

ORDERING INSTRUCTIONS

EXAMPLE:

Type	Valve Size	Flange Standard	ANSI/API Pressure Rating	Body Material	Plate Material	Body Seat	Plate Seat	End Connection	Special Feature	Spring Material	Wetted Parts
BR	30	A	015	C	S	W	P	R	/	Y	S

* 'R' in the valve type code indicates Retainerless.

VALVE TYPE*		VALVE SIZE	FLANGE STANDARD		ANSI / API PRESSURE RATINGS	
FIG	MATERIAL	SPECIFICATION	FIG	STANDARD	FIG	PRESSURE RATINGS
BR	Wafer		-	ANSI B16.5	015	ANSI 150
BFR (BFT)	Flanged (BFT: Threaded)		-	ANSI B16.47 Series A (MSS SP 44)	030	ANSI 300
BSR (BTR)	Solid Lug (BTR: Threaded)	Inches: For ANSI, AWWA & API standards	A	ANSI B16.47 Series B (API 605)	060	ANSI 600
BHR (R)	Hub Ended Reduced Bore (R)	Millimetres: For JIS standards and PN ratings	D	AWWA C207 Class D	090	ANSI 900
BHR (F)	Hub Ended Full Bore (F)		E	AWWA C207 Class E	150	ANSI 1500
BH (F)	Hub Ended Full Bore (F)		F	Hub Ended - Full Bore Internals	250	ANSI 2500
BWR (BWA)	Buttweld End		R	Hub Ended - Reduced Bore Internals	200	API 2000
BL	Wafer-Lined		J	JIS 2210	300	API 3000
BFL	Flanged-Lined		V	Compact Flange	500	API 5000
BSL	Solid Lug-Lined				100	API 10000
BC	Wafer - Clad (Retainerless)					
BFC	Flanged - Clad (Retainerless)					
BSC	Solid Lug - Clad (Retainerless)					
BD	Wafer - Clad (Retaining Plugs)					
BFD	Flanged - Clad (Retaining Plugs)					
BSD	Solid Lug - Clad (Retaining Plugs)					

BODY SEAT/PLATE OVERLAY MATERIAL			
FIG	MATERIAL	OPERATING TEMP RANGE *	
		F	C
P	Same as Body / Plate	As Body / Plate	As Body / Plate
E	410 Stainless Steel	-20 to 1000	-29 to 538
S	316 Stainless Steel	-425 to 1500	-254 to 538
F	316L Stainless Steel	-425 to 850	-254 to 455
G	17-4 PH Stainless Steel	-40 to 800	-40 to 427
I	Inconel 625		
M	Monel 400	-321 to 900	-196 to 482
U	Stellite No 6 [®]	-450 to 1500	-267 to 815
J	Viton GLT [®]	-22 to 400	-30 to 204
V	Viton A [®]	-40 to 400	-40 to 204
W	Viton B [®] Anti Explosive Decompression FR58 90	-4 to 392	-20 to 200
N	Buna-N [®]	-22 to 250	-30 to 121
T	Neoprene [®] \$	-40 to 250	-40 to 121
K	Teflon [®]	-200 to 450	-129 to 232
D	EPDM	-14 to 230	-10 to 110
L	Elast-O-Lion [®] 985	-40 to 320	-40 to 160
X	To Be Specified		

