

比例式夾管閥 Proportional Pinch Valve

PPV Series



產業應用 Applications

- 實驗室分析 Laboratory analysis
- 化學混合/配液 Chemical mixing and dispensing
- 劑量系統 Dosing system
- 臨床或化學分析 Clinical and chemical analysis
- 自動販賣機 Vending machine
- 血液處理/分析 Blood handling and analysis

夾管閥又稱管夾閥，作用是透過夾壓橡膠管來做開啟或關閉流路，也有比例式可階段調控等選擇。夾管閥主體並不會接觸到使用中的介質，可確保經過的液體或氣體不受到污染，且能保持夾管閥的清潔。因此適合作為生物、食品工業、劑量系統、血液處理/分析、實驗室分析、沖洗程序須無菌的生物製等設備。這是針對需要液體或氣體控制且不讓介質受到污染的產業所開發的產品。

比例式夾管閥系由 PM 驅動控制器搭配 PPC 夾管閥所組成的。當輸入信號 0-10V、4-20mA、RS485 三種信號中，選一種輸入至 PM 驅動器，進而控制 PPV 夾管閥中的馬達來移動軸芯，達到夾管的管徑開度由小至大的變化，不管是氣體或液體的控制，流量都可以呈線性度且精準，有助於對客人的設備提升。

本產品皆符合



Pinch valve works in a way to open or to close a fluid path in a flexible tube by squeezing or pinching the tube. With a proportional pinch valve, the shaft that pinches the tube is driven by a stepper motor, thus that the extent of pinching can be adjusted, which indirectly controls the fluid flow rate inside the tube.

The advantage of using a pinch valve is that it has no contact with the fluid, making it an ideal option for biotechnology processing, food industry, dosing system, blood process/analytical, CIP and SIP process, and biopharmaceutical equipment. Our PPV series pinch valve is driven by the PM series driver that accept either analogue (0-10V or 4-20mA) or digital RS485 modbus signal.

規格 Specifications

產品系列 Series	PPV-04/06/08	PPV-93X
硬度 Recommended Tubing Durometer	50-80 Shore A	50-80 Shore A
工作壓力 Media Pressure Maximum	5.2bar	6bar
位置精度 Position Resolution	0.0127 mm/step	0.0523 mm/step
供耗 Power Consumption	1.95W(hold); 4.5-5.2W(full speed)	2.05 W (hold); 4.3-7.0W (full speed)
供應電源 Supply Voltage	24V	24V
接線 Electrical Connection	2 wire DC power 2 wire analog Input Signal	2 wire DC power 2 wire analog Input Signal
最大夾力 Max Pinch Force	Up to 30 kgF	Up to 50 kgF

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PPV Series



型號選擇 Order Number

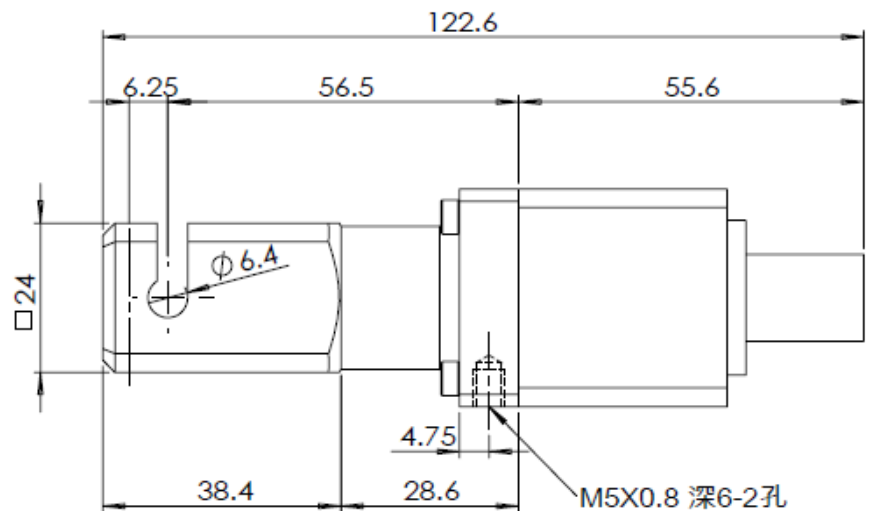
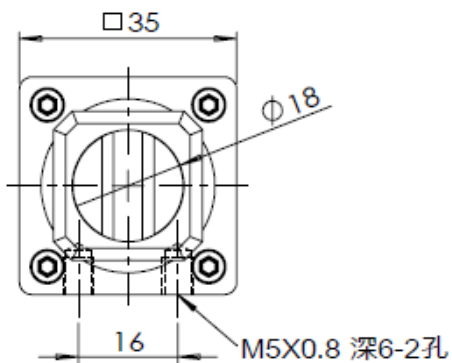
型號 Model	可搭配管外徑 Tube O.D (mm)	反應時間 Response Time (sec) (全開到全關 fully-open to fully-closed)
PPV-930-64-L-PM-□	6.4	0.52
PPV-932-95-L-PM-□	9.5	0.78
PPV-933-127-L-PM-□	12.7	1.04
PPV-933-144-L-PM-□	14.4	1.38
PPV-934-191-L-PM-□	19.1	1.56
PPV-935-254-L-PM-□	25.4	2.08

