

 **TOYO GUTTERS**

D-type150

“Hidden hanger-type decorative gutters”
which set off the eaves of large buildings beautifully.

DENKA
DENKI KAGAKU KOGYO KABUSHIKI KAISHA

As dressing for the eaves, the large decorative gutter “D-type 150” can accommodate all your needs.

The large decorative gutter “D-type 150” revolutionizes the image of gutters used on ordinary houses and large buildings including not only factories, warehouses, stores, and apartment buildings but also cultural facilities such as schools and art galleries. It is a completely new large decorative gutter developed with the concept of functionality and decorative quality as “dressing for the eaves”, to complement the design and image of the building.

State-of-the-art advanced features and decorative quality that keep pace with the evolution of houses and large buildings.



[Construction example]





[Construction example]

Characteristics

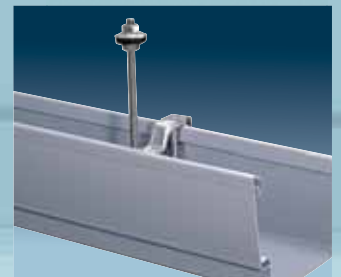
1 Employs the industry's first hidden hanger system giving a sense of unity to large buildings.

The industry's first large decorative gutter to employ a hidden hanger system. Because the brackets cannot be seen, the eaves trough merges beautifully with the roof and facade, simplifying the look of the eaves and giving a sense of unity.



2 Excellent rainwater drainage and improved strength using a rib structure.

Strength is improved through the use of a rib structure at the front of the eaves trough. This makes "D-type 150" suitable not only for houses, which are increasing in size, but also for large buildings such as factories and warehouses.



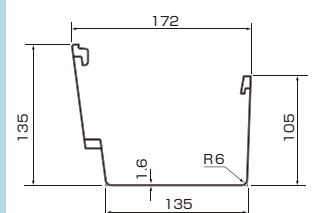
3 An extensive range of brackets that accommodates the diverse requirements of large buildings has been put together to improve the ease of construction.

The carefully-calculated installation procedure improves ease of construction on site. "D-type 150" is easy to install and its structure provides extra strength. Due to the extensive range of brackets, the ease of construction of "D-type 150" is excellent and can accommodate the diverse requirements of any large building.

4 A color range that harmonizes beautifully with the building.

Five adaptable colors that bring out the beauty in all kinds of building. Reddish Brown, Grey, Black, Snow White, European White. Select the color to suit the building's image.

Cross section (units:mm)



5 From large buildings such as factories, warehouses, public buildings, and apartment buildings, to ordinary houses.

"D-type 150" has revolutionized the image of gutters for large buildings. This large "hidden hanger-type decorative gutter" is based on a new concept of following beautiful, distinctive architectural design with strength and flexibility.

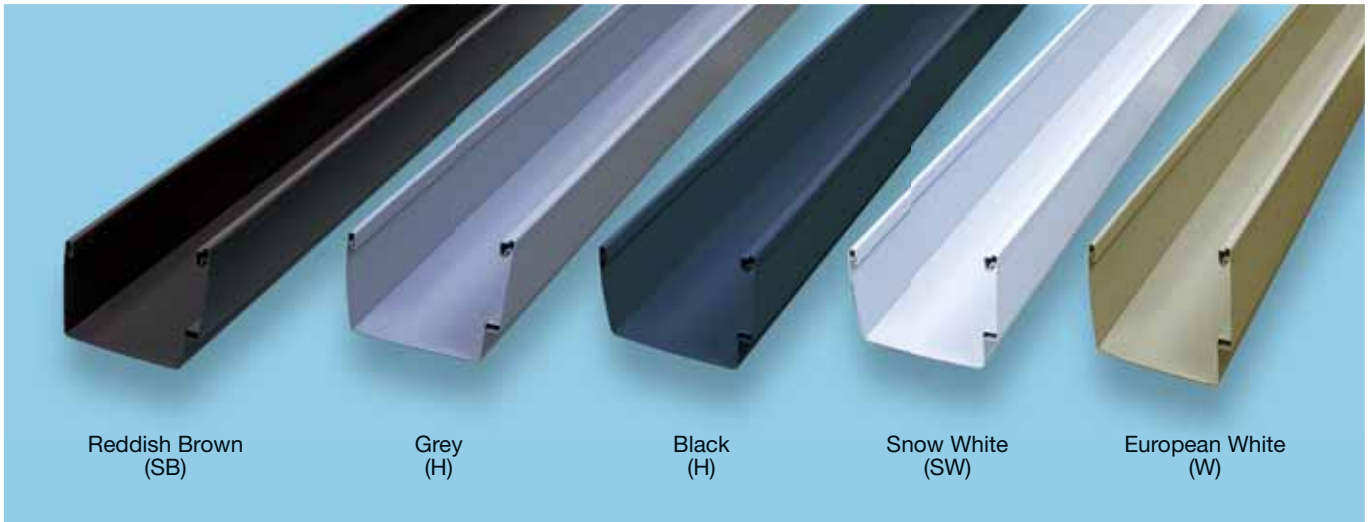


6 Basic combinations that follow the building's image

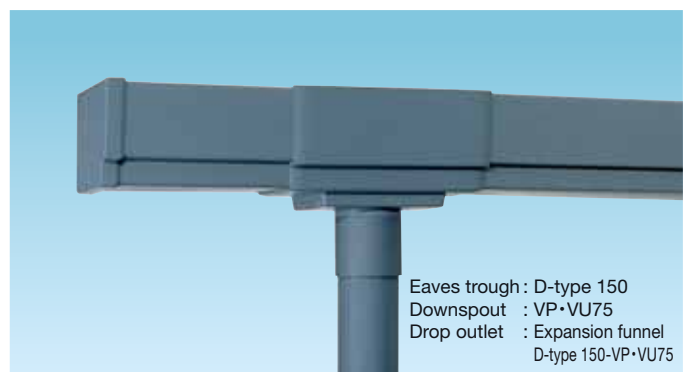
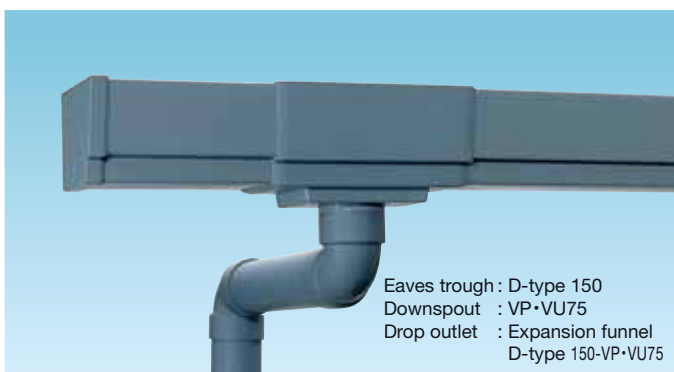
The eaves trough gives a sense of unity, the drain specification provides harmony, and the funnel specification accentuates the gutter. All can be combined with either square or round downspouts.

