

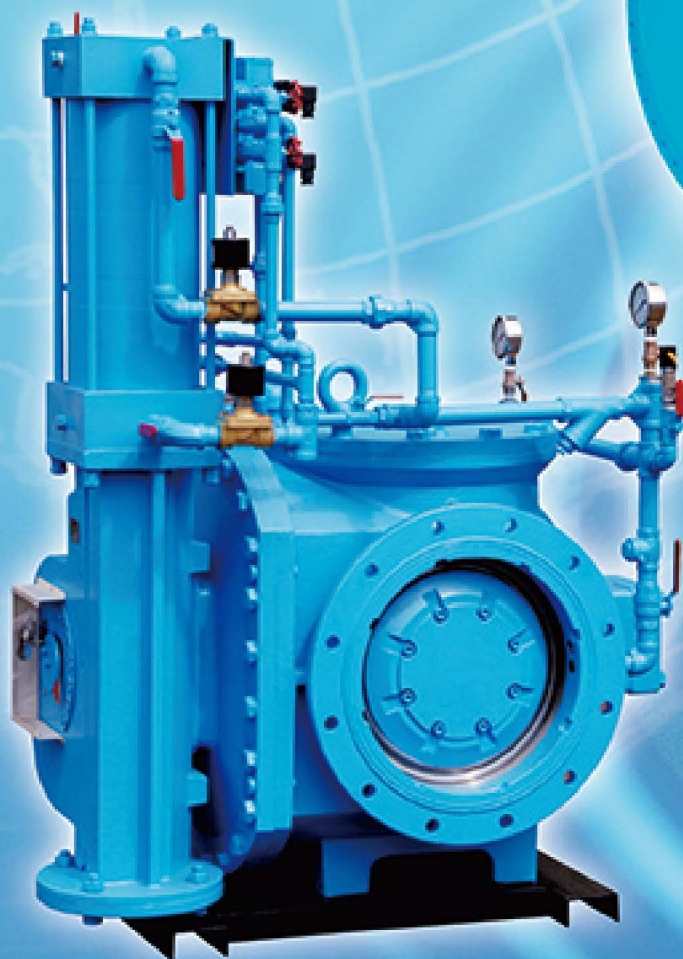
BALL TYPE AUTOMATIC CONTROL VALVES

球塞控制閥



S.K. VALVES

- **GEAR TYPE 渦齒式**
(8"~40")
- **BEAM TYPE 曲柄式**
(8"~104")



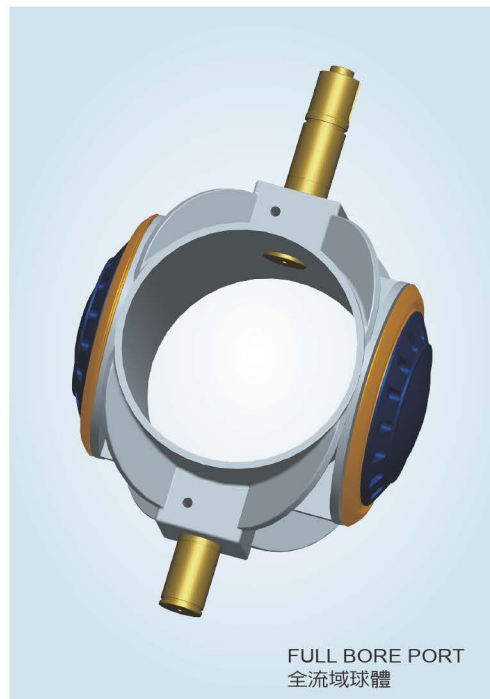
PRODUCT DESCRIPTION 產品概說

Compared with butterfly valves, the BALL TYPE CONTROL VALVE can shut-off the flow more effectively, with the bore wider than that of gate valves, and the BALL TYPE CONTROL VALVE has better drop-tight and longer service life, especially in high pressure environment.

The BALL TYPE CONTROL VALVE can control proportional within the stroke of 60%, and when the valve full opening, the full bore port can be reached zero head loss. Therefore, it is usually used as an important shut-off control valve in connected pipeline, and as pump control valve in the pump station.

