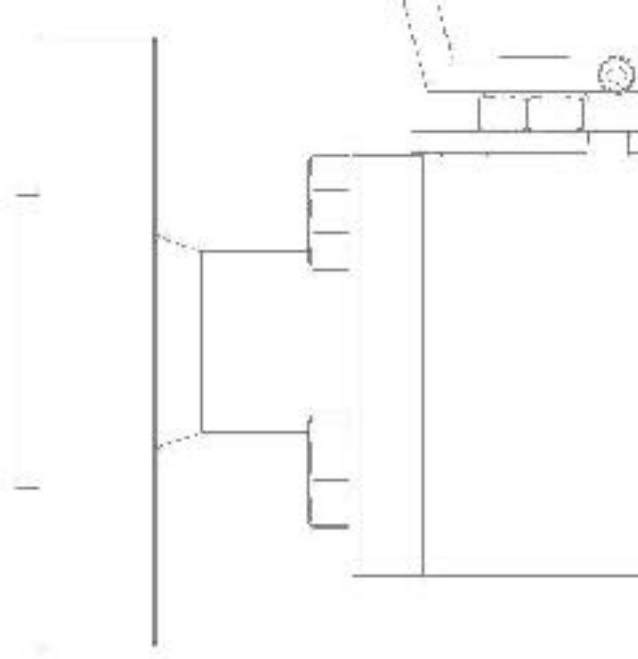
Cleveland
INDUSTRIAL VALVES







- Gate Valve
- Check Valve
- Ball Valve
- Butterfly Valve
- Globe Valve
- Strainers

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INDUSTRIAL VALVES

71-75 Concvent Garden, Shelton Street,
London, WC2H 9 JQ
England
Tel: +44 20 398 45 352
www.civ-uk.com
info@civ-uk.com

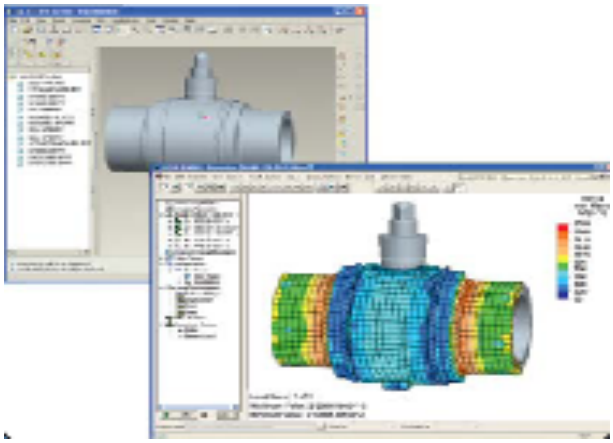
Cleveland
INDUSTRIAL VALVES

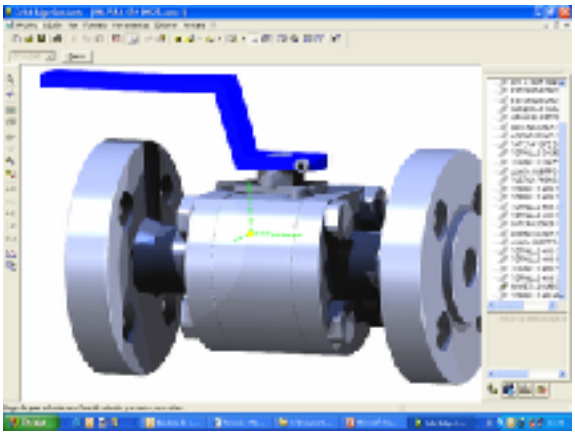
Design, Engineering Solutions & Manufacturing

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INDUSTRIAL VALVES

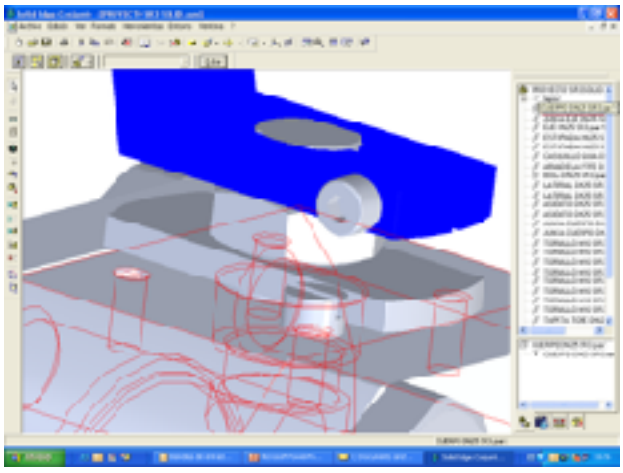


I+D





CIV uses the most modern CAD/CAM system, structural formulas and complete testing methods for researching,desining, and developing the most reliable and performing products.



Cleveland
INDUSTRIAL VALVES



MANUFACTURE





All the valves are manufactured by CNC machine-tool , with high precision and flexibility .







Cleveland
INDUSTRIAL VALVES



QUALITY CONTROL



Production Control

In CIV we are presently seeking new technologies concerning both quality and productive processes, To make our products every day better.

I+D



Cleveland
INDUSTRIAL VALVES

Certificates















Certificate of Authority to use the Official API Monogram

License Number: 6D-0746 **ORIGINAL**

The American Petroleum Institute hereby grants to

CLEVELAND INDUSTRIAL VALVES LTD.
Stainthes, Saltburn, Cleveland, TS13 5BB
United Kingdom

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API Spec 6D** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **6D-0746**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following products: Gate Valves, Ball Valves

Class Exclusions: No Exclusions Identified as Applicable

American Petroleum Institute

Director of Certification Programs

Effective Date: JULY 16, 2007
Expiration Date: JULY 16, 2010

American Petroleum Institute

American Petroleum Institute

CERTIFIED SEAL

Cleveland
INDUSTRIAL VALVES

Ball valves	Chapter 1
Gate valves	Chapter 2
Butterfly valves	Chapter 3
Check Valves	Chapter 4
Globe Valves	Chapter 5
Strainers	Chapter 6
Forged Steel Valves	Chapter 7
Gear Box	Chapter 8
Electric Actuator	Chapter 9
Pneumatic Actuator	Chapter 10

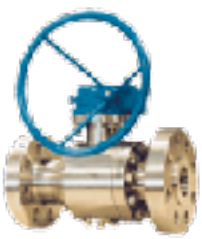
Cleveland
INDUSTRIAL VALVES



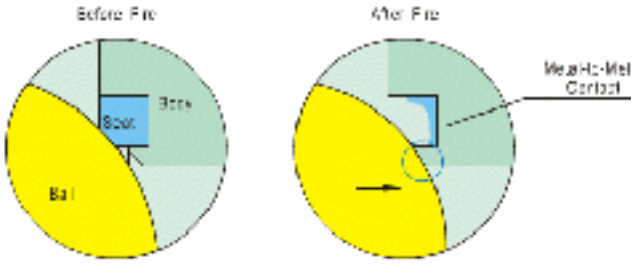
BALL VALVES









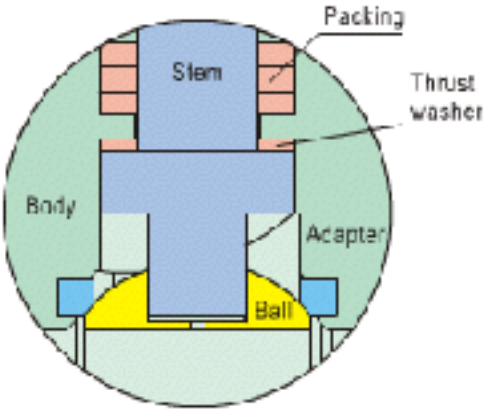


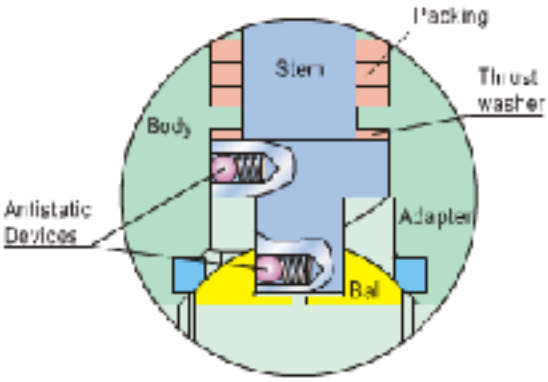
Fire Safe Seat Sealing

CIV floating ball valves' fire safe is designed in accordance with API 607 & API SPEC 6FA. When non-metal resilient seats are destroyed in a fire, the upstream medium pressure push the ball into the downstream metal seat lip to cut off the line fluid and prevent the internal leakage due to a secondary metal-to-metal seals

Blow-out Proof Stem

The stem is designed with integral T-type shoulder to provide blow-out proof effectively. It is internally inserted as the backseat function to assure stem sealing safety at all pressures.





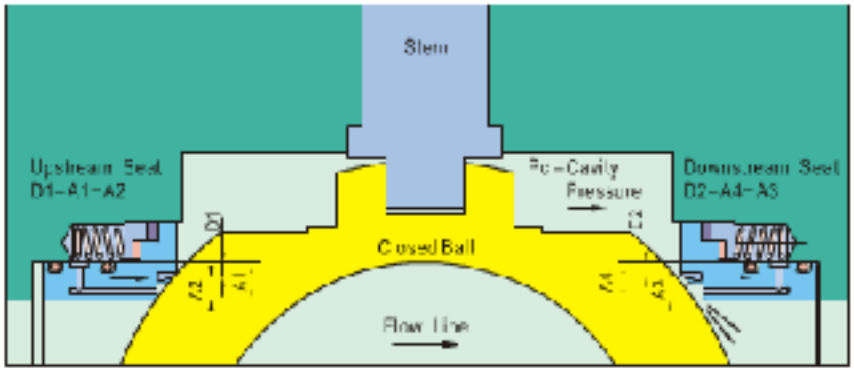
Anti-Static Device

Antistatic devices between ball & stem and stem & body are assembled by a spring & a stainless steel ball, which ensure all metal valve parts are grounding

Cleveland
INDUSTRIAL VALVES

Design Feature

Trunnion mounted Ball Valves



Seat Sealing Feature

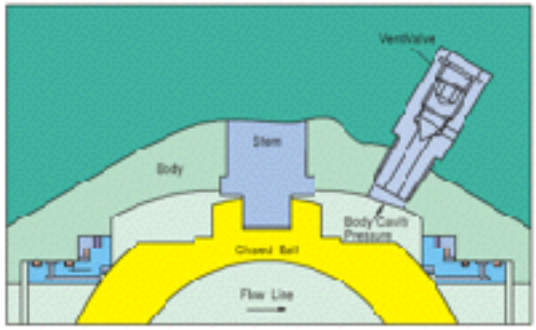
a) Upstream seat: The seats can be moved slightly along the valve axis, Upstream line pressure acting on the seat area (A1) does not equalize against on the seat area (A2).The differential force in the area (D1) pushes the seat tightly against the ball surface resulting in a tight effective seal. (Fig.1)
b) Downstream seat: When the body cavity pressure is lower than the downstream pressure, the net pressure difference acting over area (D2), pushes the downstream seat tightly against the ball surface creating a positive seal. (Fig.1)

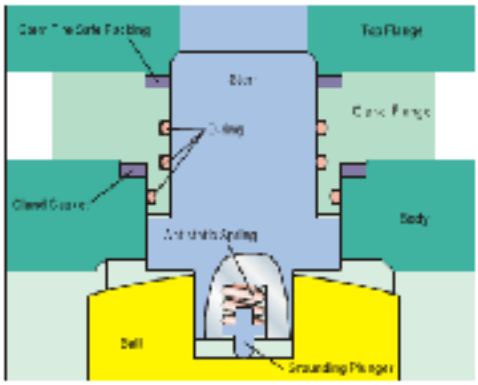
Self Relieving Seat

When the body cavity pressure exceeds the downstream seat spring preloaded force, the differential force in the area (D2) pushes the downstream seat away from the ball, the body cavity pressure will automatically relieve. And then the seat returns to the ball under spring action. (Fig. 1)

Double Block and Bleed

When the ball is in the closed position, each seat of the ball valve can cut off the medium independently on the upstream and downstream side to realize double-block functions. the body cavity are isolated from each side of the valve, the body cavity pressure could be released through the vent valve. (Fig.2)



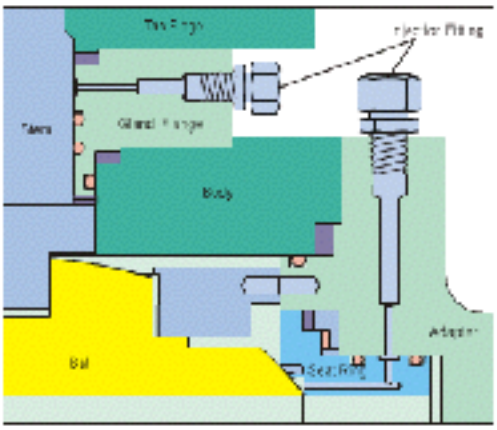


Blow-out Proof Stem

The stem with integral T-type shoulder, supported by gland, can be guaranteed not to be blow-out by the medium even if at abnormal risen pressure in the cavity. (Fig.3)

Anti-Static Device

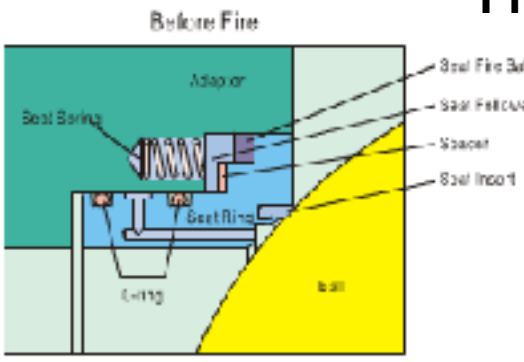
During turning of the stem to opening and closing the valve, static electricity is easily caused by sparks generated by friction. Antistatic devices, assembled by a spring & a grounding plunger, assure the electrical continuity, between ball and stem, stem and body, to prevent the possible risk of fire or explosion. (Fig.3)



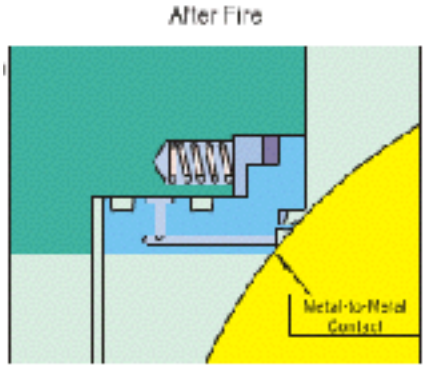
Emergency Sealant Injection System

For 6 inch and larger trunnion mounted ball valves, or small valves on request, special sealants may be injected through a sealant injection fittings that are located on the adapter and the gland to obtain emergency sealing, in case of seat or stem O-ring are damaged and leakage occur by fire or other accidental. Fittings also internally installed a second check valve to provide backup sealing. (Fig.4)

Firesafe Design



a) Internal leakage prevention
When seat insert, O-ring and spacer are damaged in a fire, the line pressure and the seat preloaded spring push the seat metal lip into the ball surface to cut off the line fluid and prevent the internal leakage to reach fire-safe purpose. Besides, the seat graphite packing can prevent fluid leakage from between the valve body and the seat. (Fig.5)



Cleveland
INDUSTRIAL VALVES

Forged steel ball valve trunnion

FIGURE 30.20.1



CIV FORGED BALL

Standards Compliance:
* Design&Manufacture:API 6D/API 608/ANSI B16.34
* Face to face:ANSI B16.10/API 6D
* End flange:ANSI B16.5
* Welding Ends:ANSI B16.25
* Pressure-Temp.Rating:ANSI B16.34
* Inspection & Test:API 6D/API 598

* Construction:
Split Body.Full Bore.Trunnion Mounted Ball,Double Seal Design-Floating Seats.Double Block & Bleed.Blow-out Proof Stem,Cavity Relieving Seats.

* Options:
Fire-safe Design,Antl-static Device,Pressure Balance Hole in Ball.

Standard materials specifications

Part Name	Body/Cap	Ball/Stem	Seats	Seats
A216 WCB	A216 WCB	A105/WCB+HCr	PTFE	PTFE Viton
A351 CF8	A351 CF8	A351 CF8/304SS		
A351 CF8M	A351 CF8M	A351 CF8M/316SS		

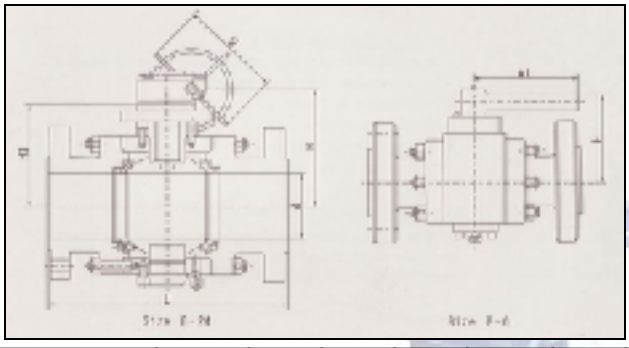
Torque date for lion forged steel ball valves

				Kgf.m)
Size(In)	CLASS 150	CLASS 300	CLASS 400	CLASS 600
2	2	3	7	20
3	8	15	25	45
4	15	30	40	60
5	20	50	65	93
6	40	70	86	115
8	64	94	130	175
10	110	160	230	300
12	175	250	380	475
14	260	360	550	690
16	390	525	750	970
18	620	715	1000	1260
20	750	880	1200	1550
24	1050	1320	1850	2450

Cleveland
INDUSTRIAL VALVES

Forged steel ball valve trunnion

FIGURE 30.20.1



CIV FORGED BALL

Size(in)		Class	2	3	4	6	8	10	12	14	16	18	20	24
L		150	178	203	229	394	457	533	610	686	762	864	914	1067
		300	216	283	305	403	502	568	648	762	838	914	991	1143
Ho		150	100	123	143	195	243	348	401	423	491	526	840	1050
		300	100	123	143	195	243	348	401	423	491	526	840	1050
H1		150	150	183	203	260	288	393	456	478	801	836	840	1050
		300	107	152	178	330	398	495	580	625	670	698	840	1050
W		150	250	350	460	1000	355	355	600	600	600	600	800	800
		300	230	400	650	1050	600	600	800	800	800	800	800	800
Wt(kg)		150	12	22	35	74	190	270	470	570	875	935	1190	2100
		300	15	39	63	152	236	303	502	602	1001	1135	1540	3900
L	RF	400	292	356	406	495	597	673	762	826	902		1054	1232
	RTJ	400	295	359	410	498	600	676	765	829	905		1080	1241
H		400	108	197	235	300	374	445	512	550	615		810	1010
W		400	600	600	600	600	800	800	800	800	800	800	800	800
Wt(kg)		400	23	49	91	192	355	640	880	1100	1540		2800	5300
L	RF	600	292	356	432	559	660	787	838	889	991	1219	1194	1397
	RTJ		371	384	460	613	740	841	968	1038	1140	1232	1334	1568
	RF	900	368	381	457	610	737	838	965	1029	1130	1219	1321	1549
	RTJ		371	384	460	613	740	841	968	1038	1140	1232	1334	1568
H1		600	100	123	143	195	243	348	401	423	491	526	840	1050
		900	100	123	143	195	243	348	401	423	491	526	840	1050
H		600	108	197	235	300	374	445	512	550	615		810	1010
		900	126	191	216	270	394	502	572	675	762	866	894	956
W		600	600	600	600	600	800	800	800	800	800	800	800	800
		900	600	600	600	800	800	800	800	800	800	800	800	800
Wt(kg)		600	35	55	102	232	390	710	960	1700	1970		3250	5800
		900	50	80	125	270								
L	RF	1500	368	381	546	705	832	991	1130	1257	1384	1537	1664	1698
	RTJ	1500	371	384	549	711	841	1000	1146	1276	1407	1559	1686	1902
H1		1500												
H		1500	217	259	297	365	475	578	696	761	831	900	950	1080
W		1500	600	600	600	800	800	800	800	800	800	800	800	800
Wt(kg)		1500	50	117	216	380								

Cleveland INDUSTRIAL VALVES

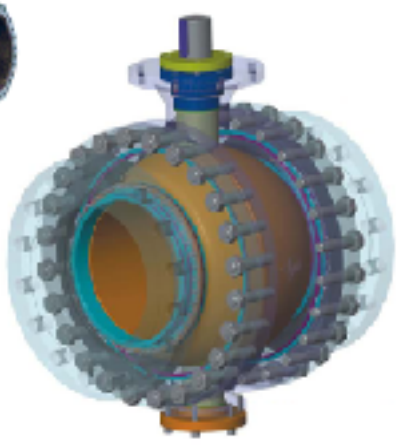
Cleveland
INDUSTRIAL VALVES

Trunnion ball valve Cast steel

FIGURE 30.20.2

CIV CAST BALL





Construction :

Two-piece, Full port, Blowout-proof stem, Fire-safe, Anti-static.

Design and manufacture: API 6D
End flange dimensions: ANSI B16.34
Test and inspection: API6D or API 598.
Face to face dimensions: ANSI B16.10
End flange dimensions: 2"~24" to ANSI B16.5
Body: CS A 216 WCB
Ball: CS A 216 WCB, CS A105N or SS CF8M
Stem & Seat: SS182 F6
Type of operation: Manual Lever or Manual Gear
Seat Ring: PTFE
O-Ring: Viton
Gasket: PTFE, Flexible Garphite or SS

No.	Parts	Carbon Steel		Stainless Steel			
		WCB	LCB	CF8	CF8M	CF3	CF3M
1	Body	A216 WCB	A352 LCB	A351 CF8	A351 F8M	A351 CF3	A351 CF3M
2	L-body	A216 WCB	A352LCB	A351 CF8	A351 F8M	A351 CF3	A351 CF3M
3	R-body	A216 WCB	A352LCB	A351 CF8	A351 F8M	A351 CF3	A351 CF3M
4	Ball	A105/Ep. Cr	A182 304	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
5	Stem	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
6	Seat	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
7	Seat ring	PTFE, POM or HF(Co-CrA)					
8	Gasket	PTFE or flexible graphite and stainless steel					
9	O-ring	VITON	VITON	VITON	VITON	VITON	VITON
10	Trunnion	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
11	Spring	AISI 6150 / 17-17PH (inconel for NACE) / Ni-Cr Alloy					
12	Drain plug	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
13	Bolt	A193B7 / A320L7 / A193B8 / A193B8M					
14	Stem beating	PTFE or stainless steel and graphite					
15	Stem seat	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
16	Small spring	17-17PH (inconel for NACE) / Ni-Cr Alloy					
17	Small ball	A182 F304 / A182F316					
18	Trunnion beating	PTFE or stainless steel and graphite					
19	Plug	A105	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
20	Spring seat	A105	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
21	Bonnet bolt	A193B7 / A320L7 / A193B8 / A193B8M					
22	Bonnet nut	A194 2H / A194 4 / A194 8					
23	Pin	Carbon steel or alloy steel					
24	Gland	A182 F6	A182 F6	A182 F304	A182 F316	A182 F304L	A182 F316L
25	Gland flange	A216 WCB	A352LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
26	Stem packing	PTFE or flexible graphite					
27	Bonnet	A216 WCB	A352LCB	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M

Cleveland
INDUSTRIAL VALVES

Trunnion ball valve Cast steel

FIGURE 30.20.2

Class 150

DN	50	65	80	100	150	200	250	300	350	400	450	500	600	700
NPS	2	2.1/2	3	4	6	8	10	12	14	16	18	20	24	28
L	178	191	203	229	394	457	533	610	686	762	864	914	1067	1245
L1	216	241	283	305	457	521	559	635	762	838	914	991	1143	1346
H	153	165	195	213	272	342	495	580	625	720	790	840	1050	1150
Do (W)	400	400	600	850	1100	1500	*350	*350	*600	*600	*800	*800	*800	*800
RF (Kgs)	15	19	38	65	97	160	240	390	510	750	895	1190	2100	3000
BW (Kgs)	13	17	35	55	92.8	154	227	365	478	711	868	1138	2015	2900

Class 300

DN	50	65	80	100	150	200	250	300	350	400	450	500	600	700
NPS	2	2.1/2	3	4	6	8	10	12	14	16	18	20	24	28
L	216	241	283	305	403	502	568	648	762	838	914	991	1143	1346
L1	216	241	283	305	457	521	559	635	762	838	914	991	1143	1346
H	153	165	195	213	272	342	495	580	625	720	790	840	1050	1150
Do (W)	400	400	600	850	1100	1500	*350	*350	*600	*600	*800	*800	*800	*800
RF (Kgs)	18	27	47	80	118	200	365	530	740	1030	1320	1540	2600	3900
BW (Kgs)	14	22	38	65	105	185	342	503	713	1000	1285	1498	2540	3825

Class 600

DN	50	65	80	100	150	200	250	300	350	400	450	500
NPS	2	2.1/2	3	4	6	8	10	12	14	16	18	20
L	292	330	356	432	559	660	787	838	889	991	1092	1194
L1	292	330	356	432	559	660	787	838	889	991	1092	1194
H	153	165	195	213	272	342	495	580	630	725	800	850
Do (W)	600	850	1250	1300	1500	*350	*350	*600	*600	*800	*800	*800
RF (Kgs)	38	56	66	122	217	350	660	820	830	1160	1420	1650
BW	31	51	58	117	200	327	605	790	800	1030	1305	1505



CIV Cryogenic

Construction :

Service temperature to -196 ºC

Construction DIN PN 16/40 & ANSI 150 / 300 lbs

Construction floating and guided ball.

Cavity pressure relief.