Combination

Color range

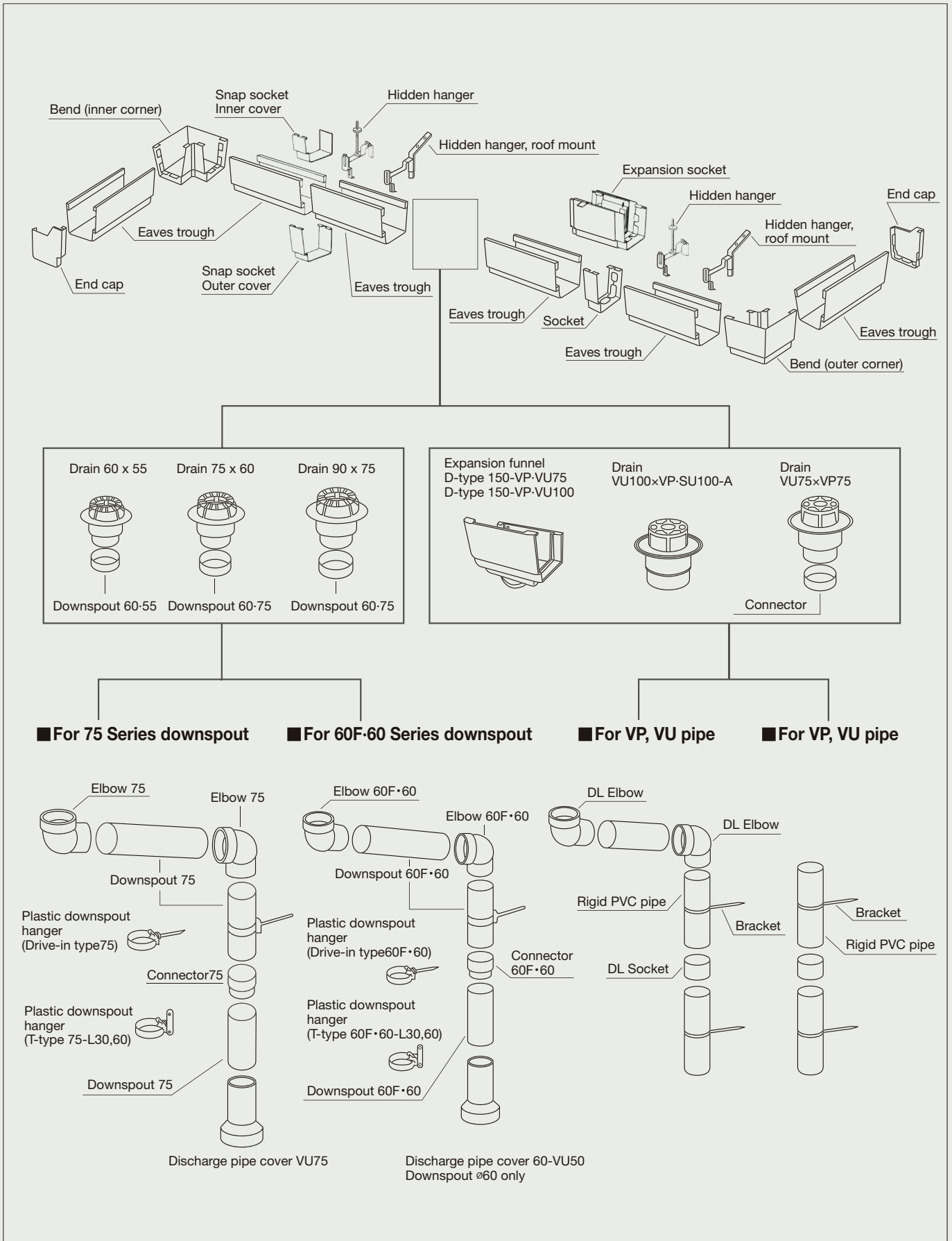


Basic combination



Standard assembly diagram

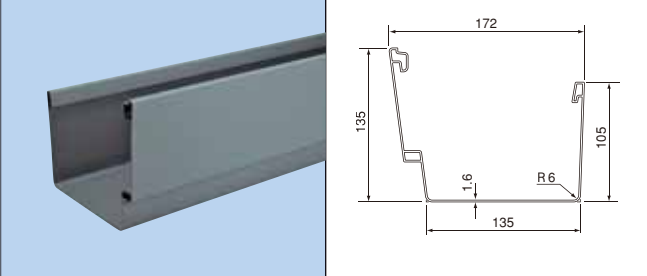
D-type150



D-type150 Standard dimensions

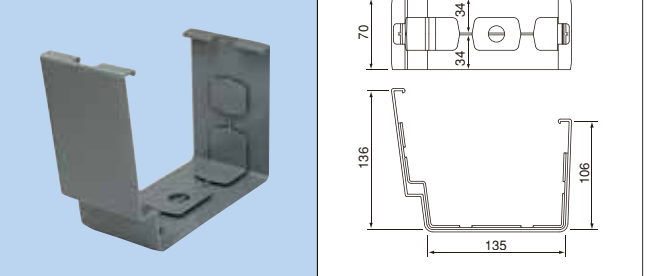
Eaves trough series/Eaves trough brackets

Eaves trough



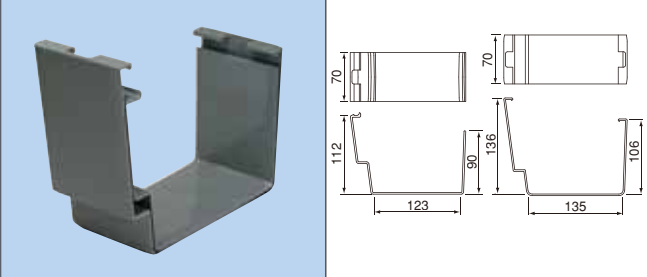
| Standard | Product number | Color | No. of packages |
|-----------------------------|----------------|-------------|-----------------|
| D-type150 (Length:4,000) | A3070N501 | H·SB·W·SW·K | 4 |

Socket



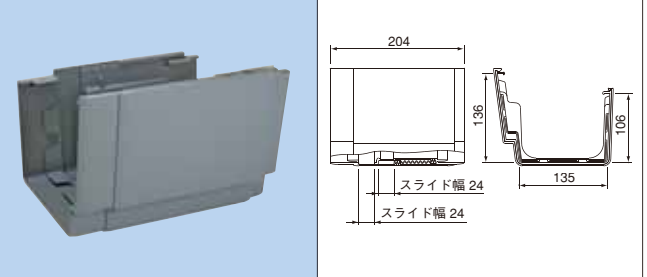
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100N501 | H·SB·W·SW·K | 12 |

Snap socket



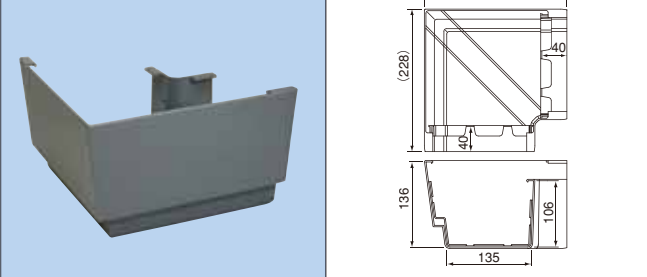
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100N502 | H·SB·W·SW·K | 12 |

Expansion socket



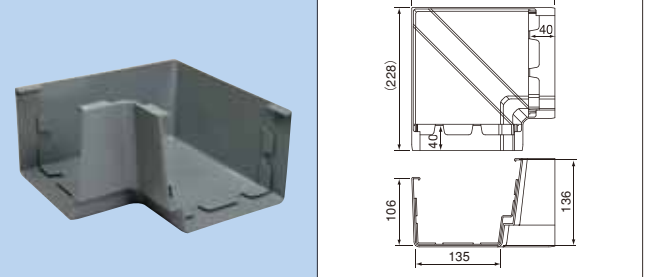
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100N503 | H·SB·W·SW·K | 4 |

