

Your Solution Partner in  
Industrial Valve  
Automation...

# PISTON VALVES

**aira**<sup>®</sup>  
VALVE AUTOMATION

**IBR**  
Approved



## Features :

- Glandless Valves
- IBR & NON IBR Available
- Leakproof
- Maintenance Free
- Asbestos Free Seals
- Temperature : 400 °C
- Leakage Class : IV to VI
- Quick After Sales Service & Spares



Mfg. & Mkt by :

**aira Euroautomation pvt. ltd.**  
INDIA

[www.airaindia.com](http://www.airaindia.com) / [www.airaeuro.com](http://www.airaeuro.com)



## About Us :

Aira Euro Automation Pvt. Ltd. headquartered in Ahmedabad, Gujarat, India accredited with ISO 9001, from BVQI - LONDON is one of the leading manufacturer and exporter of automation and manual valves in the small sector in India having over 25-years of experience maintains one of the largest and most diversified markets of valves globally. We export our product in more than 20+ countries and have received excellent feedbacks.

We manufacture pneumatic actuator operated valves, automation valves. Pneumatic actuator operated valves can easily tolerate heavy loads, and are easily available and inexpensive too. Our products meet a wide range of users from different fields in fossil & cogeneration power, nuclear, refining, petrochemicals, pulp & paper, LNG & cryogenics, pharma industry.

We are continuously enhancing the ability of our staff and workers to become "customers preferred company." The motto of our organization is to become a "One - stop shop" for our clients and customers. For this, we have fully dedicated staff in each field.

Our management and employees are more passionate about manufacturing quality products and are always striving to improve and to meet the expectations and desires of our clients and customers in the guidance of dedicated and experienced management.

For further clarification of our products & services, Please feel free to contact us.

[www.airaindia.com](http://www.airaindia.com) / [www.airaeuro.com](http://www.airaeuro.com)



ISO Certificate



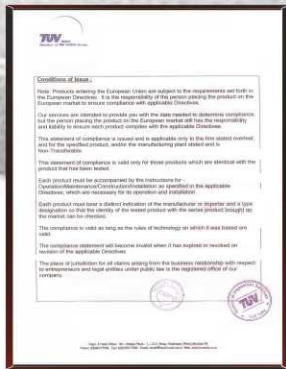
ATEX Certificate for Solenoid Coil



CE Certificate for Ball Valve

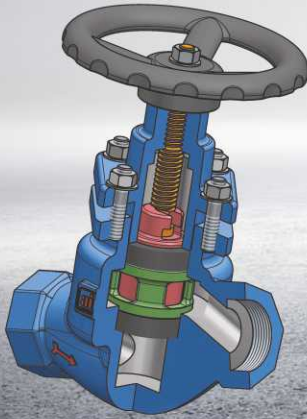


CE Certificate for Actuator

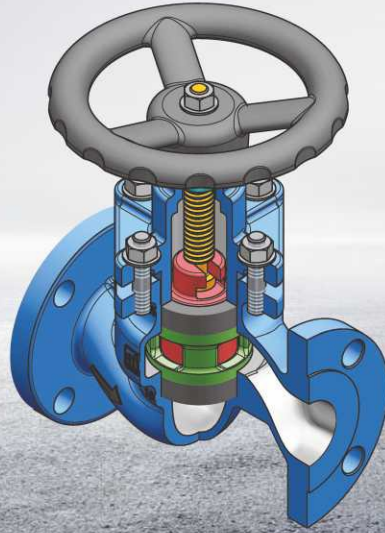


CE Certificate for Solenoid Coil & Positioner

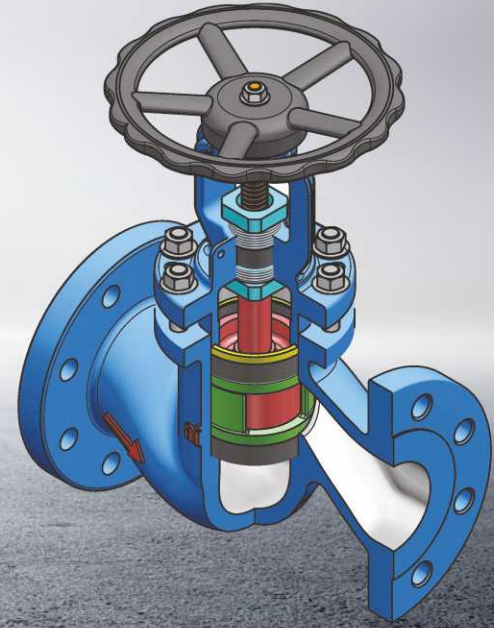




**Forged Piston Valve  
Screwed**



**Piston Valve Flanged  
(15mm to 50mm)**



**Piston Valve Flanged  
(65mm to 200mm)**

### Advantage

- Leakproof across ports & to atmosphere
- Maintenance free in the long run
- Environmentally safe and energy efficient
- Asbestos free
- Easy to Install
- Inline replaceable valve rings
- excellent control valve

### Pipe Connection

Flanged to ANSI 150, 300 & DIN PN 40.  
(Also Available Flange Drilling to BS 10  
Table D, E, F & H)

### Installation

Preferred direction is as per Arrow, however this Valve is a Bi - Directional Valve. This Valve Can be installed in any position without any adverse effect on its performance, Seal ability or Flow. Due to the soft sealing principle it is advisable to install a strainer upstream of the valve to avoid damage to the rings caused by weld slag, metal and other solid impurities.

