

Information

All Around Guidance

Vol.2004

Anniversary
60th
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Yoshitake
INC.

C O N T E N T S

Pressure Reducing Valves

Primary Pressure Regulating Valves
Differential Pressure Regulating Valves
Falling Water Preventing Valves

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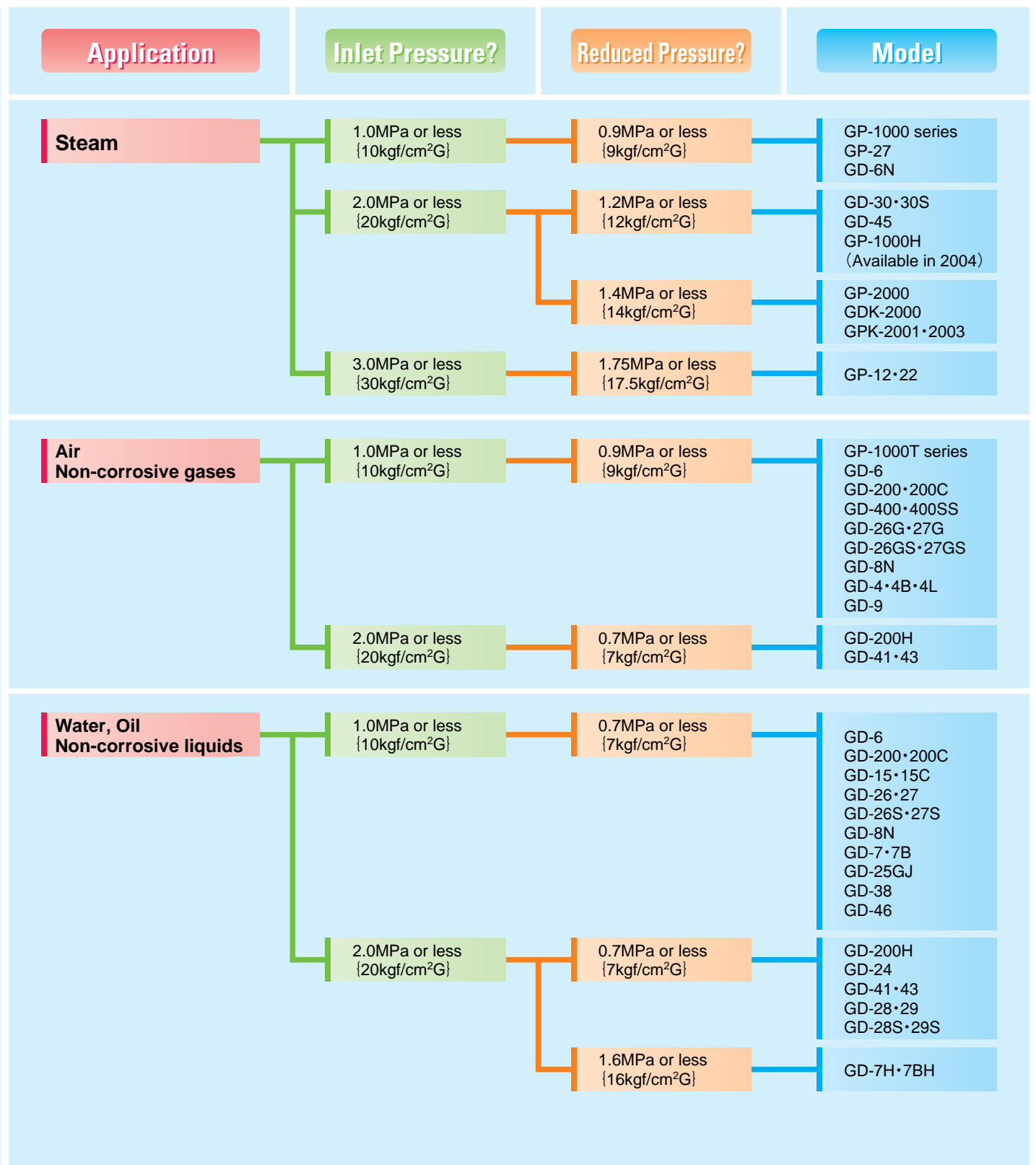
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Pressure Reducing Valves Selection

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



Primary Pressure Regulating Valves Page 14
 Differential Pressure Regulating Valves
 Falling Water Preventing Valve

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

GP-2000



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)

Application	Steam
Inlet pressure	0.1~2.0MPa {1.0~20kgf/cm ² G}
Reduced pressure	(A) 0.02~0.15MPa {0.2~1.5kgf/cm ² G} (B) 0.1~1.4MPa {1.0~14kgf/cm ² G}
Max. temperature	220°C
Connection	Scrd : JIS Rc (PT) screwed Flgd : JIS 20K RF, JIS 10K FF flanged
Material	Body : Ductile cast iron Main valve & seat : Stainless steel Pilot valve & seat : Stainless steel Diaphragm : Stainless steel
Size	Scrd : 1/2"~2" Flgd : 1/2"~8"



Air loaded pressure reducing valve



GDK-2000

- For remote control

GDK-2000(Direct acting)

Application	Steam
Inlet pressure	0.1~2.0MPa {1.0~20kgf/cm ² G}
Reduced pressure	0.05~1.4MPa {0.5~14kgf/cm ² G}
Max. temperature	220°C
Connection	Scrd : JIS Rc (PT) screwed Flgd : JIS 20K RF, JIS 10K FF flanged
Material	Body : Ductile cast iron Valve & seat : Stainless steel Diaphragm : Stainless steel
Size	Scrd : 1/2"~2" Flgd : 1/2"~4"

GPK-2001,2003(Pilot operated)

Model	GPK-2001	GPK-2003
Application	Steam	
Inlet pressure	0.1~2.0MPa {1.0~20kgf/cm ² G}	0.25~2.0MPa {2.5~20kgf/cm ² G}
Reduced pressure	0.05~0.9MPa {0.5~9kgf/cm ² G}	0.2~1.4MPa {2~14kgf/cm ² G}
Max. temperature	220°C	
Connection	Scrd : JIS Rc (PT) screwed Flgd : JIS 20K RF, JIS 10K FF flanged	
Material	Body : Ductile cast iron Valve & seat : Stainless steel Diaphragm : Stainless steel	
Size	Scrd : 1/2"~2" Flgd : 1/2"~4"	



CP-2005

CP-2001, 2002, 2003, 2004, 2006

Application	Steam
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}
Reduced pressure	(A) 0.02~0.15MPa {0.2~1.5kgf/cm ² G} (B) 0.1~0.85MPa {1.0~8.5kgf/cm ² G}
Max. temperature	183°C
Operation	Normally closed, Normally opened
Rated voltage	AC100V, 110V, 200V, 220V
Connection	Scrd : JIS Rc (PT) screwed Flgd : JIS 10K FF flanged
Size	Scrd : 1/2"~2" Flgd : 1/2"~4"

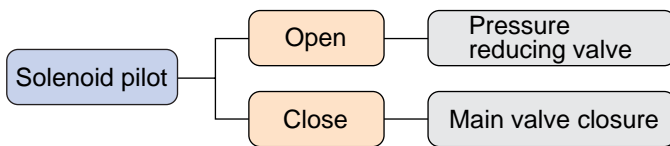
CP-2005

Application	Heating : Steam Heated : Water, Oil, Liquids
Inlet pressure	0.1~2.0MPa {1.0~20kgf/cm ² G}
Reduced pressure	(A) 0.02~0.15MPa {0.2~1.5kgf/cm ² G} (B) 0.1~1.4MPa {1.0~14kgf/cm ² G}
Max. temperature	220°C
Max. Press. for bulb	1.0MPa {10kgf/cm ² G}
Temp. regulating range	-8~183°C
Connection	Scrd : JIS Rc (PT) screwed Flgd : JIS 20K RF, JIS 10K FF flanged
Size	Scrd : 1/2"~2" Flgd : 1/2"~4"

Operation

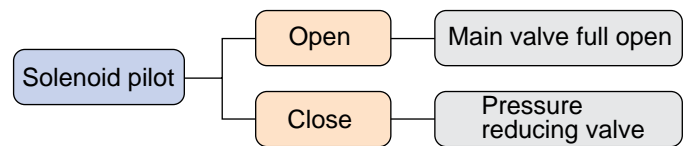
CP-2001

Pressure reducing valve with ON/OFF control



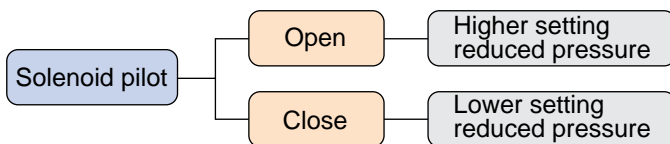
CP-2002

Pressure reducing and fully opening valve



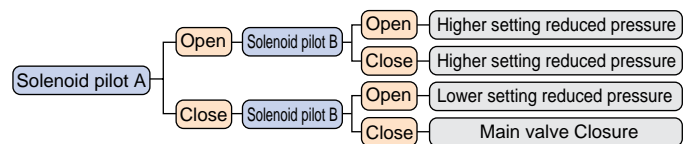
CP-2003

Switching two points pre-set reduced pressure



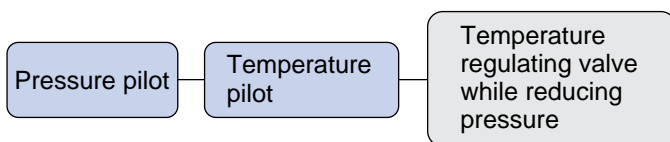
CP-2004

Switching pre-set reduced pressure with ON/OFF control



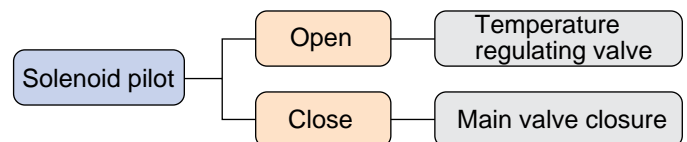
CP-2005

Pressure and temperature regulating valve



CP-2006

Temperature regulating valve with ON/OFF control



GP-1000 Series



Pressure reducing valve



GP-1000

- Pilot operated piston type
- Superior durability
- Stable performance
- Valve leakage meets ANSI class IV
- High reduction ratio (20:1)
- Wetted parts stainless steel (GP-1000SS, 1200SS, 1000TSS, 1200TSS)
- All stainless steel (GP-1000AS, 1000TAS)
- Air-loaded type for remote control (GP-1200 series)

Model	GP-1000
Application	Steam
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}
Reduced pressure	0.05~0.9MPa {0.5~9.0kgf/cm ² G}
Max. temperature	220°C
Connection	JIS 10K FF Flanged
Material	Body : Ductile cast iron
	Main valve & seat : Stainless steel
	Pilot valve & seat : Stainless steel
Piston & Cylinder : Brass or bronze	
Size	1/2"~4"

Model	GP-1000S	GP-1000SS	GP-1000AS	GP-1200	GP-1200S	GP-1200SS
Application	Steam					
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}					
Reduced pressure	0.05~0.9MPa {0.5~9.0kgf/cm ² G}					
Max. temperature	220°C					
Connection	JIS 10K FF flanged					
Material	Body	Ductile cast iron	Stainless steel		Ductile cast iron	Stainless steel
	Main valve & seat	Stainless steel				
	Pilot valve & seat	Stainless steel				
	Piston & cylinder	Stainless steel			Brass or bronze	Stainless steel
Size	1/2"~4"	1/2"~4"		1/2"~4"		1/2"~4"

Model	GP-1000T	GP-1000TS	GP-1000TSS	GP-1000TAS	GP-1200T	GP-1200TS	GP-1200TSS
Application	Air, Non-corrosive gases						
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}						
Reduced pressure	0.05~0.9MPa {0.5~9.0kgf/cm ² G}						
Max. temperature	80°C						
Connection	JIS 10K FF flanged						
Material	Body	Ductile cast iron	Stainless steel		Ductile cast iron	Stainless steel	
	Main valve & seat	NBR & Stainless steel					
	Pilot valve & seat	NBR & Stainless steel					
	Piston & cylinder	Brass or bronze	Stainless steel			Brass or bronze	Stainless steel
Size	1/2"~4"		1/2"~4"		1/2"~4"		1/2"~4"

GP-1000 Series



Pressure reducing valve



GP-1010

- 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-1011

All GP-1000 series valves except GP-1200 series can be with adjusting handle. Those model number is GP-10□1.

Model		GP-1010	GP-1010S	GP-1210	GP-1210S
Application		Steam			
Inlet pressure		0.1~1.0MPa {1.0~10kgf/cm ² G}			
Reduced pressure		0.05~0.9MPa {0.5~9.0kgf/cm ² G}			
Max. temperature		220°C			
Connection		JIS Rc (PT) screwed			
Material	Body	Cast iron		Ductile cast iron	
	Main valve & seat	Stainless steel			
	Pilot valve & seat	Stainless steel			
	Piston & cylinder	Brass or bronze	Stainless steel	Brass or bronze	Stainless steel
Size		1/2"~2"			

Model		GP-1010T	GP-1010TS	GP-1210T	GP-1210TS
Application		Air, Non-corrosive gases			
Inlet pressure		0.1~1.0MPa {1.0~10kgf/cm ² G}			
Reduced pressure		0.05~0.9MPa {0.5~9.0kgf/cm ² G}			
Max. temperature		80°C			
Connection		JIS Rc (PT) screwed			
Material	Body	Cast iron		Ductile cast iron	
	Main valve & seat	NBR & Stainless steel			
	Pilot valve & seat	NBR & Stainless steel			
	Piston & cylinder	Brass or bronze	Stainless steel	Brass or bronze	Stainless steel
Size		1/2"~2"			

GP-27



Steam

Pressure reducing valve



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

Application	Steam
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}
Reduced pressure	0.03~0.8MPa {0.3~8.0kgf/cm ² G}
Max. temperature	220°C
Connection	JIS 10K FF flanged
Material	Body : Cast iron
	Main valve & seat : Stainless steel
	Pilot valve & seat : Stainless steel
Piston & cylinder : Bronze	
Size	5"~8"

GD-6N·6



Steam

Air



Pressure reducing valve



GD-6N

- Direct-acting type
- Easy installation and operation
- Integral strainer prevents dirt problem

Model	GD-6N	GD-6
Application	Steam	Water, Air, Oil, Non-corrosive fluids
Inlet pressure	Max. 1.0MPa {10kgf/cm ² G}	
Reduced pressure	(A) 0.02~0.1MPa {0.2~1.0kgf/cm ² G}	
	(B) 0.1~0.4MPa {1.0~4.0kgf/cm ² G}	
Max. temperature	220°C	80°C
Connection	JIS Rc (PT) screwed	
Material	Body	Cast iron
	Valve & seat	Stainless steel
	Diaphragm	FKM & brass or bronze
Size	3/8"~1"	

GD-30·30S



Steam

Air

Pressure reducing valve



GD-30

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

Model	GD-30	GD-30S
Application	Steam, Air	Steam
Inlet pressure	Max. 1.7MPa {17kgf/cm ² G}	Max. 2.0MPa {20kgf/cm ² G}
Reduced pressure	(A) 0.02~0.1MPa {0.2~1.0kgf/cm ² G}	
	(B) 0.05~0.4MPa {0.5~4.0kgf/cm ² G}	
	(C) 0.35~1.0MPa {3.5~10kgf/cm ² G}	
Max. temperature	210°C	220°C
Connection	JIS Rc (PT) screwed	
Material	Body	Bronze
	Valve & seat	Stainless steel
	Bellows	Phosphor bronze
Size	1/2"~1", 1-1/2", 2"	1/2"~1"

GD-45



Pressure reducing valve



- Direct-acting type
- Small and compact
- Superior performance and durability
- Easy installation and operation
- Integral strainer prevents dirt problem.