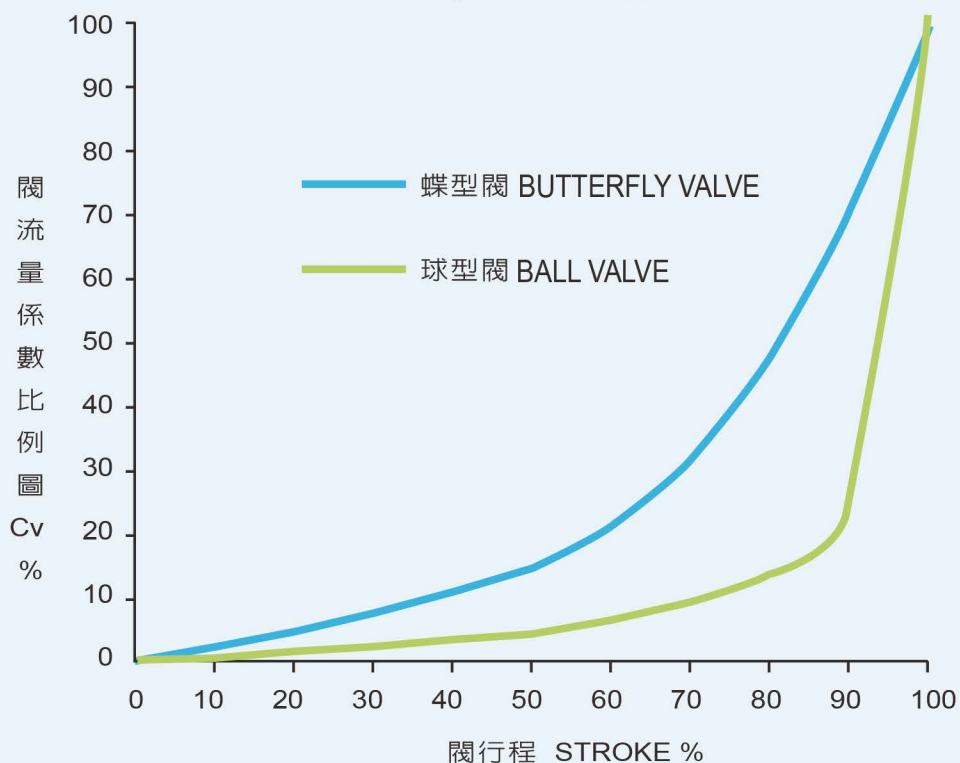
球塞型控制閥比較於蝶閥有更有效的關斷功能，且比閘閥更適合作大口徑使用，球塞型控制閥尤其在高壓環境下，球塞型控制閥止水性更佳且使用壽命更長。

球塞型控制閥在行程60%以內可作等比例控制控制，且當開度到達100%的時候，可以達到全流域流量而無水頭損失，因此在聯通管路中常作為重要的關斷控制閥，在加壓站中亦可作為泵浦控制閥。



