



Lindab Rainline™

## Lindab Roof Drainage System Assembly instructions

# Assembly instructions

## Before you start

It is the total area of the roof that decides the dimensions of the system you select. The larger and steeper the roof, the greater the run off. It always pays to carry out the calculations shown below to ensure that your guttering is sized correctly and will be able to cope with the run off. If you are in any doubt please call us and we will be able to offer the technical support you require or visit our website [www.lindab.co.uk](http://www.lindab.co.uk)

## Calculating your roof area

As the roof pitch increases the rate the water flows off the roof also increases. This has to be considered and is called 'the pitch factor'. By consulting 'Chart A – Calculation of effective roof area' below, you will be able to take the pitch factor into account when calculating the effective roof area.

**Chart A – Calculation of effective roof area**

Roof Pitch	Effective area
Flat roof	Width x Length*
30° Pitched roof	Length of gutter run x Rafter length* x 1.29
45° Pitched roof	Length of gutter run x Rafter length* x 1.50
60° Pitched roof	Length of gutter run x Rafter length* x 1.87

\*Rafter length = Measurement from eaves to ridge.

**Chart B**

Gutter Size	Outlet installed at end of run	Outlet installed central to run	Recommended downpipe size
100mm	68m <sup>2</sup>	136m <sup>2</sup>	75mm*
125mm	115m <sup>2</sup>	221m <sup>2</sup>	75mm*
150mm	152m <sup>2</sup>	326m <sup>2</sup>	100mm
190mm	268m <sup>2</sup>	507m <sup>2</sup>	100mm

\*For buildings greater than 2 stories we recommend an 87mm diameter downpipe be used.

For outlets placed within 2m of bend above roof areas should be reduced by 15% if gutter is laid without a fall above roof areas should be reduced by 15%.

## Number of brackets spacings and downpipes

Brackets should be installed at 800mm centres. End brackets should be installed 100mm from roof edge. To calculate how many brackets are required use the following formula:

$$\text{Number of brackets} = (\text{length of run} \div 0.8) + 1.$$

i.e. for a 10m run –  
 $(10 \div 0.8) + 1 = 14$  brackets.

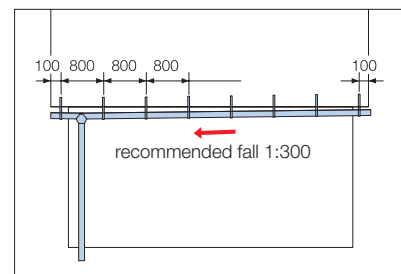
## Sizing your gutter

Below is 'Chart B' which lists in m<sup>2</sup> the maximum area of roof that should be directed to an outlet. These calculations are based on the gutter being laid to 'fall'.

i.e. the outlet end of the gutter run is lower than the other end of the run.

We strongly recommend gutter is laid in this way and not level as it allows debris to be washed out and reduces maintenance. We recommend a fall of 1:300.

i.e. over a 3 metre run, there is a drop of 10mm from high to low.



# Assembly instructions

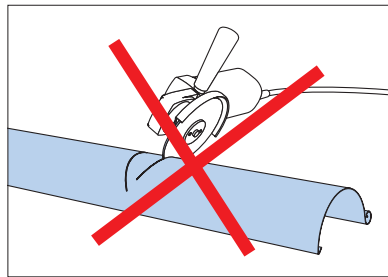
## Transport, storage, unpacking

Make sure that the roof drainage components are handled with care during transport, storage and unpacking. If not, the coating may be damaged or the pipes and gutters dented. Store pipes and gutters on a plane and stable surface.

Non coated components must be unpacked and stored in a dry and ventilated place.

## Cutting

Cut the gutters and pipes with plate shears, hacksaw or chopsaw on a firm underlay on the ground. Never use an angle grinder. It heats the steel up and thus destroys the galvanization. The coating may also be scorched by hot chips or filings.



Never use an angle grinder

## After-treatment

If the coating has been damaged, paint it with Lindab's repair paint to prolong the lifespan of the roof drainage system. Use a sponge or Lindab's paint nib.

## Maintenance

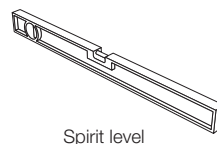
If you want to keep the roof drainage system in mint condition, give the system an overhaul a couple of times a year. Clean the gutter and pipes from leaves and twigs. Wash with water and a mild detergent. Don't use a high pressure washing appliance.

## Tools

Lindab's roof drainage system can be mounted with ordinary hand tools like pliers, hammer, hacksaw, screwdriver, folding rule and string. For bending brackets, a specialist bracket bender is available for purchase.

## Fastening

The fasteners you need are for fastening the brackets and the pipe holders. We always recommend that you use stainless screws and use the right screws intended for each material. The pipe holders are mounted on the house facade. Check if it's wood, concrete or bricks.