### Optional Features

- MOC : Cast Stainless Steel & Alloy Steel.
- Regulating type
- Pneumatic & Electrical Actuator Operated.

### Description

Piston Valve is a seat less and gland less Valve using "resilient ring to Metallic SS piston" sealing principle to give an absolute leak tight system which is effective as well as reliable.

### Applications

Steam, Thermic Fluids, Acids, Gases, Vacuum & Other Critical Applications. **IBR & NON IBR**

### Advantage of Piston Valve Over Globe Valve

Seatless, Glandless Sealing area - relatively large i.e. entire inner surface of ring 100% LEAK TIGHTNESS ASSURED	Seat at bottom , gland with stuffing box Reduced sealing area i.e. area between disc and seat LEAK ACROSS PORTS VERY COMMON
Piston-Unexposed to media. Foreign matters are swept away by descending Piston. Valve rings are resilient NO EROSION OF PISTON 'DURABILITY'.	seat & disc constantly exposed to media solid particles remain on seat. Disc & seat are metallic. EROSION OF DISC & SEAT - VERY COMMON
STAYS TIGHT DURING THERMAL EXPANSION	Conventional Valve Design Chattering between disc & seat very common LEAKAGE DURING THERMAL EXPANSION
No Leakage of toxic / aggressive media ENERGY / COST SAVING	Loss of fluid due to leakage  LEAKAGE COSTLY & HAZARDOUS
Replacement of rings make valve new. No lapping / grinding Valve remains online during maintenance MAINTENANCE COST 'NEGLIGIBLE'	Seat & disc calls for lapping / grinding. Valve to be removed from the line. MAINTENANCE NOT ONLY COSTLY BUT TIME CONSUMING TOO.



### **Efficiency & Reliability**

The Sealing element is formed by two elastic valve rings enveloping a stainless steel piston. The upper valve ring seals to the outside, the lower ring seals across the port. Due to the large piston skirt the sealing effect is optimal. As the valve closes the piston removes impurities which the medium might contain from the inside of the lower valve ring. In this way the valve reliably principle, damage to the sealing surface is avoided and tightness is guaranteed as a result.

### **Excellent control characteristics**

The standard version of the piston valves is already very well suited for controlling the flow. Because the piston is guided by the upper and the lower valve ring vibration and instability in the pipe does not occur. **aira** piston valves have proved to be excellent as by-pass control valves. Through simple replacement of the piston and the lantern bush the valves can be retrofitted to act as a special precision control valves.

### **In line valve rings replacement**

A newly installed piston valve does not require any maintenance for a long time. However, the spindle should be regularly lubricated. If nevertheless a valve ring wears out it can be replaced without problems while remaining in the line and if assembly instructions are followed, it can be changed by in - house personnel. After replacement the valve is like new.

### **The core of the piston valve : The valve rings**

The high quality valve is made of graphite laminate with tang metal sheet inserts made of stainless steel. The valve is absolutely asbestos - and maintenance-free. The variable thermal expansions which occur under alternating thermal loads are completely compensated by valve rings, which were presealed in built-in condition.

