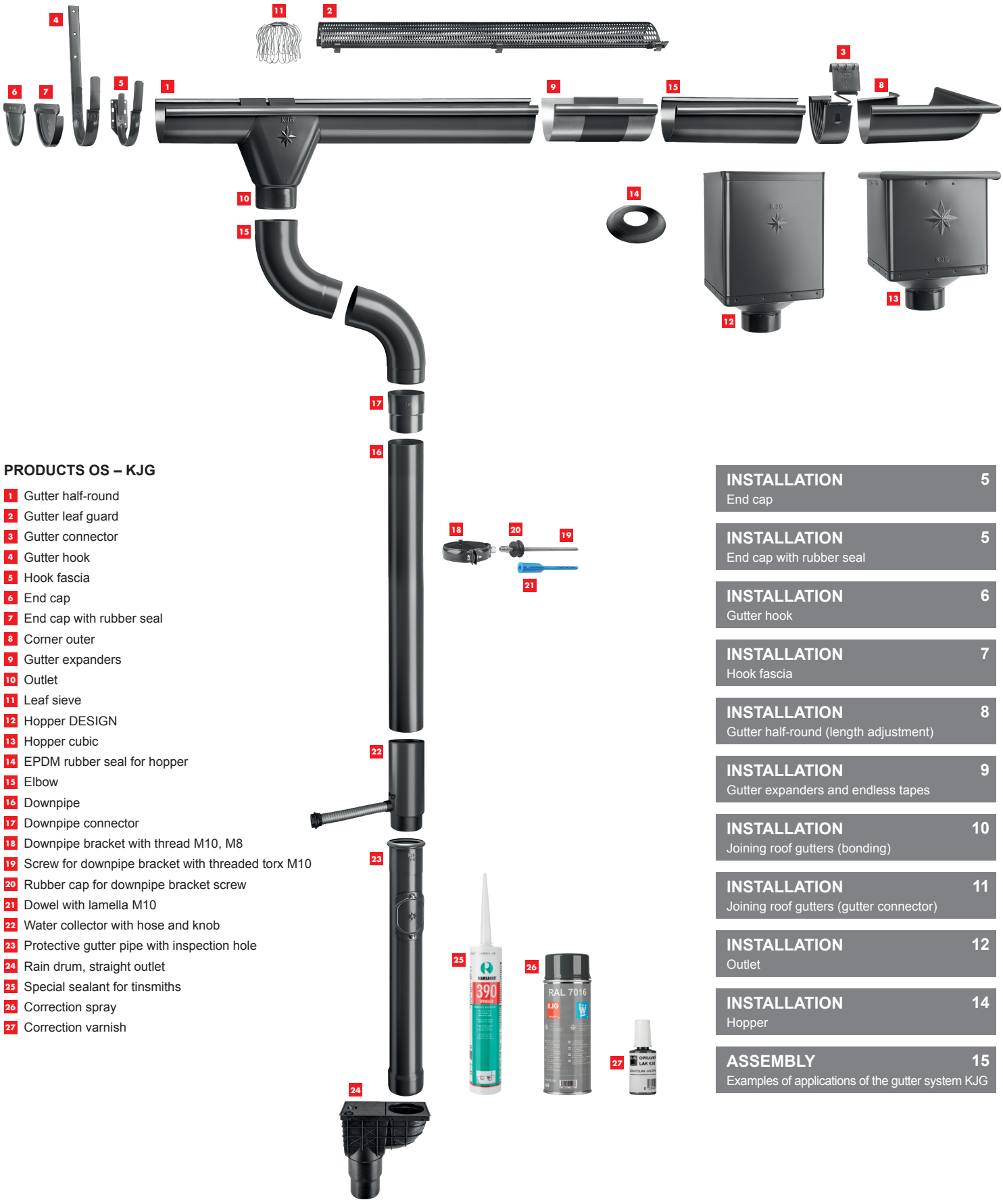
KJG QUALITY ®

ASSEMBLY INSTRUCTIONS
HALF-ROUND GUTTER SYSTEM

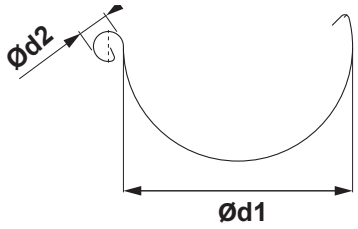
INSTALLATION INSTRUCTIONS
HALF-ROUND GUTTER SYSTEM KJG



PRODUCTS OS – KJG

1. Gutter half-round
2. Gutter leaf guard
3. Gutter connector
4. Gutter hook
5. Hook fascia
6. End cap
7. End cap with rubber seal
8. Corner outer
9. Gutter expanders
10. Outlet
11. Leaf sieve
12. Hopper DESIGN
13. Hopper cubic
14. EPDM rubber seal for hopper
15. Elbow
16. Downpipe
17. Downpipe connector
18. Downpipe bracket with thread M10, M8
19. Screw for downpipe bracket with threaded torx M10
20. Rubber cap for downpipe bracket screw
21. Dowel with lamella M10
22. Water collector with hose and knob
23. Protective gutter pipe with inspection hole
24. Rain drum, straight outlet
25. Special sealant for tinsmiths
26. Correction spray
27. Correction varnish

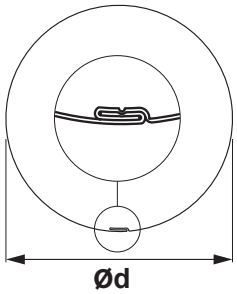
HANDLE THE MATERIAL RESPONSIBLY AND PRECISELY



ROOF GUTTER DIMENSIONS
(dimensions and dimensional tolerances according to EN 612)

Developed width (mm)	200	250	280	333	400	500
Ød1	80	105	127	153	192	250
Ød2	16	18	18	20	22	22

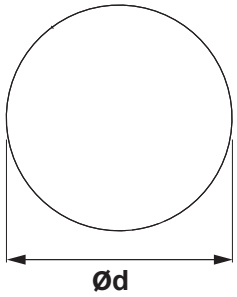
INTERNAL FALZ



ROOF DOWNPIPE DIMENSIONS
(dimensions and dimensional tolerances according to EN 612)

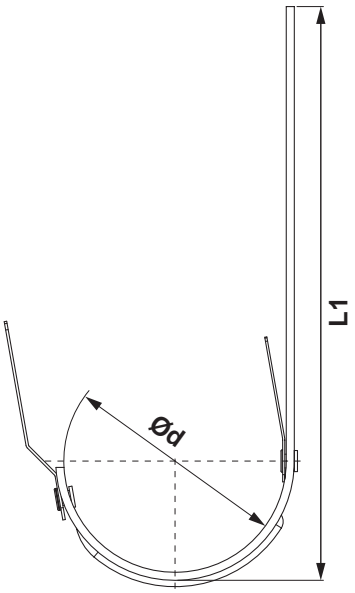
Dimensions	60	80	100	120	150
Nominal size Ød (mm)	60	80	100	120	150

WELDED TIG



ROOF DOWNPIPE DIMENSIONS
(dimensions and dimensional tolerances according to EN 612)

Dimensions	60	80	100	120
Nominal size Ød (mm)	60	80	100	120

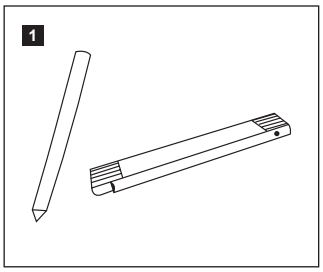


ROOF BRACKET DIMENSIONS
(dimensions and dimensional tolerances according to EN 612)

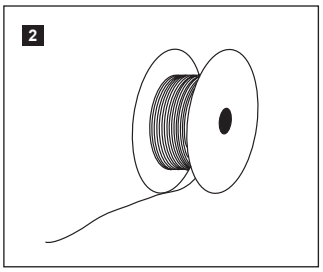
Dimensions (mm)	L1	Ød
200	290	80
250	310	105
280	345	127
333 – 510	345	153
333 – 550	385	153
333 – 610	445	153
400	400	192

TINSMITH TOOLS
FOR HALF-ROUND GUTTER SYSTEM

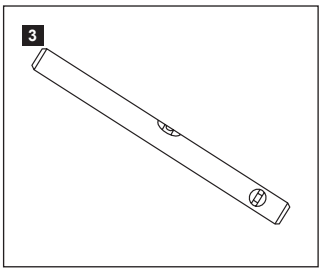
TOOLS
Choose the appropriate tools based on the purpose of the installation.



