AirTrojan

Introduction of

Polyurethane(PU) and Phenolic Air Duct System

- Polyurethane (PU) Duct Introduction
- Phenolic Duct Introduction
- Comparison Table
- Fabrication and Installation

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Polyurethane Air Duct system Introduction

Zero ODP Polyurethane air duct system (PU Duct)

AirTrojan zero ODP Polyurethane air duct system is one of the most advanced and energy saving air duct systems all over the world, and it's eco-compatible and environment-friendly as well. The system consists of pre-insulated aluminium panels and accessories.

AirTrojan zero ODP insulation panels

comprise rigid polyurethane (PU) insulation foam faced on both sides with a protective low vapour permeability 80 micron aluminium foil. They are completely CFC and HCFC free, and are of highly thermal resistance. This panel is especially suited for use in heating, ventilation and air-conditioning system installations.

Accessories:

Jack Plane (Cutter), Flange, Adhesive, Air Vent, Air Valve and other accessories for duct joining and installation. All of the accessories are customized for the duct system, assuring its perfect technical performance.

Specification and Technical Data

Item	Unit	Specification/Data
Size	mm	3900*1200*20
Density	Kg/m^3	35-50
Thermal Conductivity	w/m.k	0.025
Compressing Strength	MPa	0.2
Bending Strength	MPa	2.0
Water Absorption	%	1.9
Dimension Change	%	0.3
Working Temperature	℃	-100 - +80
Maximum Wind Velocity	m/s	≤12
Max Continuous operating Temperature	℃	≤70

Product Data

Thermal Performance

The thermal conductivity of *AirTrojan* zero ODP rigid polyurethane insulation panels is 0.025 W/m.K(10℃) almost the lowest of any commonly available zero ODP insulation material used in air duct, which allows the thinnest possible insulation to achieve the required thermal performance.

Environmental Properties

In addition to its contribution to energy efficiency, the *AirTrojan* zero ODP system's rigid polyurethane insulation panels are entirely CFC and HCFC-free with zero Ozone Depletion Potential (ODP). They provide designers and specifiers with optimum solutions towards compliance with international environmental agreements.

Moisture Resistance

AirTrojan zero ODP rigid polyurethane insulation panels have a >90% closed cell structure which means they are highly resistant to moisture penetration and are also non-wicking.

Heat Resistance

The *AirTrojan* zero ODP System is suitable for use in peak temperatures as high as 80°C and continuous operating temperatures up to 70°C.

Fire and Smoke Performance

The rigid polyurethane insulation in the *AirTrojan* zero ODP system has a resistance to burning and spread of flame as the flame retardants has been added. In addition, there is an almost complete absence of smoke when subjected to a flame source. *AirTrojan* zero ODP rigid polyurethane insulation panels are conforming to the Chinese national standard: Fire Resistance Class B1.

Quality Assurance

AirTrojan zero ODP rigid polyurethane insulation panels are manufactured according to GB/T19001-2000 - ISO 9001: 2000 (Quality Management Systems).

System Advantages

Thermal Insulation: constant and continuous in all duct sections. Special closed-cell insulation guarantees low thermal conductivity and limit the risk of condensation.

Airtight Seal: airtightness of *AirTrojan* ducts is eight times more than traditional ducts.

Energy Saving: perfect thermal insulation and optimum airtight seal allow for maximum exploitation of air handling unit capacity, increasing efficiency and reducing operating costs.

Hygiene and Air Quality: the use of aluminium for the internal surfaces of the ducts ensures hygiene and cleanliness. The problem of ageing of the insulation and consequent release of particles is non-existent.

Safety: *AirTrojan* ducts have a low participation in fire, do not drop and smokes have a reduced opacity and toxicity. *AirTrojan* duct is in conformity with the requirements of the most restrictive international regulations.

Silent Operations: the sandwich structure (aluminium - insulating material - aluminium) guarantees a good acoustic behaviour. Vibration and reverberation are stopped by the insulating material, contributing to a higher comfort in the environment where *AirTrojan* duct is installed.

Light Weight: the very light weight allows a reduction of weight on the structures, supporting points, workmanship costs and materials necessary for the installation.

Duration: the outer aluminium coating coupled with the insulating material provides sturdiness, rigidity and good resistance to corrosion, erosion and deformation even in special applications.

Construction Easiness: possibility of manufacturing ducts in the work shop or directly at job site with considerable advantages on transport costs.

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Phenolic Air Duct system Introduction

Phenolic Foam Pre-insulated Ducting Panel

Phenolic Foam Pre-insulated Ducting Panel Compounded with Aluminum Foil is of high strength, which takes phenolic foam as the core material with reinforcing the aluminum foil on both sides. It's a kind of non-combustible material which gives off no smoke and no poisonous gas when exposing to fire. Its bending strenght reaches over 1Mpa and the thermal conductivity index 0.020w/mk. The phenolic foam can be fabricated into all kinds of rectangular (bended) ducts by cutting and adhesive connecting, then can be assembled into the air ducts of different specifications by using the fire-proof flange and adhesive. It's widely used for the ventilation systems of central air conditioning units in hotels, apartments, hospitals, office buildings and other deluxe buildings.

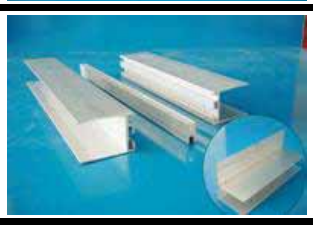
The Advantages of *AirTrojan* Phenolic Foam Air Duct System:

Lower heat conductivity, higher thermal efficiency
Low density, light weight
Foamed with CFC free materials, environment protective
Hermetic seal ensures little air leakage
With aluminum foil reinforced on both sides, it's corrosion protective, hygeian, and has a beautiful appearance.
Foamed with closed-cell structure, it's water-proof and sound-insulated.
Easy making, rapid installing and convenient maintenance save cost.
No protrudent flange on the connections, it can save a lot of building space.

