

安装方法 Installation Methods

1、管材安装（直径 Dia<114mm） Tube installation

a. 套管法:

在没封闭的管道上，当管径小于 42mm，材料厚度小于 13mm 时，直接推过弯管,安装时宜推勿拉（图 1）;



图 1

Casing method:

In the unclosed pipe when the pipe diameter less than 42 mm, the thickness of the material is less than 13 mm, straight into a bend, installation time push don't pull (figure 1);

b. 划开套接法 Slitting method



advance; (figure 2)

- 1) 当管道已经安装封闭，先用切割刀划开管面或用预先开槽的管材；（图 2）

When the pipeline has been installed, first with a cutting knife zoned open tube surface or with slotted pipes in

图 2

将管道和材料清洁干净，将材料安装至管道上，并在割面均匀涂抹胶水（图3）； To clean pipes and materials, install the material to the line, and the cut surface evenly daub glue (figure 3);



图 3



图 4

- 2) 确定胶水干化（接触涂胶面时无粘手现象）;
- 3) 封管时压紧接口两端，由两端向中间闭合（图 4）。

Determine the glue drying glue (contact surface with no sticky hands);

Sealed on both ends of pipe pressure interface, from the ends to the middle closed

c. 管口连接

- 1) 在两段需连接的管端上涂抹胶水;
- 2) 等待约 30 分钟后, 成挤压状连接在一起。

(低温下必须先使一端粘接牢固);

安装切勿拉伸材料, 而需使其在轻微的压挤下安装, 所以切割材料时适当多出约10mm长度 (图5)。

Pipe connection

In the two paragraphs should be connected on the pipe end of glue;

Wait for about 30 minutes later, the extrusion shape together. Must make side adhesive solid (low temperature);

Installation do not stretch material, but need to make it under a slight squeeze to install, so more appropriately when cutting materials about 10 mm length (figure 5).

3)

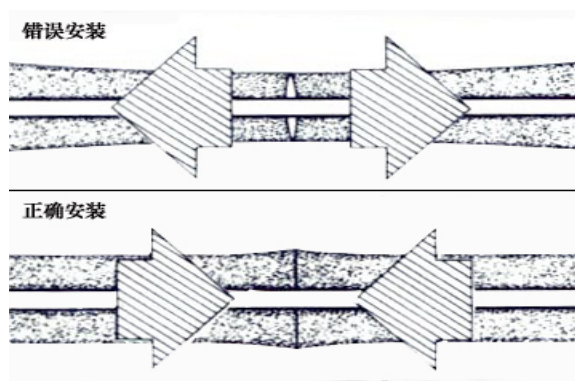


图 5

2. 板材的管道安装

- 1) 当管道直径>114mm 时, 用板材来进行安装;
- 2) 用一条等厚度的 PVE/NBR 保温材料细条量出管道的周长 (切勿拉伸细条); (图 8)

2. The pipe installation plate

When the pipe diameter > 114 mm, use plank for installation;

With a thickness of PVE/NBR insulation materials such as high-quality measure the circumference of the pipe (not stretched thin); (figure 8)



图 8

- 3) 切下以管道周长为宽度的板材;
- 4) 在板材的两切边上涂上胶水, 干化后先粘接板材两端, 再粘接中点;
- 5) 按照由两端到中间的原则粘合, 直至全部封合。(图 9)



图 9

Cut width for pipeline girth sheet;

In the plate on the two edges of coated with glue, drying after the first bonding plate at both ends, then bonding point;

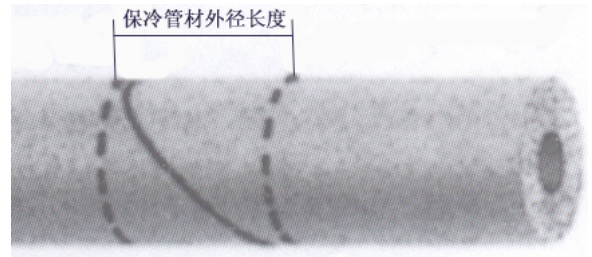
Glue, according to the principle of from ends to middle until all sealing. (figure 9)

3. 各种几何形状的管道安装

✓ 弯道结构:

A. 90 度弯法 ($DN < 60\text{mm}$)

- 1) 以保冷管材外径长度, 在保冷管材上作记号;
- 2) 连接记号两段, 并沿线切下一个 45 度的管面;



