

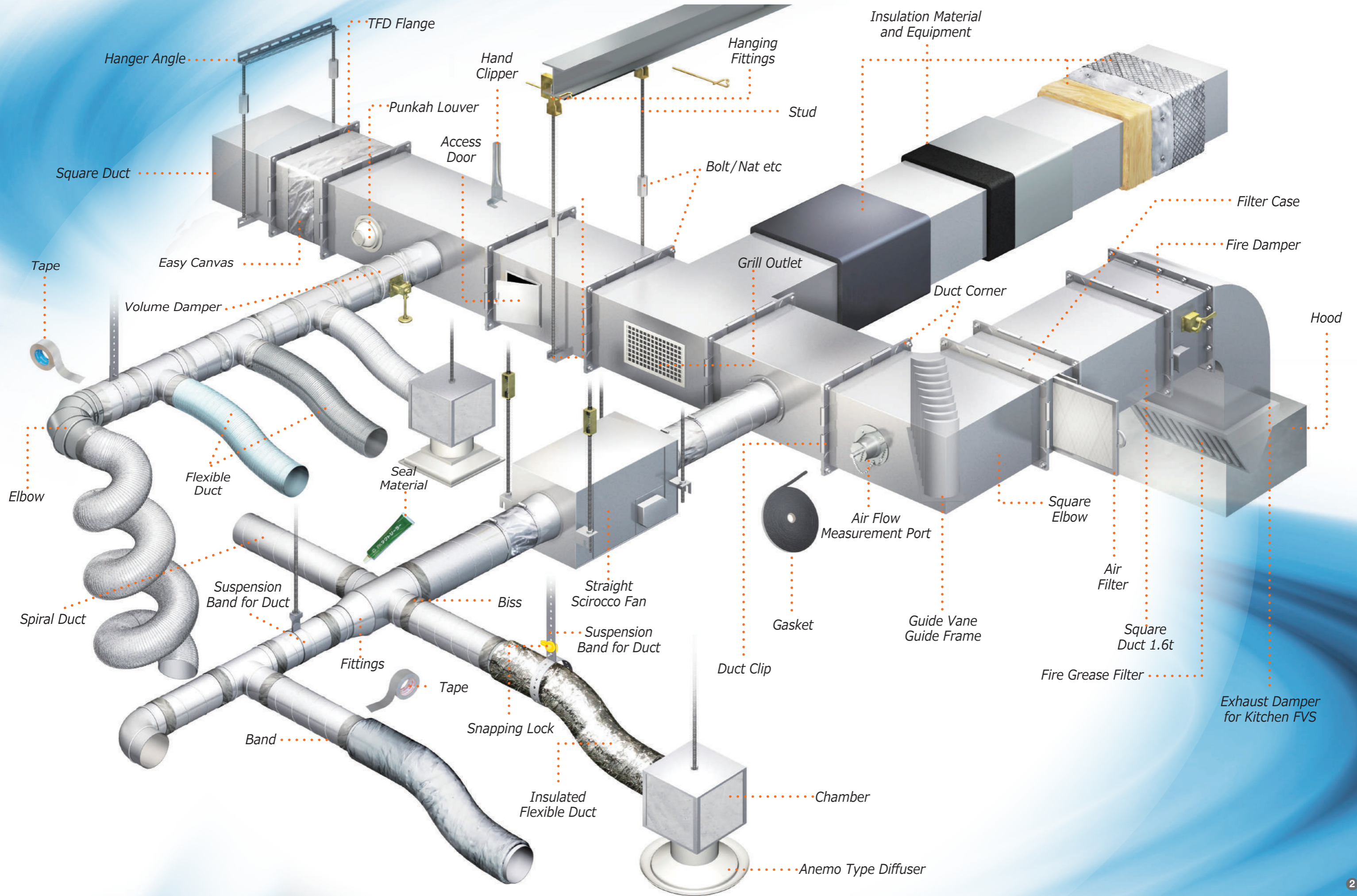


<http://www.ductnet.com>
E-mail : fukagawa@ductnet.com



SPIRAL DUCT AND ROUND FITTINGS

SPIRAL DUCT AND ROUND FITTINGS



SPIRAL DUCT

Basic specification of Spiral Duct (Outline)

Nominal size is based on inner diameter. Tolerance between thickness and inner diameter of straight low pressure duct are as follows:

| Nominal size | Basic plate thickness | Tolerance of nominal size |
|--------------|-----------------------|---------------------------|
| ~ 450 | 0.5 | 0~+2 |
| 451 ~ 710 | 0.6 | 0~+2 |
| 711 ~ 1000 | 0.8 | 0~+2 |
| 1001 ~ 1250 | 1.0 | 0~+2 |
| 1251 ~ 1600 | — | 0~+2 |

Unit (mm)

Technical data of Spiral Duct

Strain chart due to external pressure

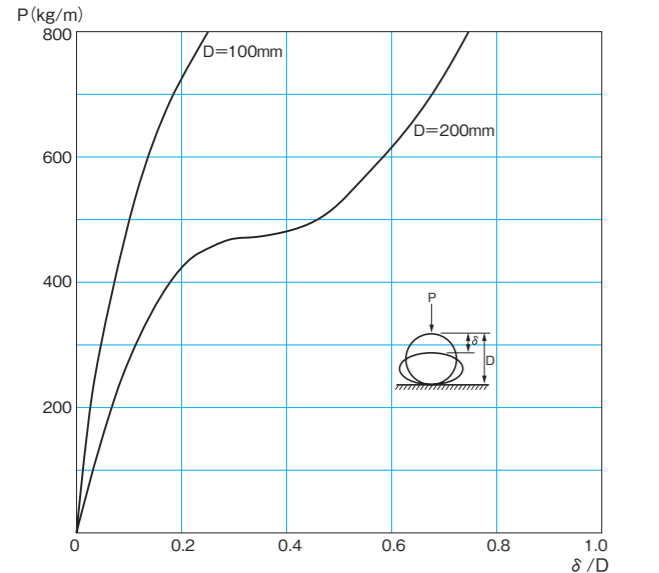
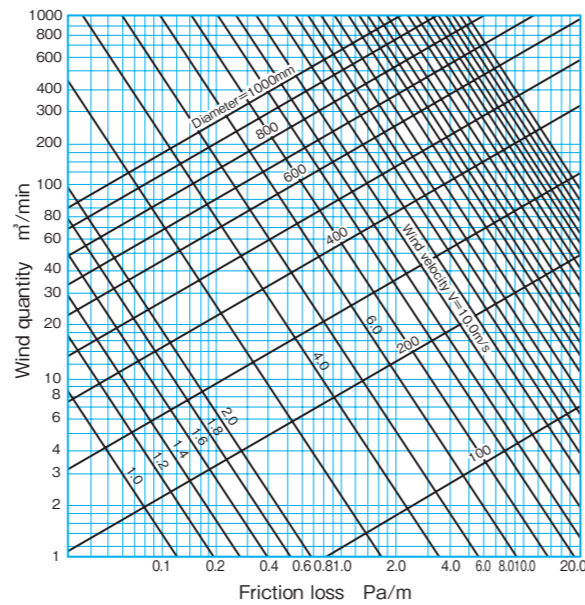
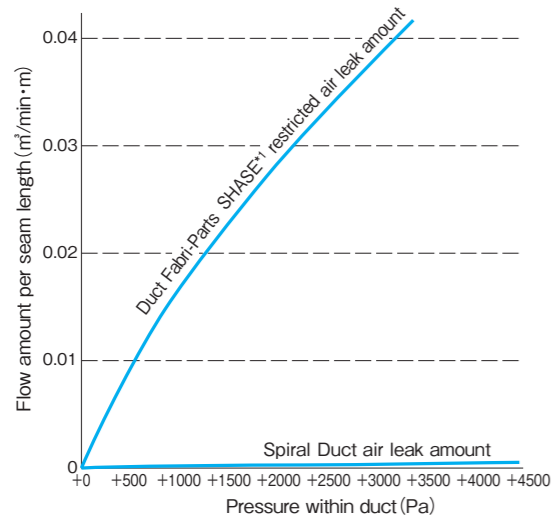


Diagram of friction loss



Air volume

(1) Pressure test



(2) Pressure resistance test

Pressure resistance data

| Nominal size φ (mm) | Plate thickness (mm) | Length (mm) | Outlook (Pa) |
|---------------------|----------------------|-------------|----------------------------|
| 400 | 0.5 | 4000 | No irregularity Upto -2500 |
| 600 | 0.6 | 4000 | No irregularity Upto -2900 |
| 800 | 0.8 | 4000 | No irregularity Upto -3100 |
| 1000 | 1.0 | 4000 | No irregularity Upto -6500 |

