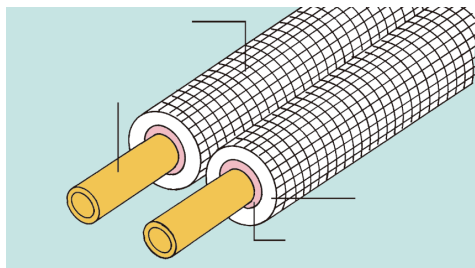


# IPO-TUBE

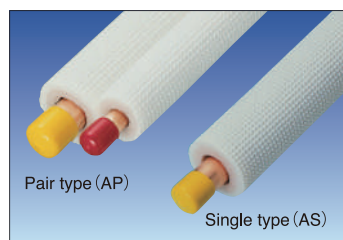
## IPO-TUBE AS·AP

● 20\*30\*50 meter coil with insulation



- 1 Polyethylene foam which has excellent heat resistance characteristic is used in the insulation layer thus allowing for an even higher level of heat insulation. It is possible to use this pipe at continuous temperature of 100°C and intermittent temperatures of up to 120°C.
- 2 Because heat insulation material and copper pipe form one covered pipe it is not necessary to insert insulation material after the pipe is fitted. Therefore the total process of fitting the pipe can be done quickly.
- 3 According to the combination of polyethylene resin and the closed cell construction of the insulation layer, creates very effective resistance to dew build up.

	Item code	Copper pipe			Insulation	Coil meter	Color of end cap	Packing
		Nominal size	Outer diameter (mm)	Thickness (mm)	Thickness (mm)	(M)		(pcs/carton)
Pair	AP-23	1/4"	6.35	0.8	9	20	②	1
	AP-23-30	3/8"	9.52	0.8	9	30	③	
	AP-24	1/4"	6.35	0.8	9	20	②	1
	AP-24-30	1/2"	12.70	0.8	10	30	④	
	AP-25	1/4"	6.35	0.8	9	20	②	1
		5/8"	15.88	1.0	10		⑤	
	AP-35	3/8"	9.52	0.8	9	20	③	1
		5/8"	15.88	1.0	10		⑤	
AP-36	3/8"	9.52	0.8	9	20	③	1	
	3/4"	19.05	1.0	10		⑥		
AP-46	1/2"	12.70	0.8	10	20	④	1	
	3/4"	19.05	1.0	10		⑥		
Single	AS-2	1/4"	6.35	0.8	9	20	②	2
	AS-2-30					30		1
	AS-2-50					50		1
	AS-3	3/8"	9.52	0.8	9	20	③	2
	AS-3-30					30		1
	AS-3-50					50		1
	AS-4	1/2"	12.70	0.8	10	20	④	2
	AS-4-30					30		1
	AS-4-50					50		1
	AS-5	5/8"	15.88	1.0	10	20	⑤	2
	AS-5-30					30		1
	AS-5-50					50		1
	AS-6	3/4"	19.05	1.0	10	20	⑥	1
	AS-7	7/8"	22.22	1.15	10	20	⑦	1



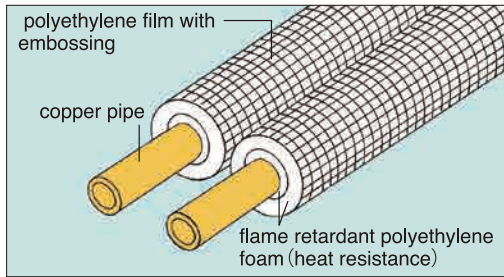
Pair type (AP)

Single type (AS)

## IPO-TUBE ASFR·APFR

● EURO CLASS B<sub>L,s1,d0</sub> approved Flame Retardant Insulation

**Class B<sub>L</sub>**



- 1 APFR and ASFR are insulated with flame retardant polyethylene, which has EURO CLASS B<sub>L,s1,d0</sub> grade in Europe. Both items are new and have EURO CLASS B<sub>L,s1,d0</sub> grade for all of insulation.
- 2 It is possible to use this pipe at continuous temperature of 100°C and intermittent temperature of up to 110°C.

	Item code	Copper pipe			Insulation	Coil meter	Color of end cap	Packing
		Nominal size	Outer diameter (mm)	Thickness (mm)	Thickness (mm)	(M)		(pcs/carton)
Pair	APFR-23	1/4"	6.35	0.8	9	20	② ③	1
	APFR-23-30	3/8"	9.52	0.8	9	30		
	APFR-24	1/4"	6.35	0.8	9	20	② ④	1
	APFR-24-30	1/2"	12.70	0.8	10	30		
	APFR-25	1/4"	6.35	0.8	9	20	② ⑤	1
		5/8"	15.88	1.0	10	10		
	APFR-35	3/8"	9.52	0.8	9	20	③ ⑤	1
		5/8"	15.88	1.0	10	10		
APFR-36	3/8"	9.52	0.8	9	20	③ ⑥	1	
	3/4"	19.05	1.0	10	10			
APFR-46	1/2"	12.70	0.8	10	20	④ ⑥	1	
	3/4"	19.05	1.0	10	10			
Single	ASFR-2	1/4"	6.35	0.8	9	20	②	2
	ASFR-2-30					30		1
	ASFR-2-50					50		1
	ASFR-3	3/8"	9.52	0.8	9	20	③	2
	ASFR-3-30					30		1
	ASFR-3-50					50		1
	ASFR-4	1/2"	12.70	0.8	10	20	④	2
	ASFR-4-30					30		1
	ASFR-4-50					50		1
	ASFR-5	5/8"	15.88	1.0	10	20	⑤	2
	ASFR-5-30					30		1
	ASFR-5-50					50		1
	ASFR-6	3/4"	19.05	1.0	10	20	⑥	1
	ASFR-7	7/8"	22.22	1.15	10	20	⑦	1



# IPO-TUBE

## IPO-TUBE ASK

- Straight pipe with insulation
- Expanded pipe end (one side)

Item code	Copper pipe			Insulation Thickness (mm)	Length (M)	Packing (pcs/carton)
	Nominal size	Outer diameter (mm)	Thickness (mm)			
ASK-3	3/8"	9.52	0.8	9	4	12
ASK-4	1/2"	12.70	0.8	10	4	9
ASK-5	5/8"	15.88	0.96	10	4	6
ASK-6	3/4"	19.05	0.96	10	4	6
ASK-7	7/8"	22.22	0.96	10	4	4
ASK-10	1"	25.40	0.96	10	4	4
ASK-11	1"+1/8"	28.58	0.96	10	4	2
ASK-12	1"+1/4"	31.75	1.05	10	4	2
ASK-13	1"+3/8"	34.92	×	10	4	2
ASK-14	1"+1/2"	38.10	1.25	10	4	2
ASK-15	1"+5/8"	41.28	×	10	4	2
ASK-16	1 +3/4"	44.45	1.25	10	4	2

\*For EU specific customer only

ASK type is insulated straight copper pipe, one end is expanded and unnecessary for fitting a socket. As temper grade is 1/2H, can be bended by tools easily.



