CÔNG TY TNHH MTV KỸ THUẬT QUỐC TẾ VIỆT NHẬT
VIET NHAT
Service & Solution
Địa chỉ: 11/6A, đường số 5, khu phố 3, P. Linh Tây, Q. Thủ Đức, TP. Hồ Chí Minh
Tel: 08 3620 2553 Fax: 08 3620 2554
Website: www.vietnhat-tech.com/ www.vietnhatvalves.com

Born to save energy™

INFORMATION

All Around Guidance Vol.E1-5

YOSHITAKE

I N D E X

Pressure Reducing Valve — Primary Pressure Regulating Valve; Differential Pressure Regulating Valve; Falling Water Preventing Valve — 1

Safety Relief Valve — 17

Strainer — 27

Solenoid Valve — Motor Valve; Air Operated Valve; Emergency Shut-off Valve — 33

Temperature Regulator — 39

Expansion Joint & Flexible Joint — 43

Steam Trap — Radiator Trap; Radiator Valve; Return Valve / Check Valve — 47

Air Vent & Drain Separator — Vacuum Relief Valve; Noiseless Heater; Air Out — 53

Sight Glass — Home Boiler Regulator; Relief Valve for Hot Water Appliance; Mixing Valve — 59

Kawaki® — Flow Meter; Sight Glass — 64

December 2014
Yoshitake Inc.

Dear Customers,

Summary of Additions and Changes in this INFORMATION (Vol. E1-5)

We would like to take this opportunity to express our sincere appreciation for your kind cooperation, and wish for your continuous success for your business in the future.

We are pleased to inform you that several additions and changes have been made in the product lineup of this INFORMATION as follows.

New released and Improved Products

Model	Feature	Page
BSV-2EN	Bellows Sealed Valve	P. 15
AF-9EN	Full Bore safety valve of large capacity with lever	P. 24
TSF-10•10F/11•11F	Float trap of compact size but large capacity	P. 50
TB-20	Bucket Trap, made of FCD, complying with screwed type	P. 50
SCV-3	Disc check valve of wafer connection	P. 50
MXV-1	Mixing valve for hot-water supply	P. 63

Switched Products

GP-12•22	Switched to the new released GP-2000CS
SY-2	Switched to the new released SY-40H•40EN
DP-15•17	Switched to the new released DP-100•100F

Pressure Reducing Valve Selection

GP types are pilot-operated valves, GD types are direct acting valves.

Application	Inlet Pressure	Reduced Pressure	Model
Steam	1.0 MPa or less	0.9 MPa or less	GP-1000 Series GP-27 GD-6N
	2.0 MPa or less	1.0 MPa or less	GD-30•30S GD-45•45P GPK-2001
		1.4 MPa or less	GP-2000 GDK-2000 GPK-2003 GP-1000EN•1000H
	3.0 MPa or less	2.0 MPa or less	GP-2000CS
Air **Non-dangerous fluids**	1.0 MPa or less	0.9 MPa or less	GP-1000T Series GD-6 GD-200•200C GD-400•**400SS** **GD-26G•27G** **GD-26GS•27GS** **GD-8N** **GD-4•4B** **GD-9**
	2.0 MPa or less	1.0 MPa or less	GD-200H GD-41**G•43G**
Water, Oil **Non-dangerous fluids**	1.0 MPa or less	0.7 MPa or less	GD-6 GD-200•200C GD-15•**15C** **GD-26-NE•27-NE** **GD-26S•27S** **GD-8N** **GD-7•7B** **GD-25 Series** **GD-38 Series** GD-41•43 **GD-46 Series** **GP-50**
	2.0 MPa or less	1.0 MPa or less	GD-200H GD-24•24B GD-41•**43** **GD-28-NE•29-NE** **GD-28S•29S**
		1.6 MPa or less	GD-7H•**7BH**

Primary Pressure Regulating Valve ••••••••••••••• Page 13
Differential Pressure Regulating Valve •••••••••••• Page 13
Falling Water Preventing Valve ••••••••••••••••••• Page 13
Y's Jacket ••••••••••••••••••••••••••••••••••••••• Page 14
Bellows Sealed Globe Valve •••••••••••••••••••••• Page 15

∗Please see the specification of the text for the detailed application and pressure of each model.

GP-2000•2000CS•2000EN 2.0 MPa Steam Pressure reducing valve

- Pilot operated diaphragm type
- Far superior capacity and performance
- Stable reduced pressure control
- Valve leakage meets ANSI Class **IV**
- High reduction ratio (20:1)

Model		GP-2000	GP-2000EN
Application		**Steam**	
Inlet pressure		0.1-2.0 MPa	
Reduced pressure		(A) 0.02-0.15 MPa (B) 0.1-1.4 MPa (C) 1.3-1.7 MPa	
Max. temperature		220℃	
Connection		JIS Rc screwed JIS 20K RF flanged JIS 10K FF flanged	EN1092 PN25 flanged
Material	Body	Ductile cast iron	
	Main valve, Valve seat	Stainless steel	
	Pilot valve, Pilot valve seat	Stainless steel	
	Diaphragm	Stainless steel	
Size	Screwed	15A-100A	—
	Flanged	15A-200A	15A-100A

Model		GP-2000CS
Application		**Steam**
Inlet pressure		0.1-3.0 MPa
Reduced pressure		(A) 0.02-0.15 MPa (B) 0.1-1.4 MPa (C) 1.3-2.0 MPa
Max. temperature		260℃
Connection		JIS Rc screwed JIS 30K RF flanged
Material	Body	Cast carbon steel
	Main valve, Valve seat	Stellite overlaid stainless steel
	Pilot valve, Pilot valve seat	Stainless steel
	Diaphragm	Stainless steel
Size	Screwed	15A-50A
	Flanged	15A-100A *

* 15A to 40A are welded flanged.

GDK-2000•GPK-2001•2003 2.0 MPa Steam Pressure reducing valve

GDK-2000

- For remote control

Model		GPK-2001 (Direct acting)	GPK-2001 (Pilot operated)	GPK-2003 (Pilot operated)
Application		**Steam**		
Inlet pressure		0.1-2.0 MPa	0.1-2.0 MPa	0.25-2.0 MPa
Reduced pressure		0.05-1.4 MPa	0.05-0.9 MPa	0.2-1.4 MPa
Max. temperature		220℃		
Connection		JIS Rc screwed JIS 20K RF flanged JIS 10K FF flanged		
Material	Body	Ductile cast iron		
	Main valve, Valve seat	—	Stainless steel	
	Pilot valve, Pilot valve seat	Stainless steel		
	Diaphragm	Stainless steel		
Size	Screwed	15A-50A		
	Flanged	15A-100A		

CP-2000 Series

1.0/2.0 MPa Steam

Combination valve

CP-2005

CP-2001•2002•2003•2004•2006

Application		Steam
Inlet pressure		0.1-1.0 MPa
Reduced pressure		(A) 0.02-0.15 MPa (B) 0.1-0.85 MPa
Max. temperature		183℃
Actuation solenoid valve		Normally closed
Rated voltage		AC 100 V, 50/60 Hz available AC 200 V, 50/60 Hz available
Connection		JIS Rc screwed
		JIS 10K FF flanged
Size	Screwed	15A-50A
	Flanged	15A-100A

CP-2005

Application		Heating: Steam Heated: Water, Oil, Liquid
Inlet pressure		0.1-2.0 MPa
Reduced pressure		(A) 0.02-0.15 MPa (B) 0.1-1.4 MPa
Max. temperature		220℃
Bulb max. pressure		1.0 MPa
Temp. adj. range		-8-183℃
Connection		JIS Rc screwed
		JIS 20K RF, JIS 10K FF flanged
Size	Screwed	15A-50A
	Flanged	15A-100A

Operation

CP-2001

Pressure reducing valve with ON-OFF control

- Solenoid pilot
  - Open → Pressure reducing valve
  - Close → Main valve closure

CP-2002

Pressure reducing valve and full-open valve

- Solenoid pilot
  - Open → Main valve full open
  - Close → Pressure reducing valve

CP-2003

Two-point switching of reduced pressure

- Solenoid pilot
  - Open → Higher setting reduced pressure
  - Close → Lower setting reduced pressure

CP-2004

Switching of reduced pressure with ON-OFF control

- Solenoid pilot A
  - Open → Solenoid pilot B
    - Open → Higher setting reduced pressure
    - Close → Higher setting reduced pressure
  - Close → Solenoid pilot B
    - Open → Lower setting reduced pressure
    - Close → Main valve closure

CP-2005

Temperature regulating valve with pressure control

- Pressure pilot
- Temperature pilot
- Temperature regulating valve while reducing pressure

CP-2006

Temperature regulating valve with ON-OFF control

- Solenoid pilot
  - Open → Temperature regulating valve
  - Close → Main valve closure

GP-1000 Series

1.0/1.6 MPa Steam Air

Pressure reducing valve

GP-1000

- Pilot operated piston type
- Inlet pressure up to 1.6 MPa
  (GP-1000EN and GP-1000H)
- Wetted parts stainless steel (GP-1□□□SS)
- All stainless steel (GP-1□□□AS)
- Air-loaded type (GP-1200 Series)

Model		GP-1000
Application		**Steam**
Inlet pressure		0.1-1.0 MPa
Reduced pressure		0.05-0.9 MPa
Max. temperature		220℃
Connection		JIS 10K FF flanged
Material	Body	Ductile cast iron
	Valve	Stainless steel
	Valve seat	Stainless steel
	Piston, Cylinder	Brass or Bronze
Size		15A-100A

Model		GP-1000EN	GP-1000H
Application		**Steam**	
Inlet pressure		0.1-1.6 MPa	
Reduced pressure		(A) 0.05-0.9 MPa (B) 0.9-1.4 MPa	
Max. temperature		220℃	
Connection		EN1092 PN25 flanged	JIS 16K FF flanged ASME Class 300 flanged
Material	Body	Ductile cast iron	
	Valve	Stainless steel	
	Valve seat	Stainless steel	
	Piston, Cylinder	Stainless steel	
Size		15A-100A	

Model		GP-1000S	GP-1000SS	GP-1000AS	GP-1200	GP-1200S	GP-1200SS
Application		**Steam**					
Inlet pressure		0.1-1.0 MPa					
Reduced pressure		0.05-0.9 MPa					
Max. temperature		220℃					
Connection		JIS 10K FF flanged					
Material	Body	Ductile cast iron	Cast stainless steel		Ductile cast iron		Cast stainless steel
	Valve	Stainless steel					
	Valve seat	Stainless steel					
	Piston, Cylinder	Stainless steel			Brass or Bronze	Stainless steel	
Size		15A-100A					

Model		GP-1000T	GP-1000TS	GP-1000TSS	GP-1000TAS	GP-1200T	GP-1200TS	GP-1200TSS
Application		**Air, Other non-dangerous fluids**						
Inlet pressure		0.1-1.0 MPa						
Reduced pressure		0.05-0.9 MPa						
Max. temperature		80℃						
Connection		JIS 10K FF flanged						
Material	Body	Ductile cast iron		Cast stainless steel		Ductile cast iron		Cast stainless steel
	Valve	Brass (NBR contained)	Stainless steel (NBR contained)	Stainless steel (FKM contained)		Brass (NBR contained)	Stainless steel (NBR contained)	
	Valve seat	Stainless steel						
	Piston, Cylinder	Brass or Bronze	Stainless steel			Brass or Bronze	Stainless steel	
Size		15A-100A		15A-50A		15A-100A		15A-50A

GP-1000 Series

1.0 MPa | Steam | Air | Pressure reducing valve

- Pilot operated piston type
- Superior durability
- Stable performance
- Valve leakage meets ANSI Class **IV**
- High reduction ratio (20:1)
- Air-loaded type for remote control (GP-1200 Series)

GP-1010

GP-1001

All GP-1000 Series valves except GP-1200 Series can be with adjusting handle (GP-10□1).

Model		GP-1010	GP-1010S	GP-1210	GP-1210S
Application		**Steam**			
Inlet pressure		0.1-1.0 MPa			
Reduced pressure		0.05-0.9 MPa			
Max. temperature		220℃			
Connection		JIS Rc screwed			
Material	Body	Ductile cast iron			
	Valve	Stainless steel			
	Valve seat	Stainless steel			
	Piston, Cylinder	Brass or Bronze	Stainless steel	Brass or Bronze	Stainless steel
Size		15A-50A			

Model		GP-1010T	GP-1010TS	GP-1210T	GP-1210TS
Application		**Air, Other non-dangerous fluids**			
Inlet pressure		0.1-1.0 MPa			
Reduced pressure		0.05-0.9 MPa			
Max. temperature		80℃			
Connection		JIS Rc screwed			
Material	Body	Ductile cast iron			
	Valve	Brass (NBR contained)	Stainless steel (NBR contained)	Brass (NBR contained)	Stainless steel (NBR contained)
	Valve seat	Stainless steel			
	Piston, Cylinder	Brass or Bronze	Stainless steel	Brass or Bronze	Stainless steel
Size		15A-50A			

GP-27 1.0 MPa Steam — Pressure reducing valve

- Pilot operated piston type
- Reliable performance
- Large capacity for controlling reduced pressure
- Wide pressure range

Application		Steam
Inlet pressure		0.1-1.0 MPa
Reduced pressure		0.03-0.8 MPa
Max. temperature		220℃
Connection		JIS 10K FF flanged
Material	Body	Ductile cast iron
	Main valve, Valve seat	Stainless steel
	Pilot valve, Pilot valve seat	Stainless steel
	Piston, Cylinder	Bronze
Size		125A-200A

GD-6N•6 1.0 MPa Steam Air Water — Pressure reducing valve

GD-6N

- Direct acting type
- Easy installation and operation

Model		GD-6N	GD-6
Application		Steam	Water, Oil, Air, Non-dangerous fluids
Inlet pressure		1.0 MPa or less	
Reduced pressure		(A) 0.02-0.1 MPa (B) 0.1-0.4 MPa	
Max. temperature		220℃	80℃
Connection		JIS Rc screwed	
Material	Body	Ductile cast iron *1	
	Valve, Valve seat	Stainless steel	Brass and Bronze (FKM disc) *2
	Diaphragm	Stainless steel	
Size		10A-25A	

*1 Available with stainless steel wetted parts and all stainless steel made.
*2 Available with stainless steel made valve disc and valve seat on request. Also available with PTFE disc on request.

GD-30•30S 1.7/2.0 MPa Steam — Pressure reducing valve

GD-30

- Direct acting type
- Small, compact and advanced design
- Superior performance and durability
- Easy adjustment with handle
- Incorporated screen prevents dirt problem
- Wetted parts stainless steel (GD-30S)

Model		GD-30	GD-30S
Application		Steam	
Inlet pressure		1.7 MPa or less	2.0 MPa or less
Reduced pressure		(A) 0.02-0.1 MPa (B) 0.05-0.4 MPa (C) 0.35-1.0 MPa	
Max. temperature		210℃	220℃
Connection		JIS Rc screwed	
Material	Body	Cast bronze	Cast stainless steel (SCS14A)
	Valve, Valve seat	Stainless steel	
	Bellows	Phosphor bronze	Stainless steel
Size		15A-25A, 40A, 50A	15A-25A

GD-45P•45

2.0 MPa | Steam

Pressure reducing valve

GD-45

GD-45P

- Direct acting type • Small and compact
- Superior performance and durability • Easy installation and operation
- Incorporated screen prevents dirt problem

Application		Steam
Inlet pressure		2.0 MPa or less
Reduced pressure		(A) 0.02-0.1 MPa (B) 0.05-0.4 MPa (C) 0.35-1.0 MPa
Max. temperature		220℃
Connection		JIS Rc screwed
Material	Body	Ductile cast iron
	Valve, Valve seat	Stainless steel
	Bellows	Phosphor bronze
Size		15A-25A

GD-200 Series

1.0/2.0 MPa | Air | Water

Pressure reducing valve

GD-200

Model		GD-200	GD-200C	GD-200H
Application		Water, Oil (Kerosene, Heavy oils A and B), Air, Non-dangerous fluids		
Inlet pressure		1.0 MPa or less		2.0MPa or less
Reduced pressure	15A-50A	(A) 0.05-0.25 MPa (B) 0.26-0.7 MPa		(A) 0.05-0.25 MPa (B) 0.26-0.7 MPa (C) 0.5-1.0 MPa
	65A, 80A			(A) 0.05-0.25 MPa (B) 0.26-0.7 MPa (C) 0.5-0.9 MPa
	100A-150A	(A) 0.05-0.25 MPa (B) 0.26-0.5 MPa		(A) 0.05-0.25 MPa (B) 0.26-0.5 MPa (C) 0.5-0.75 MPa
Max. temperature		80℃	60℃	80℃
Connection		JIS 10K FF flanged		JIS 20K RF flanged
Material	Body	Ductile cast iron		
	Valve seat	Stainless steel		
	Valve disc	NBR		
	Diaphragm	NBR		
Size		15A-150A		

- Available with FKM type (except for the GD-200H(C) of 65A to 150A).
- Available with the GD-200HS for flushing water.

GD-24•24B

1.6 MPa | Water | NPb

Pressure reducing valve

- Direct acting type • Small and compact
- Superior performance and durability
- Easy installation and operation

Model		GD-24	GD-24B
Application		Cold and hot water	Cold and hot water, Flushing water
Inlet pressure		0.2-1.6 MPa	
Reduced pressure		0.05-0.55 MPa	
Max. temperature		80℃	
Connection		JIS Rc screwed	
Material	Body	Cast bronze *1	
	Valve seat	Stainless steel	
	Valve, Valve disc	Brass, Urethane rubber	Bronze, Urethane rubber
	Diaphragm	NBR	
Size		15A-50A	

*1 Available with the body of leadless bronze (Non-Pb treatment) as the GD-24-N.

