CALOBRI®

VALVES FOR OIL, CHEMICAL AND NUCLEAR INDUSTRIES

INTRODUCTION

Calobri was founded in 1949 to supply the reconstruction of the petrochemical industry following the war.
Soon Calobri specialized in severe application valves in forged steel and gained an excellent reputation in the Italian market.
In the late '60s, Calobri began exporting to the nascent North Sea market of Netherlands, Norway and Scotland becoming one of the major suppliers to the off-shore industry.
With the expansion of the industry in the '70s, Calobri started to export to the Middle East and Asia while at the same time acquiring approvals from major oil companies and appearing on their AML.

Today, Calobri is a well known brand on the market with an outstanding record of service and quality.
At the 50th anniversary of Calobri, a new, young, dedicated and motivated management team is the backbone of Calobri of the 21st century.

We are proud therefore to introduce our company and hope you will find this presentation interesting.

"WE WANT TO PROVIDE EXCELLENT SERVICE AND COMPETITIVE PRICES TO THE VALVES USERS WORLDWIDE"



Over 50 years of Innovation

Established in 1949, CALOBRI is a privately held valve manufacturing company.

The new management has exentensive experience in the design and manufacture of specialised forged steel valves for all industries.

CALOBRI is based in Settimo Milanese, in the greater Milan area, close to the motorways and within short distance from the Linate and Malpensa Airports. The plant is 2 hours away from the major port of Genoa making it easy to quickly dispatch material.

The organization operates within the framework of the QA-system which has been certified to ISO9001.

The following functions are organized in departements:

SALES keeps contact with the CALOBRI network of agents and distributors, prepares quotations and evaluates the product specifications in order to ensure complete satisfatction of the costumer's order.

ENGINEERING with the aid of the latest CAD-CAM equipment develops and design the products according to the required standards.

MANUFACTURING with the use of the latest CNC equipment and other in-house built tools, skilled engineers guarantee higher product quality and improved efficiency.

QUALITY CONTROL a certified system including continuous improvement and monitoring of all internal and subcontracted activities.

ADMINISTRATION in-house staff provide the administrative services needed to guarantee prompt service to customers and suppliers as well. Shipping and invoicing is managed in-house.

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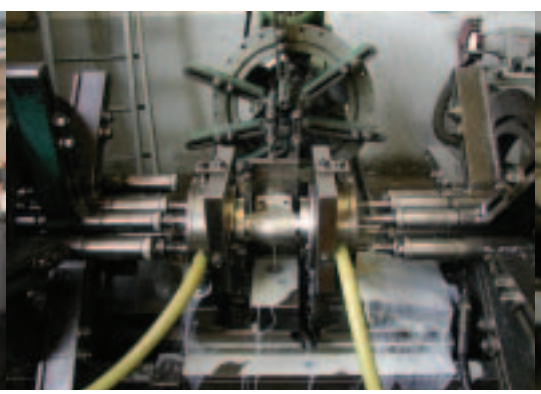
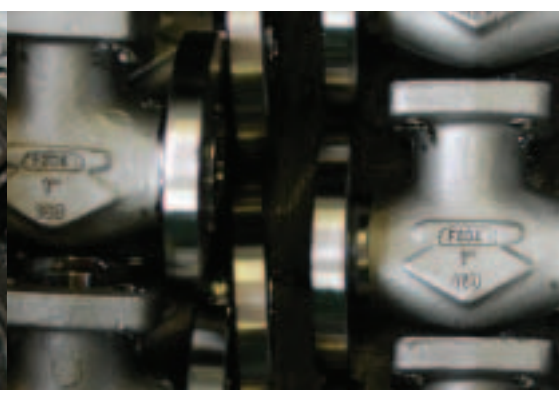

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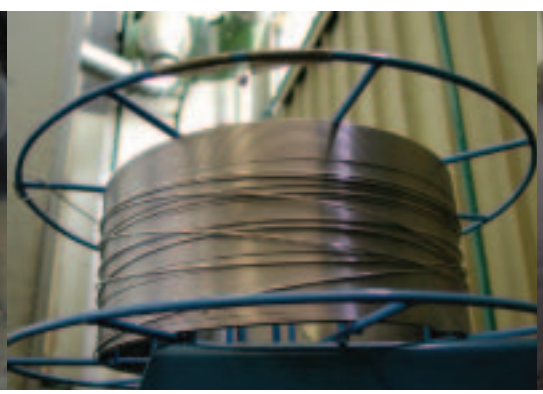



CERTIFICATION

ISO 9001

Calobri operates a fully certified Quality Assurance programme according to ISO9001 which has been upgraded recently. All major suppliers are as well fully certified to meet the most severe international standard of Quality and performance.

