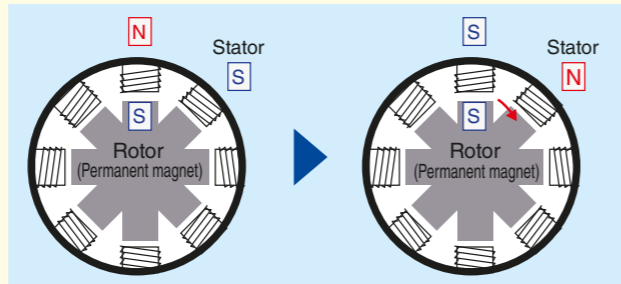


Guidance 1 Stepping Motor

A stepping motor rotates by a constant angle per pulse.

A stepping motor, also called a pulse motor, is a motor that rotates in synchronization with a command pulse signal. The principle of rotation of a simplified 2-phase, 8-pole stepping motor model is shown in the figure below.

A stepping motor consists of a stator with windings and a rotor using a powerful neodymium magnet. Energizing the stator windings to generate a magnetic force is called excitation. By sequentially exciting the multiple stator windings based on the command pulse, the motor rotates stepwise, utilizing the action of attraction and repulsion between the magnetic poles of the stator and rotor. The rotation angle of a stepping motor is always determined by the constant mechanical accuracy (motor structure and machining accuracy) for each command pulse signal. Therefore, a stepping motor performs highly accurate positioning control.



Guidance 2 Open Network

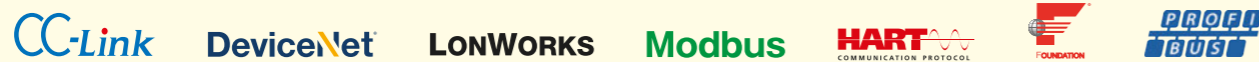
An open network is an industrial network, the specifications of which are made public and can be commonly used by many users and manufacturers.

Open networks are roughly divided into the following two types.

1. Those specified by organizations and associations in consultation and recognized as official standards.
2. Those developed by specific manufacturers and organizations and established as de facto standards as a result of promotion activities.

Both types have well-organized and integrated specifications and are available to everyone for many purposes. Either one can connect different manufacturers' devices (multivendor devices) and brings many benefits to users.

Currently, many types of open networks are expanding their tempo of popularization according to the applicable field and country in the market.



Guidance 3 Model Number for WYECO 8000 Series

Example : 80-25J14

TRIM TYPE		BODY SIZE		END CONNECTION		BODY MATERIAL	
80	CONTOUR	15	1/2"	J1	JIS 10K	3	CF8
81	V-PLUG	20	3/4"	J2	JIS 20K	4	CF8M
82	V-CAGE	25	1"	A1	ANSI 150LB	S	WCB
83	MULTI-HOLE PLUG	40	1-1/2"	A2	ANSI 300LB	F	FC250
84	MULTI-HOLE CAGE	50	2"	A3	ANSI 600LB	6	CF3M
85	TWO STAGE	65	2-1/2"	P1	PN16	H	HastelloyC
		80	3"	P4	PN40	M	Monel
		04	4"	0	Other	0	Other
		05	5"				
		06	6"				
		08	8"				
		10	10"				

(*6)

(*6) Driven with Diaphragm motors.

Contact

WYECO AUTO VALVES CO., LTD. www.wyeco.com.tw/en/

Taipei Office (10482) 4F, NO.98, SEC.3, CHIEN KUO NORTH RD., TAIPEI, TAIWAN
Tel: 886-2-2502-5166 (REP)
Fax: 886-2-2051-2863
E-mail: intl.wy01@wyeco.com.tw

Your local representative:

Actuator Manufacturer

MG Co., Ltd.
Headquarters
International Sales Department
13th floor, Tradepia Yodoyabashi, 2-5-8 Imabashi, Chuo-ku,
Osaka 541-0042 JAPAN
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WYECO AUTO VALVES

ELECTRIC CONTROL VALVE

The electric actuator is made by MG Co., Ltd.

Directly connected to various open networks to save wiring efforts to a great extent!

No time- and money-consuming air source equipment is required!

Open Network Supported

Guidance: Page 8



Electric control valve is ready to operate immediately after connecting signal and power supply!

