



LINED VALVES & ACCESSORIES





KNS - An ANTICO Venture

ANTICO with 30 Years of Experience in Moulded Corrosion Resistant Pumps for Chemical Process Industry introduces Fluoropolymer Lined Valves and Accessories under the brand, KNS.

Valves and Accessories are Lined with PFA or FEP Fluoropolymers. In line with ANTICO's design philosophy of designing products that are simple, rugged and reliable using the most appropriate material, KNS uses top quality, virgin (undyed) lining material to achieve optimum material properties.

PFA is a Copolymer of Tetrafluoroethylene and Perfluoroalkoxyethylene. PFA stands for Perfluoroalkoxy and has Temperature Resistance upto 200° Celcius.

FEP is a Copolymer of Tetrafluoroethylene and Hexafluoroethylene. FEP stands for Fluorinated Ethylene Propylene and has Temperature Resistance up to 180° Celcius.

Why PFA / FEP Lining?

In the chemical industry, both Fluoropolymers - PTFE and PFA / FEP - are used mainly in the form of linings.

For simple shapes, such as pipes, bends, T-pieces or reduction joints, PTFE is generally used. Using PTFE for lining of complicated shapes, such as valves is more difficult.

PFA / FEP, a thermoplastic material with a well-defined melting point, is processed by means of injection molding. This method enables very precise wall-thicknesses to be achieved, with tolerances of less than 0.5 mm, even at tight radii and in undercuts. Practically no mechanical finishing is needed for lined parts.

PFA / FEP properties include:

1. Chemical inertness
2. Negligible moisture resistance
3. Stress - cracking resistance
4. Wide service temperature range
5. Better sealing & wear resistance between parts -it is mouldable & machinable to close tolerances.

Lined Valves versus Alloy Valves

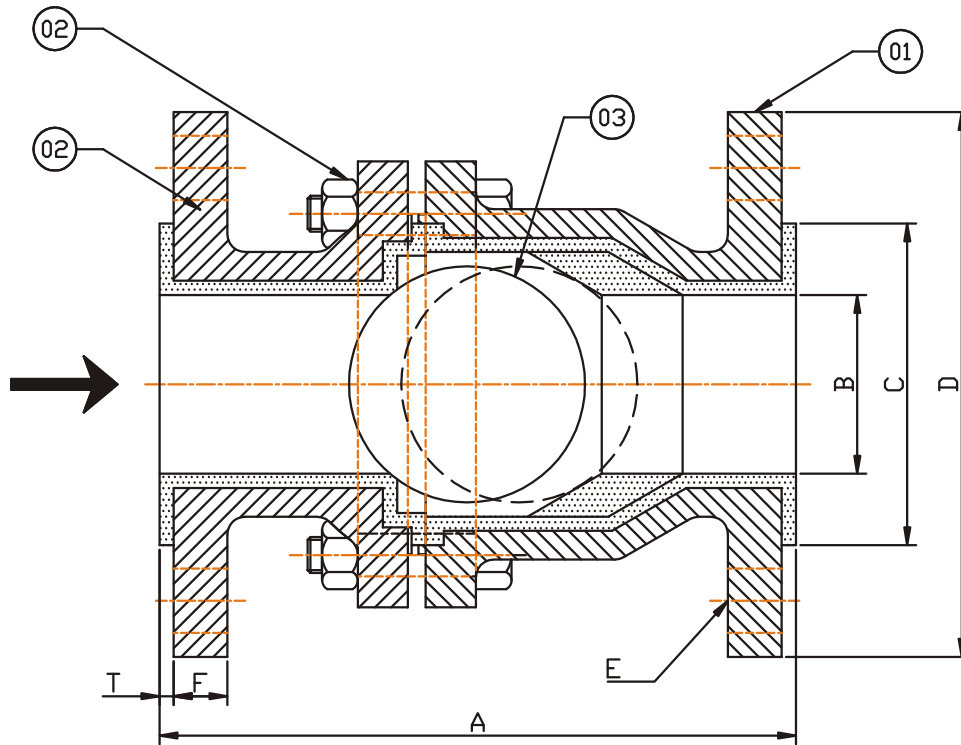
KNS lining materials are impervious to all but a few rarely encountered corrosive media.

Fluctuations in processing temperatures or chemical concentration have little or no effect on KNS lined products.

There is no use to stock & match different alloys valves for every application thus saving on valve inventory and avoiding costly installation errors.

