

VARIX WAFER TYPE UTILITY BUTTERFLY VALVE

- PN10 and PN16

Features

- Bubble tight shut-off after thousands of operations
- Liner bonded to a rigid backing to eliminate seat distortion and reduce seating torque
- Low mass – easy installation between flanges – needs no gaskets
- Quarter-turn operation plus streamlined disc for low pressure loss
- Available with ratchet handle, worm gearbox, pneumatic, electric, hydraulic or float actuators
- Liner cartridge slides out of body and is easily replaceable on site

Standards conformance:

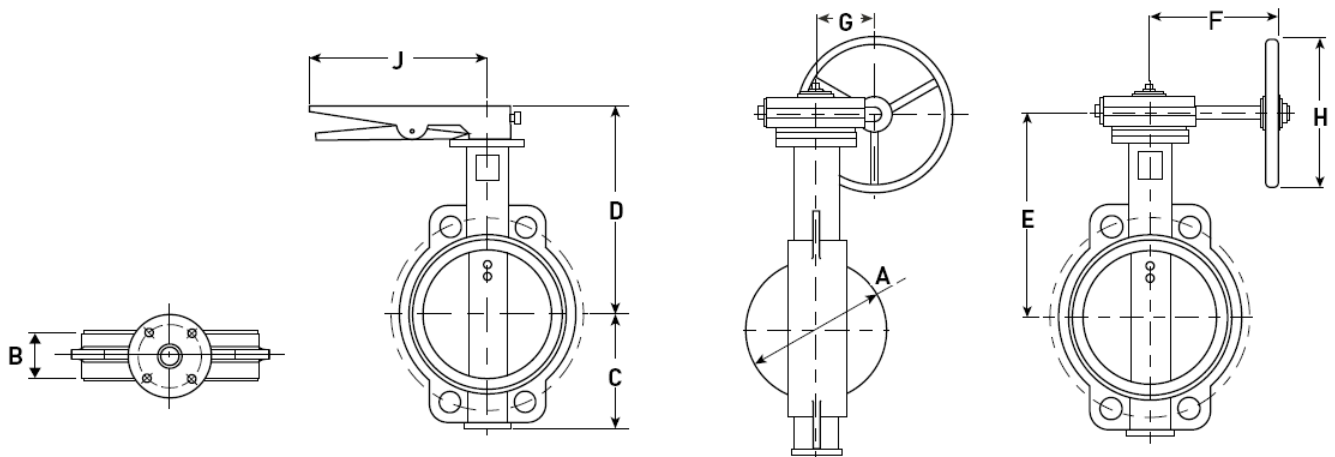
The Premier Varix Butterfly Valve conforms to all relevant sections of the BS 54540, SABS 1123 and ISO 5752 Series 20



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VARIX WAFER TYPE UTILITY BUTTERFLY VALVE



Hand lever operated: Lever has 10 lock positions.

Lever indicates disc position.

Valve sizes DN.50 – DN.300

Wormgear operated: Infinite positions 0° - 90°

Top indicator shows disc position. Adjustable end limit stops.

Valve sizes DN.50 – DN.1000

Valve Maximum Working Pressure: 1600 kPa
Body Test Pressure: 2400 kPa
Seat Test Pressure: 1760 kPa
Maximum Continuous Temperature: VA 80°C VF 120°C

Valve	A	B	C	D	E	F	G	H	J	Mass kg		BS 4504 / SABS 1123
										With Lever	With Gearbox	
50	53	43	80	193	198	175	45	150	267	3	9	10
65	65	46	89	207	212	175	45	150	267	4	9	10
80	79	46	95	213	218	175	45	150	267	4	10	10
100	104	52	114	232	237	175	45	150	267	5	11	10
125	124	56	127	245	250	175	45	150	267	8	13	10
150	156	56	139	258	263	175	45	150	267	9	14	10
200	203	60	175	305	305	227	63	300	359	15	22	10
250	251	68	203	337	337	227	63	300	359	27	28	10
300	302	78	242	382	378	240	80	300	359	37	51	10
350	334	78	267	-	409	240	80	300	-	-	61	10
400	390	102	318	-	467	275	120	300	-	-	82	10
450	441	114	334	-	490	282	120	400	-	-	117	10
500	492	127	367	-	543	340	120	400	-	-	170	10
600	593	154	471	-	625	340	120	400	-	-	225	10
700	695	165	536	-	707	360	162	435	-	-	320	10
800	795	190	608	-	744	360	162	435	-	-	520	10
900	865	203	667	-	856	412	196	435	-	-	910	10
1000	965	216	721	-	932	412	196	435	-	-	1022	10

NB - 600mm Valves have full rim flange - 700mm to 1000mm are available in 10 bar (1000kPa) on request - 700mm and upwards are supplied with 2 stage worm gears. Other flange drilling to be specified with order.



The Ultra Series Metal Seated Valve's triple eccentric sealing design offers the user a "ZERO LEAKAGE" isolating valve for use in a variety of applications in a wide range of industries:

- Mining - Service Water
- Petroleum
- Chemical and Process Plants
- Gas Production and Transportation
- Off-shore Oil and Gas Platforms
- Pulp and Paper
- Emergency Shut Down Valves (ESDs)
- Steel Mills
- Sugar Mills
- Pipeline Isolation
- Low Pressure Steam
- Hot Gases (including Flue Gas)
- Cryogenic Services
- High Cycle and Switching Valves
- Water Treatment and Distribution
- Power Generation

The Ultra Design is ideal (and proven) for use in Mining Service water applications:

- Metal Seating provides longer life
- Compact design
- Ease of 90° operation
- From 16bar to 150bar pressure ratings
- Ideal for Actuated Pump control as it has linear flow Characteristics

The Ultra Quarter Turn Valve is a ZERO LEAKAGE Metal Seated Valve that features a triple eccentric, non-rubbing conical metal seat which offers tight shut off for many thousands of cycles. The seating of the valve is actually enhanced by continued operation. These unique design features combine to give the Ultra valve the following attributes: Bidirectional tight shut off on services ranging from cryogenic to 600 degree centigrade, limitations being governed by the selection of body, disc and seal materials. The Ultra is inherently fire safe which means the valve can offer ZERO LEAKAGE before, during and after the fire as there are no soft components in the valve seating areas. Simple 90° operation offers a wide range of pneumatic, electric, manual gear actuators all direct mounted on ISO standard mounting flanges. The Ultra has good control characteristics through most of its travel, and with the addition of a positioner will give control suitable for many applications. The standard valve is wafer pattern conforming to API 609 dimensions and has enormous space and mass savings when compared with other types of valves. Ultra valves are also available in full lug and flanged

patterns with dimensions in accordance with ISO 5752 or API 600, making them interchangeable with gate, ball and plug valves. As can be seen from the illustration, this design utilises a wedging action to put the laminated seal ring in compression when in contact with the body seat. Further, as the seal ring has clearance between disc and the inside of the lamellar it is able to self align and also flex to absorb stresses that might be induced by temperature fluctuations or pipeline movement.