Application	Steam
Inlet pressure	Max. 2.0MPa {20kgf/cm ² G}
Reduced pressure	(A) 0.02~0.1MPa {0.2~1.0kgf/cm ² G}
	(B) 0.05~0.4MPa {0.5~4.0kgf/cm ² G}
	(C) 0.35~1.0MPa {3.5~10kgf/cm ² G}
Max. temperature	220°C
Connection	JIS Rc(PT) screwed
Material	Body : Ductile cast iron
	Valve & seat : Stainless steel
	Bellows : Phosphor bronze
Size	1/2"~1"

GD-200 Series



Pressure reducing valve



GD-200

- Direct-acting type
- Stable reduced pressure against fluctuation of inlet pressure because of pressure balance mechanism
- Nylon 11 coating both inside and outside of GD-200C body

Model	GD-200	GD-200H	GD-200C
Application	Water, Oil (Kerosene, Heavy oil A/B), Air, Non-corrosive fluids		
Inlet pressure	Max. 1.0MPa {10kgf/cm ² G}	Max. 2.0MPa {20kgf/cm ² G}	Max. 1.0MPa {10kgf/cm ² G}
Reduced pressure	1/2"~3" : (A) 0.05~0.25MPa {0.5~2.5kgf/cm ² G}		
	(B) 0.26~0.7MPa {2.6~7.0kgf/cm ² G}		
	4"~6" : (A) 0.05~0.25MPa {0.5~2.5kgf/cm ² G}		
	(B) 0.26~0.5MPa {2.6~5.0kgf/cm ² G}		
Max. temperature	80°C		60°C
Connection	JIS 10K FF flanged	JIS 20K RF flanged	JIS 10K FF flanged
Material	Body : Ductile cast iron		
	Valve & seat : NBR & stainless steel		
	Diaphragm : NBR		
Size	1/2"~6"		

* Trim (Valve seat, Spindle) material [SUS316] is also available (GD-200HS).

GD-24



Pressure reducing valve



- Direct-acting type
- Small and compact
- Superior performance and durability
- Easy installation and operation
- Integral strainer prevents dirt problem.

Application	Water
Inlet pressure	0.2~1.6MPa {2~16kgf/cm ² G}
Reduced pressure	0.05~0.55MPa {0.5~5.5kgf/cm ² G}
Max. temperature	80°C
Connection	JIS Rc(PT) screwed
Material	Body : Bronze
	Valve & seat : Brass & stainless steel
	Valve disc : Urethane rubber
	Diaphragm : NBR
Size	1/2"~2"

* Valve and cap made of bronze are also available (GD-24B).

GD-15·15C



Pressure reducing valve



GD-15C

- Direct-acting type
- Low noise and stable pressure control
- Hand-removable cap and integral strainer
- Integral strainer prevents dirt problem.
- With integral check valve

Model	GD-15	GD-15C
Application	Water	
Inlet pressure	0.1~1.0MPa {1.0~10kgf/cm ² G}	
Reduced pressure	0.05~0.25MPa {0.5~2.5kgf/cm ² G}	(A) 0.10~0.22MPa {1.0~2.2kgf/cm ² G} (B) 0.20~0.35MPa {2.0~3.5kgf/cm ² G}
Temperature	5~60°C	5~90°C
Connection	JIS Rc (PT) screwed	JIS R (PT) / Rc (PT) screwed
Material	Body	Bronze
	Valve	NBR
	Seat	Bronze
	Diaphragm	NBR
Size	1/2"~3/4"	

GD-41·43



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	Water, Air, Non-corrosive gases, Steam for washing/sterilization		
Inlet pressure	0.07~2.0MPa *1 {0.7~20kgf/cm ² G}	0.07~1.0MPa *1 {0.7~10kgf/cm ² G}	0.07~2.0MPa *1 {0.7~20kgf/cm ² G}
Reduced pressure	(A) 0.02~0.1MPa {0.2~1.0kgf/cm ² G} (B) 0.1~0.25MPa {1.0~2.5kgf/cm ² G} (C) 0.25~0.5MPa {2.5~5.0kgf/cm ² G}		
Temperature	5~90°C *2		
Connection	JIS Rc (PT) screwed	JIS 10K FF flanged	JIS 20K RF flanged
Material	Body : Stainless steel		
	Valve & seat : Synthetic rubber & stainless steel		
	Diaphragm : Synthetic rubber & PTFE		
Size	1/2"~1"		

*1 : The maximum pressure for steam is 0.2MPa.

*2 : The maximum temperature for steam is 130°C for 30 minutes use.
And 4 hours interval must be taken for re-use.

GD-400·400SS



Pressure reducing valve



GD-400SS

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

Model	GD-400	GD-400SS
Application	Air, N ₂ gas, CO ₂ gas	
Inlet pressure	2.5~400kPa {0.025~4kgf/cm ² G}	
Reduced pressure	(A) : 0.5~1.4kPa {0.005~0.014kgf/cm ² G} (B) : 1.2~3.3kPa {0.012~0.033kgf/cm ² G} (C) : 3.0~8.0kPa {0.03~0.08kgf/cm ² G} (D) : 7.0~20kPa {0.07~0.2kgf/cm ² G}	
Temperature	5~60°C	
Connection	JIS 10K FF flanged	
Material	Body	Cast iron
	Valve	Synthetic rubber
	Diaphragm	Synthetic rubber
	Trim	Stainless steel
Size	1/2"~1"	

GD-26 Series



Pressure reducing valve



GD-26

- Direct-acting type
- Anti-corrosion material for wetted parts
- Low noise and stable pressure control
- Integral strainer prevents dirt problem.
- Closed construction so that no leakage to outside





Model	GD-26	GD-27	GD-28	GD-29	GD-26G	GD-27G
Application	Water				Air, Non-corrosive gases	
Inlet pressure	Max. 1.0MPa {10kgf/cm ² G}		Max. 1.6MPa {16kgf/cm ² G}		Max. 1.0MPa {10kgf/cm ² G}	
Reduced pressure	(A) 0.05~0.35MPa {0.5~3.5kgf/cm ² G}	(A) 0.05~0.2MPa {0.5~2.0kgf/cm ² G}	(A) 0.05~0.35MPa {0.5~3.5kgf/cm ² G}			
	(B) 0.3~0.7MPa {3.0~7.0kgf/cm ² G}	(B) 0.2~0.5MPa {2.0~5.0kgf/cm ² G}	(B) 0.3~0.7MPa {3.0~7.0kgf/cm ² G}			
Temperature	5~90°C		5~80°C		5~90°C	
Connection	JIS Rc (PT) screwed	JIS 10K FF flanged		JIS Rc (PT) screwed	JIS 16K FF flanged	JIS Rc (PT) screwed
Material	Body : Bronze					
	Valve : Synthetic rubber					
	Seat : Bronze					
	Diaphragm : Synthetic rubber					
Size	1/2"~2"	1"~4"	5"~6"	1/2"~2"	1"~4"	1/2"~2"




Model	GD-26S	GD-27S	GD-28S	GD-29S	GD-26GS	GD-27GS
Application	Water				Air, Non-corrosive gases	
Inlet pressure	Max. 1.0MPa {10kgf/cm ² G}		Max. 1.6MPa {16kgf/cm ² G}		Max. 1.0MPa {10kgf/cm ² G}	
Reduced pressure	(A) 0.05~0.35MPa {0.5~3.5kgf/cm ² G}					
	(B) 0.3~0.7MPa {3.0~7.0kgf/cm ² G}					
Temperature	5~90°C					
Connection	JIS Rc (PT) screwed	JIS 10K FF flanged	JIS Rc (PT) screwed	JIS 16K FF flanged	JIS Rc (PT) screwed	JIS 10K FF flanged
Material	Body : Stainless steel					
	Valve : Synthetic rubber					
	Seat : Stainless steel					
	Diaphragm : Synthetic rubber					
Size	3/4"~2"	3/4"~4"	3/4"~2"	3/4"~4"	3/4"~2"	3/4"~4"

Pressure Reducing Valves

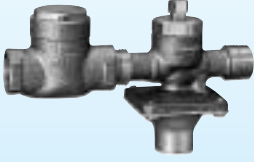




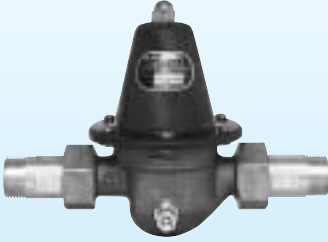
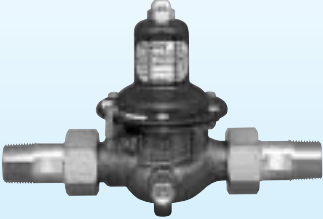
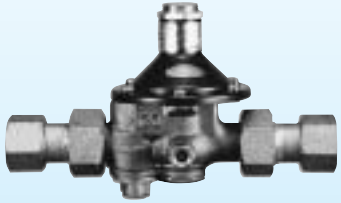
Variation

Feature	Diaphragm / Carbon steel	Low pressure	Low pressure / balance type
Model	GP-12/22	GD-4	GD-4B
Picture			
Application	Steam	Air, Non-corrosive gases	
Inlet pressure	0.1~3.0MPa	Max. 300kPa	Max. 800kPa (3/4"~2") Max. 500kPa (2-1/2"~6")
Reduced pressure	0.02~0.21MPa 0.14~0.7MPa 0.56~1.75MPa	2~200kPa * Contact us on pressure range for each valve.	
Max. temperature	260°C	80°C	
Connection	GP-12 : JIS Rc screwed GP-22 : JIS 30K RF flanged	JIS 10K FF flanged	
Material	Body	Cast carbon steel	
	Main valve	Stainless steel	NBR (3/4"~2") Stainless steel (2-1/2"~6")
	Main valve seat	Stainless steel	Stainless steel
	Pilot valve	Stainless steel	—
	Pilot valve seat	Stainless steel	—
	Diaphragm	Stainless steel	NBR
Size	1/2"~2"	3/4"~6"	
Others			




Feature	316 Stainless steel	General air regulator	Piston type	Piston type / balance type
Model	GD-8N	GD-9	GD-7	GD-7B
Picture		 1/4"~3/4" 1"		
Application	Pure Water, Air, N ₂ , CO ₂ , Ar	Air, Non-corrosive gases	Water, Oil, Non-corrosive liquids	
Inlet pressure	0.1~1.0MPa	0.1~0.99MPa	0.1~1.0MPa	
Reduced pressure	0.05~0.7MPa	0.05~0.85MPa	3/4"~2" (A) 0.05~0.25MPa (B) 0.25~0.45MPa (C) 0.45~0.7MPa *1	2-1/2"~6" (A) 0.05~0.2MPa (B) 0.2~0.5MPa (C) 0.5~0.7MPa *1
Max. temperature	60°C	60°C	80°C *2	
Connection	JIS Rc screwed	JIS Rc screwed	JIS 10K FF flanged	
Material	Body	316 Stainless steel	Aluminium die casting	Cast iron *3
	Valve	316 Stainless steel	NBR	Phosphor bronze *4
	Valve seat	316 Stainless steel	Aluminium die casting	Phosphor bronze *4
	Diaphragm	PTFE	NBR	Piston : Bronze *4
Size	1/8"~1/2"	1/4"~1"	3/4"~6"	
Others			*1 : 0.7~1.6MPa is also available as GD-7H or GD-7BH. *2 : Max. 120°C is also available. *3 : Cast carbon steel is also available. *4 : Stainless steel is also available.	

1MPa ≙ 10kgf/cm²G





Feature		PRV unit for kerosene	Water hammer arrestor	Check valve
Model		GD-65F · SU-55F	WP-1	CV-25 / CV-36
Picture				 CV-25
Application		Kerosene	Water	Water
Inlet pressure		0.05~0.1MPa	Max. 1.0MPa	Max. 1.0MPa
Reduced pressure		0.02MPa	—	Shut-off pressure CV-25 : Min. 0.005MPa CV-36 : Min. 0.004MPa
Max. temperature		60°C	90°C	CV-25 : 35°C CV-36 : 60°C
Connection		JIS Rc / R screwed	JIS R screwed	Inlet JIS R or G (Union joint) Outlet JIS R or Rc screwed * Contact us in details.
Material	Body	Bronze	Brass	Brass or Bronze
	Valve	FKM	Pipe : Copper pipe	POM
	Valve seat	Bronze	Piston : Brass	—
	Diaphragm	FKM	O ring : NBR	—
Size		1/2"	1/2"~1"	CV-25 : 3/4"~1" CV-36 : 3/4"
Others		* Integral screen : 60 mesh		



Feature		House-to-house water supply pressure reducing valves		
Model		GD-25GJ	GD-38	GD-46
Picture				
Application		Water	Water	Water
Inlet pressure		Max. 1.0MPa	Max. 1.0MPa	Max. 1.0MPa
Reduced pressure		(A) 0.05~0.10MPa	(A) 0.05~0.10MPa	(A) 0.05~0.10MPa
		(B) 0.10 ~0.22MPa	(B) 0.10 ~0.22MPa	(B) 0.10 ~0.22MPa
		(C) 0.20 ~0.35MPa	(C) 0.20 ~0.30MPa	(C) 0.20 ~0.30MPa
Max. temperature		90°C *1	90°C *1	90°C *1
Connection		JIS R (Union joint) *2	JIS R (Union joint) *2	JIS R (Union joint) *2
Material	Body	Bronze	Bronze	Bronze
	Valve	EPDM	EPDM	FKM
	Valve seat	Bronze	Bronze	Bronze
	Diaphragm	EPDM	EPDM	FKM
Size		1"	3/4"	3/4"
Others		*1 : 40°C for the valves with pipe end core. 35°C for the valves with check valve. *2 : JIS Rc is available.	*1 : 40°C for the valves with pipe end core. 60°C for the valves with check valve. *2 : JIS Rc and G are available.	*1 : 40°C for the valves with pipe end core. 60°C for the valves with check valve. *2 : JIS Rc and G are available.

