

Global-Series

New Product

Valves for Hydrogen Refueling Station



Shut-off Valves



Shut-off Valves
for pre-cool line

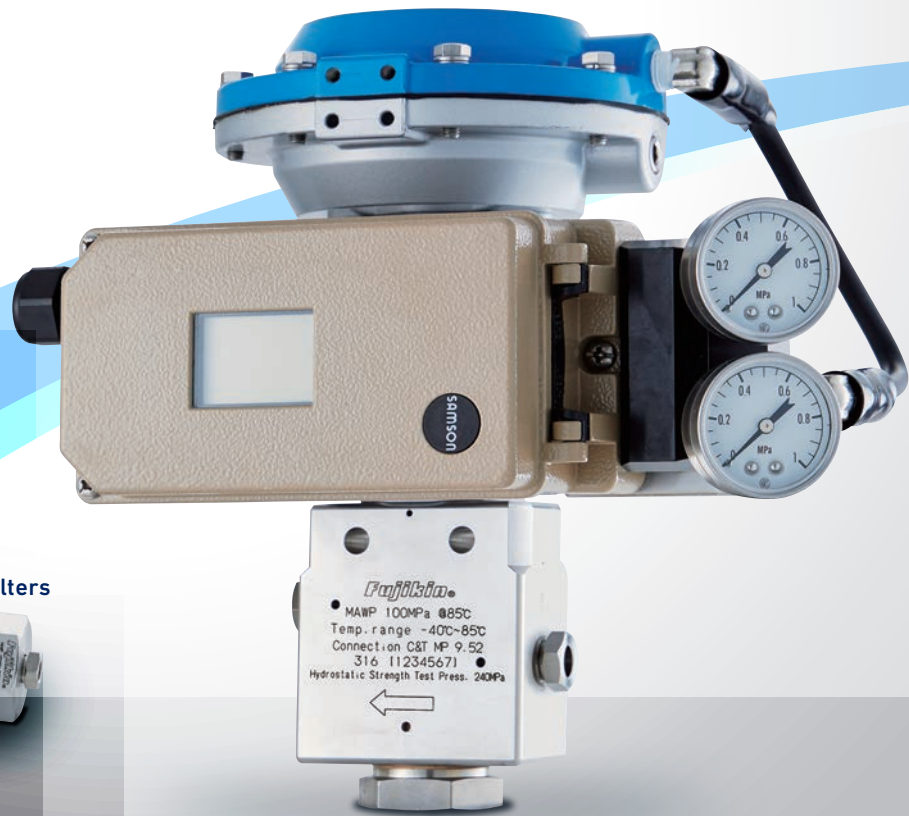


Manual Valves



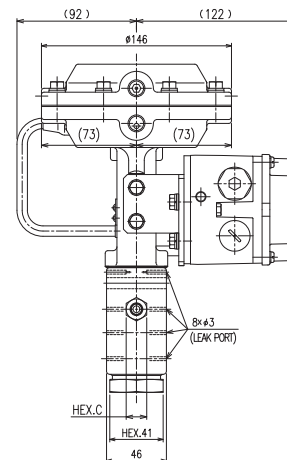
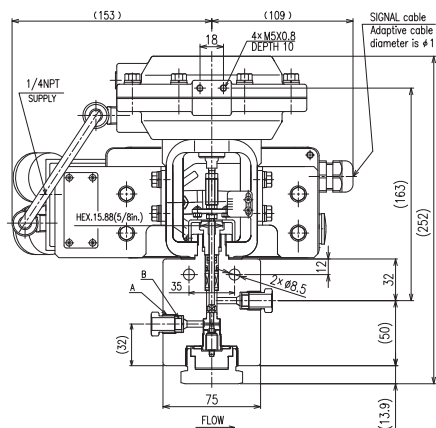
Check Valves

Filters



Flow Control Valves

Flow Control Valves



Features

1. Flow coefficient (Cv value) can be selected by replaced stem and seat.
2. Smart positioner with communications function can be available.
3. CE (Ex) II 2G Exc IIC T6

Specifications

Design Pressure	100 MPa
Fluid temperature range	-40 to +85°C
Ambient temperature range	-40 to +60°C
Body materials	ASTM A479 316/316L (Dual spec.)

