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# PETRO FLOW CONTROL

GATE, GLOBE, CHECK & BALL







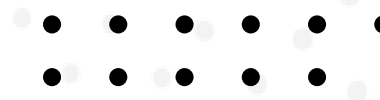
Petro Flow specialises in the supply of valves for the Oil, Gas, Chemical, Petrochemical, Pipeline and Water Industries Worldwide. Our valves are used in Offshore, Onshore and Sub-Sea applications. The Management of the Company has many years experience in the Valve Industry. The organisation and flexibility of the Company allows Petro Flow to offer short lead-times, even on non-standard valves. All valves are supplied to the highest quality standards and are fully tested before leaving the factory. The aim of Petro Flow is to provide valves and services, which meet or exceed our Customers requirements, at a realistic price and reliable manufacturing time and in so doing remain a market leader supplying a worldwide base of industry leading clients

- 01** All the Seat faces are hardfaced, ground, and lapped to a mirror finish to ensure the reliable sealing performance.
- 02** Outside screw and yoke, bolted bonnet, flexible or solid wedge, rising stem with top sealing.
- 03** Body: Body is cast to provide liberal strength to meet operating conditions and to permit unobstructed flow. Turbulence, erosion and pressure drop are minimized.
- 04** Integral Yoke & Bonnet: Some designs incorporate a two-piece bonnet and yoke. All bonnet assemblies are cast and finished to the same exacting tolerances as the bodies for accurate alignment of stems and ease of sealing. Bonnet joint varies from flat face, gasket-joint to ring-type bonnet joint, depending on class.
- 05** Seat Rings: Seat rings are seal welded to eliminate leak path behind rings and for long trouble-free service. The surfaces are precision ground to fit accurately with the disc.

## MATERIALS OF CONSTRUCTION (SERVICE CONDITIONS)

ASTM CLASSIFICATION	SERVICE CONDITIONS
A216 WCB	For use in service up to 1000°F (537°C) assuming corrosion and oxidation are not a factor (1)(2)(3)
A217 C5	For use in service up to 1200°F (649°C). Offers good corrosion and oxidation resistance.
A351 LCC	For service between -50°F (-46°C) and 650°F (343°C). This material must be quenched and tempered to obtain tensile and impact properties needed at low temperatures
A351 LC3	For service between -150°F (-101°C) and 650°F (343°C). Subsequent heat treatment is used to obtain tensile and impact properties needed at subzero temperatures
A351 CF8M	For service up to 1000°F (537°C) , where corrosion and oxidation resistance are required
A351 CF8	For service up to 1000°F (537°C), where corrosion and oxidation resistance are desired, but lower costs than CF8M and slightly lower strength and corrosion resistance can be accepted.

# PERFORMANCE FOR ANY APPLICATION



In fluid process systems, it is valves which are the controlling elements. They are responsible for stopping and starting flow, throttling or regulating flow, prevention of backflow and for regulating pressure. Petro Flow valves are used in a wide variety of applications the following descriptions will provide a simple guide in the selection of these types of valves.

## GATE VALVES

Cast steel gate valves offer the ultimate in dependable service for steam, air, gas, oil, oil vapor, and high pressure installations. All have straight-through ports to assure minimum turbulence, erosion, and resistance to flow. They are available in a wide variety of trims. The cast steel gate valves are on-off valves manufactured according to API, ANSI, ASME standard, for industrial applications.

## GLOBE VALVES

Cast Steel Globe Valves are valves with flanged or butt welding end connection designed with BS 1873 or API 627 standards and widely used in oil, gas, and petrochemical industry.

Petro cast steel globe valves are highly efficient for services requiring frequent operation and throttling when pressure drop across the valve is about 20% of inlet pressure. Body and Bonnet: Casting are precision machined. One-piece bonnet for better alignment, fewer parts.

Body Material: Carbon Steel: A216 WCB, WCC; Alloy Steel: A217 WC6, WC9, C5, C12; Low Temperature Carbon Steel: A352 LCB, LCC; Stainless Steel: A351 CF8, CF8M, CF3, CF3M, CF8C; Duplex Steel: A899/994 4A, 5A, 6A.

Trim: 13Cr stem, 13Cr faced disc, and CoCr alloy faced seats API Trim 8 suitable for service up to 850F(454C)

Seat face: CoCr alloy hardfaced, ground, and lapped to a mirror finish. Conical seat machined to fine surface finish.

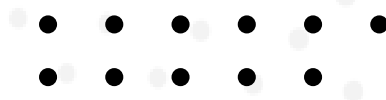
Impact handwheel: Globe valves require higher closing torque and gate valves with same seat diameter and pressure class. The most economical mechanism for tight shut off is the impact handwheel.

## Check Valve

Swing check valve, Bolted cover. Renewable disc and seat (in S.S. construction, integral seat non renewable).

Cast Steel Check Valves are used to prevent the back flow of fluid by closing before flow reversal, thereby preventing slam and water hammer. Petro Flow Cast Steel Check Valves have been successfully installed in clean and dirty applications including petrochemical, water treatment,





## Ball Valve

ANSI Class 150 ball valve sizes up to 20 inch. A class 150 ball valve as listed in ASME B16.34. A Class 150 ball valve is rated to approximately 270 PSIG at ambient conditions, 180 PSIG at approximately 400°F, 150 PSIG at approximately 600°F, and 75 PSIG at approximately 800°F. In other words, when the pressure goes down, the temperature goes up.

## Stainers

The stainer is available in sizes 2" - 12" ranging from 150 # - 1500 # complete with a bolted cover. The drain/blow-off connection comes with a plug, and the cover flange complies with ASME Section Appendix II, and/or ANSI 16.5 standards.

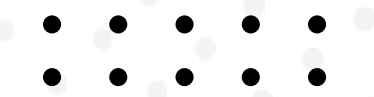
CLASS	Figure Numbers		
	GATE VALVE	GLOBE VALVE	CHECK VALVE
150	2121	3221	2621
300	3120	4221	3262
600	4041	4221	4262
900	5210	5221	5266
1500	6621	6221	6261





# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 150



Parts And Material List			FIG: 2121
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Gasket	Stainless Steel + Graphite	ASTM A182 316 + Graphite
06	Bonnet	Carbon Steel	ASTM A216 WCB
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Back Seat Ring	Stainless Steel	ASTM A276 410
10	Packing ring	Graphite	Die Formed / Braided Graphite
11	Hinge Pin	Carbon Steel	-
12	Gland Bolt	Carbon Steel	ASTM A193 B7
13	Packing Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Gland Nut	Carbon Steel	ASTM A194 2H
16	Grease Nipple	Stainless Steel	2 1/2" and above
17	Yoke Sleeve	Ductile Iron	ASTM A439 D2
18	Yoke Cap	Carbon Steel	-
19	Handwheel	Ductile Iron	-
20	Handwheel Nut	Carbon Steel	-
21	Set Screw	Steel	-
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 16" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

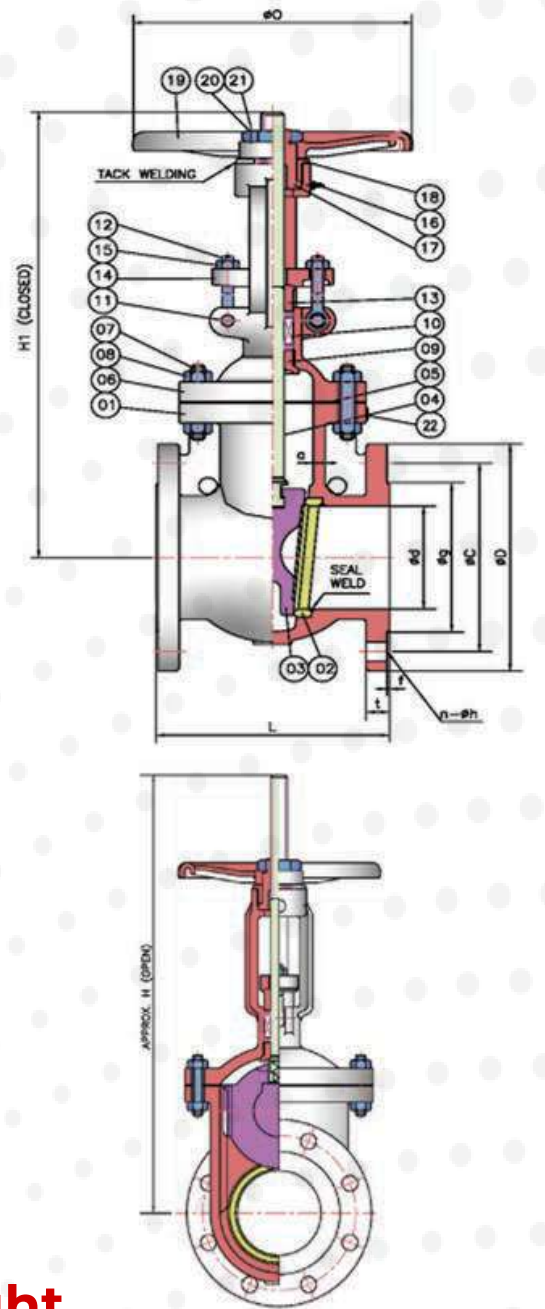
- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

Design: API 600  
 End Flange : ANSI B16.5  
 Weld Ends: ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test: API 598

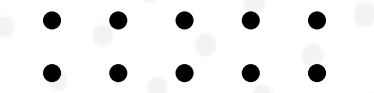


### Class 150 Cast Steel Gate Valve Dimensions & Weight

Size	Inch	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	DN	50	65	80	100	150	200	250	300	350	400	450	500
End to End Dimensions	L	178	191	203	229	267	292	330	356	381	406	432	457
	L1	216	241	283	305	403	419	457	502	572	610	660	711
	L2	191	203	216	241	279	305	343	368	394	419	445	470
Height	H	389	439	500	595	777	975	1160	1390	1555	1811	2103	2300
Handwheel	W	200	200	250	250	350	400	450	560	600	640	680	760

# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 300



Parts And Material List			FIG: 3120
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Gasket	Stainless Steel + Graphite	ASTM A182 316 + Graphite
06	Bonnet	Carbon Steel	ASTM A216 WCB
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Back Seat Ring	Stainless Steel	ASTM A276 410
10	Packing ring	Graphite	Die Formed / Braided Graphite
11	Hinge Pin	Carbon Steel	-
12	Gland Bolt	Carbon Steel	ASTM A193 B7
13	Packing Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Gland Nut	Carbon Steel	ASTM A194 2H
16	Grease Nipple	Stainless Steel	2 1/2" and above
17	Yoke Sleeve	Ductile Iron	ASTM A439 D2
18	Yoke Cap	Carbon Steel	-
19	Handwheel	Ductile Iron	-
20	Handwheel Nut	Carbon Steel	-
21	Set Screw	Steel	-
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 14" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

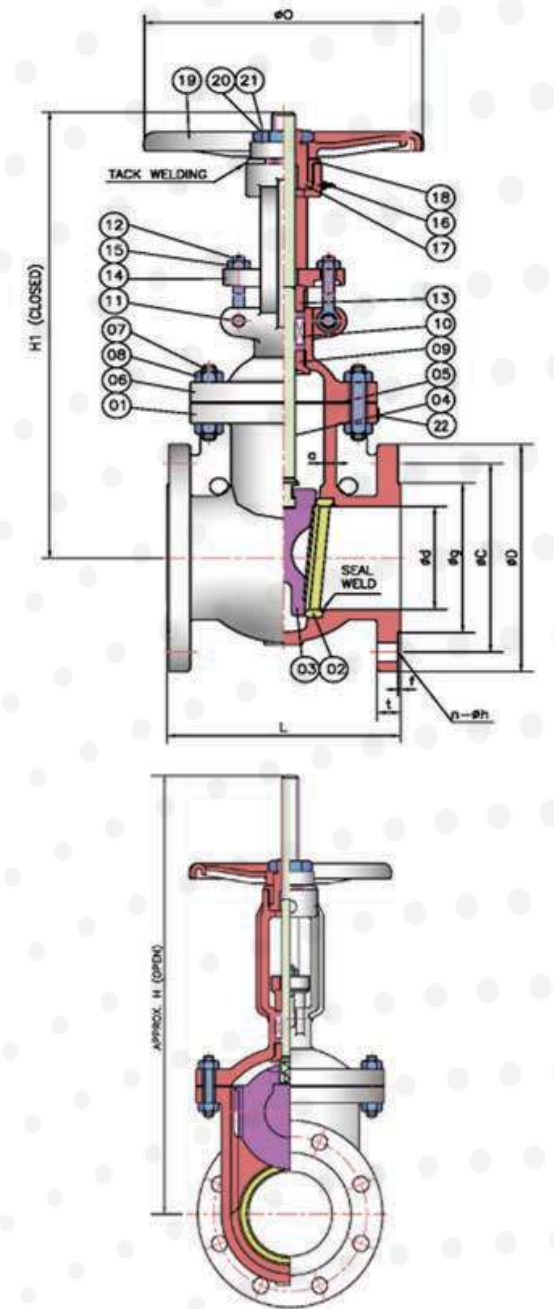
Design: API 600

End Flange : ANSI B16.5

Weld Ends: ANSI B16.25

Face-to-Face : ANSI B16.10

Shell and Seat Test: API 598



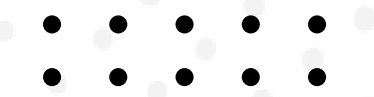
### CAST STEEL GATE VALVES - ANSI 300

Size	Inch	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	DN	50	65	80	100	150	200	250	300	350	400	450	500
End to End Dimensions	L	216	241	283	305	403	419	457	502	762	838	914	991
	L1	216	241	283	305	403	419	457	502	762	838	914	991
	L2	232	257	298	321	419	435	473	517	778	854	930	1010
Height	H	430	505	530	630	800	1008	1240	1470	1645	1841	1959	2194
Handwheel	W	200	250	250	250	350	400	450	500	600	600	610	610



# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 600



Parts And Material List			FIG: 4041
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Gasket	Stainless Steel + Graphite	ASTM A182 316 + Graphite
06	Bonnet	Carbon Steel	ASTM A216 WCB
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Back Seat Ring	Stainless Steel	ASTM A276 410
10	Packing ring	Graphite	Die Formed / Braided Graphite
11	Hinge Pin	Carbon Steel	-
12	Gland Bolt	Carbon Steel	ASTM A193 B7
13	Packing Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Gland Nut	Carbon Steel	ASTM A194 2H
16	Grease Nipple	Stainless Steel	2 1/2" and above
17	Yoke Sleeve	Ductile Iron	ASTM A439 D2
18	Yoke Cap	Carbon Steel	-
19	Handwheel	Ductile Iron	-
20	Handwheel Nut	Carbon Steel	-
21	Set Screw	Steel	-
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 8" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

