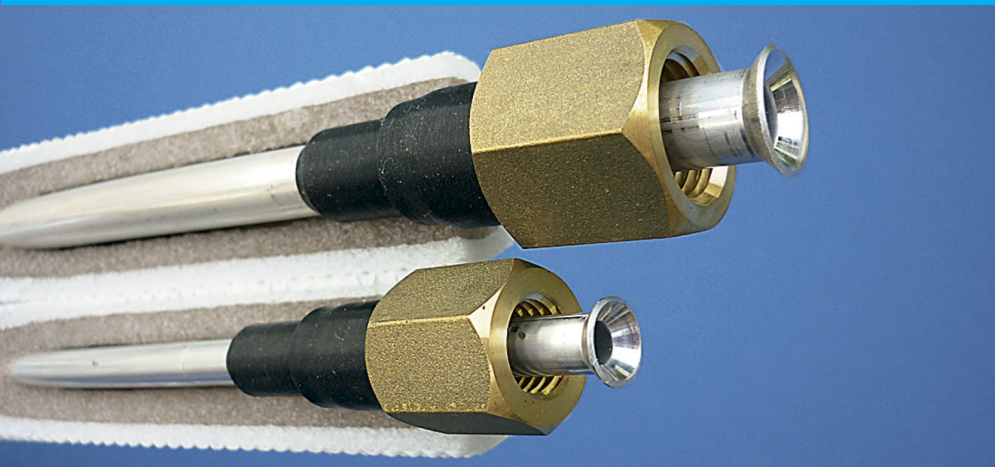


# CAT PIPE® (Insulated Aluminum Pipe)

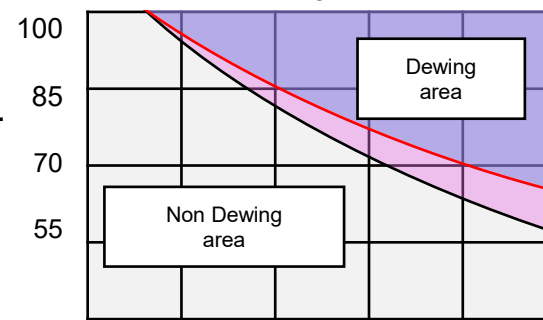


## Features;

- CAT PIPE® is made of soft annealed aluminum alloy and has superior durability and corrosion resistance.
- 1/2 heat conductivity of copper, means less dewing trouble than copper.
- Water proof flare nut & rubber cap are available to prevent galvanic corrosion.
- 1/3 weight of copper, easy to carry and handle.
- Easy to bend (except around flare nut) and cut depends on required length.
- Eco-friendly material : Aluminum's environmental load is lower than copper and this aluminum pipe is recycable.
- More economical and much less price fluctuation than copper.
- Thermal resistance up to 120°C.

## Dewing Data

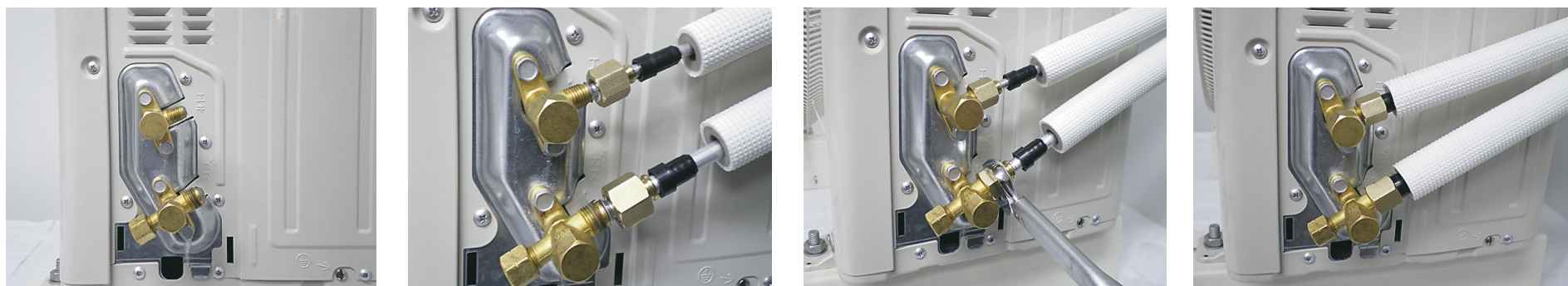
Aluminium tube size :  $\phi 9.53$   
Fluid temperature in tube : 5°C  
Insulation tube inner diameter : 11mm  
Insulation tube thickness : 8mm



X : outside tube temperature (°C)  
Y : outside tube relative humidity (%)  
Red bar : CAT PIPE®  
Black bar : Insulated copper tube

## About CAT PIPE® Installation

Since CAT PIPE® is softer and has better sealing performance than copper tube, light torque is enough to fasten to achieve high airtightness.



