

SERIES VF FLOATING BALL VALVES



ViVtrol, Inc.

PROVEN PERFORMANCE • WORLD CLASS PRODUCTS



Standards and Specifications

Vintrol Series VF Flanged End Ball Valves are designed and manufactured to meet the requirements of the following industry standards

API 6D
ANSI B16.5
ANSI B16.34
ANSI B1610
MSS-S-SP-6
MSS-SP-25
MSS-SP-55
MSS-SP-72
API 6FA
API 598
NACE MR0175

PIPELINE VALVES
STEEL PIPE FLANGES AND FLANGE FITTINGS
VALVES, FLANGED & BUTTWELD
FACE-TO-FACE DIMENSIONS FOR FERROUS VALVES
STANDARD FINISHES FOR PIPE FLANGES
STANDARD MARKING SYSTEM FOR VALVES
QUALITY STANDARD FOR STEEL CASTINGS
FLANGED BALL VALVES FOR GENERAL SERVICE
FIRE TEST SPECIFICATION
VALVE INSPECTION AND TESTING
STANDARD MATERIAL REQUIREMENTS 2002 EDITION

Vintrol Headquarters and Warehouse located in Oklahoma City, Oklahoma



ViVtrol, Inc.

ViVtrol Series VF

YOUR BEST CHOICE FOR FLOW CONTROL & SEALING SOLUTIONS

ViVtrol offers a complete solution for your flow control applications. ViVtrol products serve many of the leading Petroleum & Industrial companies and are the result of decades of innovation in the Oil & Gas industry. Our designs are proven performers in the harshest of environments.

The ViVtrol brand means quality and reliability you can count on. Our state of the art manufacturing facilities have achieved ISO 9001 certification. ViVtrol Series VF Floating Ball Valves are produced in conformance to API 6D requirements, industry standards, and our customer's demanding service conditions.

ViVtrol products are marketed and sold worldwide by an experienced team of domestic and international field representatives. Our sales force works closely with these representatives to ensure our customer's expectations are met or exceeded. A network of authorized distributors stock ViVtrol products for immediate delivery to the oil and gas and industrial marketplace.

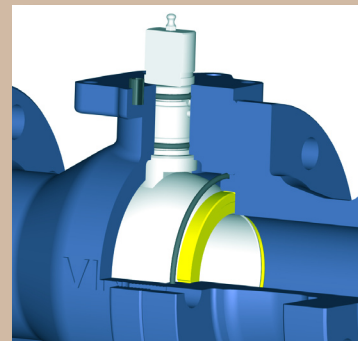
Our complete API 6D product offering includes flanged, butt weld, and threaded floating ball valves and check valves, along with trunnion mounted ball valves. Sizes range from 1/4" to 56" and are available in various pressure classes. Contact ViVtrol or one of our field representatives today to discuss how one of our cost effective products can solve your production requirements.

Performance Features of API 6D Series VF Floating Ball Valves

ViVtrol series VF ball valves feature two-piece bolted carbon and stainless steel construction with flanged end connections ranging from 1" FP to 8" FP and pressures from CL150 to CL1500. All ViVtrol series VF ball valves include the following standard features.

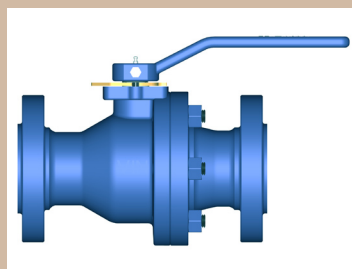
Features include

- Back-seated stem is blow out proof and fire safe
- External stem lubrication and vented weather seal
- SS trim for maximum corrosion protection
- Fire-safe and suitable for NACE service
- Delrin seats in class 600 and higher
- RTFE seats in class 150 and 300
- Available in both full and reduced port configurations
- Ball has pressure equalization hole to prevent trapped pressure in the body cavity
- Standard locking handle to meet safety and security concerns



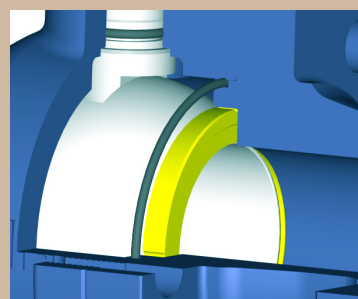
STEM LUBE FITTING & WEATHER SEAL

External stem lube fitting and vented weather seal ensure effective lubrication of stem journal and protection from external corrosion or contamination