Design features

- Metal seated, non-rubbing, "Zero Leakage", bidirectional
- Non-rubbing rotation
- Anti-blowout shaft
- Zero fugitive emission
- Resilient metal seal
- Torque seated
- Inherently fire safe
- Sizes 100mm – 1000mm (other sizes on application)
- Class ratings ANSI 150 through 900
- PN 10 to PN 150

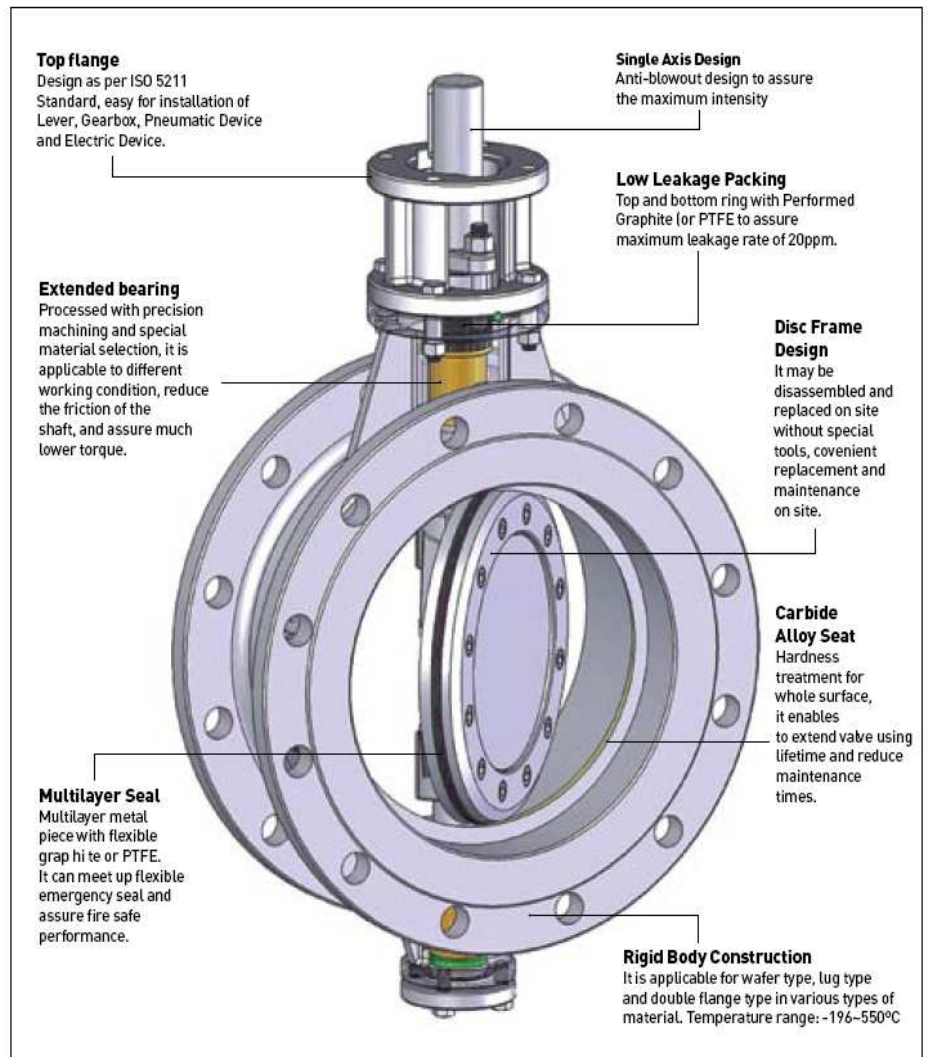
Material construction

The material selection will determine the suitability of the valve for the service media and the expected temperature range. The responsibility for final material selection rests with the customer. We can, however, suggest suitable combinations based on our experience. The following table shows the current material selection that is available, but special materials can be substituted to suit particular applications.

Body and disc	Seat	Spindle and keys	Laminated seal ring	Bearing	Packing and Gaskets
CarbonSteel/ENC	Stainless steel	AISI 431	AISI 304	Stainless chrome or nickle plated	Graphite/gaphoil
Stainless steel	Stellite 21 or Colmonoy wear-resistant facings	17-4ph AISI 630	AISI 316	Stellite shell	Graphoil
Acid resistant alloy steels	Special alloys		FAL 223	Hardened stainless	Graphite with Bearing prot graphoil
Steels for high and cryogenic temperatures				Sintered PTFE and bronze	

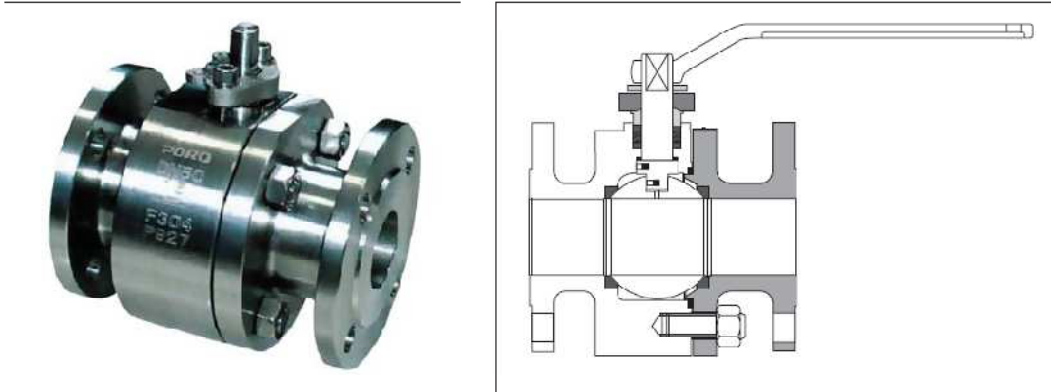
Standards

Design:	According to ASME Sec. VIII, Sec. III, ANSI B16.34, ANSI B16.10
Face to Face:	ISO 5752, MSS SP-68, API 609 and DIN 3203
Flange Drilling:	ANSI B16.5 CI 150 through 900 BS 3293, API 605, MSS SP 44 DIN 2501 and ISO 2084 PN 6 to 100
Testing:	ANSI B16.104 CI VI API598 for soft seated valves
Marking:	MSS SP-25



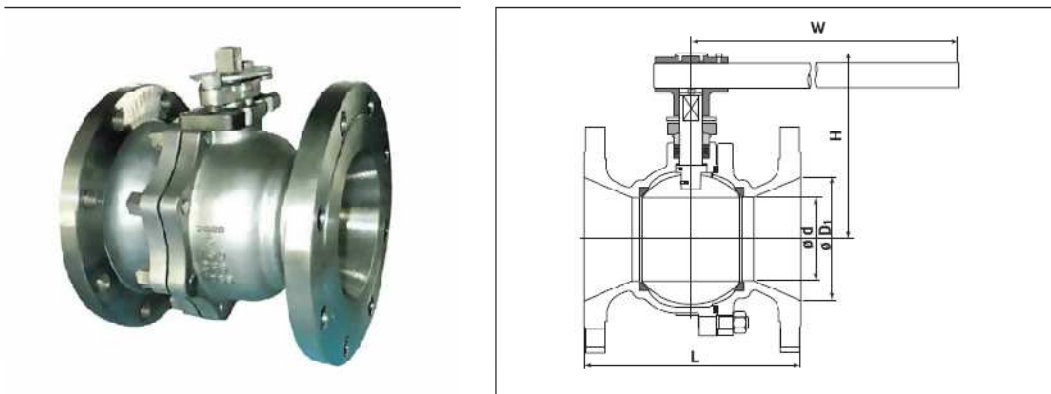
Forged Steel Ball Valve

The floating ball valve manufactured by Premier is generally a casted steel valve body. However, forged steel valve bodies are available for customer requirements of which the main sizes such as flange connections and face to face dimensions are the same as that of the cast steel ball valve.



Ball Valve with reduced bore

In addition to the full bore floating ball valve, Premier also manufactures the floating ball valve with reduced bore to meet different customer requirements.