GD-15•15C

1.0 MPa | Water | NPb

Pressure reducing valve

- Direct acting type
- Low noise and stable pressure control
- Hand-removable cap and incorporated strainer
- Incorporated strainer prevents dirt problem
- With built-in check valve

Application		City water
Inlet pressure		0.1-1.0 MPa
Reduced pressure		0.05-0.25 MPa (**standard setting : 0.2 MPa**)
Max. temperature		**60℃**
Connection		JIS Rc screwed
Material	Body	Cast bronze (**NPb-treated**)
	Valve	NBR
	Valve seat	Cast bronze (**NPb-treated**)
	Diaphragm	NBR
Size		15A, 20A

GD-41•43

1.0/2.0 MPa | Water | Gas | Steam

Pressure reducing valve

GD-41

- Direct acting type
- SCS14A/SUS316 stainless steel for wetted parts
- Material identification for recycling
- Stable pressure control by pressure balance structure

Model		GD-41	GD-43-10	GD-43-20
Application		**Cold and hot water, Steam for washing or sterilization**		
Inlet pressure		0.07-2.0 MPa (0.2 MPa or less for steam for washing or sterilization) *1		
Reduced pressure		(A) 0.02-0.1 MPa (B) 0.1-0.25 MPa (C) 0.25-0.5 MPa		
Fluid temperature		5-90℃ *2		
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS 20K RF flanged
Material	Body	Cast stainless steel (SCS14A)		
	Valve disc	Special synthetic rubber (special FKM)		
	Diaphragm	Heat-resistant synthetic rubber and PTFE (PTFE applied to wetted face)		
Size		15A-25A		

*1 The inlet pressure of the GD-43-10 is 0.07 to 1.0 MPa.

*2 If using for washing steam or sterilization steam, be sure that maximum temperature is 130℃ and avoid continuous use for more than 30 minutes.

・Available with the product for Air, Carbon dioxide gas, Nitrogen gas (GD-41G•43G).

GD-400•400SS

400 kPa | Gas

Pressure reducing valve

GD-400SS

- For extremely low pressure control
- Max. reduction ratio is 400:1
- GD-400SS: Wetted parts made of stainless steel

Model		GD-400	GD-400SS
Application		**Air, Nitrogen gas *1**	
Inlet pressure		2.5-400 kPa	
Reduced pressure		(A) 0.5-1.4 kPa (B) 1.2-3.3 kPa (C) 3.0-8.0 kPa (D) 7.0-20 kPa	
Working temperature		5-60℃	
Connection		JIS 10K FF flanged	
Material	Body	Cast iron	Cast stainless steel (SCS14A)
	Valve	Stainless steel (NBR disc incorporated)	
	Diaphragm	NBR *2	
	Spindle	Stainless steel	
Size		15A-50A	

*1 Please contact us when using for other fluids.

*2 Available with FKM type.

GD-26 Series

1.0/1.6 MPa | Air | Water | NPb

Pressure reducing valve

GD-26-NE·28-NE

- Direct acting type
- Anti-corrosion material for wetted parts
- Low noise and stable pressure control
- Incorporated strainer prevents dirt problem
- Leadless bronze (Non-Pb surface treatment) for the products with " N " letter

GD-27S·29S·27GS

Model		GD-26-NE	GD-27-NE	GD-27-N	GD-27F-N	GD-27BP *1	GD-28-NE	GD-29-NE
Application		Cold and hot water						
Inlet pressure		1.0 MPa or less				1.6 MPa or less		
Reduced pressure		(A) 0.05-0.35 MPa (B) 0.3-0.7 MPa		(A) 0.05-0.20 MPa (B) 0.2-0.5 MPa		(A) 0.05-0.35 MPa (B) 0.3-0.7 MPa		
Application temperature		5-90℃		5-80℃	5-90℃			
Connection		JIS Rc screwed	JIS 10K FF flanged				JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast bronze (NPb-treated)						
	Valve seat	Cast bronze (NPb-treated)						
	Valve disc	FKM		NBR	FKM			
	Diaphragm	EPDM		NBR	FKM	EPDM		
Size		15A-50A	25A-100A	125A, 150A		20A-100A	15A-50A	25A-100A

Model		GD-26S	GD-27S	GD-28S	GD-29S
Application		Cold and hot water			
Inlet pressure		1.0 MPa or less		1.6 MPa or less	
Reduced pressure		(A) 0.05-0.35 MPa (B) 0.3-0.7 MPa			
Application temperature		5-90℃			
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS Rc screwed	JIS 16K FF flanged
Material	Body	Cast stainless steel			
	Valve seat	Cast stainless steel			
	Valve disc	EPDM			
	Diaphragm	EPDM			
Size		20A-50A	20A-100A	20A-50A	20A-100A

Model		GD-26G	GD-27G	GD-26GS	GD-27GS
Application		Air, Other non-dangerous fluids *2			
Inlet pressure		1.0 MPa or less			
Reduced pressure		(A) 0.05-0.35 MPa (B) 0.3-0.7 MPa			
Fluid temperature		5-90℃			
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast bronze		Cast stainless steel	
	Valve seat	Bronze		Cast stainless steel	
	Valve disc	EPDM			
	Diaphragm	EPDM			
Size		15A-50A	25A-100A	20A-50A	20A-100A

*1 GD-27BP has three functions (PRV/STOP/BY-PASS).
*2 Please contact us when using for gas containing oil.
・Avoid use of 125A and 150A under differential pressure of more than 0.8 MPa.
・Available with FKM (GD-26GS, GD-27GS, and GD-26S Series).
・Available with trim parts of stainless steel (GD-26-NED, GD-27-NED).

GD-25 Series Pressure reducing valve

GD-25GJ

- Low noise and stable pressure control
- GD-25JC: With check valve
- GD-25GJ-K(P): With pipe end core
- Leadless bronze(Non-Pb surface treatment)

Model		GD-25GJ	GD-25JC	GD-25GJ-K	GD-25GJ-L
Application		**City water**			
Inlet pressure		1.0 MPa or less			
Reduced pressure		(A) 0.05-0.1 MPa (B) 0.10-0.22 MPa (C) 0.20-0.35 MPa			
Fluid temperature		5-90℃			5-40℃
Connection		JIS R1 screwed (union joint)		JIS Rc1 screwed (union joint)	
Material	Body	Cast bronze (NPb-treated)			
	Valve seat	Cast bronze (NPb-treated)			
	Spindle	Brass			
	Valve disc	FKM			
	Diaphragm	EPDM			
Size		25A			

GD-38 Series Pressure reducing valve

GD-38VV・38PP

- Low noise and stable pressure control
- With "Bypass" function
- Leadless bronze (Non-Pb surface treatment)

Model		GD-38 Series
Application		**City water**
Inlet pressure		1.0 MPa or less
Reduced pressure		(A) 0.05-0.1 MPa (B) 0.10-0.22 MPa (C) 0.2-0.3 MPa
Working temperature		5-90℃ *1
Connection		JIS R screwed (union joint) *2
Material	Body	Cast bronze (NPb-treated)
	Valve seat	Cast bronze (NPb-treated)
	Spindle	Brass
	Valve disc	EPDM
	Diaphragm	EPDM
Size		20A

*1 40℃ for the product with pipe end core. 60℃ for the product with check valve.
*2 Available with JIS Rc screwed and other types of connection.

GD-46 Series Pressure reducing valve

GD-46PP

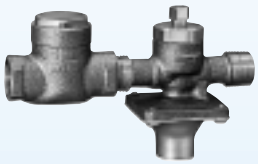
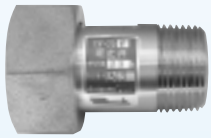
- Low noise and stable pressure control
- Hydraulic pressure test can be done easily by reversing the cap
- Leadless bronze (Non-Pb surface treatment)

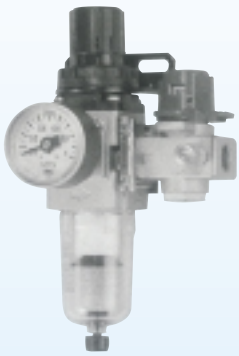
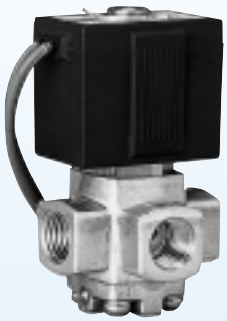
Model		GD-46 Series
Application		**City water**
Inlet pressure		1.0 MPa or less
Reduced pressure		(A) 0.05-0.1 MPa (B) 0.10-0.22 MPa (C) 0.2-0.3 MPa
Working temperature		5-90℃ *1
Connection		JIS R screwed (union joint) *2
Material	Body	Cast bronze (NPb-treated)
	Spindle	Dezincification resistant material
	Valve disc	FKM
	Diaphragm	FKM
Size		20A

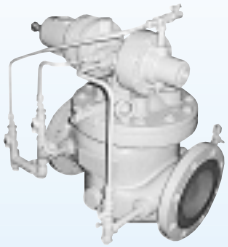
*1 40℃ for the product with pipe end core. 60℃ for the product with check valve.
*2 Available with JIS Rc screwed and other types of connection.

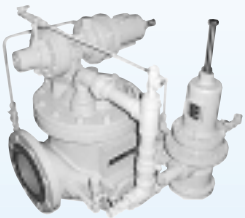
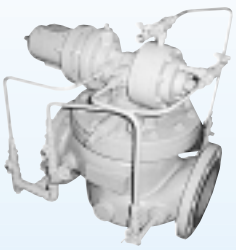
Feature		Low pressure	Low pressure / Balance type	316 Stainless steel
Model		**GD-4**	**GD-4B**	**GD-8N**
Picture				
Application		**Air, Other non-dangerous fluids**		**Pure water, Cold and hot water, Air, N_2, CO_2, Ar**
Inlet pressure		Max. 300 kPa	Max. 800 kPa (15A-50A) Max. 500 kPa (65A-150A)	0.1-1.0 MPa
Reduced pressure		2-200 kPa ·Contact us about the pressure range.		0.05-0.7 MPa
Max. temperature		80℃		60℃
Connection		JIS 10K FF flanged		JIS Rc screwed
Material	Body	Cast iron *		Stainless steel (SUS316)
	Valve	NBR (15A-50A) Stainless steel (65A-150A)	NBR	Stainless steel
	Valve seat	Stainless steel		Stainless steel
	Diaphragm	NBR		Fluororesin
Size		15A-150A		6A-15A
Others		* Available with carbon steel or stainless steel body.		· Available with reduced pressure of 0.02 to 0.2 MPa. · Pressure gauge connection port is JIS Rc 1/4 screwed. · Available with dedicated brackets.

Feature		General air regulator		Piston type	Piston type / Balance type
Model		**GD-9N**	**GD-9**	**GD-7**	**GD-7B**
Picture					
Application		**Air, Other non-dangerous fluids**		**Cold and hot water, Oil, Other non-dangerous fluids**	
Inlet pressure		0.1-0.99 MPa		0.1-1.0 MPa	
Reduced pressure		0.05-0.7 MPa	0.05-0.85 MPa	20A-50A (A) 0.05-0.25 MPa (B) 0.25-0.45 MPa (C) 0.45-0.7 MPa	65A-150A (A) 0.05-0.2 MPa (B) 0.2-0.5 MPa (C) 0.5-0.7 MPa
Max. temperature		60℃		80℃ *1	
Connection		JIS Rc screwed		JIS 10K FF flanged	
Material	Body	Aluminium die casting		Cast iron *2	
	Valve	NBR		Phosphor bronze *3	NBR
	Valve seat	Brass		Phosphor bronze *3	Stainless steel
	Diaphragm	NBR		—	
	Spindle	—		Stainless steel	
	Piston	—		Bronze	
Size		8A-20A	25A	20A-150A	
Others		· The product cannot be used for toxic and flammable gases. · Available with dedicated brackets.		*1 Available with withstanding up to 120℃. *2 Available with the GD-7H and the GD-7BH, made of cast steel, with inlet pressure of 2.0 MPa or less and reduced pressure of 0.7 to 1.6 MPa. *3 Available with stainless steel made valve and valve seat.	

Feature		Large capacity	PRV unit for kerosene	Water hammer arrestor	Check valve
Model		**GP-50**	**GD-65F・SU-55F**	**WP-1**	**CV-25U**
Picture					
Application		**Cold and hot water**	**Kerosene**	**Cold and hot water, City water**	**City water**
Inlet pressure		0.14-1.0 MPa	0.05-0.1 MPa	Max. 1.0 MPa	1.0 MPa or less
Reduced pressure		0.07-0.2 MPa 0.2-0.4 MPa 0.4-0.7 MPa	0.02 MPa	–	Shut-off pressure: Min. 0.005 MPa
Max. temperature		70℃	60℃	90℃	35℃
Connection		JIS 10K RF flanged	JIS Rc screwed x JIS R screwed	JIS R screwed	JIS G screwed x JIS R screwed
Material	Body	Cast iron	Cast bronze	Brass	Brass
	Valve	NBR, Stainless steel	FKM	Pipe: Copper	POM
	Valve seat	Stainless steel	Cast bronze	Piston: Brass	–
	Piston, Cylinder	Bronze	Diaphragm: FKM	O-ring: NBR	–
Size		125A-300A	15A	15A-25A	20A, 25A
Others		–	Incorprated screen: 60 mesh	–	–

Feature		For air loaded PRV	PRV with filter	3 port solenoid valve
Model		**GD-37U**	**GD-37**	**DD-37**
Picture				
Application		**Air**		**Air, Water, Oil**
Inlet pressure		Max. 0.99 MPa		Max. 0.6 MPa
Reduced pressure		0.05-0.85 MPa		–
Max. temperature		60℃		–
Connection		JIS Rc screwed		JIS Rc screwed
Material	Body	Zinc die casting		Brass
	Valve	NBR		NBR
	Valve seat	Zinc die casting		–
	Diaphragm	NBR		–
Size		8A		8A
Others		• Operating unit for air loaded pressure reducing valves. Filteration: 5μm	Filteration: 5μm	Rated voltage: AC 110 V 50 / 60 Hz AC 220 V 50 / 60 Hz

Feature		Primary pressure regulating valves			
Model		GPR-2000	GD-4R	GD-7R	GP-50R
Picture					
Application		Steam	Air, Other non-dangerous fluids	Water, Oil, Other non-dangerous fluids	Cold and hot water
Pressure regulating range		(A) 0.02-0.15 MPa (B) 0.1-1.1 MPa (C) 1.0-1.4 MPa	2-200 kPa *	20-50A (A) 0.05-0.25 MPa (B) 0.25-0.45 MPa (C) 0.45-0.7 MPa 65-150A (A) 0.05-0.2 MPa (B) 0.2-0.5 MPa (C) 0.5-0.7 MPa	0.1-0.2 MPa 0.2-0.4 MPa 0.4-0.7 MPa
Max. temperature		220℃	80℃	80℃	70℃
Connection		JIS Rc screwed JIS 20K RF, JIS 10K FF flanged	JIS 10K FF flanged	JIS 10K FF flanged	JIS 10K RF flanged
Material	Body	Ductile cast iron	Cast iron	Cast iron	Cast iron
	Main valve	Stainless steel	Stainless steel	Phosphor bronze	NBR・Stainless steel
	Main valve seat	Stainless steel	Stainless steel	Phosphor bronze	Stainless steel
	Pilot valve	Stainless steel	–	–	–
	Pilot valve seat	Stainless steel	–	–	–
	Diaphragm	Stainless steel	NBR	Piston: Bronze	Piston: Bronze
Size		Screwed: 15A-50A Flanged: 15A-100A	20A-150A	20A-150A	125A-300A
Others		–	* Please contact us for pressure range of each size.	• Available with the GD-7RH, made of cast steel, with pressure range of 0.7 MPa to 1.6 MPa.	–

Feature		Primary pressure regulating valve	Differential pressure regulating valve	Falling water preventing valve	Differential pressure regulating valve
Model		GD-20R	GD-21	GP-50S	GP-50RD
Picture					
Application		Water, Oil (Kerosene・Heavy oils A and B), Air, Other non-dangerous fluids	Cold and hot water	Cold and hot water	Cold and hot water
Pressure regulating range		15A-80A (A) 0.05-0.25 MPa (B) 0.26-0.7 MPa 100A-150A (A) 0.05-0.25 MPa (B) 0.26-0.5 MPa	15A-80A (A) 0.05-0.25 MPa (B) 0.26-0.7 MPa 100A-150A (A) 0.05-0.25 MPa (B) 0.26-0.5 MPa	0.1-0.2 MPa 0.2-0.4 MPa 0.4-0.7 MPa	0.1-0.2 MPa 0.2-0.4 MPa 0.4-0.7 MPa
Max. temperature		80℃	80℃	70℃	70℃
Connection		JIS 10K FF flanged	JIS 10K FF flanged	JIS 10K RF flanged	JIS 10K RF flanged
Material	Body	Ductile cast iron	Ductile cast iron	Cast iron	Cast iron
	Valve	NBR	NBR	NBR・Stainless steel	NBR・Stainless steel
	Valve seat	Stainless steel or Bronze	Bronze	Stainless steel	Stainless steel
	Diaphragm	NBR	NBR	Piston: Bronze	Piston: Bronze
Size		15A-150A	15A-150A	125A-300A	125A-300A
Others		• Available with the GD-20RC coated with Nylon 11.	–	–	–

Y's JACKET

This specially designed jacket completely fits Yoshitake products in use at your site. The energy-saving and CO_2-reduction effects can be estimated prior to order.