1MPa ≒ 10kg/cm²G

Feature		For air loaded PRV	PRV with filter	3 port solenoid valve
Model		Standard control unit	GD-37	DD-37
Picture				
Application		Air	Air	Air, Water, Oil
Inlet pressure		Max. 0.99MPa	Max. 0.99MPa	Max. 0.6MPa
Reduced pressure		0.05~0.85MPa	0.05~0.85MPa	—
Max. temperature		60°C	60°C	
Connection		JIS Rc screwed	JIS Rc screwed	JIS Rc screwed
Material	Body	Zinc die casting	Zinc die casting	Brass
	Valve	NBR	NBR	NBR
	Valve seat	Zinc die casting	Zinc die casting	—
	Diaphragm	NBR	NBR	—
Size		1/4"	1/8"~1/4"	1/4"
Others		Filteration : 5 μm	Filteration : 5 μm	Rated voltage : AC 110V 50/60Hz AC 220V 50/60Hz

1MPa ≒ 10kgf/cm²G

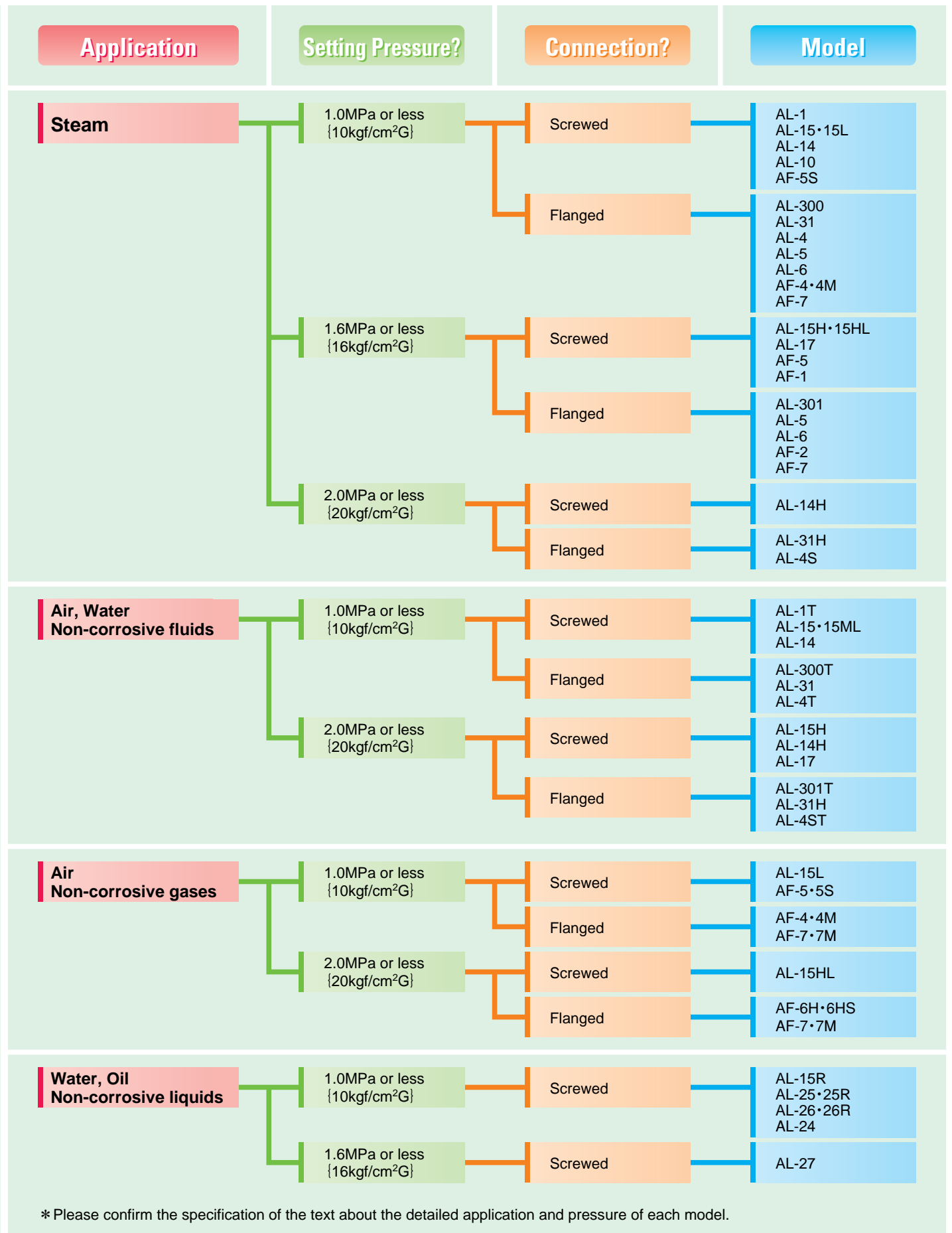
Feature	Primary pressure regulating valves			
Model	GPR-2000	GP-1R	GD-4R	GD-7R
Picture				
Application	Steam	Steam	Air, Non-corrosive gases	Water, Oil, Non-corrosive liquids
Primary pressure	(A) 0.02~0.15MPa (B) 0.1 ~1.1MPa (C) 1.0 ~1.4MPa	(A) 0.2~0.7MPa (B) 0.7 ~1.0MPa —	2~200kPa * Contact us on pressure range for each valve.	(A) 0.05~0.25MPa *1 (B) 0.25~0.45MPa *1 (C) 0.45~0.7MPa *1
Max. temperature	220°C	220°C	80°C	80°C
Connection	Scrd : JIS Rc screwed Flgd : JIS 20K RF, 10K FF flanged	JIS 10K FF flanged	JIS 10K FF flanged	JIS 10K FF flanged
Material	Body	Ductile cast iron	Cast iron	Cast iron *2
	Main valve	Stainless steel	Stainless steel	Phosphor bronze
	Main valve seat	Stainless steel	Stainless steel	Phosphor bronze
	Pilot valve	Stainless steel	Stainless steel	—
	Pilot valve seat	Stainless steel	Stainless steel	—
Diaphragm	Stainless steel	Stainless steel	NBR	Piston : Bronze
Size	Scrd : 1/2"~2" Flgd : 1/2"~4"	1/2"~4"	3/4"~6"	3/4"~6"
Others				*1 : Contact us for 2-1/2" to 6" valves. *2 : Cast carbon steel and 0.7~1.6MPa are available.

Feature	Primary pressure regulating valve	Differential pressure regulating valve
Model	GD-20R	GD-21
Picture		
Application	Water, Oil, Air, Non-corrosive fluids	Water
Primary pressure	1/2"~3" (A) 0.05~0.25MPa (B) 0.26~0.7MPa 4"~6" (A) 0.05~0.25MPa (B) 0.26~0.5MPa	1/2"~3" (A) 0.05~0.25MPa (B) 0.26~0.7MPa 4"~6" (A) 0.05~0.25MPa (B) 0.26~0.5MPa
Max. temperature	80°C	80°C
Connection	JIS 10K FF flanged	JIS 10K FF flanged
Material	Body	Ductile cast iron
	Valve	NBR
	Valve seat	Bronze
	Diaphragm	NBR
Size	1/2"~6"	1/2"~6"
Others	* The GD-20RC coated with Nylon 11 is also available.	

1MPa ≙ 10kg/cm²G

Safety & Relief Valves Selection

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



AL-1·1T



Safety relief valve



- Simple structure means easy maintenance.
- Easy adjustment
- Tight seal because of PTFE disc (AL-1T)

Model	AL-1	AL-1T
Application	Steam	Air, Oil, Water, Non-corrosive fluids
Pressure range	0.05~1.0MPa (0.5~10kgf/cm ² G) Refer to setting pressure range table (P.22)	
Max. temperature	220°C	150°C *
Connection	JIS Rc (PT) screwed	
Material	Body	Cast iron
	Valve & seat	PTFE & bronze
Size	1/2"~2"	

* Max. temperature is 120°C for liquids, such as water and oil.

AL-15·15H



Safety relief valve



AL-15

- Small and compact
- Superior durability due to stainless made valve and seat
- Blow-down pressure is adjustable.

Model	AL-15	AL-15H
Application	Steam, Air, Oil, Water, Non-corrosive fluids	
Pressure range	0.05~1.0MPa {0.5~10kgf/cm ² G}	1.0~1.6MPa {10~16kgf/cm ² G}
Max. temperature	220°C *	
Connection	JIS Rc (PT) screwed	
Material	Body	Bronze
	Valve & seat	Stainless steel
Size	1/2"~2"	

* Max. temperature is 120°C for liquids, such as water and oil.

AL-15L·15HL



Safety valve



AL-15L

- Small and compact lever type
- Superior durability due to stainless made valve and seat
- Blow-down pressure is adjustable.

Model	AL-15L	AL-15HL
Application	Steam, Air, Non-corrosive gases	
Pressure range	0.05~1.0MPa {0.5~10kgf/cm ² G}	1.0~1.6MPa {10~16kgf/cm ² G}
Max. temperature	220°C	
Connection	JIS Rc (PT) screwed	
Material	Body	Bronze
	Valve & seat	Stainless steel
Size	1/2"~2"	

AL-14・14H



Safety relief valve



AL-14

- Superior durability due to all stainless made
- Simple structure means easy maintenance.
- Easy adjustment

Model	AL-14	AL-14H
Application	Steam, Air, Oil, Water, Non-corrosive fluids	
Pressure range	0.05~1.0MPa {0.5~10kgf/cm ² G}	1.0~2.0MPa {10~20kgf/cm ² G}
	Refer to setting pressure range table (P.22)	
Max. temperature	220°C *	
Connection	JIS Rc(PT) screwed	
Material	Body	Stainless steel
	Valve & seat	Stainless steel
Size	1/2"~2"	

* Max. temperature is 120°C for liquids, such as water and oil.

AL-300・301



Safety valve



- Simple structure means easy maintenance.
- Easy adjustment

Model	AL-300	AL-301
Application	Steam	
Pressure range	0.05~1.0MPa {0.5~10kgf/cm ² G}	0.05~1.5MPa {0.5~15kgf/cm ² G}
	Refer to setting pressure range table (P.22)	
Max. temperature	220°C	
Connection	JIS 10K FF, 16K FF flanged	
Material	Body	Ductile cast iron
	Valve & seat	Bronze
Size	1/2"~2"	

AL-300T・301T



Safety relief valve



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

Model	AL-300T	AL-301T
Application	Air, Water, Oil, Non-corrosive fluids	
Pressure range	0.05~1.0MPa {0.5~10kgf/cm ² G}	0.05~1.3MPa {0.5~13kgf/cm ² G} *1
	Refer to setting pressure range table (P.22)	
Max. temperature	150°C *2	
Connection	JIS 10K FF, 16K FF flanged	
Material	Body	Ductile cast iron
	Valve & seat	PTFE & Bronze
Size	1/2"~2"	

*1 AL-301 is available for 1.3 to 1.5MPa.

*2 Max. temperature is 120°C for liquids, such as water and oil.

AL-31·31H



Steam

Air

Water

Safety relief valve



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

Model	AL-31	AL-31H
Application	Steam, Air, Oil, Water, Non-corrosive fluids	
Pressure range	0.05~1.0MPa{0.5~10kgf/cm ² G}	1.0~2.0MPa{10~20kgf/cm ² G}
	Refer to setting pressure range table (P.22)	
Max. temperature	220°C *	
Connection	JIS 10K RF flanged	JIS 16K, 20K RF flanged
Material	Body	Stainless steel
	Valve & seat	Stainless steel
Size	1/2"~2"	

* Max. temperature is 120°C for liquids, such as water and oil.

AL-4·4S



Steam

Safety valve



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

Model	AL-4	AL-4S
Application	Steam	
Pressure range	0.05~1.0MPa{0.5~10kgf/cm ² G} *1 0.05~1.5MPa{0.5~15kgf/cm ² G} *1	0.05~2.0MPa{0.5~20kgf/cm ² G}
	Refer to setting pressure range table (P.22)	
Max. temperature	220°C	
Connection	JIS 10K, 16K FF flanged	JIS 10K, 16K, 20K FF flanged
Material	Body	Cast iron
	Valve & seat	Bronze or stainless steel
	Ductile cast iron *2	Stainless steel
Size	2-1/2"~6"	2-1/2"~4"

*1 Max. set pressure is 0.8MPa for 6" size.

*2 Carbon steel or stainless steel are also available.

AL-4T·4ST



Air

Water

Safety relief valve



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

Model	AL-4T	AL-4ST
Application	Air, Oil, Water, Non-corrosive fluids	
Pressure range	0.05~1.0MPa{0.5~10kgf/cm ² G} *1 0.05~1.5MPa{0.5~15kgf/cm ² G} *1	0.05~2.0MPa{0.5~20kgf/cm ² G}
	Refer to setting pressure range table (P.22)	
Max. temperature	120°C	
Connection	JIS 10K, 16K FF flanged	JIS 10K, 16K, 20K FF flanged
Material	Body	Ductile cast iron *2
	Valve & seat	PTFE & stainless steel *3
	Cast iron	PTFE & stainless steel *3
Size	2-1/2"~6"	2-1/2"~4"

*1 Max. set pressure is 0.8MPa for 6" size.

*2 Carbon steel or stainless steel are also available.

*3 Valve is made of stainless steel at the pressure higher than 1.2MPa(2-1/2"~3") and 1.0MPa(4",5").

AL-5



Steam

Safety valve



- Conformable to JIS standard
- Sealed structure to prevent unexpected adjustment
- Blow-down pressure is adjustable.

Application		Steam	
Pressure range		0.05~1.0MPa {0.5~10kgf/cm ² G}	0.05~1.5MPa {0.5~15kgf/cm ² G}
Max. temperature		220°C	
Connection		JIS 10K FF flanged	JIS 16K FF flanged
Material	Body	Cast iron	Cast iron
	Valve & seat	Bronze or stainless steel	Stainless steel
Size		3/4"~2"	3/4"~2" *

* In case of set pressure is over 1.0MPa, body material is ductile cast iron (3/4"~1-1/2").

AL-6



Steam

Safety valve



- Conformable to JIS standard
- Available to blow-out test with lever

Application		Steam	
Pressure range		0.05~1.0MPa {0.5~10kgf/cm ² G}	0.05~1.5MPa {0.5~15kgf/cm ² G}
Max. temperature		220°C	
Connection		JIS 10K FF flanged	JIS 16K FF flanged
Material	Body	Cast iron	
	Valve & seat	Bronze or stainless steel	Stainless steel
Size		2-1/2"~6"	

* Max. set pressure of 6" is 0.8MPa.

AF-5·5S



Steam

Air

Safety valve









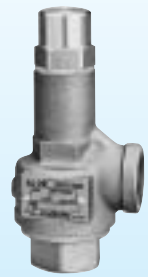

- Small and compact
- Superior durability due to corrosion-proof material
- AF-5S is all stainless steel made.



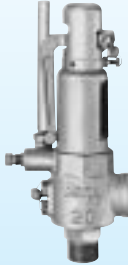

Model	AF-5		AF-5S
Application	Steam	Air, Non-corrosive gases	Steam, Air, Non-corrosive gases
Pressure range	0.1~1.6MPa {1.0~16kgf/cm ² G}	0.1~1.0MPa {1.0~10kgf/cm ² G}	0.1~1.0MPa {1.0~10kgf/cm ² G}
Max. temperature	220°C		
Connection	Inlet : JIS R (PT) screwed		Outlet : JIS Rc (PT) screwed
Material	Body	Bronze	Stainless steel
	Valve & seat	Stainless steel	
Size	3/4"~2"		





* Size is different from connection screwed size.

AF-5

Feature	Safety relief / Closed lever	Relief valve / Handle	Safety relief / 1.6MPa	Relief valve / 1.6MPa
Model	AL-15ML	AL-15R	AL-17	AL-27
Picture				
Application	Air, Water, Non-corrosive fluids	Water, Oil, Non-corrosive liquids	Steam, Air, Water, Non-corrosive fluids	Water, Oil, Non-corrosive liquids
Pressure range	A : 0.05~0.2MPa	A : 0.05~0.2MPa	A : 0.05~0.2MPa	A : 0.05~0.2MPa
	B : 0.21~0.4MPa	B : 0.21~0.4MPa	B : 0.21~0.4MPa	B : 0.21~0.4MPa
	C : 0.41~0.65MPa	C : 0.41~0.65MPa	C : 0.41~0.65MPa	C : 0.41~0.65MPa
	D : 0.66~1.0MPa	D : 0.66~1.0MPa	D : 0.66~1.0MPa	D : 0.66~1.0MPa
	—	—	E : 1.01~1.6MPa	E : 1.01~1.6MPa
Max. temperature	150°C *	120°C	220°C *	120°C
Connection	JIS Rc screwed	JIS Rc screwed	JIS Rc screwed	JIS Rc screwed
Material	Body	Bronze	Bronze	Cast iron
	Valve	Stainless steel	Stainless steel	Stainless steel
	Valve seat	Stainless steel	Stainless steel	Stainless steel
Size	1/2"~2"	1/2"~2"	1/2"~2"	1/2"~2"
Others	* Max. temperature is 120°C for liquids, such as water and oil.		* Max. temperature is 120°C for liquids, such as water and oil.	