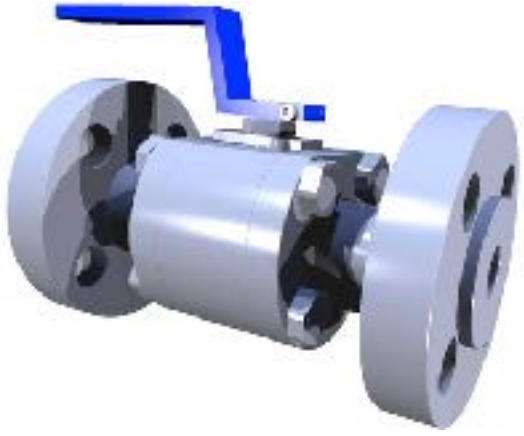
MATERIALS	VERSION DIN	VERSION ANSI
BODIES	AISI A351 CF 8M	AISI A351 CF 8M
BALL	A351 CF 8M	
STEM	A351 CF 8M	
SEATS	KELFT	KELFT
SEALS	PTFE+GF	PTFE+GF
BOLTS	A4-70	B8M

ANSI		½"	¾"	1"	2"	3"	4"	6"	8"	10"	12"		
DN		15	20	32	40	50	65	80	100	150	200	250	300
DIN	PN16	x	x	x	x	x	x	x	x	x	x	x	X
	PN40	x	X	x	x	x	x	x	x	x	x	X	x
ANSI	CL150	x	x	x	x	x	x	x	x	x	X		
	CL300	X	X	X	x	X	x	x	x	x	x		

Cleveland
INDUSTRIAL VALVES

Floating ball valve

FIGURE 30.20.4



CIV Float Flanged

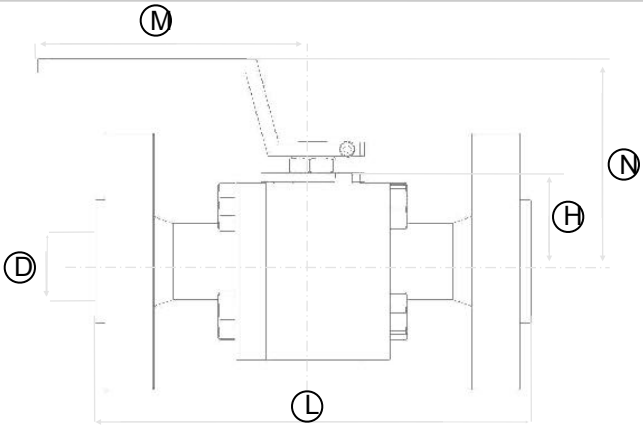
Construction :

Three pieces body, full bore or reduced bore , free floating ball, fire-safety tested design to API 607, blow-out proof stem,anti-static device,pressure balance hole in bal lDesign acc.to API 6D ,top flange ISO 5211.

Rating: API 6D CLASS 600-900

Connection : Flanges ASME B 16.5 RF,SMOTH FINISH.
Flanges ASME B16.5 RTJ.

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



MATERIAL	VERSION CS	VERSION SS
BODIES	ASTM-A-105/N	SS 316
BALL/ STEM	ASTM A351 CF8M / SS316	
SEATS	RPTFE	RPTFE
SEALS	PTFE+GF-VITON	PTFE+GF-VITON
BOLTS	ASTM A-193 B7	ASTM A-193 B7

NPS		CLASS 600		CLASS 900					ISO 5211	Cv	CLASS 600	CLASS 900	CLASS 600	CLASS 900
		RF	RTJ	RF	RTJ									
	D	L				M	N	H			TORQUE *		WEIGHT	
	mm										Nm		Kg	
1/2”x3/8”	11	165	163,5	-	-	150	45	33	F05	9	12	20	4	-
1/2”	14	165	163,5	216	216	200	55	43,5	F05	16	16	27	5	13
3/4”x1/2”	14	190,5	190,5	229	229	200	55	43,5	F05	14	16	27	6,5	15
3/4”	19	190,5	190,5	229	229	200	58	43,5	F05	32	28	47	7,5	20
1”x3/4”	19	216	216	254	254	200	58	43,5	F05	27	28	47	8	22
1”	24	216	216	254	254	240	73	56	F05	54	50	83	11,5	25
1 1/2”x1”	24	241	241	305	305	240	73	56	F05	45	250	83	15,5	30
1 1/2”	38	241	241	305	305	550	157	77	F07	157	75	120	22	34
2”x1 1/2”	38	292	295	368	371	550	157	77	F07	117	75	120	24,5	42
2”	51	292	295	368	371	550	165	86	F07	307	151	221	29	45,5
3”x2”	51	356	359	-	-	550	165	86	F07	216	151	-	39	-
3”	76	356	359	-	-	550	190	112	F10	767	330	-	57,5	-
4”x3”	76	432	435	-	-	550	190	112	F10	496	330	-	77	-
4”	102	432	435	-	-	-	-	145	F12	1.502	561	-	124,5	-
6”x4”	102	559	562	-	-	-	-	145	F12	910	561	-	179	-

Cleveland
INDUSTRIAL VALVES

Floating ball valve

FIGURE 30.20.5



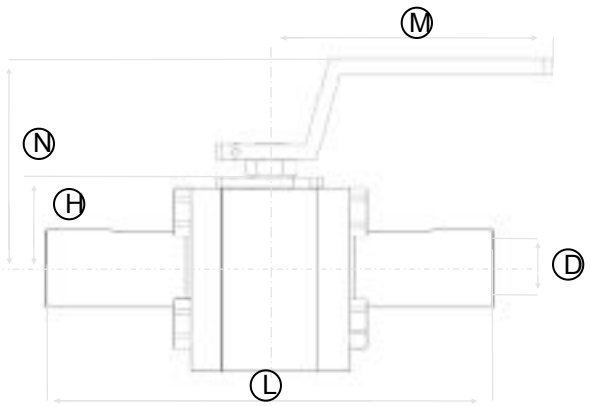
CIV Float Weld

Construction :

Three pieces body, full bore, free floating ball, fire-safety tested design to API 607, blow-out proof stem,anti-static device,pressure balance hole in ball,Design acc.to API 6D ,top flange ISO 5211.

Rating: API 6D CLASS 600-900

Connection : SCREWED-END VALVES NPT-BSP
WELD-END VALVES SW – ANSI B16.11SCH 80-160
BW – ANSI B16.25SCH 80-160



MATERIAL	VERSION CS	VERSION SS
BODIES	ASTM-A-105/N	SS 316
BALL/ STEM	ASTM A351 CF8M / SS316	
SEATS	RPTFE	RPTFE
SEALS	PTFE+GF-VITON	PTFE+GF-VITON
BOLTS	ASTM A-193 B7	ASTM A-193 B7

NPS		CLASS 600		CLASS 900					ISO 5211	Cv	CLASS 600	CLASS 900	SCREW	WELD
		SCREW	WELD	SCREW	WELD									
	D	L				M	N	H			TORQUE *		WEIGHT	
	Mm										Nm		Kg	
1/4"	8	110	216	110	216	150	42	30	F05	9	12	20	3	4
3/8"	10	110	216	110	216	150	52,5	41	F05	16	16	27	3	4
1/2"	15	110	216	110	216	200	52,5	41	F05	14	16	27	3	4
3/4"	20	140	229	140	229	200	55,5	41	F05	32	28	47	5	7
1"	25	140	254	140	254	240	55,5	41	F05	27	28	47	7	9
1.1/4"	32	170	280	170	280	300	71	54	F05	45	250	83	14	18
1 1/2"	40	170	305	170	305	550	155,5	75	F07	157	75	120	15	18
2"	50	200	368	200	368	550	155,5	75	F07	117	75	120	19	25

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INDUSTRIAL VALVES

Floating ball valve Wafer type

FIGURE 40.10.1



CIV Float WAFER

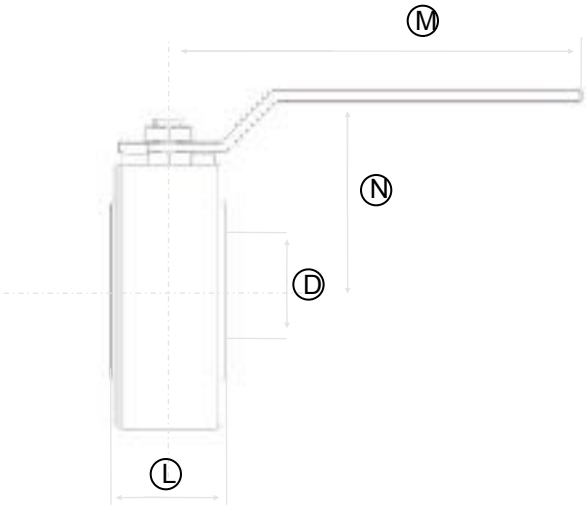
Construction :

Type Wafer , One piece body construction. Floating ball.

Rating:.

Connection : PN 16 (On request PN 25/40 & ANSI 150-300-600)

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



MATERIAL	VERSION CS	VERSION SS
BODIES	ASTM-A-105/N	SS 316
BALL/ STEM	ASTM A351 CF8M / SS316	
SEATS	PTF	PTF
SEALS	GRAPHITE/ VITON B	GRAPHITE/ VITON B
BOLTS	ASTM A-193 B7	ASTM A-193 B7

	D	L	M	N	TORQUE *	WEIGHT
	mm				Nm	Kg
1/2”	**14**	**32**	**150**	**68**	**8**	**1.2**
3/4”	**20**	**42**	**150**	**73**	**8**	**2**
1”	**25**	**45**	**160**	**84**	**10**	**2.5**
1.1/4”	**32**	**54**	**190**	**86**	**20**	**4.3**
1.1/2”	**40**	**70**	**190**	**95**	**25**	**6.2**
2”	**50**	**83**	**200**	**107**	**35**	**7.4**
2.1/2”	**65**	**108**	**250**	**118**	**50**	**14.5**
3”	**80**	**118**	**250**	**133**	**90**	**22**
4”	**100**	**152**	**350**	**158**	**175**	**30.5**

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INDUSTRIAL VALVES

Floating ball valve monobloc

FIGURE 40.10.2



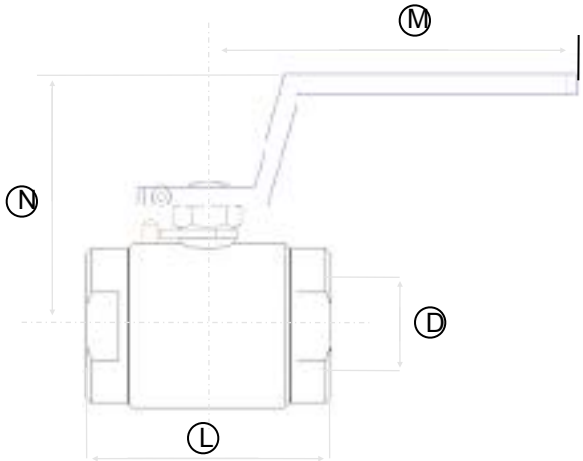
CIV Float Threaded

Construction :

Three pieces body, full bore , free floating ball, fire-safety tested design to BS6755 part 2,blowout-proof stem, cavity relieving seats, anti-static device,pressure balance hole in ball , desing acc.to BS 5351.

Rating: BS 5351 CLASS 900

Connection :Screwed ASME B1.20.1 NPT
Socket Weld (SW) ASME B16.11
Butt Weld (BW) ASME B16.25



MATERIAL	VERSION CS	VERSION SS
BODIES	ASTM-A-105/N	SS 316
BALL/ STEM	ASTM A351 CF8M / SS316	
SEATS	RPTFE	RPTFE
SEALS	PTFE+GF-VITON	PTFE+GF-VITON
BOLTS	ASTM A-193 B7	ASTM A-193 B7

	D	L	M	N	TORQUE *	WEIGHT
	mm				Nm	Kg
1/2”	**14**	**75**	**130**	**65**	**11**	**1**
3/4”	**20**	**90**	**130**	**65**	**20**	**1.5**
1”	**25**	**105**	**150**	**70**	**22**	**2.1**
1.1/4”	**32**	**120**	**250**	**80**	**30**	**3**
1.1/2”	**40**	**130**	**250**	**100**	**48**	**4**
2”	**50**	**150**	**300**	**110**	**67**	**7**

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INDUSTRIAL VALVES

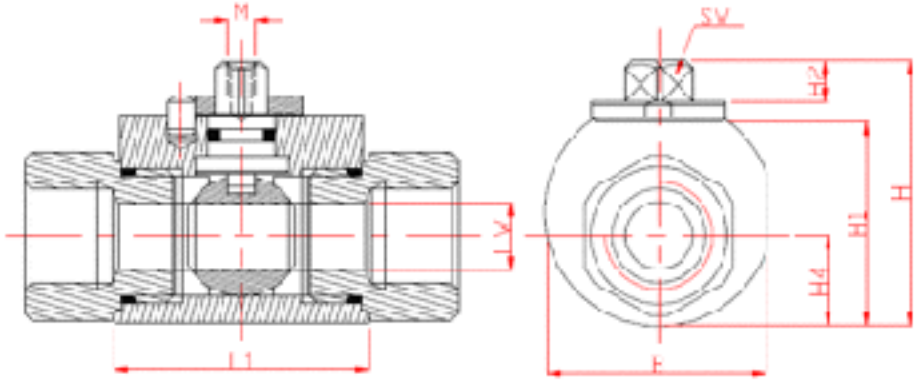
High Pressure Ball Valve

FIGURE 100.20.6



Construction :
Port Bore : Full bore
End : DIN/ISO-228, DIN 2353 , NPT Thread
Material : Stanless Steel ; S/S316
Pressure : PN 400 (6000PSI) for DN 4 up to DN 25
Temp : -20Cº to 200Cº
Seat/Seal : PTFE , POM (Delrin)

Stem : DIN 1.4571 (316 Ti)



Dimension Table												
Inch	DN	PN	L1	B	H	H1	H2	H4	M	SW	LW	WT (KG)
¼”	6	400	36	35	43.5	32	8	13	M5	9	6	0.35
3/8”	10	400	43	42	49.5	38	8	16.5	M5	9	10	0.65
½”	16	400	48	50	62	46	12	19	M6	12	15	0.75
¾”	20	400	62	60	74	57	12	25.5	M6	14	20	1.5
1”	25	400	66	65	79	63	12	28	M6	14	24	2.3
1-1/4”	32	400	81	90	104	84	13.5	38	M8	17	32	3.8
1-1/2”	40	400	85	83	111	92	13.5	41.5	M8	17	38	6.1
2”	50	400	100	100	130	111	13.5	50	M8	19	48	9.1

High pressure - 2 Way (Barstock Steel) Includes Mounting Holes



SIZE	PART	MAX PRES BAR
¼"	HCV-2-6-R14	500
3/8"	HCV-2-10-R38	500
½"	HCV-2-13-R12	500
¾"	HCV-2-20-R34	400
1"	HCV-2-25-R100	350
1 ¼"	HCV-2-25-R114	350
1 ½"	HCV-2-25-R112	350
2"	HCV-2-50-R200	320

High pressure - 2 Way (Forged Steel)



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INDUSTRIAL VALVES

SIZ E	PART	MAX PRES BAR
1 ¼"	SKH 3123 G54	420
1 ½"	SKH-3123 G32	420
2"	SKH 3123 G2-2pc	420
2"	SKH 3123 G2-2pc	420

Stainless steel

1 Piece Reduced Bore Ball Valve



SIZE	PART
¼”	BV-0.25-LOCK
3/8”	BV-0.375-LOCK
½”	BV-0.5-LOCK
¾”	BV-0.75-LOCK
1”	BV-1.0-LOCK
1 ¼”	BV-1.25-LOCK
1 ½”	BV-1.5-LOCK
2”	BV-2.0-LOCK

2 Piece Full Bore Ball Valve



SIZE	PART
¼”	BVFB-0.25-LOCK
3/8”	BVFB-0.375-LOCK
½”	BVFB-0.5-LOCK
¾”	BVFB-0.75-LOCK
1”	BVFB-1.0-LOCK
1 ¼”	BVFB-1.25-LOCK
1 ½”	BVFB-1.5-LOCK
2”	BVFB-2.0-LOCK
3"	BVFB-3.0-LOCK

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Brass Chrome Plated BSPP Female Thread



SIZE	PART	MAX WORK PRES
¼”	IBV025	25BAR
3/8”	IBV038	25BAR
1/2"	IBV050	25BAR
¾”	IBV075	25BAR
1”	IBV100	25BAR
1 ¼”	IBV125	25BAR
1 ½”	IBV150	25BAR
2”	IBV200	25BAR
2 ½”	IBV250	25BAR
3”	IBV300	25BAR
4”	IBV400	25BAR

Brass Chrome Plated "T" Handle, BSPP Fenale Thread



SIZE	PART #	MAX WORK PRES
¼”	100TO.25	25BAR
3/8”	100TO.375	25BAR
1/2"	100TO.50	25BAR
¾”	100TO.75	25BAR
1”	100T1.00	25BAR

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Mini Chrome Plated BSPP Female Thread Red Handle



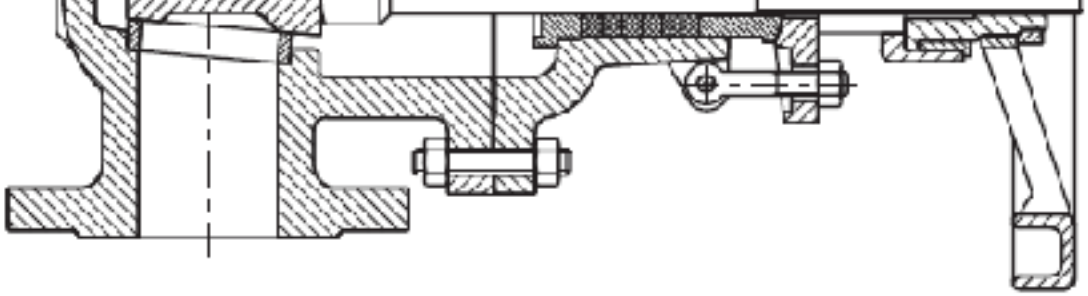
SIZE	PART	MAX WORK PRES
1/8”	3390-0.125	15BAR
¼”	3390-0.25R	15BAR
3/8”	3390-0.37R	15BAR
½”	3390-0.5R	15BAR
¾”	3390-0.75R	15BAR

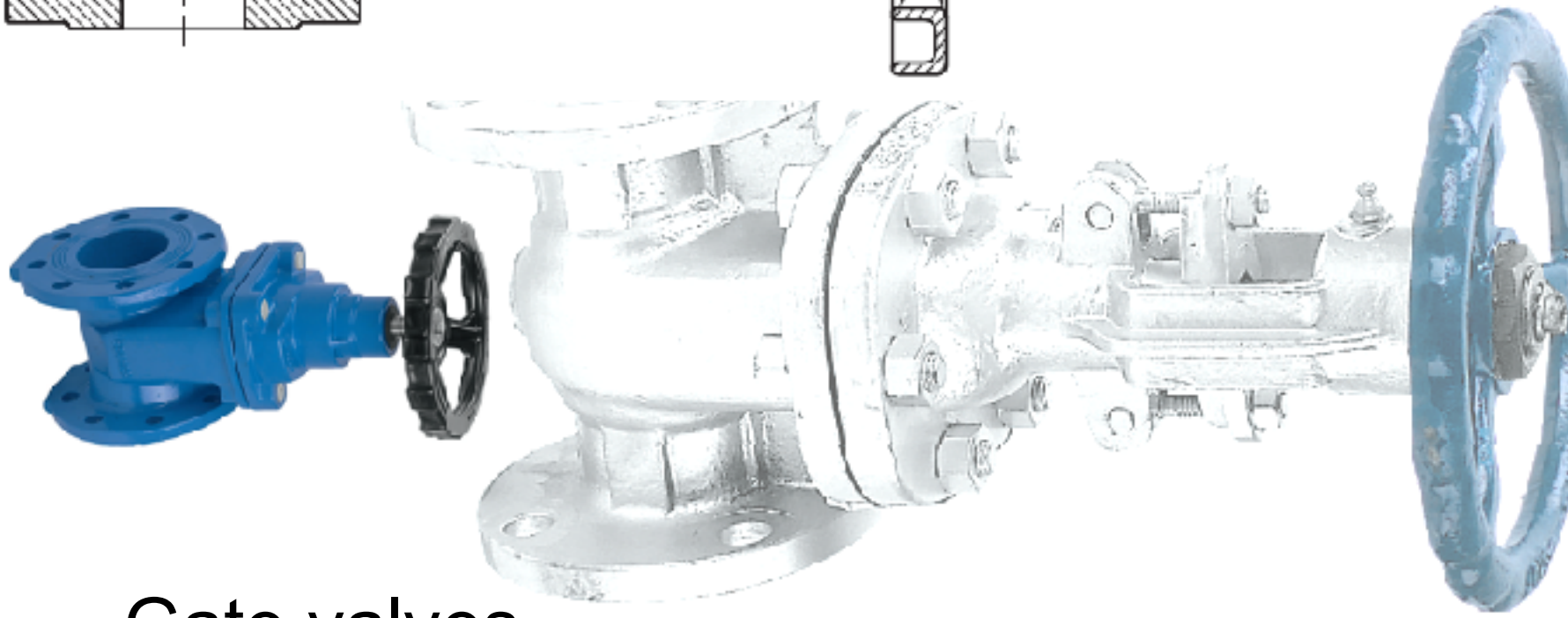
Mini Chrome Plated BSPP Female Thread Black Handle



SIZE	PART	MAX WORK PRES
¼”	100TO.25	25BAR
3/8”	100TO.375	25BAR
1/2”	100TO.50	25BAR
¾”	100TO.75	25BAR
1”	100T1.00	25BAR

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Gate valves

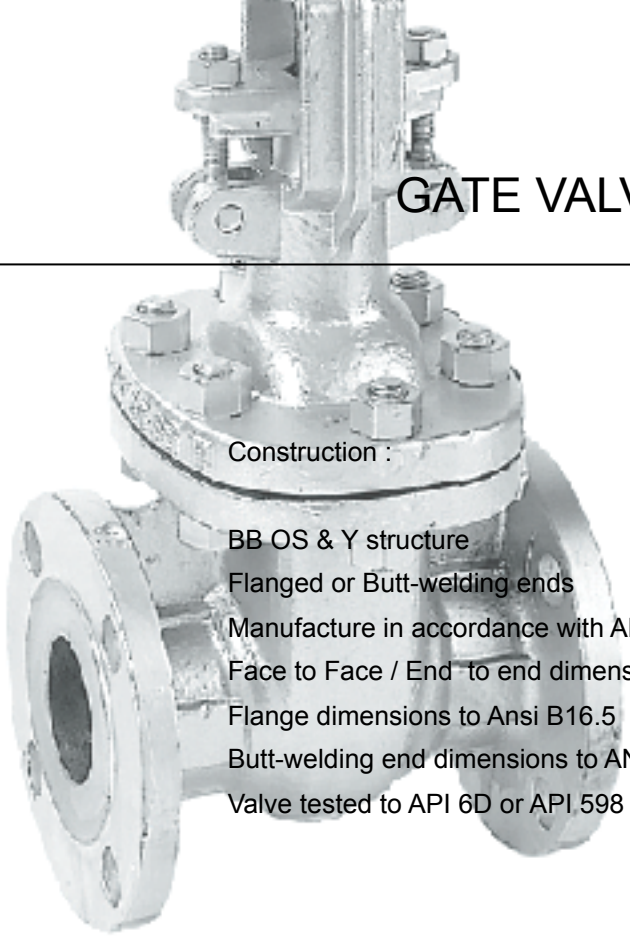
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INDUSTRIAL VALVES

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GATE VALVE CLASS 150

FIG. 10.20.1

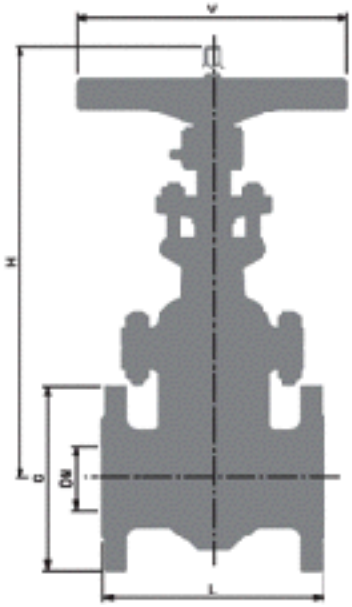




CIV GATE 150

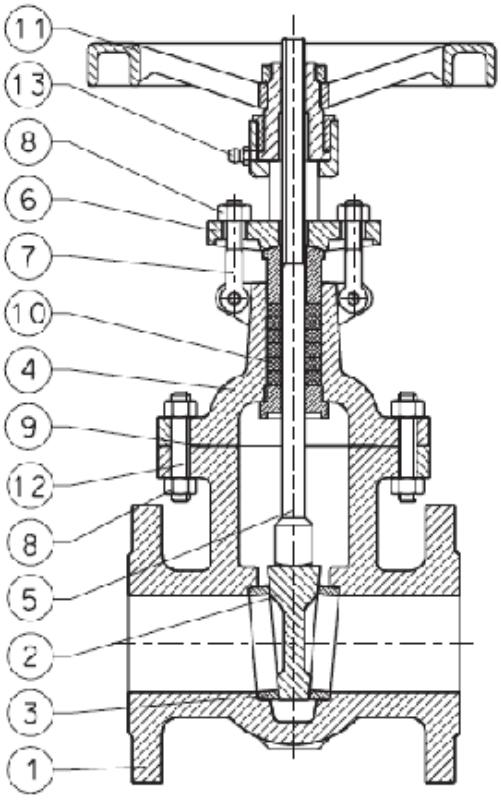
Construction :

BB OS & Y structure
Flanged or Butt-welding ends
Manufacture in accordance with API 6D or API 600
Face to Face / End to end dimensions to ANSI B16.10
Flange dimensions to Ansi B16.5
Butt-welding end dimensions to ANSI B16.25
Valve tested to API 6D or API 598



DN	D	L	DN	H	V	Kg
2”	152	178	51	400	200	19
2”1/2	178	191	64	451	200	29
3”	191	203	76	514	254	33
4”	229	229	102	597	279	47
6”	279	267	152	775	298	76
8”	343	292	203	972	349	120
10”	406	330	254	1175	400	190
12”	483	356	305	1384	451	290
14”	533	381	356	1562	502	365
16”	597	406	406	1740	597	456
18”	635	432	457	1943	673	712
20”	699	457	508	2172	749	860
24”	813	508	610	2565	749	1175