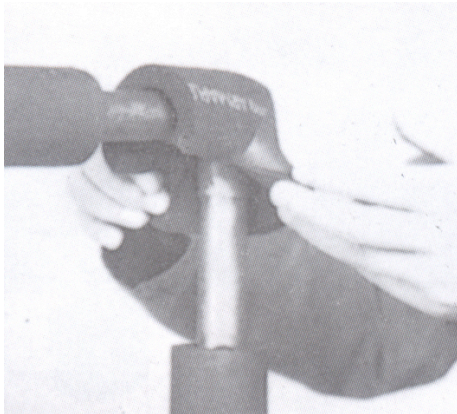
3. All sorts of geometry shape of piping installation

The bend structure:

A. 90 degrees bend method ($DN < 60\text{ mm}$)

In order to protect cold length, pipe diameter on the cold insulation pipe marked;

Connection mark two section and cut along a pipe surface at an Angle of 45 degrees;



- 3) 颠倒其中一段, 粘合形成 90 度弯头;
- 4) 划开弯头下弯口 (注意别破坏材料内壁), 在划口处涂胶水;
- 5) 干化后安装于弯道上, 并用湿粘法粘接和直管的接面, 完成。

Upside down one paragraph, bonding form 90 degree bend;

Under open elbow bend mouth (be careful not to destroy material wall), apply glue in the cut place;

Drying after installation on the corner, with sticky adhesive and straight pipe junction, complete.

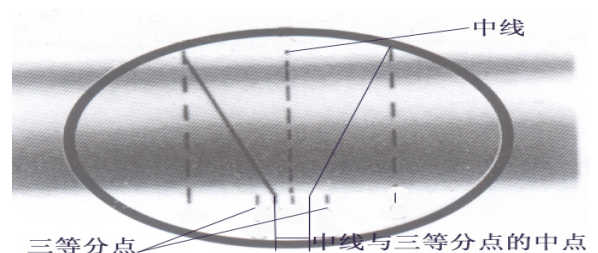
B. 圆缺法 ($60\text{mm} < DN < 114\text{mm}$)

- 1) 以保冷管材外径长度, 在保冷管材上作记号;
- 找出该段中线, 沿中线两端量出 5—7mm 距离, 作记号;

B. segmental method ($60\text{ mm} < DN < 114\text{ mm}$)

In order to protect cold length, pipe diameter on the cold insulation pipe marked;

Find out the segment center line, along the center line at two terminals 5-7 mm distance, marked;





- 2) 沿线切下，将中间圆缺段翻转 180 度，
粘合形成弯道；
- 3) 之后安装参照 90 度法 4) 及 5)；

Cut along the line, to turn round the middle period of 180 degrees.

Bonding form curve;

After installation reference 90 - degree method, 4) and 5);

C. 大管径弯道结构 (DN>114mm)

- 1) 量出弯道内弯半径 R1 (图 10);

C. large diameter bend structure (DN > 114 mm)

Measure the corners inside bend radius R1 (figure 10);

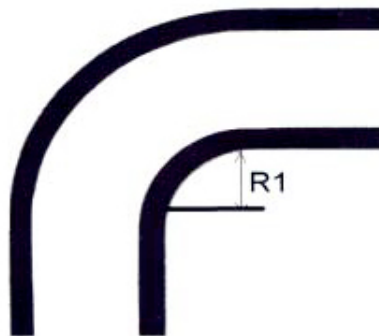


图 10

- 2) 用等厚度细条量出管道周长 L (勿拉伸细条) (图 11)

measure with equal thickness thin pipe circumference (not stretched thin) (figure 11)



图 11

3) 在板材的水平 and 垂直方向上预留 12mm 修剪长度, 在直角上量出内弯半径 $R1 + L/2$;

4) 以两个长度 $R1$ 及 $R1 + L/2$ 为半径画两条弧 (图 12);

Set aside on the horizontal and vertical direction of the plate length 12 mm clip, on the right amount of inside bend radius $R1 + L / 2$;

With two length $R1$ and $R1 + L / 2$ draws two arc radius (figure 12);



图 12

5) 沿两弧线记号切下两个相同的半弧面 (图 13);

Along the two and a half arc sign cut off two of the same surface (figure 13);