MAIN TECHNICAL INFORMATION OF PHENOLIC FOAM AIR DUCT		
Item	Unit	Specification
Density	kg/m^3	50-60
Thermal Conductivity	w/m.k	0.02
Compressing Strength	Mpa	0.25
Bending Strength	Mpa	1.0
Combustibility Property		Non-combustible Class A BS476 Class O
Water Absorption	%	1.9
Max Smoke Density	%	2
Dimension Change	%	0.3
Working Temperature	℃	-260- +150

Size	mm	4000*1200*20
Maximum Allowable Wind Velocity	m/s	≤12
Continuous Running Maximum Temperature	℃	≤120

ACCESSORIES FOR *AirTrojan* PHENOLIC FOAM AIR DUCTS

NAME	MATERIAL	UNIT	PHOTO
PVC Flange	PVC Plastics	double meter	
Aluminum Alloy Flange	Aluminum Alloy	double meter	
Phenolic Glue	Liquid Glue	drum	
Plastic 90o Cover	PVC Plastics	pcs	
Special Cutters	Stainless Steel	set	
Strengthening Gasket	Steel with Zinc-coat (Disc Gasket)	pcs	
Metal 90° Cover	Steel with Zinc-coat (Metal 90°)	pcs	
Clasp Nail	Steel with Zinc-coat	pc	

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Compare PU/Phenolic Duct with Traditional Duct

Comparison of properities

	Phenolic duct	PU duct	Polyethylene(PE)	Rock wool	Ducts from Glass fiber	Rubber	Related factors
Standard Specification	4*1.2*0.02 m	4*1.2*0.02 m	2.06*1.03 m	0.63*1.2 m		1.2*1.2 m	loss
Common Thickness	20-30 mm	20-30mm	12,15,20,25,30 mm	30,40,50 mm	30 mm	9,13,19 mm	Thermal insulation property
Fire Resistant	Non-combustible Class A	Refractory grade B1 (flame retardant)	Refractory grade B1 (flame retardant)	Grade A	Grade A	Refractory grade B1	Fire control requirement
Thermal Conductivity	0.02 W/M.K	0.021 W/M.K	0.032 W/M.K	0.0328 W/M.K	0.038 W/M.K	0.034 W/M.K	Thermal insulation property
Apparent Density	50-60 kg/m^3	40-50 kg/m^3	59 kg/m^3	60-120 kg/m^3	120 kg/m^3	65-85 kg/m^3	Thermal insulation property
Whole weight	1.2+/-0.1 kg/m^2	1.1+/- 0.1 kg/m^2	9.28 kg/m^2 (including iron sheet)	12 kg/m^2(including iron sheet)	12 kg/m^2	9.32 kg/m^2	Degree of difficulty in montage
Void structure	Close void rate: >95%	Close void rate: >95%	Close void rate: 85%	Opened void	Compact entity	Close void rate about 80%	All lifetime thermal insulation
Water absorption	<1.9%	<0.6%	0.8-1.2%	Easy water absorption	Easy moisture absorption	1.5-3.0%	All lifetime thermal insulation
Working Temperature	-260°C~ +150°C	-60°C~ +100°C	-55°C~ +90°C	7°C~ 300°C	0°C~ 105°C	-40°C~ 105°C	suitable range
Environment Protection Property	Meets the requirement for environment protection	Meets the requirement for environment protection	Meets the requirement for environment protection	bad	has tiny fiber	better	suitable range
Use Range	within & without doors	within & without doors	within doors	within doors	within doors	within doors	suitable range
Aging resistance	good	good	common	powdered	powdered	better	life-span
Appearance	beautiful	beautiful	common	worse	common	better	sensory
Appearance color	aluminum	aluminum	grey	aluminum	white	white	sensory
Use condition	Independent use (integration)	Independent use (integration)	In combined with galvanized iron sheet	In combined with galvanized iron sheet	Independent use(integration)	In combined with galvanized iron sheet	construction quality
Manufacture & montage	simple	simple	complicate	complicate	more complicate	complicate	Construction management limit
Construction quality	Easy construction and control	Easy construction and control	Many links, difficult control	Many links, difficult control	Many links, difficult control	Many links, difficult control	Time limit
Re-use rate	90%	90%	0	0	0	0	investment
Life-span	Over 20 years	Over 20 years	8-10 years	6 years	6 years	10-15 years	Multiple investment
Maintenance & repair	Basically unnecessary	Basically unnecessary	more frequent	frequent & complicate	less maintenance	less maintenance	Multiple investment

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The Fabrication and Installation of PU/Phenolic Foam Air Ducts

The Fabrication and Installation of Phenolic Foam Air Ducts

Chapter One: The Introduction of Service Tools and Accessories

1. Introduction of Service Tools

AirTrojan Phenolic Foam Air Ducts are made with a set of special service tools and special process technology.

The service tools include: Special Jack Plane/cutters (including four planers per set, Jack Plane with double knives; Left 45º Jack Plane with single knife; Right 45º Jack Plane with single knife; Vertical Jack Plane), Utility knives, Flexible Compasses, Plastics Scraper, Square Aluminum Alloy Ruler, Aluminum Alloy Angle Square, Rubber Hammer, Aluminum Alloy Cutting Machine, Abrasive Wheel Cutting Machine, Bending Machine, Glue Squeezing Gun, Glue Brush, Screwdriver, and so on.

The Jack Plane with double knives, Left 45º Jack Plane with single knife and Right 45º Jack Plane with single knife are the main tools for fabricating the air ducts and they are used to cut a V-shape slot on the phenolic foam pre-insulated ducting panel. All the planes are mounted with sharp and high-precision blades. When installing the blades, make sure they are slanting to the right or the left by 45º, so the angle of the slots will be 90º. The length of the blades must be adjusted accurately so that the insulation part of the panel will be cut through and the aluminum foil will not be lacerated.