CE Mark - PED

Calobri has been audited and approved by TUV to the new European Community Pressure Equipment Directive which define a set of design and manufacturing procedures as a minimal standard to ensure that product supplied meet specific safety and performance criteria.

QUALIFICATION

VALVE ENGINEERING

Calobri has an extensive experience in designing valves for severe applications. Calobri developed and patented the monoflange to meet the request of a compact lightweight valve for offshore installation.

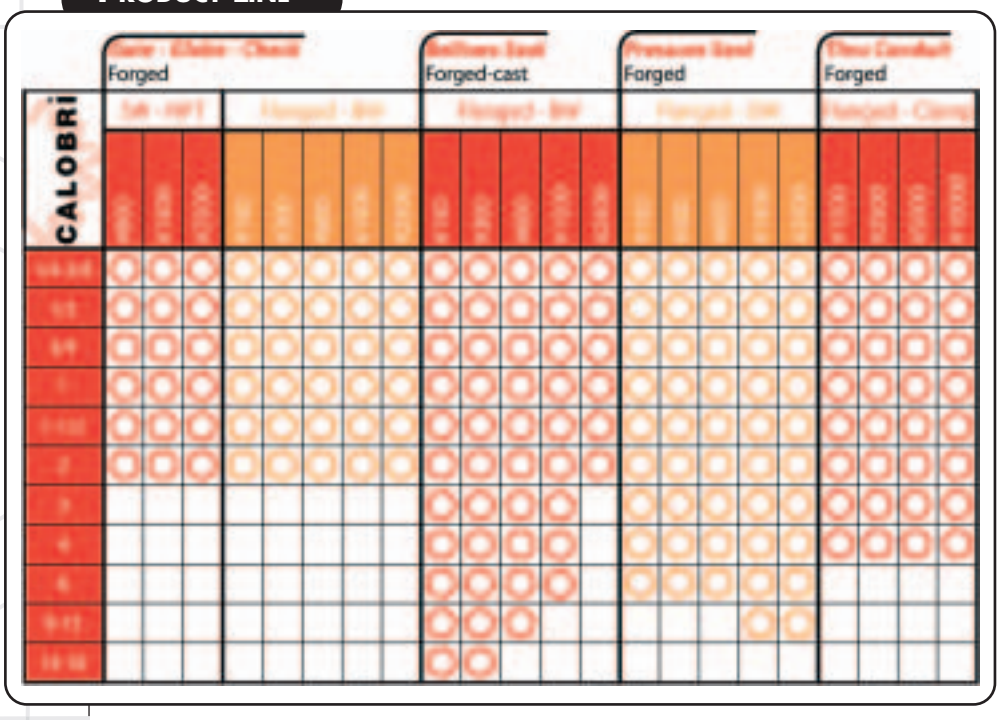
VALVE MANUFACTURING

Calobri has a skilled labor force and a set of high capacity specialized equipment. Calobri uses only forgings from Italy to guarantee the best quality of material and finished products.

VALVE ASSEMBLY AND TEST

All valves are tested 100% fully to API598 at assembly stage and retested by Final QC Inspectors.
All valves are then supplied with 3.1B certs inclusive of Mill Test reports.
Calobri is ISO 9001 approved and since 2002 has PED approval (CE Marking)

PRODUCT LINE



Cross Reference

1/2" thru 2"

