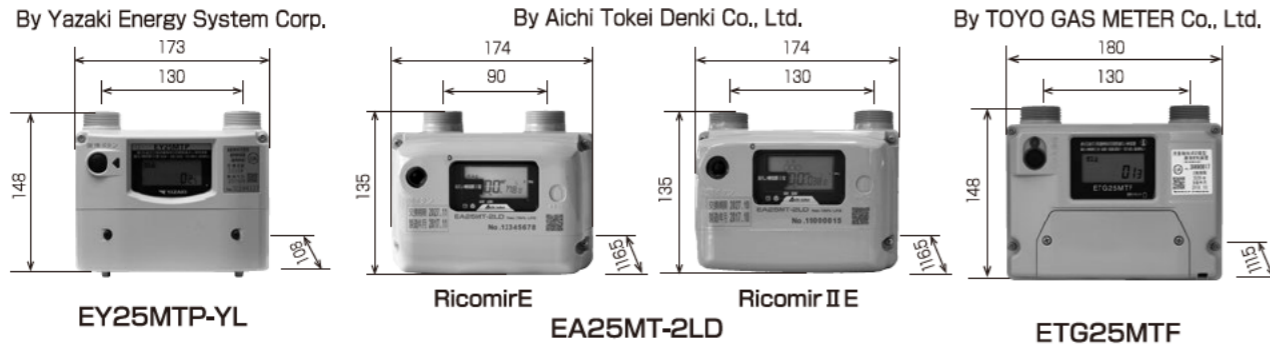


# Gas Flow Recorders



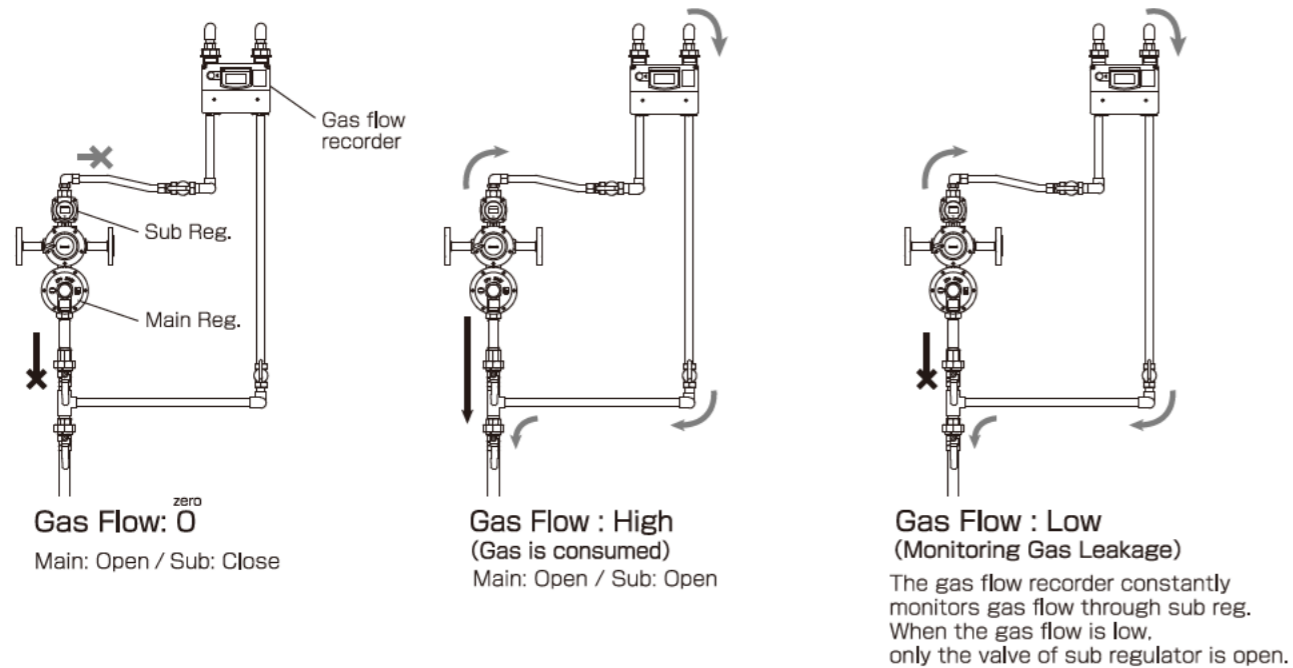
## Accessories



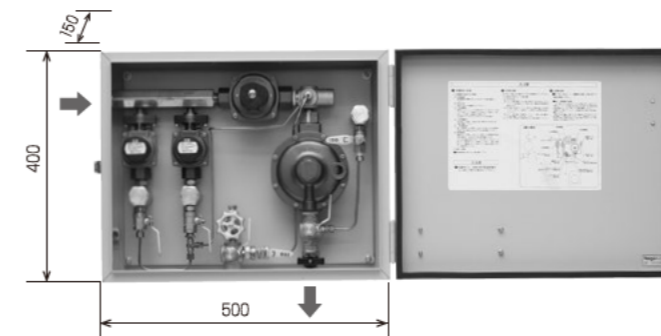
Flexible Metal Hose (15A) × 1  
 Gas Meter Union (15A) & Gasket × 2  
 Gas Ball Valve with Inspection Port (15A) × 2

Made By	Yazaki Energy System Corp.	Aichi Tokei Denki Co., Ltd.		TOYO GAS METER Co., Ltd.
Model	EY25MTP-YL	EA25MT-2LD RicomirE      Ricomir IIE		ETG25MTF
Connector Spacing	130mm	90mm	130mm	130mm
Connections	M36×2			
Air-Tightness Test	10,0kPa			
Working Pressure	≤ 3,50kPa			
Alert When	1. Small Gas Leak Detected    2. Lockup Pressure over Limit    3. Supply Pressure out of Range 4. Low Battery                      5. Approval Certification Expired			
Auto Shut-Off When	1. Pressure Too Low    2. Safety Check, On-Going Reset Procedure    3. Functional Test 4. Low Battery                      5. Approval Certification Expired			
Alert & Shut-Off Indication	LCD and Red Diode Flashing			

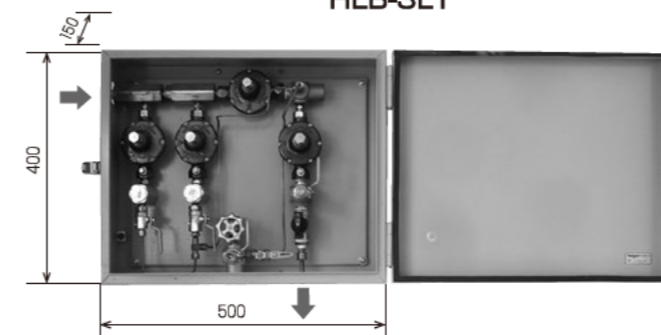
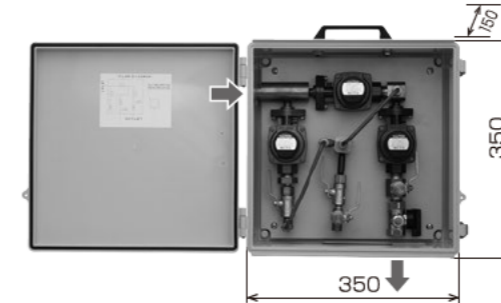
## How to Detect Gas Leakage in the Underground Pipeline



# Pressure Monitoring Type Gas Leakage Detecting Cabinets



\*Only include the cabinet dimensions.