- Energy saving
- Space saving
- Shorter installation work time

High function and high performance

- High thrust (5000 N)
- High resolution (1/1000)
- A battery-driven model is available as well.

Furthermore,

many more advantages!

Electric control valves are ready to start as

soon as connecting the signal and power cables.

PNEUMATIC

The pneumatic control valve requires complicated equipment and consumes plenty of power.

A compressor entails equipment costs as well as troublesome maintenance work! What is more, it results in high electricity bills!

Pneumatic control valve

Control signal: 4-20 mA DC

Incidental equipment: Pressure reducing valve with filter, Stop valve, Air header, Air Dryer, Compressor, Drain, I/P transducer, Pneumatic positioner.

Replace the existing pneumatic valve with an electric valve.

ELECTRIC

The electric control valve does not require incidental equipment, and consumes less power.

Equipment cost $\downarrow 1/5$ ^{(*)3}
Energy consumption $\downarrow 1/10$ ^{(*)3}

Only standby power^{(*)4} is consumed when the control loop is in a steady state.

Then you can eliminate incidental equipment.

Electric control valve

Control signal: 4-20 mA DC or open network

No incidental equipment

Power source

Then you can eliminate incidental equipment.

^{(*)3} The data surveyed by MG Co., Ltd.
^{(*)4} Maximum power consumption: 240 VA, Standby power: 20 VA. The data is provided on the condition that the PSN1 Electric Actuator is used.

The electric control valve connects to various open networks directly.

A number of electric control valves with open network capability connect in a daisy-chain layout, which saves wiring effort. Various operating information on electric control valves can be collected through a single network.

For open networks, refer to [Guidance 2 on page 8](#).

(*)2 Contact us for details.

PLC

Electric control valve → PLC

- Opening position feedback
- Opening position input error
- Motor lock alarm
- Maintenance information (Motor activation count and integrated operation distance)
- Others

PLC → Electric control valve

- Opening position setting
- Forced opening and closing
- Alarm reset
- Maintenance information and reset
- Others

Electric actuator MSP

The stepping motor is adopted for the drive block.

Digital control unit

Features

- Instant zero/span position setup
- Flexible opening/closing speed settings
- Opening position output
- Lock alarm output

Stepping motor

High thrust 5000 N
High resolution 1/1000

Refer to [Guidance 1 on page 8](#).

The stepping motor has high thrust and a resolution of 1/1000.

Battery for fail-safe operation is optional.

Power outage emergency battery

Customers can choose models provided with a battery as well as functions of emergency actions (i.e., Full Closed, Full Open, Hold Position or Target Value) in times of loss of power.

Electric actuator of MG Co., Ltd.

The photo shows PSN1 Electric Actuator.

The electric control valve is a compact structure and it ensures high performance.



The electric control valve has a very simple structure compared to the pneumatic control valve.

The electric actuator section is small, which makes it possible to narrow the distance between pipes.

Front view

Side view

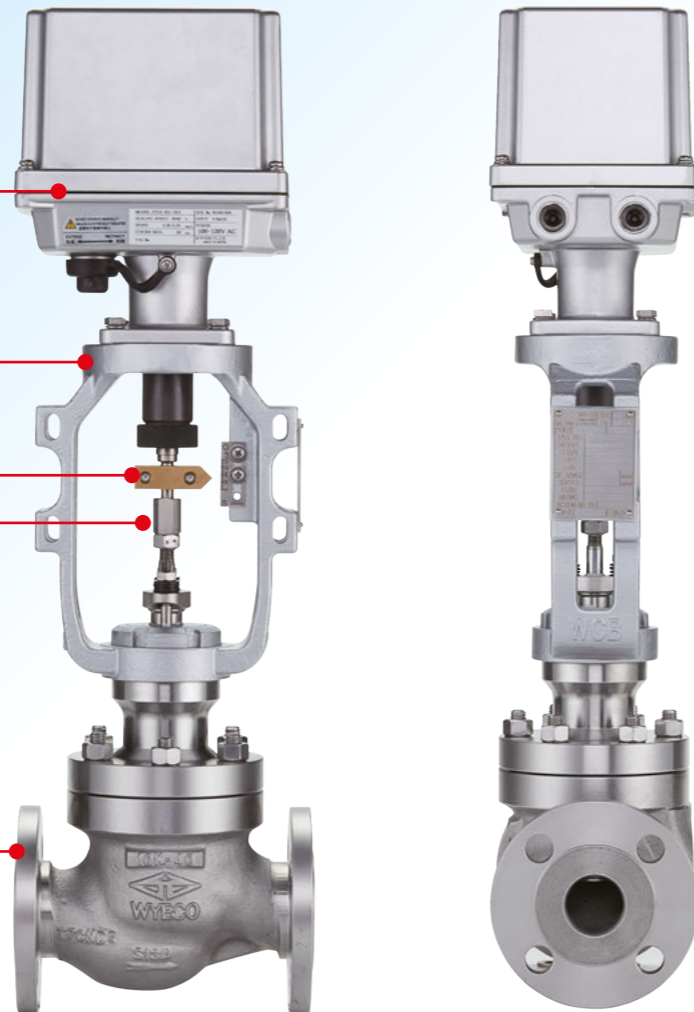
Electric Actuator
PSN Series
(Made by MG Co., Ltd.)