Spirit level



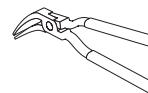
Folding rule



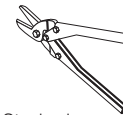
Pencil



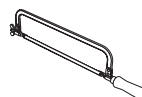
Electrical screwdriver



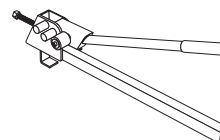
Seam plier



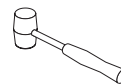
Steel scissors



Hacksaw



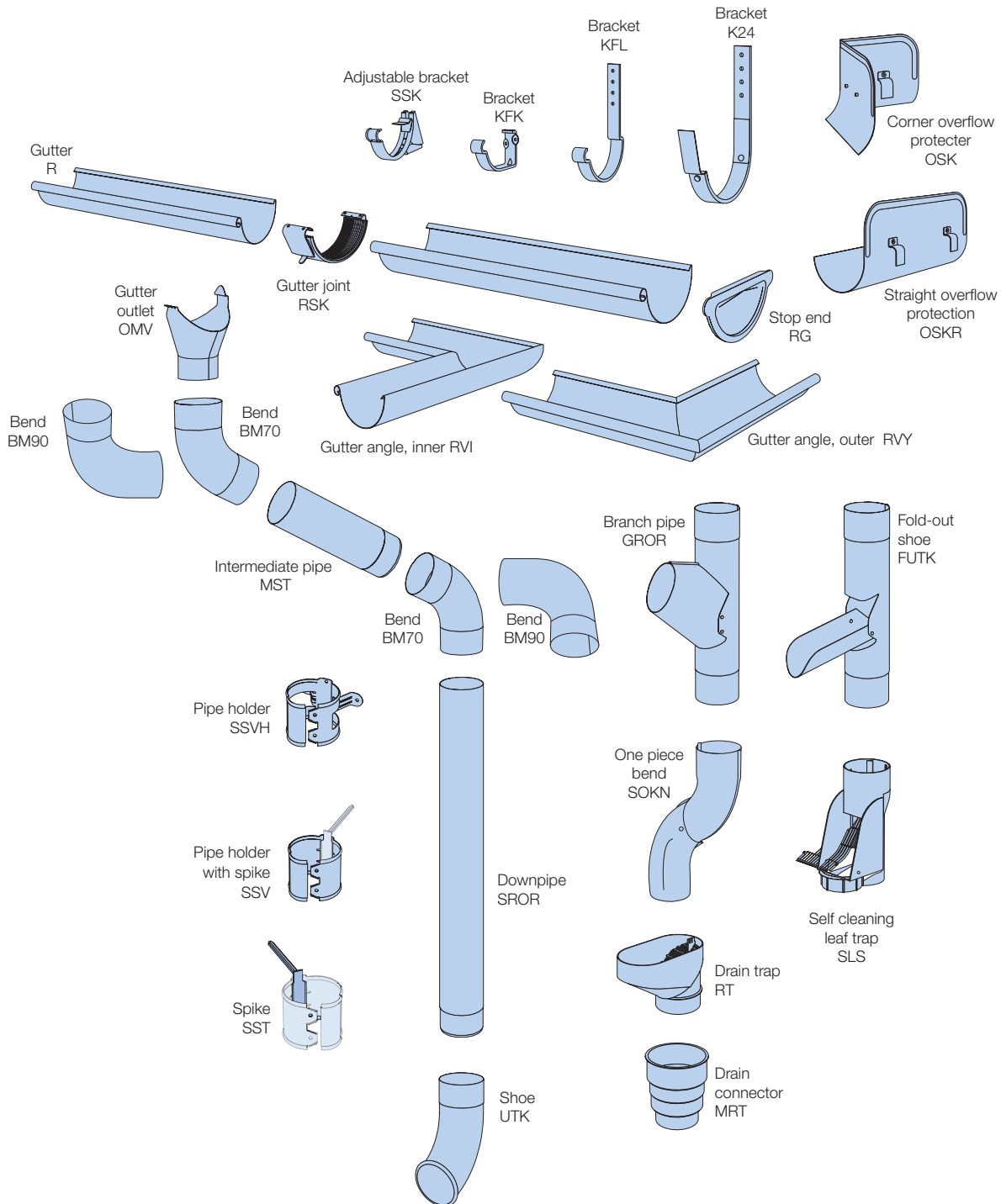
Bracket bender



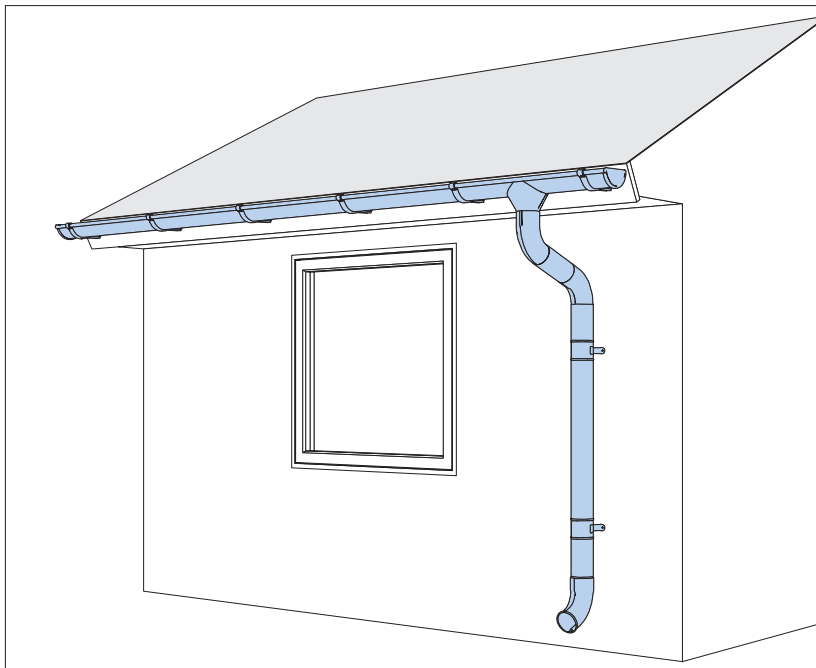
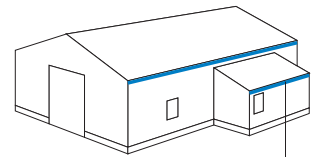
Rubber hammer