The Flexible Compasses are used to determine the size and the shape of elbows and T-pieces.

The Square Aluminum Alloy Ruler and the Aluminum Alloy Angle Square are used for lineation on the panels, so that the panels will be cut accurately.

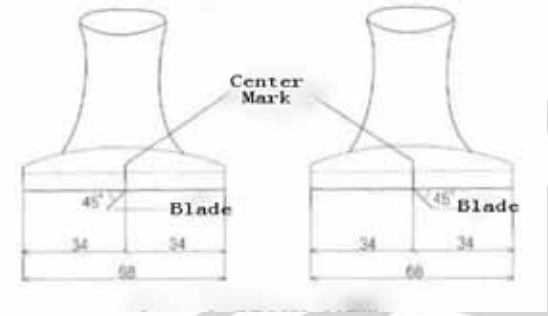
The Aluminum Alloy Cutting Machine and Abrasive Wheel Cutting Machine are used to cut the alloy and the PVC accessories.

The Bending Machine is used to fabricate the flexure of the air ducts. It is used to make creases of different distance.

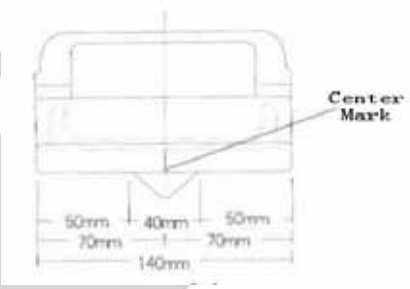
The Plastics Scraper is used to smooth the aluminum foil tape on the air duct and make the air ducts surface more beautiful.

With all the above tools, the worker can fabricate *AirTrojan* phenolic foam pre-insulated ducting panel into air ducts of different sizes and shapes. With the special tools and the processing technology, the installation worker can make the air ducts with beautiful appearance, good seal and smooth running.

Overall dimension drawing of the special cutters



Left 45º and Right 45ºJack Planes with single knife



Jack Plane with double knives

The list of the main processing tools

No	Tools Name	Specification	Usage	Note
1	Jack Plane with double knives	Special tools	for cutting 90º slot	Provided by *AirTrojan*
2	Jack Plane with single knife	Special tools	for cutting 45º slot	Provided by *AirTrojan*
3	Vertical Jack Plane	Special tools	for cutting and edge trimming	Provided by *AirTrojan*
4	Square Aluminum Alloy Ruler	4m/2m	for the shaping of arc panel	made of rectangle aluminum alloy
5	Steel Ruler	1m	for edge trimming of aluminum tape	outsourcing
6	Aluminum Alloy Angle Square		for lineation on the panels	outsourcing
7	Flexible Compasses		for lineation on the panels	outsourcing

The fabrication of Working Platform: 2 pcs

(1) The size of the platform: 4m*1m*0.8m

(2) Materials: use wood board (thickness more than20mm) as the table-board and cover the table-board with cardboard or carpet. Use the angle steel or the box steel to make the frame.

2. Introduction of the Accessories

We provide a series of accessories for the quick and easy installation of *AirTrojan* sandwich air duct system, including the connections between air ducts and the connections between equipment and other components.

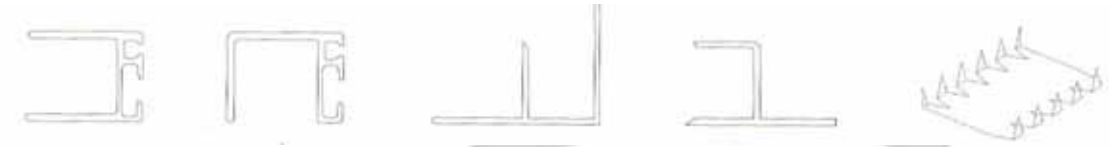
The main accessories include: PVC flange, U-shape tiger, Ч-shape aluminum alloy flange, corner metal cover, round metal washer, sealing gasket and so on.

PVC Flange, Ч-shape aluminum alloy flange, F-shape aluminum alloy flange are used for the connections between air ducts.

F-shape aluminum alloy flange are also used for connections between air duct and equipment or air vent or air valve.

Corner metal cover, round metal washer, sealing gasket are used to reinforce the pressure-resistance and the resistance to deformation of the air ducts.

We will detail the information of the above accessories in the following chapters.



H-shape PVC flange; Vertical PVC Flange; F-shape alloy flange; Y-shape alloy flange; U-shape tiger

Chapter 2 The fabrication of air duct

1. This chapter introduces the process of air duct's fabrication; the fabrications of the different type air ducts, flange or tiger were used for connection during the reinforcement or repair process.

1). The process of fabrication

Because of the specific performance of *AirTrojan* air duct panel, the process of fabrication for air duct is much more controllable and convenient compared with the fabrication of conventional panel.

The main process of air duct's fabrication

Partition the panel → Cut → Paste → Strengthen →Connection { Flange connection / Tiger connection }

A. Plate alignment

In order to improve the usage of panel and when it's impossible to produce the single side of duct by single panel, cut a V-shaped slot by 45°on the panel, and then paste the panel. (Fig 2-1)