Yoke

Connector/Indicator

Stem

Valve Body
WYECO 8000 Series



After installation, the electric control valve will be operational by just providing power supply and connecting signal input (or connecting a network).



Application Examples of WYECO's Electric Control Valve

Waste Incineration Plants

- Use** Incinerator
- Merit** High-performance/High precision control



Dyeing and Finishing Plant

- Use** Dyeing machine temperature control
- Merit** High-performance/High precision control



Pharmaceutical Industry

- Use** Sterilizer/Other apparatus
- Merit** High-performance/Improvement of control performance



Food Industry

- Use** Sterilizer/Other apparatus
- Merit** High-performance/High precision control



Gas Industry

- Use** Air separation unit
- Merit** High-performance/High precision control



Steel Industry

- Use** Oxygen injection control
- Merit** High-performance/High precision control



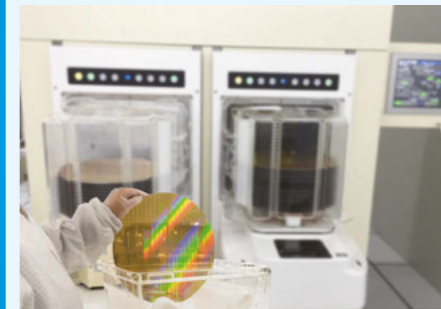
Petrochemical Plant

- Use** Hydrodesulfurization
- Merit** High-performance/High precision control



Semiconductor Factories

- Use** Flow-rate control of photoresist solution/Other apparatus
- Merit** High-performance/High precision control



Water Purification Plants

- Use** Treated water line/Ozone injection/Other apparatus
- Merit** High-performance/High precision control



Power Plant

- Use** Boiler unit/Feed water system/Other apparatus
- Merit** High-performance/High precision control



Engineering Industry

- Use** Organic solvent production line
- Merit** High-performance/High precision control



Pulp and Paper Mills

- Use** Boiler unit/Dryer/Drainage process/Cardboard making machine/Other apparatus
- Merit** High-performance/Improvement of control performance



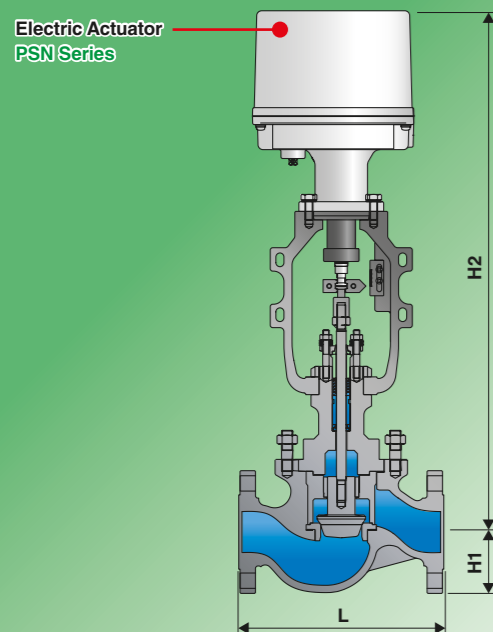
The accurate and stable control with WYECO's Electric Control Valves ensures the reliable and profitable operation of your plant.