Gate Valve

Forged Carbon Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
S1F	F1-810	353	L11-11	0815-00000	150 Std Port
S3F	F3-810	363	L3-11	0830-00000	300 Std Port
S6F	F6-810	373	L6-11	0860-00000	600 Std Port
S15N	R910	1033			1500 Std Port
RJS1515N	RJ910	1043			1500 Full Port
WS8N	L810	2801	WIL11T	0870-00000	800 Std Port
RJS 1515F	F9-RJ910	11603			1500 Full Port
S8N	810	12111	HL11T	0800-00000	800 Std Port
S88N	610	13111	H11T	0888-00000	600/800 Full Port
S66F	F6-610	13373			600 Full Port
S1515N	910	15111	9HL11T	1500-00000	1500 Full Port
TS1515N	T910	15373	9HLF11		1500 Full Port
WS15N	LR910	15801	9WL11T	1570-00000	1500 Std Port
WS1515N	L910	66703	25W12T	2570-00000	1500 Full Port
WS8EB-A	MLA-810	ST2801	MFL11SW/T	0877-00000	800 Std Port
WS8EB-B	MLB-810	TT 2801	MFL11T	0876-00000	800 Std Port
WS8EB-W	MLW-810	CT2901	VOLL11	0875-00000	800 Std Port

Forged Stainless Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
WS88N-F316-12	L610-F316-12	2831	WL18L-T	0870-D0000	800 Std Port
S8N-F316-12	810-F316-12	12401	HL18L-T	0800-D0000	800 Std Port
S88N-F316-12	610-F316-12	13401	HI8L-T	0888-D0000	600/800 Full Port
S15N-F316-12	R910-F316L-12	15401	9HL18L-T	1500-D0000	1500 Std Port
WS15N-F316-12	LR910-F316-12	15831	9WL18L-T	1570-D0000	1500 Std Port
WS8EB-A-F316-12	MLA-810-F316-12	ST2831	MFL18L-SW/T	0877-D0000	800 Std Port
WS8EB-B-F316-12	MLB-810-F316-12	TT2831	MFL-18L-T	0876/D0000	800 Std Port

Forged Chrome Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
S8N-F11-8	810-F11-8	12321	HL19T	08000-K0000	800 Std Port
S15N-F11-8	R910-F11-8	15321	9HL19T	1500-K0000	1500 Std Port
WS25N-F11-8	L2510-F11-8	66713	25W19T		2500 Full Port
WS25T-F22-5	L2510-F22-5	66773	26W10F22		2500 Full Port
S8N-F22-8	810-F22-8	12521	HL10-F22		900 Std Port
S8N-F5-8	810-F5-8	12421	HL16T	0800-C0000	800 Std Port
S8N-F9-8	810-F9-8	12921	HL10F9	0800-G0000	800 Std Port

Check Valve

Forged Carbon Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
		574			
P1F	F1-840	573	L1-41		150 Std Port
P3F	F3-840	583	L3-41	C83-00000	300 Std Port
P6F	F6-840	593	L6-41	C86-00000	600 Std Port
P8N	840	701	HL41T	C80-00000	800 Std Port
C8N	850	B701	HL51T	B80-00000	800 Std Port
B8N	860	S701	HL61T		800 Std Port
YP1515N	Y940	1610	9Y-42T		1500 Full Port
YP25N	Y2540	2610	25Y-42T		2500 Full Port
P88N	630	13701	9H41T		600/800 Full Port
P1515F	F9-940	15593	9HLF-41		1500 Full Port
P1515N	940	15701	9HL41T	C150-00000	1500 Full Port

Cross Reference

1/2" thru 2"

Forged Stainless Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
P8N-F316-12	840	718	HL48T	C80-00000	800 Std Port
C8N-F316-12	850	B718	HL58T	B80-00000	800 Std Port
B8N-F316-12	860	S718	HL68T		800 Std Port

Forged Chrome Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
YP1515N-F11-8	Y940-F11-8	1611	9Y-49T		1500 Full Port
YP1515N-F22-8	Y940-F22-8	1622	9Y-40T-F22		1500 Full Port
YP25N-F11-5	Y2540-F11-5	2611	25Y-49T		2500 Full Port
YP25N-F22-5	Y2540-F22-5	2622	25Y-40T-F22		2500 Full Port

