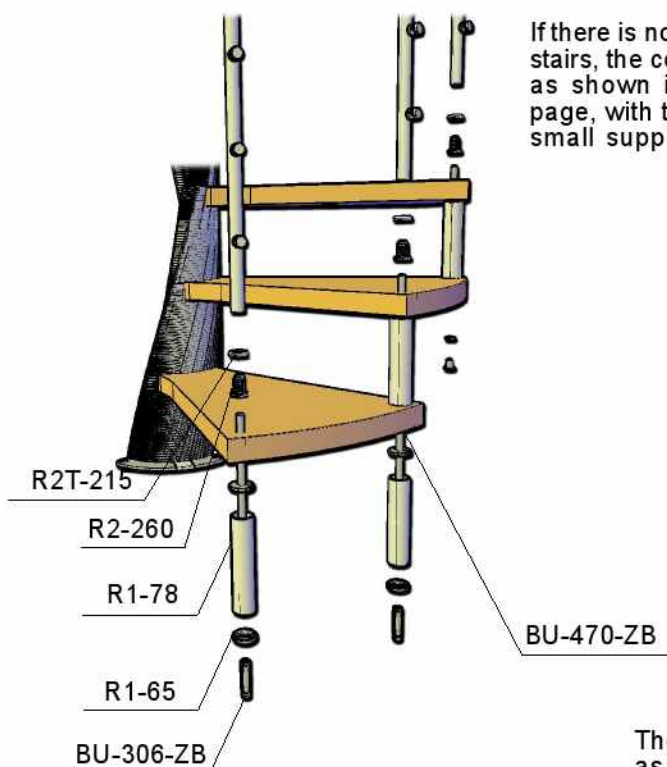
Fix the other columns below the step using a washer BU-600-ZB and a blind nut BU-35-NI. The hole in the step is then closed with the wooden cap E20-505.

Join the columns to the handrail, fixing them at the top with the screws BU-295-NI.

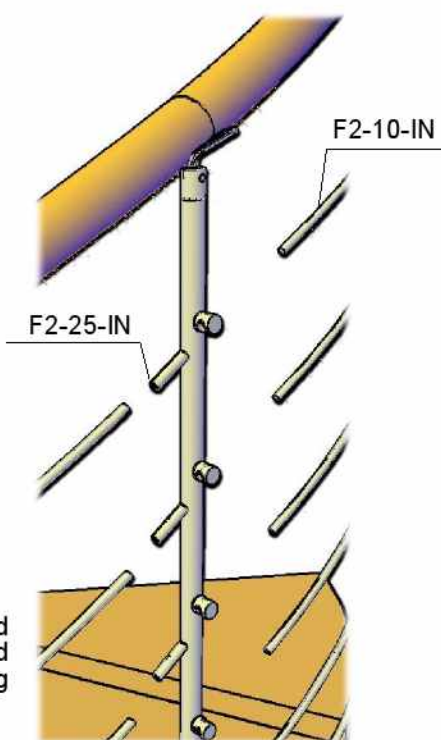


## Stairs without riser bar

If there is no riser bar on the stairs, the columns are fixed as shown in the previous page, with the addition of a small support at the start.

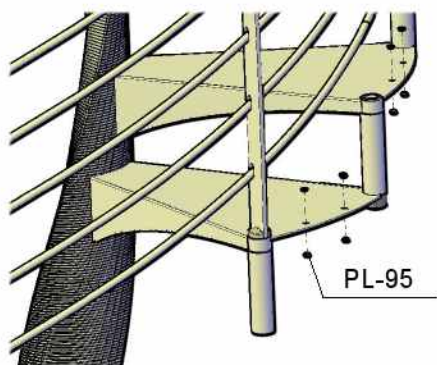


## Mouldings Ø6 mm F2

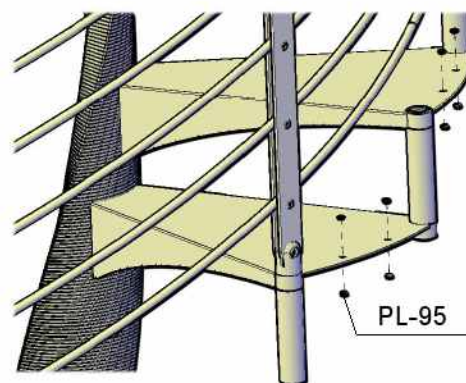


The mouldings Ø 6 mm are delivered as 6-meter spool and can be joined together using the relevant coupling F2-25-IN.

## Banister R4

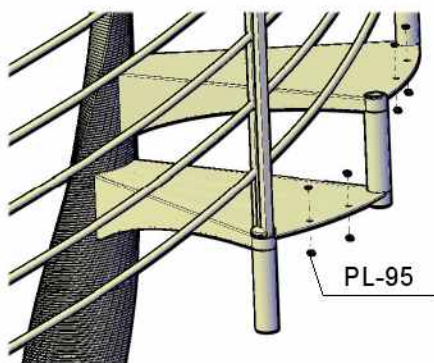


## Banister R1

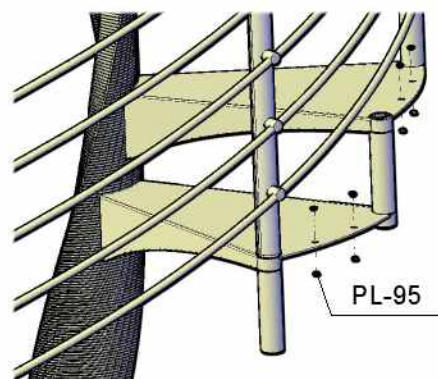


On the metal steps, the banisters R1, R4, R5 and R6 are assembled in the same way as on the wooden stairs.  
It is necessary to close the holes on the metal step using the relevant small plastic caps PL-95.

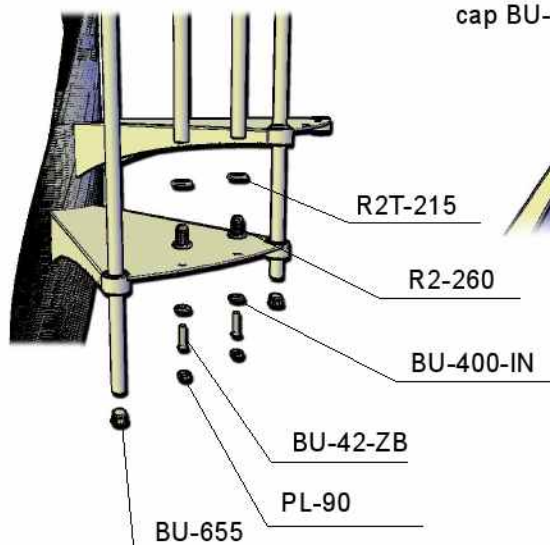
## Banister R5



## Banister R6

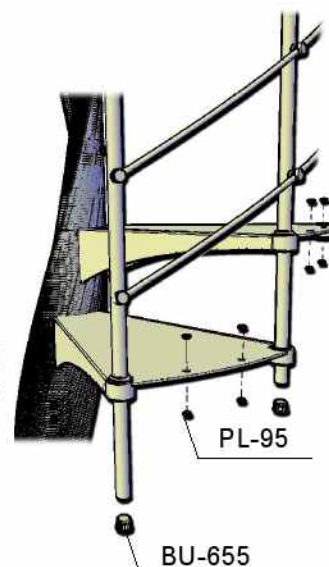


## Banister R2



On the metal steps, the banisters R2 and R2C are assembled by introducing a 1165 mm column (the one that runs through) inside the bush on the step and blocking it with the dowel (see figure below).  
The lower end of the column is closed with a cap BU-655.

## Banister R2C

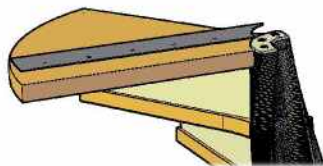


The holes on the metal step need to be closed with a cap PL-95.

The middle columns are fixed below the step using a washer BU-400-IN and a screw M8x30 mm BU-42-ZB. The head of the screw is then closed with a cap PL-90.



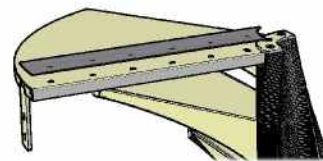
## Wooden stairs



Use the paper template supplied to mark the position of the holes to be drilled on the landing, depending on the kind of banister in the project.

Drill holes in the points marked using a Ø14 tip for the banister struts R1, R2, R3 e R4, and with a Ø10 tip for the banister struts R2 and R2C, as shown on the template.

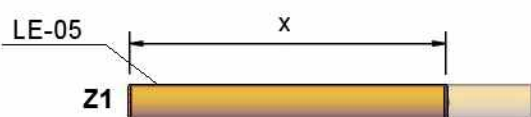
## Metal stairs



Use the paper template supplied to mark the position of the holes to be drilled on the landing, depending on the kind of banister in the project.

Drill holes in the points marked using a Ø11 tip for the banister struts R1, R2, R3 and R4, and with a Ø9 tip for the banister struts R2 and R2C, as shown on the template.

## Wooden handrail C2



Before assembling the newel onto the landing step, it is necessary to prepare the handrails and cut them to the size required.

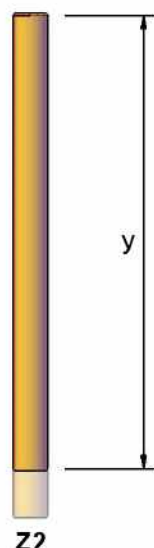
The horizontal handrail **Z1** shall be cut to the size (x) required by the landing in the project.

The vertical handrail **Z2** needs to be cut following these rules:

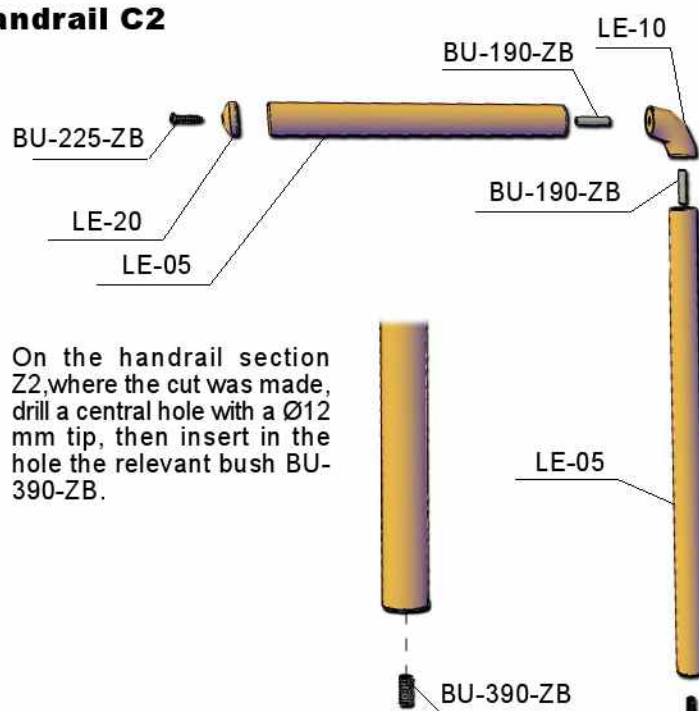
For banister R6 - R5 - R1:  $y = 924 \text{ mm}$

For banister R4:  $y = 920 \text{ mm}$

For banister R2:  $y = 910 \text{ mm}$

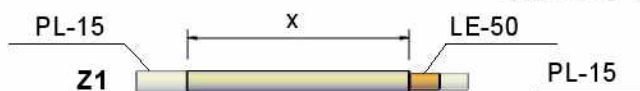


**Z2**



On the handrail section **Z2**, where the cut was made, drill a central hole with a Ø12 mm tip, then insert in the hole the relevant bush **BU-390-ZB**.