TWO-PIECE BOLTED DESIGN

Series VF ball valves are a durable two-piece bolted design. Body materials are available in WCB, LCC, & CF8M stainless steel

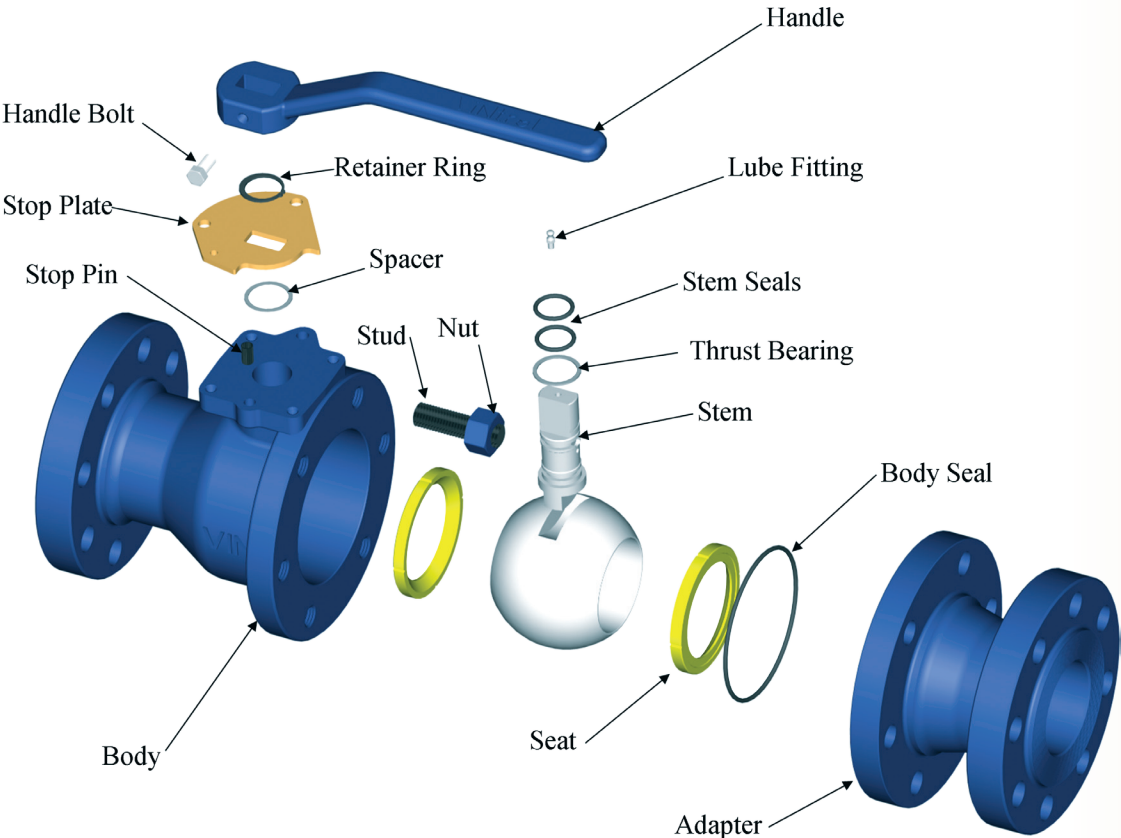


DELIN AND RTFE SEATS

Our floating ball valve seats provide bubble tight sealing at high and low pressures with excellent torque performance. Loss of seat insert results in metal to metal sealing for fire-safe reliability.