* □ -類比訊號: A-電流控制(4-20mA), E-電壓控制(0-10V)或 R-RS485 Modbus

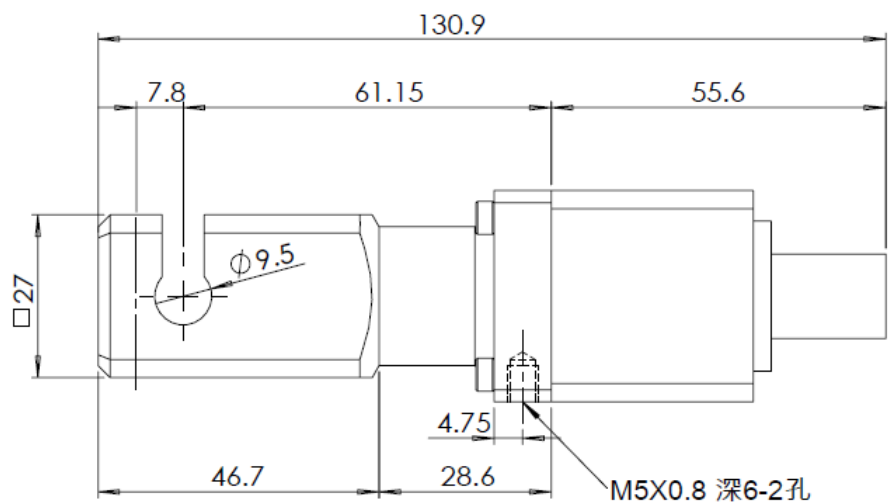
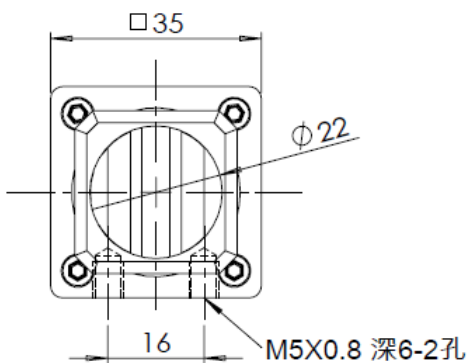
* □ -Signal: A- Current control (4-20mA), E- Voltage control (0-10V) or R-RS485 Modbus

外觀尺寸 Dimensions

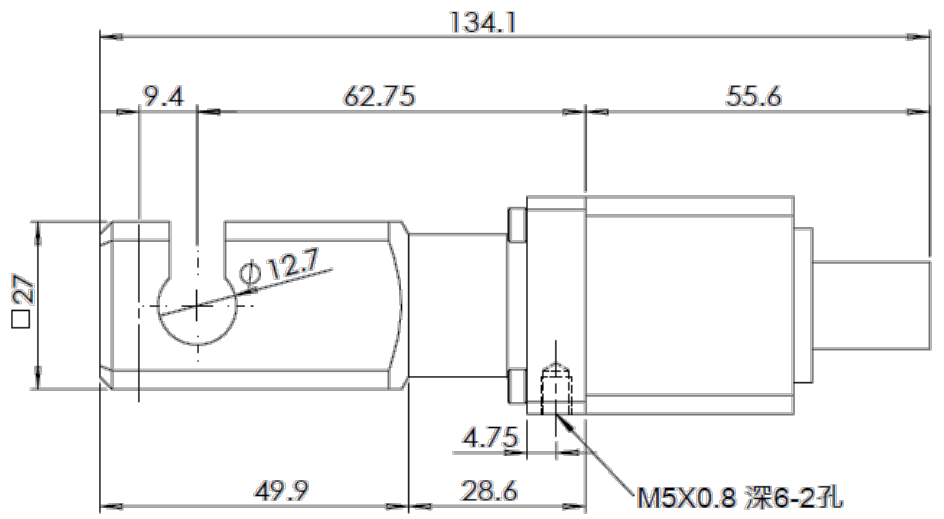
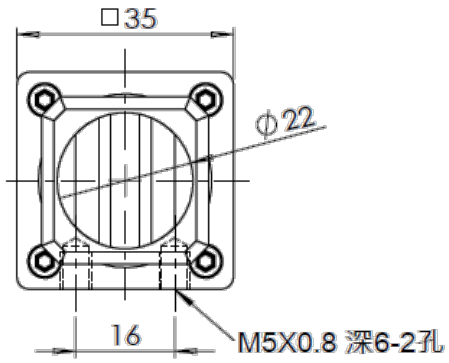
◆ PPV-930-64



