

SAFETY & RELIEF VALVES

AL-150



Application		Steam, Air, Water, Oil, Non-corrosive fluids
Setting pressure		0.05~1.0MPa (0.5~10kgf/cm ² G)
Temperature		5-220°C*
Connection		JIS Rc (PT screwed)
Nominal size		15A~50A
Material	Spring chamber	Bronze
	Valve	Stainless steel (SCS14A)
	Valve seat	Stainless steel (SCS14A)
	Adjust spring	Stainless steel (SUS304)

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

- Multi application type for steam, air, water, oil etc. service.
- Highest performance realized by subdivision of pressure classification and the high-tech manufacturing.

AL-140



Application		Steam, Air, Water, Oil, Non-corrosive fluids
Setting pressure		0.05~1.0MPa (0.5~10kgf/cm ² G)
Temperature		5-220°C*
Connection		JIS Rc (PT screwed)
Nominal size		15A~50A
Material	Spring chamber	Stainless steel
	Valve	Stainless steel (SCS14A)
	Valve seat	Stainless steel (SCS14A)
	Adjust spring	Stainless steel (SUS304)

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

- AL-140 and 250 are all stainless steel made and whole valve has excellent corrosion resistance.

AL-15L



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

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

AL-300-301



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)
Max. temperature	220°C	
Connection	JIS 10K, 16K FF flanged	
Material	Ductile cast iron	
	Body	Bronze
Size	1/2"~2"	

- Simple structure means easy maintenance.
- Easy adjustment.

AL-300T-301T



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
Max. temperature	150°C*2	
Connection	JIS 10K, 16K FF flanged	
Material	Ductile cast iron	
	Body	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.

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

AL-31-31H

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

Model	AL-31	AL-31H
Application	Steam, Air, Water, Oil, Non-corrosive fluids	
Pressure range	0.05~1.0MPa (0.5~10kgf/cm ² G)	1.0~2.0MPa (10~20kgf/cm ² G)
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

- 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)
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
Material	Body	Ductile Cast iron*2
	Valve & seat	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

- 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, Water, Oil, 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)
Max. temperature	120°C	
Connection	JIS 10K, 16K FF flanged	JIS 10K, 16K, 20K FF flanged
Material	Body	Cast iron
	Valve & seat	PTFE & bronze or stainless steel*3
Material	Body	Ductile Cast iron*2
	Valve & seat	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

- 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
	Valve & seat	Bronze or stainless steel
Material	Body	Cast iron
	Valve & seat	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



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.

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

AF-5-5S











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.

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

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 fluids	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 *Pressure range is different from nominal size.		A : 0.05~0.2MPa	
			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	Bronze	Ductile cast iron
	Valve	Bronze or Stainless steel	NBR *	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		* 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.	

Set Pressure Range Table

MPa (kgf/cm²G)