# Assembly instructions

## Components

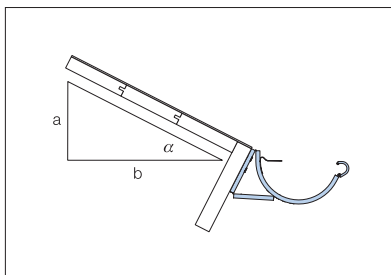


# Assembly – Roof Drainage System

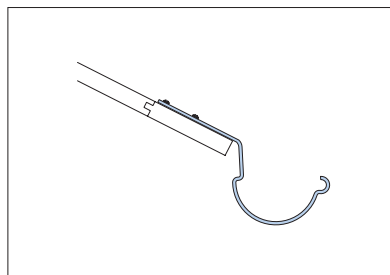


## Roof base

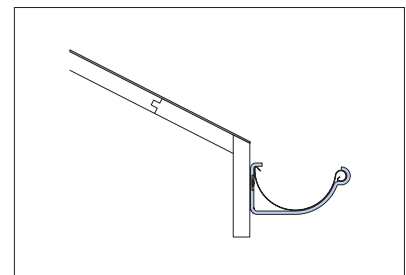
Depending on the roof construction of the building different types of brackets can be used. An adjustable snap bracket is used in the assembly instruction that follows. Other bracket applications are also shown as separate instructions. The brackets that can be used are:



Lindab SSK Adjustable snap bracket



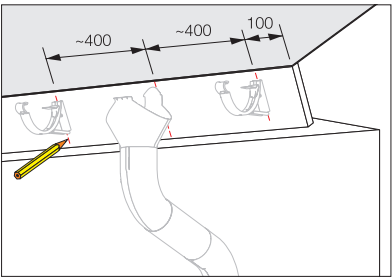
Lindab KFL bracket



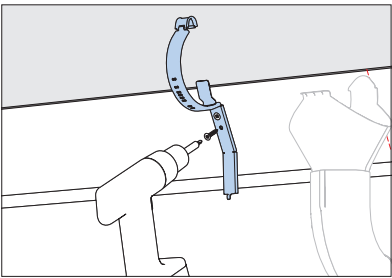
Lindab KFK bracket

# Assembly – Roof Drainage System

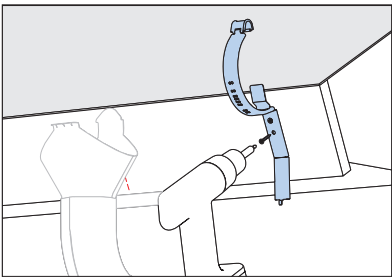
## Bracket assembly



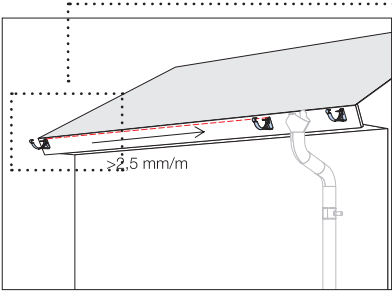
Mark out for the brackets SSK around the downpipe.



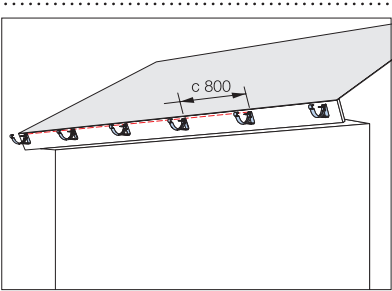
Fasten the “low bracket” 300mm left to the downpipe mark.



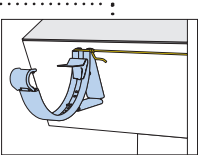
Fasten the bracket right of the downpipe mark 2.5mm higher than the low bracket.



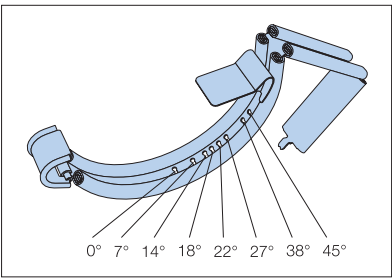
Fasten “high bracket” at the opposite end of roof base. The inclination to the pipe shall be 2.5mm/m.



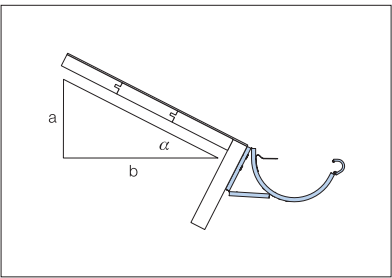
Fasten the other brackets with c/c 800mm along the string.



Put a string between the high and low bracket. It will help you to place the other brackets.

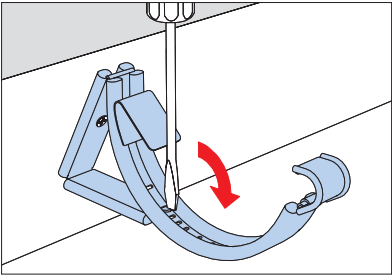
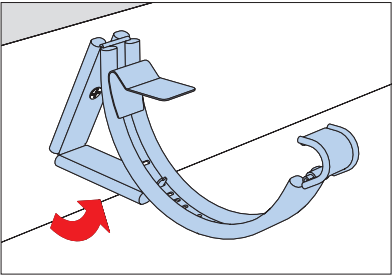
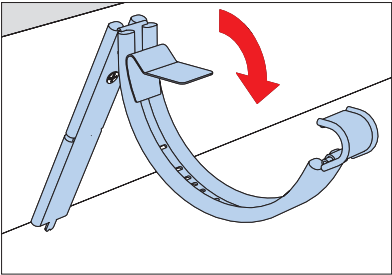


The SSK bracket can be adjusted for different roof pitches.



Calculate your roof pitch and adjust the bracket accordingly.