閥行程與流量係數比例圖

STROKE & Cv %



THE MODEL OF PRODUCT 產品功能概要

Control valve type 控制閥型式	Control system 控制系統	Main function description 主要功能說明
BVE-A level control valve 液位控制閥	<ul style="list-style-type: none"> ● Actuator(optional) water cylinder, oil cylinder, pneumatic w/oil, motor actuator ● Site control box ● Control system(optional) Leve sensor module Solenoid module PLC ● 操作機(選配) 水壓缸/油壓缸/氣油壓缸/電動操作機 ● 現場控制箱 ● 控制系統(選配) 液位傳訊模組/電磁閥模組/ 可程式控制器 	<p>It is installed on the water inlet of the reservoir to control the reservoir level automatically. When the level is low, the main valve opens to supplement inflow and when the level is high, the main valve closes to stop inflow. The level control method can be designed based on customers' require.</p> <p>裝設於蓄水槽進水管上，可自動控制蓄水槽液位，當液位處於低水位狀態則主閥開啓補充進水，當液位處於高水位狀態則主閥關閉停止進水，液位控制方式可依顧客需要設計。</p>
BVE-P Pump Control Valve 泵浦控制閥	<ul style="list-style-type: none"> ● Actuator (optional) water cylinder 、oil cylinder pneumatic w/oil 、motor actuator ● Site control box ● Control system (optional) Pressure sensor module Solenoid module PLC ● 操作機(選配) 水壓缸/油壓缸/氣油壓缸/電動操作機 ● 現場控制箱 ● 程序控制器(選配) 壓力傳訊模組 電磁閥模組 可程式控制器 	<p>It is installed on the pump outlet, with the functions of shut-off valve and slowly-closed to preven back flow. When the pump starts, the main valve opens slowly, avoiding the pressure surge at the instant of starting the pump. When the pump needs to stop, the main valve can close for 85% - 90% in advance, and then stop the pump operation, avoiding any damage due to water hammer and back flow in the pipeline. In case of power failure, the main valve can also close for about 80% rapidly, and the rest of stroke can be closed slowly.If necessary, the smarter control can be achieved based on customers' needs.</p> <p>裝設於泵浦出口端兼具關斷及緩閉阻斷逆流的功能，當泵浦啓動時主閥緩速開啓，避免泵浦啓動瞬間所造成的突壓，當泵浦欲停機時主閥可先行關閉85%-90%，再停止泵浦運轉，可避免水錘造成的任何損壞及防止管線中的水逆流。若遇電力中斷時主閥亦可迅速關閉約80%，其餘行程再緩速關閉。必要時亦可配合客戶需要作更smart的控制。</p>
BVH Process Control Valve 關斷型程式控制閥	<ul style="list-style-type: none"> ● Actuator(optional) water cylinder, oil cylinder, pneumatic w/oil, motor actuator ● Site control box ● Seneor(optional) Flow meter Pressure seneor Manual model ● 操作機(選配) 水壓缸/油壓缸/氣油壓缸/電動操作機 ● 現場控制箱 ● 感測器： 流量計/壓力傳訊器/ 機械式手動操作模組 	<p>It is installed on the water distribution pipeline, and can perform process control in coordination with the feedback signal of various types of pressure or flow.</p> <p>裝設於送配水管線上，可配合各種壓力或流量之回饋訊號作程序控制。</p>

DESIGN FEATURE 設計特點

- The BALL TYPE CONTROL VALVE is one of 90° turning valves. When the valve is fully open, the ball bore port is consistent with the pipeline bore achieving zero head loss, same as that of the straight pipe with the same bore.

球塞型控制閥為一種90°啟閉的閥，當閥門全開時球體開口與管線口徑一致，幾乎達到“0”水頭損失與同口徑直管相同。

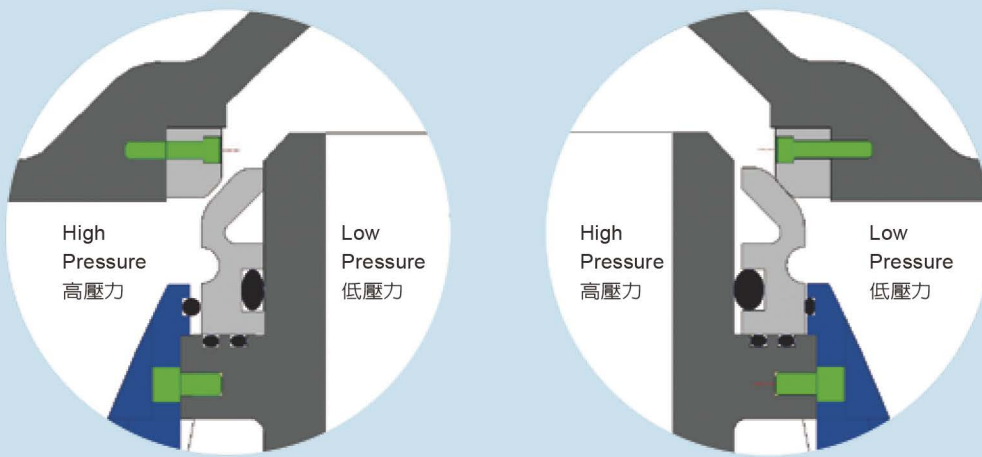
- The design of the valve can be divided into single valve seat type and double valve seat type base on customers, requirements. The drop-tight design of the single valve seat type is directionally, the double seat type is unidirectionally (two-way drop-tight design).