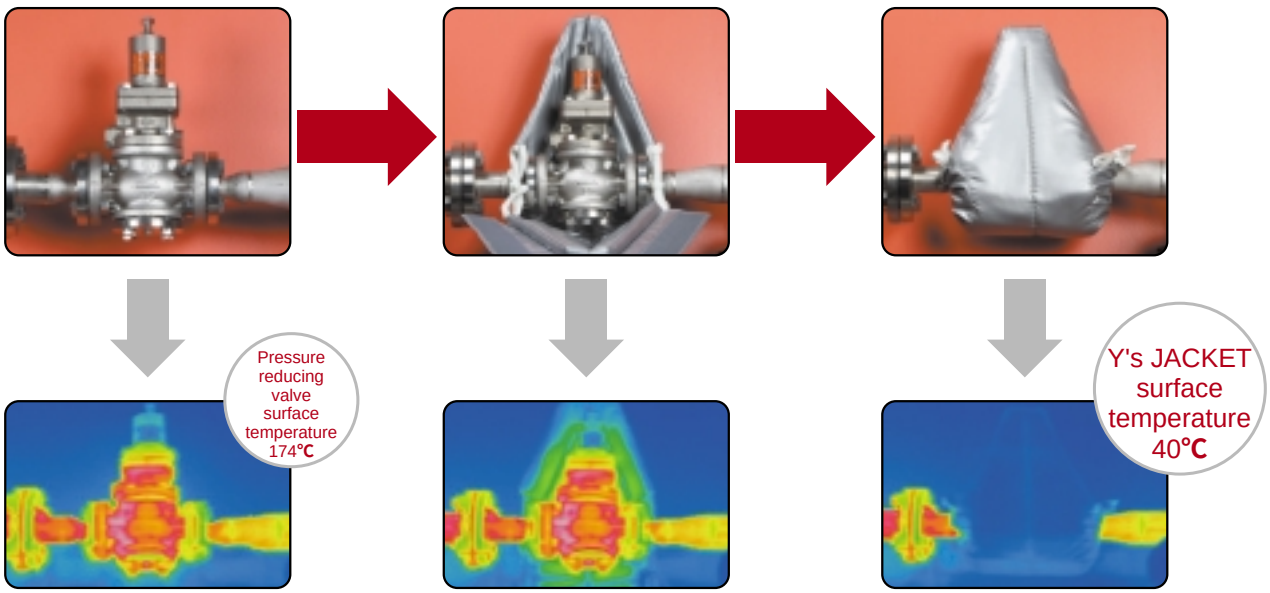
Features

1. Energy saving
   Prevents room temperature rise as well as energy loss caused by heat release.
2. CO_2-reduction effect
   Contributes to CO_2-reduction of the global issue.
3. Safety
   Prevents accidents, such as burns or bruises and brings a safe and comfortable work environment.
4. Environmental enhancement
   Easy to set and reusable after valve maintenance, it produces no waste and thus is environment-friendly.

Specifications

Material	Surface material	Glass cloth + Silicone coating
	Inner material	Glass cloth + Silicone coating
	Insulating material	Needle punched mat made of glass fiber
	Maximum temperature	250℃

Effect



BSV-2EN

1.6/2.5 MPa | Steam | Air | Water

Bellows sealed globe valve

Features

1. Non-rising handwheel: Free from foreign substance trouble because most threaded surface is covered.
2. No leakage by two-stage sealing of double bellows and gland packing.
3. Gland packing does not need retightening nor applying pressure on spindle, thus handwheel can be turned with small torque without interference from the spindle.
4. Maintenance-free: No need to replace or retighten gland packing.

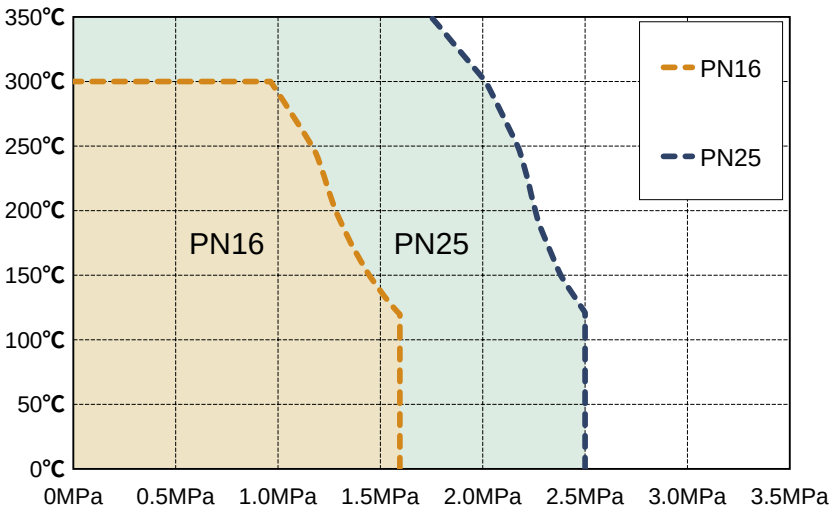
Specifications

Model		BSV-2EN	
Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids	
Nominal size		15A-200A *1	
Max. pressure		1.6 MPa *2	2.5 MPa *2
Max. temperature		300℃ *2	350℃ *2
Material	Body	Cast iron	Ductile cast iron
	Bonnet	Ductile cast iron	
	Valve	Stainless steel	
	Valve seat	Stainless steel	
	Bellows	Stainless steel (SUS316Ti)	
Connection		EN 1092-2 PN16	EN 1092-2 PN25

*1 If 250A is needed, please contact us (for cast iron body only).

*2 According to Pressure and Temperature Rating.

Pressure and Temperature Rating



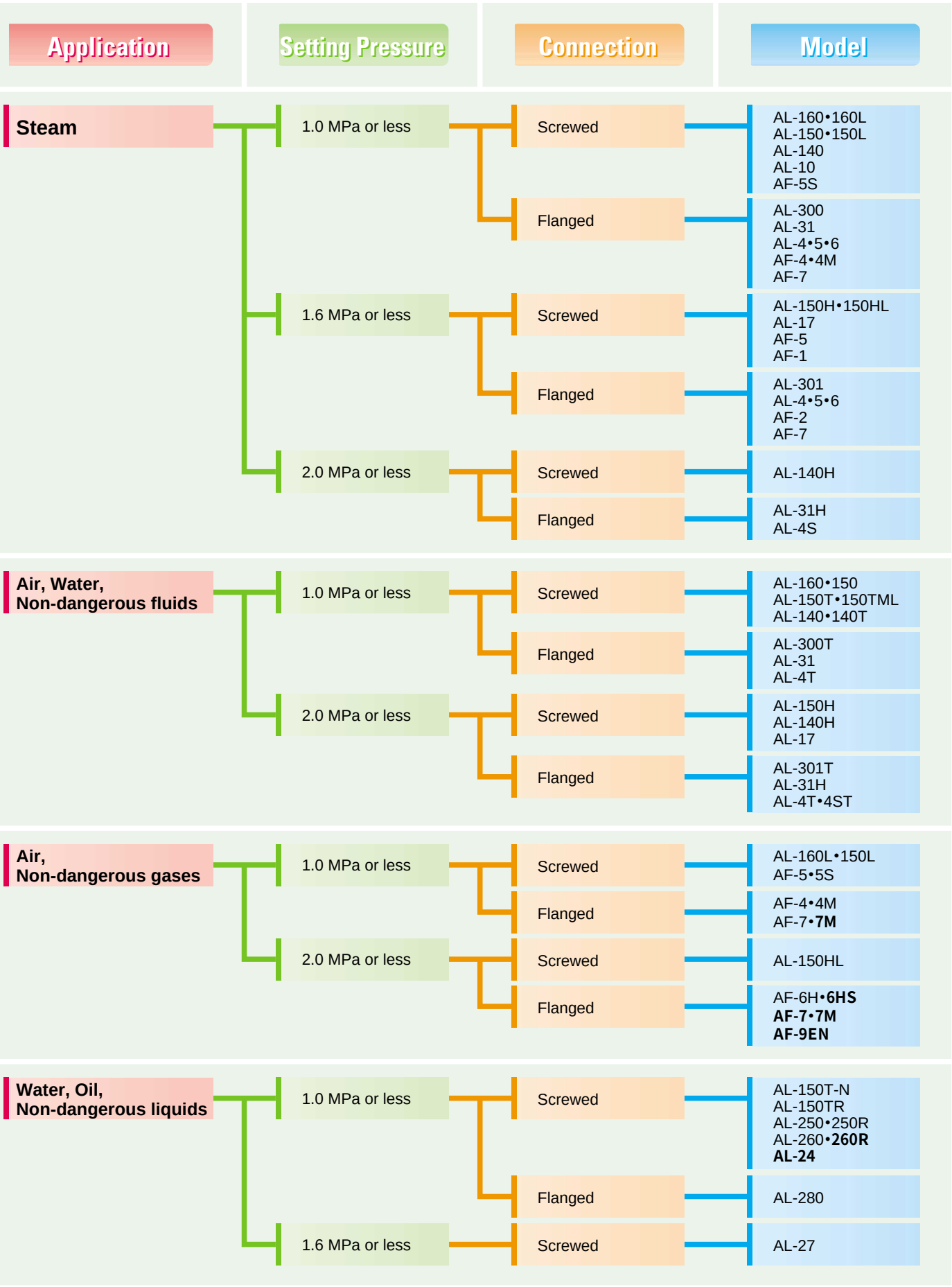
- This chart shows Pressure and Temperature Rating of PN16 for cast iron flanges and of PN25 for ductile cast iron flanges according to EN 1092-2.
- BSV-2EN PN16 flanged can be used in orange range. BSV-2EN PN25 flanged can be used in orange and green ranges.
- If detailed values of maximum fluid temperature and maximum pressure are needed, please see the following table:

Acc to EN 1092-2		Temperature [℃]					
Material	PN	-10 up to 120	150	200	250	300	350
Cast iron	16	1.6 MPa	1.44 MPa	1.28 MPa	1.12 MPa	0.96 MPa	–
Ductile cast iron	25	2.5 MPa	2.43 MPa	2.3 MPa	2.18 MPa	2.0 MPa	1.75 MPa

MEMO

Safety Relief Valve Selection

AL types are lift type safety and relief valves, AF types are full-bore safety valves.



∗Please confirm the specification of the text about the detailed application and pressure of each model.

AL-160•150•150T•150T-N

1.0 MPa | Steam | Air | Water | Safety relief valve

AL-160

- Small and compact
- Superior durability due to stainless steel made valve and valve seat

Model		AL-160•150	AL-150T	AL-150T-N
Application		Steam, Air, Water, Oil, Other non-dangerous fluids	Air, Water, Oil, Other non-dangerous fluids	Cold and hot water
Working pressure		0.05-1.0 MPa		
Max. temperature		220℃ *	120℃	100℃
Connection		JIS Rc screwed		
Material	Spring case	Cast bronze		Cast bronze (NPb-treated)
	Valve and valve seat	Cast stainless steel (SCS14A)	Cast stainless steel (SCS14A) FKM	
Size		15A-50A		

* Max. temperature is 150℃ when using for water, oil or other liquids.

AL-160L•150L•150HL•150H

1.0/1.6 MPa | Steam | Air | Water | Safety relief valve

AL-160L

- Small and compact lever type (AL-160L•150L•150HL)
- Superior durability due to stainless steel made valve and valve seat

Model		AL-160L•150L	AL-150HL	AL-150H
Application		Steam, Air		Steam, Air, Water, Oil, Other non-dangerous fluids
Working pressure		0.05-1.0 MPa	1.0-1.6 MPa	
Max. temperature		220℃		220℃ *
Connection		JIS Rc screwed		
Material	Spring case	Cast bronze		
	Valve and valve seat	Cast stainless steel (SCS14A)		
Size		15A-50A		

* Max. temperature is 150℃ when using for water, oil or other liquids.

AL-140•140H•140T

1.0/2.0 MPa | Steam | Air | Water | Safety relief valve

AL-140

- Superior durability due to all stainless steel made
- Simple structure and easy maintenance
- Easy adjustment

Model		AL-140	AL-140H	AL-140T
Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids		Air, Cold and hot water, Oil, Other non-dangerous fluids
Working pressure		0.05-1.0 MPa	1.0-2.0 MPa	0.05-1.0 MPa
Max. temperature		220℃ *		120℃
Connection		JIS Rc screwed		
Material	Spring case	Cast stainless steel		
	Valve and valve seat	Cast stainless steel (SCS14A)		Cast stainless steel (SCS14A)・FKM
Size		15A-50A		

* Max. temperature is 150℃ when using for water, oil or other liquids.

AL-250•250R

1.0 MPa Water

Relief valve

AL-250

AL-250R

- Superior durability due to all stainless steel made
- Simple structure and easy maintenance
- Unique structure especially for relief valve
- Stable operation even with back pressure change produced in continuous blow
- Set pressure is easily changed by handle(AL-250R)

Model		AL-250	AL-250R
Application		Cold and hot water, Oil, Other non-dangerous fluids	
Working pressure		0.05-1.0 MPa	
Max. temperature		120℃	
Connection		JIS Rc screwed	
Material	Spring case	Cast stainless steel	
	Valve and valve seat	Stainless steel	
Size		15A-50A	

AL-260•260R

1.0 MPa Water

Relief valve

AL-260

AL-260R

- Superior durability due to stainless steel trim parts
- Simple structure and easy maintenance
- Unique structure especially for relief valve
- Stable operation even with back pressure change produced in continuous blow
- Set pressure is easily changed by handle(AL-260R)

Model		AL-260	AL-260R
Application		Cold and hot water, Oil, Other non-dangerous fluids	
Working pressure		0.05-1.0 MPa	
Max. temperature		120℃	
Connection		JIS Rc screwed	
Material	Valve case	Cast bronze	
	Spring case	Cast bronze	
	Valve and valve seat	Stainless steel	
Size		15A-50A	

AL-280

1.0 MPa Water

Relief valve

AL-280

- Superior durability due to stainless steel trim parts
- Effective for pump with high pulsation pressure or large pressure fluctuation
- Body made of high tensile strength material "FCD450"

Model		AL-280
Application		Cold and hot water, Oil (Heavy oil A, Heavy oil B, Kerosene)
Working pressure		0.05-1.0 MPa
Max. temperature		120℃
Connection		JIS 10K FF flanged
Material	Valve case	Ductile cast iron
	Spring case	Ductile cast iron
	Valve and valve seat	Stainless steel
Size		15A-50A

AL-150TML•150TR

1.0 MPa | Air | Water

Safety relief valve

AL-150TML

AL-150TR

- Superior durability due to stainless steel made valve and valve seat
- Simple structure and easy maintenance
- With closed test lever (AL-150TML)
- Set pressure is easily changed by handle (AL-150TR)

Model		AL-150TML	AL-150TR
Application		Air, Cold and hot water, Oil, Other non-dangerous fluids	Cold and hot water, Oil, Other non-dangerous fluids
Working pressure		0.05-1.0 MPa	
Max. temperature		120℃	
Connection		JIS Rc screwed	
Material	Spring case	Cast bronze	
	Valve and valve seat	Stainless steel (SCS14A) • FKM	
	Adjusting spring	Stainless steel	
Size		15A-50A	

AL-17

1.6 MPa | Steam | Air | Water

Safety relief valve

- Superior durability due to stainless steel made valve and valve seat
- Popping structure permits a reliable blow-off operation
- Blow-down pressure is adjustable

Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids
Working pressure		0.05-1.6 MPa
Max. temperature		220℃ *
Connection		JIS Rc screwed
Material	Spring case	Ductile cast iron
	Valve and valve seat	Stainless steel
Size		15A-50A

* Max. temperature is 150℃ when using for water, oil or other liquids.

AL-27

1.6 MPa | Water

Relief valve

- Unique structure especially for relief valve
- Stable operation even with back pressure change produced in continuous blow

Application		Cold and hot water, Oil, Other non-dangerous fluids
Working pressure		0.05-1.6 MPa
Max. temperature		120℃
Connection		JIS Rc screwed
Material	Valve case	Ductile cast iron
	Spring case	Ductile cast iron
	Valve and valve seat	Stainless steel
Size		15A-50A

AL-10 Safety valve

- Discharge inspection can be manually operated at 75% or more of the opening pressure. (Open type with a lever)
- Blowdown can be adjusted with adjustable ring (seat ring).

Application		Steam
Working pressure		0.05-1.0 MPa
Max. temperature		220℃
Connection		JIS Rc screwed
Material	Spring case	Ductile cast iron
	Valve and valve seat	Cast bronze or stainless steel
Size		15A-50A

AL-300•301 Safety valve

- Simple structure and easy maintenance
- Easy adjustment

Model		AL-300	AL-301
Application		Steam	
Working pressure		0.05-1.0 MPa	0.05-1.6 MPa
Max. temperature		220℃	
Connection		JIS 10K FF flanged	JIS 10K FF flanged JIS 16K FF flanged *
Material	Valve case	Ductile cast iron	
	Spring case	Ductile cast iron	
	Valve and valve seat	Cast bronze	Stainless steel
Size		15A-50A	

* JIS 16K FF flanged when working pressure is more than 1.0 MPa.

AL-300T•301T Safety relief valve

- Simple structure and easy maintenance
- Easy adjustment
- Tight seal because of PTFE disc

Model		AL-300T	AL-301T
Application		Air, Cold and hot water, Oil, Other non-dangerous fluids	
Working pressure		0.05-1.0 MPa	0.05-1.3 MPa *1
Max. temperature		150℃	
Connection		JIS 10K FF flanged	JIS 10K FF flanged JIS 16K FF flanged *2
Material	Valve case and spring case	Ductile cast iron	
	Valve and valve seat	PTFE・Cast bronze	PTFE・Stainless steel
Size		15A-50A	

*1 Please contact us if working pressure is between 1.31 MPa and 1.6 MPa.
*2 JIS 16K FF flanged when working pressure is more than 1.0 MPa.

AL-31•31H

1.0/2.0 MPa | Steam | Air | Water

Safety relief valve

- Superior durability due to all stainless steel made
- Small and compact
- Simple structure and easy maintenance

Model		AL-31	AL-31H
Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids	
Working pressure		0.05-1.0 MPa	1.0-2.0 MPa
Max. temperature		220℃ *	
Connection		JIS 10K RF flanged	JIS 16K RF flanged JIS 20K RF flanged
Material	Valve case	Cast stainless steel	
	Spring case	Cast stainless steel	
	Valve and valve seat	Stainless steel	
Size		15A-50A	

* Max. temperature is 150℃ when using for water, oil or other liquids.

AL-4•4S

1.5/2.0 MPa | Steam

Safety valve

- Simple structure and easy maintenance
- Line-up of body material: ductile cast iron and stainless steel

Model		AL-4	AL-4S
Application		Steam	
Working pressure		0.05-1.5 MPa *1	0.05-2.0 MPa
Max. temperature		220℃	
Connection		JIS 10K FF flanged JIS 16K FF flanged	JIS 10K FF flanged JIS 16K FF flanged JIS 20K FF flanged
Material	Valve case	Ductile cast iron	Ductile cast iron *3
	Spring case		
	Valve and valve seat	Stainless steel	
Size		65A-150A for JIS 10K FF flanged 65A-125A for JIS 16K FF flanged *2	65A-100A

*1 Maximum working pressure for 150A is 0.8 MPa (connection: JIS 10K FF flanged).
*2 JIS 16K FF flanged when working pressure is more than 1.0 MPa.
*3 Available with stainless steel made.