Note: When using in a pre-cool line, please contact **Fujikin** when ordering.

Dimensions, Ordering No.

Nominal size	GLAND Thread (valves body side)	Collar Thread (tube side)	HEX.C	Cv value	Weight	ITEM No.
	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.15	6kg	E32GM3R4-7100-4M- *1
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.25	6kg	E32GM3R4-7100-6M- *1

*Coned-and-threaded connection MP type *For other nominal sizes, please contact us. *1 Cv value Number

Positioner

E32	Exia IIC T6(Intrinsic safty explosion-proof)
E53	Exd IIC T6(Flameproof enclosure explosion-proof) HART®communications

*Please contact us when ordering for required explosion-proof standards. (ATEX, CSA, KOSHA...etc.)

Cv Value

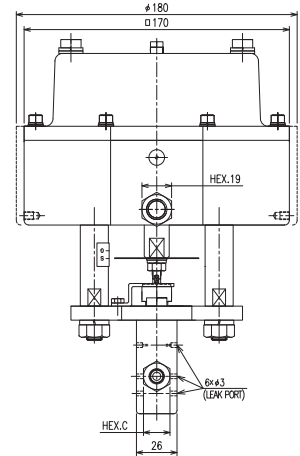
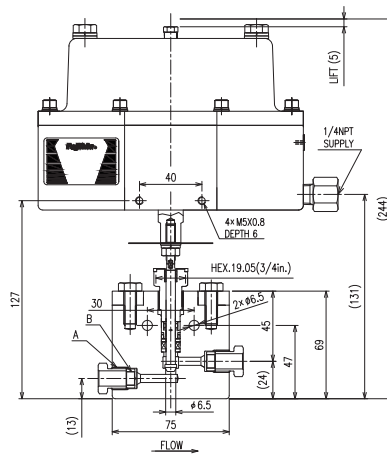
Cv Value number	Value Nature Range Ability Cv Value	EQ%, Linear									
		R2 20:1	R3 30:1	R4 40:1	R5 50:1	R6 60:1	R7 70:1	R8 80:1	R9 90:1	R10 100:1	
09	0.25										
10	0.15										
11	0.1										
12	0.07										
13	0.05										
14	0.035										
15	0.025										
16	0.015										
17	0.01										

It is possible a combination of inner painted in blue.



1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.

Shut-off Valves



Features 1. CE II 2G Exc IIC T6

Specifications

Design Pressure	100 MPa
Fluid temperature range	-40 to +85°C
Ambient temperature range	-40 to +60°C
Body materials	ASTM A479 316/316L (Dual spec.)

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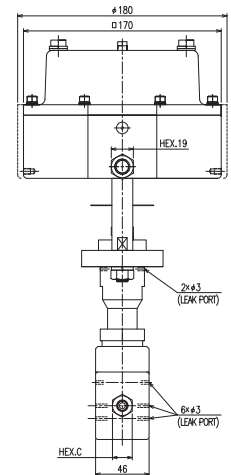
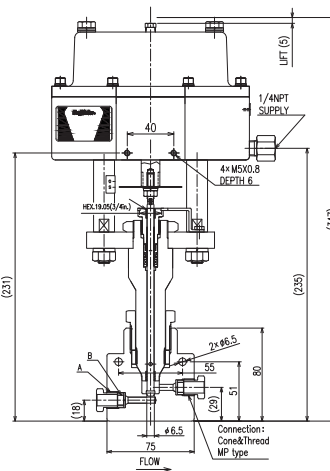
Dimensions, Ordering No.

Nominal size	GLAND Thread (valves body side)		Collar Thread (tube side)		HEX.C	Cv value	Weight	ITEM No.
	A	B	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.25	7kg	APR-GUH-7100-4M		
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.7	7kg	APR-GUH-7100-6M		

*Coned-and-threaded connection MP type

*For other nominal sizes, please contact us.

Shut-off Valves for Pre-cool line



Features 1. Improved durability against heat cycles on the pre-cool line.
2. CE II 2G Exc IIC T6

Specifications

Design Pressure	100 MPa
Fluid temperature range	-40 to +85°C
Ambient temperature range	-40 to +60°C
Body materials	ASTM A479 316/316L (Dual spec.)

