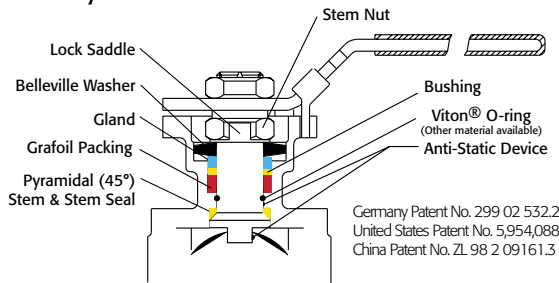


**API 607 - 6th Edition
CERTIFIED**



Triac FD9 Series Flanged Ball Valves feature a direct mount automation pad. The high quality investment castings feature a fully machined bore. The superior live-loaded packing system is accomplished with Belleville washers, "V" ring packing and a unique primary pyramidal stem seal. This advanced sealing system provides protection against stem leaks experienced by ordinary ball valves.



VALVE SIZE	VALVE Cv
1/2"	15
3/4"	45
1"	85
1-1/2"	275
2"	450
2-1/2"	700
3"	1,100
4"	2,200
6"	5,150
8"	10,000

RTFE seats are standard, but various options are available for seat materials. The 50/50 STFE seat option is excellent for services that call for higher temperatures and more difficult applications, including steam. Call us for details.

TRIAC

Series FD9

FIRESAFE

Direct Mount Split Body Flanged Ball Valve

Available in 316SST, Sizes 1/2"-6"

Available in WCB, Sizes 1/2"-12"
(Call factory for 10" & 12")

ANSI Class 150

Full Port Design

Superior Live Loaded Packing
System

ISO 5211 Actuator Mounting Pad

Blowout Proof Stem w/ Dual
Anti-Static Devices

RTFE Seats Standard

Pyramidal Stem Seal Design

Monel Ball & Stem Available

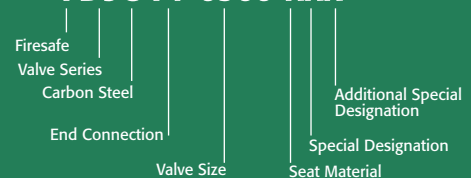
Lockable Manual Handle

STANDARDS

DESIGN	ANSI/ASME B16.34
FACE TO FACE	ANSI/ASME B16.10
FLANGE DIMENSIONS	ANSI/ASME B16.5
PIPELINE VALVES	API 6D
PRESSURE TESTING	API 598
FIRE TESTING	1/2"-4" (SST & WCB), 6"-12" (WCB only) - API 607-6th Edition
	6" (SST) - API-607-4th Edition
FUGITIVE EMISSIONS	ISO 15848-1
	1/2" - 1" ISO FE BH - CO3 - SSA 2 - t200C - CL150 - ISO 15848-1
	1 1/2" - 2 1/2" ISO FE BH - CO3 - SSA 1 - t200C - CL150 - ISO 15848-1
	3" - 6" - ISO FE BH - CO3 - SSA 0 - t200C - CL150 - ISO 15848-1
MOUNTING	ISO 5211
MARKING SYSTEM FOR VALVES	MSS SP-25
SULFIDE STRESS PROTECTION	NACE MR0175
SAFETY INTEGRITY	IEC 61508:2010; SIL 3
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

HOW TO ORDER MANUAL VALVES

SAMPLE PART #
FD9C-F1-0300-XXX



See part number matrix for itemized options

SERIES FD9 150# Direct Mount Split Body Flanged Ball Valve

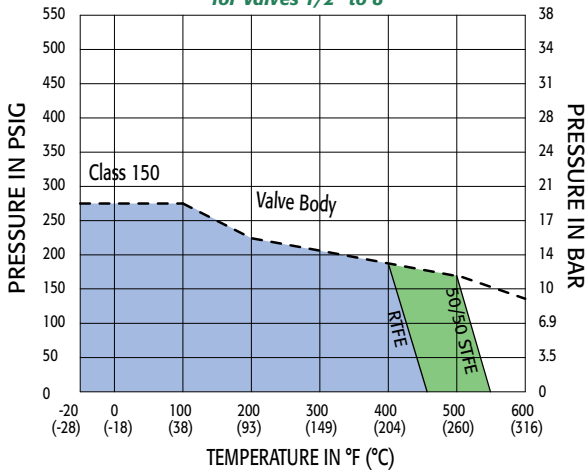
Firesafe

Series FD9

High Performance, Full Port Split Body Ball Valve Series FD9 (ANSI Class 150)

API 607 - 6th Edition
CERTIFIED

Pressure vs. Temperature Chart for Valves 1/2" to 8"



NOTE: Dotted line shows the rating for valve body. Solid line shows the rating for valve seat. Both ratings need to be considered when determining the limitation of the valve for specific application. Consult factory for other seat materials.