PFA / FEP have features that make it extremely attractive as a liner for corrosive applications. In addition, PFA / FEP have been found to be better in handling some monomers such as butadiene thus permitting the use of PFA / FEP lined products on wider range of applications.

Technical Data



SIZE	A	B	C	D	E			F	G
					P.C.D.	HOLE	Nos.		
25NB	127	25	51	108	79.5	16	4	11.2	3.5
40NB	165	40	73	127	98.5	16	4	14.2	3.5
50NB	178	50	92	152	121	19	4	16	4
80NB	203	75	127	191	152	19	4	19	4
100NB	229	100	157	229	190	19	8	24	4

All Dimensions in mm

Temperature : FEP – Max: 180 °C PFA – Max: 200 °C
Flange Connection : ANSI B 16.50 Class 150
Face to Face : ANSI B 16.10
Spark Testing of PFA/FEP Lining at 15 kVA
Leak Test as per API 598

COMPONENTS	MATERIAL OF CONSTRUCTION
Body and Body End Piece	Cast Iron / Cast Steel / Stainless Steel
Body and Body End Piece Lining	PFA / FEP
Ball	PTFE
Hardware	Stainless Steel



Lined Ball Check Valves

- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked by multiple locking grooves. Ball is made of solid PTFE.
- Outer body graded cast iron as per ASTM Standard, other materials like cast steel / stainless steel available on request.
- 2 piece body design high stability rigidity eliminating potential leak path.
- Full port design minimizes pressure losses and increases flow capacities thus reducing energy and pumping costs.
- Can be installed either vertically or horizontally depending on the type of application.



Quality Assurance

KNS quality control procedures assure lining integrity, seal leak tightness & absence of external leaks. Liners are spark tested at 15 kVA and valve seats are tested as per API 598.

Deviations from Standard

KNS Lined Products are available as per the needs of applications in additional sizes and other than standard materials.

Industries Served

KNS supports an array of customer specifications with products that are easily acceptable to meet specific process requirements.

Pickling of Mild Steel / Stainless Steel

Sulphuric Acid Plants

Chlor-Alkali Plants

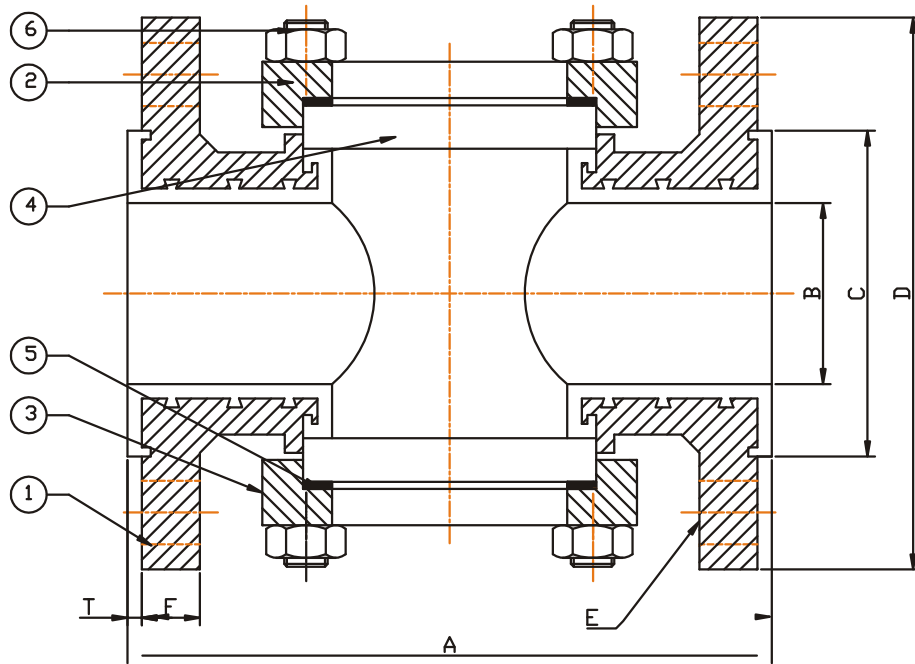
Chemicals and Fine Chemicals Processing



- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked by multiple locking grooves.
- Outer body graded cast iron as per ASTM Standard, other materials like cast steel / stainless steel available on request.
- Two piece full port standard lined ball valves which offer high stability, rigidity eliminating potential leak path.
- Full port design minimizes pressure losses and increases flow capacities thus reducing energy and pumping costs.
- Bubble tight shut off : precision machined ball and seat ensures leak free Valve.
- One-piece ball & stem : no possibility of damaging PFA/FEP Lining on ball by the stem.