## Plastic handrail C1



Before assembling the newel onto the landing step, it is necessary to prepare the handrails and cut them to the size required.

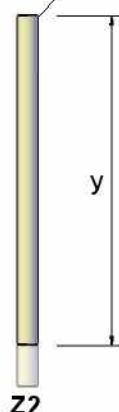
The horizontal handrail **Z1**, and the relevant wooden core shall be cut to the size (x) required by the landing in the project.

The vertical handrail **Z2** needs to be cut following these rules:

For banister R6 - R5 - R1:  $y = 948 \text{ mm}$

For banister R4:  $y = 943 \text{ mm}$

For banister R2:  $y = 933 \text{ mm}$

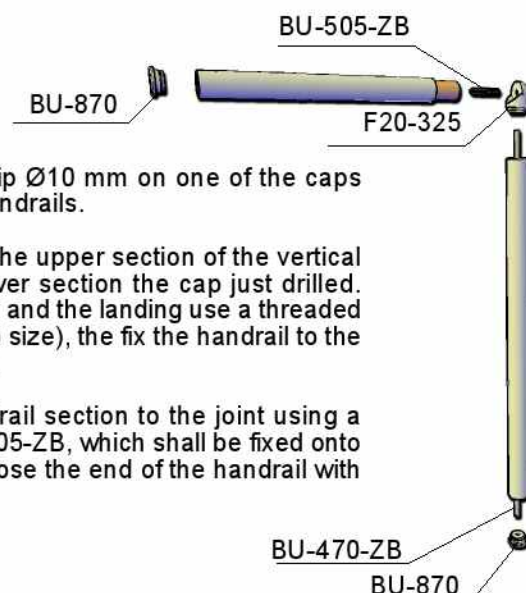


**Z2**

Drill a central hole with a tip Ø10 mm on one of the caps **BU-870** which close the handrails.

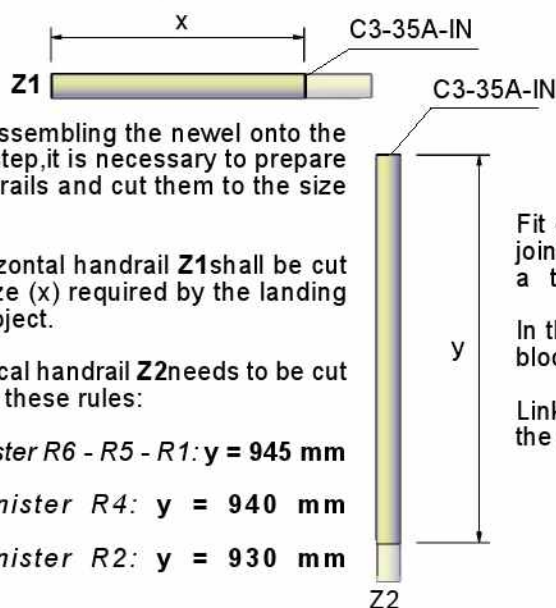
Fix the joint **F20-325** onto the upper section of the vertical handrail **Z2** and on the lower section the cap just drilled. To link the joint, the handrail and the landing use a threaded bar **BU-470-ZB** (to be cut to size), then fix the handrail to the step as shown on page 27.

Attach the horizontal handrail section to the joint using a mordant M8x60 mm, **BU-505-ZB**, which shall be fixed onto the wooden core **LE-50**. Close the end of the handrail with a cap **BU-870**.





### Metal handrail C3



Before assembling the newel onto the landing step, it is necessary to prepare the handrails and cut them to the size required.

The horizontal handrail **Z1** shall be cut to the size (x) required by the landing in the project.

The vertical handrail **Z2** needs to be cut following these rules:

For banister R6 - R5 - R1:  $y = 945 \text{ mm}$

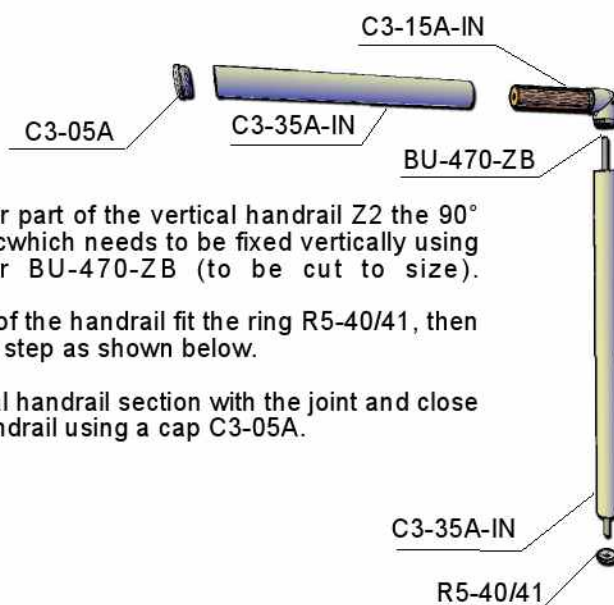
For banister R4:  $y = 940 \text{ mm}$

For banister R2:  $y = 930 \text{ mm}$

Fit onto the upper part of the vertical handrail Z2 the 90° joint C3-15A-IN, which needs to be fixed vertically using a threaded bar BU-470-ZB (to be cut to size).

In the lower part of the handrail fit the ring R5-40/41, then block it below the step as shown below.

Link the horizontal handrail section with the joint and close the end of the handrail using a cap C3-05A.



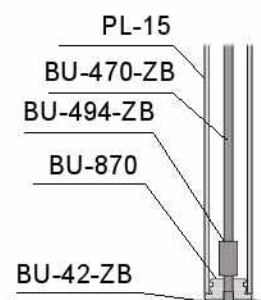
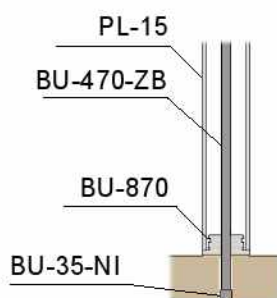
### Fixing the handrail onto the newel

The handrail on the newel is fixed onto the landing step using different nuts and bolts depending on the materials of which the step (it could be wood or metal) and the handrail (wood, plastics or stainless steel) are made.

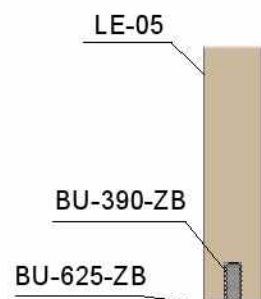
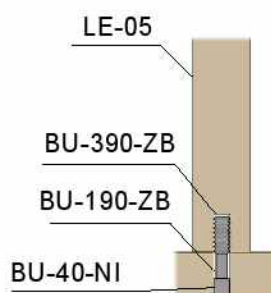
#### Wooden step

#### Metal step

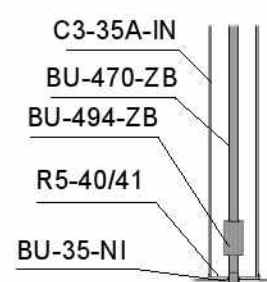
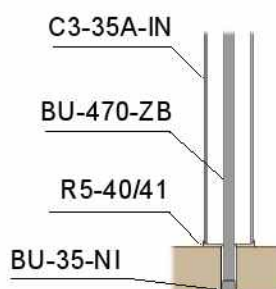
#### Plastic handrail C1



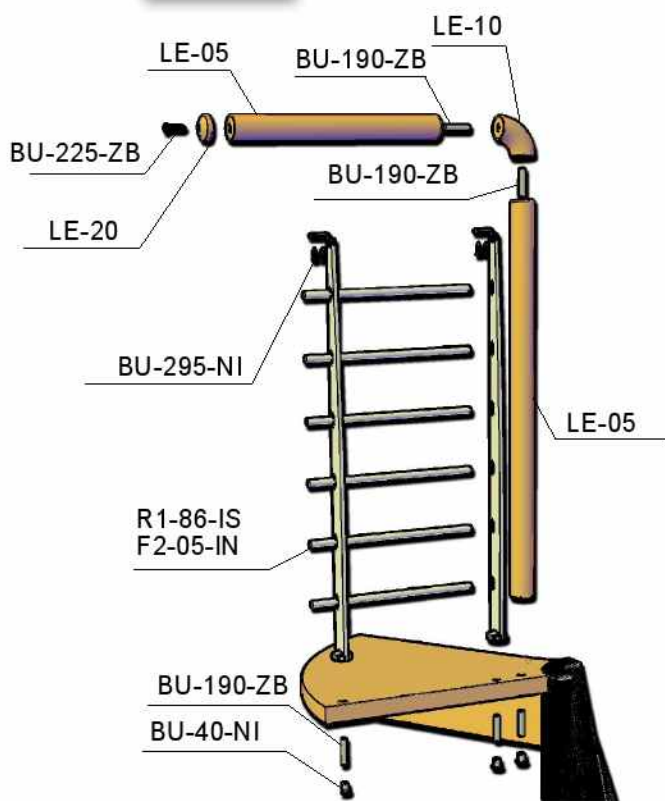
#### Wooden handrail C2



#### Metal handrail C3



## Wooden stairs



### Newel for banister R4

Fix the newels and the vertical handrail onto the landing, using the blind nut BU-40-NI and a threaded bar BU-190-ZB.

Fix the 90° elbow LE-10 onto the vertical handrail and joint it with the horizontal handrail LE-05, using the threaded bars M10x60 mm. BU-190-ZB.