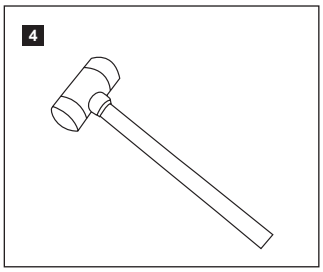
Tinsmith pencil and folding ruler



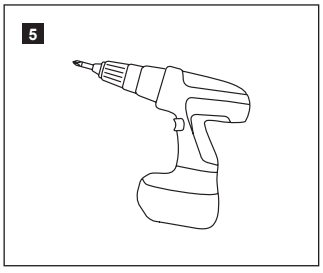
Tinsmith chalk line



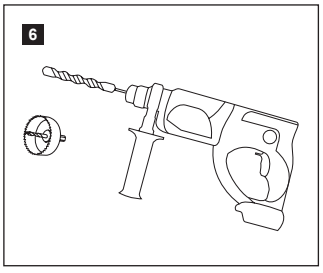
Spirit level



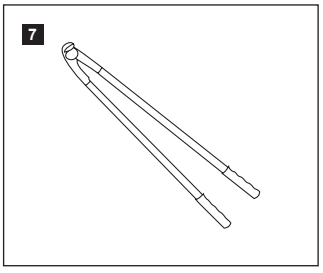
Rubber mallet



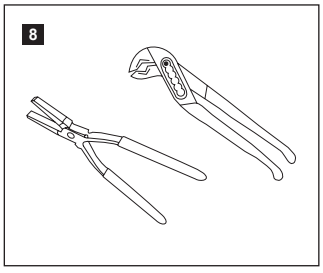
Cordless screwdriver



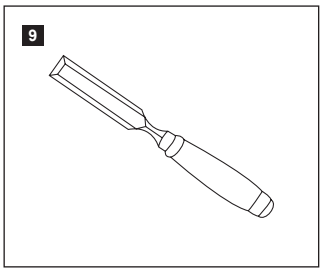
Drilling machine



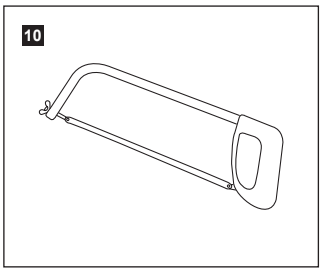
Pliers for bending roof gutter brackets



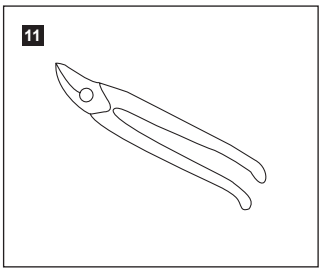
Combined pliers



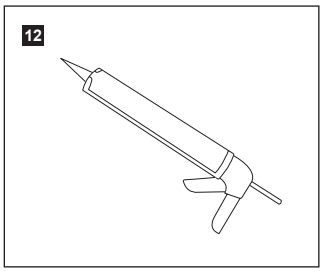
Chisel



Metal and wood saw

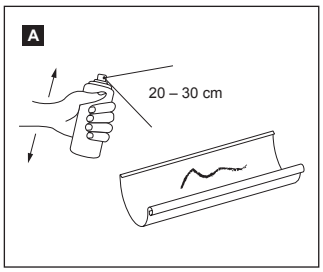


Sheet metal shears

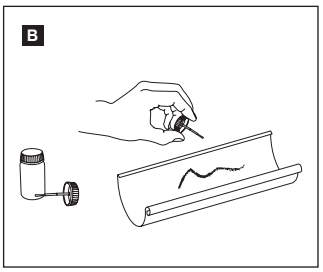


Extrusion gun for cartridges

CORRECTION SPRAY AND PAINT
For minor scratches, use a correction spray or paint.



CORRECTION SPRAY KJG®
1. Clean the surface
2. Shake the spray can thoroughly
3. Spray thin coats from a distance of 20 – 30 cm evenly

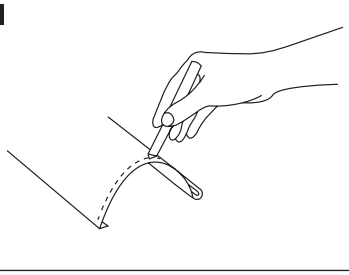


PAINT CORRECTION KJG®
1. Clean the surface
2. Shake the bottle with the brush really thoroughly
3. Carefully apply the correction paint

INSTALLATION
HALF-ROUND GUTTER END CAPS

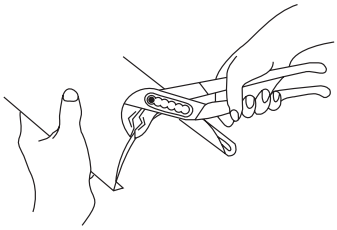
A HALF-ROUND GUTTER END CAP
Designed for folding.

1



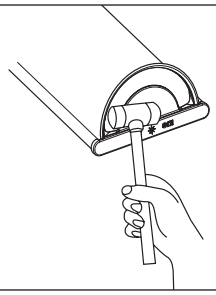
Measure approximately 5 mm from the end of the gutter and mark the spot

2

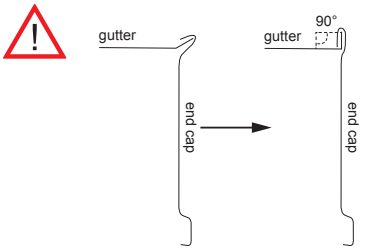


Along the entire length of the mark, bend approximately 5 mm from the edge using pliers.

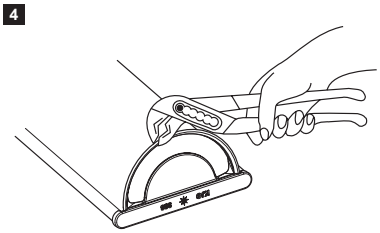
3



Slide on the gutter end cap and tap it around the entire perimeter to secure it to the gutter.



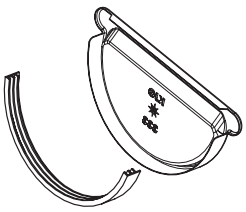
4



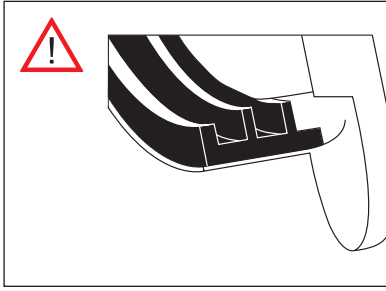
Gently close the fold using flat pliers. Caution: do not scratch the paint!

B HALF-ROUND GUTTER END CAP WITH RUBBER SEAL
Designed for easy insertion.

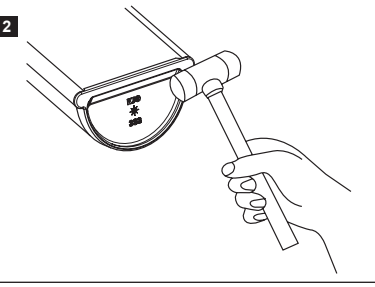
1



Insert the rubber seal. Make sure it is oriented correctly – see the picture. Only in this position the joining is properly secured.