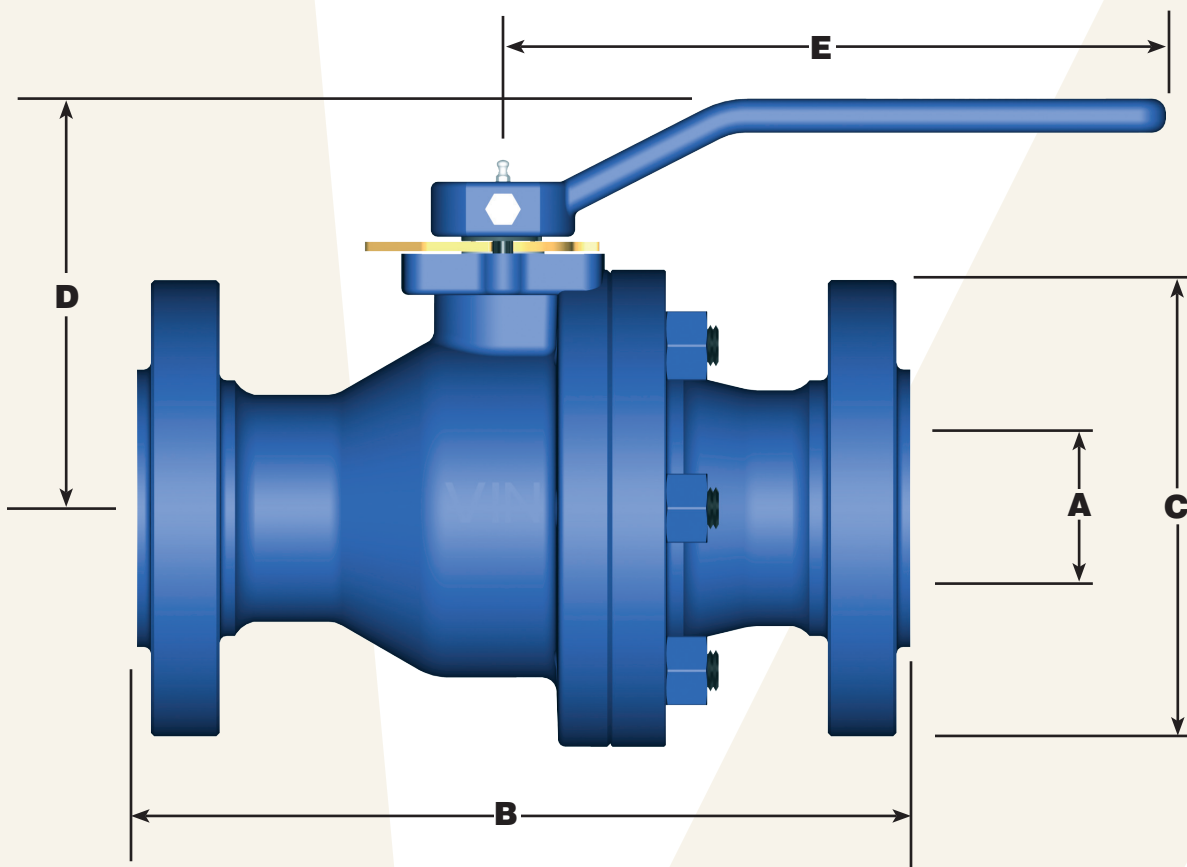
Optional seat materials include PEEK, TFM, DEVLON, & TUNGSTEN CARBIDE.

ViWtrol Series VF Floating Ball Valve



Series
VF

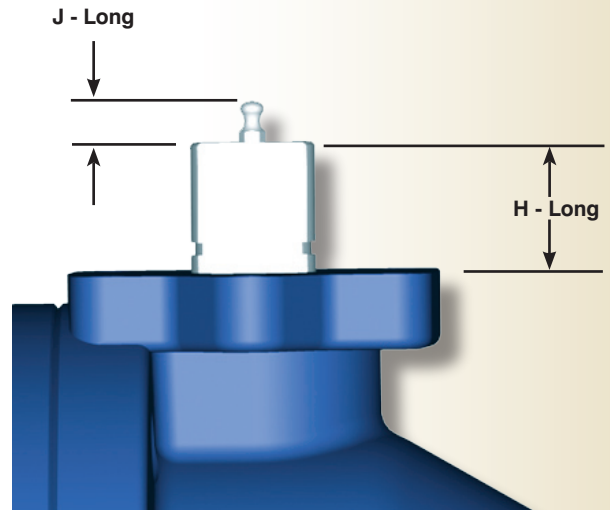
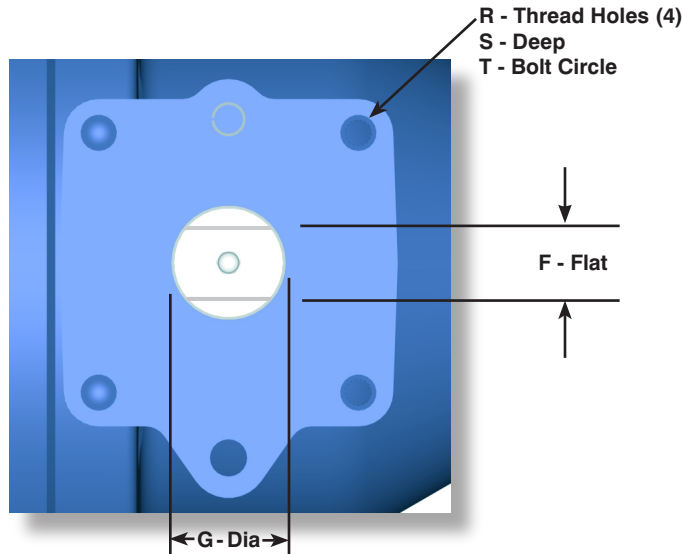
PART DESCRIPTION	AVAILABLE MATERIALS
BODY	ASTM A216 WCB, A351 CF8M, A352 LCC, A217 CA15
ADAPTER	ASTM A216 WCB, A351 CF8M, A352 LCC, A217 CA15
BALL	ASTM A105, 316 SS, 410 SS, TUNGSTEN CARBIDE
STEM	PLATED CARBON STEEL, 316 SS
SEAT	DEVLON, DELRIN, RTFE, TUNGSTEN CARBIDE, TFM, PEEK
STOP PLATE	PLATED CARBON STEEL
HANDLE	DUCTILE IRON
THRUST BEARING	REINFORCED TEFLON
STEM SPACER	NYLON
BODY SEAL	HNBR, VITON A VITON B, AFLAS, AND MORE
STEM SEALS	HNBR, VITON A VITON B, AFLAS, AND MORE
RETAINER RING	SPRING STEEL
LUBE FITTING	PLATED CARBON STEEL
STOP PIN	SPRING STEEL
HANDLE BOLT	PLATED CARBON STEEL
STUD	ASTM A193 B7 & B7M, A320 L7 & L7M
NUT	ASTM A194 2H & 2HM, A320 L7 & L7M



