

PRODUCT LITERATURE: PIPING MATERIALS 1/3

▪ PIPING MATERIALS: PIPE, FLANGE, GASKET, BOLT/NUT

Material	Pipe		Wrought Steel Fitting		Forged Steel Fitting		Flange	Gasket	Bolt/Nut
	ASTM	Grade/Type	ASTM	Grade/Type	ASTM	Grade/Type			
Carbon steel	A106/A53	A, B & C	A234	WP XXX ¹	A105(N)		Forging material same as forged steel fitting. RATING per ASME B16.5, ASME B16.47, API, MSS, AWWA	Compressed, non-asbestos, spiral wound, metal, rubber, insulation kit, rating per flange	Carbon steel, alloy steel, stainless steel, stud, machine, thread to international standards
Low and int. alloy steel	A335	P1, P11, P12, P21, P22, P23, P5, P9, P91, P92		WP XXX	A182	F XXX			
Stainless steel	A312	304(L),316(L), 317(L),321(H), 316Ti	A403	WP XXX					
Dimension	- ASME B36.10, B36.19		- ASME B16.9		- ASME B16.11				
Notes	<p>1. Suffix "XXX" is intended to match the pertinent pipe material grade.</p> <p>2. Welded pipes and wrought steel fittings are available per material grade.</p> <p>3. Other special materials such as super alloy, titanium, low temperature steel API materials and etc. are available upon request.</p>								





PRODUCT LITERATURE: PIPING MATERIALS (VALVES) 2/3



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PIPING MATERIALS: CASTING VALVES

Type	Rating	Size	
Gate Bolted Bonnet Type	150#	2" - 48"	 <p>[Gate Valve]</p>  <p>[Globe Valve]</p>
	300#	2" - 36"	
	600#	2" - 36"	
	900#	2" - 24"	
	1500#	2" - 24"	
	2500#	2" - 16"	
Globe Bolted Bonnet Type	150#	2" - 24"	
	300#	2" - 24"	
	600#	2" - 24"	
	900#	2" - 16"	
	1500#	2" - 16"	
	2500#	2" - 12"	

PIPING MATERIALS: FORGED STEEL VALVES



Type	Body Material	Rating	Construction / Size
Gate	A105N	ASME B16.34	API 800#/1500#, SC, SW, BW: 1/4"~2"
Globe	A182 F5 / 9 / 11 / 22 / 91	150#, 300#, 600#	Bolted bonnet: Regular port/Full port
Y-Globe	A182 F304(L/H) / 316(L/H)	800#, 900#, 1500#	Seal welded bonnet: Regular port/Full port
	317(L) / 321(H) / 347(H)		Extended bonnet: Regular port
	A350 LF2		ASME 150#~1500#, Integral/welded flanged: Regular port, 1/2"~2"
Check	Monel, Inconel, Hastelloy		API 800#/1500#, SC, SW, BW: 1/4"~2"
			Piston check/Ball check/Swing check: Regular port/Full port
			Y-Piston check/Y-Ball check: Full port
			ASME 150#~1500#, Integral/welded flanged: Regular port, 1/2"~2"



▪ PIPING MATERIALS: BALL VALVES

Type	General Purpose	High Performance	Metal Seated	Fully Jacketed	SC/SW/BW End
Features	Floating ball 2 pieces, full bore Fire safety design	Trunnion mounted ball (2" & larger) Floating ball (1/2"~1-1/2") 2 pieces split body (1/2"~12") 3 pieces split body (6" & larger) Self relief design Fire safety design Double block & bleed Double sealed	Floating ball 2 pieces, full bore Fire safety design Stellited seat ENP ball (Electro-less nickel plated)	Floating ball 1 piece, full bore Fire safety design	Floating ball 3 pieces, full bore Screw, socket, butt weld end Fire safety design
Applications	Hydrocarbon process Water, oil, gas	Petroleum, petrochemical Low temperature Water, oil, gas	Pulp, slurry, coke High temperature Mining	Hydrocarbon process Water, oil, gas	Hydrocarbon process Water, oil, gas
Body Materials	WCB CF8(M), CF3(M)	A105, LF2 F304(L), F316(L)	WCB CF8(M), CF3(M)	WCB CF8(M), CF3(M)	CF8(M), CF3(M)
Rating / Size	ASME 150#/300# 1/2"~12"	ASME 150#/300#: 2"~24" ASME 600#: 1/2"~24" API 6D 600#~2500#: 2"~24"	ASME 150#/300# 1/2"~8"	ASME 150#/300# 1/2"~4"	1000PSI 1/2"~1-1/2"

▪ PIPING MATERIALS: BALL VALVES

Type	Size	CRB Series	CHB Series	CTB Series	
Wafer/Lug	1-1/2" ~ 12"	<ul style="list-style-type: none"> Body: cast iron/ductile iron /cast steel/stainless steel Seat: EPDM/NBR/Viton Disc: Al-bronze/stainless steel /alloy (duplex) Stem: stainless steel 	Phenolic Backed Cartridge Rubber Lined Size: 2"~24" Temperature: -40 °C ~ 200 °C <ul style="list-style-type: none"> Body: A126 CL.B Seat: EPDM rubber Disc: Al-bronze/stainless steel /alloy (duplex) Applications: water transmission/fuel gas distribution/industrial & waste water/fire fighting/oil rigs (offshore) 	Teflon & Rubber Molded Disc & Seat Size: 2"~24" Temperature: -40 °C ~ 200 °C <ul style="list-style-type: none"> Body: A126 CL.B / SS316 / Al-bronze/ductile iron Seat: teflon molded EPDM/DPDM/Buna-N/Viton Disc: Teflon molded SS316/EPDM molded SS316/nylon coated ductile iron Applications: Chemical plant / Pulp and paper mill / Food and beverage/ Processing plant 	 
	14" ~ 48"	<ul style="list-style-type: none"> Body: cast iron/ductile iron Seat: EPDM/NBR/Viton/Al-bronze Disc: Al-bronze/stainless steel /alloy (duplex) Stem: stainless steel 		<ul style="list-style-type: none"> Stem: stainless steel 	
(Flanged)			N/A	N/A	
Operator	Lever: 1-1/2" ~ 12" Gear: 1-1/2" ~ 48"				