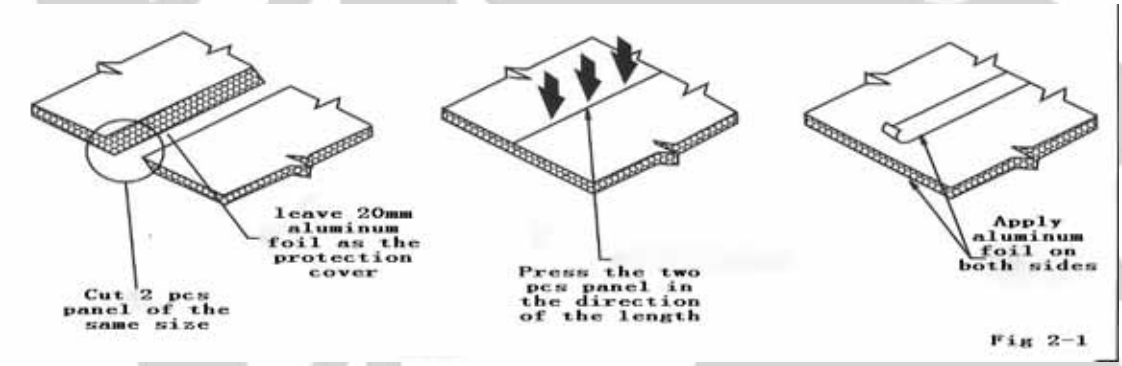


Fig 2-1

B. Lineation and Cut

During the real construction, the process of *AirTrojan* panel's fabrication is the same with the conventional panel, partition the duct on the drawing reasonably. The dimension of *AirTrojan* panel is 4000(L)*1200(W) mm and 2000(L)*1200(W) mm, and the dimension of the duct is also different, so the accurate calculation is required during lineation, reasonable line and cut is the most important way to reduce the wastage. In order to ensure the strength after fabrication, keep 20mm thickness of aluminum foil of the panel.

The several techniques of lineation and cut are as follows; it can be changed based on the real construction.

Based on the different length of sides (Fig 2-2), six techniques are supplied:

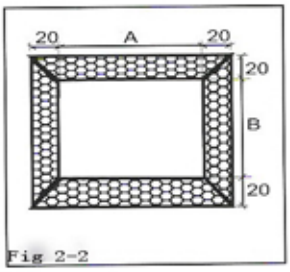


Fig 2-2

a. Technique (1): the total length of 4 sides 2(A+B) ≤1020mm, duct can be made by a panel which the longest length is 4m by lengthways cutting. (Fig 2-3)

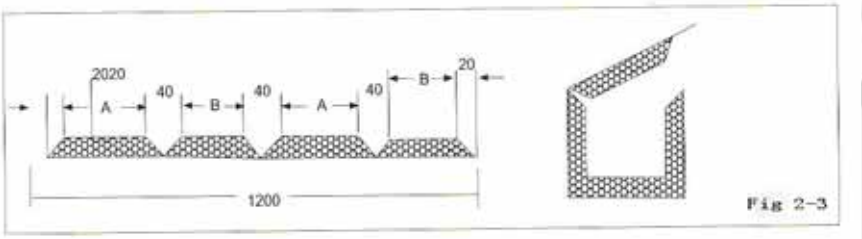


Fig 2-3

b. technique(2): the length of 3 sides 2A+B≤1080 or A+2B≤1080, the duct can be made by applying U shape and covered with a panel by lengthways cutting.(Fig 2-4)

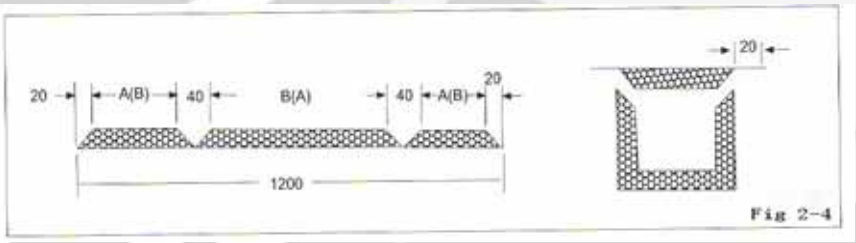


Fig 2-4

c. Technique (3): The length of 2 sides A+B≤1100mm, duct can be produced by two "L" shape panel, lengthways cutting. (Fig 2-5)

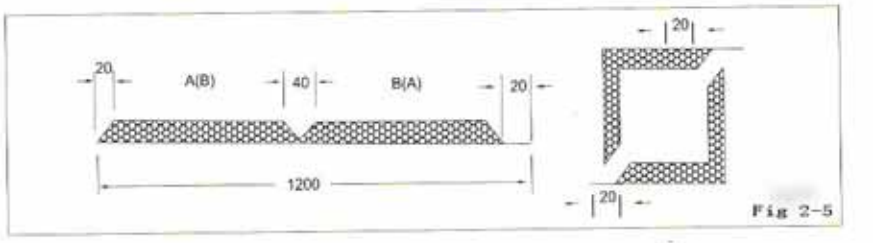


Fig 2-5

d. Technique (4): the single length A or B≤1140mm, take each panel by lengthways cutting then connect it. (Fig 2-6)

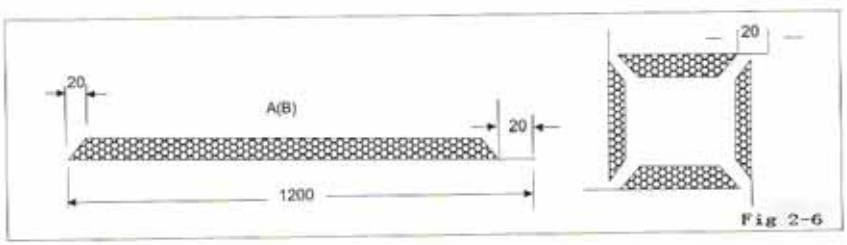


Fig 2-6

e. Technique (5): the single length A or B>1140mm, when each side of panel is larger than 1140mm:

ⅰ) Plate alignment, then based on the cutting technique (1)~(4)

ⅱ) Apply the lengthways cutting, the length of duct is 1200mm by this way.

