



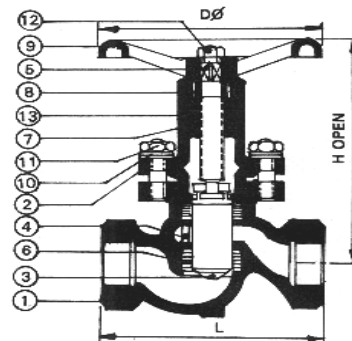
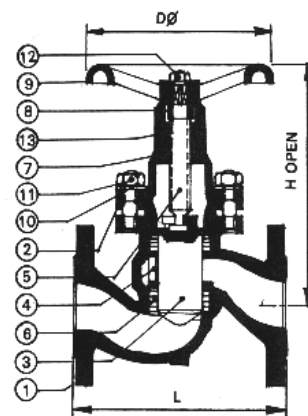
PISTON VALVES

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- Seatless & glandless valves.
- Piston valves are maintenance free.
- Sealing rings easily replaced online.
- Adapts as regulating valve.
- The bubble tight seal is formed by:
 1. The cylindrical piston precision-ground Stainless steel
 2. The resilient sealing rings-made are specially imported (KX-GT ring set)
 3. The load on the bonnet nuts compresses the resilient sealing rings firmly around the piston giving a pressure-tight seal



Sr.No.	Part	Material
1	Body	◆ ASTM A 216 Gr.WCB (Cast Steel)
2	Bonnet	◆ ASTM A 216 Gr.WCB (Cast Steel)
3	Piston	SS - 304
4	Lantern Bush	Cast Steel
5	Spindle	SS - 410
6	Sealing Rings	Original Imported ring set
7	Yoke Bush	Gun Metal (G.M.)
8	Indicator	Mild Steel (M.S)
9	Hand Wheel	Cast Iron (C.I)
10	Belleville Washers	Cr.V.Spring Steel
11	Studs Nuts	ASTM A -193 / 194
12	Wheel Nut	Mild Steel (M.S)
13	Set Screw	Mild Steel (M.S)
14	Spindle-Lock Nut	SS - 410



Weight of Piston valves in Kg. (approx)										
SIZE	15	20	25	32	40	50	65	80	100	150
Flange type	3.7	4.7	6.8	11.5	12.0	18.0	27.0	35.5	54.5	145.0
Screwed type	2.0	2.5	3.8	8.5	10.5	13.0	0	0	0	0

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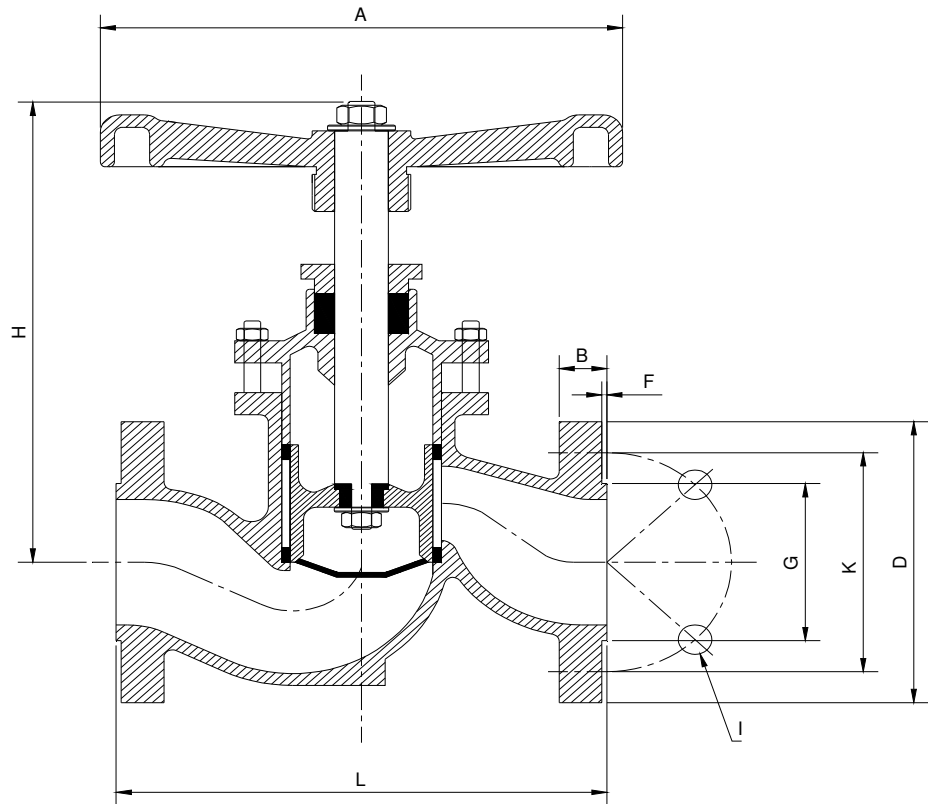
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Flange Ends, Class 150