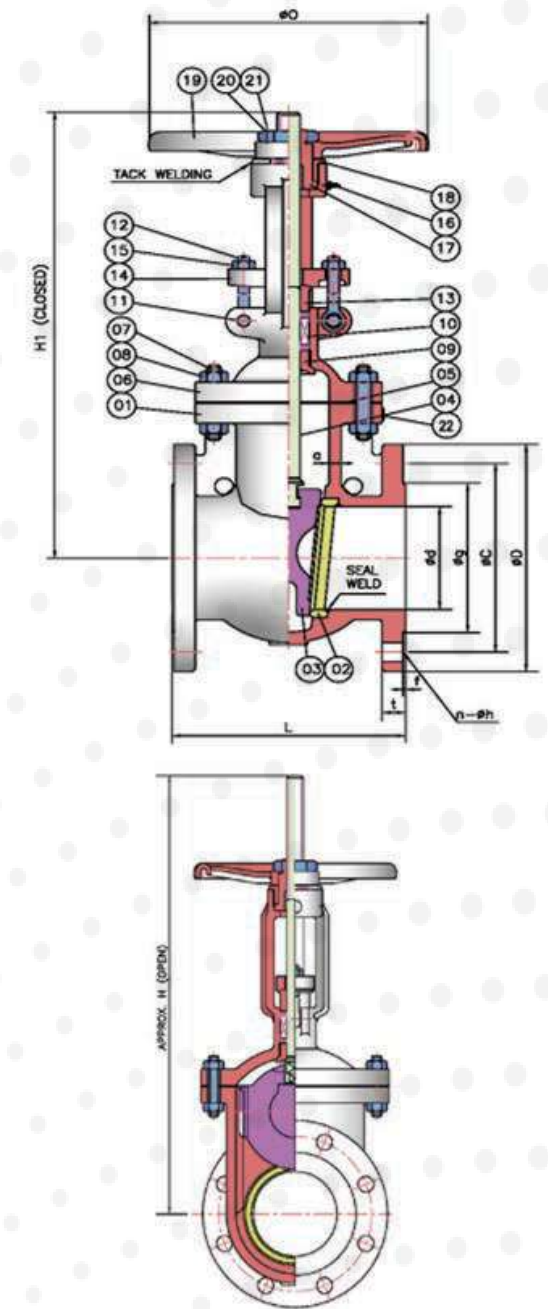
Design: API 600

End Flange : ANSI B16.5

Weld Ends: ANSI B16.25

Face-to-Face : ANSI B16.10

Shell and Seat Test: API 598

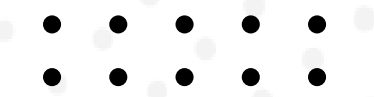


### Class 600 Cast Steel Gate Valve Dimensions

Size	Inch	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
	DN	50	65	80	100	150	200	250	300	350	400	450	500
End to End Dimensions	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
	L2	295	333	359	435	562	663	790	841	892	994	1095	1200
Height	H	455	588	550	690	910	1065	1257	1468	1623	1816	2260	2705
Handwheel	W	250	250	250	350	450	500	640	680	610	610	610	610

# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 900



Parts And Material List			FIG: 5210
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Gasket	Stainless Steel + Graphite	ASTM A182 316 + Graphite
06	Bonnet	Carbon Steel	ASTM A216 WCB
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Back Seat Ring	Stainless Steel	ASTM A276 410
10	Packing ring	Graphite	Die Formed / Braided Graphite
11	Hinge Pin	Carbon Steel	-
12	Gland Bolt	Carbon Steel	ASTM A193 B7
13	Packing Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Gland Nut	Carbon Steel	ASTM A194 2H
16	Grease Nipple	Stainless Steel	2 1/2" and above
17	Yoke Sleeve	Ductile Iron	ASTM A439 D2
18	Yoke Cap	Carbon Steel	-
19	Handwheel	Ductile Iron	-
20	Handwheel Nut	Carbon Steel	-
21	Set Screw	Steel	-
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 6" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

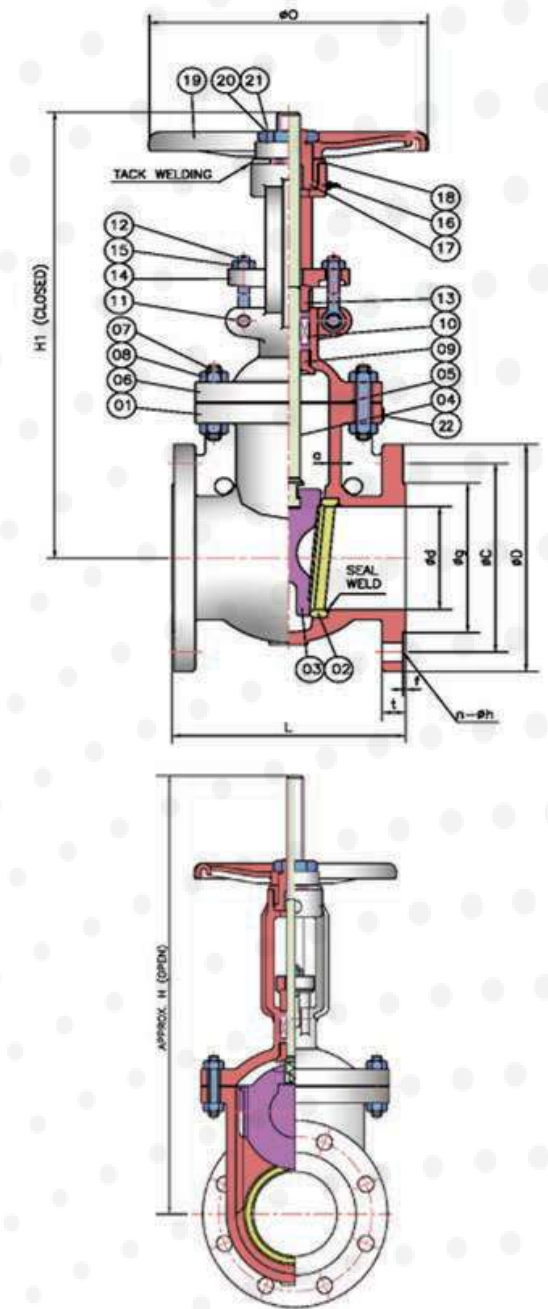
Design: API 600

End Flange : ANSI B16.5

Weld Ends: ANSI B16.25

Face-to-Face : ANSI B16.10

Shell and Seat Test: API 598



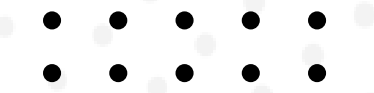
### Class 900 Cast Steel Gate Valve Dimensions

Size	Inch	2"	2.5"	3"	4"	6"	8"	10"	12"
	DN	50	65	80	100	150	200	250	300
End to End Dimensions	L	368	419	381	457	610	737	838	965
	L1	368	419	381	457	610	737	838	965
	L2	371	422	384	460	613	740	841	968
Height	H	620	705	737	825	1065	1219	1345	1840
Handwheel	W	300	350	350	400	500	600	610	610



# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 1500



Parts And Material List			FIG: 6621
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Gasket	Stainless Steel + Graphite	ASTM A182 316 + Graphite
06	Bonnet	Carbon Steel	ASTM A216 WCB
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Back Seat Ring	Stainless Steel	ASTM A276 410
10	Packing ring	Graphite	Die Formed / Braided Graphite
11	Hinge Pin	Carbon Steel	-
12	Gland Bolt	Carbon Steel	ASTM A193 B7
13	Packing Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Gland Nut	Carbon Steel	ASTM A194 2H
16	Grease Nipple	Stainless Steel	2 1/2" and above
17	Yoke Sleeve	Ductile Iron	ASTM A439 D2
18	Yoke Cap	Carbon Steel	-
19	Handwheel	Ductile Iron	-
20	Handwheel Nut	Carbon Steel	-
21	Set Screw	Steel	-
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 4" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

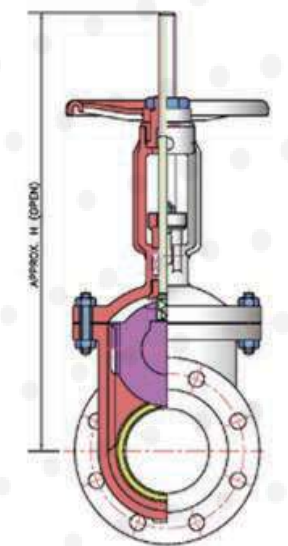
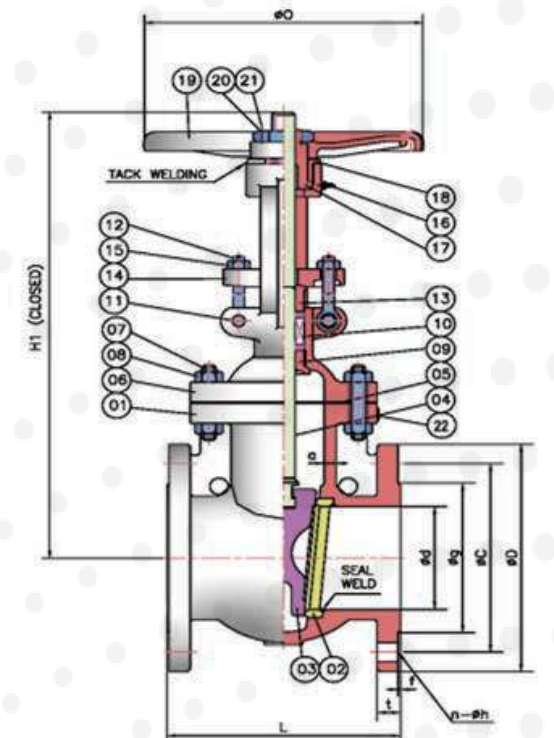
- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

Design: API 600  
 End Flange : ANSI B16.5  
 Weld Ends: ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test: API 598



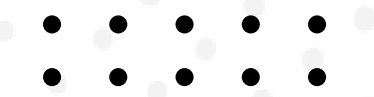
### Class 1500 Cast Steel Gate Valve Dimensions

Size	Inch	2"	2.5"	3"	4"	6"	8"	10"	12"
	DN	50	65	80	100	150	200	250	300
End to End Dimensions	L	368	419	470	546	705	832	991	1130
	L1	368	419	470	546	705	832	991	1130
	L2	371	422	473	549	711	842	1000	1146
Height	H	695	705	770	872	1092	1400	1600	1840
Handwheel	W	350	400	400	500	600	610	610	610



# GATE VALVES

## CAST STEEL GATE VALVES - ANSI 1500 PRESSURE SEAL BONNET



Parts And Material List			FIG: 6621
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Wedge	Carbon Steel	ASTM A216 WCB ST'L No.6 Face
04	Stem	Stainless Steel	ASTM A182 F6a
05	Stuffing Box	Carbon Steel	ASTM A105
06	Sealing Ring	Stainless Steel	ASTM A276 316L
07	Yoke	Carbon Steel	ASTM A216 WCB
08	Spacer Ring	Carbon Steel	ASTM A276 410
09	Lantern	Stainless Steel	ASTM A276 410
10	Packing Ring	Graphite	Die Formed / Braided Graphite
11	Nut Gasket	Stainless Steel	ASTM A276 410
12	Stuffing Nut	Carbon Steel	ASTM A193 B7
13	Gland	Stainless Steel	ASTM A276 410
14	Gland Flange	Carbon Steel	ASTM A216 WCB
15	Hinge Pin	Carbon Steel	-
16	Gland Eye Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Grease Nipple	Stainless Steel	-
19	Yoke Sleeve	Ductile Iron	ASTM A439 D2
20	Yoke Cap	Carbon Steel	-
21	Handwheel	Malleable Iron	-
22	Handwheel Nut	Carbon Steel	-
23	Set Screw	Steel	-

### OPERATOR OPTIONS

- Gear Operated recommended for size 4" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Flexible Wedge
  - Oval Bonnet with integral Yoke
  - Rising Stem - Non-rising Handwheel
  - Welded-In/Threaded Seat Rings
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

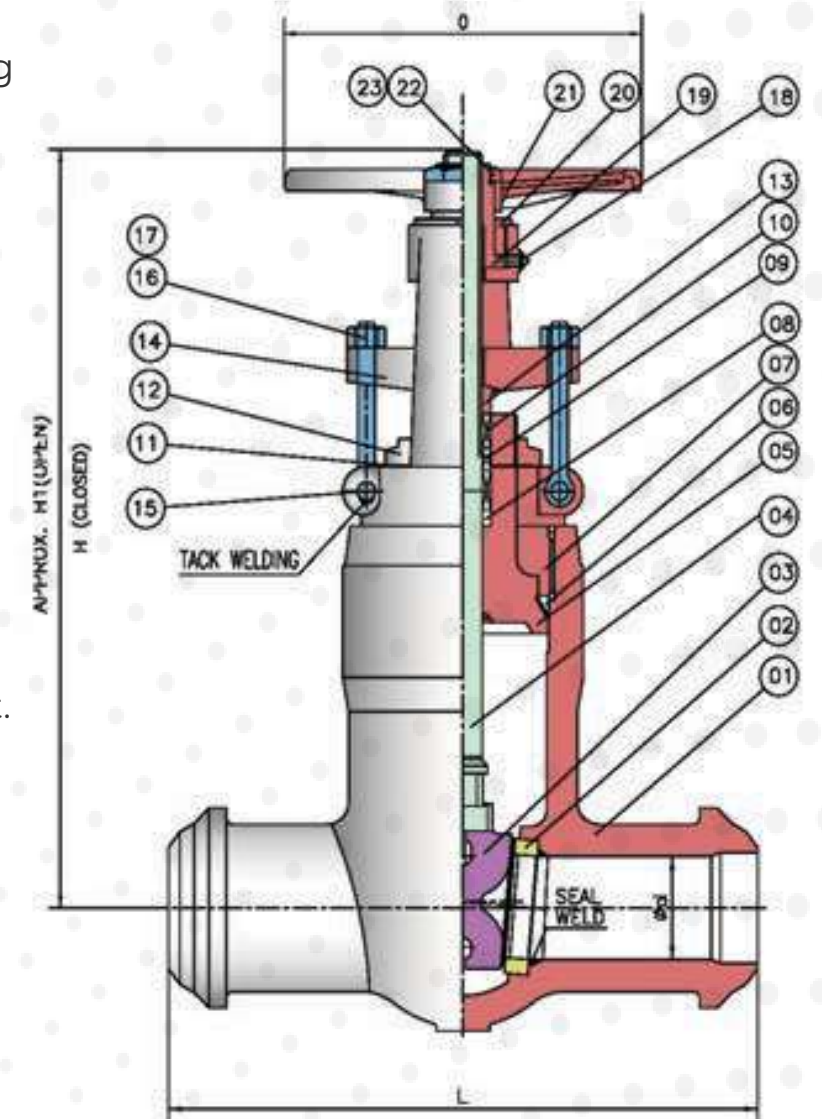
Design: API 600

End Flange : ANSI B16.5

Weld Ends: ANSI B16.25

Face-to-Face : ANSI B16.10

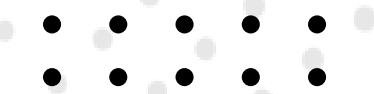
Shell and Seat Test: API 598



Dimensional Data (mm)*						
Size	Face -to-Face L	Dia. of Bore d	ø of Handwheel O	Height H/H1	Wall Thk a min	Wt (Kg)
2"	216.0	47.5	300	614/524	19.1	95.0
3"	305.0	69.9	350	681/565	23.9	168.0
4"	406.0	91.9	400	702/582	28.7	277.0
6"	559.0	136.4	640	951/775	38.1	545.0
8"	711.0	177.8	710	1137/913	47.8	1180.0
10"	864.0	222.3	750	1437/1170	57.1	2118.0
12"	991.0	263.4	800	1834/1554	66.8	2800.0

\* Please note dimensions are for information only. Order specific arrangement drawing dimensions will be final.