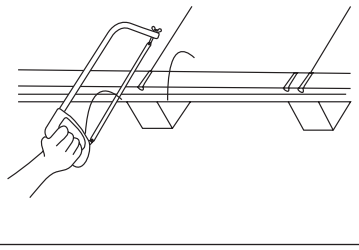
2



Fit the end cap onto the gutter and gently tap it into place on the gutter.

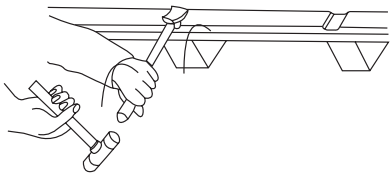
HALF-ROUND GUTTER HOOK
Tinsmith solution for installation on battening.

1



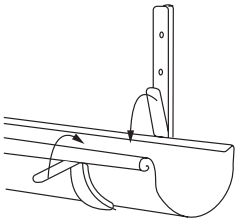
Cut notches for the gutter bracket according to the spacing of the individual rafters.

2



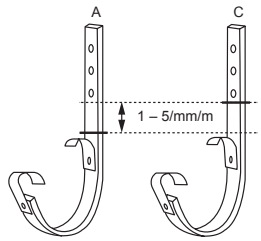
Cut out or mill the notch for the gutter bracket.

3



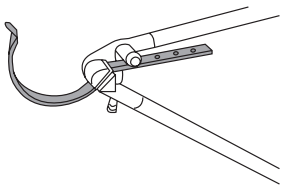
Fit the end gutter brackets A and C to the ends of the gutters so that they overlap, and bend the gutter bracket adapters of the gutter brackets. Then remove the gutter from the gutter bracket again while keeping the gutter bracket adapters closed.

4



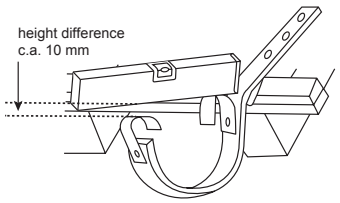
Based on the slope (1 – 5 mm/m), mark the highest and lowest points on brackets A and C to determine the bending point.

5



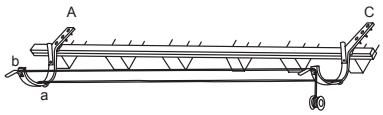
Using hook-bending pliers, bend the outer gutter brackets A and C at the marked points.

6



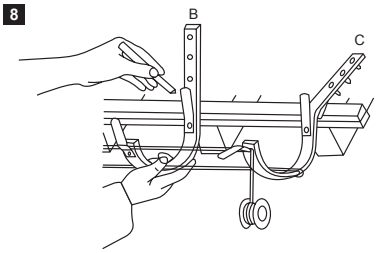
Check that the gutter height difference of approximately 10 mm is maintained.

7



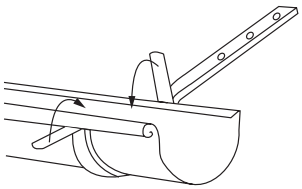
Install the first gutter bracket (A) into the prepared notch at the lowest point, and the last gutter bracket (C) at the highest point. Stretch a string between the two brackets and tighten it.

8

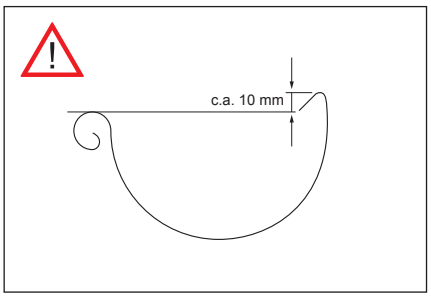


Align the gutter brackets (B) between the strings, mark the bending point, bend the gutter bracket, and install it into the notches.

9

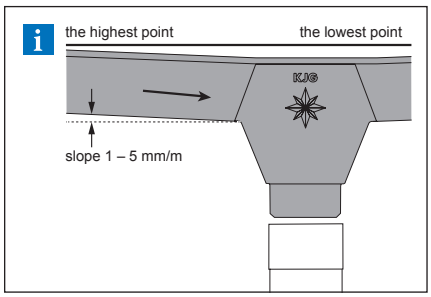


Remove the string, insert the gutter and secure it by bending both the gutter bracket adapters (first the front adapters, then the rear ones).



HEIGHT DIFFERENCE OF THE ROOF GUTTER

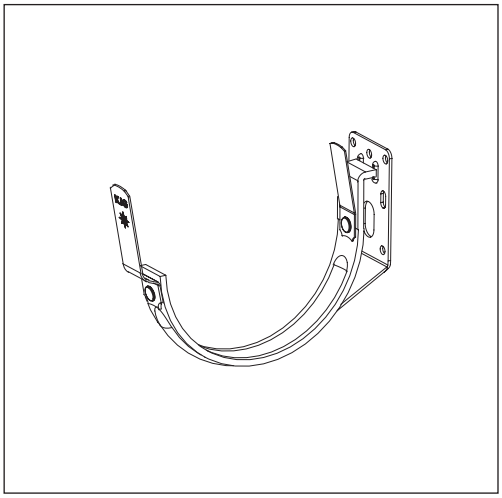
The height difference of the roof gutter allows accumulated rainwater to drain over the front edge of the gutter.