Bend (outer corner)



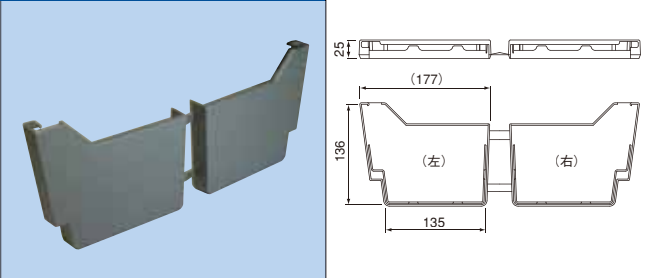
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100B501 | H·SB·W·SW·K | 4 |

Bend (inner corner)



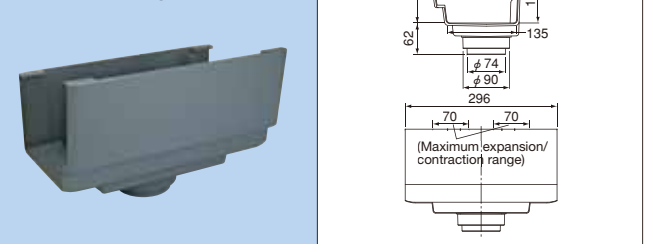
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100B502 | H·SB·W·SW·K | 4 |

End cap



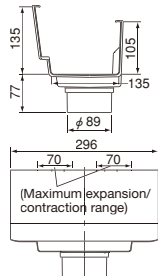
| Standard | Product number | Color | No. of packages |
|-----------|----------------|-------------|-----------------|
| D-type150 | A3100S501 | H·SB·W·SW·K | 20 |

Expansion funnel (Elbow fitting)



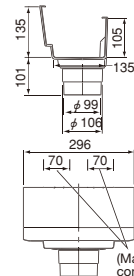
| Standard | Product number | Color | No. of packages |
|--------------|----------------|-------------|-----------------|
| D-type150-75 | A3100M505 | H·SB·W·SW·K | 4 |

Expansion funnel (Elbow fitting)



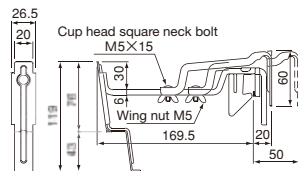
| Standard | Product number | Color | No. of packages |
|----------------------|----------------|---------|-----------------|
| D-type150 VP·VU75 | A3100M504 | Special | 4 |

Expansion funnel (Elbow fitting)



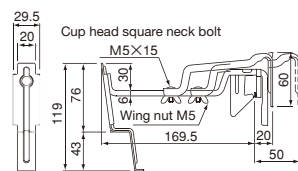
| Standard | Product number | Color | No. of packages |
|-----------------------|----------------|---------|-----------------|
| D-type150 VP·VU100 | A3100M503 | Special | 12 |

Stainless steel hidden hanger, fascia mount, slide type



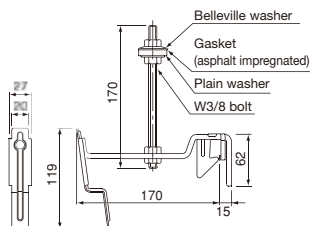
| Standard | Product number | Color | No. of packages | |
|----------|----------------|-----------|-----------------|----|
| 0 | D-type150 | A31606611 | Natural | 30 |
| 4/10 | D-type150 | A31606612 | Natural | 30 |
| 5/10 | D-type150 | A31606613 | Natural | 30 |
| 6/10 | D-type150 | A31606614 | Natural | 30 |

Hidden hanger, fascia mount, slide type



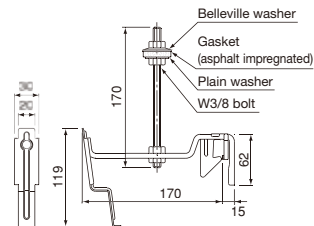
| Standard | Product number | Color | No. of packages | |
|----------|----------------|-----------|-----------------|----|
| 0 | D-type150 | A31503611 | Gilt | 30 |
| 4/10 | D-type150 | A31503612 | Gilt | 30 |
| 5/10 | D-type150 | A31503613 | Gilt | 30 |
| 6/10 | D-type150 | A31503614 | Gilt | 30 |

Stainless steel hidden hanger, hanging mount



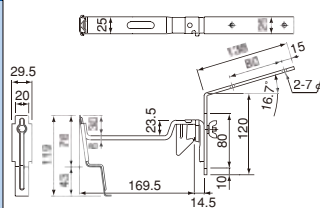
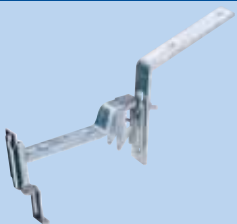
| Standard | Product number | Color | No. of packages |
|----------------|----------------|---------|-----------------|
| D-type150·L150 | A31606615 | Natural | 30 |
| D-type150·L250 | A31606616 | Natural | 30 |

Hidden hanger, hanging mount



| Standard | Product number | Color | No. of packages |
|----------------|----------------|-------|-----------------|
| D-type150·L150 | A31506611 | Gilt | 30 |
| D-type150·L250 | A31506612 | Gilt | 30 |

Hidden hanger, roof mount



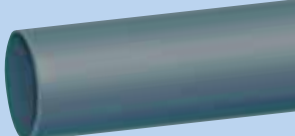
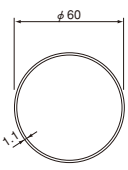
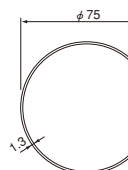
| Standard | Product number | Color | No. of packages |
|----------------|----------------|-------|-----------------|
| D-type150·L150 | A31507611 | Gilt | 30 |

color

- H = Grey,
- SB = Reddish Brown,
- W = European White,
- SW = Snow White,
- K = Black

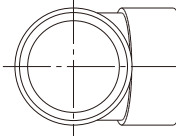
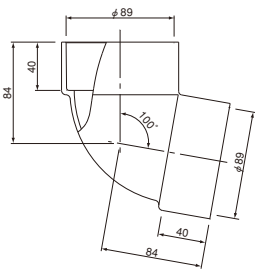
D-type150 Standard dimensions

Round downspout series

| Downspout | | | |
|---|---|---|-----------------|
|  |  |  | |
| Standard | Product number | Color | No. of packages |
| φ60×2700 | A11T20 | H·SB·W·SW·K | 20 |
| φ75×2700 | A11T30 | H·SB·W·SW·K | 20 |

| Variable elbow | | | |
|----------------|----------------|-------------|-----------------|
| Standard | Product number | Color | No. of packages |
| 60F | A12L773 | H·SB·W·SW·K | 20 |
| 75F | A12L775 | H·SB·W·SW·K | 20 |

