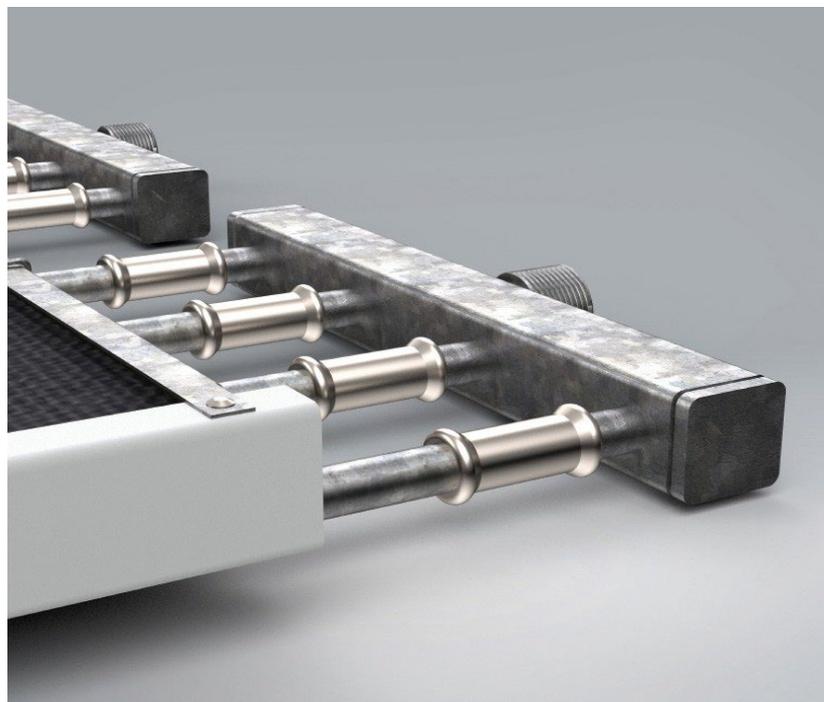




# *ituString*<sup>®</sup>**+**

## INSTALLATION INSTRUCTIONS



Read more about the ItuString+ system at  
[www.itula.com](http://www.itula.com)

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## 1. ORDER OF INSTALLATION

### Before the installation

#### CHECK

- The accuracy of the installation site drawings
- The load capacity of the fixing points (must carry the weight of the panels)
- The spacing for the ceiling fixings in the ItuString+ suspension axes document.
- Suitability of the fixing accessories used for the mounting.
- Location of pipes in relation to the panels to be mounted.
- Delivery note (the amounts and models)
- Suitable lifting equipment for safe installation
- Suitable personal safety equipment
- Suitable accessories and equipment for the installation.
- Covered storage for radiant ceiling panels before and during the installation.
- Recyclability of the packing materials

#### GET TO KNOW

- Project-specific part list and installation drawing
- ItuString+ lifting instruction
- ItuString+ suspension axes
- ItuString+ cover plate installation instructions
- ItuString+ ball guard installation instructions

### Installation order

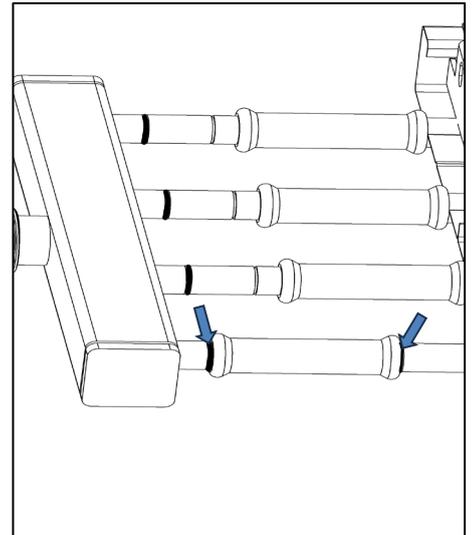
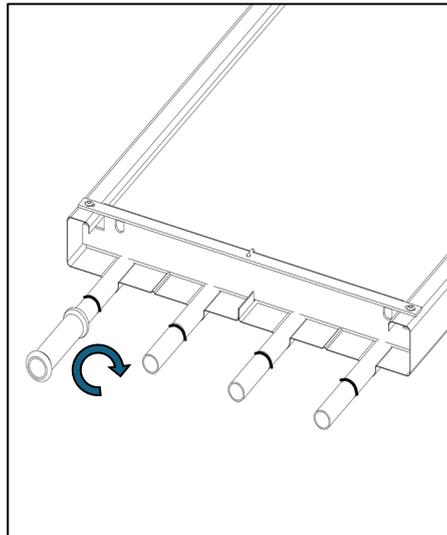
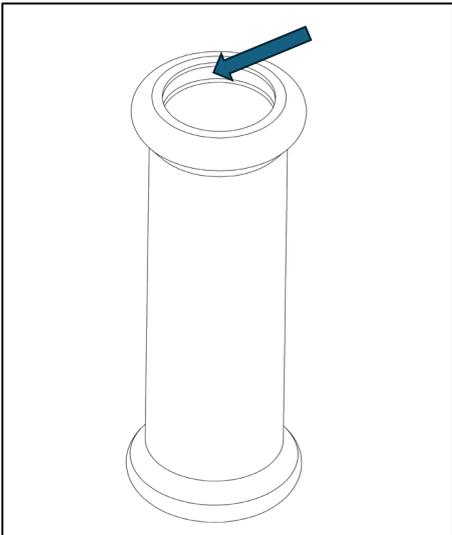
1. Reading the “Before the installation” -instructions
2. Mounting the appropriate brackets to the ceiling (not included in the delivery)
3. Mounting the suspension chains to the ceiling
4. Attaching the bearer to the chains
5. Aligning and levelling of the bearer
6. Preparing the panels for installation on the floor (at this point it is easy to check the positioning of the radiant panel components)
7. Lifting the panel and attaching it to the bearer
8. Checking the alignment and putting the sleeve crimp fittings in place
9. Crimp connections
10. Network connection
11. Attaching cover plates and ball guards, if included
12. Pressure test with air
13. Pressure test with water and pressure test report
14. Putting the covers insulation in place