Dimensions																		
Size		CLASS 150 PN 20						CLASS 300 PN 50						CLASS 600 PN 110				
		L		d	d1	H	W	L		d	d1	H	W	L	d	d	h	w
DN	NPS	Long	Short					Long	Short									
15	½	108	108	10	14	80	140	140	140	10	14	80	140	165	10	14	75	140
20	¾	117	117	14	19	85	140	152	152	14	19	85	140	190	14	19	79	140
25	1	127	127	20	25	90	140	165	165	20	25	90	140	216	20	25	83	140
32	1¼	140	140	25	32	99	150	178	178	25	32	99	150	229	25	32	114	150
40	1½	165	165	32	38	105	180	190	190	32	38	105	180	241	32	38	120	200
50	2	178	178	38	51	126	200	216	216	38	51	126	200	292	38	51	125	250
65	2½	190	190	51	64	140	250	241	241	51	64	140	250	330	51	64	156	300
80	3	203	203	64	76	165	300	283	283	64	76	165	300	356	64	76	172	350
100	4	229	229	76	102	178	350	305	305	76	102	178	350	432	76	102	220	500
125	5	359	359	102	127	230	500	381	381	102	127	230	500	508	102	127	250	650
150	6	394	267	127	152	280	800	403	403	127	152	280	800	-	-	-	-	-
200	8	457	292	152	203	310	800	502	419	152	203	310	800	-	-	-	-	-
250	10	533	330	203	254	350	1000	568	457	203	254	350	1000	-	-	-	-	-



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D-060-HFNS Combination Air Valve for High Flow Non Slam PAT. Pend

This is a double orifice dual purpose air valve with full bore orifice and two stage closing action to prevent water hammer effects if too high a velocity is generated during filling of a pipeline, or at water column return.

This valve is available in sizes 50mm through to 200mm in pressure rating 16 bar, 25 bar and 40 bar and is now manufactured in South Africa. The standard valve will come equipped with the non-slam disc, but if this feature is not required it can be excluded with a slight reduction in price.

This model meets all the requirements written in the specifications by the South African Water Industry and has the following additional benefits :

- ◆ The small automatic orifice is of the patented A.R.I. rolling seal design which is much larger than its competition and has a self cleaning effect.
- ◆ The non-slam device is external to the pressure containing body and has no seals. The device can be left out if not considered necessary and its orifice size can be adjusted to suit special circumstances, while the valve is under pressure.
- ◆ The valve comes complete with all the usual A.R.I. benefits including a **10 year guarantee** against leaking seals and **sealing at much lower pressures** than its competition (down to 2m).

Automatic component

A.R.I patent, Rolling Seal Mechanism

- ◆ Dramatically reduces the possibility of obstruction by debris.
- ◆ Discharges high air flow rates up to 160m³/h.
- ◆ One size orifice for a wide pressure range (up to 40 bar).
- ◆ Self cleaning mechanism.

Special sealing mechanism design: combination of bronze and E.P.D.M rubber, assures long term maintenance free operation.

Special FISO (fast in slow out) protection mechanism.

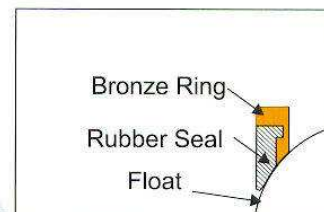
FBE Coating to 250 micron standard
Other coatings available on request

Available: D-060-HFNS 0.2 - 1 6Bar
D-062-HFNS 0.2 - 25 Bar

**MANUFACTURED
IN SOUTH AFRICA**



WHY THE 10 YEAR GAURANTEE



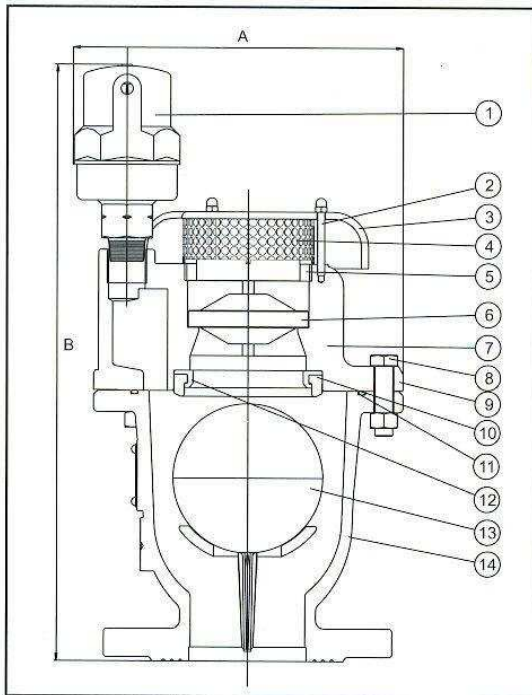
The force on the float of a 200mm air valve on a 16 bar pipe is 5123 kg (5 Ton).

Most air valves seals distort after a period from this force causing the seals to leak. The A.R.I. float is supported by the Bronze component and the rubber seal is only subject to a small force. Also, the lack of "sticking" effect between the rubber seal and ball ensures instant release of the float to allow instant air intake when a vacuum condition occurs.



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D-060-HFNS Combination Air Valve for High Flow Non Slam

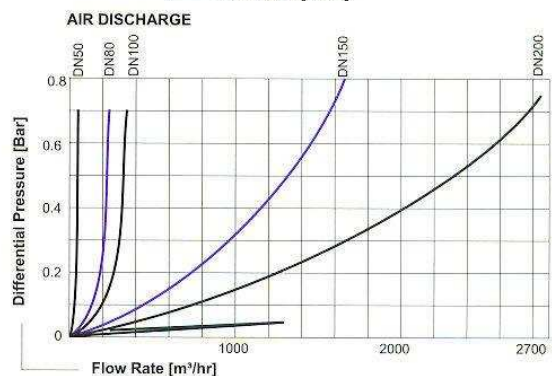
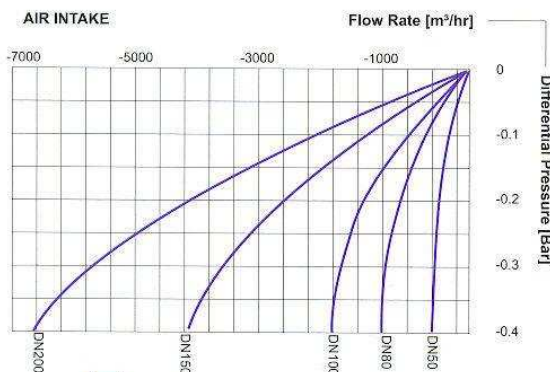
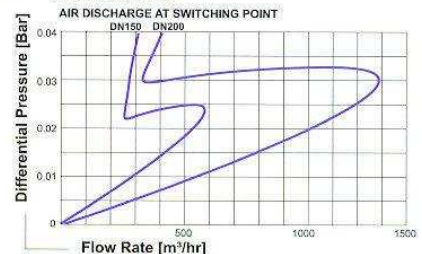
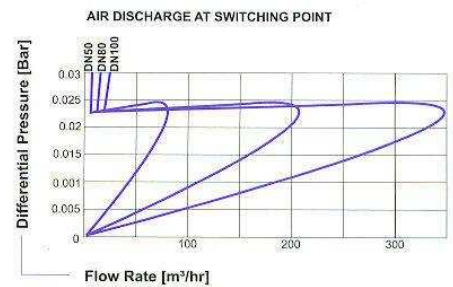


PARTS LIST AND SPECIFICATION

- | | |
|--------------------------------------|-----------------------------------|
| 1. S-050 Automatic Air Release Valve | |
| 2. Bolt | Galvanised Steel |
| 3. Screen Cover | Cast Iron ASTM A-48 CI30 |
| 4. Screen | Stainless Steel SAE 316 |
| 5. Ring | 2"-4" Stainless Steel |
| | 6"-8" Steel DIN ST-37 |
| 6. Disc | 2"-4" Stainless Steel SAE 316 |
| | 6"-8" Cast Iron ASTM A-48 CL35B |
| 7. Stage Chamber | SG Iron |
| 8. Bolt & Nut | Galvanised Steel, Chromate plated |
| 9. Cover | Cast Iron ASTM A-48 CL35B |
| 10. Nozzle Seal | Rubber EPDM |
| 11. O-Ring | Buna-N |
| 12. Nozzle Seat | Bronze ASTM B-62 B-271 |
| 13. Float | 2"-4" Polycarbonate |
| | 6"-8" Stainless Steel SAE 304 |
| 14. Body | SG Iron |

DIMENSIONS AND WEIGHTS

Nominal Size	Model	Dimensions mm		Weight	Orifice Area mm ²
		A	B		
50mm	D-060-HFNS	190	350	14Kg	1960
80mm	D-060-HFNS	233	404	21Kg	5030
100mm	D-060-HFNS	268	460	29Kg	7850
150mm	D-060-HFNS	375	707	92Kg	17662
200mm	D-060-HFNS	463	829	140Kg	31400



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D-040 “Barak” Combination Air Valve PATENTED

This is the double orifice version of the rolling seal mechanism. Due to the relatively large “automatic” orifice, this valve has an inherent two-stage non slam closure effect. This valve is available as a dual purpose valve to allow air out and air in, or as a single purpose air valve to allow air out of or air into the pipeline only. The Barak is available in a Reinforced nylon body or the same valve covered in a cast iron housing to make it tamper proof.

