

Our Valuable Client



Overseas Client



An ISO 9001 : 2008
Certified Company



Superior
Valve for a
World of Industries



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Manufacturer & Exporter of

- Industrial Valves
- Strainers & Filters
- Sight Glass & Flow Indicators
- Valve Automation





About Us

It gives us immense pleasure to introduce our company as one of the dynamic growth oriented and quality conscious engineering firm. Our team engineers have an experience of more than 15 year in manufacturing of Industry of Valves, Valve Automation, Sight Glass – Flow Indicators and Strainer - Filters.

The organization is managed by technocrats having wide experience in Projects, Maintenance, Production and Marketing of industrial valves. Nivz Valves manufacturing all types of valves as per National & International standard and almost all related standard available with us in our engineering library. We match all customer need API/ASME/MSS/AWWA/BS/IS/DIN/JIS standard valves.

Nivz also offer valves with 3rd Party Inspection or customer inspection prior to dispatch the materials. We have a work experience with 3rd Party like SGS, BV, DNV, TATA, IRS, PDIL, QUEST, KPMG, Intertek, Techcellance and many more.

Nivz manufacturing range covers Ball, Globe, Gate, Check - Non Return, Butterfly, Forged Steel, PTFE/FEP/PFA Lined, Flush Bottom, Needle Valve, Y/T/Basket Type Strainer, Sight Glass - Flow Indicator, Diaphragm, 3/4/5 Way, Multiport, Fire Safe Ball Valve, Pneumatic Control Valve, Pneumatic/Electrical Actuator Operated Valves. The valves manufacturing range in size from 10 mm to 300 mm in different types of valves & up to 600 mm in case of Wafer Check valve, 1200mm up to Butterfly Valve, material of construction can be Cast Iron, Cast Steel, Stainless Steel, Alloy Steel and to suit specific customer requirement.

These valves are generally conforming to API, BS, ANSI, ASME and DIN international technical standards for Design, Manufacture and Testing. Our enterprise have complete set-up for Hydraulic, Pneumatic & Function Test of Valve.

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Quality Policy

We At Nivz Valves & Automation Are Committed To Achieve Total Customer Satisfaction And Leadership In The Market of Industrial Valves & Strainer by,

- ✓ Complying With Product And Quality System Requirements,
- ✓ Supplying Consistent Quality Products To Our Valued Customers,
- ✓ Continually Improving Effectiveness Of Quality Management System,
- ✓ Utilizing All Available Resources Effectively,
- ✓ Creating An Environment Of Team Work, Positive Attitude And Innovative Approach.

Top Management
(1st November 2012)

BALL VALVE

Single / Two / Three Piece / Fire Safe Design
Full Bore / Regular Port (Floating / Tunion Mounted)

Standard

Design Standard : BS 5159 / ISO 7121 / BS 5351 / ISO 17292 / API 6D / API 608 / ISO 14313 / ASME B 16.34 / BS EN 12516
 Inspection & Testing Standard : API 598 / API 6D / BS EN 12266 - I / ISO 5208
 Fire Testing : API 607 / ISO 10497 / BS EN 12266 - II
 Face To Face : As Per ANSI B 16.10
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H / JIS / PN / DIN / IS Standard
 Screwed End To ANSI B 1.20.1 (BSP/NPT)
 Socket Weld End To ANSI B 16.11
 Butt-weld End To ANSI B 16.25
 Size Range : 1/4" To 12" (DN6 To DN300)
 Pressure Rating : 150# / 300# / 600# / 800#
 Operation : Hand Lever / Gear / Pneumatic / Electrical Actuator



Screwed / Socket Weld End Ball Valve

JACKETED BALL VALVE

Half Jacket / Full Jacket
Up To 320°C Temperature

Standard

Design Standard : BS 5159 / ISO 7121 / BS 5351 / ISO 17292 / API 6D / ISO 14313 / ASME B 16.34 / BS EN 12516
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : As Per ANSI B 16.10 / Mfg. Std. / Special on request
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H / JIS / PN / DIN / IS Standard
 Size Range : 1/2" x 1" To 6" x 10" (DN15 x DN25 To DN100 x DN250)
 Pressure Rating : 150# / 300#
 Operation : Hand Lever / Gear / Pneumatic / Electrical Actuator



3/4/5 WAY BALL VALVE

Multiport Ball Valve

Standard

Design Standard : BS 5159 / ISO 7121 / BS 5351 / ISO 17292 / API 6D / ISO 14313 / ASME B 16.34 / BS EN 12516
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : Mfg. Std.
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H / JIS / PN / DIN / IS Standard
 Screwed End To ANSI B 1.20.1 (BSP/NPT)
 Size Range : 1/2" To 12" (DN15 To DN300)
 Pressure Rating : 150# / 300#
 Operation : Hand Lever / Gear / Pneumatic / Electrical Actuator



GATE VALVE

Bolted Bonnet, OS & Y Type, Rising Stem

Standard

Design Standard : API 600 / ISO 10434 / API 6D / ISO 14313 / API 603
 Inspection & Testing Standard : API 598 / ISO 5208
 Face To Face : As Per ANSI B 16.10
 End Connection : Flanged End To ANSI B 16.5/BS 10 Table
 : JIS / PN / DIN / IS Standard, Screwed End To ANSI B 1.20.1 (BSP/NPT), Socket Weld End To ANSI B 16.11, Butt-weld End To ANSI B 16.25
 Size Range : 1/2" To 24" (DN15 To DN600)
 Pressure Rating : 150# / 300# / 600# / 800#
 Operation : Hand Wheel / Gear Operated