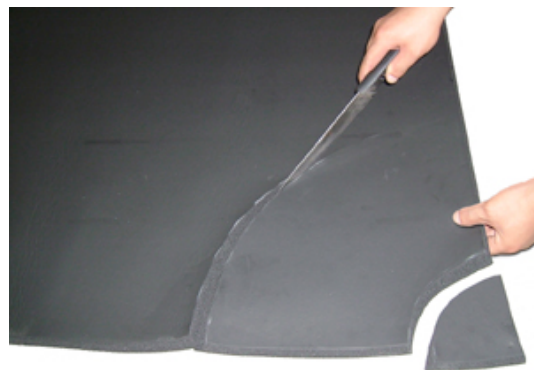


图 13

6) 将两弯道面重合在一起, 并在大弧面上涂上胶水待干化后, 粘接大弧线接口 (图 14);

Will be two curve surface overlap together and stay in on big surface coated with glue drying, adhesive high arc interface (figure 14);



图 14

7) 切调弯道口多余的倾斜部分，使弯道材料的接面为正圆面；

8) 在弯道的内接口涂上胶水（图 15）；

Cut the bend excess tilt part, make the junction bend material for round face;
In the corner of interface is coated with glue (figure 15);



图 15

9) 将材料架在弯道上，待胶水干化后，粘合接口面（图 16）；

The material on the shelf in the corner, after waiting for glue drying, adhesive interface surface (figure 16);



图 16

D. 大于直管管径的弯道

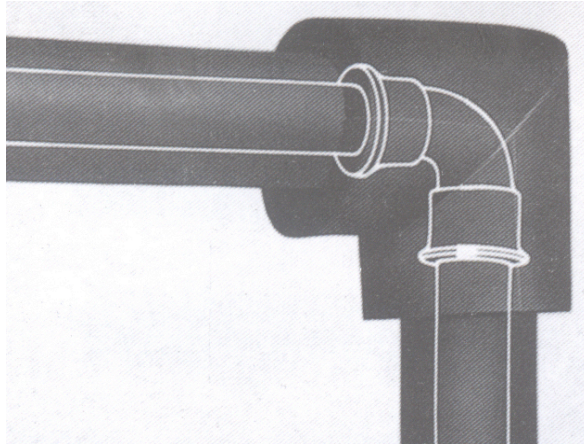
一、套管法（弯头连接处管径>>直管管径）：

选用直管保温管材外径作为弯头保温管材内径，可以用 A.B.C.任何一种方法安装。

D. is greater than that of straight tube diameter curves

One, the method of casing (elbow joint diameter > > straight pipe diameter) :

Choose straight pipe insulation as elbow insulation pipe diameter, pipe diameter can be installed in A.B.C. any kind of way.

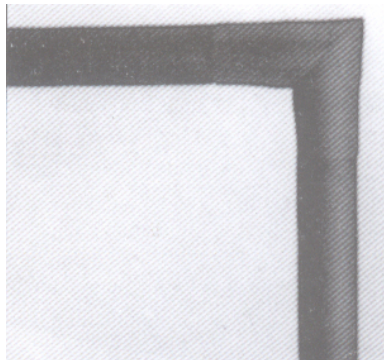


二、变径法（弯头连接处管径 \approx 直管管径）

选用弯道最大直径为保温材料直径，当管材直径 $<35\text{mm}$ ，在弯道两个 180° 度处下刀，当管材直径 $>35\text{mm}$ ，在弯道四个 90° 度处下刀，应使剩余材料的内径渐变至直管直径，将间隙处粘接好。

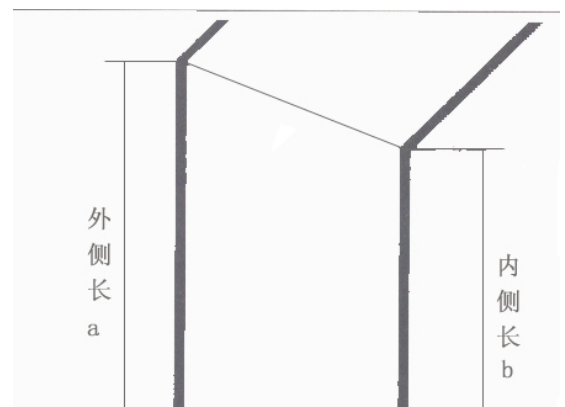
Second, variable diameter method (elbow joint diameter material straight pipe diameter)

Choose insulation diameter in diameter of the bend, when the pipe diameter $< 35\text{ mm}$, two 180° - degree turn in place under the knife, when the pipe diameter $> 35\text{ mm}$, 90° degrees in four corners under the knife, should make the inner diameter of the surplus material gradient to straight pipe diameter, will cut the gap in the bonding is good.