1. Repeated and rapid bending shall be avoided as aluminum pipe is softer than copper tube.
2. Use exclusive flare nut and cap designed to protect from galvanic corrosion.
3. Insert the cap tightly to the bottom of flare nut.
4. Use specialized tool for aluminum to fastening flare nut and union in order to avoid excessive stress to flare part of aluminum pipe. (Massive torque will reduce the thickness of flare part which may cause gas leakage.)
5. Cover exposed part with insulation till top of rubber cap after fastening.
6. Finishing by tape around insulation end is required.

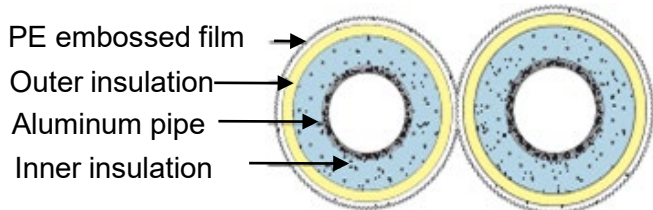
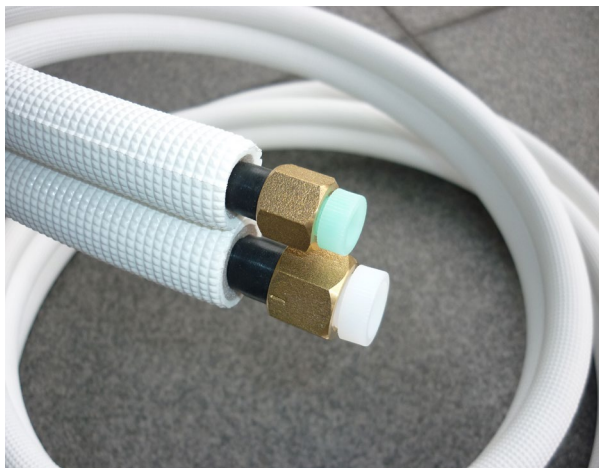
## CAT PIPE Sales History

2009	Developed and started selling CAT PIPE
2011	Installed to temporary houses made after great east Japan earthquake
2012	Developed specialized tools, exhibited in HVAC
2013	Developed large diameter CAT PIPE
2014	Introduced Aluminum pipe in HVAC
2015	large size CAT PIPE is adapted by major general contractor, and start to sell abroad
2016	Continuous contract was made with popular hotel chain
2018	Registered to New Technology Information System (NETIS) in Japan
2019	Installed to school. Another continuous order with general and sub contractor.