DIMENSIONAL DATA (IN INCHES)

SIZE	1" FP	1.5" FP	2" RP	2" FP	3" RP	3" FP	4" RP	4" FP	6" RP	6" FP	8" RP	8" FP
A PORT	1.0	1.5	2x1.5	2	3 x 2	3	4 x 3	4	6 x 4	6	8 x 6	8
B 150 RF	5	6.5	7	7	8	8	9	9	10.5	15.5	11.5	18
B 300 RF	6.5	7.5	8.5	8.5	11.12	11.12	12	12	15.88	15.88	16.5	19.75
B 600 RF	8.5	9.5	11.5	11.5	14	14	17	17	22			
B 600 RTJ	8.5	9.5	11.62	11.62	14.12	14.12	17.12	17.12	22.12			
B 900 RF	10	12	14.5	14.5	15							
B 900 RTJ	10	12	14.62	14.62	15.12							
B 1500 RF	10	12	14.5	14.5								
B 1500 FTJ	10	12	14.62	14.62								
C 150	4.25	5	6	6	7.5	7.5	9	9	11	11	13.5	13.5
C 300	4.88	6.12	6.5	6.5	8.25	8.25	10	10	12.5	12.5	15	15
C 600	4.88	6.12	6.5	6.5	8.25	8.25	10.75	10.75	14			
C 900	5.88	7	8.5	8.5	9.5							
C 1500	5.88	7	8.5	8.5								
D	3.74	4.94	4.94	5.31	5.31	6.75	6.75	8.4	8.4	8.73	8.25	10.77
E	6	8	8	10	10	15	15	18	18			

series
VF



ISO DESIGN - CLASS 150/300

LARGE BORE - CLASS 150

SIZE	1" FP	1.5" FP	2" RP	2" FP	3" RP	3" FP	4" RP	4" FP	6" RP	6" FP	8" RP	8" FP
F-Flat	.374	.560	.560	.560	.560	.622	.622	.745	.745	.945	.945	.473 keyed
G-Dia	.622	.873	.873	.873	.873	1.240	1.240	1.365	1.365	1.418	1.418	1.654
H-Long	.81	.99	.99	.99	.99	1.33	1.33	1.48	1.48	2.05	2.05	2.21
J-Long	.31	.31	.31	.31	.31	.31	.31	.31	.31	NA	NA	NA
R	10-24 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	3/8-16 UNC	3/8-16 UNC	1/2-13 UNC	1/2-13 UNC	M12X1.75	M12X1.75	M16X2
S	.30	.40	.40	.40	.40	.44	.44	.56	.56	.78	.78	1.00
T	1.417	1.969	1.969	1.969	1.969	4.016	4.016	4.921	4.921	4.921	4.921	5.512

