FIG. 1008N, SURGE ANTICIPATION VALVE, PN16/25

Size: DN 50 - 800 mm

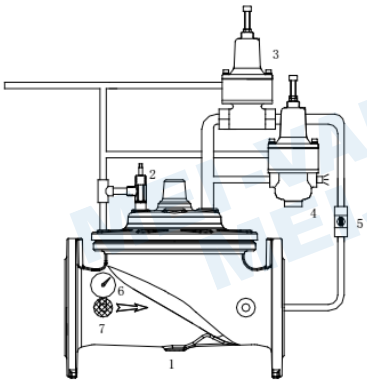
SPECIFICATION

Type: Pilot control valve, Working pressure: 16/25 bar.
Meet standards BS EN 1074-5, ISO 5208, BS EN 12266.1, BS EN 558-1.
Flanged to JIS 10/16K, BS4504 PN16/25, ANSI #150/300.

PRESSURE/TEMPERATURE RATINGS	
Working pressure	16/25 bar
Testing Pressure	Shell: 24/37.5 bar
Working temperature	-10°C to 80°C
Suitable Media	

FUNCTION

- Protects Against Water Hammer Surge.
- Opens on Initial Low Pressure Wave.
- Closes Slowly to Prevent Subsequent Surges.
- Adjustable Over a Wide Flange of Settings
- Anticipation Pilot is used for sensing to open at pressure before surge for quick relief high pressure wave.
- The pre-open function eliminates the surge during pump abrupt stoppage.
- The valve releases excessive system pressure.
- Horizontal installation.



STANDARDS COMPONENTS

1. Main valve
2. Need valve
3. Relief/Sustaining pilot
4. Anticipation pilot
5. Inlet pressure gauge (Optional)
6. Y- Strainer

APPLICATION

- The main valve shall be a hydraulically operated, single diaphragm actuated, globe or angle pattern valve. Y-pattern valves shall not be permitted. The valve shall contain a disc and diaphragm assembly that forms a sealed chamber below the valve cover, separating operating pressure from line pressure. The diaphragm shall be constructed of nylon reinforced (EPDM+ Nylon Fabric), and shall not seal directly against the valve seat and shall be fully supported by the valve body and cover. Rolling diaphragm construction will not be allowed and there shall be no pistons operating the main valve or any pilot controls.

- The main valve body and cover shall be Ductile iron ASTM A536 or GJS 500-7 and all internal cast components shall be Ductile Iron or (SUS 304) Stainless Steel. All Ductile Iron components, including the body and cover, shall be lined coated with an NSF 61 Certified Epoxy Coating applied by the electrostatic heat fusion process. All main valve throttling components (valve seat and disc guide) shall be Stainless Steel. The valve body and cover must be machined with a 360-degree locating lip to assure proper alignment.

- The disc and diaphragm assembly shall contain a Buna-N synthetic rubber (EPDM + Nylon Fabric) that is securely retained on sides by a disc retainer and disc guide. Diaphragm assemblies utilizing bolts or cap screws for component retention will not be permitted.

- The exposed portion of the EPDM + Nylon Fabric shall contact the valve seat and seal drip-tight. The disc and diaphragm assembly must be guided by two separate bearings, one installed in the valve cover and one concentrically located within the valve seat, to avoid deflection and assure positive disc-to-seat contact. Center guided valves will not be permitted. All necessary repairs shall be made from the top the valve while the body remains in line.