Technical Data



SIZE	A	B	C	D	E			F	T
					P.C.D.	HOLE	Nos.		
25 NB	127	25	51	108	79.5	16	4	11.2	3.5
40 NB	165	40	73	127	98.5	16	4	14.2	3.5
50 NB	178	50	92	152	121	19	4	16	4
80 NB	203	75	127	191	152	19	4	19	4
100 NB	229	100	157	229	190	19	8	24	4

All Dimensions in mm

Temperature : FEP – Max : 180 °C PFA – Max : 200 °C
Flange Connection : ANSI B 16.50 Class 150
Face to Face : ANSI B 16.10 Spark Testing of PFA/FEP Lining at 15 kVA.
Leak Test as per API 598

COMPONENTS	MATERIAL OF CONSTRUCTION
Body, Top Plate and Bottom Plate	Cast Iron / Cast Steel / Stainless Steel
Body Lining	PFA / FEP
Gasket	PTFE
Indicator	Toughened and Tempered Glass
Hardware	Stainless Steel

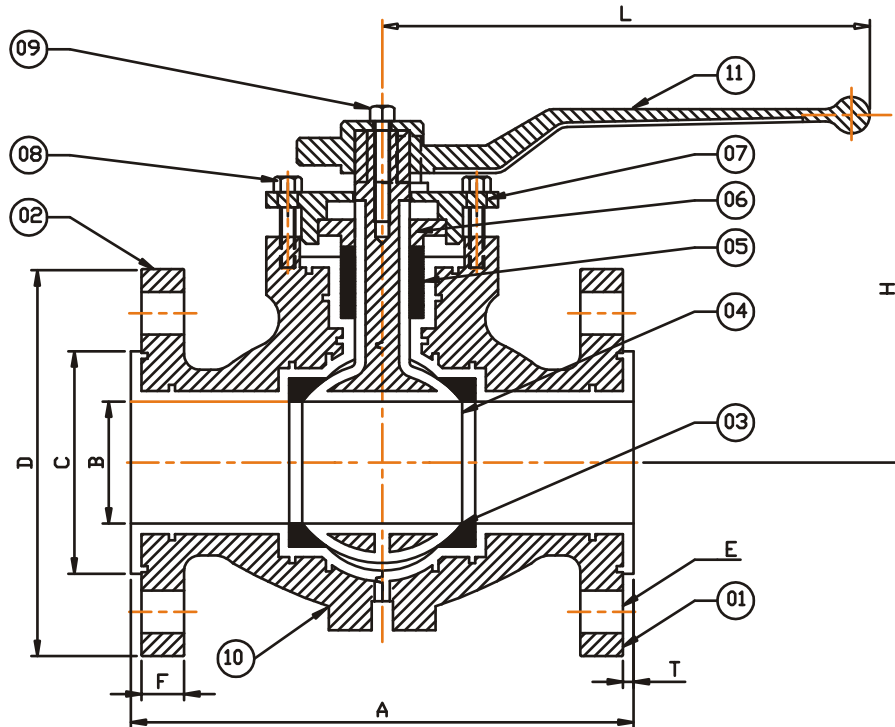


Lined Sight Glasses

- KNS Lined Sight Glasses offer clear inspection of fluid characteristics of severely corrosive liquid from either side.
- Motion flow and color can be inspected visually during the process since this indicator is equipped with two tempered and polished glass windows for ANSI Class 150 service.
- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked by multiple locking grooves.
- Full port design minimizes pressure losses and increases flow capacities thus reducing energy and pumping costs.
- Outer body graded cast iron as per ASTM standard, other materials like cast steel / stainless steel available on request.



Technical Data



Size	A	B	C	D	E			F	H	L	T	TORQUE	
					P.C.D.	HOLE	Nos.					inch-pounds	N-m
25NB	127	25	51	108	79.5	16	4	11.2	106.5	160	3.5	100	11.3
40 NB	165	40	73	127	98.5	16	4	14.2	114	160	3.5	120	13.55
50 NB	178	50	92	152	121	19	4	16	137	210	4	240	27.11
80 NB	203	75	127	191	152	19	4	19	151	210	4	690	78
100 NB	229	100	157	229	190	19	8	24	193	315	4	1100	124.3

All Dimensions in mm

TEMPERATURE : FEP – Max : 180 °C PFA – Max : 200 °C

FLANGE CONNECTION : ANSI B 16.50 Class 150

FACE TO FACE : ANSI B 16.10

Spark Testing of PFA/FEP Lining at 15 kVA.

