

(Patent Applied)



THE PISTON VALVE principle is a KLINGER idea. One of many ideas which has achieved world-wide recognition. Continuously modified and matched to modern requirement, the piston Valve has provided itself to the millions throughout the world. Today we can say with pride that our group is worlds largest manufacturer of valves, based on this design principle. KLINGER Piston valve performance is backed by central R & D of KLINGER at Switzerland.

The shut off assembly comprises of a stainless steel piston, two resilient valve rings and a ferrous metal lantern bush. The sealing consists of the cylindrical surface of the piston and the corresponding inner surface area of the sealing rings. This provides a very large sealing compared with globe valves with conventional design- one of the reasons for the Piston valve's excellent seal.

The valve Rings are the heart of the piston valve. They are made from KXGT, a material specially developed and exclusively used for the manufacture of valve ring. KXGT consists essentially of graphite and tanged stainless steel between each layer of graphite. KLINGER valve rings are not merely surface graphited; the graphite content extends throughout the ring. For this reason its outstanding self lubricating properties are retained throughout the rings entire service life. KLINGER valve rings are resilient, accurately dimensioned and in consequence of their good recovery characteristics have excellent form retention and long service life. KLINGER valve rings are resistant to water, steam, oils, solvents and wide range of other media. KLINGER valve rings can be used for more than 230 listed fluid media.

**FEATURES:-**

- Seatless and Gland less valve.
- Economic, easy to service.
- No erosion of sealing surface.
- Maintenance free.
- Compensation for thermal expansion with use of Belleville washer.
- Leak-tight across ports and to atmosphere.
- Spherical joint of piston and spindle requires very low torque leading to smooth opening and closing operation (Patent applied\*)

**END CONNECTIONS:-**

Socket weld #800 Rating  
Screwed BSPT/ NPT  
Flanged to ANSI #150/#300

**MATERIAL OF CONSTRUCTION:-**

ASTMA105  
ASTMA182 Gr.F316

**AVAILABLE SIZES:-**

15,20,25, and 40 NB Pr Rating #800  
1/2", 3/4", 1", and 1 1/2" Pr Rating #800

KVSN 50 as per PN40 Rating  
KVSN 2" as per PN40 Rating



**ON REQUEST:-**

IBR/Non-IBR  
MOC : Cast Stainless / Alloy Steel  
Valve with extended spindle.  
Valve with Heating Jacket  
Pneumatic / Electrical Actuator

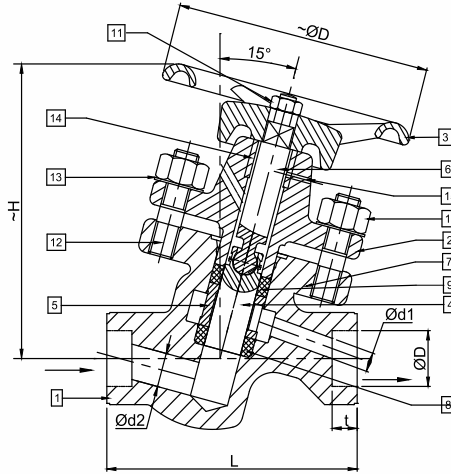
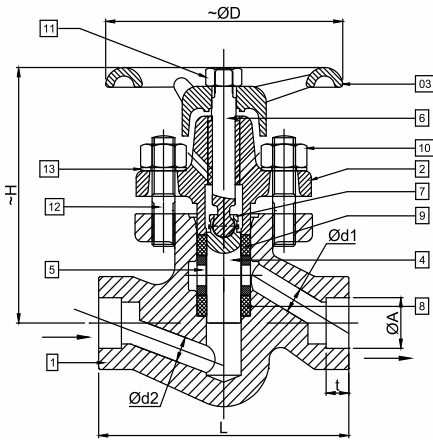
**APPLICATIONS:-**

- Steam
- Thermic fluids
- Acids
- Gases
- Vacuum
- Other critical media.

**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 performance, seal ability or flow.  
Due to 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.