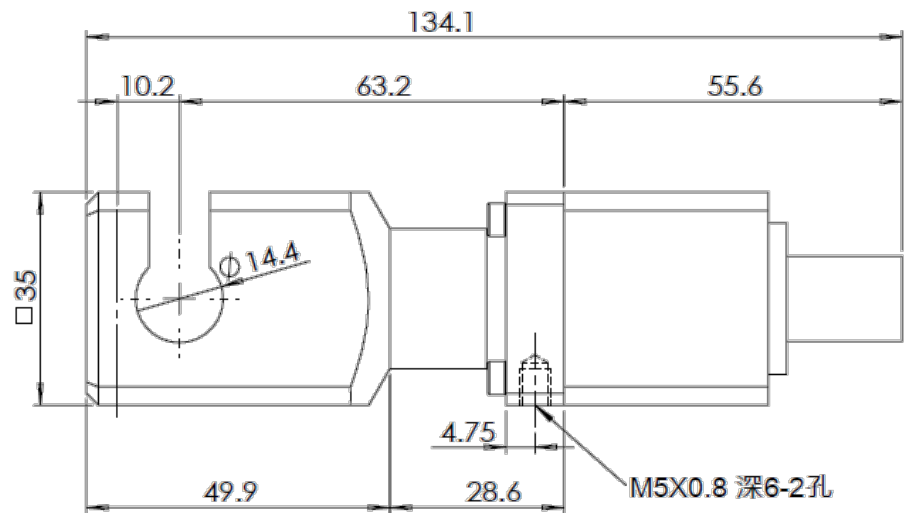
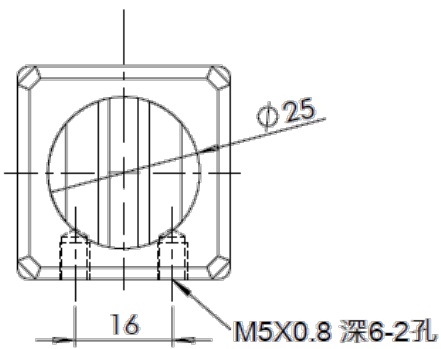
◆ PPV-932-95



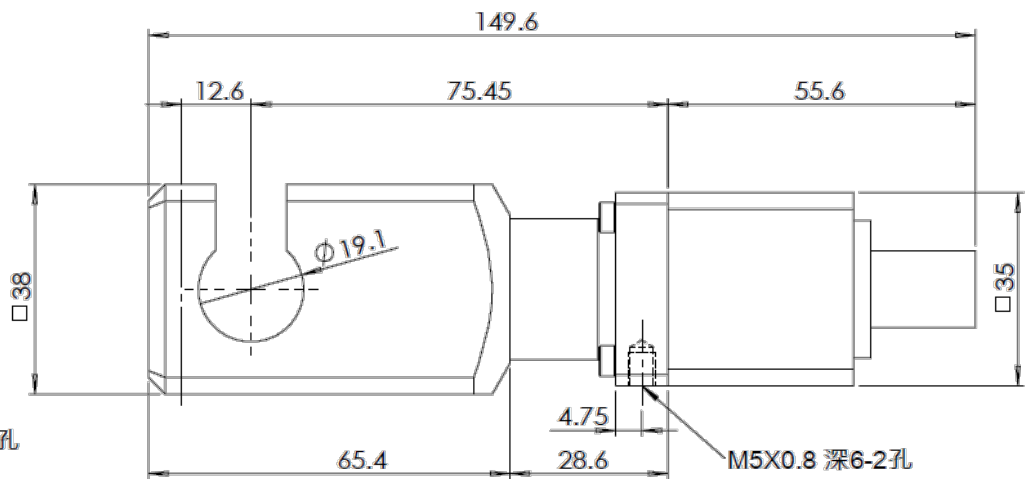
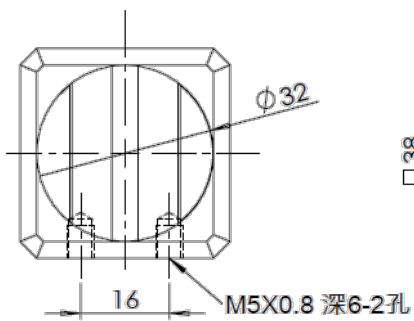
◆ PPV-933-127