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INDUSTRIAL VALVES

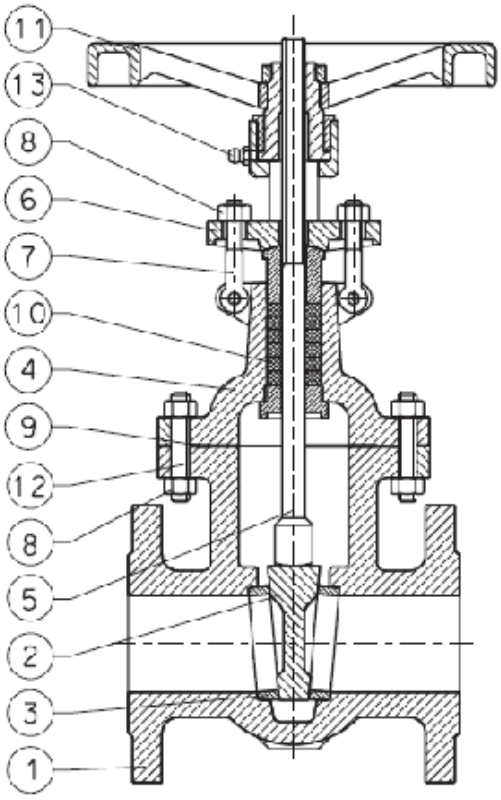


CIV GATE 150

List Materials

	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Wedge	ASTM A 216 WCB
3	Seat	ASTM A 216 WCB
4	Yoke	ASTM A216 WCB STEEL
5	Stem	STAINLESS STEEL
6	Gland Flange	ASTM A105 STEEL
7	Tie-rods	STEEL
8	Nuts	STEEL
9	Gasket	ASBESTOS FREE
12	Packing	ASBESTOS FREE
11	Hand Wheel	STEEL
12	Studs	STEEL
13	Lubricator	ZINC PLATED STEEL

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CIV GATE 150

List Materials

	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Wedge	ASTM A 216 WCB
3	Seat	ASTM A 216 WCB
4	Yoke	ASTM A216 WCB STEEL
5	Stem	STAINLESS STEEL
6	Gland Flange	ASTM A105 STEEL
7	Tie-rods	STEEL
8	Nuts	STEEL
9	Gasket	ASBESTOS FREE
12	Packing	ASBESTOS FREE
11	Hand Wheel	STEEL
12	Studs	STEEL
13	Lubricator	ZINC PLATED STEEL

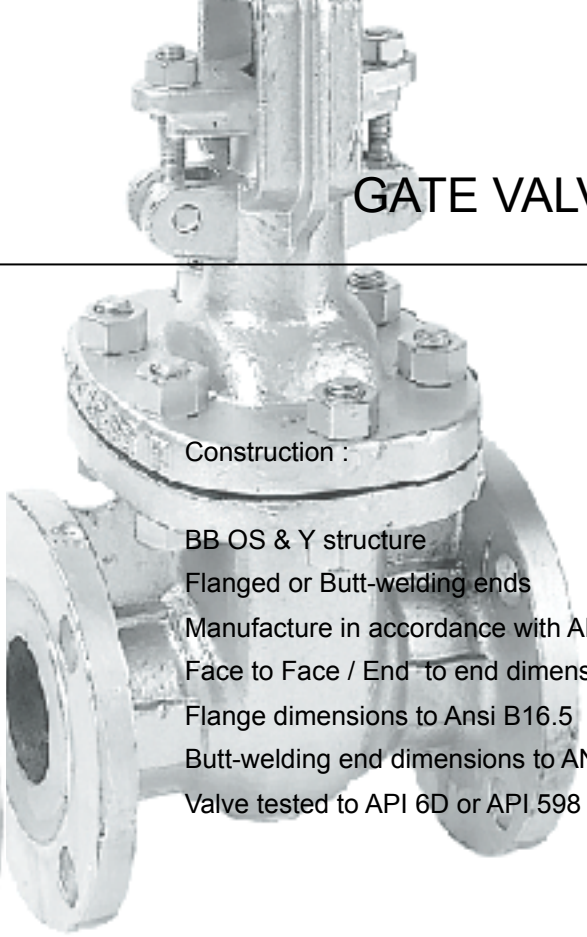
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GATE VALVE CLASS 300

FIG. 10.20.2

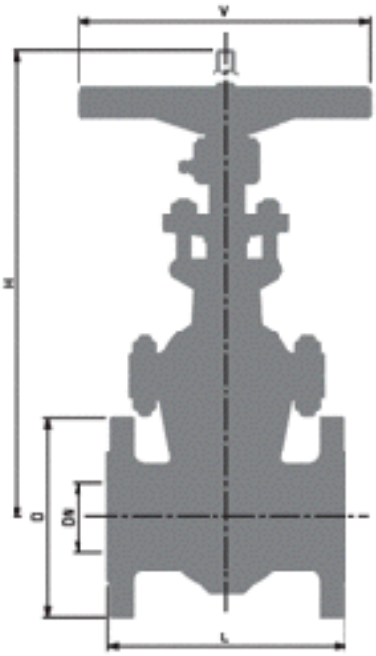




CIV Gate 300

Construction :

BB OS & Y structure
Flanged or Butt-welding ends
Manufacture in accordance with API 6D or API 600
Face to Face / End to end dimensions to ANSI B16.10
Flange dimensions to Ansi B16.5
Butt-welding end dimensions to ANSI B16.25
Valve tested to API 6D or API 598

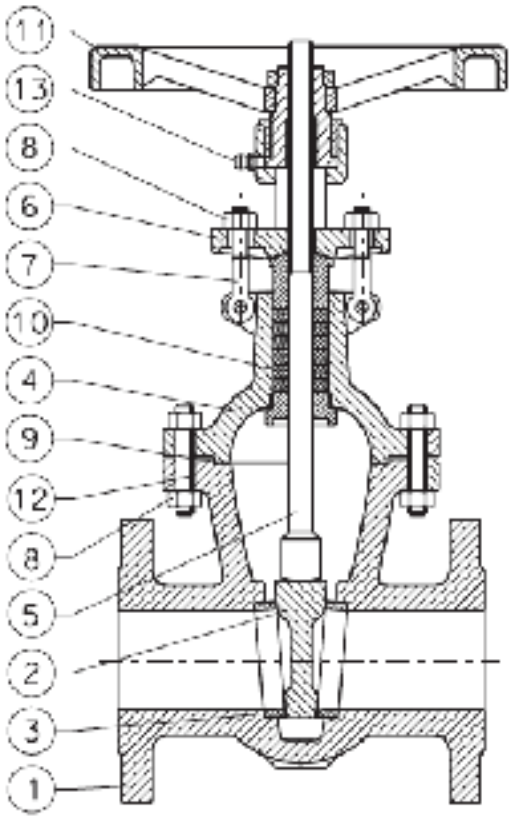


DN	D	L	DN	H	V	Kg
2”	165	216	51	419	200	29
2”1/2	191	241	64	470	200	37
3”	210	283	76	537	254	49
4”	254	305	102	619	279	69
6”	318	403	152	806	349	137
8”	381	419	203	994	400	235
10”	445	457	254	1203	451	315
12”	521	502	305	1416	502	460
14”	584	762	356	1638	597	650
16”	648	838	406	1918	673	950

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INDUSTRIAL VALVES

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Gate 300

List Materials

	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Wedge	ASTM A 182 F6 STEEL
2	Wedge	STEEL + ST.STEEL
3	Seat	STAINLESS STEEL
3	Seat	STAINLESS STEEL
4	Yoke	ASTM A216 WCB STEEL
5	Stem	STAINLESS STEEL
6	Gland Flange	ASTM A105 STEEL
7	Tie-rods	STEEL
8	Nuts	STEEL
9	Gasket	ASBESTOS FREE
12	Packing	ASBESTOS FREE
11	Handwheel	STEEL
12	Studs	STEEL
13	Lubricator	ZINC PLATED STEEL

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GATE VALVE CLASS 600

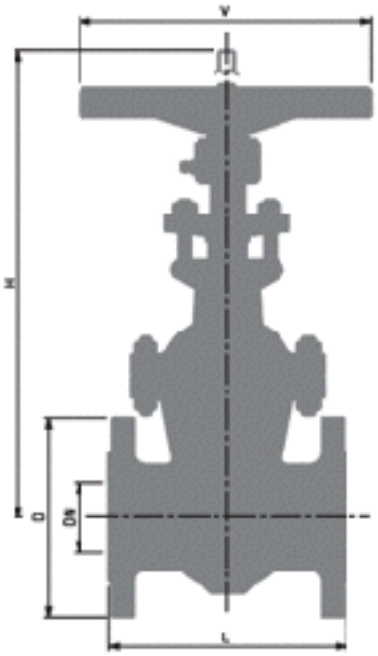
FIG. 10.20.3



CIV Gate 600

Construction :

BB OS & Y structure
Flanged or Butt-welding ends
Manufacture in accordance with API 6D or API 600
Face to Face / End to end dimensions to ANSI B16.10
Flange dimensions to Ansi B16.5
Butt-welding end dimensions to ANSI B16.25
Valve tested to API 6D or API 598



DN	D	L	DN	H	V	Kg
2”	165	295	51	432	203	29
2”1/2	191	333	64	486	254	37
3”	210	359	76	546	305	49
4”	273	435	102	648	356	69
6”	356	562	152	800	457	137
8”	419	664	203	1029	559	235
10”	508	791	254	1270	610	315
12”	559	841	305	1486	711	460

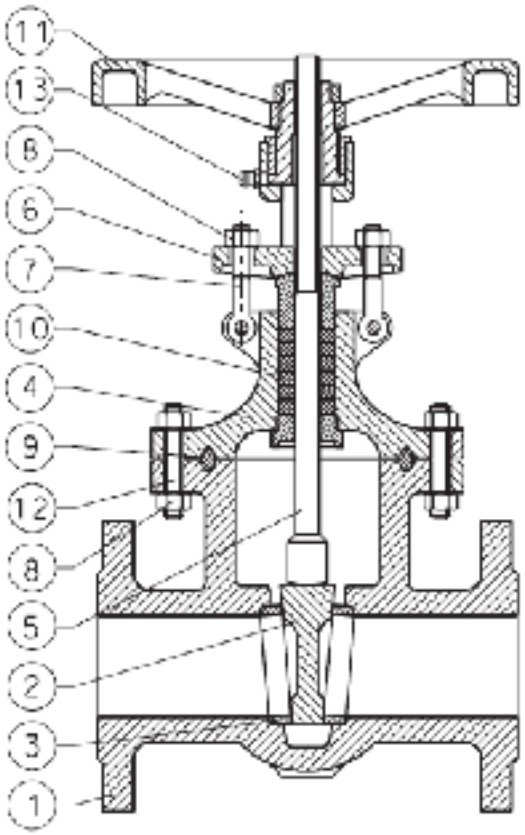
Cleveland
INDUSTRIAL VALVES

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

CIV Gate 600

List Materials



	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Wedge	ASTM A 182 F6 STEEL
2	Wedge	STEEL + ST.STEEL
3	Seat	STAINLESS STEEL
3	Seat	STAINLESS STEEL
4	Yoke	ASTM A216 WCB STEEL
5	Stem	STAINLESS STEEL
6	Gland Flange	ASTM A105 STEEL
7	Tie-rods	STEEL
8	Nuts	STEEL
9	Gasket	METALLIC
12	Packing	ASBESTOS FREE
11	Handwheel	STEEL
12	Studs	STEEL
13	Lubricator	ZINC PLATED STEEL

Cleveland INDUSTRIAL VALVES

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Bronze Gate Valve PN 25

Material: bronze

Seat-Teflon

Hand Wheel painted red.

Sizes: 1/4" to 2”



Installation:

Use a suitable thread sealant on the male threads of the pipe being threaded into the valve body. We recommend either Teflon Thread Sealant Paste with PTFE.

DO NOT OVERTIGHTEN. OVERTIGHTENING MAY CAUSE CRACKS OR LEAKS.

GATE VALVE INSIDE SCREW PN16

FREE MAINTENANCE

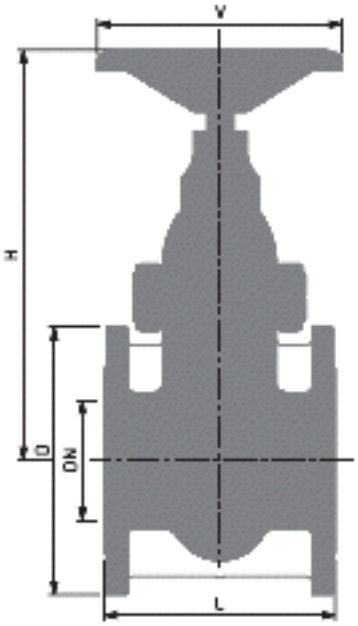
FIG. 10.10.1



CIV GATE 16

Construction :

Cast iron body , bonnet , cap and handwheel. Brass stem and seats. Connection flanges dressed and drilled according to EN 1092-2 PN 16 with raised face. Max working temperature standard gaskets + 80º C.



DN	D	L	H	V	Kg
40	150	140	230	125	9
50	165	150	245	150	11
65	185	170	290	175	15
80	200	180	315	175	18
100	220	190	355	200	23
125	250	200	415	200	31
150	285	210	460	225	41
200	340	230	545	225	63
250	395	250	635	250	91
300	445	270	725	300	124

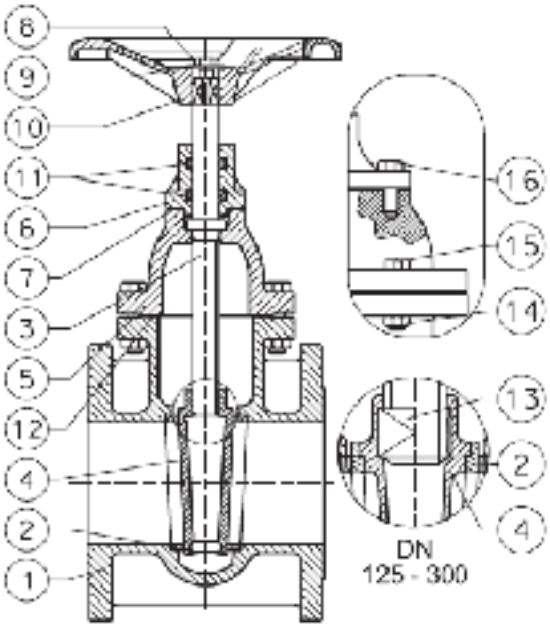
Cleveland INDUSTRIAL VALVES

GATE VALVE INSIDE SCREW PN16

FREE MAINTENANCE

FIG. 10.10.1

CIV GATE 16



List Materials

	Part Name	Material
1	Body	EN-GJL-250 Cast Iron
2	Seat	Cast Brass
3	Stem	Drawn Brass
4	Wedge DN 40-100	Cast Brass
4	Wedge DN	Cast Iron + Brass
5	Bonnet	EN-GJL-250 Cast Iron
6	Cap	EN-GJL-250 Cast Iron
7	Gasket	SBR Rubber
8	Screw	Zinc Plated 8.8 C. Steel
9	Washer	Zinc Plated C. Steel
10	Handwheel	Cast iron
11	O-ring	NBR
12	Gasket	SBR Rubber
13	Mothrscrew	Cast Brass
14	Nut	Carbon Steel
15	Screw	8.8 Carbon Steel
16	Screw	8.8 Carbon Steel

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GATE VALVE INSIDE SCREW PN25

FIG. 10.10.2

CIV GATE 25

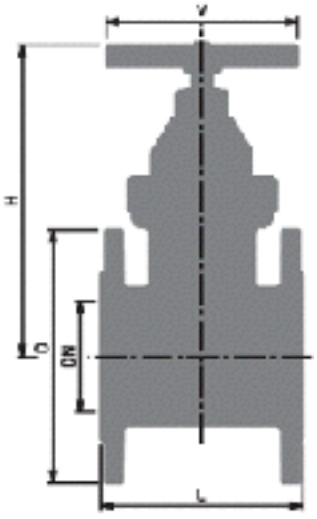


Construction :

Nodular cast iron body and bonnet. Stainless steel stem. Nodular cast iron wede NBR vulcanized. Pressed steel handwheel. Full bore, minimal pressure drop, absolute tightness, wedge with anti-freezing drain, clockwise closing.

Inside and outside epoxy coating min.Thickness 150 microns.

Connection flanges dressed and drilled according to EN 1092-2 PN 16 with raised face.

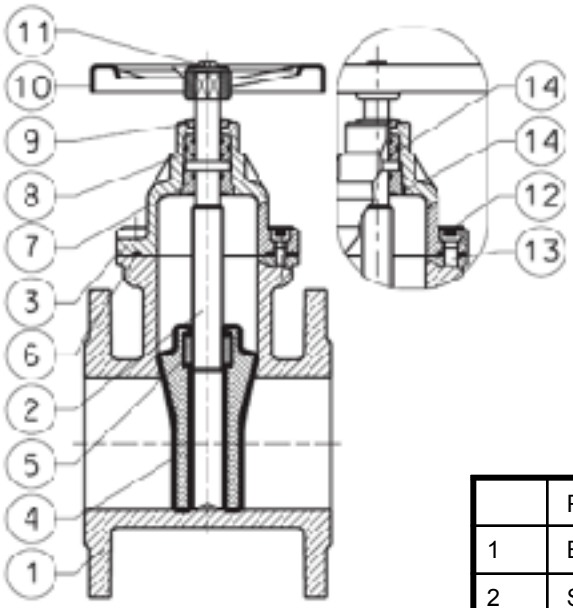


DN	D	L	H	V	Kg
40	150	140	230	250	9
50	165	150	260	250	12
65	185	170	270	250	15
80	200	180	310	250	17
100	220	190	340	250	26
125	250	200	405	350	38
150	285	210	460	350	47
200	340	230	570	350	82
250	405	250	660	500	130
300	460	270	770	500	175

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GATE VALVE INSIDE SCREW PN25

FIG. 10.10.2



CIV GATE 25

List Materials

	Part Name	Material
1	Body	EN-GJS-400-15 Cast Iron
2	Stem	Stainless steel
3	Bonnet	EN-GJS-400-15 Cast Iron
4	Wedge	Nodular C.iron Vulc.NBR
4	Motherscrew	Brass
5	Gasket	Rubber
6	Lower bush	Bronze
7	Upper bush	Bronze
8	Dust cover	Rubber
9	Handwheel	Pressed steel
10	Screw	Zinc plated steel
11	Protection cap	Resin
12	Bolts	Zinc plated steel
13	O-ring	NBR

Cleveland INDUSTRIAL VALVES

GATE VALVE OUTSIDE SCREW PN25

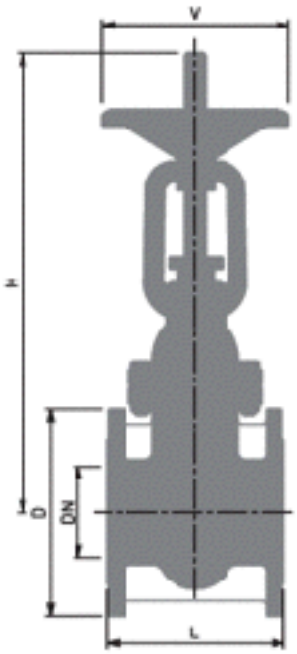
FIG. 10.10.3



CIV GATE 25 OUTSIDE

Construction :

Cast iron body , bonnet , yoke , wedge and handwheel.Brass stem and seats.Connection flanges dressed and drilled according to EN 1092-2 PN 25 with raised face.



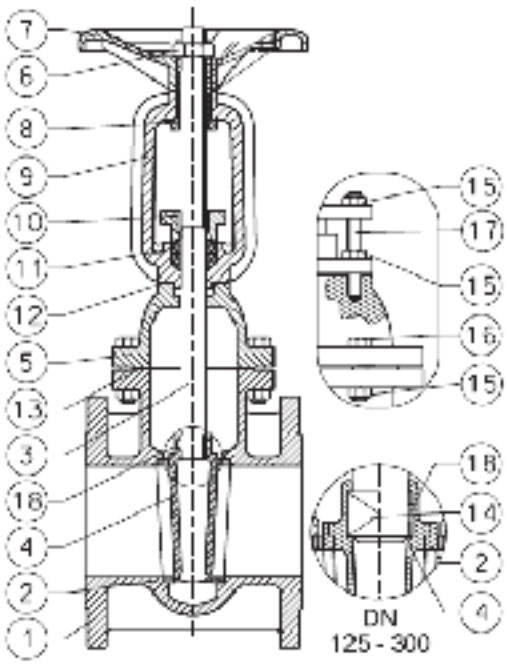
DN	D	L	H	V	Kg
40	150	140	305	150	10
50	165	150	325	150	12
65	185	170	400	175	16
80	200	180	435	175	19
100	220	190	500	200	24
125	250	200	620	200	33
150	285	210	735	225	44
200	340	230	900	225	68
250	395	250	1080	250	100
300	445	270	1260	250	134

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GATE VALVE OUTSIDE SCREW PN25

FIG. 10.10.3



CIV GATE 25 OUTSIDE

List Materials

	Part Name	Material
1	Body	EN-GJL-250 Cast iron
2	seat	Cast Brass
3	stem	Drawn Brass
4	Wedge DN 40-100	Cast Brass
4	Wedge DN	Cast iron
5	Bonnet	EN-GJL-250 Cast iron
6	Nut	Drawn Brass
7	Handwheel	Cast Iron
8	Motherscrew	Cast Brass
9	Yoke	Cast Iron
10	Gland	EN-GJL-250 Cast iron
11	Packing	EN-GJL-250 Cast iron
12	Gasket	SBR rubber
13	Gasket	SBR rubber
14	Motherscrew	Cast Brass
15	Nut	Carbon Steel
16	Screw	8.8 Carbon Steel
17	Tie rod	Carbon Steel
18	Pin	Carbon Steel

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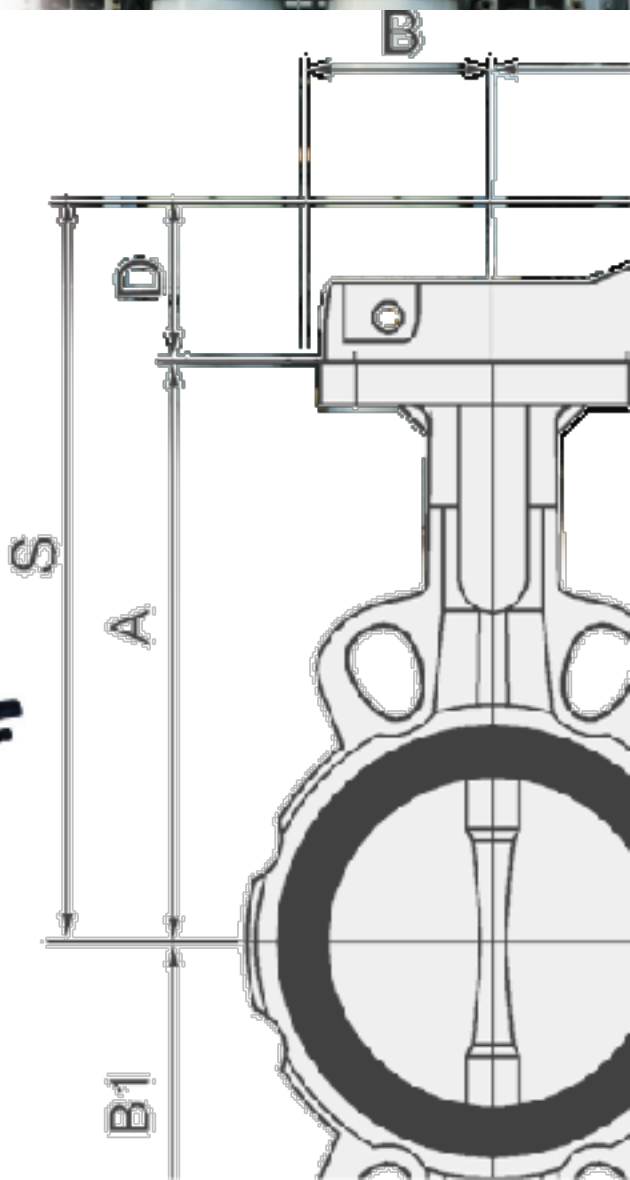
INDUSTRIAL VALVES











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Butterfly valve PN 16

Wafer type



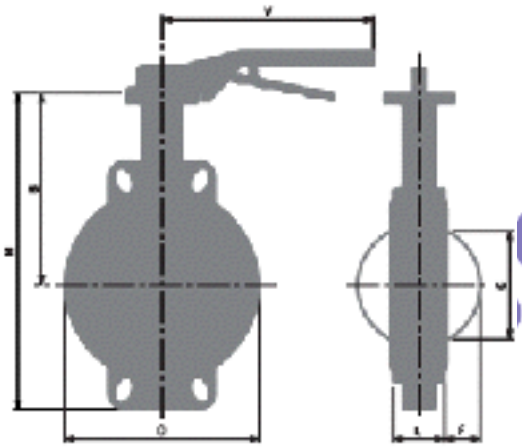
CIV BFV Wafer

Construction :

Polyster coated ductil cast iron body and butterfly.

Stainless steel stem.Coated aluminum lever.

EPDM liner. Over DN 200 thevalves are standard provided by gearbox.

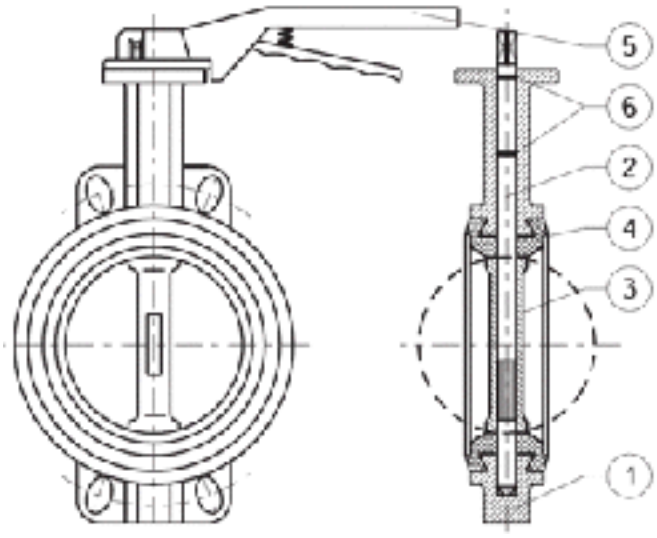


DN	D	L	G	H	V	B
50	-	43	-	240	-	161
65	-	46	-	253	-	160
80	-	46	-	268	-	165
100	-	52	-	305	-	185
125	-	56	-	343	-	210
150	-	56	-	368	-	210
200	-	60	-	430	-	250
250	-	68	-	511	-	295
300	-	78	-	572	-	321
350	-	78	-	608	-	346
400	-	102	-	675.8	-	375
450	-	114	-	733	-	400
500	-	127	-	798	-	432

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CIV BFV Wafer

List Materials



	Part Name	Material
1	Body	Ductil Iron
2	Shaft	Aisi 420 Stainless Steel
3	Disc	Stainless steel
4	Liner	EPDM
4	Lever	Bare Shaft ready to installl Air Actuator
5	O-ring	NBR RUBBER

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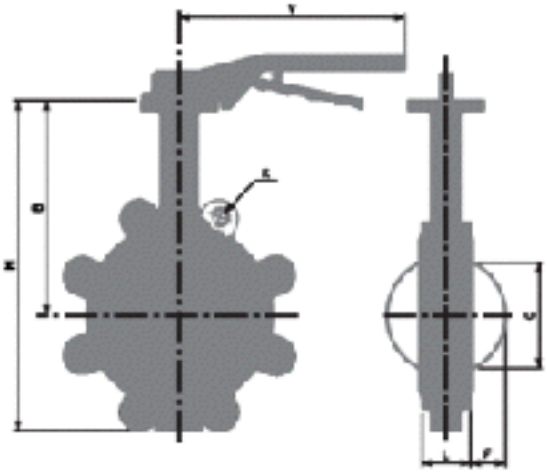
Butterfly valve PN 16 Lug type

CIV BFV Lug



Construction :

Centric butterfly valve with elastomer liner , Body ductil cast iron , Lug type or Flanged , Face to Face according iso 5752/20 , Top flange according ISO 5211 , rating PN 10, PN 16 , ANSI CL 150.