Globe Valve

Forged Carbon Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
D1F	F1-830	473	L1-31		150 Std Port
D3F	F3-830	483	L3-31	G83-00000	300 Std Port
D6F	F6-830	493	L6-31	G86-00000	600 Std Port
YD88N	LY630	810	Y-32T		600/800 Full Port
YD1515N	Y930	1510	9Y-32T		1500 Full Port
YD25N	Y2530	2510	25Y-32T		2500 Full Port
WD8N	L830	2821	WL31T	G87-00000	800 Std Port
D8N	830	12141	HL31T		800 Std Port
D88N	630	13141	H31T		600/800 Full Port
D15N	R930	15141	9HL31T	G150-00000	1500 Full Port
RJS1515F	F9-RJ930	15493	9HLF31		1500 Full Port
WD15N	LR930	15821	9WL31T	G157-00000	1500 Std Port
WD25N	L2530	66723	25W32T		2500 Full Port

Forged Stainless Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
D8N-F316-12	830-F316-12	12501	HL38L-T	G80-D0000	800 Std Port
D15N-F316-12	R930-F316-12	15501	9HL38L-T	G150-D0000	1500 Std Port

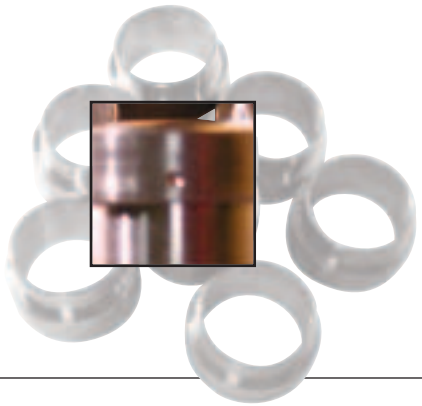
Forged Chrome Steel

CALOBRI	OMB	VOGT	BONNEY	SMITH	ANSI CLASS
YD15N-F11-5	LY930-F11-5	1511	9Y-39T		1500 Full Port
YD15N-F22-5	LY930-F22-5	1522	9Y-30T-F22		1500 Full Port
YD25N-F11-5	Y2530-F11-5	2511	25Y-39T		2500 Full Port
YD25N-F22-5	Y2530-F22-5	2522	25Y-30T-F22		2500 Full Port
D8T-F11-5	830-SW-F11-5	12351	HL39T	G80-K0000	800 Std Port
D8T-F22-5	830-SW-F22-5	12551	HL30T-F22		800 Std Port
WD8-F11-5	L830-F11-5	66733	25 W-39T		800 Std Port
WD8-F22-5	L830-F22-5	66793	25W30T-F22		800 Std Port

API TRIM DESIGNTIONS AND OTHER PRODUCTS ARE AVAILABLE FROM CALOBRI

COMPONENTS

SEATS



GATE valves seats are pressed-in: design, tolerances and procedure ensure a perfect fit. On request and for special service we can supply welded-in seats.
GLOBE: both renewable (screwed-in) or integral seat are available. Renewable seat is standard up to class #800.
STELLITE(R) grade 6 is the usual hardfacig material when this is requested.

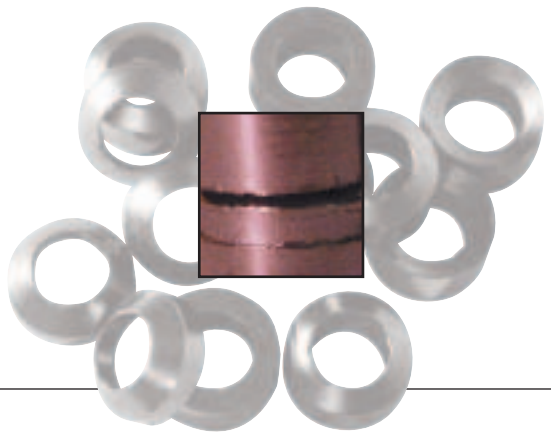
NAMEPLATE

Calobri nameplate are fixed on the valves handwheel or cover (check) in a safe and strong lock. Nameplate material can be chosen between Aluminum or Stainless steel.
The nameplate record all valves data as well as the Test number which identify the operator who tested the valve before shipment.

MARKING

Calobri valves bodies and bonnets show clearly embossed the material grade and the heat number (forging code) which allows complete lot traceability.
The body marking include as well as standard Calobri logo, pressure rating and valve bore dimension. Flow directional arrow is embossed on unidirectional valves such as globe and check.