BODY AND/OR PLATE MATERIAL			SPECIAL FEATURES	
FIG	MATERIAL	SPECIFICATION	-	No Special Features
C	Carbon Steel	ASTM A216 WCB / A105	/	To be specified in order and inquiry text
L	Low Temp Carbon Steel	ASTM A352 LCB	S	Super Torque Spring
O	Low Temp Carbon Steel	ASTM A352 LCC / A350 LF2	L	Low Torque Spring
D	High Temp Cr Mo Steel	ASTM A217 WC6	M	Mini Torque Spring
K	Low Alloy Steel	ASTM A487 GR 4C		
E	410 Stainless Steel	ASTM A217 CA15		
P	5% Cr Steel	ASTM A217 C5		
W	9% Cr Steel	ASTM A217 C12		
G	Low Temp 13% Cr 4% Ni	ASTM A352 CA6NM		
S	316 Stainless Steel	ASTM A351 CF8M / A182 F316		
F	316L Stainless Steel	ASTM A351 CF3M / A182 F316L		
Y	347 Stainless Steel (High Temp)	ASTM A351 CF8C / A182 F321		
Q	22% Chrome Duplex ¹	J92205 / ASTM A890 4A or A995 4A (WE) ¹		
B	25% Chrome Super Duplex ²	J93372 / ASTM A995 CD4MCuN (WE) ²		
R	Ferrallium 255-3SC ³	J93380 / ASTM A890 6A or A995 6A (WE) ³		
Z	25% Chrome Super Duplex ³	J93380 / ASTM A890 6A or A995 6A (WE) ³		
H	Alloy 825 ⁴	N08826 / ASTM A494 CU5MCuC (WE) ⁴		
I	Alloy 625 ⁵	N26625 / ASTM A494 CW6MC (WE) ⁵		
V	Avesta 254 SMO ⁶	J93254 / ASTM A351 CK3MCuN (WE) ⁶		
U	Stellite [®]	Stellite 6 [®]		
T	Titanium	ASTM B367 C2 / B381 F2 / B348 GR2		
J	Hastelloy C276 ⁷	ASTM A494 CW12MW (WE) ⁷		
M	Monel	ASTM A494-M35-2		
A	Nickel Aluminium Bronze	† BS EN 1982 CC333G / ASTM B148 C95800		
1	Chromium Molybdenum Steel	ASTM A217 GR WC9		
2	3.5% Nickel Steel	ASTM A352 LC3		
3	304 Stainless Steel	ASTM A351 CF8		
4	304L Stainless Steel	ASTM A351 CF3		
5	Alloy 20	ASTM A351 CN7M		
6	317 Stainless Steel	ASTM A351 CG8M		
7	Carbon Molybdenum Steel	ASTM A352 LC1		
8	Ni-Resist [®] Iron	ASTM A439 D2		
9	Ductile Iron	ASTM A395		
X	To Be Specified	TO BE SPECIFIED		

END CONNECTION			WETTED PARTS*	
FIG	CONNECTION	FIG	PINS/OTHER	
Q	Raised Face 3.2 µm max. Spiral Groove	S	316 SS	
R	Raised Face 3.2-6.3 µm Spiral Groove	F	316L SS / 316 SS	
S	Raised Face 6.3-12.5 µm Spiral Groove	E	410 SS / 316 SS	
F	Flat Face 3.2-6.3 µm Spiral Groove	G	17-4 PH / 316 SS	
G	Flat Face 6.3-12.5 µm Spiral Groove	I	Inconel 625 [®]	
E	Raised Face 3.2 µm max Concentric Groove	A	Monel K500 [®] / 625	
D	Raised Face 3.2-6.3 µm Concentric Groove	M	Monel 400 [®] / 625	
C	Raised Face 6.3-12.5 µm Concentric Groove	3	304 SS / 316 SS	
A	Flat Face 3.2-6.3 µm Concentric Groove	4	304L SS / 316 SS	
Z	Flat Face 6.3-12.5 µm Concentric Groove	W	347 SS / 625	
J	Ring Type Joint	Y	321 SS / 625	
H	Clamped End	Q	F51 DSS / 625	
W	Buttweld End	Z	F55 SDSS / 625	
V	Compact Flange	H	Incoloy 825 [®] / 625	
		T	Titanium	

SPRING MATERIAL			
FIG	MATERIAL	RECOMMENDED MAX TEMP	
		F	
		C	
S	316 Stainless Steel	250	121
Y	Inconel X750 [®]	1000	537
I	Inconel 625 [®]	1000	537
M	Monel K500 [®]	400	204
L	Inconel 718	1022	550
T	Titanium Ti 6AL4V	662	350
X	To Be Specified		

LINED VALVES

Valves can be supplied with various linings, such as Neoprene[®], Chloroprene[®], Chlorobutyl, Riisan Nylon II[®], EPDM, Glass Flake and Coal Tar Epoxy (lined valves have retaining plugs).

CLAD VALVES

Valves can be supplied with various internal claddings such as Inconel 625 & 825.

