



Gutter system – The assembly instructions

„HORNVAL”

The size of the Roof is the basic criteria selection. Thanks to the deep gutter and cross-section of drain pipe \varnothing 150/100 and \varnothing 150/120 the HORNVAL gutter system ensures efficient drainage of rainwater from roof surface in the industrial construction. Gutter system HORNVAL was projected in such way to contain the best features of plastic and steel system.

1. How to chose gutter size to the size of the roof.

Table contains maximum size of the Roof, from which can taking water out from each gutter size.

Method of drain pipe assembling		
gutter/drain pipe \varnothing 150/100	max 140 m ²	max 290 m ²
gutter/drain pipe \varnothing 150/120	max 160 m ²	max 310 m ²

2. Tools

To install Hornval gutter system correctly, prepare necessary tools:



nibbler or saw for cutting sheet metal



cut snips



screw gun



pencil



hammer



chalk line



measuring tape



manual bending



bending to the rafter bracket



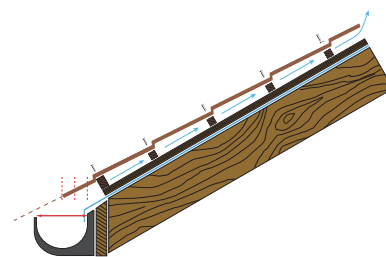
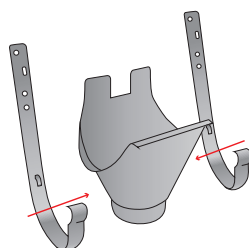
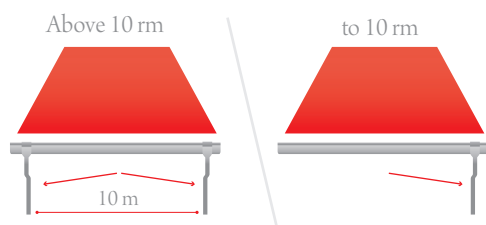
spirit level



Attention

It is unacceptable to use angle grinders and other devices that causes a thermal effect for cutting and all gutter system treatments. This can damage paint and zinc coatings - as a result, the corrosion process begins.

3. Marking basic gutter line and chose of gutter brackets

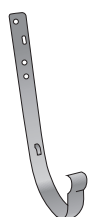
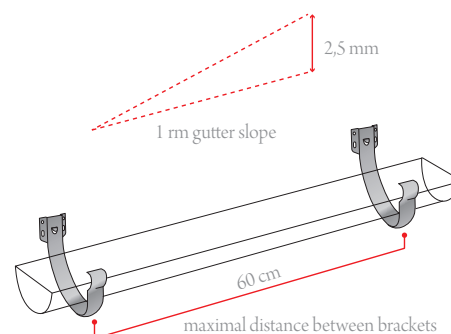


- Mark the place in which running outlet will be situated
- At longer roof surfaces then 10 m use drainage in two directions
- Running outlet is the lowest installed element on the gutter line
- The gutter bracket must be placed at both side of running outlet.
- 1 drain pipe drains water from around 10 m of gutter
- We install the gutter to the front board in such way that the sliding snow from the roof surface does not damage the gutter

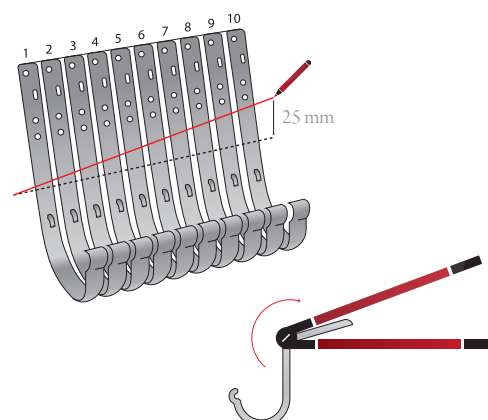
Gutter brackets choosing:



Gutter bracket type "C" – Apple to the front board. Remember to keep the slope of the gutter so that the water can run freely. Proper slope will be no less than 2,5 mm for 1 m of the gutter. Distance between brackets should be no less than 60 cm. When you take the highest and lowest fixing point use chalk line to settle the slope line along which next gutter brackets will be install.



Rafter bracket type "C" – to use it you need bending machine to bend it the angle of roof. Best way to setting the places of bending next brackets is to mark them from 1 to 10, after that mark two lines. Distance of the lines on 1 bracket should be 0 mm and on the last bracket should be around 25 mm.



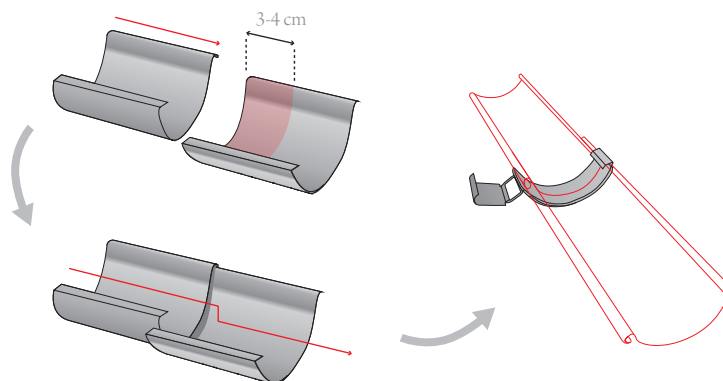
Do not apply any traces or lines to the flashing with a sharp stylus!!!