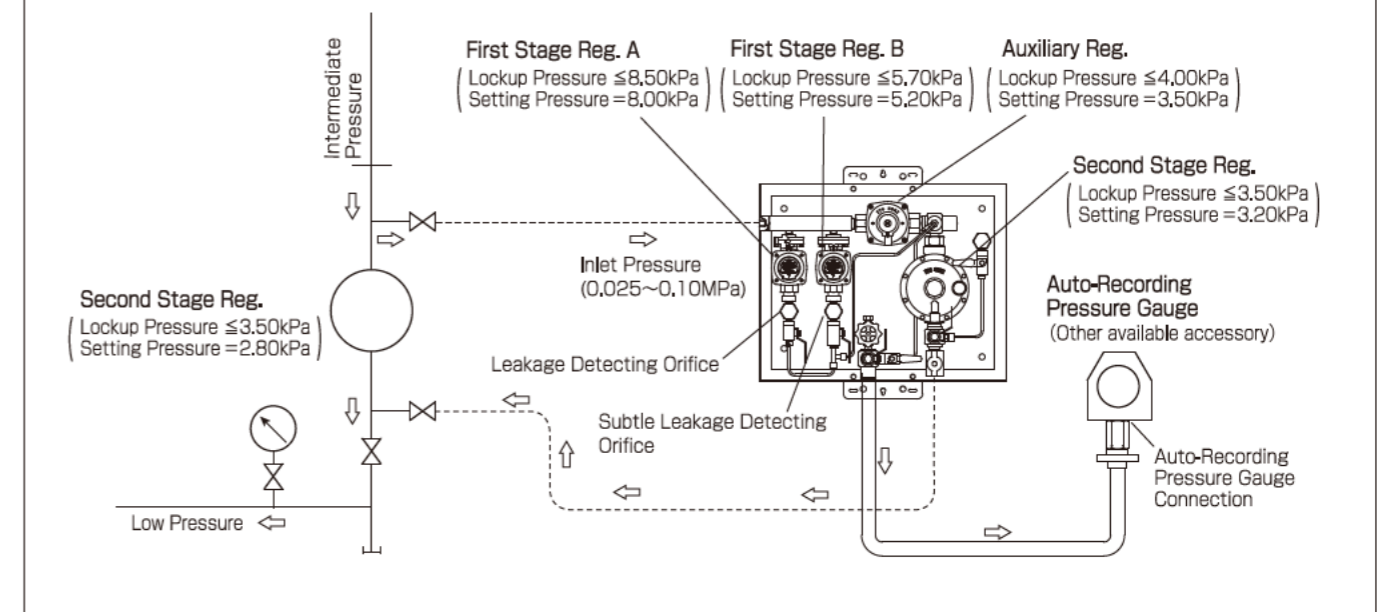


Model	HLB-3 HLB-3LT	HLB-5
Inlet Pressure	0.025~0.10MPa	
Outlet Pressure	3.20±0.10kPa	
Capacity(Propane)	0.2kg/h	
Lockup Pressure	≤ 3.50kPa	
Minimum Detectable Leak Rate	3 ℓ/h	5 ℓ/h
Detected Pressure	No Leakage	8.00±0.50kPa
	Min. Gas Leakage	6.00±0.25kPa
	10 ℓ/h Gas Leakage	5.25±0.25kPa
	18 ℓ/h Gas Leakage	4.60±0.40kPa
Inlet Connection	Rc1/4	
Outlet Connection	Rc1/2	
Auto-Recording Pressure Gauge Connection	G3/8	
Installation Method	Wall Mounted	

Model	HLB-6M	
Inlet Pressure	0.20~0.40MPa	
Applicable Outlet Pressure Range	10.0~150kPa*1	
Capacity(Propane)	0.2kg/h	
Lockup Pressure	≤ 37.0kPa*2	
Minimum Detectable Leak Rate	6 ℓ/h	
Detected Pressure	No Leakage	180±15.0kPa
	Min. Gas Leakage	150±10.0kPa
	18 ℓ/h Gas Leakage	115±10.0kPa
Inlet Connection	Rc1/4	
Outlet Connection	Rc1/2	
Auto-Recording Pressure Gauge Connection	Rc1/4	
Installation Method	Wall Mounted	

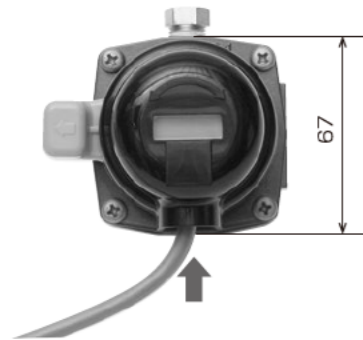
\*1 Interchangeable springs are available.  
 \*2 Based on 25.0kPa setting pressure.

## Flow Chart of HLB-3,HLB-5



# Signal Transmitting System, Relay Barrier

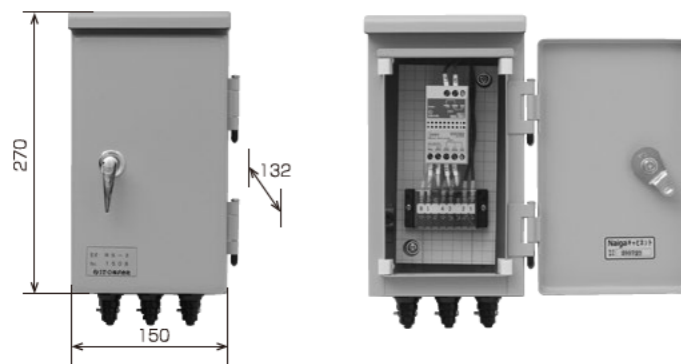
Changeover Indicator



PS-05K

Working Pressure	≤ 0.20MPa
Signal Set Point	55.0±2.00kPa
Connection	Rc1/4
Contact Form	Non-Voltage, Normally Open Contact
Max. Allowable Voltage	DC200V
Max. Allowable Current	DC0.5A
Contact Resistance	≤ 1.0Ω
Lead Wire	VCTF0.5mm <sup>2</sup> (2 conductors)×1m

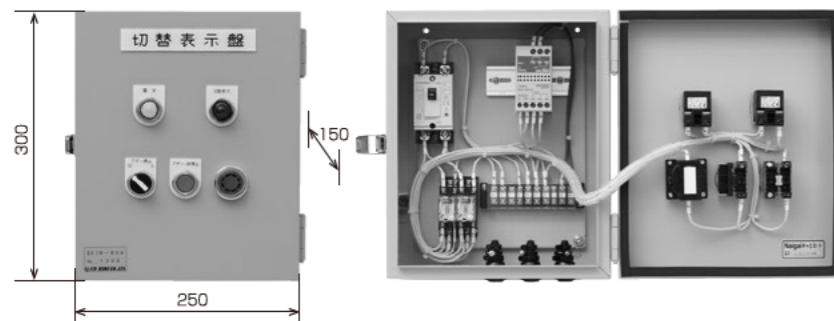
Relay Barrier



RS-2

Type of Protection	Intrinsic Safety
Rated Voltage	AC100V~240V 50/60Hz
Power Consumption	9.6VA