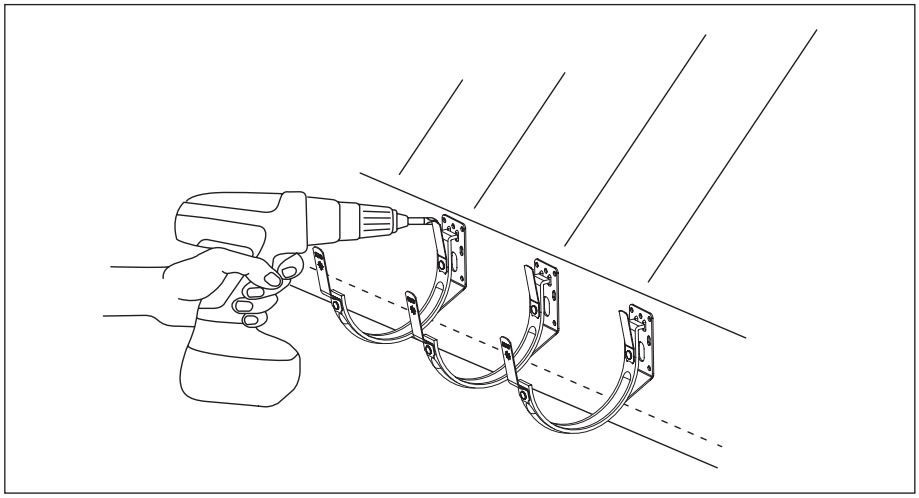


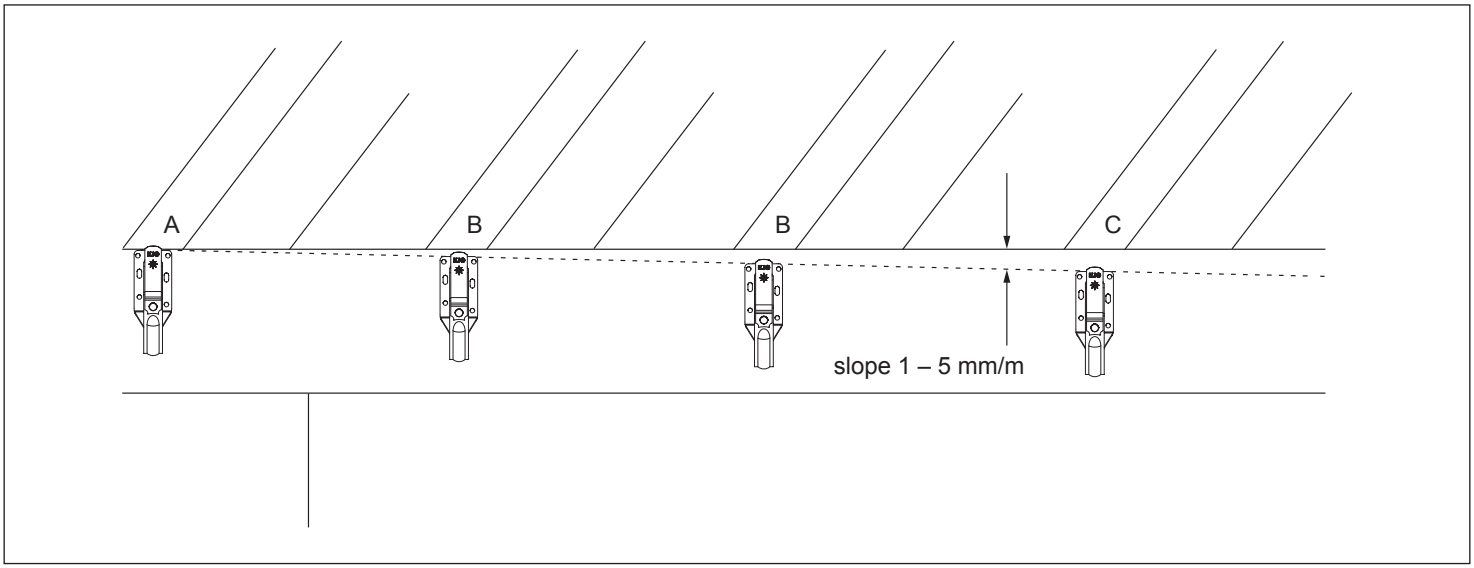
SLOPE

Install the roof gutter bracket with a slope of 1 – 5 mm/m.

HALF-ROUND HOOK FASCIA
Designed for front-mounted installation on a vertical board.



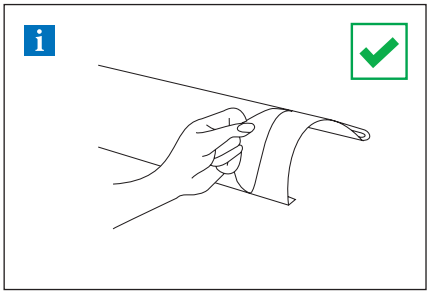




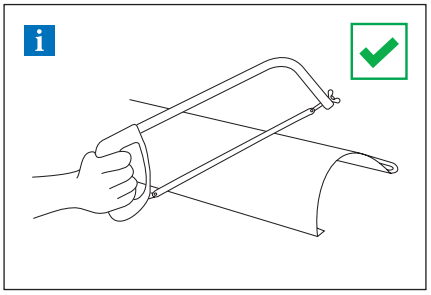
1. Install the first (A) and last (C) front-mounted brackets at spaced distances matching the rafters. Pay attention to the slope 1 – 5 mm/m!
2. Stretch a string between the front-mounted brackets (A, C) and align the individual brackets according to the string to ensure the correct slope. Install the front-mounted brackets at spaced distances matching the rafter spacing.
3. Remove the string and insert the gutter.
4. Secure the gutter in the front-mounted brackets by bending both gutter bracket adapters (first the front adapters, then the rear ones).

INSTALLATION
GUTTER HALF-ROUND

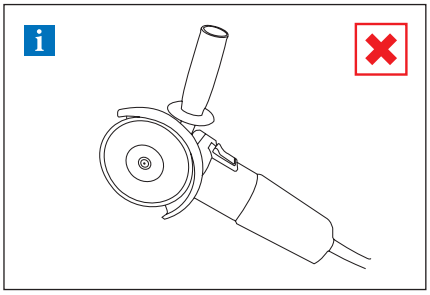
EXPANSION
Linear expansion causes materials to expand and contract at different temperatures.



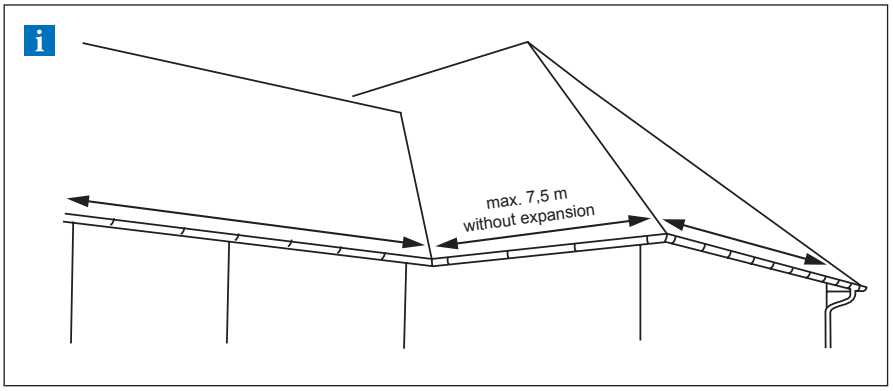
Before installing gutters and downspouts remove the protective foil!



A saw must be used to shorten the gutter!



The use of a grinder is not allowed!



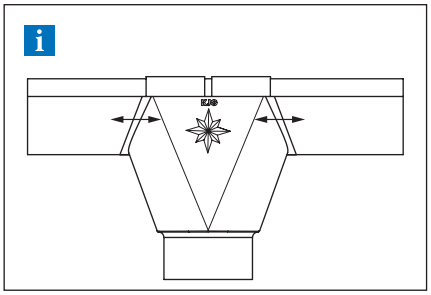
MAXIMUM SIDE LENGTH

Maximum roof side length for proper compensation of linear expansion: 15 m.
For corner spacings, half the length always applies.

MATERIAL EXPANSION

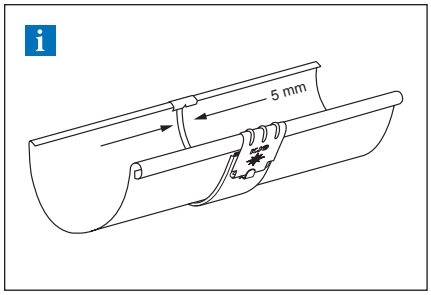
Galvanized steel		0,12 mm/m
Copper		0,17 mm/m
Titanium zinc		0,22 mm/m
Aluminium		0,24 mm/m

OPTIONS FOR JOINTS OF HALF-ROUND ROOF GUTTERS
Options for joints that can be used for compensating the linear expansion of individual materials.



LOOSE CONNECTION OF GUTTERS IN THE GUTTER OUTLET

Gutter overlap: 80 mm



GUTTER CONNECTOR

Roof gutter connector with a 5 mm gap between gutters serves as an expansion joint.

DILATATION JOINERS

Dilatation are a flexible solution for thermal expansion caused by variability in external conditions.

GUTTER EXPANDERS

Installation example: eaves gutter with a developed width up to 500 mm. The expansion gutter must be installed at a spacing of 15 meters. For external corners and the gutter's starting point, half the standard value applies: maximum 7,5 m. For internal corners, one quarter of the standard value applies: maximum 3,75 m. For other materials and dimensions, refer to the table below. Corners are always considered as fixed points.