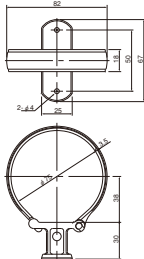
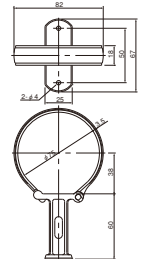
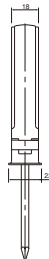
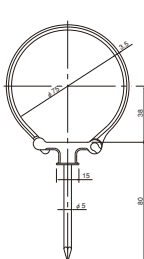
| Reducing pipe | | | |
|---------------|----------------|-------------|-----------------|
| Standard | Product number | Color | No. of packages |
| 60×60-60 | A12Y20 | H·SB·W·SW·K | 20 |
| 75×60-75 | A12Y25 | H·SB·W·SW·K | 20 |
| 75×75-75 | A12Y30 | H·SB·W·SW·K | 20 |

| Elbow | | | |
|--|---|-------------|-----------------|
|  |  | | |
| Standard | Product number | Color | No. of packages |
| 60-90° | A12L30 | H·SB·W·SW·K | 20 |
| 60-100° | A12L87 | H·SB·W·SW·K | 50 |
| 60-110° | A12L88 | H·SB·W·SW·K | 30 |
| 75-100° | A12L885 | H·SB·W·SW·K | 30 |
| 75-110° | A12L89 | H·SB·W·SW·K | 30 |

| T-connector | | | |
|-------------|----------------|-------------|-----------------|
| Standard | Product number | Color | No. of packages |
| 60F | A13B243 | H·SB·W·SW·K | 100 |
| 75F | A13B20 | H·SB·W·SW·K | 100 |

| Elbow for drainpipe that runs across surface of roof | | | |
|--|----------------|-------------|-----------------|
| Standard | Product number | Color | No. of packages |
| 60×55-L110 | A12L110 | H·SB·W·SW·K | 20 |
| 60×55-L200 | A12L805 | H·SB·W·SW·K | 20 |

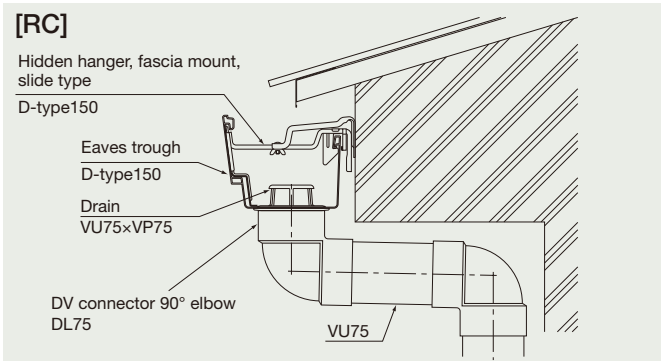
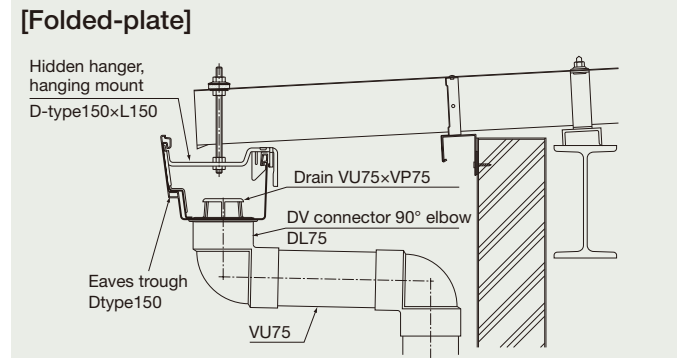
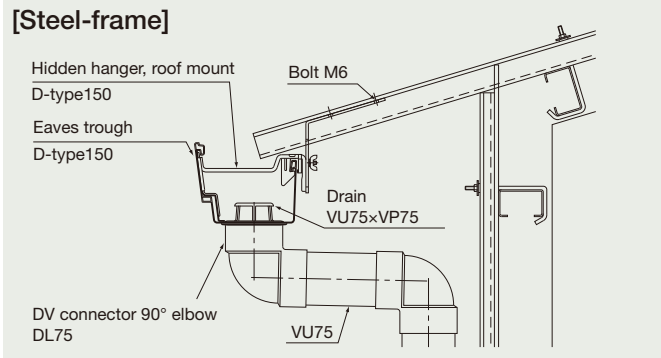
Downspout brackets

| Plastic downspout hanger | | | |
|---|---|---|---|
|  |  |  |  |
| Standard | Product number | Color | No. of packages |
| Drive-in type 60-L80 | A254440 | H·SB·W·SW·K | 100 |
| Drive-in type 60-I80 | A254455 | SB·W·SW·K | 100 |
| T-type 60-L30 | A254516 | SB·W·SW·K | 100 |
| T-type 75-L30 | A254518 | SB·W·SW·K | 100 |
| T-type 60-L60 | A254546 | SB·W·SW·K | 100 |
| T-type 75-L60 | A254548 | SB·W·SW·K | 100 |

| Plastic hanger for drainpipe that runs across surface of roof | | | |
|---|----------------|-----------|-----------------|
| Standard | Product number | Color | No. of packages |
| 60(L120) | A254860 | SB·W·SW·K | 50 |

| | |
|-------|---------------------|
| color | H = Grey, |
| | SB = Reddish Brown, |
| | W = European White, |
| | SW = Snow White, |
| | K = Black |

Standard eaves construction diagram



Drainage water quantity (for rainfall intensity of 160 mm/h)

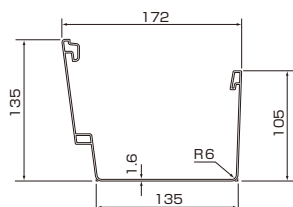
● Drainage water quantity in eaves trough

| Eaves trough drainage slope | 1/1000 | 3/1000 | 5/1000 |
|----------------------------------|--------|--------|--------|
| Drainage water quantity (ℓ/sec.) | 3.8 | 6.6 | 8.4 |

● Drainage water quantity in downspout

| Downspout | 60 | 75 | K35 | VU75 | VU100 |
|----------------------------------|-----|-----|-----|------|-------|
| Drainage water quantity (ℓ/sec.) | 2.3 | 3.6 | 2.6 | 4.6 | 7.7 |

Dimensional drawing



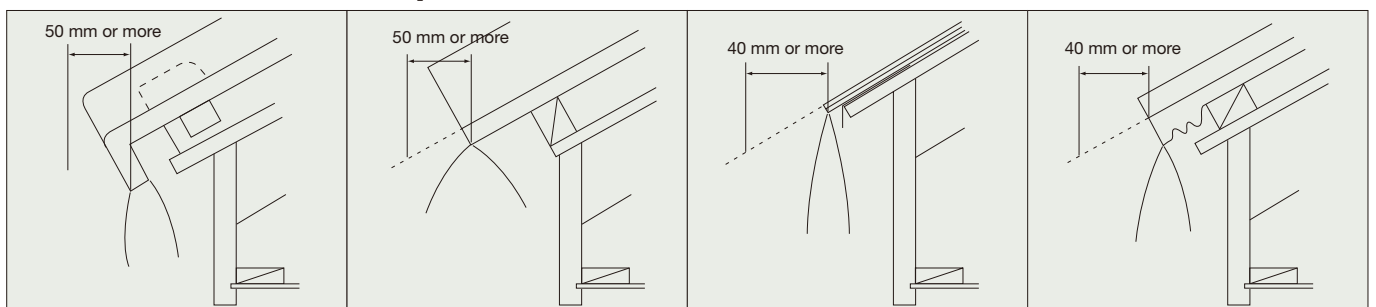
● Drainage water quantity (ℓ/sec.) and projected roof area (m²) for each drop outlet

| Downspout | Eaves trough drainage slope | Projected roof area (m ²) | | | | | | |
|-----------|-----------------------------|---------------------------------------|--------|--------|--------|--------|--------|--------|
| | | 1/1000 | 3/1000 | 5/1000 | 1/1000 | 3/1000 | 5/1000 | 1/1000 |
| 60 | 2.3 | 50.7 | 2.3 | 50.7 | 2.3 | 50.7 | 2.3 | 50.7 |
| 75 | 3.6 | 80.2 | 3.6 | 80.2 | 3.6 | 80.2 | 3.6 | 80.2 |
| K35 | 2.6 | 58.3 | 2.6 | 58.3 | 2.6 | 58.3 | 2.6 | 58.3 |
| VU75 | 4.7 | 83.8 | 4.6 | 104.0 | 4.6 | 104.0 | 4.6 | 104.0 |
| VU100 | 7.7 | 83.8 | 7.7 | 147.4 | 7.7 | 172.6 | 7.7 | 172.6 |