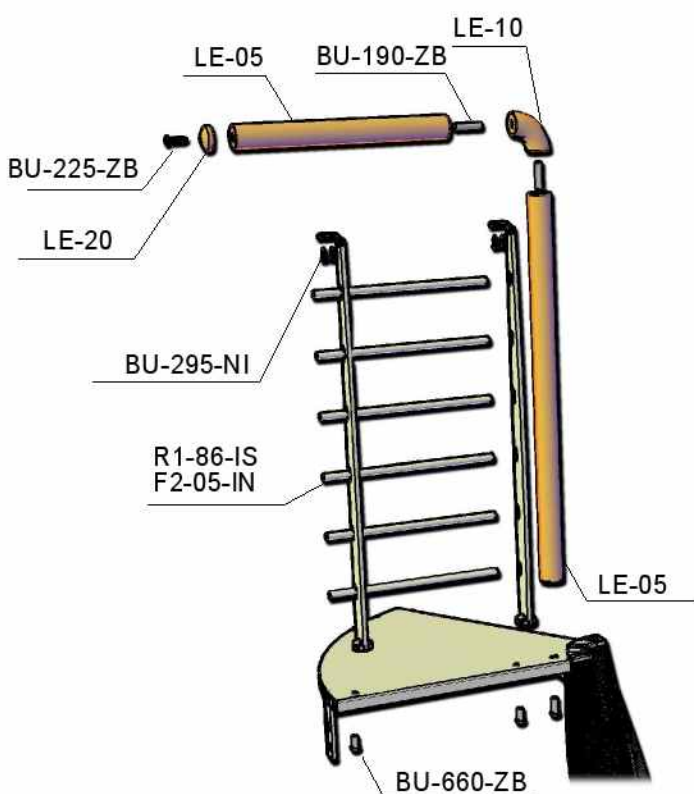
Fix the struts onto the handrail using the relevant screws BU-295-NI.

Cut the mouldings to size then finish assembling the newel by inserting them into the strut slots. Block them with the relevant dowels (see description on page 19).

**Newel for banister R1 - R5 - R6**

The banisters R1 - R5 - R6 are fixed onto the landing step in the same way as described above with regard to banister R4.

## Metal stairs



## Newel for banister R4

Fix the vertical handrail onto the landing using a screw BU-625-ZB.

Fix the 90° elbow LE-10 onto the vertical handrail then join it to the horizontal handrail using threaded bars M10x60 mm, BU-190-ZB.

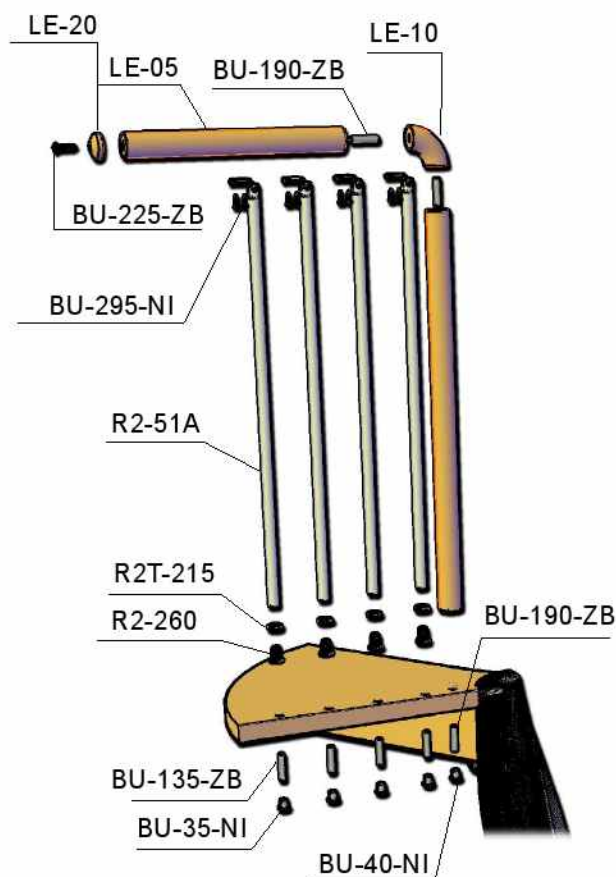
Fix the struts onto the handrail, using TBCE screws M10x10.

Cut the mouldings to measure and finish assembling the newel by inserting them into the strut slots. Block them with the relevant dowels (see description on page 19).

**Newel for banister R1 - R5 – R6**

The banisters R1 - R5 - R6 are fixed onto the landing step in the same way as described above with regard to banister R4; however, the screw used to fix the struts onto the step is longer: TBCE M10x20 mm, BU-660-ZB.

## Wooden stairs



### Newel for banister R2

Fix the vertical handrail onto the landing using a blind nut BU-40-NI and a threaded bar BU-190-ZB.

Place the columns on the step, with a centre distance of about 120 mm (see step drilling with template on page 26). Insert in each column the ring and the base, then fix them onto the step using a threaded bar M8 and the relevant blind nut.

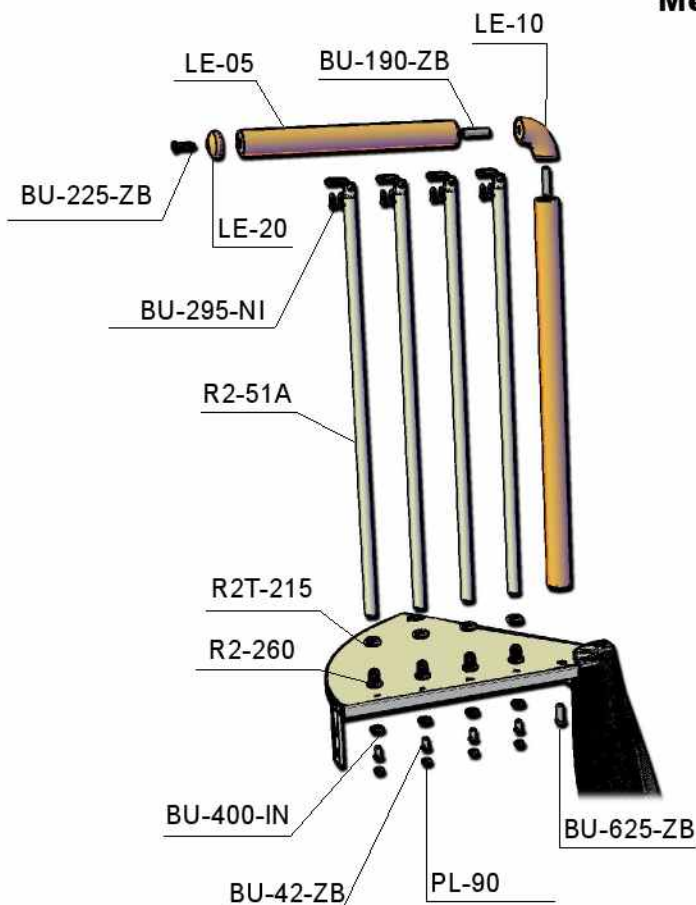
Fix the 90° elbow LE-10 onto the vertical handrail and join it to the horizontal handrail LE-05, using threaded bars M10x60 mm.

Fix the columns onto the handrail, using the relevant screws BU-295-NI.

### Newel for banister R2C

The centre distance between the columns to be placed on the landing step is about 240 mm (see step drilling with template on page 26). For fixing onto the landing step, work in the same way as described above with regard to banister R2. Cut the mouldings to the size required and fix them onto the columns.

## Metal stairs



### Newel for banister R2

Fix the vertical handrail onto the landing, using the relevant screw BU-625-ZB.

Place the columns onto the step with a centre distance of about 120 mm (see step drilling with template on page 26). Insert in each column the ring and the base, then block them below the step using washer and screw. The head of the screw then needs to be covered with the plastic cap.

Fix the 90° elbow LE-10 onto the vertical handrail and join it to the horizontal handrail LE-05, using the threaded bars M10x60 mm.

Fix the columns onto the handrail, using the relevant screws BU-295-NI.

### Newel for banister R2C

The centre distance of the columns to be placed on the landing step is about 240 mm (see step drilling with template on page 26). For fixing onto the landing step, work in the same way as described above with regard to banister R2.

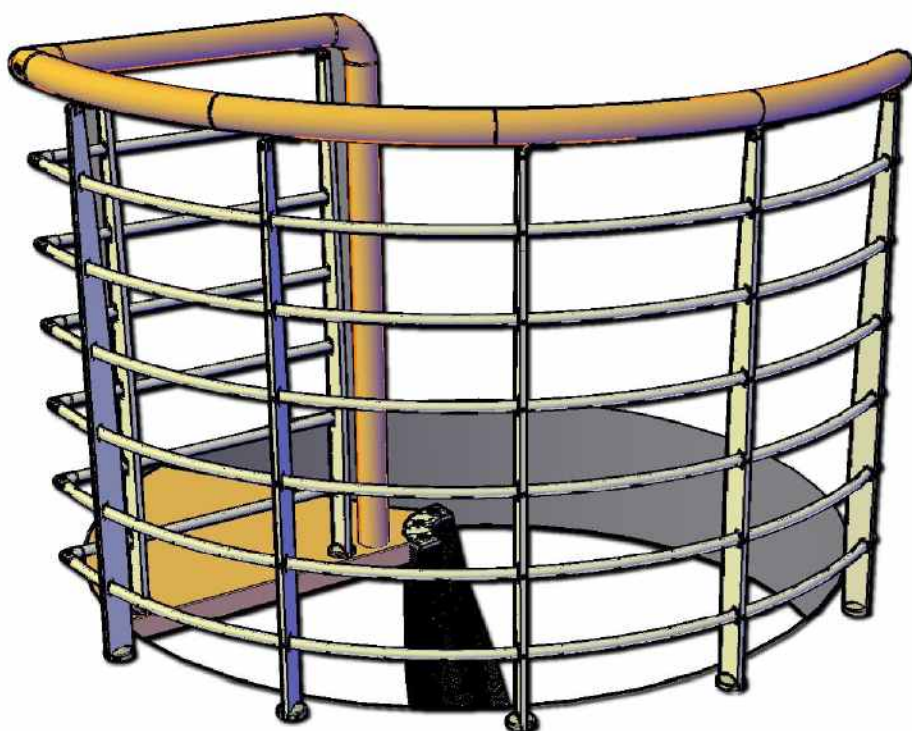
Cut the mouldings to the size required and fix them onto the columns.