Break Away Torque for RTFE Seats

SIZE	IN.-LBS.
1/2"	110
3/4"	140
1"	175
1-1/2"	400
2"	450
2-1/2"	620
3"	1,000
4"	1,600
6"	2,700
8"	7,256

NOTE: For other seat material, consult factory

MATERIALS LIST

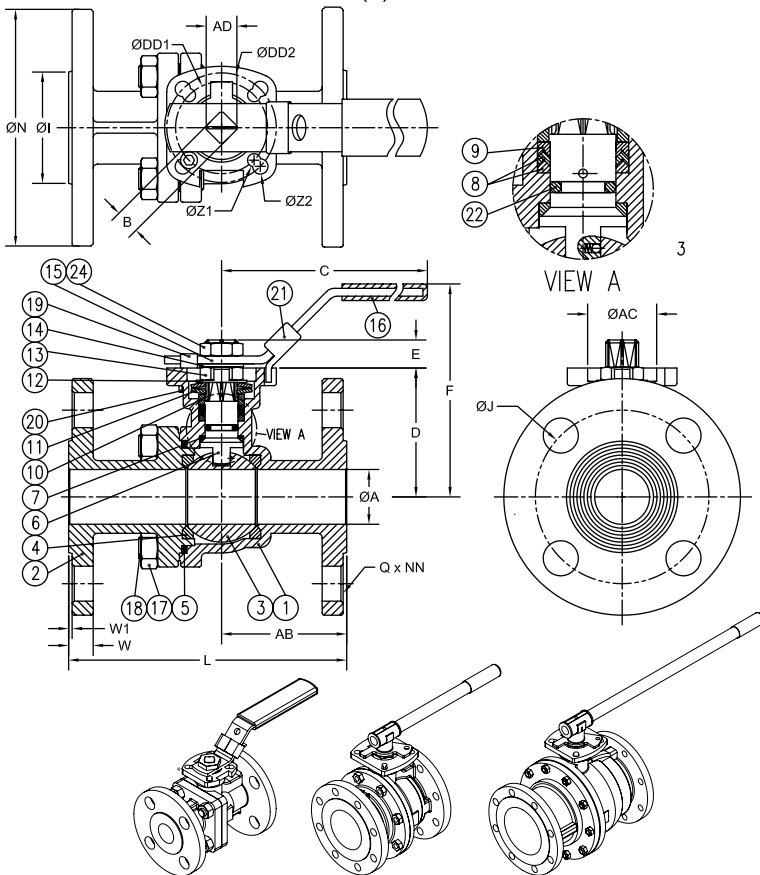
NO.	PART NAME	QTY	STAINLESS STEEL	CARBON STEEL
1	BODY	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB
2	END CAP	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB
3	BALL	1	ASTM A351 GRADE CF8M	ASTM A351 GRADE CF8M
4	SEAT	2	RTFE	RTFE
5	JOINT GASKET	1	GRAFOIL	GRAFOIL
6	STEM	1	ASTM A276 SS316	ASTM A276 SS316
7	STEM SEAL	1	RTFE	RTFE
8	GLAND PACKING	1	GRAFOIL	GRAFOIL
9	GLAND WASHER	1	RTFE	RTFE
10	GLAND BUSHING	1	AISI 304	AISI 304
11	BELLEVILLE WASHER	2	AISI 301	AISI 301
12	LOCK SADDLE	1	AISI 304	AISI 304
13	STEM NUT	1	AISI 304	AISI 304
14	STEM WASHER	1	AISI 304	AISI 304
15	HANDLE	1	AISI 304	AISI 304
16	HANDLE SLEEVE	1	VINYL	VINYL
17	BODY NUT	*	ASTM A194 GRADE 8M	ASTM A194 GRADE 2HM
18	BODY STUD	*	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M
19	STOP BOLT	1	AISI 304	AISI 304
20	STOP BOLT NUT	1	AISI 304	AISI 304
21	HANDLE LOCK	1	AISI 304	AISI 304
22	STEM O-RING	1	VITON®	VITON®
23	ANTI-STATIC DEVICE	2	AISI 316	AISI 316
24	HANDLE NUT	1	AISI 304	AISI 304

* 1/2" THRU 2" QTY = 4 PCS

* 2-1/2" THRU 4" QTY = 8 PCS

* 6" QTY = 10 PCS

* 8" QTY = 12 PCS



BENT HANDLE SIZES 1/2" - 2-1/2" PIPE HANDLE SIZES 3" - 4" PIPE HANDLE SIZE 6"

NOTE: A-T CONTROLS RECOMMENDS A GEAR FOR 6" VALVES AND LARGER

DIMENSIONS (IN)