E. 非常规角度弯管安装

- 1) 量出管道内侧长 a 及外侧长 b ，并同厚度板材细条量出管道周长 c （注意细条勿拉伸）；
- 2) 在板材上量出管道周长 c 及周长中点，画出中线，并在 c 的两端垂直量出内侧长 b 、 $(b+1/2c)$ ，

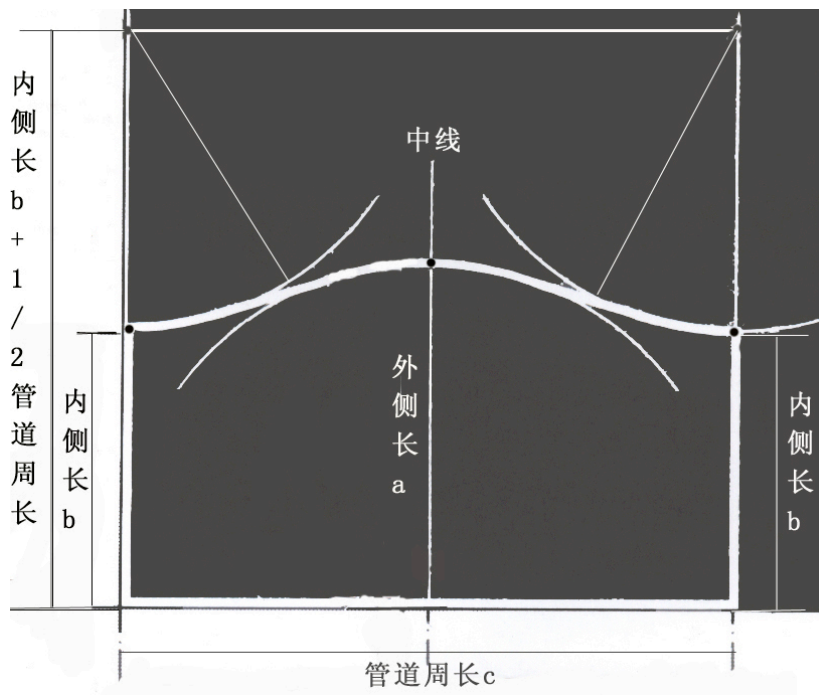


在 c 的中线上量出外侧长 a ;

E. unconventional Angle bend pipe installation

Measure pipe medial and lateral long b long, with the thickness of the plank to measure thin pipe circumference c (note the strips do not stretch);

On board measure pipe circumference of c and the perimeter point, draw the center line, and c in the ends of the vertical measure inside of the long, $(c) b + 1/2 b$, c in the center line of the measure on the outside a long;



3) 以 $1/2c$ 为半径, 以 c 的中点、 c 两端 $(b + 1/2c)$ 点为圆心作三段圆弧, 并用平滑曲线连接三段圆弧;

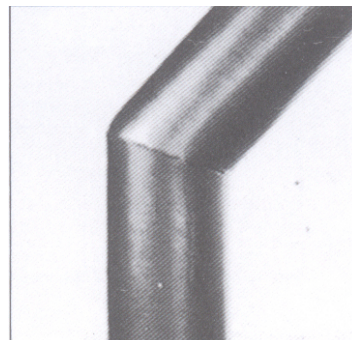
4) 沿线切下, 并将其中一个旋转 180 度, 作为上下连接面进行安装;

5) 先粘合垂直方向, 再粘合斜接口。

Radius is $1/2 c$, ends at the halfway point of the c and $c (c) b + 1/2$ point as the center of the circle arc, paragraph three is connected by smooth curve three segment arc;

Cut along the line, and will be one of the rotated 180 degrees, as the junction surface up and down for installation;

Adhesive vertical direction, and then bonding interface.