Compatible size chart (Based on rainfall intensity: 160 mm/h, drainage slope: 3/1000, interval between drop outlets: 12 m)

| Gutter combination | | Projected roof area for each drop outlet (m ²) | Projected roof area (m ²) | | | | | | | | | | | | | | | | | |
|--------------------|----------------|--|---------------------------------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Eaves trough | Downspout pipe | | ~100 | ~200 | ~300 | ~400 | ~500 | ~600 | ~700 | ~800 | ~900 | ~1000 | ~1100 | ~1200 | ~1300 | ~1400 | ~1500 | ~1600 | ~1700 | ~1800 |
| D-type150 | 75 | 80.14 | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 12 | 13 | 14 | 15 | 17 | 18 | 19 | 20 | 22 | 23 |
| | 90 | 116.66 | 1 | 2 | 3 | 4 | 5 | 6 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 |
| | VU75 | 103.97 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | VP75 | 89.37 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 21 |
| | VU100 | 147.35 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 11 | 12 | 13 |
| | VP100 | 147.35 | 1 | 2 | 3 | 3 | 4 | 5 | 5 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | 11 | 11 | 12 | 13 |

Standard construction position



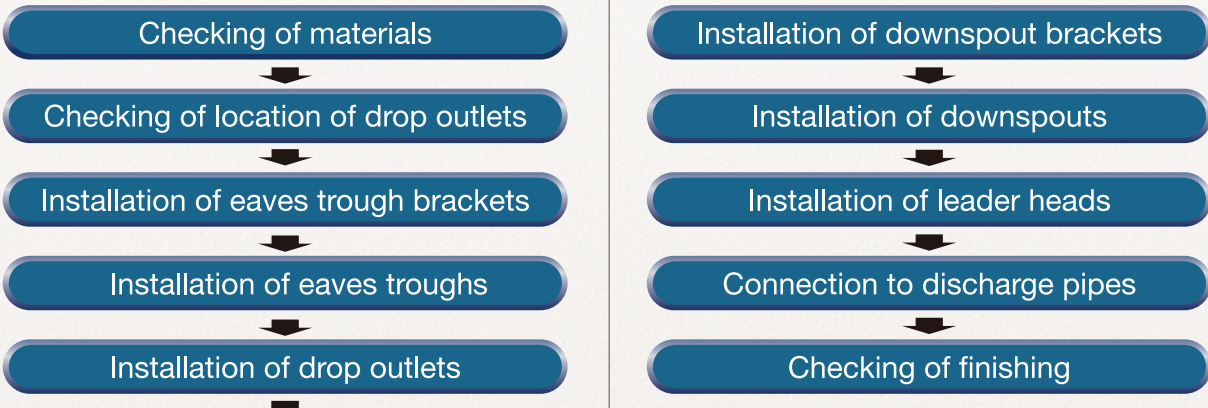
For Japanese tiles

For S-tiles

For colored slate (thin)

For colored slate (thick)

● Construction flowchart



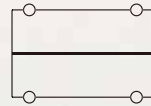
● Construction procedure and instructions

Use genuine DENKA adhesive (600ZT) in order to prevent water leakage.

1. Determining location of drop outlets

The number of drop outlets is determined using the calculation for drainage water quantity. However, taking into account the balance of the drainage water, it is ideal to provide at least 1 drop outlet on each eave.

Gabled roof



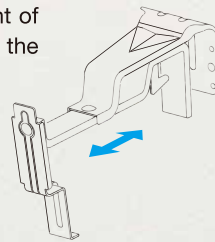
(Funnel/drain)

○ Location of funnel or drain

2. Selection of eaves trough bracket

Select the eaves trough bracket according to the gradient of the fascia board, the overhang length of the eaves, and the roof shape.

Four types for gradients of 0, 4/10, 5/10, 6/10.



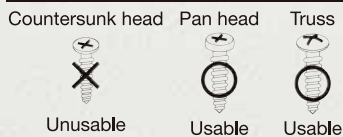
● Inner hanger, fascia mount (slide type)
Slide width = 20~50 mm

Nails for standard use

| | |
|---------------------|-------------|
| Nail/screw hole (4) | φ 4.3 |
| Screw nail | φ 2.4 X 4 5 |
| Tapping screw | φ 4.0 X 3 5 |

| | |
|-----------------|-------------|
| Anchor hole (2) | φ 6.5 |
| Anchor bolt | φ 6.0 X 4 5 |
| Tapping screw | φ 5.0 X 3 5 |

Selection of tapping screw



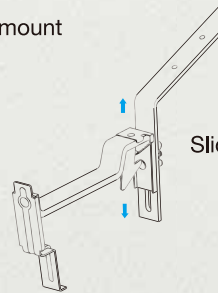
● Hidden hanger, hanging mount



Slide width=30mm

※Be sure to use genuine DENKA products.

● Hidden hanger, roof mount



Slide width=75mm

Caution

If using tapping screws (φ4), secure the plate using the four nail/screw holes. If using anchor bolts/tapping screws (φ5), use the two anchor bolt holes.

3. Installation of brackets

● Install brackets on both sides of the eaves. (Gradient of 1/1000 or more)

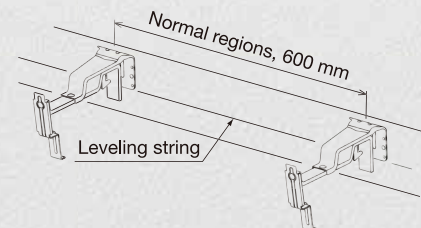
● Stretch a leveling string along the brackets on both sides.

● The distance between brackets in normal regions is 600 mm or less.

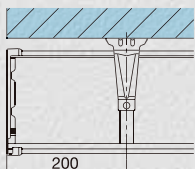
Install brackets at intervals of 450 mm or less in snowfall regions.

In snowfall regions, install snow brackets on the roof.

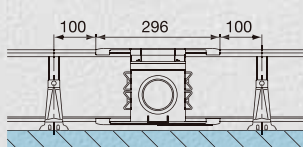
● Installation of brackets close to components is shown in the diagrams below.