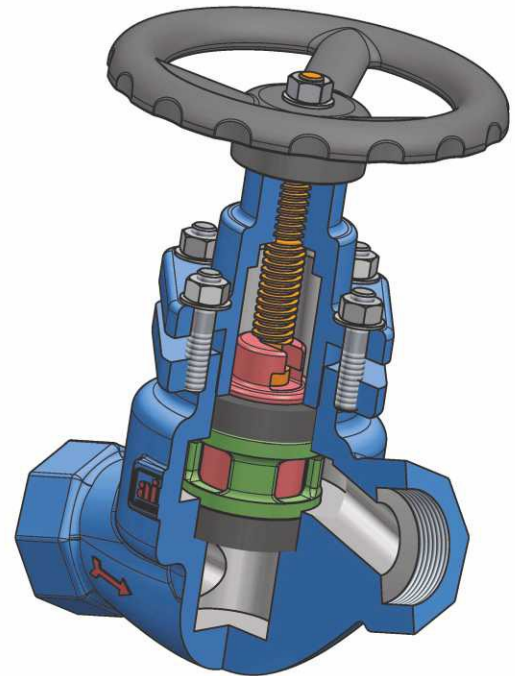
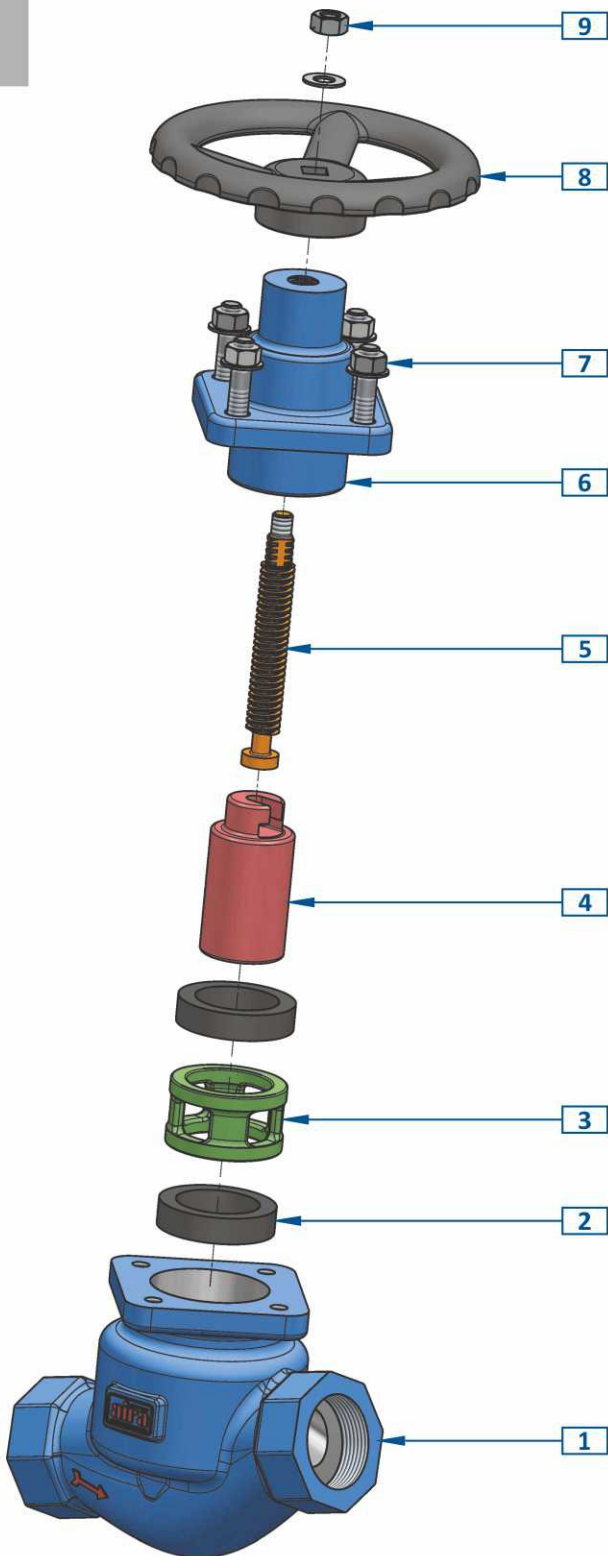
### **Long term sealing even at highest demands**

Media in the temperature range between -40 °C & +400 °C & at pressure of up to 63 Bar. Can be reliably controlled.

### **Pressure releaved piston**

In order to ensure convenient actuation at high differential pressures, the pistons are made of stainless steel, whereof the sizes DN 65 to 200 are pressure releaved. The spindle is sealed with a gland and an additional valve ring provides the sealing between the body and the bonnet.