8000 Series Globe Control Valves

Please see [Guidance 3 on page 8](#) for the Model No. & Specifications.

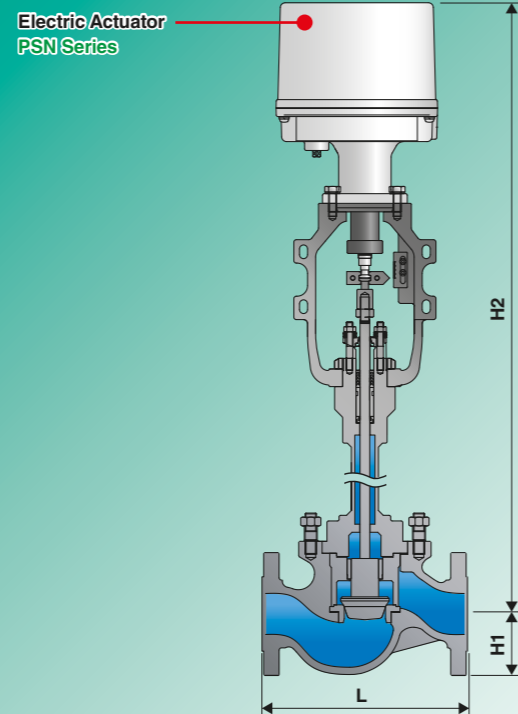
Standard Type

High-performance control valve.
Quick release for convenient maintenance.
The trim part has the automatic correct function.



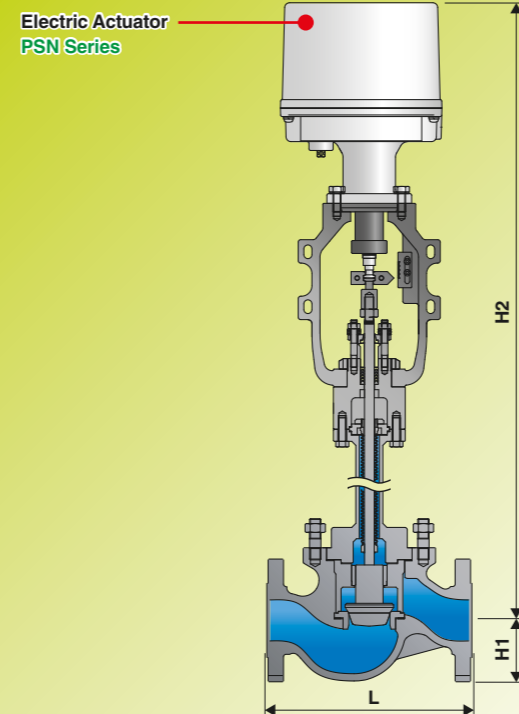
Extension Type

For cryogenic fluid, e.g. Liquid Nitrogen (LN2).



Bellows Type

For toxic fluid, precious fluid, non-leakable fluid and high temperature.



Valve Size	L		ANSI H1		JIS H1		H2	
	CL150	CL300	CL150	CL300	10K	20K	CL150	CL300
15A	130	130	45	48	48	48	595	595
20A	150	150	49	59	50	50	595	595
25A	160	160	54	62	63	63	595	595
40A	200	200	64	78	70	70	603	603
50A	230	230	76	83	78	78	646	646
65A	290	290	89	95	88	88	692	692
80A	310	310	95	105	93	100	877	877
100A	350	350	115	127	105	113	907	907

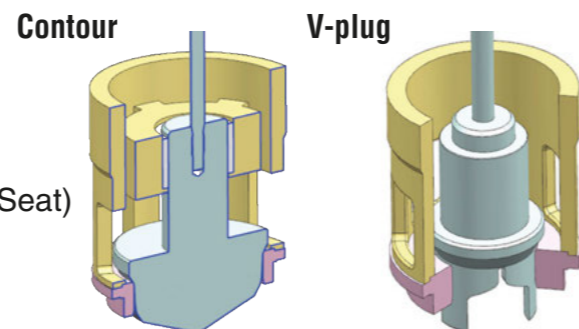
Valve Size	L		ANSI H1		JIS H1		H2	
	CL150	CL300	CL150	CL300	10K	20K	CL150	CL300
15A	130	130	45	48	48	48	756	756
20A	150	150	49	59	50	50	766	766
25A	160	160	54	62	63	63	776	776
40A	200	200	64	78	70	70	782	782
50A	230	230	76	83	78	78	795	795
65A	290	290	89	95	88	88	907	907
80A	310	310	95	105	93	100	1037	1037
100A	350	350	115	127	105	113	1076	1076