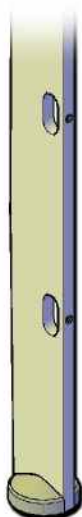
## Round hole

### Example with banister R4

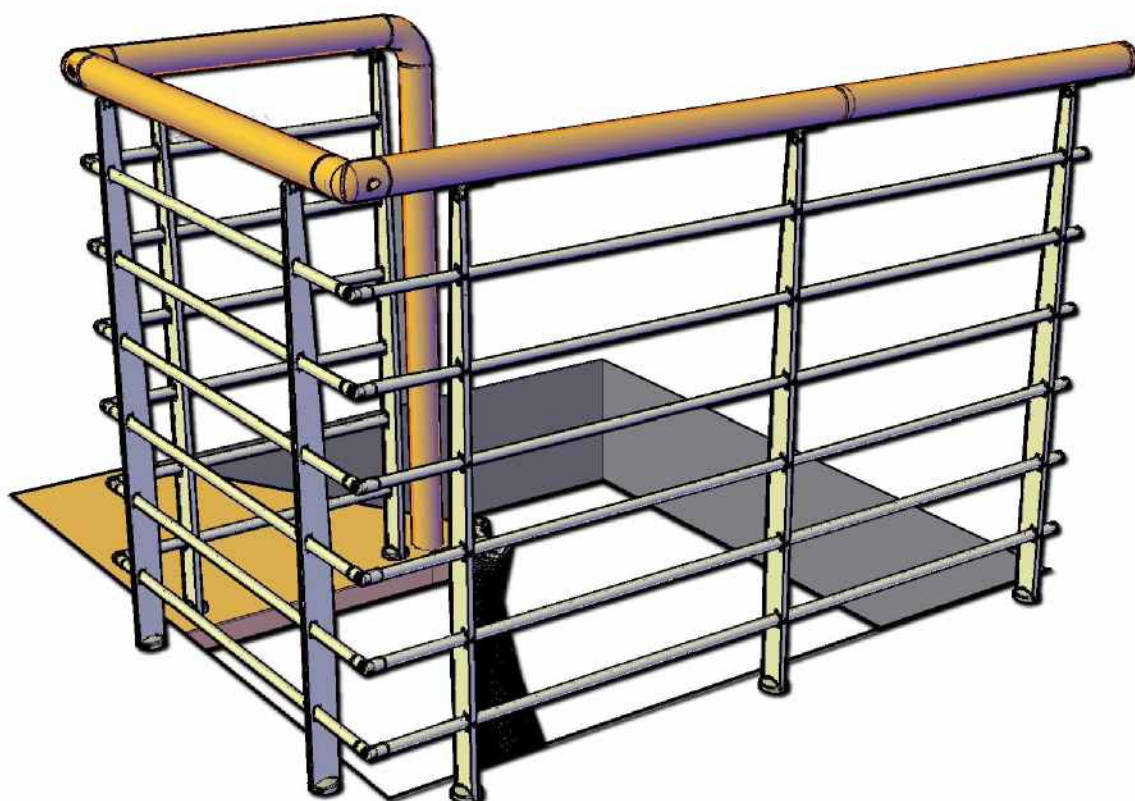
The struts for banisters R1, R5 and R6 are fixed to the ground in the same way shown with regard to R4.



### Fixing the strut to the ground



## Rectangular hole



BU-490-ZB



BU-217-PL



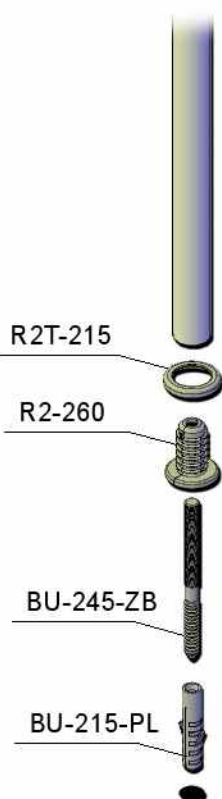
## Round hole

### Example with banister R2

The columns for banister R2C are fixed to the ground in the way shown with regard to R2.



### Fixing the column to the ground



## Rectangular hole

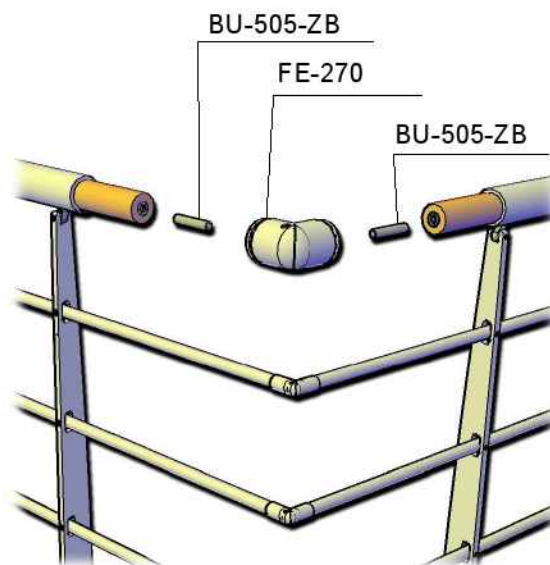
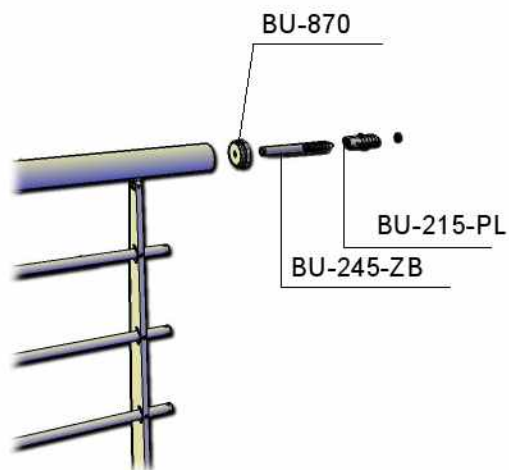




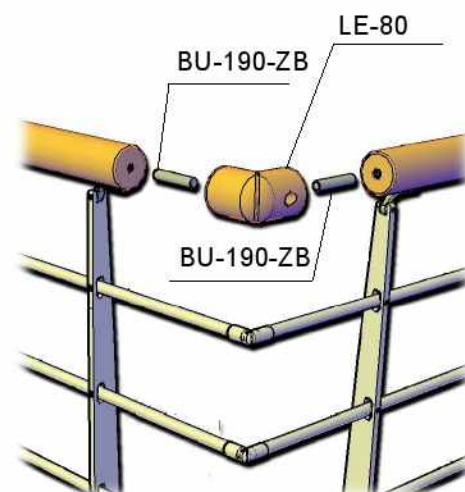
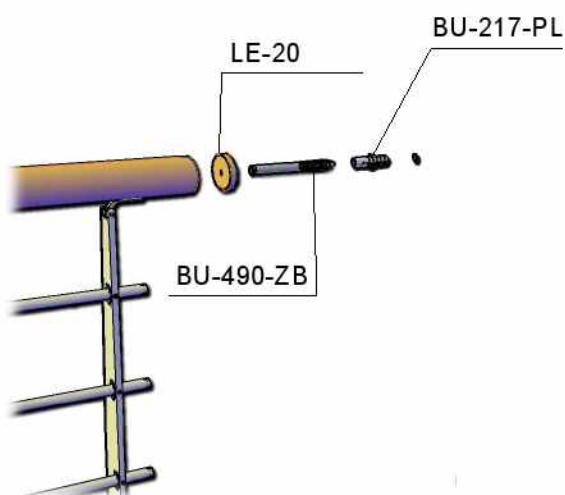
## Handrail – wall fixing

## Handrail fixing in a corner

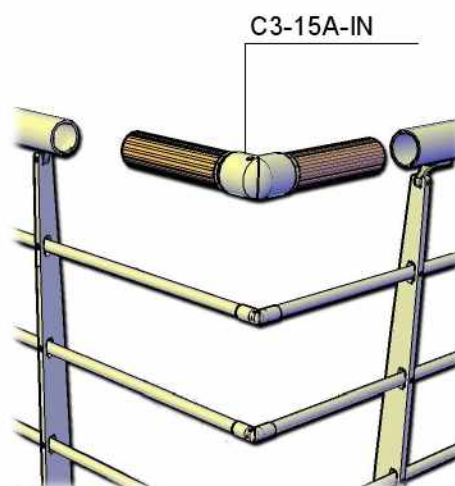
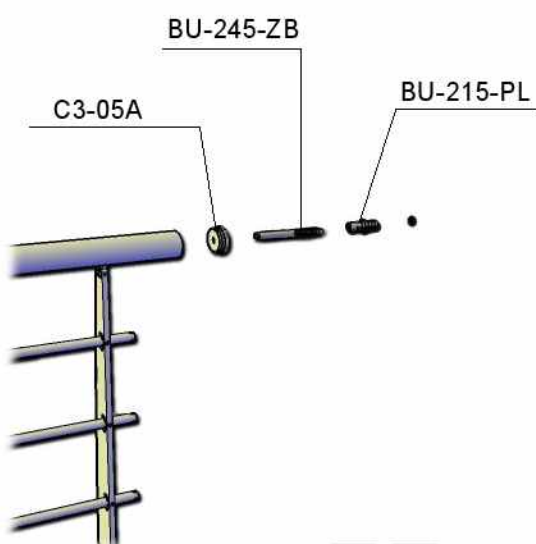
### Plastic handrail C1



### Wooden handrail C2



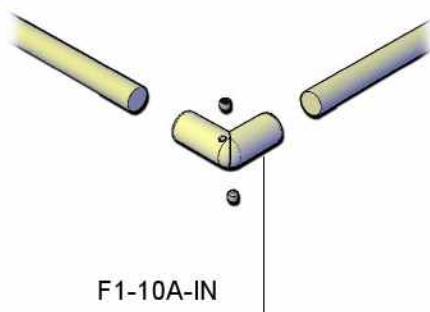
### Metal handrail C3





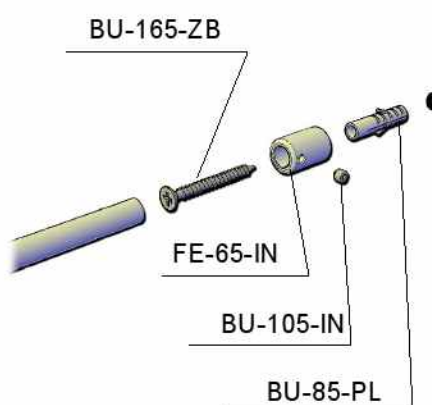
## Fixing a moulding in a corner Ø12 mm

Insert the mouldings in the coupling, using some kind of binder. Adjust their tilting/rotation, then tighten the dowels to block the position of the coupling.



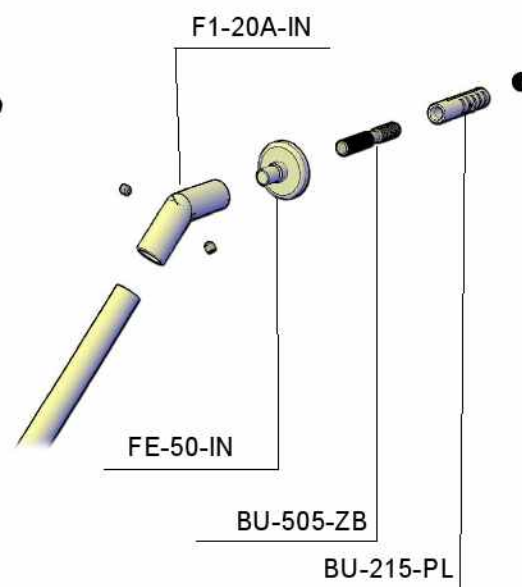
## Fixing a moulding to the wall Ø12 mm

Insert the screw and the moulding in the socket. Fix the socket to the wall, then insert the moulding in the socket and block it with the relevant dowel.