Size Range 15MM to 50MM  
Forged 800#

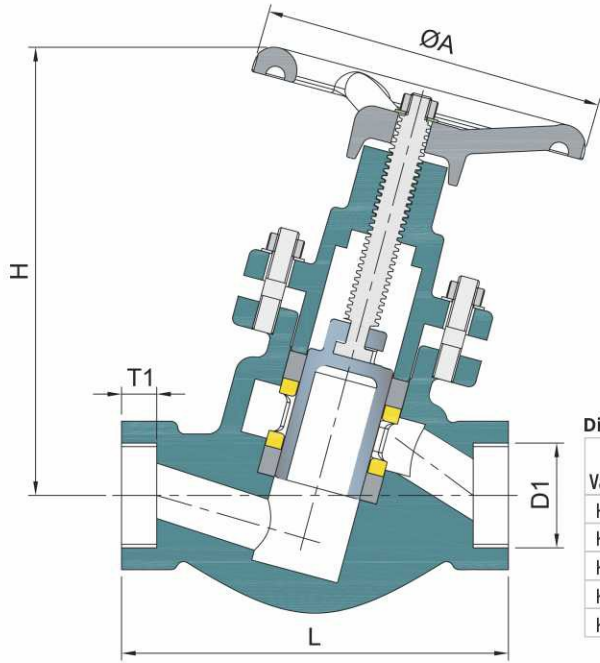


Sr. No.	Description	Material
1	Body	A 182 (F11) / A 182 (F12) / A 105
2	Upper-Lower Valve Rings	S/S Reinforced Graphoil
3	Lantern Bush	CF8 / CF8M
4	Piston	CF8 / CF8M
5	Spindle	S. S. 410
6	Bonnet	A 182 (F11) / A 182 (F12) / A 105
7	Stud + Nut+ Washer For Bonnet Fitting	S. S. 304 / S. S. 316
8	Hand Wheel	C. I. / S. G. Iron
9	Nut+ Washer For Hand Wheel Fitting	S. S. 304 / S. S. 316



# Drawing & Dimension Table for Piston Valve

## Screwed or Socket Weld 800#



### Valve Details

Working Temperature	Upto 400 °C Max.
Working Pressure	40 Kg/cm <sup>2</sup> Max.
Face to Face	As Per Manufacturing Std.
Connection	Screwed / Socket Weld 800#
Leakage Class	Class VI As Per FCI - 70 - 2

### 800# Testing Details

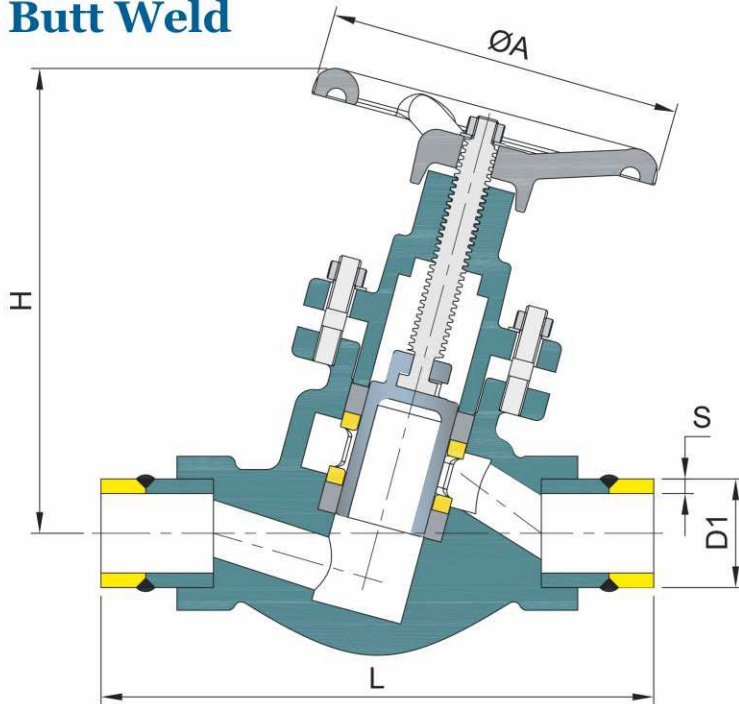
Hydraulic Test Pressure	
Valve Body	70 BAR ( G )
Seat	40 BAR ( G )
Maximum Hydraulic	
Test Pressure	40 BAR ( G )

### Dimensions :

Screwed Valve Model	Socket Weld Valve Model	Valve Size		L	SE D1	SW D1	H	ØA	T1
		MM	Inch						
KLS - 15	KLW - 15	15	1/2"	110	1/2" BSP	21.80	110	110	16.5
KLS - 20	KLW - 20	20	3/4"	121	3/4" BSP	27.10	135	110	14
KLS - 25	KLW - 25	25	1"	134	1" BSP	33.80	160	145	13.5
KLS - 40	KLW - 40	40	1.1/2"	185	1.1/2" BSP	48.30	210	180	17.5
KLS - 50	KLW - 50	50	2"	220	2" BSP	60.30	257	200	18

(All Dimensions are in MM)

## Butt Weld



### Valve Details

Working Temperature	Upto 400 °C Max.
Working Pressure	40 Kg/cm <sup>2</sup> Max.
Face to Face	As Per Manufacturing Std.
Connection	Butt Weld 800#
Leakage Class	Class VI As Per FCI - 70 - 2