Valve Size	L		ANSI H1		JIS H1		H2	
	CL150	CL300	CL150	CL300	10K	20K	CL150	CL300
15A	130	130	45	48	48	48	769	769
20A	150	150	49	59	50	50	769	769
25A	160	160	54	62	63	63	769	769
40A	200	200	64	78	70	70	776	776
50A	230	230	76	83	78	78	802	802
65A	290	290	89	95	88	88	958	958
80A	310	310	95	105	93	100	1138	1138
100A	350	350	115	127	105	113	1146	1146

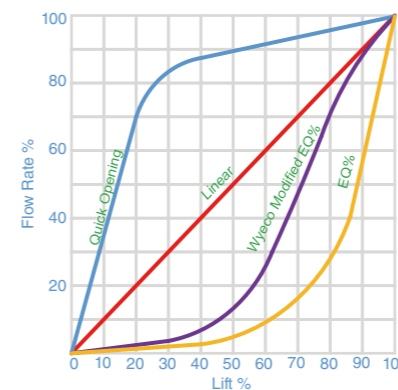
Design Features

- Plug design: Contour Plug, V-plug ^(*)
- Balanced / Unbalanced Plug
- Quick-Change
- Reduced Capacity
- Leakage Class: Leakage IV, V (Metal Seat) and VI (Soft Seat)
- Low Emission Packing
- Bonnet Type: Standard / Extension / Bellows Seal

^(*) Please contact us for other types of plug.



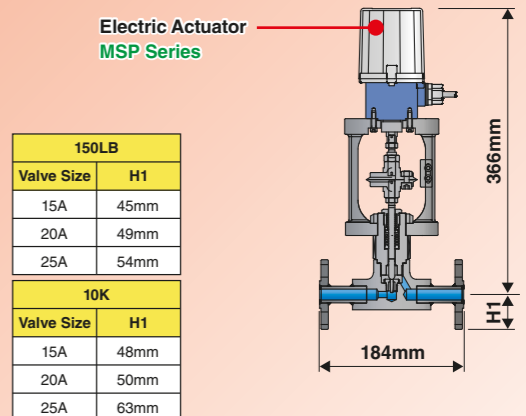
Flow Rate Curve



Micro Flow Control Valve

Extremely micro flow capacity
Globe style control valve

Providing excellent system regulation.
For laboratory or trial production applications requiring high accuracy control of extremely micro flow.



150LB	
Valve Size	H1
15A	45mm
20A	49mm
25A	54mm

10K	
Valve Size	H1
15A	48mm
20A	50mm
25A	63mm

Specifications

- **Body type**
Globe style
- **Rating**
Flange end ANSI 150-600
Thread end ANSI2500
- **End connection**
Flange RF, RTJ, NPT end
Internal thread 1/4NPT, 1/2NPT, 3/4NPT
Butt Weld, Socket Weld
- **Material**
Body/Bonnet
Standard 316ss
Trim
Standard 316ss
Gland Packing
Standard PTFE V-ring
Optional Graphite
Gasket
Standard Gylon
Optional 316ss graphite
- **Electric Actuator**
MSP Series
(Made by MG Co., Ltd.)
- **Bonnet type**
Standard Plane bonnet
- **Leakage**
Standard Class IV
Optional Class V
- **Trim type**
Micro Contour plug
- **Plug**
Equal percentage
Linear

Flow Coefficient Cv

Rated Cv NA	Orifice Dia. (mm)	Rangeability		Stroke (mm)
		Linear	Equal %	
0.3	4	25 : 1	50 : 1	16
0.2	4	25 : 1	50 : 1	16
0.1	4	25 : 1	40 : 1	16