依客戶需求可分為單閥座型及雙閥座型二種。單閥座型的止漏設計具有方向性；雙閥座型的止漏設計沒有方向性。

- The ball seats adopt metal to metal and floating sphericity designs, which can reduce the torque of operation while opening / closing and self-correcting seat position .

球體閥座採用金屬-金屬、浮動球面設計，能夠有效降低開啓及關閉時的操作扭矩及自動修正入座位置。

Floating sphericity seat design 浮動球座設計



- The large size BALL TYPE CONTROL VALVE adopts triple eccentric design, which makes the ball's seat separated from the body's seat as soon as it opens, reducing the friction stroke between the ball seat and valve seat, and extending the valve seat's service life.

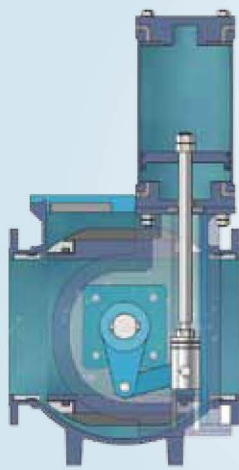
大口徑球塞型控制閥更採用三偏心設計，當球體開啓時球體閥座能快速脫離本體閥座，減少閥座-閥座間的摩擦，除能有效降低開啓及關閉扭力，更能延長使用壽命。

- There are two types of driver can be chose ,BEAM TYPE and WORM GEAR TYPE. The BEAM TYPE driver can transfer rotative motion into rectilinear motion, and which can self-decelerating during initial 15% opening / closing stroke, real time which can output the greater torque, therefore BEAM TYPE driver can be used on large size of BALL TYPE CONTROL VALVE.

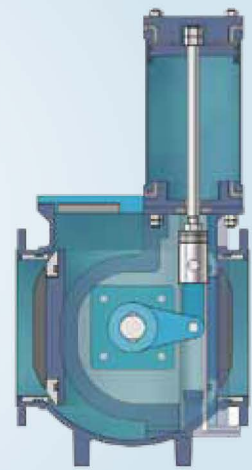
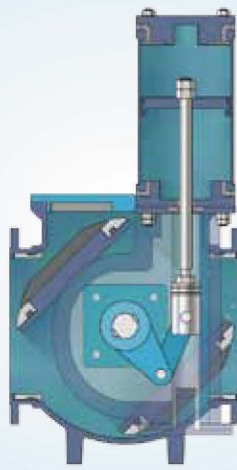
球塞型控制閥之驅動機構有曲柄式驅動箱及渦齒輪減速箱二種可選用。

曲柄式驅動箱是一種將旋轉運動轉變為直線運動的連桿機構，可以在開啓或關閉約15%的開度時自動產生緩衝效果。此特性於泵浦控制閥時有極佳的適用性，當抽水機啟動時，此15%行程的緩慢開啓，可消除抽水機啟動瞬間電流增大的情形；而當抽水機停機時，此15%的緩慢關閉，可有效減少水錘產生，保護抽水機及管線的安全。另外其在閥開及關瞬間的高扭力輸出的特性適合搭配大口徑球塞型控制閥。