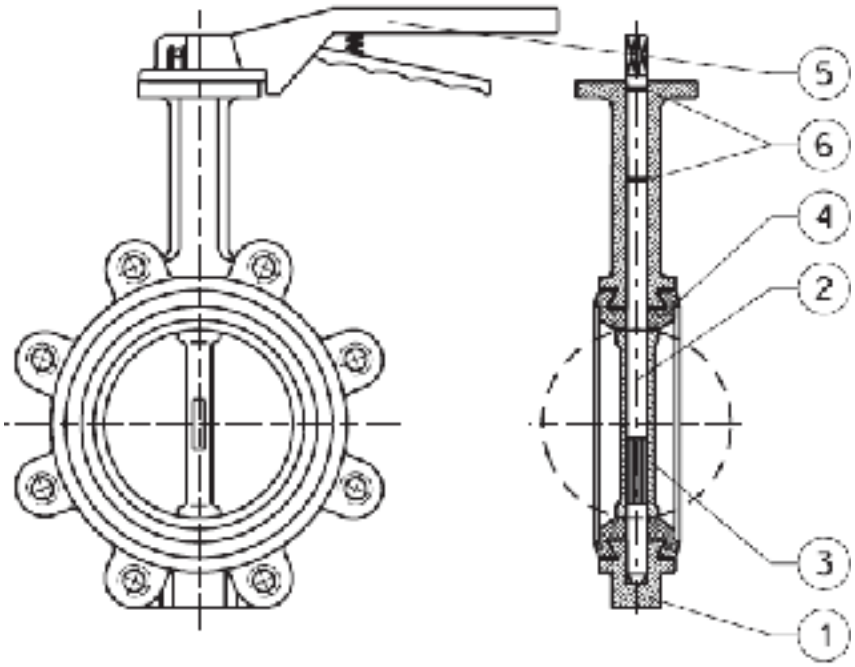
DN	D	L	G	H	V	B
50	-	43	-	213	-	130
65	-	46	-	235	-	140
80	-	46	-	247	-	145
100	-	52	-	284	-	160
125	-	56	-	307	-	170
150	-	56	-	339	-	190
200	-	60	-	401	-	220
250	-	68	-	470	-	260
300	-	78	-	538	-	290
350	-	78	-	599	-	320
400	-	102	-	655	-	350
450	-	114	-	745	-	380
500	-	127	-	791	-	420
600	-	154	-	927	-	470

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Butterfly valve PN 16

Lug type

CIV BFV Lug



List Materials

	Part Name	Material
1	Body	Ductil Iron; Cast Iron ; Stainlees steel ; Special alloys*
2	Shaft	Aisi 420 Stainless Steel
3	Disc	Ductil Iron ; Alu-Bronze ; Stainless steel , Special
4	Liner	EPDM; EPDM KTW ; Nitrile ; Butyl ; Silicon ;Viton .
4	Lever	Aluminum ;
5	O-ring	NBR RUBBER

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High performance butterfly

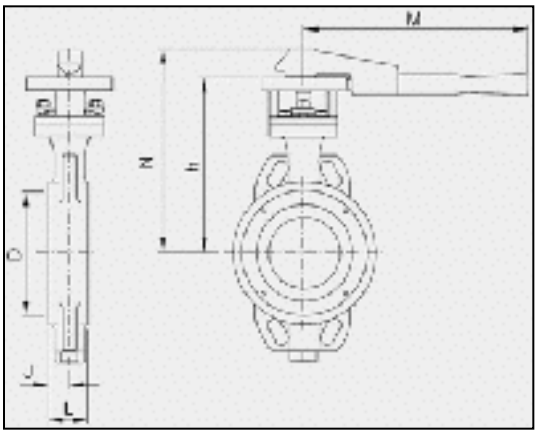
FIGURE 30.20.5



CIV BFV High Performance Wafer

Construction :
Wafer body , double escentric disc , secondary energiser metal seat. Fire-safe tested design , BS 6755 part 2 blow-out proof shaft , design API 609.
Rating : API 609 Class 150-300
Connections : ASME Class 150-300 , Smoth finish
Flange DIN 2501/1 PN 10-40, Facing DIN 2526.

Face to Face dimensions : API 609, Class 150-300



MATERIALS	VERSION CS	VERSION SS
BODIES	ASTM-A-216 WCC	ASTM A-351 CF8M
DISC/	ASTM A351 CF8M / UN S31803	
SEATS	PTFE / INCONEL-625	
SEALS	GRAPHITE	

NPS		Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300
	D	L		M		N		H		J		Par-Torque		Weight	
	Mm											Nm		Kg	
3"	74,6	50	50	300	300	253	253	210	210	27	27	57	90	7,5	87,5
4"	89,7	55,5	55,5	300	300	271	271	228	228	28,6	28,6	97	145	10	11
6"	144,1	60	60	400	400	308	308	268	268	31,7	31,7	175	302	20	20
8"	193,8	67	76	400	-	344	371	317	317	35	38	333	612	28	28
10"	235,8	72	86	-	-	401	456	402	402	39,3	44	638	1208	46	56
12"	286	84	94	-	-	452	480	426	426	46	50,8	1179	2000	68	78
14"	304,5	92	117	-	-	508	578	507	507	52	58	1300	2200	88	120
16"	360	102	133	-	-	556	653	573	573	58	72	1500	2400	160	230
18"	410	114	149	--	-	606	685	605	605	67	78	2100	4240	210	290
20"	459	127	159	-	-	684	732	642	642	70	80	3000	4836	312	382
24"	556	154	11	-	-	748	792	692	692	83	83	4000	6019	444	605

On request CIV supply valves up to 72" in SS, CS , CI , DI , Monel , Inconel.

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High performance butterfly

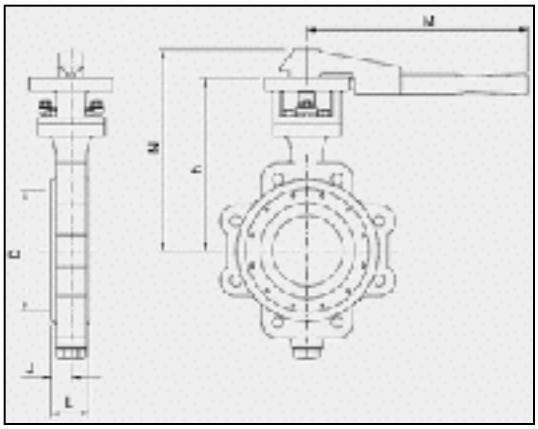
FIGURE 30.20.6



CIV BFV High Performance Lug

Construction :
Lug body , double escentric disc , secondary energiser metal seat. Fire-safe tested design , BS 6755 part 2 blow-out proof shaft , design API 609.
Rating : API 609 Class 150-300
Connections : ASME Class 150-300 , Smoth finish
Flange DIN 2501/1 PN 10-40, Facing DIN 2526.

Face to Face dimensions : API 609, Class 150-300



MATERIALS	VERSION CS	VERSION SS
BODIES	ASTM-A-216 WCC	ASTM A-351 CF8M
DISC/ SHAFT	ASTM A351 CF8M / UN S31803	
SEATS	PTFE / INCONEL-625	
SEALS	GRAPHITE	

NPS		Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300
	D	L		M		N		H		J		Par-Torque		Weight	
	Mm											Nm		Kg	
3"	74,6	50	50	300	300	253	253	210	210	27	27	60	90	9	9
4"	89,7	55,5	55,5	300	300	271	271	228	228	28,6	28,6	100	150	15	15
6"	144,1	60	60	400	400	308	308	268	268	31,7	31,7	185	300	25	28
8"	193,8	67	76	400	-	344	371	317	317	35	38	350	600	32	46
10"	235,8	72	86	-	-	401	456	402	402	39,3	44	650	1100	50	75
12"	286	84	94	-	-	452	480	426	426	46	50,8	1260	2060	75	104
14"	304,5	92	117	-	-	508	578	507	507	52	58	1450	2300	110	160
16"	360	102	133	-	-	556	653	573	573	58	72	1600	2600	175	290
18"	410	114	149	--	-	606	685	605	605	67	78	2000	4200	188	355
20"	459	127	159	-	-	684	732	642	642	70	80	2900	5000	385	460
24"	556	154	11	-	-	748	792	692	692	83	83	4000	6100	470	705

On request CIV supply valves up to 72" in SS, CS , CI , DI , Monel , Inconel.

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INDUSTRIAL VALVES

CHECK VALVES







Cleveland
INDUSTRIAL VALVES

SWING CHECK VALVE PN 25

FIGURE 40.10.1

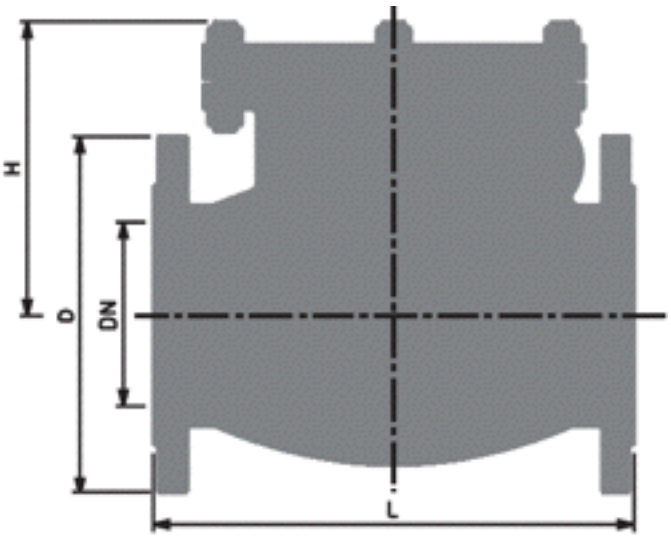
CIV Check 25



Construction :

Carbon steel , body , cover and disc. Stainless steel sealing seats. Graphite + inox gasket.

Connection flanges dressed and drilled accordingto EN 1092-1 PN 25 with raised face.



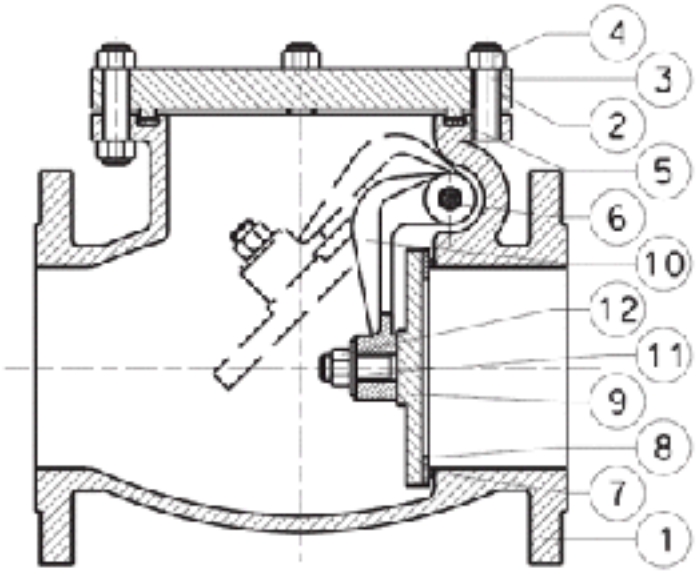
DN	D	L	H	kg
50	165	200	160	15
65	185	240	170	24
80	200	260	175	28
100	235	300	195	38
125	270	350	210	58
150	300	400	240	96
200	360	500	280	131
250	425	600	320	212
300	485	700	365	273
350	555	800	425	440
400	620	900	440	465

Cleveland
INDUSTRIAL VALVES

SWING CHECK VALVE PN 25

FIGURE 40.10.1

CIV Check 25



List Materials

	Part Name	Material
1	Body	GP 240 GH+N STEEL
2	Cover	CARBON STEEL
2	Tie-rod	STEEL
3	Nut	STEEL
3	Gasket	GRAPHITE+ST.STEEL
4	Pin	STAINLESS STEEL
5	Body seat	STAINLESS STEEL
6	Disc seat	STAINLESS STEEL
7	Disc	CARBON STEEL
8	Hinge	CARBON STEEL
9	Stud screw	STEEL
12	Nut	STEEL

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SWING CHECK VALVE PN 40

FIGURE 40.10.2

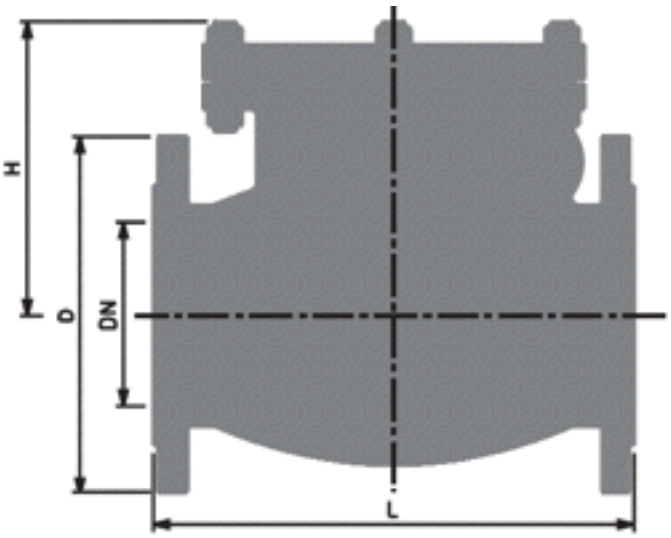
CIV Check 40



Construction :

Carbon steel , body , cover and disc. Stainless steel sealing seats. Graphite + inox gasket.

Connection flanges dressed and drilled accordingto EN 1092-1 PN 40 with raised face.

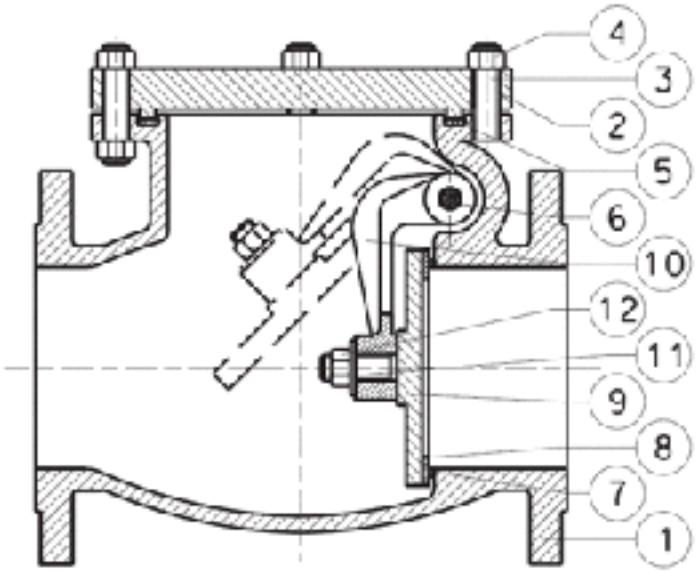


DN	D	L	H	kg
50	165	230	160	20
80	200	310	175	33
100	235	350	215	46
125	270	400	230	65
150	300	480	240	95
200	375	600	290	165
250	450	730	320	230
300	515	850	395	380
350	580	980	435	500
400	660	1100	450	580

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CIV Check 40

List Materials



	Part Name	Material
1	Body	GP 240 GH+N STEEL
2	Cover	CARBON STEEL
2	Tie-rod	STEEL
3	Nut	STEEL
3	Gasket	GRAPHITE+ST.STEEL
4	Pin	STAINLESS STEEL
5	Body seat	STAINLESS STEEL
6	Disc seat	STAINLESS STEEL
7	Disc	CARBON STEEL
8	Hinge	CARBON STEEL
9	Stud screw	STEEL
12	Nut	STEEL

Cleveland INDUSTRIAL VALVES

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Check Valve PN10-16-ANSI 150

FIGURE 40.2

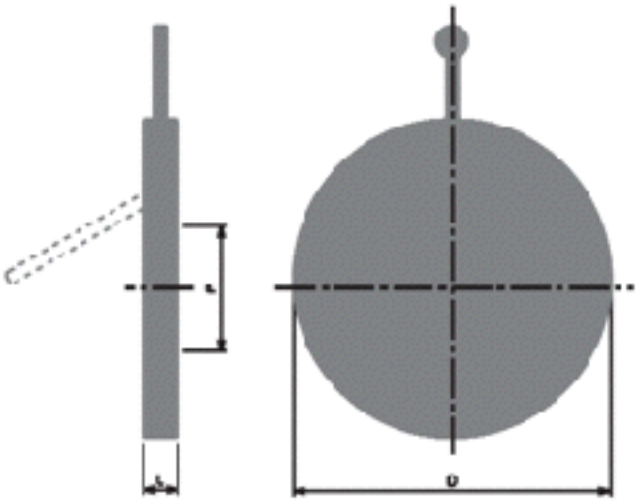
CIV Check Wafer



Construction :

Carbon steel body , lifting eye bolt. Stainless steel clapet. BUNA or VITON O-rings. Suitable

To be assemble betweeen flanges PN6/10/16 and Ansi Class 150.



DN	D	L	P	kg
40	94	14	19	0.65
50	109	14	25	1
65	129	14	38	1.3
80	144	14	46	1.6
100	164	14	71	2
125	195	16	95	3
150	221	19	114	5
200	276	29	140	11
250	331	32	188	15
300	386	38	216	25

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Check Valve PN10-16-ANSI 150

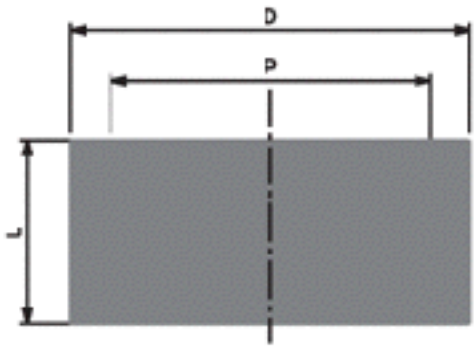
FIGURE 40.1

CIV Check Wafer Double



Construction :

Body ductile Iron ; Body and plate ; Wafer type ;
Design according ISO 3202



Valves size	D			P	L	Kg
DN	PN10	PN16	ANSI 150			
50	109		105	40	43	2
65	129		124	60	46	2.8
80	144		137	70	64	4
100	164		175	88	64	5
125	194		197	115	70	6.5
150	220		222	134	76	9.5
200	275		279	182	89	15.5
250	330		340	220	114	29
300	380		410	260	114	48
350	440	446	451	298	127	58
400	491	498	514	350	140	76
450	539	55	549	385	152	85
500	596	620	606	438	152	107
600	698	737	718	538	178	165

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

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INDUSTRIAL VALVES

SWING CHECK VALVE CLASS 150

FIGURE 40.20.1

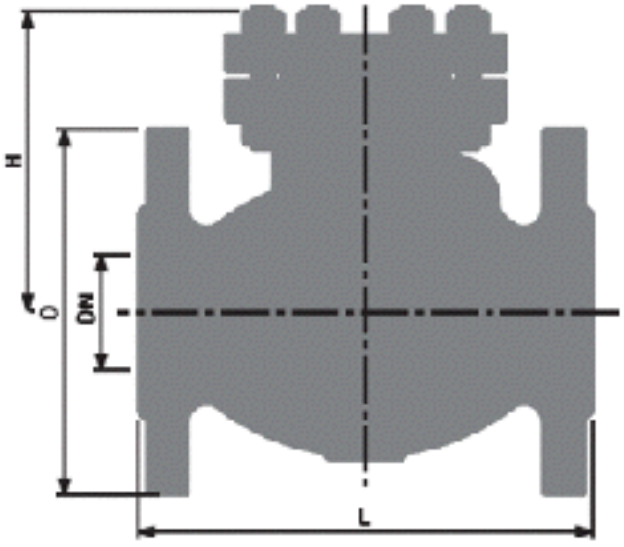
CIV Check 150



Construction :

Carbon steel body and cover . Stainless steel seat and swing until 6". Asbestos free gaskets.

Connection flangeds dressed and drilled according to ANSI B.16.5 150 RF ; RTJ ; BW.



SIZE	D	L			H	kg
		BW	RTJ	RF		
2"	152	203	216	203	159	17
2".1/2	178	216	229	216	168	25
3"	191	241	254	241	181	29
4"	229	292	305	292	203	50
6"	279	356	368	356	276	85
8"	343	495	508	495	330	150
10"	406	622	635	622	381	240
12"	483	699	711	699	410	350
14"	533	787	800	787	524	460
16	597	864	876	864	572	495

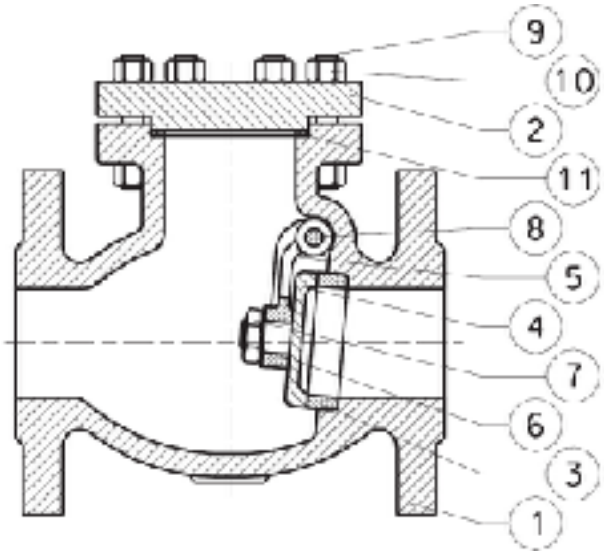
Cleveland INDUSTRIAL VALVES

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72" in SS, CS , CI , DI , Monel , Inconel.

CIV Check 150

List Materials



	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Cover	ASTM A216 WCB STEEL
3	Seat	STAINLESS STEEL
3	Swing	STAINLESS STEEL
4	Hinge	CARBON STEEL
4	Washer	STAINLESS STEEL
5	Nut	STAINLESS STEEL
6	Pin	STAINLESS STEEL
7	Studs	STEEL
8	Nuts	STEEL
9	Gasket	ASBESTOS FREE

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SWING CHECK VALVE CLASS 300

FIGURE 40.20.2

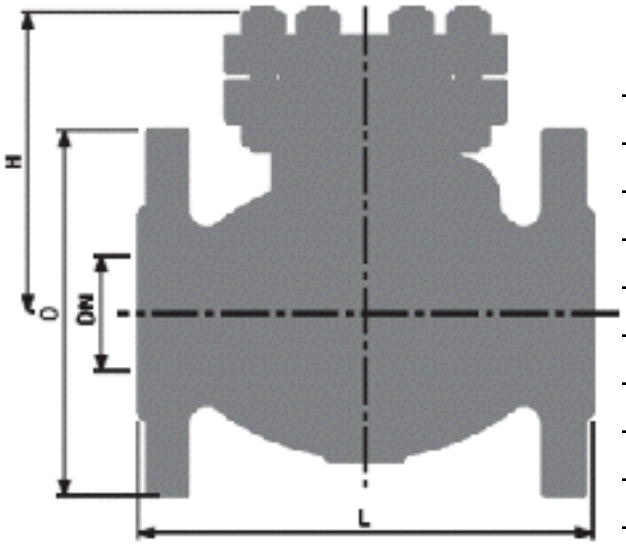
CIV Check 300



Construction :

Carbon steel body and cover . Stainless steel seat and swing until 6”. Asbestos free gaskets.

Connection flangeds dressed and drilled according to ANSI B.16.5 300 RF ; RTJ ; BW.



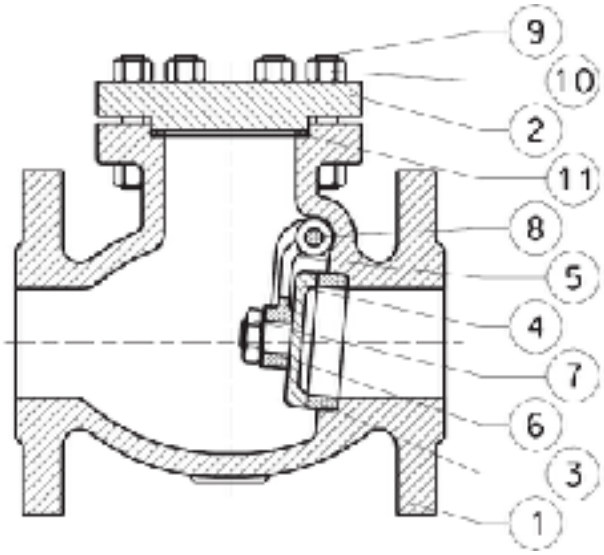
SIZE	D	L			H	kg
		BW	RTJ	RF		
2”	165	267	283	267	175	28
2”.1/2	191	292	308	292	181	33
3”	210	318	333	318	191	45
4”	254	356	371	356	241	70
6”	318	445	460	445	305	150
8”	381	533	549	533	362	230
10”	445	622	638	622	425	390
12”	521	711	727	711	451	520
14”	584	838	854	838	549	710

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

CIV Check 300

List Materials



	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Cover	ASTM A216 WCB STEEL
3	Seat	STAINLESS STEEL
3	Swing	STAINLESS STEEL
4	Hinge	CARBON STEEL
4	Washer	STAINLESS STEEL
5	Nut	STAINLESS STEEL
6	Pin	STAINLESS STEEL
7	Studs	STEEL
8	Nuts	STEEL
9	Gasket	ASBESTOS FREE

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SWING CHECK VALVE CLASS 600

FIGURE 40.20.3

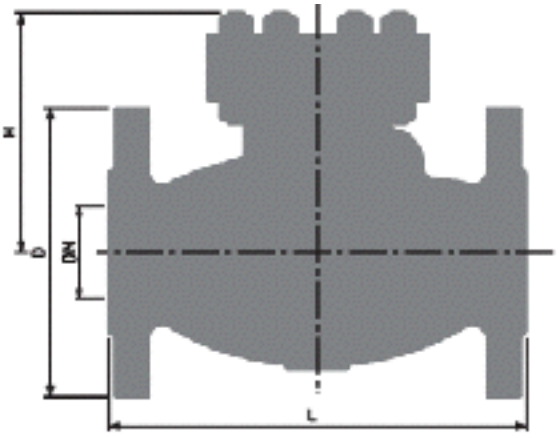
CIV Check 600



Construction :

Carbon steel body and cover . Stainless steel seat and swing until 6”. Asbestos free gaskets.