Changeover Alarm Box Incorporating with a Relay Barrier

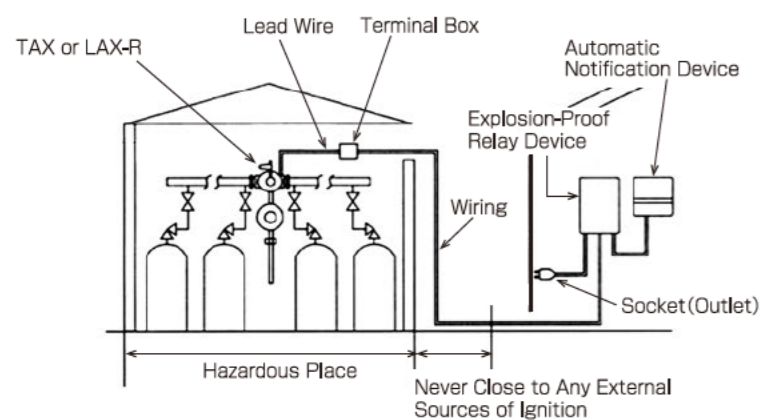


IB-EXA

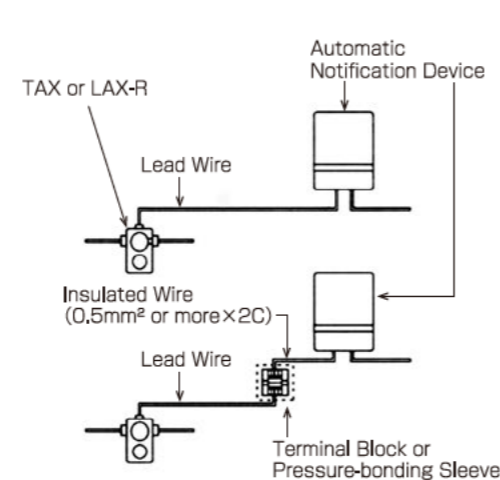
Type of Protection	Intrinsic Safety
Rated Voltage	AC100V (AC200V) 50/60Hz
Power Consumption	100V : 11VA 200V : 11.9V

## Application

### Installation in a Hazardous Place

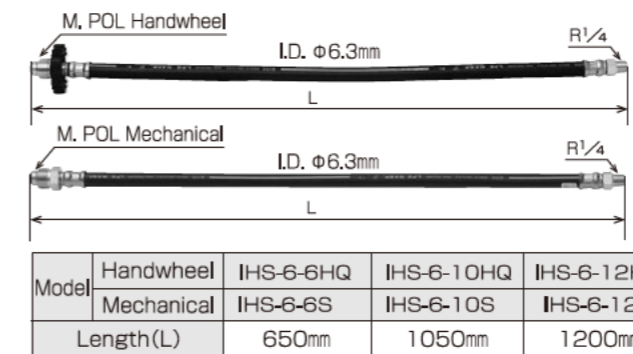


### Installation in a Non-Hazardous Place



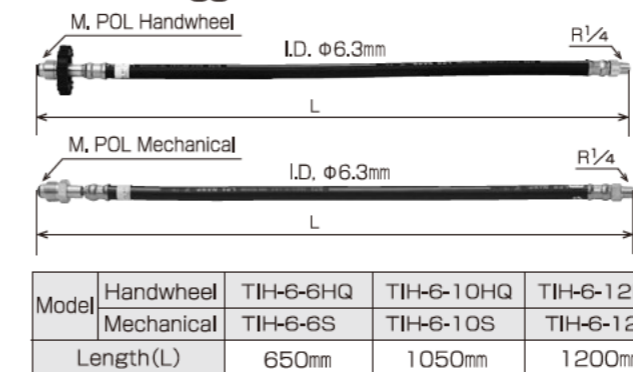
# Hoses

High Pressure Hose (HP)



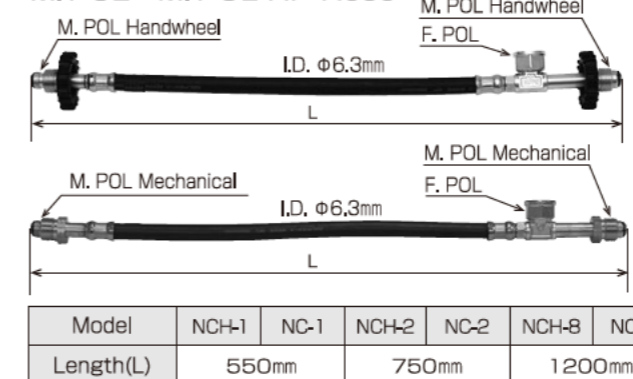
Model	Handwheel	IHS-6-6HQ	IHS-6-10HQ	IHS-6-12HQ
	Mechanical	IHS-6-6S	IHS-6-10S	IHS-6-12S
Length(L)		650mm	1050mm	1200mm

Tensile Triggered HP Hose



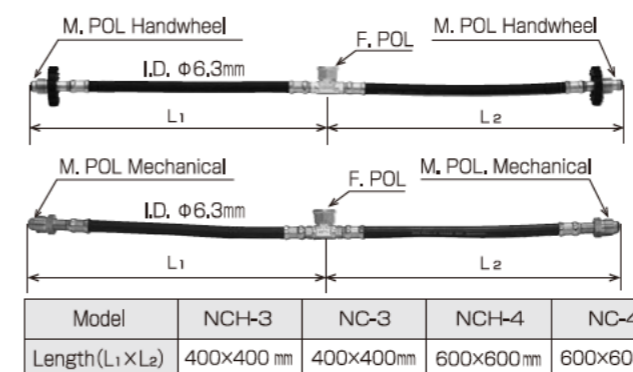
Model	Handwheel	TIH-6-6HQ	TIH-6-10HQ	TIH-6-12HQ
	Mechanical	TIH-6-6S	TIH-6-10S	TIH-6-12S
Length(L)		650mm	1050mm	1200mm

M. POL × M. POL HP Hose



Model	NCH-1	NC-1	NCH-2	NC-2	NCH-8	NC-8
Length(L)	550mm		750mm		1200mm	

Supplied by ITO.

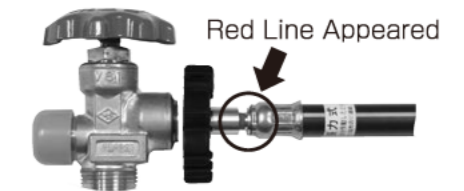


Model	NCH-3	NC-3	NCH-4	NC-4
Length(L1×L2)	400×400mm	400×400mm	600×600mm	600×600mm

Supplied by ITO.

