

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.

**END CONNECTIONS:-**

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

**MATERIAL OF CONSTRUCTION:-**

ASTMA105  
ASTMA182 Gr.F316

**APPLICATIONS:-**

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



**Piston Valve with Actuator  
(on request)**



**ON REQUEST:-**

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

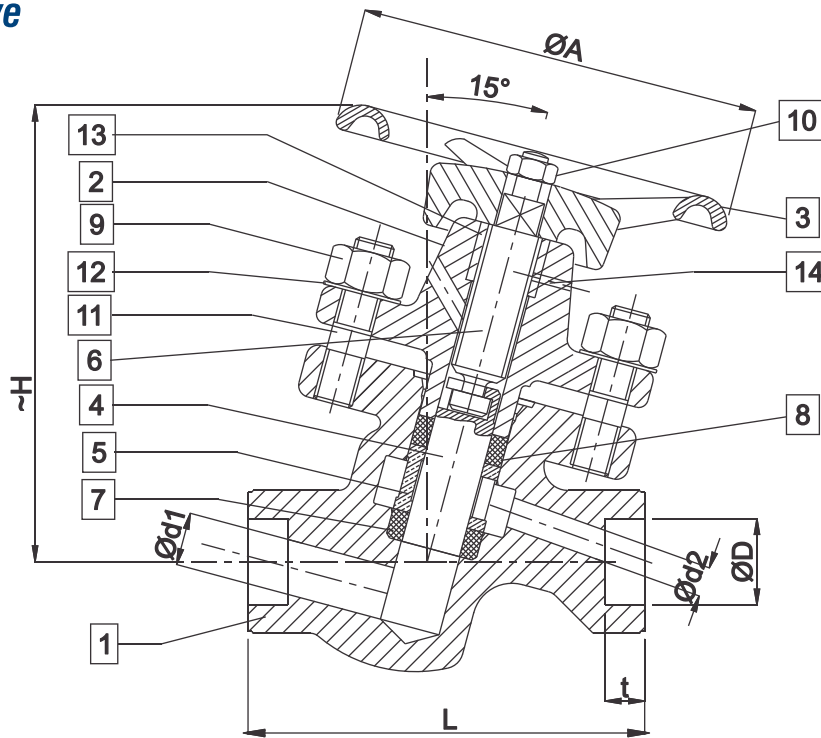
**AVAILABLE SIZES:-**

15,20,25, and 40 NB Pr Rating #800  
KVSN 50 as per PN40 Rating

**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



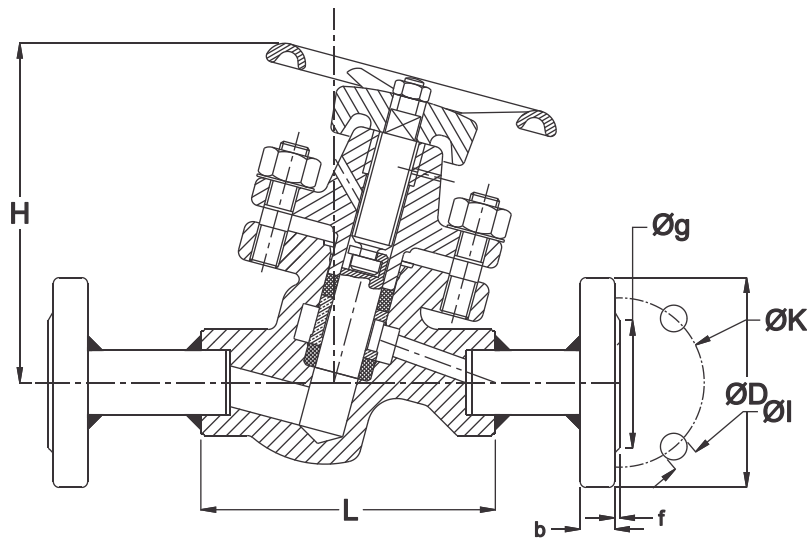
## BILL OF MATERIAL

| 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#                    | Lower Valve Ring | Klinger Std.      | KXGT                        |
| 8#                    | Upper Valve Ring | Klinger Std.      | KXGT                        |
| 9                     | Bonnet Nut       | Carbon Steel      | ASTM A 194 Gr.2H            |
| 10                    | Hand Wheel Nut   | Carbon Steel      | ASTM A 194 Gr.2H            |
| 11                    | Stud             | Alloy Steel       | ASTM B 193 Gr. B7           |
| 12                    | Bel. Washer      | Spring Steel      | 50 Cr V4                    |
| 13*                   | Threaded Bush    | Cast Iron         | GG20 / FG200                |
| 14*                   | Tension Pin      | Spring Steel      | 50 Cr V4                    |
| # Available as Spares |                  |                   |                             |