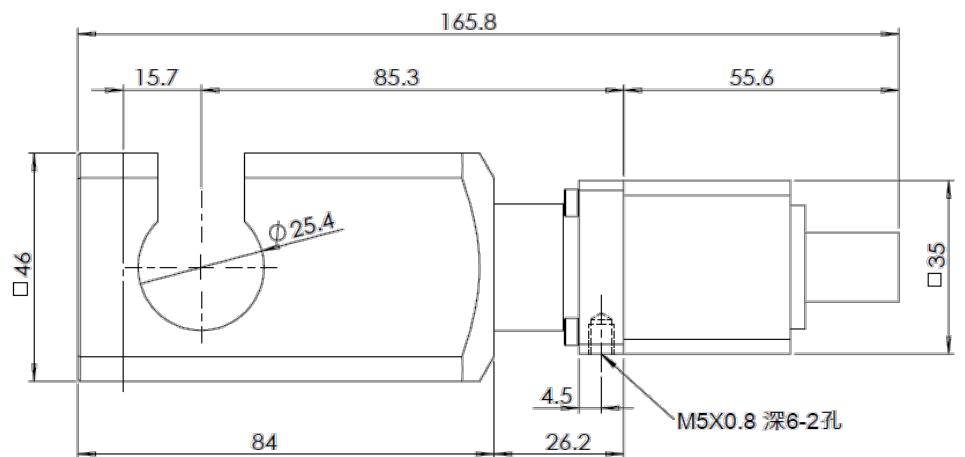
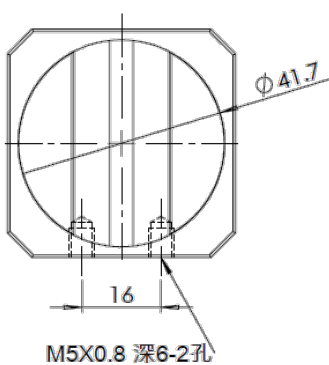
◆ PPV-933-144



◆ PPV-934-191



◆ PPV-935-254



比例式夾管閥 Proportional Pinch Valve

PPV Series



型號選擇 Order Number



PPV-□ - □ - □

管外徑
Tube O.D.

04	4 mm
06	6 mm
08	8 mm

安裝架 Mounting Bracket

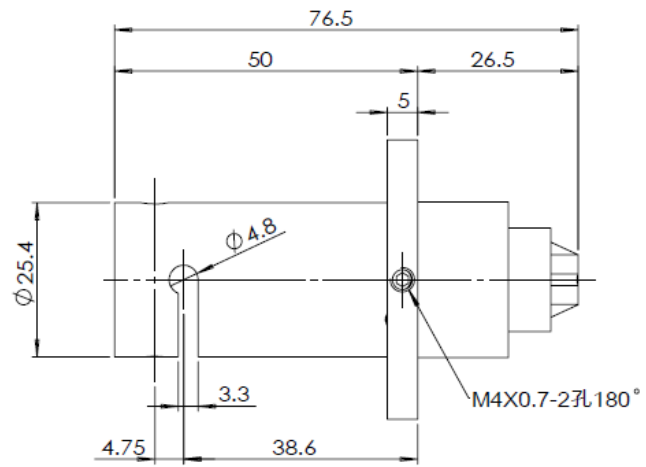
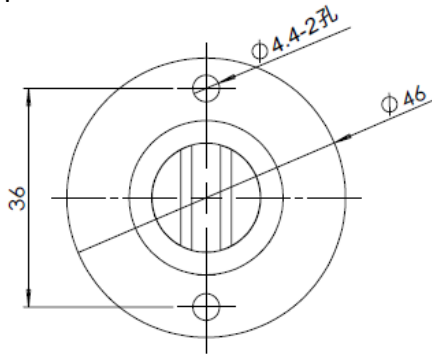
	No Bracket
L	L Type