### 800# Testing Details

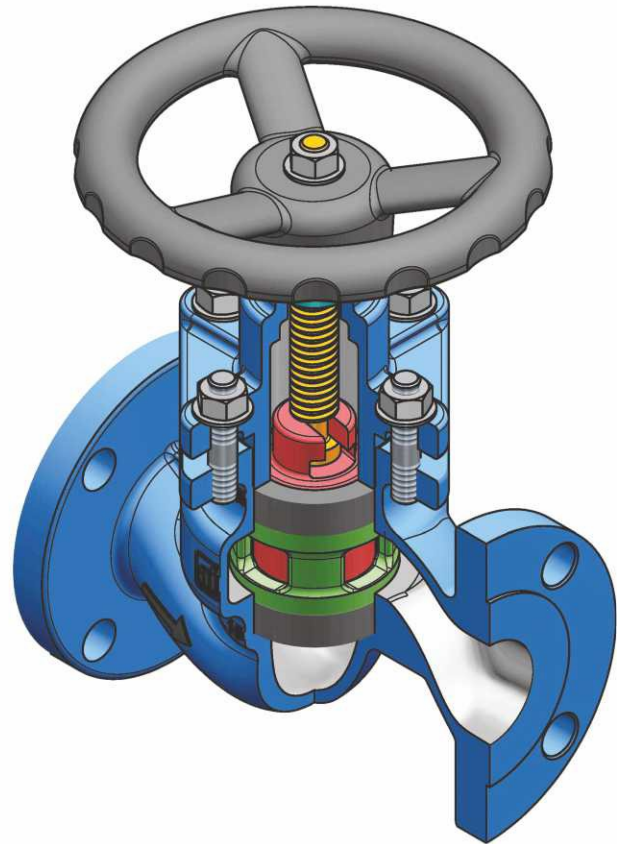
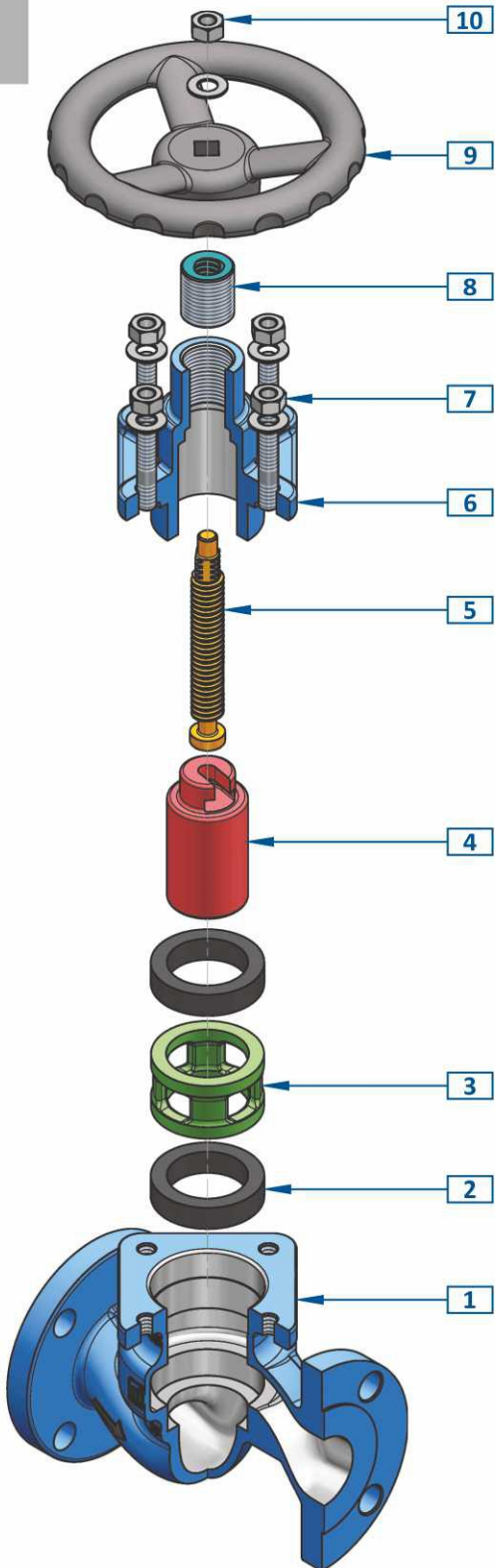
Hydraulic Test Pressure	
Valve Body	70 BAR ( G )
Seat	40 BAR ( G )
Maximum Hydraulic	
Test Pressure	40 BAR ( G )

### Dimensions :

Valve Model	Valve Size		L	Butt Weld D1	S	H	ØA
	MM	Inch					
KLB - 15	15	1/2"	155	Ø21.30	2.77	110	110
KLB - 20	20	3/4"	170	Ø26.90	2.87	135	110
KLB - 25	25	1"	200	Ø33.70	3.38	160	145
KLB - 40	40	1.1/2"	270	Ø48.30	3.68	210	180
KLB - 50	50	2"	320	Ø60.30	3.91	257	200

(All Dimensions are in MM)