Dimensions, Ordering No.

Nominal size	GLAND Thread (valves body side)		Collar Thread (tube side)		HEX.C	Cv value	Weight	ITEM No.
	A	B	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.25	8.5kg	APR-GUH-7100M-4M		
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.7	8.5kg	APR-GUH-7100M-6M		

*Coned-and-threaded connection MP type

*For other nominal sizes, please contact us.



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Accessories for Automatic Valves

Regulators with Filter



Features

1. Regulating required air supply pressure for Flow Control Valves.

Makers	SSS Co., Ltd.	
Model No.	XR-108	
Specifications	Air Connecting Port	Rc1/4 (Pressure gauge: Rc1/8)
	Filter Element	Polyprene bonded material Element: 5 μm
	Max Supply Pressure	0.9 MPa
	Weight	0.26 Kg

Solenoid Valves



Explosion Proof Construction	Item Numbers	Types	Makers	Features
ExdIIC T6	MOOU-8-E22POA-SA	—	KANEKO SANGYO CO., LTD	<ul style="list-style-type: none"> Pressure-resistant & Explosion Proof Type Outdoor Prevention Drop IP67 Changeable by manual operation Various Explosion Proof Standard
Ex e mb IIC	WBLPG551A005MS	Direct Mount Type 3-Way	ASCO JAPAN Co., Ltd	<ul style="list-style-type: none"> Safety & Resin Filling Explosion Proof Type Hydrogen Explosion Proof Type Ex e mb IIC. Outdoor Prevention Drop IP67 Applicable to Manifold Type
	WBLPG551A017MS	Direct Mount Type 4-Way		
	WBLPG551A001MS	NAMUR Type 3,4-Way		
Ex ia IIC T4	CFSCISG551C505MO	Direct Mount Type 3-Way	ASCO JAPAN Co., Ltd	<ul style="list-style-type: none"> Intrinsically Safe Explosion Proof Type Hydrogen Explosion Proof Type Ex ia IIC T4. Outdoor Prevention Drop IP67 Certain operation by spring return Type
	CFSCISG551C517MO	Direct Mount Type 4-Way		
	CFSCISG551C501MO	NAMUR Type 3,4-Way		

*: When ordering, please specify explosion-proof construction and power supply specification.

Proximity Switch, Controller

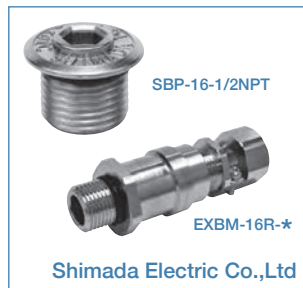
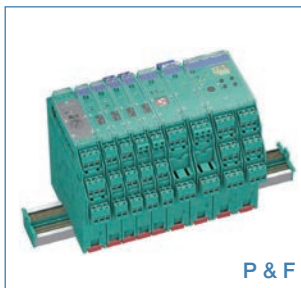


Features

1. Output electrical signals indicating open or close status of valves.
2. Uses a two-wire DC system to allow for long-distance wiring highly resistant to noise.

Item	Model No.	IDEC Corporation	Explosion-proof Construction
Proximity switch	Bi2-G12-Y1		ExiaIIC T6
Controller	IM1-12EX-R		[Exia]IIC

Explosion-Proof accessories For Positioners



*: Please request necessary.

