

LINED PLUG VALVES



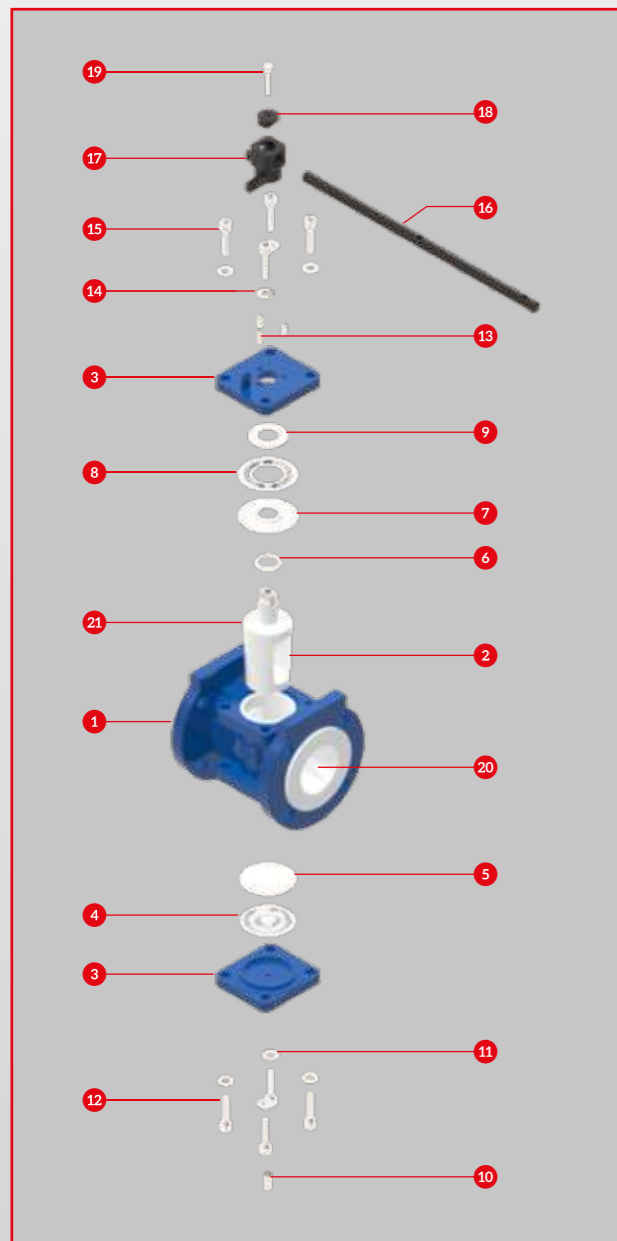
VALVE SOLUTION
for Corrosive Applications

AUDCO ITALIANA
Your Valve Specialist

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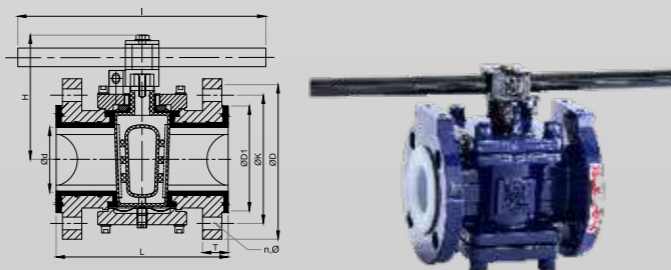
PLUG VALVES - FOR CORROSIVE APPLICATIONS

LINED PLUG VALVE LEVEL OPERATED



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTMA 216 GR. WCB / CFB / CF8M	1
2	Plug	ASTM A 890 GR. 4A (CD3MN)	1
3	Cover Plates	ASTMA 216 GR. WCB / CFB / CF8M	2
4	Shim Bottom	SS 304/ SS 316	1
5	Diaphragm Bottom	PTFE/TFM	1
6	Wedge Ring	PTFE/TFM	1
7	Diaphragm Top	PTFE/TFM	1
8	Shim Top	SS 304/ SS 316	1
9	Thrust Collar	SS 304 / SS 316	1
10	Grub Screw Bottom	SS 304	1
11	Allen Bolt Washer Bottom	STEEL / SS 304	4
12	Allen Bolt Bottom	ASTM A 193 GR. B7 / SS 304	4
13	Grub Screw Top	SS 304	3
14	Allen Bolt Washer Top	STEEL / SS 304	4
15	Allen Bolt Top	ASTM A 193 GR. B7 / SS 304	4
16	Lever	MS	1
17	Lever Holding Block	ASTM A 216 GR. WCB	1
18	Lever Locating Washer	MS GALVANISED	1
19	Lever Holding Bolt	S5 304	1
20	Body Lining Material	PFA	-
21	Plug Lining Material	TEFCOR / TFM / GTEFCOR / CERCOR	-