## IPO-TUBE ASKFR

- Straight pipe with insulation
- Expanded pipe end (one side)
- EURO CLASS B<sub>L</sub>,s1,d0 approved Flame Retardant Insulation

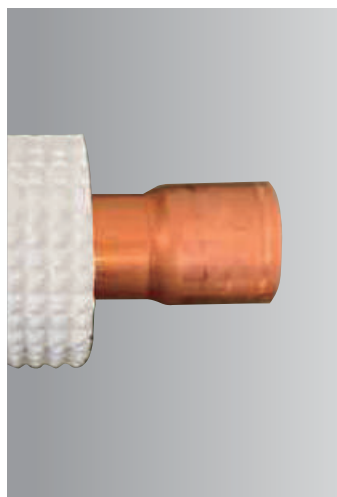
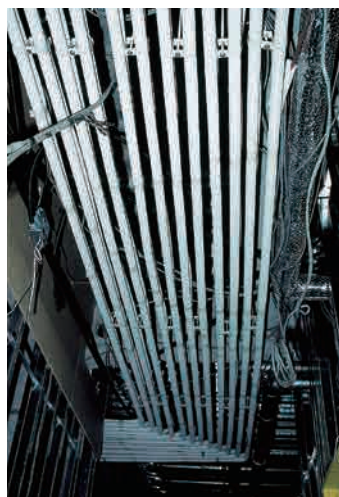
**Class B<sub>L</sub>**

Item code	Copper pipe			Insulation Thickness (mm)	Length (M)	Packing (pcs/carton)
	Nominal size	Outer diameter (mm)	Thickness (mm)			
ASKFR-3	3/8"	9.52	0.8	9	4	12
ASKFR-4	1/2"	12.70	0.8	10	4	9
ASKFR-5	5/8"	15.88	1.0	10	4	6
ASKFR-6	3/4"	19.05	1.0	10	4	6
ASKFR-7	7/8"	22.22	1.0	10	4	4
ASKFR-10	1"	25.40	1.0	10	4	4
ASKFR-11	1"+1/8"	28.58	1.0	10	4	2
ASKFR-12	1"+1/4"	31.75	1.1	10	4	2
ASKFR-13	1"+3/8"	34.92	1.1	10	4	2
ASKFR-14	1"+1/2"	38.10	1.35	10	4	2
ASKFR-15	1"+5/8"	41.28	1.2	10	4	2
ASKFR-16	1"+3/4"	44.45	1.25	10	4	2

ASKFR type is insulated with flame retardant polyethylene, which has EURO CLASS B<sub>L</sub>,s1,d0 grade in Europe.

This item is new and have EURO CLASS B<sub>L</sub>,s1,d0 grade for all of insulation.

ASKFR type is insulated straight copper pipe, one end is expanded and unnecessary for fitting a socket. As temper grade is 1/2H, can be bended by tools easily.



## Physical Properties for IPO Tube

### Copper pipe

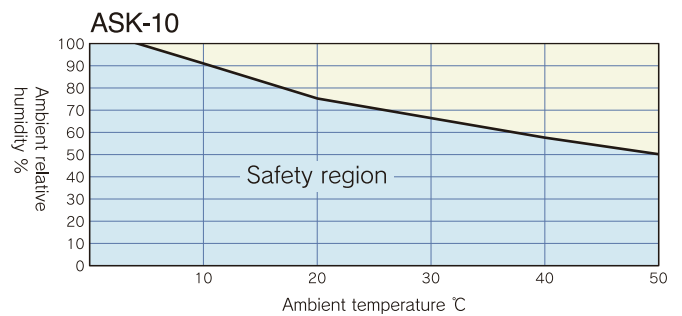
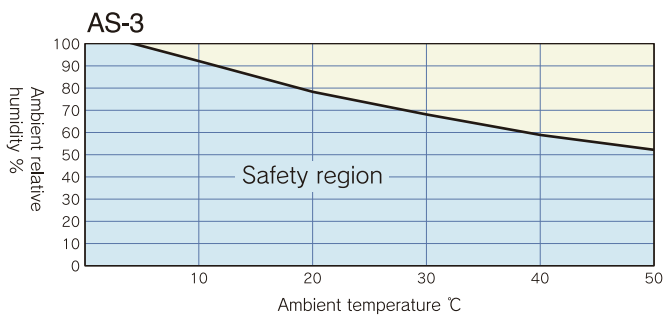
	AS·AP·ASFR-APFR	ASK·ASKFR
Specification	JIS H3300 C1220T / EN 12735-1 12200	
Chemical Component	Cu : 99.90% and above P : 0.015~0.040% * DHP-Cu	
Temper Grade	O / R-220	1/2 H / R-250 (Half Hard)
Tensile strength N/mm <sup>2</sup>	Min. 220	250~328

### Insulating material

	Unit	AS·AP·ASK		ASFR·APFR·ASKFR	
		Regular (outer wall)	Heat resistance (inner wall)	Flame retardant and Heat resistance	
Thermal Conductivity	W/m.k	Max. 0.043			
Density	g/cm <sup>3</sup>	Min. 0.010			
Tensile Strength	N/cm <sup>2</sup>	Min. 14.0			
Shrinkage of thickness	%	Max. 7 (70±5°C)	Max. 7 (120±5°C)		
Fire resistance	-	EN 13501-1 CLASS FL		EN 13501-1 CLASS B <sub>L,s1,d0</sub>	
Vapour diffusion conductivity	-	μ < 4000			

### Insulating Data

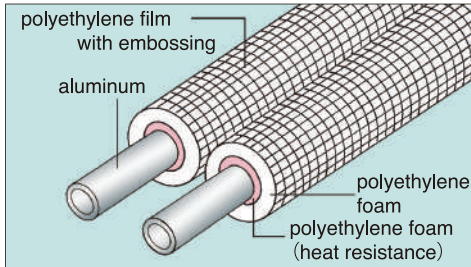
(Internal pipe temperature 5 °C)



# IPO TUBE ALIGHT

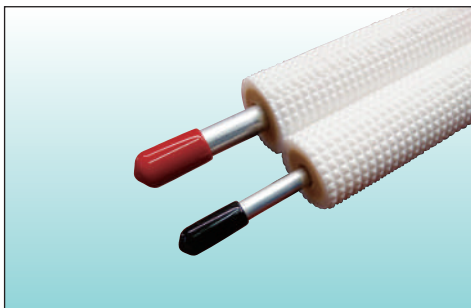
## IPO TUBE ALIGHT

### ● Aluminum tubes for air-conditioner



- 1** Light weight and low cost. Aluminum is lighter than copper and has lower thermal conductivity.
- 2** It's easy and quick to install "IPO TUBE ALIGHT". Aluminum is easier to cut or bend and can be used like copper.
- 3** Polyethylene foam which has excellent heat resistance characteristic is used in the insulation layer thus allowing for an even higher level of heat insulation. It is possible to use this pipe at continuous temperature of 100°C and intermittent temperatures of up to 120°C.