Feature	Relief valve / Stainless steel	Relief valve / Handle	Relief valve / Bronze	Relief valve / Handle
Model	AL-25	AL-25R	AL-26	AL-26R
Picture				
Application	Water, Oil, Non-corrosive liquids		Water, Oil, Non-corrosive liquids	
Pressure range	0.05~1.0MPa		A : 0.05~0.2MPa	
	*Pressure range is different from nominal size. Refer to setting pressure range table (P.22)		B : 0.21~0.4MPa	
			C : 0.41~0.65MPa	
			D : 0.66~1.0MPa	
			—	
Max. temperature	120°C		120°C	
Connection	JIS Rc screwed		JIS Rc screwed	
Material	Body	Stainless steel	Bronze	
	Valve	Stainless steel	Stainless steel	
	Valve seat	Stainless steel	Stainless steel	
Size	1/2"~2"		1/2"~2"	
Others				

Feature	Safety valve / Open, Lever	Relief valve / Diaphragm type	Full bore / screwed	Full bore / JIS B 8210 inlet
Model	AL-10	AL-24	AF-1	AF-2
Picture				
Application	Steam	Water	Steam	Steam
Pressure range	A : 0.05~0.2MPa *	0.1~0.7MPa *0.05~0.1MPa is also available.	0.18~1.6MPa *1	0.18~1.6MPa *1
	B : 0.21~0.4MPa			
	C : 0.41~0.65MPa			
	D : 0.66~1.0MPa			
Max. temperature	220°C	60°C *	220°C	220°C
Connection	JIS Rc screwed	JIS Rc screwed	JIS R / Rp screwed	JIS 10K RF / FF flanged *2
Material	Body	Cast iron	Ductile cast iron	Ductile cast iron
	Valve	Bronze or Stainless steel	Stainless steel	Stainless steel
	Valve seat	Bronze or Stainless steel	Stainless steel	Stainless steel
Size	1/2"~2"	1/2"~1"	3/4"~2" *2	2-1/2"~3"
Others	*Refer to setting Pressure range table (P.22) for 2".	* FKM is also available (Max. Temp. is 120°C).	*1 Contact us on pressure range. *2 Size is different from connection screwed size.	*1 Contact us on pressure range. *2 Inlet : JIS B 8210 10K RF Outlet : JIS B 2239 10K FF Inlet is JIS B 8210 20K RF for 1.1MPa or more.

Feature	Full bore / JIS B 2239 flanged	Full bore / SCPH, SCS	Full bore / Lever, SCPH	Full bore / Closed, SCPH
Model	AF-4, 4M	AF-6H, 6HS	AF-7	AF-7M
Picture				
Application	Steam, Air	Air, Non-corrosive gases	Steam, Air, Non-corrosive gases	Air, Non-corrosive gases
Pressure range	0.1~1.0MPa Contact us on pressure range.	0.1~2.0MPa Contact us on pressure range.	0.1~1.0MPa *1 Contact us on pressure range.	
Max. temperature	220°C	250°C *1	350°C	300°C
Connection	JIS 10K FF flanged	Inlet : JIS 20K RF flanged *2 Outlet : JIS 10K FF flanged	Inlet : JIS 10K RF flanged *1 Outlet : JIS 10K FF flanged	
Material	Body	Cast iron	Carbon steel *2	
	Valve	Stainless steel	Stainless steel	
	Valve seat	Stainless steel	Stainless steel	
Size	1"~6" (Except 1-1/4")	1"~4" (Except 1-1/4")	1"~4"	
Others	AF-4 : Opened lever type AF-4M : Opened type	*1 Contact us on Max. temperature because it is dependent on the fluid and pressure. *2 Inlet flange is equivalent to JIS 20K RF flanged.	*1 1.6MPa set pressure is available (inlet : JIS 20K RF flanged). *2 Wetted parts stainless steel is available.	

1MPa ≙ 10kgf/cm²G

(MPa)

Model	Size	A	B	C	D	E	F	G	H
AL-1, 1T	1/2"	0.05~0.25	0.26~0.4	0.41~0.75	0.76~1.0				
	3/4"~2"	0.05~0.25	0.26~0.5	0.51~0.75	0.76~1.0				
AL-15, 15L, 15R, 15ML AL-26, 26R	1/2"~2"	0.05~0.2	0.21~0.4	0.41~0.65	0.66~1.0				
AL-15H, 15HL	1/2"~2"					1.0~1.6			
AL-17, 27	1/2"~2"	0.05~0.2	0.21~0.4	0.41~0.65	0.66~1.0	1.01~1.6			
AL-14, 14H, 25, 25R	1/2"	0.05~0.15	0.16~0.35	0.36~0.55	0.56~0.75	0.76~1.0	1.0~1.3	1.31~2.0	
	3/4"	0.05~0.2	0.21~0.3	0.31~0.45	0.46~0.6	0.61~0.75	0.76~1.0	1.0~1.6	1.61~2.0
	1"	0.05~0.2	0.21~0.35	0.36~0.45	0.46~0.55	0.56~0.8	0.81~1.0	1.0~1.6	1.61~2.0
	1-1/4"~2"	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-10	1/2"~1-1/2"	0.05~0.2	0.21~0.4	0.41~0.65	0.66~1.0				
	2"	0.05~0.1 0.11~0.2							
AL-31, 31H	1/2"	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	
	3/4"	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	
1"	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	
1-1/4"~2"	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	1/2"~2"	0.05~0.25	0.26~0.5	0.51~0.75	0.76~1.5				
AL-300T, 301T	1/2"~2"	0.05~0.25	0.26~0.5	0.51~0.75	0.76~1.3 1.31~1.5 *				
AL-4, 4T	2-1/2"	0.05~0.1	0.11~0.25	0.26~0.55	0.65~1.0	1.01~1.5			
	3"~5"	0.05~0.1	0.11~0.2	0.21~0.4	0.41~0.8	0.81~1.5			
	6"	0.05~0.1	0.11~0.2	0.21~0.4	0.41~0.8				
AL-4S, 4ST	2-1/2"	0.05~0.1	0.11~0.25	0.26~0.55	0.56~1.0	1.01~2.0			
	3"~4"	0.05~0.1	0.11~0.2	0.21~0.4	0.41~0.8	0.81~1.6	1.61~2.0		

* In case of over 1.3MPa, the model is AL-301, not AL-301T.

1MPa ≙ 10kg/cm²G

Strainers Selection

Application	Type?	Max. Pressure?	Model
Steam Air Water Non-corrosive fluids	Y type / Screwed	1.3MPa or less {13kgf/cm ² G}	SY-6
		2.0MPa or less {20kgf/cm ² G}	SY-5 SY-17
	Y type / Flanged	1.0MPa or less {10kgf/cm ² G}	SY-40 SY-20-10 SY-8 SY-23
		2.0MPa or less {20kgf/cm ² G}	SY-20-20 SY-2
		3.0MPa or less {30kgf/cm ² G}	SY-10-30 SY-10HS
Air Water Non-corrosive fluids	Y type / Screwed	1.0MPa or less {10kgf/cm ² G}	SY-9
	Y type / Flanged	1.0MPa or less {10kgf/cm ² G}	SY-40C
Water, Oil Non-corrosive fluids	Y type / Screwed	1.6MPa or less {16kgf/cm ² G}	SY-6V•6P SY-24
	U type / Screwed	1.2MPa or less {10kgf/cm ² G}	SU-55F
	U type / Flanged	1.0MPa or less {10kgf/cm ² G}	SU-50S•50SS SU-20•20S SU-10•10S SU-15 SU-12-10
		2.0MPa or less {20kgf/cm ² G}	SU-50H SU-12-20
	Duplex / Flanged	1.0MPa or less {10kgf/cm ² G}	SW-10 SW-10S
Temporary Strainer			ST-1

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

SY-5



Strainer



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

Application		Steam, Air, Water, Non-corrosive fluids
Max. pressure		2.0MPa {20kgf/cm ² G}
Max. temperature		220°C
Connection		JIS Rc (PT) screwed
Material	Body	Ductile cast iron
	Screen	Stainless steel
Size		3/8"~2"

* Standard screen : ϕ 2.5-7.21 holes/cm² 60 mesh. 20 to 100 mesh screen are available.

SY-40·40C



Strainer



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

Model		SY-40	SY-40C
Application		Steam, Air, Water, Non-corrosive fluids	Air, Water, Non-corrosive fluids
Max. pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		220°C	60°C
Connection		JIS 10KFF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		1/2"~12"	

* Standard screen : ϕ 2.5-7.21 holes/cm² 60 mesh
20 to 100 mesh screen are available.

SY-17



Strainer



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

Application		Steam, Air, Water, Non-corrosive fluids
Max. pressure		2.0MPa {20kgf/cm ² G}
Max. temperature		150°C (250°C) **
Connection		JIS Rc (PT) screwed
Material	Body	Stainless steel
	Screen	Stainless steel
Size		1/2"~2"

* Standard screen : ϕ 2.5-7.21 holes/cm² 60 mesh. 20 to 100mesh screen are available.
120~200 mesh screen are available as SY-37.

** Gasket material is asbestos for over 150°C.

SY-20



Strainer



- Flanged, carbon steel and 2.0MPa
- Low pressure loss and large capacity

Model		SY-20-10	SY-20-20
Application		Steam, Air, Water, Non-corrosive fluids	
Max. pressure		1.0MPa {10kgf/cm ² G}	2.0MPa {20kgf/cm ² G}
Max. temperature		260°C	
Connection		JIS 10KRF flanged	JIS 20KRF flanged
Material	Body	Carbon steel	
	Screen	Stainless steel	
Size		1/2"~6"	

* Standard screen : ϕ 6-1.80 holes/cm² 40 mesh. 20 to 80 mesh screen are available.

SU-50 Series



Strainer



SU-50H

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

Model		SU-50H	SU-50S	SU-50SS
Application		Water, Oil		Flush water
Max. pressure		2.0MPa {20kgf/cm ² G}	1.0MPa {10kgf/cm ² G}	
Max. temperature		80°C		
Connection		JIS 20KRF or BS4504 PN16 flanged		
Material	Body	Ductile cast iron		Ductile cast iron
	Cover	Ductile cast iron	Carbon steel	316 stainless steel
	Screen	316 stainless steel (φ 2.5-7.21holes/cm ² perforation)		
Size		2"~6" (Except 5") *		

* 8" is available as SU-20H

** 20 to 100 mesh screen are available.



SU-50S

SU-20·20S



Strainer



SU-20

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

Model		SU-20	SU-20S
Application		Water, Oil, Non-corrosive liquids	
Max. pressure		1.0MPa {10kgf/cm ² G}	1.0MPa {10kgf/cm ² G} *
Max. temperature		220°C	80°C
Connection		JIS 10KFF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		3/4"~6"	

* Max. pressure is 0.7MPa for 5" and 0.5MPa for 6".

** Standard screen : φ 6-1.42 holes/cm² 60 mesh.

20 to 250 mesh screen are available.



SU-20S

SW-10·10S



Strainer



SW-10

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

Model		SW-10	SW-10S
Application		Water, Oil, Non-corrosive liquids	
Max. pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		80°C	
Connection		JIS 10KFF flanged	
Material	Body	Ductile cast iron	
	Screen	Stainless steel	
Size		3/4"~4"	

* Standard screen : φ 6-1.42 holes/cm² 60 mesh.

20 to 250 mesh screen are available.


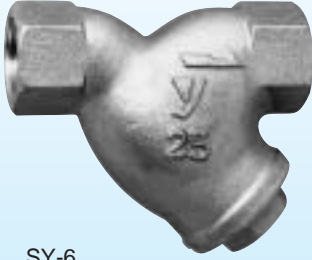


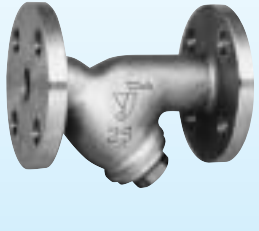

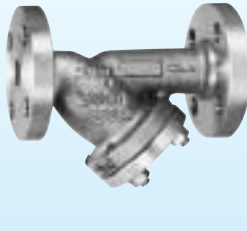

SW-10S

Strainers








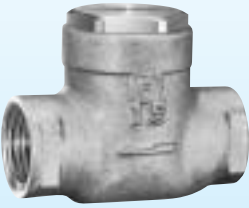
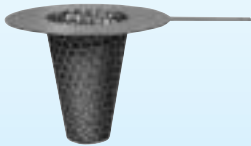
Variation

Feature	Y type flanged / Ductile cast iron	Y type screwed / Bronze	Anticorrosive core / PVC	Anticorrosive core / Polyethylene
Model	SY-2	SY-6	SY-6V	SY-6P
Picture				
Application	Steam, Air, Water, Oil, Non-corrosive fluids	Steam, Air, Water, Oil, Non-corrosive fluids	Water	Water
Max. pressure	2.0MPa	1.3MPa	1.0MPa	1.0MPa
Max. temperature	220°C	220°C	40°C	40°C
Connection	JIS 20K FF flanged *	JIS Rc screwed	JIS Rc screwed	JIS Rc screwed
Material	Body	Ductile cast iron	Bronze	Bronze
	Screen	Stainless steel	Stainless steel	Stainless steel
Standard screen	3/4"~3" : ϕ 1.3-16.2 holes/cm ² 4"~8" : ϕ 1.5-11.2 holes/cm ²	40 mesh (ϕ 2.5-7.21 holes/cm ²)	40 mesh (ϕ 2.5-7.21 holes/cm ²)	40 mesh (ϕ 2.5-7.21 holes/cm ²)
Available screen	20~100 mesh (ϕ 2.5-7.21 holes/cm ²)	20~100 mesh (ϕ 2.5-7.21 holes/cm ²)	20~100 mesh (ϕ 2.5-7.21 holes/cm ²)	20~100 mesh (ϕ 2.5-7.21 holes/cm ²)
Size	3/4"~8"	1/2"~2"	1/2"~2"	1/2"~2"
Others	* JIS 10K, 16K FF flanged are available.		* For steel water pipes lined with hard PVC.	* For steel water pipes lined with pulverized polyethylene.