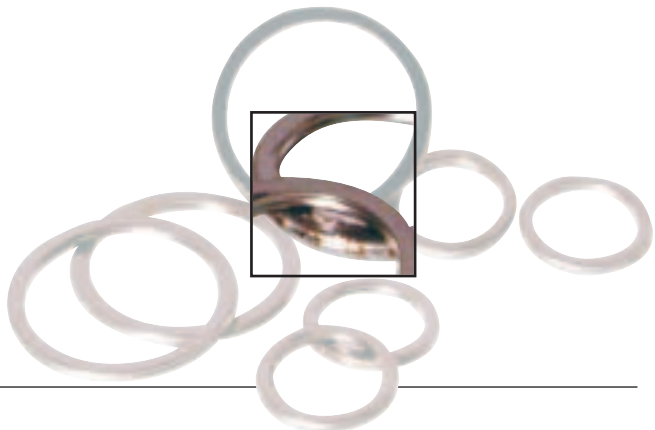
PACKING



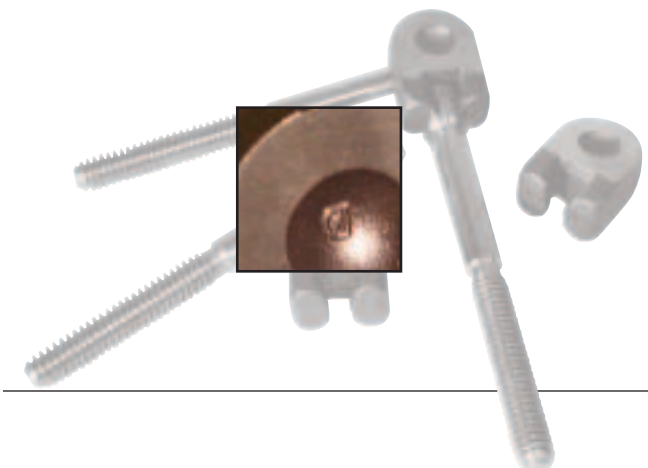
It takes 50 years to excel in fugitive emission control! Calobri packing have undergone a continuous development to achieve the best results with the lowest cost impact. Our packings offer now include traditional square section graphite packing and cup-and-cone designs.

GASKET

Calobri gaskets and contact area have been designed to meet the most stringent request: Zero Emission. Calobri is now able to certify 0PPM emission from the gasket area thanks to special anti-extrusion design, closer tolerances and controlled material density.



STEM AND WEDGE



We have been working to improve these two components in two areas: perfect exterior surfaces of stem to guarantee smooth operation and lowest emissions and tight tolerances in the connection to meet stringent "Pull Test" resistant design request.

MATERIALS

CALOBRI valves are manufactured in a wide range of materials, supplied by the best available steel mills, forged by well known forgery with outstanding equipment and experience. All the material can be certified in the chemical composition and the mechanical characteristic.