Parts And Material List			FIG: 2221
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Disc	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Disc Thrust Plate	Stainless Steel	A276 410
05	Disc Nut	Stainless Steel	A276 410
06	Stem	Stainless Steel	ASTM A182 F6a
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Gasket	Stainless Steel	Spiral Wound 316 + Graphite
10	Back Seat Ring	Stainless Steel	A276 410
11	Packing Ring	Graphite	Die Formed/Braided Graphite
12	Bonnet	Carbon Steel	ASTM A216 Gr. WCB
13	Hinge Pin	Carbon Steel	Carbon Steel
14	Packing Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 WCB
16	Gland Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Yoke Bush	Ductile Iron	ASTM A439 D2
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel
21	Washer	Carbon Steel	Carbon Steel
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 12" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

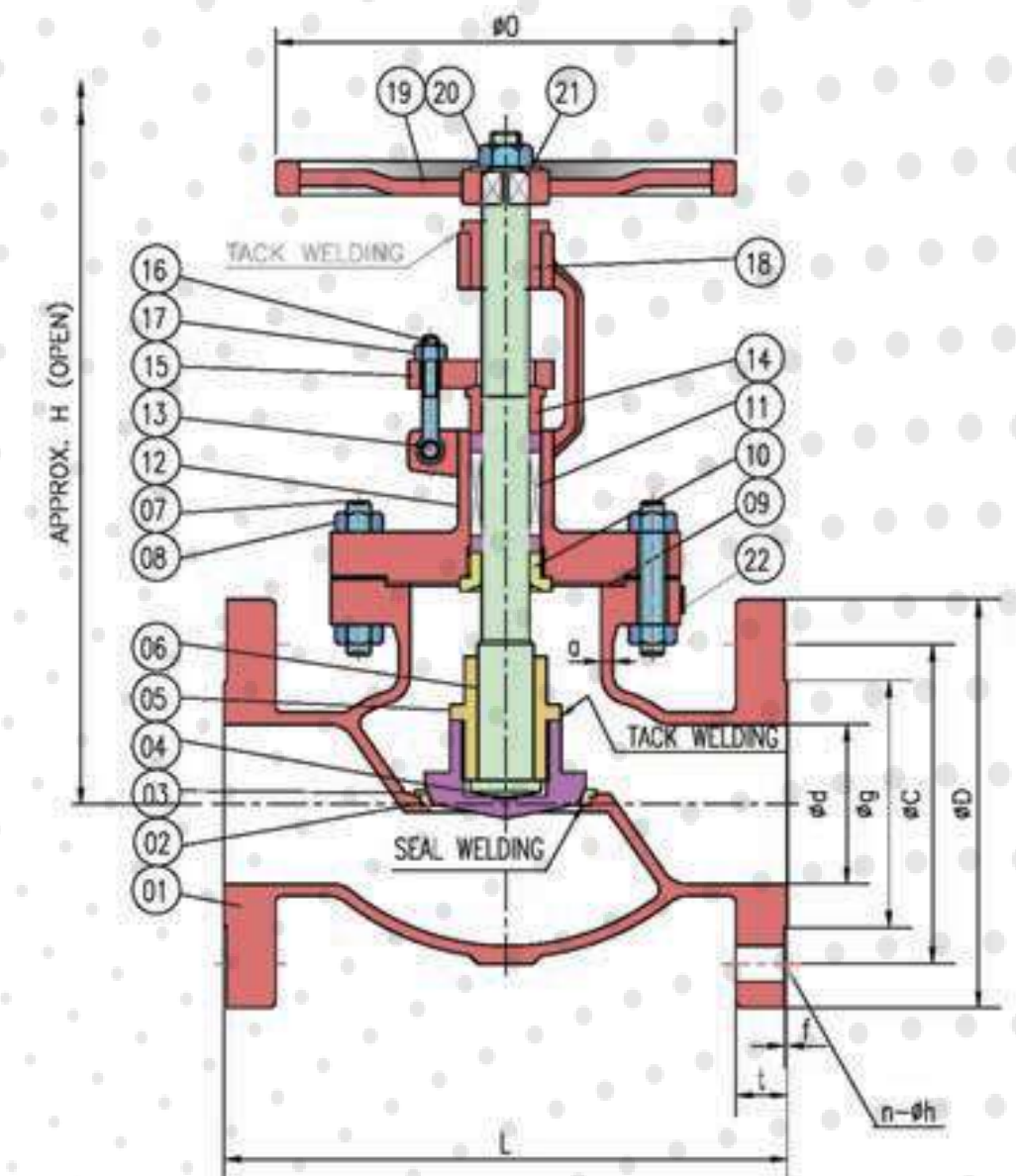
- Bolted Bonnet
- Outside Screw and Yoke
- Yoke integral with bonnet
- Rising Stem - Handwheel
- Welded or Threaded Seat Ring - Stellite
- Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

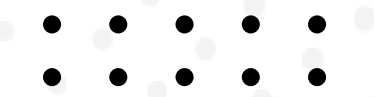
### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598



Dimensions and Weights												
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"
L/L1	in	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	31.00	36.00	38.50
	mm	203	216	241	292	406	495	622	698	787	914	978
L2	in	8.50	9.00	10.00	12.00	16.50	20.00	25.00	28.00	31.50	36.50	39.00
	mm	216	229	254	305	419	508	635	711	800	927	991
H	in	13.58	16.34	15.94	19.09	20.47	23.62	30.00	33.94	38.58	47.05	51.18
	mm	345	415	405	485	520	600	762	862	980	1195	1300
W	in	8	8	10	12	14	18	20	25	25	24	24
	mm	200	200	250	300	350	450	500	640	640	610	610
Weight RF	kg	22	32	38	62	104	159	308	539	610	880	1150





Parts And Material List			FIG: 4221
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Disc	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Disc Thrust Plate	Stainless Steel	A276 410
05	Disc Nut	Stainless Steel	A276 410
06	Stem	Stainless Steel	ASTM A182 F6a
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Gasket	Stainless Steel	Spiral Wound 316 + Graphite
10	Back Seat Ring	Stainless Steel	A276 410
11	Packing Ring	Graphite	Die Formed/Braided Graphite
12	Bonnet	Carbon Steel	ASTM A216 Gr. WCB
13	Hinge Pin	Carbon Steel	Carbon Steel
14	Packing Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 WCB
16	Gland Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Yoke Bush	Ductile Iron	ASTM A439 D2
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel
21	Washer	Carbon Steel	Carbon Steel
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 10" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

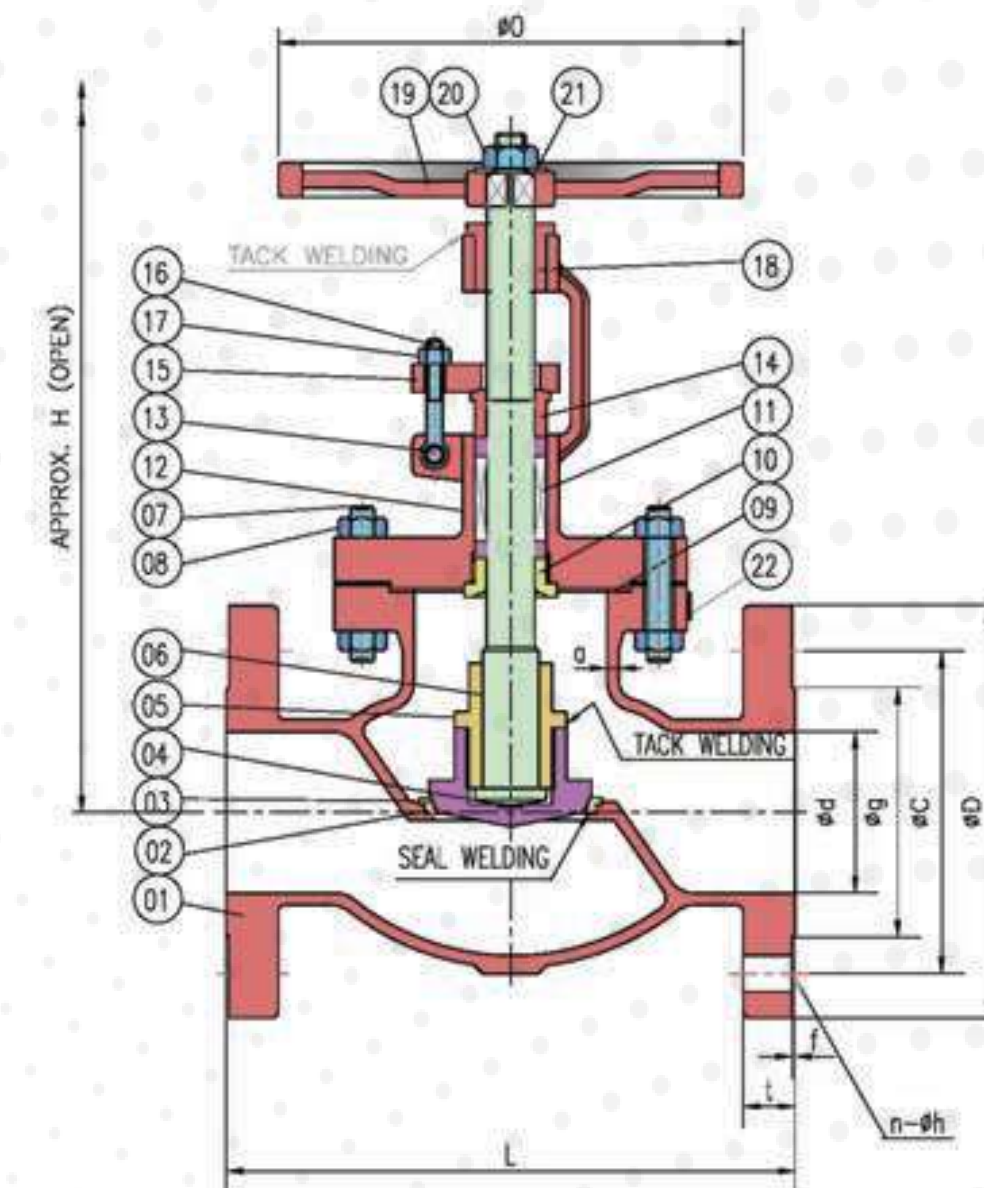
- Bolted Bonnet
  - Outside Screw and Yoke
  - Yoke integral with bonnet
  - Rising Stem - Handwheel
  - Welded or Threaded Seat Ring - Stellite
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

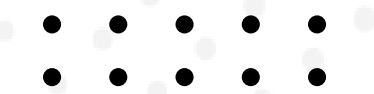
### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598



Dimensions and Weights												
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"	14"	16"	18"
L/L1	in	8.00	8.50	9.50	11.50	16.00	19.50	24.50	27.50	31.00	36.00	38.50
	mm	203	216	241	292	406	495	622	698	787	914	978
L2	in	8.50	9.00	10.00	12.00	16.50	20.00	25.00	28.00	31.50	36.50	39.00
	mm	216	229	254	305	419	508	635	711	800	927	991
H	in	13.58	16.34	15.94	19.09	20.47	23.62	30.00	33.94	38.58	47.05	51.18
	mm	345	415	405	485	520	600	762	862	980	1195	1300
W	in	8	8	10	12	14	18	20	25	25	24	24
	mm	200	200	250	300	350	450	500	640	640	610	610
Weight RF	kg	22	32	38	62	104	159	308	539	610	880	1150





Parts And Material List			FIG: 4221
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Disc	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Disc Thrust Plate	Stainless Steel	A276 410
05	Disc Nut	Stainless Steel	A276 410
06	Stem	Stainless Steel	ASTM A182 F6a
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Gasket	Stainless Steel	Spiral Wound 316 + Graphite
10	Back Seat Ring	Stainless Steel	A276 410
11	Packing Ring	Graphite	Die Formed/Braided Graphite
12	Bonnet	Carbon Steel	ASTM A216 Gr. WCB
13	Hinge Pin	Carbon Steel	Carbon Steel
14	Packing Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 WCB
16	Gland Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Yoke Bush	Ductile Iron	ASTM A439 D2
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel
21	Washer	Carbon Steel	Carbon Steel
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 6" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

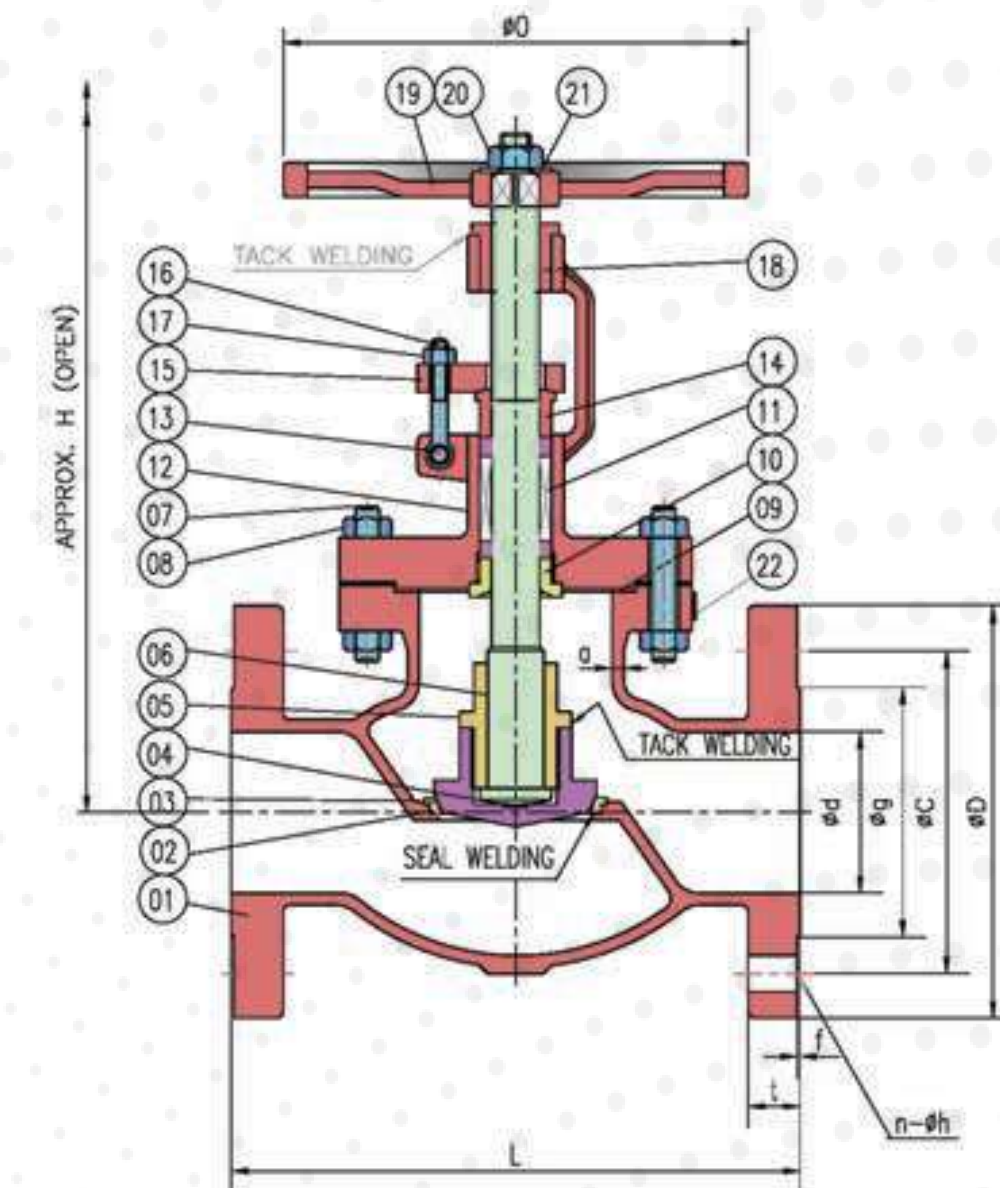
- Bolted Bonnet
  - Outside Screw and Yoke
  - Yoke integral with bonnet
  - Rising Stem - Handwheel
  - Welded or Threaded Seat Ring - Stellite
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

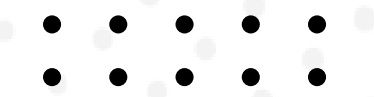
### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598



