

SAFVAL VALVE GROUP

API & DIN

Industrial Valves



SAFVAL

**To Be An Excellent
Industrial Valves
Manufacturer & Supplier**



**To Be An Outstanding
Flow Control Solutions
Supplier In The Fields
of Energy, Security and
Environment Protection**

Adopting advanced technology and standard
Improving and innovating continuously
Providing satisfied products and services
Insisting on following the law and good faith

SAFVAL

Brief Introduction

SAFVAL is one specialized manufacturer and supplier of industrial valve according to API, ASME, EN, ISO, JIS, DIN, BS, GOST & GB standards. The product includes butterfly valve, ball valve, gate valve, check valve, globe valve, plug valve etc. Materials can be carbon steel, stainless steel, cast iron, ductile iron, alloy steel etc.

Our valves can be used widespread in petroleum, chemical, metallurgical and power generation industries. As the reliable supplier on quality and service, We won great reputations from the customers in Europe, America, Middle East, Australia, South East Asia, Russia and other countries.

Our factory launched its quality management and safety system as ISO 9001, ISO14001, OHSAS18001 and awarded API 6D, API 600, API 607, API 6FA, CE/PED approvals for the product.

SAFVAL is dedicated to supplying high quality valve solutions for global industries. In the new century, we are facing a historical development opportunity and furious competition. By holding the persistence improving in management and product quality. SAFVAL will be also committed to the continuous improvement of our abilities provide higher and better service to you.



SAFVAL

Production Equipment



Manufacture mainly according to API, ANSI, DIN, BS, JIS, JB and GB standard. We manage production by quality assurance system from product design, raw materials purchasing, production, inspection, painting, packaging to delivery.



SAFVAL

Industrial Valves

Product Shows



Industrial Valves

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Product Shows



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Quality Control

SAFVAL has built strictly quality control system to ensure manufacturing the superior quality valves. The production and testing equipments are under regular and good maintenance to ensure teh normal operation. The main production processes and testings can be executed independently in our company.



Contents

Cast Steel Valves

- 01 Gate Valves
- 02 Through Conduit Gate Valves
- 03 Globe Valves
- 04 Check Valves
- 05 Wafer Check Valves
- 06 Floating Ball Valves
- 07 Trunnion Ball Valves
- 08 Forged Steel Ball Valves
- 09 Full Welded Ball Valves
- 10 Butterfly Valves
- 11 Plug Valves
- 12 Strainers

Forged Steel Valves

- 13 Gate Valves & Globe Valves
- 14 Check Valves & Ball Valves

Cast Iron Valves

- 15 Butterfly Valves
- 16 Resilient and Metallic Seated Gate Valves
- 17 Globe Valves
- 18 Check Valves & Y Strainers
- 19 Materials Characteristic
- 20 International Materials Standards
- 21-22 How To Order

Gate Valves

Cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of API600 & API6D, BS1414 & BS EN1984 and generally conform to ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.



Applicable Standards:

- ★ Design & Manufacture: API600, API6D, API603, DIN3352
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1



Product Range

Size	2"~48" / DN50~DN1200
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Trim	13Cr, SS304, SS316, Stellite
Operation	HW. GO. Motor, Pneumatic

Design Description:

- ★ Full Port Design
- ★ OS&Y, Outside Screw And Yoke
- ★ BB, Bolted Bonnet
- ★ Flexible Wedge, Solid Wedge
- ★ Rising Stem And Non-Rising Handwheel
- ★ Flanged Ends or Butt Welded Ends
- ★ Handwheel or Gear Operated

Through Conduit Gate Valves



Applicable Standards:

- ★ Design & Manufacture: API600, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1

Design Description:

- ★ Full Port Design
- ★ Fire Safe Design
- ★ BB, Bolted Bonnet
- ★ Slab Gate or Expanding Gate
- ★ Double Block & Bleed
- ★ Flanged Ends or Butt Welded Ends
- ★ Handwheel or Gear Operated



Product Range

Size	2"~48" / DN50~DN1200
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Trim	Soft Seal, Metal Seal
Operation	HW. GO. Motor, Pneumatic



Globe Valves

Cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All globe valves are full ported and meet the design requirements of API600 & API6D, BS EN13709 and generally conform to ASME B16.34. Valves are available and trims.

Applicable Standards:

- ★ Design & Manufacture: API600, API6D, API603, BS1873
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1



Product Range

Size	2"~24" / DN50~DN600
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Trim	13Cr, SS304, SS316, Stellite
Operation	HW, GO, Motor, Pneumatic



Design Description:

- ★ Full Port Design
- ★ OS&Y, Outside Stem & Yoke
- ★ BB, Bolted Bonnet
- ★ Straight Way, Y Pattern or Angle Type
- ★ Rising Stem and Handwheel
- ★ Flanged Ends or Butt Welded Ends
- ★ Handwheel or Gear Operated

Check Valves

Cast steel check valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of API600 & API6D, BS1414 & BS EN1984 and generally conform to ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.