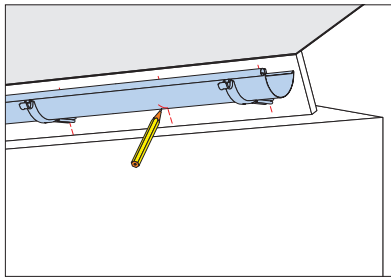
a	b	$\alpha$
1	1	45°
1	1.25	38°
1	2	27°
1	2.5	22°
1	3	18°
1	4	14°
1	8	7°
1	$\infty$	0°



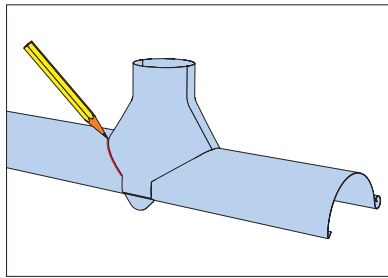
Use screwdriver to fold the tap forward for low inclinations and backwards for  $\alpha \geq 22^\circ$ .

# Assembly – Roof Drainage System

## Gutter assembly



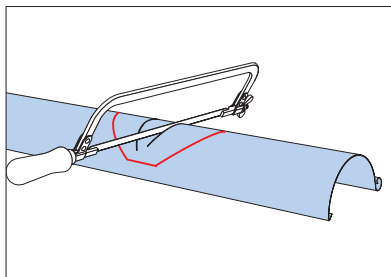
Place the gutter in the brackets and mark out for the gutter outlet OMV on the gutter.



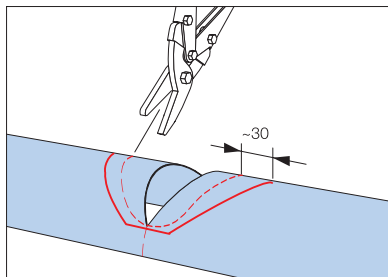
Use the outlet as template on the gutter.

**To cut the hole for the outlet we recommend that a metal cutting hole saw be used.**

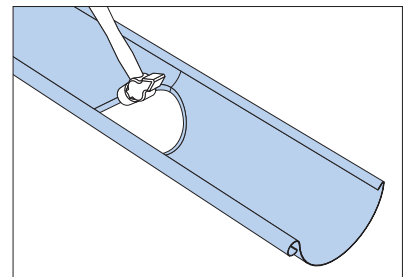
75mm downpipe – 70mm Hole saw  
87mm downpipe – 80mm hole saw  
100mm downpipe – 90mm hole saw  
Alternatively the following method can be adopted.



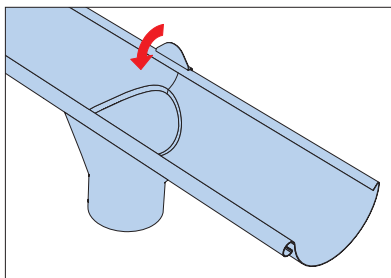
Use a hacksaw to make a hole in the gutter.



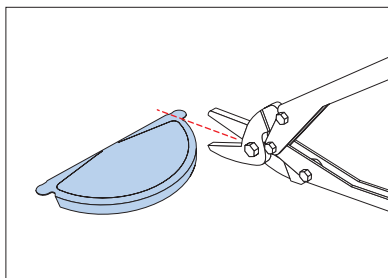
Finish by cutting up to the bead and backside as shown in picture.



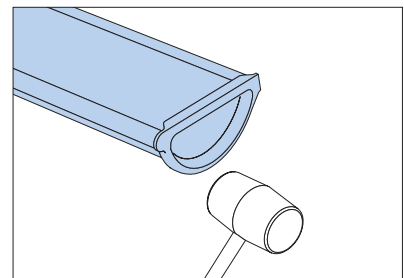
To get a smooth water fall, use a hammer on the edges.



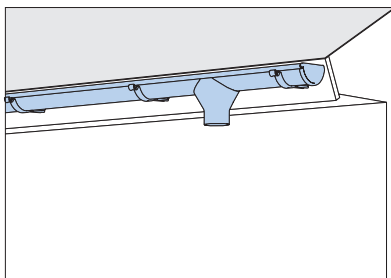
The gutter outlet snaps easily on the gutter.



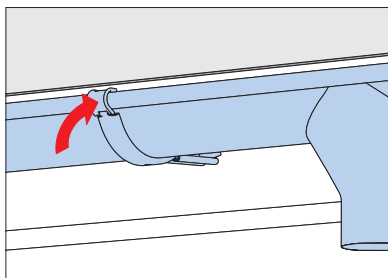
Cut or fold the ear not used.



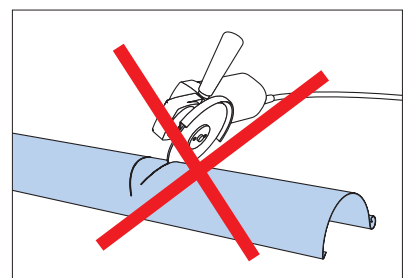
The stop end RG is self sealing. Use a rubber hammer to fix it to the gutter.



Place the gutter in the brackets.



Just snap on the bracket hooks on the gutter.

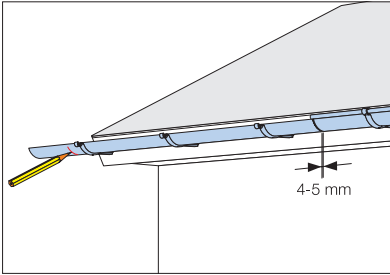


Never use an angle grinder.