Spiral Duct (Zinc Steel Plate)

Material

Zinc z-18

Thickness

0.5mm~1.2mm

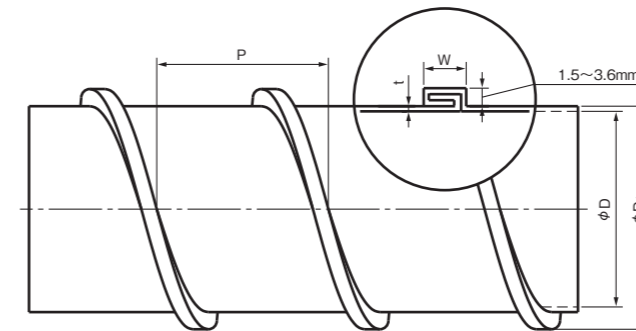
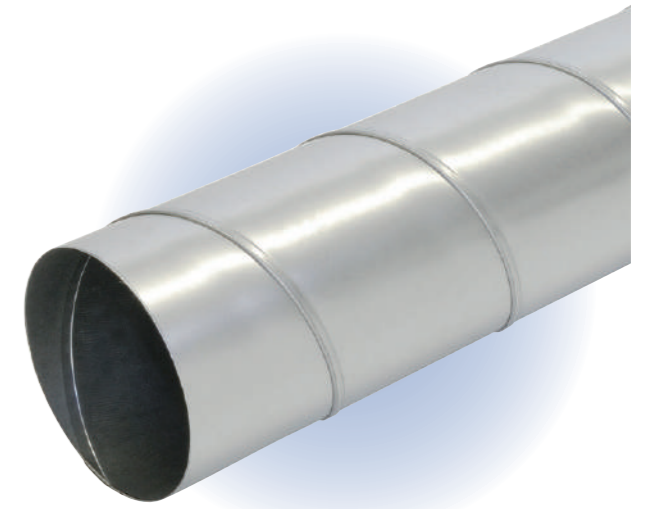
Size

φ75~φ600 every / 25mm pitch

φ601~φ1600 every / 50mm pitch

Special feature

· Mainly used for HVAC use.



Unit (mm)

Ministry of land, infrastructure and transport specifications (year 2019 issued)

| Width of seam fold (W) | Pitch of seam (P) | |
|------------------------|-------------------|--------------|
| | ~ φ 100 | φ 125~φ 1250 |
| Over 4.0 | ~125 | ~150 |

| Nominal size φD (mm) | Thickness t (mm) | Outer dimension (mm) | | | Weight (kg/m) |
|----------------------|------------------|----------------------|-------|-------|---------------|
| | | W | P | D1 | |
| 75 | 0.5 | 6.5 | 132 ※ | 77.5 | 1.4 |
| | 0.6 | 6.5 | 122 | 102.5 | 1.61 |
| 100 | 0.6 | 6.5 | 122 | 103.0 | 1.91 |
| | 0.8 | 6.5 | 122 | 104.0 | 2.53 |
| 125 | 0.5 | 6.5 | 140 | 127.5 | 2.01 |
| | 0.6 | 6.5 | 140 | 128.0 | 2.39 |
| 150 | 0.5 | 6.5 | 140 | 129.0 | 3.16 |
| | 0.6 | 6.5 | 140 | 152.5 | 2.40 |
| 175 | 0.6 | 6.5 | 140 | 153.0 | 2.87 |
| | 0.8 | 6.5 | 140 | 154.0 | 3.79 |
| 200 | 0.5 | 6.5 | 135 | 177.5 | 2.80 |
| | 0.6 | 6.5 | 135 | 178.0 | 3.35 |
| 225 | 0.6 | 6.5 | 135 | 179.0 | 4.42 |
| | 0.8 | 6.5 | 135 | 202.5 | 3.19 |
| 250 | 0.5 | 6.5 | 135 | 203.0 | 3.83 |
| | 0.6 | 6.5 | 135 | 204.0 | 5.06 |

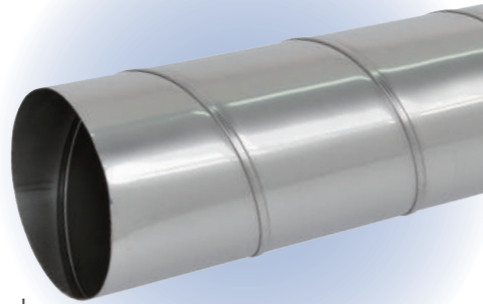
※Can be manufactured under 125mm(P)

| Nominal size φD (mm) | Thickness t (mm) | Outer dimension (mm) | | | Weight (kg/m) |
|----------------------|------------------|----------------------|-----|-------|---------------|
| | | W | P | D1 | |
| 225 | 0.5 | 6.5 | 135 | 227.5 | 3.60 |
| | 0.6 | 6.5 | 135 | 228.0 | 4.31 |
| 250 | 0.6 | 6.5 | 135 | 229.0 | 5.69 |
| | 0.5 | 6.5 | 135 | 252.5 | 4.0 |
| 275 | 0.6 | 6.5 | 135 | 253.0 | 4.79 |
| | 0.8 | 6.5 | 135 | 254.0 | 6.33 |
| 300 | 0.5 | 6.5 | 135 | 277.5 | 4.40 |
| | 0.6 | 6.5 | 135 | 278.0 | 5.27 |
| 325 | 0.8 | 6.5 | 135 | 279.0 | 6.96 |
| | 0.5 | 6.5 | 135 | 302.5 | 4.80 |
| 350 | 0.6 | 6.5 | 135 | 303.0 | 5.75 |
| | 0.8 | 6.5 | 135 | 304.0 | 7.59 |
| 375 | 0.5 | 6.5 | 135 | 327.5 | 5.20 |
| | 0.6 | 6.5 | 135 | 328.0 | 6.24 |
| 400 | 0.8 | 6.5 | 135 | 329.0 | 8.25 |
| | 0.5 | 6.5 | 135 | 352.5 | 5.60 |
| 425 | 0.6 | 6.5 | 135 | 353.0 | 6.72 |
| | 0.8 | 6.5 | 135 | 354.0 | 8.87 |

SPIRAL DUCT

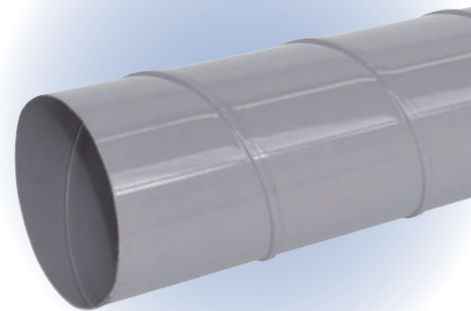
Spiral Duct (Stainless Steel Plate)

- **Material**
Stainless Steel Plate
- **Thickness**
0.5mm~0.8mm
- **Size**
φ75~φ600 every 25mm pitch
φ601~φ1300 every 50mm pitch
- **Special feature - usage**
 - Excellent corrosion and heat resistance
 - Useful for petroleum(oil), chemical and pulp factory
 - Useful for hospital and research ducts
 - Ducts for use in factories by seaside areas, medicine and gas - used
 - Ducts for use factory flue, pool and sewage treatment plants



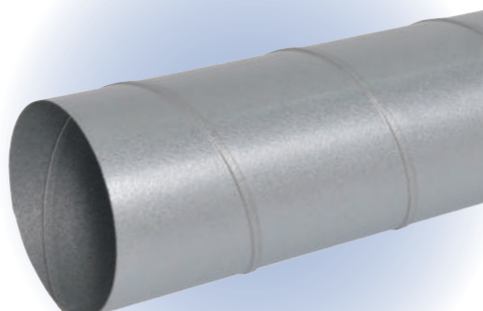
Spiral Duct (Poly Vinyl Chloride Steel Plate)

- **Material**
Poly vinyl chloride covered steel plate
- **Thickness**
0.5mm~0.8mm
- **Size**
φ75~φ600 every 25mm pitch
φ601~φ1300 every 50mm pitch
- **Special feature - usage**
 - Excellent corrosion and heat resistance various corrosive gases
 - Apartment building(complex) and toilet ventilation
 - Ducts for chemical factories
 - Ducts for water and sewage treatment plants



Spiral Duct (Corrosion Resistance Alloy Galvalume Steel Plate)

- **Material**
Corrosion resistance alloy galvalume steel plate
 - **Thickness**
0.5mm~0.8mm
 - **Size**
φ75~φ600 every 25mm pitch
φ601~φ1000 every 50mm pitch
 - **Special feature - usage**
 - Aluminum, zinc, silicon, origin, aluminum galvanized steel sheet
 - Excellent endurance better than Zinc Steel Plate
 - Useful for outdoors, bay area and indoor pool institution
- ※Also, Super Dima and Ribbed Spiral Ducts are available.