SECTIONAL VIEW

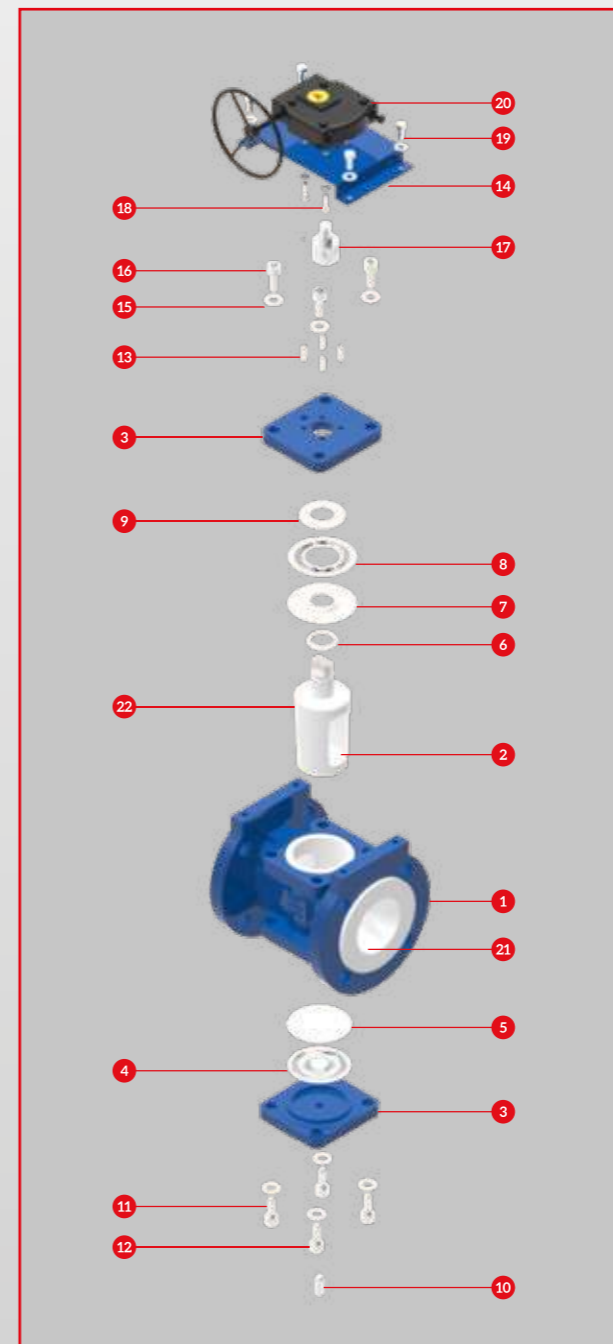


DIMENSIONS

SIZE INCH	L ± .11		ØD ± .04		ØD1 ± 0.04		Ød ± 0.04		T+0.11/-0.00		H ± 0.19		ØK ± 0.062		l ± 0.19		n	Ø	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
0.5	4.25	108	3.5	8	1.37	35	0.60	15	0.51	13	3.46	88	2.36	60	8.85	225	04	5/8	16
1	5.00	127	4.25	108	2.00	51	0.98	25	0.62	16	4.17	106	3.11	79	12.79	325	04	5/8	16
1.5	6.49	165	5.00	127	2.87	73	1.57	40	0.74	19	4.29	109	3.86	98	17.71	450	04	3/4	19
2	7.00	178	5.98	152	3.62	92	1.96	50	0.80	20.5	5.47	139	4.76	111	17.71	450	04	3/4	19
3	7.99	203	7.48	190	5.00	127	2.99	76	0.98	25	5.78	147	5.98	152	17.71	450	04	3/4	19
4	9.01	229	9.01	229	6.18	157	3.93	100	0.98	25	6.92	176	7.52	191	29.52	750	08	7/8	19

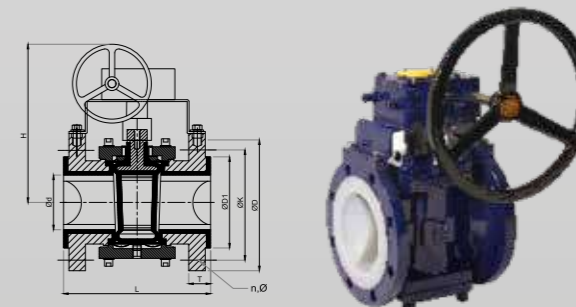
All Dimensions are in Inches & mm unless otherwise specified. Tolerances are given in Inches.