## 2. GENERAL INSTALLATION INSTRUCTIONS

Check that the crimp fitting O-ring is intact and clean. To help the installation soap water can be applied to the O-ring.

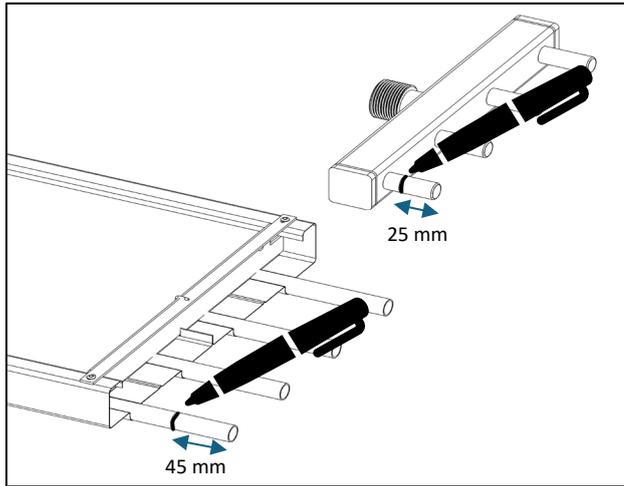
Install the crimp fitting by pushing and simultaneously turning it axially. Do not bend the pipe, it might break the O-ring. Push the crimp fitting against the panel, so that it doesn't disturb the mounting

The crimp fitting should be placed in the middle. Mark the endpoint of the sleeve on both pipes to be connected. When positioning the sleeve, make sure that you can see both markings.

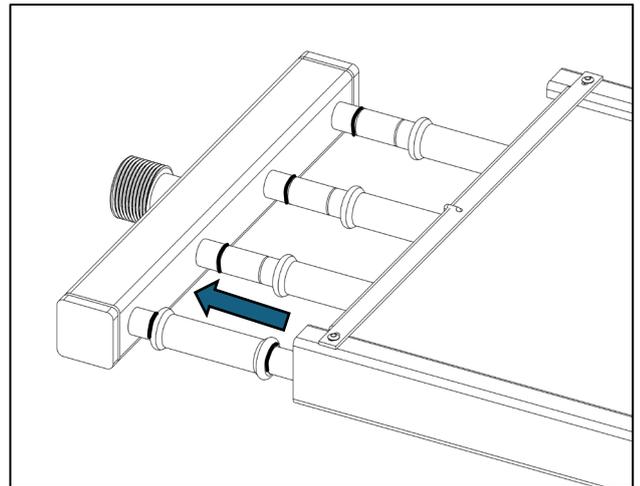


### 3. INSTALLATION OF MANIFOLDS

Use a marker to draw a line on the manifold at 25 mm. Draw a line 45 mm from the end of the panel pipe.