Automatic component
A.R.I patent, Rolling Seal Mechanism

- ◆ Dramatically reduces the possibility of obstruction by debris.
- ◆ Automatic orifice discharges high air flow rates up to 160m³/h.
- ◆ One size orifice for a wide pressure range (up to 16 bar).
- ◆ Self cleaning mechanism.



D-040-P

Reliable operation reduces water hammer incidents.

Dynamic design allows high velocity air discharge preventing premature closing.

The body is made of high strength plastic, and all operating parts are made of specially selected corrosion resistant materials.

The drainage outlets enables removal of excess fluids.

Working pressure range : 3/4", 1" : 0.2-16 Bar
2" : 0.2-16 Bar

Available in 20mm, 25mm, 50mm BSPT/NPT threaded



D-040-C

Reliable operation reduces water hammer incidents.

Dynamic design allows high velocity air discharge preventing premature closing.

The body is made of metal casting as an anti-vandalism application, and all operating parts are made of specially selected corrosion resistant materials.

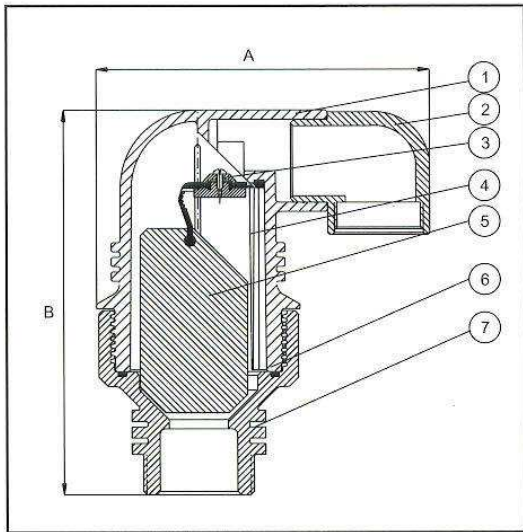
The drainage outlets enables removal of excess fluids.

Working pressure range : 0.2-16 Bar

Available in 20mm, 25mm, 50mm BSPT/NPT threaded or flanged.

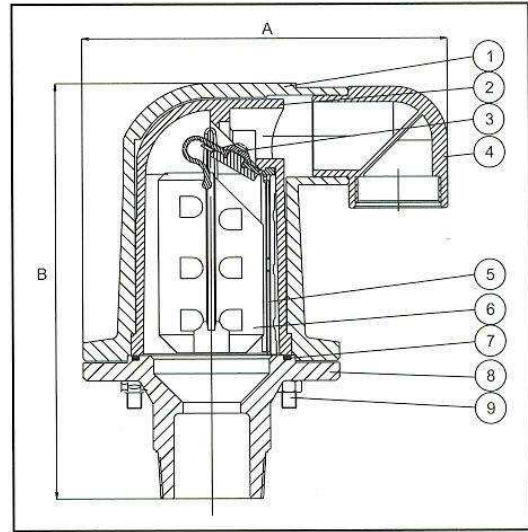


D-040 "Barak" Combination Air Valve PATENTED



PARTS LIST AND SPECIFICATION

- | | |
|-----------------------|----------------------|
| 1. Body | Reinforced Nylon |
| 2. Drainage elbow | Polypropolene |
| 3. Seal Plug Assembly | |
| 4. Clamping Stem | Reinforced Nylon |
| 5. Float | Foamed Polypropylene |
| 6. O-Ring | Buna-N |
| 7. Base | Reinforced Nylon |



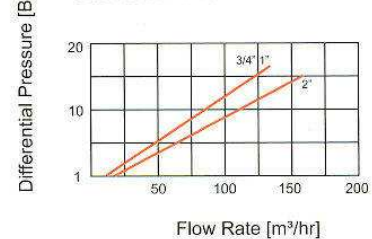
PARTS LIST AND SPECIFICATION

- | | |
|-----------------------|----------------------------|
| 1. Body | Cast Iron ASTM A48 CL.35B |
| 2. Sleeve | Reinforced Nylon |
| 3. Seal Plug Assembly | |
| 4. Drainage elbow | Polypropolene |
| 5. Clamping Stem | Reinforced Nylon |
| 6. Float | Foamed Polypropylene |
| 7. O-Ring | Buna-N |
| 8. Base | Cast Iron ASTM A48 CL.35B |
| 9. Bolt & nut(x4) | Galvanised Steel, Chromate |

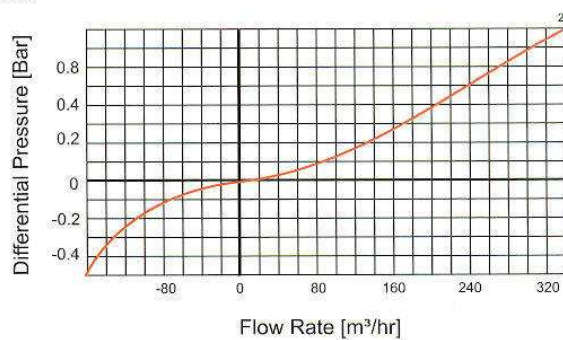
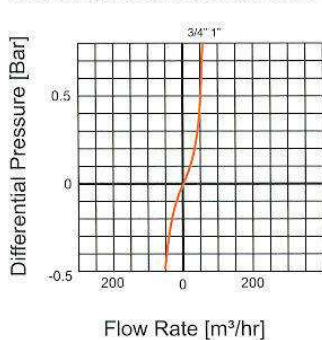
DIMENSIONS AND WEIGHTS

Nominal Size	Model	Dimensions mm		Weight	Orifice Area	Orifice Area
		A	B		Automatic	Kinetic
20mm & 25mm	D-040	100	140	0.33Kg	7.8mm ²	100mm ²
50mm	D-040	180	209	1.1Kg	12mm ²	804mm ²
20mm & 25mm	D-040-C	119	150	1.7Kg	5mm ²	82mm ²
50mm	D-040-C	202	230	5.4Kg	12mm ²	804mm ²

AUTOMATIC AIR DISCHARGE



KINETIC AIR DISCHARGE GRAPH MODEL D-040





D-014_{PN 40}

D-016_{PN 64}



Combination Air Valve for High Pressure

Description

The D-014, D-016 series Combination Air Valve has the features of both an air release valve and an air & vacuum valve.

The air release component is designed to automatically release small pockets of air to the atmosphere as they accumulate along a pipeline or piping system when it is full and operating under pressure.

The air & vacuum component is designed to automatically discharge or admit large volumes of air during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures whenever water column separation occurs.

Applications

Municipal and industrial high pressure water conveyance systems.

Operation

The air & vacuum component, with the large orifice, discharges air at high flow rates during the filling of the system and admit air into the system at high flow rates during its drainage and at water column separation.

High velocity air should not blow the float shut. Water will lift the float which seals the valve.

At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.

The smooth discharge of air prevents pressure surges and other destructive phenomena.

The intake of air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.

The air release component releases entrapped air in pressurized systems.