ROUND FITTINGS

Specifications of Round Fittings

- **Material** : Zinc Steel Plate, Stainless Steel Plate, poly vinyl Chloridized Steel Plate
Corrosion proof alloy galvalume steel plate, high corrosion resistance coated steel sheet.

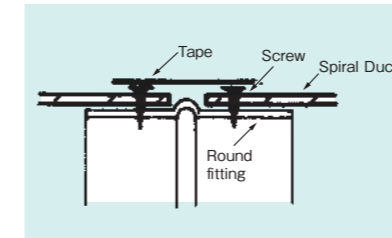
● **Specifications** (Nominal size is of basic outside diameter)

| Tolerance and Thickness | | | Unit (mm) |
|-------------------------|-----|-----------|-----------|
| Nominal size | φ D | Tolerance | Thickness |
| ~ 315 | | -1.2~-1.9 | 0.6 |
| 316 ~ 710 | | -1.2~-1.9 | 0.8 |
| 711 ~ 1000 | | -2.0~-2.2 | 1.0 |
| 1001 ~ 1250 | | -2.0~-2.2 | 1.2 |
| 1251 ~ 1600 | | -2.0~-3.0 | 1.2 |

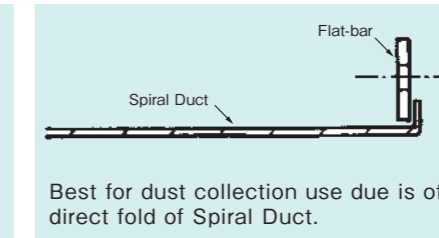
| Insert Length | | | Unit (mm) |
|---------------|-----|---------------|-----------|
| Nominal size | φ D | Insert Length | |
| 75~300 | | 10 | |
| 325~1600 | | 13 ~ | |

Connecting Method

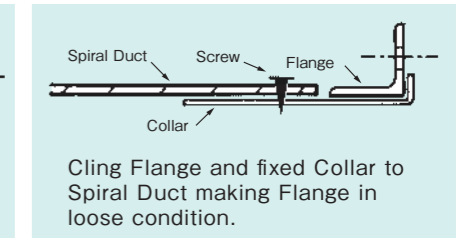
Insert Type



Flange Type (Flat-bar)

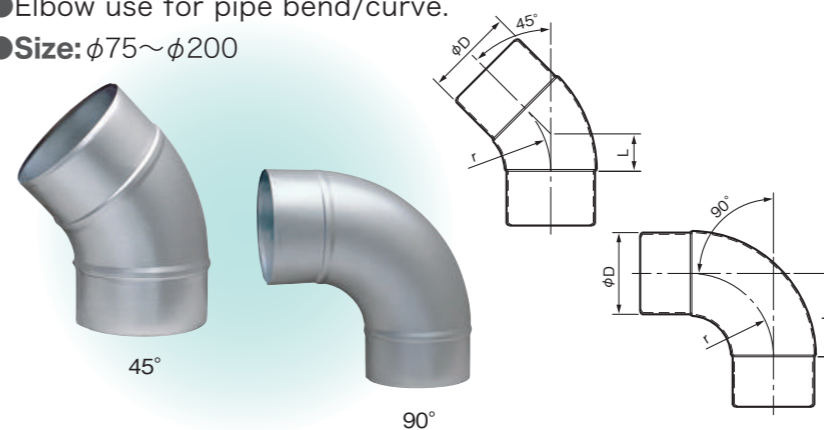


Flange Type



Elbow (Pressed) 45° / 90°

- Elbow use for pipe bend/curve.
- **Size:** φ75~φ200

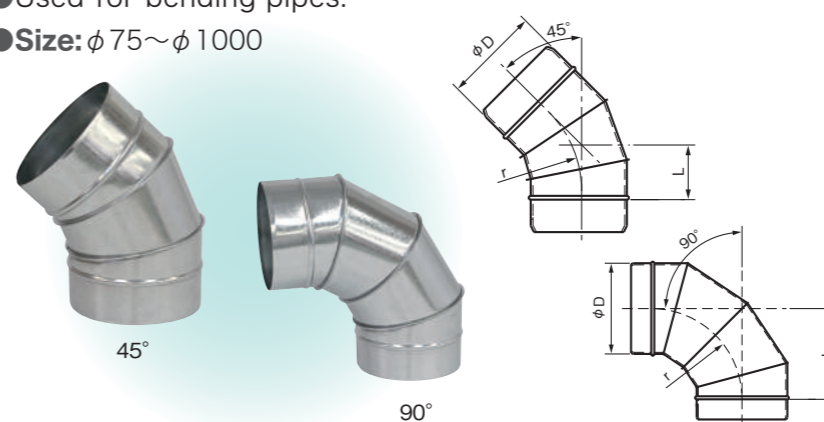


| Unit (mm) | | | |
|-----------|-----------------|------|-----|
| | Nominal size φD | L | r |
| 45° | 75 | 37 | 75 |
| | 100 | 41.4 | 100 |
| | 125 | 60 | 125 |
| | 150 | 62.1 | 150 |
| | 175 | 82 | 175 |
| 90° | 200 | 82.8 | 200 |
| | 75 | 75 | 75 |
| | 100 | 100 | 100 |
| | 125 | 125 | 125 |
| | 150 | 150 | 150 |
| | 175 | 175 | 175 |
| | 200 | 200 | 200 |

※ (L) measure is TK supecification.

Elbow 45° / 90°

- Used for bending pipes.
- **Size:** φ75~φ1000

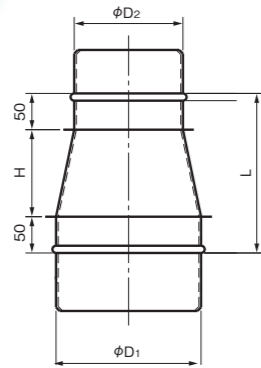


| Unit (mm) | | | |
|-----------|-----------------|-----|-----|
| | Nominal size φD | L | r |
| 45° | 225 | 95 | 225 |
| | 250 | 100 | 250 |
| | 275 | 110 | 275 |
| | 300 | 120 | 300 |
| | 325 | 130 | 325 |
| 90° | 350 | 140 | 350 |
| | 225 | 225 | 225 |
| | 250 | 250 | 250 |
| | 275 | 275 | 275 |
| | 300 | 300 | 300 |
| | 325 | 325 | 325 |
| | 350 | 350 | 350 |

ROUND FITTINGS

R Pipe (Reducer)

- Fitting for change the duct size.
- Size: $\phi 75 \sim \phi 1000$



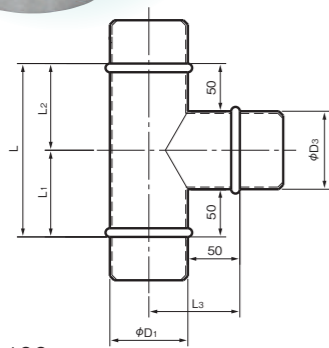
$$L = 2(D_1 - D_2) + 100$$

$$H = 2(D_1 - D_2)$$

| Nominal size | | | Unit (mm) | | |
|--------------|-----|-----|-----------|-----|-----|
| $\phi D1$ | D2 | L | $\phi D1$ | D2 | L |
| 100 | 75 | 150 | 250 | 100 | 400 |
| | 75 | 200 | | 125 | 350 |
| 125 | 100 | 150 | | 150 | 300 |
| | 75 | 250 | | 175 | 250 |
| 150 | 100 | 200 | | 200 | 200 |
| | 125 | 150 | | 225 | 150 |
| | 75 | 300 | 100 | 450 | |
| 175 | 100 | 250 | 125 | 400 | |
| | 125 | 200 | 150 | 350 | |
| | 150 | 150 | 175 | 300 | |
| | 75 | 350 | 200 | 250 | |
| 200 | 100 | 300 | 225 | 200 | |
| | 125 | 250 | 250 | 150 | |
| | 150 | 200 | 100 | 500 | |
| | 175 | 150 | 125 | 450 | |
| 225 | 75 | 400 | 150 | 400 | |
| | 100 | 350 | 175 | 350 | |
| | 125 | 300 | 200 | 300 | |
| | 150 | 250 | 225 | 250 | |
| | 175 | 200 | 250 | 200 | |
| | 200 | 150 | 275 | 150 | |