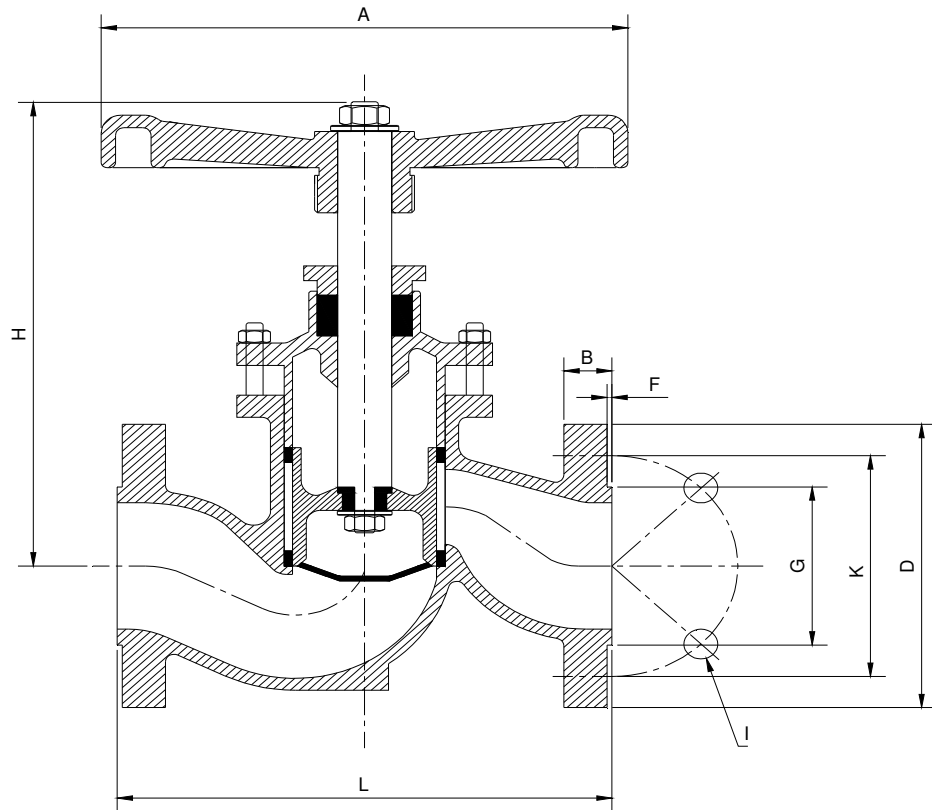
Pressure rating : ANSI class 150 Overall length : ANSI B 16.10 class 150 Connection : Flanged to ANSI B 16.5 class 150 RF										
Overall Dimensions			Connection Dimensions							
Size mm	L	H	A	B	D	F	G	No of Holes	K	I
15	108	105	100	11.7	88.9	1.6	35	4	60.45	15.74
20	117	105	100	12.7	98.55	1.6	42.93	4	69.85	15.74
25	127	120	120	14.22	107.95	1.6	50.8	4	79.24	15.74
40	165	154	160	17.52	127	1.6	73.15	4	98.55	15.74
50	203	186	180	19.05	152.4	1.6	91.95	4	120.65	19.05
80	241	327	250	19.05	190.5	1.6	127	4	152.4	19.05
100	292	374	280	23.87	228.6	1.6	157.23	8	190.5	19.05
150	406	477	360	25.4	279.4	1.6	215.9	8	241.3	22.35
200	495	561	400	28.44	342.9	1.6	269.75	8	298.45	22.35

TESTING PRESSURE				
HYDROSTATIC				
	ND-10 Kg /Cm ²	ND-25 Kg /Cm ²	ND-40 Kg /Cm ²	PNEUMATIC Kg / Cm ²
SEAT	10	25	40	5
BODY	16	40	64	5