GLOBE VALVE

Bolted Bonnet, OS & Y Type, Rising Stem

Standard

Design Standard : BS 1873 / DIN Std.
 Inspection & Testing Standard : BS EN 12266 I (BS 6755-I) / ISO 5208
 Face To Face : As Per ANSI B 16.10
 End Connection : Flanged End To ANSI B 16.5/BS 10 Table, Screwed End To ANSI B 1.20.1 (BSP/NPT), Socket Weld End To ANSI B 16.11
 Butt-weld End To ANSI B 16.25
 Size Range : 1" To 12" (DN25 To DN300)
 Pressure Rating : 150# / 300# / 600# / 800# / PN 16 / PN 25 / PN 40
 Operation : Hand Wheel / Gear / Electrical Actuator Operated



CHECK VALVE (NRV)

Swing Type / Lift Type / Water Type / Disc Type

Standard

Design Standard : Swing Check Valve - BS 1868, Lift Check Valve - BS 1868 / BS 5352 / DIN Std. Wafer Type Check Valve - API 6D, Disc Type Check Valve - DIN EN 558-2
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : As Per ANSI B 16.10 / API 6D
 End Connection : Flanged End To ANSI B 16.5/BS 10 Table JIS / PN / DIN / IS Standard
 Screwed End To ANSI B 1.20.1 (BSP/NPT), Socket Weld End To ANSI B 16.11
 Butt-weld End To ANSI B 16.25, Wafer Type, Flangeless, Sandwich Type
 Size Range : 1/2" To 24" (DN15 To DN600)
 Pressure Rating : 150# / 300# / 800# / PN 16 / PN 25 / PN 40



STAINLESS STEEL GGC VALVE

Gate / Globe / Check Valve (Investment Casting)

Standard

Design Standard : ASME B 16.34 / Mfg. Std.
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : Mfg. Std.
 End Connection : Screwed End To ANSI B 1.20.1 (BSP/NPT)
 Socket Weld End To ANSI B 16.11
 Size Range : 1/2" To 4" (DN15 To DN100)
 Pressure Rating : 150# / PN10 / PN16



FORGED STEEL VALVE

Gate / Globe / Check / Ball Valve



Standard
 Design Standard : Gate Valve - API 602 / ASME B 16.34 / ISO 15761
 Globe Valve - BS 5352 / ASME B 16.34 / ISO 15761
 Check Valve - BS 5352 / ASME B 16.34 / ISO 15761
 Ball Valve - ISO 17292 / BS 5351 / BS 5159
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : As Per ANSI B 16.10 / BS 5352
 End Connection : Screwed End To ANSI B 1.20.1 (BSP/NPT)
 Socket Weld End To ANSI B 16.11
 Buttweld End To ANSI B 16.25
 Size Range : 1/4" To 2" (DN6 To DN50)
 Pressure Rating : 800# / 1500#

DOUBLE WINDOW SIGHT GLASS

Large View, Bolted Cover (SIGHT FLOW INDICATOR)



Standard
 Design Standard : ASME B 16.34 / ASME Sec. VIII, Div.-1 / Mfg. Standard
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : DIN EN 558 - 1 / Mfg. Std.
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H
 Size Range : 1/2" To 12" (DN15 To DN300) J15/PN/ DIN/15 Standard
 Pressure Rating : PN 6 / PN 10 / PN 16 / 150#

DIAPHRAGM VALVE

A Weir Pattern, Hard Rubber Lined & Without Lining (Un-Lined)



Standard
 Design Standard : BS EN 13397 (BS 5156)
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : BS EN 13397 (BS 5156)
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H
 JIS / PN / DIN / IS Standard
 Size Range : 1/2" To 8" (DN15 To DN200)
 Pressure Rating : PN10 / 150#
 Operation : Hand Wheel / Pneumatic Actuator Operated

TUBE TYPE SIGHT GLASS

Sight Flow Indicator



Standard
 Design Standard : Mfg. Standard
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Glass Length : 100MM / 150MM (Higher on request)
 Face To Face : Mfg. Standard
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H
 JIS / PN / DIN / IS Standard
 Size Range : 1" To 6" (DN25 To DN150)
 Pressure Rating : PN 6

BUTTERFLY VALVE

Slim-Seal, Centre Disc / Off-Set Disc Design



Standard
 Design Standard : BS 5155 / API 609
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : BS 5155 / API 609
 End Connection : Wafer, Flangeless, Sandwich Type
 Full Lug Type, Through or Tapped Hole
 Double Flanged End to ANSI B 16.5/BS 10/JIS/PN/DIN/JIS/IS Std.
 Size Range : 1-1/2" To 48" (DN40 To DN1200)
 Pressure Rating : PN10 / PN16 / 150#
 Operation : Hand Lever / Gear / Pneumatic / Electrical Actuator Operated

FLUSH BOTTOM VALVE

Flush Bottom Ball Valve - 1 pc., Design, Floating Ball, Y Type Flush Bottom Valve - Rising Stem, Y Pattern Bod