GUTTER EXPANDERS

Developed gutter width	Aluminium	Galvanized steel, Titanium zinc, Copper, Stainless steel
< 500	12	15
> 500	8	10

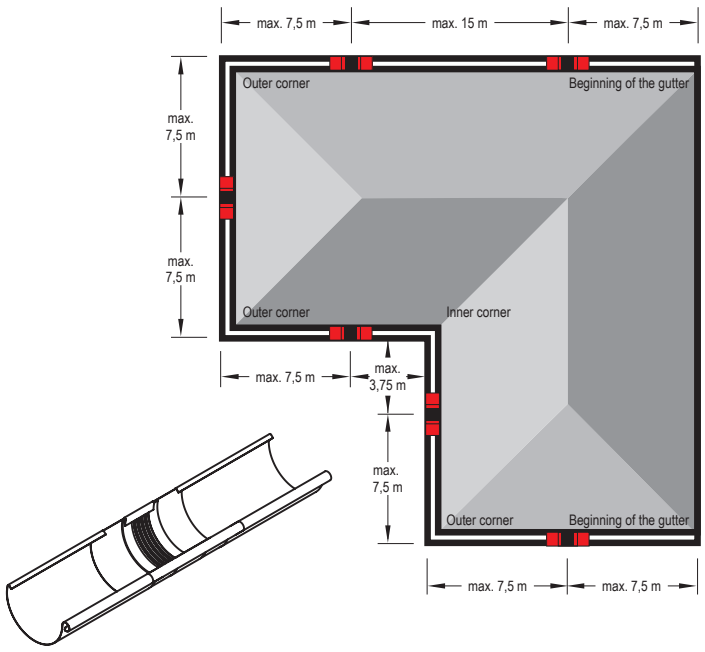
ENDLESS TAPES

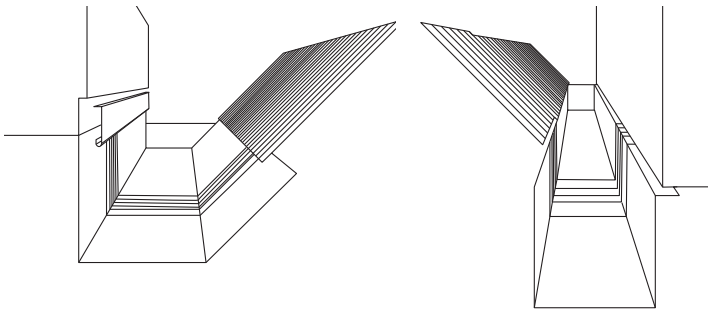
Internal installation: mounted onto gutters without bonding to the substrate, roofs with non-standard profiles, and sheet-metal cladding of masonry.

ENDLESS TAPES

Developed gutter width	Aluminium	Galvanized steel, Titanium zinc, Copper, Stainless steel
< 500	8	10
> 500	6	8

For the gutter external corner or beginning, half of the standard value applies.
For an internal corner, one quarter of the standard value applies.





Note on installation of the expansion point gutter.

When installing using soldering, first cover the central rubber section with a damp cloth (to prevent heat transfer into the central rubber part). A minimum distance of 6 cm from the central rubber section must be maintained. In all cases, avoid direct contact of the rubber with an open flame.

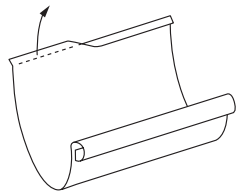
Note on installation of the expansion point strip.
During bending and installation of expansion elements, make sure that:

- The bending jaws have a radius of at least 2 mm.
- For sheet metal thickness of 1 mm or more, the bending radius must be at least 5 mm.
- During bending, the jaws must be adjusted to the thickness the central rubber section (3 – 4 mm) to prevent a shearing effect – rubber damage.
- The rubber central section must not be compressed or damaged during bending. To prevent this, an aluminium sheet strip (2 – 5 mm thick) should be bent and mounted onto the jaws as protection. This provides a larger bending radius and helps prevent damage to the central rubber section.

JOINING
HALF-ROUND ROOF GUTTERS

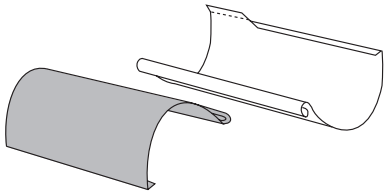
A BONDING

1



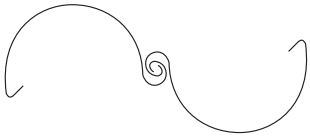
Bend out a return water groove using flat pliers.

2



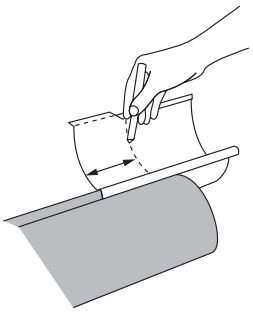
Join the gutters to each other using hemmed edges (overlap approx. 80 mm).

3



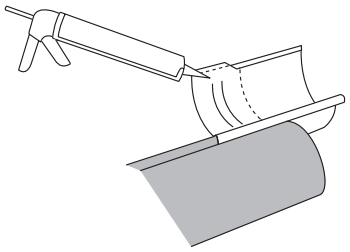
Join both gutters by overlapping their hemmed edges.

4



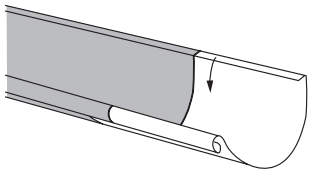
Ensure sufficient overlap of the gutters and mark it accordingly.

5



Apply the special roofing sealant SCH-SPENGLER 390 in two rows onto the clean and dry surface of the gutter (marked area), with a minimum width of 8 mm.

6



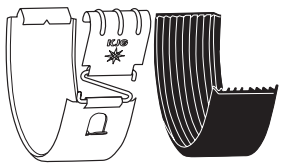
Place the gutters together and bend back the return water groove using flat pliers.

JOINING
ROOF GUTTERS USING A CONNECTOR

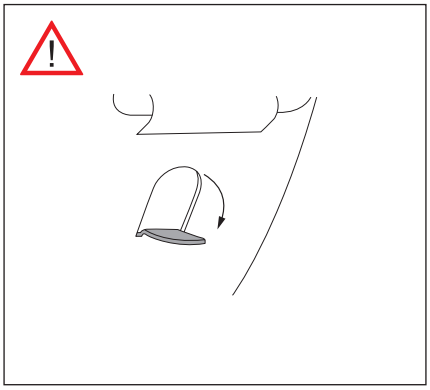
B GUTTER CONNECTOR

Gutter connector with a locking mechanism for gutters sized according to EN 612

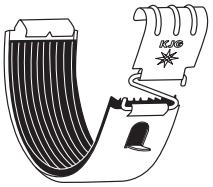
1



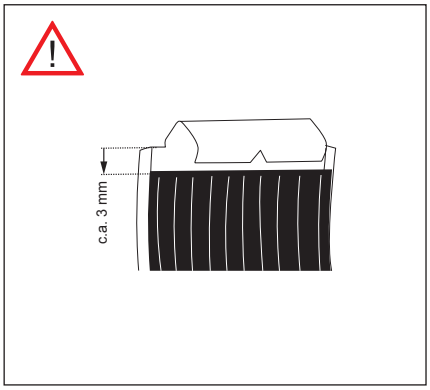
Open the locking mechanism on the gutter connector.



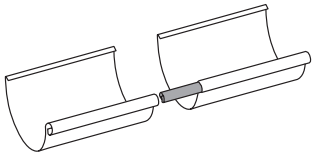
2



Paste in the rubber seal approximately 3 mm below the cutout and allow it to slightly overlap at the front.

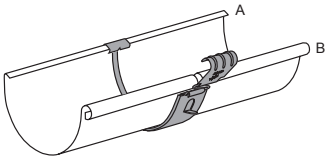


3



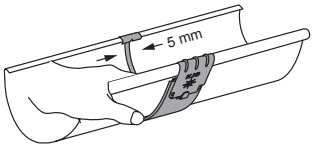
Slide the hemmed edge connector all the way to the marked point (not required during repairs). Leave a 5 mm gap between the gutters to allow for proper expansion.

4



With light counter-pressure on the inside, hook the clip over the hemmed edge and snap it into place (audible click!). Close the locking mechanism.