† Previously BS 1400 AB2

WE - Wrought Equivalents

¹ UNS S31803 ⁵ UNS N06625

² UNS S32550 ⁶ UNS S31254

³ UNS S32760 ⁷ UNS N10276

⁴ UNS N08825

* Suitability will depend, in part, on operating temperature range of base material.

\$ For ANSI 150lb & 300lb only

combinations available on request.

**◀ MATERIALS AND APPLICATIONS
SUITABILITY MATRIX**



PLEASE OPEN HERE TO VIEW

Materials and Applications Suitability Matrix

Oil & Gas Production & Transmission

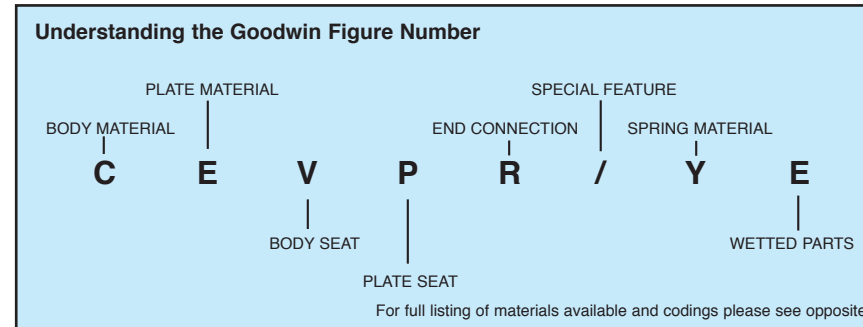
Table with columns: CARBON STEEL, LOW TEMP CARBON STEEL, STAINLESS STEEL, NON-FERROUS, DUPLEX, NICKEL ALLOYS, TITANIUM. Rows include material types and application conditions like Crude Oil, Gas, Hydrocarbon, etc.

Refining, Transmission & Petrochemical

Table with columns: CARBON STEEL, LOW TEMP CARBON STEEL, CHROME STEEL, STAINLESS STEEL, NON-FERROUS, NICKEL ALLOYS. Rows include material types and application conditions like Crude Oil, Hydrocarbon Liquids, etc.

Gas Liquefaction & LNG

Table with columns: LOW TEMP CARBON STEEL, STAINLESS STEEL, NON-FERROUS, DUPLEX, NICKEL ALLOYS. Rows include material types and application conditions like Liquid Argon, LNG at -161 Deg C, etc.



Desalination & Water Transmission

Table with columns: CARBON STEEL, STAINLESS STEEL, CAST IRON, DUCTILE IRON, NI-RESIST, NON-FERROUS. Rows include material types and application conditions like Brine (De Oxygenated), Distillate, etc.

Notes:-
The information in the above chart is intended as a general guide based on previous supply history over the last 25 years to the hydrocarbon, energy and process industries.
Ultimate responsibility for material selection rests with the customer.
Goodwin Check Valves are manufactured to meet requirements of NACE MR 01 75 when specified in customer enquiry/order.
For sour service applications, Inconel 718 springs can be provided when specified in customer enquiry/order.
For stagnant seawater and oxygenated brine applications, Inconel 625® springs should be used.
If tight shut-off is a requirement, soft seats such as Viton® or Buna N® are available, subject to compatibility with fluid and temperatures.
All Goodwin Check Valves are supplied as Retainerless* construction ensuring the pressure boundary is not degraded by crevice corrosion in sour service applications as compared to the old fashioned retainer design that is prone to crevice corrosion down the retainer sealing threads in the valve body.
Goodwin Check Valves are certifiable in compliance with the European Pressure Equipment Directive (PED) 97/23/EC when specified in customer enquiry/order.
Goodwin does not recommend use of Dual Plate Check Valves in reciprocating machinery applications. It is the responsibility of the customer to ensure the valve is suitable for its intended application.
*Lined valves are fitted with retainers but these are protected from the line fluid by resilient sealing compound.

Legend:-
OVERSPECIFIED - 0
EXCELLENT - 1
GOOD - 2
SATISFACTORY - 3
NOT RECOMMENDED - 4 *
DO NOT USE - 5 ‡
* Not Recommended - The use of this construction on the particular application is likely to lead to premature failure of the valve, which may lead to catastrophic failure or fatality.
‡ Do Not Use - You must avoid using this construction on the particular application to avoid catastrophic failure and possible fatality.