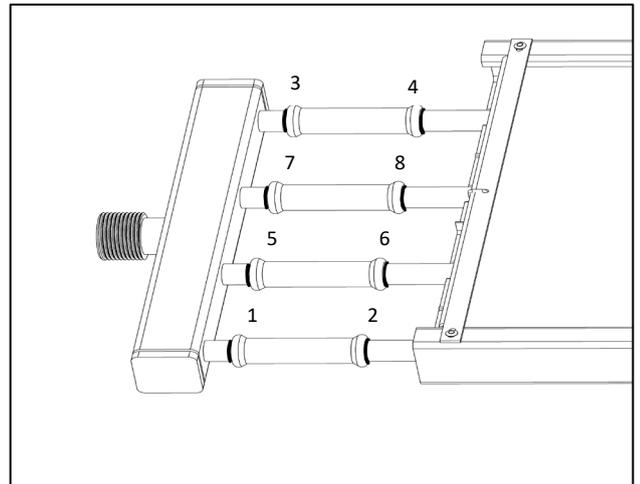
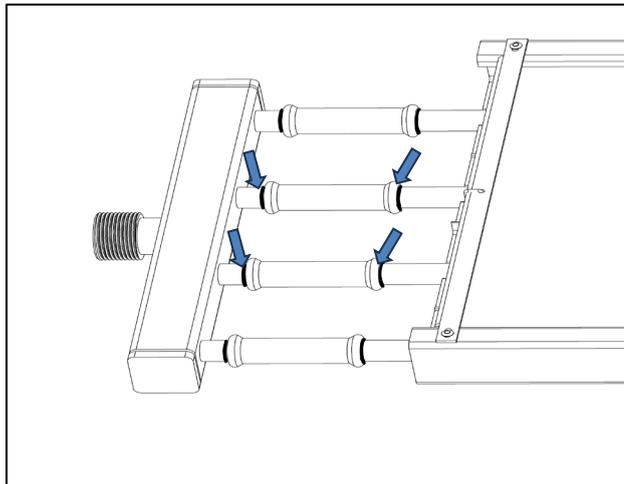


Pull the crimp fittings to the markings.



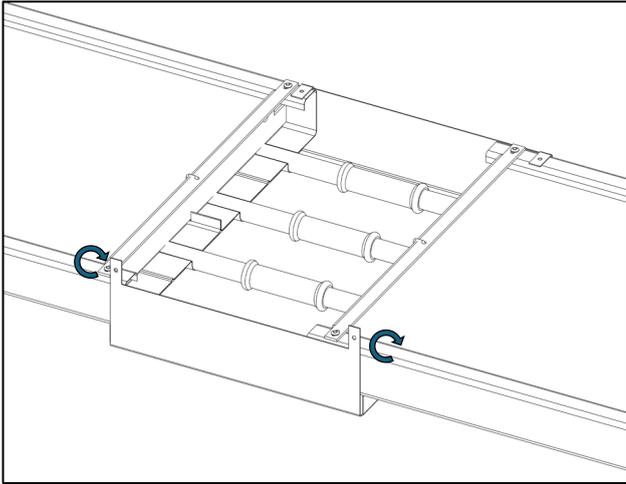
Before crimping, ensure that the fittings stop at the markings.

Crimp the fittings in the order shown in the picture. Use suitable type of jaw for the pressing tool based on the type of fitting used.

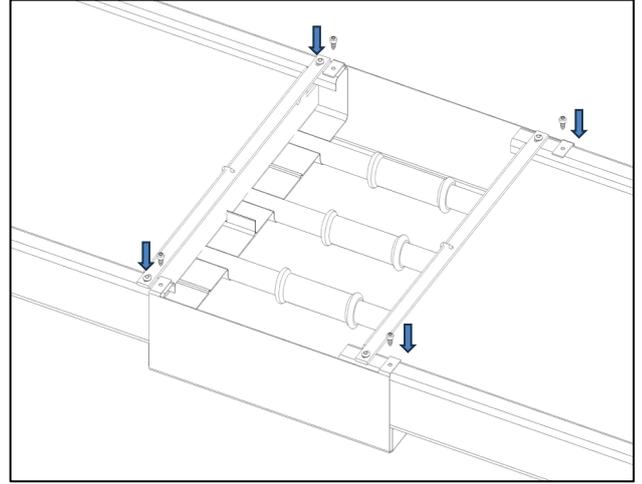


## 4. INSTALLATION OF COVER PLATES

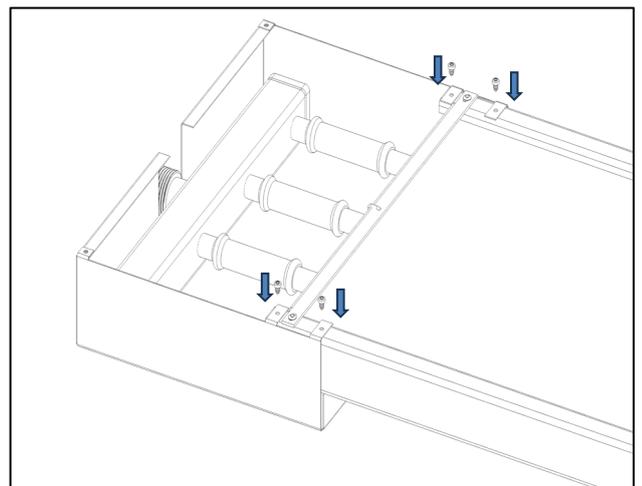
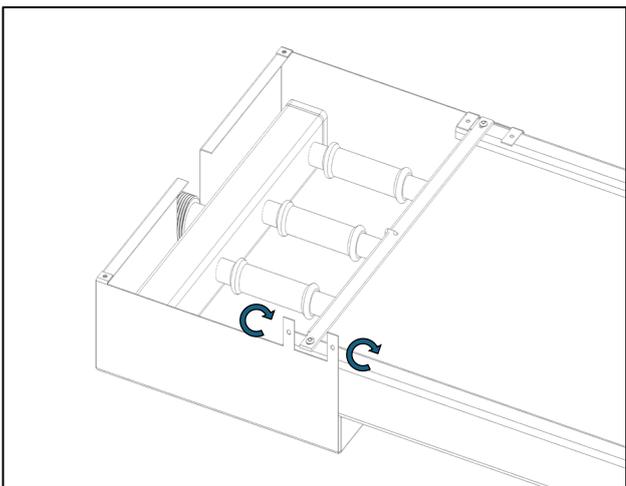
Place the cover plate between the panels.  
Make sure that the brackets can be turned  
over the edge of the panel.