Connection flangeds dressed and drilled according to ANSI B.16.5 600 RF ; RTJ ; BW.



SIZE	D	L			H	kg
		BW	RTJ	RF		
2”	165	292	295	292	203	32
2”.1/2	191	330	333	330	219	42
3”	210	356	359	356	238	60
4”	273	432	435	432	279	110
6”	356	559	562	559	381	220
8”	419	660	664	660	438	390
10”	508	787	791	787	527	630
12”	559	838	841	838	641	870

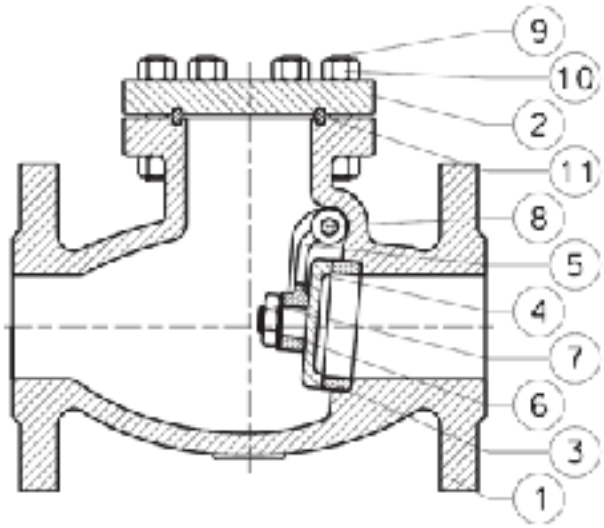
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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

CIV Check 600

List Materials



	Part Name	Material
1	Body	ASTM A216 WCB STEEL
2	Cover	ASTM A216 WCB STEEL
3	Seat	STAINLESS STEEL
3	Swing	STAINLESS STEEL
4	Hinge	CARBON STEEL
4	Washer	STAINLESS STEEL
5	Nut	STAINLESS STEEL
6	Pin	STAINLESS STEEL
7	Studs	STEEL
8	Nuts	STEEL
9	Gasket	METALLIC

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GLOBE VALVES



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GLOBE VALVE CLASS 150

FIG. 20.20.1

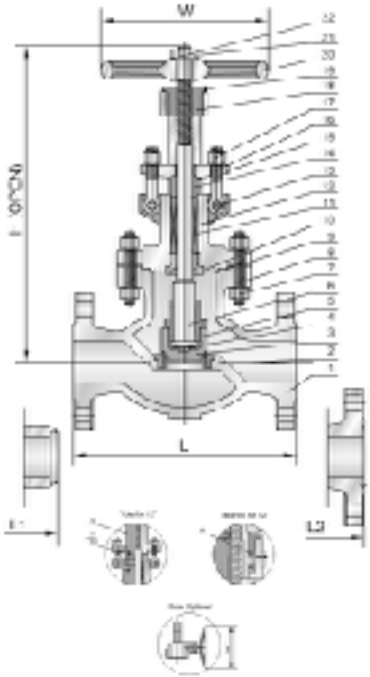
CIV Globe 150



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to End	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

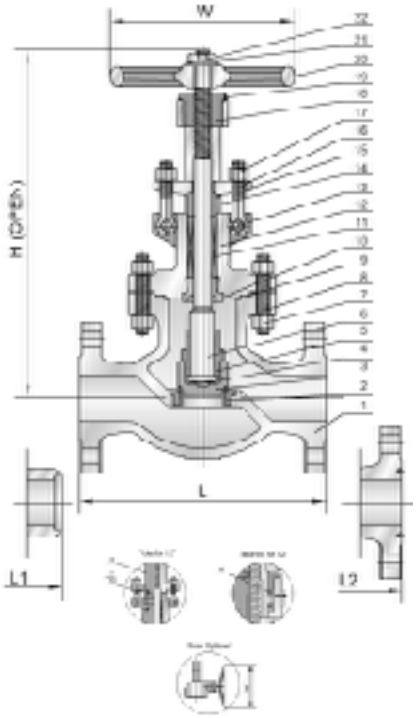


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	8.00	203	8.50	216	13.58	345	8	200	22
2.5"	65	8.50	216	9.00	229	16.34	415	8	200	32
3"	80	9.50	241	10.00	254	15.94	405	10	250	38
4"	100	11.50	292	12.00	305	19.09	485	12	300	62
6"	150	16.00	406	16.50	419	20.47	520	14	350	104
8"	200	19.50	495	20.00	508	23.62	600	18	450	159
10"	250	24.50	622	25.00	635	30.00	762	20	500	308
12"	300	27.50	698	28.00	711	33.94	862	25	640	539

Cleveland INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 150

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel

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GLOBE VALVE CLASS 300

FIG. 20.20.2

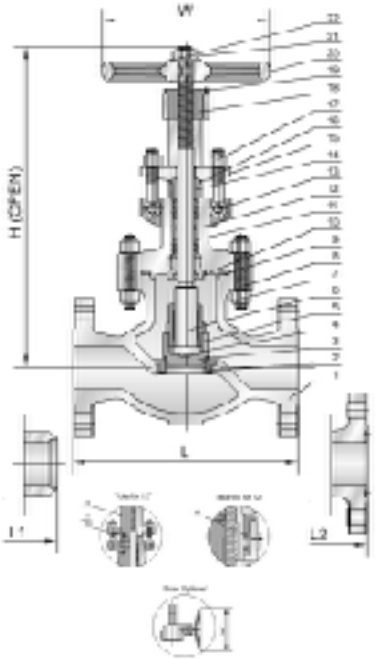
CIV Globe 300



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

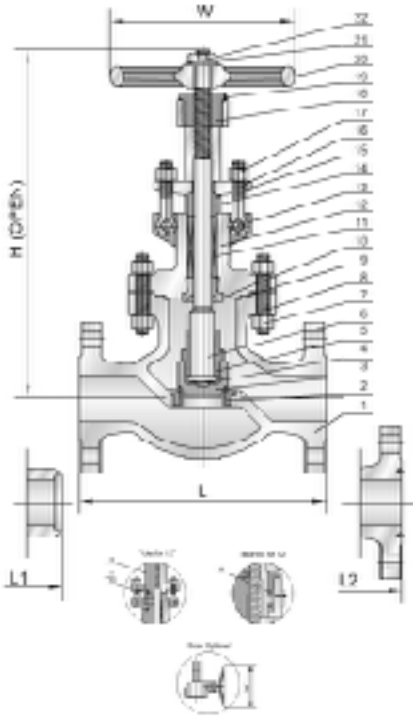


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	10.50	267	11.12	283	14.57	370	8	200	28
2.5"	65	11.50	292	12.12	308	18.66	474	10	250	48
3"	80	12.50	318	13.12	333	17.32	440	10	250	56
4"	100	14.00	356	14.62	371	20.67	525	14	350	82
6"	150	17.50	445	18.12	460	24.41	620	18	450	154
8"	200	22.00	559	22.62	575	35.83	910	22	560	240
10"	250	24.50	622	25.12	638	37.36	949	24	600	319
12"	300	28.00	711	28.62	727	40.63	1032	25	640	632

Cleveland INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 300

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

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GLOBE VALVE CLASS 600

FIG. 20.20.3

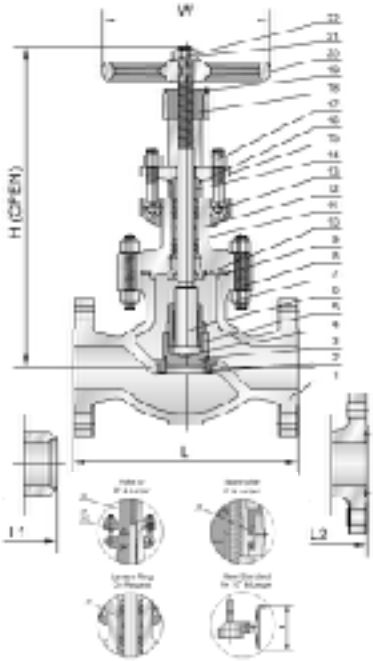
CIV Globe 600



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to End	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

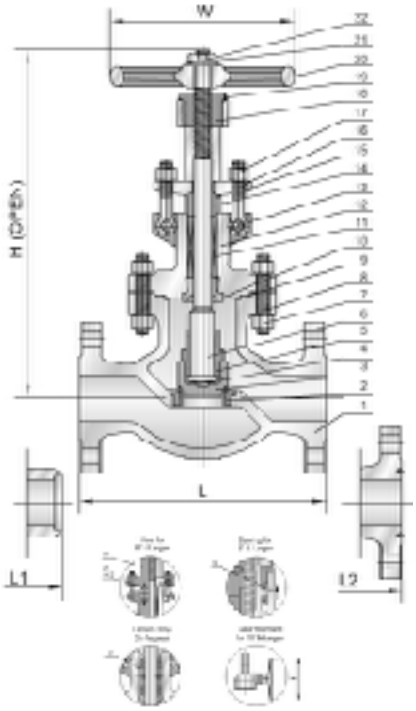


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	11.50	292	11.62	295	18.19	462	10	250	36
2.5"	65	13.00	330	13.12	333	21.26	540	10	250	70
3"	80	14.00	356	14.12	359	23.03	585	12	350	85
4"	100	17.00	432	17.12	435	26.38	670	18	450	123
6"	150	22.00	559	22.12	562	34.88	886	20	500	404
8"	200	26.00	660	26.12	663	36.69	932	25	640	450
10"	250	31.00	787	31.12	790	40.94	1040	24	610	700
12"	300	33.00	838	33.12	841	50.39	1280	24	610	900

Cleveland INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 600

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + 13Cr Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

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GLOBE VALVE CLASS 900

FIG. 20.20.4

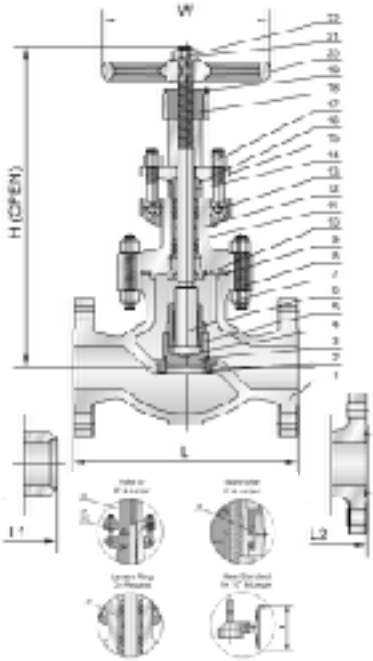
CIV Globe 900



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to End	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

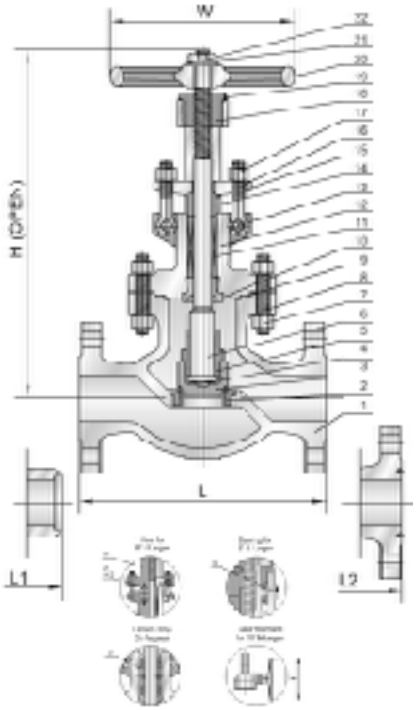


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	14.50	368	14.62	371	23.62	600	14	350	95
2.5"	65	16.50	419	16.62	422	25.98	660	14	350	138
3"	80	15.00	381	15.12	384	26.18	665	18	450	122
4"	100	18.00	457	18.12	460	31.50	800	20	500	195
6"	150	24.00	610	24.12	613	43.62	1108	24	610	435
8"	200	29.00	737	29.12	740	46.61	1184	24	610	730

Cleveland
INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 900

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + Stellite Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

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GLOBE VALVE CLASS 1500

FIG. 20.20.5

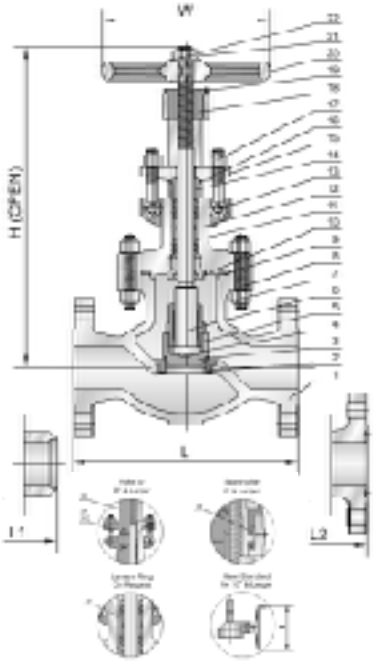
CIV Globe 1500



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to End	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

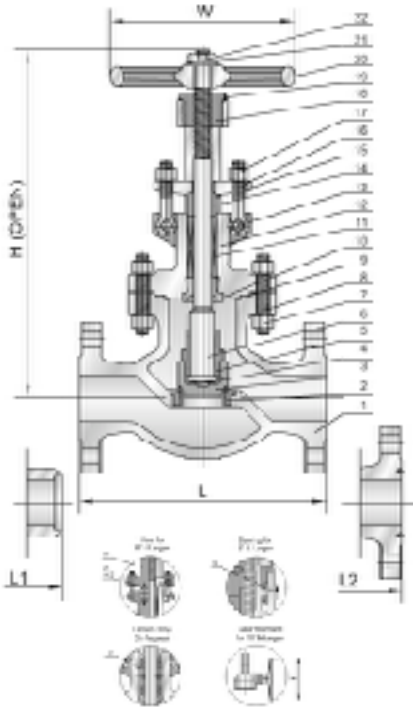


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	14.50	368	14.62	371	25.98	660	14	350	95
2.5"	65	16.50	419	16.62	422	25.98	660	14	350	138
3"	80	18.50	470	18.62	473	30.31	770	20	500	250
4"	100	21.50	546	21.62	549	33.46	850	22	560	435
6"	150	27.75	705	28.00	711	45.08	1145	24	610	540
8"	200	32.75	832	33.13	841	52.95	1345	24	610	970

Cleveland
INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 1500

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + Stellite Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

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GLOBE VALVE CLASS 2500

FIG. 20.20.6

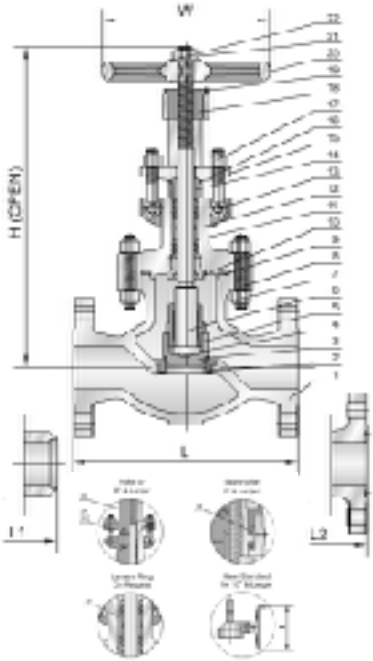
CIV Globe 2500



Construction :

OS & Y, Rising StemBolted BonnetConic DiscExtended Bonnet for Cryogenic ServicesImpact Handwheel OptionalGear

Design	ASME B16.34/BS 1873
Face to Face	ASME B16.10
End Flange	ASME B16.10
End to End	ASME B16.5BW
End	ASME B16.25
Test	API 598
Special	NACE MR-01-75

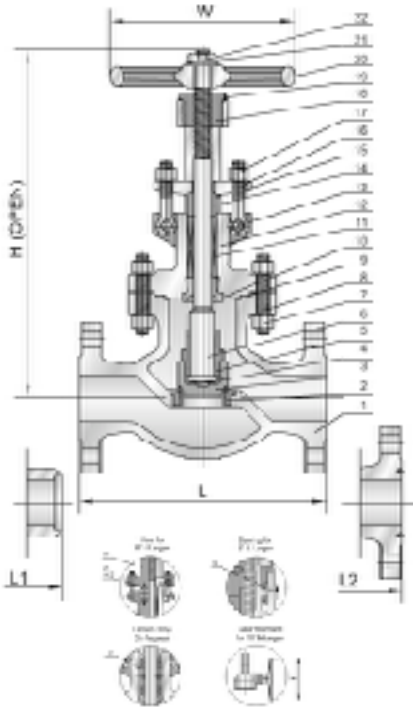


Size		L/L 1		L2		H		W		Weight RF
in	mm	in	mm	in	mm	in	mm	in	mm	kg
2"	50	17.75	451	17.87	454	28.35	720	16	400	176
2.5"	65	20.00	508	20.25	514	31.50	800	20	500	264
3"	80	22.75	578	23.00	584	34.84	885	22	560	308
4"	100	26.50	673	26.88	683	49.61	1260	24	600	759
6"	150	36.00	914	36.50	927	75.00	1905	24	610	1990
8"	200	40.25	1022	40.87	1038	97.05	2465	24	610	4390

Cleveland
INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.



CIV Globe 2500

List Materials

ITEM	PART NAME	MATERIAL
1	Body	ASTM A216 GR.WCB
2	Seat Ring	ASTM A105 + Stellite Faced
3	Disc	ASTM A105 + Stellite Faced
4	Disc Thrust Plate	ASTM A276 Type 420
5	Disc Nut	ASTM A276 Type 410
6	Stem	ASTM A182 GR.F6
7	Bonnet Bolt Nuts	ASTM A194 GR.2H
8	Bonnet Bolts	ASTM A193 GR.B7
9	Gasket	Soft Iron+Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing	Braided Graphite & Die formed Graphite Ring
12	Bonnet	ASTM A216 GR.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 GR.WCB
16	Gland Eye Bolts	ASTM A307 GR.B
17	Eye Bolt Nuts	ASTM A194 GR.2H
18	Yoke Bush	ASTM A439 GR.D-2
19	Screw	Carbon Steel
20	Handwheel	Ductile Iron
21	Handwheel Nut	ASTM A194 GR.2H
22	Washer	Carbon Steel
23	Yoke	ASTM A216 GR.WCB
24	Yoke Pan Bolt Nuts	ASTM A194 GR.2H
25	Yoke Pan Bolts	ASTM A193 GR.B7
26	Bearing	Steel
27	Lantern Ring On Request	ASTM A276 Type 410

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Stem Data & Operation Torques

CLASS	ITEM	VALVE SIZE							
		2"	2.5"	3"	4"	6"	8"	10"	12"
150	Stem Thread O.D.	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"
	Thread Per Inch	5	5	5	5	4	4	4	3
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.25	0.25	0.333
	Turns to Open	4	7	5	8	7	9	10	7
	Touque (N.m)	47	66	84	157	239	326	620	1198
300	Stem Thread O.D.	3/4"	7/8"	1"	1-1/8"	1-3/8"	1-1/2"	1-5/8"	1-3/4"
	Thread Per Inch	5	5	5	5	4	4	3	3
	Pitch (in)	0.2	0.2	0.2	0.2	0.25	0.25	0.333	0.333
	Turns to Open	4	8	7	8	7	9	9	9
	Touque (N.m)	62	85	118	218	727	1309	2160	3100
600	Stem Thread O.D.	7/8"	1"	1-1/8"	1-1/2"	1-5/8"	1-7/8"	2"	2-1/8"
	Thread Per Inch	5	5	5	4	3	3	3	3
	Pitch (in)	0.2	0.2	0.2	0.25	0.333	0.333	0.333	0.333
	Turns to Open	8	8	8	8	9	9	9	9
	Touque (N.m)	142	244	316	602	1590	2782	4579	6216
900	Stem Thread O.D.	1-1/8"	1-1/4"	1-1/4"	1-3/8"	1-3/4"	2"		
	Thread Per Inch	5	4	4	4	3	3		
	Pitch (in)	0.2	0.25	0.25	0.25	0.333	0.333		
	Turns to Open	8	7	8	8	9	9		
	Touque (N.m)	285	412	528	1063	1792	3439		
1500	Stem Thread O.D.	1-1/8"	1-1/4"	1-3/8"	1-1/2"	2"	2-1/4"		
	Thread Per Inch	5	4	4	4	3	3		
	Pitch (in)	0.2	0.25	0.25	0.25	0.333	0.333		
	Turns to Open	8	7	7	8	9	9		
	Touque (N.m)	352	772	876	1816	3868	5011		
2500	Stem Thread O.D.	1-1/4"	1-1/2"	1-5/8"	1-3/4"	2"	2-1/2"		
	Thread Per Inch	4	4	3	3	3	3		
	Pitch (in)	0.25	0.25	0.333	0.333	0.333	0.333		
	Turns to Open	7	7	6	6	9	9		
	Touque (N.m)	502	824	959	2062	6530	9682		

Data given this catalogue may be changed without notice

On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

Cleveland
INDUSTRIAL VALVES

STRAINERS



Cleveland
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Y-STRAINER PN 16

FIGURE Nº 50.10.1

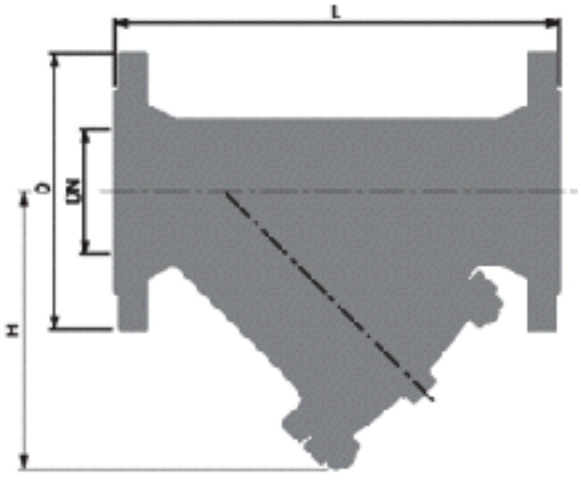
CIV Strainer 16



Construction :

Ductil cast iron body cover and cover . Stainless steel screen.

Connection flanges dressed and drilled according to EN 11092-2 PN 16 with raised face.

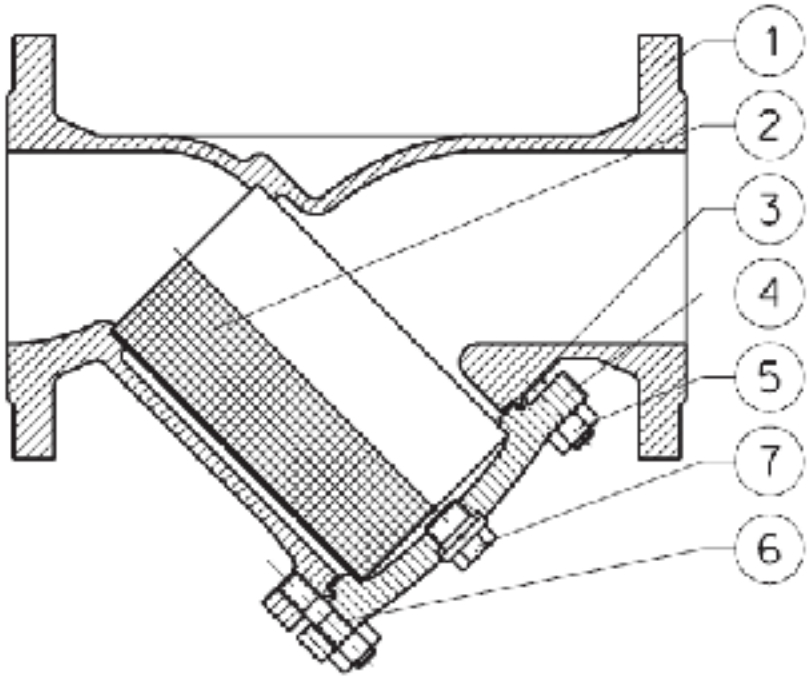


DN	D	L	H
40	150	200	126
50	165	230	134
65	185	290	182
80	200	310	208
100	220	350	240
125	250	400	280
15	285	480	325
200	340	600	400
250	405	730	485

Cleveland
INDUSTRIAL VALVES

CIV Strainer 16

List Materials



	Part Name	Material
1	Body	Ductil Iron; Cast Iron ; Stainlees steel ; Special alloys*
2	Strainer	SS304 ; Icr18Ni9TI
3	Cover	Ductil Iron; Cast Iron ; Stainlees steel ; Special alloys*
4	Washer	PTFE+graphite
5	Bolt	steel
6	Bolt	steel
7	-	-

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Y-STRAINER PN 40

FIGURE Nº 50.10.2

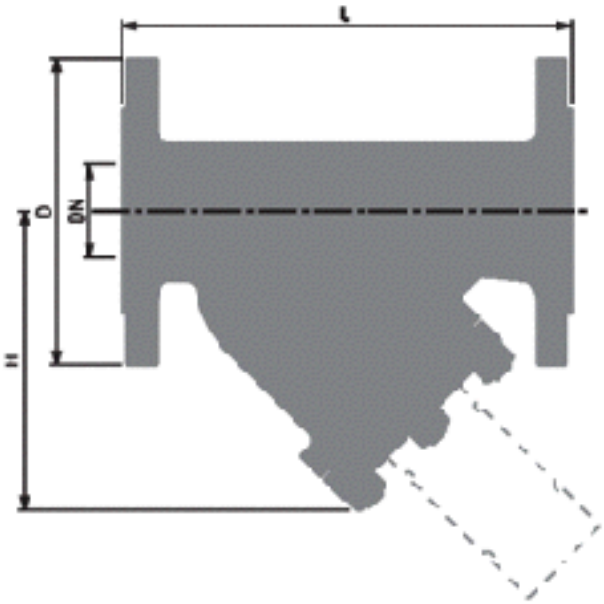
CIV Strainer 40



Construction :

Carbon steel body and bonnet. Stainless steel screen.Asbestos free gasket.Connection flanges dressed and drilled according to EN 1092-1

PN 40 with raised face.