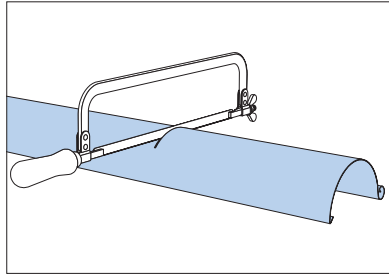


# Assembly – Roof Drainage System

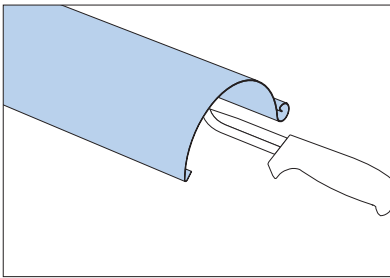
## Gutter joint



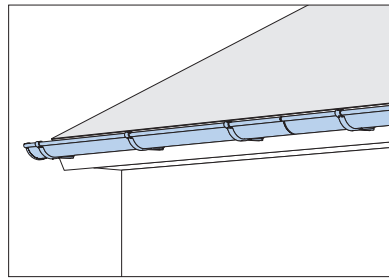
Place the gutter to be jointed in the brackets and mark out the needed length



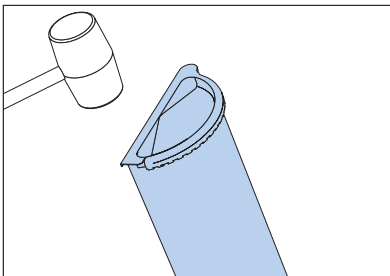
Use a hacksaw to cut the gutter.



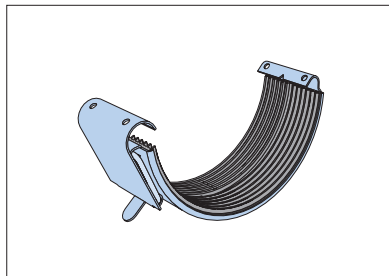
Remove the filings.



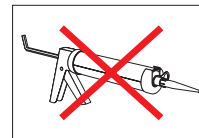
Snap on the gutter.



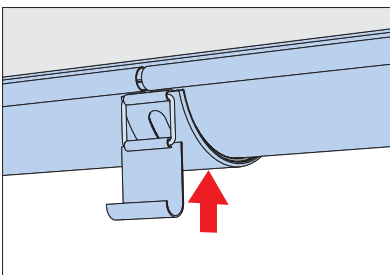
Assemble the stop end RG.



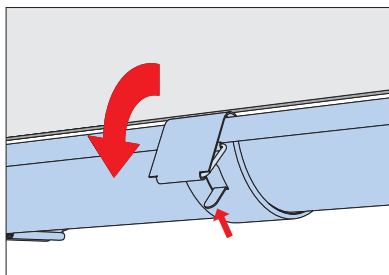
Use self sealing RSK gutter joint.



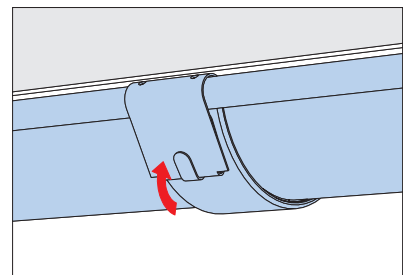
Silicone should not be used.



Press the sealing to the gutter.



Snap on the gutter joint

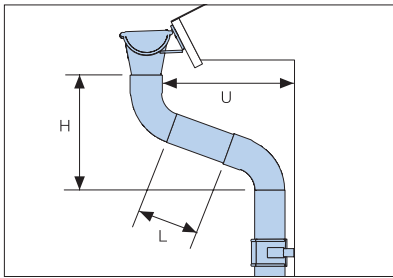


and lock.

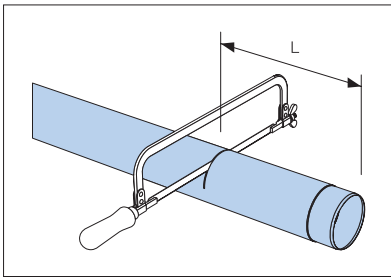


# Assembly – Roof Drainage System

## Downpipe bends



Check the measures to get the length of the intermediate pipe. Use table on the side.  
A small piece of spare downpipe can be used. Alternatively an MST intermediate pipe may be used.

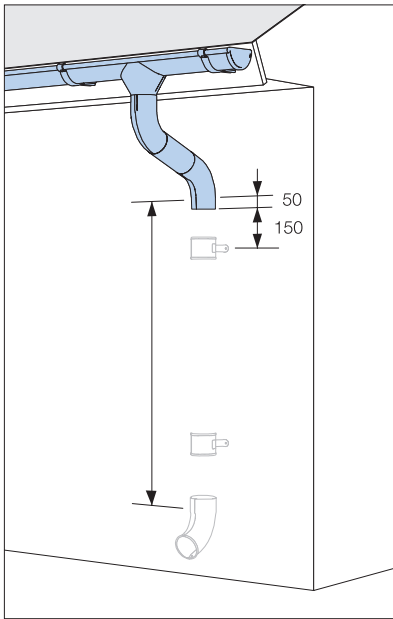


Use a hacksaw to cut the intermediate pipe. Remove sharp metal filings with a knife.  
Male section at end or MST must be removed before measuring length and cutting.