	Item code	Aluminum pipe			Insulation	Coil meter	Color of end cap	Packing
		Nominal size	Outer diameter (mm)	Thickness (mm)	Thickness (mm)	(M)		(pcs/carton)
Pair	ALP-23	1/4"	6.35	0.8	9	20	②	1
	ALP-23-30	3/8"	9.52	1.0	9	30	③	
	ALP-24	1/4"	6.35	0.8	9	20	②	1
	ALP-24-30	1/2"	12.70	1.3	10	30	④	
	ALP-35	3/8"	9.52	1.0	9	20	③	1
	5/8"	15.88	1.3	10		⑤		
Single	ALS-2	1/4"	6.35	0.8	9	20	②	2
	ALS-2-30					30		1
	ALS-2-50					50		1
	ALS-3	3/8"	9.52	1.0	9	20	③	2
	ALS-3-30					30		1
	ALS-3-50					50		1
	ALS-4	1/2"	12.70	1.3	10	20	④	2
	ALS-4-30					30		1
	ALS-4-50					50		1
	ALS-5	5/8"	15.88	1.3	10	20	⑤	2
	ALS-5-30					30		1
	ALS-5-50					50		1



# CONIC JOINT

## CONIC JOINT

● Unique flareless fittings for aluminum pipes



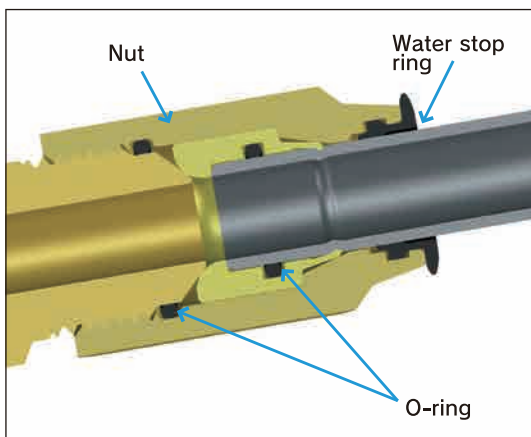
**1 "CONIC JOINT" brings a breakthrough!**

"CONIC JOINT" prevents corrosion due to different metal contact. (aluminum & brass)

**2 It's easy and quick to install "IPO TUBE ALIGHT" and "CONIC JOINT".**

INOAC developed no flare fitting to avoid risk of flaring aluminum. "IPO TUBE ALIGHT" and "CONIC JOINT" need no torque wrench and no flare tools.

**3 "CONIC JOINT" is applicable for both of Aluminum and Copper pipes.**



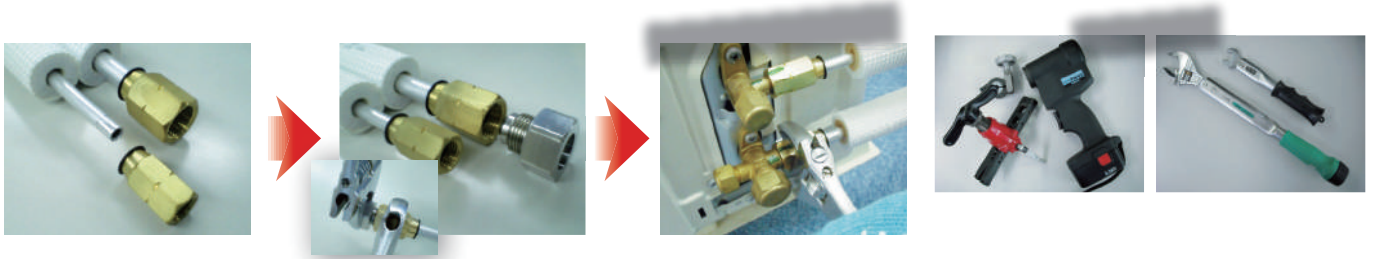
● CONIC JOINT

Item code	Conformable pipe size	Packing Pcs/carton
CJ-06A	1/4" (6.35mm)	100
CJ-09A	3/8" (9.52mm)	100
CJ-12A	1/2" (12.7mm)	50
CJ-15A	5/8" (15.88mm)	50

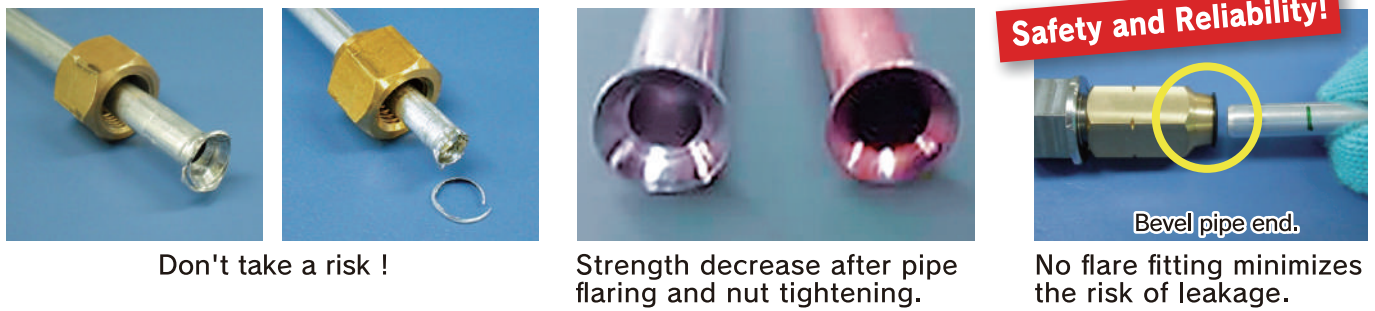
● Tightening Tool

Item code	Conformable pipe size	Packing Pcs/carton
CJTT-0609	1/4"&3/8"(6.35&9.52)	5
CJTT-0612	1/4"&1/2"(6.35&12.7)	5
CJTT-0915	3/8"&5/8"(9.52&15.88)	5

## No flare fitting (Easy and reliable two step tightening)



## Aluminum causes problems after flared and overtightened.



## New solution to galvanic corrosion (Water stop function)

Aluminum corrodes quickly when connected with copper or brass and in contact with water.



Tightening Tool is for connecting CONIC JOINT with IPO TUBE ALIGHT(aluminum tubes).