輸入信號 Input Signal*

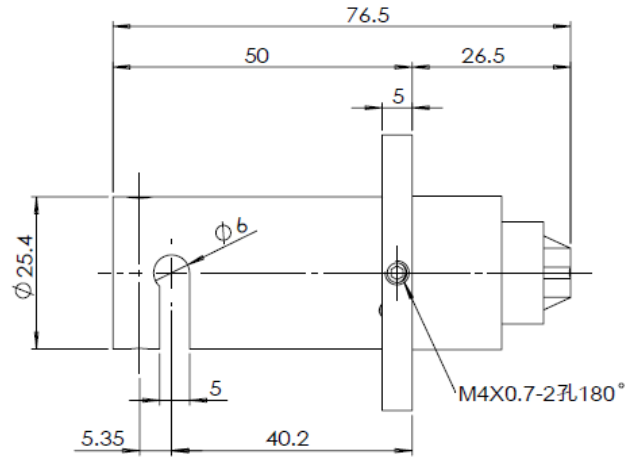
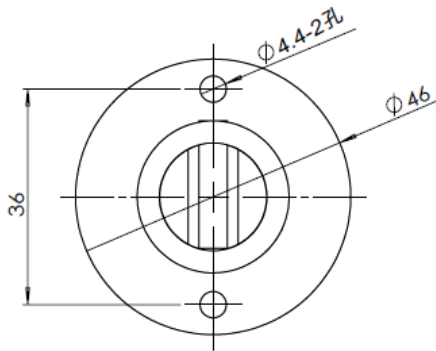
E	0 - 10 V
A	4 - 20 mA
R	RS485 Modbus

外觀尺寸 Dimensions

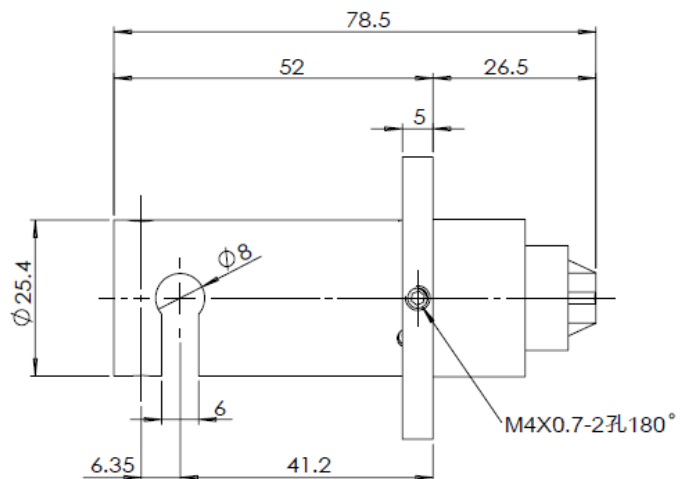
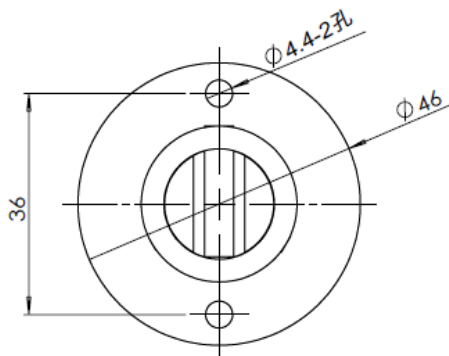
◆ PPV-04