Intrinsically Safe Explosion proof Barrier for E32M3 Series

Makers	Model No.	Explosion-proof Construction
P & F	KCD2-SCD-EX1	Exia IIC

Cable gland for E53M3 (Explosion Proof) Series

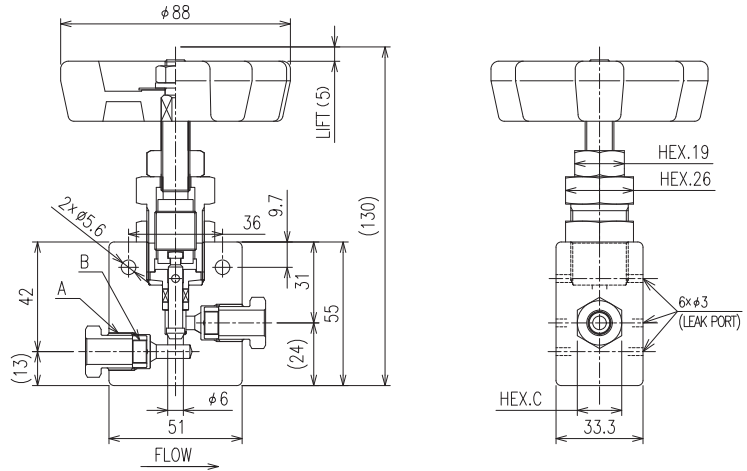
Makers	Model No.	Explosion-proof Construction	Connecting Threads
Shimada Electric Co.,Ltd	EXBM-16R-★	Exd IIC	1/2 NPT

*: Please let us know the outer diameter of the cable to be used.

E53M3 (Explosion Proof) Electrical Wiring Closure Plug

Makers	Model No.	Connecting Threads
Shimada Electric Co.,Ltd	SBP-16-1/2NPT	1/2 NPT

Manual Valves



Specifications

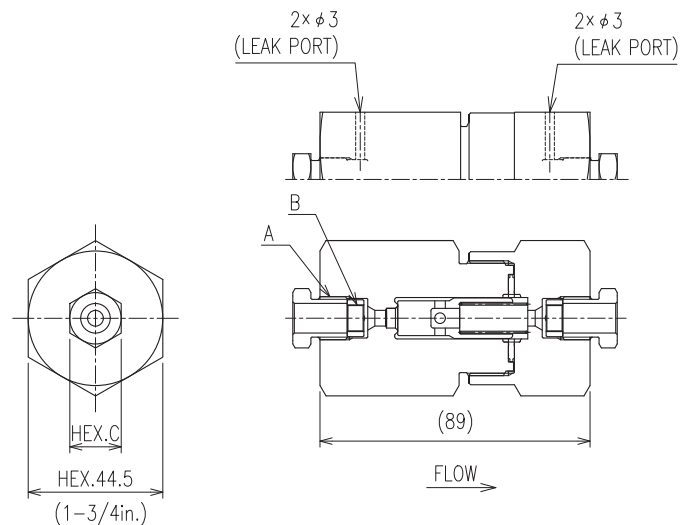
Design Pressure	100 MPa
Fluid temperature range	-40 to +85°C
Body materials	ASTM A479 316/316L (Dual spec.)

Dimensions, Ordering No.

Nominal size	GLAND Thread (valves body side)	Collar Thread (tube side)	HEX.C	Cv value	Weight	ITEM No.
	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.18	1kg	GUH-7100L-4M
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.55	1kg	GUH-7100L-6M

*Coned-and-threaded connection MP type *For other nominal sizes, please contact us.

Check Valves



Specifications

Design Pressure	100 MPa	
Fluid temperature range	-40 to +85°C	
Body materials	ASTM A479 316/316L (Dual spec.)	
Cracking pressure	Under 0.0069MPa	
Operating conditions	Flow rate	Over 40m ³ /h normal
	Differential pressure (Reverse Pressure)	Over 10MPa

Dimensions, Ordering No.

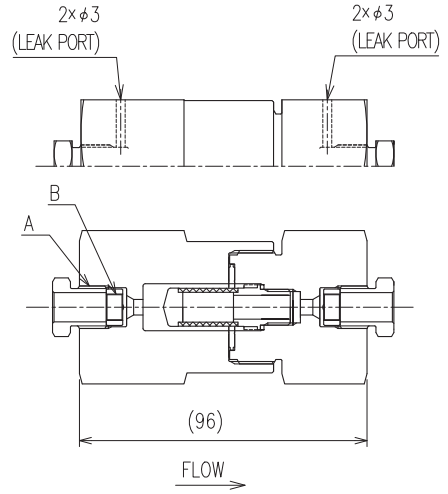
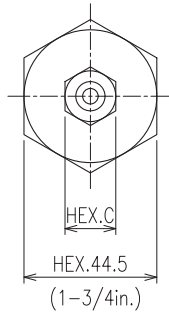
Nominal size	GLAND Thread (valves body side)	Collar Thread (tube side)	HEX.C	Cv value	Weight	ITEM No.
	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.21	1.2kg	GUCL-7100-4M
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.66	1.2kg	GUCL-7100-6M

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2. Please use each valve after confirming the instruction manual and daily inspection manual.