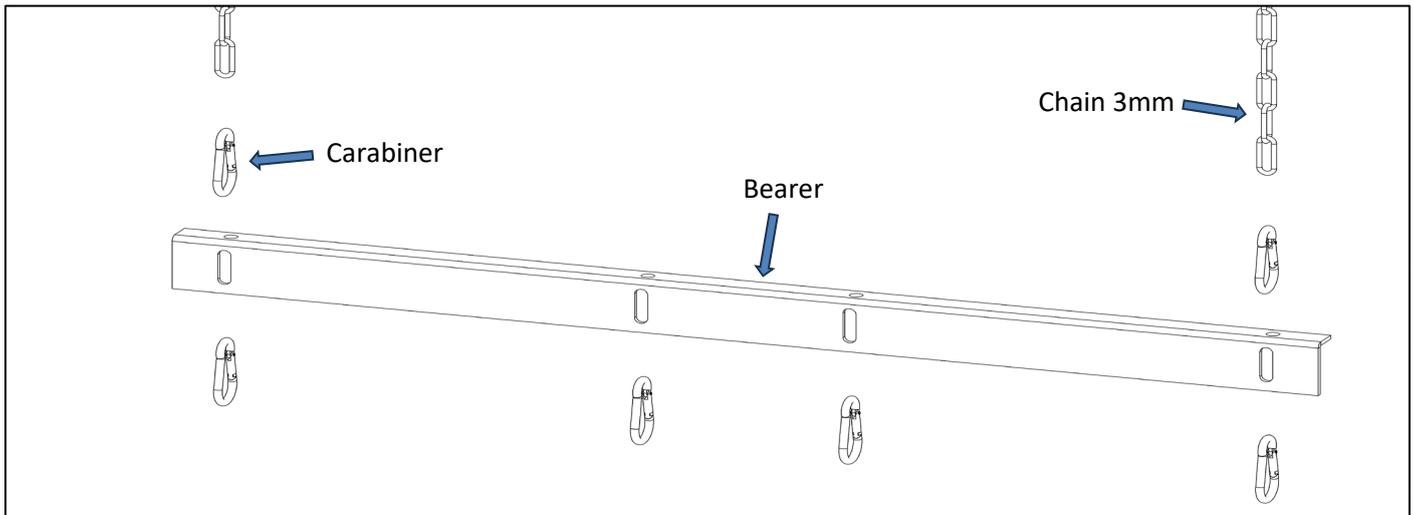
Attach the cover plate to the edge of the  
panel with a self-tapping sheet metal screw.



Place the end cover as shown in the images below,  
and turn the brackets over the edge of the panel.  
Attach the end cover with self-tapping sheet metal screws.

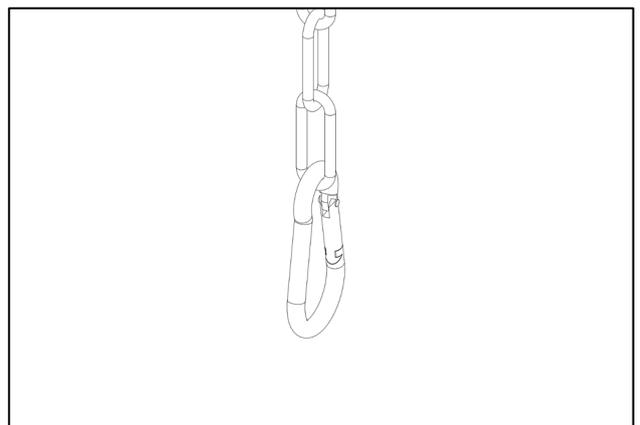
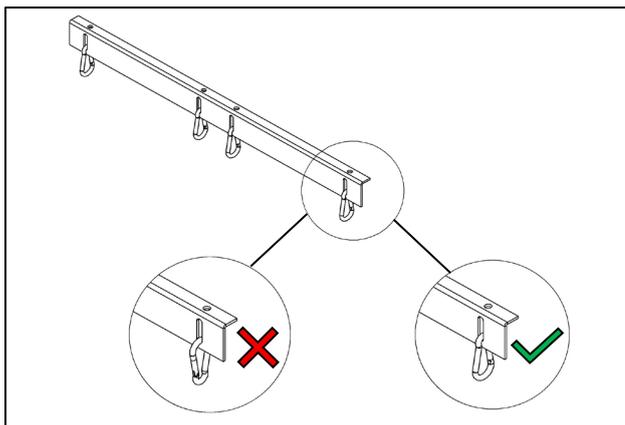