Tightening (1st Step)

## ● Installation

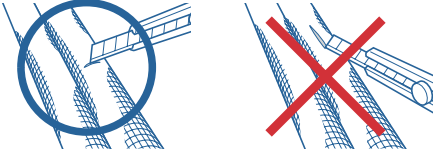
Suitable for new refrigerant (HFC) ONLY ※R410A, R407C, R404A, R507A

### 1 To start with. (Straighten pipe)

Straighten the pipe from coil.

### 2 Cut insulation

Before cutting the pipe, cut insulation perpendicularly against longitudinal direction. Don't cut along the long side of the pipe to avoid vertical damage on the pipe.



**Caution** • The vertical damage in contact with fitting may cause leakage.

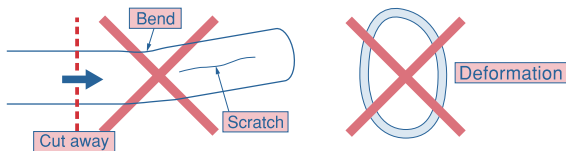
### 3 Pipe cutting

Cut the straightened pipe evenly with pipe cutter to ensure its surface should be flat and smooth.



Check if there is a scratch, bend, deformation, or adhesive residue of tape on the pipe's cut surface or joint part with fitting.

**Caution** • Make sure the pipe does not get deformed or oval.  
• If the pipe has scratches, bend, deformation or adhesive residue of tape, cut the pipe again.



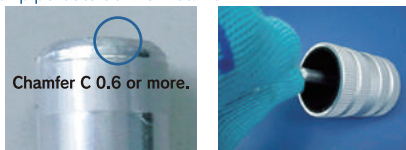
### 4 Burr removal (inside)

Turn the pipe's cut surface downward to avoid dirt or dust, and remove burr with reamer. Be careful not to damage the pipe's interior. Remove scraped burr from pipe end or inside if any.



### 5 Chamfering pipe (outside)

Turn the pipe's cut surface downward to avoid dirt or dust, and chamfer pipe outside with reamer.



Remove scraped burr from pipe end or inside if any.

**Caution** • Ensure that the pipe's outer end is well chamfered to avoid damage to the fitting.  
• Improper chamfering may damage o-ring in the fitting and cause leakage.

## ● INOAC Original Reamer



- Pipe size : From 1/4" to 1"+1/4"
- Pipe type : Copper, Aluminum, Steel
- Material : Body-Aluminum Blade-Steel

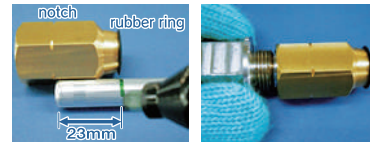
- Easier and quicker to chamfer pipes, particularly OD 1/4 inch.
- Its unique blades increase chamfering speed.
- Aluminum body and steel blades ensures long life.

### 6 Tightening (1st step)

Mark the pipe at 23mm from its end for proper pipe insertion. (Insertion Mark)

The fitting has notches at 23mm from rubber ring side. Use them as a guide when marking.

Insert Tightening Tool into fitting and tighten with fingers till it can't go any further.



Insert the pipe straight into fitting

Be sure to insert until the insertion mark is flush with the fitting's rubber ring. Insert the pipe again if insertion is insufficient and there is a gap between the mark and the rubber.



**Caution** • Insufficient insertion may impair seal force and cause leakage.

- Do not twist the pipe. Insert straight into the fitting.
- If it's hard to insert, don't push forcefully. Chamfer pipe outside again.
- Forceful insertion may damage o-ring in the fitting and cause leakage.

Tighten Tightening Tool with wrench until there is no gap between the tool and the fitting. No torque control is required. The insertion mark moves a little during tightening, but this is normal.

Tightening Torque (Reference only)

CJ-06A	10 N·m
CJ-09A	15 N·m
CJ-12A	20 N·m



Take off Tightening Tool and look at the pipe from the other side of the fitting to check the pipe is at the right position.

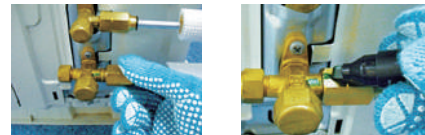


**Caution** • If pipe end is at the back of the fitting, cut pipe and start again from the beginning.  
※ Don't reuse the fitting after tightened.

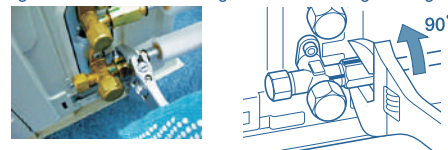
### 7 Tightening (2nd step)

Make sure the joint part of the air-conditioner is free from scratches or damage. If any, consult with the air-conditioner supplier. It may cause leakage if connected with copper or aluminium pipes. Connect with an air-conditioner and tighten with fingers till fittings do not turn any more.

Mark both the fitting and the joint part for proper tightening. (Tightening Mark)



Tighten again with wrench 90 degrees from the tightening mark.



**Caution** • Be sure not to overtighten 120 degrees or more.  
• Don't bend pipes at or near the joint part to prevent leakage.

### 8 Air tight test

Check gas leakage as usual.

**Caution** • Wipe off soap water or gas leakage liquid when they are used.



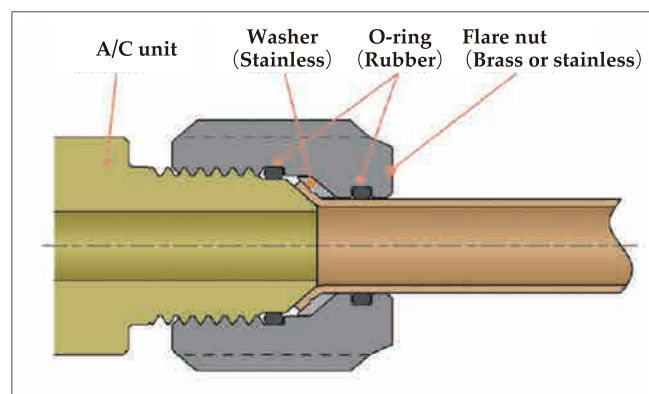
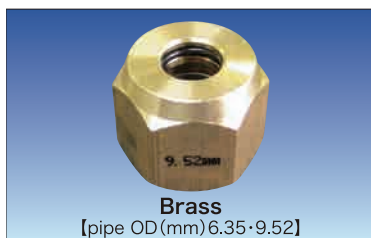
# Correct Flare

## Correct Flare Nuts

● New solution to flare deformation and minute refrigerant gas leaks.




- 1 Prevents pipe from disconnecting at connection.**  
Special washer protects pipe flare and firmly holds pipe.
- 2 Protects pipe flare against deformation.**  
Prevents refrigerant gas leak caused by flare deformation Two O-rings stop minute leak.
- 3 No new tools required.**  
No additional work or working time.