LINED PLUG VALVE GEAR OPERATED



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / CFB / CF8M	1
2	Plug	ASTM A 890 GR. 4A (CD3MN)	1
3	Cover Plates	ASTMA 216 GR. WCB / CFB / CF8M	2
4	Shim Bottom	SS 304/ SS 316	1
5	Diaphragm Bottom	PTFE/TFM	1
6	Wedge Ring	PTFE/TFM	1
7	Diaphragm Top	PTFE /TFM	1
8	Shim Top	SS 304/ SS 316	1
9	Thrust Collar	SS 304 / SS 316	1
10	Grub Screw Bottom	SS 304	1
11	Allen Bolt Washer Bottom	STEEL / SS 304	4/8
12	Allen Bolt Bottom	ASTM A 193 GR. B7 / SS 304	4/8
13	Grub Screw Top	SS 304	3
14	Gear Box Mounting Bracket	SS 304	1
15	Allen Bolt Washer Top	STEEL/SS 304	4/8
16	Allen Bolt Top	ASTM A 193 GR. B7 / SS 304	4/8
17	Coupler	SS 304	1
18	Gear Box Mounting Bolts	HT129	4
19	Bracket Mounting Bolts	HT129	4
20	Gear Box	CAST IRON	1
21	Body Lining Material	PFA	-
22	Plug Lining Material	TEFCOR / TFM / GTEFCOR / CERCOR	-

SECTIONAL VIEW



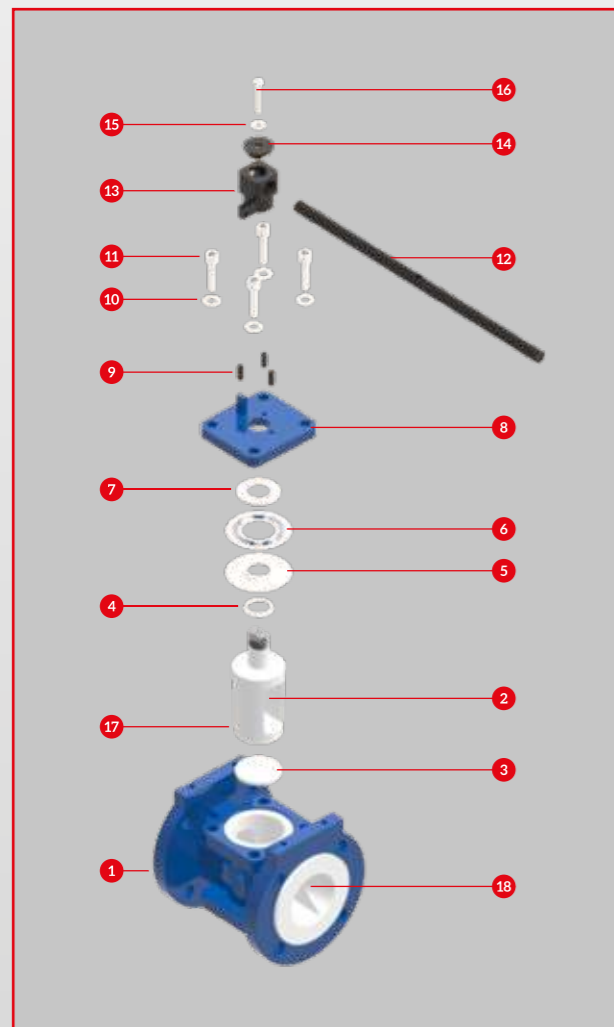
DIMENSIONS

SIZE INCH	L ± .11		ØD ± .04		ØD1 ± 0.04		Ød ± 0.04		T+0.11/-0.00		H ± 0.19		PDC ± 0.062		n	HOLE DIA.	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
6	10.51	267	11.00	280	8.50	216	5.90	150	1.10	28	16.14	410	9.48	241	08	7/8	22
8	11.69	297	13.50	343	10.55	268	7.60	194	1.18	30	18.30	465	11.73	298	08	7/8	22

All Dimensions are in Inches & mm unless otherwise specified. Tolerances are given in Inches.