## 5. ASSEMBLING THE BEARER

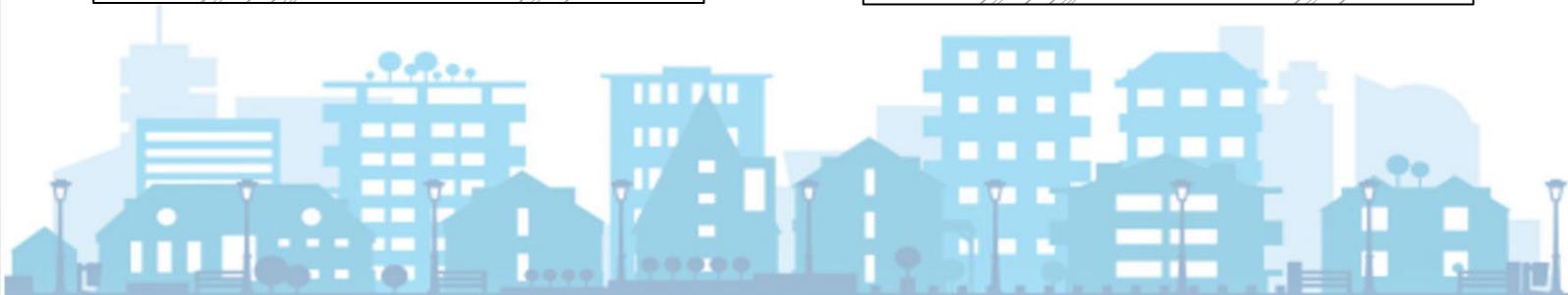
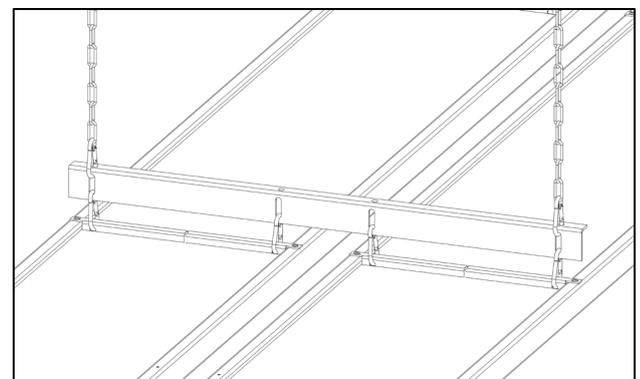
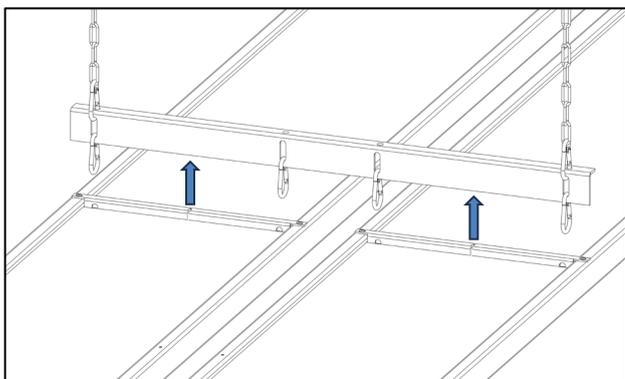


A carabiner is attached to the lower part of the bearer.

Attach the carabiner to the chain.

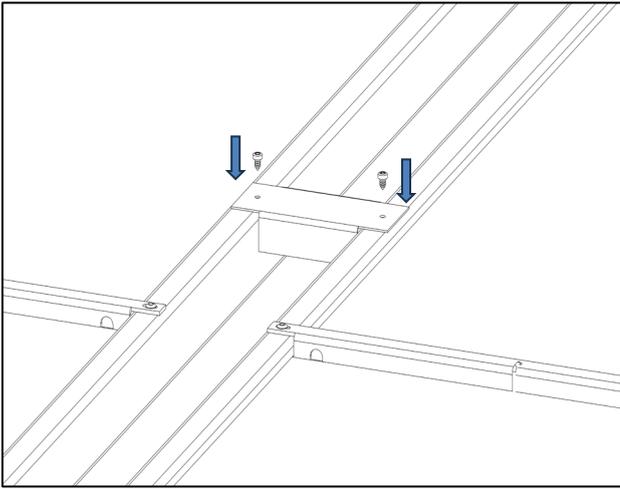


Mount the chain to the ceiling and attach the bearer to the chain using a carabiner. The panels are attached to the bearer. N.B.: carabiners must be positioned narrow end up!