BODY AND BONNET MATERIALS

Material Group	Common Name	Nominal Type	UNS	Forging Spec.	Casting Spec. Equivalent	DIN	DIN W. No	Application Notes
Carbon Steel	CS	C-Mn-Fe	K03504	A105N	A216-WCB	C22.8 DIN 17243	1.0460	General non-corrosive service from -20F(-29C) to 800F(427C)
Low Temperature Carbon Steel	LTCS	C-Mn-Fe	K03011	A350-LF2	A352-LCA A352-LCB A352-LCC	TSTE 355 DIN 18103	1.0566	General non-corrosive service from -50F (-46C) to 650F(340C), LF2 to 800F(427C).
Low Temperature Alloy Steel	Nickel Steel	3.1/2Ni	K32025	A350-LF3	A352-LC3	10Ni14	1.5637	-150F(-101C) to 650F(340C)
Low Alloy Steel	Moly Steel	C-1/2Mo	K12822	A182-F1	A217-WC1	15MO3	1.5415	Up to 875F (468C)
	Alloy Steel Chrome Moly	1.1/4Cr-1/2Mo	K11572	A182-F11 cl2	A217-WC6	13CRMO44	1.7335	Up to 1100F (593C)
		2.1/4Cr-1Mo	K21590	A182-F22 cl3	A217-WC9	10CRMO910	1.7380	Up to 1100F(593C), HP steam
		5Cr-1/2Mo	K41545	A182-F5	A217-C5	12CRMO195	1.7362	High temp refinery service
		9Cr-1Mo	K90941	A182-F9	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	S30400	A182-F304	A351-CF8	DIN X5CrNi 18 9	1.4301	0.04% min. carbon for temp.>1000F(538C)
		304L : 18Cr-8Ni	S30403	A182-F304L	A351-CF3	X 2 CrNi 19 11	1.4306	Up to 800F(427C)
		304H :	S30409	A182-F304H		n/a	n/a	
		316 : 16Cr-12Ni-2Mo	S31600	A182-F316	A351-CF8M	DIN X5CrNiMo 18 10	1.4401	0.04% min. carbon for temp.>1000F(538C)
		316L : 16Cr-12Ni-2Mo	S31603	A182-F316L	A351-CF3M	X 5 CrNiMo 17 12 2	1.4404	Up to 800F(427C)
		316H :	S31609	A182-F316H		n/a	n/a	
		316Ti:	S31635	A182-F316Ti		X 6 CrNiMoTi 17 12 2	1.4571	
		321: 18Cr-10Ni-Ti	S32100	A182-F321		X 6 CrNiTi 18 10	1.4541	0.04% min. carbon (grade F321H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
		321H	S32109	A182-F321H		n/a	n/a	
		347: 18Cr-10Ni-Cb(Nb)	S34700	A182-F347	A351-CF8C	DIN 8556	1.4550	0.04% min. carbon (grade F347H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
		347H	S34709	A182-F347H		n/a	n/a	
		317L	S31703	A182-F317L	A351-CG3M	X2CrNiMo18-16-4	1.4438	
	Alloy 20	28Ni-19Cr-Cu-Mo	N08020	A182-F20	A351-CN7M	DIN 1.4500	2.4660	service to 600F(316C)
	Duplex 2205	22Cr-5Ni-3Mo-N	S31803 S32205	A182-F51	A890-J92205	X2CrNiMON22-5-3 DIN 10088-1 (95)	1.4462	service to 600F(316C) -The original S31803 UNS designation has been supplemented by S32205 which has higher minimum N, Cr, and Mo.
	Super Duplex 2507	25Cr-7Ni-4Mo-N	S32750	A182-F53	A351-CD4MCu A890 5A	X2CrNiMoN25-7-4 DIN 10088-1 (95)	1.4501	service to 600F(316C)
	Super Austenitic 6Mo	20Cr-18Ni-6Mo	S31254	A182-F44	A351-CK3MCuN	X1CrNiMoCuN20-18-7 DIN 10088-1 (95)	1.4547	service to 600F(316C)
Nickel-Iron Alloy	Incoloy 800	33Ni-42Fe-21Cr	N08800	B564-N08800		X10NiCrAlTi32-20	1.4876	service to 1000F(538C)
	Incoloy 825	42Ni-21.5Cr-3Mo-2.3Cu	N08825	B564-N08825	A494-CU5MCuC	DIN 17744	2.4858	service to 600F(316C) for N02200, 1200F(648C) for N02201
Nickel	Nickel	99/95Ni	N02200	B160-N02200 (bar)	A494-CZ-100	NW2200	1.7740	
Nickel-Copper	Monel 400	67Ni-30Cu	N04400	B564-N04400	A494-M35-1	DIN 17730	2.4360	
	Monel 500		N05500	B564-N05500			2.4375	
Nickel-Alloy	904L		N08904	904L	n/a	Z2 NCDU 25-20	1.4539	
Nickel Superalloys	Inconel 600	72Ni-15Cr-8Fe	N06600	B564-N06600	A494-CY40	DIN 17742	2.4816	
	Inconel 625	60Ni-22Cr-9Mo-3.5Cb	N06625	B564-N06625*	A494-CW-6MC		2.4856	*Difficult to forge in close dye
	Hastelloy C-276	54Ni-15Cr-16Mo	N10276	B564-N10276*	A494-CW-2M	NiMo 16 Cr 15 W	2.4819	*Difficult to forge in close dye
Titanium	Titanium	98Ti	R50400	B381-Gr2	B367-C2	Ti 2	3.7035	

Note: these charts are for reference only. CALOBRI recommends customer engineers to analize service requirements and specify the materials they consider optimium. CALOBRI cannot be held liable for any damage occured due to the use of the tables.