\*All the POL connections are JIS POL according to JIS B 8245.

Tensile Trigger Shut-Off Valve (Shut-Off Situation)



When abnormal tension is applied to the hose, the stop valve built in the connector body is activated and stops the gas supply.

HP Hose with Liquid Non-Return Valve



Model	LIHS-6-6HH	LIHS-6-10HH	LIHS-6-15HH
Length(L)	650mm	1050mm	1500mm

Outdoor Low Pressure Hose



Model	10×600FS	10×900FS
Length(L)	600mm	900mm

Supplied by ITO.

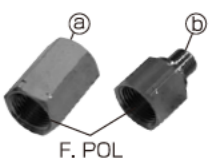
HP Hose O-Ring



POL Adapters

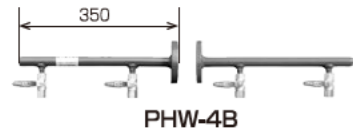
Model	PC-106	PC-112	PC-115
Connection@	Rc1/4	Rc3/8	Rc1/2

Model	PC-206	PC-212	PC-215	PC-220
Connection@	R1/4	R3/8	R1/2	R3/4



# High Pressure Manifold Assembly Kits

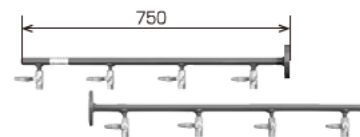
## 15A Unilateral Flange Type



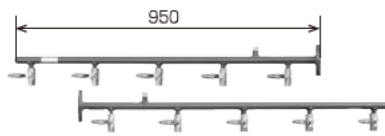
PHW-4B



PHW-6B

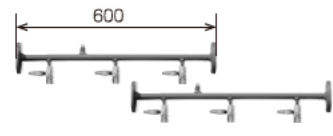


PHW-8B

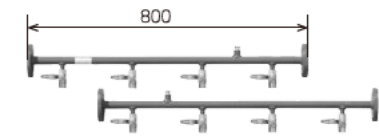


PHW-10B

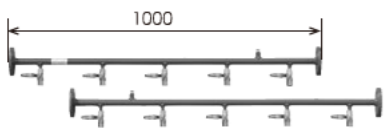
## 15A Bilateral Flange Type



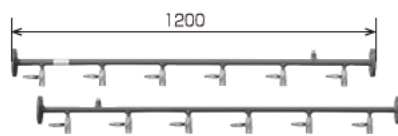
PHW-6FB



PHW-8FB



PHW-10FB



PHW-12FB

## With High Pressure Hoses

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-4B-H	600mm×4	Handwheel	Ⓐ
PHW-4B-S	600mm×4	Mechanical	
PHW-4B-TH	600mm×4	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-4B-TS	600mm×4	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-6B-H	600mm ×4 1000mm×2	Handwheel	Ⓑ
PHW-6B-S	600mm ×4 1000mm×2	Mechanical	
PHW-6B-TH	600mm ×4 1000mm×2	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-6B-TS	600mm ×4 1000mm×2	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-8B-H	600mm ×4 1000mm×4	Handwheel	Ⓑ
PHW-8B-S	600mm ×4 1000mm×4	Mechanical	
PHW-8B-TH	600mm ×4 1000mm×4	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-8B-TS	600mm ×4 1000mm×4	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-10B-H	600mm ×6 1000mm×4	Handwheel	Ⓑ
PHW-10B-S	600mm ×6 1000mm×4	Mechanical	
PHW-10B-TH	600mm ×6 1000mm×4	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-10B-TS	600mm ×6 1000mm×4	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-6FB-H	600mm ×4 1000mm×2	Handwheel	Ⓒ
PHW-6FB-S	600mm ×4 1000mm×2	Mechanical	
PHW-6FB-TH	600mm ×4 1000mm×2	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-6FB-TS	600mm ×4 1000mm×2	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-8FB-H	600mm ×4 1000mm×4	Handwheel	Ⓒ
PHW-8FB-S	600mm ×4 1000mm×4	Mechanical	
PHW-8FB-TH	600mm ×4 1000mm×4	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-8FB-TS	600mm ×4 1000mm×4	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-10FB-H	600mm ×6 1000mm×4	Handwheel	Ⓒ
PHW-10FB-S	600mm ×6 1000mm×4	Mechanical	
PHW-10FB-TH	600mm ×6 1000mm×4	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-10FB-TS	600mm ×6 1000mm×4	Mechanical Inc.Tensile Trigger Shut-Off Valve	

Model	High Pressure Hose(Provided with Kit) Lxq'ty	Connector	Accs.
PHW-12FB-H	600mm ×6 1000mm×6	Handwheel	Ⓒ
PHW-12FB-S	600mm ×6 1000mm×6	Mechanical	
PHW-12FB-TH	600mm ×6 1000mm×6	Handwheel Inc.Tensile Trigger Shut-Off Valve	
PHW-12FB-TS	600mm ×6 1000mm×6	Mechanical Inc.Tensile Trigger Shut-Off Valve	

## Accessories

Ⓐ

Bracket×2  
Anchor Bolt with Nut×4  
15A U Bolt with Nut×2  
M12 Bolt×8  
M12 Nut×8  
M12 Spring Washer×8  
M12 Flat Washer×16  
15A Flange Gasket×2

Ⓑ

Bracket×4  
Anchor Bolt with Nut×8  
15A U Bolt with Nut×4  
M12 Bolt×8  
M12 Nut×8  
M12 Spring Washer×8  
M12 Flat Washer×16  
15A Flange Gasket×2

Ⓒ

Bracket×4  
Anchor Bolt with Nut×8  
15A U Bolt with Nut×4  
M12 Bolt×16  
M12 Nut×16  
M12 Spring Washer×16  
M12 Flat Washer×32  
15A Flange Gasket×4  
15A Cap Flange×2