AL-4T•4ST

1.5/2.0 MPa | Air | Water

Safety relief valve

- Simple structure and easy maintenance
- Tight seal because of PTFE disc
- Line-up of body material : ductile cast iron and stainless steel

Model		AL-4T		AL-4ST
Type		Standard	With SUS trim parts	—
Application		Air, Cold and hot water, Oil, Other non-dangerous fluids		
Working pressure		0.05-1.0 MPa *1	0.05-1.5 MPa *1 *2	0.05-2.0 MPa *2
Max. temperature		150℃		
Connection		JIS 10K FF flanged	JIS 10K FF flanged JIS 16K FF flanged	JIS 10K FF flanged JIS 16K FF flanged JIS 20K FF flanged
Material	Valve case	Ductile cast iron		Ductile cast iron *4
	Spring case			
	Valve and valve seat	PTFE・Cast bronze	PTFE・Stainless steel	
Size		65A-150A	65A-150A for JIS 10K FF flanged 65A-125A for JIS 16K FF flanged *3	65A-100A

*1 Maximum working pressure for 150A is 0.8 MPa (connection: JIS 10K FF flanged).
*2 When working pressure is more than 1.2 MPa (for 65A and 80A) or 1.0 MPa (for 100A and 125A), a metal-to-metal seating is incorporated in.
*3 JIS 16K FF flanged is used when working pressure is more than 1.0 MPa.
*4 Available with stainless steel made.

AL-5

1.5 MPa Steam

Safety valve

- Restricting structure to prevent unexpected pressure adjustment

Application		Steam
Working pressure		0.05-1.5 MPa
Max. temperature		220℃
Connection		JIS 10K FF flanged JIS 16K FF flanged *
Material	Valve case	Ductile cast iron
	Spring case	Ductile cast iron
	Valve and valve seat	Stainless steel
Size		20A-50A

* JIS 16K FF flanged when working pressrue is more than 1.0 MPa.

AL-6

1.5 MPa Steam

Safety valve

- Blowout test can be performed with lever

Application		Steam
Working pressure		0.05-1.5 MPa *1
Max. temperature		220℃
Connection		JIS 10K FF flanged JIS 16K FF flanged *2
Material	Valve case	Ductile cast iron
	Spring case	Ductile cast iron
	Valve and valve seat	Cast stainless steel
Size		65A-150A

*1 Maximum working pressure for 150A is 0.8 MPa.
*2 JIS 16K FF flanged when working pressure is more than 1.0 MPa.

AF-5・5S

1.0/1.6 MPa Steam Air

Safety valve

AF-5

- Small and compact
- Superior durability due to corrosion-proof material
- The AF-5S is all stainless steel made

Model		AF-5		AF-5S
Application		Steam	Air, Other non-dangerous fluids	Steam, Air, Other non-dangerous fluids
Working pressure		0.1-1.6 MPa	0.1-1.0 MPa	0.1-1.0 MPa
Max. temperature		220℃		
Connection		Inlet: JIS R screwed Outlet: JIS Rc screwed		
Material	Spring case	Cast bronze		Cast stainless steel
	Valve and valve seat	Stainless steel		
Size		20A-50A *		

* The nominal size and the connection size are different.

AF-9EN

1.0/1.6 MPa | Steam | Air

Safety valve

- Full bore safety valve of open type.
- Large discharge capacity.
- Due to lift lever mechanism, a discharge inspection can be manually performed at least 80% of working pressure.

Application		Steam, Air, Other non-dangerous fluids		
Size		20A-100A	125A	150A
Working pressure		0.045-1.6 MPa	0.045-1.25 MPa	0.045-1.0 MPa
		* According to P/T rating.		
Max. temperature		250℃		
Connection		Inlet: EN1092 PN16 flanged, Outlet: EN1092 PN10 flanged		
Material	Valve case	Cast iron		
	Spring case	Ductile cast Iron		
	Valve	Stainless steel		
	Valve seat	Stainless steel		

- Spring replacement does not need any other part replacement but gaskets, however, it requires training by Yoshitake. Only certified person is allowed to replace the spring.
- AF-9EN is not closed type. Please contact us for the product of closed type.
- Please contact us for any further information.

AF-4•4M

1.0 MPa | Steam | Air

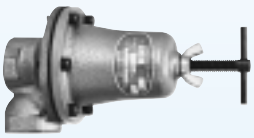
Safety valve

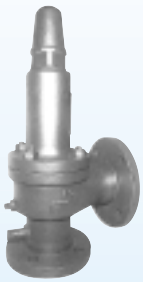
AF-4

- Large discharge capacity.
- Blowout test can be performed with lever.

Application		Steam, Air, Other non-dangerous fluids
Working pressure		0.1-1.0 MPa
Max. temperature		220℃
Connection		* Inlet: JIS 10K FF or JIS 10K RF Outlet: JIS 10K FF flanged
Material	Valve case	Ductile cast iron
	Valve	Stainless steel
	Valve seat	Stainless steel
Size		25A-150A

* Inlet connection for size 100A-150A is JIS 10K RF flanged.

Feature		Relief valve / Diaphragm type	Full bore / SCPH	Full bore / SCS
Model		AL-24	AF-6H	AF-6HS
Picture			AF-6H	
Application		Cold and hot water	Air, Other non-dangerous fluids	
Working pressure		0.1-0.7 MPa *1	0.1-1.96 MPa	
Max. temperature		60℃	250℃ *1	
Connection		JIS Rc screwed	Inlet: JIS 20K RF flanged Outlet: JIS 10K FF flanged *2	
Material	Valve case	Cast bronze *2	Cast carbon steel	Cast stainless steel
	Valve	NBR *3	Stellite overlaid stainless steel	
	Valve seat	Stainless steel	Stellite overlaid stainless steel	
	Diaphragm	NBR (heat-resistant nylon contained)	—	
Size		15A-25A	25A-100A	
Others		*1 Available with working pressure between 0.05 MPa and 0.1 MPa. *2 Available with NPb-treated. *3 Available with FKM (AL-24F).	*1 It may change depending on fluid and pressure. *2 The inlet flange is thicker than JIS standard value.	

Feature		Full bore / Screwed	Full bore / JIS B 8210 inlet	Full bore / Lever, SCPH	Full bore / Closed, SCPH
Model		AF-1	AF-2	AF-7	AF-7M
Picture					
Application		Steam	Steam	Steam, Air, Other non-dangerous fluids	Air, Other non-dangerous fluids
Working pressure		0.18-1.6 MPa	0.18-1.6 MPa	0.1-1.0 MPa *	
Max. temperature		220℃	220℃	350℃	300℃
Connection		Intel: JIS R screwed Outlet: JIS Rp screwed	Intel: JIS B 8210 10K RF flanged * Outlet: JIS B 2239 10K FF flanged	Inlet: JIS 10K RF flanged Outlet: JIS 10K FF flanged	
Material	Valve case	Ductile cast iron	Ductile cast iron	Cast carbon steel	
	Valve	Stainless steel	Stainless steel	Stainless steel	
	Valve seat	Stainless steel	Stainless steel	Stainless steel	
Size		20A-50A	65A, 80A	25A-100A	
Others		—	* JIS B 8210 20K RF flanged when working pressure is more than 1.0 MPa.	* Available with working pressure between 1.0 MPa and 1.6 MPa (Inlet: JIS 20K RF flanged).	

●Setting pressure range for each model (MPa)

Model	Size	A	B	C	D	E	F	G	H
AL-160 AL-160L	15A-50A	0.05-0.2	0.21-0.4	0.41-0.7	0.66-1.0				
AL-150 AL-150L AL-140	15A	0.05-0.2	B1: 0.21-0.3 B2: 0.31-0.4	0.41-0.55	0.56-0.75	0.76-1.0			
	20A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.6	0.61-0.75	0.76-1.0		
	25A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.55	0.56-0.8	0.81-1.0		
	32A	0.05-0.2	B1: 0.21-0.3 B2: 0.31-0.4	0.41-0.65	0.66-1.0				
	40A • 50A	0.05-0.2	B1: 0.21-0.3 B2: 0.31-0.4	0.41-0.65	0.66-0.8	0.81-1.0			
AL-150H·150HL	15A						1.0-1.6		
	20A • 25A							1.0-1.6	
	32A					1.0-1.6			
	40A • 50A						1.0-1.6		
AL-140H	15A						1.0-1.3	1.31-2.0	
	20A • 25A							1.0-1.6	1.61-2.0
	32A					1.0-1.6	1.61-2.0		
	40A						1.0-1.6	1.61-2.0	
AL-150T·150TR AL-150TML AL-140T AL-250·250R AL-260·260R	15A	0.05-0.2	0.21-0.4	0.41-0.55	0.56-0.75	0.76-1.0			
	20A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.6	0.61-0.75	0.76-1.0		
	25A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.55	0.56-0.8	0.81-1.0		
	32A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-1.0				
	40A • 50A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-0.8	0.81-1.0			
AL-17·27	15A-50A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-1.0	1.01-1.6			
AL-10	15A-40A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-1.0				
	50A	0.05-0.1 0.11-0.2							
AL-31·31H	15A	0.05-0.15	0.16-0.25	0.36-0.45	0.56-0.65	0.76-0.85	1.0-1.3	1.31-1.6	
			0.26-0.35	0.46-0.55	0.66-0.75	0.86-1.0		1.61-2.0	
	20A	0.05-0.2	0.21-0.3		0.31-0.4	0.51-0.7	0.71-1.0	1.0-1.3	1.61-2.0
					0.41-0.5			1.31-1.6	
	25A	0.05-0.2	0.21-0.3	0.31-0.45	0.46-0.55	0.56-0.65 0.66-0.8	0.81-1.0	1.0-1.6	1.61-2.0
	32A-50A	0.05-0.2	0.21-0.3	0.31-0.5	0.51-0.65	0.66-0.8	0.81-1.0	1.0-1.6	1.61-2.0
AL-300·301	15A-50A	0.05-0.25	0.26-0.5	0.51-0.75	0.76-1.6				
AL-300T·301T	15A-50A	0.05-0.25	0.26-0.5	0.51-0.75	0.76-1.3				
AL-280	15A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.6	0.61-0.75	0.76-1.0		
	20A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.6	0.61-0.75	0.76-1.0		
	25A	0.05-0.2	0.21-0.35	0.36-0.45	0.46-0.55	0.56-0.8	0.81-1.0		
	32A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-1.0				
	40A-50A	0.05-0.2	0.21-0.4	0.41-0.65	0.66-0.8	0.81-1.0			
AL-4·4T	65A	0.05-0.1	0.11-0.25	0.26-0.55	0.56-1.0	1.01-1.5			
	80A-125A	0.05-0.1	0.11-0.2	0.21-0.4	0.41-0.8	0.81-1.5			
	150A	0.05-0.1	0.11-0.2	0.21-0.4	0.41-0.8				
AL-4S·4ST	65A	0.05-0.1	0.11-0.25	0.26-0.55	0.56-1.0	1.01-2.0			
	80A • 100A	0.05-0.1	0.11-0.2	0.21-0.4	0.41-0.8	0.81-1.6	1.61-2.0		
AL-5	20A	0.05-0.12	0.13-0.21	0.22-0.35	0.36-0.63	0.64-0.99	1.0-1.5		
	25A	0.05-0.08	0.09-0.15	0.16-0.25	0.26-0.45	0.46-0.75	0.76-1.0	1.01-1.1	1.11-1.5
	32A	0.05-0.08	0.09-0.17	0.18-0.25	0.26-0.45	0.46-0.75	0.76-1.0	1.01-1.1	1.11-1.5
	40A	0.05-0.08	0.09-0.15	0.16-0.4	0.41-0.7	0.71-1.0	1.01-1.1	1.11-1.5	
	50A	0.05-0.09	0.1-0.25	0.26-0.5	0.51-0.7	0.71-1.0	1.01-1.1	1.11-1.5	
AL-6	65A	0.05-0.1	0.11-0.25	0.26-0.55	0.56-1.0	1.01-1.5			
	80A-125A	0.05-0.1	0.11-0.2	0.21-0.4	0.41-0.8	0.81-1.0	1.01-1.5		
	150A	0.05-0.1	0.11-0.2	0.21-0.4	0.41-0.8				

Strainer Selection

Application	Type	Max. Pressure	Model
Steam, Air, Water, Non-dangerous fluids	Y type / Screwed	1.3 MPa or less	SY-6
		2.0 MPa or less	SY-5 SY-17
	Y type / Flanged	1.0 MPa or less	SY-40 SY-20-10 SY-8 SY-13
		2.0 MPa or less	SY-40EN•40H SY-20-20
		3.0 MPa or less	SY-10-30 SY-10H•10HS
Air, Water, Non-dangerous fluids	Y type / Screwed	1.0 MPa or less	SY-9
	Y type / Flanged	1.0 MPa or less	SY-40C-**N**
Water, Oil, Non-dangerous fluids	Basket / Flanged	1.0 MPa or less	SU-50S•50SS SU-20•**20S•20C** **SU-10•10S** **SU-12-10** **SU-6**
		2.0 MPa or less	SU-50H SU-12-20
	Duplex / Flanged	1.0 MPa or less	SW-10 SW-10S
Water	Y type / Screwed	1.0 MPa or less	SY-6L•6L-N
		1.3 MPa or less	SY-6-N
		1.6 MPa or less	SY-24•24-N
	Basket / Screwed	1.2 MPa or less	SU-55F
Temporary Strainer			ST-1

∗Please confirm the specification of the text about the detailed application and pressure of each model.

SY-5 Y type strainer

2.0 MPa · Steam · Air · Water

- Screwed, ductile cast iron and 2.0 MPa • Small and compact
- Low pressure loss and large capacity

Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids
Max. pressure		2.0 MPa
Max. temperature		220℃
Connection		JIS Rc screwed
Material	Body	Ductile cast iron
	Screen	Stainless steel
Size		10A-50A

- Standard screen: ϕ 2.5-7.21 holes/cm^2 80 mesh.
- Available with 20 to 100 mesh screen.

SY-40•40C-N Y type strainer

1.0 MPa · Steam · Air · Water

- Flanged, ductile cast iron and 1.0 MPa • Low pressure loss and large capacity
- SY-40C-N is coated with Nylon 11

Model		SY-40	SY-40C-N
Application		Steam, Air, Water, Oil, Other non-dangerous fluids	Air, Water, Other non-dangerous fluids
Max. pressure		1.0 MPa	
Max. temperature		220℃	60℃
Connection		JIS 10K FF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		15A-300A	15A-150A

- Standard screen: ϕ 2.5-7.21 holes/cm^2 80 mesh for the SY-40 or 60 mesh for the SY-40C-N.
- Available with 20 to 100 mesh screen.

SY-40EN•40H Y type strainer

2.0 MPa · Steam · Air · Water

- Flanged, ductile cast iron and 2.0 MPa
- Low pressure loss and large capacity

Model		SY-40EN	SY-40H
Application		Steam, Air, Cold and hot water, Other non-dangerous fluids	
Max. pressure		2.0 MPa	
Max. temperature		220℃	
Connection		EN1092 PN25 flanged	JIS 20K FF flanged ASME Class 300 flanged
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		15A-150A	

- Standard screen: ϕ 2.5-7.21 holes/cm^2 80 mesh.
- Available with 20 to 100 mesh screen.

SY-17 Y type strainer

2.0 MPa · Steam · Air · Water

- Screwed, stainless steel and 2.0 MPa • Small and compact
- Low pressure loss and large capacity

Application		Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids
Max. pressure		2.0 MPa
Max. temperature		150℃ (250℃) *
Connection		JIS Rc screwed
Material	Body	Cast stainless steel
	Screen	Stainless steel
Size		15A-50A

* Gasket material is non-asbestos, for more than 150℃.

- Standard screen: ϕ 2.5-7.21 holes/cm^2 80 mesh.
- Available with 20 to 100 mesh screen.
- Available with 120 to 200 mesh screen as the SY-37.

SU-50 Series

1.0/2.0 MPa Water

Basket strainer

SU-50H

SU-50S

- Flanged, ductile cast iron and 2.0 MPa
- Small and compact
- Easy maintenance because of unique cover (SU-50S•50SS)

Model		SU-50H	SU-50S	SU-50SS
Application		Water, Oil		Water, Oil, Flushing water
Max. pressure		2.0 MPa	1.0 MPa	
Max. temperature		80℃		
Connection		JIS 20K RF or BS4504 PN16 flanged		
Material	Body	Ductile cast iron		Ductile cast iron with Epoxy Coating
	Cover	Ductile cast iron	Carbon steel	Stainless steel
	Screen	Stainless steel (SUS316)		
Size		50A-150A (Except 125A)		

• Standard screen: φ2.5-7.21 holes/cm^2 60 mesh.
• Available with 20 to 100 mesh screen.

SU-20•20S•20C

1.0 MPa Water

Basket strainer

SU-20

SU-20S

- Flanged, ductile cast iron and 1.0 MPa
- Easy maintenance because of one-touch cover (SU-20S)
- Stainless steel made are available as the SU-10 and SU-10S

Model		SU-20 ·20C	SU-20S
Application		Cold and hot water, Oil, Other non-dangerous fluids	
Max. pressure		1.0 MPa	1.0 MPa *
Max. temperature		220℃ (60℃ in the case of the SU-20C)	80℃
Connection		JIS 10K FF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		20A-150A	

* Max. pressure is 0.7 MPa for 125A and 0.5 MPa for 150A.
• Standard screen: φ6-1.42 holes/cm^2 60 mesh.
• Available with 20 to 250 mesh screen.