ISO DESIGN - CLASS 600/900/1500

SIZE	1" FP	1.5" FP	2" RP	2" FP	3" RP	3" FP	4" RP	4" FP	6" RP
F-Flat	.374	.560	.560	.560	.560	.745	.745	1.003	1.003
G-Dia	.622	.873	.873	.873	.873	1.365	1.365	1.505	1.505
H-Long	.81	.99	.99	.99	.99	1.48	1.48	1.48	1.48
J-Long	.31	.31	.31	.31	.31	.31	.31	.31	.31
R	10-24 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	3/8-16 UNC	3/8-16 UNC	1/2-13 UNC	1/2-13 UNC
S	.30	.40	.40	.40	.40	.44	.44	.56	.56
T	1.417	1.969	1.969	1.969	1.969	4.016	4.016	4.921	4.921

STANDARD DESIGN - CLASS 150/300

LARGE BORE - CLASS 300

SIZE	1" FP	1.5" FP	2" RP	2" FP	3" RP	3" FP	4" RP	4" FP	6" RP	6" FP	8" RP	8" FP
F-Flat	.374	.560	.560	.560	.560	.622	.622	.745	.745	.473 keyed	.473 keyed	.473 keyed
G-Dia	.622	.873	.873	.873	.873	1.240	1.240	1.365	1.365	1.654	1.654	1.654
H-Long	.81	.99	.99	.99	.99	1.33	1.33	1.48	1.48	2.21	2.21	2.21
J-Long	.31	.31	.31	.31	.31	.31	.31	.31	.31	NA	NA	NA
R	10-24 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	5/16-18 UNC	5/16-18 UNC	3/8-16 UNC	3/8-16 UNC	M16X2	M16X2	M16X2
S	.30	.40	.40	.40	.40	.62	.62	.44	.44	1.00	1.00	1.00
T	1.25	1.75	1.75	1.75	1.75	2.75	2.75	4.00	4.00	5.512	5.512	5.512

STANDARD DESIGN - CLASS 600/900/1500

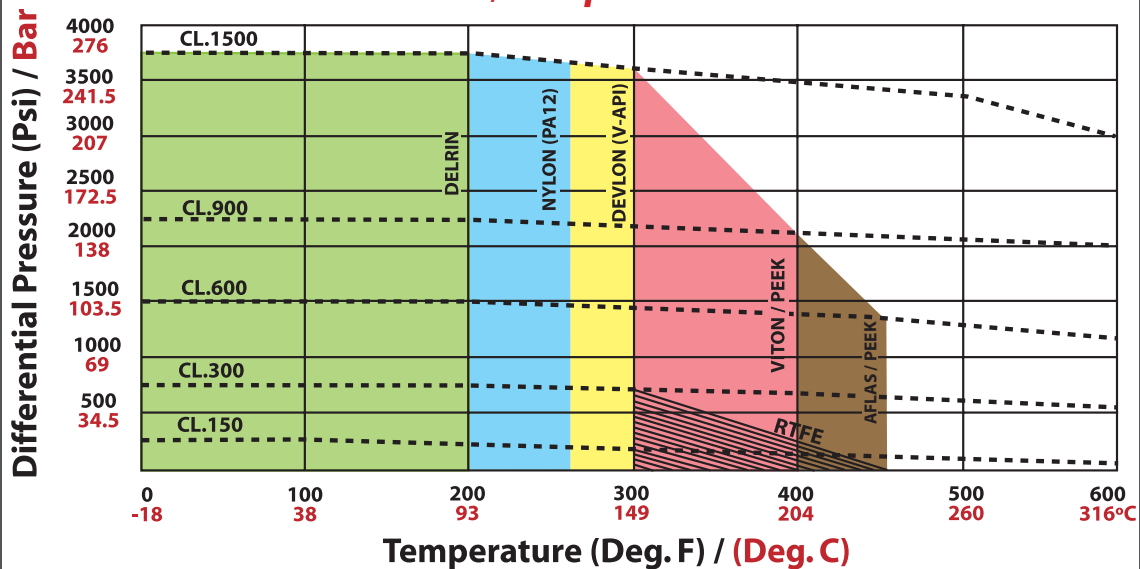
SIZE	1" FP	1.5" FP	2" RP	2" FP	3" RP	3" FP	4" RP	4" FP	6" RP
F-Flat	.374	.560	.560	.560	.560	.622	.622	.745	.745
G-Dia	.622	.873	.873	.873	.873	1.240	1.240	1.365	1.365
H-Long	.81	.99	.99	.99	.99	1.33	1.33	1.48	1.48
J-Long	.31	.31	.31	.31	.31	.31	.31	.31	.31
R	10-24 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	1/4-20 UNC	5/16-18 UNC	5/16-18 UNC	3/8-16 UNC	3/8-16 UNC
S	.30	.40	.40	.40	.40	.62	.62	.44	.44
T	1.25	1.75	1.75	1.75	1.75	2.75	2.75	4.24	4.24