BEAM TYPE DRIVE MOVEMENT 曲柄式驅動機構作動原理



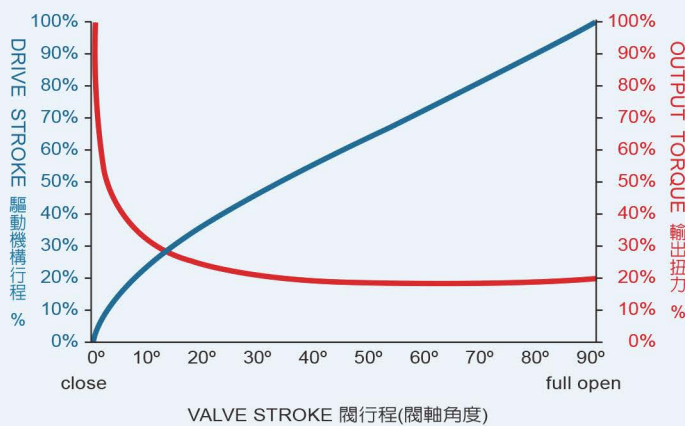
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關閉 CLOSE

BEAM TYPE DRIVE STROKE & TORQUE CURVE

曲柄式驅動機構-行程&扭力曲線圖



曲柄式 BEAM TYPE

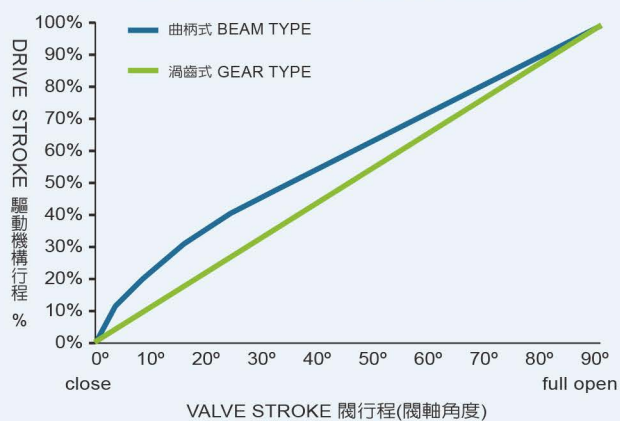


- The WORM GEAR TYPE driver can be used on BALL TYPE CONTROL VALVE, which is smaller than the size of DN1000.