SW-10•10S

1.0 MPa Water

Duplex strainer

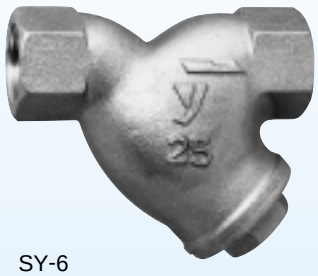
SW-10

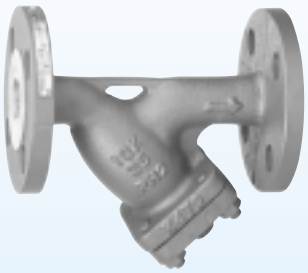
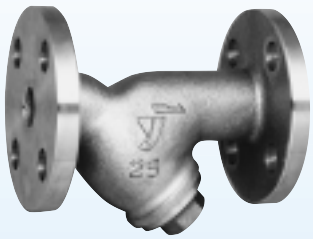
SW-10S

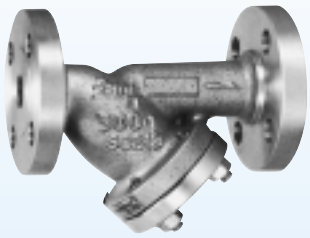
- Flanged, duplex, ductile cast iron and 1.0 MPa
- Easy maintenance because of one-touch cover (SW-10S)
- Stainless steel made is available

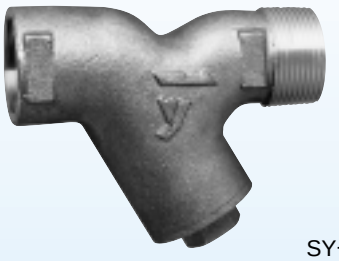
Model		SW-10	SW-10S
Application		Cold and hot water, Oil, Other non-dangerous fluids	
Max. pressure		1.0 MPa	
Max. temperature		80℃	
Connection		JIS 10K FF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		20A-100A	

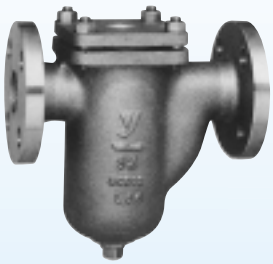
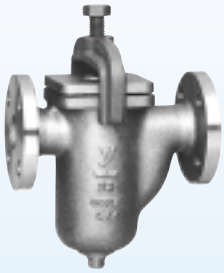
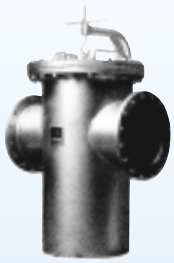
• Standard screen: φ6-1.42 holes/cm^2 60 mesh.
• Available with 20 to 250 mesh screen.

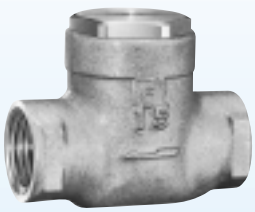
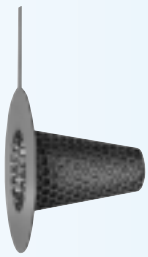
Feature		Y type screwed / Bronze	Leadless bronze	Anticorrosive core	Anticorrosive core
Model		**SY-6**	**SY-6-N**	**SY-6L**	**SY-6L-N**
Picture		 SY-6			
Application		**Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids**	**Cold and hot water**		
Max. pressure		1.3 MPa		1.0 MPa	
Max. temperature		220℃	80℃	40℃	
Connection		JIS Rc screwed			
Material	Body	Cast bronze	Cast bronze (NPb-treated)	Cast bronze	Cast bronze (NPb-treated)
	Screen	Stainless steel			
Standard screen		80 mesh (φ2.5-7.21 holes/cm²)	60 mesh (φ2.5-7.21 holes/cm²)		
Available screen		20-100 mesh (φ2.5-7.21 holes/cm²)			
Size		15A-50A			
Others		–	–	–	–

Feature		Y type flanged / Cast carbon steel		Y type flanged / Stainless steel
Model		**SY-20-10**	**SY-20-20**	**SY-8**
Picture				
Application		**Steam, Air, Cold and hot water, Other non-dangerous fluids**		**Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids**
Max. pressure		1.0 MPa	2.0 MPa	1.0 MPa *1
Max. temperature		260℃		150℃ (250℃) *2
Connection		JIS 10K RF flanged	JIS 20K RF flanged	JIS 10K FF flanged *1
Material	Body	Cast carbon steel		Cast stainless steel
	Screen	Stainless steel		Stainless steel
Standard screen		80 mesh (φ6-1.8 holes/cm²)		80 mesh (**15A-100A: φ**2.5-7.21 holes/cm²) (**125A-150A: φ**6-2.05 holes/cm²)
Available screen		20-60 mesh (φ6-1.8 holes/cm²)		20-100 mesh *3 (**15A-100A: φ**2.5-7.21 holes/cm²) (**125A-150A: φ**6-2.05 holes/cm²)
Size		15A-150A		15A-150A
Others		–	–	*1 Available with JIS 20K FF flanged (up to 50A). *2 Gasket material is non-asbestos, for more than 150℃. *3 Available with 120 to 200 mesh screen as the SY-38.

Feature		Y type flanged / Carbon steel		Y type flanged / Stainless steel
Model		SY-10	SY-10H	SY-10HS
Picture		SY-10		
Application		Steam, Air, Cold and hot water, Other non-dangerous fluids	High-pressure gas, Steam, Cold and hot water, Other non-dangerous fluids	
Max. pressure		3.0 MPa	1.0, 2.0, or 3.0 MPa	
Max. temperature		260℃ *	350℃ *	
Connection		JIS 30K RF flanged	JIS 10K/20K/30K RF flanged	
Material	Body	Cast carbon steel		Cast stainless steel
	Screen	Stainless steel		
Standard screen		80 mesh (φ6-1.8 holes/cm²)		
Available screen		20-100 mesh (φ6-1.8 holes/cm²)		
Size		15A-250A	15A-100A	
Others		* If the temperature is more than 260℃, please contact us.	* 350℃ for working pressure up to 2.0 MPa, and 300℃ for more than 2.0 MPa.	* 350℃ for working pressure up to 2.0 MPa, and 300℃ for more than 2.0 MPa.

Feature		Y type screwed / Bronze	Leadless bronze	Y type screwed / Easy plug	Y type flanged / Large size
Model		SY-24	SY-24-N	SY-9	SY-13
Picture		 SY-24			
Application		Cold and hot water		Air, Cold and hot water, Other non-dangerous fluids	Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids
Max. pressure		1.6 MPa		1.0 MPa	1.0 MPa
Max. temperature		80℃		80℃	220℃
Connection		Inlet: JIS Rc screwed	Outlet: JIS R screwed	JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast bronze	Cast bronze (NPb-treated)	Ductile cast iron	Carbon steel *1
	Screen	Stainless steel		Stainless steel	Stainless steel
Standard screen		60 mesh (φ2.5-7.21 holes/cm²)		60 mesh (φ2.5-7.21 holes/cm²)	80 mesh (φ6-1.8 holes/cm²)
Available screen		20-100 mesh (φ2.5-7.21 holes/cm²)		20-100 mesh (φ2.5-7.21 holes/cm²)	20-100 mesh *2 (φ6-1.8 holes/cm²)
Size		15A-50A		15A-50A	200A-600A
Others		–	–	–	*1 Carbon steel pipes for pressure service and rolled steels for general structure. *2 Available only with perforations (20A to 80A: φ1.5-11.2 holes/cm²) on request. • Available with stainless wetted parts (SY-13SS).

Feature		Basket / Stainless steel	One-touch / Stainless steel			Basket flanged / Large size
Model		**SU-10**	**SU-10S**			**SU-6**
Picture						
Application		**Cold and hot water, Oil, Other non-dangerous fluids**				**Cold and hot water, Oil, Other non-dangerous fluids**
Max. pressure		1.0 MPa	1.0 MPa	0.7 MPa	0.5 MPa	1.0 MPa
Max. temperature		220℃	80℃			120℃
Connection		JIS 10K FF flanged				JIS 10K FF flanged
Material	Body	Cast stainless steel				Rolled steel for carbon steel piping and general structural rolled steel.
	Screen	Stainless steel				Stainless steel
Standard screen		60 mesh (φ6-1.42 holes/cm^2)				40 mesh (φ10-0.8 holes/cm$_2$)
Available screen		20-250 mesh (φ6-1.42 holes/cm^2)				20-100 mesh (φ10-0.8 holes/cm$_2$)
Size		20A-150A	20A-100A	125A	150A	200A-650A
Others		–	–			* Available with stainless steel wetted parts (SU-6SS). * Available with all stainless steel (SU-6AS).

Feature		Basket flanged / CS	Small type / Bronze	Corn type / Temporary
Model		**SU-12**	**SU-55F**	**ST-1**
Picture				
Application		**Cold and hot water, Oil, Other non-dangerous fluids**	**Cold and hot water**	**Steam, Air, Cold and hot water, Other non-dangerous fluids**
Max. pressure		1.0, 1.6 or 2.0 MPa	1.2 MPa	1.0, 2.0, 3.0 or 4.0 MPa
Max. temperature		260℃	60℃	220℃
Connection		JIS, ASME flanged *	JIS Rc screwed	JIS flanged *
Material	Body	Cast carbon steel	Cast bronze	–
	Screen	Stainless steel	Stainless steel	Stainless steel
Standard screen		60 mesh (φ6-1.42 holes/cm^2)	60 mesh	80 mesh (φ8-0.954 holes/cm^2)
Available screen		20-250 mesh (φ6-1.42 holes/cm^2)	–	20-250 mesh (φ8-0.954 holes/cm^2)
Size		20A-150A	15A	25A-300A
Others		* SU-12-10: JIS 10K RF flanged SU-12-16: JIS 16K RF flanged SU-12-20: JIS 20K RF flanged SU-12-150: ASME Class 150 flanged SU-12-300: ASME Class 300 flanged	–	* ST-1-10: JIS 10K flanged ST-1-20: JIS 20K flanged ST-1-30: JIS 30K flanged ST-1-40: JIS 40K flanged

1MPa 10kgf/cm^{2}G

Solenoid Valve, Motor Valve, Air Operated Valve Selection

Type	Application	Pressure	Model
Solenoid Valves			
DP type (Pilot operated type)	Steam, Air, Water, Oil, Non-dangerous fluids	1.0 MPa or less	**DP-100•100F** DP-10
	Air, Water, Oil, Non-dangerous fluids	1.0 MPa or less	**DP-200•200F** **DP-12C•14C** DP-16•**18**
DD type (Direct acting type)	Steam, Air, Water, Oil, Non-dangerous fluids	0.15 MPa or less	DD-2
		0.8 MPa or less	DD-2-8
	Air, Water, Oil, Non-dangerous fluids	0.12 MPa or less	DD-3
		0.7 MPa or less	DD-3-8
Motor Valves			
Two Way type	Steam	0.6 MPa or less	MD-54
	Air, Water	1.0 MPa or less	MD-53•54 MD-36R MD-55 MD-61
Three Way type	Air, Water	1.0 MPa or less	MD-35R
Air Operated Valves			
	Steam, Air, Water, Oil, Non-dangerous fluids	1.0 MPa or less	PD-1 PD-2
Emergency Shut-off Valve			
	Water	1.0 MPa or less	MD-71

∗Please confirm the specification of the text about the detailed application and pressure of each model.

DP-100•100F

1.0 MPa | Steam | Air | Water

Solenoid valve

DP-100

- Applicable for steam, air, water and oil
- Small and compact, but large capacity
- Vertical or horizontal installation is possible

Model		DP-100	DP-100F
Application		Steam, Air, N_2 gas, CO_2 gas (dry), Ar gas, Cold and hot water, Oil (20 cSt or less)	
Working pressure		0-1.0 MPa (unusable under vacuum)	
Min. differential pressure		0 MPa (**0.03 MPa or more is required** for vertical installation)	
Max. temperature		180℃	
Rated voltage		AC 100 / 200 V, AC 110 / 220 V	
		50 / 60 Hz common	
Operation		Normally closed	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast stainless steel (SCS14A)	
	Piston	Stainless steel (SCS14A)	
	Valve disc	PTFE	
Size		10A-50A	15A-65A

- Available with normally opened type as the DP-100-C and DP-100F-C.
- Available with DC coil type as the DP-100-D and DP-100F-D.

DP-10

1.0 MPa | Steam | Air | Water

Solenoid valve

DP-10

- Applicable for steam, air, water and oil
- Small and compact, but large capacity
- Vertical or holizontal installation is possible

Model		DP-10
Application		Steam, Air, Cold and hot water, Oil (20 cSt or less)
Working pressure		0.05-1.0 MPa (Unusable under vacuum)
Min. differential pressure		0.05 MPa (**0.1 MPa or more is required** for vertical installation)
Max. temperature		180℃
Rated voltage		AC 100 / 200 V, AC 110 / 220 V, AC 120 / 240 V
		50 / 60 Hz common
Operation		Normally closed
Connection		JIS Rc screwed
Material	Body	Cast bronze
	Piston	Stainless steel
	Valve disc	PTFE
Size		10A-50A

DP-200•200F

1.0 MPa | Air | Water | NPb

Solenoid valve

DP-200

- Zero leakage
- Zero differential working pressure
- Vertical or horizontal installation is possible

Model		DP-200•200-N	DP-200F•200F-N
Application		Air, N_2 gas, CO_2 gas (dry), Ar gas, Cold and hot water, Oil (20 cSt or less)	
Working pressure		0-1.0 MPa (Unusable under vacuum)	
Min. differential pressure		0 MPa (**0.1 MPa or more is required** for vertical installation)	
Max. temperature		60℃	
Rated voltage		AC 100 / 200 V, AC 110 / 220 V, AC 120 / 240 V	
		50 / 60 Hz common	
Operation		Normally closed	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast bronze	
	Valve	NBR (Diaphragm)	
Size		10A-50A	15A-50A

- Available with leadless bronze (Non-Pb surface treatment) **as the DP-200-N and DP-200F-N.**
- Available with normally opened type as the DP-12C and DP-14C.
- Available with DC coil type as the DP-12D and DP-14D.
- Available with normally opened & DC coil type as the DP-12CD and DP-14CD.

DP-16•18 Solenoid valve

1.0 MPa | Air | Water

DP-16

- Stainless steel made ensures long life
- Small and compact, but large capacity

Model		DP-16	DP-18
Application		Air, Cold and hot water, Oil (20 cSt or less)	
Working pressure		0-1.0 MPa (Unusable under vacuum)	
Min. differential pressure		0 MPa (**0.1 MPa or more is required** for vertical installation)	
Max. temperature		60℃	
Rated voltage		AC 100 / 200 V, AC 110 / 220 V, AC 120 / 240 V	
		50 / 60 Hz common	
Operation		Normally closed	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast stainless steel	
	Valve	NBR (Diaphragm)	
Size		15A-50A	

- Available with normally opened type as the DP-16C and DP-18C.
- Available with DC coil type as the DP-16D and DP-18D.
- Available with normally opened & DC coil type as the DP-16CD and DP-18CD.

DD-2•3 Solenoid valve

1.0 MPa | Steam | Air | Water

DD-2

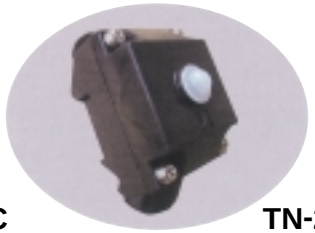
- Small and compact direct acting type
- Stainless steel made ensures long life
- Applicable for steam, air, water and oil

Model		DD-2	DD-2-8	DD-3	DD-3-8
Application		Steam, Air, N_2 gas, CO_2 gas, Ar gas, Cold and hot water, Oil		Air, N_2 gas, CO_2 gas, Ar gas, Cold and hot water, Oil	
Maximum pressure		0-0.15 MPa	0-0.8 MPa	0-0.15 MPa	0-0.8 MPa
Maximum. temperature		175℃		100℃	
Rated voltage		AC 100 / 200 V, AC 110 / 220 V			
		50 / 60 Hz common			
Operation		Normally closed			
Connection		JIS Rc screwed			
Material	Body	Cast stainless steel (SCS14A)			
	Valve	PTFE		FKM	
Size		10A-20A			

DP-100•10 Series option Solenoid valve

TN-1

TN-1C



TN-2

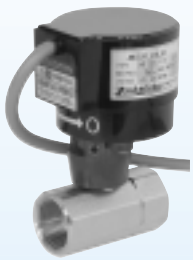
TN-2C

Terminal box

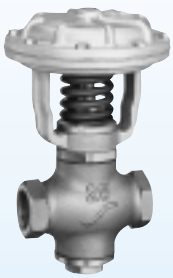
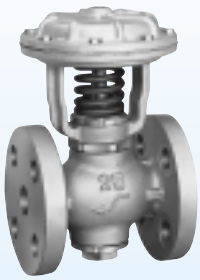
Terminal box can be installed to the DP-100•10 Series for both outdoor and indoor usage.
The TN-2 and TN-2C cannot be used for DC voltage.

TN-1: Standard terminal box
TN-1C: With cab tire cable
TN-2: With indication light
TN-2C: With indication light and cab tire cable

Feature		Motor valve / Screwed, 2 way	Motor valve / Screwed
Model		**MD-53**	**MD-54**
Picture			
Application		**Air, Cold and hot water**	**Steam, Air, Cold and hot water**
Working pressure		0-1.0 MPa	0-1.0 MPa (Steam: 0-0.6 MPa)
Max. temperature		80℃	Steam: 160℃ Air: 120℃ Water: 100℃
Ambient temperature		-15-55℃	
Rated voltage		AC 100 / 100 V 50 / 60 Hz common AC 200 / 220 V 50 / 60 Hz common	AC 100 / 110 V 50 / 60 Hz common AC 200 / 220 V 50 / 60 Hz common
Operation		ON-OFF	
Connection		JIS Rc screwed	
Material	Body	Cast stainless steel	
	Plunger	Stainless steel	Ball: Stainless steel
	Valve disc	PTFE	Seat: Reinforced fluorine resin for high temperature
Size		15A-50A	
Others		–	–

Feature		Motor valve / Screwed, 3 way	Motor valve / Screwed, 2 way
Model		**MD-35R**	**MD-36R**
Picture			
Application		**Air, Cold and hot water**	
Working pressure		0-1.0 MPa	
Max. temperature		80℃ (No freeze condition)	
Ambient temperature		-20-50(60)℃ *	
Rated voltage		AC 100 / 110 V 50 / 60 Hz common AC 200 / 220 V 50 / 60 Hz common	
Operation		Diverting	ON-OFF
Connection		JIS Rc x JIS R screwed	JIS Rc screwed
Material	Body	Brass	
	Plunger	Ball: Brass (HCr plating)	
	Valve disc	Seat: PTFE	
Size		15A-25A	
Others		* The ambient temperature of 60℃ depends on the frequency of operation and the temperature of the fluid. Please contact us for details.	