Applicable Standards:

- ★ Design & Manufacture: API600, API6D, API603, BS1868
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1



Product Range

Size	2"~32" / DN50~DN800
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Trim	13Cr, SS304, SS316, Stellite

Design Description:

- ★ Full Port Design
- ★ Swing Disc or Piston Lift Type Disc
- ★ BB, Bolted Bonnet
- ★ Renewable, Welded or Integral Seat
- ★ Horizontal or Vertical Service
- ★ Flanged Ends or Butt Welded Ends

Wafer Check Valves

Applicable Standards:

- ★ Design & Manufacture: API594, API6D
- ★ Steel Valves: ASME B16.34, ISO14313
- ★ Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1



Design Description:

- ★ Full Port Design
- ★ One Piece Body
- ★ Butterfly Swing or Piston Lift Type
- ★ Dual-Plate Disc, Single Disc, Piston Disc
- ★ Wafer or Lug Ends
- ★ Available With Flanged Ends
- ★ Horizontal or Vertical Service

Product Range

Size	2"~24" / DN50~DN600
Pressure	CL150~CL600 / PN1.0~PN10.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	EPDM, 13Cr, SS304, SS316, Stellite



Floating Ball Valves



Applicable Standards:

- ★ Design & Manufacture: API608, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1

Design Description:

- ★ Full Bore or Reduced Bore Design
- ★ Split Body, 2 Piece Body
- ★ Bolted Bonnet, Side Entry
- ★ Floating Ball
- ★ Anti Static & Fire Safe
- ★ Flanged Ends or Butt Welded Ends
- ★ Handwheel or Gear Operated



Product Range

Size	1/2"~12" / DN15~DN300
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	PTFE, RPTFE, PEEK, DEVLON
Ball	A105+ENP, SS304(L), SS316(L)
Operation	Lever, GO, Motor, Pneumatic



Trunnion Ball Valves

Applicable Standards:

- ★ Design & Manufacture: API608, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1



Design Description:

- ★ Full Bore or Reduced Bore Design
- ★ Split Body, 2 or 3 Pieces Design
- ★ Side Entry or Top Entry
- ★ Floating or Trunnion Mounted Ball
- ★ Blow-Out Proof Stem
- ★ Anti Static And Fire Safe
- ★ Flanged Ends or Butt Welded Ends
- ★ Hand lever or Gear Operated

Product Range

Size	2"~48" / DN50~DN1200
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	PTFE, RPTFE, PEEK, DEVLON, NBR, Metal Seated
Ball	A105+ENP/Stellite, SS304(L), SS316(L)
Operation	Lever, GO, Motor, Pneumatic



Forged Steel Ball Valves

Applicable Standards:

- ★ Design & Manufacture: API608, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1



Design Description:

- ★ Full Bore or Reduced Bore Design
- ★ Split Body, 2 or 3 Pieces Design
- ★ Side Entry or Top Entry
- ★ Floating or Trunnion Mounted Ball
- ★ Blow-Out Proof Stem
- ★ Anti Static And Fire Safe
- ★ Flanged Ends or Butt Welded Ends
- ★ Hand lever or Gear Operated



Product Range

Size	2"~48" / DN50~DN1200
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	PTFE, RPTFE, PEEK, DEVLON, NBR, Metal Seated
Ball	A105+ENP/Stellite, SS304(L), SS316(L)
Operation	Lever, GO, Motor, Pneumatic



Full Welded Ball Valves

Applicable Standards:

- ★ Design & Manufacture: API608, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1

Design Description:

- ★ Fully Welding Body and Bonnet Design
- ★ Fire Safe Design
- ★ Double Block & Bleed
- ★ Trunnion Mounted Ball
- ★ Blow-Out Proof Stem
- ★ Anti Static Device
- ★ Flanged Ends or Butt Welded Ends
- ★ Hand lever or Gear Operated



Product Range

Size	2"~48" / DN50~DN1200
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Forged Carbon Steel, Stainless Steel, Alloy
Seat	PTFE, RPTFE, PEEK, DEVLON, NBR, Metal Seated
Ball	A105+ENP/Stellite, SS304(L), SS316(L)
Operation	Lever, GO, Motor, Pneumatic

Butterfly Valves

Applicable Standards:

- ★ Design & Manufacture: API609, GB/T12238, MSS-SP-68
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Face To Face: API609, GB/T12221
- ★ Inspection & Test: API598, API609, EN12266-1



Design Description:

- ★ Full Port Design
- ★ Concentric, Double or Triple Eccentric
- ★ ISO 5211 Top Flange
- ★ Soft Seated or Metal Seated
- ★ Blow-out Proof Stem
- ★ Flanged, Wafer or Lug Ends

Product Range

Size	2"~80" / DN50~DN2000
Pressure	CL150~CL600 / PN1.0~PN10.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	EPDM, NBR, PTFE, Metal Seated
Disc	Carbon Steel, Stainless Steel, Alloy
Operation	Lever, GO, Motor, Pneumatic



Plug Valves

Applicable Standards:

- ★ Design & Manufacture: API60D, API599
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1



Design Description:

- ★ Full Port or Reduced Port Design
- ★ BB, Bolted Bonnet Cap
- ★ Sleeved or Lubricated type(Pressure Balance)
- ★ Stem Integral With Plug
- ★ Anti Static And Fire Safe
- ★ Flanged Ends or Butt Welded Ends
- ★ Hand Lever or Gear Operated

Product Range

Size	1/2"~24" / DN15~DN600
Pressure	CL150~CL900 / PN1.0~PN15.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Seat	PTFE, RPTFE, PEEK, Metal
Operation	Lever, GO, Motor, Pneumatic



Strainers



Applicable Standards:

- ★ Design & Manufacture: API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, ASME B16.47, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1
- ★ Inspection & Test: API598, API6D, EN12266-1

Design Description:

- ★ Y Type, T Type or Basket Type
- ★ Bolted Bonnet Cap
- ★ Stainless Steel Screen
- ★ With Drain Plug or Valve
- ★ Renewable Screen Density
- ★ Perforated Stainless Steel Screen
- ★ Flanged Ends or Butt Welded Ends



Product Range

Size	2"~24" / DN50~DN600
Pressure	CL150~CL900 / PN1.0~PN15.0 MPa
Body	Carbon Steel, Stainless Steel, Alloy
Screen	SS304(L), SS316(L)



Gate/Globe Valves

Applicable Standards:

- ★ Design & Manufacture: API602, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1

Design Description:

- ★ Reduced Port Design
- ★ Bolted Bonnet, Welded Bonnet Available
- ★ OS&Y, Outside Screw and Yoke
- ★ Rising Stem & Non-Rising Handwheel (GAV)
- ★ Rising Stem & Non-Rising Handwheel (GLV)
- ★ Flanged Ends, BW Ends, SW Ends, NPT Ends
- ★ Handwheel Operated



Product Range

Size	1/2"~3" / DN15~DN80
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Forged Steel (CS, SS, ALLOY)
Trim	13Cr, SS304(L), SS316(L), Stellite
Operation	HW. GO. Motor, Pneumatic

Check/Ball Valves

Applicable Standards:

- ★ Design & Manufacture: API602, API6D
- ★ Steel Valves: ASME B16.34
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Butt Welded Ends: ASME B16.25, EN12627
- ★ Face To Face: ASME B16.10, EN558-1, EN12982
- ★ Inspection & Test: API598, API6D, EN12266-1



Design Description:

- ★ Reduced Port Design
- ★ Swing Disc or Piston Lift Type Disc
- ★ Bolted Bonnet or Welded Bonnet
- ★ Integral Seat
- ★ Horizontal or Vertical Service
- ★ Flanged, BW, SW or NPT Ends

Product Range

Size	1/2"~3" / DN15~DN80
Pressure	CL150~CL2500 / PN1.0~PN42.0 MPa
Body	Forged Steel (CS, SS, ALLOY)
Trim	13Cr, SS304(L), SS316(L), Stellite
Operation	HW, GO, Motor, Pneumatic





Butterfly Valves

Small in size and light in weight, easy to install. Simple, compact structure and quick 90 degree on-off operation. Disc has two-way bearing, perfect seal, without leakage under the pressure test. Flow curve tending to straight-line. Excellent regulation performance. Various kinds of materials, applicable to different medium.

Applicable Standards:

- ★ Design & Manufacture: API609, BS5155, EN593
- ★ Flanged Ends: ASME B16.1, DIN2501, BS4504
- ★ Wafer, Lug, U Pattern, Double Flanged, Single Flanged
- ★ Face To Face: DIN3202, API609, EN558-1, ISO5752
- ★ Inspection & Test: API598, DIN3230, EN12266-1



Product Range

Size	1 1/2"~80" / DN40~DN2000
Pressure	CL125~CL150 / PN1.0~PN1.6 MPa
Body	Cast Iron, Ductile Iron, AL-Bronze
Disc	Ductile Iron, AL-Bronze, SS
Shaft	SS410, SS420, SS431
Seat	EPDM, NBR, PTFE
Operation	HW. GO. Motor, Pneumatic