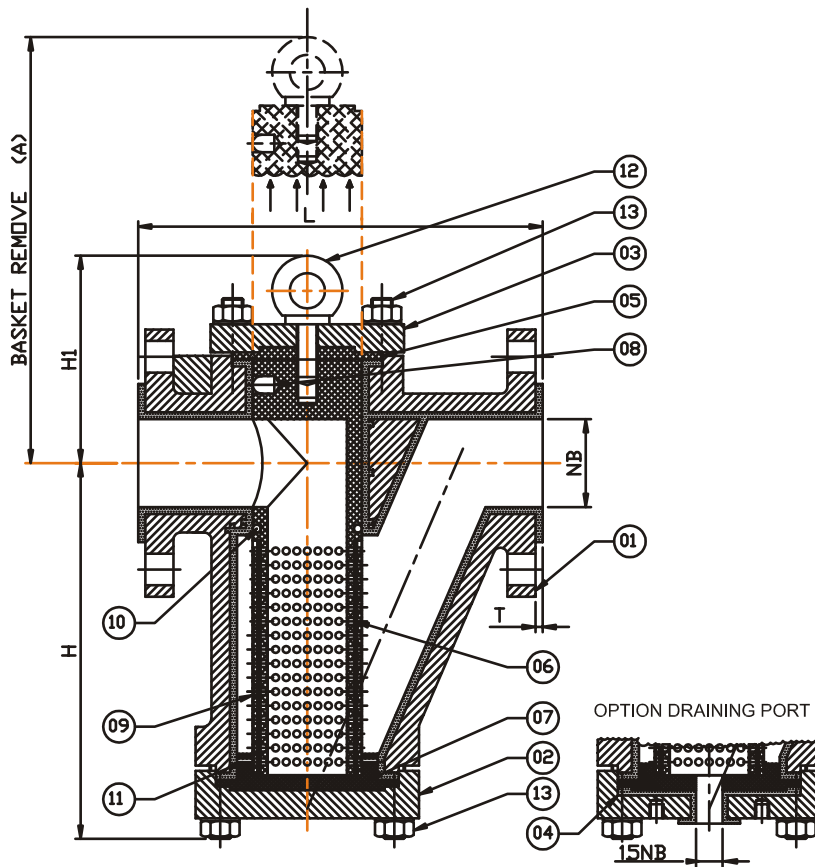
Leak Test as per API 598.

COMPONENTS	MATERIAL OF CONSTRUCTION
Body and Top Plate	Ductile Iron / Cast Steel / Stainless Steel
Ball with Stem	Cast Steel / Stainless Steel
Body and Ball with Stem Lining	PFA / FEP
Seat and Seal	PTFE
Handle	Ductile Iron
Hardware	Stainless Steel

- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked in dovetail grooves, slots and Holes in the body & plug castings. This prevents Liner collapse in vacuum conditions and blow out in high pressure conditions.
- Outer body graded cast iron as per ASTM Standard, other materials like cast steel / stainless steel available on request.
- 2 Way cavity free design prevents accumulation of particulate matter making it an ideal choice for slurry applications.
- The seal from this plug valve is created by the interface of the plug & the liner. The outside of the plug and the body cavity are at a taper of 2°. The wedge action results in a tight shut-off. Because the Seal is created because of compression it is bi-directional sealing on both upstream and downstream sides.
- Adjustment bolts on the top cover can be utilized for external adjustment of in-line seal.