图为完成品

✓ T 型结构

1) 磨利一个与安装管径相同外径的管材，并在管材上打孔作为 T 型交接点（图 17）；

T structure

Sharpen a and installation of pipe material, pipe diameter is the same diameter and cut holes in pipe as a T intersection (figure 17);



图 17

2) 经过孔中心线将保温管材划开，并在接口处涂抹胶水（图 18）；

After the center line of the hole will be heat preservation pipe cutting and on interfaces glue (figure 18);



图 18

在垂直接管口上削出近似吻合口，宜深勿浅（图19）；

In the vertical control of approximate anastomotic mouth cut out on the appropriate deep not shallow (figure 19);

3)



图 19

4) 在衔接处涂上胶水，粘牢 T 型的两个浪边，完成安装（图 20）。

At the connecting coated with glue, two waves of edge glued down T type, complete the installation (figure 20).



图 20

✓ 法兰结构

1) 用卡钳量出待保温直管和法兰的直径，并用等厚度的细条量出其周长（图 21）；

Structure of the flange

With calipers measure insulation straight pipe and the flange diameter, and thickness of thin, such as measure its circumference (figure 21);



图 21

2) 在板材上用圆规画出以这两个直径为直径的同心圆，划两个，切出两个圆环（图 22）；
On board with compasses to draw to the two concentric circles, diameter of the diameter of the cross two, cut into two rings (figure 22);

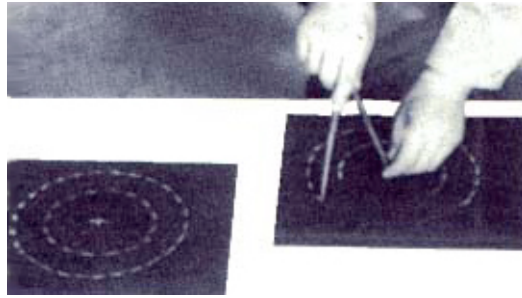


图 22

3) 切开圆环一边，在切开处涂上胶水，待干化后安装于管道上；

4) 切下一块板材，长度为法兰的周长，宽度为两圆环之间安装距离，在接口处涂抹胶水，干化后从两端向中间粘合（图 23）；

Cut circle, coated with glue in cut place, after being dry installed on the pipeline;

Cut a piece of sheet, for the circumference of the flange length, width to install distance between two circle, on interfaces daub glue, drying of bonding (figure 23) from both ends towards the centre;

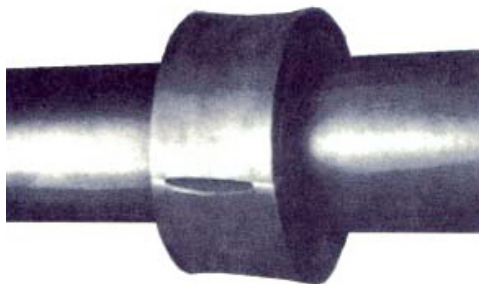


图 24

✓ 活门及闸门结构：

1) 按照法兰安装第 1) 及第 2) 步，切割出两个圆环，套在组件管道上（图 25）；

Valve and gate structures:

According to the flange installation steps 1) and 2), cut into two ring, set on the pipeline components (figure 25);



图 25

量出连接活门前沿组件的管道周长 a ，两组件管道之间距离 b （包括法兰保温环）和活门轴外壳直径 c ，（图26） Measure component at the forefront of connection valve pipe circumference. A, b, distance between the two component pipelines (including flange insulation ring) and the valve shaft shell diameter, c (figure 26)

2)

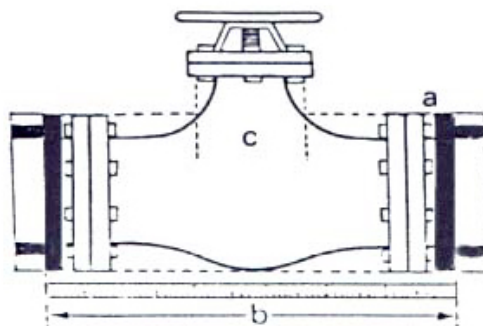


图 26

3) 以 a 为长、 b 为宽，并于板材中点挖出两个直径为 c 的半圆，在板材上切割出来（图 27）； B is for a long, wide, and dug two sheet in the middle c semicircle diameter, cutting out on board (figure 27);