渦齒輪減速箱較適合DN1000(40")口徑以下之球塞型控制閥。

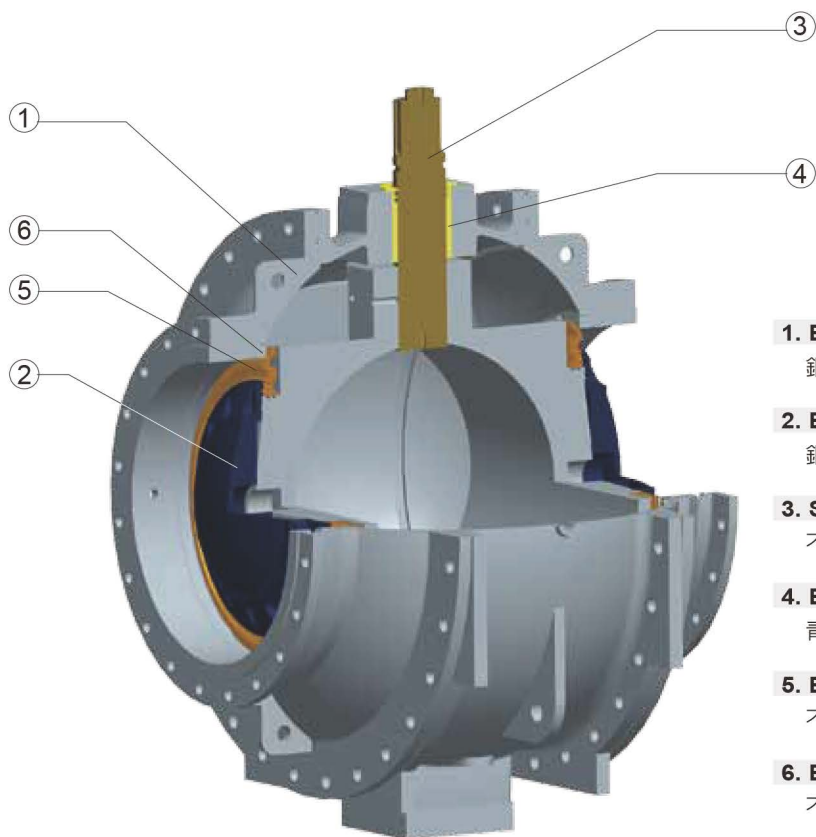
BEAM & GEAR TYPE DRIVE STROKE CURVE

曲柄式&渦齒式 驅動機構行程曲線圖



渦齒式 GEAR TYPE





1. BODY 閥體

鋼製SS41 / 球狀石墨鑄鐵 Ductil casting Iron

2. BALL 球體

鋼製SS41 / 球狀石墨鑄鐵 Ductil casting Iron

3. SHAFT 閥軸

不鏽鋼SUS304 / 410 / 420

4. BEARINGS 軸承

青銅BC6

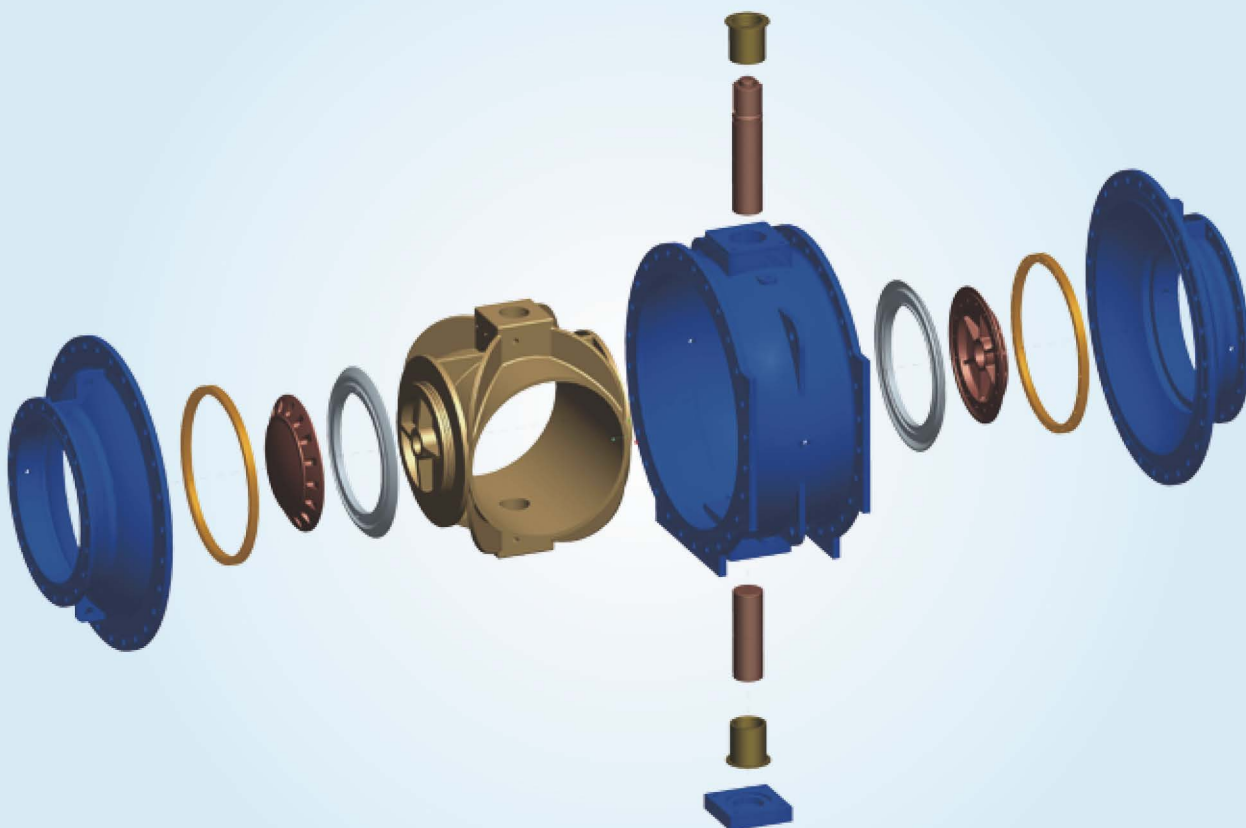
5. BODY SEAT 閥座

不鏽鋼SUS304 / 316 (weld-on monel metal)