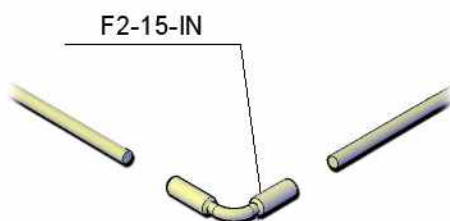
## Tilted moulding wall Ø12 mm fixing

Fix the washer to the wall using mordant and expander. Tighten the coupling onto the washer, then insert the moulding in the coupling, using some kind of binder. Adjust the tilting/rotation, then tighten the dowels to block the position of the coupling.



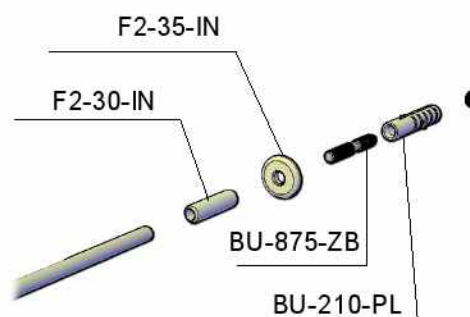
## Fixing the moulding in a corner Ø6 mm

Insert the mouldings in the coupling using some binder. Adjust the tilting of the coupling by bending it manually.



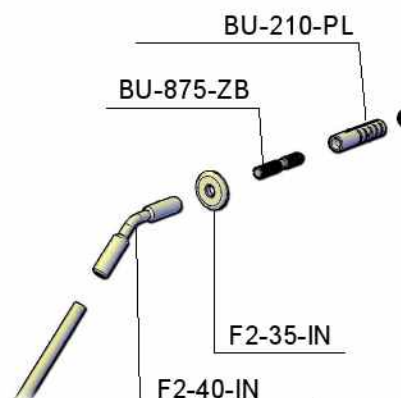
## Wall moulding fixing Ø6 mm

Fix the socket and washer to the wall, using the mordant and relevant expander. Insert the moulding in the glass using some kind of binder.

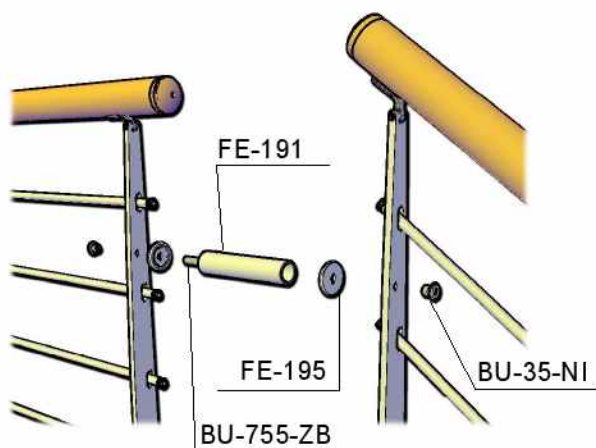


## Tilted moulding wall Ø6 mm fixing

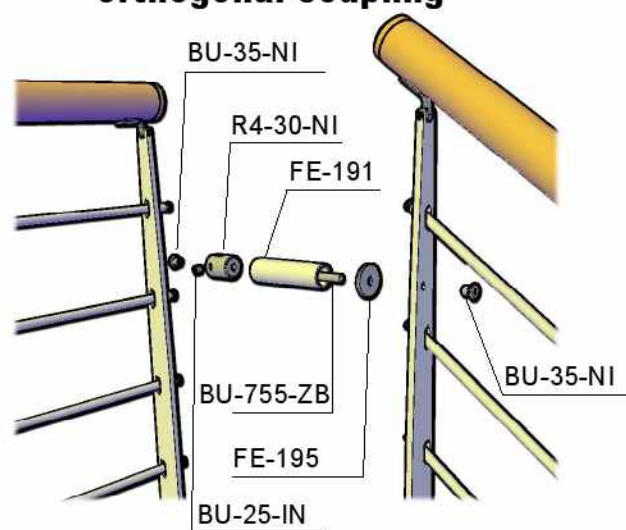
Manually bend the coupling to adjust its tilting, then fix the coupling and the washer on the wall using the mordant and relevant expander. Insert the moulding into the coupling using some kind of binder.