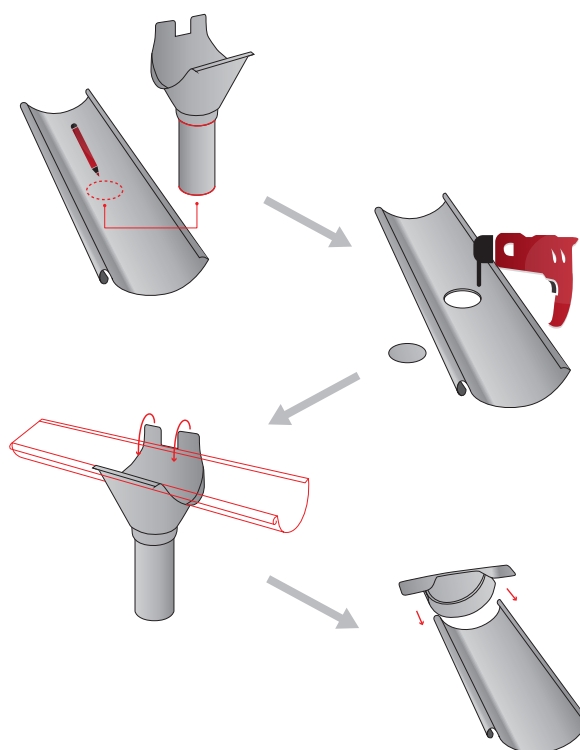
4. Gutter, running outlet, angles and stopend installation

Hornval gutter system join two gutter by the „click” system

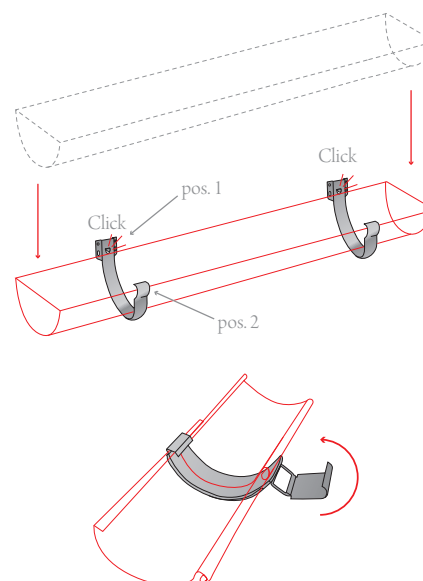
- Slide one gutter into the other for about 3-4 cm and connect them by “click”. It should be remembered that the upper gutter should be on top so that there is no leakage.
- In the place of joining two gutters, it is necessary to install gutter union



- It is necessary to make hole in the place of draining the water from gutter to drain pipe. Take special care when doing this. The hole can be cut with: special hole saw or hacksaw. After determining the place where the hole is to be cut, it should be marked with a marker by applying and outlining the drain pipe. Then cut out the outlet hole carefully. It is recommended to finish the hole with nibbler scissors. The edging of the hole should be bent outwards in the direction of the flowing water.
- In the place where the hole is cut put the running outlet by inserting it under the front edging of the gutter, and after that bend rear part onto gutter.
- Assembly angles at the end of the gutter as with connection of two gutters. Use gutter unions in the place of connection.
- Put the stopend at the end of gutter. Stopend should be gripped by a metal screw in two places.

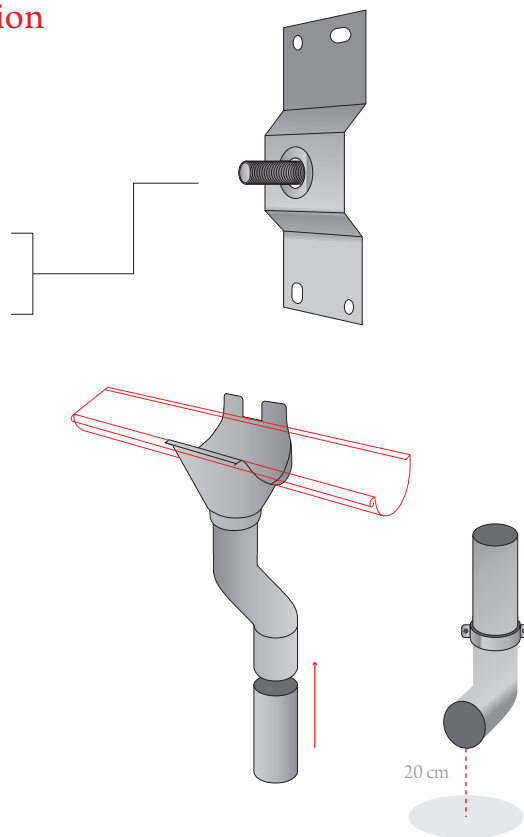


- Such assembled gutter should be putted into earlier installed hooks under the catch in back part of gutter bracket or rafter bracket (pos.1), and then we connect the gutter to the front part of bracket (pos.2).
- We clamp the gutter unions.
- Use roofing sealant in the place of connection of two gutters, gutter and angle, and gutter with stopend.



5. Drain pipes, circular clamps and elbows installation

- We mark the montage line of the drain pipe on the wall.
- Assemble circular clamps to the wood, concrete or Ceramic wall by dowel with expansion flange.
Assemble circular clamps to the sandwich wall or elevation made from steel sheets by special „clamp plate” and using metal screw.
- Distance between circular clamps should not be higher than 100 cm.
Put the first clamp 15 cm from the end of elbow.
- Running outlet connect directly with drain pipe or by the arc elbow.
- Put outlet elbow at the end of drain pipe. It is recommended to keep 20 cm distance between outlet elbow and ground.
- Elbows and drain pipes are fitted, and do not need any additional joining elements.



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