Gate Valves

Applicable Standards:

- ★ Design & Manufacture: AWWA C509/C515,
- ★ BS5163, DIN3352, SABS 664/665, KSB2334
- ★ Flanged Ends: ASME B16.1, EN1092-1
- ★ Face To Face: DIN3202, BS5163, ASME B16.10
- ★ Inspection & Test: API598, EN12266-1



Product Range

Size	2"~40" / DN50~DN1000
Pressure	CL125~CL150 / PN1.0~PN1.6 MPa
Body	Cast Iron, Ductile Iron
Wedge	Ductile Iron
Shaft	SS410, SS420, SS431
Seat	EPDM, NBR, Brass, SS, Alloy
Operation	HW. GO. Motor

Design Description:

- ★ Full Port Design
- ★ Rising Stem or Non-Rising Stem
- ★ BB, Bolted Bonnet
- ★ Resilient or Metallic Seated
- ★ Flanged Ends
- ★ Handwheel, Gear or Motor Operated



Globe Valves

Applicable Standards:

- ★ Design & Manufacture: MSS-SP-85, BS5152,
- ★ DIN3356, EN13789
- ★ Flanged Ends: ASME B16.1, EN1092-1
- ★ Face To Face: DIN3202, ASME B16.10
- ★ Inspection & Test: API598, EN12266-1

Design Description:

- ★ Full Port Design
- ★ Rising Stem and Handwheel
- ★ BB, Bolted Bonnet
- ★ Metallic Seated
- ★ Flanged Ends
- ★ Handwheel or Gear Operated



Product Range

Size	2"~12" / DN50~DN300
Pressure	CL125~CL150 / PN1.0~PN1.6 MPa
Body	Cast Iron, Ductile Iron
Disc	Ductile Iron
Shaft	SS410, SS420, SS431
Seat	Brass, SS, Alloy
Operation	HW. GO. Motor

Check Valves

Applicable Standards:

- ★ Design & Manufacture: MSS-SP-71, EN1074-3
- ★ BS5153, AWWA C508
- ★ Flanged Ends: ASME B16.5, EN1092-1
- ★ Face To Face: DIN3202, ASME B16.10, EN558
- ★ Inspection & Test: API598, EN12266-1



Product Range

Size	2"~24" / DN50~DN600
Pressure	CL125~CL150 / PN1.0~PN1.6 MPa
Body	Cast Iron, Ductile Iron
Disc	Ductile Iron, SS
Shaft	SS410, SS420, SS431
Seat	EPDM, NBR, Brass, SS, Alloy