Feature	Y type flanged / Stainless steel	Y type flanged / Carbon steel	Y type flanged / Stainless steel	Y type flanged / Large size
Model	SY-8	SY-10-30	SY-10HS	SY-23
Picture				
Application	Steam, Air, Water, Oil, Non-corrosive fluids	Steam, Air, Water, Oil, Non-corrosive fluids	Steam, Air, Water, Oil, Non-corrosive fluids	Steam, Air, Water, Oil, Non-corrosive fluids
Max. pressure	1.0MPa *1	3.0MPa	3.0MPa	1.0MPa
Max. temperature	150°C (250°C) *2	260°C *	350°C *	300°C
Connection	JIS 10K FF flanged *1	JIS 30K RF flanged	JIS 30K RF flanged	JIS 10K FF flanged *1
Material	Body	Stainless steel	Carbon steel	Stainless steel
	Screen	Stainless steel	Stainless steel	Stainless steel
Standard screen	40 mesh (ϕ 2.5-7.21 holes/cm ²)	40 mesh (ϕ 6-1.8 holes/cm ²)	40 mesh (ϕ 6-1.8 holes/cm ²)	8" : ϕ 8-1.2 holes/cm ² 10"~26" : ϕ 10-0.8 holes/cm ²
Available screen	20~100 mesh *3 (ϕ 2.5-7.21 holes/cm ²)	20~100 mesh (ϕ 6-1.8 holes/cm ²)	20~100 mesh (ϕ 6-1.8 holes/cm ²)	20~100 mesh (ϕ 8-1.2 or ϕ 10-0.8 holes/cm ²)
Size	1/2"~6"	1/2"~10"	1/2"~4"	8"~26"
Others	*1 JIS 20K FF flanged is available up to 2". *2 Gasket material : PTFE (150°C), asbestos (250°C) *3 120 to 200 mesh screen are available as SY-38.	* In case of temp is over 260°C, contact us for further information.	* Max. temperature is 300°C for 2.0MPa or more.	*1 JIS 20K, ANSI 150lb, 300lb flanged are available. *2 Stainless steel is available as SY-23SS.

1MPa \approx 10kgf/cm²G

Feature	Y type screwed / Easy plug	Y type screwed / Bronze	U type / Stainless steel	One-touch / Stainless steel
Model	SY-9	SY-24	SU-10	SU-10S
Picture				SU-10
Application	Air, Water, Oil, Non-corrosive fluids	Water	Water	Water
Max. pressure	1.0MPa	1.6MPa	1.0MPa	1.0MPa *
Max. temperature	80°C	80°C	220°C	80°C
Connection	JIS Rc screwed	JIS Rc / R screwed	JIS 10K FF flanged	JIS 10K FF flanged
Material	Body	Ductile cast iron	Bronze	Stainless steel
	Screen	Stainless steel	Stainless steel	Stainless steel
Standard screen	40 mesh (ϕ 2.5-7.21 holes / cm ²)	60 mesh (ϕ 2.5-7.21 holes / cm ²)	60 mesh (ϕ 6-1.42 holes / cm ²)	60 mesh (ϕ 6-1.42 holes / cm ²)
Available screen	20~100 mesh (ϕ 2.5-7.21 holes / cm ²)	20~100 mesh (ϕ 2.5-7.21 holes / cm ²)	20~250 mesh (ϕ 6-1.42 holes / cm ²)	20~250 mesh (ϕ 6-1.42 holes / cm ²)
Size	1/2"~2"	1/2"~2"	3/4"~6"	3/4"~6"
Others				* 0.7MPa for 5" and 0.5 MPa for 6".

Feature	U type flanged / Large size	U type flanged / CS	Small type / Bronze	Corn type / Temporary
Model	SU-15	SU-12	SU-55F	ST-1
Picture				
Application	Water, Oil, Non-corrosive liquids	Water, Oil, Non-corrosive liquids	Water	Steam, Air, Water, Oil, Non-corrosive fluids
Max. pressure	1.0MPa	1.0 or 2.0MPa *	1.2MPa	1.0, 2.0, 3.0, 4.0MPa *
Max. temperature	300°C	260°C	80°C	220°C
Connection	JIS 10K FF flanged	JIS,ANSI flanged *	JIS Rc screwed	For JIS flanged *
Material	Body	Carbon steel *	Carbon steel	Bronze
	Screen	Stainless steel	Stainless steel	Stainless steel
Standard screen	40 mesh (ϕ 10-0.8 holes / cm ²)	60 mesh (ϕ 6-1.42 holes / cm ²)	60 mesh	30 mesh (ϕ 8-0.954 holes / cm ²)
Available screen	20~100 mesh (ϕ 10-0.8 holes / cm ²)	20~250 mesh (ϕ 6-1.42 holes / cm ²)	—	20~250 mesh (ϕ 8-0.954 holes / cm ²)
Size	8"~26"	3/4"~6"	1/2"	1"~12"
Others	* Stainless steel is available as SU-15SS.	* SU-12-10 : JIS 10K RF flanged SU-12-20 : JIS 20K RF flanged SU-12-150 : ANSI 150lb RF flanged SU-12-300 : ANSI 300lb RF flanged		* ST-1-10 : For JIS 10K flanged ST-1-20 : For JIS 20K flanged ST-1-30 : For JIS 30K flanged ST-1-40 : For JIS 40K flanged

1MPa \doteq 10kg/cm²G

Solenoid Valves, Motor Valves, Air Operated Valves Selection

Type?	Application	Pressure?	Model
Solenoid Valves			
DP type (Pilot operated type)	Steam, Air, Water, Oil Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	DP-10•13 DP-10C•13C DP-15•17 DP-6
	Air, Water, Oil Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	DP-33 DP-16•18 DP-12•14 DP-12C•14C
DD type (Direct acting type)	Steam	0.12MPa or less {1.2kgf/cm ² G}	DD-1S
		0.5MPa or less {5kgf/cm ² G}	DD-1S-5
		0.7MPa or less {7kgf/cm ² G}	DD-1S-7
	Air, Water, Oil Non-corrosive fluids	0.12MPa or less {1.2kgf/cm ² G}	DD-1W
		0.5MPa or less {5kgf/cm ² G}	DD-1W-5
		0.7MPa or less {7kgf/cm ² G}	DD-1W-7
Motor Valves			
Two Way type	Steam	0.6MPa or less {6kgf/cm ² G}	MD-54
	Air, Water	1.0MPa or less {10kgf/cm ² G}	MD-53•54 MD-36 MD-55 MD-61
Three Way type	Air, Water	1.0MPa or less {10kgf/cm ² G}	MD-35
Air Operated Valves			
	Steam, Air, Water, Oil Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	PD-1 PD-2
Emergency Shut-off Valves			
	Water	1.0MPa or less {10kgf/cm ² G}	MD-71

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

DP-10·13



Solenoid valve



DP-10

- Fluid-free service for steam, air, water and oil
- Small and compact, but large capacity
- Vertical or horizontal installation is possible.

Model	DP-10	DP-13
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Working pressure	0.05~1.0MPa {0.5~10kgf/cm ² G}	
Min. differential pressure	0.05MPa {0.5kgf/cm ² }	
Max. temperature	180°C	
Rated voltage	AC100/200V selective 50/60Hz common AC110/220V selective 50/60Hz common AC120/240V selective 50/60Hz common	
Operation	Normally closed	
Connection	JIS Rc(PT) screwed	JIS 10K FF flanged
Material	Body	Bronze
	Piston	Stainless steel
	Valve disc	PTFE
Size	3/8"~2"	1/2"~2"

* DC coil is available as DP-10D and DP-13D.

DP-10C·13C



Solenoid valve



DP-10C

- Fluid-free service for steam, air, water and oil
- Small and compact but large capacity
- Vertical or horizontal installation is possible.

Model	DP-10C	DP-13C
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Working pressure	0.05~1.0MPa {0.5~10kgf/cm ² G}	
Min. differential pressure	0.05MPa {0.5kgf/cm ² }	
Max. temperature	180°C	
Rated voltage	AC100/200V selective 50/60Hz common AC110/220V selective 50/60Hz common AC120/240V selective 50/60Hz common	
Operation	Normally opened	
Connection	JIS Rc(PT) screwed	JIS 10K FF flanged
Material	Body	Bronze
	Piston	Stainless steel
	Valve disc	PTFE
Size	3/8"~2"	1/2"~2"

* DC coil is available as DP-10CD and DP-13CD.

DP-10 series option

Solenoid valve



Operation ring

“Operation ring” permits verification of operation from any direction.



Terminal box

The terminal box can be installed to DP-10 series for both outdoor and indoor usage.



Connector for cab tire cable

This connector protects connection parts at the wire, and avoid a wire break and a connection degraded.

DP-33



Solenoid valve



- Small and compact, but large capacity
- Zero-differential working pressure
- Vertical or horizontal installation is possible.

Application	Air, Water, Oil, Non-corrosive fluids	
Working pressure	0~1.0MPa {0~10kgf/cm ² G} *	
Min. differential pressure	0MPa {0kgf/cm ² }	
Max. temperature	60°C	
Rated voltage	AC220V 50/60Hz	
Operation	Normally closed	
Connection	JIS Rc(PT) screwed	
Material	Body	Bronze
	Valve	NBR (Diaphragm)
Size	1/2"~1"	

* 0~0.6MPa (0~6kgf/cm²G) for oil service.

DP-15·17·16·18



Solenoid valve



DP-16

- Stainless steel made enables long life.
- Fluid-free service for steam, air, water and oil (DP-15, DP-17)
- Small and compact, but large capacity

Model	DP-15	DP-17	DP-16	DP-18
Application	Steam, Air, Water, Oil, Non-corrosive fluids		Air, Water, Oil, Non-corrosive fluids	
Working pressure	0.05~1.0MPa {0.5~10kgf/cm ² G}		0~1.0MPa {0~10kgf/cm ² G}	
Min. differential pressure	0.05MPa {0.5kgf/cm ² }		0MPa {0kgf/cm ² }	
Max. temperature	180°C		60°C	
Rated voltage	AC100/200V selective 50/60Hz common AC110/220V selective 50/60Hz common AC120/240V selective 50/60Hz common			
Operation	Normally closed *			
Connection	JIS Rc(PT) screwed	JIS 10K FF flanged	JIS Rc(PT) screwed	JIS 10K FF flanged
Material	Body			
	Stainless steel			
	Piston	Stainless steel	—	
Valve disc	PTFE (Disc)	NBR (Diaphragm)		
Size	1/2"~2"			

* Normally opened is available as DP-15C, DP-17C, DP-16C and DP-18C.

** DC coil is available as DP-15D, DP-17D, DP-16D and DP-18D.

MD-54



Motor valve



- Fluid-free service for steam, air, water and oil
- Small and compact, but large capacity
- Special valve seat for high temperature

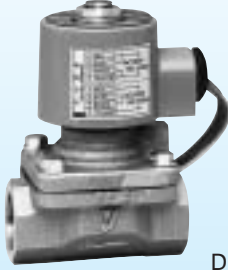
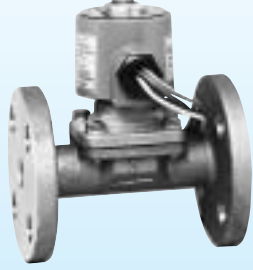
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Working pressure	0~1.0MPa {0~10kgf/cm ² G} Steam : 0~0.6MPa {0~6kgf/cm ² G}	
Max. temperature	Steam : 160°C Air : 120°C Water : 100°C	
Rated voltage	AC100/110V selective 50/60Hz common AC200/220V selective 50/60Hz common	
Operation	ON/OFF	
Connection	JIS Rc(PT) screwed	
Material	Body	Stainless steel
	Valve	Stainless steel
	Valve seat	PTFE
Size	1/2"~2"	

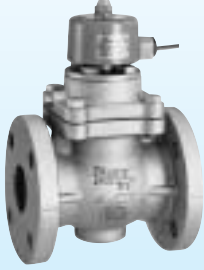
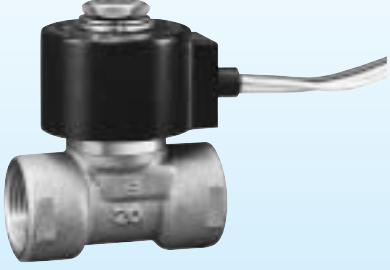
* MD-53 for water and air is available (Max. Temp. 80°C).

Solenoid Valves







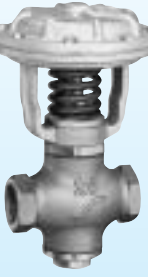
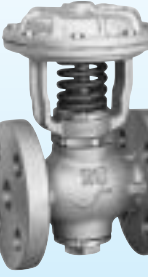


Variation

Feature	Diaphragm type / Screwed	Diaphragm type / Flanged	Normally opened / Screwed	Normally opened / Flanged
Model	DP-12	DP-14	DP-12C	DP-14C
Picture				
Application	Air, Water, Oil, Non-corrosive fluids			
Working pressure	0~1.0MPa			
Min. differential pressure	0MPa			
Max. temperature	60°C (FKM : 120°C is available.)			
Rated voltage	AC100/200V, AC110/220V, AC120/240V selective 50/60 Hz common			
Operation	Normally closed		Normally opened	
Connection	JIS Rc screwed	JIS 10K FF flanged	JIS Rc screwed	JIS 10K FF flanged
Material	Bronze			
	NBR (Diaphragm)			
Size	3/8"~2"	1/2"~2"	3/8"~2"	1/2"~2"
Others	* DC coil is available as DP-12D.	* DC coil is available as DP-14D.	* DC coil is available as DP-12CD.	* DC coil is available as DP-14CD.

Feature	Piston type / Flanged	Direct acting / For steam	Direct acting / For air, water
Model	DP-6	DD-1S	DD-1W
Picture			
Application	Steam, Air, Water, Oil, Non-corrosive fluids	Steam	Air, Water, Oil, Non-corrosive fluids
Max. pressure	1.0MPa	DD-1S : 0.12MPa 120°C DD-1S-5 : 0.5MPa 160°C DD-1S-7 : 0.7MPa 170°C	DD-1W : 0.12MPa 120°C DD-1W-5 : 0.5MPa 120°C DD-1W-7 : 0.7MPa 120°C
Max. temperature	180°C		
Min. differential pressure	0.5MPa	0MPa	
Rated voltage	AC100/200V, AC110/220V, AC120/240V selective 50/60 Hz common	AC100, AC110V, AC120V, AC200V, AC220V, AC240V 50/60 Hz common	
Operation	Normally closed	Normally closed	
Connection	JIS 10K FF flanged	JIS Rc screwed	
Material	Body	Cast iron	
	Valve	Stainless steel	
	Valve seat	Bronze	Plunger : Stainless steel
Size	2-1/2"	PTFE (Disc) / FKM (Disc)	
Others		3/8"~3/4"	