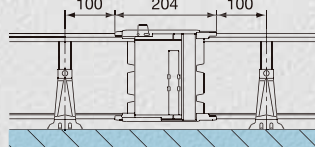
End cap



Expansion funnel

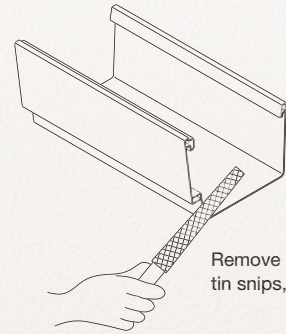
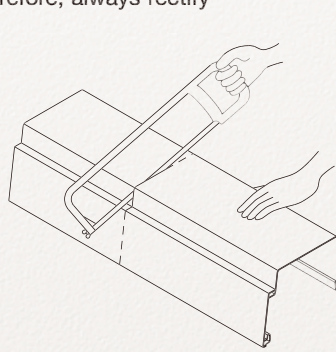


Expansion socket



4. Cutting eaves trough

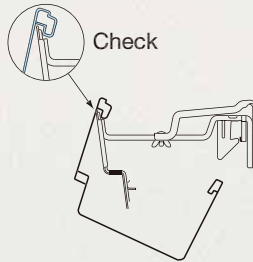
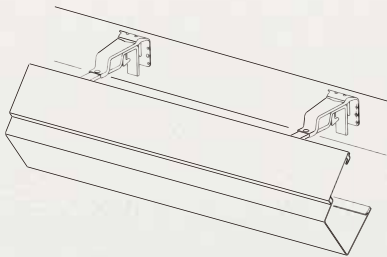
- Use a hacksaw to cut the eaves trough at a right angle.
- Remove all burrs from the cut surface.
- Deformities or burrs on the cut surface may cause gaps when the socket, etc. is installed. Therefore, always rectify deformities and burrs carefully. (Prevention of water leakage)



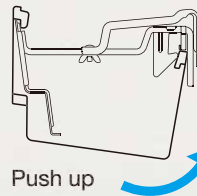
Remove burrs using a file, tin snips, etc.

5. Installation onto eaves trough brackets

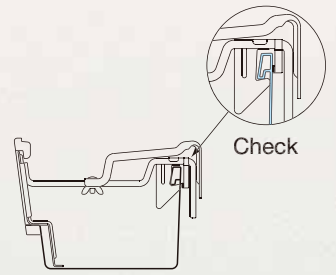
- Hook the eaves trough's hidden hanger lip securely onto the edge of the brackets. Then, push the base of the eaves trough up and fit the rear mounting ear.
- Check that all of the brackets are fitted into the eaves trough.



Check



Push up

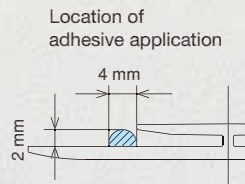
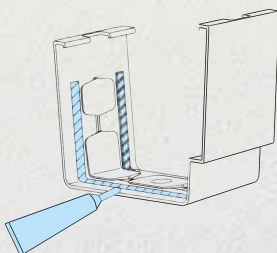


Check

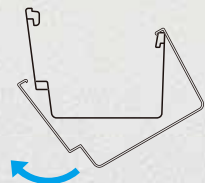
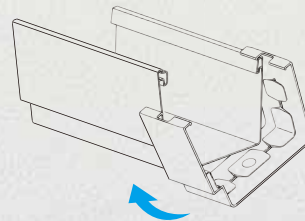
6. Installation of socket

※ Use genuine DENKA adhesive (600ZT) in order to prevent water leakage.

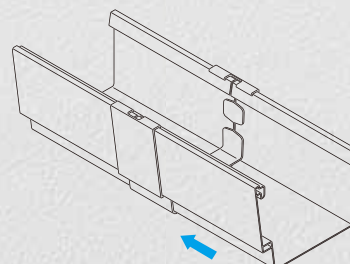
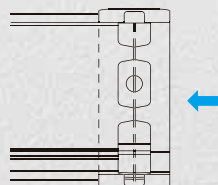
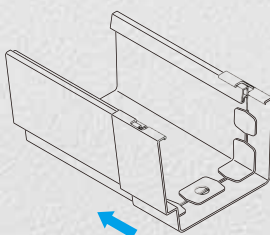
- Apply rows of adhesive evenly around the entire circumference of the inside of the socket. Apply up to below the mounting ears ensuring that there are no gaps, particularly at the corners.
- Hook the socket onto the eaves trough's rear mounting ear and fit it onto the front mounting ear by rotating it forwards.



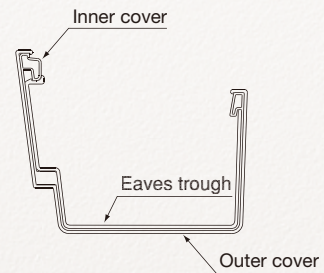
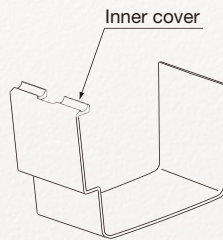
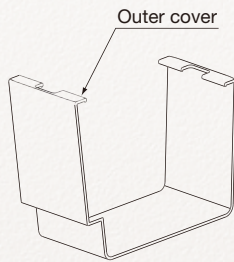
Location of adhesive application



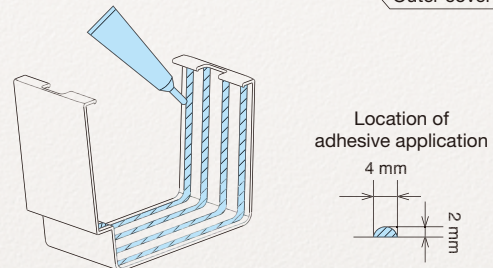
- Slide the socket all the way on.
- Set the other eaves trough and insert it all the way on.



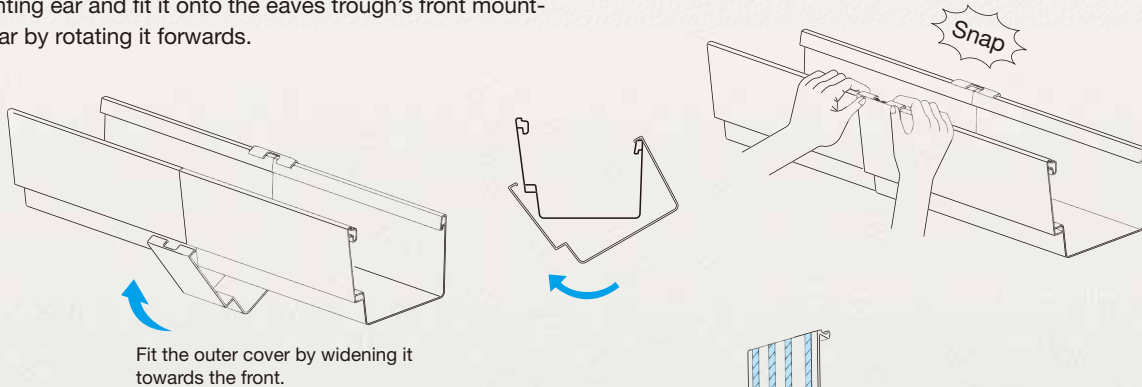
7. Construction of snap socket



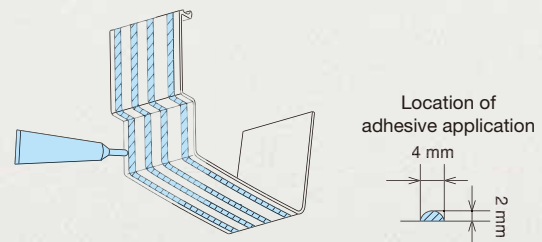
- Apply rows of adhesive evenly around the entire circumference of the inside of the socket. Apply up to below the mounting ears ensuring that there are no gaps, particularly at the corners.