Y Strainer



Materials characteristic

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASTM Specification	Chemical Requirements											Tensile Requirements				
	C	Mn	Si	P	S	Cr	Ni	Mo	Cu	V	Tensile	Yield	Elongation	Reduction	Hardness	
	Carbon	Manganese	Silicon	Phosphorus	Sulfur	Chromium	Nickel	Molybdenum	Copper	Vanadium	MPa	MPa	%	of area, %	HB	
Nominal Or Maximum, %											Min.		Max.			
Carbon Steel	A216-WCA	0.25	0.70	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	415-585	205	24	35	
	A216-WCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	250	22	35	
	A216-WCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	22	35	
Chrome-Molybdenum Steel	A217-WC1	0.25	0.50-0.80	0.60	0.040	0.045	0.35	0.45-0.65	0.45-0.65	0.50	-	450-620	240	24	35	
	A217-WC6	0.05-0.20	0.50-0.80	0.60	0.040	0.045	1.00-1.50	0.50	0.45-0.65	0.50	-	485-655	275	20	35	
	A217-WC9	0.05-0.18	0.40-0.70	0.60	0.040	0.045	2.00-2.75	0.50	0.90-1.20	0.50	-	485-655	275	20	35	
	A217-C5	0.20	0.40-0.70	0.75	0.040	0.045	4.00-6.50	0.50	0.45-0.65	0.50	-	620-795	415	18	35	
	A217-C12	0.20	0.35-0.65	1.00	0.040	0.045	8.00-10.0	0.50	0.90-1.20	0.50	-	620-795	415	18	35	
Ni Alloy Steel	A494 M-35-1	0.35	1.50	1.25	0.030	0.030	-	Allowance	-	26.0-33.0	Fe≤3.50	450	170	25	-	
	A494 CW-6M	0.07	1.00	1.00	0.040	0.030	17.0-20.0	Allowance	17.0-20.0	-	Fe≤3.00	495	275	25	-	
	A494 CY-40	0.40	1.50	3.00	0.030	0.030	14.0-17.0	Allowance	-	-	Fe≤11.0	185	195	30	-	
Stainless Steel	A351-CF8	0.08	1.50	2.00	0.040	0.040	18.0-21.0	8.0-11.0	0.50	-	-	485	205	35	35	
	A351-CF8M	0.08	1.50	1.50	0.040	0.040	18.0-21.0	9.0-12.0	2.0-3.0	-	-	485	205	30	30	
	A351-CF3	0.03	1.50	2.00	0.040	0.040	17.0-21.0	8.0-12.0	0.50	-	-	485	205	35	35	
	A351-CF3M	0.03	1.50	1.50	0.040	0.040	17.0-21.0	9.0-13.0	2.0-3.0	-	-	485	205	30	30	
	A351-CN7M	0.07	1.50	1.50	0.040	0.040	19.0-22.0	27.5-30.5	2.0-3.0	3.0-4.0	-	450	170	35	35	
Carbon Steel	A352-LCB	0.30	1.00	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	450-650	240	24	35	
	A352-LCC	0.25	1.20	0.60	0.040	0.045	0.50	0.50	0.20	0.30	0.03	485-655	275	22	35	
	A352-LC1	0.25	0.50-0.80	0.60	0.040	0.045	-	-	0.45-0.65	-	-	450-620	240	24	35	
	A352-LC2	0.25	0.50-0.80	0.60	0.040	0.045	-	2.00-3.00	-	-	-	485-655	275	24	35	
	A352-LC3	0.15	0.50-0.80	0.60	0.040	0.045	-	3.00-4.00	-	-	-	485-655	275	24	35	
Carbon steel	A105(N)	0.35	0.60-1.05	0.35	0.040	0.050	0.30	0.40	0.12	0.40	0.03	485	250	30	30	187
	A350-LF1	0.30	1.35	0.15-0.3	0.035	0.040	0.30	0.40	0.12	0.40	0.03	415-585	205	25	38	
	A350-LF2	0.30	1.35	0.15-0.30	0.035	0.040	0.30	0.40	0.12	0.40	0.03	485-655	250	22	30	
	A350-LF3	0.20	0.90	0.20-0.35	0.035	0.040	0.30	3.25-3.7	0.12	0.40	0.03	485-655	260	22	35	
	A350-LF9	0.20	0.40-1.06	-	0.035	0.040	0.30	1.60-2.24	0.12	0.75-1.25	0.03	435-605	315	25	38	
Stainless Steel	A182-F304	0.08	2.00	1.00	0.040	0.030	18.0-20.0	8.0-11.0	-	-	-	515	205	30	50	
	A182-F316	0.08	2.00	1.00	0.040	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	
	A182-F304L	0.03	2.00	1.00	0.045	0.030	18.0-20.0	8.0-13.0	-	-	-	485	170	30	50	
	A182-F316L	0.03	2.00	1.00	0.045	0.030	16.0-18.0	10.0-15.0	2.0-3.0	-	-	485	170	30	50	
Tirril	A276-304	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.5	-	-	-	515	205	40	50	
	A276-316	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	485	170	40	50	
	A276-410	0.15	1.00	1.00	0.040	0.030	11.5-13.5	-	-	-	-	480	275	20	45	
	A276-420	0.15	1.00	1.00	0.040	0.030	12.0-14.0	-	-	-	-	-	-	-	-	241
	A182-F6a	0.15	1.00	1.00	0.040	0.030	11.5-13.5	0.50	-	-	-	585	380	18	35	167-229
Stud	A193-B7	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	860	720	16	50	
	A193-B7M	0.37-0.49	0.65-1.10	0.15-0.35	0.035	0.040	0.75-1.20	-	0.15-0.25	-	-	690	550	18	50	235
	A193-B8	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	223
	A193-B9A	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.50	-	-	-	515	205	30	50	192
	A193-B8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	515	205	30	50	192
	A320-L7	0.38-0.48	0.75-1.00	0.15-0.35	0.035	0.040	0.80-1.10	-	0.15-0.25	-	-	860	725	16	50	
Nut	A194-2H	≥0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	248-352
	A194-2HM	≥0.40	1.00	0.40	0.040	0.050	-	-	-	-	-	-	-	-	-	159-237
	A194-7	0.37-0.49	0.65-1.10	0.15-0.35	0.040	0.040	0.75-1.20	-	0.15-0.25	-	-	-	-	-	-	248-352
	A194-8	0.08	2.00	1.00	0.045	0.030	18.0-20.0	8.0-10.5	-	-	-	-	-	-	-	126-300
	A194-8M	0.08	2.00	1.00	0.045	0.030	16.0-18.0	10.0-14.0	2.0-3.0	-	-	-	-	-	-	126-300