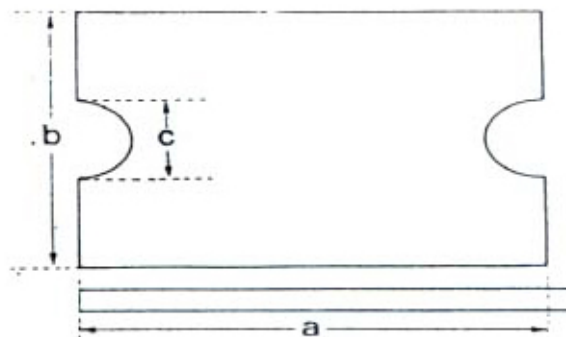


图 27

量出前沿组件的轴长距离 d 和较短距离 e 及周长（图28）； Measure out front component axial distance d and the short distance e and circumference (figure 28);

4)

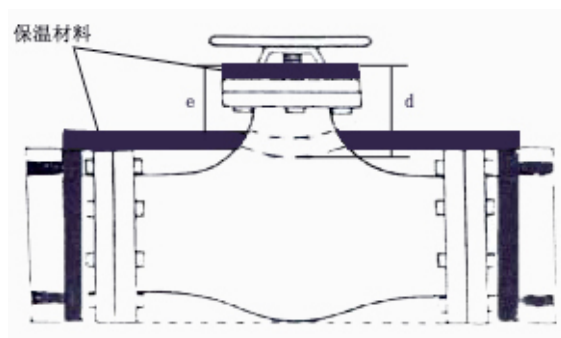


图 28

5) 将上述尺寸移到板材上，四等分阀门盖周长，并按照下图定出五点并以平滑曲线连接 (图29); The size will be moved to the plate, the quartering valve cap circumference, and according to the below set at five o'clock and connection in a smooth curve (figure 29);

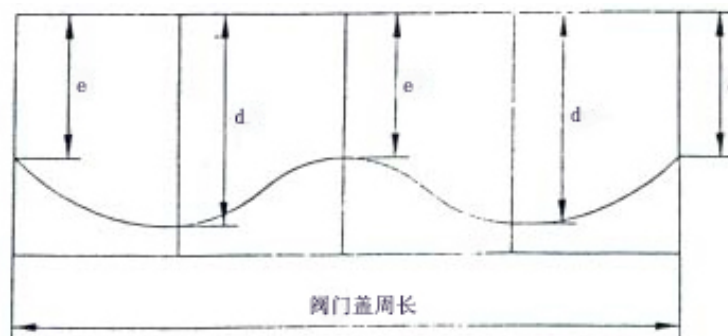


图 29

6) 沿所划曲线切割，取上部作为活门保温材料;

7) 将上述组件安装于活门周围并用粘接剂粘合，完成活门安装 (图 30)。

Upper delimit along the curve cutting, as valve thermal insulation material;

Around the above components installed on the valve and the adhesive glue and complete valve is installed (figure 30).



图 30

✓ 过滤器安装

在过滤器上环一圈板材以支撑将安装上的保温板材;

Filter is installed

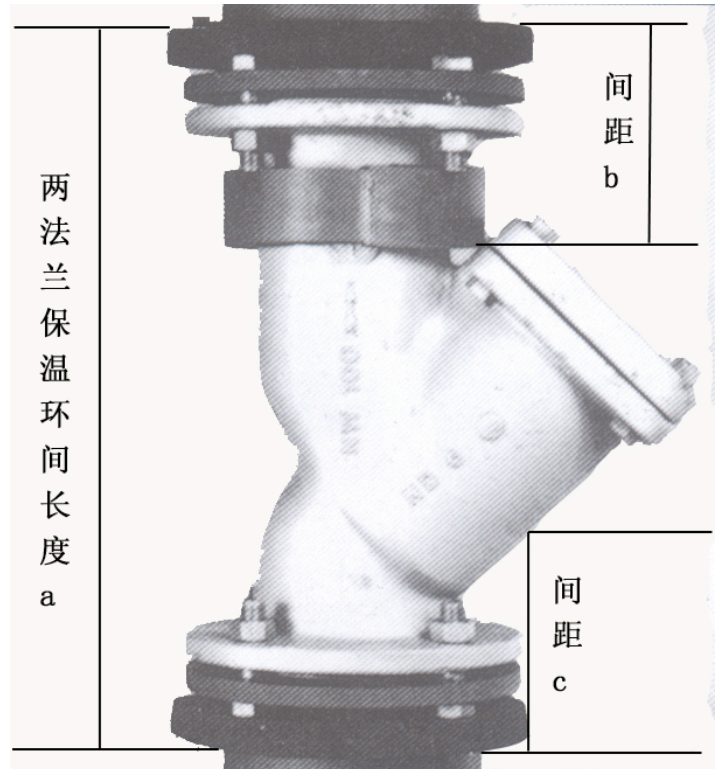
Ring is a circle on the filter plate to support will be installed on the insulation board;