## Other Available Accessories

Flange Gasket

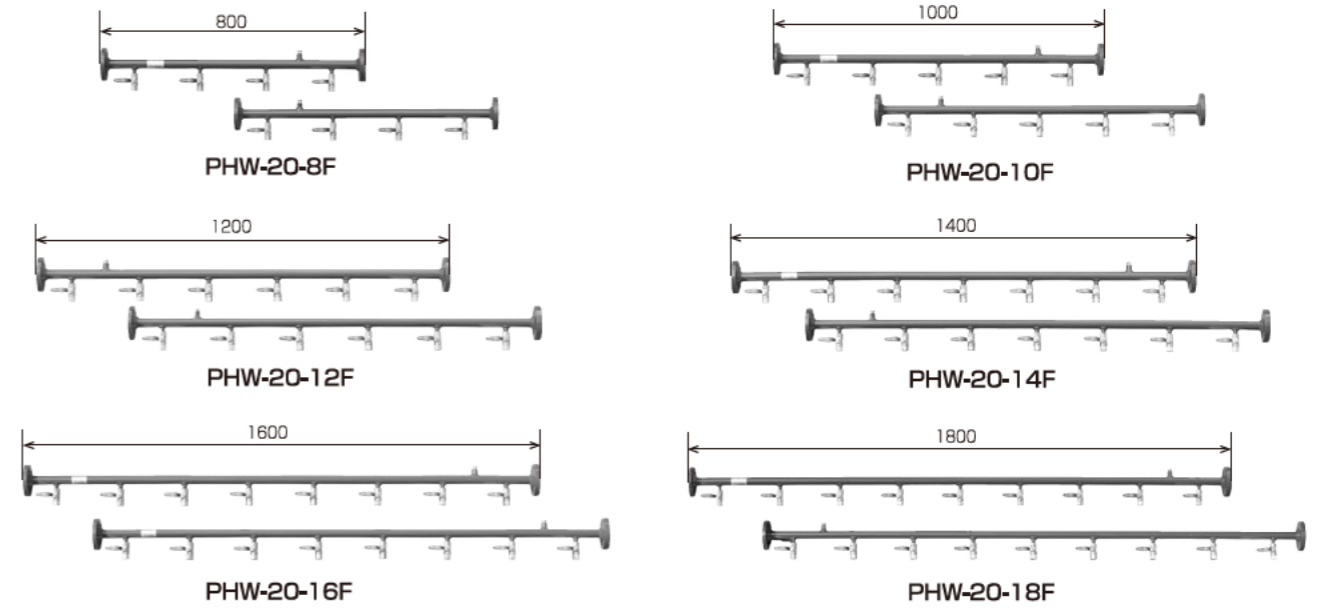
Model
15A Flange Gasket
20A Flange Gasket
25A Flange Gasket
40A Flange Gasket
50A Flange Gasket

Bolt, Nut, Washer

Model
15A U-Bolt with Nut for PHW
20A U-Bolt with Nut for PHW

Model
M12×55mm Bolt/ Nut/Spring Washer
M12×55mm Bolt/ Nut/ Spring Washer/ Flat Washer
M12 Flat Washer
M16×55mm Bolt/ Nut/ Spring Washer

## 20A Bilateral Flange Type



Bracket×4  
Anchor Bolt with Nut×8  
U Bolt with Nut×4  
M12 Bolt×16  
M12 Nut×16  
M12 Spring Washer×16  
M12 Flat Washer×32  
20A Flange Gasket×4  
20A Cap Flange×2

**PHW-20 Accessories**  
(Other Available Accessories)

## 15A Thread Type



PHW-4R

Accessories

Bracket×2  
15A U Bolt×2  
M5 Butterfly Nut×4  
M5 Flat Washer×4  
Tapping Screw×4

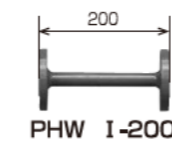


PHW-6R

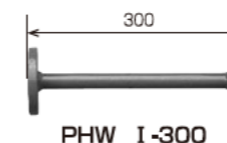
Accessories

Bracket×4  
15A U Bolt×4  
M5 Butterfly Nut×8  
M5 Flat Washer×8  
Tapping Screw×8

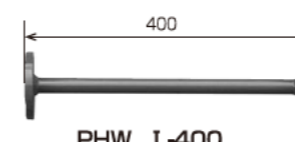
## 15A Straight Flange Connector



PHW I-200

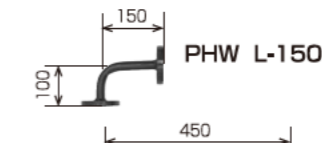


PHW I-300

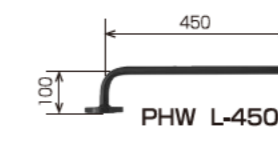


PHW I-400

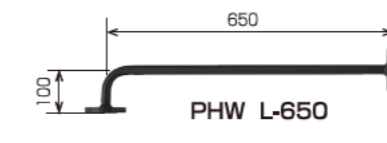
## 15A Angle Flange Connector



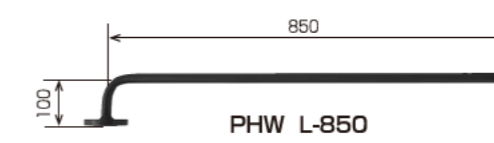
PHW L-150



PHW L-450



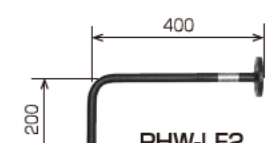
PHW L-650



PHW L-850



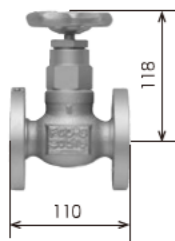
PHW-LF



PHW-LF2

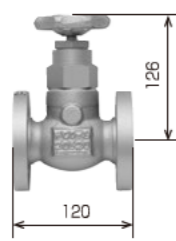
# Valves

## Globe Valve



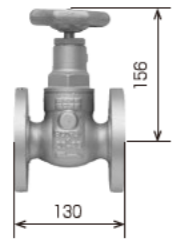
D1-15F

Conn. JIS20K15A Flange



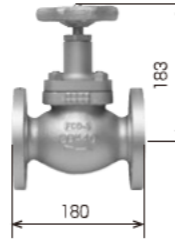
D1-20F

Conn. JIS20K20A Flange



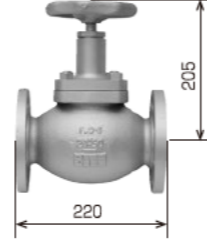
D1-25F

Conn. JIS20K25A Flange



D1-40F

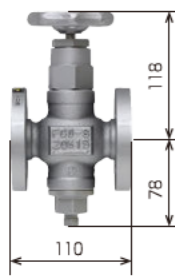
Conn. JIS20K40A Flange



D1-50F

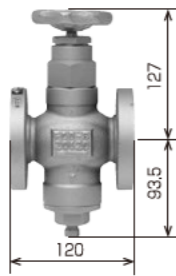
Conn. JIS20K50A Flange

## Strainer Incorporated



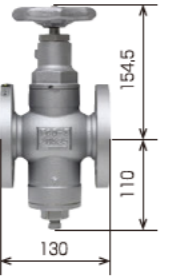
D7-15F

Conn. JIS20K15A Flange



D7-20F

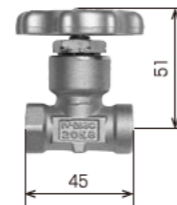
Conn. JIS20K20A Flange



D7-25F

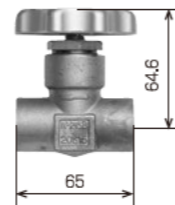
Conn. JIS20K25A Flange

## As Stop Valve



IV-206C

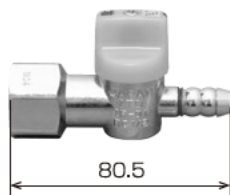
Conn. Rc1/4



IV-215B

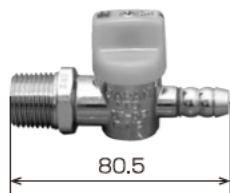
Conn. Rc1/2

## Gas Valve



IF-01  
IF-01E

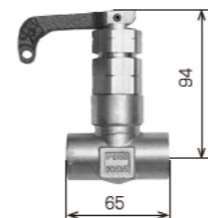
Model	Inlet	Outlet	Excess Flow Valve
IF-01	Rc 1/2	φ9.5 Hose Nozzle	N/A
IF-01E	Rc 1/2	φ9.5 Hose Nozzle	✓



IF-02  
IF-02E

Model	Inlet	Outlet	Excess Flow Valve
IF-02	R1/2	φ9.5 Hose Nozzle	N/A
IF-02E	R1/2	φ9.5 Hose Nozzle	✓

## Orifice Valve

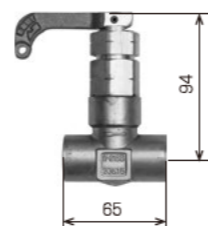


IV-215BE

Conn. Rc1/2

\*See page 106.