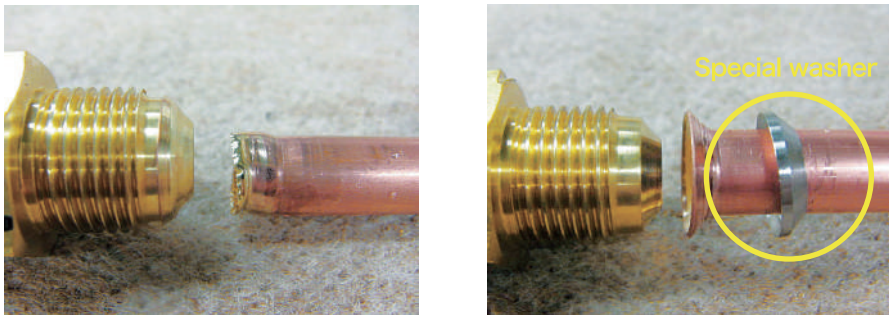
Item code	Conformable pipe size	Material	Packing Pcs/carton
CFN06W	1/4" (6.35mm)	Brass	70
CFN09W	3/8" (9.52mm)	Brass	60

\*Build - to - order manufacturing.

## Comparison after over-tightened

	Standard nuts	Correct Flare Nuts
<p>3/8" (φ9.52mm) Standard tightening torque 330~407kgf·cm</p>	<p>785kgf·cm</p> 	<p>985kgf·cm</p> 

## Special washer protects pipe flare and firmly holds pipe.



## Prevents refrigerant gas leak caused by flare deformation Two O-rings stop minute leak.

### Tightness Leak Test

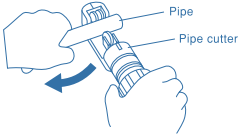
Test method: Inject nitrogen gas at 4.3MPa, soak pipes for two minutes and check gas leakage.

Test sample: 1/4" (φ6.35mm) 5pipes

Torque	Conventional flare nut	CORRECT FLARE NUT
50kgf	4 leakage, 1 minute leakage	No leakage
100kgf	1 leakage, 1 minute leakage	
150kgf	1 minute leakage	
200kgf	1 minute leakage	
250kgf	1 minute leakage	
300kgf	No leakage	

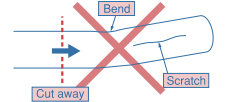
### ● Installation

**1 Pipe cutting**  
Cut pipe on the level to ensure its surface should be flat and smooth.

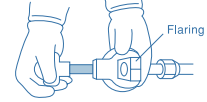


**⚠ Caution**

- Make sure pipe does not get deformed or oval.
- If pipe has scratch, bend or deformation, cut pipe again.



**3 Flaring**  
Insert pipe into Correct Flare Nut and flare with flaring tool.  
For smooth finish of flare surface, rotate the tool 3 or 4 times after it clicked.



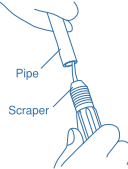
**⚠ Caution**

- Reround pipe with flaring die if Correct Flare Nut does not fit smoothly.
- Cut pipe again if rerounding does not work.
- Before flaring, check cone of flaring tool and clean if necessary.

**5 Refrigeration oil coating (Not compulsory)**  
Apply refrigeration oil thinly on both sides of flare.

**⚠ Caution** Use same oil as that for installed air-conditioner.

**2 Burr removal**  
Turn pipe's cut-surface downward to avoid dirt and dust, and remove burr with reamer or scraper. Make sure that the surface should be unscratched.

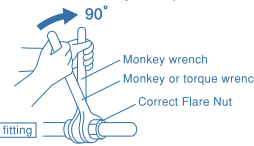


**4 Check flaring**  
Check flare inside has no scratch or groove and flare diameter is appropriate.

Insufficient burr removal	Grooved surface
Inside scratch due to copper chip or etc.	
Flare diameter too small	
Flare diameter too big	
Crack	

**⚠ Caution** In case of defect, cut pipe and flare again.

**6 Nut tightening**  
Make sure flare fitting should be free from scratch. Tighten manually till nut does not turn any more. Tighten further with monkey or torque wrench.



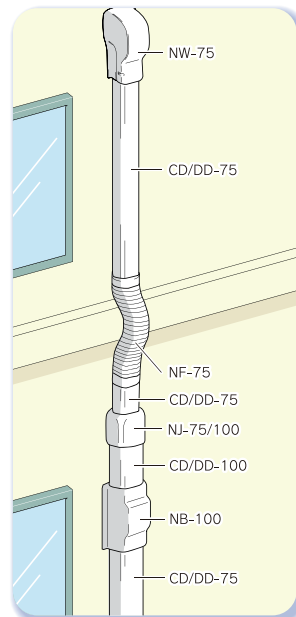
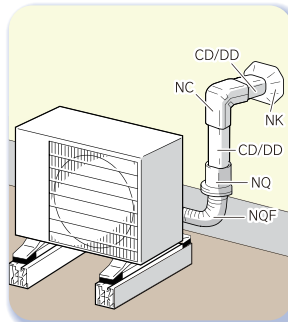
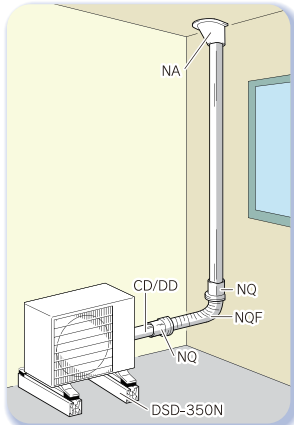
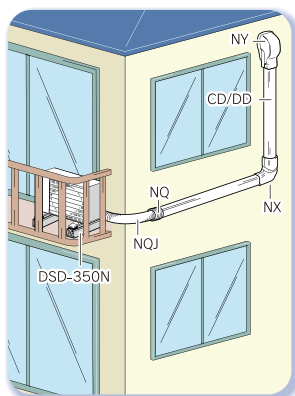
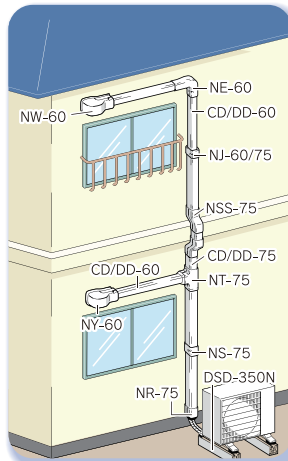
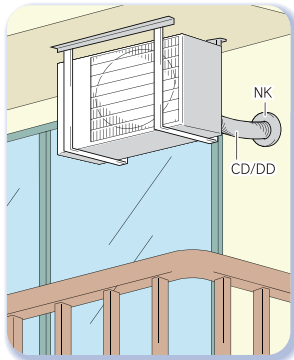
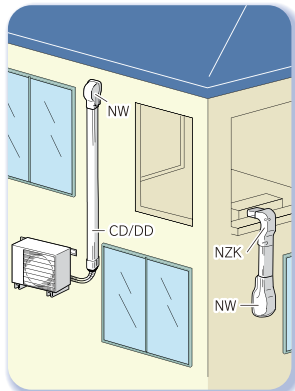
Diameter	Tightening torque	Tightening angle by monkey or torque wrench as a guide
6.35mm	14~ 22 N·m	90°
9.52mm	31~ 58 N·m	
12.7mm	44~ 85 N·m	
15.88mm	61~110 N·m	
19.05mm	90~160 N·m	

**7 Airtight test**  
Check gas leakage.

**⚠ Caution** Wipe nut after using soap water or gas leakage liquid.

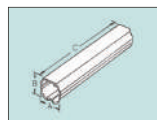
# Clean Duct

● Clean Duct's wide range of accessories make it easy for installers to layout airconditioning pipes beautifully and perfectly in any condition.