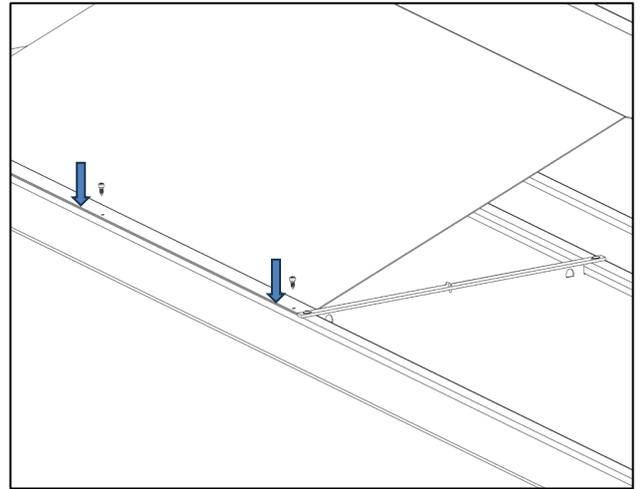


## 6. INSTALLATION OF BALL GUARDS

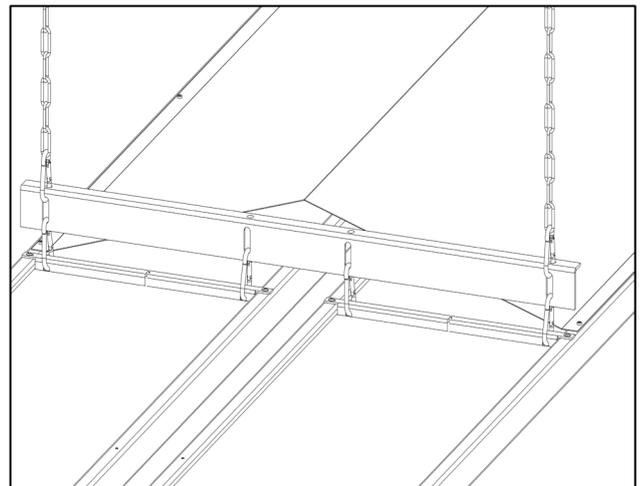
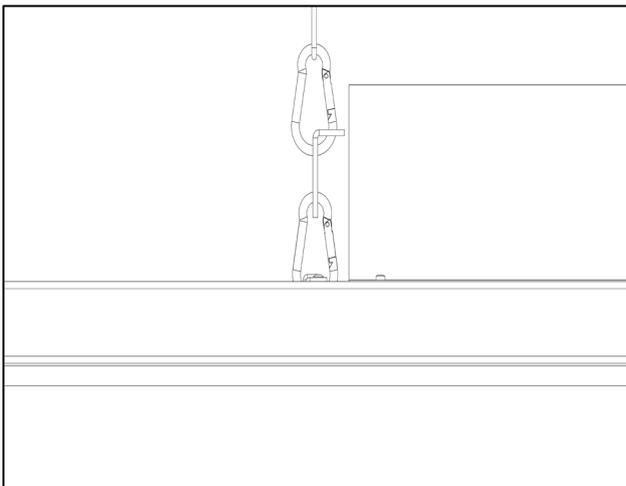
Attach the support between the panels with self-tapping sheet metal screws. The distance between the supports is 3 meters.



Mount the ball guard between the suspensions with self-tapping sheet metal screws.



Before mounting, ensure that there is a gap of about 1 cm between the suspension and the ball guard to allow the bearer to fit straight.