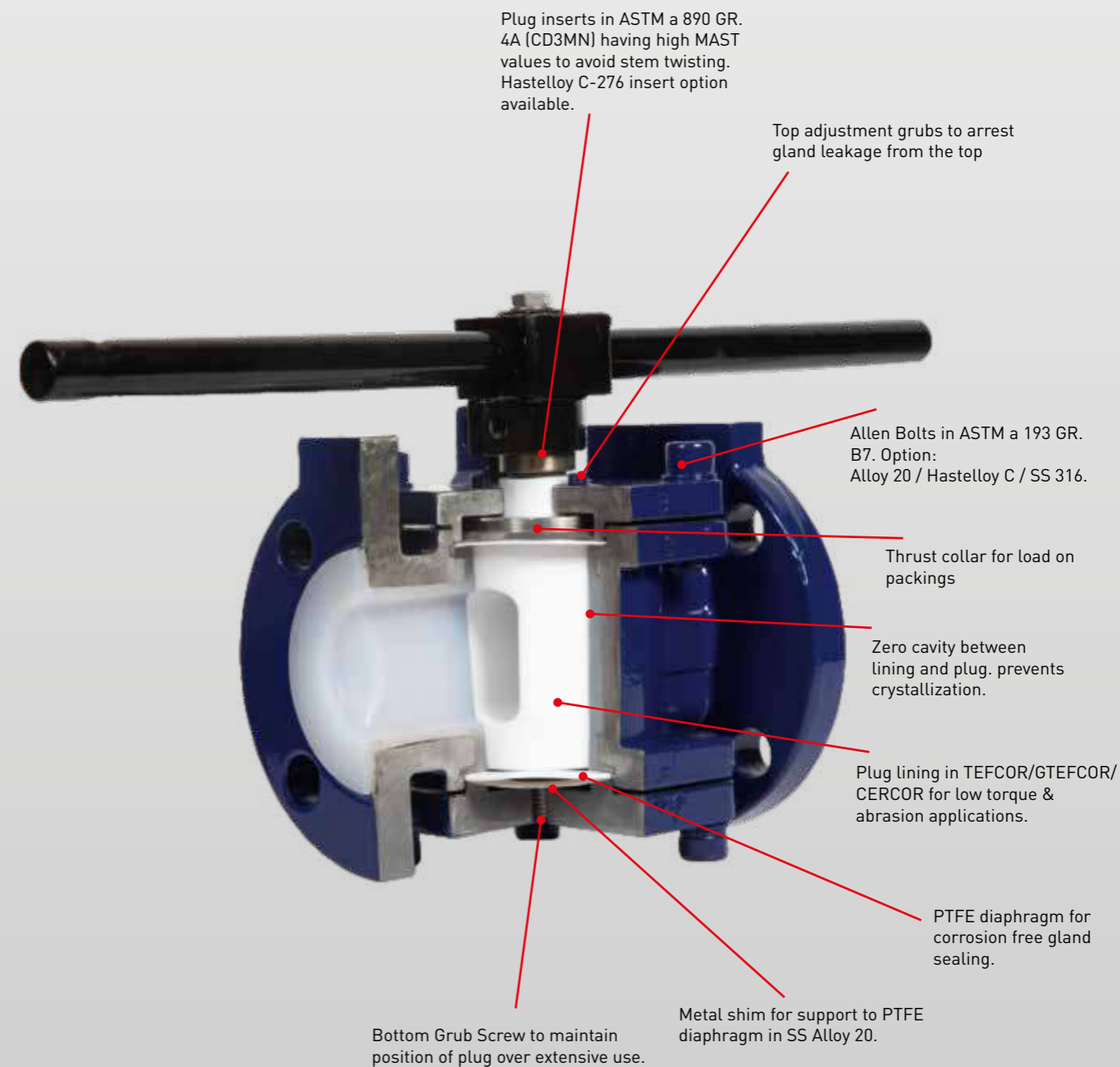
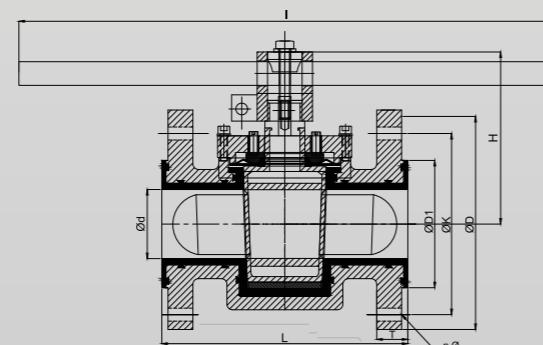
BOTTOM SEALED PLUG VALVE LEVER OPERATED