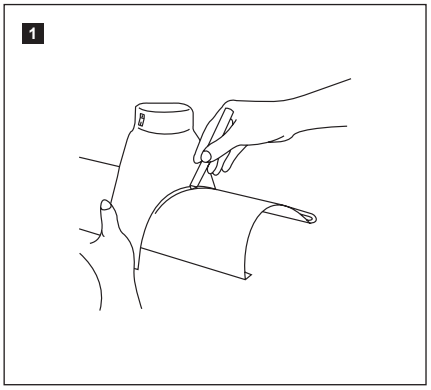
5



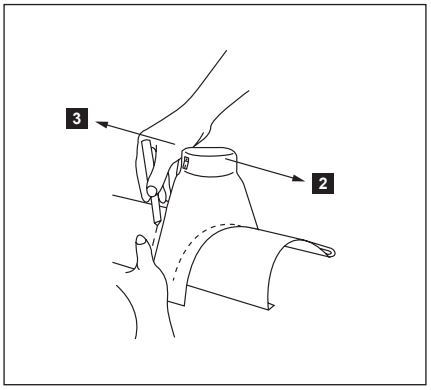
With light counter-pressure on the inside, hook the clip over the hemmed edge and snap it into place (audible click!). Close the locking mechanism.

INSTALLATION
HALF-ROUND GUTTER OUTLET

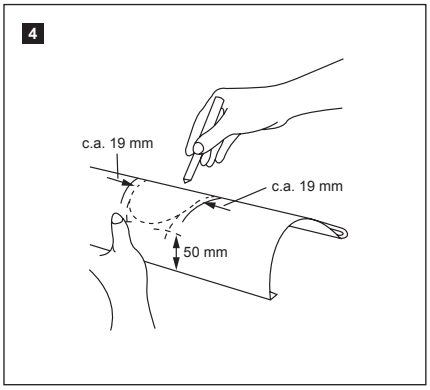
A EASY INSTALLATION OF A GUTTER OUTLET



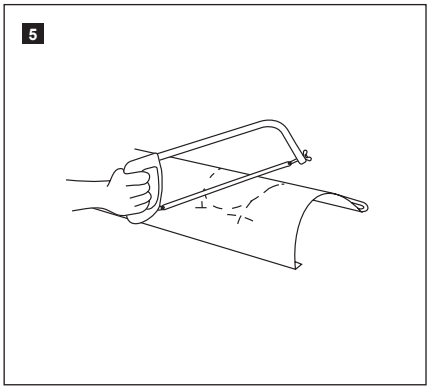
Place the gutter outlet onto the gutter. Trace its outline on the gutter to the right and left.



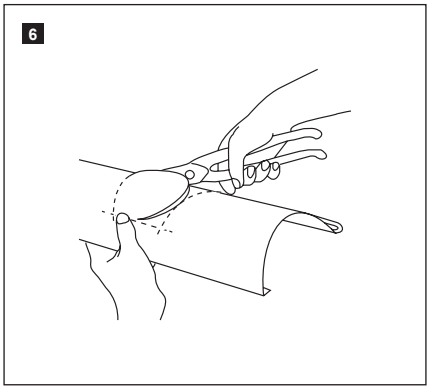
Shift the gutter outlet 19 mm to both sides and trace it again.



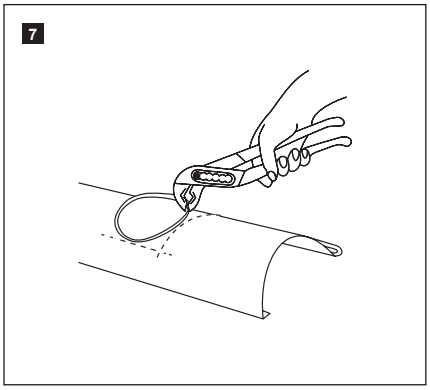
Measure 50 mm from the edge of the gutter and mark the spot. Create a circular outline that matches the inner shape of the gutter outlet (see the picture).



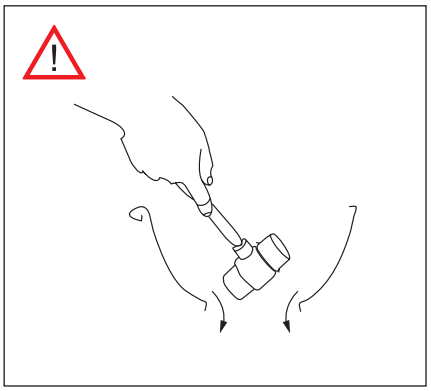
Cut through the centre using a hacksaw.



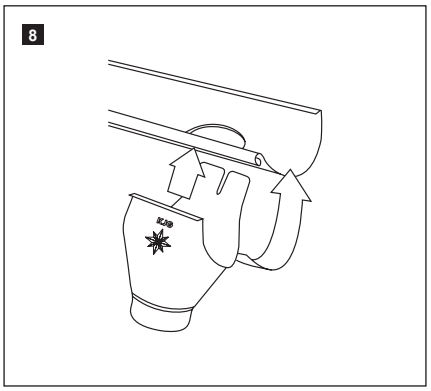
Cut out the opening using sheet metal shears.



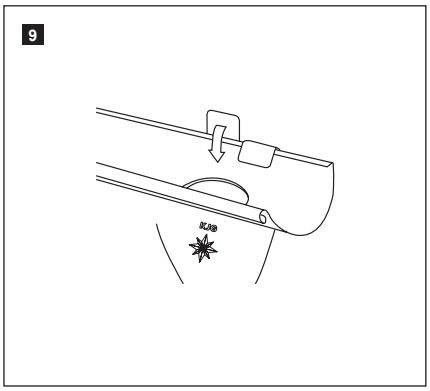
Bend the edges upward with pliers and create a hem.



Tap the edges of the opening inside the gutter with a rubber mallet.



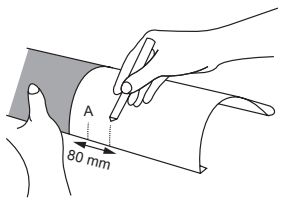
Attach the gutter outlet by hooking it so that the holes in the gutter and outlet are aligned.



Secure the outlet firmly to the gutter.

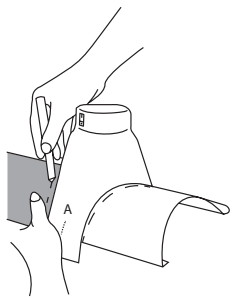
B INSTALLATION OF A HALF-ROUND GUTTER OUTLET

1



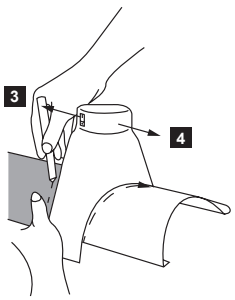
Insert the gutters 80 mm into each other, notice: do not use any adhesive! On the upper gutter, mark 40 mm (A, centred in relation to the mark of 80 mm).

2



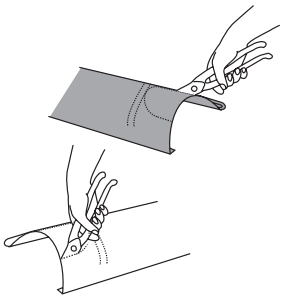
Position the gutter outlet centred at the 40 mm mark (A). Trace its outline on the gutter to the right and left.

3 4



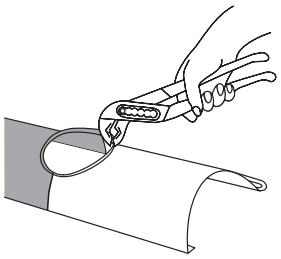
Measure 19 mm from the mark and shift it inward (both left and right). From the edge of the gutter, measure 50 mm upwards and mark the spot. Connect this point with the inner marking of the outlet in a circular line.

5

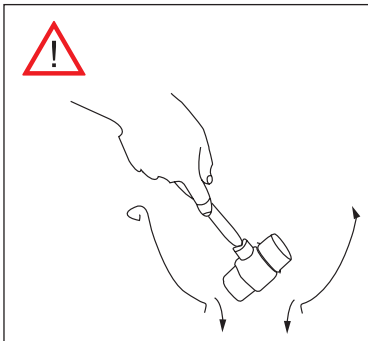


Cut out the resulting half-rounds on both gutters using sheet metal shears (complete the half-round on the second gutter).