# Forged Piston Valve USN 15-40



## BILL OF MATERIAL

No.	PART NAME	MATERIAL	MATERIAL CODE
1	Body	Forged Steel	ASTM A105
2	Bonnet	Forged Steel	ASTM A105
3#	Hand Wheel	Fabricated/C.I.	M.S. / C.I.
4#	Piston	Stainless Steel	Cast Equivalent of AISI 430
5#	Lantern Bush	Stainless Steel	ASTM A276 TP410
6*	Spindle	Stainless Steel	ASTM A276-TP410
7*\$	Collar	Stainless Steel	AISI 430
8#	Lower Valve Ring	Klinger Std.	KXGT
9#	Upper Valve Ring	Klinger Std.	KXGT
10	Bonnet Nut	Carbon Steel	ASTM A 194 Gr.2H
11	Hand Wheel Nut	Carbon Steel	ASTM A 194 Gr.2H
12	Stud	Alloy Steel	ASTM B 193 Gr. B7
13	Bel. Washer	Spring Steel	50 Cr V4
14\$	Threaded Bush	Cast Iron	GG20 / FG200
15\$	Tension Pin	Spring Steel	50 Cr V4

# - Available as Spares

\$ - Not applicable for 15NB and 20NB (1/2" & 3/4")

\* Spherical joint arrangement for Piston and Spindle ( Patent Applied)

## DIMENSION (mm / inches)

Size		Class	L		H		ØA CI / MS		ØD		t		Ød1		Ød2	
mm	in		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
15	1/2"	800	110.00	4.33	110.00	4.33	100 / 106	3.94 / 4.17	21.80	0.86	10.00	0.39	11.00	0.43	11.00	0.43
20	3/4"	800	110.00	4.33	110.00	4.33	100 / 106	3.94 / 4.17	27.20	1.07	13.00	0.51	11.00	0.43	11.00	0.43
25	1"	800	135.00	5.31	155.00	5.31	140 / 146	5.51 / 5.75	33.90	1.33	13.00	0.51	19.00	0.75	17.00	0.67
40	1 1/2"	800	185.00	7.28	215.00	7.28	180 / 200	7.08 / 7.87	48.80	1.92	13.00	0.51	36.50	1.44	24.00	0.94

## DIMENSION (mm / inches)

Size		Overall Dimensions for #150																
		Length (L)		Height (H)		ØA		ØD		b		Øg		No of holes	ØI		ØK	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		mm	in	mm	in
15 NB	1/2"	212	8.35	118	4.65	100	3.94	90	3.54	9.6	0.38	35	1.38	4	16	0.63	60.3	2.37
20 NB	3/4"	232	9.13	134	5.28	120	4.72	100	3.94	11.2	0.44	42.9	1.69	4	16	0.63	69.9	2.75
25 NB	1"	251	9.88	155	6.10	140	5.51	110	4.33	12.7	0.50	50.8	2.00	4	16	0.63	79.4	3.13
40 NB	1 1/2"	311	12.24	215	8.46	180	7.09	125	4.92	15.9	0.63	73	2.87	4	16	0.63	98.4	3.87
Size		Overall Dimensions for #300																
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
15 NB	1/2"	226	8.90	118	4.65	100	3.94	95	3.74	16	0.63	45	1.77	4	14	0.55	65	2.56
20 NB	3/4"	252	9.92	134	5.28	120	4.72	105	4.13	18	0.71	58	2.28	4	14	0.55	75	2.95
25 NB	1"	269	10.59	155	6.10	140	5.51	115	4.53	18	0.71	68	2.68	4	14	0.55	85	3.35
40 NB	1 1/2"	327	12.87	215	8.46	180	7.09	150	5.91	18	0.71	88	3.46	4	14	0.55	110	4.33

Rating	Pmax		Temp		T max		Press.(bar.g)	
	bar.g	Psi.g	°C	°F	°C	°F	bar.g	Psi.g
#150	13.8	196.30	200	392	425	797	5.5	78.24
#300	43.8	623.04	200	392	425	797	28.5	405.41
SW# 800	138.9	1975.82	Amb.	Amb.	425	797	76.7	1100.28
BSP	12.25	174.25	260	—	—	500	—	—
BSPT/NPT	31.6	449.50	425	—	—	797	—	—

**Special Instructions:-** 1) Flush pipelines, 2) Open/Close the valve using hand wheel only, 3) Hot Tighten, 4) Lubricate spindle, 5) Use original Klinger rings only.

## HOW TO ORDER

KLINGER PISTON VALVE USN 25, Steam, IBR, FLANGED TO #150 Please mention the media, its design and working pressure/Temperature

In view of technical progress designs and dimensions are subject to change without notice.

# UNI KLINGER LIMITED

A joint venture of the Neterwala group of companies and KLINGER AG, Switzerland.

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