T Pipe

- Fitting to diverge air flow in two directions.
- Size: $\phi 75 \sim \phi 1000$



$$L = D_3 + 100$$

$$L_1 = 0.5D_3 + 50$$

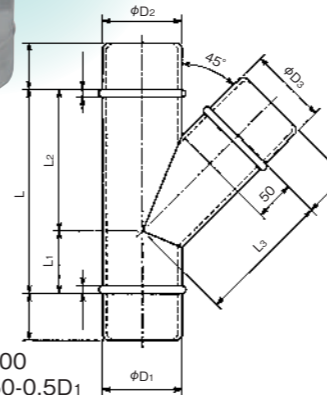
$$L_2 = 0.5D_3 + 50$$

$$L_3 = 0.5D_1 + 50$$

| Nominal size | | | | Unit (mm) | | | |
|--------------|-----|-----|-----|-----------|-----|-----|-----|
| $\phi D1$ | D3 | L | L3 | $\phi D1$ | D3 | L | L3 |
| 75 | 75 | 175 | 90 | 225 | 225 | 325 | 165 |
| | 75 | 175 | 100 | | 100 | 200 | 175 |
| 100 | 100 | 200 | 100 | | 125 | 225 | 175 |
| | 75 | 175 | 115 | | 150 | 250 | 175 |
| 125 | 100 | 200 | 115 | | 175 | 275 | 175 |
| | 125 | 225 | 115 | | 200 | 300 | 175 |
| | 225 | 325 | 175 | | | | |
| 150 | 75 | 175 | 125 | 250 | 350 | 175 | |
| | 100 | 200 | 125 | 100 | 200 | 190 | |
| | 125 | 225 | 125 | 125 | 225 | 190 | |
| | 150 | 250 | 125 | 150 | 250 | 190 | |
| 175 | 75 | 175 | 140 | 175 | 275 | 190 | |
| | 100 | 200 | 140 | 200 | 300 | 190 | |
| | 125 | 225 | 140 | 225 | 325 | 190 | |
| | 150 | 250 | 140 | 250 | 350 | 190 | |
| | 175 | 275 | 140 | 275 | 375 | 190 | |
| 200 | 100 | 200 | 150 | 100 | 200 | 200 | |
| | 125 | 225 | 150 | 125 | 225 | 200 | |
| | 150 | 250 | 150 | 150 | 250 | 200 | |
| | 175 | 275 | 150 | 175 | 275 | 200 | |
| 225 | 100 | 200 | 165 | 200 | 300 | 200 | |
| | 125 | 225 | 165 | 225 | 325 | 200 | |
| | 150 | 250 | 165 | 250 | 350 | 200 | |
| | 175 | 275 | 165 | 275 | 375 | 200 | |
| | 200 | 300 | 165 | 300 | 400 | 200 | |
| | 300 | 400 | 200 | | | | |

Y Pipe

- Fitting to diverge air flow in two directions.
- Size: $\phi 75 \sim \phi 1000$



$$L = 1.6D_3 + 100$$

$$L_1 = 0.8D_3 + 50 - 0.5D_1$$

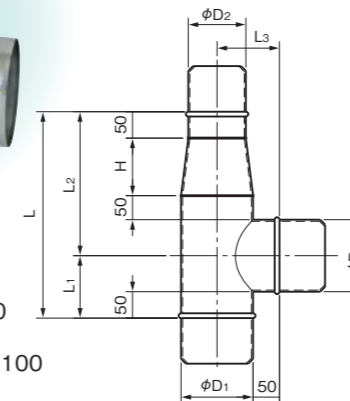
$$L_2 = 0.8D_3 + 50 + 0.5D_1$$

$$L_3 = 0.5D_3 + 50 + 0.71D_1$$

| Nominal size | | | | | | Unit (mm) | | | | | |
|--------------|-----|-----|-------|-------|-----|-----------|-----|-------|-------|-------|-----|
| $\phi D1$ | D3 | L | L1 | L2 | L3 | $\phi D1$ | D3 | L | L1 | L2 | L3 |
| 75 | 75 | 220 | 72.5 | 147.5 | 140 | 225 | 225 | 460 | 117.5 | 342.5 | 325 |
| | 75 | 220 | 60.0 | 160.0 | 160 | | 100 | 260 | 5.0 | 255.0 | 280 |
| 100 | 100 | 260 | 80.0 | 180.0 | 170 | | 125 | 300 | 25.0 | 275.0 | 290 |
| | 75 | 220 | 47.5 | 172.5 | 180 | | 150 | 340 | 45.0 | 295.0 | 305 |
| 125 | 100 | 260 | 67.5 | 192.5 | 190 | | 175 | 380 | 65.0 | 315.0 | 315 |
| | 125 | 300 | 87.5 | 212.5 | 205 | | 200 | 420 | 85.0 | 335.0 | 330 |
| | 75 | 220 | 35.0 | 185.0 | 195 | 225 | 460 | 105.0 | 355.0 | 340 | |
| 150 | 100 | 260 | 55.0 | 205.0 | 210 | 250 | 500 | 125.0 | 375.0 | 355 | |
| | 125 | 300 | 75.0 | 225.0 | 220 | 100 | 260 | -7.5 | 267.5 | 295 | |
| | 150 | 340 | 95.0 | 245.0 | 235 | 125 | 300 | 12.5 | 287.5 | 310 | |
| | 75 | 220 | 22.5 | 197.5 | 215 | 150 | 340 | 32.5 | 307.5 | 320 | |
| 175 | 100 | 260 | 42.5 | 217.5 | 225 | 175 | 380 | 52.5 | 327.5 | 335 | |
| | 125 | 300 | 62.5 | 237.5 | 240 | 200 | 420 | 72.5 | 347.5 | 345 | |
| | 150 | 340 | 82.5 | 257.5 | 250 | 225 | 460 | 92.5 | 367.5 | 360 | |
| | 175 | 380 | 102.5 | 277.5 | 265 | 250 | 500 | 112.5 | 387.5 | 370 | |
| | 100 | 260 | 30.0 | 230.0 | 245 | 275 | 540 | 132.5 | 407.5 | 385 | |
| 200 | 125 | 300 | 50.0 | 250.0 | 255 | 100 | 260 | -20.0 | 280.0 | 315 | |
| | 150 | 340 | 70.0 | 270.0 | 270 | 125 | 300 | 0.0 | 300.0 | 325 | |
| | 175 | 380 | 90.0 | 290.0 | 280 | 150 | 340 | 20.0 | 320.0 | 340 | |
| | 200 | 420 | 110.0 | 310.0 | 295 | 175 | 380 | 40.0 | 340.0 | 350 | |
| | 100 | 260 | 17.5 | 242.5 | 260 | 200 | 420 | 60.0 | 360.0 | 365 | |
| | 125 | 300 | 37.5 | 262.5 | 275 | 225 | 460 | 80.0 | 380.0 | 375 | |
| 225 | 150 | 340 | 57.5 | 282.5 | 285 | 250 | 500 | 100.0 | 400.0 | 390 | |
| | 175 | 380 | 77.5 | 302.5 | 300 | 275 | 540 | 120.0 | 420.0 | 400 | |
| | 200 | 420 | 97.5 | 322.5 | 310 | 300 | 580 | 140.0 | 440.0 | 415 | |

RT Pipe

- Fitting to diverge air flow in two directions by complex R Pipe-T Pipe, change the duct size at the same time.
- Size: $\phi 75 \sim \phi 1000$



$$L = D_3 + 2(D_1 - D_2) + 150$$

$$L_1 = 0.5D_3 + 50$$

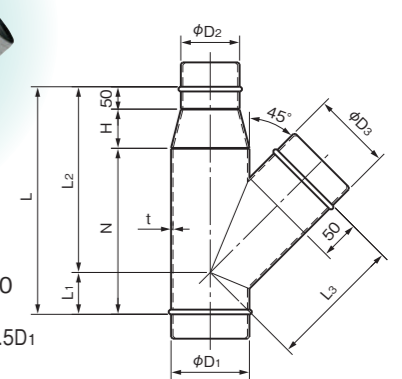
$$L_2 = 0.5D_3 + 2(D_1 - D_2) + 100$$

$$L_3 = 0.5D_1 + 50$$

$$H = 2(D_1 - D_2)$$

RY Pipe

- Fitting to diverge air flow in two directions by complex R Pipe-Y Pipe, change the duct size at the same time.
- Size: $\phi 75 \sim \phi 1000$