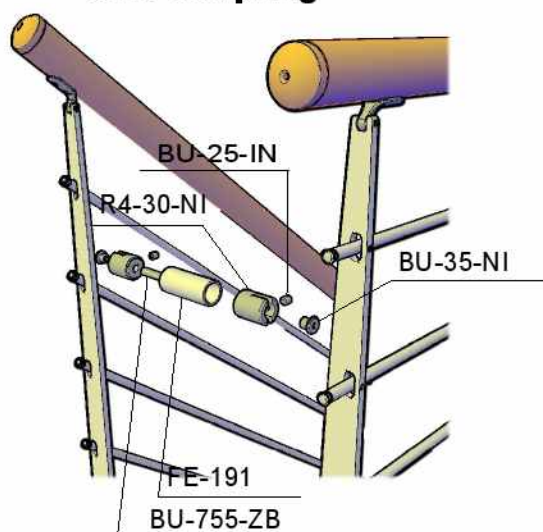
## Strut-strut front coupling



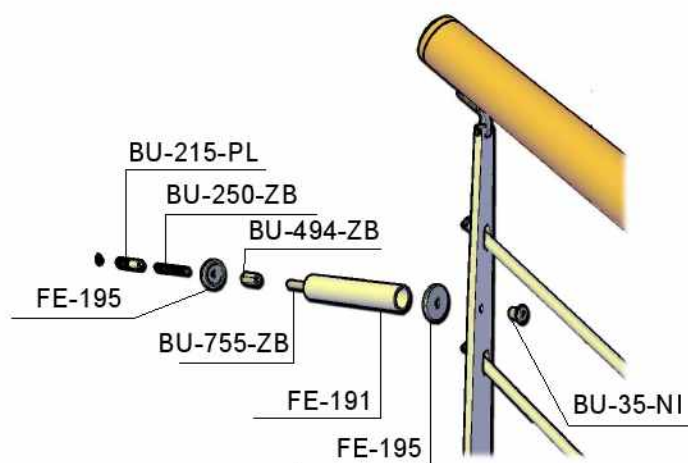
## Strut-strut orthogonal coupling



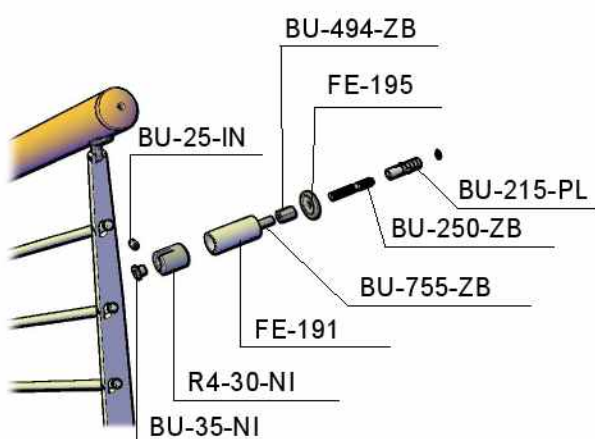
## Strut-strut side coupling



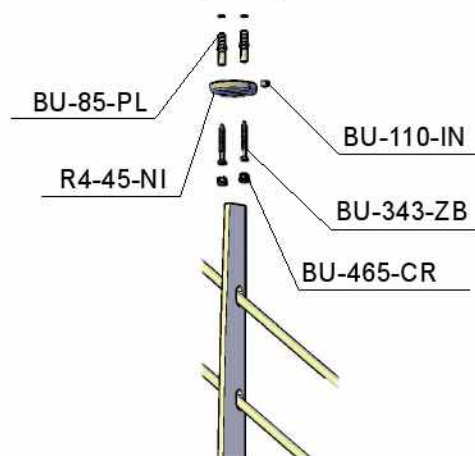
## Strut-wall front coupling



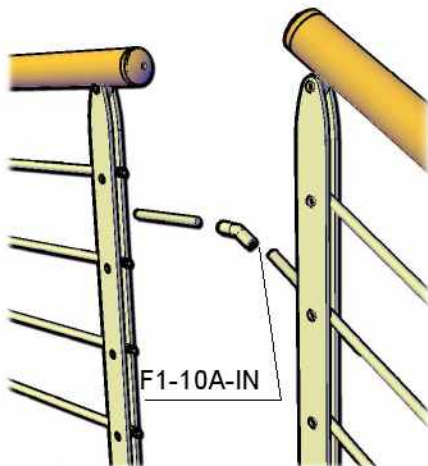
## Strut-wall side coupling



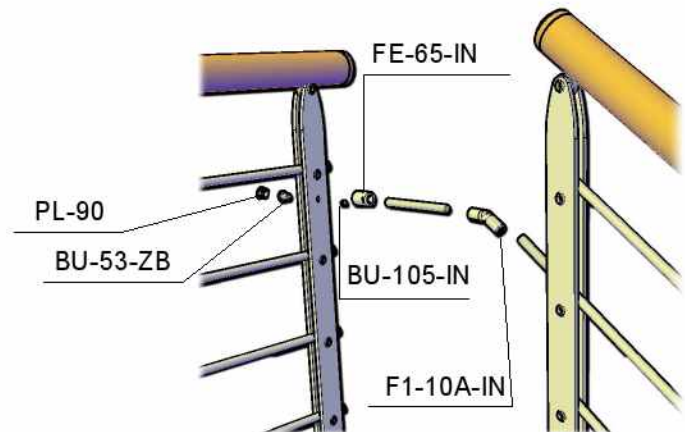
## Strut-ceiling coupling



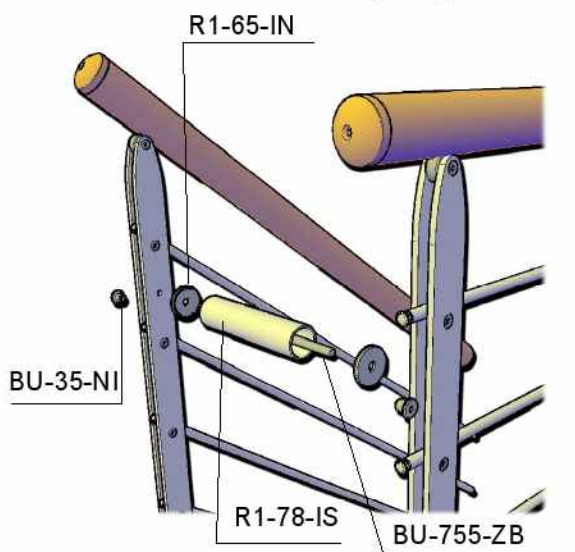
**Strut-strut  
front coupling**



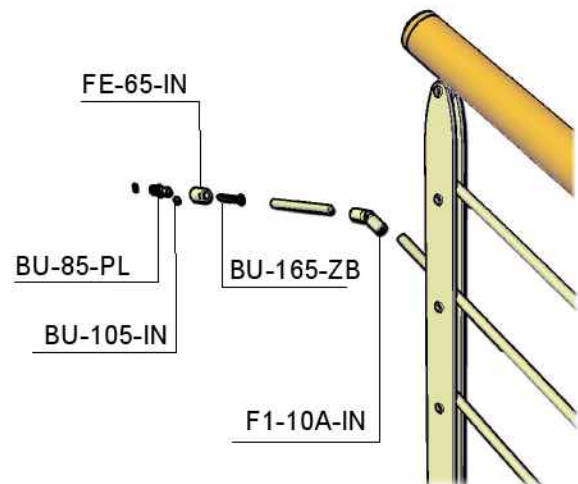
**Strut-strut  
orthogonal coupling**



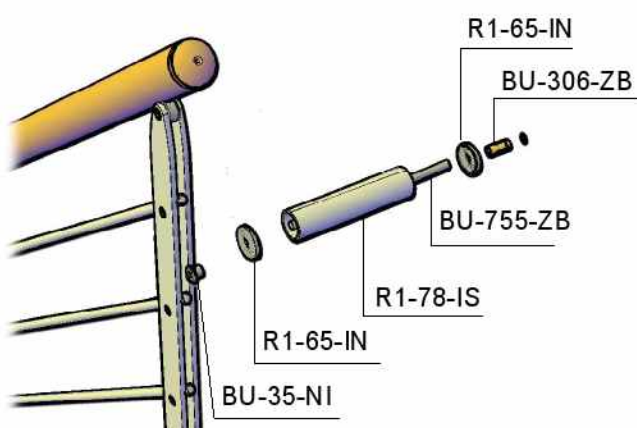
**Strut-strut  
side coupling**



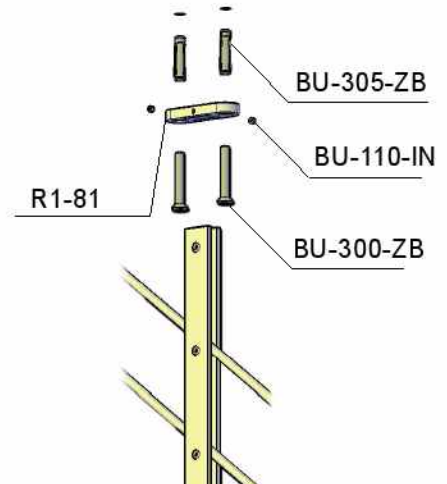
**Strut-wall  
front coupling**



**Strut-wall  
side coupling**

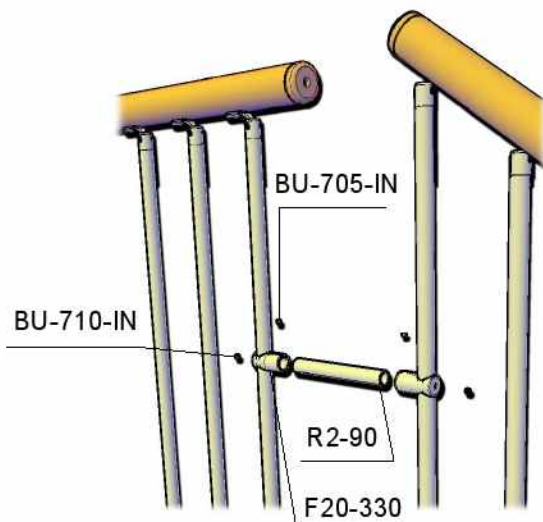


**Strut-ceiling  
coupling**

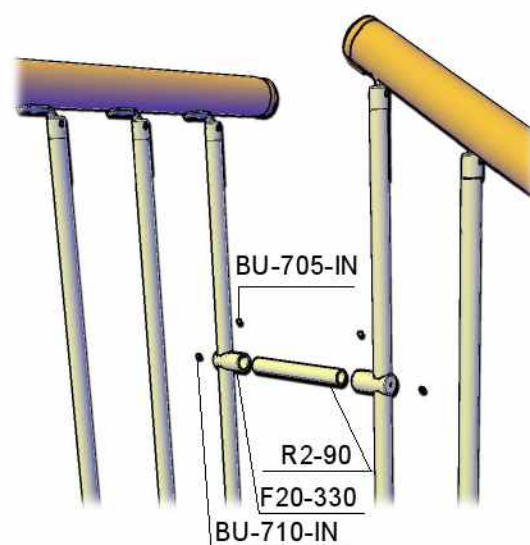




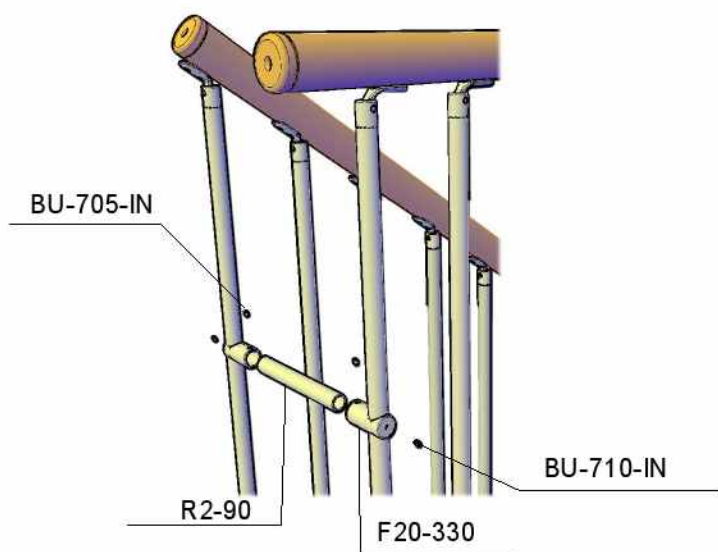