## Blow Valve

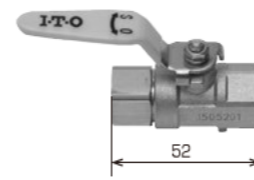


IV-215BU

Conn. Rc1/2

\*See page 106.

## Ball Valve

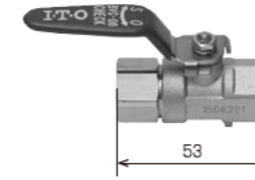


BV-206

Conn. Rc1/4

\*NPT connection is also available.

## Inc. Check Valve

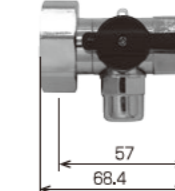


BVC-06

Conn. Rc1/4

\*NPT connection is also available.

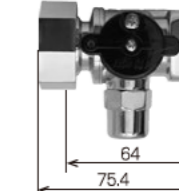
## With Inspection Port



MB-40CU

Inlet M35×2

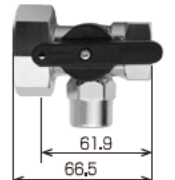
Outlet Rc1/2



MB-60CU

Inlet M35×2

Outlet Rc3/4



G73PZU

Inlet M35×2

Outlet Rc1/2

Supplied by ITO.

## Ball Valve for Union



BV-20U

Inlet M42×2  
Outlet Rc3/4

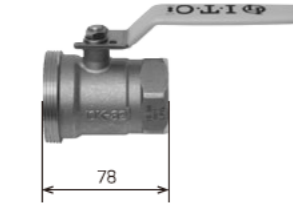
Supplied by ITO.



BV-25U

Inlet M51×2  
Outlet Rc1

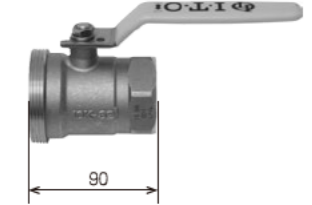
Supplied by ITO.



BV-32U

Inlet M60×2  
Outlet Rc1 1/4

Supplied by ITO.

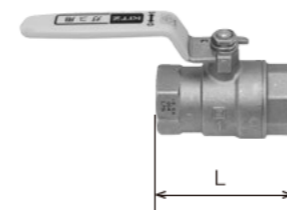


BV-40U

Inlet M68×2  
Outlet Rc1 1/2

Supplied by ITO.

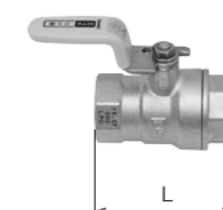
## Ball Valve



GT(N)

Conn.	L
Rc1	72
Rc1 1/4	82
Rc1 1/2	94
Rc 2	107

Supplied by ITO.

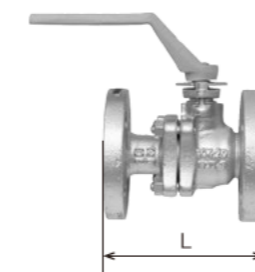


GTM(N)

Conn.	L
Rc 1/2	52
Rc 3/4	66

Supplied by ITO.

## Ductile Iron 10K Flange Ball Valve

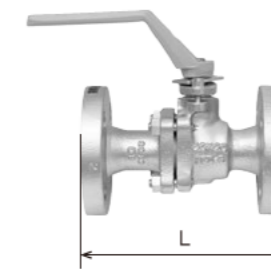


10STLBF

Connection	L
10K15A Flange	108
10K20A Flange	117
10K25A Flange	127
10K32A Flange	140
10K40A Flange	165
10K50A Flange	178

Supplied by ITO.

## Ductile Iron 20K Flange Ball Valve



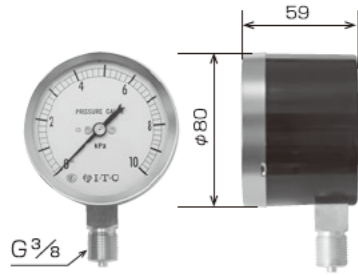
20STLB

Connection	L
20K15A Flange	140
20K20A Flange	152
20K25A Flange	165
20K40A Flange	178
20K50A Flange	190

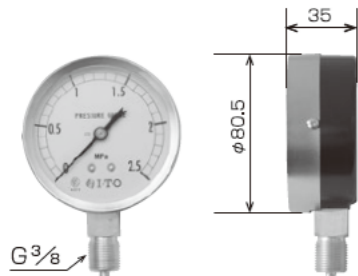
Supplied by ITO.

# Pressure Gauges

## Pressure Gauge



Maximum Scale Value
10kPa
20kPa
50kPa



Maximum Scale Value
0.1MPa
0.2MPa
0.4MPa
1.0MPa
2.0MPa
2.5MPa
3.5MPa

## Pressure Gauge Kit

① Reducer Gasket  
 ② Reducer  
 ③ BV-206 (See page 104)  
 ④ Angle Siphon Pipe (Threaded)  
 ⑤ 8A Nipple

Model	Pressure Gauge
IPG-1000	10KPa
IPG-2000	20KPa

\*A set provided with each kit. (Unassembled)

Model	Pressure Gauge
IPG-20	2.0MPa
IPG-25	2.5MPa
IPG-35	3.5MPa

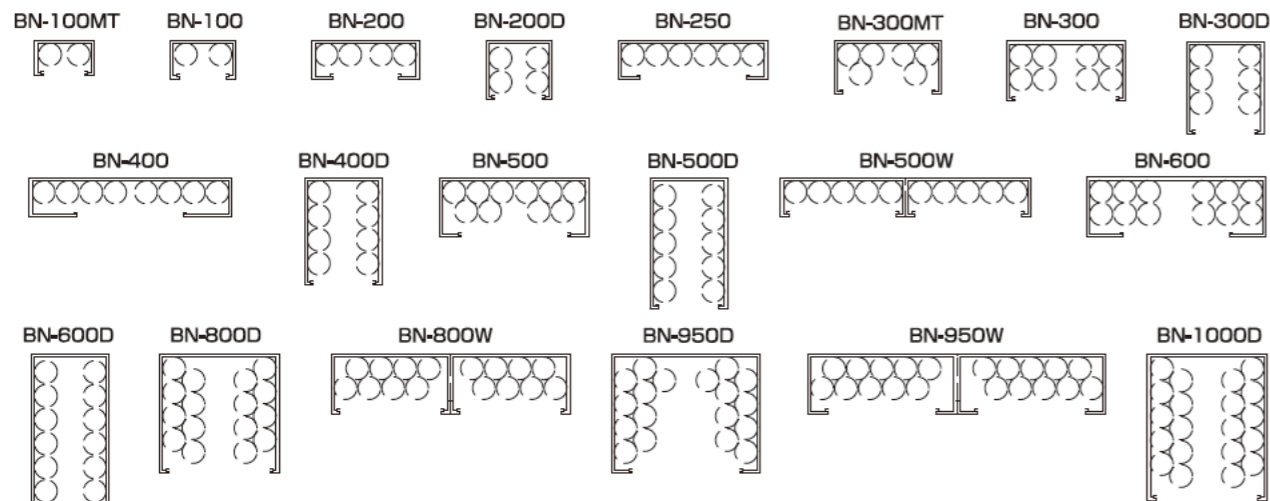
\*2 sets provided with each kit. (Unassembled)