OPERATION

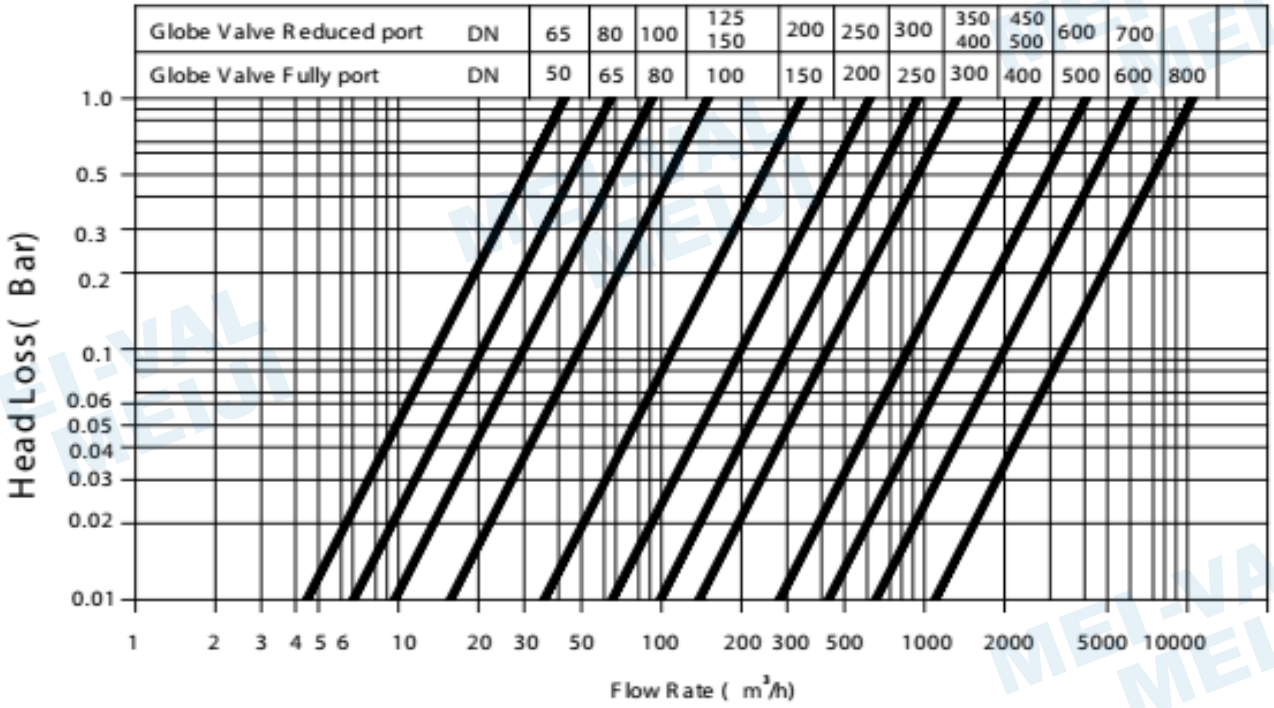
- Fig 1008N Discharges to atmosphere from a tee in the pump discharge header. The valve anticipates surges caused by power failure as well as acting as a standard ever pressure relief valve.
- The Meiji Fig.1008N Surge Anticipator Valve is indispensable for protecting pumps, pumping equipment and all applicable pipelines from dangerous pressure surges caused by rapid changes of flow velocity within a pipeline.
- When pumping system are started and stopped gradually, harmful surges do not occur. Should a power failure take place, however the abrupt stopping of the pump can cause dangerous surges in the system which could result in severe equipment damage.
- The abrupt stopping of a pump produces a pressure drop as the traveling column of water, with its inherent momentum, continues to travel along the line, generating severe low pressure.
- When the traveling column of water loses its momentum, it travels back towards the pumps. Should it hit the closed check valve, a very high pressure surge is created and travels throughout the system as a damaging wave at velocities of up to main valve. No quick relief valve can react quickly enough to eliminate it.
- Eliminating surge requires anticipation and pre-action. The Fig.1008N is well suited to this task.
- The Low pressure (No. 4 anticipation pilot) senses the initial pressure drop and opens. This immediate reaction allows remaining line pressure to quickly open the main valve.
- The already opened Fig.1008N releases the returning column of water, minimizing the line pressure rise. Should the relief rate be insufficient, and the pressure exceed the High pressure (No. 3 Relief/ Sustaining pilot) setting, the pilot immediately opens, further opening the main valve.
- As system pressure stabilizes again at static pressure, both pilots close and the main valve begins closing. Should lines pressure rise during main valve closing, the High pressure (No. 3 Relief/ Sustaining pilot) briefly stops the process, preventing the pressure from continuing to rise.
- The flow stem No. 3 Need valve limits the relief flow to prevent column separation and preserve closing pressure.