1) Bending the Curve shape

A. Making the curve side of the panel

When making the curve side, make the panel to be curve shape, the length L is decided by the length of curve MN. L=MN, (Fig2-7)

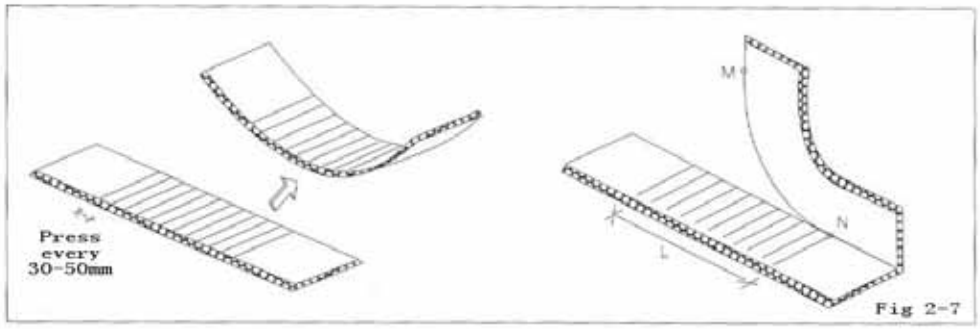


Fig 2-7

B. The curving technique of panel

Press the panel by bender, make the panel appeared "V" shape, and make it to be bendable. the pressing distance is between 30-70cm, when the radius of arch is smaller than 150mm, the distance of pressing is 30mm, when the radius of arch is between 150~300mm, the distance of pressing is between 50~70mm, if the distance is too small, it's quite easy to make aluminum foil to be plump, but it's easy to bend it. Vise versa. The depth of press should be less than 5mm, if it's too deep, it's easy to fracture the panel; if it's too low, and it’s not easy to bend it. When the panel is curve shape, make them connected closely, it's easy to be shaped and strengthened.

C. The sample of bending the curve shape

a. The elbow duct (Fig2-8)

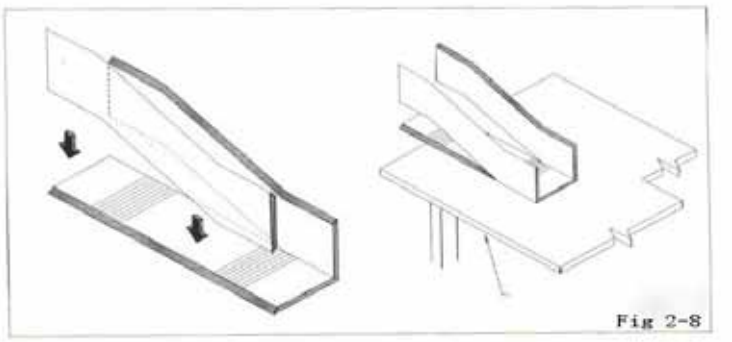
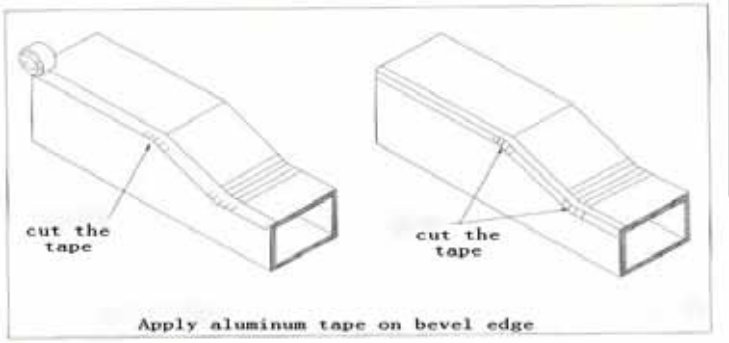


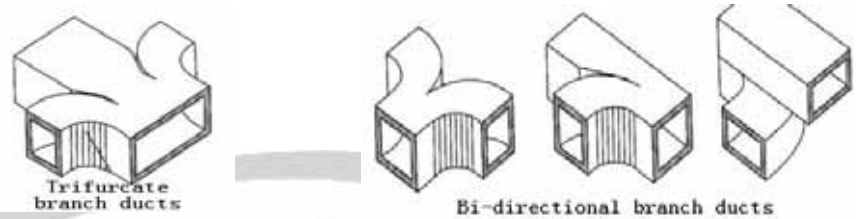
Fig 2-8

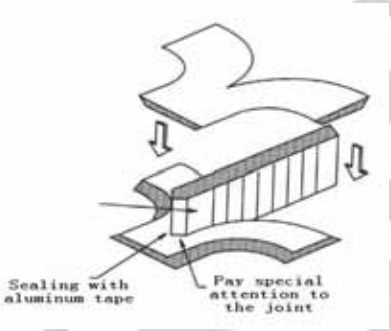
b. The reducing duct (Fig2-9)

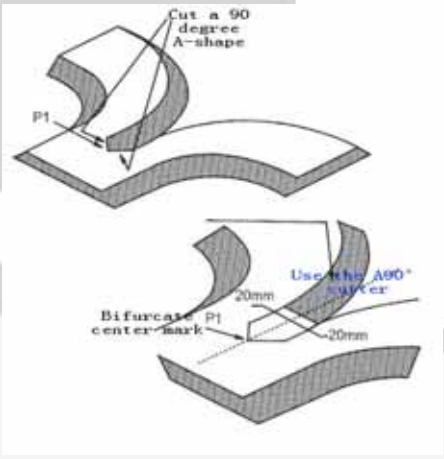


c. The bifurcated duct

The bifurcated duct is composed by two parts (elbow + elbow; elbow + reducing duct; elbow duct + elbow), it's used for the air flow towards the diffluence and direction changed of the other system (Fig2-10)







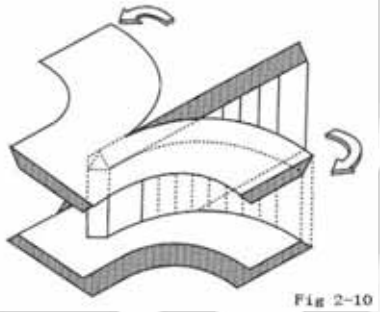


Fig 2-10

d. 90° elbow (Fig 2-11)