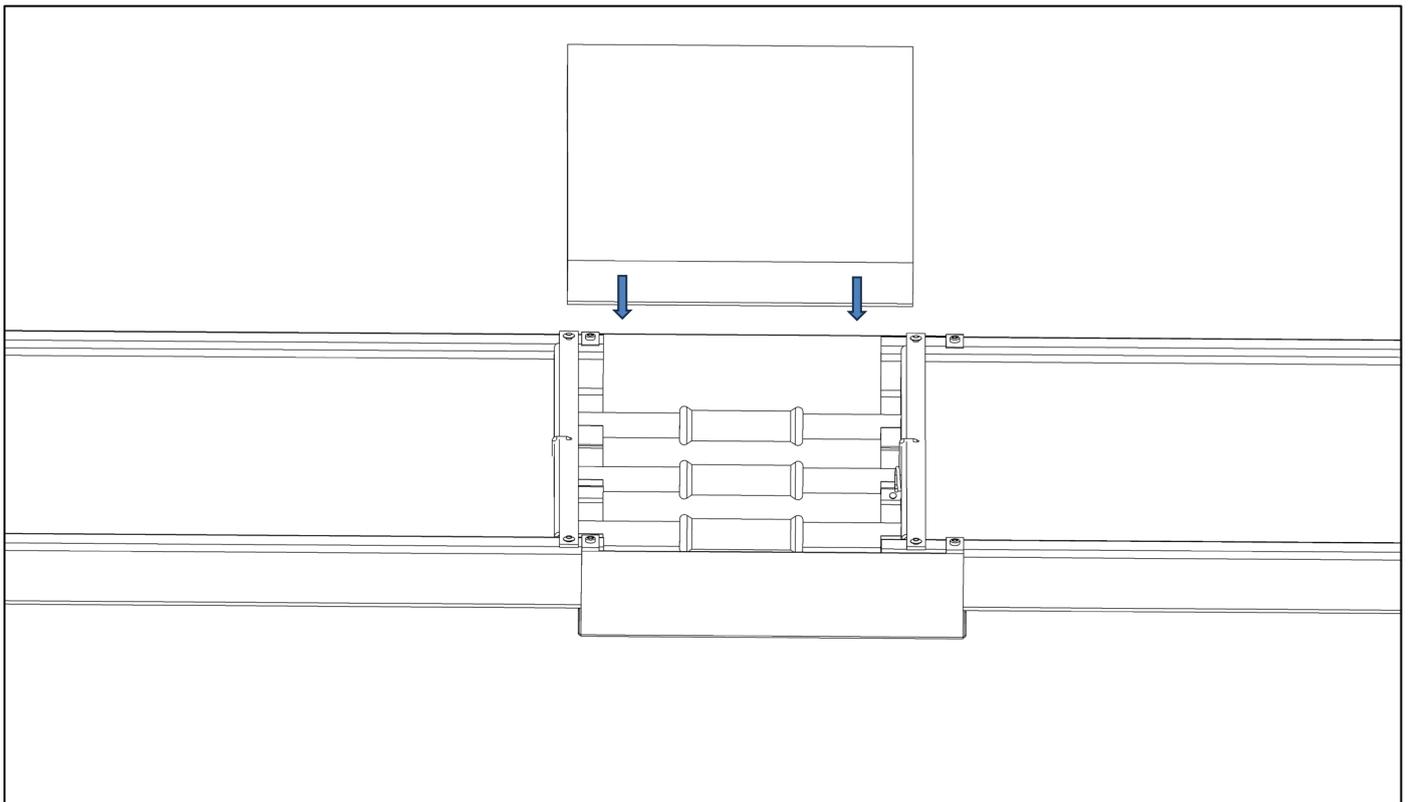


## 7. PRESSURE TEST AND WATER QUALITY

The ItuString+ system must first be tested with compressed air to ensure that it is installed correctly. If no leaks are found, a pressure test can be carried out with water. A pressure test report must always be compiled according to local regulations and practices.

The corrosion tolerance of steel pipes in heating and cooling networks is based on the oxygen free network. This is why all of the air must be removed from the network before the system is put into use. All air must also be carefully removed from the network after any maintenance operations. Water quality must meet country-specific state of art requirements for closed circuit systems.

After documented pressure testing, you can put the cover plate insulation in place.



## 8. PARTS

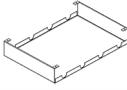
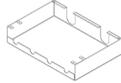
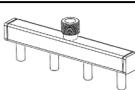
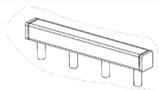
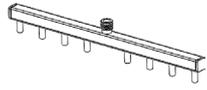
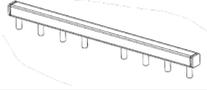
The cover plates are used to cover the manifolds and are installed to cover the joints between the modules.

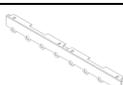
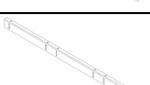
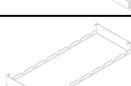
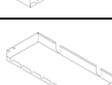
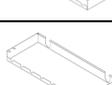
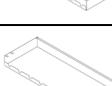
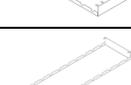
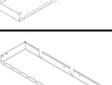
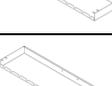
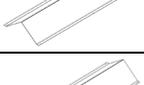
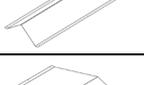
The ball guards can be used for installations of ItuString 1, ItuString 2 and ItuString 3 in sport halls and activity centers.

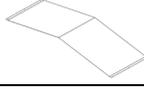
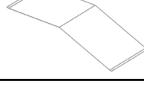
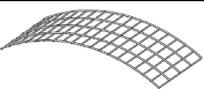
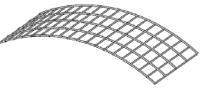
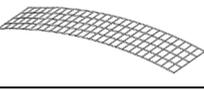
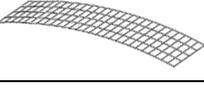
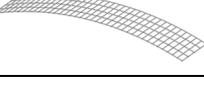
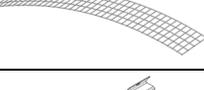
The dust protective shields ease the removal of the dust accumulated on the panels.