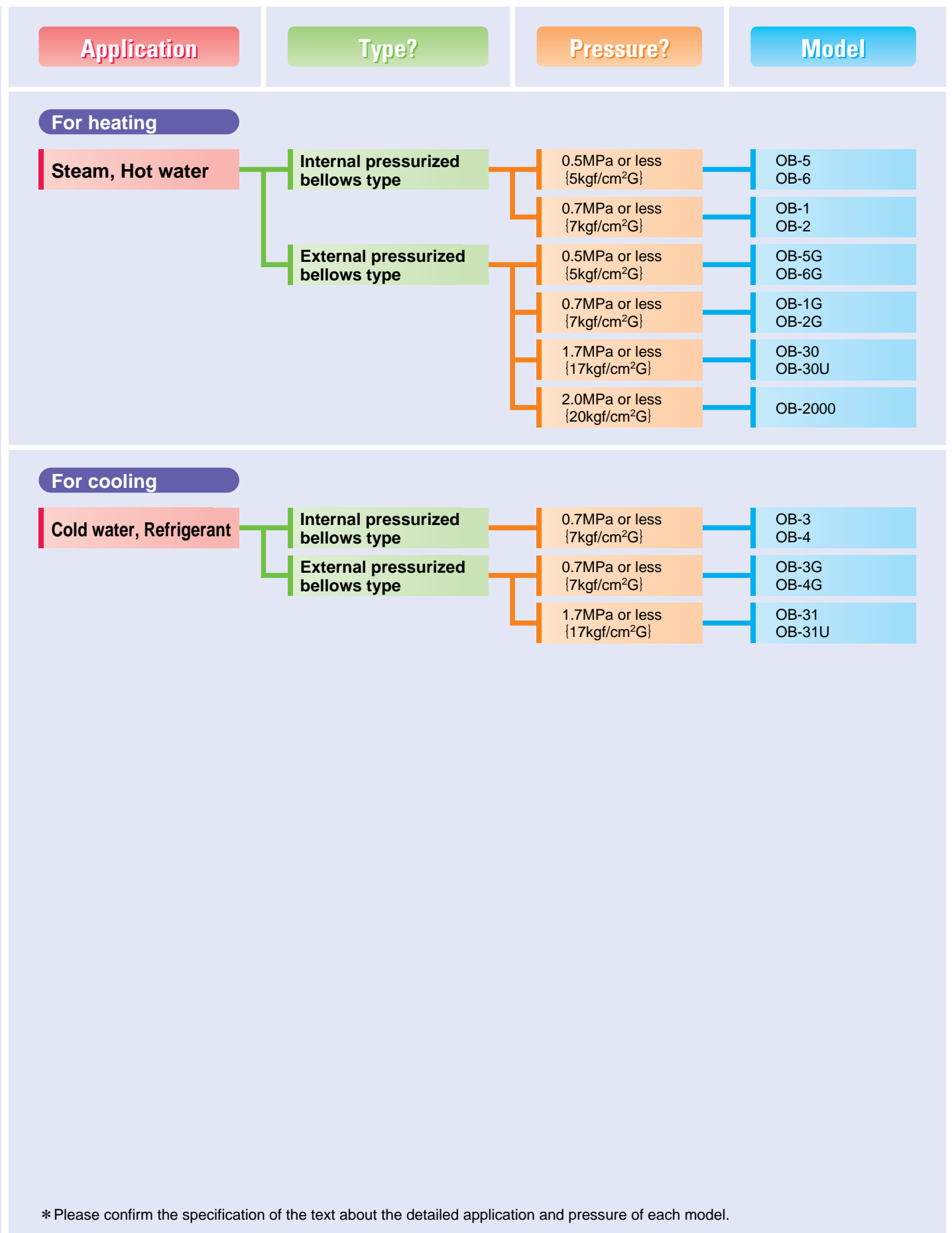
1MPa ≒ 10kgf/cm²G

Feature	Motor valve / Screwed, 3 way	Motor valve / Screwed, 2 way	Motor valve / Flanged, 2 way	Motor valve / Stainless, 2 way
Model	MD-35	MD-36	MD-55	MD-61
Picture				 MD-61
Application	Air, Water, Non-corrosive fluids			
Working pressure	0~1.0MPa		0~1.0MPa	
Min. differential pressure	0MPa		0MPa	
Max. temperature	60°C		80°C	
Rated voltage	AC100/110V, AC200/220V, 50/60 Hz common		AC100/110V, AC200/220V, 50/60 Hz common	
Operation	Switching	ON/OFF	ON/OFF	
Connection	JIS Rc x R screwed	JIS Rc screwed	JIS 10K FF flanged	JIS 10K RF flanged
Material	Body	Brass		Cast iron
	Valve	Brass (HCr plating)		Stainless steel
	Valve seat	PTFE		PTFE
Size	1/2"~1"		2-1/2"~6"	
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-2
Picture				
Application	Steam, Air, Water, Oil, Non-corrosive fluids		Water	—
Working pressure	0~1.0MPa		0~1.0MPa	—
Max. temperature	180°C		60°C	50°C
Rated voltage	—	—	DC24V	AC100~200V 50/60 Hz common
Operation	Air to open *		ON/OFF	Output : DC24V
Connection	JIS Rc screwed	JIS 10K FF Flanged	Wafer for JIS 5K, 10K flanged	—
Material	Body	Bronze	Cast iron	Ductile cast iron
	Valve	Stainless steel		Stainless steel
	Valve seat	Stainless steel		EPDM
Size	1/2"~1"	1/2"~2"	2"~8"	—
Others	* "Air to close" is also available.			* Standard unit is for 2 emergency shut-off valves. Contact us in detail.

1MPa ≒ 10kgf/cm²G

Temperature Regulators Selection



OB-30 series



Temperature Regulator



OB-30

- OB-30, 30U for heating, OB-31, 31U for cooling
- Small and compact, but accurate control
- PTFE/Stainless valve & seat enables long durability.

Model	OB-30	OB-30U	OB-31	OB-31U
Application	For heating (steam, hot water)		For cooling (Cold water, refrigerant)	
Heated or cooled fluid	Water, Oil, Non-corrosive liquids			
Max. pressure	1.7MPa {17kgf/cm ² G} *		1.7MPa {17kgf/cm ² G}	
Max. differential pressure	1.0MPa {10kgf/cm ² }			
Max. temperature	185°C			
Max. pressure for bulb	1.0MPa {10kgf/cm ² G}			
Set point range	0~35°C, 25~70°C, 40~100°C, 60~130°C, 70~150°C		0~35°C, 25~70°C, 40~100°C	
Max.Temp. for bulb	Upper set point+40°C			
Connection	JIS Rc(PT) screwed	JIS Rc(Union joint)	JIS Rc(PT) screwed	JIS Rc(Union joint)
Material	Body	Bronze		
	Valve disc	PTFE		
	Valve seat	Stainless steel		
	Bulb	Copper (Nickel chrome plated)		
Size	1/2"~1"			

* Max. pressure is 1.0MPa for steam service.

** Standard capillary length is 2m. 3m or 5m are available.

OB-2000



Temperature Regulator



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

Model	OB-2000	
Application	For heating (steam)	
Heated fluid	Water, Oil, Non-corrosive liquids	
Max. pressure	2.0MPa {20kgf/cm ² G}	
Max. temperature	220°C	
Max. pressure for bulb	1.0MPa {10kgf/cm ² G}	
Set point range	-8~15°C, 10~36°C, 30~62°C, 55~94°C, 80~127°C, 115~183°C	
Max.Temp. for bulb	Upper set point+20°C	
Connection	JIS Rc(PT) screwed	JIS 10KFF, 20KRF flanged
Material	Body	Ductile cast iron
	Valve	Stainless steel
	Valve seat	Stainless steel
	Diaphragm	Stainless steel
	Bulb	Copper (Nickel chrome plated)
Size	1/2"~2"	1/2"~4"

* Standard capillary length is 2m. 3m or 5m are also available.



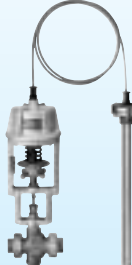
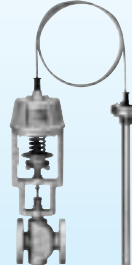
OB-2

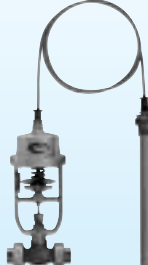
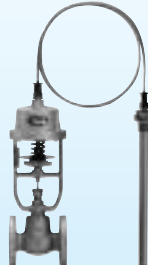
- Adjusting handle enables easy setting.
- Double valve structure meaning large capacity
- External pressurized bellows is high tolerant to temperature. (OB-1G·2G)

Model	OB-1	OB-1G	OB-2	OB-2G
Application	For heating (steam, hot water)			
Heated fluid	Water, Oil, Non-corrosive liquids			
Max. pressure	0.7MPa {7kgf/cm ² G}		0.7MPa {7kgf/cm ² G} *1	
Max. temperature	180°C			
Max. pressure for bulb	1.0MPa {10kgf/cm ² G}			
Set point range	40~60°C, 60~80°C, 80~100°C, 100~120°C	15~30°C, 20~40°C, 30~50°C, 40~60°C, 50~70°C, 60~80°C, 80~100°C	40~60°C, 60~80°C, 80~100°C, 100~120°C	15~30°C, 20~40°C, 30~50°C, 40~60°C, 50~70°C, 60~80°C, 80~100°C
Max.Temp. for bulb	Upper set point+10°C	Upper set point+30°C	Upper set point+10°C	Upper set point+30°C
Connection	JIS Rc (Union joint)		JIS 10KFF flanged	
Material	Body	Bronze		Cast iron
	Valve	Phosphor bronze		Phosphor bronze *2
	Valve seat	Bronze		Phosphor bronze *2
	Bulb	Copper (Nickel chrome plated) *2		
Size	1/2"~1-1/2"		1/2"~6"	

*1 Max. pressure differs from size. Contact us in detail.

*2 Stainless steel is available.

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	Cold water, Refrigerant			
Cooled fluid	Water, Air, Oil, Non-corrosive fluids			
Max. pressure	0.7MPa		0.7MPa *1	
Max. temperature	180°C			
Max. pressure for bulb	1.0MPa			
Set point range	40~60°C, 60~80°C, 80~100°C, 100~120°C	15~30°C, 20~40°C, 30~50°C, 40~60°C, 50~70°C, 60~80°C, 80~100°C	40~60°C, 60~80°C, 80~100°C, 100~120°C	15~30°C, 20~40°C, 30~50°C, 40~60°C, 50~70°C, 60~80°C, 80~100°C
Max. Temp. for bulb	Upper set point +10°C	Upper set point +30°C	Upper set point +10°C	Upper set point +30°C
Connection	JIS Rc (Union joint)		JIS 10K FF flanged	
Material	Body	Bronze		Cast iron
	Valve	Phosphor bronze		Phosphor bronze *2
	Valve seat	Bronze		Phosphor bronze *2
	Bulb	Copper (Nickel chrome plated) *2		
Size	1/2"~1-1/2"		1/2"~6"	
Others	*1 Max. pressure differs from size. Contact us in detail. *2 Stainless steel is available.			

Feature	For heating / Screwed	For heating / Flanged	
Model	OB-5	OB-6	
Picture			
Application	Steam, Hot water		
Heated fluid	Water, Air, Oil, Non-corrosive fluids		
Max. pressure	0.5MPa		
Max. temperature	180°C		
Max. pressure for bulb	1.0MPa		
Set point range	40~60°C, 60~80°C, 80~100°C, 100~120°C		
Max. Temp. for bulb	Upper set point +10°C		
Connection	JIS Rc (Union joint)	JIS 10K FF flanged	
Material	Body	Bronze	Cast iron
	Valve	Stainless steel	
	Valve seat	Bronze	Stainless steel
	Bulb	Copper (Nickel chrome plated) *2	
Size	1/2"~1		
Others	*1 15~30°C, 20~40°C, 30~50°C are available as OB-5G, OB-6G. *2 Stainless steel is available.		

1MPa ≒ 10kg/cm²G

Expansion Joints and Flexible Joints Selection

Type?	Application	Pressure?	Model
Expansion joints Bellows type	Steam, Air, Water, Non-corrosive fluids	0.98MPa or less {10kgf/cm ² G}	EB-1J EB-2J
		2.0MPa or less {20kgf/cm ² G}	EB-11 EB-12
	Air, Water, Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	EB-31 EB-32
	Hot and Cold water, Chemicals	1.0MPa or less {10kgf/cm ² G}	EB-51-3
Expansion joints Sleeve type	Steam, Air, Water, Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	ES-10
		2.0MPa or less {20kgf/cm ² G}	ES-11
Ball Joints	Steam, Air, Water, Non-corrosive fluids	0.98MPa or less {10kgf/cm ² G}	UB-1 UB-2 UB-10·11
Universal Joints	Air, Water, Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	UB-3·13
Flexible Joints	Air, Water, Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	YBF-1F
	Steam, Air, Water, Non-corrosive fluids	1.0MPa or less {10kgf/cm ² G}	YBF-2F YBF-3F

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

EB-1J・EB-2J



Expansion Joint



EB-1J



EB-2J

- Design and dimension are based on JIS standard.
- 316L stainless steel wetted parts
- With outer pipe and inner pipe

Model	EB-1J	EB-2J
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Max. pressure	0.98MPa {10kgf/cm ² G}	
Max. temperature	220°C	
Axial extension	10mm	20mm
Axial compression	25mm	50mm
Connection	JIS 10KFF flanged	
Material	Outer pipe	Carbon steel *1
	Bellows	Stainless steel
	Inner pipe	Stainless steel
Size	3/4"~10" *2	

*1 All stainless type is available.

*2 12"~16" are available as EB-3, EB-4.

EB-11・EB-12



Expansion Joint



EB-11



EB-12

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

Model	EB-11	EB-12
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Max. pressure	2.0MPa {20kgf/cm ² G}	
Max. temperature	220°C	
Axial extension	10mm	20mm
Axial compression	25mm	50mm
Connection	JIS 10KFF flanged	
Material	Outer pipe	Carbon steel
	Bellows	Stainless steel
	Inner pipe	Stainless steel
Size	3/4"~10" *1	

*1 12"~16" are available as EB-7, EB-8.

YBF-1F・2F・3F



Flexible Joint



YBF-1F



YBF-2F



YBF-3F

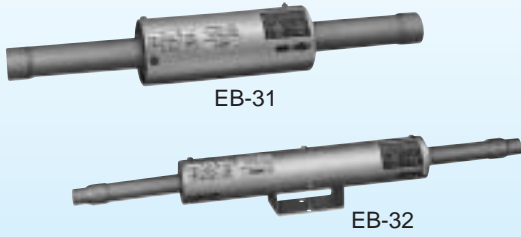
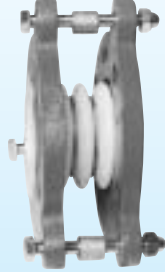
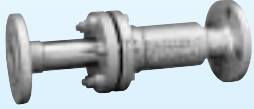
- Flexible and durable for pressure up to 1.0MPa
- Excellent weather resistance to cracks and pelling
- Significantly improved fatigue life

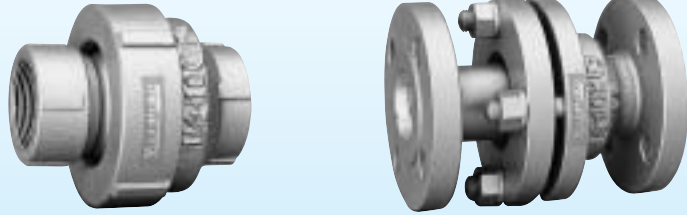

Model	YBF-1F	YBF-2F	YBF-3F
Application	Air, Water, Non-corrosive fluids	Steam, Air, Water, Non-corrosive fluids	
Max. pressure	1.0MPa {10kgf/cm ² G} *1		
Max. temperature	100°C	220°C	
Length	100mm, 300mm, 500mm *2		
Connection	JIS Rc (Union joint)	JIS 10KFF flanged *1	
Material	Bellows	Stainless steel *3	
	Braid	Stainless steel *3	
Size	1/2"~2"	3/4"~4"	5"~6"

*1 Max. pressure 1.6MPa and BS4504 PN are also available.

*2 400mm, 600mm, 800mm length are also available.