Note:

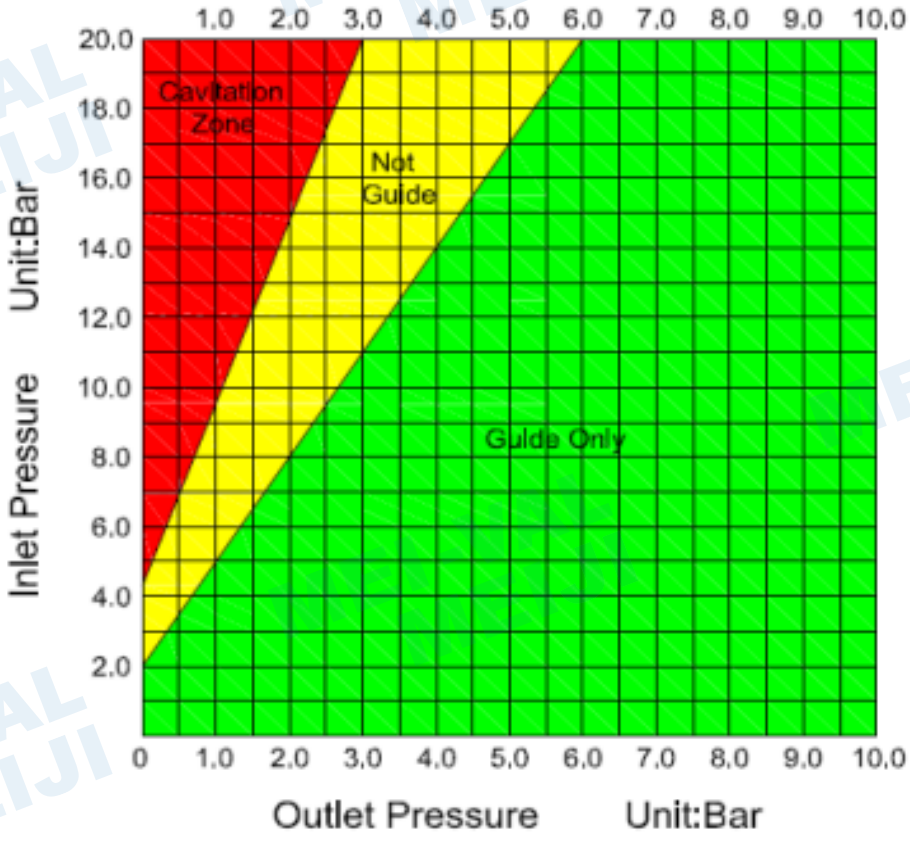
- The remote pressure sensing line should be ½" minimum I.D, installed from the valve to the pipeline to avoid air pockets.

- We recommend protecting tubing and valve from freezing temperatures.