Engineering Specifications

Flow coefficient *cv*

SIZE	CL 150	CL 300	CL 600	CL 900	CL 1500
1" FP	89	79	68	70	70
2" RP	137	128	117	119	119
2" FP	490	422	368	365	365
3" RP	238	216	203	175	
3" FP	1380	1055	1000		
4" RP	635	610	580		
4" FP	2560	2100	1850		
6" RP	925	905	895		
6" FP	5350	5300			
8" RP	2500	2400			
8" FP	10750	10500			

Pressure/Temperature Chart



Torque at Full rated Pressure in - lbs

SIZE	285	740	1480	2200	3705
1"	280	345	585	770	1180
1.5"	530	710	880	1150	2000
2"	590	945	1180	1670	2700
3"	1300	2155	2685		
4"	2140	3550	4423		
6"	3540	5319			
8"	7965	11505			

Technical data provided for customer convenience and is subject to change without notice. Please consult factory for specific application and additional product information.

Pressure/Temperature ratings are based on ANSI B16.34 and the trim materials selected for the valve.

Torque values are based on clean lubricating fluids. A service factor should be applied for all other conditions

ViWtrol Series VF Part Numbers

SIZE	CL 150	CL 300	CL 600	CL 900	CL 1500
1" FP	4100-	4300-	4600-	4900-	4500-
1.5" FP	4101-	4301-	4601-	4901-	4501-
2" RP	4102-	4302-	4602-	4902-	4502-
2" FP	4103-	4303-	4603-	4903-	4503-
3" RP	4105-	4305-	4605-	4905-	
3" FP	4106-	4306-	4606-		
4" RP	4107-	4307-	4607-		
4" FP	4108-	4308-	4608-		
6" RP	4109-	4309-	4609-		
6" FP	4110-	4310-			
8" RP	4111-	4311-			
8" FP	4112-	4312-			

ViWtrol Series VF Part Numbers

Pneumatic actuators and accessories are available from our facilities in India as well as our full service facilities in Oklahoma, Texas, and Louisiana. Factory mounted automation packaging means single point responsibility, standardization of control components and accessories, and expert sizing for smooth operation.

Coatings and Overlay

A wide variety of coatings are available for increased life span and corrosion protection you can count on. Enduro-Bond Plus coatings are a cross-linked barrier, fused by a strong mechanical bond to provide superior protection over traditional plastic coatings. A complete line of spray-on and weld overlay metals are also available.

Series 21 Scotch Yoke Actuator

ViWtrol, Inc. is pleased to offer top-of-the-line products in flow control automation. The ViWtrol Series 21 are pneumatically operated, quarter turn rotary, Scotch Yoke actuators. These actuators are built with several of the latest features that enhance safety and performance. The actuators are manufactured with state-of-the-art machinery and under a robust quality assurance system complying with ISO 9001: 2000. Sizes range from 4500 to 177,000 in-lbs.



Trim Option Part Numbers

Base No.	Suffix codes								
XXXX	X	X	X	X	X	X	X	X	XX
									Options 99 None
									Pipe Size 99 Standard
									Actuation 1 Handle 2 Square Nut 3 Gear Operator 4 Gear Operator w/ Locking Device 9 Bare Stem
									Seals 1 Buna-N 2 Viton 3 LT Buna-N 4 HNBR 5 AFLAS 7 James Walker 8 PC Buna-N 9 EPDM
									Seats 1 Delrin 2 PTFE 3 RTFE 4 Devlon 5 PEEK 6 TFM (Hostafion) 7 Metal to Metal
									End Connection 6 Flanged RF 7 Flanged RTJ 5 Buttweld 8 RF x BW 9 RTJ x BW
									Trim Material (Ball/Stem) 1 CS / CS Standard (CS Trim Non-NACE) 2 316 SS / 316 SS (NACE SS Trim Only)

Body / Adapter Material

- 1 Carbon Steel
- 2 CF8M
- 4 Low Temp Carbon Steel (LCC)
- 6 Coated Carbon Steel