Total Sales Result as of June 2020 : beyond 1,000,000m

# CAT-PIPE® (Insulated Aluminum Pipe)

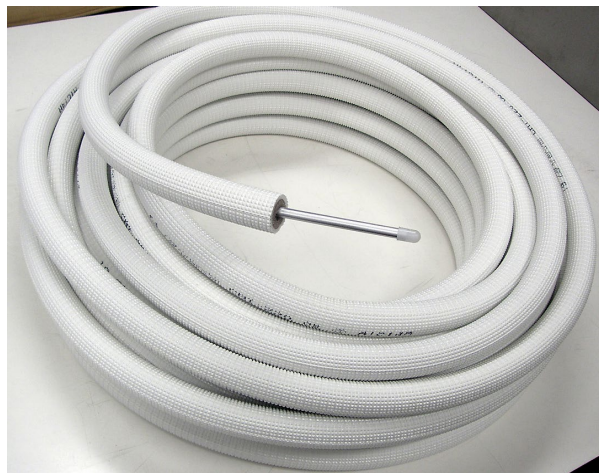
## CAT Aluminum Twin Dia – Pair Coil



Length (m)	Model No.	Aluminum Pipe Size				Insulation Size				Package Qty
		Outer Diameter		Wall Thickness		Outer Diameter		Wall Thickness		
		Metric	Imperial	Metric	Imperial	Metric	Imperial	Metric	Imperial	
20	CAT-2320S10	6.35	1/4"	0.95	0.037	24	0.945	8	0.315	1
		9.52	3/8"	1.0	0.039	27	1.063	8	0.315	
	CAT-2420	6.35	1/4"	0.95	0.037	24	0.945	8	0.315	1
		12.70	1/2"	1.2	0.047	34	1.339	10	0.394	
	CAT-3520	9.52	3/8"	1.0	0.039	27	1.063	8	0.315	1
		15.88	5/8"	1.3	0.051	37	1.457	10	0.394	
30	CAT-2330	6.35	1/4"	0.95	0.037	24	0.945	8	0.315	1
		9.52	3/8"	1.0	0.039	27	1.063	8	0.315	
	CAT-2430	6.35	1/4"	0.95	0.037	24	0.945	8	0.315	1
		12.70	1/2"	1.2	0.047	34	1.339	10	0.394	
	CAT-3530	9.52	3/8"	1.0	0.039	27	1.063	8	0.315	1
		15.88	5/8"	1.3	0.051	37	1.457	10	0.394	

Exclusive waterproof flare nut and rubber cap are sold separately except CAT-2320S10. CAA-2320S10 includes 10 each flare nut and rubber cap for both liquid and gas pipe.

## CAT Aluminum Single Dia – 20m Coil



Model No.	Aluminum Pipe Size				Insulation Size				Package Qty
	Outer Diameter		Wall Thickness		Outer Diameter		Wall Thickness		
	Metric	Imperial	Metric	Imperial	Metric	Imperial	Metric	Imperial	
CAT-220	6.35	1/4"	0.95	0.037	24	0.945	8	0.315	3
CAT-320	9.52	3/8"	1.0	0.039	27	1.063	8	0.315	3
CAT-420	12.70	1/2"	1.2	0.047	34	1.339	10	0.394	2
CAT-520	15.88	5/8"	1.3	0.051	37	1.457	10	0.394	1
CAT-S-320	9.52	3/8"	1.0	0.039	51	2.008	20	0.787	1
CAT-S-420	12.70	1/2"	1.2	0.047	54	2.126	20	0.787	1
CAT-S-520	15.88	5/8"	1.3	0.051	57	2.244	20	0.787	1

## Flare Nut, Waterproof Cap for CAT PIPE®



### Features;

- Originally developed water proof flare nut and rubber cap to prevent galvanic corrosion of Aluminum (pipe) and Copper (union).
- Designed to put the flare part and union in correct position easily in order to reduce the risk of installation mistake.



Applicable Size (mm)	Tightening Torque		Item / Model Number			Package Qty
	Bore (mm)	N.m	Nut & Cap	Nut	Cap	
6.35	17	16	VNFNS-2	VNFN-2	VNFNC-2	10
9.52	22	38	VNFNS-3	VNFN-3	VNFNC-3	10
12.70	26	52	VNFNS-4	VNFN-4	VNFNC-4	10
15.88	29	70	VNFNS-5	VNFN-5	VNFNC-5	10

## Specialized Tools for CAT PIPE



### Torque Wrench

- TY-122 for 1/4" nut / 17mm x 16N · m
- TY-123 for 3/8" nut / 22mm x 38N · m
- TY-124 for 1/2" nut / 26mm x 52N · m
- TY-125 for 5/8" nut / 29mm x 70N · m

### Dodecagon Torque Wrench

TY-124-V2 for 1/2" nut / 26mm x 52N · m

TY-125-V2 for 5/8" nut / 29mm x 70N · m



### Tube Cutter for Aluminum Pipe

- TY-160
- Applicable Outer Diameter ; 1/8" to 1-1/8" (3 to 28mm)
- Including one spare blade



### Flare Tool for Aluminum Pipe

- TY-100
- Applicable Outer Diameter ; 1/4", 5/16", 3/8", 1/2", 5/8", 3/4"
- Compatible Refrigerant R-410A, R-22, R407C, R404A, R-507A etc...
- Surely check the size and surface of flare after processing



### Motorized Flare Machine

- TY-110
- Easy and quick to use. Just putting switch button
- Applicable outer diameter; 1/4" to 5/8"