Dimensions and Weights									
SIZE	in	2"	2.5"	3"	4"	6"	8"	10"	12"
L/L1	in	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00
	mm	292	330	356	432	559	660	787	838
L2	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12
	mm	295	333	359	435	562	663	790	841
H	in	18.19	21.26	23.03	26.38	34.88	36.69	40.94	50.39
	mm	462	540	585	670	886	932	1040	1280
W	in	10	10	12	18	20	25	24	24
	mm	250	250	350	450	500	640	610	610
Weight RF	kg	36	70	85	123	404	450	700	900





### Parts And Material List

FIG: 5221

No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Disc	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Disc Thrust Plate	Stainless Steel	A276 410
05	Disc Nut	Stainless Steel	A276 410
06	Stem	Stainless Steel	ASTM A182 F6a
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Gasket	Stainless Steel	Spiral Wound 316 + Graphite
10	Back Seat Ring	Stainless Steel	A276 410
11	Packing Ring	Graphite	Die Formed/Braided Graphite
12	Bonnet	Carbon Steel	ASTM A216 Gr. WCB
13	Hinge Pin	Carbon Steel	Carbon Steel
14	Packing Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 WCB
16	Gland Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Yoke Bush	Ductile Iron	ASTM A439 D2
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel
21	Washer	Carbon Steel	Carbon Steel
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 6" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Yoke integral with bonnet
  - Rising Stem - Handwheel
  - Welded or Threaded Seat Ring - Stellite
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

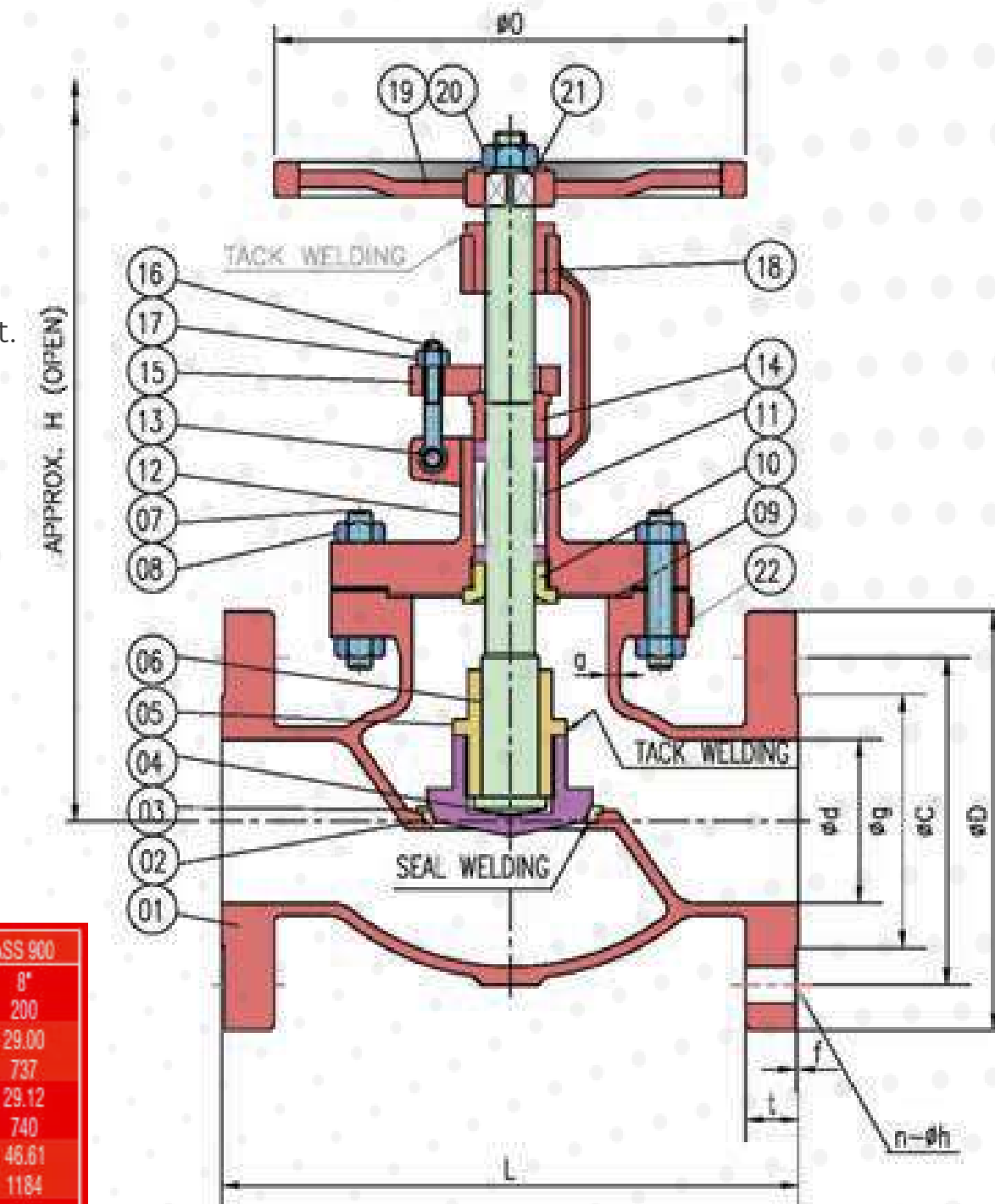
### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

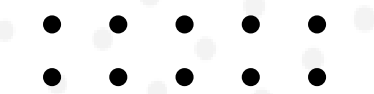
### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598

Dimensions and Weights		CLASS 900					
SIZE		2"	2.5"	3"	4"	6"	8"
L/L1	in	14.50	16.50	15.00	18.00	24.00	29.00
	mm	368	419	381	457	610	737
L2	in	14.62	16.62	15.12	18.12	24.12	29.12
	mm	371	422	384	460	613	740
H	in	23.62	25.98	26.18	31.50	43.62	46.61
	mm	600	660	665	800	1108	1184
W	in	14	14	18	20	24	24
	mm	350	350	450	500	610	610
Weight RF	kg	95	138	122	195	495	730







Parts And Material List			FIG: 6221
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No. 6 Face
03	Disc	Carbon Steel	ASTM A216 WCB 13Cr Face
04	Disc Thrust Plate	Stainless Steel	A276 410
05	Disc Nut	Stainless Steel	A276 410
06	Stem	Stainless Steel	ASTM A182 F6a
07	Bonnet Bolt	Carbon Steel	ASTM A193 B7
08	Bonnet Nut	Carbon Steel	ASTM A194 2H
09	Gasket	Stainless Steel	Spiral Wound 316 + Graphite
10	Back Seat Ring	Stainless Steel	A276 410
11	Packing Ring	Graphite	Die Formed/Braided Graphite
12	Bonnet	Carbon Steel	ASTM A216 Gr. WCB
13	Hinge Pin	Carbon Steel	Carbon Steel
14	Packing Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 WCB
16	Gland Bolt	Carbon Steel	ASTM A193 B7
17	Gland Nut	Carbon Steel	ASTM A194 2H
18	Yoke Bush	Ductile Iron	ASTM A439 D2
19	Handwheel	Malleable Iron	Malleable Iron
20	Handwheel Nut	Carbon Steel	Carbon Steel
21	Washer	Carbon Steel	Carbon Steel
22	Nameplate	Stainless Steel	ASTM A182 F316

### OPERATOR OPTIONS

- Gear Operated recommended for size 4" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

- Bolted Bonnet
  - Outside Screw and Yoke
  - Yoke integral with bonnet
  - Rising Stem - Handwheel
  - Welded or Threaded Seat Ring - Stellite
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

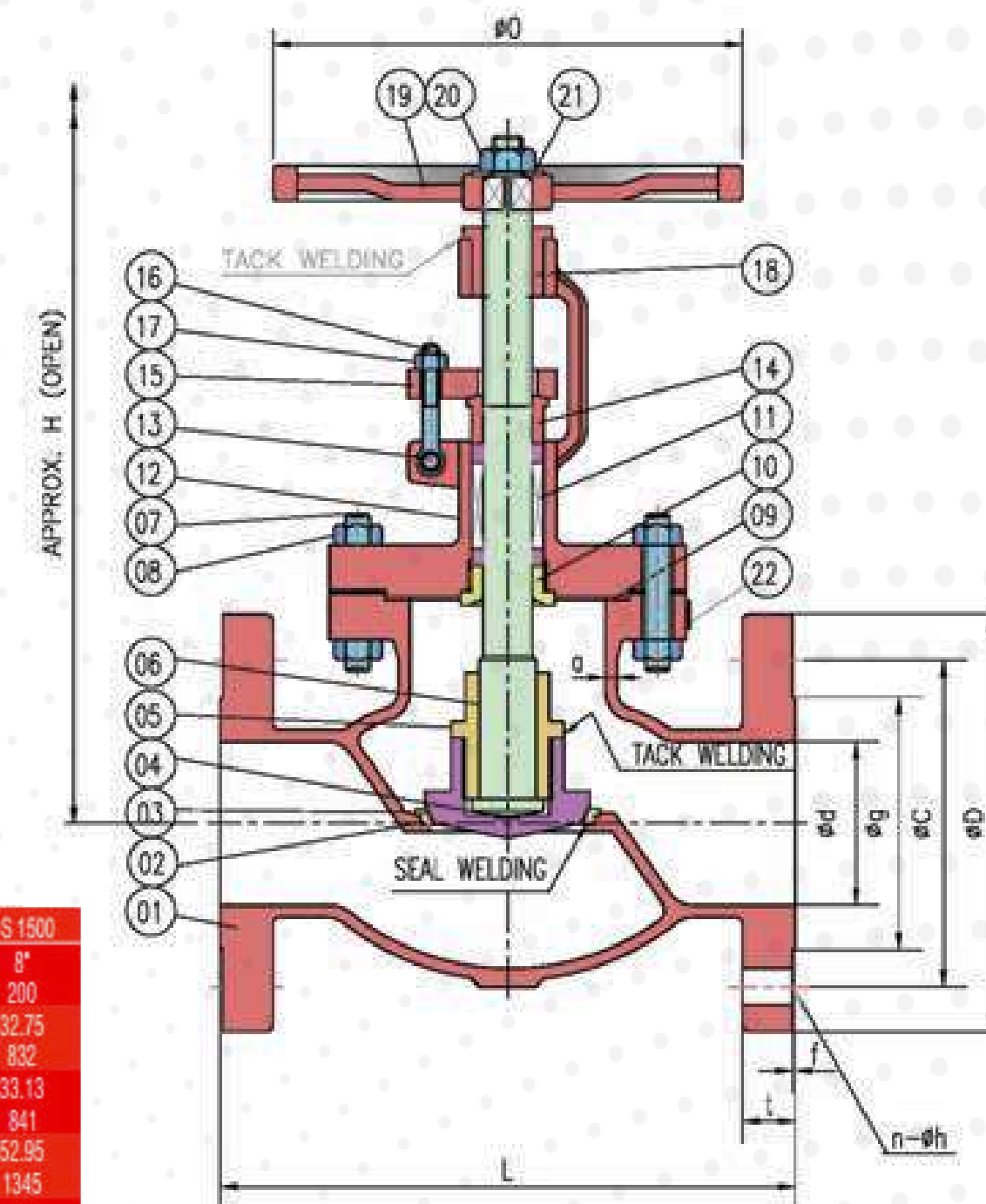
### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

- Design : ANSI B16.34
- End Flange : ANSI B16.5
- Weld Ends : ANSI B16.25
- Face-to-Face : ANSI B16.10
- Shell and Seat Test : API 598

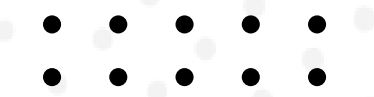
Dimensions and Weights		CLASS 1500					
SIZE	in	2"	2.5"	3"	4"	6"	8"
LL1	in	14.50	16.50	18.50	21.50	27.75	32.75
	mm	368	419	470	546	705	832
L2	in	14.62	16.62	18.62	21.62	28.00	33.13
	mm	371	422	473	549	711	841
H	in	25.98	25.98	30.31	33.46	45.08	52.95
	mm	660	660	770	850	1145	1345
W	in	14	14	20	22	24	24
	mm	350	350	500	560	610	610
Weight RF	kg	95	138	250	435	540	970





# GLOBE VALVES

## CAST STEEL GLOBE VALVE - ANSI 1500 PRESSURE SEAL BONNET



Parts And Material List			FIG: 6221
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A105 ST'L No.6 Face
04	Disc Nut	Stainless Steel	ASTM A276 410
05	Stem	Stainless Steel	ASTM A182 F6a
06	Stuffing Box	Carbon Steel	ASTM A105
07	Sealing Ring	Stainless Steel	ASTM A276 316L
08	Spacer Ring	Stainless Steel	ASTM A276 410
09	Packing Ring	Graphite	Die Formed/Braided Graphite
10	Lantern	Stainless Steel	ASTM A276 410
11	Yoke	Carbon Steel	ASTM A216 WCB
12	Gland Seat	Carbon Steel	-
13	Gland Seat Washer	Stainless Steel	ASTM A276 410
14	Gland	Stainless Steel	ASTM A276 410
15	Gland Flange	Carbon Steel	ASTM A216 Gr. WCB
16	Hinge Pin	Carbon Steel	-
17	Gland Bolt	Carbon Steel	ASTM A193 B7
18	Gland Nut	Carbon Steel	ASTM A194 2H
19	Yoke Bush	Ductile Iron	ASTM A439 D2
20	Set Screw	Steel	-
21	Handwheel	Malleable Iron	Malleable Iron
22	Handwheel Nut	Carbon Steel	-
23	Washer	Carbon Steel	-

### OPERATOR OPTIONS

- Gear Operated recommended for size 4" above
- For Gear Dimensional detail contact Petro Flow Engineering

### SPECIFICATION

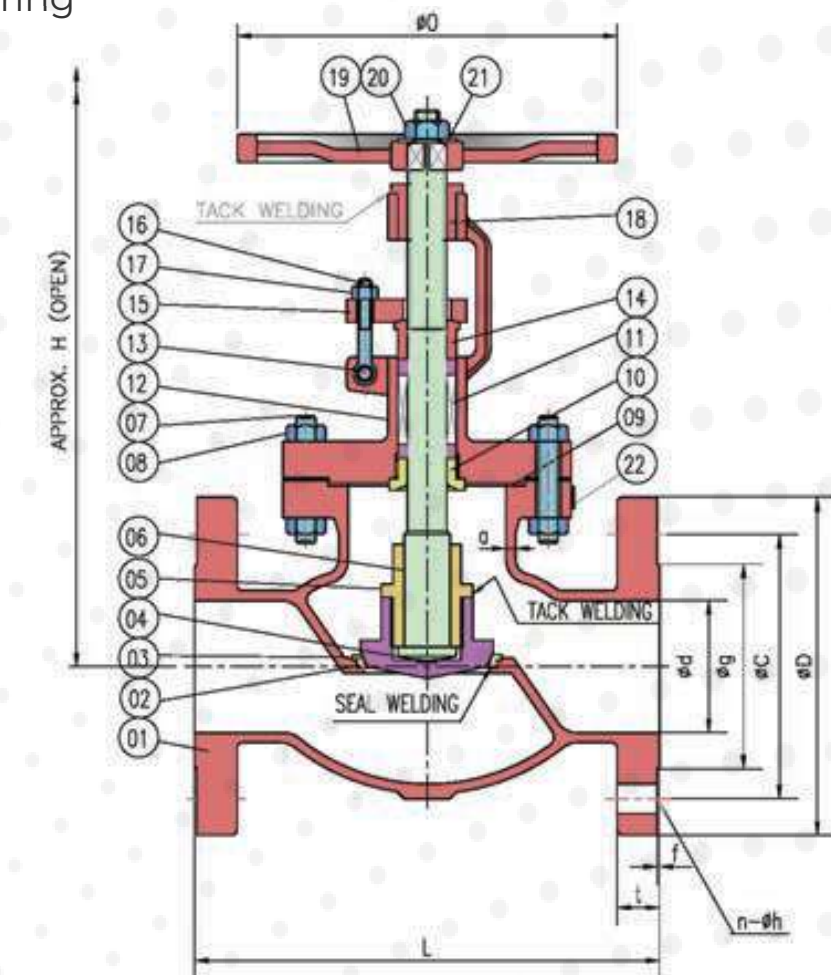
- Bolted Bonnet
  - Outside Screw and Yoke
  - Yoke integral with bonnet
  - Rising Stem - Handwheel
  - Welded or Threaded Seat Ring - Stellite
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### MATERIAL

Option available for materials to meet NACE MR0175 requirement.

### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598



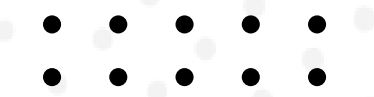
Dimensional Data (mm)*					
Size	Face -to-Face L	Dia. of Bore d	ø of Handwheel O	Height H	Wall Thk a min
2"	216.0	47.5	350	650	19.1
3"	305.0	69.9	450	711	23.9
4"	406.0	91.9	560	782	28.7
6"	559.0	136.4	640	927	38.1
8"	711.0	177.8	720	1127	47.8
10"	864.0	222.3	900	1308	57.2

\* Please note dimensions are for information only. Order specific arrangement drawing dimensions will be final.



# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 150



Parts And Material List			FIG: 2621
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A216 13Cr Face
04	Washer	Carbon Steel	ASTM A276 316
05	Disc Nut Pin	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Arm	Carbon Steel	ASTM A216 WCB
08	Arm Pin	Stainless Steel	ASTM A276 410
09	Spring Washer	Stainless Steel	ASTM A276 316
10	Plug	Stainless Steel	ASTM A276 410
11	Gasket	Stainless Steel	Spiral Wound 316+Graphite
12	Cover Bolt	Carbon Steel	ASTM A193 B7
13	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A216 WCB
15	Eye Bolt	Carbon Steel	Carbon Steel
16	Nameplate	Stainless Steel	ASTM A182 F316

Dimensional Data (mm)*										
Size	Face -to-Face L	Dia. of Bore d	O.D. of Flange D	ø of Bolt Circle C	O.D. of RF g	Thk of Flange t	Ht. of RF f	ø of Bolt Holes h	Height H	Wall Thk a min
2"	203.0	50.8	150.0	120.7	92.1	16.3	2.0	4-19.1	165	8.6
3"	241.0	76.2	190.0	152.4	127.0	19.5	2.0	4-19.1	186	10.4
4"	292.0	101.6	230.0	190.5	157.2	24.3	2.0	8-19.1	217	11.2
6"	356.0	152.4	280.0	241.3	215.9	25.9	2.0	8-22.4	266	11.9
8"	495.0	203.2	345.0	298.5	269.9	29.0	2.0	8-22.4	318	12.7
10"	622.0	254.0	405.0	362.0	323.8	30.6	2.0	12-25.4	368	14.2
12"	698.0	304.8	485.0	431.8	381.0	32.2	2.0	12-25.4	406	16.0
14"	787.0	336.6	535.0	476.3	412.8	35.4	2.0	12-28.6	432	16.8
16"	864.0	387.4	595.0	539.8	469.9	37.0	2.0	16-28.6	483	17.5
18"	978.0	438.2	635.0	577.9	533.4	40.1	2.0	16-32.0	600	18.3
20"	978.0	489.0	700.0	635.0	584.2	43.3	2.0	20-32.0	660	19.1

### SPECIFICATION

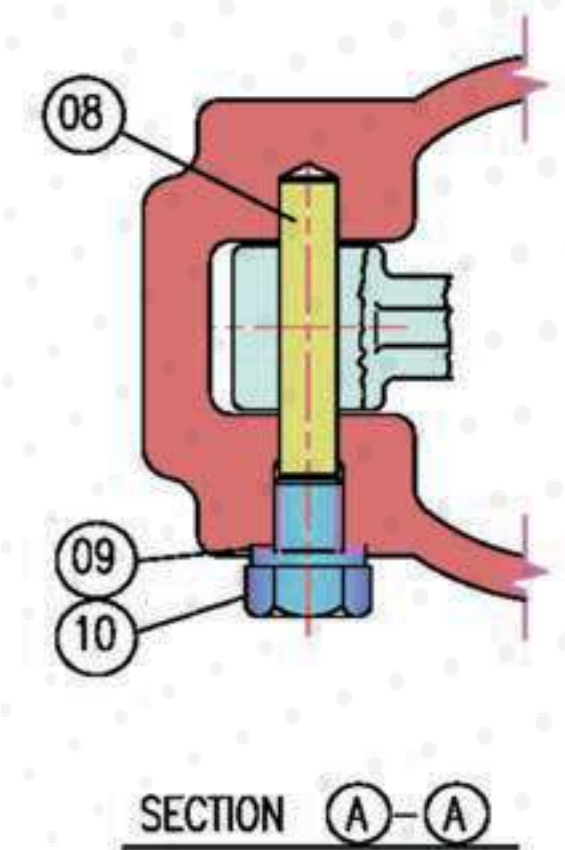
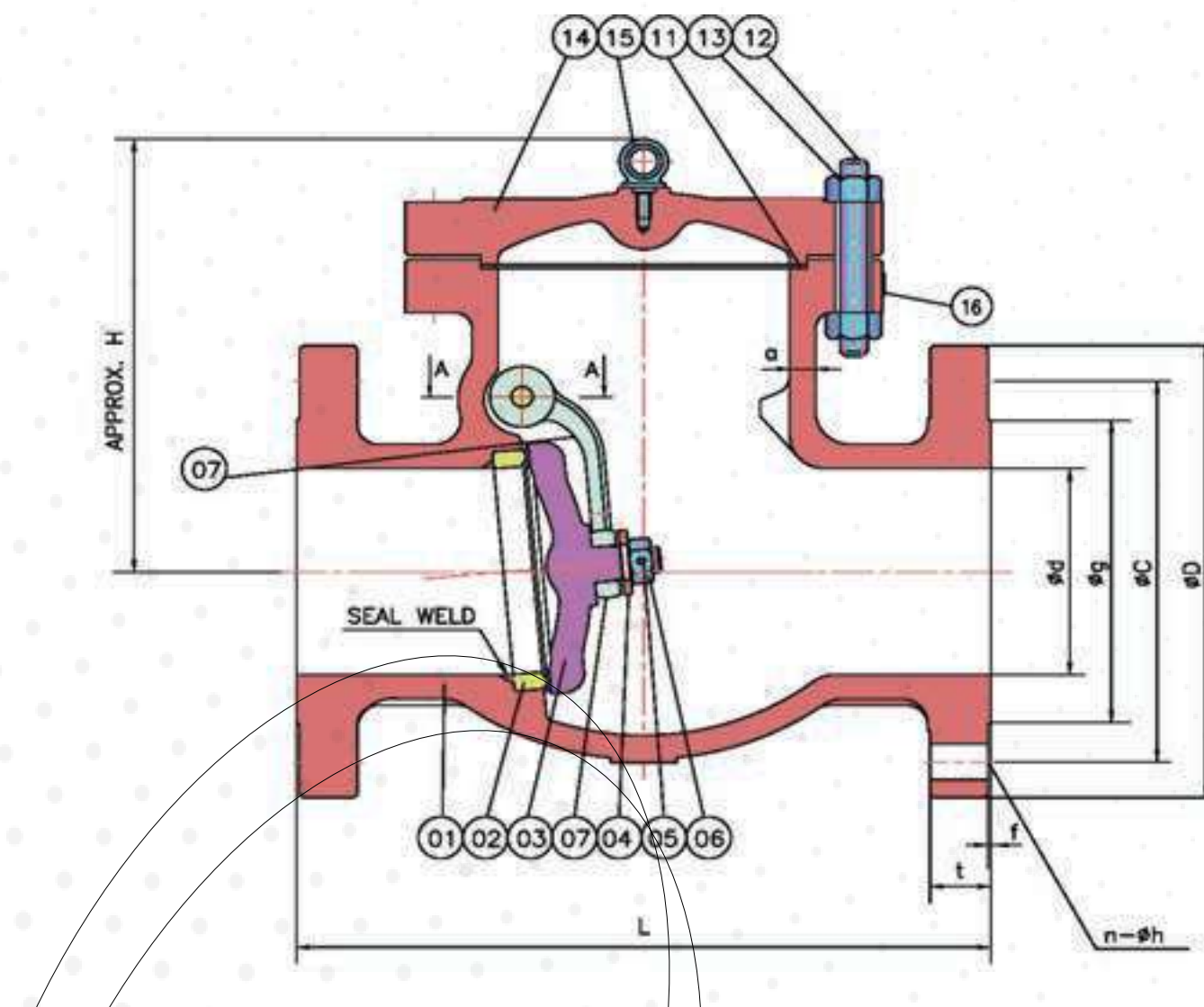
- Bolted Cover
  - For Horizontal or Vertical Lines (Up Flow Only)
  - Welded or Threaded Seat Ring
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

- Design : ANSI B16.34
- End Flange : ANSI B16.5
- Weld Ends : ANSI B16.25
- Face-to-Face : ANSI B16.10
- Shell and Seat Test : API 598

### APPLICABLE STANDARDS

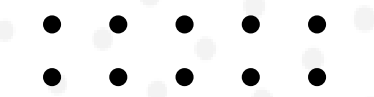
- Option available for materials to meet NACE MR0175 requirement.





# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 300



Parts And Material List			FIG: 3262
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A216 13Cr Face
04	Washer	Carbon Steel	ASTM A276 316
05	Disc Nut Pin	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Arm	Carbon Steel	ASTM A216 WCB
08	Arm Pin	Stainless Steel	ASTM A276 410
09	Spring Washer	Stainless Steel	ASTM A276 316
10	Plug	Stainless Steel	ASTM A276 410
11	Gasket	Stainless Steel	Spiral Wound 316+Graphite
12	Cover Bolt	Carbon Steel	ASTM A193 B7
13	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A216 WCB
15	Eye Bolt	Carbon Steel	Carbon Steel
16	Nameplate	Stainless Steel	ASTM A182 F316

Size	Dimensional Data (mm)*									
	Face -to-Face L	Dia. of Bore d	O.D. of Flange D	ø of Bolt Circle C	O.D. of RF g	Thk of Flange	Ht. of RF f	ø of Bolt Holes n-h	Height H	Wall Thk a min
2"	267.0	50.8	165.0	127.0	92.1	22.7	2.0	8-19.1	178	9.7
3"	318.0	76.2	210.0	168.3	127.0	29.0	2.0	8-22.4	211	11.9
4"	356.0	101.6	255.0	200.0	157.2	32.2	2.0	8-22.4	246	12.7
6"	444.0	152.4	320.0	269.9	215.9	37.0	2.0	12-22.4	318	16.0
8"	533.0	203.2	380.0	330.2	269.9	41.7	2.0	12-25.4	356	17.5
10"	622.0	254.0	445.0	387.4	323.8	48.1	2.0	16-28.6	394	19.1
12"	711.0	304.8	520.0	450.8	381.0	51.3	2.0	16-32.0	482	20.6
16"	864.0	387.4	650.0	571.5	469.9	57.6	2.0	20-35	584	23.9
18"	978.0	431.8	710.0	628.6	533.4	60.8	2.0	24-35	590	25.4
20"	1016.0	482.6	775.0	685.8	584.2	64.0	2.0	24-35	614	26.9

### SPECIFICATION

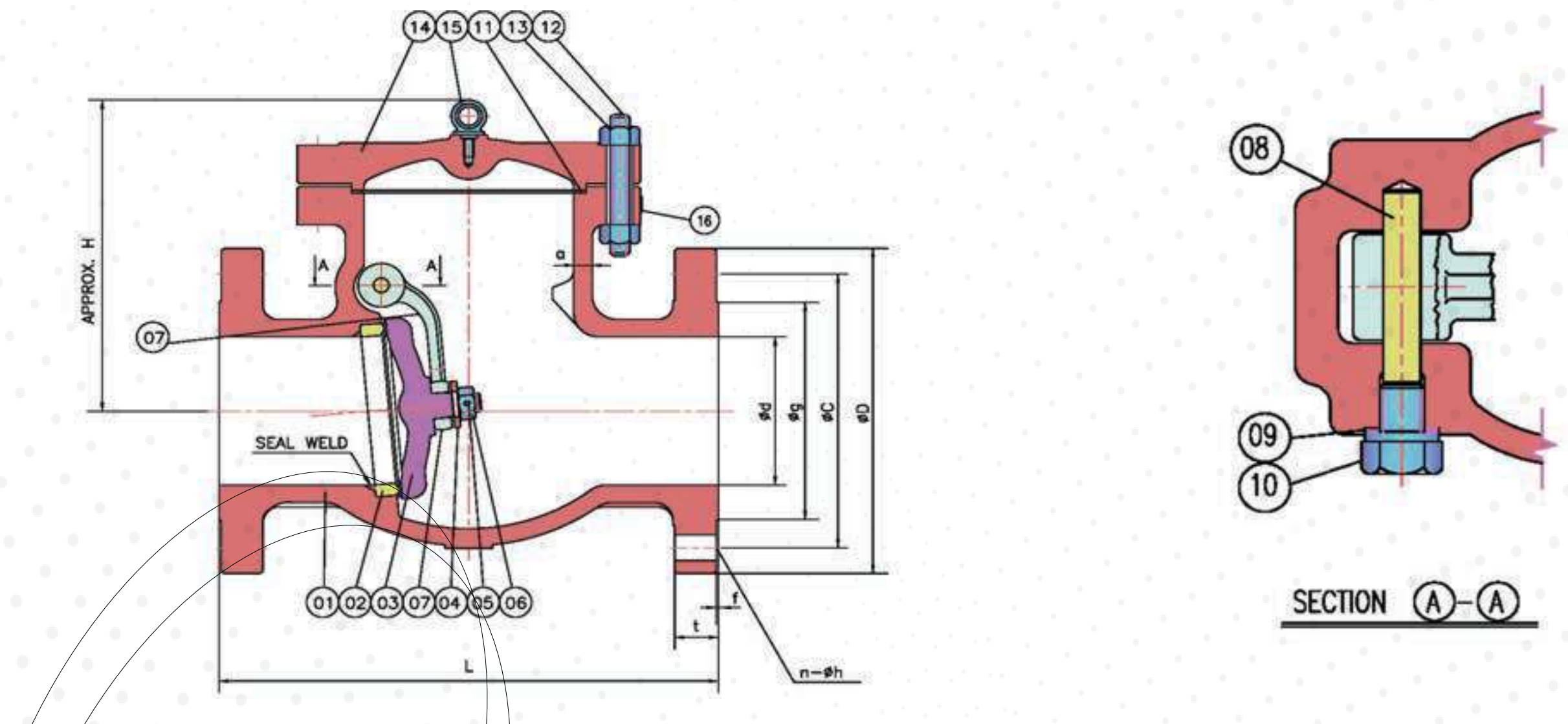
- Bolted Cover
- For Horizontal or Vertical Lines (Up Flow Only)
- Welded or Threaded Seat Ring
- Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

- Design : ANSI B16.34
- End Flange : ANSI B16.5
- Weld Ends : ANSI B16.25
- Face-to-Face : ANSI B16.10
- Shell and Seat Test : API 598

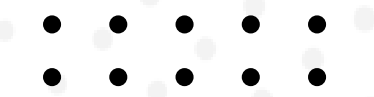
### APPLICABLE STANDARDS

- Option available for materials to meet NACE MR0175 requirement.



# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 600



Parts And Material List			FIG: 4262
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A216 13Cr Face
04	Washer	Carbon Steel	ASTM A276 316
05	Disc Nut Pin	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Arm	Carbon Steel	ASTM A216 WCB
08	Arm Pin	Stainless Steel	ASTM A276 410
09	Spring Washer	Stainless Steel	ASTM A276 316
10	Plug	Stainless Steel	ASTM A276 410
11	Gasket	Stainless Steel	Spiral Wound 316+Graphite
12	Cover Bolt	Carbon Steel	ASTM A193 B7
13	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A216 WCB
15	Eye Bolt	Carbon Steel	Carbon Steel
16	Nameplate	Stainless Steel	ASTM A182 F316

Dimensional Data (mm)*										
Size	Face -to-Face L	Dia. of Bore d	O.D. of Flange D	ø of Bolt Circle C	O.D. of RF g	Thk of Flange t	Ht. of RF f	ø of Bolt Holes n-h	Height H	Wall Thk a min
2"	292.0	50.8	165.0	127.0	92.1	25.4	7.0	8-19.1	187	11.2
3"	356.0	76.2	210.0	168.3	127.0	31.8	7.0	8-22.4	278	12.7
4"	432.0	101.6	275.0	215.9	157.2	38.1	7.0	8-25.4	316	16
6"	559.0	152.4	355.0	292.1	215.9	47.7	7.0	12-28.6	400	19.1
8"	660.0	199.9	420.0	349.2	269.9	55.6	7.0	12-32.0	432	25.4
10"	787.0	247.7	510.0	431.8	323.8	63.5	7.0	16-35.0	483	28.7
12"	838.0	298.5	560.0	489.0	381.0	66.7	7.0	20-35.0	508	31.8
14"	889.0	326.9	605.0	527.0	412.8	69.9	7.0	20-38.0	572	35.1
16"	991.0	374.7	685.0	603.2	469.9	76.2	7.0	20-41.0	660	38.1
18"	1092.0	419.1	745.0	654.0	533.4	82.6	7.0	20-44.0	730	41.4
20"	1094.0	463.6	815.0	723.9	584.2	88.9	7.0	24-44.0	800	44.5

### SPECIFICATION

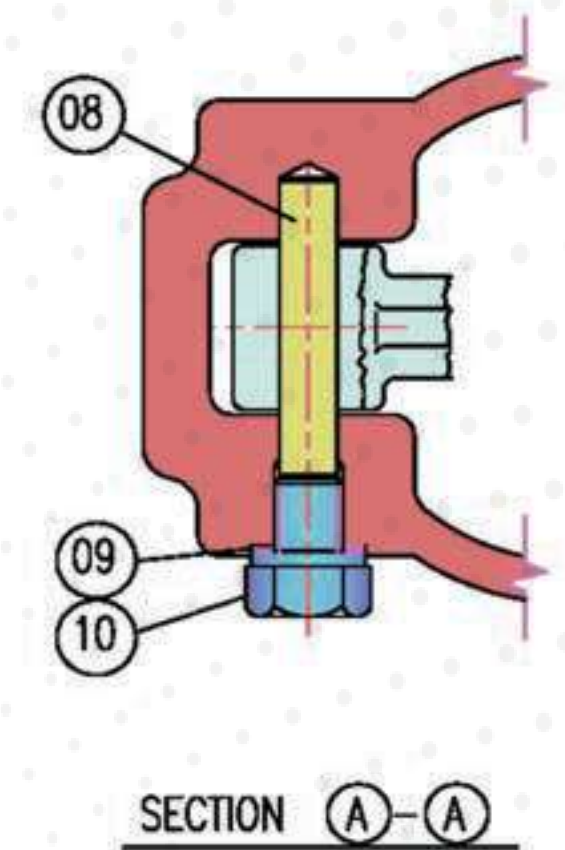
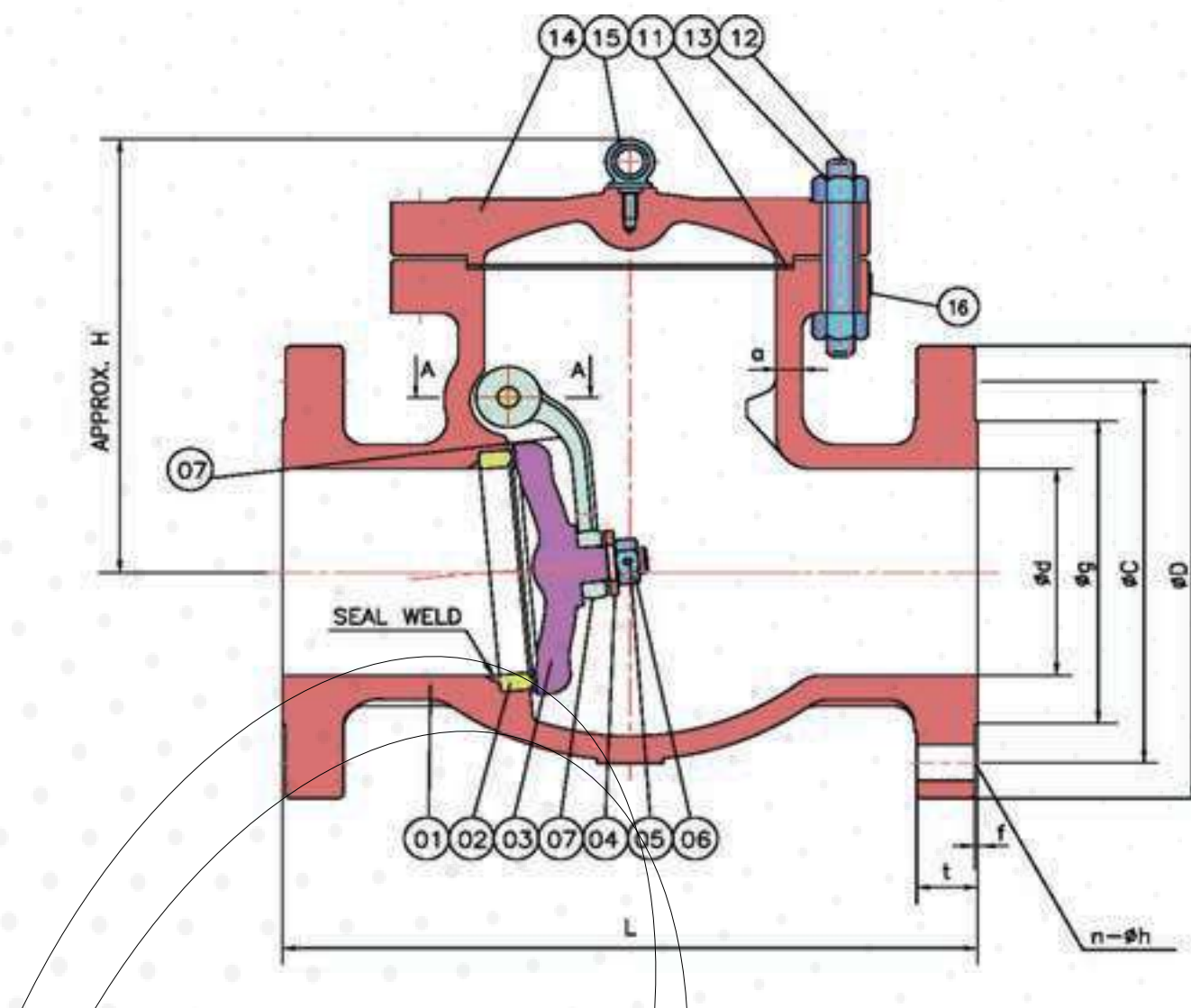
- Bolted Cover
  - For Horizontal or Vertical Lines (Up Flow Only)
  - Welded or Threaded Seat Ring
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

- Design : ANSI B16.34
- End Flange : ANSI B16.5
- Weld Ends : ANSI B16.25
- Face-to-Face : ANSI B16.10
- Shell and Seat Test : API 598

### APPLICABLE STANDARDS

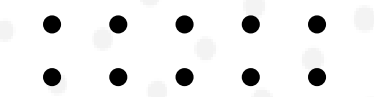
- Option available for materials to meet NACE MR0175 requirement.





# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 900



Parts And Material List			FIG: 5266
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A216 13Cr Face
04	Washer	Carbon Steel	ASTM A276 316
05	Disc Nut Pin	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Arm	Carbon Steel	ASTM A216 WCB
08	Arm Pin	Stainless Steel	ASTM A276 410
09	Spring Washer	Stainless Steel	ASTM A276 316
10	Plug	Stainless Steel	ASTM A276 410
11	Gasket	Stainless Steel	Spiral Wound 316+Graphite
12	Cover Bolt	Carbon Steel	ASTM A193 B7
13	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A216 WCB
15	Eye Bolt	Carbon Steel	Carbon Steel
16	Nameplate	Stainless Steel	ASTM A182 F316

Dimensional Data (mm)*											
Size	Face -to-Face L	Dia. of Bore d	O.D. of Flange D	ø of Bolt Circle C	O.D. of RF g	ø of RTJ P	Thk of Flange t	Ht. of RF f	ø of Bolt Holes n-h	Height H	Wall Thk a min
2"	371.3	47.5	215.0	165.1	124.0	95.25	38.1	7.9	8-25.4	225	19.1
3"	384.0	72.9	240.0	190.5	155.4	123.83	38.1	7.9	8-25.4	250	19.1
4"	460.2	98.3	290.0	235.0	180.8	149.23	44.5	7.9	8-32.0	320	21.3
6"	612.6	146.1	380.0	317.5	241.3	211.12	55.6	7.9	12-32.0	345	26.2
8"	739.6	190.5	470.0	393.7	307.8	269.88	63.5	7.9	12-38.0	415	31.8
10"	841.2	238.0	545.0	469.9	362.0	323.85	69.9	7.9	16-38.0	515	36.6
12"	968.2	282.4	610.0	533.4	419.1	381.00	79.4	7.9	20-38.0	560	42.2

### SPECIFICATION

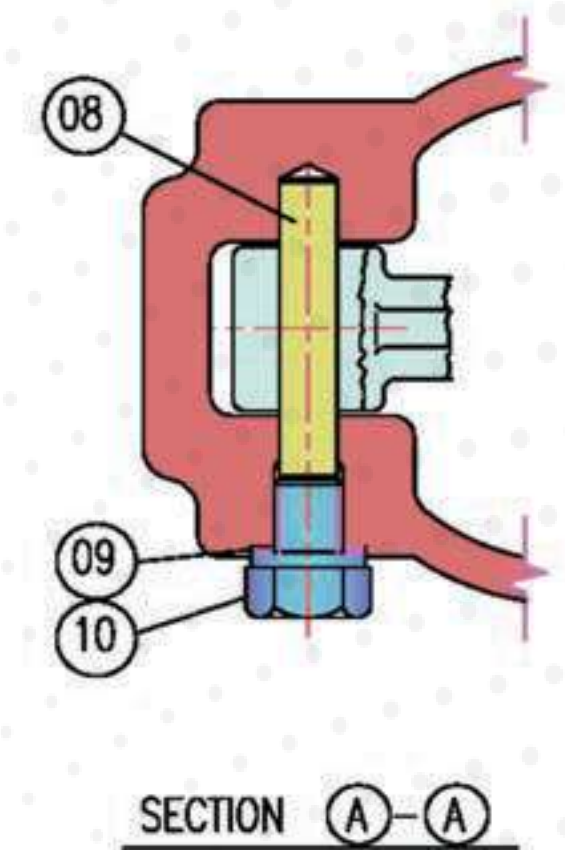
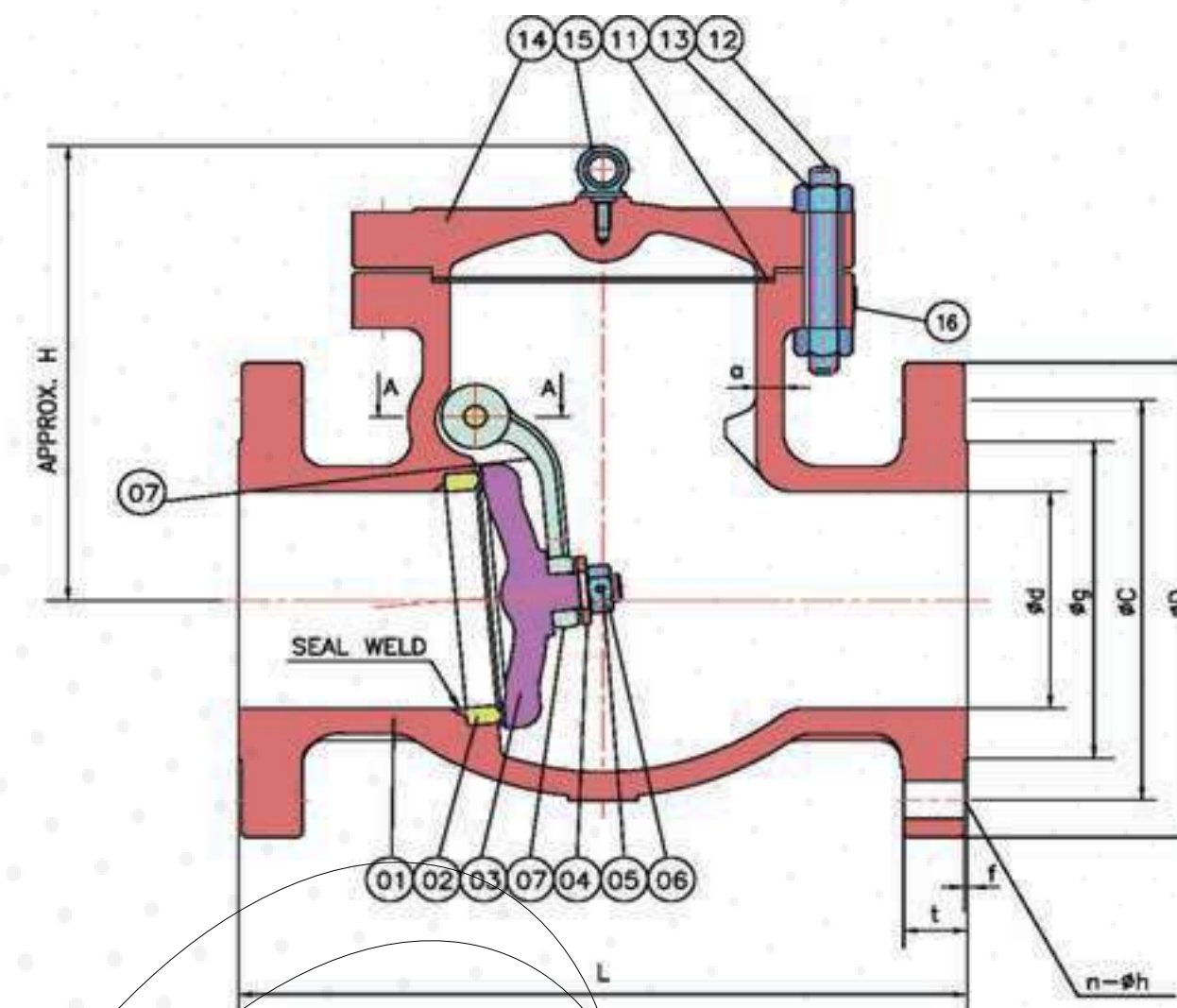
- Bolted Cover
  - For Horizontal or Vertical Lines (Up Flow Only)
  - Welded or Threaded Seat Ring
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598

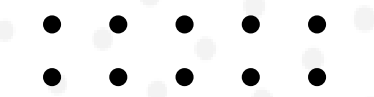
### APPLICABLE STANDARDS

Option available for materials to meet NACE MR0175 requirement.



# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 1500



**Parts And Material List** **FIG: 6261**

No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A216 13Cr Face
04	Washer	Carbon Steel	ASTM A276 316
05	Disc Nut Pin	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Arm	Carbon Steel	ASTM A216 WCB
08	Arm Pin	Stainless Steel	ASTM A276 410
09	Spring Washer	Stainless Steel	ASTM A276 316
10	Plug	Stainless Steel	ASTM A276 410
11	Gasket	Stainless Steel	Spiral Wound 316+Graphite
12	Cover Bolt	Carbon Steel	ASTM A193 B7
13	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A216 WCB
15	Eye Bolt	Carbon Steel	Carbon Steel
16	Nameplate	Stainless Steel	ASTM A182 F316

Size	Dimensional Data (mm)*										
	Face -to-Face L	Dia. of Bore d	O.D. of Flange D	ø of Bolt Circle C	O.D. of RF g	ø of RTJ P	Thk of Flange t	Ht. of RF f	ø of Bolt Holes n-h	Height H	Wall Thk a min
2"	371.3	47.5	215.0	165.1	124.0	95.25	38.1	7.9	8-25.4	225	19.1
3"	472.9	69.9	265.0	203.2	168.1	136.53	47.7	7.9	8-32.0	330	23.9
4"	549.1	91.9	310.0	241.3	193.5	161.93	54.0	7.9	8-35.0	355	28.7
6"	711.2	136.4	395.0	317.5	247.7	211.12	82.6	9.5	12-38.0	450	38.1
8"	841.5	177.8	485.0	393.7	317.5	269.88	92.1	11.1	12-44.0	460	47.8
10"	1000.3	222.3	585.0	482.6	371.3	323.85	108.0	11.1	12-52.0	519	57.2

### SPECIFICATION

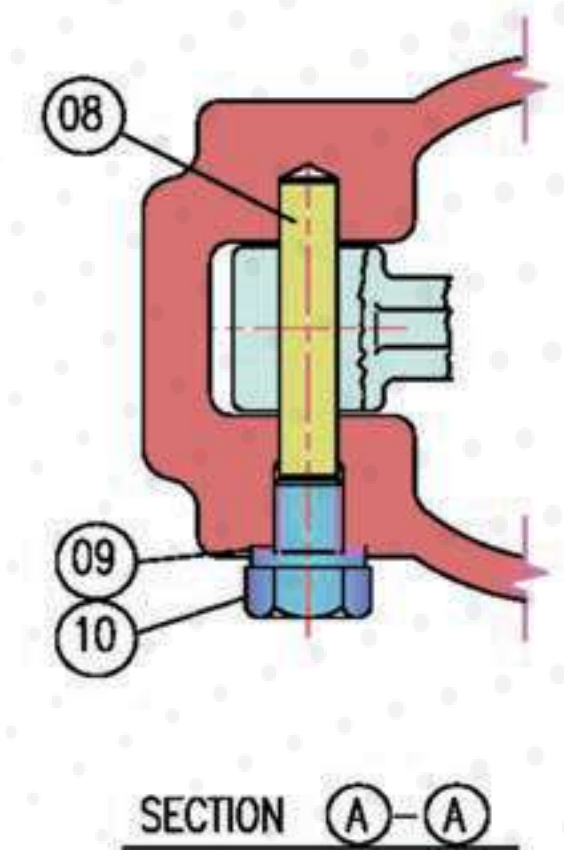
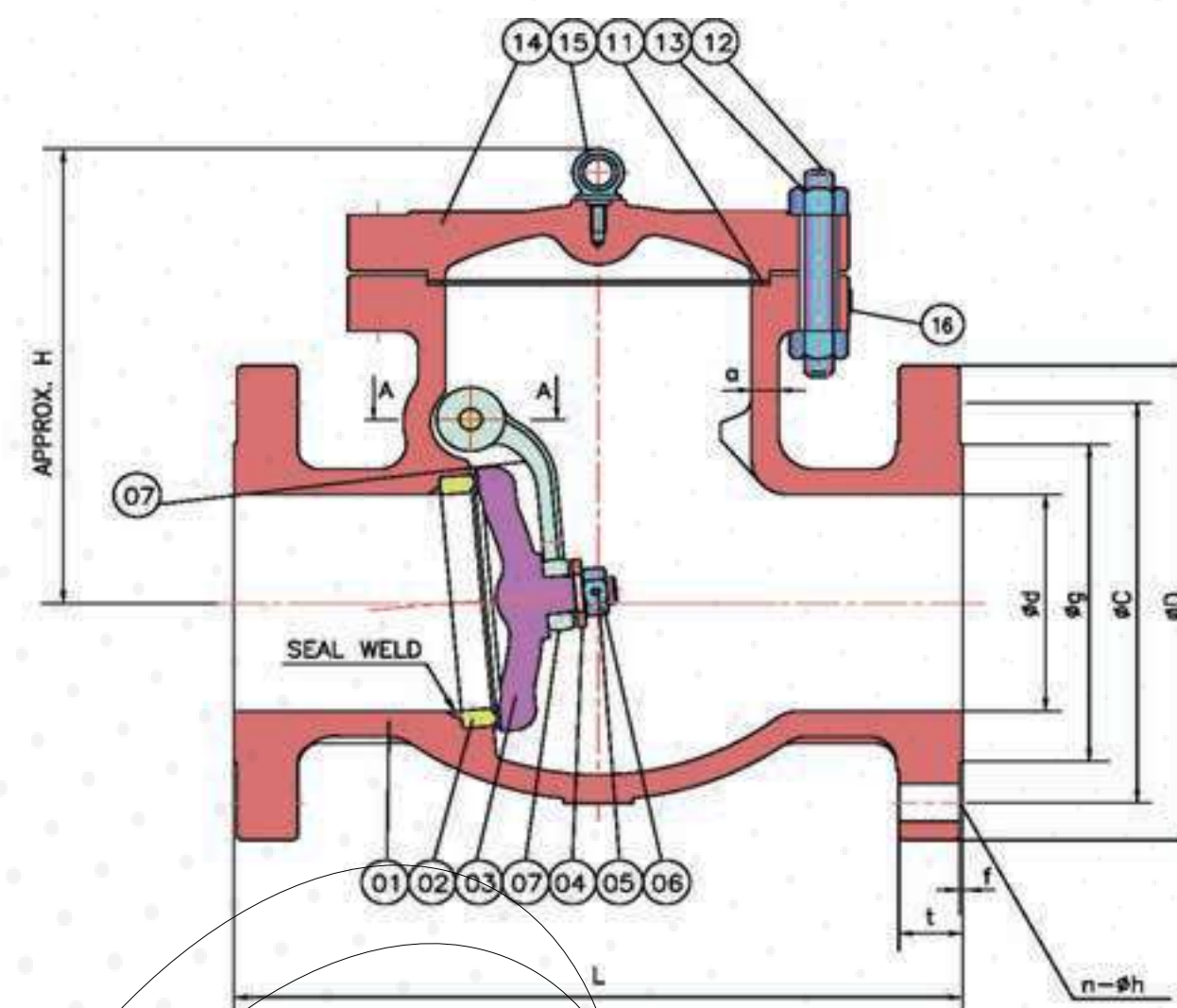
- Bolted Cover
  - For Horizontal or Vertical Lines (Up Flow Only)
  - Welded or Threaded Seat Ring
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

- Design : ANSI B16.34
- End Flange : ANSI B16.5
- Weld Ends : ANSI B16.25
- Face-to-Face : ANSI B16.10
- Shell and Seat Test : API 598

### APPLICABLE STANDARDS

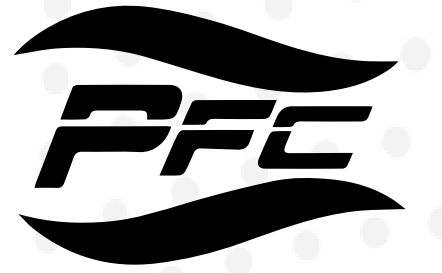
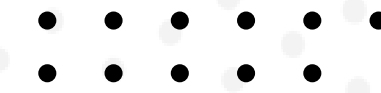
- Option available for materials to meet NACE MR0175 requirement.



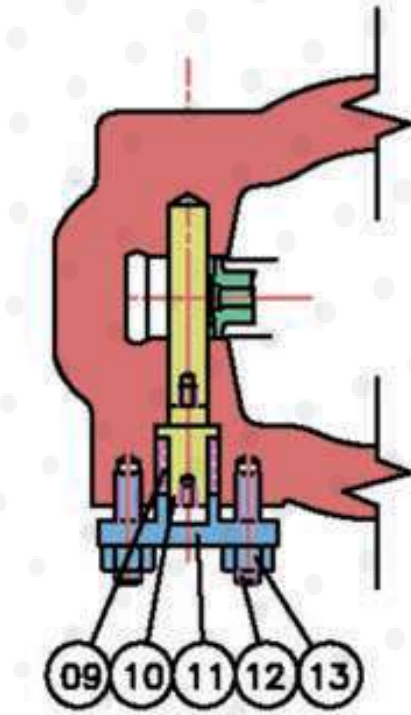
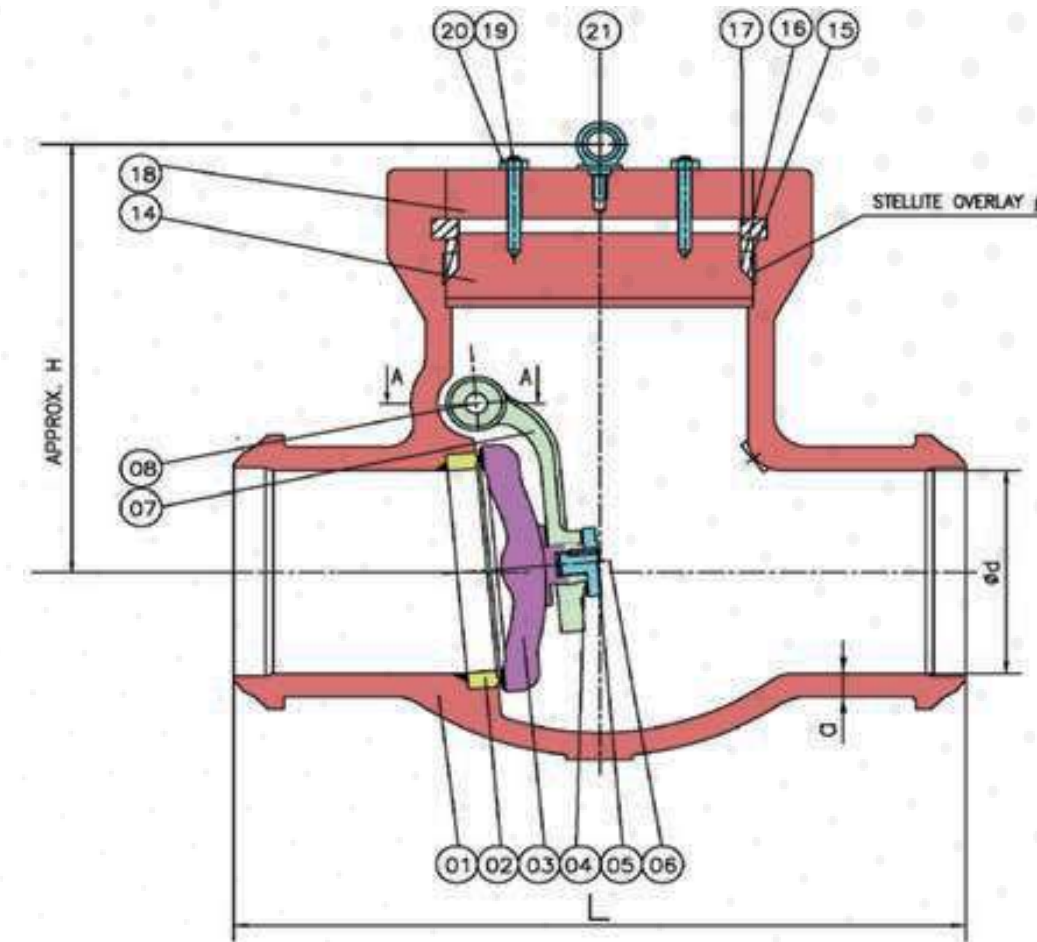


# CHECK VALVES

## CAST STEEL SWING CHECK VALVE - ANSI 1500 PRESSURE SEAL BONNET



Parts And Material List			FIG: 6261
No.	Part Name	Material	ASTM Specification
01	Body	Carbon Steel	ASTM A216 Gr. WCB
02	Body Seat Ring	Carbon Steel	ASTM A105 ST'L No.6 Face
03	Disc	Carbon Steel	ASTM A105 ST'L No.6 Face
04	Washer	Stainless Steel	ASTM A276 316
05	Disc Nut Screw	Stainless Steel	ASTM A276 410
06	Disc Nut	Carbon Steel	ASTM A194 8
07	Hinge	Carbon Steel	ASTM A216 WCB
08	Pin	Stainless Steel	ASTM A276 410
09	Packing	Graphite	Graphite
10	Hinge pin	Stainless Steel	ASTM A276 410
11	Plug	Stainless Steel	ASTM A276 410
12	Plug Bolt	Carbon Steel	ASTM A193 B7
13	Plug bolt Nut	Carbon Steel	ASTM A194 2H
14	Cover	Carbon Steel	ASTM A105
15	Sealing Ring	Stainless Steel	ASTM A276 316L
16	Pressure Ring	Stainless Steel	ASTM A276 410
17	Segment Ring	Stainless Steel	ASTM A276 410
18	Cover Clamp	Carbon Steel	ASTM A105
19	Cover Bolt	Carbon Steel	ASTM A193 B7
20	Cover Bolt Nut	Carbon Steel	ASTM A194 2H
21	Eye Bolt	Carbon Steel	Carbon Steel



### SPECIFICATION

- Bolted Cover
  - For Horizontal or Vertical Lines (Up Flow Only)
  - Welded or Threaded Seat Ring
  - Raised Face Flanged Ends or Butt Weld Ends
- Other End connections are available on request.

### APPLICABLE STANDARDS

Design : ANSI B16.34  
 End Flange : ANSI B16.5  
 Weld Ends : ANSI B16.25  
 Face-to-Face : ANSI B16.10  
 Shell and Seat Test : API 598

### APPLICABLE STANDARDS

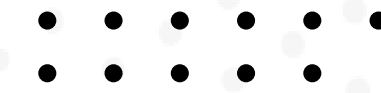
Option available for materials to meet NACE MR0175 requirement.

Dimensional Data (mm)*				
Size	Face -to-Face L	Dia. of Bore d	Height H	Wall Thk a min
3"	305.0	69.9	330.0	23.9
4"	406.0	91.9	355.0	28.7
6"	559.0	136.4	400.0	38.1
8"	711.0	177.8	460.0	47.8
10"	864.0	222.3	630.0	57.2

\* Please note dimensions are for information only. Order specific arrangement drawing dimensions will be final.