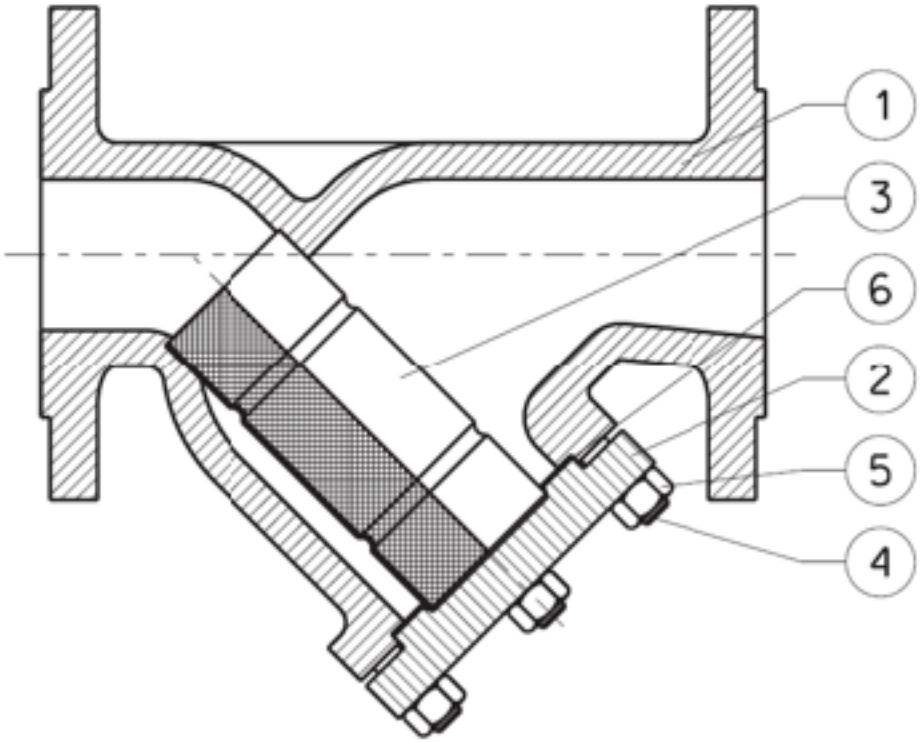


DN	D	L	H
15	95	130	70
20	105	150	75
25	115	160	80
32	140	180	90
40	150	200	100
50	165	130	115
65	185	190	130
80	200	310	145
100	235	350	170
125	270	400	220
150	300	480	290
200	375	600	370
250	450	730	420
300	515	850	530

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CIV Strainer 40

List Materials



	Part Name	Material
1	Body	Ductil Iron ; Stainlees steel ; Special alloys*
2	cover	Ductil Iron; Stainlees steel ; Special alloys*
3	Screen	AISI 304 ; ST.STEEL
4	Stud	Carbon steel
5	Nut	Carbon steel
6	Gasket	Asbestos free
7	-	-

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SEDIMENT STRAINER PN 16

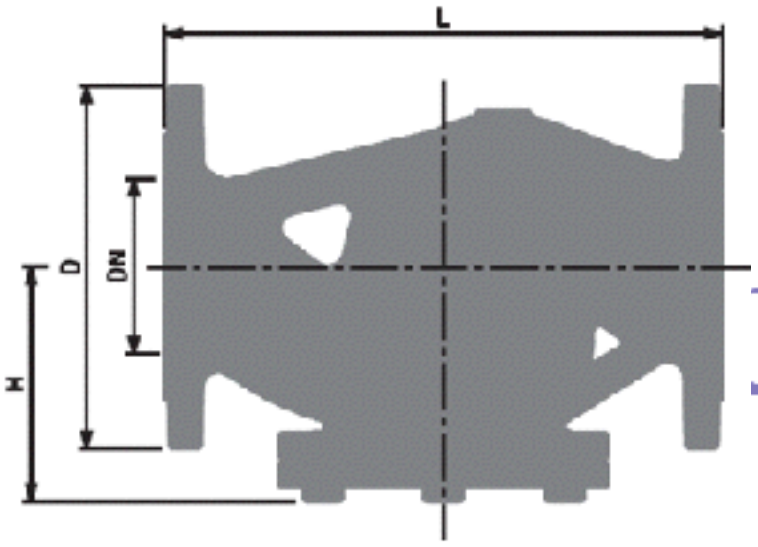
FIGURE Nº 50.10.4

CIV Strainer 16 Sediment



Construction :

Nodular cast iron body. Carbon steel cover. Stainless steel screen . Connection flanged dressed and drilled according to EN 1092-2 PN 16 standards with raised face.



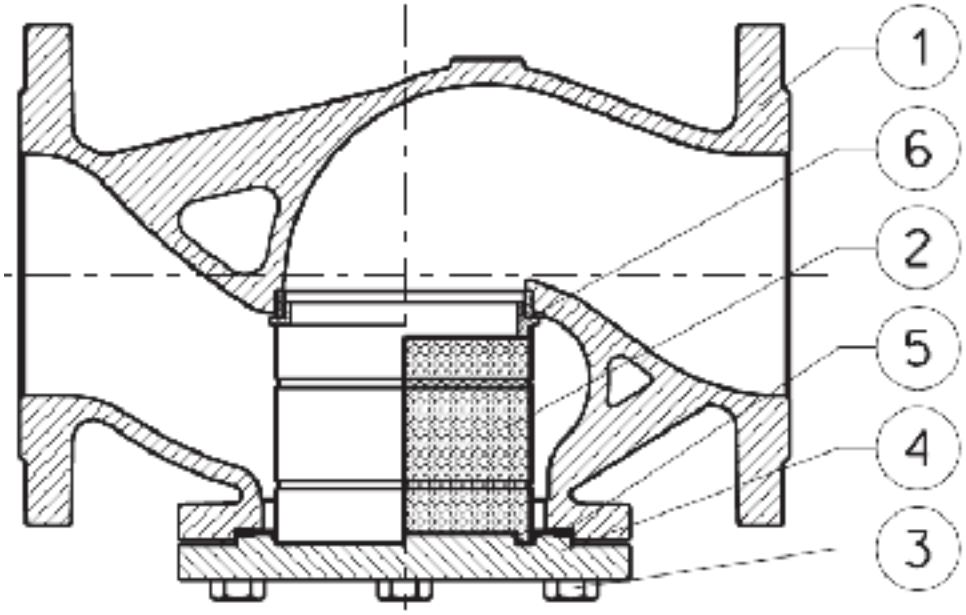
DN	D	L	H
15	95	130	73
20	105	150	73
25	115	160	78
32	140	180	90
40	150	200	105
50	165	130	113
65	185	190	143
80	200	310	150
100	220	350	165
125	250	400	185
150	285	480	205
200	340	600	245
250	405	730	313
300	460	850	355

Cleveland INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

CIV Strainer 16 Sediment



Material List

	Part Name	Material
1	Body	Ductil Iron; Cast Iron ; Stainlees steel ; Special alloys*
2	Screen	Aisi 304 St.Steel
3	Screw	8.8 Steel
4	cover	Ductil Iron; Cast Iron ; Stainlees steel ; Special alloys*
5	Gasket	Graphite + Stainless steel
6	Central	Steel
7	-	-

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SEDIMENT STRAINER PN 25

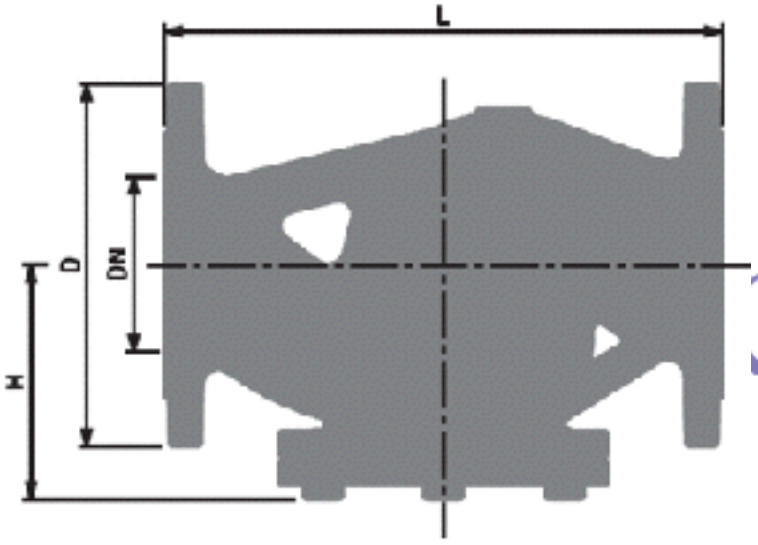
FIGURE Nº 50.10.5

CIV Strainer 25
Sediment



Construction :

Nodular cast iron body. Carbon steel cover. Stainless steel screen . Connection flanged dressed and drilled according to EN 1092-2 PN 25 standards with raised face.



DN	D	L	H
15	95	130	73
20	105	150	73
25	115	160	78
32	140	180	90
40	150	200	105
50	165	130	113
65	185	190	143
80	200	310	150
100	235	350	165
125	270	400	185
150	300	480	205

Cleveland
INDUSTRIAL VALVES

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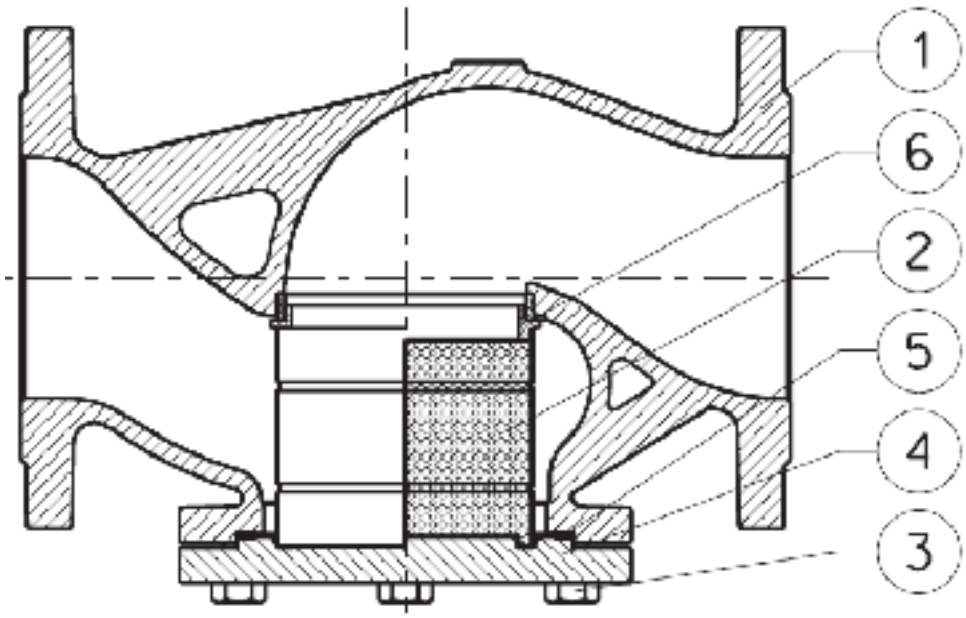
On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

SEDIMENT STRAINER PN 25

FIGURE Nº 50.10.5

CIV Strainer 25 Sediment

Material List



	Part Name	Material
1	Body	Ductil Iron; Stainlees steel ; Special alloys*
2	Screen	Aisi 304 St.Steel
3	Screw	8.8 Steel
4	cover	Ductil Iron; Stainlees steel ; Special alloys*
5	Gasket	Graphite + Stainless steel
6	Central	Steel
7	-	-

Cleveland INDUSTRIAL VALVES

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On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

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SEDIMENT STRAINER PN 40

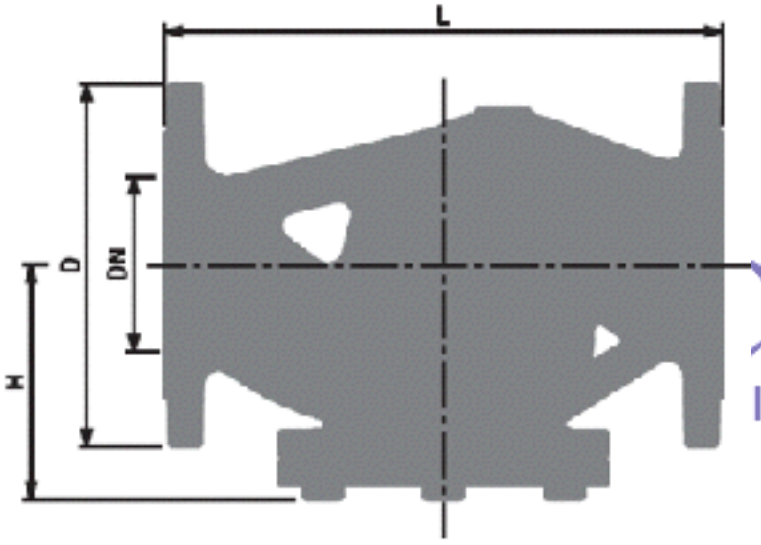
FIGURE Nº 50.10.6

CIV Strainer 40 Sediment



Construction :

Nodular cast iron body. Carbon steel cover. Stainless steel screen . Connection flanged dressed and drilled according to EN 1092-2 PN 40 standards with raised face.



DN	D	L	H
15	95	130	73
20	105	150	73
25	115	160	78
32	140	180	90
40	150	200	105
50	165	130	113
65	185	190	143
80	200	310	150
100	235	350	165
125	270	400	185
150	300	480	205

Cleveland INDUSTRIAL VALVES

Data given this catalogue may be changed without notice

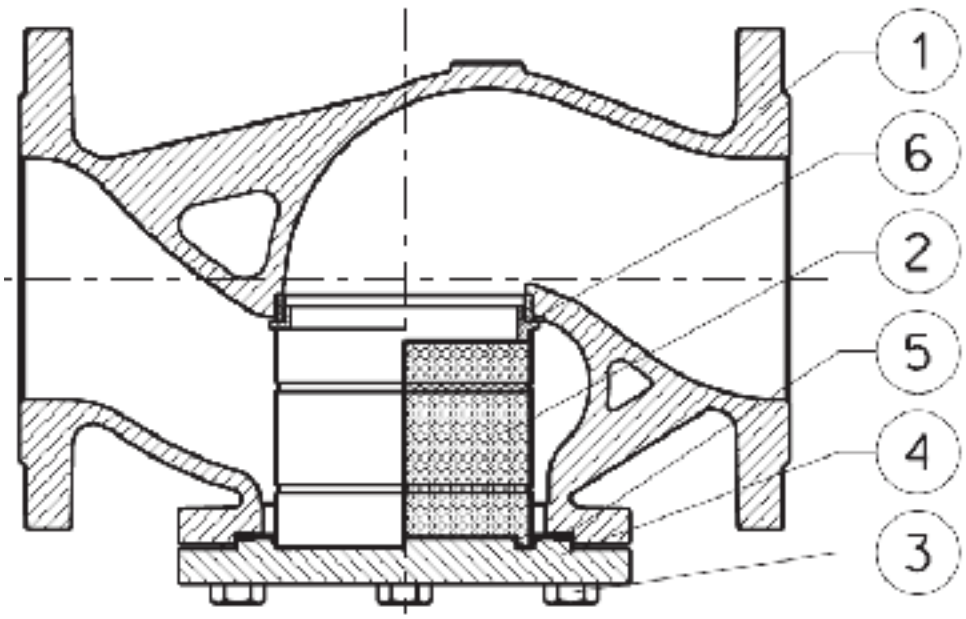
On request CIV supply valves up to 72” in SS, CS , CI , DI , Monel , Inconel.

SEDIMENT STRAINER PN 40

FIGURE Nº 50.10.6

CIV Strainer 40

Sediment



Material List

	Part Name	Material
1	Body	Ductil Iron; Stainlees steel ; Special alloys*
2	Screen	Aisi 304 St.Steel
3	Screw	8.8 Steel
4	cover	Ductil Iron; Stainlees steel ; Special alloys*
5	Gasket	Graphite + Stainless steel
6	Central	Steel
7	-	-

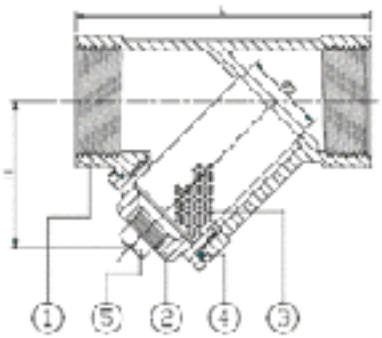
Cleveland
INDUSTRIAL VALVES

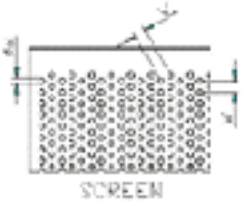
Threaded Strainer



FEATURES:

The thread ends conform to ASME B1.20.1(NPT)DIN 2999 & BS 21 ISO 228/1 & ISO 7/1
Investment casting
Max working temperature 445 F
600 W.O.G.
800 W.O.G. (Option)





Applicable Standard		
Test and Inspection		API 598

ITEM	PARTS	MATERIAL	
1	BODY	ASTM A351-CF8M 1.4408	ASTM A276-316
2	CAP		
3	SCREEN	AISI 316	
4	GASKET	PTFE	
5	DRAIN PLUG	ASTM A351-CF8M 1.4408	

INDUSTRIAL VALVES

Cleveland
INDUSTRIAL VALVES

FORGED STEEL VALVES



GATE - GLOBE - CHECK

FORGE STEEL GATE VALVE CLASS 800

FIG. 100.10.800



CIV Forged Gate 800

Standards

Construction : API602, BS 5352

Flanged ASME CLASSES 150,300,600,1500

Socket Weld : Asme B16.11

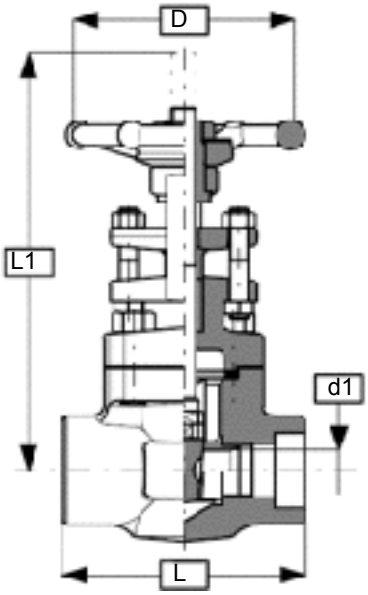
Threaded Asme B1.20.1

Butt Weld : Asme B16.25

Test : API 598-BS 6755 (Pt.1)

ASME CLASS 800 : 1975 psi 100 ºf

ASME CLASS 1500 : 3705 psi 100ºF



DN	d1	L	L1	D
½”	10	80	145	90
¾”	14	90	156	90
1”	18	110	186	100
1.1/4”	24	127	216	120
1.1/2”	31	127	255	140
2”	9,1	130	273	140

Cleveland INDUSTRIAL VALVES

FORGE STEEL GATE VALVE CLASS 1500

FIG. 100.10.1500



CIV Forged Gate 1500

Standards

Construction : API602, BS 5352

Flanged ASME CLASSES 150,300,600,1500

Socket Weld : Asme B16.11

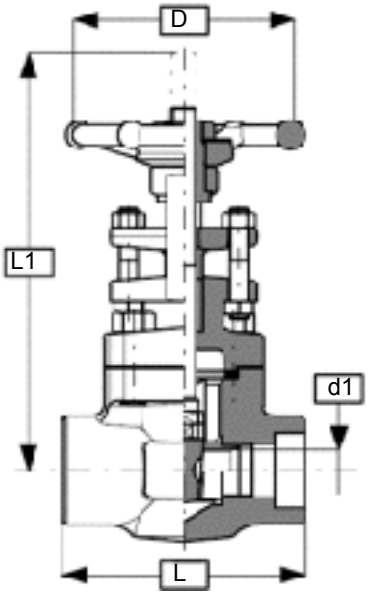
Threaded Asme B1.20.1

Butt Weld : Asme B16.25

Test : API 598-BS 6755 (Pt.1)

ASME CLASS 800 : 1975 psi 100 ºf

ASME CLASS 1500 : 3705 psi 100ºF



DN	d1	L	L1	D
½”	13	102	197	90
¾”	13	127	200	90
1”	18	152	244	125
1.1/4”	32	178	270	150
1.1/2”	32	178	270	150
2”	38	229	312	250

Cleveland INDUSTRIAL VALVES

FORGE STEEL GLOBE VALVE CLASS 800

FIG. 100.20.800

CIV Forged Globe 800



Standards

Construction : API602, BS 5352

Flanged ASME CLASSES 150,300,600,1500

Socket Weld : Asme B16.11

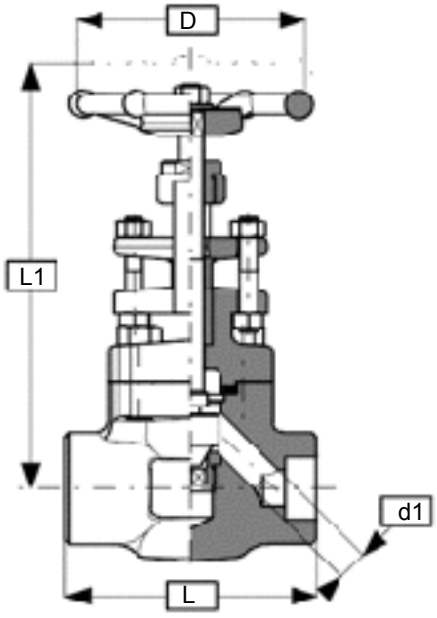
Threaded Asme B1.20.1

Butt Weld : Asme B16.25

Test : API 598-BS 6755 (Pt.1)

ASME CLASS 800 : 1975 psi 100 ºf

ASME CLASS 1500 : 3705 psi 100ºF



DN	d1	L	L1	D
½”	8	73	122	64
¾”	13	83	180	105
1”	19	89	185	105
1.1/4”	32	127	221	150
1.1/2”	32	127	221	150
2”	38	203	285	200

leveland INDUSTRIAL VALVES

FORGE STEEL GLOBE VALVE CLASS 1500

FIG. 100.20.1500

CIV Forged Globe 1500



Standards

Construction : API602, BS 5352

Flanged ASME CLASSES 150,300,600,1500

Socket Weld : Asme B16.11

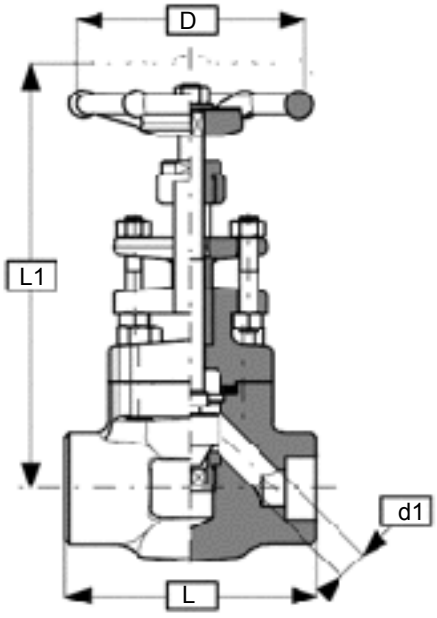
Threaded Asme B1.20.1

Butt Weld : Asme B16.25

Test : API 598-BS 6755 (Pt.1)

ASME CLASS 800 : 1975 psi 100 ºf

ASME CLASS 1500 : 3705 psi 100ºF



DN	d1	L	L1	D
½”	13	102	206	150
¾”	13	127	213	150
1”	19	152	254	200
1.1/4”	32	178	279	200
1.1/2”	32	178	279	200
2”	38	229	312	300

Cleveland INDUSTRIAL VALVES

FORGE STEEL CHECK VALVE CLASS 800

FIG. 100.30.800

CIV Forged Check 800



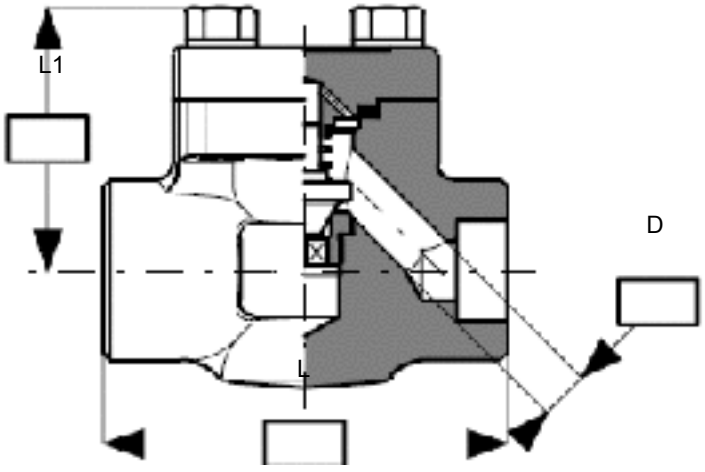
Standards

Piston , Ball or Swing type ASME CLASSES 800 , 1500

Socket Weld : Asme B16.11

Threaded Asme B1.20.1

Butt Weld : Asme B16.25



DN	D	L	L1
½”	12.7	89	64
¾”	12.7	89	64
1”	19.1	127	89
1.1/4”	31.8	133	86
1.1/2”	31.8	133	86
2”	38.1	152	109

Cleveland INDUSTRIAL VALVES

FORGE STEEL CHECK VALVE CLASS 1500

FIG. 100.30.1500

CIV Forged Check 1500



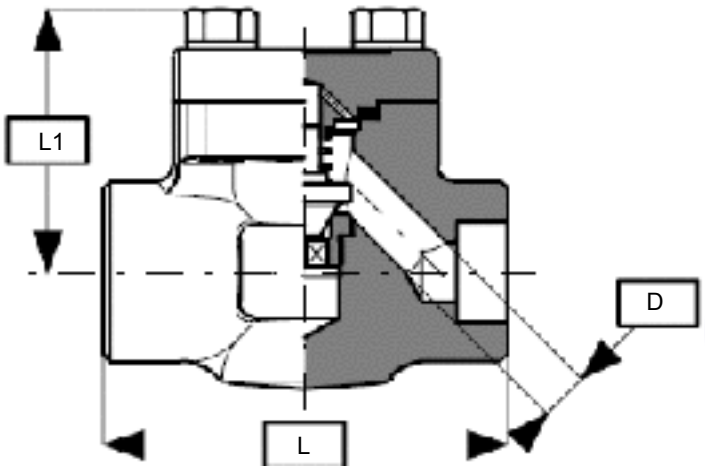
Standards

Piston , Ball or Swing type ASME CLASSES 800 , 1500

Socket Weld : Asme B16.11

Threaded Asme B1.20.1

Butt Weld : Asme B16.25



DN	D	L	L1
½”	12.7	152	94
¾”	12.7	152	94
1”	19.1	152	94
1.1/4”	31.8	178	94
1.1/2”	31.8	178	107
2”	38.1	229	132

Cleveland INDUSTRIAL VALVES


Cleveland
INDUSTRIAL VALVES
GEAR BOX

CIV GEAR BOX



Construction :

Speed reduction unit is used for butterfly valve, ball valve , plug valve etc.. With 90 unblocking

Degree to realice manual drive.