## Asymmetric Duct

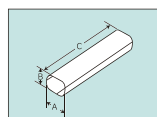
The neat appearance will harmonize your home. Economical model duct for your selection.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
CD-60	CD-60W	58	60	2,000	5
CD-75	CD-75W	75.5	64	2,000	5
CD-100	CD-100W	100	70	2,000	5
CD-140	CD-140W	140	80	2,000	5

## Symmetric Duct

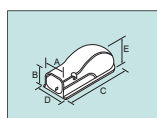
Newly released symmetric duct.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
DD-60	—	59	60	2,000	10
DD-75	—	75.5	64	2,000	5
DD-100	—	100.5	70	2,000	5
DD-140	—	140	81	2,000	5

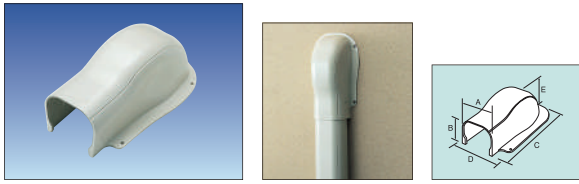
## Wall Cover

Used in the area where the pipe is drawn into the wall.



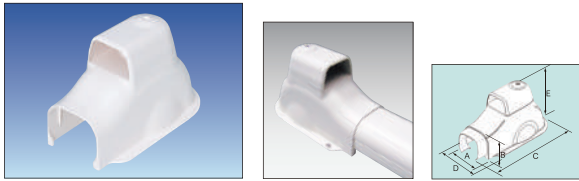
Item code		Dimension (mm)					Pcs/ carton
Ivory	White	A	B	C	D	E	
NW-60	NW-60W	65.5	65	200	77	81	40
NW-75	NW-75W	82	69	210	94	83	40
NW-100	NW-100W	107	75	231	119	96	20
NW-140	NW-140W	146	85	286	158	105	20

## Wall Cover (Simple)



Item code		Dimension (mm)					Pcs/ carton
Ivory	White	A	B	C	D	E	
NY-60	NY-60W	67	63	201	114.5	81	10
NY-75	NY-75W	84	67	210	130	83	40
NY-100	NY-100W	106	70	230	141	93	20
NY-140	NY-140W	146	80	285	182	102	5

## Ventilation Wall Cover



Item code		Duct size	Dimension (mm)					Pcs/ carton
Ivory	White		A	B	C	D	E	
NYK-60/75N	NYK-75NW	75	81.5	65.5	231.5	111.5	122.5	10

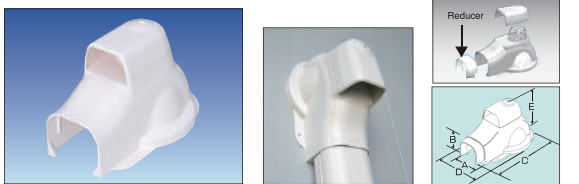
\* Adaptable to DD · CD-60 duct with reducer.

## Round Wall Cover



Item code		Duct size	Dimension (mm)							Pcs/ carton
Ivory	White		A	B	C	D	E	F	G	
NYM-60/75	NYM-75W	75	83.7	66.5	62.5	61	135	208	82.5	10

## Ventilation Round Wall Cover

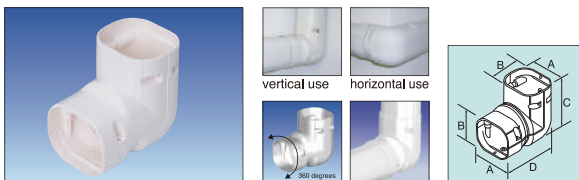


Item code		Duct size	Dimension (mm)					Pcs/ carton
Ivory	White		A	B	C	D	E	
NYX-60/75	NYX-75W	75	81.5	65.5	231.5	135	128	10

\* Reducer not included in NYX-75W.

## Universal Elbow (Vertical&Twisted 360°)

Duct can be tilted at various (360°) angles.



Item code		Dimension (mm)				Pcs/ carton
Ivory	White	A	B	C	D	
NCX-75	NCX-75W	80	68	114	121	10
NCX-100	NCX-100W	107	75	135	137	20
NCX-140	NCX-140W	146	87	190	180	5

## Universal Elbow (Horizontal)

Can be changed an angle 45°~90°horizontally as one likes.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NX-60	NX-60W	65.5	65	137	10
NX-75	NX-75W	82	69	153	40
NX-100	NX-100W	107	75	193.5	20
NX-140	NX-140W	146	85	248	5

## Universal Elbow (Vertical)

Can be changed an angle 45°~90°vertically as one likes.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NZ-60	NZ-60W	65.5	65	118	10
NZ-75	NZ-75W	82	69	122	40
NZ-100	NZ-100W	105	73	117	5
NZ-140	NZ-140W	146	87	150	5

## Elbow (Horizontal)

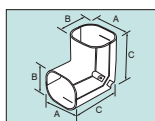
Used in the portion of pipe that bends 90°.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NE-60	NE-60W	65.5	65	120	40
NE-75	NE-75W	82	69	141	40
NE-100	NE-100W	107	75	161	20
NE-140	NE-140W	146	85	200	5

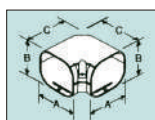
## Elbow (Vertical)

Used in the portion of pipe for turn up and down.