International Materials Standards

Materials		America	Germany			United Kingdom		China
		ASTM/AISI/SAE/ASME	DIN No.	DIN TYPE	MATERIAL NUMBER	BS NUMBER	BS GRADE	GB
Cast Steel								
Carbon Steel	A216-WCA	ASTM A216 - WCA	1681	GS-38	1.042	1504-161	430	WCA
	A216-WCB	ASTM A216 - WCB	17245	GS-C25	1.0619	1504-161	480	WCB
	A216-WCC							WCC
Cast Steel								
Chromium-Molybdenum Steel	A217-WC1	ASTM A217-WC1	17245	GS-22Mo4	1.5419			ZG20Mo
	A217-WC6	ASTM A 217 WC6	17245	GS-17CrMo55	1.7357			15CrMo
	A217-WC9	ASTM A 217 WC9	17245	GS-18CrMo810	1.7379			12Cr1Mo1V
	A217-C5	ASTM A217 C5	VDEh SPW 595	GS-12CrMo195	17363	1504	625E	1Cr5Mo
	A217-C12	ASTM A217 C12	VDEh SPW 595	G-X12CrMo101	17389	1504	629E	9Cr1Mo
Cast Steel								
Ni Alloy Steel	A494 M-35-1							
	A494 CW-6M							
	A494 CY-40							
Cast Steel								
Stainless Steel	A351-CF8	ASTM A351-CF8	17445	G-X6CrNi189	1.4308	1504-304	C15	0Cr18Ni9
	A351-CF8M	ASTM A351-CF8M	17445	G-X6CrNiMo1810	1.4408	1504-316	C16	1Cr18Ni12Mo2Ti
	A351-CF3	ASTM A351-CF3	17440	G-X2CrNiN189	1.4306	970/1	304S11	00Cr18Ni10
	A351-CF3M	ASTM A351- CF3M	17440	G-X2CrNiMoN1810	1.4404	2056	316S12	00Cr17Ni14Mo2
	A351-CN7M	ASTM A351-CN7M				1504	332C11E	
Cast Steel								
Carbon Steel	A352-LCB	ASTM A352-LCB	SFW 685	GS-21Mo5	1.1138			LCB
	A352-LCC	ASTM A352-LCC	17173	GS-26CrMo4	1.7219			LCC
	A352-LC1	ASTM A352-LC1				1504	245LT50	
	A352-LC2	ASTM A352-LC2						ZG0CrMnVA1
	A352-LC3	ASTM A352- LC3	SEW 685	GS10Ni14	1.5638	1504-503	LT60	
Forged Steel								
Carbon steel	A105(N)	ASTM A105	17100	S150-2	1.005	1503	221-490	25
	A350-LF1	ASTM A 350-LF1	SEW 680	TTS41	1.0437			
	A350-LF2	ASTM A 350-LF2	17155	19Mn5	1.0482			
	A350-LF3	ASTM A 350-LF3	17173	10Ni14	1.5637	1503	503Gr 490	
	A350-LF9	ASTM A 350-LF9						
Forged Steel								
Stainless Steel	A182-F304	ASTM A182- F304	17440	X5CrNi189	1.4301	1503	304S31	0Cr18Ni9
	A182-F316	ASTM A182- F316	17440	X5CrNiMo1810	1.4401	1503	316S31	0Cr17Ni12Mo2
	A182-F304L	ASTM A182-F304L	17440	X2CrNiB10	1.4311			00Cr18Ni10
	A182-F316L	ASTM A182- F316L	17440	X2CrNiMo1810	1.4404	1503	316S11	00Cr17Ni14Mo2
Component Part								
Tmm	A276-304	ASTM A276-304						0Cr18Ni9
	A276-316	ASTM A276-316						0Cr17Ni12Mo2
	A276-410	ASTM A276-410						1Cr13
	A276-420	ASTM A276-420						2Cr13
	A182-F6a	ASTM A182-F6a						2Cr13
Fastening Piece								
Stud	A193-B7	ASTM A193 GRAD B7	17240	40CrMoV4.7	1.7711	1506-630	790	35CrMoA
	A193-B7M	ASTM A193 GRAD B7M						
	A193-B8	ASTM A193 GRAD B8	17440	X5CrNi189	1.4301			0Cr18Ni9
	A193-B8A							
	A193-B8M	ASTM A193 GRAD B8M	17245	X8CrNiMoTi17 12 2	1.4571	1506-316	S31	0Cr17Ni12Mo2
	A320-L7	ASTM A320 GR L7	17200	42CrMo4	1.7225	4882		42CrMo
Nut	A194-2H	ASTM A 194 GRAD 2H	17440	CK 35	1.1181	1508-162		45
	A194-2HM	ASTM A 194 GRAD 2HM						
	A194-7	ASTM A 194 GRAD 7	17200	24CrMo5	1.7258	1506-162		20CrMo
	A194-8	ASTM A 194 GRAD 8	17245	X6CrNiMo17 12 2	1.4571	1506-316	S31	0Cr18Ni9
	A194-8M	ASTM A194 GR8M	17440	X5CrNiMo1810	1.4401			0Cr17Ni12Mo

Example:

Sample	8	G	P	9	B	05	A	-	B
Code	I	II	III	IV	V	VI	VII		VIII

SAFVAL valve figure numbers is comprised of significant numbers and letters that describe the configurations of valves. When ordering, we recommend you to select figure numbers to make your requirements more distinct. However a detailed description must accompany any special orders.