PLUG VALVE FEATURES



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB /SS304/SS316	1
2	Py	ASTM A 890 GR 4A (CD-3MN) /CF8 / CF8M	1
3	Bearing Washer	PTFE	1
4	WedgeRing	PTFE	1
5	Diaphragm	PTFE	1
6	Shim	SS 304	1
7	Thrust collar	SS 304	1
8	Cover Plate	ASTM A 216 GR WB / SS 304 /55 316	1
9	Grub Screw	SS 304	3
10	Allen Bolt Spring Washer	87 /55 304/55 316	4
11	AllenBol	ASTM A 193 GR. B7	4
12	lever	MS	1
13	Lever Holding Block	ASTM A 216 GR. WCB	1
14	Lever Locating Washer	MS GALVANISED	1
15	Lever Holding Bolt Washer	SS 304	1
16	Lever Holding Bolt	SS 304	1
17	Plug Lining Material	TEFCOR / TFM / GTEFCOR / CERCOR	-
18	Body Lining Material	PFA	-

SECTIONAL VIEW



DIMENSIONS

SIZE	L ± .11		ØD ± .04		ØD1 ± 0.04		Ød ± 0.04		T+0.11/-0.00		H ± 0.19		ØK ± 0.062		l ± 0.19		n	Ø	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
1	5.00	127	4.25	108	2.00	51	0.98	25	0.62	16	4.17	106	3.11	79	12.79	325	04	5/8	16
15	6.49	165	5.00	127	2.87	73	1.57	40	0.74	19	4.29	109	3.86	98	17.71	450	04	5/8	16
2	7.00	178	5.98	152	3.62	92	1.96	50	0.80	20.5	5.47	125	4.76	121	17.71	450	04	3/4	19
3	7.99	203	7.48	190	5.00	127	2.99	76	0.98	25	5.78	147	5.98	152	17.71	450	04	3/4	19
4	9.01	229	9.01	229	6.18	157	3.93	100	0.98	25	6.92	176	7.52	191	29.52	750	08	3/4	19

All Dimensions are in Inches & mm unless otherwise specified. Tolerances are given in Inches.

TORQUE & Cv VALUES

SIZE	TORQUE IN Nm		STANDARD		Cv
	PFA PLUG	TEFCOR PLUG	PFA PLUG	TEFCOR PLUG	
0.5"	25	-	221	-	15
1"	35	-	310	-	41
1.5"	50	30	443	266	91
2"	75	40	664	354	169
3"	140	50	1239	443	297
4"	235	100	2080	885	539
6"	525	238	4646	2100	1123
8"	940	-	8319	-	1591

VALVE NET WEIGHTS

SIZE	WEIGH	
	kg	lb
0.5"	4.10	9.0
1"	5.20	11.4
1.5"	8.00	17.6
2"	12.30	27.0
3"	19.50	42.9
4"	31.00	68.2
6"	58.00	127.6
8"	80.00	176.0

PRODUCT DESIGN AND TESTS PERFORMED

DESIGN PARAMETERS	STANDARD
DESIGN STD	BS EN 17292
SHELL DESIGN	ANSI B 16.34
FLANGE CONNECTION RATING	ANSI B 16.5, 150#/ DIN PN 10 / JIS
TESTING STANDARD	API 598 / BS EN 122661
CONNECTION	FLANGED, RF

TEST PERFORMED	API 598	API 598
SIZES	0.5" TO 4"	6" TO 12"
HIGH PR. SHELL TEST HYDRO	420 PSI	225 PSI
HIGH PR. SEAT TEST HIDRO	270 PSI	165 PSI
KOW PR. SEAT PNEUMATIC	105 PSI	75 PSI

SPARK TEST	KVDC
SPARK TEST	20 KVDC

VALVE CV & TORQUE VALUES

SIZE	Cv FULL PORT	Cv RED. PORT	TORQUE NM FULL PORT	TORQUE NM REDUCED PORT	TORQUE INCH-LBS FULL PORT	TORQUE INCH-LBS REDUCED PORT
0.5"	15	-	10	-	88	-
0.75"	25	-	12	-	106	-
1"	50	39	12	10	106	88
1.5"	185	50	20	18	177	159
2"	320	191	25	22	221	195
3"	805	330	40	35	354	310
4"	1600	790	65	50	575	443
6"	4500	-	180	-	1593	-
8"	8300	-	280	-	2478	-
10"	11725	-	350	-	3098	-
12"	18100	-	500	-	4425	-