**Column-column front coupling**



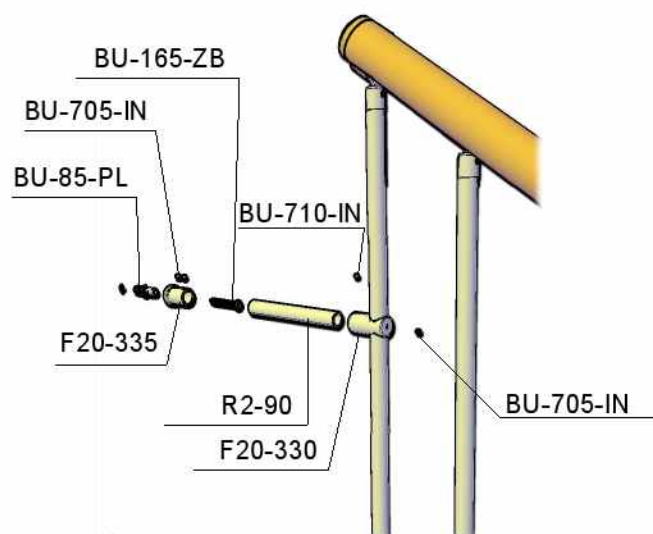
**Column-column orthogonal coupling**



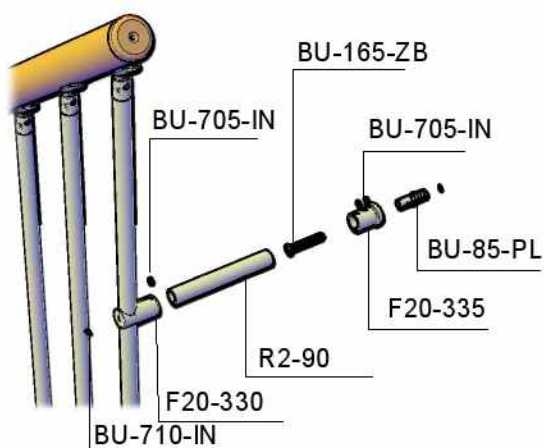
**Column-column side coupling**



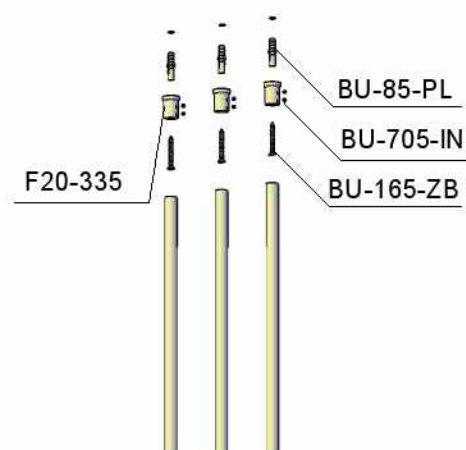
**Column-wall front coupling**



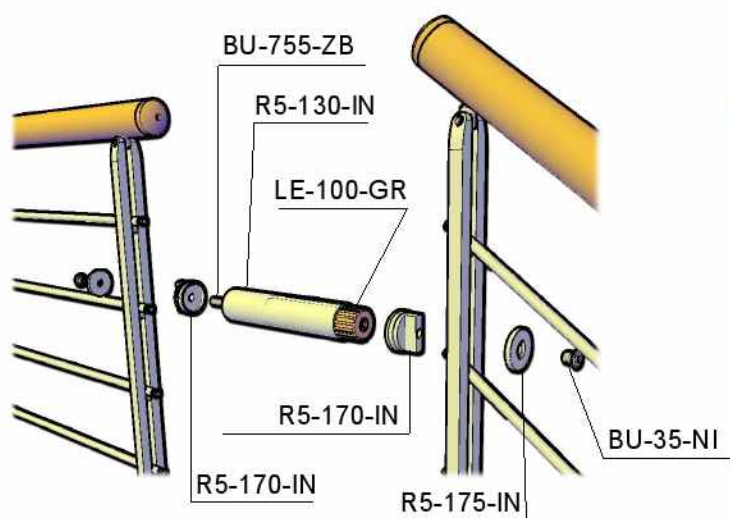
**Column-wall side coupling**



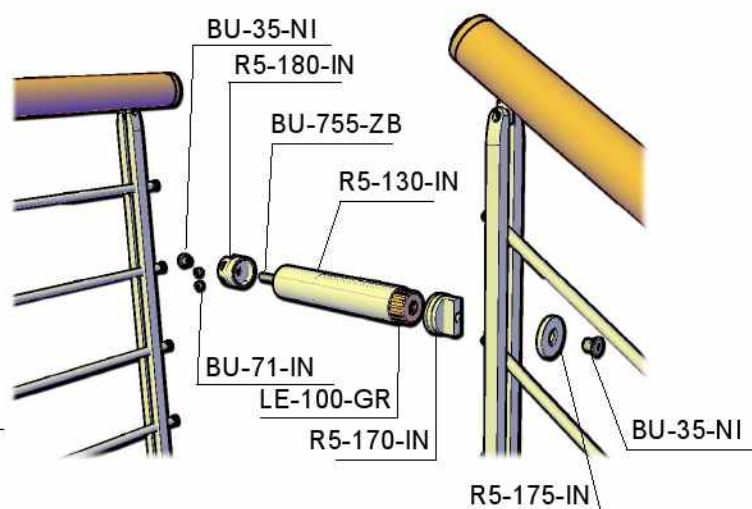
**Column-ceiling coupling**



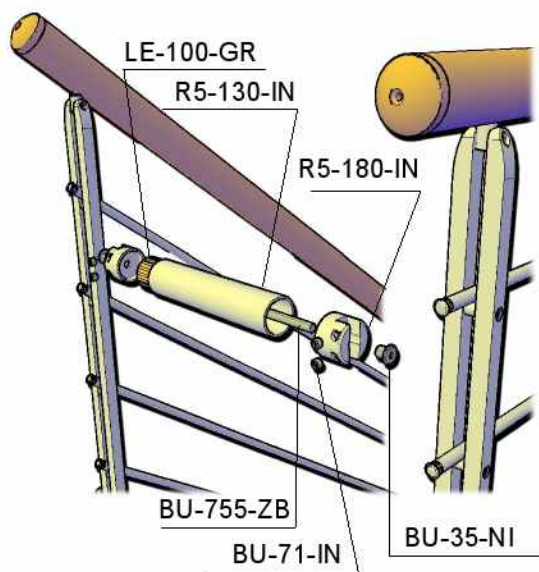
## Strut-strut front coupling



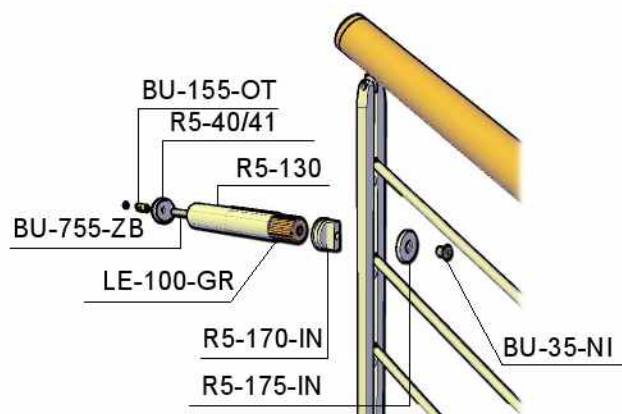
## Strut-strut orthogonal coupling



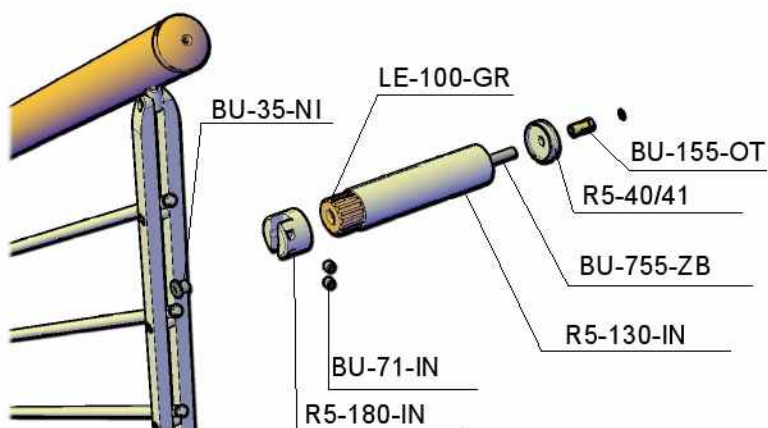
## Strut-strut side coupling



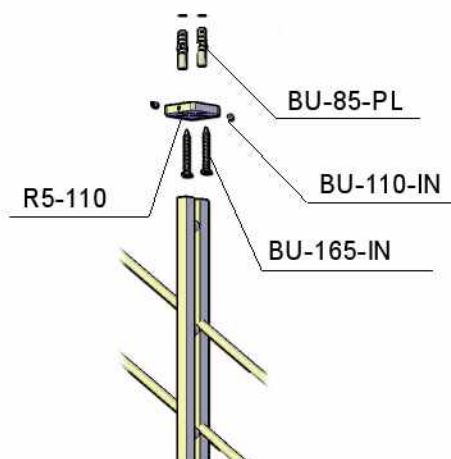
## Strut-wall front coupling



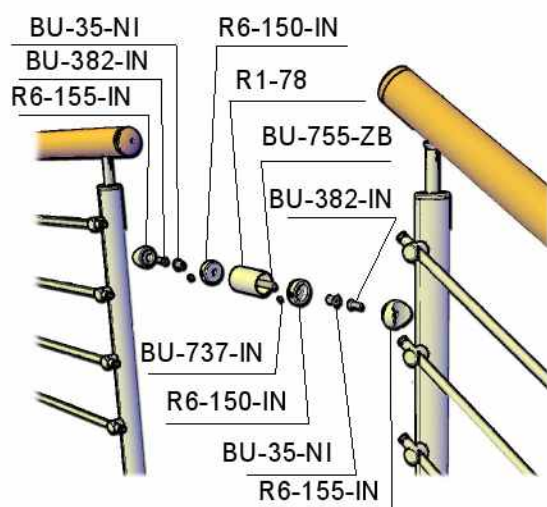
## Strut-wall side coupling



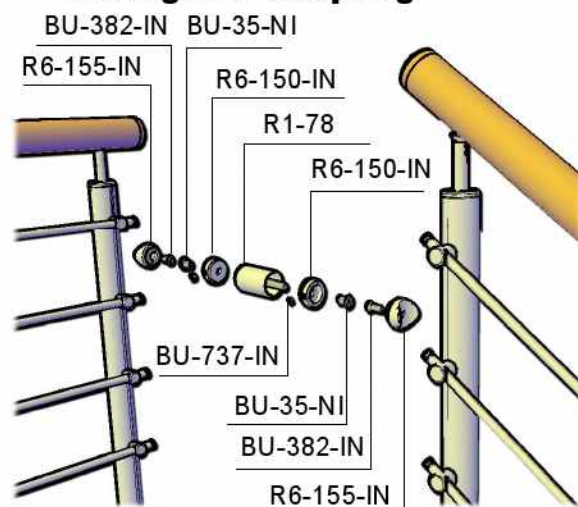
## Strut-ceiling coupling



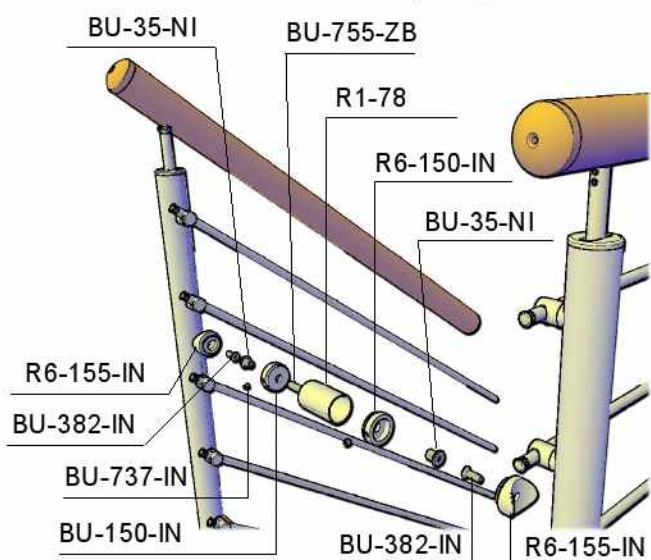
## Strut-strut front coupling



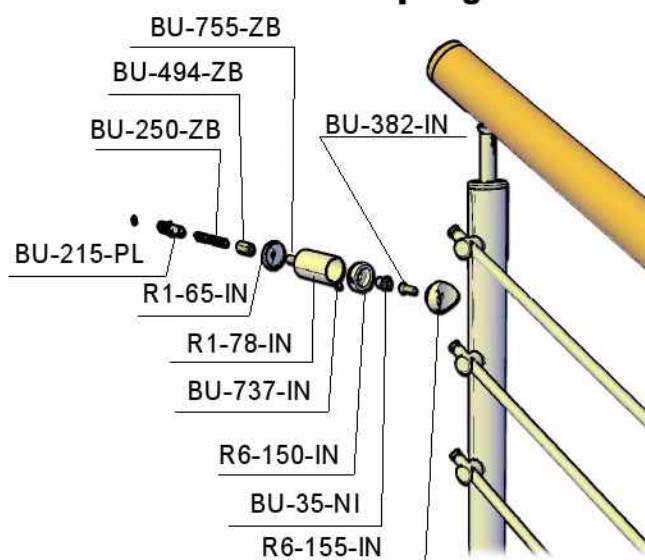