Without air valves, pockets of accumulated air may cause the following destructive phenomena:

- Obstruction of effective flow and hydraulic conductivity of the system along with a throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Acceleration of cavitation damages.
- High-pressure surges.
- Acceleration of corrosion to metal parts.
- Danger of a high-energy burst of compressed air.
- Inaccuracies in flow metering.

As the system starts to fill, the valve functions according to the following stages:

1. Entrapped air in the pipeline is discharged by the valve.
2. Liquid enters the valve, lifting the float which pushes the sealing mechanism to its sealing position.

3. Entrapped air, which accumulates at peaks along the system (where combination air valves should be installed), rises to the top of the valve, which in turn displaces the liquid in the valve's body.

4. The float descends, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.

5. Liquid penetrates into the valve and the float rises, pushing the rolling seal back to its sealing position.

When internal pressure falls below atmospheric pressure (negative pressure):

1. The floats will immediately drop down, opening the air & vacuum and air release orifices.

2. Air will reenter the system.

Main Features

- Working pressure range:
 - D-014: 0.2-40 bar
 - D-016: 0.2-64 bar
- Testing Pressure: 1.5 times the working pressure of the air valve.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- Reliable operation reduces water hammer incidents.
- Dynamic design allows for high velocity air discharge while preventing premature closure.
- Lightweight, small dimensions, simple and reliable structure.
- Special orifice seat design: combination of bronze and E.P.D.M. rubber assures long-term maintenance-free operation.
- The drainage outlet enables removal of excess fluids.

Air Release Component

- Body made of high strength materials.
- All operating parts are made of specially selected corrosion-resistant polymer materials.
- Large orifice:
 - Dramatically reduces the possibility of obstruction by debris.
 - Discharges high air flow rates.
 - One size orifice for a wide pressure range (up to 64 bar), achieved by: A.R.I. patented rolling seal mechanism.

Valve Selection

- The D-014, D-016 combination air valves are available in sizes 2", 3" 4", 6" 8", 10" (D-014 only).
- These valves are manufactured with flanged ends to meet any requested standard.
- Valve coating: baked epoxy coating according to the international standard DIN 30677-2.
- Other coatings are available upon request.

DOUBLE DOOR WAFER CHECK VALVE

- PN16

Features

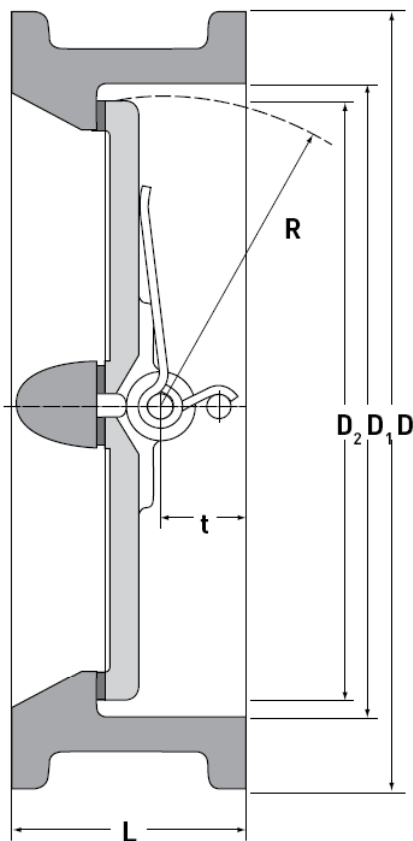
- Compact wafer design
 - Extremely light weight and economical
- Protection from water hammer
 - Quick action spring closure
- Freedom of installation
 - Can be installed at any angle
- Multiple applications for water and most fluids requiring check valve duty
- Choice of materials
- Fusion bonded epoxy coating



Standards conformance:

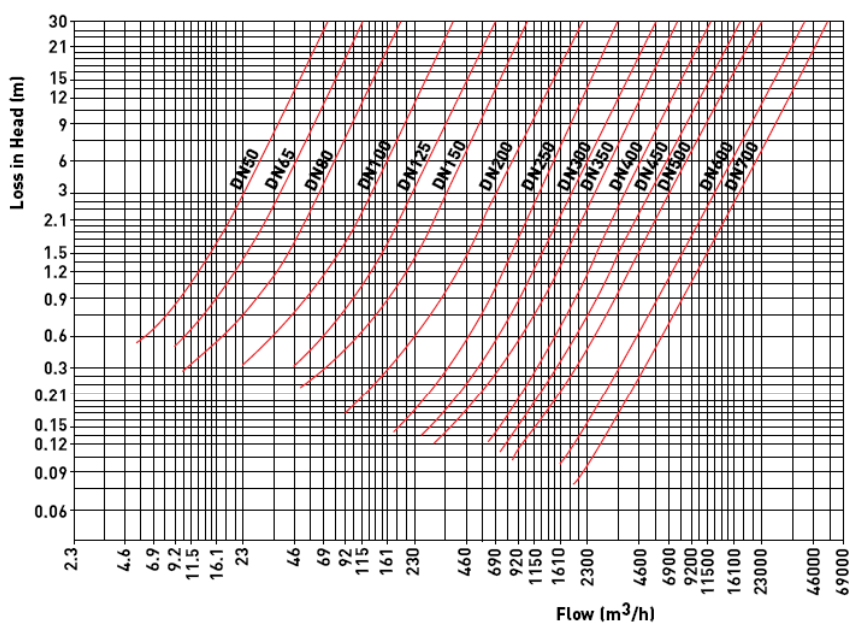
The Premier Double Door Wafer Check Valve conforms to all relevant sections of the BS 5153

DOUBLE DOOR WAFER CHECK VALVE



Materials of Construction

Body	Cast Iron / Ductile Iron / Stainless Steel
Doors	Ductile Iron (nickel plated) / Stainless Steel / Aluminium Bronze
Stem	Stainless Steel
Seat	NBR Rubber / EPDM / Viton
Springs	Stainless Steel
Coating	Epoxy Powder Coated



Dimensions (mm) : PN 16

DN	D	D1	D2	L	R	t	Kg
50	107	65	43	43	29	19	2
65	127	80	60	46	36	20	2
80	142	94	66	64	43	28	4
100	162	117	91	64	53	27	6
125	192	145	117	70	66	30	7
150	218	170	145	76	79	31	9
200	273	224	198	89	104	33	17
250	328	265	234	114	127	50	26
300	378	310	284	114	148	43	42
350	438	360	333	127	172	45	55
400	489	410	381	140	197	52	75
450	555	450	420	152	218	58	107
500	594	505	468	152	241	58	111
600	690	624	573	178	295	73	172
700	800	720	680	229	354	98	219
800	930	825	783	241	404	100	314



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ULTRA 'G' SERIES NOZZLE CHECK VALVE

Product Range:

Size: 2"~48" (DN50~DN1200)

Pressure rating: ANSI 150lb~2500lb; PN16~PN420

Body material: Cast carbon steel, Stainless steel and alloy steel

End connections: Flanged or butt weld ends

Design Features:

Venturi port to reduce pressure drop

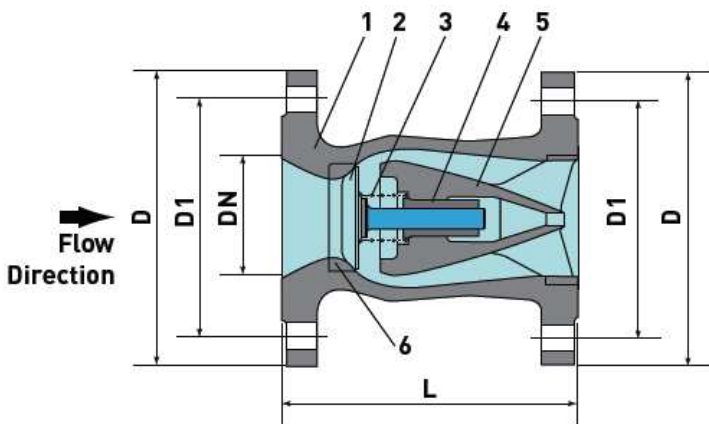
Spring protection and no impact

Low noise and lower water hammer damage

Soft seal and second metal to metal seal for fire safe applications

No outside leakage due to integral body design

1. BODY: CAST STEEL/STAINLESS STEEL
2. DISC: STEEL/STAINLESS STEEL
3. SPRING: 316S/S
4. BEARING: STAINLESS STEEL
5. FLOW DIFFUSER: STEEL/SS
6. SEAT: STAINLESS STEEL