SIZE	A	B	C	D	E	F	I	J	L	N	Q	W	WI	Z1	Z2	AB	AC	AD	DD1	DD2	NN	ISO 5211	(LBS)
1/2"	0.59	0.433	6.50	1.84	0.39	3.30	1.38	2.38	4.26	3.50	0.63	0.44	0.06	0.26	0.28	1.84	1.26	0.55	1.654	1.969	4	F04/F05	4.0
3/4"	0.79	0.433	6.50	2.02	0.39	3.45	1.69	2.74	4.62	3.88	0.63	0.44	0.06	0.26	0.28	2.18	1.26	0.55	1.654	1.969	4	F04/F05	5.0
1"	0.98	0.433	6.50	2.31	0.41	3.81	2.00	3.12	5.00	4.25	0.63	0.44	0.06	0.26	0.28	2.21	1.26	0.55	1.654	1.969	4	F04/F05	7.0
1-1/2"	1.50	0.748	10.32	3.51	0.75	5.60	2.88	3.88	6.50	5.00	0.63	0.56	0.06	0.39	0.47	2.83	2.09	0.94	2.756	4.016	4	F07/F10	14.5
2"	1.97	0.748	10.32	3.80	0.75	5.78	3.62	4.75	7.02	6.00	0.75	0.63	0.06	0.39	0.47	3.38	2.09	0.94	2.756	4.016	4	F07/F10	20.5
2-1/2"	2.56	0.748	10.32	4.57	0.75	6.75	4.12	5.50	7.48	7.00	0.75	0.69	0.06	0.39	0.47	3.06	2.09	0.94	2.756	4.016	4	F07/F10	31.0
3"	3.15	0.866	14.37	5.22	0.91	8.05	5.00	6.00	8.01	7.50	0.75	0.75	0.06	0.47	0.55	4.01	2.55	1.18	4.016	4.921	4	F10/F12	41.0
4"	3.94	0.866	14.37	6.18	0.91	9.00	6.19	7.50	9.00	9.00	0.75	0.94	0.06	0.47	0.55	4.07	2.55	1.18	4.016	4.921	8	F10/F12	67.5
6"	5.91	1.063	29.53	8.28	1.12	12.50	8.50	9.50	15.50	11.0	0.87	1.00	0.06	0.55	0.71	7.00	2.97	1.41	4.921	5.511	8	F12/F14	145.0
8"	7.91	1.417	37.60	10.43	1.58	12.83	10.62	11.75	18.00	13.5	0.88	1.12	0.06	0.71	0.87	9.00	NA	1.81	5.51	6.50	8	F14/F16	208.0

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Pneumatic Double Acting

Automated Ball Valve Package

Series FD9
ANSI Class 150
Flanged Ball Valve
Direct Mount

Firesafe

Available in 316SST, Sizes 1/2"-6"

Available in WCB, Sizes 1/2"-12"
(Call factory for 10" & 12")

ANSI Class 150
Full Port Design

Superior Live Loaded
Packing System

Blowout Proof Stem w/ Dual
Anti-Static Devices

RTFE Seats Standard

Pyramidal Stem Seal Design

Monel Ball & Stem Available

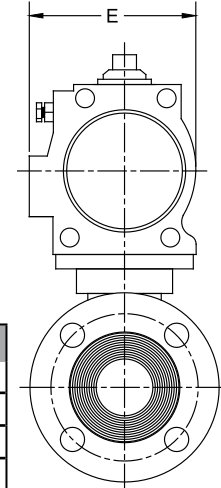
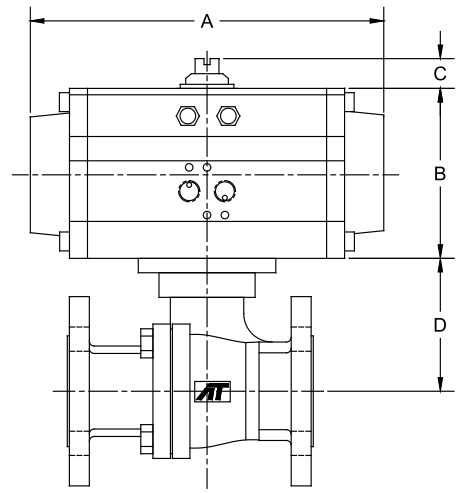
STANDARDS

DESIGN	ANSI/ASME B16.34
FACE TO FACE	ANSI/ASME B16.10
FLANGE DIMENSIONS	ANSI/ASME B16.5
PIPELINE VALVES	API 6D
PRESSURE TESTING	API 598
FIRE TESTING	
1/2"-4" (SST & WCB), 6"-12" (WCB only) - API 607-6th Edition	
6" (SST) - API 607-4th Edition	
FUGITIVE EMISSIONS	ISO 15848-1
1/2" - 1" ISO FE BH - CO3 - SSA 2 - t200C - CL150 - ISO 15848-1	
1 1/2" - 2 1/2" ISO FE BH - CO3 - SSA 1 - t200C - CL150 - ISO 15848-1	
3" - 6" ISO FE BH - CO3 - SSA 0 - t200C - CL150 - ISO 15848-1	
MOUNTING	ISO 5211
MARKING SYSTEM FOR VALVES	MSS SP-25
SULFIDE STRESS PROTECTION	NACE MR0175
SAFETY INTEGRITY	IEC 61508:2010; SIL 3
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