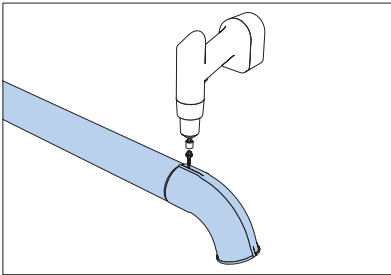
Intermediate pipelength at 70° bends

U mm	H mm	L mm
220	275	0
270	290	100
300	300	135
350	320	185
400	340	240
450	355	290
500	375	345
550	395	400
600	410	455
650	430	505
700	450	560
750	465	610
800	485	665
850	505	720
900	520	770
950	540	825
1000	555	880
1050	575	930
1100	595	985
1150	610	1040
1200	630	1090

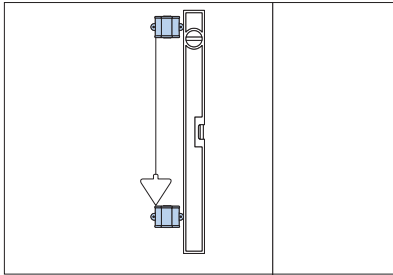
## Downpipe and holder



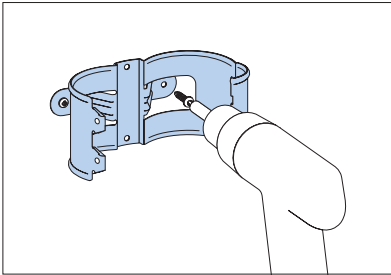
Measure the length of the downpipe. Mark out for the pipe holders SSVH



Assemble the pipe Shoe UTK. Use a self tapping screw on the back side.



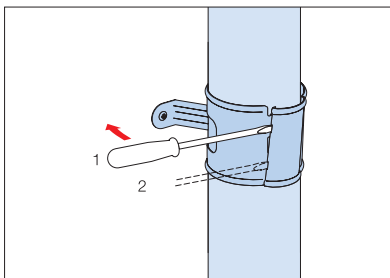
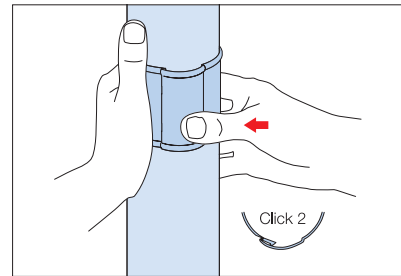
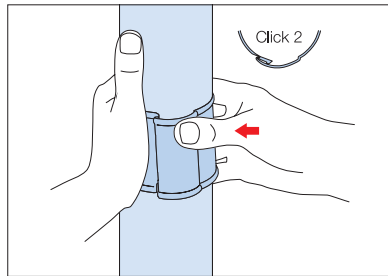
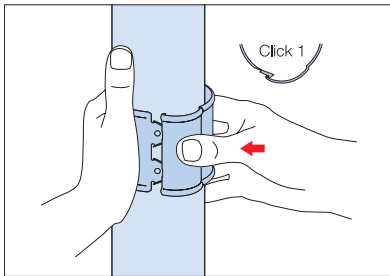
Level the pipe holders with spirit level or plummet.



Fasten the pipe holder on the wall.  
(Max 1.5m centres)

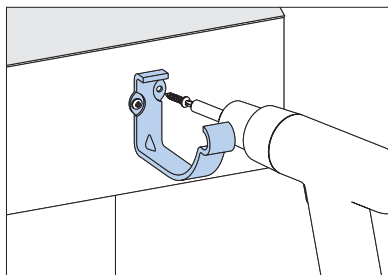
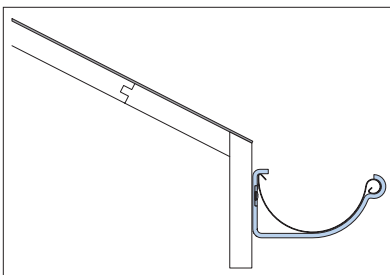
# Assembly – Roof Drainage System

## Close up assembly pipe holder SSVH

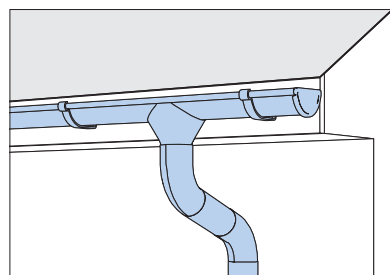
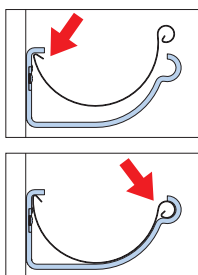
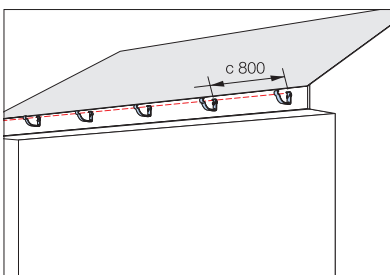


It's easily done to dismount the holder.

## Bracket KFK



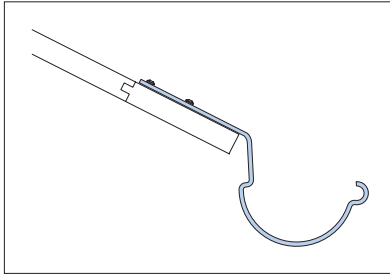
Alternative to use bracket KFK for perpendicular roof base.



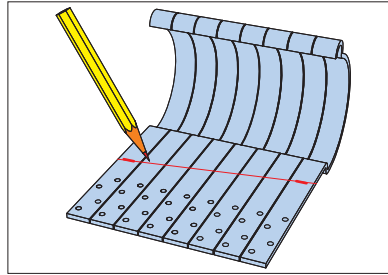
The inclination shall be 2.5mm/m.