 **ULTRA CONTROL
VALVES**



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Ultra Control Valves cc was formed in 2009 in order to present a Company in the market place who's efforts are mostly concentrated on Automatic Control Valves and with an emphasis on the new **Ultra ACV** Automatic Water Control Valve product. This valve has its origins in the USA (**Muesco Baker**) and has been copied by many companies worldwide because of its high level of technical advantages over competitive products. With a combined experience of over 50 years in the valve industry, the Personnel of Ultra are committed to offer superior service in both pre-sales (application advise and consulting) and after-sales (commissioning/trouble shooting). Although the concentration is on Control valves, a complete range of other valves are available – all aimed at providing long life and complete Pipeline solutions, including Waterhammer reduction techniques and products.

Introduction

Purchasing Automatic Control Valves is a critical balancing act. On the one hand you want a reliable product of unquestionable quality; on the other hand you want a product that is supported by a trusted after sales set-up. With the **Ultra ACV** valve, you can get both a quality product and unsurpassed product support from **Ultra Control Valves**. Our well-trained and experienced sales engineers offer specification assistance, analysing system conditions to recommend the right valve for your application. **Ultra Control Valves** does not sell valves, we sell control valve solutions. The after sales service supplied by **Ultra Control Valves** personnel has stood the test of time.

In order to keep pace with changing market requirements, the **Ultra ACV** valve is now made from cast steel, with a fusion-bonded epoxy coating. You can now get a tough valve body, offering not only a long life, but also minimal maintenance under the harsh conditions experienced in various industries in Southern Africa. For tougher applications we offer our all stainless steel valve, which is an affordable and acceptable option for aggressive water of high and low ph values.

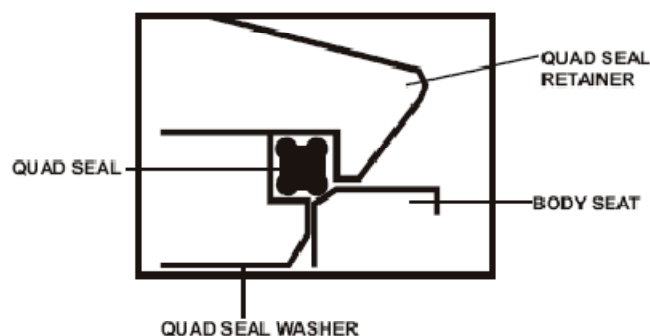
FBE coating

The role of a high quality coating on the valve body cannot be underestimated. The **Ultra ACV** valve is coated with a fusion bonded powder coating to a minimum thickness of 250 microns. RAL 5005 is one of the finest FBE coatings and is approved for drinking water by WRAS. The coating protects the valve from environmental attack externally, as well as rust and mineral build up (a major factor in control valve failure) internally. It prolongs the life of the valve and makes servicing very easy.

Efficient valve design

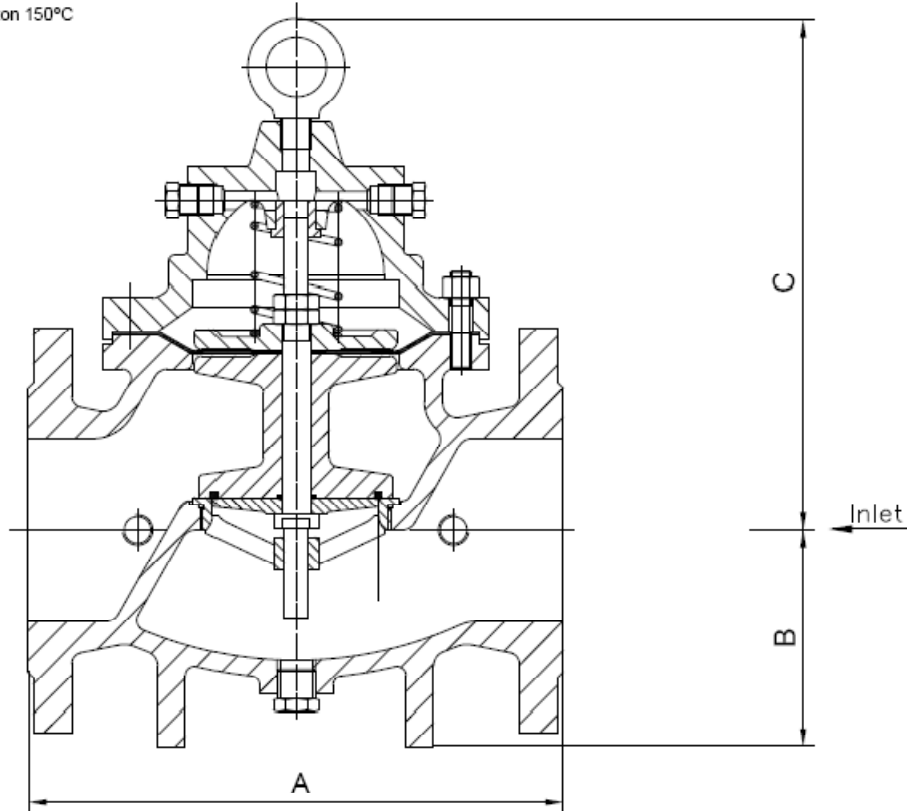
The **Ultra ACV** valve is a globe style, diaphragm actuated, hydraulic pilot operated control valve. The globe design has superior features, which make it the best for the regulation of fluids. The spindle assembly, which carries the diaphragm and seat, is the only moving part in the valve. This simple design ensures a reliable and trouble-free valve life. The spindle assembly is supported at both ends by bearings, which stabilises throttling and assists positive closure with a near frictionless operation. This design has proven to be superior to Y-Pattern single bearing designs which suffer from early bearing wear and subsequent faulty operation – including seizure of the Diaphragm Assembly.

The **Ultra ACV** valve furthermore incorporates a Dynamic Quad Seal as the main seal and which has proven to be superior to Flat Seals or O-rings.



The **Ultra ACV (Muesco Baker)** design is the only valve of its kind with a cavitation resistance which enables it to reduce pressure in a 4:1 ratio with the standard design whereas most competitors can only achieve a 3:1 ratio. Similar type Water Control valves are available from Ultra for up to 150bar working pressure

Standard Rating Steel Construction: 25 Bar
 Temperature: NBR 80°C / Viton 150°C



Dimension Data

Size	A	B	C	Mass kg
50	203	55	210	13
80	241	105	245	25
100	292	155	305	31
150	356	155	415	80
200	495	330	510	165
250	622	330	560	230
300	698	372	658	330
350	787	394	696	440
400	914	415	735	640
450	978	415	735	800
500	1075	400	620	870
600	1230	455	695	1240
700	1300	510	930	1720
800	1450	560	950	2200

Materials of Construction

Basic Valve components	Specifications
Cover	Cast steel
Bearing	Copper
Spring	Stainless steel
Stem nut	Stainless steel
Diaphragm washer	Cast steel
Stud	Steel
Stud nut	Steel
Diaphragm**	NBR
Body	Cast steel
Quad ring retainer	Cast steel
Quad ring seal**	NBR
Seat	Stainless steel
Seat gasket	NBR
Quad ring washer	Ductile iron
Stem	Stainless steel
Spacer (150-400mm)	Ductile iron
O ring**	NBR