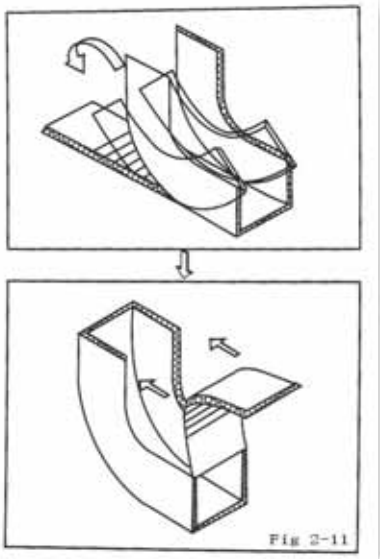


Fig 2-11

4) Formation by plating

A. Plating time: after brushing the glue, when it's not adhesive by hand’s touching.

B. Plate: ensure the edge of the duct connected firmly, make sure that there's no semicircular angle to affect the beautiful appearance of duct when the angle should be 90°

C. Put the adhesive plate on out wall of duct after plating

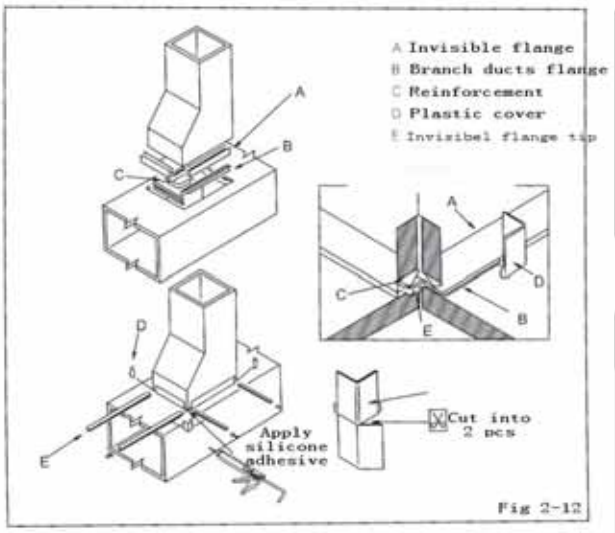
D. Plug the inner joint by glass cement or 30mm aluminum adhesive plate, the joint should be clean before plugging, and then strengthen it.

E. Deburring to make the nozzle and flat surface to be vertical, this process affect the levelness of duct directly.

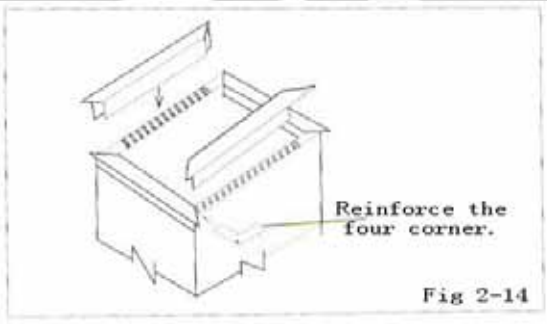
5). Install flange or plug

A. "H" type and vertical PVC flange is used for butt joint notice the direction of flange during installation, it will bring the big trouble for the duct installation if the direction of flange is wrong, and it should alternate the direction of flange again.

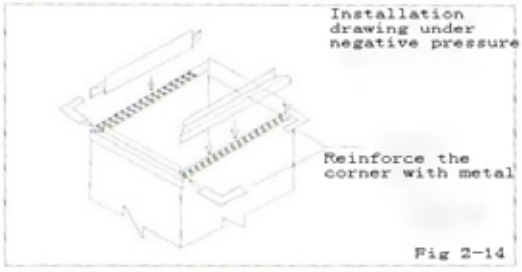
B. The installation of Vertical PVC flange. (Fig2-12)



C. The installation of “Ч” shape aluminum alloyed flange.



D. The installation of “F” shape aluminum alloyed flange.



E. The usage of Tiger

“U” shape Tiger:

a. The Tiger is made of 0.88mm zincification steel, dimension: 74mm*50mm

b. The outer catch of connection, the distance of Tiger is 250mm, Seal the joint by 80mm aluminum adhesive plate after connecting by Tiger

c. The inner catch of connection, when the dimension of duct between 600~800mm, it need inner catch. The distance of tiger is 500mm; Seal the joint by 80mm aluminum adhesive plate after connecting by Tiger.

d. When the edge of duct is between 800~1200mm, the joint cannot always connected by Tiger, it should use PVC flange or aluminum alloyed flange to strengthen it after using two Tiger

2．Strengthen/reinforce

1). Strengthen the angle,

When the rectangular duct's edge≥250mm, put 0.75mm galvanized pad/washer on the four angle of duct, strengthen the hardness of four angles to avoid the duct to distort. It's enough to strengthen one side of duct when applying the metal flange; strengthen both sides of duct when applying PVC flange. Installation method (Fig 2-15)