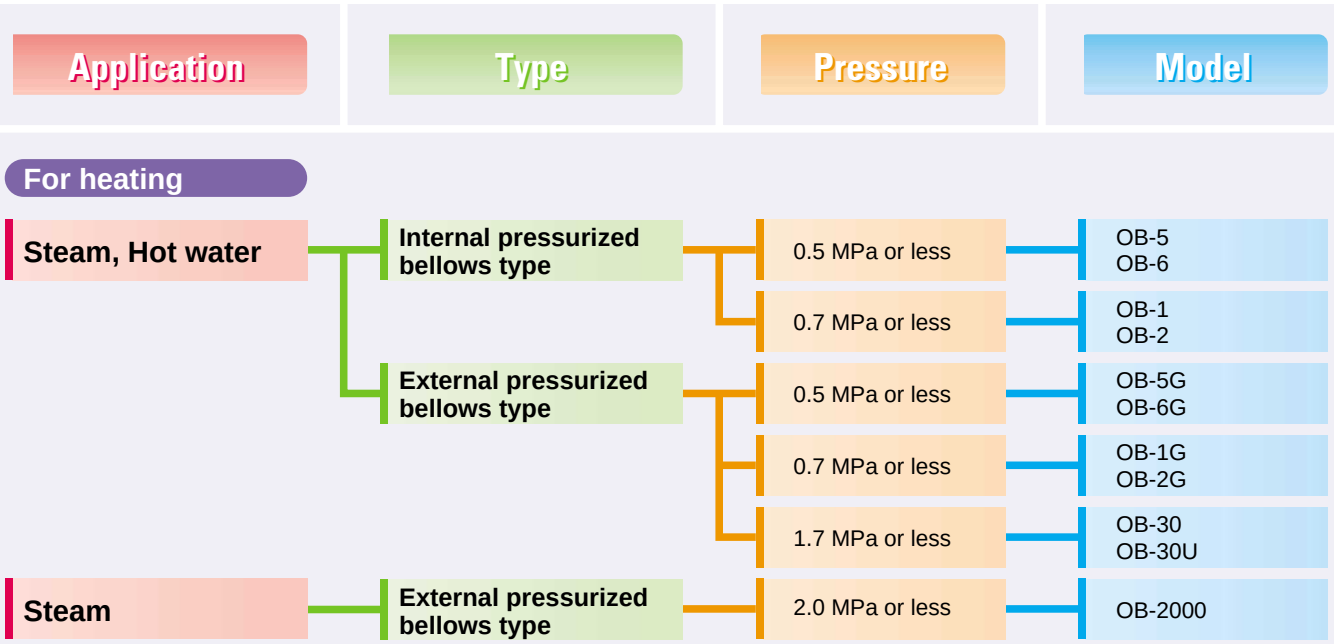
Feature		Pressure & flame proof solenoid valve		Motor valve / Flanged, 2 way	Motor valve / Stainless, 2 way
Model		**DP-34**		**MD-55**	**MD-61**
Picture				MD-61	
Application		**Air, Nitrogen gas**	**Cold and hot water, Heavy oil A, Light oil**	**Air, Cold and hot water**	
Working pressure		0.05-0.9 MPa (unusable under vacuum)	0.05-1.6 MPa (unusable under vacuum)	0-1.0 MPa	
Min. differential pressure		0.05 MPa		–	
Max. temperature		60℃		80℃	
Ambient temperature		5-60℃		-20-50℃	
Rated voltage		AC 100 V 50 / 60 Hz common AC 200 V 50 / 60 Hz common		AC 100 / 110 V 50 / 60 Hz common AC 200 / 220 V 50 / 60 Hz common	
Operation		Normally closed		ON-OFF	
Connection		JIS Rc screwed		JIS 10K RF flanged	
Material	Body	Brass (C3771)		Ductile cast iron	Cast stainless steel
	Ball	Main valve: Brass (C3604)		Stainless steel	
	Seat	Valve disc: Fluororubber (FKM)		PTFE	
Size		15A-25A		65A-150A	65A-125A
Others		–		–	–

Feature		Diaphragm valve / Screwed	Diaphragm valve / Flanged	Emergency shut-off valve	Control unit for MD-71
Model		**PD-1**	**PD-2**	**MD-71**	**KS-5**
Picture					
Application		**Steam, Air, Cold and hot water, Other non-dangerous fluids**		**City water**	–
Working pressure		0-1.0 MPa		0-1.0 MPa	–
Max. temperature		180℃		60℃	50℃
Ambient temperature		–		-20-55℃ (no freeze condition)	
Rated voltage		–		24 V DC	85-240 V AC, 50 / 60 Hz
Operation		Air-to-open *		ON-OFF	Output: 24 V DC
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS 10K flanged	–
Material	Body	Cast bronze	Cast iron	Cast iron (FC 300) or Ductile cast iron	–
	Valve	Stainless steel		Stainless steel	–
	Valve seat	Stainless steel		FKM	–
Size		15A-25A	15A-50A	50A-200A	–
Others		* Available with air-to-close operation type.		–	• Standard unit is for 2 emergency shut-off valves. Contact us for details.

1MPa 10kgf/cm^{2}G

MEMO

Temperature Regulator Selection



∗Please confirm the specification of the text about the detailed application and pressure of each model.

OB-30 Series

1.7 MPa | Steam | Hot/Cold Water

Temperature regulator

OB-30

- The OB-30 and OB-30U for heating, the OB-31 and OB-31U for cooling
- Small and compact, but accurate control
- PTFE/Stainless steel valve & valve seat ensure long durability

Model		OB-30	OB-30U	OB-31	OB-31U
Purpose		For heating		For cooling	
Application	Cooling/Heating	Steam, Hot water		Cold water, Refrigerant	
	Cooled/Heated	Cold and hot water, Oil, Liquid			
Max. pressure	Body	1.0 MPa (1.7 MPa for hot water)		1.7 MPa	
	Thermal bulb	1.0 MPa			
Max. differential pressure		1.0 MPa			
Max. temperature		185℃			
Set point range		0-35℃, 25-70℃, 40-100℃, 60-130℃, 70-150℃		0-35℃, 25-70℃, 40-100℃	
Withstand temperature		Upper set point +40℃			
Connection		JIS Rc screwed	JIS Rc screwed (union joint)	JIS Rc screwed	JIS Rc screwed (union joint)
Material	Body	Cast bronze			
	Valve disc	PTFE			
	Valve seat	Stainless steel			
	Thermal bulb	Copper pipe (nickel chrome plated)			
Standard capillary length		2 m			
Size		15A-25A			

- Available with thermal well (stainless steel made).
- Available with capillary of 3 or 5 meter.

OB-2000

2.0 MPa | Steam

Temperature regulator

- Large capacity and accurate control
- Wide temperature range
- Valve leakage meets ANSI class IV

Model		OB-2000	
Application	Heating	Steam	
	Heated	Cold and hot water, Oil, Non-dangerous fluids	
Max. pressure	Body	2.0 MPa *	
	Thermal bulb	1.0 MPa	
Max. temperature		220℃	
Set point range		−8-15℃, 10-36℃, 30-62℃, 55-94℃, 80-127℃, 115-183℃	
Withstand temperature		Upper set point +20℃	
Connection		JIS Rc screwed	JIS 10K FF, 20K RF flanged
Material	Body	Ductile cast iron	
	Main valve, Valve seat	Stainless steel	
	Diaphragm	Stainless steel	
	Pilot valve	Stainless steel	
	Pilot valve seat	Stainless steel	
	Thermal bulb	Copper pipe (nickel chrome plated)	
Standard capillary length		2 m	
Size		15A-50A	15A-100A

* Maximum pressure of JIS 10K FF flanged is 1.0 MPa.

- Available with thermal well (stainless steel made).
- Available with capillary of 3 or 5 meter.

OB-1•1G•2•2G

0.7 MPa | Steam | Hot Water

Temperature regulator

OB-2

- Adjusting handle enables easy setting
- Double valve structure and large capacity
- External pressure type bellows ensures distinguished temperature resistance (OB-1G•2G)

Model		OB-1	OB-1G	OB-2	OB-2G
Application	Heating	Steam, Hot water			
	Heated	Cold and hot water, Oil, Non-dangerous fluids			
Max. pressure	Body	0.7 MPa		0.2-0.7 MPa *1	
	Thermal bulb	1.0 MPa			
Max. temperature		180℃			
Set point range		40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃	15-35℃, 20-40℃, 35-55℃, 40-60℃, 50-70℃, 60-80℃, 70-90℃, 80-100℃	40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃	15-35℃, 20-40℃, 35-55℃, 40-60℃, 50-70℃, 60-80℃, 70-90℃, 80-100℃
Ambient temperature		[set point -10℃] or less	[set point +30℃] or less *2	[set point -10℃] or less	[set point +30℃] or less *2
Connection		JIS Rc screwed (union joint)		JIS 10K FF flanged	
Material	Body	Cast bronze		Cast iron	
	Valve	Phosphor bronze		Phosphor bronze (stainless steel)	
	Valve spindle	Stainless steel			
	Bellows	Phosphor bronze			
	Thermal bulb	Stainless steel			
Standard capillary length		2 m		15A-40A: 2 m 100A-150A: 3 m	
Size		15A-40A		15A-150A	

*1 Maximum pressure varies on nominal size. Contact us for details.

*2 Available with capillary of up to 5 meter.

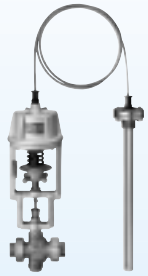
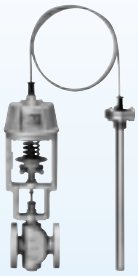
MHN-20

Steam

Micro hotwater navigator

- No generation of chemical substances due to heating
- Stainless steel encased body ensures safety and hygiene
- Compact sized wall mounted type
- Immediate supply of hot water improves work efficiency

Model		MHN-20
Application	Heating	Steam
	Heated	Cold and hot water
Steam supply pressure		0.1-0.3 MPa
Water supply pressure		0.15-0.4 MPa
Relationship between steam supply pressure and water supply pressure		Steam supply pressure < Water supply pressure
Temperature adjusting range		40℃-70℃
Hot water capacity	Minimum flow rate	5 L/min
	Flow rate range	5-30 L/min
Max. steam capacitiy		93 kg/h
Max. heat exchange capacity		54 kW (46,200 kcal/h)
Material		Stainless steel, Copper, PTFE, Synthetic rubber

Feature		For cooling / Screwed	For cooling / External pressurized	For cooling / Flanged	For cooling / External pressurized
Model		OB-3	OB-3G	OB-4	OB-4G
Picture					
Application	Cooling/Heating	Cold water, Refrigerant		Cold water, Refrigerant	
	Cooled/Heated	Cold and hot water, Oil, Non-dangerous fluids		Cold and hot water, Oil, Non-dangerous fluids	
Max. pressure	Body	0.7 MPa		0.2-0.7 MPa *	
	Thermal bulb	1.0 MPa		1.0 MPa	
Body max. temperature		180℃		180℃	
Set point range		40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃	15-35℃, 20-40℃, 35-55℃, 40-60℃, 50-70℃, 60-80℃, 70-90℃, 80-100℃	40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃	15-35℃, 20-40℃, 35-55℃, 40-60℃, 50-70℃, 60-80℃, 70-90℃, 80-100℃
Ambient temperature		[Set point -10℃] or less	[Set point +30℃] or less	[Set point -10℃] or less	[Set point +30℃] or less
Connection		JIS Rc screwed (union joint)		JIS 10K FF flanged	
Material	Body	Cast bronze		Cast iron	
	Valve	Phosphor bronze		Phosphor bronze (stainless steel)	
	Valve seat	Phosphor bronze		Phosphor bronze (stainless steel)	
	Thermal bulb	Stainless steel		Stainless steel	
Standared capillary length		2 m		15A-80A: 2 m 100A-150A: 3 m	
Size		15A-40A		15A-150A	
Others		–		* Maximum pressure varies on the nominal size.	

Feature		For heating / Screwed	For heating / Flanged
Model		OB-5	OB-6
Picture			
Application	Cooling/Heating	Steam, Hot water	Steam, Hot water
	Cooled/Heated	Cold and hot water, Oil, Non-dangerous fluids	Cold and hot water, Oil, Non-dangerous fluids
Max. pressure	Body	0.5 MPa	0.5 MPa
	Thermal bulb	1.0 MPa	1.0 MPa
Body max. temperature		180℃	180℃
Set point range		40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃	40-60℃, 50-70℃, 60-80℃, 80-100℃, 100-120℃
Ambient temperature		[Set point -10℃] or less	[Set point -10℃] or less
Connection		JIS Rc screwed (union joint)	JIS 10K FF flanged
Material	Body	Cast bronze	Cast iron
	Valve	Stainless steel	Stainless steel
	Valve seat	Stainless steel	Stainless steel
	Thermal bulb	Stainless steel	Stainless steel
Standared capillary length		2 m	2 m
Size		15A-25A	15A-25A
Others		• Available with the OB-5G for low-temperature heating (15-35℃, 20-40℃, 35-55℃).	• Available with the OB-6G for low-temperature heating (15-35℃, 20-40℃, 35-55℃).

Expansion Joint and Flexible Joint Selection

Type	Application	Pressure	Model
Expansion Joints Bellows Type	Steam, Air, Water, Oil, Non-dangerous fluids	0.98 MPa or less	EB-1J EB-2J
		2.0 MPa or less	EB-11 EB-12
	Cold and hot water, Chemicals	1.0 MPa or less	EB-51-3
Expansion Joints Sleeve Type	Steam, Air, Water, Non-dangerous fluids	1.0 MPa or less	ES-10
		2.0 MPa or less	ES-11
Ball Joints	Steam, Air, Water, Oil, Non-dangerous fluids	0.98 MPa or less	UB-1 UB-2 UB-10•11
Flexible Joints	Steam, Air, Water, Oil, Non-dangerous fluids	1.0 MPa or less	YBF-1E YBF-2E

∗Please confirm the specification of the text about the detailed application and pressure of each model.

EB-1J•2J

0.98 MPa | Steam | Air | Water

Expansion joint

EB-1J

EB-2J

- Design and dimension comply with JIS standard
- 316L stainless steel wetted parts
- With outer pipe and inner pipe

Model		EB-1J	EB-2J
Application		Steam, Air, Cold and hot Water, Oil, Other non-dangerous fluids	
Max. pressure		0.98 MPa	
Max. temperature		220℃	
Max. axial extension		35 mm (Expansion 10 mm Compression 25 mm)	70 mm (Expansion 20 mm Compression 50 mm)
Connection		JIS 10K FF flanged	
Material	Outer pipe	Carbon steel *1	
	Bellows	Stainless steel (SUS316L)	
	Inner pipe	Stainless steel (SUS316L)	
Size		20A-250A *2	

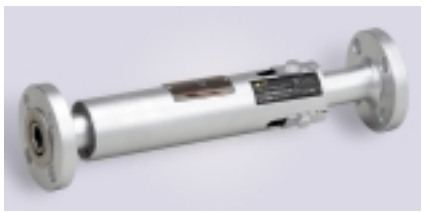
*1 Available with all stainless steel made.

*2 Available with nominal size from 300A to 450A (EB-3•4).

EB-11•12

2.0 MPa | Steam | Air | Water

Expansion joint



EB-11

EB-12

- With control ring and up to 2.0 MPa
- 316L stainless steel wetted parts
- With outer pipe and inner pipe

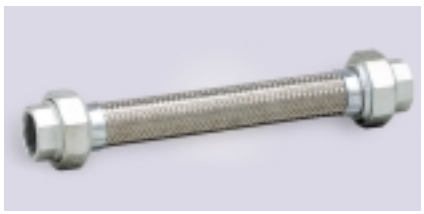
Model		EB-11	EB-12
Application		Steam, Air, Cold and hot Water, Oil, Other non-dangerous fluids	
Max. pressure		2.0 MPa	
Max. temperature		220℃	
Max. axial extension		35 mm (Expansion 10 mm Compression 25 mm)	70 mm (Expansion 20 mm Compression 50 mm)
Connection		JIS 20K RF flanged	
Material	Outer pipe	Carbon steel	
	Bellows	Stainless steel (SUS316L)	
	Inner pipe	Stainless steel (SUS316L)	
Size		20A-250A *	

* Available with nominal size from 300A to 450A (EB-7•8).

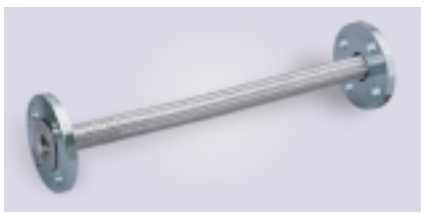
YBF-1E•2E

1.0 MPa | Steam | Air | Water

Flexible joint



YBF-1E



YBF-2E

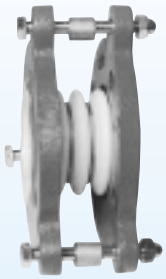
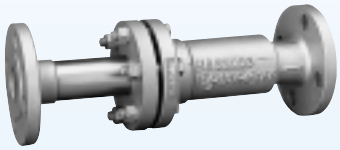
- Flexible and durable for pressure up to 1.0MPa
- Excellent weather resistance
- Significantly improved service life

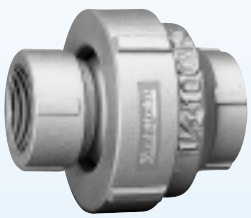
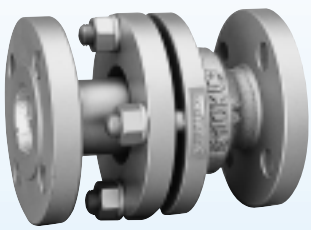
Model		YBF-1E	YBF-2E
Application		Steam, Air, Cold and hot Water, Oil, Other non-dangerous fluids	
Max. pressure		1.0 MPa	1.0 MPa *1
Max. temperature		220℃	
Length		300 mm, 500 mm, 800 mm, 1000 mm *2	
Connection		JIS Rc screwed (union joint)	JIS 10K FF **fanged** (loose flanges on both sides)
Material	Connection	Malleable cast iron	Rolled steel
	Bellows	Stainless steel *3	
	Braid	Stainless steel *3	
Size		15A-50A	15A-250A

*1 Maximum pressure for 250A is 0.5 MPa.