The mounting kits: the 3 mm steel chains and 5x50 mm carabiner hooks are used to suspend the panels.

The bracket multi-bar is for side-by-side coupling.

Code		Description	Weight (kg)
ITUIP-100026		ItuString-ECO end plate, visible side as white	0,09
ITUIP-100001		cover plate between panels, colour RR20	0,57
ITUIP-100002		4-pipe manifold cover plate, colour RR20	0,71
ITUIP-100002-NO		collector cover plate, colour RR20	0,73
ITUIP-100002-2		parallel 2-pipe manifold cover plate, colour RR20	0,70
ITUIP-100004		between panels fixture to be used in ball guard installations	0,05
ITUIP-100014		chain 3mm, sold in 50m coils	0,16 /m
ITUIP-100020		manifold 2 tubes 1" M	0,61
ITUIP-100022		manifold 2 tubes 1" M 90°	0,61
ITUIP-100040		manifold 4 tubes 1" M	1,11
ITUIP-100042		manifold 2 tubes 1" M 90°	1,11
ITUIP-100041		collector 4 tubes	1,00
ITUIP-100023		manifold 2 tubes 1" M with 1/2" air vent hole	0,65
ITUIP-100043		manifold 4 tubes 1" M with 1/2" air vent hole	1,1
ITUIP-100080		manifold 8 tubes 1" M	2,28
ITUIP-100081		collector 8 tubes	2,18

ITUIP-100704		ItuString 2 multi-suspension bar	0,95
ITUIP-101088		ItuString 3 multi-suspension bar	1,45
ITUIP-101472		ItuString 4 multi-suspension bar	1,94
ITUIP-RSS-IS2		ItuString connector bracket for IS2	1,03
ITUIP-RSS-IS3		ItuString connector bracket for IS3	2,64
ITUIP-100642		ItuString IS2 multi-suspension bar	0,93
ITUIP-100946		ItuString IS3 multi-suspension bar	1,40
ITUIP-100001-IS2		cover plate between panels for IS2, colour RR20	1,13
ITUIP-100002-IS2		parallel 4-pipe manifold cover plate for IS2, colour RR20	1,38
ITUIP-100002-3-IS2		parallel 2-pipe manifold cover plate for IS2, colour RR20	1,38
ITUIP-100002-NO-IS2		collector cover plate for IS2, colour RR20	1,41
ITUIP-100001-IS3		cover plate between panels for IS3, colour RR20	1,62
ITUIP-100002-IS3		parallel 4-pipe manifold cover plate for IS3, colour RR20	1,98
ITUIP-100002-NO-IS3		collector cover plate for IS3, colour RR20	2,02
ITUIP-100012		carabine hook 5x50mm, (100 pcs in a bag)	1,50
ITUIP-100018		carabine hook 6x60mm, (100 pcs in a bag)	2,80
0487459		crimp fitting 15 mm (M-type)	0,05
ITUIP-100110		self-tapping screw DIN 7504-N AW20 ZN 4,2 x 13 250 pcs per box	
ITUIP-BG1-370		ItuString 1 ball cover plate, 370x370 mm, colour RR20	0,77
ITUIP-BG1-972		ItuString 1 ball cover plate, 310x972 mm, colour RR20	2,01
ITUIP-BG2-370		ItuString 2 ball cover plate, 694x370 mm, colour RR20	1,42

ITUIP-BG2-972		ItuString 2 ball cover plate, 694x972 mm, colour RR20	3,88
ITUIP-BG3-370		ItuString 3 ball cover plate, 1078x370 mm, colour RR20	2,24
ITUIP-BG3-972		ItuString 3 ball cover plate, 1078x972 mm, colour RR20	5,87
ITUIP-BGM1-320		ItuString 1 ball guard mesh, zinc coated, 40 x 80. 320 x 320	0,17
ITUIP-BGM1-960		ItuString 1 ball guard mesh, zinc coated, 40 x 80. 320 x 960	0,50
ITUIP-BGM2-320		ItuString 2 ball guard mesh, zinc coated, 40 x 80. 720 x 320	0,38
ITUIP-BGM2-960		ItuString 2 ball guard mesh, zinc coated, 40 x 80. 720 x 960	1,07
ITUIP-BGM3-320		ItuString 3 ball guard mesh, zinc coated, 40 x 80. 1080 x 320	0,56
ITUIP-BGM3-960		ItuString 3 ball guard mesh, zinc coated, 40 x 80. 1080 x 960	1,58
ITUIP-BGM4-320		ItuString 4 ball guard mesh, zinc coated, 40 x 80. 1480 x 320	0,76
ITUIP-BGM4-960		ItuString 4 ball guard mesh, zinc coated, 40 x 80. 1480 x 960	2,16
ITUIP-100016		ItuString, mesh ball guard holder 12 x 20 x 156 mm	0,02