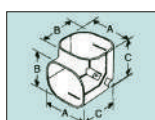
Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NC-60	NC-60W	65.5	65	120	40
NC-75	NC-75W	82	69	124	40
NC-100	NC-100W	107	75	135	20
NC-140	NC-140W	146	85	149	5

## Mini Elbow (Horizontal)



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NH-60	NH-60W	65.5	65	85	10
NH-75	NH-75W	82	69	100	40
NH-100	NH-100W	107	75	125	20
NH-140	NH-140W	146	85	165	5

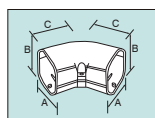
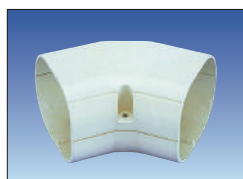
## Mini Elbow (Vertical)



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NL-60	NL-60W	65.5	65	75	10
NL-75	NL-75W	82	69	83	10
NL-100	NL-100W	107	75	90	5
NL-140	NL-140W	146	85	100	5

## 45° Elbow (Horizontal)

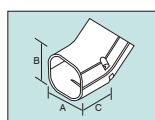
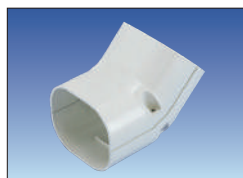
Used in the area where the pipe bends 45°.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NM-60	NM-60W	65.5	65	68	10
NM-75	NM-75W	82	69	74	40
NM-100	NM-100W	107	75	84	20
NM-140	NM-140W	146	85	106	5

## 45° Elbow (Vertical)

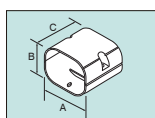
Used in the area where the pipe bends 45°.



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NU-60	NU-60W	65.5	65	67	10
NU-75	NU-75W	82	69	72	40
NU-100	NU-100W	107	75	83	20
NU-140	NU-140W	146	85	93	10

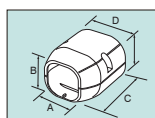
## Socket

When lengthening the duct used on the connecting portion.



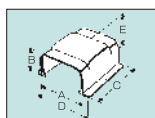
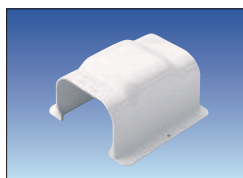
Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NS-60	NS-60W	65.5	65	80	40
NS-75	NS-75W	82	69	80	40
NS-100	NS-100W	107	75	80	20
NS-140	NS-140W	146	85	80	10

## Variant Socket



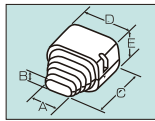
Item code		Duct size	Dimension (mm)					Pcs/ carton
Ivory	White		A	B	C	D	E	
NJ-60/75	NJ-60/75W	60/75	69.5	68	80	82	69	10
NJ-75/100	NJ-75/100W	75/100	86	72	80	107	75	40
NJ-100/140	NJ-100/140W	100/140	115	78	80	146	85	40

## Divergent Socket



Item code		Duct size	Dimension (mm)					Pcs/ carton
Ivory	White		A	B	C	D	E	
NB-100	—	100	109	69	150	149	82	5
NB-140	—	140	148	82	170	188	92	5

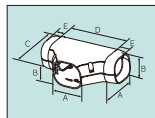
## End Socket



Item code		Duct size	Dimension (mm)					Pcs/ carton
Ivory	White		A	B	C	D	E	
NR-60	NR-60W	60	53	30	87	65.5	65	10
NR-75	NR-75W	75	53	30	99	82	69	40
NR-100	NR-100W	100	53	30	115	107	75	20
NR-140	NR-140W	140	53	30	143	146	85	10

## T-Joint

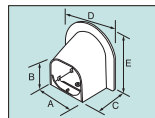
Used in the portion of pipe diverging.



Item code		Dimension (mm)					Pcs/ carton
Ivory	White	A	B	C	D	E	
NT-75	NT-75W	82	69	121	160	25	10
NT-100	NT-100W	107	75	161	215	35	5
NT-140	NT-140W	146	85	200	254	35	5

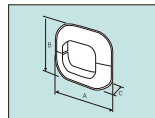
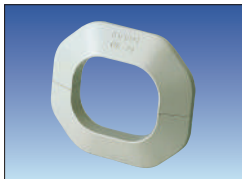
\*NT-75 supplied with ; 2pcs of Reducing adaptor (75→60)  
 \*NT-100 supplied with ; 2pcs of Reducing adaptor (100→75)  
 \*NT-140 supplied with ; 2pcs of Reducing adaptor (140→60)

## Corner Cap



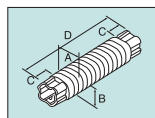
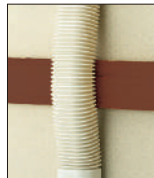
Item code		Dimension (mm)					Pcs/ carton
Ivory	White	A	B	C	D	E	
NA-60	NA-60W	67	65	66	105	110	40
NA-75	NA-75W	84	70	66	124	125	20
NA-100	NA-100W	109	76	66	149	140	20
NA-140	NA-140W	148	86	66	189	155	10

## Wall Cap



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NK-60	NK-60W	110	110	16	10
NK-75	NK-75W	126	114	16	80
NK-100	NK-100W	175	145	16	40
NK-140	NK-140W	220	180	16	20

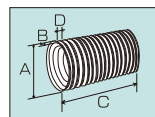
## Flexible-Joint



Item code		Dimension (mm)				Pcs/ carton
Ivory	White	A	B	C	D	
NF-60	NF-60W	60	59.5	60	550	10
NF-60M	NF-60MW	60	59.5	60	1,000	5
NF-75	NF-75W	76	64	60	550	10
NF-75M	NF-75MW	76	64	60	1,000	10
NF-100	NF-100W	101	70	75	800	10
NF-140	NF-140W	140	80	80	1,000	5

## Twisted&Flexible Elbow

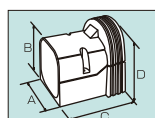
Can be cut to suit.



Item code		Duct size	Dimension (mm)				Pcs/ carton
Ivory	White		A	B	C	D	
NQF-75	—	75	76	6	1,000	8	5
NQF-100	—	100	101	8	1,000	10	5

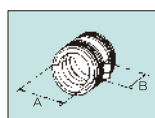
\* Fitted for both NQ-60 and NQ-70.

## Twisted Elbow Socket



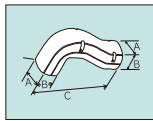
Item code		Duct size	Dimension (mm)				Pcs/ carton
Ivory	White		A	B	C	D	
NQ-60	—	60	65.5	65	90	85.5	10
NQ-75	—	75	82	69	90	85.5	10
NQ-100	—	100	107	75	102	94	5

## Twisted Elbow Joint



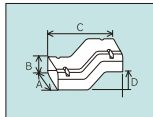
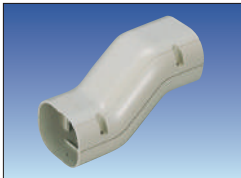
Item code		Duct size	Dimension (mm)		Pcs/ carton
Ivory	White		A	B	
NQJ-75	—	75	88	54	10
NQJ-100	—	100	113	63	5

## T-corner Elbow



Item code		Dimension (mm)			Pcs/ carton
Ivory	White	A	B	C	
NZK-60	NZK-60W	65.5	65	222.2	5
NZK-75	NZK-75W	82	69	226	40

## Bridge Socket



Item code		Dimension (mm)				Pcs/ carton
Ivory	White	A	B	C	D	
NSS-75	—	82	69	175	50	10