*2 Available with 400 mm, 600 mm, 700 mm, 1200 mm, 1500 mm, 2000 mm length (YBF-2E).

*3 Available with all stainless steel made (YBF-6E•7E).

Feature		Anti-corrosion / PTFE joint	Sleeve joint / 1.0, 2.0 MPa
Model		**EB-51-3**	**ES-10·11**
Picture			 ES-10-100
Application		**Cold and hot water, Chemicals, etc.**	**Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids**
Max. pressure		1.0 MPa *1	ES-10: 1.0 MPa ES-11: 2.0 MPa
Max. temperature		150℃ *1	220℃
Axial extension		13-20 mm *2	ES-10-100, ES-11-100: 20 mm ES-10-200, ES-11-200: 40 mm
Axial compression		13-35 mm *2	ES-10-100, ES-11-100: 80 mm ES-10-200, ES-11-200: 160 mm
Connection		JIS 10K RF flanged	ES-10: JIS 10K RF flanged ES-11: JIS 20K RF flanged
Material	Outer pipe	–	Body - ES-10: Cast iron or Rolled steel *1 ES-11: Rolled steel *1 Sleeve: Carbon steel (HCr plating)
	Bellows	PTFE	
	Connection	Flange: Ductile cast iron	
Size		25A, 40A-200A	20A-300A
Others		*1 Depends on the size and rating. Contact us for details. *2 Depends on the size. Contact us for details.	*1 The bodies of the ES-10-100 and of the ES-11-100 are FCD (25A-100A).

Feature		Ball joint / Screwed	Ball joint / Butt-weld	Ball joint / Flanged
Model		**UB-1**	**UB-2**	**UB-10·11**
Picture		 UB-1	 UB-10	
Application		**Steam, Air, Cold and hot water, Oil, Other non-dangerous fluids**		
Max. pressure		0.98 MPa		
Max. temperature		220℃		
Max. displacement angle		20 °		
Max. axial displacement		–		
Connection		JIS Rc screwed	Butt-weld	JIS 10K RF flanged
Material	Body	Cast iron	Carbon steel	UB-10: Cast iron UB-11: Carbon steel
	Ball	Cast iron (HCr plating)	Carbon steel (HCr plating)	
Size		20A-50A	50A-250A	
Others		–	–	–

MEMO

Steam Trap, Radiator Trap and Radiator Valve Selection

Application	Pressure	Model
Steam Traps		
Steam condensate	0.3 MPa or less	TF-1
	0.7 MPa or less	TF-2
	1.0 MPa or less	TSD-7•**7F** TS-7•**8** TB-5
	2.0 MPa or less	TD-10NA•30NA TSF-10•10F•11•11F TB-20
	4.2 MPa or less	TSD-42
Assist Trap		
Steam condensate	0.5 MPa or less	TFA-2000
Radiator Traps		
Steam condensate	0.1 MPa or less	TS-1
	0.2 MPa or less	TS-3 TS-1H
	0.35 MPa or less	TS-4
Radiator Valves		
Steam, Water	0.3 MPa or less	FV-2
	Water: 1.0 MPa Steam: 0.05 MPa	118 Series
Water	0.6 MPa or less	HV-3
Return Valves		
Water	0.6 MPa or less	HV-3
	1.0 MPa or less	109 Series
Check Valve		
Steam, Water	1.6 MPa or less	SCV-2
	2.0 MPa or less	SCV-3

∗Please confirm the specification of the text about the detailed application and pressure of each model.

TD-10NA•30NA

2.0 MPa | Steam condensate | Steam trap

TD-10NA

TD-30NA

- Bi-metal ring eliminates air-binding problem
- Stable performance and superior durability
- Ductile cast iron body and up to 2.0 MPa

Model		TD-10NA	TD-30NA	
Application		Steam condensate		
Working pressure		0.035-2.0 MPa	0.035-1.0 MPa	0.035-2.0 MPa
Max. temperature		220℃		
Allowable back pressure		50% or less of inlet pressure		
Connection		JIS Rc screwed	JIS 10K FF flanged	JIS 20K FF flanged
Material	Body	Ductile cast iron		
	Disc	Stainless steel (special heat treatment)		
	Seat	Stainless steel (special heat treatment)		
Size		15A-25A		

TSD-42

4.2 MPa | Steam condensate | Steam trap

- **Stainless steel body and up to 4.2 MPa**
- Bi-metal ring eliminates air-binding problem
- Stable performance and superior durability

Application		Steam condensate
Working pressure		0.035-4.2 MPa
Max. temperature		425℃
Allowable back pressure		50% or less of inlet pressure
Connection		JIS Rc, NPT, BSPT screwed
Material	Body	Stainless steel (SCS2A)
	Disc	Stainless steel (special heat treatment)
	Seat	Stainless steel (special heat treatment)
Size		15A-25A

TSD-7•7F

1.0 MPa | Steam condensate | Steam trap

TSD-7

TSD-7F

- “ Stop ”, “ Bypass ”, “ Trap ”, “ Test ” functions
- Stable operation in wide pressure range

Model		TSD-7	TSD-7F
Application		Steam condensate	
Working pressure		0.035-1.0 MPa	
Max. temperature		183℃	
Allowable back pressure		50% of inlet pressure	
Connection		JIS Rc screwed	JIS 10K FF flanged
Installation posture		At any angle between vertical and horizontal (Do not put the cover under the horizontal level.)	
Material	Body	Ductile cast iron	
	Disc	Stainless steel (special heat treatment)	
	Seat	Stainless steel (special heat treatment)	
Size		15A-25A	

TS-7・8 1.0 MPa Steam condensate — Steam trap

TS-7

TS-8

- “ Stop ”, “ Bypass ”, “ Trap ”, “ Test ” functions
- Stable operation in wide pressure range
- Incorporated strainer

Model		TS-7	TS-8
Application		Steam condensate	
Maximum pressure		1.0 MPa *	
Max. temperature		183℃	
Min. working differential pressure		0.03 MPa	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Ductile cast iron	
	Cock (valve seat)	Stainless steel	
	Bellows (valve)	Stainless steel	
Size		15A-25A	

* When performing an airtightness test using water or air, keep the pressure at 0.5 MPa or less.

TF-2 0.7 MPa Steam condensate — Steam trap

- Stainless steel valve disc and valve seat offer excellent durability
- Built-in air vent prevents air-binding problem, offering higher durability
- Compact, lightweight and large discharge capacity

Application		Steam condensate
Working pressure		0.01-0.7 MPa
Max. temperature		170℃
Connection		JIS Rc screwed
Material	Body	Ductile cast iron
	Valve, Valve seat	Stainless steel
	Float	Stainless steel
Size		15A-50A

TFA-2000 0.5 MPa Steam condensate — Assist trap

- **Float trap equipped with pumping/assist functions**
- Appropriate for discharging low-pressure condensate in heating equipment and air conditioner, etc.

Application		Steam condensate
Maximum pressure		0.5 MPa
Max. temperature		160℃
Connection		JIS Rc screwed
Material	Body	Ductile cast iron
	Trim parts	Stainless steel
	Float	Stainless steel
Size		25A

TSF-10•10F•11•11F

2.1 MPa | Steam condensate

Steam trap

TSF-10

- Sufficient steam discharge
- Quick warm-up
- Easy maintenance
- Installable at any angle

Model		TSF-10	TSF-10F	TSF-11	TSF-11F
Application		Steam condensate			
Working pressure		TSF-1□□-5: 0.01-0.5 MPa TSF-1□□-10: 0.01-1.0 MPa TSF-1□□-21: 0.01-2.1 MPa			
Max. temperature		220℃			
Connection		JIS Rc screwed NPT	JIS 10K FF flanged JIS 20K FF flanged	JIS Rc screwed NPT	JIS 10K FF flanged JIS 20K FF flanged
Material	Body	Ductile cast iron			
	Float	Stainless steel			
	Valve, Valve seat	Stainless steel			
Nominal size		15A-25A		25A-50A	

• Available with ASME or EN flanged.

TB-20

1.6 MPa | Steam condensate

Steam trap

TB-20

- **Excellent durability with free floating lever system and hemispherical valve.**
- Stainless steel internal parts provide reliable performance.
- Stainless steel upper ring provides a good wear resistance.

Model		TB-20			
Application		Steam condensate			
Working pressure		(A) 0.01-0.3 MPa {0.1-3 kgf/cm²G}	(B) 0.2-0.6 MPa {2-6 kgf/cm²G}	(C) 0.3-1.0 MPa {3-10 kgf/cm²G}	(D) 0.6-1.6 MPa {6-16 kgf/cm²G}
Min. differencial pressure		0.01 MPa {0.1 kgf/cm²}	0.03 MPa {0.3 kgf/cm²}	0.10 MPa {1 kgf/cm²}	0.10 MPa {1 kgf/cm²}
Max. temperature		220℃			
Connection		JIS Rc (PT screwed)			
Material	Body	Ductile cast iron			
	Valve	Stainless steel			
	Valve seat	Stainless steel			
Size		15A-25A			

SCV-3

2.0 MPa | Steam | Water

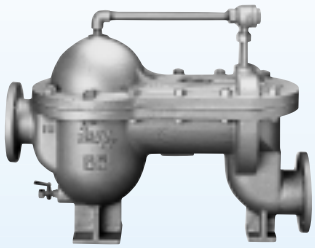
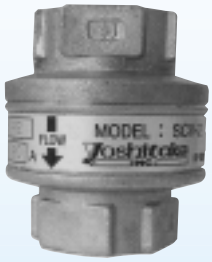
Check valve

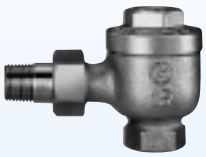
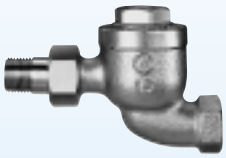
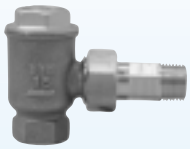
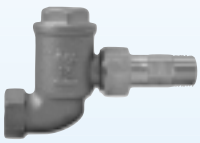
SCV-3

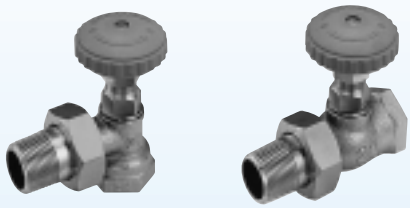
- **Compact design**
- Installable with JIS/EN/ASME flanges.
- Installable at any angle
- Outstanding corrosion resistance and durability

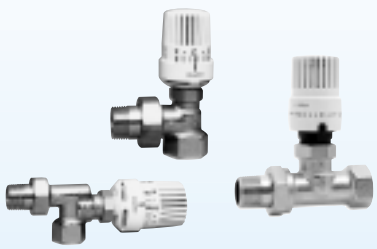
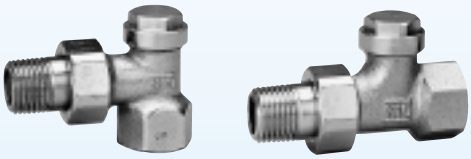
Model		SCV-3
Application		Steam, Cold and hot water
Maximum pressure		2.0 MPa
Maximum temperature		220℃
Minimum opening pressure		0.003 MPa
Material	Body	Cast stainless steel
	Disc	Cast stainless steel
Connection		Wafer

* A small amount of fluid leaks out of the product. So, it should not be used for applications requiring complete closing.

Feature		Float type / Flanged	Bucket type / Screwed	Check valve
Model		TF-1	TB-5	SCV-2
Picture				
Application		Steam condensate	Steam condensate	Steam, Cold and hot water
Max. pressure		0.3 MPa	1.0 MPa	1.6 MPa
Max. temperature		150℃	220℃	220℃
Connection		JIS 10K RF flanged	JIS 10K FF flanged	JIS Rc screwed
Material	Body	Ductile cast iron	Ductile cast iron	Cast stainless steel
	Valve, Valve seat	Cast bronze	Stainless steel	Disc: Stainless steel
	Float	Brass	Bucket: Stainess steel	–
Size		65A, 80A	15A-50A	15A-50A
Others		–	–	–

Feature		Radiator trap / Bellows type	Radiator trap / Bellows type	Radiator trap / Bellows type	Radiator trap / Wax type
Model		TS-1A・1S	TS-1HA・1HS	TS-3A・3S	TS-4A・4S
Picture		 TS-1A  TS-1S		 TS-3A  TS-3S	
Application		Steam condensate			
Max. pressure		0.1 MPa	0.2 MPa	0.2 MPa	0.35 MPa
Max. temperature		120℃		135℃	150℃
Connection		Inlet: JIS R screwed（union joint） Outlet: JIS Rc screwed			
Material	Body	Cast bronze	Cast bronze	Cast bronze	Cast bronze
	Valve, Valve seat	Brass	Brass	Brass, Stainless steel	Stainless steel
	Bellows	Phosphor bronze	Phosphor bronze	Phosphor bronze	Thermoelement: Brass, Others
Size		15A-25A	25A	15A, 20A	15A, 20A
Others		TS-□A: Angle type TS-□S: Straight type			

Feature		Radiator valve / Bellows type	Radiator valve / Return valve
Model		**FV-2A • 2S**	**HV-3A • 3S**
Picture		FV-2A FV-2S	 HV-3A HV-3S
Application		**Steam（Cold and hot water）**	**Cold and hot water**
Max. pressure		0.3 MPa	0.6 MPa
Max. temperature		150℃	90℃
Connection		Inlet: JIS Rc screwed Outlet: JIS R screwed（union joint）	
Material	Body	Cast bronze	Cast bronze
	Valve	Union: Brass	PTFE
	Valve seat	Valve disc: PTFE	Bronze
Size		15A-32A	15A-25A
Others		FV-2A: Angle type FV-2S: Straight type	HV-3A: Angle type HV-3S: Straight type

Feature		Thermo-radiator valve	Return valve
Model		**118 Series**	**109 Series**
Picture			
Application		**Hot water, Steam**	**Cold and hot water**
Max. pressure		Hot water: 1.0 MPa Steam: 0.05 MPa	1.0 MPa
Max. temperature		Hot water: 120℃ Steam: 110℃	120℃
Connection		Inlet: JIS Rp screwed Outlet: JIS R screwed（union joint）	Inlet: JIS R screwed（union joint） Outlet: JIS Rp screwed
Material	Body	Bronze or Brass	Bronze or Brass
	Valve	EPDM	Brass
	Valve seat	Bronze or Brass	Bronze or Brass
Size		15A-25A（Angle, Straight） 15A-20A（Reversed angle）	15A, 20A
Others		Thermostats: Bellows, Liquid, Remote mount Valve: Angle, Straight, Reversed angle	Valve: Angle, Straight

Air Vent, Vacuum Relief Valve, Noiseless Heater, Drain Separator, Air Out Selection

Application	Pressure	Model
Air Vent Valves		
Water	0.3 MPa or less	TA-11•11L TA-18•18L
	1.0 MPa or less	TA-22•22L TA-16•16L
Water, Oil	1.0 MPa or less	TA-3•6 TA-2 TA-5•5F TA-2C•3C
Vacuum Relief Valves		
Steam, Air	1.0 MPa or less	VB-7 VB-7S
Noiseless Heaters		
Steam	0.7 MPa or less	MS-1 MS-3-13 MS-2 MS-4-13 MS-6
Drain Separators		
Steam, Air	Steam：2.0 MPa Air：1.0 MPa	DS-1 DS-2
Air Vent with Vacuum Breaker		
Water	1.0 MPa or less	TAV-2 TAV-3A
Air Out		
Water	1.0 MPa or less	AO-2

＊Please confirm the specification of the text about the detailed application and pressure of each model.

TA-3•6 Air vent valve

1.0 MPa Water

TA-3

- Wide pressure range and long durability
- Large capacity and compact design
- Tight seal and easy maintenance

Model		TA-3	TA-6
Application		Cold and hot water, Oil (specific gravity: 0.8 or more)	
Working pressure		0.01-1.0 MPa	
Max. temperature		90℃	
Connection		JIS Rc screwed	
Material	Body, Cover	Ductile cast iron	Cast bronze
	Valve	Brass	
	Valve seat	Brass (equipped with NBR disc)	
	Float	Stainless steel	
Size		15A-32A	

TA-11•11L Air vent valve

0.3 MPa Water

TA-11

- Compact and adequate discharge capacity
- Easy maintenance with removable valve seat
- Emergency shut-off cap or hose connection

Model		TA-11	TA-11L
Application		Cold and hot water	
Working pressure		0.01-0.3 MPa	
Max. temperature		100℃	
Connection	Inlet	JIS R screwed	
	Outlet	Cap type	Hose joint type
Material	Body	Brass	
	Disc	NBR	
	Seat	Brass	
	Float	Heat-resistant resin	
Size		6A, 10A-20A	

TA-22•22L Air vent valve

1.0 MPa Water

TA-22

- Wide pressure range in a compact body
- Easy maintenance with removable valve seat
- Emergency shut-off cap or hose connection

Model		TA-22	TA-22L
Application		Cold and hot water	
Working pressure		0.01-1.0 MPa	
Max. temperature		100℃	
Connection	Inlet	JIS R screwed	
	Outlet	Cap type	Hose joint type
Material	Body	Bronze	
	Disc	FKM	
	Seat	Brass	
	Float	Heat-resistant resin	
Size		15A-25A	

TA-16•16L 1.0 MPa Water Air vent valve

TA-16

- Stainless steel made, anti-corrosion and long durability
- Wide pressure range in a compact body
- Easy connection by attaching optional connection parts

Model		TA-16	TA-16L
Application		Cold and hot water	
Working pressure		0.01-1.0 MPa	
Max. temperature		90℃	
Connection	Inlet	JIS R screwed	
	Outlet	JIS Rc screwed	Hose joint type
Material	Body, Cover	Stainless steel	
	Disc	FKM	
	Gasket	FKM	
	Float	Stainless steel	
Size		15A-25A	

* Please contact us when fluid is ozone water.