Technical Data



basket for strainer

SIZE	L	H	H1	A	E			T
					P.C.D.	HOLE	Nos.	
25 NB	160	165	106	270	79.5	16	4	3.5
40 NB	200	205	120	320	98.5	16	4	3.5
50 NB	230	213	126	340	121	19	4	4
80 NB	310	314	151	460	152	19	4	4
100 NB	350	324	162	500	190	19	8	4

All Dimensions in mm

Temperature : FEP – Max : 180 °C PFA – Max : 200 °C
Flange Connection : ANSI B 16.50 Class 150 Face to Face : ANSI B 16.10
Spark Testing of PFA/FEP Lining at 15 kVA
Leak Test as per API 598

COMPONENTS	MATERIAL OF CONSTRUCTION
Body, Bottom Cover and Top Cover	Ductile Iron / Cast Steel / Stainless Steel
Basket	PTFE / FEP / PVDF
Body and Bottom Cover Lining	PFA / FEP
Hardware	Stainless Steel

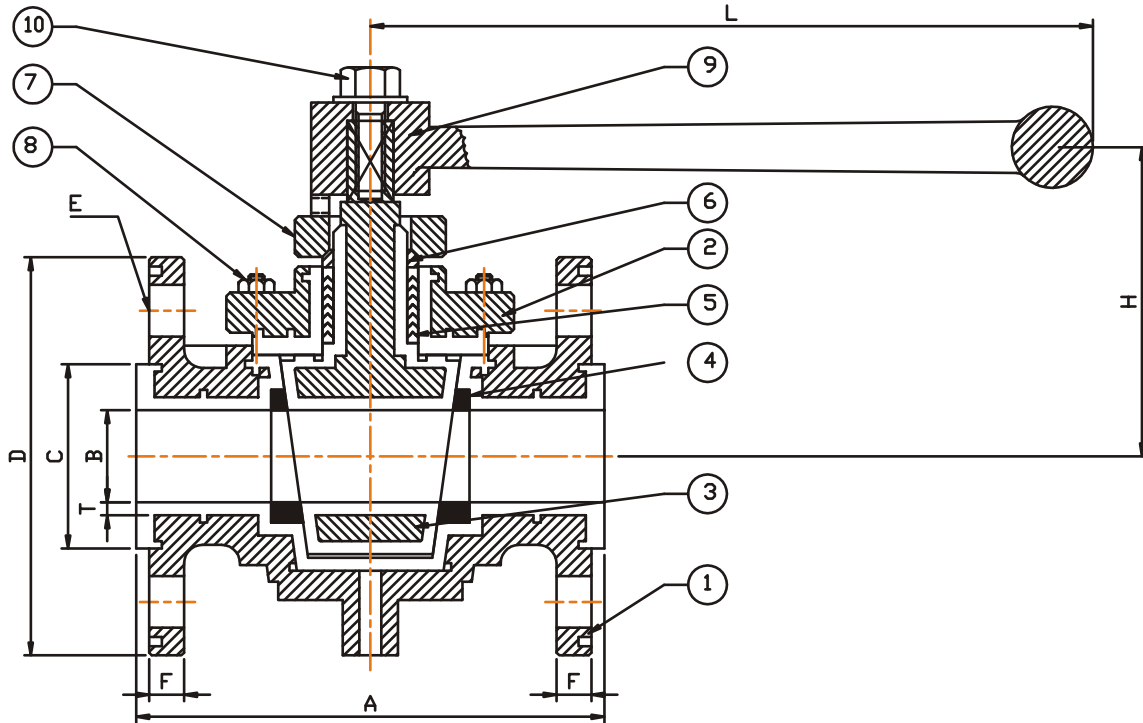


Lined Basket Strainers

- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked by multiple locking grooves.
- Outer body graded cast iron as per ASTM Standard, other materials like cast steel / stainless steel available on request.
- Strainer Basket made of PTFE / FEP / PVDF. Standard Mesh Size 0.25 mm; other sizes available on request.



Technical Data



SIZE	A	B	C	D	E			F	H	L	T
					P.C.D.	HOLE	Nos.				
25 NB	127	Ø25	Ø51	Ø108	Ø79.5	Ø16	4	11.2	84	170	3.5
40 NB	165	Ø40	Ø73	Ø127	Ø98.5	Ø16	4	14.2	107	285	3.5
50 NB	178	Ø50	Ø92	Ø152	Ø121	Ø19	4	16	117	432	4
80 NB	203	Ø75	Ø127	Ø191	Ø152	Ø19	4	19	135	584	4
100 NB	229	Ø100	Ø157	Ø229	Ø190	Ø19	8	24	158	735	4

All Dimensions in mm

TEMPERATURE : FEP – Max: 180 °C PFA – Max: 200 °C
FLANGE CONNECTION : ANSI B 16.50 Class 150
FACE TO FACE : ANSI B 16.10
Spark Testing of PFA/FEP Lining at 15 kVA
Leak Test as per API 598