# Assembly – Roof Drainage System

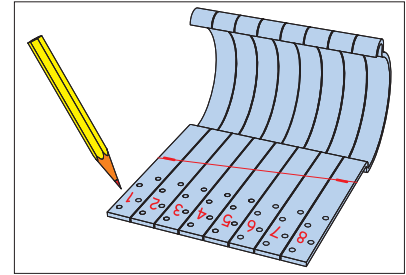
## Bracket KFL



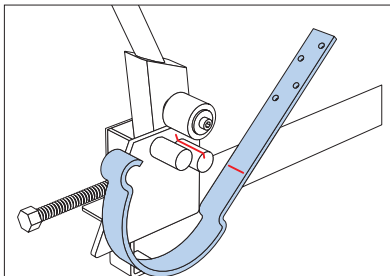
Alternative to use bracket KFL



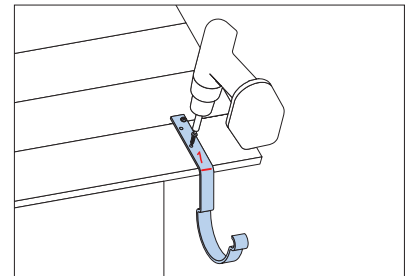
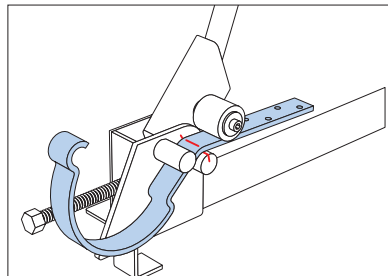
Mark out on the brackets for the gutter incline. 2.5mm/m.



Number the brackets. 1 is for "Low bracket". Last bracket is "High bracket".



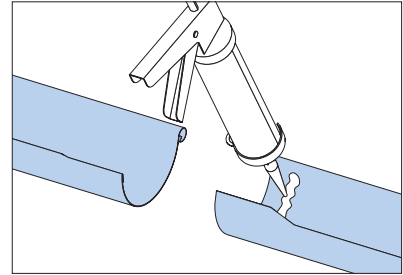
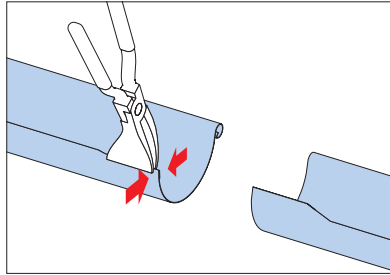
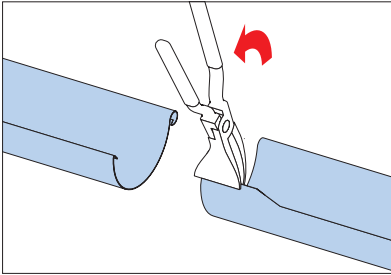
Bend the brackets at the marking.



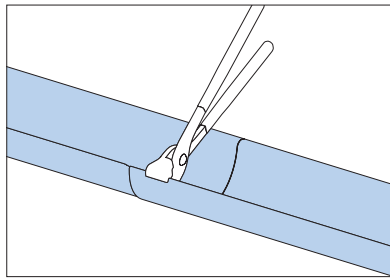
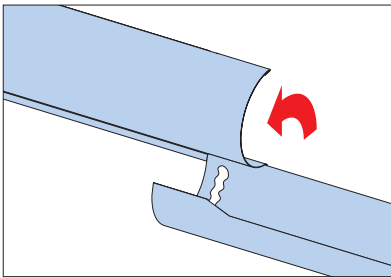
Mount bracket no.1 "Low bracket", and fasten the other brackets accordingly.

## Assembly – Roof Drainage System – 190mm only

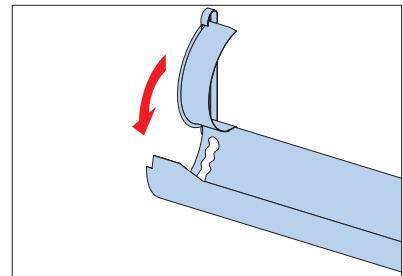
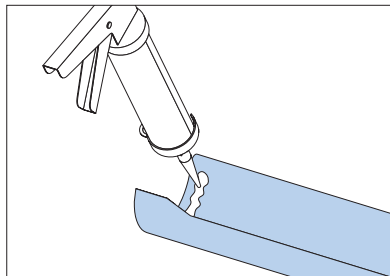
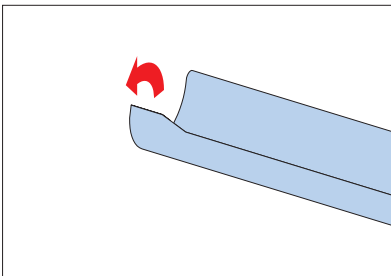
### Traditional gutter joint



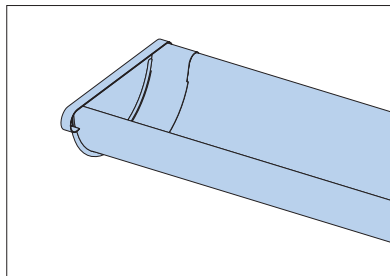
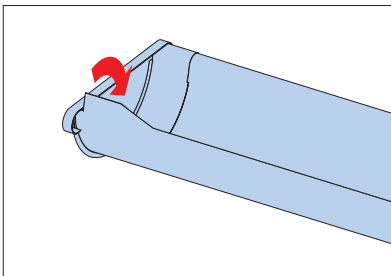
Use silicone as sealing.



### Traditional Stop end RG (left hand) and RG (right hand)

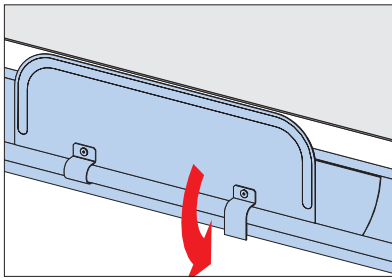


Use silicone as sealing.