In-Service Applications



How to Avoid Problems

- Ball Valves shall be transported and stored with the ball in the fully open position.
- Flanged ends and welded ends shall be protected.
- End protection shall be removed only when the valve is installed in the line
- Valves shall be handled using the proper lifting lugs.
- Valves shall be stored according to Vintrol storage procedures. Long term storage shall be avoided.
- For welded-end valves, advise Vintrol if there will be a post-weld heat treatment (transition pups may be necessary to avoid damages to seals).
- Flush and clean the line before operating the valve.
- Make sure no line-testing fluid is left in the line and/or the valve body.
- Avoid leaving the valve body filled with salt water to prevent corrosion
- During line-testing, valves shall be left in the partially open position for the minimum possible amount of time
- Standard ball valves shall be used for on-off service only. Throttling service (use of the valve with the ball partially open) can damage the seats
- Make sure to take into consideration the actual service conditions when selecting materials for O-rings and seat inserts.
- Always specify anti-explosive decompression material for valves to be used in high pressure gas service
- Make sure the selected actuator has been properly sized (an oversized actuator can be as dangerous as an undersized one).
- Advise Vintrol of cycle frequency to ensure proper sizing of actuator.
- Do not use the actuator to lift the valve.

Trim Compatibility Guide

This guide is provided to assist Vintrol customers in selection of trim materials for common media applications. It is the responsibility of the user to determine the suitability of materials for a particular service condition. This information is believed to be reliable and is intended to be used by experienced personnel at their discretion. Compatibilities may be temperature dependant. Consult Vintrol for specific recommendations.