## DIMENSIONS(mm)

| Size | Class | L      | H      | ØA<br>CI / MS | ØD    | t     | Ød1   | Ød2   |
|------|-------|--------|--------|---------------|-------|-------|-------|-------|
| 15   | 800   | 110.00 | 110.00 | 100 / 106     | 21.80 | 10.00 | 11.00 | 11.00 |
| 20   | 800   | 110.00 | 110.00 | 100 / 106     | 27.20 | 13.00 | 11.00 | 11.00 |
| 25   | 800   | 135.00 | 155.00 | 140 / 146     | 33.90 | 13.00 | 19.00 | 17.00 |
| 40   | 800   | 185.00 | 215.00 | 180 / 200     | 48.80 | 13.00 | 36.50 | 24.00 |

## Forged Piston Valve USN 15-40



**DIMENSION (mm)**

| Size  | Overall Dimensions |            | Connection Dimensions (#150) |     |      |      |             |    |      |
|-------|--------------------|------------|------------------------------|-----|------|------|-------------|----|------|
|       | Length (L)         | Height (H) | ØA                           | ØD  | b    | Øg   | No of holes | ØI | ØK   |
| 15 NB | 212                | 118        | 100                          | 90  | 9.6  | 35   | 4           | 16 | 60.3 |
| 20 NB | 232                | 134        | 120                          | 100 | 11.2 | 42.9 | 4           | 16 | 69.9 |
| 25 NB | 251                | 155        | 140                          | 110 | 12.7 | 50.8 | 4           | 16 | 79.4 |
| 40 NB | 311                | 215        | 180                          | 125 | 15.9 | 73   | 4           | 16 | 98.4 |

| Size  | Overall Dimensions |            | Connection Dimensions (#150) |     |    |    |             |    |     |
|-------|--------------------|------------|------------------------------|-----|----|----|-------------|----|-----|
|       | Length (L)         | Height (H) | ØA                           | ØD  | b  | Øg | No of holes | ØI | ØK  |
| 15 NB | 226                | 118        | 100                          | 95  | 16 | 45 | 4           | 14 | 65  |
| 20 NB | 252                | 134        | 120                          | 105 | 18 | 58 | 4           | 14 | 75  |
| 25 NB | 269                | 155        | 140                          | 115 | 18 | 68 | 4           | 14 | 85  |
| 40 NB | 327                | 215        | 180                          | 150 | 18 | 88 | 4           | 14 | 110 |

| Rating   | Pmax (bar.g) | Temp °C | T max °C | Press. (bar.g) |
|----------|--------------|---------|----------|----------------|
| #150     | 13.8         | 200     | 425      | 5.5            |
| #300     | 43.8         | 200     | 425      | 28.5           |
| SW# 800  | 138.9        | Amb.    | 426.5    | 77.35          |
| BSP      | 12.25        |         | 260      |                |
| BSPT/NPT | 31.6         |         | 425      |                |

**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

## Product Range

### **UTD-55 | UTD-62 | UTD-120**

Thermodynamic steam trap

### **UTST | UCT-10**

Thermostatic steam trap & Sanitary steam trap

### **UFT-15 to 100 | UCA**

Ball Float Trap for Steam and air application

### **UG 25/45 | UP64Ti | UP215Ti**

Bi-metallic Steam Trap

### **UITVS**

Compact Trap Valve Station

### **UIBT-28US**

Inverted bucket Steam Trap in complete stainless steel construction

### **UIBT 1701 to 7004**

Inverted bucket steam trap in cast/forged steel construction

### **UDCV**

Wafer type disc check valve / NRV

### **UMS**

Moisture separator for Steam & Air

### **UAV**

Thermostatic air vent for steam with air bottle for proper venting

### **UAE**

Air eliminator for liquid application

### **UBSV**

Bellow seal gate/globe valve

### **UPHV**

High pressure (#1500/#2500) gate/globe valve

### **USTR**

Y & T type strainers in cast carbon steel and stainless steel

### **USG**

Double window sight glass

### **USI**

Steam injector for boiler feed water tank

### **UFV**

Condensate flash vessel

### **UPPPU**

Condensate pressure powered pump unit

### **UDH**

Atmospheric de-aerator head for boiler feedwater tank

### **UAPT**

Automatic pumping trap – Combination of a conventional trap & pump for proper condensate discharge for varied applications

### **UCCDS**

Online (24x7) condensate contamination detection system

### **UBBHRS**

Boiler blowdown heat recovery system

### **UHWGS**

Instant Hot water generator system

### **UPRS / UPRDS**

Pressure reducing system & de-superheating system

### **UCCM / USDM**

Steam / Condensate manifolds

### Other Products :



Cast / Forged Steel Piston Valves, Bellow seal valves, High Pressure valves (Gate/Globe), Strainers – “Y” Type, ITVS Steam Traps (Thermodynamic, Thermostatic, Ball Float Traps and IBT), Pressure Reducing Station, Condensate Recovery Products, Level Gauges (Reflex, Transparent, Bicolor), Sight Glass, Hot Water Generation System, Safety and Relief Valves.

**FSD Products :** Compressed Asbestos / Non Asbestos Fiber Sheetting / Cut Gaskets, Spiral Wound Gaskets / Gland Packing



## UNI KLINGER LIMITED

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

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

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