Head Loss Curve

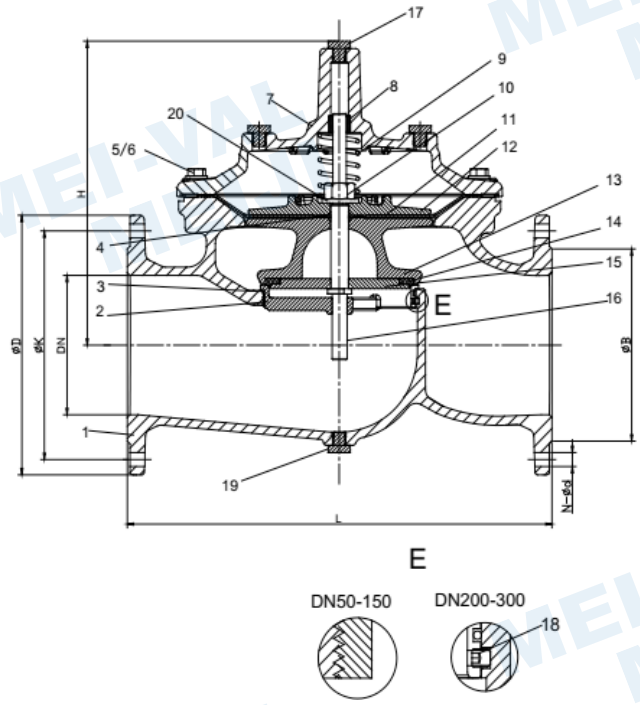


Cavitation



The main valve include: Main valve + Pilot control

Metarial & dimension of Main valve DN 50-350mm



Parts List

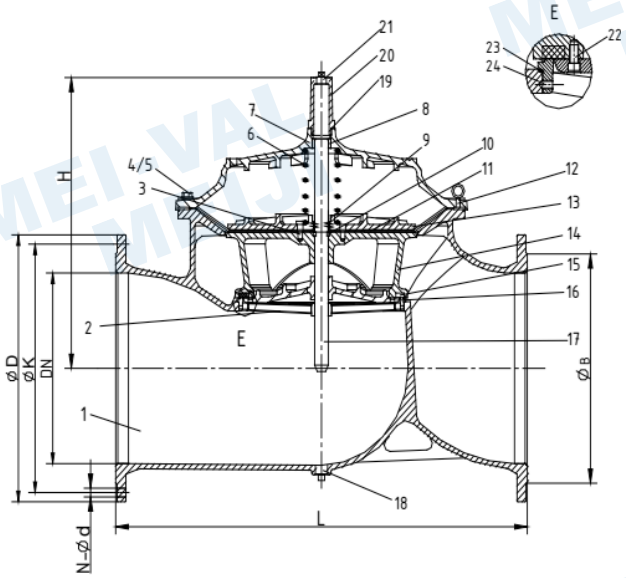
No.	Description	Material	Standard
1	Body	Ductlie Iron	GJS 500-7
2	Seat	Stainless Steel	AISI 304/316
3	O-ring	Rubber	NBR
4	O-ring	Rubber	NBR
5	Bolt	Stainless Steel	A2/A4
6	Washer	Stainless Steel	A2/A4
7	Bonnet	Ductile Iron	GJS 500-7
8	Bush	Bronze	C61900
9	Spring	Stainless Steel	AISI 304/316
10	Caulking Nut	Stainless Steel	A4
11	Diaphragm	Nylon Reinforced Rubber	EPDM +Nylon Fabric
12	Fixing holder	Ductlie Iron	GJS 500-7
13	Disc Holder	Ductlie Iron	GJS 500-7
14	Seal	Rubber	EPDM
15	Seat Retainer	Stainless Steel	AISI 304/316
16	Stem	Stainless Steel	AISI 304/316
17	Plug	Stainless Steel	AISI 304/316
18	Screw	Stainless Steel	A2/A4
19	Plug	Stainless Steel	A2/A4
20	Washer	Stainless Steel	A2/A4

Dimension:

Unit :mm

DN	L	H	øD		øK		N-øD		N-øB	
			PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25
50	230	177	165	165	125	125	4-ø19	4-ø19	ø99	ø99
65	290	202	185	185	145	145	4-ø19	8-ø19	ø118	ø118
80	310	219	200	200	160	160	8-ø19	8-ø19	ø132	ø132
100	350	243	220	235	180	190	8-ø19	8-ø23	ø156	ø156
125	400	243	250	270	210	220	8-ø19	8-ø28	ø156	ø156
150	480	333	285	300	240	250	8-ø23	8-ø28	ø211	ø211
200	600	428	340	360	295	310	12-ø23	12-ø28	ø266	ø274
250	730	478	405	425	355	370	12-ø28	12-ø31	ø319	ø330
300	850	538	460	485	410	430	12-ø28	12-ø31	ø370	ø389
350	980	550	520	555	470	490	16-ø28	16-ø34	ø429	ø448

Metarial & dimension of Main valve DN 400-800mm



Parts List

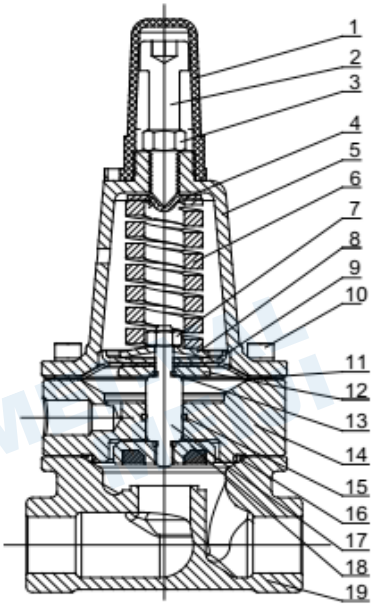
No.	Description	Material	Standard
1	Body	Ductlie Iron	GJS 500-7
2	Seat	Stainless Steel	AISI 304/316
3	Screw	Stainless Steel	A2/A4
4	Screw	Stainless Steel	A2/A4
5	Screw	Stainless Steel	A2/A4
6	Spring	Stainless Steel	AISI 304/316
7	Bonnet	Ductile Iron	GJS 500-7
8	Bush	Bronze	C61900
9	O-ring	Rubber	NBR
10	Fix Washer	Bronze	C61900
11	Diaphragm	Nylon Reinforced Rubber	EPDM +Nylon Fabric
12	Eye Bolts	Carbon Steel	1040
13	Fixing Holder	Ductlie Iron	GJS 500-7
14	Disc Holder	Ductlie Iron	GJS 500-7
15	Seal	Rubber	EPDM
16	Seal Retainer	Ductlie Iron	GJS 500-7
17	Stem	Stainless Steel	AISI 304/316
18	Plug	Stainless Steel	AISI 304/316
19	O-ring	Rubber	NBR
20	Cap	Ductlie Iron	GJS 500-7
21	Plug	Stainless Steel	AISI 304/316
22	Screw	Stainless Steel	A2/A4
23	O-ring	Rubber	NBR
24	Screw	Stainless Steel	A2/A4