$$L = 1.6D_3 + 2(D_1 - D_2) + 150$$

$$L_1 = 0.8D_3 + 50 - 0.5D_1$$

$$L_2 = 0.8D_3 + 2(D_1 - D_2) + 100 + 0.5D_1$$

$$L_3 = 0.5D_3 + 50 + 0.71D_1$$

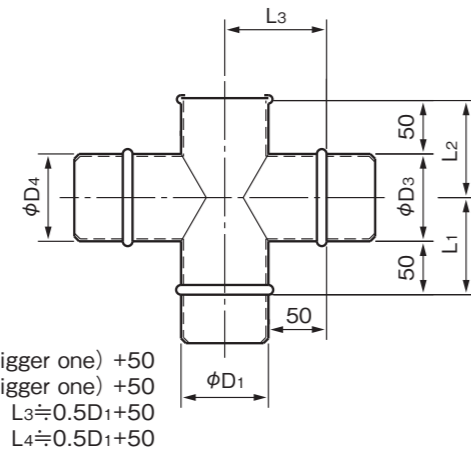
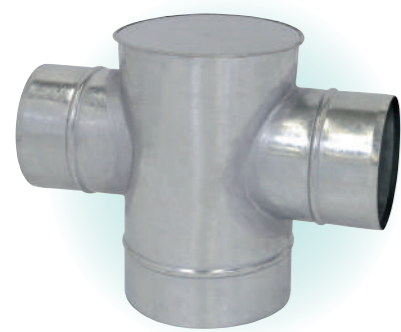
$$H = 2(D_1 - D_2)$$

$$N = 1.6D_3 + 100$$

ROUND FITTINGS

WTM Pipe

- Fitting to diverge air flow in 3 directions, closed one direction by complex pipe of 2 T Pipe and Cap.
- Size: $\phi 75 \sim \phi 1000$

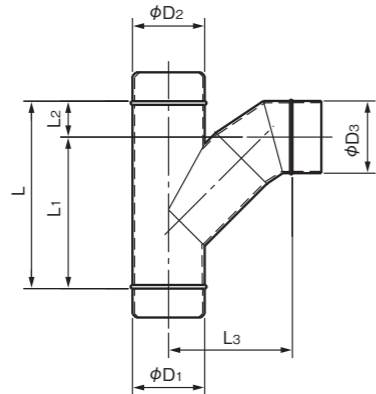


$L_1 \approx 0.5(D_3 D_4 \text{ of bigger one}) + 50$
 $L_2 \approx 0.5(D_3 D_4 \text{ of bigger one}) + 50$
 $L_3 \approx 0.5 D_1 + 50$
 $L_4 \approx 0.5 D_1 + 50$

| $\phi D_3, D_4$ of bigger one | L1, L2 | Unit (mm) | |
|----------------------------------|--------|-----------|--------|
| | | D1 | L3, L4 |
| 100 ϕ | 100 | 100 | 100 |
| 125 | 115 | 125 | 115 |
| 150 | 125 | 150 | 125 |
| 175 | 140 | 175 | 140 |
| 200 | 150 | 200 | 150 |
| 225 | 165 | 225 | 165 |
| 250 | 175 | 250 | 175 |
| 275 | 190 | 275 | 190 |
| 300 | 200 | 300 | 200 |
| 325 | 215 | 325 | 215 |
| 350 | 225 | 350 | 225 |
| 375 | 240 | 375 | 240 |
| 400 | 250 | 400 | 250 |
| 450 | 265 | 450 | 265 |

TY Pipe

- Fitting to diverge air flow in 2 directions by complex pipe, T Pipe and Y Pipe.
- Size: $\phi 75 \sim \phi 1000$



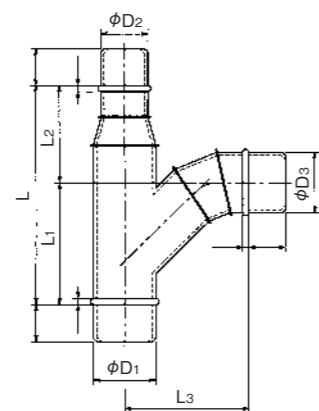
$L \approx 1.6 D_3 + 100$
 $L_1 \approx 1.505 D_3 + 50$
 $L_2 \approx 0.095 D_3 + 50$
 $L_3 \approx \frac{D_1}{2} + 1.202 D_3$

* For under $\phi 150$ of D_3 is $L_3 = \frac{D_1}{2} + \alpha$

| ϕD_3 | Unit (mm) | | | |
|------------|-----------|-----|-----|-----|
| | 75 | 100 | 125 | 150 |
| α | 125 | 150 | 175 | 200 |

RTY Pipe

- Fitting to diverge air flow in 2 directions by complex pipe of R Pipe and T Pipe and Y-Pipe, changing the duct size same time.
- Size: $\phi 75 \sim \phi 1000$



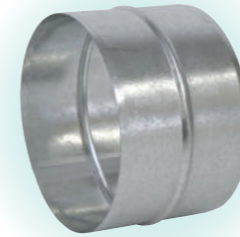
$L \approx 1.6 D_3 + 2(D_1 - D_2) + 150$
 $L_1 \approx 1.505 D_3 + 50$
 $L_2 \approx 0.095 D_3 + 2(D_1 - D_2) + 100$
 $L_3 \approx \frac{D_1}{2} + 1.202 D_3$

* For under $\phi 150$ of D_3 is $L_3 = \frac{D_1}{2} + \alpha$

| ϕD_3 | Unit (mm) | | | |
|------------|-----------|-----|-----|-----|
| | 75 | 100 | 125 | 150 |
| α | 125 | 150 | 175 | 200 |

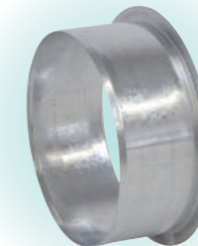
Nipple

- Use for connection of Spiral Duct against each other.



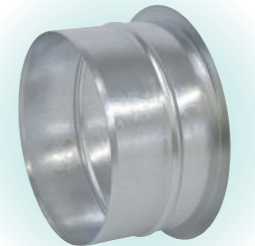
Collar

- Use at connecting Spiral Duct from Rectangular Duct etc.



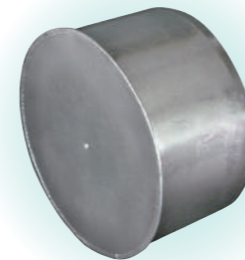
Collar Nipple

- Composite fitting of Collar and Nipple.



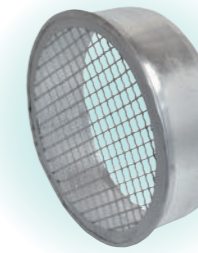
Cap

- Use for Spiral Duct etc., pipe closing section.



Net Attached Cap

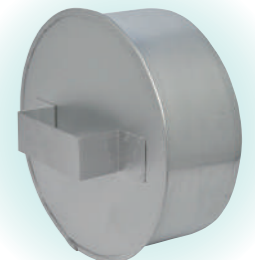
- Attached to the Cap. Choose from the net size.



* Bird protect net: 10mm mesh / Insect protect net: 16mesh.

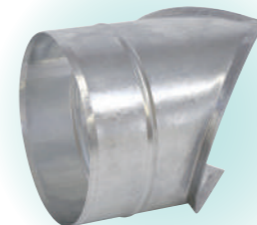
Handle Attached Cap

- Attached to the Cap, easy to remove.



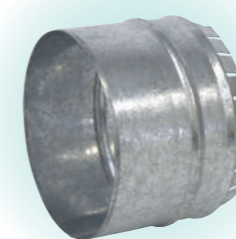
Offset

- Taking at branch directly from Round Pipe.



Notching Collar

- Using as same as Collar.
- Don't need to fix with bis-stop.
- Connect with raising nail.



Spin Collar

- Use installing Round Duct from Rectangular Duct. Able to install without using spot or weld.



RELATED PRODUCTS

Hang Band with Hole

- Hanging Band for Spiral Duct and Flexible Duct.



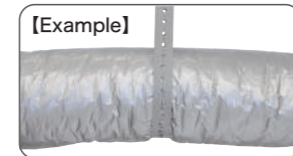
| Type number | Thickness(mm) | Material | Length(m) |
|----------------------|---------------|-----------|-----------|
| B5-60C | 0.5 | Zinc | 60 |
| B6-30C | 0.6 | Zinc | 30 |
| B6-30CS | 0.6 | Stainless | 30 |
| B8-30C | 0.8 | Zinc | 30 |
| B8-60 (without case) | 0.8 | Zinc | 60 |

Wide Band

- Hanging Band for Insulated Flexible Duct.
- Polyethylene material is recyclable.