Standard
 Design Standard : Ball Valve = BS 5351 / ISO 17292 / API 6D / ASME B 16.34 / BE EN ISO 12516
 Y Type Valve = ASME B 16.34 / ASME Sec. VIII, Div.-1 / Mfg. Standard
 Inspection & Testing Standard : BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
 Face To Face : As Per ANSI B 16.10 / Mfg. Std.
 End Connection : Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H
 JIS / PN / DIN / IS Standard
 Size Range : Ball Valve = 2" x 1" To 8" x 6"
 (DN50 x DN25 To DN200 x DN150)
 Y Type Valve = 1-1/2" To 8" (DN40 To DN200)
 Pressure Rating : 150# / 300# / PN10 To PN 40
 Operation : Hand Lever / Wheel / Gear / Pneumatic / Electrical Actuator

Y TYPE STRAINER

Bolted Cover, Low Pressure Drop, High Filtration Area (CASTED BODY)



Standard	
Design Standard	: ASME B 16.34 / Mfg. Standard
Inspection & Testing Standard	: BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
Face To Face	: DIN EN 558-1
End Connection	: Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H JIS / PN / DIN / IS Standard Screwed End To ANSI B 1.20.1 (BSP/NPT) Socket Weld End To ANSI B 16.11 Buttweld End To ANSI B 16.25
Net Filtration Area	: Minimum 2.5 to 3 Times
Size Range	: 1/2" To 12" (DN15 To DN300)
Pressure Rating	: 150# / 300# / 600#

Y TYPE STRAINER

Bolted Cover, Low Pressure Drop, High Filtration Area (FABRICATED BODY)



Standard	
Design Standard	: ASME Sec. VIII - Div. 1
Inspection & Testing Standard	: BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
Face To Face	: Mfg. Standard
End Connection	: Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H JIS / PN / DIN / IS Standard
Net Filtration Area	: Minimum 3 to 4 Times (Higher on request)
Size Range	: 2" To 32" (DN25 To 800)
Pressure Rating	: 150# / 300# / 600#

T/TEE TYPE STRAINER

Bolted Cover with Drain



Standard	
Design Standard	: ASME Sec. VIII - Div. 1
Inspection & Testing Standard	: BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
End Connection	: Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H JIS / PN / DIN / IS Standard Buttweld End To ANSI B 16.25
Size Range	: 1" To 48" (DN25 To DN1200)
Pressure Rating	: 150# / 300# / 600#

CONICAL STRAINER

Wafer, Flangeless, Inline Strainer



Standard	
Design Standard	: ASME Sec. VIII - Div. 1 / Mfg. Std.
Inspection & Testing Standard	: BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
End Connection	: Suitable to mount between two flanges on request standard
Size Range	: 3" To 48" (DN80 To DN1200)
Pressure Rating	: 150# / 300#

BASKET TYPE STRAINER/FILTER

Bolted Cover / Davit Arm / Quick Open Type Low Pressure Drop, High Filtration Area, Easy to clean (SIMPLEX & DUPLEX)

Standard	
Design Standard	: ASME Sec. VIII - Div. 1
Inspection & Testing Standard	: BS EN 12266 - I (BS 6755-I) / API 598 / ISO 5208
Flow	: In to Out or Out to In / Inline or Offline
Face To Face	: Mfg. Standard
End Connection	: Flanged End To ANSI B 16.5 / BS 10 Table D-E-F-H JIS / PN / DIN / IS Standard Buttweld End To ANSI B 16.25
Size Range	: 1" To 48" (DN25 To DN1200)
Pressure Rating	: 150# / 300# / 600#
Accessories	: Drain & Vent Valve / Blind Plug Differential Pressure Gauge / ΔP Switch 3 Way Ball / 2 Way Ball / Butterfly / Gate Valve for Duplex Strainer Skid Mounting