Dimension:

Unit :mm

DN	L	H	øD		øK		N-øD		N-øB	
			PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25
400	1100	670	580	620	525	550	16-ø31	16-ø37	480	503
450	1200	700	640	670	585	600	20-ø31	20-ø37	548	548
500	1250	790	715	730	650	660	20-ø34	20-ø37	610	609
600	1450	930	840	845	770	770	20-ø37	20-ø40	720	720
700	1650	950	910	960	840	875	24-ø37	24-ø43	720	720
800	1850	1260	1025	1085	950	990	24-ø40	24-ø49	900	928

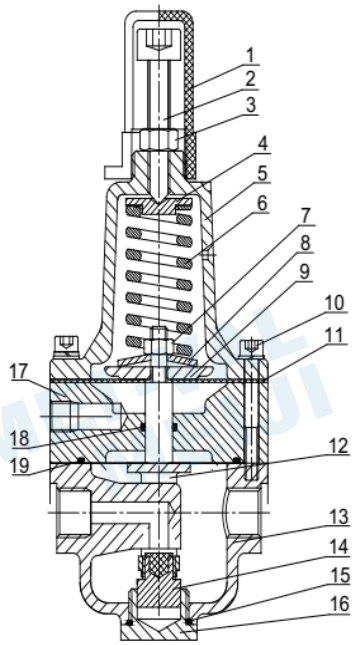
Relief/ Sustaining Pilot (No. 3)



Part list & Material

No.	Description	Material	Standard
1	Cap	Plastic	ABS
2	Adjusting Screw	Stainless Steel	AISI 304
3	Jam Nut	Stainless Steel	AISI 304
4	Spring table	Stainless Steel	AISI 304
5	Bonnet	Stainless Steel	AISI 304
6	Spring	Spring Steel	SiCrV
7	Nut	Stainless Steel	A2
8	Spring table	Spring Steel	Mn-steel+Ni Plated
9	Fixing Holder	Stainless Steel	AISI 304
10	Screw	Stainless Steel	A2
11	Diaphragm	Nylon Reinforced Rubber	EPDM+Nylon
12	Gasket	Stainless Steel	AISI 304
13	O-Ring	Rubber	NBR
14	Internal Body	Stainless Steel	AISI 304
15	O-Ring	Rubber	NBR
16	O-Ring	Rubber	NBR
17	Stem	Stainless Steel	AISI 304
18	Disc	Stainless Steel+Rubber	AISI 304+EPDM
19	Body	Stainless Steel	AISI 304

Anticipation Pilot (No. 4)



Part list & Material

No.	Description	Material	Standard
1	Cap	Plastic	ABS
2	Adjusting Screw	Stainless Steel	AISI 304
3	Jam Nut	Stainless Steel	A2
4	Spring table	Stainless Steel	AISI 304
5	Bonnet	Stainless Steel	AISI 304
6	Spring	Spring Steel	SiCrV
7	Nut	Stainless Steel	A2
8	Spring table	Spring Steel	Mn-steel+Ni Plated
9	Fixing Holder	Stainless Steel	AISI 304
10	Screw	Stainless Steel	A2
11	Diaphragm	Rubber	NBR+Nylon
12	Yoke	Stainless Steel	AISI 304
13	Body	Stainless Steel	AISI 304
14	Disc	Stainless Steel+Rubber	AISI 304+EPDM
15	O-Ring	Rubber	NBR
16	Plug	Stainless Steel	AISI 304
17	Internal Body	Stainless Steel	AISI 304
18	O-Ring	Rubber	NBR
19	O-Ring	Rubber	NBR