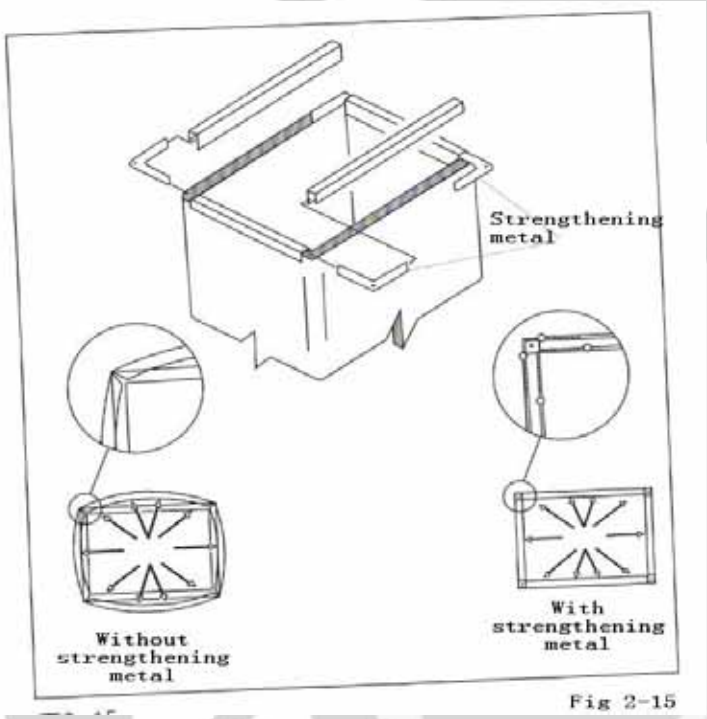
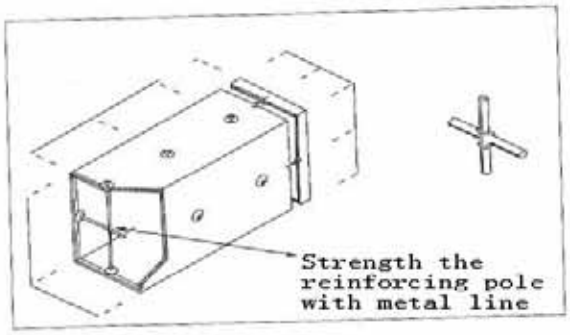
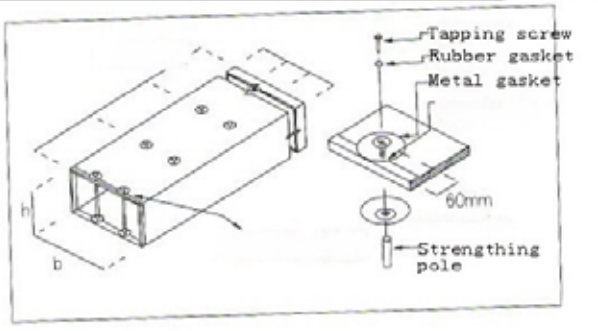


Fig 2-15

2). Strengthen the flat surface: one sided reinforcement and crossed reinforcement, showed as the following Fig:





A. The requirement of material: the knighthead adopts DN15 galvanized tube or Φ10 aluminum foil (outside diameter), put 60mm length of batten or Φ8 plastic expansion screw. The bolt fastened by Φ6*60 self tapping screw.

B. When A or B＜2000mm, adopt inner reinforcement, the quantity and distance of reinforcement based on the following table.

C. When A or B ≥2000mm, need to increase outer reinforcement, adopt ∠30*3 angle iron to make the anchor ear, and then hoop the duct.

Table of the minimum quantity of transverse reinforcement and lengthways distance

pressure Pa / Edge mm	< 300	310-350	510-750	760-1000	1100-1250	1260-1500	1510-2000	2100-2500
400-600					1	1	1	1
610-800			1	1	1	1	1	1
810-1000	1	1	1	1	1	2	2	2
1010-1200	1	1	1	1	1	2	2	2
1210-1400	1	1	2	2	2	2	2	2
1410-1600	2	2	3	3	3	3	3	3
1610-1800	2	2	3	3	3	3	3	4
1810-2000	2	2	3	3	4	4	4	4
2010-2200	2	3	4	4	4	4	4	4
2210-2400	3	3	4	4	4	4	4	4
The lengthways distance of reinforcement	800		800				400	

III. The repair of *AirTrojan* duct

The main factors causing the damage and the protection method

It will be broken when the duct was hit accidentally

The movement and loading will cause the duct damage

The duct of outdoor should be protected in order to avoid the damage which caused by collision.

The duct which install on the ground or near the sideway should be protected to avoid damage.

During the installation, because of the technical crossed construction, it may cause the damage, there should be warning sign to remind it.

The repair technique of different situation

There's scratch and dent on the surface of the duct, level the surface or re-plate the surface by aluminum adhesive plate.

There is hole on the duct

The hole is large, cut the diamond on panel at 45°, and then plug it with the equal diamond, put the aluminum adhesive plate on the joint.

The hole is small; it can be blocked by glass cement, and plate the aluminum adhesive plate.

(3) The fracture of flange, cut the duct away 300mm of flange, supplement a new short duct.

Chapter Three: the installation of the air ducts

1. The Inspection of the air ducts before installation

1) Mark all the finished air ducts according to the sequence of the central air conditioning system.

2) Make sure all the air ducts are of the right sizes and all the flanges are installed accurately.

3) Aberration is allowed in the fabrication of the air ducts and the flanges, but the aberration must meet the

specification showed in the below chart.

The side length (b)	The Allowed Aberration (mm)			
	The Aberration of the side length	The Smoothness of Surface	The aberration of diagonal of the air ducts	The smoothness of Flange or the ducts orifice
b≤320	≤2	≤3	≤3	≤2
320＜b≤2000	≤3	≤5	≤4	≤4

4） The dust and other waste in and on the surface of the air ducts must be cleaned before installation.

2. The installation of the brackets and the hangers

1) The choose of the brackets and the hangers

a) Choose round steel or screw bolt (φ≥6) when the size of hemline ≤1500mm

b) Choose round steel or screw bolt (φ≥8) when the size of hemline ＞1500mm

2) The choose of the transversal bar

a) Choose angle iron (specification ≥ ∠25×3) when the size of the hemline ≤1000mm

b) Choose angle iron (specification ≥ ∠30×3) when the size of the hemline is between 1000mm and 2000mm.

c) Choose angle iron (specification ≥ ∠40×4) when the size of the hemline ＞2000mm

2) The distance between the brackets and the hangers must meet the below specification

a) When the air ducts are installed horizontally and the size of the hemline ≤1000mm, the distance between the brackets and the hangers should be less than 3m.

b) When the air ducts are installed horizontally and the size of the hemline ＞1000mm, the distance between the brackets and the hangers should be less than 2m.

c) When the air ducts are installed vertically, the distance between the brackets and the hangers should be less than 3m and there should be at least two brackets or hangers on every piece of air duct.

d) When the air ducts are installed horizontally and the length of main ducts are more than 20m, at least a jigging-proof bracket should be installed.