6. BALL SEAT 球座

不鏽鋼SUS304 / 316 / 鋁青銅ALBC

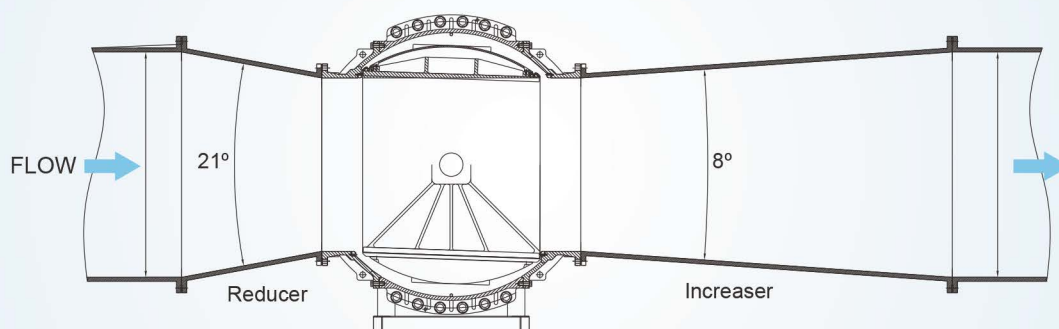
EXPLODED VIEW 分解圖



VENTURI-TYPE WAY 文氏管施工法

The small size BALL TYPE CONTROL VALVE can be used in large size pipe line when it is installed by venturi-type way, such as DN600 BALL TYPE CONTROL VALVE has lower head lose than DN750 butterfly valve, therefore the budget of the project can be reduced effectually.

使用文氏管施工法可在大管線上安裝較小口徑的球塞型控制閥，例如：DN600球塞型控制閥的水頭損失小於DN750的蝶閥，因此可有效降低工程成本



SPECIFICATIONS 規格說明

Pressure Class & Flange 壓力等級&法蘭規格		
Standard 規格	Class 等級	Pressure 工作壓力
ANSI	125	0 - 175 psi
	300	0 - 300 psi
ISO DIN BS	PN10	0 - 10 kgf/cm ²
	PN16	0 - 16 kgf/cm ²
JIS CNS	7.5 K	0 - 10 kgf/cm ²
	10.0 K	0 - 10 kgf/cm ²
	16.0 K	0 - 16 kgf/cm ²

Fluid 適用流體 流體溫度
Clean Water / Raw Water 自來水、原水
Tempature Range 流體溫度
0 - 80 °C / 32 - 176 °F
Testing Pressure 測試壓力
According to ISO 5208(Rate 3)
SEAT閥座: 1.1 x Max.Operating Pressure
BODY閥體: 1.5 x Max.Operating Pressure

OPTIONS 其他配件

- 油壓動力單元
含驅動馬達、油壓泵浦、蓄壓器、油槽、控制箱
- 氣壓動力單元
含空壓機、蓄壓桶、控制箱
- 電動操作機
含驅動馬達、減速機、控制面盤
- **Hydraulic power kit**
Including motor、oil pump、pressure tank、oil tankcontrol box
- **Pneumatic power kit**
Including air compressor、pressure tank、control box
- **Motor actuator**
Including motor actuator、gear box、control panel





SKYE KUANG VALVES MFG CO., LTD.

叶光閥業股份有限公司

EN IN ENTERPRISE CO., LTD

恩盈企業股份有限公司

屏東縣萬巒鄉佳興路83號 郵遞區號:923

No. 83, Chia Hsing Rd., Wanluan, Pingtung 923,
Taiwan R.O.C

Tel: +886-8-7833834 **Fax:** +886-8-7833734

E-mail: international@skvalves.com.tw

Http: [//www.skvalves.com.tw](http://www.skvalves.com.tw)