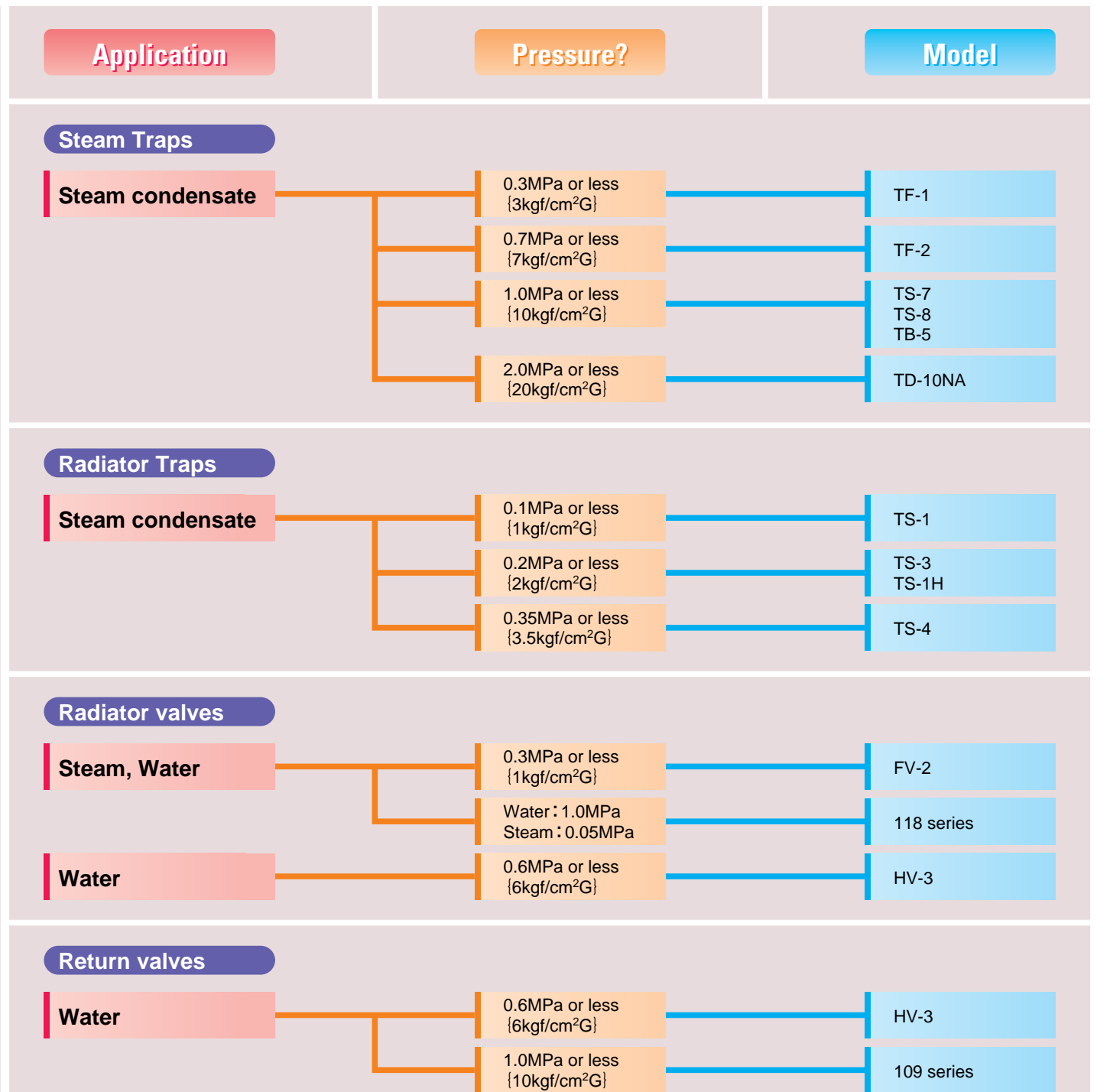
*3 316 stainless steel type is also available.

Feature	For copper pipe / Single type	For copper pipe / Double type	Anti-corrosion / PTFE joint	Sleeve joint / 1.0, 2.0MPa
Model	EB-31	EB-32	EB-51-3	ES-10·11
Picture	 <p>EB-31 EB-32</p>			 <p>ES-10-100</p>
Application	Air, Water, Oil, Non-corrosive fluids		Water, Chemicals, etc.	Steam, Air, Water, Non-corrosive fluids
Max. pressure	1.0MPa		1.0MPa *1	ES-10 : 1.0MPa ES-11 : 2.0MPa
Max. temperature	120°C		150°C *1	220°C
Axial extension	10mm	20mm	10~20mm *2	ES-10-100, ES-11-100 : 20mm ES-10-200, ES-11-200 : 40mm
Axial compression	25mm	50mm	10~35mm *2	ES-10-100, ES-11-100 : 80mm ES-10-200, ES-11-200 : 160mm
Connection	Thrusting brazing		JIS 10K RF flanged	ES-10 : JIS 10K RF flanged ES-11 : JIS 20K RF flanged
Material	Outer pipe	Carbon steel	—	Body - ES-10 : Cast iron or Rolled steel
	Bellows	Stainless steel	PTFE	ES-11 : Rolled steel
	Connection	Copper	Flange : Ductile cast iron	Sleeve : Carbon steel (HCr plating)
Size	3/4"~3"		1", 1-1/2"~8"	3/4"~12"
Others			*1 Depend on the size and rating. Contact us in detail. *2 Depend on the size. Contact us in detail.	

Feature	Ball joint / Screwed	Ball joint / Butt-weld	Ball joint / Flanged	Universal joint / Axial & angle
Model	UB-1	UB-2	UB-10·11	UB-3·13
Picture	 <p>UB-1 UB-10</p>			
Application	Steam, Air, Water, Oil, Non-corrosive fluids			Air, Water, Non-corrosive fluids
Max. pressure	0.98MPa			1.0MPa
Max. temperature	220°C			80°C *1
Max. displacement angle	20°			UB-3 : 20° UB-13 : 30°
Max. axial displacement	—			12mm ~ 80mm *2
Connection	JIS Rc screwed	Butt-weld	JIS 10K RF flanged	UB-3 : JIS Rc screwed UB-13 : JIS 10K RF flanged
Material	Body	Carbon steel	UB-10 : Cast iron UB-11 : Carbon steel	Cast iron
	Ball	Cast iron (HCr plating)	Carbon steel (HCr plating)	Carbon steel (HCr plating)
Size	3/4"~2"	2"~10"	2"~10"	UB-3 : 3/4"~2" UB-13 : 1-1/2"~12"
Others				*1 Max. Temp. 120°C is also available. *2 Depend on the size. Contact us in detail.

1MPa ≒ 10kgf/cm²G

Steam Traps, Radiator Traps and Radiator Valves Selection



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

TD-10NA



Steam Trap



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

Application		Steam condensate
Operating pressure		0.035~2.0MPa {0.35~20kgf/cm ² G}
Max. temperature		220°C
Max. back pressure		50% of inlet pressure
Connection		JIS Rc (PT) screwed
Material	Body	Ductile cast iron
	Valve disc	Stainless steel (Heat treated)
	Valve seat	Stainless steel (Heat treated)
Size		1/2"~1"

TS-7·8



Steam Trap



- “Stop”, “Bypass”, “Trap”, “Test” function
- Stable operation in wide pressure range
- Integral strainer and non-asbestos gasket

Model	TS-7	TS-8
Application		Steam condensate
Maximum pressure		1.0MPa {10kgf/cm ² G}
Max. temperature		183°C
Min. pressure differential		0.03MPa {0.3kgf/cm ² }
Connection		JIS Rc (PT) screwed JIS 10KFF flanged
Material	Body	Cast iron
	Cock (seat)	Stainless steel
	Bellows (valve)	Stainless steel
Size		1/2"~1"

TS-7

TS-3A·3S



Radiator Trap



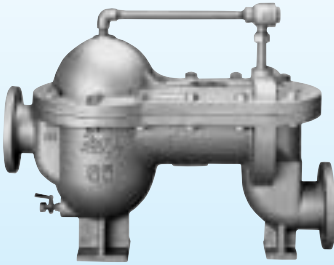
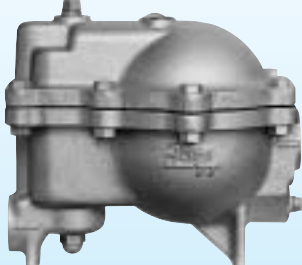

TS-3A

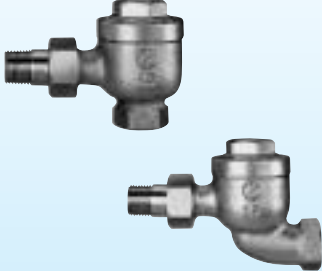
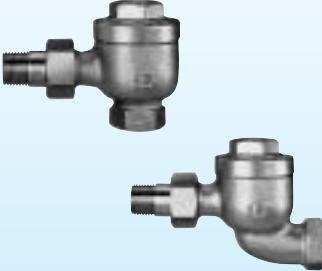
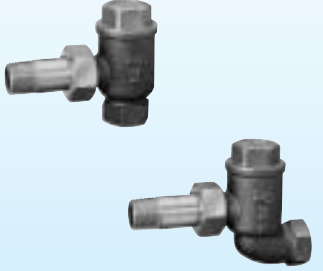
- Bellows type radiator trap up to 0.2MPa
- Compact design and silent operation
- Angle type and straight type

Model	TS-3A (Angle type)	TS-3S (Straight type)
Application		Steam condensate
Operating pressure		0.01~0.2MPa {0.1~2kgf/cm ² G}
Max. temperature		135°C
Connection		Inlet : JIS R (Union joint) Outlet : JIS Rc (PT) screwed
Material	Body	Bronze
	Valve	Brass
	Valve seat	Stainless steel
Size		1/2", 3/4"



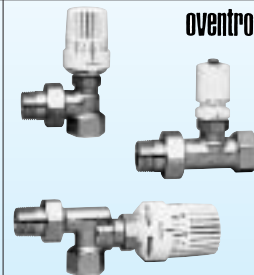



TS-3S

Feature	Float type / Flanged	Float type / Screwed	Bucket type / Flanged
Model	TF-1	TF-2	TB-5
Picture			
Application	Steam condensate		
Max. pressure	0.3MPa	0.7MPa	1.0MPa
Max. temperature	150°C	170°C	220°C
Connection	JIS 10K RF flanged	JIS Rc screwed	JIS 10K FF flanged
Material	Body	Cast iron	Cast iron
	Valve	Bronze	Stainless steel
	Valve seat	Bronze	Stainless steel
	Float	Brass	Stainless steel
Size	2-1/2", 3"	1/2"~2"	1/2"~2"
Others			

Feature	Radiator trap / Bellows type	Radiator trap / Bellows type	Radiator trap / Wax type
Model	TS-1A·1S	TS-1HA·1HS	TS-4A·4S
Picture			
Application	Steam condensate		
Max. pressure	0.1MPa	0.2MPa	0.35MPa
Max. temperature	120°C	135°C	150°C
Connection	Inlet : JIS R (Union joint) Outlet : JIS Rc screwed	Inlet : JIS R (Union joint) Outlet : JIS Rc screwed	Inlet : JIS R (Union joint) Outlet : JIS Rc screwed
Material	Body	Bronze	Bronze
	Valve	Brass	Brass
	Valve seat	Brass	Brass
	Bellows	Phosphor bronze	Phosphor bronze
Size	1/2"~1"	1"	1/2", 3/4"
Others	TS-1A : Angle type TS-1S : Straight type	TS-1HA : Angle type TS-1HS : Straight type	TS-4A : Angle type TS-4S : Straight type

1MPa ≒ 10kgf/cm²G

Feature		Radiator valve / Bellows type	Radiator valve / Return valve	Thermo-radiator valve	Return valve
Model		FV-2	HV-3	118 series	109 series
Picture					
Application		Steam (water)	Water	Water, Steam	Water
Max. pressure		0.3MPa	0.6MPa	Water : 1.0MPa Steam : 0.05MPa	1.0MPa
Max. temperature		150°C	120°C	Water : 120°C Steam : 110°C	120°C
Connection		Inlet : JIS Rc screwed Outlet : JIS R (Union joint)	Inlet : JIS Rc screwed Outlet : JIS R (Union joint)	Inlet : JIS Rp screwed Outlet : JIS R (Union joint)	Inlet : JIS R (Union joint) Outlet : JIS Rp screwed
Material	Body	Bronze	Bronze	Bronze or Brass	Bronze or Brass
	Valve	PTFE	PTFE	EPDM	Brass
	Valve seat	Bronze	Bronze	Bronze or Brass	Bronze or Brass
Size		1/2"~1-1/4"	1/2"~1"	1/2"~1" *	1/2"~3/4"
Others		FV-2A : Angle type FV-2S : Straight type	HV-3A : Angle type HV-3S : Straight type	Thermostats : Bellows, wax, remote Valve : Angle, straight, reversed angle * Except 1" reversed angle type.	Valve : Angle, straight

1MPa ≙ 10kg/cm²G

Air Vent, Vacuum Relief Valves, Noiseless Heaters, Drain Separators, Air Out Selection

Application	Pressure?	Model
Air Vent valves		
Water	0.3MPa or less {3kgf/cm ² G}	TA-11·11L TA-18·18L
	1.0MPa or less {10kgf/cm ² G}	TA-22·22L TA-16·16L
Water, Oil	1.0MPa or less {10kgf/cm ² G}	TA-3·6 TA-2 TA-5·5F TA-2C·3C
Vacuum Relief Valves		
Steam, Air	1.0MPa or less {10kgf/cm ² G}	VB-7 VB-7S
Noiseless Heaters		
Steam	0.7MPa or less {7kgf/cm ² G}	MS-1 MS-3-13 MS-2 MS-4-13 MS-6
Drain Separators		
Steam, Air	Steam : 2.0MPa Air : 1.0MPa	DS-1 DS-2
Air Vent with Vacuum Breaker		
Water	1.0MPa or less {10kgf/cm ² G}	TAV-2
Air Out		
Water	1.0MPa or less {10kgf/cm ² G}	AO-2

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

TA-3·6



Air Vent Valve



TA-3

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

Model	TA-3	TA-6
Application	Water, Oil (Specific gravity : 0.8 or more)	
Maximum pressure	1.0MPa {10kgf/cm ² G}	
Max. temperature	90°C	
Connection	JIS Rc(PT) screwed	
Material	Body	Cast iron
	Valve	Brass
	Valve seat	NBR
	Float	Stainless steel
Size	1/2"~1-1/4"	

TA-11·11L



Air Vent Valve



TA-11

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

Model	TA-11	TA-11L
Application	Water	
Maximum pressure	0.3MPa {3kgf/cm ² G}	
Max. temperature	100°C	
Connection	JIS R (PT) screwed	
Material	Body	Brass
	Valve	NBR
	Valve seat	Brass
	Float	Heat-resistant resin
Size	1/8", 3/8"~3/4"	
Others	Cap type	Hose joint type

TA-22·22L



Air Vent Valve



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	Water	
Maximum pressure	1.0MPa {10kgf/cm ² G}	
Max. temperature	100°C	
Connection	JIS R (PT) screwed	
Material	Body	Bronze
	Valve	NBR
	Valve seat	Brass
	Float	Heat-resistant resin
Size	1/2"~1"	
Others	Cap type	Hose joint type

TA-16·16L



Air Vent Valve



TA-16

- Stainless steel made meaning anti-corrosion and long durability
- Wide pressure range in a compact body
- Variety of exhaust parts make a flexible connection easy.

Model	TA-16	TA-16L
Application	Water	
Maximum pressure	1.0MPa {10kgf/cm ² G}	
Max. temperature	90°C	
Connection	JIS R (PT) screwed	
Material	Body	Stainless steel
	Valve	FKM
	Valve seat	Stainless steel
	Float	Stainless steel
Size	1/2"~1"	
Others	Open type	Hose joint type

Option for exhaust connection

- Manual valve for copper pipe
- Manual valve hose joint
- Rotating screwed joint

VB-7·7S



Vacuum relief Valve



VB-7

- Stable performance without chattering and hunting
- Easy handling due to small and light weight
- Anti-corrosion material make a corrosion-proof superior.