I	Valve NPS.	Design Standard
NPS	Nominal Pipe Size	API, ANSI
DN	Nominal Diameter	BS, EN, DIN

II	Valve Type
G	Gate Valve
B	Ball Valve
C	Check Valve
GL	Globe Valve
P	Plug Valve
S	Strainer

III	Special Code ¹⁾	Suitable Valve
R	Reduced Port	
C	Cryogenic	
P	Pressure Seal	G/C/GL Valve
N	Non-Rising Stem	G/GL Valve
B	Bellows Type	
A	Adjustment-type Disc	Globe valve
M	Trunnion Mounted	
T	Top Entry	Ball Valve
W	All-Welded	
V	Vertical	Lift Type
H	Horizontal	
D	Dual-plate, Butterfly Type	Check Valve
S	Single-plate	
Y	Y-type	Strainer

NOTE: 1) More codes can be used simultaneously

IV	ANSI, Pound Class	PN, Nominal Pressure
0		PN 1.6MPa
1	ANSI Class 150Lb	PN 2.0MPa
2		PN 2.5MPa
3	ANSI Class 300Lb	PN 5.0MPa
4		PN 4.0MPa
5	ANSI Class 400Lb	PN 6.3MPa
6	ANSI Class 600Lb	PN 10.0MPa
8	ANSI Class 800Lb	
9	ANSI Class 900Lb	PN 15.0MPa
15	ANSI Class 1500Lb	PN 25.0MPa
25	ANSI Class 2500Lb	PN 42.0MPa

V	Type of Connection	Stand. Code
F	Raised Face Flange End	RF
L	Flat Face Flange End	FF
R	Ring Joint Flange End	RTJ
B	Butt Welding End	BW
S	Socket Welding End	SW
T	Screwed End, Internal Thread, NPT	SC
W	Wafer Type	WF

VI	Trim Material					
	CODE	API CN	Surface		Brinell Hardness	Stem Material
		Closure Member	Seat			
01	1	13Cr	13Cr	13Cr	250 HB min.	13Cr
02	2	18Cr-8Ni	18Cr-8Ni	18Cr-8Ni	Not Specified	18Cr-8Ni
03	3	20Cr-20Ni	20Cr-20Ni	20Cr-20Ni	Not Specified	20Cr-20Ni
04	4	13Cr	13Cr	13Cr	750 HB min.	13Cr
05	5	HF	HF	HF	350 HB min.	13Cr
06	6	13Cr	CuNi	CuNi	250 HB/175 HB min.	13Cr
07	7	13Cr	13Cr	13Cr	250 HB/750 HB min.	13Cr
08	8	13Cr	HF	HF	250 HB/350 HB min.	13Cr
09	9	NiCu alloy	NiCu alloy	NiCu alloy	Not Specified	NiCu alloy
10	10	18Cr-8Ni-Mo	18Cr-8Ni-Mo	18Cr-8Ni-Mo	Not Specified	18Cr-8Ni-Mo
11	11	NiCu alloy	HF	HF	350 HB min.	NiCu alloy
12	12	18Cr-8Ni-Mo	HF	HF	350 HB min.	18Cr-8Ni-Mo
13	13	19Cr-29Ni	19Cr-29Ni	19Cr-29Ni	Not Specified	19Cr-29Ni
14	14	19Cr-29Ni	HF	HF	350 HB min.	19Cr-29Ni
50	/	A105+ENP ²⁾	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	13Cr
55	/	13Cr	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	13Cr
56	/	18Cr-8Ni	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	13Cr
57	/	18Cr-8Ni	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	18Cr-8Ni
58	/	18Cr-8Ni-Mo	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	13Cr
59	/	18Cr-8Ni-Mo	Soft Seat ³⁾	Soft Seat ³⁾	Not Specified	18Cr-8Ni-Mo
00 ³⁾	/	/	/	/	/	/

NOTES:

- 1) Soft seat including PTFE, NYLON and PEEK, see part list for details.
- 2) ENP = Electroless Nickel Plating.
- 3) Applicable to Strainer.