6

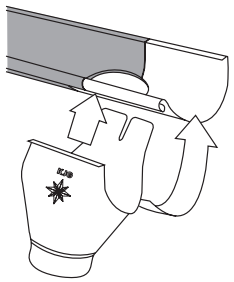


Slide the gutters together again with an 80 mm overlap. Use pliers to bend the edges.



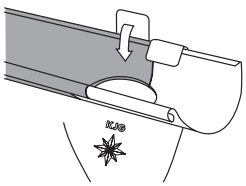
Tap around the edges of the opening inside the gutter using a rubber mallet.

7



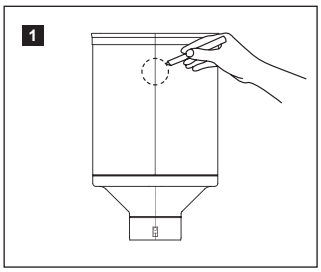
Hang the gutter outlet at the centre of the roof gutter.

8

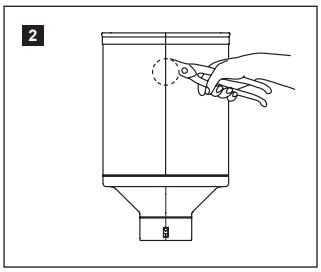


Secure the gutter outlet firmly to the roof gutter.

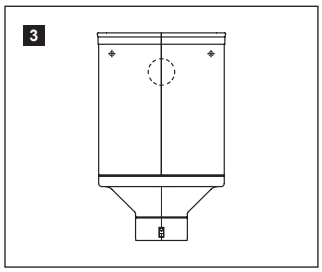
A INSTALLATION ON A FACADE
Hopper eccentric



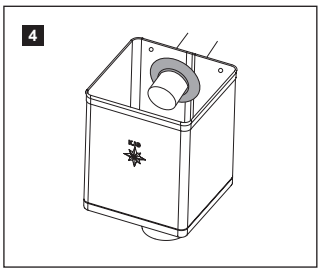
Create an opening: measure the diameter and mark it on the appropriate side of the collection outlet.



Cut out the opening using sheet metal shears.

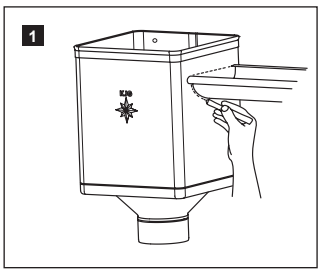


Mark the fastening holes (min. 20 mm from the edge). And drill the holes.

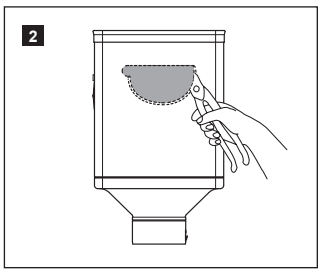


Fix the gutter outlet using suitable fastening materials.
Tip: Attach the EPDM sealing rubber of the gutter outlet.

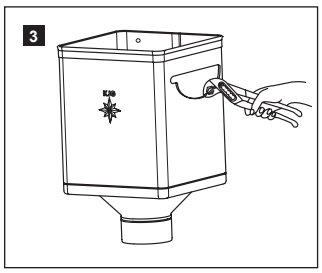
B INSTALLATION ON A GUTTER
Hopper



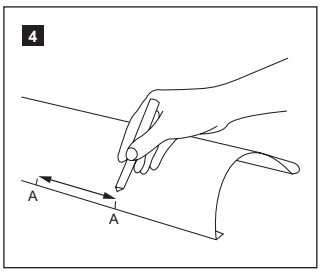
Place the gutter outlet against the gutter at the desired height and trace the gutter opening from the outside.



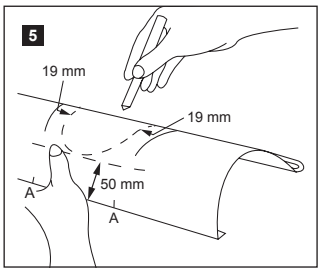
To create the opening, reduce the lower marking of the gutter by 5 mm. Cut out the resulting outer section (grey area shown in the picture) using sheet metal shears.



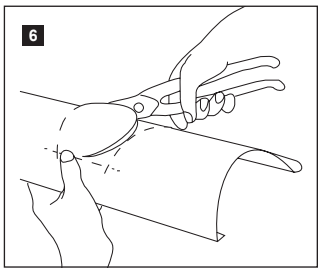
Bend the lower edge of the opening outward using sheet metal shears (see the picture). Repeat the individual steps for the opposite side of the gutter outlet: mark, cut out and bend the edge.



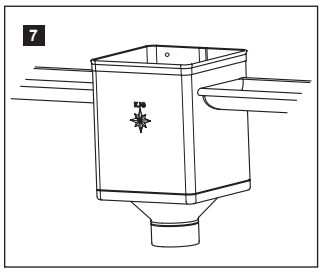
Prepare the opening on the gutter: mark the width of the gutter outlet at the desired location on the gutter.



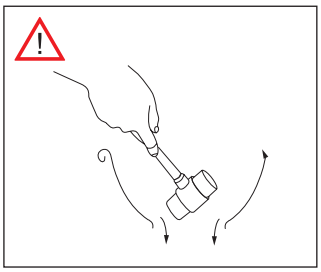
Mark 50 mm from the edge of the gutter, and 19 mm on both sides inside the gutter outlet (A). Connect the individual marks.



Cut out the opening using sheet metal shears.