Filters



Features

1. Element size from 2, 5, and 10 μ m

Specifications

Design Pressure	100 MPa
Fluid temperature range	-40 to +85°C
Body materials	ASTM A479 316/316L (Dual spec.)

Dimensions, Ordering No.

Nominal size	GLAND Thread (valves body side)	Collar Thread (tube side)	HEX.C	Cv value *2	Weight	ITEM No.
	A	B				
6.35(1/4in.)	7/16-20UNF	(Left)1/4-28UNF	12.7	0.13	1.2kg	GUFL-7100-4M-*1
9.52(3/8in.)	9/16-18UNF	(Left)3/8-24UNF	15.8	0.4	1.2kg	GUFL-7100-6M-*1

*Coned-and-threaded connection MP type *For other nominal sizes, please contact us.
 *1 Element size Number *2 In case of Element size 2 μ m



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Cv Value Calculation

Please confirm the necessary Cv Value suited to the intended use (process valves, meter master valves, etc.) before selecting an appropriate valves. Also, if there is a large difference between the flow channel diameter and piping diameter, please multiply the Cv value for the valve unit by revising coefficient Fp to determine the revised Cv Value (CvR).

What is Cv Value?

Cv Value is a capacity coefficient for valves and other devices. It is defined in the Japanese Industrial Standards (JIS) as "the flow volume expressed in US gal/min of clear water at 60°F (15°C) through a valve within a particular operating range with a pressure differential of 1 lb/inch² (= 1 psi)."

■ Cv Value Calculation

Differential Pressure Conditions		$P_2 > \frac{P_1}{2}$	$P_2 \leq \frac{P_1}{2}$	Explanation of Symbols
Liquid	General	$Cv = 0.366 Q_L \sqrt{\frac{G_L}{P_1 - P_2}}$	Same as left	
	High Viscosity ★1	$Cv = 0.366 Q_L K_v \sqrt{\frac{G_L}{P_1 - P_2}}$	Same as left	
Gas		$Cv = \frac{Q_G}{4140} \sqrt{\frac{G_G (273+t)}{(P_1 - P_2) P_2}}$	$Cv = \frac{Q_G}{2070 P_1} \sqrt{G_G (273+t)}$	
Steam	Saturated Water Vapor	$Cv = \frac{Q_s}{197.8 \sqrt{(P_1 - P_2) P_2}}$	$Cv = \frac{Q_s}{98.91 P_1}$	
	Heated Water Vapor	$Cv = \frac{Q_s}{197.8 \sqrt{(P_1 - P_2) P_2}} (1 + 0.0013S)$	$Cv = \frac{Q_s}{98.91 P_1} (1 + 0.0013S)$	
	Wet Steam	$Cv = \frac{Q_s X}{197.8 \sqrt{(P_1 - P_2) P_2}}$	$Cv = \frac{Q_s X}{98.91 P_1}$	

★1: For liquids, if kinematic viscosity is 20 mPa·s or more and calculated Cv value is 0.01 or less, viscosity correction calculation is required. Please contact Fujikin if fluid specifications are needed for viscosity correction.

★2: Please use pressure in the immediate proximity of the valve. Calculations using pressure from a point distant from the valve can produce significant errors due to the effects of piping pressure loss, etc.



Important Note
Cv Value calculation provides the standard used in valve selection; so, please use as a reference value. It is possible that fixed piping conditions, usage conditions or other factors can cause actual values to differ from calculated values.



URL <http://www.fujikin.co.jp/>



ものづくり日本大賞

- the 1st MONODZUKURI NIPPON GRAND AWARDS.
(9 developers awarded)
- the 5th MONODZUKURI NIPPON GRAND AWARDS.
(Fujikin Vietnam 4 employees awarded)
- the 7th MONODZUKURI NIPPON GRAND AWARDS.
(7 developers awarded)