1)

量出法兰保温环间距a、间距b、间距c及法兰环周长d;

Measure the flange insulation ring spacing distance between space between a, b, c and d flange ring circumference;

2)

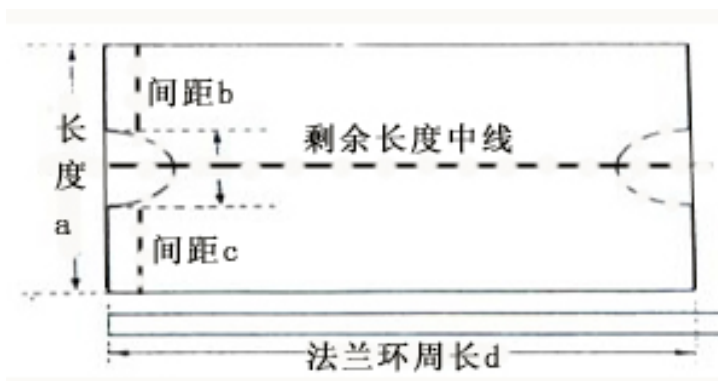


3) 在板材上按量出的 a、b、c、d 尺寸

画出如图形状(图中两个圆弧的圆心

为 a 两端分别减去 b 及 c 后的剩余段中点，1/2 剩余段为半径)，并沿图切割;

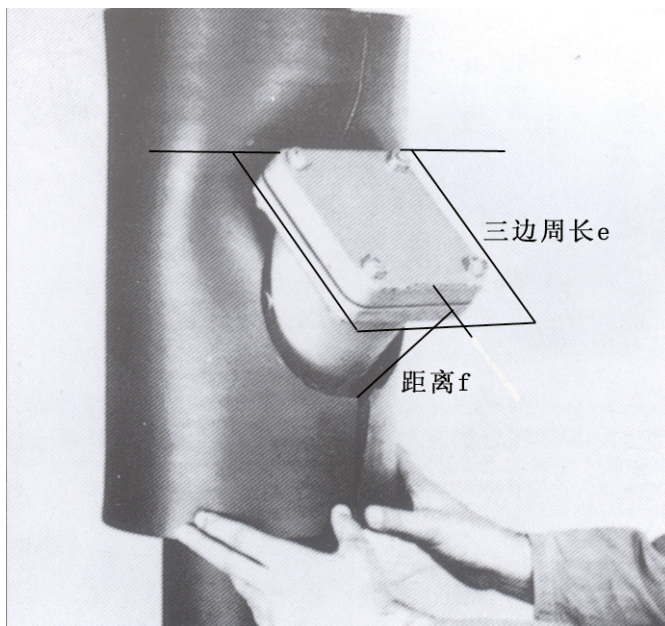
Volume on the plate out of a, b, c, d dimensions draw the shape shown in figure (figure in two on both ends of the arc's center for a minus b and c respectively after the remaining period of midpoint, 1/2 remaining section of the radius), and the figure cut;



将切下的板材安装在过滤体上，并量出过滤盖的外三变长度e及盖口到过滤器安装表面的距离

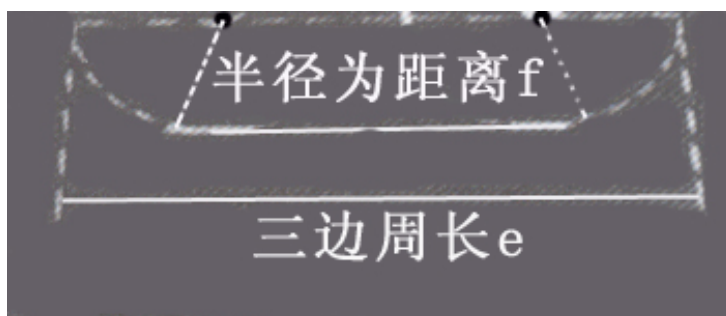
f, 并预留 $\geq 20\text{mm}$ 尺寸; Will cut off the plate installed on the filter body, and the amount of filter cover outside the three changes of length e and cover mouth to distance on the surface of the filter installation f, and obligate or 20 mm size;