Size Range 15MM to 50MM  
Flanged 150#, 300#, PN 40



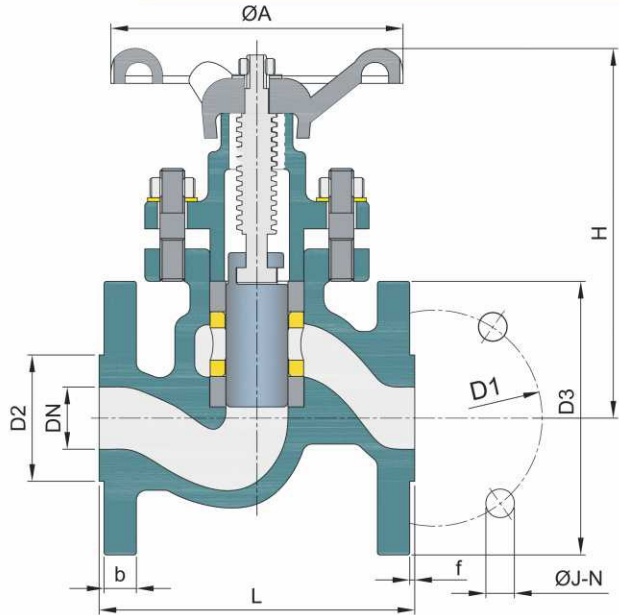
Sr. No.	Description	Material
1	Body	WCB
2	Upper-Lower Valve Rings	S/S Reinforced Graphoil
3	Lantern Bush	CF8 / CF8M
4	Piston	CF8 / CF8M
5	Spindle	S. S. 410
6	Bonnet	WCB
7	Stud + Nut+ Washer For Bonnet Fitting	S. S. 304 / S. S. 316
8	Threaded Bush	C. I. / S. G. Iron
9	Hand Wheel	C. I. / S. G. Iron
10	Nut+ Washer For Hand Wheel Fitting	S. S. 304 / S. S. 316





# Drawing & Dimension Table for Piston Valve

## 15 mm to 50 mm Flanged



### Valve Details

Working Temperature	Upto 400 °C Max.
Working Pressure	20 Kg/cm <sup>2</sup> Max.
Face to Face	ASME B16.10 150# / 300# IEC - 2001 (PN 40)
Flanges	ASME B 16.5 150# / 300# DIN - 2545 (PN 40)
Leakage Class	Class VI As Per FCI - 70 - 2

#### 150# Dimensions :

Valve Model	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
KLU - 15	15	1/2"	108	90	8	34.9	2	15.9-4	60.3	110	110
KLU - 20	20	3/4"	117	100	8.9	42.9	2	15.9-4	69.9	125	110
KLU - 25	25	1"	127	110	12.7	50.8	2	15.9-4	79.4	150	145
KLU - 32	32	1.1/4"	140	115	14.3	63.5	2	15.9-4	88.9	174	180
KLU - 40	40	1.1/2"	165.1	125	15.9	73	2	15.9-4	98.4	190	180
KLU - 50	50	2"	203.2	150	17.5	92.1	2	19.05-4	120.7	230	200

(All Dimensions are in MM)

#### 300# Dimensions :

Valve Model	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
KLD - 15	15	1/2"	152.4	95	12.7	34.9	2	15.9-4	66.7	110	110
KLD - 20	20	3/4"	177.8	115	14.3	42.9	2	19.05-4	82.6	125	110
KLD - 25	25	1"	203.2	125	15.9	50.8	2	19.05-4	88.9	150	145
KLD - 32	32	1.1/4"	216	135	17.5	63.5	2	19.05-4	98.4	174	180
KLD - 40	40	1.1/2"	228.6	155	19.1	73	2	22.2-4	114.3	190	180
KLD - 50	50	2"	266.7	165	20.7	92.1	2	19.05-8	127	230	200

(All Dimensions are in MM)

#### PN 40 Dimensions :

Valve Size	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
15	15	1/2"	130	95	16	45	2	14-4	65	110	110
20	20	3/4"	150	105	18	58	2	14-4	75	125	110
25	25	1"	160	115	18	68	2	14-4	85	150	145
32	32	1.1/4"	180	140	18	78	2	18-4	100	174	180
40	40	1.1/2"	200	150	18	88	3	18-4	110	190	180
50	50	2"	230	165	20	102	3	18-4	125	230	200

(All Dimensions are in MM)

### 150# Testing Details

Hydraulic Test Pressure	
Valve Body	30 BAR ( G )
Seat	21 BAR ( G )
Maximum Hydraulic Test Pressure	
Test Pressure	21 BAR ( G )