** Suggested spares

Hydraulic Control Parts

Bodies: Brass-ASTM B584
 Internals: Stainless steel
 Elastomers: NBR
 (Other materials available ie. Stainless Bodies)

Available in Standard Flange Drillings

BS 4504 T10, T16, T25
 BS 10 TD, TE, TF
 ANSI 150, 300

FIG BT115
PRESSURE REDUCING

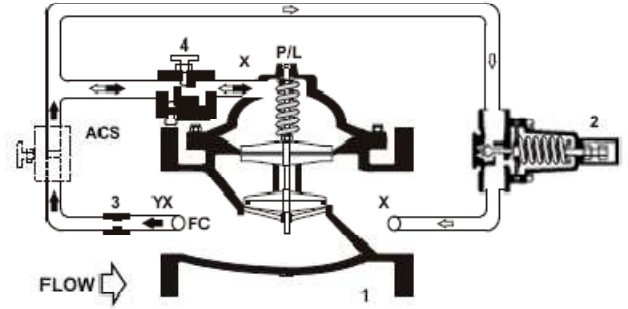
Automatically reduces a higher pressure to a constant lower outlet pressure regardless of changing flow rate and / or varying inlet pressure.
Refer to FIG BT115-7 for dead-end systems and / or systems using high demand, on-off equipment.

NOTE:
Adjustment range:
Standard: 20-1190 kPa
Optional: 0-638 kPa
 100-2040 kPa
(Stainless steel control)

QUICK SIZING:
Valve size one size smaller than line.

- Points to consider:**
- See Engineering Data - Pressure Reducing Sizing
 - Check maximum and minimum flow
 - Check pressure drop - pressure reducing valves or cavitation charts

Consult Ultra



Flow Direction Shown : Under the Seat
Optional 'R' Flow Over the Seat: 115-3R

VALVE FUNCTION
- Reduce higher inlet pressure to constant lower outlet pressure (adjustable)

- COMPONENTS**
1. Main Valve
 2. 263 Reducing Valve
 3. Fixed Orifice
 4. Flow Control - Adj. Opening Speed

- ACCESSORIES**
Located as indicated
Included as marked
- X - Isolation Cocks
 - Y - Y Strainer
 - P - Position Indicator
 - FC - Flo-Clean Strainer
 - L - Limit Switch
 - AOS - Adjustable Closing Speed

FIG BT116
PRESSURE RELIEF / SUSTAINING

Installed on a bypass line, mainline pressure is accurately controlled by relief of excess pressure. Installed in a mainline it prevents upstream pressure from dropping below a preset minimum.
For very fast reaction requirement refer to Ultra for info on gas loaded surge relief valve.

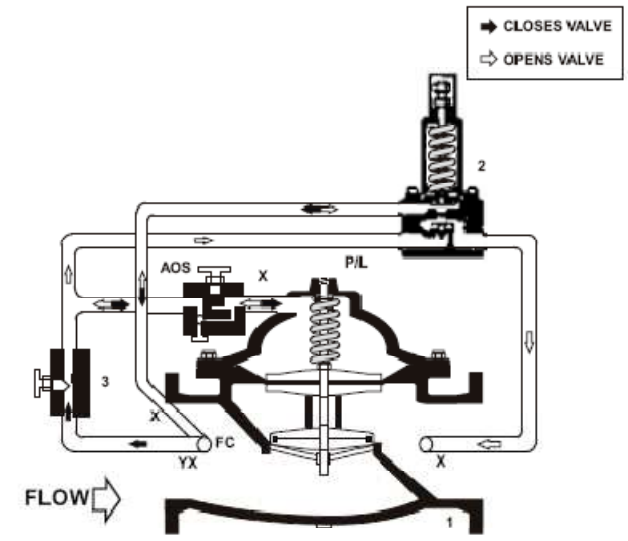
NOTE:
Adjustment range:
Standard: 20-1360 kPa
Optional: 0-204 kPa
 100-2040 kPa
Additional relief/sustaining functions:
-116FM/1116FM
(U.L. Listed/F.M. Approved for fire pump relief service)
-116-5 Pressure Sustaining / Check
-116-25 Differential Pressure Sustaining
-116-24 Differential Pressure Sustaining / Check

116 RELIEF
QUICK SIZING: Valve size one or two sizes smaller than main line.

- Points to Consider:**
- Refer to Engineering Data - Flow Capacity Chart
 - Consult Floquip

116 SUSTAINING
QUICK SIZING: Valve size same as line.

- Points to Consider:**
- Refer to Engineering Data - Flow Capacity Chart
Pressure drops at required flow
 - Refer to Engineering Data - Pressure Drop Chart



Flow Direction Shown: Under the Seat

VALVE FUNCTION
- Maintain constant upstream pressure (inlet to valve) by relieving excess Pressure.

- COMPONENTS**
1. Main Valve
 2. PV20C Sustaining Control
 3. Needle Valve - Adj. Closing Speed

- ACCESSORIES**
Located as indicated
Included as marked
- X - Isolation Cocks
 - Y - Y-Strainer
 - P - Position Indicator
 - FC - Flo-Clean Strainer
 - L - Limit Switch
 - AOS - Adj. Opening Speed

If the valve is to be used as a "safety" Relief valve the flow rates in the table can be exceeded.

Valve Size - mm	50	80	100	150	200	250	300	350	400	600
Maximum Continuous Flow Rate l/s (water)	13	30	50	114	200	310	440	540	695	1700
Maximum Intermittent Flow Rate l/s (water)	30	65	114	310	440	695	1010	1200	1580	2300

FIG B113-21
BOOSTER PUMP CONTROL (Valves 200mm and larger)

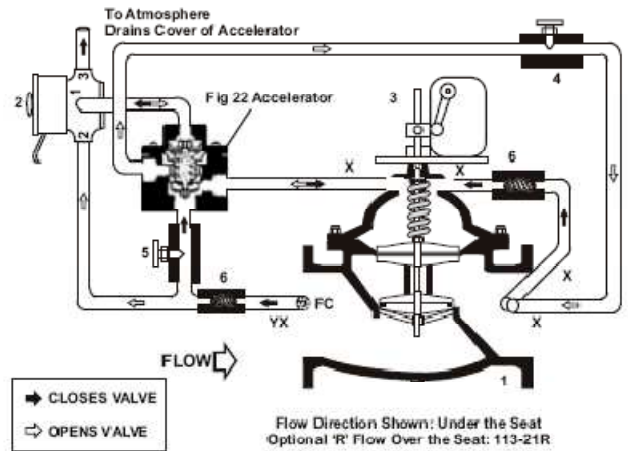
A solenoid operated pump control for controlled opening and closing on a pump start-up and shut down. Equipped with hydraulic check features to close valve on pressure reversal. Valve and pump operation are interlocked by a limit switch assembly.

NOTE:
Energized to open valve.
At time of order, advise factory actual system working pressure for correct solenoid selection.
110-120 VAC, 50-60 Hz standard
Optional: specify voltage required.
Solenoid enclosure NEMA 1,2,3,3S,4,4X
Optional: explosion proof NEMA 3,3,S,4,4X,6,6P,7,9
Manual operator standard
Limit switch enclosure general purposes
Optional: explosion proof.
Standard with adjustable opening and closing speed.

QUICK SIZING: Valve size same as line.