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Flange Ends, Class 300

Pressure rating : ANSI class 300 Overall length : ANSI B 16.10 class 300 Connection : Flanged to ANSI B 16.5 class 300 rf										
Overall Dimensions				Connection Dimensions						
Size mm	L	H	A	B	D	F	G	No of Holes	K	I
15	152	105	100	14.22	95.25	1.6	35	4	66.54	15.74
20	178	120	120	15.74	117.34	1.6	42.93	4	82.55	19.05
25	203	138	140	17.62	123.95	1.6	50.8	4	88.9	19.05
40	229	186	180	20.57	155.44	1.6	73.15	4	114.3	22.35
50	267	211	200	22.35	165.1	1.6	91.95	8	127	19.05
65	292	306	250	25.4	190.5	1.6	104.65	8	149.35	22.35
80	318	327	250	28.44	209.55	1.6	127	8	168.14	22.35
100	356	374	280	31.75	254	1.6	157.23	8	200.15	22.35
150	445	477	380	35.57	317.5	1.6	213.4	12	269.74	22.35
200	559	561	400	41.14	381	1.6	269.75	12	330.2	25.4

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Operating Manual

All WOODLAND Piston valves can be kept permanently tight without trouble.

Shortly after the piston valve is first put into service, the cover nuts should be lightly tightened with the valve in closed position, which in-turn compresses the valve packing ring firmly around the position.

When a leak develops it is easy to correct it with an ordinary spanner.

1. Shut the valve fully.
2. Tighten each cover nuts $1/8^{\text{th}}$ of a turn.
3. If the leak is slight and has not persisted for any length of time, this will be found sufficient, If not, then repeat the process until the valve is steam tight.

It is important to follow instruction no.1, If the cover nuts are tighten down with the valve open then the bottom ring may be compressed in the passage and get damaged by the Piston when the valve is again closed.

No undue force should be used in tightening the piston valve nuts. They should move easily with a standard spanner of the corresponding size & should be tightened equally to avoid tilting of the cover. Please do not use a wheel spanner on the hand wheel since there is no use of any undue force to shut the piston valve, it may simply damage the spindle.

Life of the rings depends on the above process as & when required until the rings are worn out & needs replacement.

To remove old sealing rings use a tang of an old file or screwdriver bent at right angle to form a hook, now pull out the top ring, lantern bush & the bottom ring one after another.

Replacing new piston & sealing rings is a simple matter, as they are provided with a machined Horseshoe slot. In some cases the piston are fitted by means of a split washer and nut.

- All nuts have left hand threads.
- The pistons are accurately machined & carefully finished, if it is necessary to hold the piston while fitting then grip it between a soft wooden clamp to avoid damaging the surface.
- Open the valve wide.
- Remove the cover nuts.
- Screw down the spindle (turn right) to lift the cover off the studs.
- Turn the cover so that it rests on top of the studs.
- Screw spindle up (turn Left) to withdraw piston from rings.
- Lift off cover parts, taking care to avoid scratching the piston.
- Use only genuine WOODLAND valve rings.
- Insert a new ring & drive it gently home using a punch / a short bar metals or wood having a slight small diameter than that of the ring. Tap the punch with the hammer lightly & drive the ring till the bottom of the bore.
- Replace the lantern bush, which should enter the bottom bore & sit flat on the ring.
- Insert the top ring by the same way as the bottom.

Replacing the valve cover

- See that the piston is in good condition, enter the piston through the passage between the rings and replace the cover.
- Screw down the cover nuts lightly, then screw down the hand wheel (turn right) then unscrew (Turn left) drawing the cover into position.
- Run the nuts down, shut the valve & tighten with spanner evenly just enough to grip the rings.
- Make sure that the cover is sitting square on the valve body.

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Remember when the piston valve is first put under service, the cover nuts should be tightened lightly and evenly with the valve in closed position, this will enable to settle the rings firmly around the piston. This will increase the life of the rings & failure to this may result in premature leakage. Also note that the cover nuts should not be tighten without the Belleville washers.

The heart of the piston valve: The valve rings KX-GT

The high quality valve ring KX-GT 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 KX-GT-valve rings, which were pre-sealed in a built-in condition.

Long term sealing even at highest demands

Media in the temperature range between $-40\text{ }^{\circ}\text{C}$ and $+427\text{ }^{\circ}\text{C}$ and at pressures of up to 63 bar, can be reliably controlled. KX-GT valve rings are excellent for the use in temperature shock operation as well as steam condensate alternating-operation.



The heart of the piston valve: The valve rings KFK – KOR-P



Upper Valve Ring KFK



Lower Valve Ring KOR -P