■Option for exhaust connection

- Manual valve with copper pipe
- Manual valve with hose joint
- Swivel joint
- Swivel copper pipe joint
- Swivel hose joint
- L-shaped hose joint

VB-7•7S 1.0 MPa Steam Air Vacuum relief valve

VB-7

- Stable performance without chattering and hunting
- Easy handling due to small and light weight
- Corrosion-proof by anti-corrosion material

Model		VB-7	VB-7S
Application		Steam, Air	
Max. pressure		1.0 MPa	
Pressure regulating range		Spring A: -0.5 to -21 kPa (standard set pressure: -4 kPa) Spring B: -21 to -48 kPa (standard set pressure: -21 kPa) Spring C: -48 to -81 kPa (standard set pressure: -48 kPa)	
Max. temperature		200℃	
Connection		JIS R screwed	
Material	Body	Brass	Stainless steel
	Valve	Cast bronze	Cast stainless steel
	Valve seat	Brass	Stainless steel
Size		15A-50A	

MS-1•3-13 0.7 MPa Steam Noiseless heater

MS-1

- Easy installation for noise reduction
- Simple construction and trouble-free
- Anti-corrosion (MS-3-13)

Model	MS-1	MS-3-13
Application	Steam	
Working pressure	0.05-0.7 MPa	
Max. warning sound temperature limit	60℃	
Connection	JIS Rc screwed	
Material	Cast bronze	Cast stainless steel
Size	15A-50A	

MS-2•4-13 0.7 MPa Steam — Noiseless heater

MS-2

- Easy installation for noise reduction
- Simple construction and trouble-free
- Anti-corrosion (MS-4-13)

Model	MS-2	MS-4-13
Application	**Steam**	
Working pressure	0.1-0.7 MPa	
Max. warning sound temperature limit	90℃	
Connection	JIS Rc screwed	
Material	Cast bronze	Cast stainless steel
Size	15A-50A	

MS-6 0.7 MPa Steam — Noiseless heater

- Stainless steel made and corrosion-proof
- Easy installation for noise reduction
- Simple construction and trouble-free

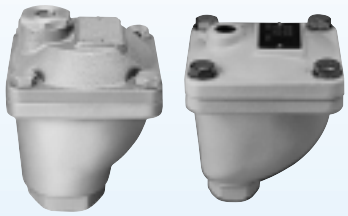
Model	MS-6
Application	**Steam**
Working pressure	0.05-0.7 MPa
Max. warning sound temperature limit	90℃
Connection	JIS Rc screwed
Material	Stainless steel
Size	15A-50A

DS-1•2 2.0 MPa Steam Air — Drain separator

DS-1

- Highly efficient drain separation due to cyclone type
- Extremely low pressure loss
- Simple construction and trouble-free

Model		DS-1	DS-2
Application		**Steam, Air**	
Max. pressure		2.0 MPa (1.0 MPa for air)	
Max. temperature		220℃	
Connection		JIS Rc screwed	JIS 10K/20K FF flanged
Material	Body	Ductile cast iron	
	Nozzle	Cast iron	
	Receiver	Ductile cast iron	
Size		15A-50A	15A-100A

Feature		With quick ventilation mechanism	Bronze body	Nylon coating
Model		**TA-2**	**TA-5·5F**	**TA-2C·3C**
Picture		TA-2		 TA-2C TA-3C
Application		**Cold and hot water, Oil（specific gravity: 0.8 or more）**		**Cold and hot water, Oil（specific gravity: 0.8 or more）**
Max. pressure		1.0 MPa		1.0 MPa
Max. temperature		90℃	TA-5: 90℃ TA-5F: 120℃	60℃
Connection		JIS Rc screwed		JIS Rc screwed
Material	Body	Ductile cast iron	Cast bronze	Ductile cast iron
	Valve	Brass, NBR	TA-5: Brass, NBR TA-5F: Brass, FKM	Brass, NBR
	Valve seat	Brass		Brass
	Float	Stainless steel		Stainless steel
Size		15A-32A		15A-32A
Others		–	–	• Nylon coated: TA-2C: Body TA-3C: Body and cover

Feature		Stainless steel body	Air vent with vacuum breaker		Air out
Model		**TA-18·18L**	**TAV-2**	**TAV-3A**	**AO-2**
Picture		TA-18 TA-18L			
Application		**Cold and hot water**	**City water**		**Cold and hot water**
Max. pressure		0.3 MPa	1.0 MPa		1.0 MPa
Max. temperature		100℃	80℃（no freeze condition）	35℃（no freeze condition）	120℃
Connection		JIS R screwed	JIS R screwed		JIS Rc screwed
Material	Body	Stainless steel	Cast bronze（NPb-treated）		Cast bronze
	Valve	Disc: FKM	EPDM	EPDM, NBR	–
	Valve seat	Brass	Bronze, Heat-resistant resin		–
	Float	Heat-resistant resin	Heat-resistant resin		–
Size		15A, 20A	15A	20A, 25A	20A-50A
Others		–	• Operating pressure of vacuum breaker is −1.0 kPa or less.		–

MEMO

Sight Glass, Home Boiler Regulator, Relief Valve and Mixing Valve Selection

Application	Type	Pressure	Model
Sight Glasses			
Water, Oil, Non-dangerous fluids	Plain type	1.0 MPa or less	SL-1S･1F 150L 150L-13
	Flap type	1.0 MPa or less	SF-1S･1F 150F 150F-13
Water	Ball type	1.0 MPa or less	SB-1S･1F
	Spinner type	0.7 MPa or less	400
Home Boiler Regulators			
Water	Standard type	750 kPa or less	GD-55-80 GD-56-80
	For cold district	750 kPa or less	GD-55R-80 GD-56R-80
Relief Valves for Hot Water Appliances			
Water		95 kPa or less	AL-52F-95 AL-50
		97 kPa or less	AL-68-97
Mixing Valve			
Cold and hot water		1.0 MPa or less	MXV-1

∗Please confirm the specification of the text about the detailed application and pressure of each model.

SL-1S•1F 1.0 MPa Water Steam condensate Plain type Sight glass

SL-1S

- For visible check of two component fluid flow
- Suitable for check of intermittent flow
- Horizontal and vertical installation

Model		SL-1S	SL-1F
Application		Cold and hot water, Oil, Other non-dangerous fluids *	
Maximum working pressure		1.0 MPa	
Max. temperature		150℃	
Max. thermal shock		100℃	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Ductile cast iron	
	Glass	Hardened glass	
Size		15A-50A	

* Available with mica plate for steam condensate (SLM-1S•1F) .

• Glass part is consumable supply.

SF-1S•1F 1.0 MPa Water Steam condensate Flap type Sight glass

SF-1S

- For visible check of continuous flow change
- Suitable for check of continuous flow
- Horizontal and vertical installation

Model		SF-1S	SF-1F
Application		Cold and hot water, Oil, Other non-dangerous fluids *	
Maximum working pressure		1.0 MPa	
Max. temperature		150℃	
Max. thermal shock		100℃	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Ductile cast iron	
	Glass	Hardened glass	
	Flap	Stainless steel	
Size		15A-50A	

* Available with mica plate for steam condensate (SFM-1S•1F) .

• Glass part is consumable supply.

SB-1S•1F 1.0 MPa Water Ball type Sight glass

SB-1S

- For visible check by moving balls
- Balls keep glasses clean
- Horizontal and vertical installation

Model		SB-1S	SB-1F
Application		Cold and hot water	
Maximum working pressure		1.0 MPa	
Max. temperature		85℃	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Ductile cast iron	
	Glass	Hardened glass	
	Ball	Synthetic resin	
Size		15A-50A	

• Glass part and balls are consumble supply.

400 0.7 MPa Water Spinner type

- Spinner keeps glass clean
- For visible check by moving spinner
- Horizontal and vertical installation

Application		Cold and hot water
Maximum working pressure		0.7 MPa
Max. temperature		100℃
Max. thermal shock		40℃
Connection		JIS Rc screwed
Material	Body	Cast bronze
	Glass	Heat-resistant glass
	Spinner	Special heat-resistant resin
Size		10A-25A

• Glass part and spinner are consumable supply.

150L 1.0 MPa Water Steam condensate Plain type

- For visible check of two component fluid flow
- Suitable for check of intermittent flow
- Horizontal and vertical installation

Model		150L-F
Application		Cold and hot water, Oil, Other non-dangerous fluids *
Maximum working pressure		1.0 MPa
Max. temperature		150℃
Max. thermal shock		100℃
Connection		JIS 10K FF flanged
Material	Body	Ductile cast iron
	Glass	Hardened glass
Size		65A-150A

* Available with mica plate for steam condensate (150LM-F).
• Available with protector (150LP-F).
• Glass part is consumable supply.

150F 1.0 MPa Water Steam condensate Flap type

- For visible check of continuous flow change
- Extremely low pressure loss
- Horizontal and vertical installation

Model		150F-F
Application		Cold and hot water, Oil, Other non-dangerous fluids *
Maximum working pressure		1.0 MPa
Max. temperature		150℃
Max. thermal shock		100℃
Connection		JIS 10K FF flanged
Material	Body	Ductile cast iron
	Glass	Hardened glass
	Flap	Stainless steel
Size		65A-150A

* Available with mica plate for steam condensate (150FM-F).
• Available with protector (150FP-F).
• Glass part is consumable supply.

150L-13 1.0 MPa Water Steam condensate Stainless steel Plain type

- Stainless steel made
- For visible check of two component fluid flow
- Horizontal and vertical installation

Model		150L-13S	150L-13F
Application		Cold and hot water, Oil, Other non-dangerous fluids *	
Maximum working pressure		1.0 MPa	
Max. temperature		150℃	
Max. thermal shock		100℃	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast stainless steel	
	Glass	Hardened glass	
Size		15A-50A	15A-100A

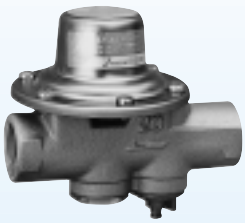
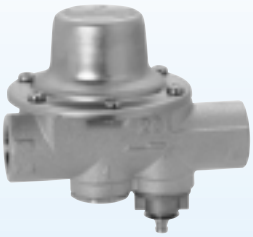
* Available with mica plate for steam condensate (150LM-13S•13F).
• Available with protector (150LP-13S•13F).
• Glass part is consumable supply.

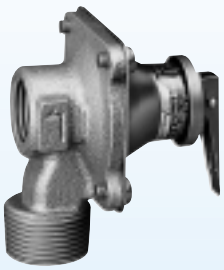
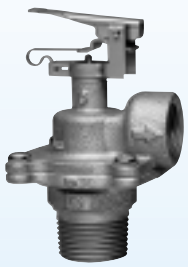
150F-13 1.0 MPa Water Steam condensate Stainless steel Flap type

- Stainless steel made
- For visible check of continuous flow change
- Horizontal and vertical installation

Model		150F-13S	150F-13F
Application		Cold and hot water, Oil, Other non-dangerous fluids *	
Maximum working pressure		1.0 MPa	
Max. temperature		150℃	
Max. thermal shock		100℃	
Connection		JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast stainless steel	
	Glass	Hardened glass	
	Flap	Stainless steel	
Size		15A-50A	15A-100A

* Available with mica plate for steam condensate (150FM-13S•13F).
• Available with protector (150FP-13S•13F).
• Glass part is consumable supply.

Home boiler regulator					
Feature		**Standard / L = 90 mm**	**Standard / L = 115 mm**	**For cold district / L = 90 mm**	**For cold district / L = 115 mm**
Model		**GD-55-80**	**GD-56-80**	**GD-55R-80**	**GD-56R-80**
Picture					
Application		**Cold and hot water**			
Inlet pressure		100-750 kPa			
Reduced pressure		Standard set pressure: 80 ± 6 kPa Available with 30-200 kPa.			
Max. temperature		60℃			
Freezing test		–		usable at -20℃ or above	
Connection		JIS Rc screwed			
Material	Body	Cast bronze			
	Diaphragm	Synthetic rubber			
	Main valve	Synthetic rubber			
	Check valve	Synthetic rubber			
	Screen	Stainless steel			
Size		20A			
Face to face dimension		90 mm	115 mm	90 mm	115 mm
Others		–	–	–	–

Home boiler relief valve				
Feature		**Relief valve / Closed lever**	**Relief valve / Handle**	**Relief valve**
Model		**AL-52F-95, AL-52FS-95**	**AL-50**	**AL-68-97**
Picture				
Application		**Cold and hot water**		
Commence-to-blow pressure		95 $^{+4}_{-6}$ kPa *	110-200 kPa 240-270 kPa 300 kPa	97 $^{+2}_{-4}$ kPa *
Reseating pressure		87 kPa or more	75 kPa or more	92 kPa or more
Breathing pressure		–	–	-12 kPa or less
Max. temperature		100℃		
Freezing test		usable at -20℃ or above		
Connection		Inlet: JIS R screwed Outlet: JIS Rc screwed		
Material	Body	Bronze		
	Valve	Synthetic rubber (diaphragm)	Synthetic rubber	
	Valve seat	Bronze		Stainless steel
Size		Inlet 20A x Outlet 15A		
Others		* Available with commence-to-blow pressure 60-190 kPa. AL-52FS: Valve seat made of stainless steel • Blowdown pressure is over 87 kPa.	–	* Available with commence-to-blow pressure 190 kPa (AL-68-190). • Blowdown pressure is over 92 kPa.

MXV-1

Mixing valve

- Stable mixed water temperature due to wax thermo-element.
- No electricity is required.
- Compact with built-in check valves at both inlets.
- Wide set temperature range and suitable for various purposes.
- Applicable for circulating water piping, having circulating water inlet joint.

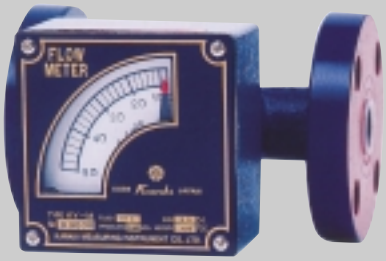
Application		Cold and hot water
Nominal size		25A-50A
Working pressure		1.0 MPa or less
Minimum closing pressure of check valve		3 KPa
Supply pressure difference between cold water and hot water		Within 0.05 MPa
Set temperature range		38-65℃
Initial set pressure		48℃
Inlet temperature		90℃ or below (No freeze condition)
Difference between cold water temperature and set temperature		10℃ or more
Difference between hot water temperature and set temperature		10℃ or more
Installation posture		Vertical or horizontal installation
Material	Body	Cast brass
	Joint	Bronze
Connection		JIS Rc screwed
Connection for circulating water inlet		JIS G 1/2 screwed

Flow Meters・Sight Glasses

Flow meters・Flow switches

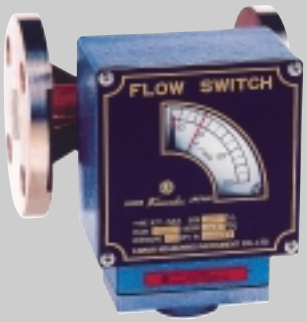
Mechanical flow meter / Area flow meter / Metal-tube area flow meter and Shuttle flow switch,etc.

Flow meter



KY-M

Flow switch

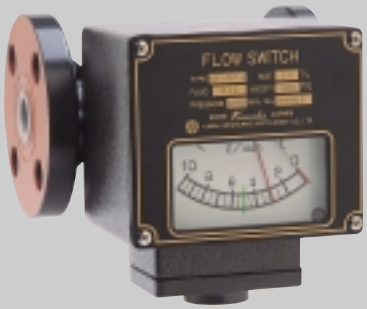


KY-MA

Flow switch

FY-M

Flow switch



SF-MA

River flow

RFH type

Flow meter

KNR

Sight glasses

A wide variety of sight glasses, such as Transparent, Compact, Magnet following, Nozzle, Normal / Reverse dual use type, etc.

Nozzle type

FS-1-N

Magnet following type

FS-M

Normal/Reverse dual-use

FS-Ⅳ

Ordering information

Flow meters are used mainly for lubricant oil, water supply line of steel, electric, paper manufacturing plant, and we design each product according to each application.
When ordering, please specify the following information. We will recommend the best suitable model for your specific needs. The product will be built to order.

1.	Application	(a) Fluid name or its chemical component
		(b) Mass density or specific gravity
		(c) Viscosity (mm^2/s)
		(d) Corrosivity
2.	Flow capacity	(a) Maximum flow capacity
		(b) Flow rate (Normal condition)
		(c) Contact capacity
		(d) Velocity
3.	Pressure	
4.	Temperature	
5.	Flow direction	(a) From left to right
		(b) From right to left
		(c) From bottom to top
		(d) From top to bottom

KAWAKI MEASURING INSTRUMENT CO., LTD. manufactures high quality flow meter, based on the long time experience and performance in producing flow meter for various application, such as oil, gas, steam, particulate, and so on. We propose the best suited products to required specification, and provide unique custom-made flow meters.

MEMO

Born to Save Energy

The most important subject we aim at is to establish of the "Y's" brand – giving the best energy saving solutions to our customers, we step out into the wider world.

February, 1944
Establishment of Yoshitake Inc.

August, 1989
Established the subsidiary company "Yoshitake Works. (Thailand) Ltd." in Thailand
An extensive improvement in quality, cost, and time for delivery, by integrated production system from casting to finished product.

June, 1995
Acquisition of ISO 9001.
For better quality management system.

September, 2000
Acquisition of ISO 14001.
For business in consideration of environmental preservation.

ISO9001

ISO14001

YOSHITAKE

http://www.yoshitake.jp

INTERNATIONAL DEPARTMENT
7-3, FUTANO-CHO, MIZUHOKU
NAGOYA, AICHI, 467-0861, JAPAN
PHONE: 81-52-881-7199
FAX : 81-52-881-7201

YWT SALES DIVISION
222 MOO-3 T.BANBUNG
A.BANBUNG CHONBURI 20170, THAILAND
PHONE: 66-38-110-003
FAX : 66-38-110-012

Printed in Japan. 048-05-14-12

Yoshitake reserves the right to change the materials or design of the products shown in this catalogue without prior notice.