PRODUCT DESIGN AND TESTS PERFORMED

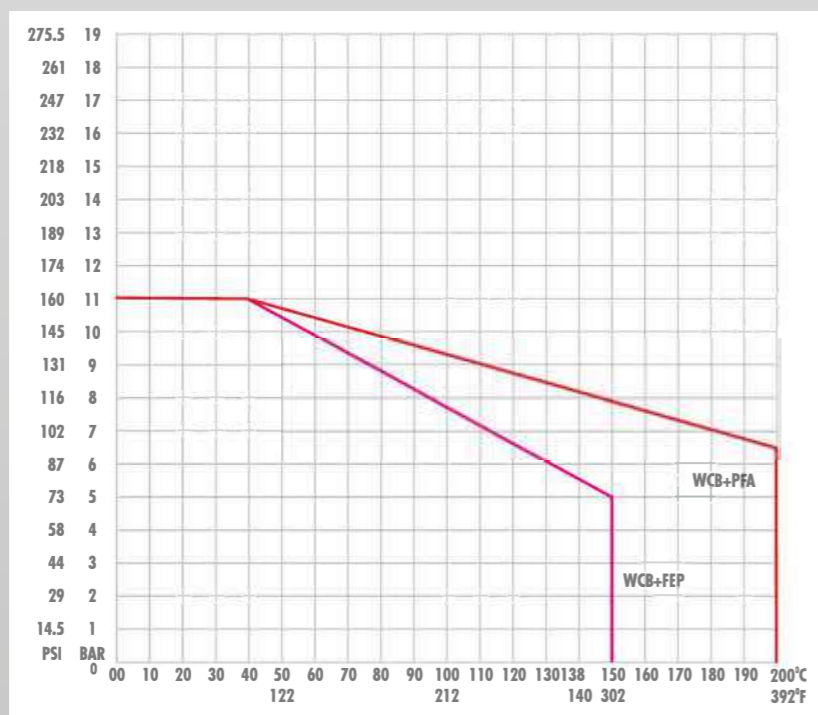
DESIGN PARAMETERS	STANDARD
VALVE DESIGN	API 599
SHELL DESIGN	ANSI B 16.34
FACE TO FACE	ANSI B 16.10
FLANGE CONNECTION RATING	ANSI B 16.5,150#,300#/ DIN PN10 /JIS
TESTING STANDARD	API 598 / BS EN 12266-1
CONNECTION	FLANGED, RF

TESTS PERFORMED	SIZES	
	0.5" TO 4"	6" TO 8"
HIGH PR. SHELL TEST HYDRO	225 PSI 15 kg/cm2	225 PSI 15 kg/cm2
HIGH PR. SHELL TEST HYDRO	165 PSI 11 kg/cm2	165 PSI 11 kg/cm2
LOW PR. SHELL PNEUMATIC	85 PSI 6 kg/cm2	85 PSI 6 kg/cm2