DUPLEX BASKET STRAINER



SIMPLEX BASKET STRAINER



**PTFE (FEP/PFA)
LINED VALVE**



Ball Valve



Butterfly Valve



Check Valve - NRV



Diaphragm Valve



Sight Flow Indicator



Gate Valve

**VALVE
AUTOMATION**



Pneumatic Ball Valve



Pneumatic Jacketed Ball Valve



Pneumatic 3 Way Valve



Pneumatic Butterfly Valve



Electrical Actuated Ball Valve



Electrical Actuated Butterfly Valve

**CONTROL
VALVES**



Butterfly Control Valve



Globe Control Valve



3 Way Globe Control Valve



Diaphragm Control Valve



Jacketed Ball Control Valve

**SPECIAL
PURPOSE
VALVES**



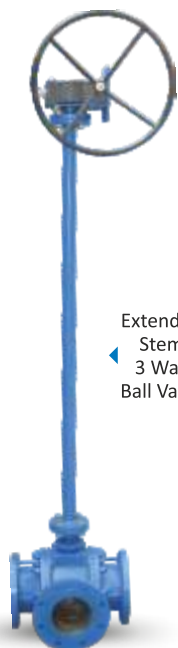
Extended Stem Ball Valve



High Pressure Ball Valve



Flange Mounted Sight Glass



Extended Stem 3 Way Ball Valve

**VALVE
PRESSURE
TESTING**

Rating	Test	ASTM Material Grade									
		WCB	WCB	LCC	LCB	WC1	WC6	WC9	C5	CF8	CF8M
150#	Shell	450	450	400	400	450	450	425		425	
	Seat	314	319	292	292	319	319	303		303	
	Air Seat	80	80	80	80	80	80	80		80	
300#	Shell	1125	1125	1050	1050	1125	1125	1100		1100	
	Seat	814	825	765	765	825	825	792		792	
	Air Seat	80	80	80	80	80	80	80		80	
600#	Shell	2225	2250	2100	2100	2250	2250	2175		2175	
	Seat	1628	1650	1529	1529	1650	1650	1584		1584	
	Air Seat	80	80	80	80	80	80	80		80	
900#	Shell	3350	3375	3150	3150	3375	3375	3250		3250	
	Seat	2442	2475	2294	2294	2475	2475	2376		2376	
	Air Seat	80	80	80	80	80	80	80		80	
1500#	Shell	5575	5625	5225	5225	5625	5625	5400		5400	
	Seat	4076	4125	3817	3817	4125	4125	3960		3960	
	Air Seat	80	80	80	80	80	80	80		80	
2500#	Shell	9275	9375	8700	8700	9375	9375	9000		9000	
	Seat	6787	6875	6364	6364	6875	6875	6600		6600	
	Air Seat	80	80	80	80	80	80	80		80	

**MAJOR VALVE
MATERIAL
GROUPS**

FORGED	CAST
CARBON STEEL	
ASTM A105N	ASTM A216 WCB/WCC
ASTM A350 LF2	ASTM A352 LCB/LCC
ALLOY STEEL	
ASTM A350 LF3	ASTM A352 LC3
ASTM A182 F5a	ASTM A217 C5
ASTM A182 F9	ASTM A217 C12
ASTM A182 F11	ASTM A217 Wc6
ASTM A182 F22	ASTM A217 Wc9
ASTM A182 F91	ASTM A217 C12A
AUSTENITIC STAINLESS STEEL	
ASTM A182 F304/F304L	ASTM A351 CF8/CF3
ASTM A182 F316/F316L	ASTM A351 CF8M/CF3M
ASTM A182 F321	
ASTM A182 F347	ASTM A351 CF8C
ASTM A182 F44 (6MO)	ASTM CK3MCuN
ASTM A182 F20* (ALLOY 20)	A351 CN7M
FERRITIC-AUSTENITIC STAINLESS STEEL	
ASTM A182 F51 - UNS S31803+ (DUPLEX S.S.)	A890 GR.4A*/ A351 CD3MN
ASTM A182 F53 - UNS S32750 (SUPER DUPLEX S.S.)	A890 GR.5A*/ A351 CE8MN
ASTM A182 F55 - UNS S32760 (SUPER DUPLEX S.S.)	A995 CD3MWCuN/6A
NICKEL ALLOY	
INCONEL 825 - UNS N08825 ASTM B564 - N08825	A484 CU5MCuC*
INCONEL 600 - UNS N06600 ASTM B564 - N06600	A494 Cy40*
INCONEL 625 - UNS N06625 ASTM B564 - N06625	A494 CW6MC*
MONEL 400 - UNS N04400 ASTM B564 - N04400	A494 M35-1
TITANIUM	
ASTM B381 GR.F2	ASTM B367 GR.C2
ASTM B381 GR.F3	ASTM B367 GR.C3

VALVE BODY MATERIAL

Nivz Valve manufacturing in a wide range of materials as follows:

Material Group	Common Name	Material Type	Forging Spec	UNS	Casting Spec. Equivalent	DIN	DIN W. No	Application						
Carbon Steel	CS	C-Mn-Fe	A105N	K03504	A216-WCB	C22.8 DIN 17243	1.0460	General non-corrosive service from -20°F (-29°C) to 800°F (427°C)						
Low Temperature Carbon Steel	LTCS	C-Mn-Fe	A350-LF2	K03011	A352-LC1	TSTE 355 DIN 18103	1.0566	General non-corrosive service from -50°F (-46°C) to 650°F (340°C), LF2 to 800°F (427°C)						
					A352-LCB									
					A352-LCC									
Low Temperature Alloy Steel	Nickel Steel	3.1/2Ni	A350-LF3	K32025	A352-LC3	10Ni14	1.5637	-150°F (-101°C) to 650°F (340°C)						
Low Alloy Steel	Moly Steel	C-1/2Mo	A182-F1	K12822	A217-WC1	15Mo3	1.5415	Up to 875°F (468°C)						
								1.1/4Cr-1/2Mo	A182-F11 cl2	K11572	A217-WC6	13CrMo44	1.7335	Up to 1100°F (593°C)
								2.1/4Cr-1Mo	A182-F22 cl3	K21590	A217-WC9	10CrMo910	1.7380	Up to 1100°F (593°C), HP steam
								5Cr-1/2Mo	A182-F5a	K41545	A217-C5	12CrMo195	1.7362	High temp. refinery service
								9Cr-1Mo	A182-F9	K90941	A217-C12	X 12 CrMo 9 1	1.7386	High temp. erosive refinery service
								9Cr-1Mo-V	A182-F91		A217-C12A	X 10 CrMoVNb 9 1	1.4903	High pressure steam
Stainless Steel	Austenitic S.Steel 300 series S.Steel	304 : 18Cr-8Ni	A182-F304	S30400	A351-CF8	DIN X5CrNi 18 9	1.4301	0.04% min. carbon for temp. > 1000°F (538°C)						
		304L : 18Cr-8Ni	A182-F304L	S30403	A351-CF3	X 2 CrNi 19 11	1.4306	Up to 800°F (427°C)						
		304H :	A182-F304H	S30409	A351-CF10	n/a	n/a							
		316 : 16Cr-12Ni-2Mo	A182-F316	S31600	A351-CF8M	DIN X5CrNiMo 18 10	1.4401	0.04% min. carbon for temp. > 1000°F (538°C)						
		316L : 16Cr-12Ni-2Mo	A182-F316L	S31603	A351-CF3M	X 5 CrNiMo 17 12 2	1.4404	Up to 800°F (427°C)						
		316H :	A182-F316H	S31609	A351-CF10M	n/a	n/a							
		316Ti :	A182-F316 Ti	S31635		X 6 CrNiMoTi 17 12 2	1.4571	Special grade						
		321 : 18Cr-10Ni-Ti	A182-F321	S32100		X 6 CrNiTi 18 10	1.4541	0.04%min. carbon (grade F321H) and heat treat at 2000°F (1100°C) for service temps. >1000°F (538°C)						
		321H	A182-F321H	S32109		n/a	n/a							
		347 : 18Cr-10Ni-Cb(Nb)	A182-F347	S34700	A351-CF8C	DIN 8556	1.4550	0.04%min. carbon (grade F347H) and heat treat at 200°F (1100°C) for service temps. >1000°F (538°C)						
		347H	A182-F347H	S34709		n/a	n/a							
		317L	A182-F317L	S31703	A351-CG3M*	X2CrNiMo18-16-4	1.4438							
		Alloy 20	28Ni-19Cr-Cu-Mo	A182-F20*	N08020	A351-CN7M†	DIN 1.4500	2.4660	Service to 600°F (316°C)*					
		Duplex 2205	22Cr-5Ni-3Mo-N	A182-F51	S31803	A351-CD3MN	X2CrNiMoN22-5-3	1.4462	Service to 600°F (316°C) - The original S31803 UNS designation has been supplemented by S32205 which has higher minimum N,CR, and Mo					
									S32205	A890-J92205*	DIN 10088-1 (95)			
	A351-CD4MCu*								X2CrNiMoN27-7-4					
Super Duplex 2507	25Cr-7Ni-4Mo-N	A182-F53	S32750		A890 5A*	DIN 10088-1 (95)	1.4501	Service to 600°F (316°C)						
Super Duplex F55	25Cr-7Ni-3.5Mo-N-Cu-W	A182-F55	S32760	A995-CD3MWCuN				Service to 600°F (316°C)						
Super Austenitic 6Mo	20Cr-18Ni-6Mo	A182-F44	S31254	A351-CK3MCuN	X1CrNiMoCuN20-18-7	DIN 10088-1 (95)	1.4547	Service to 600°F (316°C)						
Nickel-Iron Alloy	Incoloy 800	33Ni-42Fe-21Cr	B564-N08800	N08800		X10NiCrAlTi32-20	1.4876	Service to 1000°F (538°C)						
	Incoloy 825	42Ni-21.5Cr-3Mo-2.3Cu	B564-N08825*	N08825	A494-CU5MCu*	DIN 17744	2.4858	Service to 600°F (316°C) for N02200, 1200°F (648°C) for N02201						
Nickel	Nickel	99/95Ni	B160-N02200 (bar)	N02200	A494-CZ-100*	NW2200	1.7740							
Nickel-Copper	Monel 400	67Ni-30Cu	B564-N04400	N04400	A494-M35-1	DIN 17730	2.4360							
	Monel 500		B564-N05500*	N05500			2.4375							
Nickel-Alloy	904L		904L*	N08904	N/A	Z2 NCDU 25-20	1.4539							
Nickel Superalloys	Inconel 600	72Ni-15Cr-8Fe	B564-N06600	N06600	A494-CY40*	DIN 17742	2.4816							
	Inconel 625	60Ni-22Cr-9Mo-3.5Cb	B564-N06625	N06625	A494-CW-6MC*		2.4856							
	Hastelloy C-276	54Ni-15Cr-16Mo	B564-N10276	N10276	A494-CW-2M*	NiMo 16 Cr 15 W	2.4819							
Titanium	Titanium	98Ti	B381-Gr2	R50400	B367-C2*	Ti 2	3.7035	Special grade						

Cast CN7M only rated to 150°C, However 'New Alloy 20' grade CN3MCu is available which is to be rated to at least 316°C
Disclaimer: These chart are for reference only