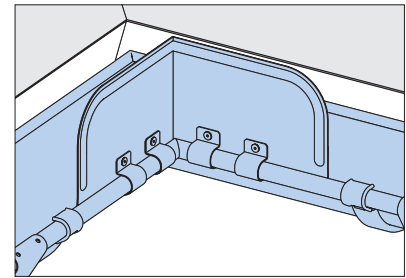
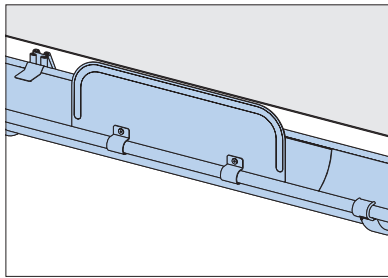


# Assembly – Roof Drainage System

## Overflow protection OSK and OSKR

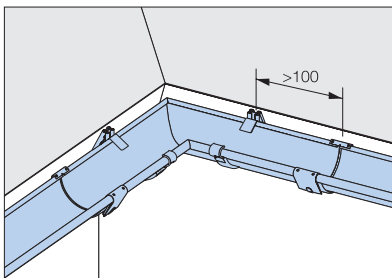


Place Overflow protection OSKR in the gutter.

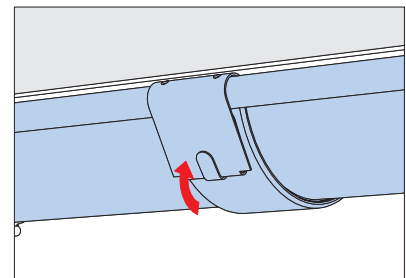
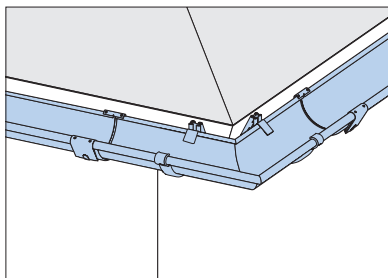


Overflow protection OSK for gutter angles.

## Gutter angle RVI/RVY

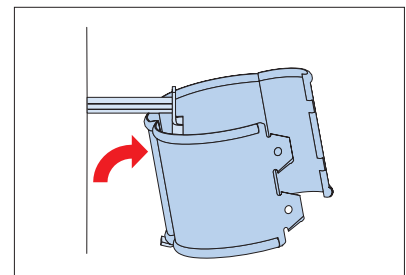
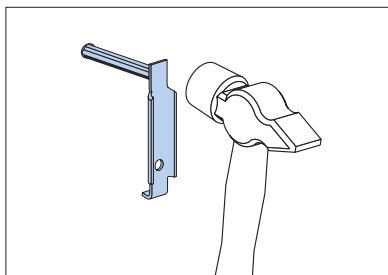
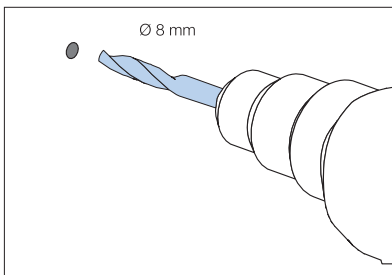


Use the gutter joint RSK. (For 190mm gutter 'Roll Joint' must be installed in direction of flow).



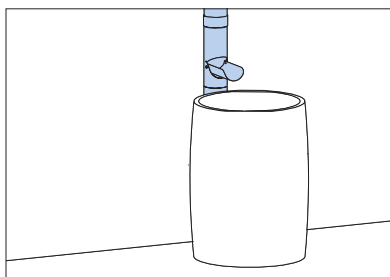
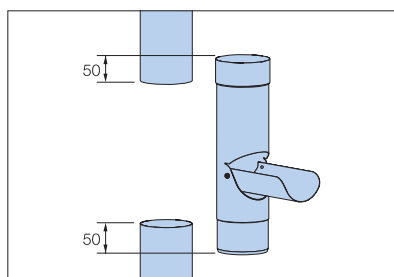
Gutter joint RSK.

## Spike STI with Pipe holder SSV

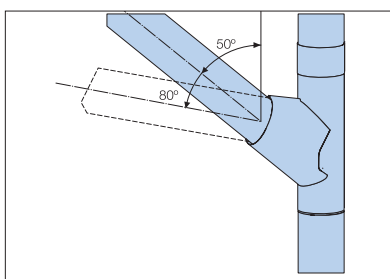
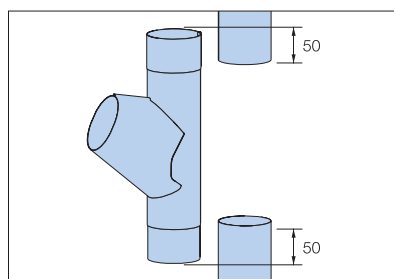


# Assembly – Roof Drainage System

## Adjustable shoe FUTK

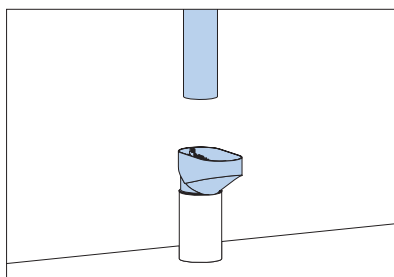


## Adjustable branch GRÖR

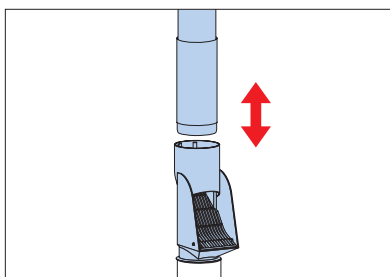


Connect a branch pipe. Can be mounted in angle 50-80°.

## Drain trap RT



Place the drain trap in the ground pipe.



You can also use a self cleaning leaf trap SLS.





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