# Cylinder Cabinets



Model		
BN-100MT	BN-300D	BN-600D
BN-100	BN-400	BN-800D
BN-200	BN-400D	BN-800W
BN-200D	BN-500	BN-950D
BN-250	BN-500D	BN-950W
BN-300MT	BN-500W	BN-1000D
BN-300	BN-600	
BN-300D		

Supplied by ITO.



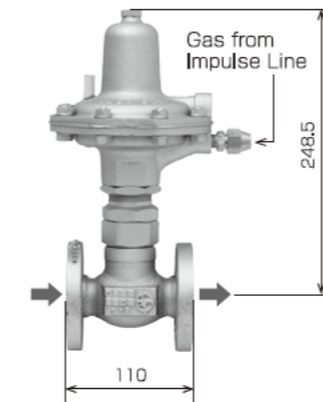
# Emergency Shut-Off System

## Operating Pressure

Model	Pressure Range	0.30MPa	0.50MPa	0.70MPa	1.00MPa	1.50MPa	2.00MPa
CV-15F~CV-40AF		0.10MPa	0.11MPa	0.13MPa	0.15MPa	0.20MPa	0.25MPa
CV-50AF		0.10MPa	0.13MPa	0.15MPa	0.20MPa	0.30MPa	0.35MPa

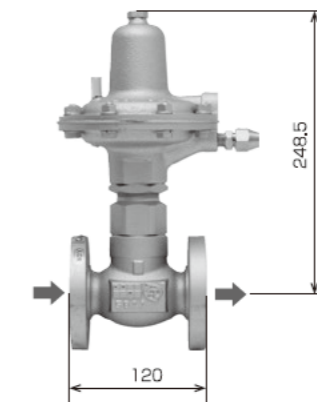
\*Use compressed air or nitrogen for the impulse line.

## Air-Actuated Shut-Off Valve



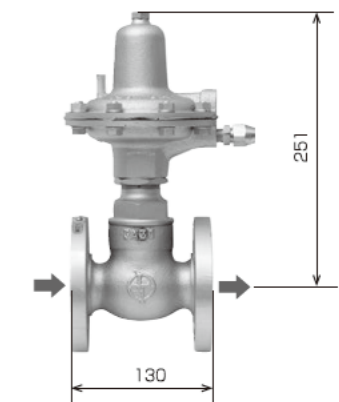
CV-15F

Connection JIS20K15A Flange



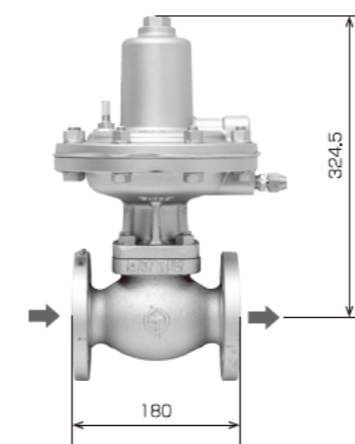
CV-20F

Connection JIS20K20A Flange



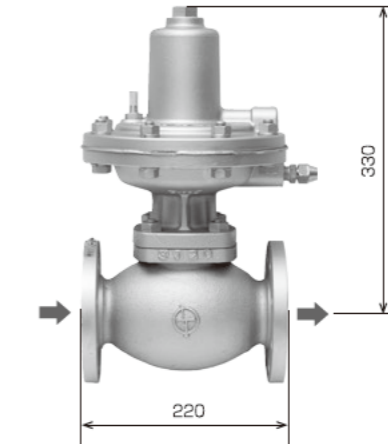
CV-25F

Connection JIS20K25A Flange



CV-40AF

Connection JIS20K40A Flange



CV-50AF

Connection JIS20K50A Flange

## For the SOV Control Orifice Valve



IV-215BE

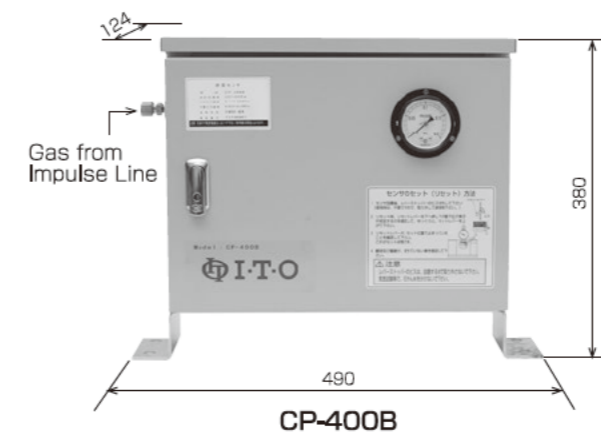
## Blow Valve



IV-215BU

\*See page 103.

## Earthquake-Actuated Sensor



CP-400B

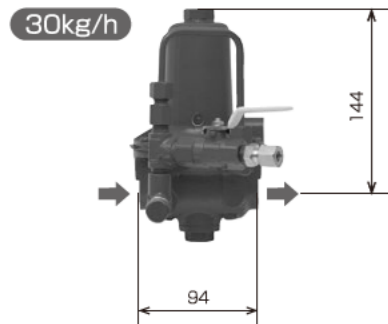
Model	CP-400B
Vibration Acceleration	320~400gal
Vibration Frequency	1.4~3.3Hz
Tripping Method	Steel Ball Dropping Type +Magnet & Heavy Bob Dropping Type
Operating Pressure Range	0.10~0.35MPa
Activation Display	Pressure Gauge
Reset Method	Manual Operation by the Reset Lever
Installation Method	Ground Line Installation
Connection	Copper Pipe(Φ8 Outer Diameter)

\*Use compressed air or nitrogen for the impulse line.