VALVE TRIM MATERIAL

API Trim No.	Nonimal Trim	Trim Code	Stem	Disc/Wedge	Seat	Min. Hardness (Brinell)
1	F6	F6	410 (13Cr)	F6 (13Cr)	410 (13Cr)	250
2	304	304	304 (18Cr-8Ni)	304 (18Cr-8Ni)	304 (18Cr-8Ni)	not specified
3	310	310	(25Cr-20Ni)	310 (25Cr-20Ni)	310 (25Cr-20Ni)	not specified
4	Hard 410	F6-H	410 (13Cr)	F6 (13Cr)	F6 (13Cr)	275
5	410 Full Hard faced	F6-HF	410 (13Cr)	F6+St Gr6 (CoCr Alloy)	410+St Gr6 (CoCr Alloy)	350
5A	410 Full Hard faced	F6-HF	410 (13Cr)	F6+Hardf. NiCr Alloy	410+Hardf. NiCr Alloy	350
6	410 and Ni-Cu	F6-NFS	410 (13Cr)	F6 (13Cr)	Monel 400 B (NiCu Alloy)	250/175
7	410 and Full Hard	410	410 (13Cr)	F6 (13Cr)	F6 (13Cr) (750 HB)	250/750
8	410 and Hard faced	F6-NFS	410 (13Cr)	F6 (13Cr)	410+St Gr6 (CoCr Alloy)	250/350
8A	410 and Hard faced	F6-NFS	410 (13Cr)	F6 (13Cr)	410+Hardf. NiCr Alloy	250/350
9	Monel	Monel	Monel®8 (NiCu Alloy)	Monel®B (NiCu Alloy)	Monel 400 ®8 (NiCu Alloy)	not specified
10	316	316	316 (18Cr-Ni-Mo)	316 (18Cr-8Ni-Mo)	316 (18Cr-8Ni-Mo)	not specified
11	Monel and Hard faced	Monel-NFS	Monel®8 (NiCu Alloy)	Monel®B (NiCu Alloy)	Monel 400 ®8 St Gr6	350
11A	Monel and Hard faced	Monel-NFS	Monel®8 (NiCu Alloy)	Monel®8 (NiCu Alloy)	Monel 400 ®8 Hardf. NiCrA	350
12	316 and Hard faced	316-NFS	316 (18Cr-Ni-Mo)	316 (18Cr-8Ni-Mo)	316+St Gr6	350
12A	316 and Hard faced	316-NFS	316 (18Cr-Ni-Mo)	316 (18Cr-8Ni-Mo)	316 Hardf. NiCr Alloy	350
13	Alloy 20	Alloy 20	Alloy 20 (19Cr-29Ni)	Alloy 20 (19Cr-29Ni)	Alloy 20 (19Cr-29Ni)	not specified
14	Alloy 20 & Hard faced	Alloy 20-NFS	Alloy 20 (19Cr-29Ni)	Alloy 20 (19Cr-29Ni)	Alloy 20 St Gr6	350
14A	Alloy 20 & Hard faced	Alloy 20-NFS	Alloy 20 (19Cr-29Ni)	Alloy 20 (19Cr-29Ni)	Alloy 20 hardf. NiCr Alloy	350
15	304 Full Hard faced	304-HF	304 (18Cr-8Ni-Mo)	304+St Gr6	304+St Gr6	350
16	316 Full Hard faced	316-HF	316 HF (18Cr-8Ni-Mo)	316+St Gr6	316+St Gr6	350
17	347 Full Hard faced	347-HF	347 HF (18Cr-10Ni-Cb)	347+St Gr6	347+St Gr6	350
18	Alloy 20 Full Hard faced	Alloy-HF	Alloy 20 (19Cr-29Ni)	Alloy 20+St Gr6	Alloy 20+St Gr6	350
n/a	Alloy 625	Alloy 625	Alloy 625	Alloy 625	Alloy 625	

TRIM MATERIAL EQUIVALENT GRADES

TRIM	UNS	TYPE	GRADE (forged)	ASTM wrought	DIN	DIN W NO.
1	UNS 541000	13Cr	ASTM A182 F6a	A276-410	DIN X12Cr13	1.4006
2	UNS 530400	18-8 Cr-Ni	ASTM A182 F304	A276-304	DIN X5CrNi 18 10	1.4301
3	UNS 531600	18-8 Cr-Ni (18-10-2)	ASTM A182 F316	A276-316	DIN X5CrNiMo 18 10	1.4401
4	UNS 532100	18 Cr-10 Ni-Ti	ASTM A182 F321	A276-321	DIN X6CrNiTi 18 10	1.4541
5	UNS 534700	18 Cr-10 Ni-Cb	ASTM A182 F347	A276-347	DIN X6CrNiNb18 10	1.4550
6	UNSN04400	67Ni-30Cu	ASTM B564-N04400	B164-N04400	BDIN 17743	2.4360
7	UNSN08020	28Ni-19Cr-Cu-Mo	ASTM A182-F20"	ASTM B473	DIN 14500	2.4660
8	UNSN06625	60Ni-22Cr-9Mo-3.5Cb	ASTM B564-N06625	ASTM B564-N06625	DIN 17361	2.4865
9	UNS N10276	54Ni-15Cr-16Mo	ASTM B564-N10276	ASTM B574-N10276	DIN NiMo 16 Cr 15 W	2.4819
10	UNS 517400	0Cr17Ni4Cu4Nb	ASTM A705 UNS 517400	ASTM A564 UNS 517400	X5CrNiCuNb17-4-4	1.4548
11	UNS R30006	Co Cr-A	AMS 5894		Stellite (R) Gr6	

PRESSURE TEMPERATURE RATING

ASME B 16.34, 2004.
Not to be used for above.