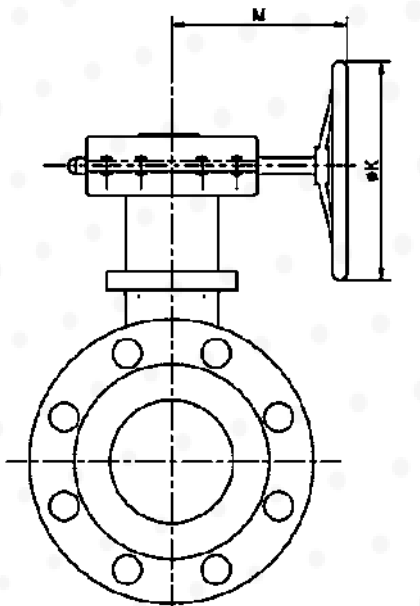
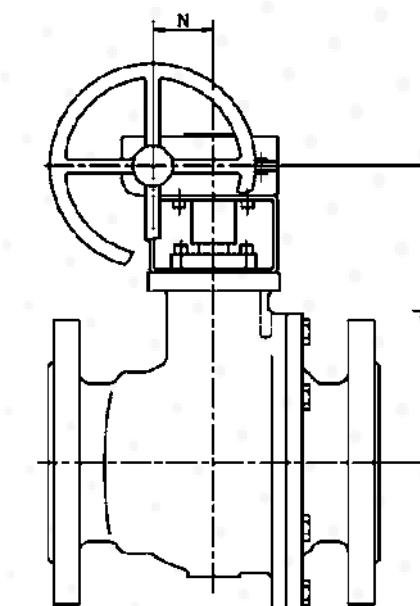
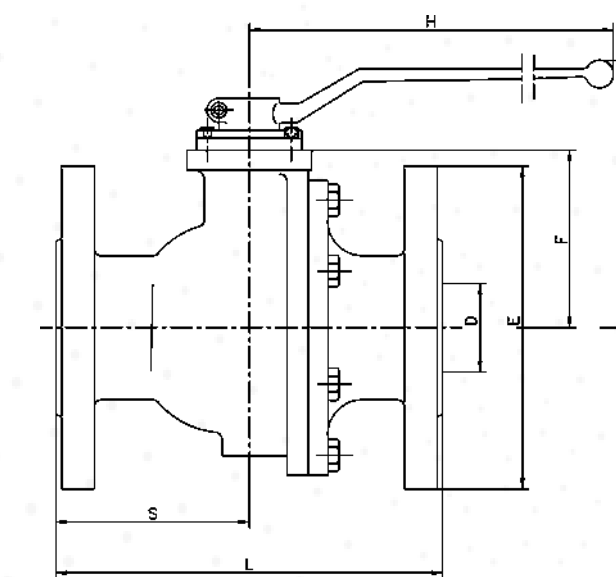
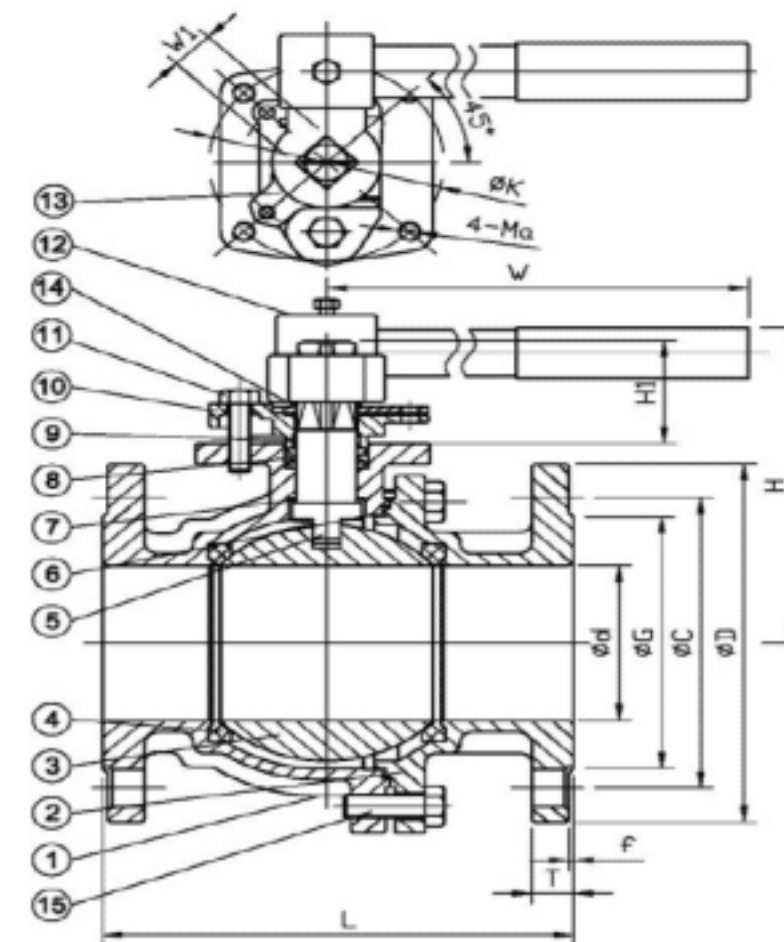
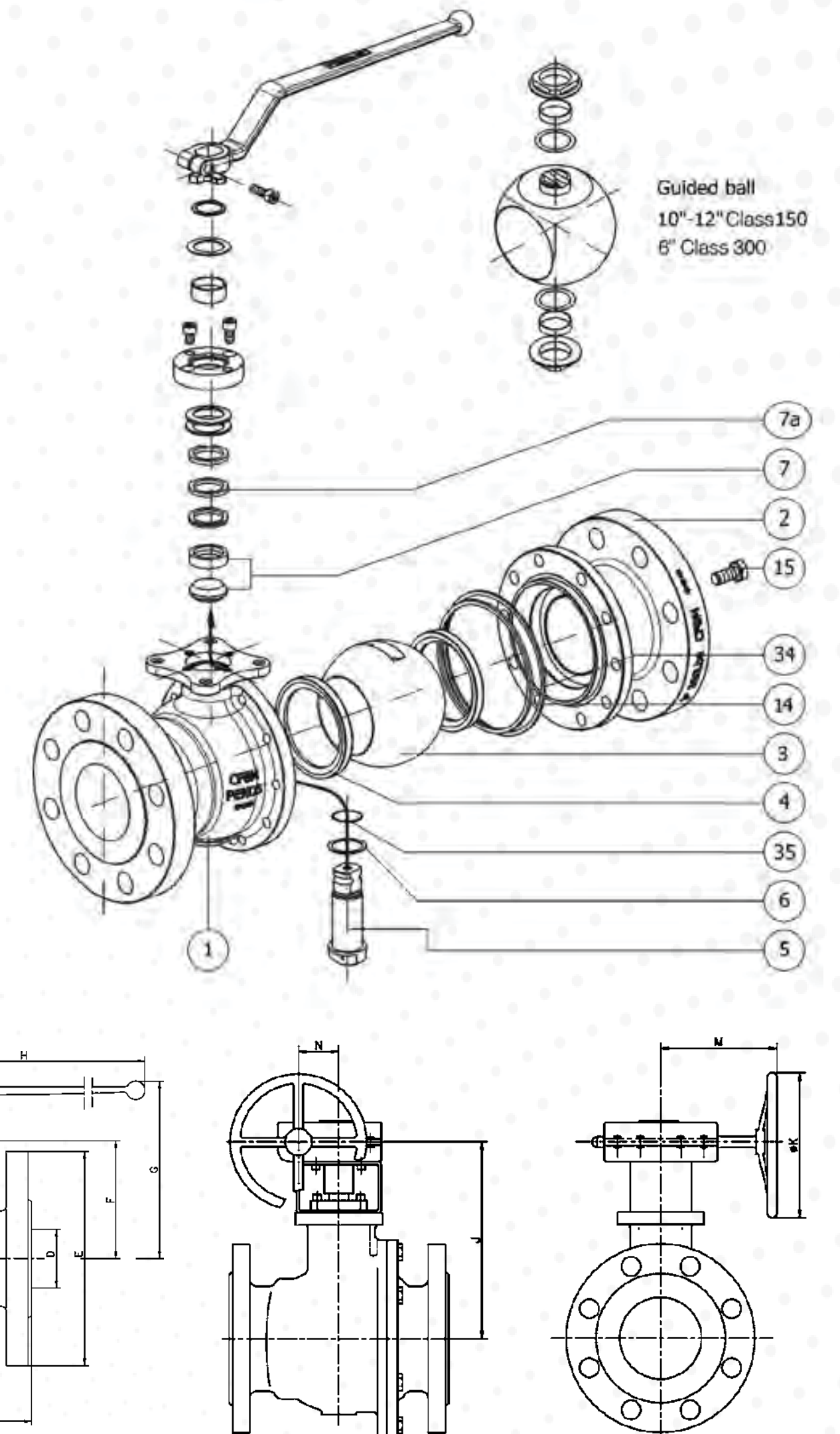


# BALL VALVE



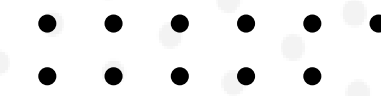
Item	Description	Figure	
		Z14 TTTGV Z34 SSSGV Z64 SSSGV ZG14TTTGV ZG34 SSSGV	Z16 TTTGV Z36 SSSGV Z66 SSSGV ZG16TTTGV ZG36 SSSGV
1-2	Body	A216 WCB	A351CF8M
3	Ball	A351CF8M	
4	Seats	PTFE (T) PTFE+FG (R) PTFE + CG (S)	
5	Stem	AISI 316	
6	Stem seal	PTFE + CG (S)	
7	Packing 1	PTFE (T)	
7a	Packing 2	Graphite	
14	Seal body 1	PTFE (T)	
15	Bolts body	A193 B7M	A193/A320 B8M
34	Seal body 2	Graphite	
35	O'ring stem	Viton®	

Size inches	Dimensional data, mm					
	A			ØB	E	F
2	RF	BW	RTJ			
3	203	283	216	76	229	510
4	229	305	241	102	260	700
6	394	457	406	152	340	700
8	457	521	470	203	375	600
10	533	559	546	254	450	600
12	610	635	622	305	480	600
14	686	762	699	337	490	600
16	762	838	775	387	498	600
18	864	914	876	438	548	600
20	914	991	927	489	567	800





# BALL VALVE



## Ball Valve ASME Class 300

Dimensional data, mm						
Size inches	A					
	RF	BW	RTJ	ØB	E	F
2	216	216	232	51	188	410
3	283	283	298	76	229	510
4	305	305	321	102	260	700
6	403	457	419	152	340	700
8	502	521	518	203	375	600
10	568	559	584	254	450	600
12	648	635	664	305	480	600
14	762	762	778	337	490	600
16	838	838	854	387	498	600
18	914	914	930	438	548	600
20	991	991	1010	489	567	800

## Ball Valve ASME Class 900

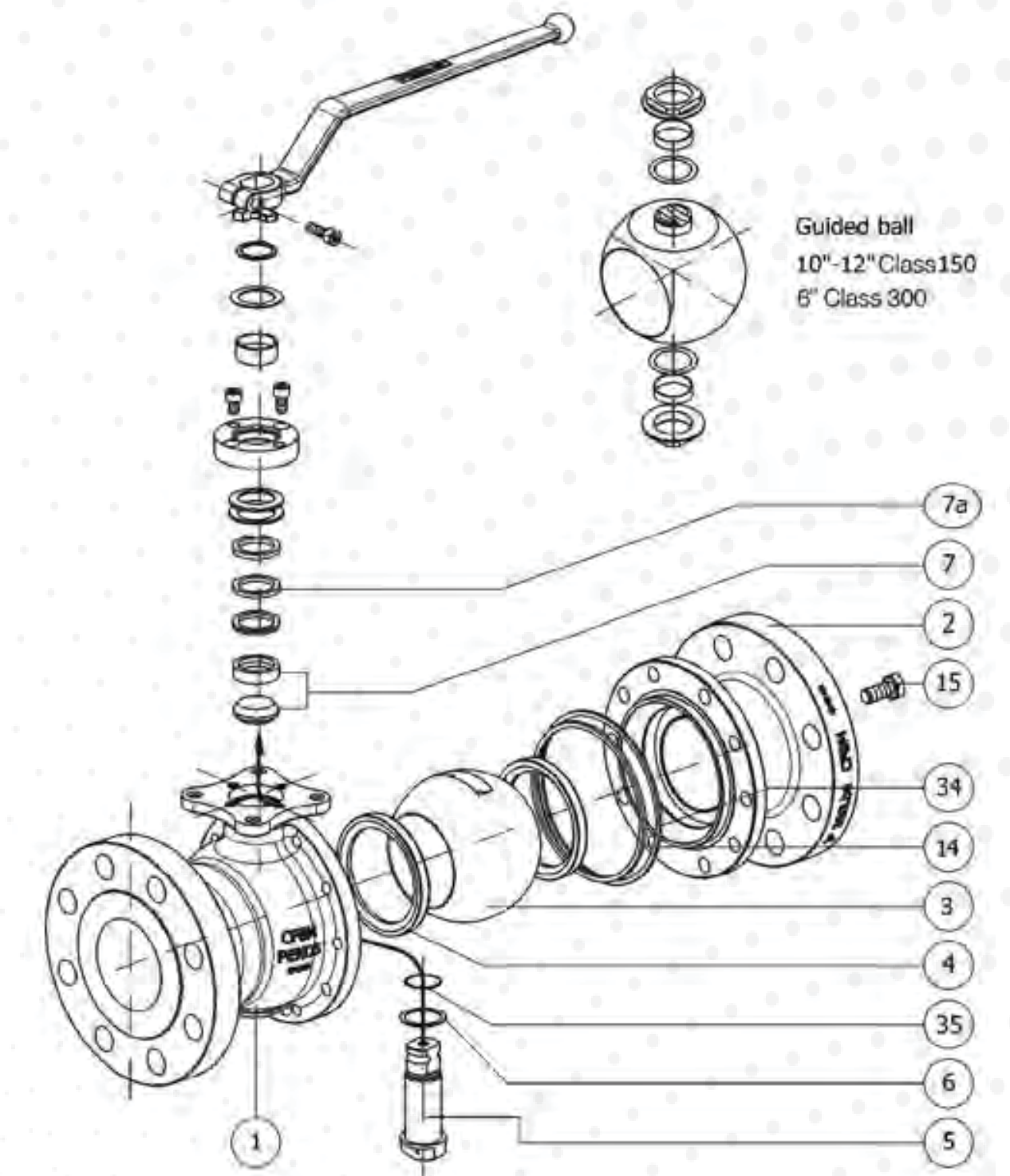
Dimensional data, mm							
Size inches	A						
	RF	BW	RTJ	ØB	D	E	F
2	368	368	371	51	120	185	410
3	381	381	384	76	120	255	510
4	457	457	460	102	150	285	600
6	610	610	613	152	251	370	600
8	737	737	740	203	280	400	600
10	838	838	841	254	340	450	800
12	965	965	968	305	390	500	800
14	1029	1029	1038	324	442	520	800
16	1130	1130	1140	375	490	550	800
18	1219	1219	1232	425	500	600	800
20	1321	1321	1334	473	500	630	800

## Ball Valve ASME Class 600

Dimensional data, mm						
Size inches	A					
	RF	BW	RTJ	ØB	E	F
2	292	292	295	51	188	410
3	356	356	359	76	229	510
4	432	432	435	102	260	700
6	559	559	562	152	305	500
8	660	660	664	203	375	600
10	787	787	791	254	450	600
12	838	838	841	305	495	600

## Ball Valve ASME Class 1500

ASME Class 1500 dimensional data, mm							
Size inches	A						
	RF	BW	RTJ	ØB	D	E	F
2	368	368	371	51	120	185	410
3	470	470	473	76	120	255	510
4	546	546	549	102	150	285	600
6	705	705	711	146	270	460	600
8	832	832	841	194	300	520	600
10	991	991	1000	241	360	640	800
12	1130	1130	1146	289	410	720	800
14	1257	1257	1276	318	460	760	800
16	1384	1384	1407	362	510	820	800





**THANK YOU**

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