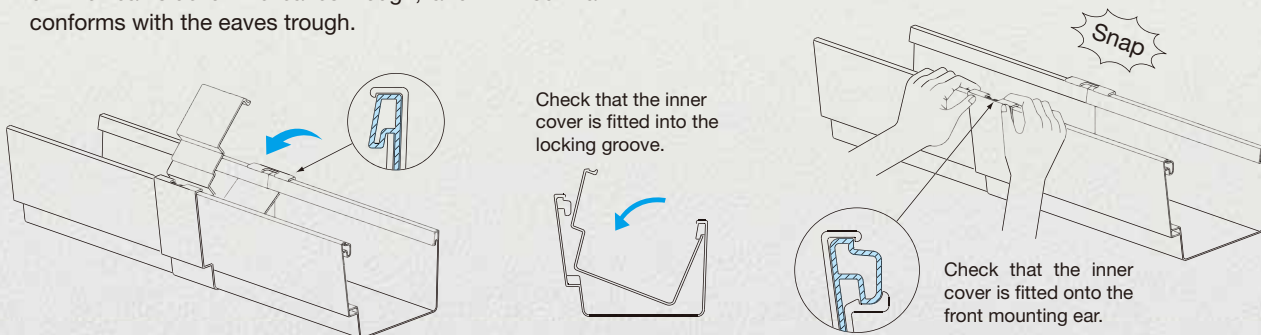
- Matching the center of the socket to the connection point in the eaves troughs, hook it onto the eaves trough's rear mounting ear and fit it onto the eaves trough's front mounting ear by rotating it forwards.



- Apply rows of adhesive around the entire circumference of the outer surface of the inner cover, ensuring that there are no gaps.



- Insert the rear side of the inner cover into the locking groove on the rear side of the eaves trough, and fit it so that it conforms with the eaves trough.

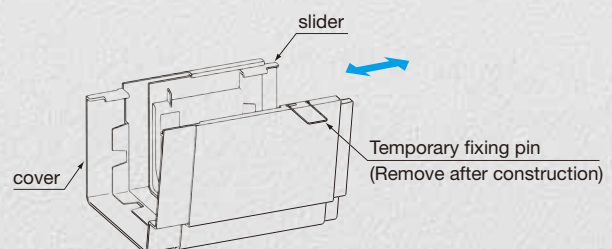


8. Installation of expansion socket

※ Use genuine DENKA adhesive (600ZT) in order to prevent water leakage.

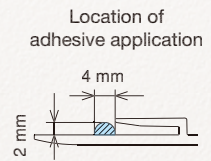
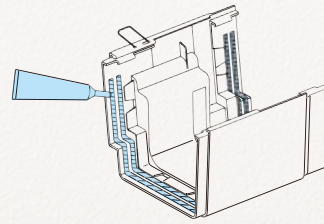
Product description

- The product consists of a cover, a slider, and a temporary fixing pin.
- In the case of drain chutes, always use an expansion socket.
- ※ Use in the ratio of one expansion socket for two eaves troughs (4 m x 2 eaves troughs).



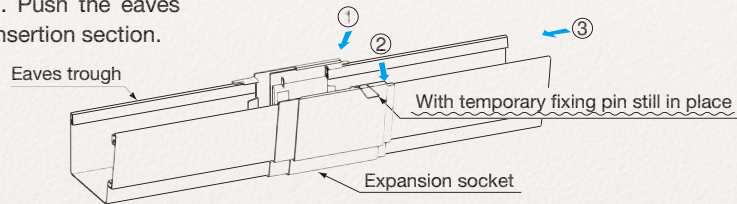
9. Application of adhesive

- Apply rows of adhesive around the entire circumference of the eaves trough insertion section of the expansion socket (slider, cover), ensuring that there are no gaps.

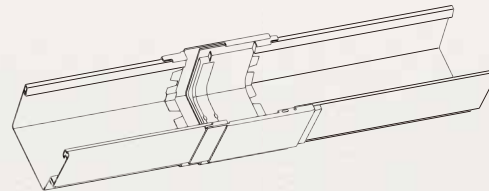


10. Fitting of expansion socket to eaves trough

- Install the expansion socket by snapping it onto the rear side and front side of the eaves trough. Push the eaves trough all the way into the eaves trough insertion section.

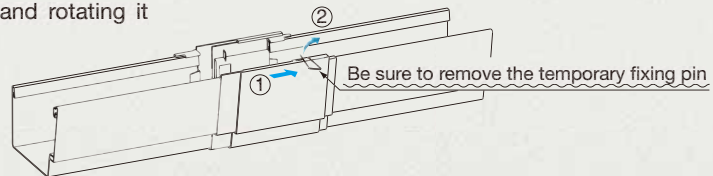


- The efficiency of the expansion socket cannot be maximized unless the eaves trough is connected in the correct position. Therefore, carry out the connection work without removing the temporary fixing pin. (Be sure to remove the pin after construction).



11. Removal of temporary fixing pin

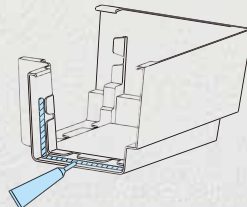
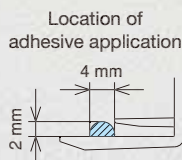
- The temporary fixing pin is easily removed by picking its inside surface with the tip of one's finger and rotating it upwards.



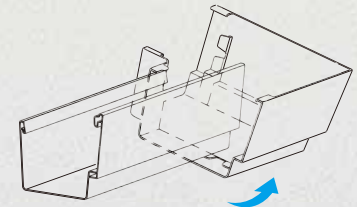
12. Installation of bend

※ Use genuine DENKA adhesive (600ZT) in order to prevent water leakage.

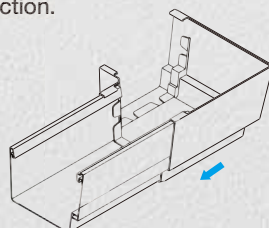
- Apply a row of adhesive evenly around the entire circumference of the insertion section of the bend, ensuring that there are no gaps.



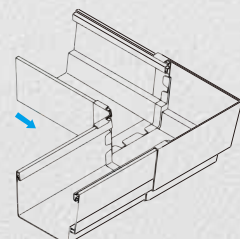
- Hook the bend onto the eaves trough's rear mounting ear, and fit it onto the eaves trough's front mounting ear by rotating it forwards.



- Slide the bend to insert the eaves trough all the way into the insertion section.



- Install the eaves trough on the other side in the same way.

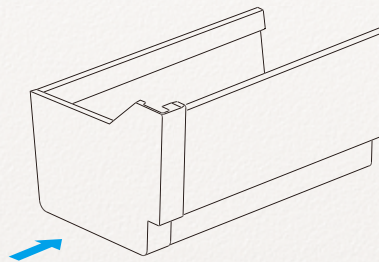
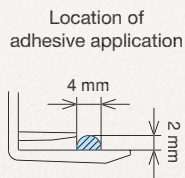
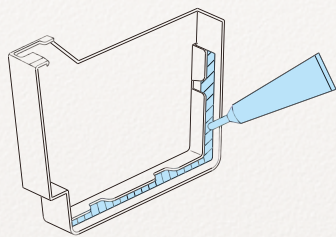


13. Installation of end cap (left/right specific)

※Use genuine DENKA adhesive (600ZT) in order to prevent water leakage.

- Apply a row of adhesive evenly around the entire circumference of the insertion section of the end cap, ensuring that there are no gaps.

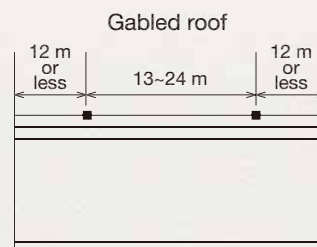
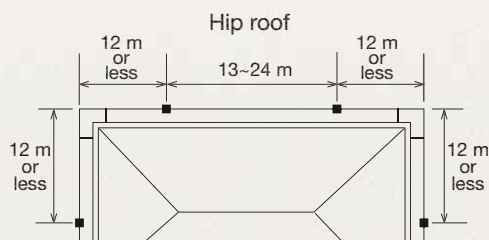
- Insert the end cap all the way onto the eaves trough.