◆ PPV-06

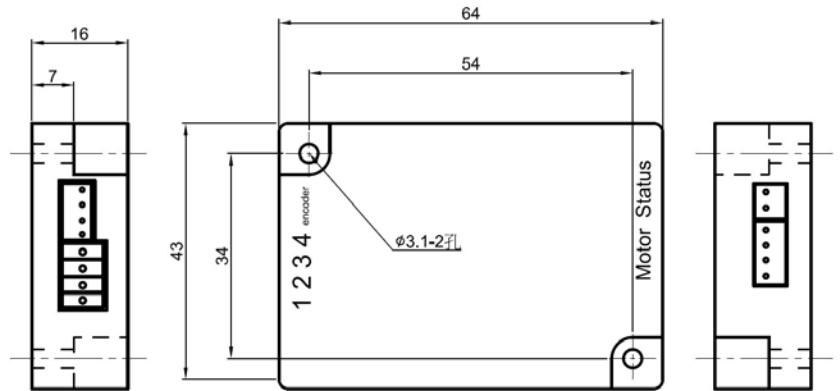


◆ PPV-08



步進比例式控制器 Proportional Valve Controller

PM Series



PM 系列驅動器主要是提供了 PPV 系列夾管閥所需要電源和控制信號(步驟和方向)·並以類比訊號或數位信號(0-10Vdc/4-20mA/RS485 Modbus)轉換為雙極步進馬達之步驟控制。

Series PM provides series FC with the required power and control signal (step and direction). It controls the step of a bipolar stepper motor with an analogue or digital signal (0-10 VDC/4-20mA / RS485 Modbus).

接線方式 Wiring



編號 No.	功能 Function
1	DC24V +
2	DC24V -
3	Signal +/A、RS485 +
4	Signal -/B、RS485-

產品特色 Features

- 體積小 Compact
- 低成本 Low Cost
- 靈敏度高 High Resolution
- 類比/數位訊號 Analog / Digital Signal
- 簡易控制 Easy-Control
- 線性全流量控制

Full scale Linearity Flow Control

規格 Specifications

輸入訊號 Input signal	VDC 0-10V / 4-20mA/ RS485
工作電源 Supply	DC24V (≤12W)
指示燈狀態 Indicator LED Status	on/off 燈亮表示馬達運轉(LED on is motor running) on/off 燈熄表示馬達停止(LED off is motor stopping) on/off 閃爍表示馬達故障(LED flashing is motor error)
編碼器解析度 Encoder Resolution	$1.587 \times 10^{-3} \text{mm}$
馬達狀態輸出 Motor Status output	Sink 50mA
使用溫度範圍 Temp. Range(Operating)	0-60°C
線材長度 Cable Length	一米,如需加長另詢價 1 meter, consult for longer cable

夾管閥 Pinch Valve

All Series



各類夾管閥使用注意事項

1. 請勿在高腐蝕性氣體、化學、海水環境或附著上述物質的場所使用。
2. 請不要附加超過規格範圍以外的正負壓力，如果所加壓高於規範許可值，就會造成流體洩漏、噴出和爆炸。
3. 請定期保養更換管材，防止管材破裂造成意外。
4. 為防止線圈被燒壞，必須按照規格所記載的電氣特性和溫度範圍使用，此外連續通電後線圈表面會出現高溫狀態，請不要用手觸摸。
5. 本產品不宜受日光照射或雨淋場合，請用保護罩等遮蔽保護。
6. 如果自行將產品拆解、再組裝或改造等行為，都將使保固無效。
7. 本產品不能用作緊急關閉裝置。應在系統中安裝安全系統，以防止嚴重傷害或生命損失。

保固

自出廠起 12 個月以內為保固期限，請務必遵守使用注意事項。
因人為因素使用不當造成的產品不良，則本公司對本保修不承擔任何責任。

Precautions for use

1. Do not operate in locations having an atmosphere of corrosive gases, chemicals, sea water, or where there will be contact with the same.
2. Do not apply higher than the allowable operating pressure in the tube, this will result in fluid leakage or tube burst.
3. It is advised to replace the tube from time to time to avoid tube bursting.
4. To avoid damaging the solenoid in solenoid-operated pinch valve, do not apply higher than designated power continuously. The coil may heat up and do not touch the coil with hands.
5. In locations which receive direct sunlight or raining, please provide a protective cover.
6. The product will be out of warranty period should the product be dis-assembled or re-assembled.
7. The product cannot be used as an emergency shut-off. The system should be installed with a safety device to prevent damage to the system.

Warranty

KaoLu Enterprise Co. Ltd. products are warranted to the original purchaser only against defects in material or workmanship for 6 months from the date of manufacture. The extent of KaoLu's liability under this warranty is limited to repair or replacement of the defective unit at KaoLu's option. KaoLu shall have no liability under this warranty where improper installation or filtration occurred.