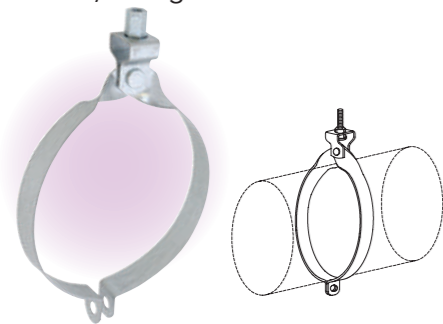
| Type number | Thickness(mm) | Material | Length(m) |
|-------------|---------------|----------------------------------|-----------|
| WB-50 | 1.0 | HDPE (High Density Polyethylene) | 50 |



Because of the width it is not easy to damage to the flexible duct.

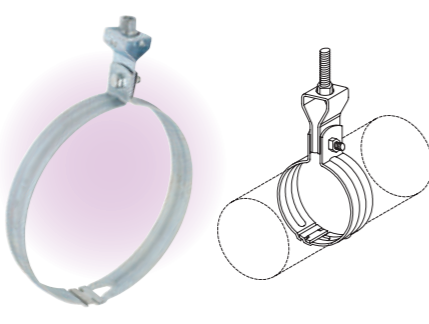
Twist Band

- Hanging Band for Spiral Duct.
- Tighten at upper part with bolt and nut.
- Useful in case of height work and/or large caliber duct.



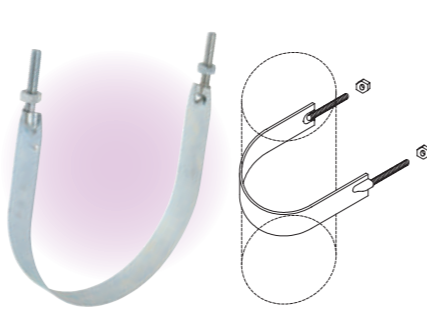
D Band

- Hanging Band for Spiral Duct.
- Tighten at lower section with bolt and nut.



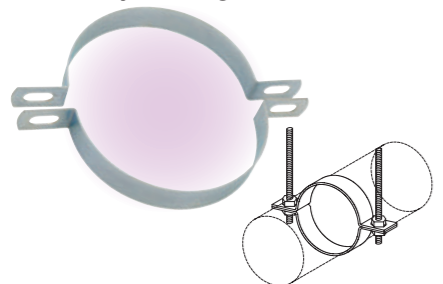
U Band

- Use at fixing Spiral Duct vertical pipe to bracket.



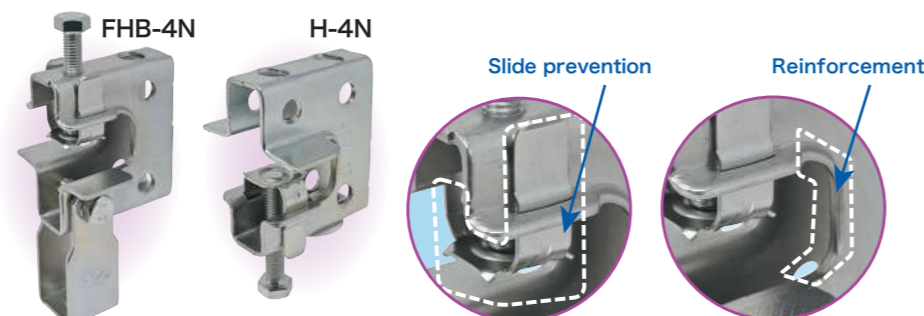
Double Divided Band

- Use at double band of Spiral Duct.
- Mainly for large caliber use.



Super TSUYOSHI

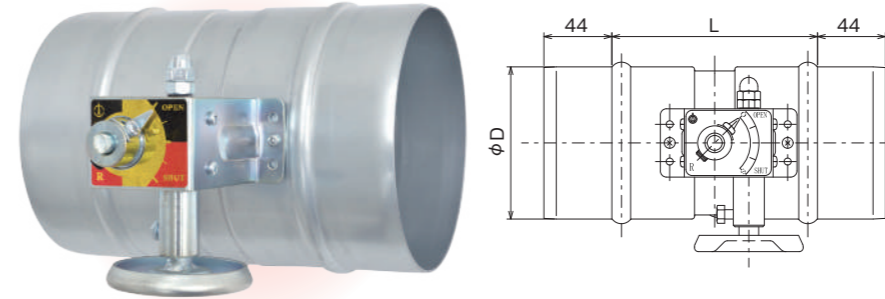
- Hang fit metal with slide prevention metal.
- Double intensity of usual article (company's comparison).



ROUND DUMPER

Volume Dumper (Worm type)

- Able to adjust air volume without stage limitation by round handle.



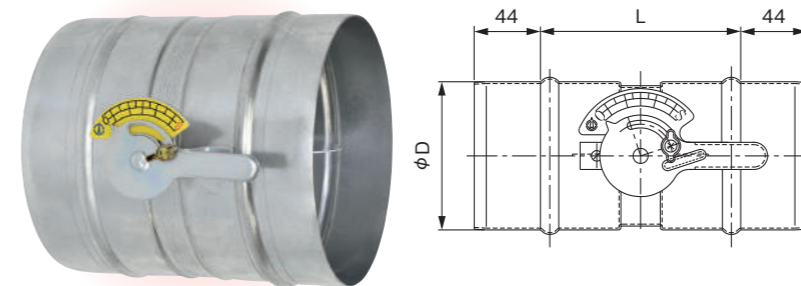
VD

| Unit (mm) | |
|----------------|-----|
| Nominal size D | L |
| 100~200 | 132 |
| 225~300 | 212 |
| 325~350 | 262 |
| 375~400 | 312 |
| 425~450 | 362 |
| 475~500 | 412 |

*Photograph and Measure Plan is up to $\phi 300$ method (means)
*Over $\phi 375$ will be an open and shut switch of VD-2C.
*The open and shut switch plan is VD-3C.

Volume Dumper-RIA (Guide type)

- Adjust air volume amount by wing nut.

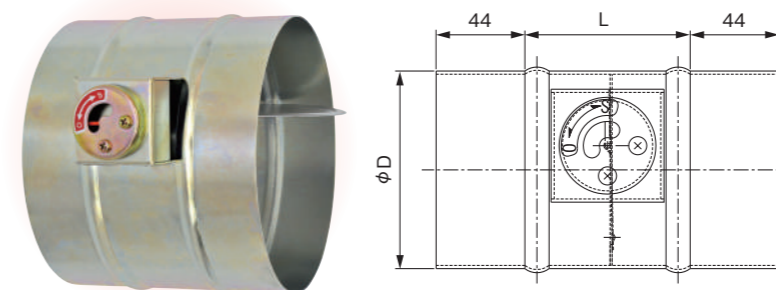


VD-RIA

| Unit (mm) | |
|----------------|-----|
| Nominal size D | L |
| 100~200 | 132 |
| 225~300 | 212 |

Chuck Dumper-RIA

- Dumper to prevent reverse air flow by flowing air from one direction.



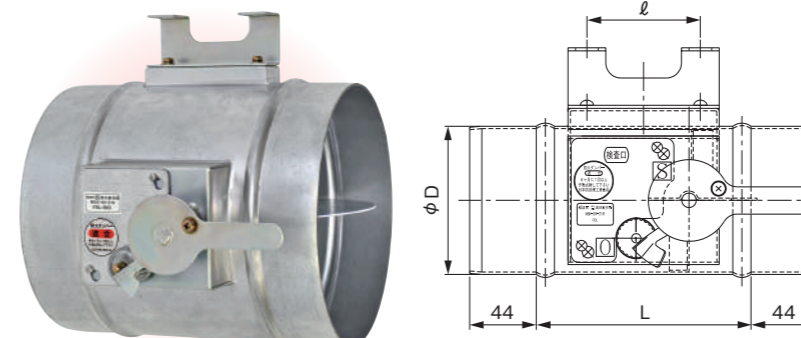
CD-RIA

| Unit (mm) | |
|----------------|-----|
| Nominal size D | L |
| 100~200 | 82 |
| 225~350 | 112 |
| 375~400 | 312 |
| 425~450 | 362 |

*With open and shut confirm pointing needle
*Over $\phi 375$ will be weight attached pointing needle.

Fire Dumper

- Will shut down and weld cut off heat fuse when an air temperature rise at fire outbreak.