- 1. WCB - 425° C
- 2. WC6 - 538° C
- 3. LCB/LCC - 345° C
- 4. CF3 - 425° C
- 5. CF8/8M - 538° C
- 6. CF3M - 455° C

Temp. in °C	Temp. in °F	WORKING PRESSURE IN BAR											
		ASTM A 216 Gr. WCB (Standard Class)						ASTM A 216 Gr. WC6 (Standard Class)					
		150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 to 38.	100	19.6	51.1	102.1	153.2	255.3	425.5	19.8	51.7	103.4	155.1	258.6	430.9
50	122	19.2	50.1	100.2	150.4	250.6	417.7	19.5	51.7	103.4	155.1	258.6	430.9
100	212	17.7	46.6	93.2	139.8	233.0	388.3	17.7	51.5	103.0	154.4	257.4	429.9
150	302	15.8	45.1	90.2	135.2	225.4	375.6	15.8	49.7	99.5	149.2	248.7	414.5
200	392	13.8	43.8	87.6	131.4	219.0	365.0	13.8	48.0	95.9	143.9	239.8	399.6
250	482	12.1	41.9	83.9	125.8	209.7	349.5	12.1	46.3	92.7	139.9	231.8	386.2
300	572	10.2	39.8	79.6	119.5	199.1	331.8	10.2	42.9	85.7	128.6	214.4	357.1
325	617	9.3	38.7	77.4	116.1	193.6	322.6	9.3	41.4	82.6	124.0	206.6	344.3
350	662	8.4	37.6	75.1	112.7	187.8	313.0	8.4	40.3	80.4	120.7	201.1	335.3
375	707	7.4	36.4	72.7	109.1	181.8	303.1	7.4	38.9	77.6	116.5	194.1	323.2
400	752	6.5	34.7	69.4	104.2	173.6	289.3	6.5	36.5	73.3	109.8	183.1	304.9
425	797	5.5	28.8	57.5	86.3	143.8	239.7	5.5	35.2	70.0	105.1	175.1	291.6
450	842	4.6	23.0	46.0	69.0	115.0	191.7	4.6	33.7	67.7	101.4	169.0	281.8
475	887	3.7	17.4	34.9	52.3	87.2	145.3	3.7	31.7	63.4	95.1	158.2	263.9
500	932	2.8	11.8	23.5	35.3	58.8	97.9	2.8	25.7	51.5	77.2	128.6	214.4
538	1000	1.4	5.9	11.8	17.7	29.5	49.2	1.4 (a)	14.9	29.8	44.7	74.5	124.1
550	1022							1.4 (a)	12.7	25.4	38.1	63.5	105.9
575	1067							1.4 (a)	8.8	17.6	26.4	44.0	73.4
600	1112							1.4 (a)	6.1	12.2	18.3	30.5	50.9
625	1157							1.4 (a)	4.3	8.5	12.8	21.3	35.5
650	1202							1.4 (a)	2.8	5.7	8.5	14.2	23.6

Temp. in °C	Temp. in °F	WORKING PRESSURE IN BAR											
		ASTM A 352 Gr. LCB (Standard Class)						ASTM A 352 Gr. LCC (Standard Class)					
		150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 to 38.	100	18.4	48.0	96.0	144.1	240.1	400.1	19.8	51.7	103.4	155.1	258.6	430.9
50	122	18.2	47.5	94.9	142.4	237.3	395.6	19.5	51.7	103.4	155.4	258.6	430.9
100	212	17.4	45.3	9.7	136.0	226.7	377.8	17.7	51.5	103.0	154.6	257.6	429.4
150	302	15.8	43.9	87.9	131.8	219.7	366.1	15.8	50.2	100.3	150.4	250.8	418.1
200	392	13.8	42.5	85.1	127.6	212.7	354.4	13.8	48.6	97.2	145.8	243.2	405.4
250	482	12.1	40.8	81.6	122.3	203.9	339.8	12.1	46.3	92.7	139.0	231.8	386.2
300	572	10.2	38.7	77.4	116.1	193.4	322.4	10.2	42.9	85.7	128.6	214.4	357.1
325	617	9.3	37.6	75.2	112.7	187.9	313.1	9.3	41.4	82.6	124.0	206.6	344.3
350	662	8.4	36.4	72.8	109.2	182.0	303.3	8.4	40.0	80.0	120.1	200.1	333.5
375	707	7.4	35.0	69.9	104.9	174.9	291.4	7.4	37.8	75.7	113.5	189.2	315.3
400	752	6.5	32.6	65.2	97.9	163.1	271.9	6.5	34.7	69.4	104.2	173.6	289.3
425	797	5.5	27.3	54.6	81.9	136.5	227.5	5.5	28.8	57.5	86.3	143.8	239.7
450	842	4.6	21.6	43.2	64.8	107.9	179.9	4.6	23.0	46.0	69.0	115.0	191.7
475	887	3.7	15.7	31.3	47.0	78.3	130.6	3.7	17.1	34.2	51.3	85.4	142.4
500	932	2.8	11.1	22.1	33.2	55.4	92.3	2.8	11.6	23.2	34.7	57.9	96.5
538	1000	1.4	5.9	11.8	17.7	29.5	49.2	1.4	5.9	11.8	17.7	29.5	49.2