- a. Cr = Chromium; Ni = Nickel; Co = Cobalt; Mo = Molybdenum.
 b. HF = Hard Facing using CoCr welding alloy.
 c. Other materials can be used upon discussion between buyer and manufacturer.

VII		SHELL MATERIAL						
CODE	ASTM Spec. Grade	Nominal Designation	Service Recommendations	Min. TEMP		Min. TEMP		
				°F	°C	°F	°C	
A	A216-WCB	Cast Carbon Steel	W.O.G (Water, Oil & Gas) Steam and General Service	-20	-29	800	425	
B	A352-LCB	Cast Carbon Steel	Low Temperature and General Service	-50	-46	650	343	
C	A352-LCC	Cast Carbon Steel	Low Temperature and General Service	-50	-46	650	343	
D	A217-WC6	Chrome-Molybdenum Steel 1 1/2 Cr - 1/2 Mo	High Temperature, Steam Oil vapour and General Service	-20	-29	1100	593	
E	A217-WC9	Chrome-Molybdenum Steel 2 1/4 Cr - 1 Mo	High Temperature, Steam Oil vapour and General Service	-20	-29	1100	593	
F	A217-C5	Chrome-Molybdenum Steel 5 Cr - 1/2 Mo	Corrosive Erosive Oil Refinery Service	-20	-29	1200	649	
G	A217-C12	Chrome-Molybdenum Steel 9 Cr - 1 Mo	Corrosive Erosive Oil Refinery Service	-20	-29	1200	649	
K	A351-CF8	Cast Stainless Steel 18 Cr - 10 Ni, 304 SS	Corrosive or extremely high temperature non- corrosive services between -450°F (-268°F) and 1200°F (649°F). Above 1000°F (540°F) specify carbon content of 0.04% or greater.	-20	-29	1100	593	
L	A351-CF8M	Cast Stainless Steel 18 Cr - 10 Ni - 2 Mo, 316 SS		-20	-29	1100	593	
M	A351-CF3	Cast Low Carbon Stainless Steel 18 Cr - 10 Ni, 304L SS		-20	-29	800	425	
N	A351-CF3M	Cast Low Carbon Stainless Steel 18 Cr - 10 Ni - 2 Mo, 316L SS		-20	-29	850	454	
P	A351-CN7M	Cast Stainless Steel 19 Cr - 29 Ni, Alloy-20	Corrosion Resistance	-20	-29	800	425	
R	A494 M-35-1	Cast Ni Alloy Steel Monel	Weldable grade, Good resistance to corrosion by all common organic acids and salt water.	-20	-29	750	400	
U	A494 CW-6M	Cast Ni Alloy Steel Hastelloy C	Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids.	-20	-29	1200	649	
V	A494 CY-40	Cast Ni Alloy Steel Inconel	Very good for high temperature service. Good resistance to strongly corrosive media.	-20	-29	1200	649	
FA	A105(N)	Forged Carbon steel	W.O.G (Water, Oil & Gas) Steam and General Service	-40	-40	800	425	
FB	A350-LF2	Forged Carbon Steel	W.O.G (Water, Oil & Gas) and General Service	-50	-46	650	343	
FD	A182-F11	Chrome-Molybdenum Steel 1 1/2 Cr - 1/2 Mo - Si	High Temperature, Steam Oil vapour and General Service	-40	-40	1100	593	
FK	A182-F304	Forged Stainless Steel 18 Cr - 10 Ni, 304 SS	Corrosive or extremely high temperature non- corrosive services between -450°F (-268°C) and 1200°F (649°C). Above 1000°F (540°C) specify carbon content of 0.04% or greater.	-20	-29	1100	593	
FL	A182-F316	Forged Stainless Steel 18 Cr - 10 Ni - 2 Mo, 316 SS		-20	-29	1100	593	
FM	A182-F304L	Forged Low Carbon Stainless Steel 18 Cr - 10 Ni, 304L SS		-20	-29	800	425	
FN	A182-F316L	Forged Low Carbon Stainless Steel 18 Cr - 10 Ni - 2 Mo, 316L SS		-20	-29	850	454	
NOTE: The soft seal valve maximum working temperature depending upon the seat material.			Seat Material	R.PTFE	-320	-196	250	121
				NYLON	-58	-50	176	80
				PEEK	-185	-120	483	250

VIII	Actuator Device
B	Bevel Gear Actuator
W	Worm Gear Actuator
E	General Electric Actuator
EX	Explosion-Proof Electric Actuator
P	Double Pneumatic Actuator
PS	Single Pneumatic Actuator
H	Hydraulic Actuator
EH	Electro-Hydraulic Actuator
PH	Pneumatic-Hydraulic Actuator

NOTES: a. N/A for Handwheel or Lever operated.
b. N/A for Check valve and Strainer.



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