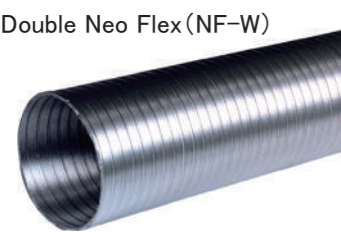

FDL-RIO

| Unit (mm) | | |
|----------------|-----|-----|
| Nominal size D | L | ℓ |
| 100~200 | 142 | 75 |
| 225~300 | 212 | 75 |
| 325~350 | 262 | 166 |

防火ダンパー
適合
●必ず片側に必ず
取付けして下さい
取付け位置
Conform to
JAPAN FIRE AND SOMKE
PREVENTION SYSTEM
ASSOCIATION

METAL SYSTEM FLEXIBLE DUCT



The numerical value is not of guaranteed value.

| Commodity / Photograph | Structure | Specifications | | |
|--|--|-------------------------|---|---------------------------------|
|  Neo Flex (NF) | Aluminum (Non inflammable material) | Temperature application | -20°C~200°C | Maximum static pressure +500Pa |
| | | Size | ● φ 75~ φ 400(25 pitch) ● Longest stretch length ≒ 3m | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● Standard type ● Keeps shape with easy bendings by free stretch. ● Fit for carry-in, storage due is compact pressed. | |
|  Power Flex (PF) | Aluminum (Non inflammable material) | Temperature application | -20°C~200°C | Maximum static pressure +500Pa |
| | | Size | ● φ 100~ φ 400(25 pitch) ● Longest stretch length ≒ 3m | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● Has about 3 times intensity of Double Neo Flex. (Company's comparison) ● Keeps shape with easy bendings by free stretch. ● It's compact and easy to carry in store. ● Choice from 2 colors, silver or blue. | |
|  Double Neo Flex (NF-W) | Aluminum / Double structure (Non inflammable material) | Temperature application | -20°C~200°C | Maximum static pressure +500Pa |
| | | Size | ● φ 100~ φ 400(25 pitch) ● Longest stretch length ≒ 3m | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● Has over 3 times intensity of Double Neo Flex with double structure. (Company's comparison) ● Keeps shape with easy bendings by free stretch. | |
|  Miles Flex (MF) | Galvanized plate (Non inflammable material) | Temperature application | -20°C~200°C | Maximum static pressure +500Pa |
| | | Size | ● φ 75~ φ 400(25 pitch) ● Longest stretch length ≒ 3m | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● Excellent heat resistance / fire resistance ● Keeps shape with easy bendings by free stretch. | |
|  Sus Flex (SUS-F) | Stainless (SUS 304) (Non inflammable material) | Temperature application | -20°C~400°C | Maximum static pressure +500Pa |
| | | Size | ● φ 100~ φ 400(25 pitch) ● Standard length 2m | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● Excellent heat resistance / fire resistance ● Strong against rust due of stainless steel. ● CAUTION...Unable to stretch. | |
|  Wire-Aluminum (ALUDEC 270) | Aluminum Foil, Polyester, Steel Wire | Temperature application | -30°C~200°C | Maximum static pressure +2500Pa |
| | | Size | ●ALUDEC112: φ 50 ● Standard length 10m ●ALUDEC270: φ 75~ φ 350(25 pitch) ● Standard length 10m φ 400~ φ 600(50 pitch) | |
| | | Usage | ●HVAC use ●Low pressure use | |
| | | Feature | ● High intensity by 5-layer laminate structure is made of "aluminum 3-layer" and "polyester double layer". ● Able to adjust length easily by plier or cutter. ● Excellent in flexibility. ● Will be compact up to 0.8m put in a box. | |
| Product authorization | ● Product authorization-Non inflammable Recognition: ALUDEC112...NM-3443 ● Product authorization-Non inflammable Recognition: ALUDEC270...NM-3445 | | | |

※ Non inflammable Recognition Evidence became unnecessary for Aluminum Non inflammable Materials by establishment of Ministry Of Construction Notice #1400 on May30th year 2000
 ※ For usage of NF, PF, NF-W,MF large size, stretch from products center (core). CAUTION...Holding BOTH ENDS stretching may create loose/come-off of seam.

INSULATED FLEXIBLE DUCT

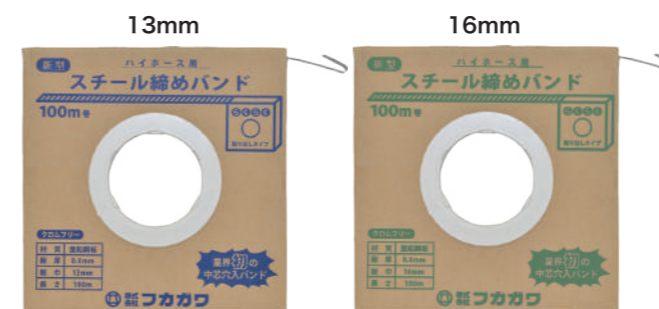
The numerical value is not of guaranteed value.

| Commodity / Photograph | Structure | | Specifications | |
|--|-----------------------------|---|-------------------------|--|
|  HH-F214 | Cover material | Glass fiber net / Aluminum / PET film | Use heat area | -29°C~60°C※1 |
| | | | Size | φ 100~ φ 300 (25 pitch) φ 350· φ 400 |
| | Insulating material | J.M Glass wool (Non Formaldehyde) 17.1kg/m³ × t28.6 | Usage | General air condition use / Heat insulated type |
| | | | Maximum static pressure | +1500Pa (~ φ 300) +1000Pa (φ 350~) |
| Core | Wire / PET film | | Certification | Product authorization-Non inflammable Recognition : φ 100, φ 125: NM-2686 over φ 150: NM-4991 F☆☆☆☆ : MFN-2553 |
|  HH24-ACNN | Cover material | Polyethylene film | Use heat area | -10°C~60°C |
| | | | Size | φ 100~ φ 400 (25 pitch) |
| | Insulating material | Glass wool 24kg/m³ × 25t | Usage | General air condition use / Heat insulated, Silencer equipped type |
| | | | Maximum static pressure | +500Pa |
| Core | Wire, Non-woven (Polyester) | | Certification | Product authorization-Non inflammable Recognition : NM-1235 F☆☆☆☆ : MFN-2568 |

※1 Use heat area, Maximum static pressure are maker's recommended value.

Steel Tightening Band

● Used for tightening connection parts such as insulation flexible duct.



| Product name | Material | Thickness (mm) | Width (mm) | Length (m) |
|-----------------------|-----------|----------------|------------|------------|
| Steel Tightening Band | Zinc | 0.4 | 13 | 100 |
| | Stainless | 0.4 | | 100 |
| | Zinc | 0.4 | 16 | 100 |
| | Stainless | 0.4 | | 100 |

Utility Binding Machine



Band Seal



| Product name | Material | Quantity (pcs) |
|---------------------|-----------|----------------|
| Band Seal (Open) | Zinc | 1000 |
| | Stainless | 1000 |
| Band Seal (Overlap) | Zinc | 1000 |
| | Stainless | 1000 |

Installation Photo



ANCHOR

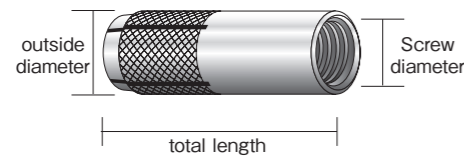
- The expansion is mechanically opened in a hole drilled in the base material.
- The metallic anchors to be fixed and the adhesive to be filled are hardened by chemical reactions.
- This is a product that physically secures the fixing part.

Internal cone driving system

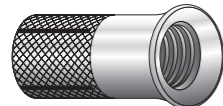
●**Base Material** : concrete/stone



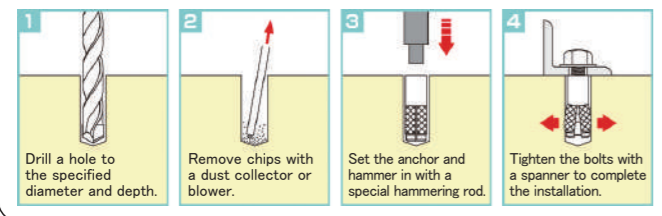
- It has an excellent pull-out strength.
- The outer diameter of collar is thinner than the diameter of internal screw, so the diameter of preliminary hole is small. It improves the workability and makes easy to upward construction.
- This is internal cone support. Rid off the loss cones during work and falling out after installation.



UC-3030B (with lips)



[Installation Method]



UCbucket set




| Product Set No. | Anchor product No. | Pre-drill | Driving rod |
|-----------------|--------------------|------------|-------------|
| UB-09 | UC-3030B (500) | UX12.5 (2) | SD-30S (1) |

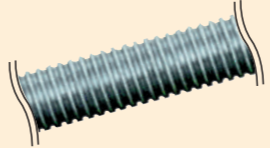
JCAA Product Certification Mark
Products with a certification mark indicate that they meet the evaluation and certification criteria set by the Japan Construction Anchor Association.