CODE	Velocity ratio	Torque	Input torque moment Nm	Diameter of handwheel	Weights (Kg 9
GB10	26:1	60	300	200	7
GB20	38:1	60	500	200	13
GB30		75	620	250	
GB40		90	700	300	
GB50	54:1	100	1000	250	17
GB60		120	1200	300	
GB70	80:1	110	1600	300	22
GB80		140	2000	400	
GB90	78:1	200	3100	600	38

Cleveland INDUSTRIAL VALVES

Cleveland
INDUSTRIAL VALVES

ELECTRICAL ACTUATORS



On–off Range
AK–On/off multi–turn
AKT–On/off quarter–turn

Modulating Range
AKM–Modulating multi–turn
AKTM–Modulating quarter–turn
AKMD–Modulating linear

CIV Electric Actuators

The CIV AK/AKT range of actuators is the latest generation of intelligent electric actuators based on advanced German technologiesSOC (System on a Chip) wich has resulted in a perfect combination of precise control with high stability.



The AK/AKT range actuators are equipped with infrared remote control by wich users can make settings. CIV actuators conform to the international explosion-proof standars , like ATEX. CIV not only provides the advanced technologies, but also actively takes customers cost into consideration so that more users may be able to share our high value products.

Cleveland
INDUSTRIAL VALVES

Non-intrusive design

The CIV AK/AKT range of actuators adopts the non-intrusive design. All parts are assembled into a double-sealed watertight metallic enclosure that complies with IP68 standards (3 meters 48 hours). Explosion-proof complies with BT4 and CT4 standars. By using an infrared remote control or local operation button, the settings may be done conveniently.

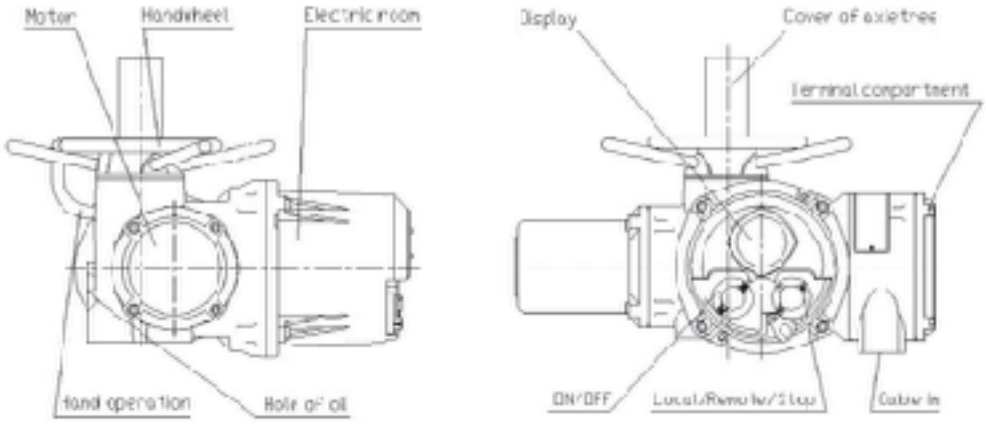
LCD Display and Local Control

The CIV AK/AKT actuators incorporate a unique high-definition liquid crystal display. Large display window with backlight enables users to see valve position , torque and function status at a long distance.

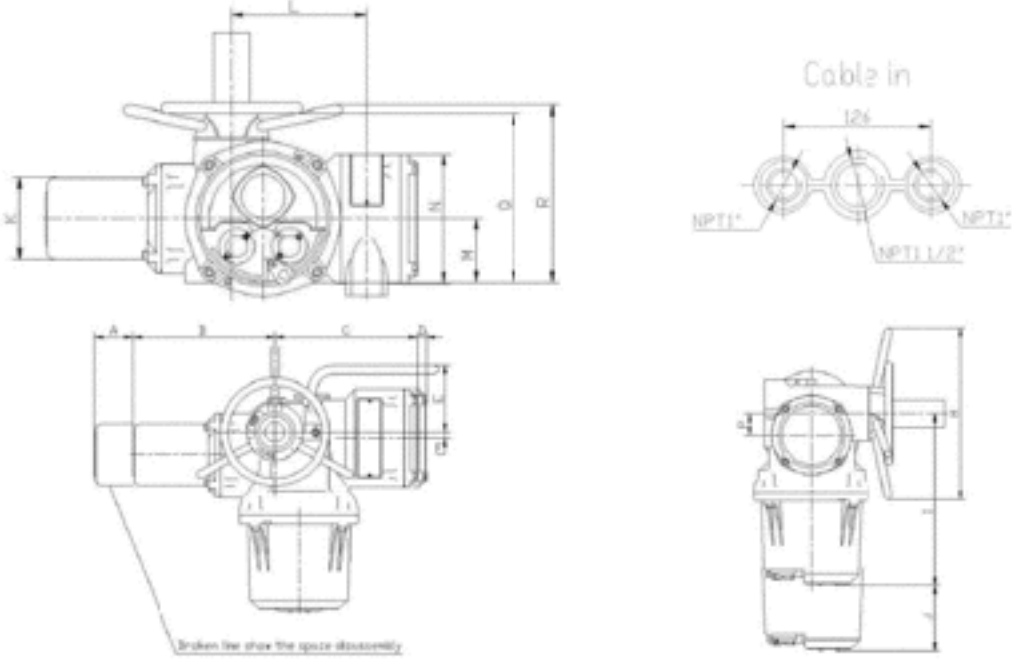
Emergency Shut Down (ESD)

According to customers specific requirement, the AK/AKT range of actuators can pre-set the emergency shut down (ESD) signals, such as motor thermostat , interruption timer etc…

AK range and AKM10/18/20/25/35 each part and name

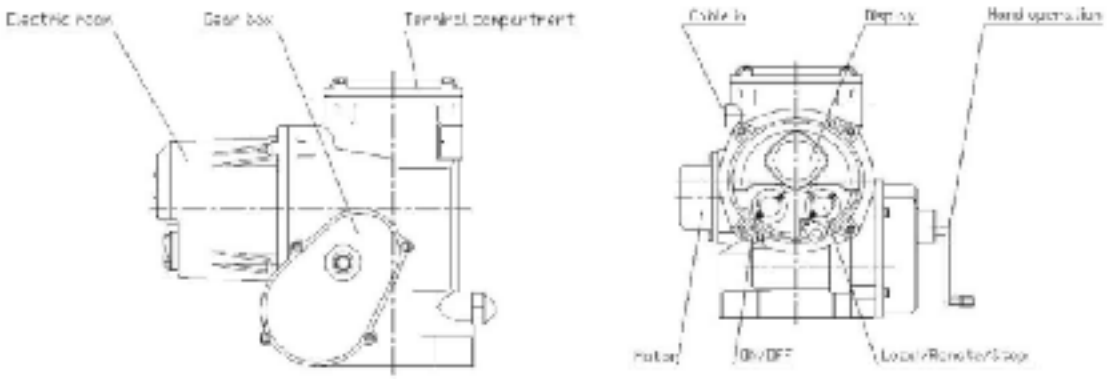


AK range and AKM10/12/18/20/25/35 actuator dimensions

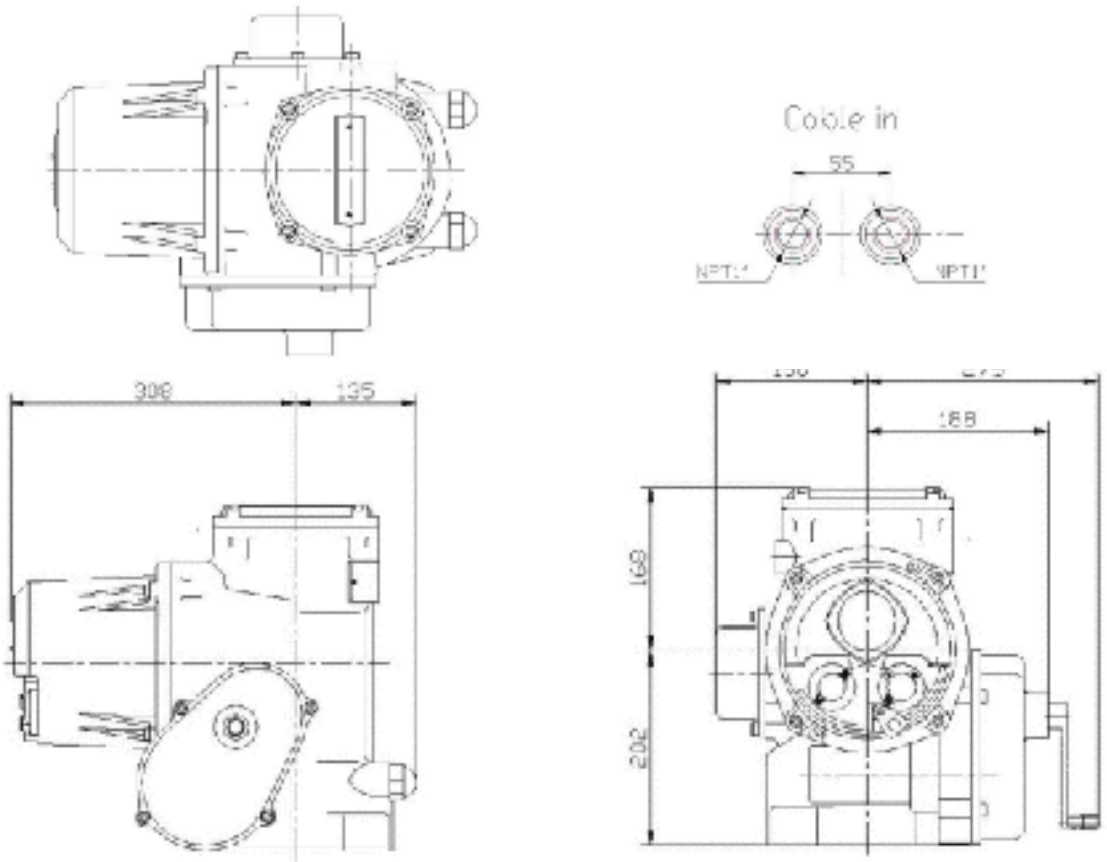


parameter	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
AK10/12/18	165	257	253	30	119	11	11	318	321	200	112	173	87	177	40	231	242
AK 20/25	230	354	257	30	119	40	16	652	382	230	136	178	108	177	60	278	308
AK 35	247	352	284	30	120	42	16	793	402	230	145	205	122	177	75	315	353

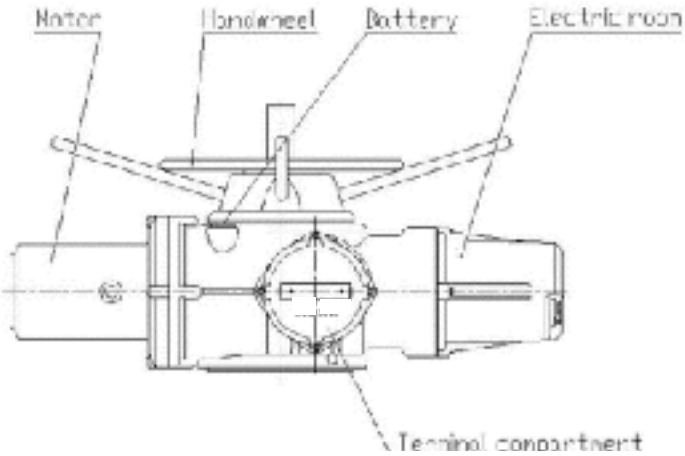
AKT range and AKTM500/1000/2000 each part and name

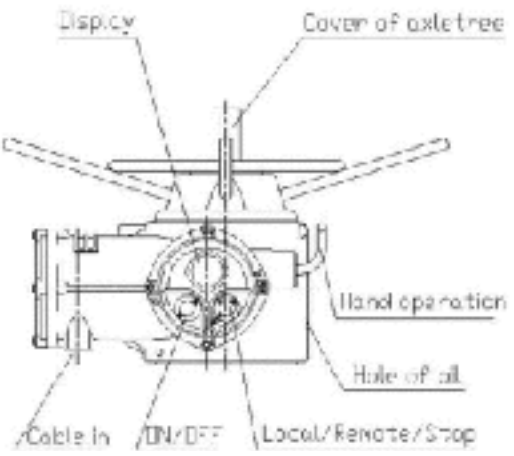


AKT range and AKTM500/1000/2000 actuator dimensions

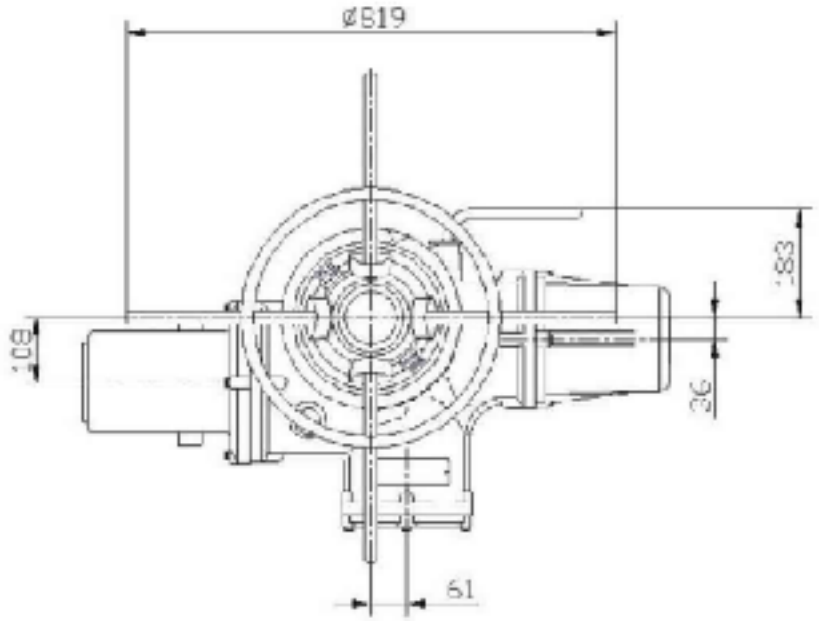


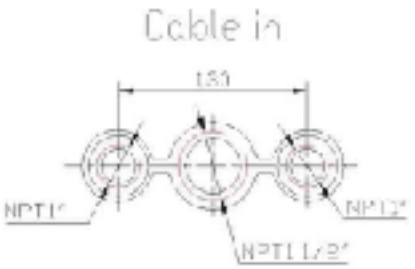
Each part and name of AK40

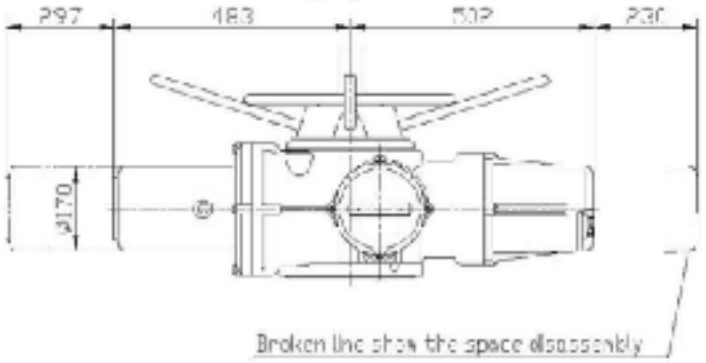


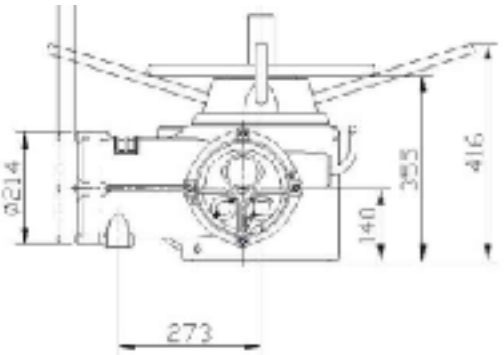


Dimension of AK40

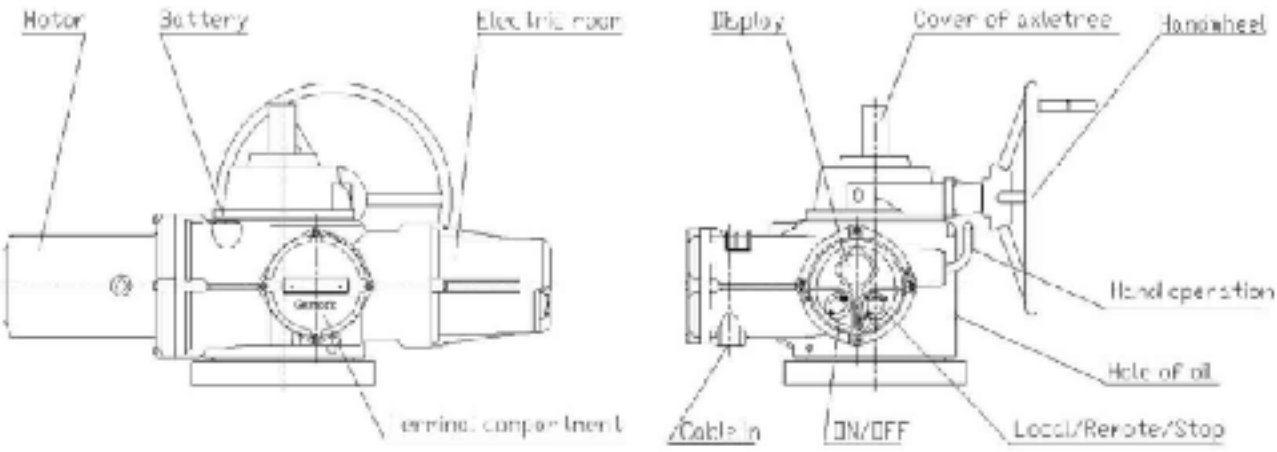




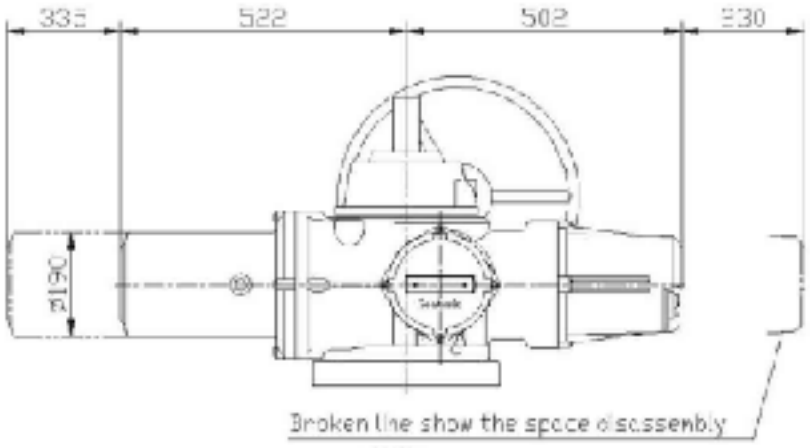


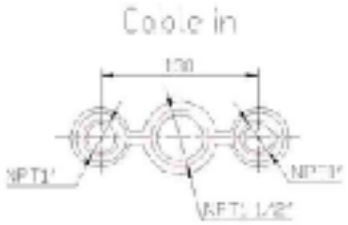


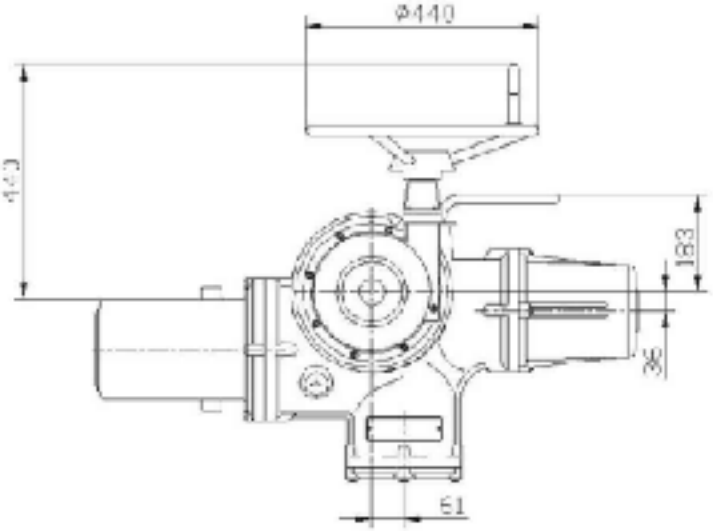
Each part and name of AK70/90/91/95

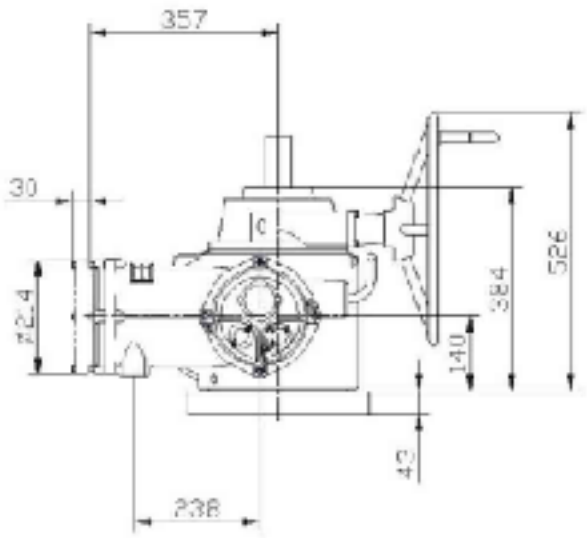


Dimensions of AK70/90/91/95









Data on multi-turn actuator (50/60Hz 380V 3 Phase)

50/60Hz	18	24	36	48	72	96	144	192
Model	Torque (Nm)							
Ak10	45	45	45	45	45	45		
Ak12	90	90	90	80	60	50		
Ak18	110	110	110					
Ak20	205	205	205	180	145	100		
Ak25	400	400	300	250	255	230	150	
Ak35	610	610	540	470	470	370	260	
Ak40	1000	1000	850	680	680	550	400	
Ak70	1500	1500	1300	1000	1000	750	650	540
Ak90	2000	2000	1700	1350	1350	1000	870	730
Ak91								13515300
Ak95		3000						

Data on multi-turn actuator (50/60Hz 380V 3 Phase)

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Model	AKM10		AKM18		AKM20		AKM25		AKM35	
Rated Thrust	44kN		44kN		100kN		100kN		150kN	
Flange	F10		F10		F14		F14		F16	
Stem Dia.(mm)	32		32		51		51		54	
Speed (RPM)	Modulating Torque	Max.Seat Torque	Modulating Torque	Max.Seat Torque	Modulating Torque	Max.Seat Torque	Modulating Torque	Max.Seat Torque	Modulating Torque	Max.Seat Torque
18	20	34	34	61	81	122	152	204	271	544
24	20	34	34	54	81	109	152	204	271	544
36	18	30	30	54	68	81	129	163	253	408
48	15	28	27	48	54	68	102	136	203	313
72	-	-	-	-	47	54	102	136	203	218

Cleveland INDUSTRIAL VALVES

CIV Electric Actuators

Data on Modulating Liner Actuator

Actuator Model	AKMD10			AKMD18			AKMD20		
Flange Model	F10			F10			F14		
ScrewDiameter/ Thread Space	25/3			25/3			33/7		
Max. Linear Travel	115								
Actuator Speed (RPM)	Linear speed (mm/sec)	Modulating Thrust (kN)	Rated seat Thrust (kN)	Linear speed (mm/sec)	Modulating Thrust (kN)	Linear speed (mm/sec)	Linear speed (mm/sec)	Modulating Thrust (kN)	Linear speed (mm/sec)
18	0.9	8.1	16.1	0.9	15.9	28.59	2.1	24.26	36.4
24	1.2	8.1	16.1	1.2	15.9	25.42	2.8	24.26	36.4
36	1.8	7.9	15	1.8	14.3	25.42	4.2	20.22	24.3
48	2.4	7.7	14.7	2.4	12.7	22.26	5.6	16.17	20.2
72							8.4	14.15	16.1

Actuator Model	AKMD20			AKMD25					
Flange Model	F14								
ScrewDiameter/ Thread Space	38/15			33/7			38/15		
Max. Linear Travel	115								
Actuator Speed (RPM)	Linear speed (mm/sec)	Modulating Thrust (kN)	Rated seat Thrust (kN)	Linear speed (mm/sec)	Modulating Thrust (kN)	Linear speed (mm/sec)	Linear speed (mm/sec)	Modulating Thrust (kN)	Linear speed (mm/sec)
18	5.4	16.7	25.1	2.5	45.5	60.7	5.4	31.3	41.7
24	7.2	16.7	25.1	3.4	45.5	60.7	7.3	31.3	41.7
36	10.8	13.9	16.7	5.0	38.4	48.5	10.8	26.4	33.3
48	14.4	11.1	13.9	6.8	30.3	40.4	14.4	20.85	27.8
72	21.6	8.9	11.1	10.1	30.3	40.4	21.6	20.85	27.8

Cleveland INDUSTRIAL VALVES

Data on Modulating Liner Actuator

Actuator Model		AKT125			AKT250		AKT500	AKT1000		AKT2000
Torque (Nm)	MAX	125			250		500	1000		2000
	MIN	50			100		200	400		800
90 degree operation time (s)	MIN	5			8		15	30		60
	MAX	20			30		20	120		240
Flanged Model		F05	F07	F10	F07	F10	F10	F12	F14	F14
Max Stem (mm)	Key	22	28	42	28	42	42	50	60	60
	Square Shaft	14	19	27	19	27	27	32	36	36

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ELECTRIC ACTUATOR





CIV Single Act



Single-phase motor

ISO 5211 Mounting
IP-65 Protection
Manual emergency control
Visual position indicator 2 additional limit switches (signalling or auxiliary)
R-0, R1 and R2+ Automatic motor disconnection when selection level is set at manual.