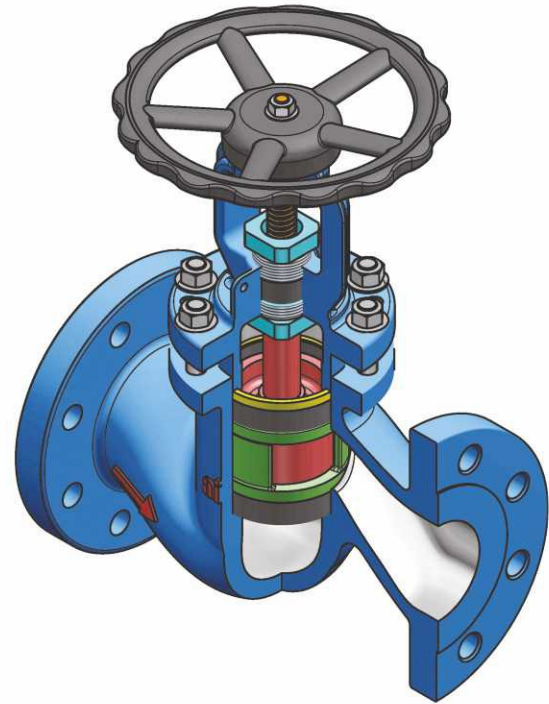
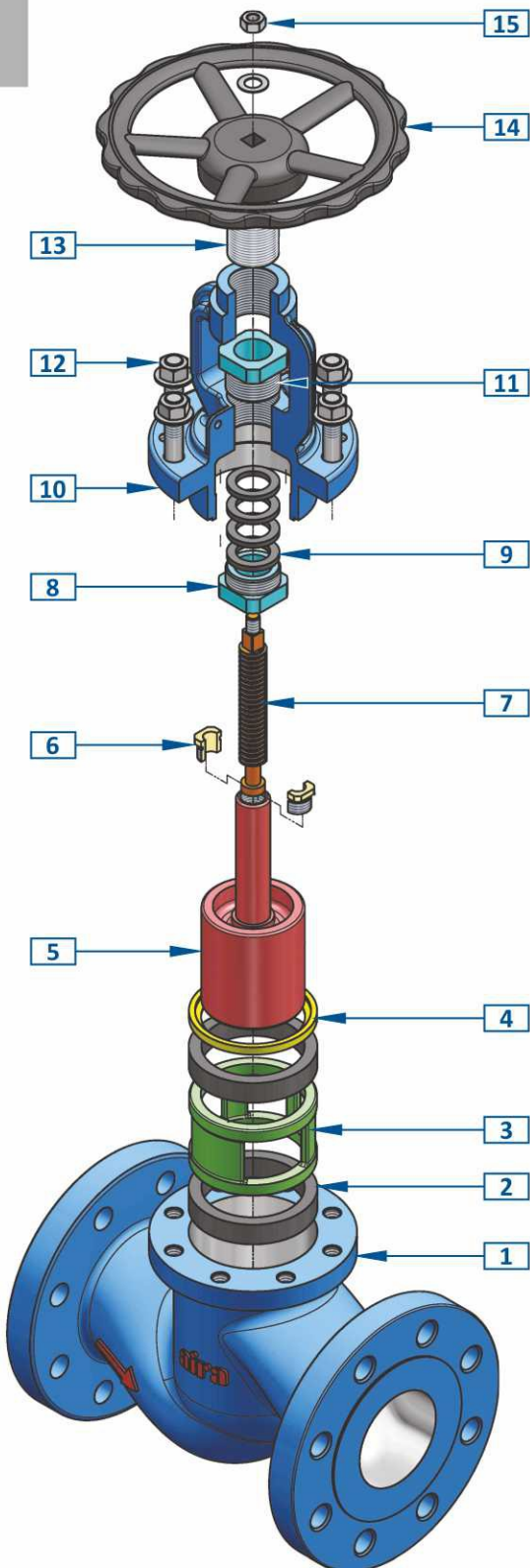
### 300# Testing Details

Hydraulic Test Pressure	
Valve Body	79 BAR ( G )
Seat	56 BAR ( G )
Maximum Hydraulic Test Pressure	
Test Pressure	56 BAR ( G )

### PN 40 Testing Details

Hydraulic Test Pressure	
Valve Body	70 BAR ( G )
Seat	40 BAR ( G )
Maximum Hydraulic Test Pressure	
Test Pressure	40 BAR ( G )