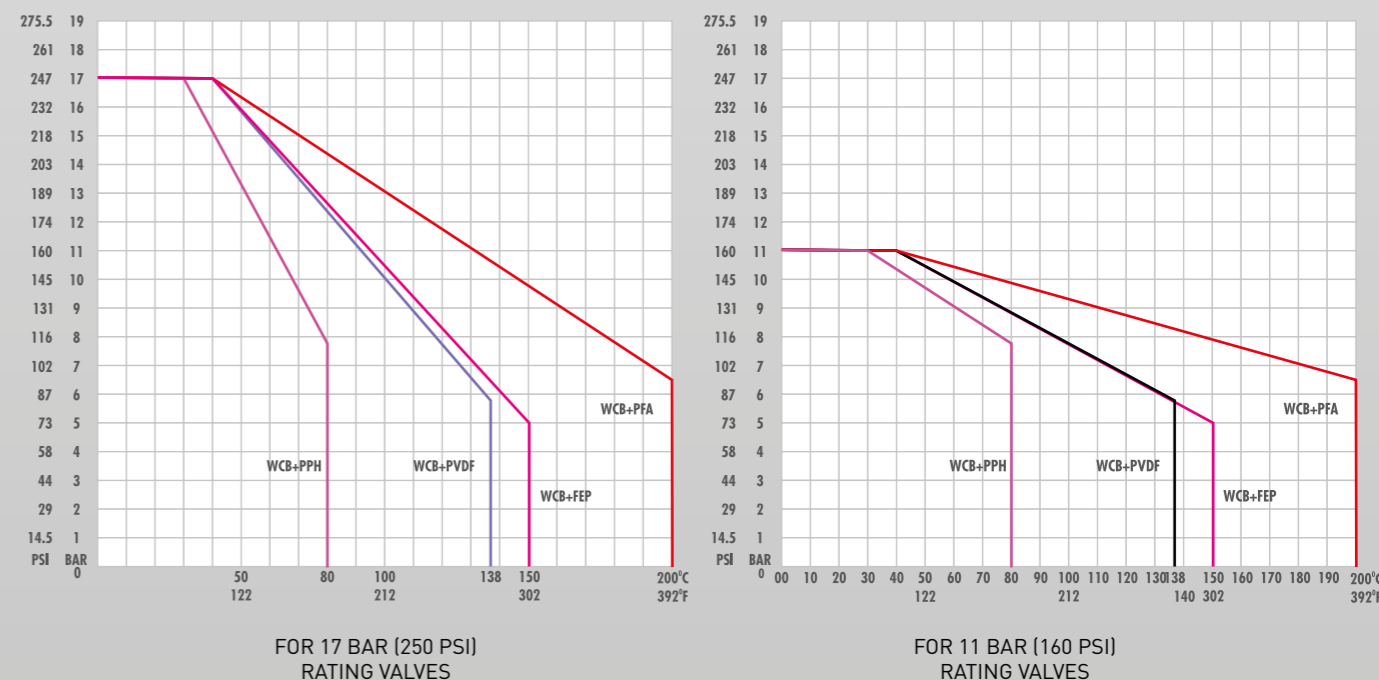
SPARK TEST	KVDC
SPARK TEST	20 KDVC

TYPE	SIZE	STANDARD FOR END TO END DIM
FULL PORT SIDE SPLIT	1" - 6"	ANSI B 16.1 SHORT PATTERN
FULL PORT CENTRESPLIT	8" - 12"	ANSI B 16.1 LONG PATTERN
FULL PORT SIDESPLIT	1/2" & 3/4"	DIN EN 558 SERIES - 1
FULL PORT SIDE SPLIT	1/2" - 6"	DIN EN 558 SERIES- 1

PRESSURE - TEMPERATURE GRAPH



PRESSURE - TEMPERATURE GRAPH



CODES USED

TYPE OF VALVE	CODE
PLUG VALVE	PLGV

BODY MOC	CODE
ASTM A 216 GR. WCB	C1
ASTM A 351 GR. CF8	C2
ASTM A 351 GR. CF8M	C3
ALLOY 20	C4
ASTM A 890 GR. 4A (CD3MN)	C5
HASTELLOY C 276/22	C6

TRIM INSERT MOC	CODE
ALLOY 20	T4
ASTM A 890 GR. 4A (CD3MN)	T5
ASTM A 665 GR. 5A (CE3MN)	T6
HASTELLOY C 276/22	TH

FASTENERS	CODE
SS 304	F2
SS 316	F3
HIGH TENSILE	F4
ASTM A 193 GR. B7	F5

OPERATION	CODE
LEVER	L
GEAR	G
BARE-STEM	B

LOCKING	CODE
PROVIDED	Y
NOT PROVIDED	N

LINING MATERIAL	CODE
PFA	L1
FEP	L2
ANTISTATIC PFA	L7

PLUG LINING MATERIAL	CODE
PFA	P1
FEP	P2
TEFCOR	P3
GTEFCOR	P4
TFMCOR	P5
CERCOR	P6
ANTISTATIC PFA	P7

SEAT	CODE
NOT APPLICABLE	XX

SIZE							
0.5"	1"	1.5"	2"	3"	4"	6"	8"
CODE							
0H	01	1H	02	03	04	06	08

HOW TO READ CODE

CODE	CODE	
VALVE TYPE	PLUG VALVE	PLGV
BODY	ASTM A 216 GR. WCB	C1
TRIM INSERT	DUPLEX	T5
BODY LINING	PFA	LT
PLUG LINING	TEFCOR	P3
SEAT	NA	XX
FASTENERS	ASTM A 193 GR. B7	F5
OPERATION	LEVER	L
LOCKING	PROVIDED	Y
SIZE	2"	02

PLUG LINING & TYPE OPTIONS



RESIN	RESIN STANDARD	SPECIFIC GRAVITY	WATER ABSORPTION (%)	HARDNESS ROCKWELL (R)	TENSILE STRENGTH YIELD PSI	IMPACT STRENGTH NOTCHED FT. LB/IN	ELONGATION AT BREAK (%)	HDT °C	INJECTION MOULDING TEMP. °C	MAX WORKING TEMP. °C
PVDF	ASTM D 3222	1.77 - 1.78	0.03	76-80	7000	2.0 - 4.0	50-250	168	200-300	-40 TO +140
ETFE	ASTM D 3159	1.70	0.007	75	6700	2.0	300	176	310-330	-100 TO +160
FEP	ASTM D 2116	2.15	0.004	60	3400	2.9	325	260	250-370	205
PFA	ASTM D 3307	2.15	<0.03	72	3600	1.2	300	305	350-370	260