Model	VB-7	VB-7S
Application	Steam, Air	
Maximum pressure	1.0MPa {10kgf/cm ² G}	
Regulating pressure range	A : -0.5~-21kPa {-3.5~-160mmHg} B : -21~-48kPa {-160~-360mmHg} C : -48~-81kPa {-360~-600mmHg}	
Max. temperature	200°C	
Connection	JIS R (PT) screwed	
Material	Body	Brass
	Valve	Bronze
	Valve seat	Brass
Size	1/2"~2"	

MS-1·3-13



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	
Maximum pressure	0.7MPa {7kgf/cm ² G}	
Max. warning sound temperature limit	60°C	
Connection	JIS Rc (PT) screwed	
Material	Brass	Stainless steel
Size	1/2"~2"	

MS-2·4-13



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	
Maximum pressure	0.7MPa {7kgf/cm ² G}	
Max. warning sound temperature limit	90°C	
Connection	JIS Rc(PT) screwed	
Material	Bronze	Stainless steel
Size	1/2"~2"	

MS-6



Noiseless Heater



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

Model	MS-6
Application	Steam
Maximum pressure	0.7MPa {7kgf/cm ² G}
Max. warning sound temperature limit	90°C
Connection	JIS Rc(PT) screwed
Material	Stainless steel
Size	1/2"~2"

DS-1·2





Drain Separator

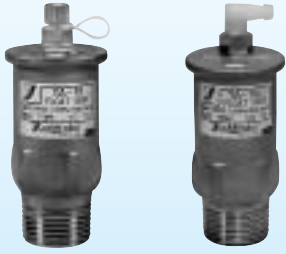




- High separating efficiency due to whirlpool flow
- Extremely low pressure loss
- Simple construction and trouble-free

Model	DS-1	DS-2
Application	Steam, Air	
Maximum pressure	Steam : 2.0MPa {20kgf/cm ² G} Air : 1.0MPa {10kgf/cm ² G}	
Max. temperature	220°C	
Connection	JIS Rc(PT) screwed	JIS 20KRF flanged *
Material	Body	Ductile cast iron
	Nozzle	Cast iron
	Receiver	Ductile cast iron
Size	1/2"~2"	2-1/2"~4"

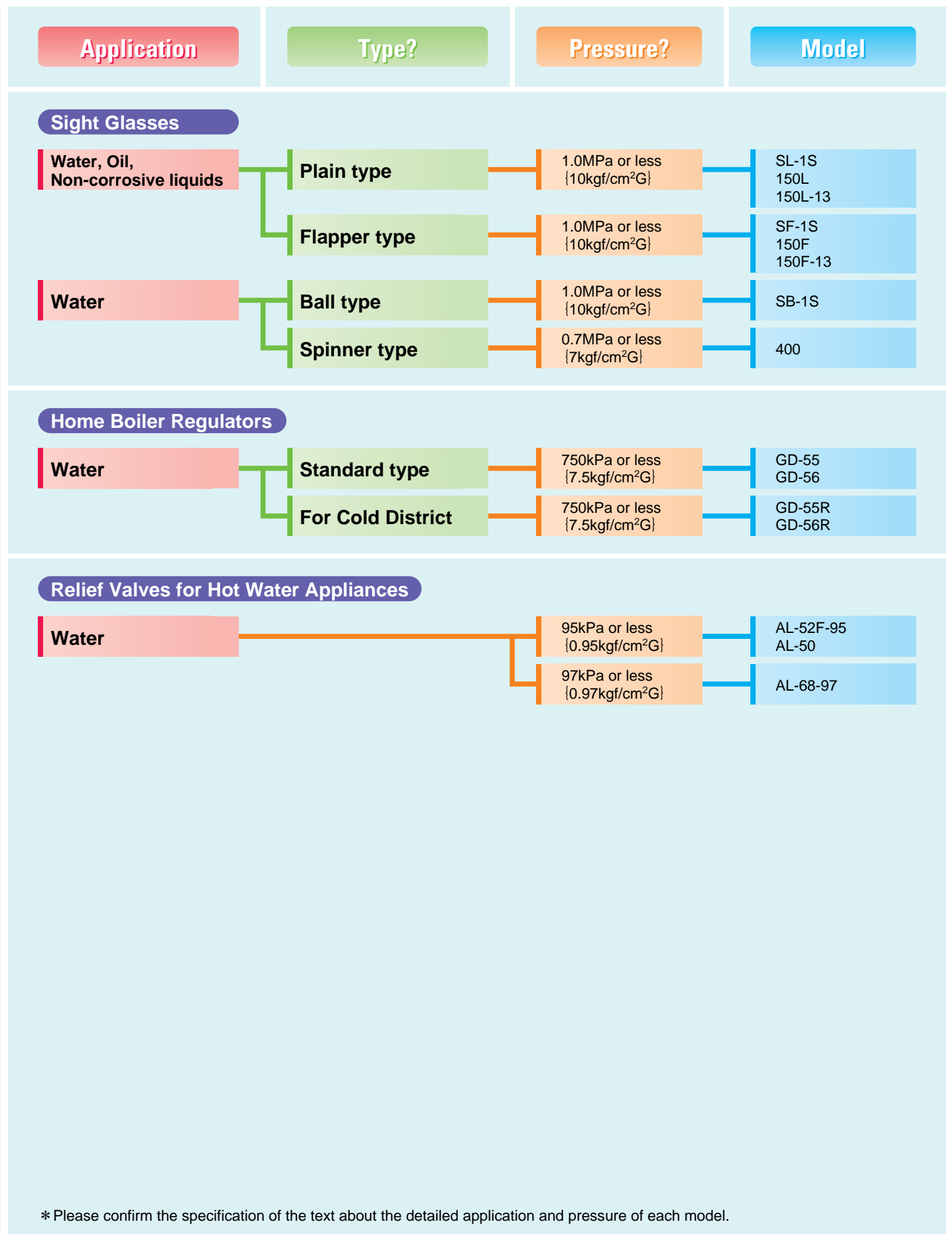
* JIS 10K, 16KRF flanged are available.

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	Water, Oil (Specific gravity : 0.8 or more)		
Max. pressure	1.0MPa	1.0MPa	1.0MPa
Max. temperature	90°C	TA-5 : 90°C TA-5F : 120°C	60°C
Connection	JIS Rc screwed	JIS Rc screwed	JIS Rc screwed
Material	Body	Cast iron	Cast iron
	Valve	Brass, NBR	Brass, NBR
	Valve seat	Brass	Brass
	Float	Stainless steel	Stainless steel
Size	1/2"~1-1/4"	1/2"~1-1/4"	1/2"~1-1/4"
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	AO-2
Picture			
	TA-18 TA-18L		
Application	Water		
Max. pressure	0.3MPa	1.0MPa	1.0MPa
Max. temperature	100°C	80°C	120°C
Connection	JIS R screwed	JIS R screwed	JIS Rc screwed
Material	Body	Stainless steel	Bronze
	Valve	FKM	EPDM, NBR
	Valve seat	Brass	Brass
	Float	Heat-resistant resin	Synthetic resin
Size	1/2", 3/4"	1/2"~1"	3/4"~2"
Others		* Operating pressure of vacuum breaker is -1.0kPa{-100mmAq} or less.	

1MPa ≒ 10kgf/cm²G

Sight Glasses, Home Boiler Regulators and Relief Valves Selection



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

SL-1S



Plain type

Sight Glass



SF-1S

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

Application		Water, Oil, Non-corrosive liquids *
Maximum pressure		1.0MPa {10kgf/cm ² G}
Max. temperature		180°C
Max. thermal shock		100°C
Connection		JIS Rc (PT) screwed
Material	Body	Cast iron
	Glass	Hardened glass
Size		1/2"~1"

* For steam condensate : with mica plate.

SF-1S



Flapper type

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

Application		Water, Oil, Non-corrosive liquids *
Maximum pressure		1.0MPa {10kgf/cm ² G}
Max. temperature		180°C
Max. thermal shock		100°C
Connection		JIS Rc (PT) screwed
Material	Body	Cast iron
	Glass	Hardened glass
Size		1/2"~1"

* For steam condensate : with mica plate

SB-1S



Ball type

- For visible check of one-fluid flow
- Balls keep glasses clean.
- Horizontal and vertical installation

Application		Water
Maximum pressure		1.0MPa {10kgf/cm ² G}
Max. temperature		85°C
Connection		JIS Rc (PT) screwed
Material	Body	Cast iron
	Glass	Hardened glass
Size		1/2"~1"

400



Spinner type

Sight Glass



- Spinner keeps glasses clean.
- For visible check of one-fluid flow
- Horizontal and vertical installation

Application		Water
Maximum pressure		0.7MPa {7kgf/cm ² G}
Max. temperature		100°C
Max. thermal shock		40°C
Connection		JIS Rc (PT) screwed
Material	Body	Bronze
	Glass	Heat-resistant glass
Size		3/8"~1"

150L



Plain type

Sight Glass



150L-F

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

Model		150L-S	150L-F
Application		Water, Oil, Non-corrosive liquids *	
Maximum pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		180°C	
Max. thermal shock		100°C	
Connection		JIS Rc(PT) screwed	JIS 10KFF flanged
Material	Body	Cast iron	
	Glass	Hardened glass	
Size		1-1/4"~2"	1/2"~6"

* For steam condensate: with mica plate.

** Protector with wire-netting is available.

150F



Flapper type

Sight Glass



150F-F

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

Model		150F-S	150F-F
Application		Water, Oil, Non-corrosive liquids *	
Maximum pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		180°C	
Max. thermal shock		100°C	
Connection		JIS Rc(PT) screwed	JIS 10KFF flanged
Material	Body	Cast iron	
	Glass	Hardened glass	
	Flapper	Stainless steel	
Size		1-1/4"~2"	1/2"~6"

* For steam condensate: with mica plate.

** Protector with wire-netting is available.

150L-13



Stainless steel Plain type

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

Model		150L-13S	150L-13F
Application		Water, Oil, Non-corrosive liquids *1	
Maximum pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		180°C	
Max. thermal shock		100°C	
Connection		JIS Rc(PT) screwed	JIS 10KFF flanged
Material	Body	Stainless steel (SCS13) *2	
	Glass	Hardened glass	
Size		1/2"~2"	1/2"~4"

*1 For steam condensate : with mica plate.

*2 SCS14 is available

*3 Protector with wire-netting is available.

150F-13



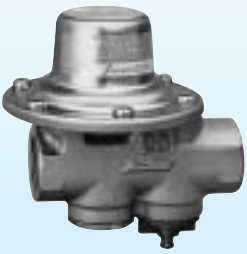
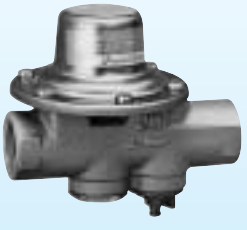


Stainless steel Flapper type

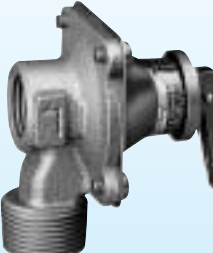

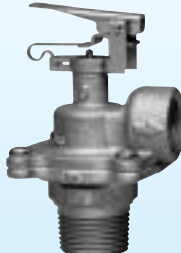
- Stainless steel made
- For visible check of continuous flow change
- Horizontal and vertical installation

Model		150F-13S	150F-13F
Application		Water, Oil, Non-corrosive liquids *	
Maximum pressure		1.0MPa {10kgf/cm ² G}	
Max. temperature		180°C	
Max. thermal shock		100°C	
Connection		JIS Rc(PT) screwed	JIS 10KFF flanged
Material	Body	Stainless steel (SCS13)	
	Glass	Hardened glass	
	Flapper	Stainless steel	
Size		1/2"~2"	1/2"~4"

* For steam condensate : with mica plate.

** Protector with wire-netting is available.

Pressure reducing valves for water works				
Feature	Standard / L=90mm	Standard / L=115mm	For cold district / L=90mm	For cold district / L=115mm
Model	GD-55-80	GD-56-80	GD-55R-80	GD-56R-80
Picture				
Application	Water			
Inlet pressure	100~750kPa {1~7.5kgf/cm ² G}			
Reduced pressure	Standard set pressure : 80±6kPa {0.80±0.06kgf/cm ² G} 30~200kPa {0.3~2.0kgf/cm ² G} is available.			
Max. temperature	60°C			
Freezing test	—		Suitable for -20°C	
Connection	JIS Rc screwed			
Material	Body	Bronze		
	Diaphragm	Synthetic rubber		
	Main valve	Synthetic rubber		
	Check valve	Synthetic rubber		
	Screen	Stainless steel		
Size	3/4"			
Face to face dimension	90mm	115mm	90mm	115mm
Others				

Relief valves for hot water appliances			
Feature	Safety relief / closed lever	Relief valve / Handle	Safety relief / 1.6MPa
Model	AL-52F-95	AL-50	AL-68-97
Picture			
Application	Water		
Commence-to-blow pressure	95 $\begin{smallmatrix} +4 \\ -6 \end{smallmatrix}$ kPa {0.95 $\begin{smallmatrix} +0.04 \\ -0.06 \end{smallmatrix}$ kgf/cm ² G}	95kPa {0.95kgf/cm ² G}	97 $\begin{smallmatrix} +2 \\ -4 \end{smallmatrix}$ kPa {0.97 $\begin{smallmatrix} +0.02 \\ -0.04 \end{smallmatrix}$ kgf/cm ² G}
Reseating pressure	87kPa {0.87kgf/cm ² G} or more	75kPa {0.75kgf/cm ² G} or more	92kPa {0.92kgf/cm ² G} or more
Breathing pressure	—	—	-12kPa {-0.12kgf/cm ² G} or less
Max. temperature	100°C	100°C	100°C
Freezing test	Suitable for -20°C	Suitable for -20°C	Suitable for -20°C
Connection	Inlet : JIS R screwed Outlet : JIS Rc screwed	Inlet : JIS R screwed Outlet : JIS Rc screwed	Inlet : JIS R screwed Outlet : JIS Rc screwed
Material	Body	Bronze	
	Valve	Synthetic rubber (Diaphragm)	
	Valve seat	Bronze	
Size	Inlet 3/4" X Outlet 1/2"		Inlet 3/4" X Outlet 1/2"
Others	* Commence-to-blow pressure 60 ~190kPa {0.6~1.4kgf/cm ² G} is available. (AL-52FH)	* Commence-to-blow pressure 90 ~300kPa {0.9~3.0kgf/cm ² G} is available. (AL-50H)	* Commence-to-blow pressure 190kPa {1.9kgf/cm ² G} is available. (AL-68-190)

1MPa ≙ 10kgf/cm²G

You can believe in Y's

The new big subject which we aim at is in establishment of the "Y's" brand. It challenges toward establishment of the Yoshitake brand trusted out of the world.

February, 1944
Establishment of Yoshitake Inc.

August, 1989
Established the subsidiary company "Yoshitake Works. (Thailand) Ltd." in Thailand

An extensive improvement of quality, cost, and time for delivery are achieved by integrated system of production from raw material to finished product.

April, 2002
Attestation acquisition of CE Marking.

The conformity to the demand matter in the Euro market and the further safety of the product is pursued.

June, 1995
Attestation acquisition of ISO 9001.

Establishment, maintenance and improvement of international quality control organization are aimed at.

September, 2000
Attestation acquisition of ISO 14001.

The active conduct of business in consideration of preservation of earth environment is aimed at.



ISO9001



ISO14001



CE Marking



<http://www.yoshitake.co.jp>

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