COMPONENTS	MATERIAL OF CONSTRUCTION
Body, Bonnet and Gland Plate	Ductile Iron / Cast Steel / Stainless Steel
Plug	Cast Steel / Stainless Steel
Body, Bonnet and Plug Lining	PFA / FEP
Seal	PTFE
Handle	Ductile Iron
Hardware	Stainless Steel

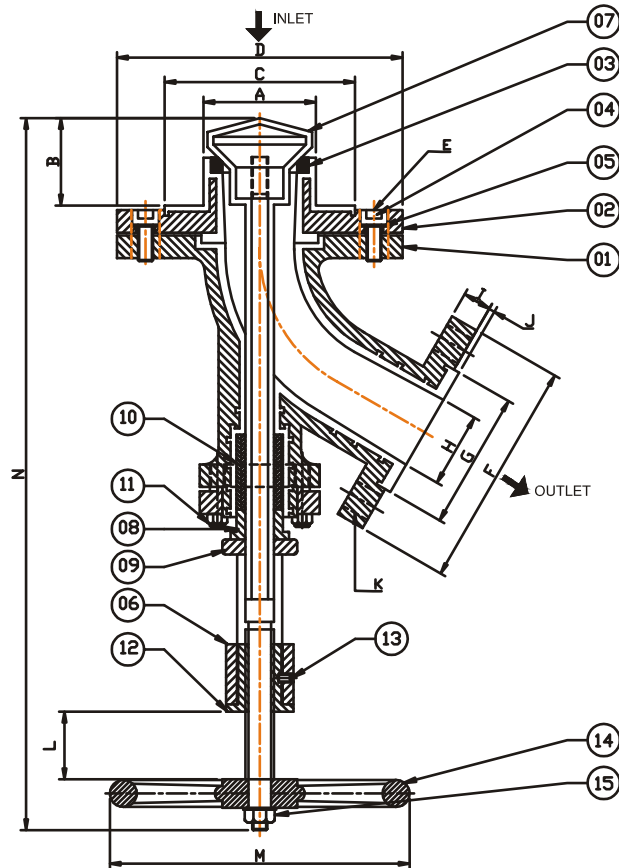


Lined Bottom Drain Valves

- PFA/FEP Lining offers highest corrosion resistance. Minimum lining thickness of 3mm, lining locked by multiple locking grooves.
- Outer body graded cast iron as per ASTM standard, other materials like cast steel / stainless Steel available on request.
- Most commonly used for Free Draining & Feeding of Vessels and Reactors.



Technical Data



SIZE IN-OUT	A	B	C	D	E*			F	G	H	I	J	K			L	M	N	#
					PCD	HOLE	Nos						PCD	HOLE	Nos.				
40x25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50x40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80x50	75	32	127	190.5	152	-	-	152	93	48	19	4	121	19	4	45	200	475	04
100x80	100	36	157	229	-	-	-	190.5	127	75	19	4	152.4	19	4	45	250	564	08
150x100	152	48	209	280	-	-	-	229	157	100	19	4	190.5	19	8	50	250	722	08

All Dimensions in mm

TEMPERATURE : FEP – Max : 180 °C PFA – Max : 200 °C

FLANGE CONNECTION : ANSI B 16.50 Class 150, other options as per Custom Requirements.

Spark Testing of PFA/FEP Lining at 15 kVA.

Leak Test as per API 598.

COMPONENTS	MATERIAL OF CONSTRUCTION
Body, Top Plate and Bonnet	Ductile Iron / Cast Steel / Stainless Steel
Plug with Stem	Carbon Steel / Stainless Steel
Body, Top Plate and Plug with Stem Lining	PFA / FEP
Seal	PTFE
Hand Wheel	Ductile Iron
Hardware	Stainless Steel

KNS Lined Products Pvt Ltd - extending boundaries, limitless possibilities.



KIRIT N. SHAH
(B.E. Mech. / Elec.)
F o u n d e r
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The continual optimising of materials and the search for the latest technical pump solutions for chemical processing applications have formed the basis of Antico story for the last 4 decades. KNS Lined Products Pvt Ltd is another chapter of the story so far. The introduction of PFA / FEP Lined Valves and Accessories only complement Antico Product Range and further bolsters Antico's commitment to serve the chemical process industry.

KNS Lined Products are hereby dedicated to the founder, Kirit N. Shah.



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