UC type, W screw (unichrome plating)

| Model No. | Screw diameter | Outer diameter (mm) | Total length (mm) | Screw length (mm) | Preliminary hole diameter(mm) | Embedment depth (mm) | Small box Qty. (pcs) | Large box Qty. (pcs) |
|-----------|----------------|---------------------|-------------------|-------------------|-------------------------------|----------------------|----------------------|----------------------|
| UC-2025 | W1/4 | 8.0 | 25 | 10 | 8.5 | 25 | 100 | 1000 |
| UC-2530 | W5/16 | 10.0 | 30 | 13 | 10.5 | 30 | 100 | 1000 |
| UC-3030B | W3/8 | 12.0 | 30 | 12 | 12.5 | 30 | 100 | 1000 |
| UC-4050 | W1/2 | 16.0 | 50 | 20 | 16.5 | 50 | 50 | 500 |

| Product name | Material | Size(mm) | Quantity(pcs) | | |
|--|-----------|----------|---------------|-----------|------|
| | | | Small Box | Large Box | |
| Bolt(hexagonal)  | Plating | M8/20 | 300 | 3000 | |
| | | M8/25 | | 2100 | |
| | | W3/8×20 | 200 | 1400 | |
| | | W3/8×25 | 250 | 1500 | |
| | | W3/8×32 | 200 | 1200 | |
| | | W1/2×25 | 100 | 700 | |
| | | W1/2×32 | | 900 | |
| | Stainless | M8/20 | 200 | 1600 | |
| | | M8/25 | | 100 | 1200 |
| | | M8×30 | | | 600 |
| | | W3/8×20 | 1200 | | |
| | | W3/8×25 | 100 | | |
| | | W1/2×25 | | 100 | 600 |
| | | W1/2×32 | 600 | | |

| Product name | Material | Size | Quantity(pcs) | |
|---|-----------|------|---------------|-----------|
| | | | Small Box | Large Box |
| Nut(hexagonal)  | Plating | W3/8 | 300 | 3000 |
| | | W1/2 | 150 | 1500 |
| | | M8 | 600 | 6000 |
| | | M10 | 300 | 3000 |
| | | M12 | 200 | 2000 |
| | | W3/8 | 300 | 2400 |
| | Stainless | W1/2 | 150 | 1200 |
| | | M8 | 600 | 4800 |
| | | M10 | 300 | 2400 |
| | | M12 | 200 | 1600 |

| Product name | Material | Size(mm) | Quantity(pcs) | |
|---|-----------|-----------|---------------|----|
| Full Thread It's headless screw thread.  | Plating | W3/8×1000 | 50 | |
| | | W3/8×1500 | 25 | |
| | | W3/8×2000 | | 20 |
| | | W3/8×2500 | | |
| | | W3/8×3000 | | |
| | | W1/2×1000 | 25 | |
| | | W1/2×1500 | 15 | |
| | | W1/2×2000 | | |
| | | W1/2×2500 | 10 | |
| | | W1/2×3000 | | |
| | M10×2000 | 25 | | |
| | M10×3000 | 20 | | |
| | Stainless | W3/8×1000 | 50 | |
| | | W3/8×1500 | 25 | |
| | | W3/8×2000 | | 20 |
| | | W3/8×3000 | | |
| | | W1/2×1000 | 30 | |
| | | W1/2×1500 | | |
| | | W1/2×2000 | 15 | |
| | | W1/2×3000 | | 10 |

SCREW / SEALING TAPE

One-Touch Screw



Don't need to make a preparation hole.

[Construction example]



| Product name | Material | Size(mm) | Quantity(pcs) | |
|------------------|--------------------|----------|---------------|-----------|
| | | | Small box | Large box |
| MB Tex | Trivalence Plating | M4×13 | 1000 | 10000 |
| | | M4×16 | | |
| | | M4×19 | | |
| | SUS | M4×13 | | |
| | | M4×16 | | |
| | | M4×19 | | |
| Duct Damba Screw | Trivalence Plating | M4×13 | 1000 | 10000 |
| | | M4×16 | | |
| | | M4×19 | | |
| | SUS | M4×13 | | |
| | | M4×16 | | |
| | | M4×19 | | |
| Pierce Screw | Trivalence Plating | M4×13 | 1000 | 10000 |
| | | M4×16 | | |
| | | M4×19 | | |
| | SUS | M4×13 | 1000 | 10000 |
| | | M4×16 | | |
| | | M4×19 | | |

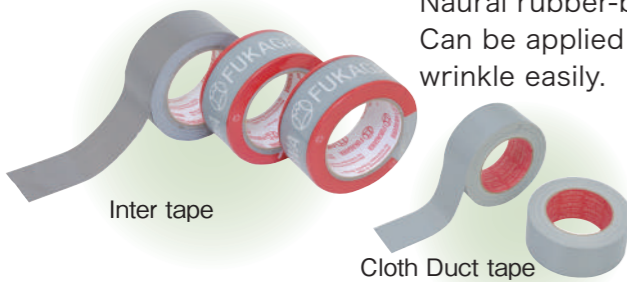
Aluminum Tape



Was applied acrylic adhesive on an aluminum foil tape. It has excellent heat, corrosion, weather, and moisture resistance, it's able to overlapping.

| Product name | Specification | Size(mm×m) | Quantity(rolls) |
|---------------|---------------|------------|-----------------|
| Aluminum Tape | No luster | 50×50 | 30 |
| | | 75×50 | 18 |
| | | 100×50 | 12 |

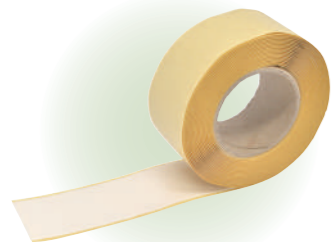
Duct Tape



Natural rubber-band adhesive coated on poly-coated cloth. Can be applied in layers. It has excellent elasticity and does not wrinkle easily.

| Product name | Size(mm×m) | Quantity(rolls) |
|-----------------|------------|-----------------|
| Inter tape | 48×25 | 30 |
| | 48×50 | 24 |
| Cloth Duct tape | 50×25 | 30 |

Kitchen Tape



This is Fukagawa original tape. It's useful for fluids containing water like kitchen, exhaust ducts and hood.

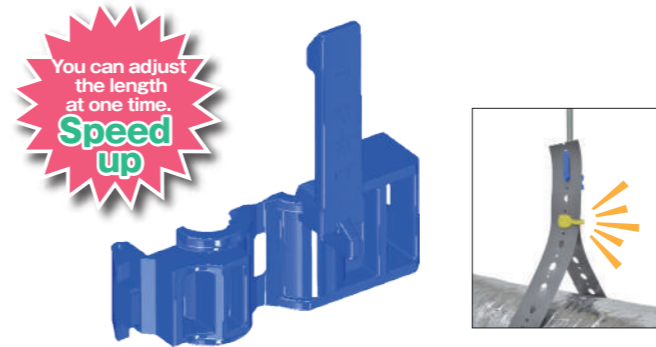
Approved by the Minister of Land Infrastructure and Transport Non combustible material : NM-4425-1

| Product name | Thickness(mm) | Size(mm×m) | Collar | Quantity(rolls) |
|--------------|---------------|------------|--------|-----------------|
| Kitchen tape | 1.0 | 40×5 | White | 32 |

SNAPPING SERIES

Snapping Hook

Useful for fitting with full thread.



| Material | Use temperature range(°C) | Allowable static load(N) |
|----------------|---------------------------|--------------------------|
| PA66 (Nylon) | -10~60 | 50 |
| Supported band | Supported screw diameter | Quantity (pcs/bag) |
| Wide Band | 3/8 Full Thread | 100 |

※You can use for only insulated flexible duct.

Snapping Anchor

You can use it instead of a full thread. Construction can be done quickly.



| Material | Use temperature range(°C) | Allowable static load(N) |
|----------------|---------------------------|--------------------------|
| PA66 (Nylon) | -10~60 | 20 |
| Supported band | Supported Anchor | Quantity (pcs/bag) |
| Wide Band | 3/8 Short anchor | 200 |

Snapping Lock

You can use snapping with three fingers easily.



| Material | Use temperature range(°C) | Allowable static load(N) |
|----------------|---------------------------|--------------------------|
| PA66 (Nylon) | -10~60 | 50 |
| Supported band | Supported thickness(mm) | Quantity (pcs/bag) |
| Wide Band | 2~3 | 200 |

※You can't use it with only metallic perforated band.

Snapping Pink

You can use it with Dragon high-hose, too.



| Material | Use temperature range(°C) | Allowable static load(N) |
|--------------------|---------------------------|--------------------------|
| PA66 (Nylon) | -10~60 | 50 |
| Corresponding band | Supported Thickness(mm) | Quantity (pcs/bag) |
| Wide Band | 2~3 | 200 |