Temp. in °C	Temp. in °F	WORKING PRESSURE IN BAR											
		ASTM A 351 Gr. CF3/CF8 (Standard Class)						ASTM A 351 Gr. CF3M/CF8M (Standard Class)					
		150#	300#	600#	900#	1500#	2500#	150#	300#	600#	900#	1500#	2500#
-29 to 38.	100	19.0	49.6	99.3	14.9	248.2	413.7	19.0	49.6	99.3	148.9	248.2	413.7
50	122	18.3	47.8	95.6	143.5	239.1	398.5	18.4	48.1	96.2	144.3	240.6	400.9
100	212	15.7	40.9	81.7	122.6	204.3	340.4	16.2	42.2	84.4	126.6	211.0	351.6
150	302	14.2	37.0	74.0	111.0	185.0	308.4	14.8	38.5	77.0	115.5	192.5	320.8
200	392	13.2	34.5	69.0	103.4	172.4	287.3	13.7	35.7	71.3	107.0	178.3	297.2
250	482	12.1	32.5	65.0	97.5	162.4	270.7	12.1	33.4	66.8	100.1	166.9	278.1
300	572	10.2	30.9	61.8	92.7	154.6	257.6	10.2	31.6	63.2	94.9	158.1	263.5
325	617	9.3	30.2	60.4	90.7	151.1	251.9	9.3	30.9	61.8	92.7	154.4	257.4
350	662	8.4	29.6	59.3	88.9	148.1	246.9	8.4	30.3	60.7	91.0	151.6	252.7
375	707	7.4	29.0	58.1	87.1	145.2	241.9	7.4	29.9	59.8	89.6	149.4	249.0
400	752	6.5	28.4	56.9	85.3	142.2	237.0	6.5	29.4	58.9	88.3	147.2	245.3
425	797	5.5	28.0	56.0	84.0	140.0	233.3	5.5	29.1	58.3	87.4	145.7	242.9
450	842	4.6	27.4	54.8	82.2	137.0	228.4	4.6	28.8	57.7	86.5	144.2	240.4
475	887	3.7	26.9	53.9	80.8	134.7	224.5	3.7	28.7	57.3	86.0	143.4	238.9
500	932	2.8	26.5	53.0	79.5	132.4	220.7	2.8	28.2	56.5	84.7	140.9	235.0
538	1000	1.4	24.4	48.9	73.3	122.1	203.6	1.4	25.2	50.0	75.2	125.5	208.9
550	1022	1.4 (a)	23.6	47.1	70.7	117.8	196.3	1.4 (a)	25.0	49.8	74.8	124.9	208.0
575	1067	1.4 (a)	20.8	41.7	62.5	104.2	173.7	1.4 (a)	24.0	47.9	71.8	119.7	199.5
600	1112	1.4 (a)	16.9	33.8	50.6	84.4	140.7	1.4 (a)	19.9	39.8	59.7	99.5	165.9
625	1157	1.4 (a)	13.8	27.6	41.4	68.9	114.9	1.4 (a)	15.8	31.6	47.4	79.1	131.8
650	1202	1.4 (a)	11.3	22.5	33.8	56.3	93.8	1.4 (a)	12.7	25.3	38.0	63.3	105.5
675	1247	1.4 (a)	9.3	18.7	28.0	46.7	77.9	1.4 (a)	10.3	20.6	31.0	51.0	86.0
700	1292	1.4 (a)	8.0	16.1	24.1	40.1	66.9	1.4 (a)	8.4	16.8	25.1	41.9	69.8
725	1337	1.4 (a)	6.8	13.5	20.3	33.8	56.3	1.4 (a)	7.0	14.0	21.0	34.9	58.2
750	1382	1.4 (a)	5.8	11.6	17.3	28.9	48.1	1.4 (a)	5.9	11.7	17.6	29.3	48.9
775	1427	1.4 (a)	4.6	9.0	13.7	22.8	38.0	1.4 (a)	4.6	9.0	13.7	22.8	38.0
800	1472	1.2 (a)	3.5	7.0	10.5	17.4	29.2	1.2 (a)	3.5	7.0	10.5	17.4	29.2
816	1500	1.0 (a)	2.8	5.9	8.6	14.1	23.8	1.0 (a)	2.8	5.9	8.6	14.1	23.8

FLANGE STANDARD

ASME B 16.5, 2003

SIZE	ASME Class 150 Raised Face (in mm)					
	O.D.	PCD	RfØ	Thk.*	Bolt	
Mm	Inch				No.	Dia.
15	1/2"	90	60.3	34.9	8	15.8
20	3/4"	100	69.9	42.9	8	15.8
25	1"	110	79.4	50.8	9	15.8
32	1-1/4"	115	88.9	63.5	11	15.8
40	1-1/2"	125	98.4	73	12	15.8
50	2"	150	120.7	92.1	14	19
65	2-1/2"	180	139.7	104.8	15	19
80	3"	190	152.4	127	17	19
100	4"	230	190.5	157.2	22	19
125	5"	255	215.9	185.7	22	22.2
150	6"	280	241.3	215.9	23	22.2
200	8"	345	298.5	269.9	27	22.2
250	10"	405	362	323.8	28	25.4
300	12"	485	431.8	381	30	25.4
350	14"	535	476.3	412.8	33	28.5
400	16"	595	539.8	469.9	35	28.5
450	18"	635	577.9	533.4	38	31.7
500	20"	700	635	584.2	41	31.7
600	24"	815	749.3	692.1	46	34.9

* 2mm R.F. Height Extra

ASME Class 300 Raised Face (in mm)						
O.D.	PCD	RfØ	Thk.*	Bolt		
				No.	Dia.	
95	66.7	34.9	12.7	4	15.8	
115	82.6	42.9	14.3	4	19	
125	88.9	50.8	15.9	4	19	
135	98.4	63.5	17.5	4	19	
155	114.3	73	19.1	4	22.2	
165	127	92.1	20.7	8	19	
90	149.2	104.8	23.9	8	22.2	
210	168.3	127	27	8	22.2	
255	200	157.2	30.2	8	22.2	
280	235	185.7	33.4	8	22.2	
320	269.9	215.9	35	12	22.2	
380	330.2	269.9	39.7	12	25.4	
445	387.4	323.8	46.1	16	28.5	
520	450.8	381	49.3	16	31.7	
585	514.4	412.8	52.4	20	31.7	
650	571.5	469.9	55.6	20	34.9	
710	628.6	533.4	58.8	24	34.9	
775	685.8	584.2	62	24	34.9	
9						