The following tables suggest standard combination of body and bonnet materials and trim (stem, disc or wedge, seat) composition. Different combinations are available uppon request.

TRIM STANDARD MATERIALS

CALOBRI STANDARD TRIM DEFINITIONS

API Trim No	Nonimal Trim	CALOBRI descr.	Stem	Disc/Wedge	Seat
1	F6	F6	410	F6	410
2	304	304	304	304	304
5	Hardfaced	F6HF	410	F6 + St Gr6	410 + St Gr6
8	F6 and Hardfaced	F6HFS	410	F6	410 + St Gr6
9	Monel	Monel	Monel	Monel	Monel
10	316	316	316	316	316
11	Monel and Hardfaced	MonelHFS	Monel	Monel	Monel
12	316 and Hardfaced	316HFS	316	316	316 + St. Gr6
13	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Alloy 20
14	Alloy 20 and Hardfaced	Alloy 20HFS	Alloy 20	Alloy 20	Alloy 20
15	Hardfaced (304)	304-HF	304	304 + St Gr6	304 + St Gr6
16	Hardfaced (316)	316-HF	316 HF	316 + St Gr6	316 + St Gr6
17	Hardfaced (347)	347-HF	347 HF	347 + St Gr6	347 + St Gr6
18	Hardfaced (Alloy 20)	Alloy 20-HF	Alloy 20 HF	Alloy 20 + St Gr6	Alloy 20 + St Gr6
n/a	Alloy 625	Alloy 625	Alloy 625	Alloy 625	Alloy 625

CALOBRI TRIM MATERIAL

CALOBRI	UNS	TYPE	Grade (forged)	ASTM wrought	DIN	DIN W NO.
F6	UNS S41000	13Cr	ASTM A182 F6a	A276-410	DIN X12Cr13	1,4006
304	UNS S30400	18-8 Cr-Ni	ASTM A182 F304	A276-304	DIN X5CrNi 18 10	1,4301
316	UNS S31600	18-8 Cr-Ni (18-10-2)	ASTM A182 F316	A276-316	DIN X5CrNiMo 18 10	1,4401
321	UNS S32100	18 Cr-10 Ni-Ti	ASTM A182 F321	A276-321	DIN X6CrNiTi 18 10	1.4541
347	UNS S34700	18 Cr-10 Ni-Cb	ASTM A182 F347	A276-347	DIN X6CrNiNb18 10	1.4550
MONEL(R)	UNS N04400	67Ni-30Cu	ASTM B564-N04400	B164-N04400	DIN 17743	2.4360
ALLOY 20	UNS N08020	28Ni-19Cr-Cu-Mo	ASTM A182-F20	ASTM B473	DIN 14500	2.4660
ALLOY 625	UNS N06625	60Ni-22Cr-9Mo-3.5Cb	ASTM B564-N06625	ASTM B564-N06625	DIN 17361	2.4865
C276	UNS N10276	54Ni-15Cr-16Mo	ASTM B564-N10276	ASTM B574-N10276	DIN NiMo 16 Cr 15 W	2,4819
St. Gr6	UNS R30006	Co Cr-A	AMS 5894	Stellite(R) Gr6		

DESIGN AND MANUFACTURING STANDARDS

API 598	-	Valve inspection and Test
ASME B 16.5	-	Steel Pipe Flanges and Fittings
ASME B 16.10	-	Face-to-Face and End-to-End Dimension of Ferrous Valves
ASME B 16.11	-	Forged Steel Fittings, Socket-Welding and Threaded
ASME B 16.34	-	Steel Valves, Flanged and Buttwelded Ends
MSS SP 25	-	Standard Marking System for Valves, Fittings, Flanges and Unions
BS 5352	-	Specific for Cast and Forged Steel Wedge Gate, Globe, Check and Plug Valves, Screwed and Socket-Weld
BS 6755	-	Testing of valves
NACE Standard	-	Material Requirement - Sulfide Stress Cracking Resistant
MR 01.75	-	Metallic Material for Oil Field Equipment
DIN 3202	-	End to End dimensions of ferrous valves