4)



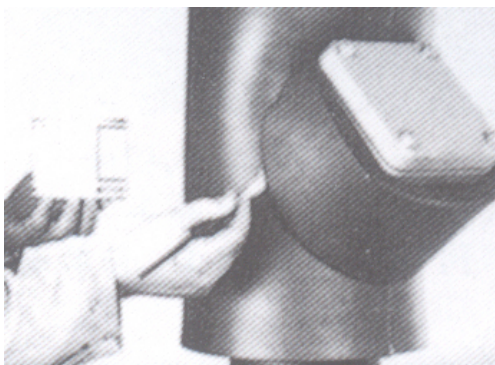
在板材上量出长度e, 并以距离f从e两端向内找出两点, 以这两点为圆心, 距离f为半径作两个半圆, 并作两圆的公切线, 沿此图形切下板材, 并削去与过滤器连接的一边边料; E on board measure length and distance from the inside to find out two on both ends of the e, f, centered on the two distance f for the radius of the semicircle, and two common tangent circle, along the graph cut plate, and cut and blocking connections of one side of the edge material;

5)



6) 将切下来的板材安装在过滤器上, 涂上胶水, 完成安装。

Will cut off the plate installed complete the installation.



on the filter, coated with glue,

✓ 风管的安装

- 1) 去除风管表面污物, 量出表面尺寸并预留 10mm 切下板材, 以使材料粘接时有挤压力;
- 2) 先在材料再在风管待粘接面上分别涂上一层胶水;

The installation of the duct

Remove duct surface contamination, the surface size and the amount set aside 10 mm cut sheet, so that the material of adhesive with extrusion;

The material first, then respectively on the surface of the duct to adhesive coated with a layer of glue;



- 3) 待干化后, 将板材压在风管表面;

After drying, the sheet will be pressed on the surface of the duct;



完成两对边安装后, 测量并
装材料厚度) Complete two

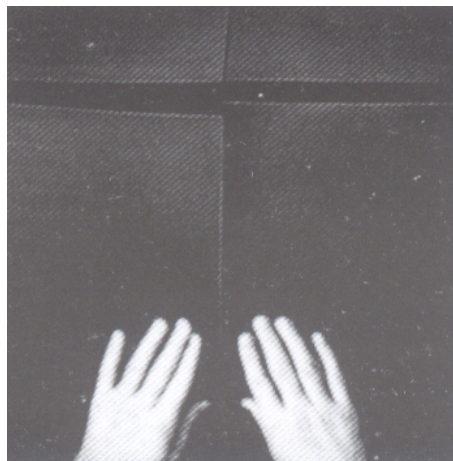
安装剩余两对边 (包括已安
side after installation,

measurement and install the remaining two opposite sides (including installed material thickness)

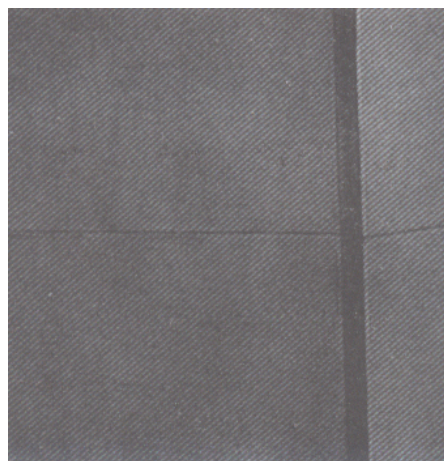
4)

5) 用同样方法安装剩余两面，接缝处以湿粘法粘合；

Used the same method to install the rest of the two sides, the seams with sticky glue;



6) 安装完毕。Installation Finished



✓ 多层保冷安装

- 1) 每层安装方法同单层保冷安装;
- 2) 在安装外层时须先将内表面清洁干净;
- 3) 相邻两层保冷层须错缝安装;
- 4) 当外层使用管材时, 需考虑内层外径与外层内径相符;
- 5) 当外层使用板材时, 其厚度要达到管材厚度。

Multilayer cold installation

Installed on each floor method with single layer for cold;

When installing the outer inner surface cleaning must first be clean;

Adjacent two layers of insulating layer shall be staggered joints installation;

Should be taken into consideration when the outer use pipe inner diameter and outer diameter is consistent;

When outer use plate, to achieve the thickness of pipe thickness.