Model	Nominal Size	A	B	C	D	E	F	G	H
AL-1, 1T	1/2"	0.05~0.25 (0.5~2.5)	0.26~0.4 (2.6~4.0)	0.41~0.75 (4.1~7.5)	0.76~1.0 (7.6~10.0)				
	3/4"~2"	0.05~0.25 (0.5~2.5)	0.26~0.5 (2.6~5.0)	0.51~0.75 (5.1~7.5)	0.76~1.0 (7.6~10.0)				
AL-15, 15L, 15R, 15ML 26,26R	1/2"~2"	0.05~0.2 (0.5~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.65 (4.1~6.5)	0.66~1.0 (6.6~10.0)				
AL-15H	1/2"~2"					1.0~1.6 (10.0~16.0)			
AL-17, 27	1/2"~2"	0.05~0.2 (0.5~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.65 (4.1~6.5)	0.66~1.0 (6.6~10.0)	1.01~1.6 (10.1~16.0)			
AL-14, 25,25R 0.05~1.0MPa (0.5~10.0kgf/cm ² G) AL-14H 1.0~2.0MPa (10.0~20.0kgf/cm ² G)	1/2"	0.05~0.15 (0.5~1.5)	0.16~0.35 (1.6~3.5)	0.36~0.55 (3.6~5.5)	0.56~0.75 (5.6~7.5)	0.76~1.0 (7.6~10.0)	1.0~1.3 (10.0~13.0)	1.31~2.0 (13.1~20.0)	
	3/4"	0.05~0.2 (0.5~2.0)	0.21~0.3 (2.1~3.0)	0.31~0.45 (3.1~4.5)	0.46~0.6 (4.6~6.0)	0.61~0.75 (6.1~7.5)	0.76~1.0 (7.6~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
	1"	0.05~0.2 (0.5~2.0)	0.21~0.35 (2.1~3.5)	0.36~0.45 (3.6~4.5)	0.46~0.55 (4.6~5.5)	0.56~0.8 (5.6~8.0)	0.81~1.0 (8.1~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
	1 1/4"~2"	0.05~0.2 (0.5~2.0)	0.21~0.3 (2.1~3.0)	0.31~0.5 (3.1~5.0)	0.51~0.65 (5.1~6.5)	0.66~0.8 (6.6~8.0)	0.81~1.0 (8.1~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
AL-10	1/2"~2"	0.05~0.2 (0.5~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.65 (4.1~6.5)	0.66~1.0 (6.6~10.0)				
AL-31 0.05~1.0MPa (0.5~10.0kgf/cm ² G) AL-31H 1.0~2.0MPa (10.0~20.0kgf/cm ² G)	1/2"	0.05~0.15 (0.5~1.5)	0.16~0.35 (1.6~3.5)	0.36~0.55 (3.6~5.5)	0.56~0.75 (5.6~7.5)	0.76~1.0 (7.6~10.0)	1.0~1.3 (10.0~13.0)	1.31~2.0 (13.1~20.0)	
	3/4"	0.05~0.2 (0.5~2.0)	0.21~0.3 (2.1~3.0)		0.31~0.5 (3.1~5.0)	0.51~0.7 (5.1~7.0)	0.71~1.0 (7.1~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
	1"	0.05~0.2 (0.5~2.0)	0.21~0.3 (2.1~3.0)	0.31~0.45 (3.1~4.5)	0.46~0.55 (4.6~5.5)	0.56~0.8 (5.6~8.0)	0.81~1.0 (8.1~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
	1 1/4"~2"	0.05~0.2 (0.5~2.0)	0.21~0.3 (2.1~3.0)	0.31~0.45 (3.1~4.5)	0.51~0.65 (5.1~6.5)	0.66~0.8 (6.6~8.0)	0.81~1.0 (8.1~10.0)	1.0~1.6 (10.0~16.0)	1.61~2.0 (16.1~20.0)
AL-300, 301	1/2"~2"	0.05~0.25 (0.5~2.5)	0.26~0.5 (2.6~5.0)	0.51~0.75 (5.1~7.5)	0.76~1.5 (7.6~15.0)				
AL-300T, 301T	1/2"~2"	0.05~0.25 (0.5~2.5)	0.26~0.5 (2.6~5.0)	0.51~0.75 (5.1~7.5)	0.76~1.3 (7.6~13.0)				
					1.31~1.5* (13.1~15.0)				
AL-4, 4T	2 1/2"	0.05~0.1 (0.5~1.0)	0.11~0.25 (1.1~2.5)	0.26~0.55 (2.6~5.5)	0.56~1.0 (5.6~10.0)	1.01~1.5 (10.1~15.0)			
	3"~5"	0.05~0.1 (0.5~1.0)	0.11~0.2 (1.1~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.8 (4.1~8.0)	0.81~1.5 (8.1~15.0)			
	6"	0.05~0.1 (0.5~1.0)	0.11~0.2 (1.1~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.8 (4.1~8.0)				
AL-4S, 4ST	2 1/2"	0.05~0.1 (0.5~1.0)	0.11~0.25 (1.1~2.5)	0.26~0.55 (2.6~5.5)	0.56~1.0 (5.6~10.0)	1.01~2.0 (10.1~20.0)			
	3", 4"	0.05~0.1 (0.5~1.0)	0.11~0.2 (1.1~2.0)	0.21~0.4 (2.1~4.0)	0.41~0.8 (4.1~8.0)	0.81~1.6 (8.1~16.0)	1.61~2.0 (16.1~20.0)		

Spring range for AL-150/AL-140

	(A)	(B)	(C)	(D)	(E)	(F)
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-.035	0.36-0.45	0.46-0.6	0.61-0.75	0.76-1.0
25A	0.05-0.2	0.21-.035	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	

Spring range for AL-150T

	(A)	(B)	(C)	(D)	(E)	(F)
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	