3. The preventive measure when installing the air ducts

1) If the air ducts passing through floors or side walls, the air ducts should be reinforced with a metal cover (Zinc-coated steel) whose thickness is no less than 0.75mm or use metal conduits instead.

2) The air valves or other components which are connecting to the air ducts should be suspended by independent hangers or brackets.

3) Be careful when moving and installing the air ducts.

4. The Installation of the Air Ducts

1） Connected by PVC Flanges

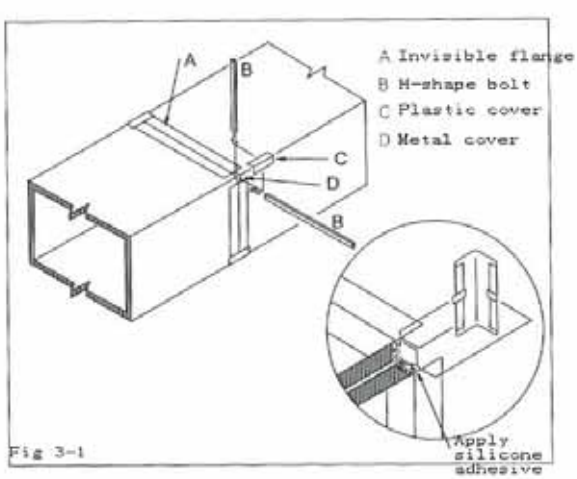


Fig 3-1

2) Connected by ч-shape Aluminum Alloy Fangles

a) Apply Silicone Adhesive to each corner after the connection

b) Seal the joint Aluminum Foil Tape

3) Connected by F-shape Aluminum Alloy Flanges

a) Use bolts (size no less than M6×25) to fasten the F-shape Aluminum Alloy Flanges on the air ducts

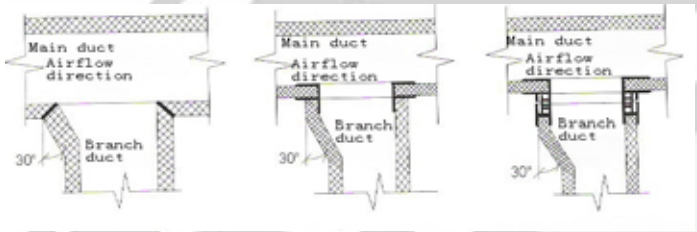
b) The distance between bolts should be less than 120mm

c) Use washers or pads when connect a flange to another

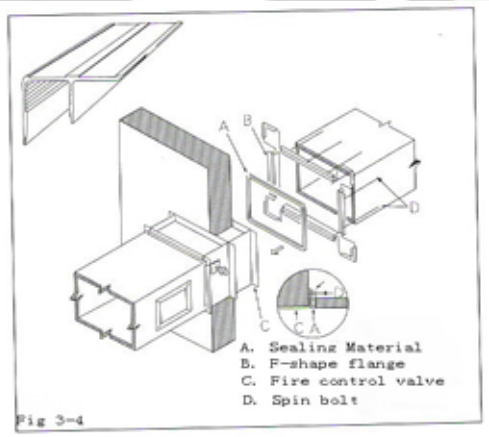
4) The connection mode of branch ducts

a) Adopt 'a' mode when the side length of air ducts is less than 500mm

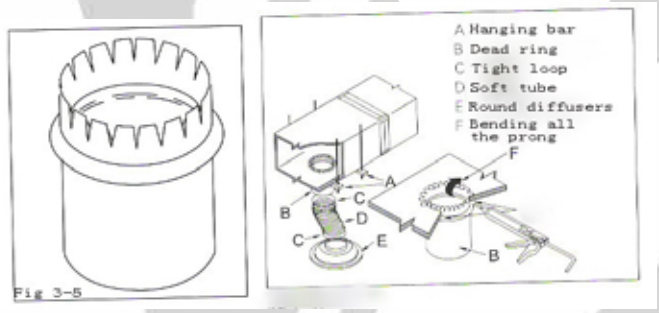
b) Adopt 'b' mode when the side length of air ducts is no less than 500mm



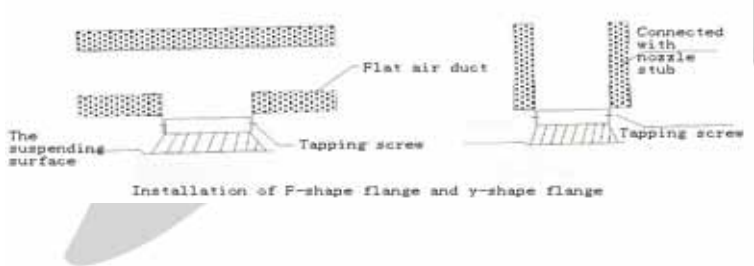
5) The connection mode of components: use F-shape Flange



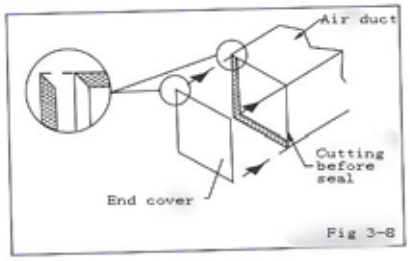
6) Round Flanges are used for connection with round diffusers or round soft tubes. The round flanges are made of zinc-coated steel (thickness: 0.3-0.75mm) at site.



7) The installation of air vents



8) Seal the end air duct according to figure 3-8



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We focus on environment-friendly and energy-saving products as well as genial and prompt service.
With our professional background and our strong supply systems, we can always help our customers to get the best products at a reasonable price to save their time and effort.
We wish to grow with you and to build a bridge to success for you!
Save the earth, save your money!
Your satisfaction is always our cherished desire

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