	BODY & TRIM			SEATS & SEALS				BODY & TRIM			SEATS & SEALS					
E = EXCELLENT G = GOOD F = FAIR U = UNSATISFACTORY	DUCTILE IRON	CARBON STEEL	CF8M STAINLESS	DEVCON / DELRIN	TEFLON	HNBR	VITON	EPDM	DUCTILE IRON	CARBON STEEL	CF8M STAINLESS	DEVCON / DELRIN	TEFLON	HNBR	VITON	EPDM
ACETONE	E	G	E	E	E	U	U	E	E	E	E	E	E	E	E	U
ACETYLENE (DRY)	E	G	E	E	E	E	E	E	E	E	E	E	E	E	E	U
AIR	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	U
ALCOHOL, ISOPROPYL	G	E	E	G	E	E	E	E	G	G	E	E	E	E	G	E
ALCOHOL, METHYL	G	G	E	G	E	E	U	E	F	G	E	G	E	E	F	E
ALUMINUM CHLORIDE	F	G	E	U	E	E	E	E								
AMINES, PRIMARY	G	G	G	G	E	G	U	E								
AMMONIA, ANHYDROUS	G	G	E	G	E	G	U	E				G	E	F	U	G
AMMONIA, (AQUEOUS)	G	E	E	G	E	G	U	E								
AMMONIA SOLUTIONS	G	G	E	G	E	E	U	E	F	E	E	E	E	E	E	U
AMMONIUM CARBONATE	G	G	G	E	E	G	U	E	E	E	E	E	E	E	E	U
AMMONIUM HYDROXIDE	G	G	G	E	E	G	U	E								
ASPHALT, EMULSION	E	E	E	G	E	E	E	U				G	E	E	E	U
AROMATIC HYDROCARBONS	E	E	E	G	E	U	E	U	E	E	E	E	E	E	E	U
BARIUM CARBONATE	F	G	G	G	E	E	E	E				G	E	E	E	E
BEET SUGAR LIQUORS	G	G	E	E	E	E	E	E				G	E	U	G	G
BENZALDHYDE	F	U	G	G	E	F	U	E	E	E	E	E	E	E	E	U
BENZENE	G	G	G	E	E	U	E	U	E	E	E	G	E	E	U	E
BUNKER "C" FUEL OIL	G	E	E	E	E	E	E	U	G	G	E	E	E	U	E	U
BUTADIENE	G	G	G	E	E	U	E	U								
BUTANE	G	E	E	E	E	E	E	U								
BUTYLENE	G	G	G	E	E	G	E	U								
CARBOLIC ACID	U	U	G	U	E	U	E	G								
CARBON DISULFIDE	F	G	G	G	E	U	E	U								
CARBON DIOXIDE	F	E	E	G	E	E	G	G								
CARBONIC ACID	U	U	G	E	E	E	E	E								
CARBON TETRACHLORIDE	F	F	E	E	E	G	E	G								
CHLOROBENZENE (DRY)	G	G	G	G	E	U	E	U								
CRUDE OIL (SWEET)	G	E	E	E	E	E	E	U								
CRUDE OIL (SOUR)	F	G	E	G	E	E	G	U								
CYCLOHEXANE	G	G	G	E	E	E	E	U								
DIESEL FUELS	E	E	E	E	E	E	E	U								
DIETHYLAMINE	E	E	E	E	E	U	U	E								
DOWTHERM OIL A AND E	G	G	E	E	E	U	E	U								
DRILLING MUD	G	G	E	E	E	E	E	E								
ETHANE	E	E	E	E	E	E	E	U								
ETHYL ALCOHOL	G	G	G	E	E	E	F	E								
ETHYLENE	E	E	E	E	E	E	E	U								
ETHYLENE GLYCOL	G	G	G	G	E	E	E	E								
ETHYLENE OXIDE	G	G	G	G	E	U	U	E								
FISH OILS	G	G	E	G	E	E	E	U								
FORMALDEHYDE	F	U	E	G	E	G	F	G								
FREON	G	G	E	E	E	E	G	U								
FUEL OIL	G	E	E	E	E	E	E	U								
GASOLINE, LEADED	G	E	E	E	E	E	E	U								
GASOLINE, UNLEADED	G	E	E	E	E	E	E	U								
GASOLINE, AVIATION	G	E	E	E	E	E	E	U								
GLUE	E	E	E	E	E	E	E	E								
GLYCERIN (GLYCEROL)	G	G	E	G	E	E	E	E								
GLYCOLS	G	G	G	G	E	E	E	E								
HEPTANE	E	E	E	E	E	E	E	U								
HEXANE	E	E	E	E	E	E	E	U								
HYDRAULIC OILS	E	E	E	E	E	E	E	E								
HYDROGEN SULFIDE (DRY)	G	G	E	E	E	E	G	E								
HYDROGEN SULFIDE (WET)	F	G	E	G	E	E	F	E								
ISO-OCTANE	G	E	E	E	E	E	E	U								
ISOPROPYL ETHER	G	E	E	G	E	F	U	G								
JET FUEL	F	E	E	E	E	E	E	U								
KEROSENE	E	E	E	E	E	E	E	U								
LIQUIFIED PET. GAS	G	E	E	E	E	E	E	U								
LUBRICATING OIL	E	E	E	E	E	E	E	U								
MAGNESIUM HYDROXIDE	G	G	E	G	E	E	E	E								
MERCAPTAN	G	G	E	G	E	U	G	G								
METHANE	E	E	E	E	E	E	E	U								
METHYL ETHYL KETONE	E	G	E	G	E	U	U	E								
MINERAL OIL	G	G	E	E	E	E	E	U								
NAPHTHA	G	E	E	E	E	E	E	U								
NAPHTHALENE	G	E	E	E	E	F	E	U								
NATURAL GAS	G	G	E	E	E	E	E	U								
NITRIC ACID	F	U	G	U	E	U	E	G								
NITROGEN	E	E	E	E	E	E	E	E								
OIL WATER MIXTURES	E	E	E	E	E	E	E	U								
OZONE (DRY)	G	F	G	U	E	E	E	E								
PAINTS AND SOLVENTS	E	E	E	F	E	G	E	U								
PARAFFIN	E	E	E	E	E	E	E	U								
PENTANE	G	G	G	E	E	E	E	U								
PHENOL	U	G	E	U	E	U	E	E								
PRODUCER GAS	G	G	G	E	E	E	E	U								
PROPANE	G	E	E	E	E	E	E	U								
PROPYLENE GLYCOL	E	E	E	G	E	E	E	E								
SEA WATER	U	U	E	E	E	E	E	E								
SODIUM ACETATE	F	G	G	G	E	G	U	E								
SODIUM HYDROXIDE	F	G	E	E	E	E	E	E								
STEAM	G	E	E	F	E	E	U	E								
STODDARD SOLVENT	G	G	G	G	E	E	E	U								
SULPHUR DIOXIDE	F	E	G	F	E	U	U	E								
SULPHURIC ACID	U	U	G	U	E	U	E	F								
TALL OIL	F	G	G	G	E	E	E	U								
TOLUENE / TOLUOL	E	E	E	E	E	U	E	U								
TERPENTINE	F	G	E	G	E	E	E	U								
WATER, FRESH	F	F	E	E	E	E	E	E								
WAX EMULSIONS	G	E	E	E	E	E	E	U								
WAXES	E	E	E	E	E	E	E	U								
XYLENE	G	E	E	G	E	E	E	U								
ZINC CHLORIDE	F	U	G	U	E	E	G	U								



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