14. Installation of expansion funnel

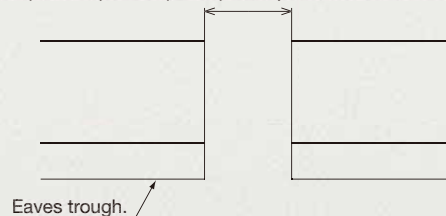
- Drop outlets

- Ensure that the distance between two funnels on the same level is 24 m or less.
- If there is a bend, ensure that the distance from the bend is 12 m or less.
- For gabled roofs, ensure that the edges of funnels are at 12 m or less.



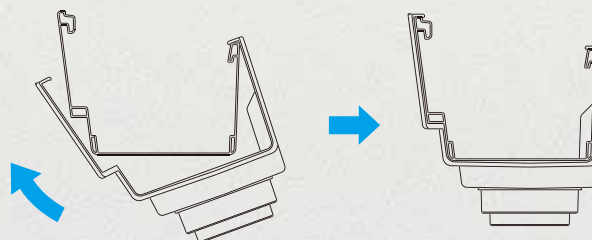
- Adjust the space between the two eaves troughs on the basis of 80 mm in the summer and 130 mm in the winter.

80 (summer) ~ 130 (winter) mm space between eaves troughs

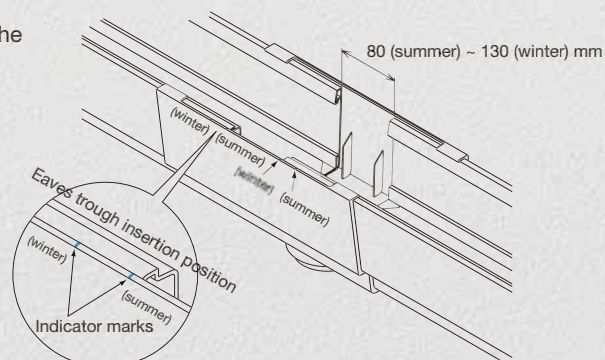
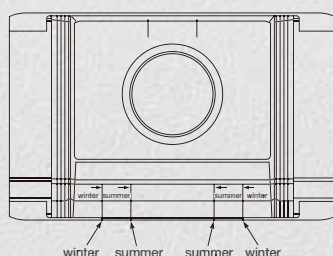


- Hook the expansion funnel onto the eaves troughs' rear mounting ears, and rotate it forwards to fit it onto the eaves troughs' front mounting ears with a "click".

※Do not glue the expansion funnel to the eaves troughs.



- In accordance with the construction season (summer, winter), set the eaves troughs to the indicator marks on the front top surface of the expansion funnel.



Quality/Properties

● General properties of Toyo gutter

| | | | | |
|-----------------------|------------------------------|-----------------------------------|------------------|--|
| Physical properties | Specific gravity | — | 1.45~1.52 | Equivalent to 1/5 that of galvanized sheet iron and 1/2 that of aluminum, Toyo gutter is light and easy to construct |
| Mechanical properties | Tensile strength | N/cm ² | 3922.7 and above | Has the strength required of gutters |
| | Falling ball impact | cm | 120 and above | The higher the value, the more resistant the material is to breaking when a weight is dropped on it (1 kg weight) |
| | Modulus of elasticity | 10 ⁴ N/cm ² | 24.52~34.32 | More elastic than metal |
| Thermal properties | Linear expansion coefficient | 10 ⁻⁵ /°C | 6.0~0.29 | The amount of expansion/contraction when 1 mm of gutter undergoes a temperature change of 1°C |
| | Vicat softening temperature | °C | 82~90 | Standard for estimating the heat-resistant strength |

● Impact resistance

Rigid PVC resin has sufficient impact strength to withstand being struck by items during typhoons, etc.

[Impact resistance test]

An eaves trough was left inside a 20°C thermostatic chamber for at least 1 hour and then a 1 kg weight was dropped on it from a height of 1.2 m. The eaves trough was inspected for damage.

(n=5)

| Eaves trough | Result |
|--------------|-----------|
| D-type 150 | No damage |



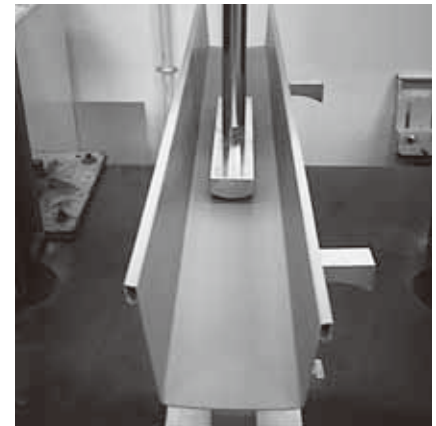
Impact resistance

● Load resistance

Has sufficient load resistance to withstand accumulation of grit in the eaves trough.

[Load on eaves trough and amount of deflection]

| Type | Effective cross-sectional drainage area (cm ²) | | Load (kg) when bracket interval 600 mm | Amount of deflection (mm) |
|------------|--|---------------|--|---------------------------|
| D-type 150 | 151.9 | Full of water | 9.1 | 3.3 |
| | | Full of grit | 12.5 | 4.54 |



Load resistance

● Heat resistance

The amount of expansion/contraction due to temperature difference in rigid PVC resin is large compared to metals; however, the use of expansion components (expansion, expansion sockets) means that this is not a problem in practical terms.

[Amount of expansion/contraction in gutter]

| Linear expansion coefficient | Temperature difference (°C) | Amount of expansion/contraction (mm) per 10 m of eaves trough |
|------------------------------|-----------------------------|---|
| 6×10 ⁻⁵ /°C | 30 | 18.0 |
| | 40 | 24.0 |
| | 50 | 30.0 |
| | 60 | 36.0 |



Weather resistance

[Clash-Berg temperature of gutter]

PVC gutters have sufficient heat resistance for use, and can be used with confidence.

| Test item | Test method | Type | Temperature (°C) |
|-----------------------------|----------------------------------|--------------|------------------|
| Vicat softening temperature | 1kg load according to JIS K 7206 | Eaves trough | 97 |
| | | Downspout | 90 |
| | | Part | 82 |

● Tensile strength of bonded parts

The adhesive has sufficient strength and, in particular, the initial adhesive strength is very fast, so it can be used with confidence.

[Time-dependent tensile strength]

Unit : N/cm²

| Type of adhesive | After 3 hours | After 24 hours |
|------------------|---------------|----------------|
| 600ZT | 199 | 324 |
| 100P | 195 | 298 |

Tensile shear strength was measured according to JIS K 6850.

※ In order that the adhesive maintains the stated strengths, use "genuine Toyo gutter adhesive".

● Weather resistance

The properties of rigid PVC resin suffer little deterioration during extended periods of use outdoors, so Toyo gutters can be used with confidence.

[Outdoor exposure test]

The product was left outside for 3 years at an angle of 45° to the south, after which the tensile strength was measured.

| | Before exposure | 1 year | 2 years | 3 years |
|---------------------------------------|-----------------|--------|---------|---------|
| Tensile strength (N/cm ²) | 5490 | 5520 | 5560 | 5620 |

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URL <http://www.denka.co.jp/eng/top.htm>

Please note that product specifications, packaging specifications, and colors are subject to change without notice.
Due to printing, color shades may differ from the actual product.