# Earthquake-Actuated Shut-Off System

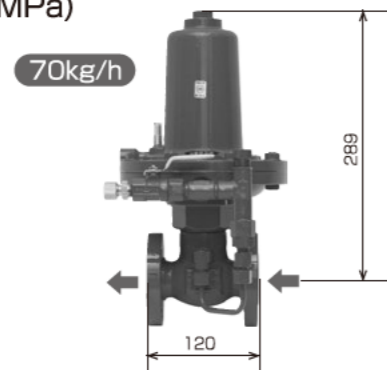
## Shut-Off Valve

EQ Range  
(Pressure Range : 0.025~0.20MPa)



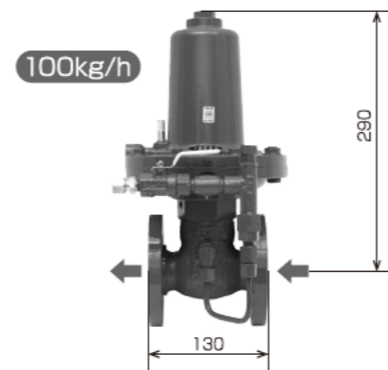
EQ-15

Connection	Rc1/2
Accessories	N/A



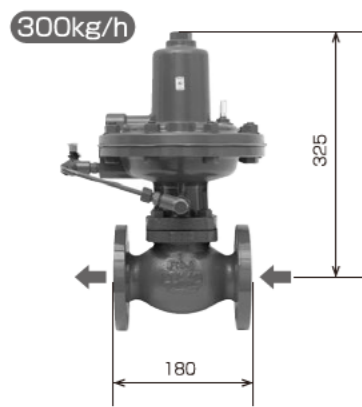
EQ-20

Connection	JIS20K20A Flange
Accessories	(A)



EQ-25

Connection	JIS20K25A Flange
Accessories	(B)



EQ-40

Connection	JIS20K40A Flange
Accessories	N/A



EQ-50

Connection	JIS10K50A Flange
Accessories	N/A



EQ-80

Connection	JIS10K80A Flange
Accessories	N/A

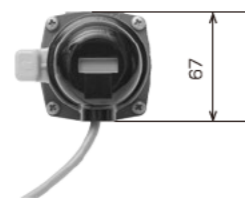
With Signal Transmitting Function



EQ-40

Model
EQ-15
EQ-20
EQ-25
EQ-40
EQ-50
EQ-80

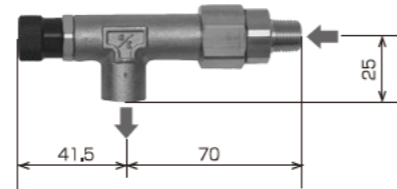
## Changeover Indicator



PS-05K (For Shut-Off Valve)

Connection	Rc1/4
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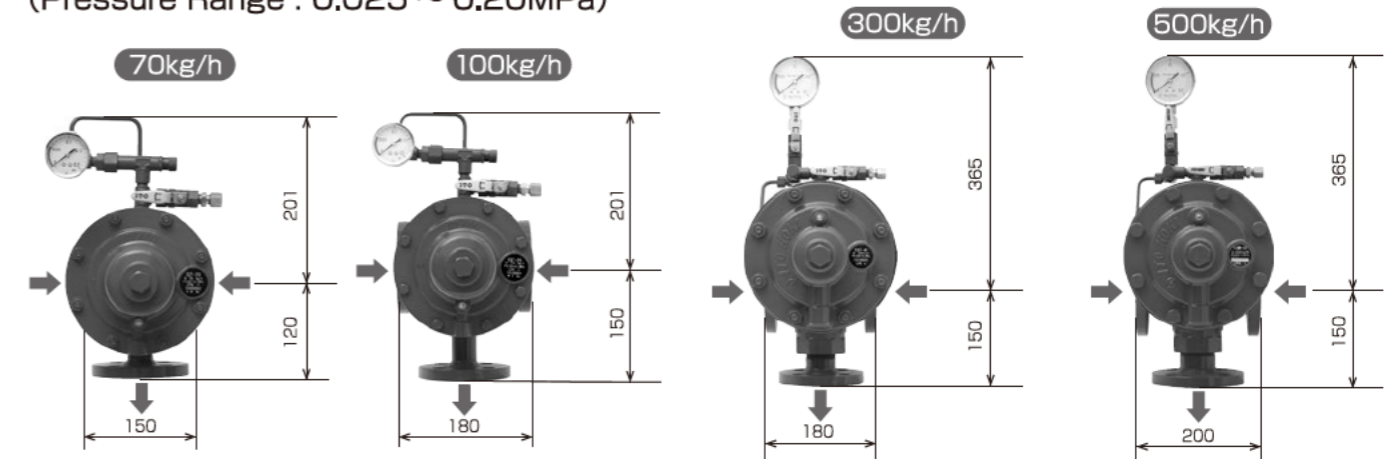
## Reset Valve Inc. Excess Flow Valve



ERV-8

Connection	R1/4×Rc1/4
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EQT Range (Dual Inlets for 1st Stage Reg. of Separated ACO)  
(Pressure Range : 0.025 ~ 0.20MPa)



EQT-20

Connection	JIS10K20A Flange JIS10K25A Flange
Accessories	(A) (B)

EQT-25

Connection	JIS10K25A Flange
Accessories	N/A

EQT-40

Connection	JIS10K40A Flange
Accessories	N/A

EQT-50

Connection	JIS10K50A Flange
Accessories	N/A

EQH Range  
(Pressure Range : 0.07~1.56MPa)



EQH-20

Connection	JIS20K20A Flange
Accessories	(A)

EQH-25

Connection	JIS20K25A Flange
Accessories	(B)

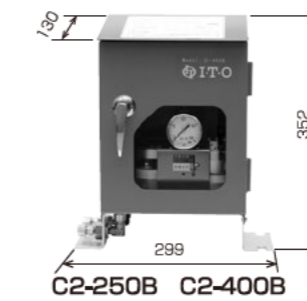
EQH-40

Connection	JIS20K40A Flange
Accessories	N/A

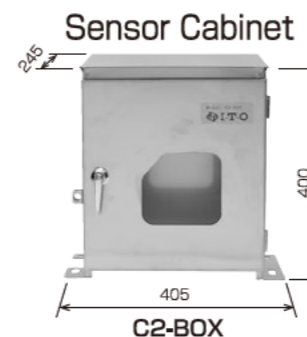
## Accessories

(A)	M12 Stud Bolt×2 M12 Hexgon Nut×4 M12 Spring Washer×4
(B)	M16 Stud Bolt×2 M16 Hexgon Nut×4 M16 Spring Washer×4

## Earthquake-Actuated Sensor



C2-250B C2-400B



C2-BOX

Model	C2-250B	C2-400B
Vibration Acceleration	200~250gal	320~400gal
Vibration Frequency	1.4~3.3Hz	
Tripping Method	Steel Ball Dropping Type +Magnet & Heavy Bob Dropping Type	
Operating Pressure Range	0.025~0.20MPa	
Activation Display	Pressure Gauge	
Reset Method	Manual Operation by the Reset Lever	
Installation Method	Ground Line Installation	
Connection	Copper Pipe(φ8 Outer Diameter)	

Accessories	M12 Flat Washer ×3 M8 Flat Washer ×6 M8 Anchor Bolt×3 Insect Screen×1
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Model	C2-BOX
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Accessories	M8 Anchor Bolt×4
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