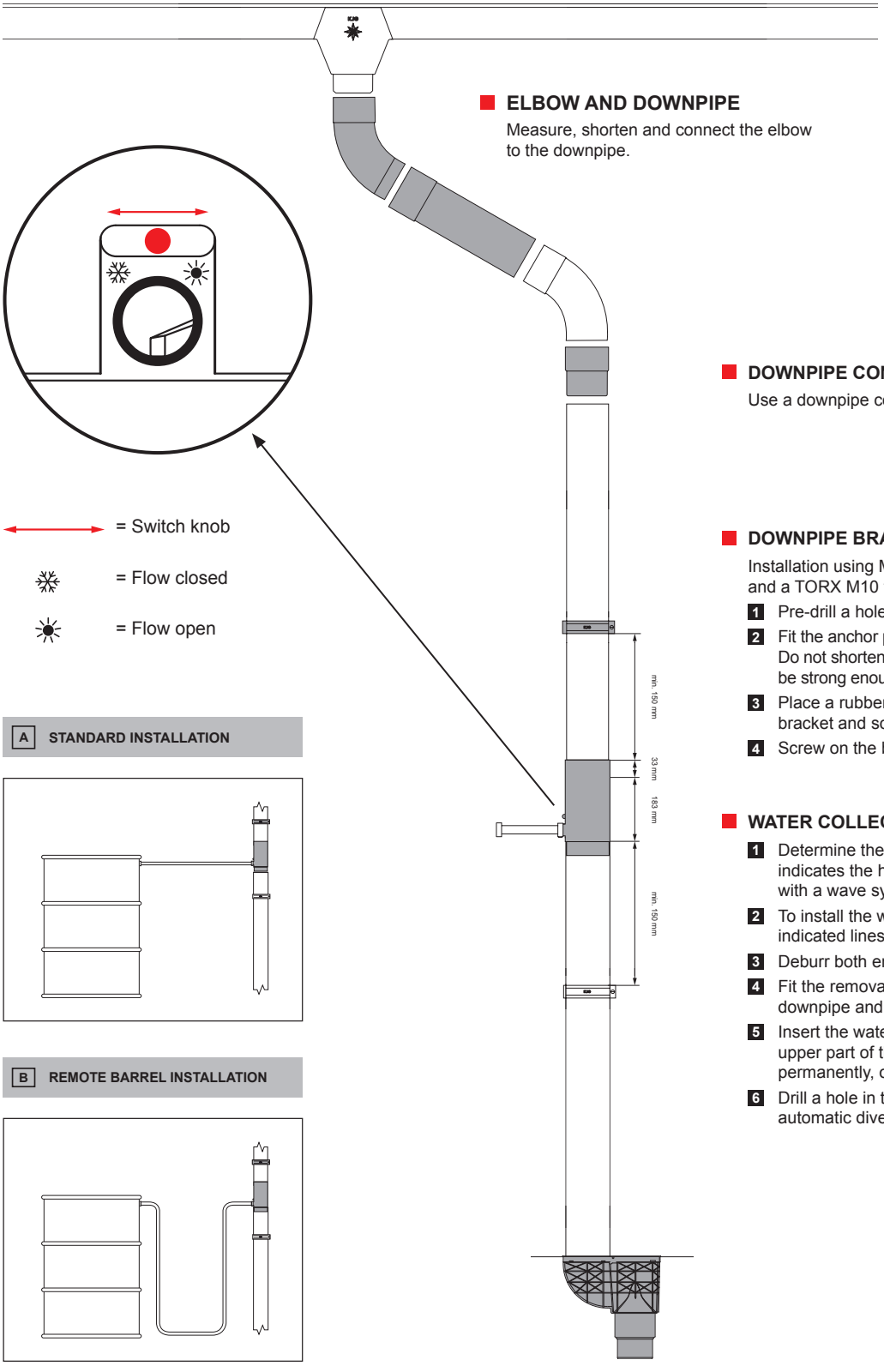


Insert the gutter into the collection outlet, then hang both the collection outlet and the gutter onto the hooks.



Create a hem on the edges of the opening inside the gutter using a rubber mallet.

EXAMPLES OF APPLICATIONS OF THE HALF-ROUND GUTTER SYSTEM KJG



ELBOW AND DOWNPIPE

Measure, shorten and connect the elbow to the downpipe.

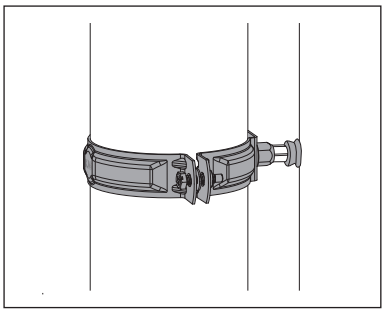
= Switch knob

= Flow closed

= Flow open

A STANDARD INSTALLATION

B REMOTE BARREL INSTALLATION



Downpipe bracket with thread M10. Installation on an example of solid brick (without thermal requirements).

DOWNPIPE CONNECTOR

Use a downpipe connector to join the cut sections of a downpipe.

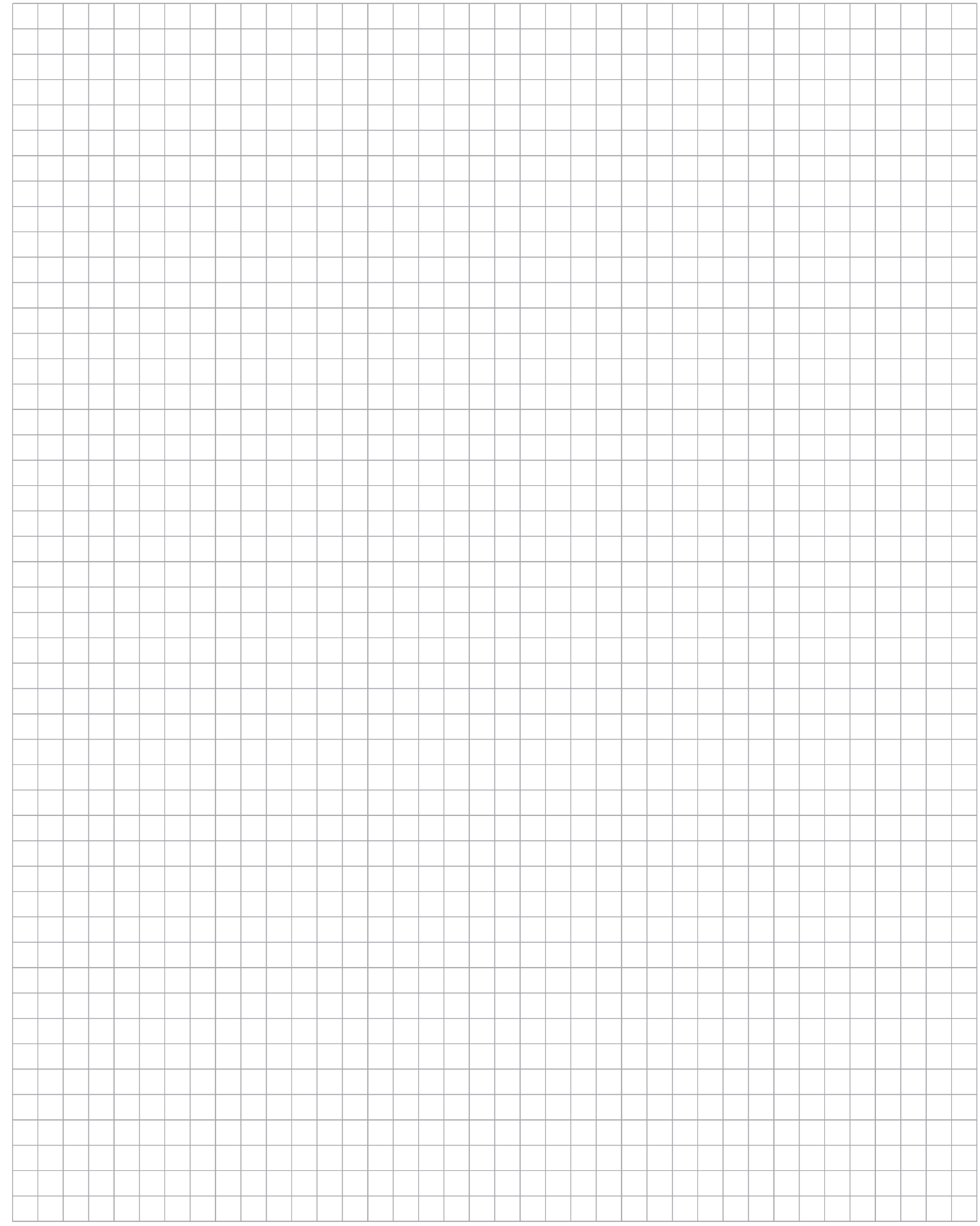
DOWNPIPE BRACKET WITH THREAD M10

Installation using M10 lamellar anchor plugs and a TORX M10 threaded tip.

1. Pre-drill a hole with a diameter of 10 mm.
2. Fit the anchor plug. If the hole is too shallow, drill it deeper. Do not shorten the anchor plug – the connection would not be strong enough.
3. Place a rubber cap onto the TORX M10 threaded tip of the bracket and screw it in. The cap seals the drilled hole.
4. Screw on the bracket with the M10 nut.

WATER COLLECTOR WITH HOSE AND KNOB

1. Determine the location for the container: the top line indicates indicates the height of the container, the water level is marked with a wave symbol.
2. To install the water collector: cut the downpipe along the indicated lines (see the picture).
3. Deburr both ends of the downpipes.
4. Fit the removable top part onto the upper section of the downpipe and slide it into place. Then attach the bottom part.
5. Insert the water collector into the lower downpipe; slide the upper part of the collector downward. Do not fix the collector permanently, otherwise cleaning will not be possible.
6. Drill a hole in the container at the same height as the automatic diverter.



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Nitra, Cabajská 23

Banská Bystrica, Zvolenská cesta 14

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