Size Range 65MM to 200MM  
Flanged 150#, 300#, PN 40

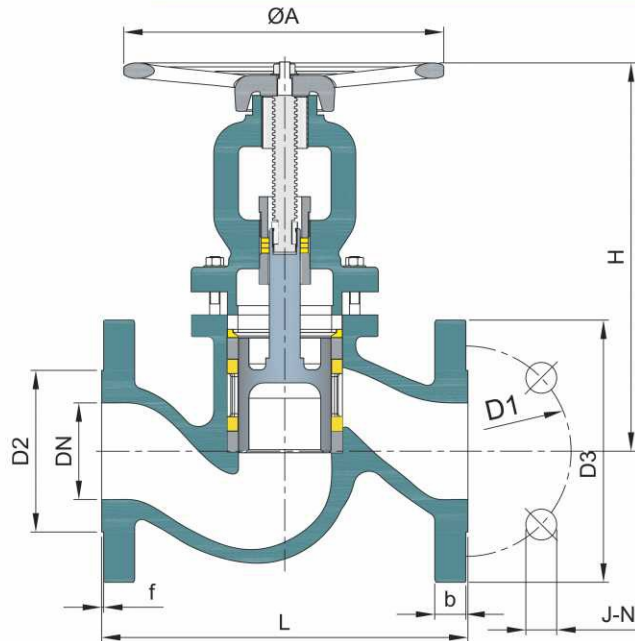


Sr. No.	Description	Material
1	Body	WCB
2	Upper-Lower Valve Rings	S/S Reinforced Graphoil
3	Lantern Bush	CF8 / CF8M
4	Additional Valve Ring	S. S. 410
5	Piston & Shaft	CF8 / CF8M
6	Split Bush	Brass
7	Spindle	S. S. 410
8	Bottom Lock Nut	S. S. 304 / S. S. 316
9	Stuffing Box Rings	Graphoil
10	Bonnet	WCB
11	Top Lock Nut	S. S. 304 / S. S. 316
12	Stud + Nut+ Washer For Bonnet Fitting	S. S. 304 / S. S. 316
13	Threaded Bush	C. I. / S. G. Iron
14	Hand Wheel	C. I. / S. G. Iron
15	Nut+ Washer For Hand Wheel Fitting	S. S. 304 / S. S. 316



# Drawing & Dimension Table for Piston Valve

## 65 mm to 200 mm Flanged



### Valve Details

Working Temperature	Upto 400 °C Max.
Working Pressure	20 Kg/cm <sup>2</sup> Max.
Face to Face	ASME B16.10 150# / 300# IEC - 2001 (PN 40)
Flanges	ASME B 16.5 150# / 300# DIN - 2545 (PN 40)
Leakage Class	Class VI As Per FCI - 70 - 2

#### 150# Dimensions :

Valve Model	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
KLU - 65	65	2.1/2"	215.9	180	20.7	104.8	2	19.05-4	139.7	295	252
KLU - 80	80	3"	241.3	190	22.3	127	2	19.05-4	152.4	330	252
KLU - 100	100	4"	292.1	230	22.3	157.2	2	19.05-8	190.5	375	280
KLU - 125	125	5"	356	255	22.3	185.7	2	22.2-8	215.9	----	----
KLU - 150	150	6"	406.4	280	23.9	215.9	2	22.2-8	241.3	450	370
KLU - 200	200	8"	495.3	345	27	269.9	2	22.2-8	298.5	535	370

(All Dimensions are in MM)

#### 300# Dimensions :

Valve Model	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
KLD - 65	65	2.1/2"	292.1	190	23.9	104.8	2	22.2-8	149.2	295	252
KLD - 80	80	3"	317.5	210	27	127	2	22.2-8	168.3	330	252
KLD - 100	100	4"	355.6	255	30.2	157.2	2	22.2-8	200	375	280
KLD - 125	125	5"	400	280	33.4	185.7	2	22.2-8	235	----	----
KLD - 150	150	6"	444.5	320	35	215.9	2	22.2-12	269.9	450	370
KLD - 200	200	8"	558.8	380	39.7	269.9	2	25.4-12	330.2	535	370

(All Dimensions are in MM)

#### PN 40 Dimensions :

Valve Size	Valve Size		L	D3	b	D2	f	J - N	D1	H	ØA
	MM	Inch									
65	2.1/2"	290	185	22	122	3	18-8	145	295	252	
80	3"	310	200	24	138	3	18-8	160	330	252	
100	4"	350	235	24	162	3	22-8	190	375	280	
125	5"	400	270	26	188	3	26-8	220	----	----	
150	6"	480	300	28	218	3	26-8	250	450	370	
200	8"	600	375	34	285	3	30-12	320	535	370	

(All Dimensions are in MM)

#### 150# Testing Details

Hydraulic Test Pressure	
Valve Body	30 BAR ( G )
Seat	21 BAR ( G )
Maximum Hydraulic	
Test Pressure	21 BAR ( G )

#### 300# Testing Details

Hydraulic Test Pressure	
Valve Body	79 BAR ( G )
Seat	56 BAR ( G )
Maximum Hydraulic	
Test Pressure	56 BAR ( G )

#### PN 40 Testing Details

Hydraulic Test Pressure	
Valve Body	70 BAR ( G )
Seat	40 BAR ( G )
Maximum Hydraulic	
Test Pressure	40 BAR ( G )