## Saddle Band



Item code	Length (mm)	Pcs/carton
NV-S	250	500
NV-L	360	500

NV-S:60,75  
NV-L:100,140

## Duct Blade

## saw for Clean Duct

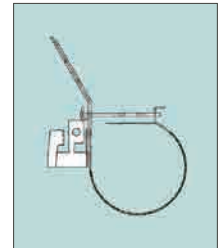
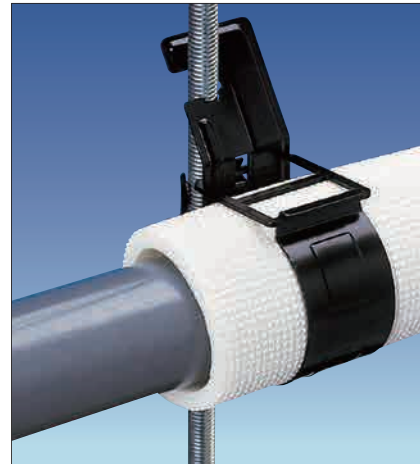
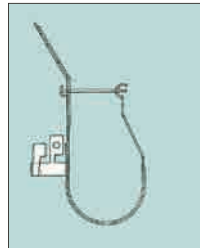


Item code		Pcs/carton	
DB-26	26 cuts of edge	60	26 type can cut a duct fine.
DB-26K	renewal edge	300	
DB-18	18 cuts of edge	60	18 type can cut a duct speedy.
DB-18K	renewal edge	300	
DB-T	woodwork type	60	
DB-TK	renewal edge	300	

# ACCESSORIES

## Pair Hanger ● Metal fittings to support insulated copper tubes and drain pipe.

- Quick and easy to install
- No tools or preparation required to install
- Saves time for the installer
- Fits securely on threaded rod
- Easy to stock and transport



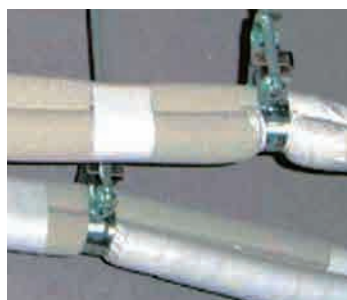
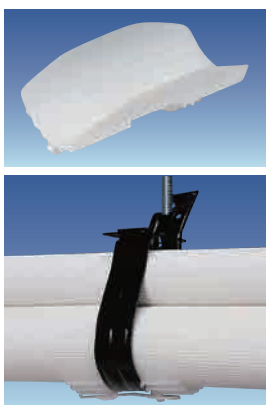
Item code	Weight (g)	Material	Conformable size	Color	Packing pcs/carton
PNE-2	67	steel	1/4 x 5/8 ~ 1/2 x 3/4	black	200
PNE-3	72	steel	1/4 x 5/8 ~ 5/8 x 1	black	200
PNE-4	81	steel	1/4 x 5/8 ~ 1 1/8 x 1 1/2	black	150

Item code	Weight (g)	Material	Conformable size	Color	Packing pcs/carton
SDP-3	58	steel	20 · 25 · 30	black	100

## ● Installation

①	②	③	④	⑤	⑥
Fit Pair Hanger onto threaded rod from the side gap.	Push Pair Hanger toward the threaded rod, as shown.	Bend the back stopper of PNE, fit in the threaded rod.	Set IPO-Tube, wire and/or hoses into the Pair Hanger	Lock PNE.	

## Insulation Support ● Support parts for insulation wastage with Pair Hanger



insulation collapsed by its weight. Condensation occurs when insulation collapses.

- Wide support
- Any inclination fitting
- Quick and easy to install
- Fits with any maker of pair hanger
- Anytime installable

Item code	Dimension (mm)			Packing pcs/carton	Material
	Width	Height	Length		
PNE-SP	57	27.5	100	200	PP



## High-Drain S

High-Drain • High-Drain hose has excellent weatherability and mold resistance.



### High-Drain S

Item code	Inner diameter × Outer diameter (mm)	Length (m)	Packing Pcs/carton
DRS-14	φ14×19	50	8

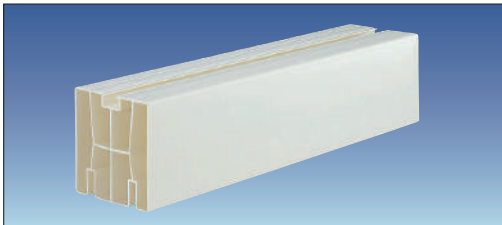


### High-Drain

Item code	Inner diameter × Outer diameter (mm)	Length (m)	Packing Pcs/carton
DRX-14	φ14×19	50	1
DRX-16	φ16×20.5	50	1

## Base Rock

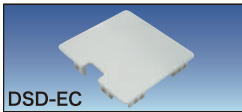
Made of PVC resin. Sturdy outdoor air conditioner stand.



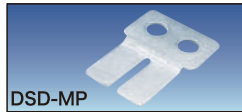
Item code	Size (mm)			Weight (g)	Color	Packing Pcs/carton
	H	W	L			
DSD-350N	82	83	350	586	Ivory	30
DSD-400N	82	83	400	670	Ivory	30
DSD-1000N	82	83	1,000	1,675	Ivory	10

- Maximum load 120kg (For temperature of 50°C)
- Lightweight (about 1/5 of concrete block)

Option



DSD-EC  
End cap for Base Rock



DSD-MP  
Fixing metal plate for Base Rock

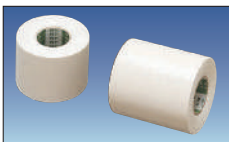
## PE Bender

Used into the copper pipe when bend it.



Item code	Size for Copper tube	Length (m)	Packing Pcs/carton
ZAKT-3	for 3/8" (φ9.52mm)	25	5
ZAKT-4	for 1/2" (φ12.7mm)	25	5
ZAKT-5	for 5/8" (φ15.88mm)	15	5
ZAKT-6	for 3/4" (φ19.05mm)	10	5

## Non-adhesive Tape



Item code	Size	Packing Pcs/carton
H-1	50mm×18m	100

## Saddle



Item code	Packing Pcs/carton
S-1	500

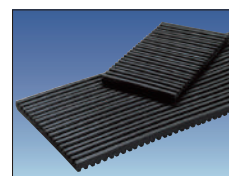
## Adhesive Tape



Item code	Size	Packing Pcs/carton
N-5	50mm×20m	80

color : Ivory

## Antivibration Rubber Mat



Item code	Size (mm)	Packing Pcs/carton
BM-100T	t 10×W 100×L 1,000	10
BM-150T	t 10×W 150×L 1,000	10
BM-300T	t 10×W 300×L 300	20
BM-15-100T	t 15×W 100×L 1,000	10

Material : Natural Rubber (NR)