Points to consider:

- Refer to Engineering Data - Flow Capacity Chart
- Pressures drop at required flow
Refer to Engineering Data - Pressure Drop Chart



VALVE FUNCTION

- Opens at a controlled rate on pump start-up (adjustable)
- Closes at a controlled rate on pump shut-off (adjustable)
- Valve and pump are electrically interlocked so that power is shut-off when the valve is in near closed position
- Check feature closes valve when discharge pressure exceeds inlet Pressure (Power failure or pump failure)

COMPONENTS

- | | |
|--------------------------------------|--------------------------------------|
| 1. Main Valve | 5. Needle Valve - Adj. Closing Speed |
| 2. 3-Way Solenoid | 6. Check Valve |
| 3. Fig. 51 Limit Switch | FC - Flow Clean Strainer |
| 4. Needle Valve - Adj. Opening Speed | |

ACCESSORIES

- | | | |
|----------------------|--|---|
| Located as indicated | <input type="checkbox"/> X - Isolation Cocks | <input type="checkbox"/> Y - Y - Strainer |
| Included as marked | <input type="checkbox"/> FC - Flo-Cleaner Strainer | |

FIG B114
RATE OF FLOW

"R" Indicates flow over the seat (failed closed)

Maintains a constant flow rate, adjustable, regardless of fluctuations in line pressure. The rate of flow pilot senses the differential pressures across a thin edged orifice plate mounted in the valve inlet flange. It responds to changes in pressure and modulates the main valve to maintain the desired flow.

SPECIFY:

- Desired flow rates at time of order.
- FIG 114R: Flow over the seat (fail closed)
- FIG 114: Flow under the seat (fail open)

Additional combination functions:

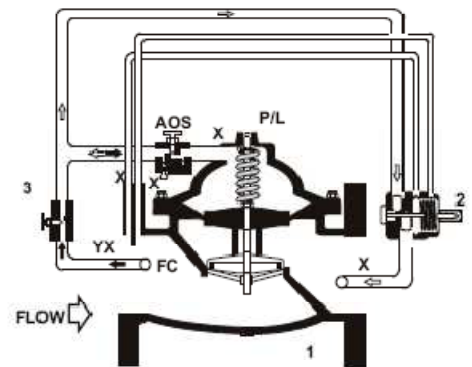
- 114-1R Rate of Flow / Solenoid On-Off
- 114-2R Rate of Flow / Pressure Reducing
- 114-8R Rate of Flow / Pressure Sustaining

QUICK SIZE: Stay within parameters of a capacity chart (below)

Points to consider:

- Orifice plate sized per application and per your acceptable pressure

Valve Size - mm	50	80	100	150	200	250	300	350	400	600
Minimum Flow Rate Litre / Second	1	2	3	6	12	19	25	31	53	190
Maximum Flow Rate Litre / Second	14	30	50	115	200	310	440	550	700	1700



VALVE FUNCTION

- Limits flow rate to a constant preset maximum (adjustable)

COMPONENTS

- | |
|--------------------------------------|
| 1. Main Valve |
| 2. Figure 51 Limit Switch |
| 3. Needle Valve - Adj. Closing Speed |
| 4. Orifice Plate |

ACCESSORIES

- | | |
|----------------------|---|
| Located as indicated | <input type="checkbox"/> AOS - Adj. Opening Speed |
| Included as marked | <input type="checkbox"/> X - Isolation Cocks |
| | <input type="checkbox"/> Y - Y Strainer |
| | <input type="checkbox"/> FC - Flo-Clean Strainer |
| | <input type="checkbox"/> P - Position Indicator |
| | <input type="checkbox"/> L - Limit Switch |

SURGE RELIEF / CHECK

FIG B116-52

SURGE ANTICIPATOR RELIEF / REMOTE SENSE

Used in pumping systems to protect equipment from damaging pressure surges or waves caused by rapid changes of flow within the pipeline. The 116-52 responds by opening at a preset low pressure setting, allowing for quick relief of the returning high pressure wave. It is also equipped with a high pressure control pilot which allows for high pressure relief service.

Floquip also have a gas loaded Surge Relief Valve. Consult Floquip for Options.

NOTE:

Adjustment range:

Low pressure : standard 20-1360 kPa, optional 0-204 kPa.

High pressure : standard 20-1360 kPa, optional 0-204, 100-2040 kPa

QUICK SIZING:

Valve size one or two sizes smaller than main line.

Points to consider:

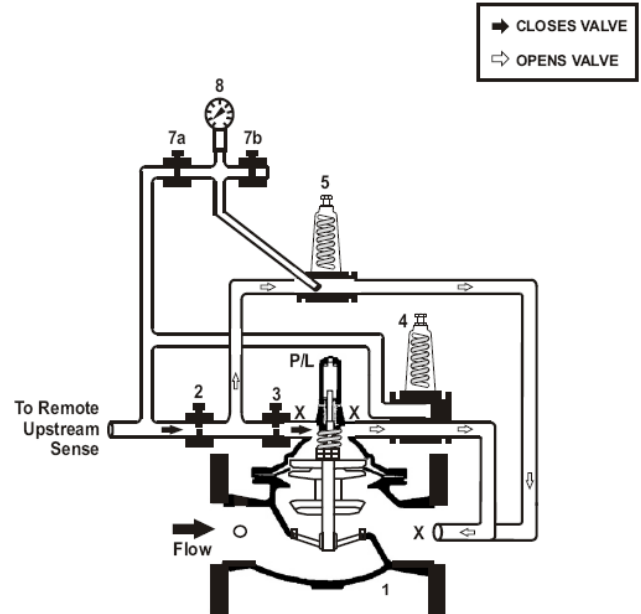
- Refer to Engineering Data - Flow Capacity Chart

FLOW CAPACITY CHART

Valve Size - mm	50	80	100	150	200	250	300	350	400	600
Maximum Continuous Flow Rate l/s (water)	13	30	50	114	200	310	440	540	695	1700
Maximum Intermittent Flow Rate l/s (water)	30	65	114	310	440	695	1010	1200	1580	2300

Maximum continuous flow based on pipe line velocity of 6 Mtrs per second.

Maximum intermittent flow based on pipe line velocity of 14 Mtrs per second.



COMPONENTS

- Main
- & 3. Speed Control
- 263RS Pressure Reducing Pilot

FIG B118-3R

CHECK VALVE W/SEPARATE OPENING & CLOSING SPEED CONTROLS

Valves 100mm & smaller (150mm & larger uses 118-4R)

The FIG 118-3R permits flow when inlet pressure exceeds outlet pressure.

Should pressure reversal occur the valve closes drip-tight. Opening and closing speeds are separately adjustable.

118 - R - no speed control

118 - 1R - no closing speed (Sizes 50 -150mm)

118 - 2R - opening speed (Sizes 50 - 150mm)

118 - 3R - separate adjustable opening and closing speed 100mm & smaller

118 - 4R - separate 150mm & larger.

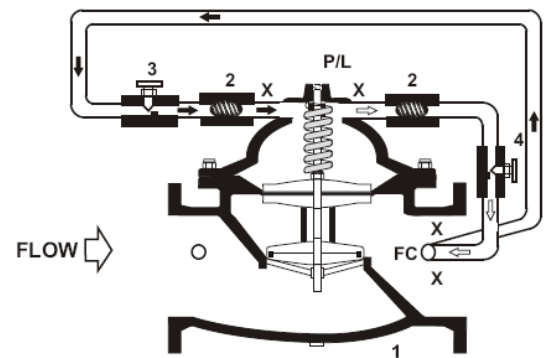
QUICK SIZING:

Valve size same as line.

Points to consider:

Distribution flow:

- Refer to Engineering Data - Flow Capacity Chart
- Pressure drops at required flow. Refer to Engineering Data - Pressure Drop Chart Check Flow
- If Check flow velocity exceeds a valve chart, consider Adding a Relief Valve FIG 116 to your system.



VALVE FUNCTION

- Valve closes at a controlled rate (adjustable) when outlet/downstream pressure exceeds inlet/upstream pressure.
- Valve opens at a controlled rate (adjustable) when inlet/upstream pressure exceeds outlet/downstream pressure.

COMPONENTS

- Main Valve
- Check Valve
- Needle Valve - Adj. Closing Speed
- Needle Valve - Adj. Opening Speed

ACCESSORIES

Located as indicated
Included as marked

- X - Isolation Cocks
- P - Position Indicator
- L - Limit Switch



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