## Strut-strut orthogonal coupling



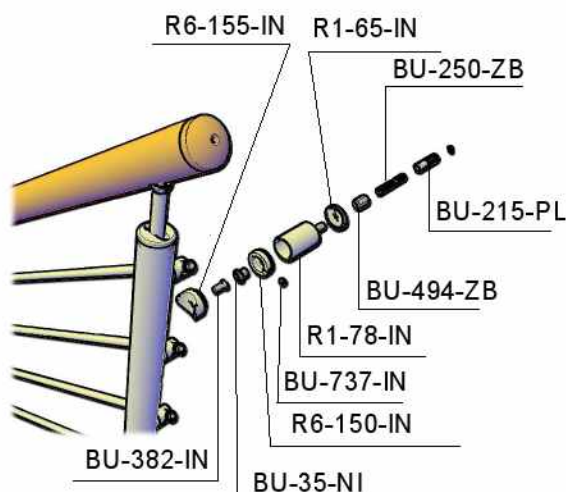
## Strut-strut side coupling



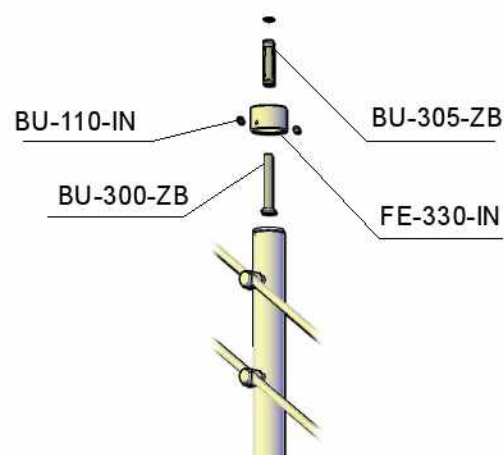
## Strut-wall front coupling



## Strut-wall side coupling

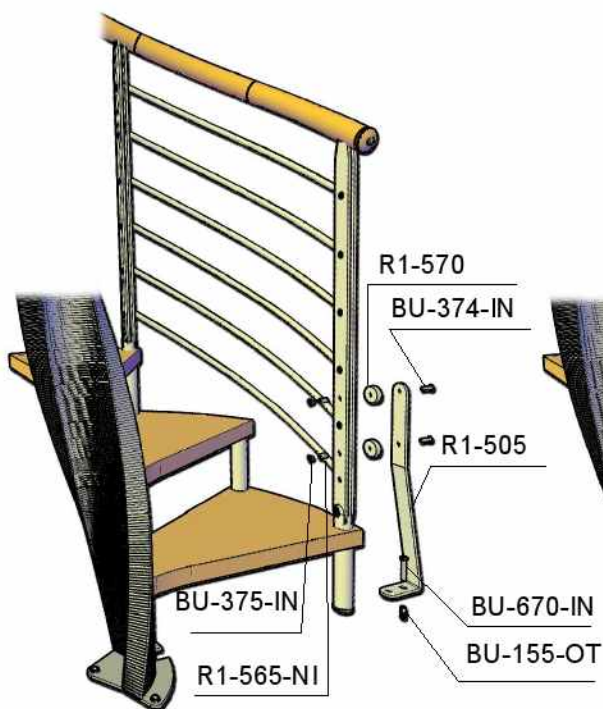


## Strut-ceiling coupling

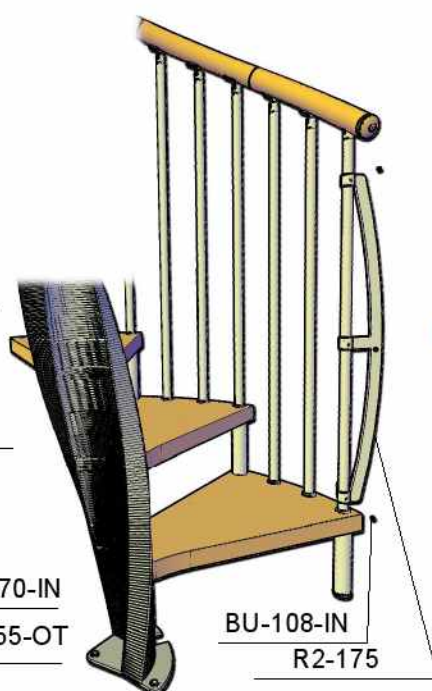




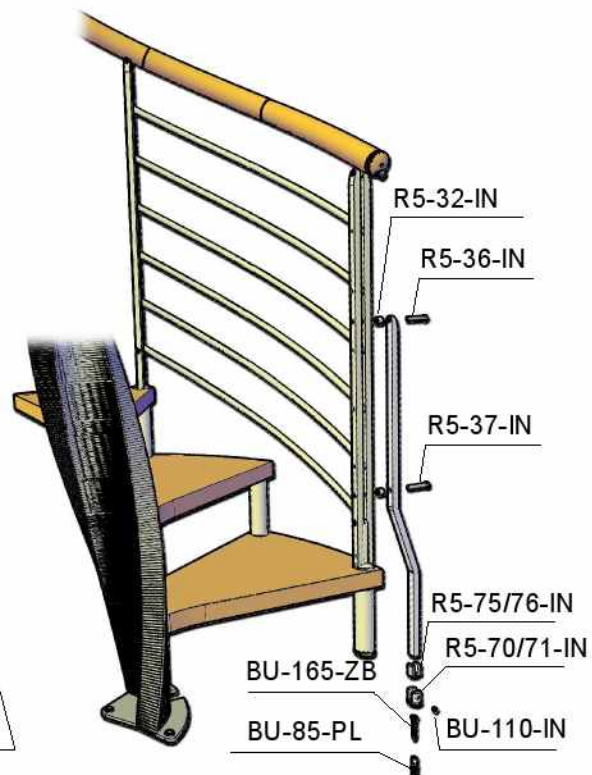
## Starting stiffening plate R1



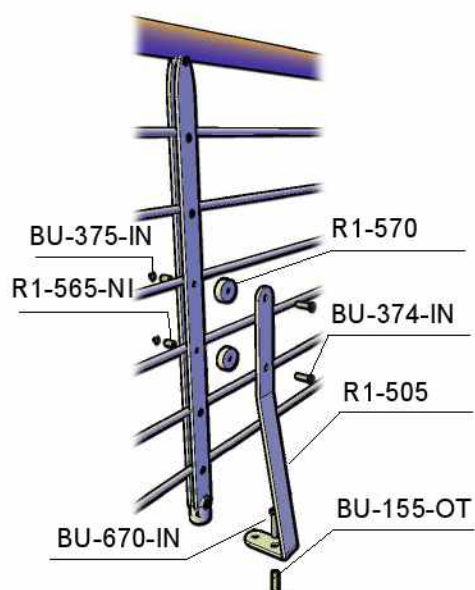
## Starting stiffening plate R2 - R2C



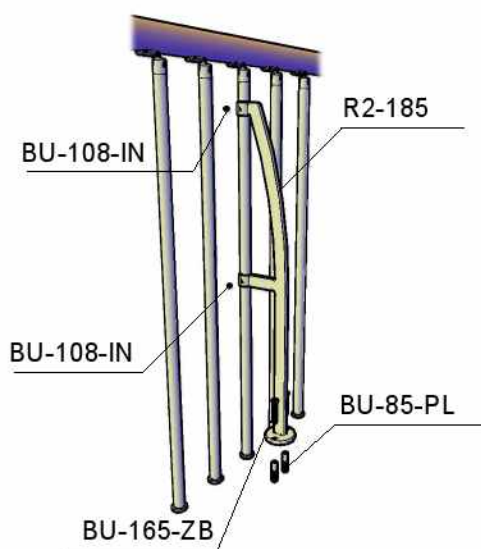
## Starting stiffening plate R5



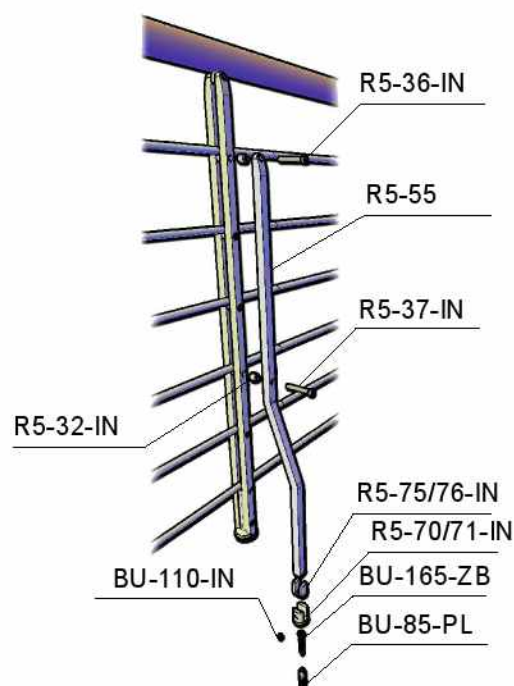
## Banister stiffening plate R1



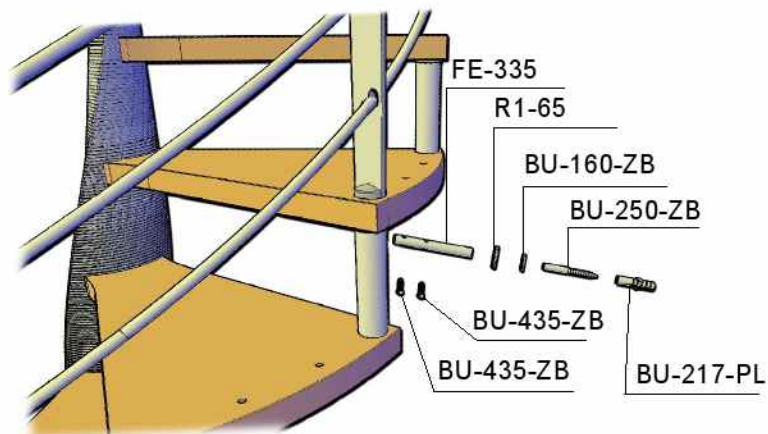
## Banister stiffening plate R2



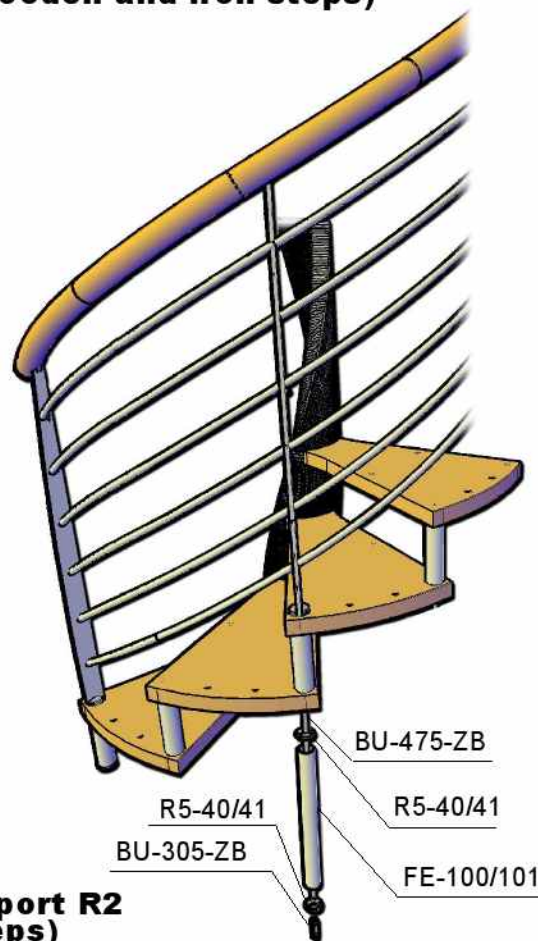
## Banister stiffening plate R5



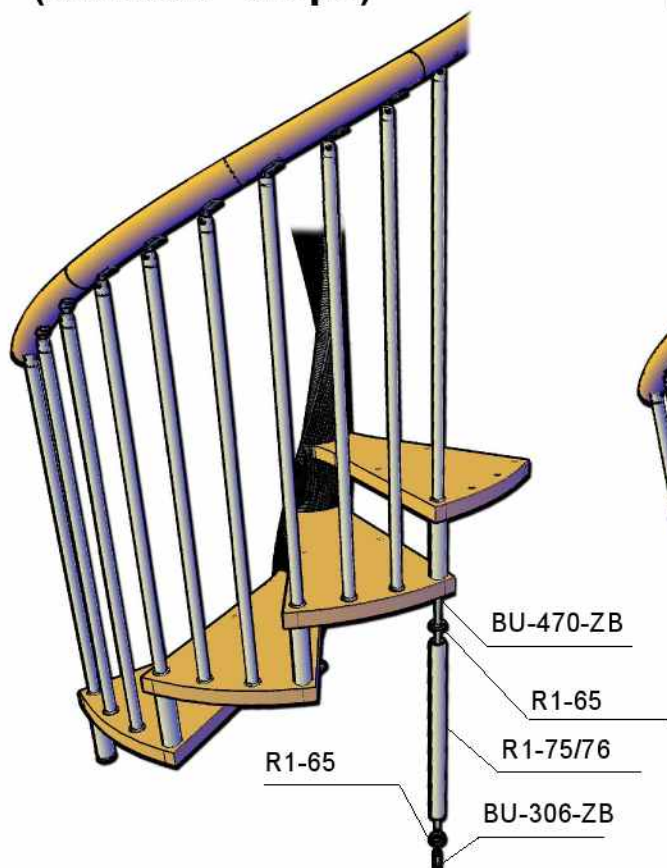
## Step bracket



## Ground support R1 - R4 - R5 - R6 (wooden and iron steps)



## Ground support R2 (wooden steps)



## Ground support R2 (iron steps)