TEFLON FEP "PER FLUORO (ETHYKENE PROPYLENE) COPOLYMER"

- Fep is a fluorocarbon resin having very strong interatomic bonds between Carbon & Fluorine atoms.
- It has very high molecular weigh or long molecular chain lenght compared to other polymers.
- FEP can be used for continuos service temperature upto an elevated temèeratures as high as 205 °C (400 °F).
- This fluorocarbon is resistant to all chemicals aggressive and hazardous in nature.
- Absorption rate this fluorocarbon is as lower as 0.004%, hence awelling is avoided, and permeation is negligible.

PFA (PER FLUORO ALKOXY)

- PFA is also Fluorocarbon resin with all other properties same as FEP but can be used for continuis service temperature up to an elevated temperature as high as 260 °C (500 °F).

ETHYLENE TETRA FLUORO ETHYLENE (ETFE)

- It has very high temperature resistance from -100 C to +160 °C
- It is resistant to a wide variety of corrosive chemicals and organic solvents, including strong acids and strong bases. No known solvent dissolves or stress cracks the polymer at temperature up to 121°C
- It possesses excellent mechanical properties over a wide temperature from cryogenic temperature to 204 °C. It has nylon like durability and provides excellent impact resistance at ambient and subambient temperatures.
- It is a fluoropolymer which is mouldable and weldable with an ordinary thermoplastic welding equipment.

POLYVINYLIDENE FLUORIDE (PVDF)

PVDF is an engineering fluoropolymer, the grade containing no additives has remarkable properties. The most important of which are :

- Exceptional outdoor weather resistance, due to its transparency and total inertness to ultra-violet light.
- Excellent resistance to most of the chemicals.
- Remarkable thermal stability under operating and processing application temperatures. It does not darken when subjected to heat.
- Good abrasion resistance, enabling it to be used with slurries.
- Very low creep.
- High mechanical strength.
- The crystalline content of PVDF was chosen in order to obtain excellent properties, such as low permeability to gases & fluids as well as low swelling in certain solvents, while retaining a high impact resistance, good stress cracking resistance and a very high dimensional stability.
- PVDF may be used over wide temperatures from -40 °C to +140 °C. It is non-flammable and may be used for contact with foodstuffs.

QUALITY ASSURANCE PLAN

SR. NO	ITEMS	PARAMETERS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOC. & ACCEPTANCE CRITERIA	FORMAT OR RECORD	AGENCY (P)	AGENCY (W)	AGENCY (R)
1	RAW MATERIAL								
	A) NON METALIC PARTS (Fluoro Polymers & Fluoro Carbons)	Intactness Grade Confirmation Physical Verification	Visual	100%	PO. Specificaion & Product Data Sheets	TC	1 1 1	1 1 1	
	B) Casting ,Other Metallic Parts & Fasteners	Chemical Properties	Chemical Analysis	Sample/Batch	Lob.Test ACertYificat e Manufactures TC	TC			2
2	INPROCESS								
	VALVE BODY, PLUG, COVER PLATES & OTHER PARTS	POROCITY CHECK, PHYSICAL VERIFICATION DIMENSIONS	Spark Test Visual, Mearsurement	100%	Standard Moulding Documents/Mfy. Drawings	IR	1	1	
	FINISHED PRODUCTS	-	280		-		2478		-
	VALVES	Leckoge Test (Body & Seat) Lining Intactness Dimension, Workmanship	Hydro Test Spark Test Measurment, Visual	100% 100% 100%	Standord Test Procedure/Apord. Data Sheet/Drq. Apprd. Drq. Apprd. Assembly- Draving	IR	1 1 1	2(10%) 2(10%) 20(10%)	

LEGENDS P: PERFORM | W : WITNESS | R:REVIEW | 1. AI - AUDCO ITALIANA | 2. CLIE/ NATGE NT

CERTIFICATION



APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED SIDE SPLIT FULL PORT BALL VALVES
Size Range : 1/2" to 8"

APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED PLUG VALVES
Size Range : 1/2" to 8"

APPROVED
ISO 15848-1
FUGITIVE EMISSION CERTIFICATION
PFA LINED BUTTERFLY VALVE
Size Range : 2" to 24"

APPROVED
DIN EN 14432:2014
PFA LINED BUTTERFLY VALVES
Size Range : 2" to 8"

APPROVED
DIN EN 14432:2014
PFA LINED SIDE SPLIT DESIGN BALL VALVES
Size Range : 1" to 4"

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