Construction material

Lid: A6 Polyamide
Casing: A6 Polyamide
Internal cams: A6 Polyamide
Main external shafts: Stainless steel Gears: Steel and polyamide
Position indicator: Polyamide and Fibreglass

Cleveland INDUSTRIAL VALVES

Optional accessorieS

Anti-condensation heater
BSR Battery return safety lock
DS 2000 Digital positioning system
4-20 mA or 0-10 v.





Characteristics



CARACTERÍSTICAS TÉCNICAS		U-0						
VOLTAJE (V)	DC	12	24	110				
	AC				24		110	220/240
CONSUMO (A)		1.8	1	0.3	1.2		0.35	0.2
TIME S/90º		9			7.5			15
START TORQUE (Nm)		15						
TORQUE (Nm)		15						
LOW TENSION TIME %		35						
PROTECTION		IP 65						
MANIOVER ANGLE º		90º						
WEIGHT (Kg)		1.5						
TEMPERATURE ºC		-10 +50						
CONECTORS		DIN 43650 / ISO 4400 & C - 192						

Cleveland
INDUSTRIAL VALVES

Characteristics



CARACTERÍSTICAS TÉCNICAS		R-0						
VOLTAJE (V)	DC	12	24	110				
	AC				24	48	110	220/240
CONSUMO (A)		1.8	1	0.3	1.2	0.8	0.35	0.35
TIME S/90º		9			7.5			
START TORQUE (Nm)		25						
TORQUE (Nm)		20						
LOW TENSION TIME %		35						
PROTECTION		IP 65						
MANIOVER ANGLE º		90º 180º 270º						
WEIGHT (Kg)		1.5						
TEMPERATURE ºC		-10 +50						
CONECTORS		DIN 43650 / ISO 4400 & C - 192						

Cleveland
INDUSTRIAL VALVES

Characteristics



CARACTERÍSTICAS TÉCNICAS		R-1						
VOLTAJE (V)	DC	12	24	110				
	AC				24	48	110	220/240
CONSUMO (A)		1.6	1	0.25	1.3	0.9	0.3	0.35
TIME S/90º		25			20			
START TORQUE (Nm)		60						
TORQUE (Nm)		55						
LOW TENSION TIME %		35						
PROTECTION		IP 65						
MANIOVER ANGLE º		90º 180º 270º						
WEIGHT (Kg)		1.8						
TEMPERATURE ºC		-10 +50						
CONECTORS		DIN 43650 / ISO 4400 & C - 192						

Cleveland
INDUSTRIAL VALVES

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INDUSTRIAL VALVES

Pneumatic Actuators
GT Series

Functions: 1) GT series part-turn valve pneumatic actuators with 90° rotary angle of output shaft
2) Combined with ball valves & butterfly valves

Working conditions and technical data:

1) Pressure of air supply: 0.1 - 1MPa
2) Rotary angle of output shaft: 0°±2°
3) Circumstance temperature: -20 ~ +90°C
4) The air supply should be clean & dry
5) Rating 125/250 VAC/10A
6) Stroke switch capability: AC 380V or DC 220V
7) Connection 1/4", Max. Pressure 120PSI
8) CSA Enclosure 4, Water Proof
9) SPDT Micro Switch



FLANGES

Cleveland

INDUSTRIAL VALVES



Cleveland
INDUSTRIAL VALVES

Flanges 150Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	89	11.2	47.6	15.9	15.9	60.5	4	15	35
3/4	117	15.9	57.2	25.4	25.4	82.5	4	15	43
1	108	14.3	55.6	17.5	17.5	79.5	4	15	51
1.1/4	117	15.9	57.2	20.6	20.6	89.0	4	15	64
1.1/2	127	17.5	61.9	22.2	22.2	98.5	4	15	73
2	152	19.1	63.5	25.4	25.4	120.5	4	19	92
2.1/2	178	22.3	69.8	28.6	28.6	139.5	4	19	105
3	190	23.9	69.8	30.2	30.2	152.5	4	19	127
3.1/2	216	23.9	71.4	31.8	31.8	178.0	8	19	140
4	229	23.9	86.2	33.3	33.3	190.5	8	19	157
5	254	23.9	88.9	36.5	36.5	216.0	8	22	186
6	279	25.4	88.9	39.7	39.7	241.5	8	22	216
8	343	28.6	101.6	44.4	44.4	298.5	8	22	270
10	406	30.2	101.6	49.2	49.2	362.0	12	25	324
12	483	31.8	114.3	55.6	55.6	432.0	12	25	381
14	533	35.0	127.0	57.2	79.4	476.0	12	29	413
16	597	36.6	127.0	63.5	87.3	539.5	16	29	470
18	635	39.7	139.7	68.3	96.8	578.0	16	32	533
20	698	42.9	144.5	73.0	103.2	635.0	20	32	584
24	813	47.7	152.4	82.6	111.1	749.5	20	35	692

Data given this catalogue may be changed without notice

Cleveland
INDUSTRIAL VALVES

Flanges 300Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	95	14.3	52.4	22.2	22.2	666.5	4	15	35
3/4	117	15.9	57.2	25.4	25.4	82.4	4	19	43
1	124	17.5	61.9	27.0	27.0	89.0	4	19	51
1-1/4	133	19.1	65.1	27.0	27.0	98.5	4	19	64
1-1/2	156	20.7	68.3	30.2	30.2	114.5	4	22	73
2	165	22.3	69.8	33.3	33.3	127.0	8	19	92
2-1/2	190	25.4	76.2	38.1	38.1	149.0	8	22	105
3	210	28.6	79.4	42.9	42.9	168.0	8	22	127
4	254	318	85.7	47.6	47.6	200.0	8	22	157
5	279	35.0	98.4	50.8	50.8	235.0	8	22	186
6	313	36.6	98.4	52.4	52.4	270.0	12	22	216
6	381	413	111.1	61.9	91.9	330.0	12	25	270
10	444	47.7	117.5	66.7	95.3	387.5	16	29	324
12	521	50.8	130.2	73.0	101.6	451.0	16	32	381
14	584	54.0	142.9	76.2	111.1	514.5	20	32	413
16	648	57.2	146.0	82.6	120.7	571.5	20	35	470
18	711	60.4	158.8	88.9	130.2	628.5	24	35	533
20	775	63.5	161.9	95.2	139.7	686.0	24	35	584
24	914	69.9	168.3	106.4	152.4	843.0	24	41	692

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Cleveland
INDUSTRIAL VALVES

Flanges 600Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	95	14.3	52.4	22.2	22.2	66.5	4	15	35
3/4	117	15.9	57.2	25.4	25.4	82.5	4	19	43
1	124	17.5	61.9	27.0	27.0	89.0	4	19	51
1-1/4	133	20.7	66.7	28.6	28.6	98.5	4	19	64
1-1/2	156	22.3	69.8	31.8	31.8	114.5	4	22	73
2	165	25.4	73.0	36.5	36.5	127.0	8	19	92
2-1/2	190	28.6	79.4	41.3	41.3	149.0	8	22	105
3	210	31.8	82.6	46.0	46.0	168.0	8	22	127
3-1/2	229	35.0	85.7	49.2	49.2	184.0	8	25	140
4	273	38.1	101.6	54.0	54.0	216.0	8	25	157
5	330	44.5	114.3	60.3	60.3	266.5	8	29	186
6	356	47.7	117.5	66.7	66.7	292.0	12	29	216
8	419	55.6	133.4	76.2	76.2	349.0	12	32	270
10	508	63.5	152.4	85.7	115.1	432.0	16	85	324
12	559	66.7	155.6	92.1	111.1	489.0	20	35	381
14	603	69.9	165.1	93.7	117.5	527.0	20	38	413
16	686	76.2	177.8	106.4	127.0	603.0	20	41	470
18	743	82.6	184.2	117.6	139.7	654.0	20	45	533
20	813	88.9	190.5	127.0	165.1	724.0	24	45	584
24	940	101.6	203.2	139.7	184.2	838.0	24	51	692

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Cleveland
INDUSTRIAL VALVES

Flanges 900Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	121	22.3	60.3	31.8	31.8	82.5	4	22	35
3/4	130	25.4	69.8	34.9	34.9	89.0	4	22	43
1	149	28.6	78.0	41.3	41.3	101.5	4	25	51
1-1/4	159	28.6	78.0	41.3	41.3	111.0	4	25	64
1-1/2	178	31.8	82.6	44.4	44.4	124.0	4	29	78
2	216	38.1	101.6	57.2	57.2	165.0	8	25	92
2-1/2	244	41.3	104.8	63.5	63.5	190.5	8	29	105
8	241	38.1	101.6	54.0	54.0	190.5	8	25	127
3-1/2									
4	292	44.5	114.3	69.8	69.8	235.0	8	32	157
5	349	50.8	127.0	79.4	79.4	279.5	8	35	186
6	381	55.6	189.7	85.7	85.7	317.5	12	32	216
8	470	68.5	161.9	101.8	114.3	393.5	12	38	270
10	546	69.9	184.2	108.0	127.0	470.0	16	38	324
12	610	79.4	200.0	117.5	142.9	533.5	20	38	381
14	584	54.0	142.9	76.2	111.1	514.5	20	32	413
16	711	60.4	158.8	88.9	130.2	628.5	24	35	533
20	775	63.5	161.9	95.2	139.7	686.0	24	35	584
24	914	69.9	168.3	106.4	152.4	843.0	24	41	692

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Cleveland
INDUSTRIAL VALVES

Flanges 1500Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	12.1	22.3	60.3	31.8	31.8	82.5	4	22	35
3/4	130	25.4	69.8	34.9	34.9	89.0	4	22	43
1	149	28.6	73.0	41.3	41.3	101.5	4	25	51
1-1/4	159	28.6	73.0	41.3	41.3	111.0	4	25	64
1-1/2	178	31.8	82.6	44.4	44.4	124.0	4	29	73
2	216	38.1	101.6	57.2	57.2	165.0	8	25	92
2-1/2	244	41.3	104.8	63.5	63.5	190.5	8	29	105
3	267	47.7	117.5	73.0	73.0	203.0	8	32	127
3-1/2									
4	311	54.0	123.8	90.5	90.5	241.5	8	35	157
5	375	73.1	155.5	104.8	104.8	292.0	8	41	186
6	394	82.6	171.4	119.1	119.1	317.5	12	38	216
8	483	92.1	212.7	142.9	142.9	393.5	12	45	270
10	584	108.0	254.0	158.8	177.8	482.5	12	51	324
12	673	123.9	282.9	181.0	219.1	571.5	16	54	381
14	749	133.4	298.4	-----	241.3	635.0	16	60	413
16	826	146.1	311.2	-----	260.4	705.0	16	51	470
18	914	162.0	327.0	------	276.2	474.5	16	73	538
20	984	117.8	355.4	-----	292.1	832.0	16	80	584
24	1168	203.2	406.4	-----	330.2	990.5	16	92	692

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INDUSTRIAL VALVES

Flanges 2500Lbs

Normal pipe size	Outside dia. of flange	Minimum thickness of flange	Overall Length			Bolt Circle	No. and Size of Holes		O.D. of raised face
			Welding neck	Slip-on & socket welding	Lap Joint				
	O	Q	Y			Diam.	No.	dia.	R
1/2	133.4	30.2	73.0	39.7	39.7	88.9	4	22	34.9
3/4	139.7	31.8	79.4	42.9	42.9	95.3	4	22	42.9
1	158.8	34.9	88.9	47.6	47.6	108.0	4	25	50.8
1-1/4	184.2	38.1	95.3	52.4	52.4	130.2	4	29	63.5
1-1/2	203.2	44.5	111.1	60.3	60.3	146.0	4	32	73.0
2	235.0	50.8	127.0	69.9	69.9	171.5	8	29	92.1
2-1/2	266.7	57.2	142.9	79.4	79.4	196.9	8	32	104.8
3	304.8	66.7	168.3	92.1	92.1	228.6	8	35	127.0
3-1/2									
4	355.6	76.2	190.5	108.0	108.0	273.0	8	41	157.2
5	419.1	92.1	228.6	130.2	130.2	323.9	8	48	185.7
6	482.6	108.0	273.1	152.4	152.4	268.3	8	54	215.9
8	552.5	127.0	317.5	177.8	177.8	438.2	12	54	269.9
10	673.1	165.1	419.1	228.6	228.6	539.8	12	67	323.9
12	762.0	184.2	463.6	254.0	254.0	619.1	12	73	381.03

Cleveland

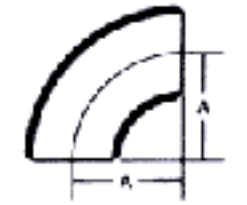
INDUSTRIAL VALVES

FITTINGS

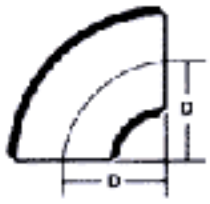


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INDUSTRIAL VALVES

Elbows, and returns Fittings



90° ELBOW/LONG RADIUS



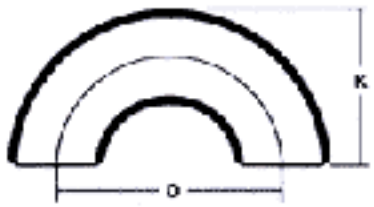
90° ELBOW/SHORT RADIUS



45° ELBOW



180° RETURN/SHORT RADIUS



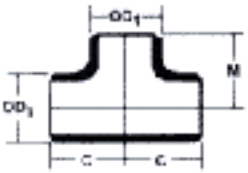
180° RETURN/LONG RADIUS

NOM PIPE SIZE	OUTSIDE DIAM. O.D.	A	B	D	O	K	O¹	K¹
1/2	0.84	1.50	0.62	-	3.00	1.88	-	-
3/4	1.05	1.50*	0.75**	-	3.00	2.00	-	-
1	1.32	1.50	0.88	1.00	3.00	2.19	2.00	1.62
1 1/4	1.66	1.88	1.00	1.25	3.75	2.75	2.50	2.06
1 1/2	1.90	2.25	1.12	1.50	4.50	3.25	3.00	2.44
2	2.38	3.00	1.38	2.00	6.00	4.19	4.00	3.19
2 1/2	2.88	3.75	1.75	2.50	7.50	5.19	5.00	3.94
3	3.50	4.50	2.00	3.00	9.00	6.25	6.00	4.75
3 1/2	4.00	5.25	2.25	3.50	10.50	7.25	7.00	5.50
4	4.50	6.00	2.50	4.00	12.00	8.25	8.00	6.25
5	5.56	7.50	3.12	5.00	15.00	10.31	10.00	7.75
6	6.62	9.00	3.75	6.00	18.00	12.31	12.00	9.31
8	8.62	12.00	5.00	8.00	24.00	16.31	16.00	12.31
10	10.75	15.00	6.25	10.00	30.00	20.38	20.00	15.38
12	12.75	18.00	7.50	12.00	36.00	24.38	24.00	18.38
14	14.00	21.00	8.75	14.00	42.00	28.00	28.00	21.00
16	16.00	24.00	10.00	16.00	48.00	32.00	32.00	24.00
18	18.00	27.00	11.25	18.00	54.00	36.00	36.00	27.00
20	20.00	30.00	12.50	20.00	60.00	40.00	40.00	30.00
22	22.00	33.00	13.50	22.00	66.00	44.00	44.00	33.00
24	24.00	36.00	15.00	24.00	72.00	48.00	48.00	36.00

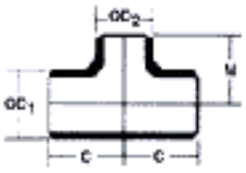
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INDUSTRIAL VALVES

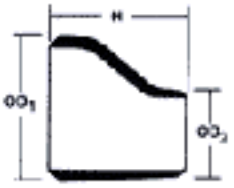
Tees and Reducers



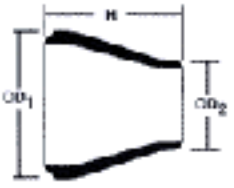
STRAIGHT TEE



REDUCING TEE



ECCENTRIC REDUCER



CONCENTRIC REDUCER

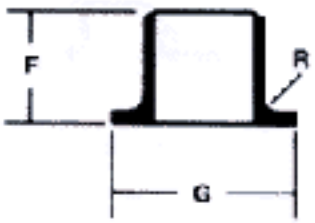
NOM PIPE SIZE		OUTSIDE DIAM		CENTER TO END		LENGTH	NOM PIPE SIZE		OUTSIDE DIAM		CENTER TO END		LENGTH
NPS X	NPS	OD¹	OD²	RUN C	OUTLET M	H	NPS X	NPS	OD¹	OD²	RUN C	OUTLET M	H
1/2	1/2	0.84	0.84	1.00	1.00	-	3 1/2	3 1/2	4.00	4.00	3.75	3.75	-
3/4	3/4	1.05	1.50	1.12	1.12	-		3	4.00	3.50	3.75	3.62	4.00
	1/2	1.05	0.84	1.12	1.12	1.50		2 1/2	4.00	2.88	3.75	3.50	4.00
1	1	1.32	1.32	1.50	1.50	-		2	4.00	2.38	3.75	3.25	4.00
	3/4	1.32	1.05	1.50	1.50	2.00		1 1/2	4.00	1.90	3.75	3.12	4.00
	1/2	1.32	0.84	1.50	1.50	2.00		1 1/4	4.00	1.66	-	-	4.00
1 1/4	1 1/4	1.66	1.66	1.88	1.88	-	4	4	4.50	4.50	4.12	4.12	-
	1	1.66	1.32	1.88	1.88	2.00		3 1/2	4.50	4.00	4.12	4.00	4.00
	3/4	1.66	1.05	1.88	1.88	2.00		3	4.50	3.50	4.12	3.88	4.00
	1/2	1.66	0.84	1.88	1.88	2.00		2 1/2	4.50	2.88	4.12	3.75	4.00
1 1/2	1 1/2	1.90	1.90	2.25	2.25	-		2	4.50	2.38	4.12	3.50	4.00
	1 1/4	1.90	1.66	2.25	2.25	2.50		1 1/2	4.50	1.90	4.12	3.38	4.00
	1	1.90	1.32	2.25	2.25	2.50	5	5	5.56	5.56	4.88	4.88	-
	3/4	1.90	1.05	2.25	2.25	2.50		4	5.56	4.50	4.88	4.62	5.00
	1/2	1.90	0.84	2.25	2.25	2.50		3 1/2	5.56	4.00	4.88	4.50	5.00
2	2	2.38	2.38	2.50	2.50	-		3	5.56	3.50	4.88	4.38	5.00
	1 1/2	2.38	1.90	2.50	2.38	3.00		2 1/2	5.56	2.88	4.88	4.25	5.00
	1 1/4	2.38	1.66	2.50	2.25	3.00		2	5.56	2.38	4.88	4.12	5.00
	1	2.38	1.32	2.50	2.00	3.00	6	6	6.62	6.62	5.62	5.62	-
	3/4	2.38	1.05	2.50	1.75	3.00		5	6.62	5.56	5.62	5.38	5.50
2 1/2	2 1/2	2.88	2.88	3.00	3.00	-		4	6.62	4.50	5.62	5.12	5.50
	2	2.88	2.38	3.00	2.75	3.50		3 1/2	6.62	4.00	5.62	5.00	5.50
	1 1/2	2.88	1.90	3.00	2.62	3.50		3	6.62	3.50	5.62	4.88	5.50
	1 1/4	2.88	1.66	3.00	2.50	3.50		2 1/2	6.62	2.88	5.62	4.75	5.50
	1	2.88	1.32	3.00	2.25	3.50	8	8	8.62	8.62	7.00	7.00	-
3	3	3.50	3.50	3.38	3.38	-		6	8.62	6.62	7.00	6.62	6.00
	2 1/2	3.50	2.88	3.38	3.25	3.50		5	8.62	5.56	7.00	6.38	6.00
	2	3.50	2.38	3.38	3.00	3.50		4	8.62	4.50	7.00	6.12	6.00
	1 1/2	3.50	1.90	3.38	2.88	3.50		3 1/2	8.62	4.00	7.00	6.00	6.00
	1 1/4	3.50	1.66	3.38	2.75	3.50							

Cleveland
INDUSTRIAL VALVES

Caps and stup Ends



CAP



SHORT PATTERN STUB END

NOM PIPE SIZE	OUTSIDE DIA. O.D.	F	G	CORNER RADIUS		O.D. OF BARREL*		E
				TYPE A R	TYPE B R	MAX.	MIN.	
1/2	0.84	2.00	1.38	0.12	0.03	0.896	0.809	1.00
3/4	1.05	2.00	1.69	0.12	0.03	1.106	1.019	1.00
1	1.32	2.00	2.00	0.12	0.03	1.376	1.284	1.50
1 1/4	1.66	2.00	2.50	0.19	0.03	1.716	1.629	1.50
1 1/2	1.90	2.00	2.88	0.25	0.03	1.965	1.869	1.50
2	2.38	2.50	3.62	0.31	0.03	2.456	2.344	1.50
2 1/2	2.88	2.50	4.12	0.31	0.03	2.966	2.844	1.50
3	3.50	2.50	5.00	0.38	0.03	3.596	3.469	2.00
3 1/2	4.00	3.00	5.50	0.38	0.03	4.096	3.969	2.50
4	4.50	3.00	6.19	0.44	0.03	4.593	4.469	2.50
5	5.56	3.00	7.31	0.44	0.06	5.683	5.532	3.00
6	6.62	3.50	8.50	0.50	0.06	6.743	6.594	3.50
8	8.62	4.00	10.62	0.50	0.06	8.743	8.594	4.00
10	10.75	5.00	12.75	0.50	0.06	10.913	10.719	5.00
12	12.75	6.00	15.00	0.50	0.06	12.913	12.719	6.00
14	14.00	6.00	16.25	0.50	0.06	14.170	13.969	6.50
16	16.00	6.00	18.50	0.50	0.06	16.180	15.969	7.00
18	18.00	6.00	21.00	0.50	0.06	18.190	17.969	8.00
20	20.00	6.00	23.00	0.50	0.06	20.240	19.969	9.00
22	22.00	6.00	25.25	0.50	0.06	22.240	21.969	10.00
24	24.00	6.00	27.25	0.50	0.06	24.240	23.969	10.50

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NOM PIPE SIZE	NOMINAL INSIDE DIAMETERS[1]														
	OUTSIDE DIA. O.D.	SCH. 5S [4]	SCH. 10S[4]	SCH. 10[5]	SCH. 20[5]	SCH. 30[5]	SCH. 40S[4]	SCH. 40S[5]	STD[5]	B16.5	SCH. 80S[4]	XS[5]	SCH. 80[5]	SCH. 160[5]	XXS[5]
1/2	0.84	0.710	0.674	-	-	-	0.622	0.622	0.622	0.62	0.546	0.546	0.546	0.464	0.252
3/4	1.05	0.920	0.844	-	-	-	0.824	0.824	0.824	0.82	0.742	0.742	0.742	0.612	0.434
1	1.32	1.190	1.102	-	-	-	1.054	1.054	1.054	1.05	0.962	0.962	0.962	0.820	0.604
1 1/4	1.66	1.530	1.442	-	-	-	1.380	1.380	1.380	1.38	1.278	1.278	1.278	1.160	0.896
1 1/2	1.90	1.770	1.682	-	-	-	1.610	1.610	1.610	1.64	1.500	1.500	1.500	1.338	1.100
2	2.38	2.250	2.162	-	-	-	2.072	2.072	2.072	2.07	1.944	1.944	1.944	1.692	1.508
2 1/2	2.88	2.716	2.640	-	-	-	2.474	2.474	2.474	2.47	2.328	2.328	2.328	2.130	1.776
3	3.50	3.334	3.260	-	-	-	3.068	3.068	3.068	3.07	2.900	2.900	2.900	2.624	2.300
3 1/2	4.00	3.834	3.760	-	-	-	3.548	3.548	3.548	3.55	3.364	3.364	3.364	-	-
4	4.50	4.334	4.260	-	-	-	4.026	4.026	4.026	4.03	3.826	3.826	3.826	3.438	3.152
5	5.56	5.342	5.292	-	-	-	5.044	5.044	5.044	5.05	4.810	4.810	4.810	4.310	4.060
6[2]	6.62	6.402	6.352	-	-	-	6.060	6.0670	6.060	-	5.756	5.756	5.756	5.182	4.892
6[3]	6.63	6.412	6.362	-	-	-	6.070	6.070	6.070	6.07	5.766	5.766	5.766	5.192	4.902
8[2]	8.62	8.402	8.324	-	8.120	8.066	7.976	7.976	7.976	-	7.620	7.620	7.620	6.808	6.870
8[3]	8.63	8.412	8.334	-	8.130	8.076	7.986	7.986	7.986	7.98	7.630	7.630	7.630	6.818	6.880
10	10.75	17.482	10.420	-	10.250	10.136	10.020	10.020	10.020	10.02	9.750	9.750	9.562	8.500	8.750
12	12.75	12.438	12.390	-	12.250	12.090	12.00	11.938	12.000	12.00	11.750	11.750	11.374	10.126	10.750
14	14.00	13.688	13.624	13.500	13.376	13.250	-	13.124	13.250	-	-	13.000	12.500	11.188	-
16	16.00	15.670	15.624	15.500	15.376	15.250	-	15.000	15.250	-	-	15.000	14.312	12.812	-
18	18.00	17.670	17.624	17.500	17.376	17.124	-	16.876	17.250	-	-	17.000	16.124	14.438	-
20	20.00	19.624	19.564	19.500	19.250	19.000	-	18.812	19.250	-	-	19.000	17.938	16.062	-
22	22.00	21.624	21.564	21.500	21.250	21.000	-	-	21.250	-	-	21.000	19.750	17.750	-
24	24.00	23.564	23.500	23.500	23.250	22.876	-	22.624	23.250	-	-	23.000	21.562	19.312	-