**API 607 - 6th Edition
CERTIFIED**



**150# Flanged
Firesafe Tested to API-607
Direct Mount**



DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	5.98	2.76	0.79	1.84	2.58	15
3/4"	5.98	2.76	0.79	2.02	2.58	45
1"	7.95	3.43	0.79	2.31	3.29	85
1-1/2"	9.29	4.49	0.79	3.51	4.41	275
2"	9.29	4.49	0.79	3.80	4.41	450
2-1/2"	10.87	4.88	0.79	4.57	4.69	700
3"	13.90	6.18	0.79	5.22	5.91	1100
4"	13.90	6.18	0.79	6.18	5.91	2200
6"	20.95	8.31	1.18	8.28	6.89	5150

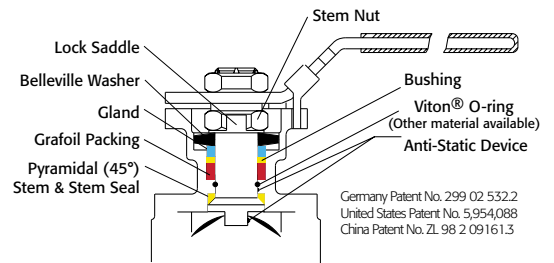
DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

SERIES FD9 150# Flanged Direct Mount

Firesafe

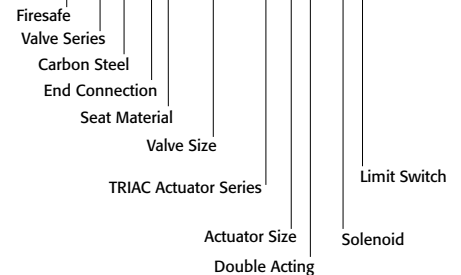
SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	FD9-F1-050/TR1D-XX
3/4"	FD9-F1-075/TR1D-XX
1"	FD9-F1-100/2R2D-XX
1-1/2"	FD9-F1-150/2R3D-XX
2"	FD9-F1-200/2R3D-XX
2-1/2"	FD9-F1-250/2R4D-XX
3"	FD9-F1-300/2R6D-XX
4"	FD9-F1-400/2R6D-XX
6"	FD9-F1-600/2R8D-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	FD9-F1-050/TR1D-XX
3/4"	FD9-F1-075/2R2D-XX
1"	FD9-F1-100/2R2D-XX
1-1/2"	FD9-F1-150/2R3D-XX
2"	FD9-F1-200/2R3D-XX
2-1/2"	FD9-F1-250/2R5D-XX
3"	FD9-F1-300/2R6D-XX
4"	FD9-F1-400/2R6D-XX
6"	FD9-F1-600/2R9D-XX



Germany Patent No. 299 02 532.2
United States Patent No. 5,954,088
China Patent No. ZL 98 2 09161.3

SAMPLE PART #
FD9C-F1-150/2R3D-XX



See valve part number matrix for complete part number and options.

OPTIONS

DESCRIPTION	PART NO. SUFFIX	DESCRIPTION	PART NO. SUFFIX
NEMA 4 Solenoid	(A)	NEMA 4 Limit Switch (2) spdt	(A)
NEMA 7 Solenoid	(B)	NEMA 7 Limit Switch (2) spdt	(B)
Intrinsically Safe Solenoid	(C)	Intrinsically Safe Limit Switch	(C)

Other options available - call for details
Actuators are sized based on clean/clear fluid.



Pneumatic Spring Return

Automated Ball Valve Package

Series FD9
ANSI Class 150
Flanged Ball Valve
Direct Mount

Firesafe

Available in 316SST, Sizes 1/2"-6"

Available in WCB, Sizes 1/2"-12"
(Call factory for 10" & 12")

ANSI Class 150

Full Port Design

Superior Live Loaded
Packing System

Blowout Proof Stem w/ Dual
Anti-Static Devices

RTFE Seats Standard

Pyramidal Stem Seal Design

Monel Ball & Stem Available

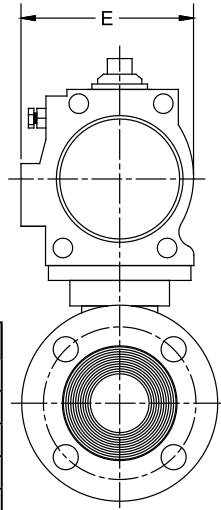
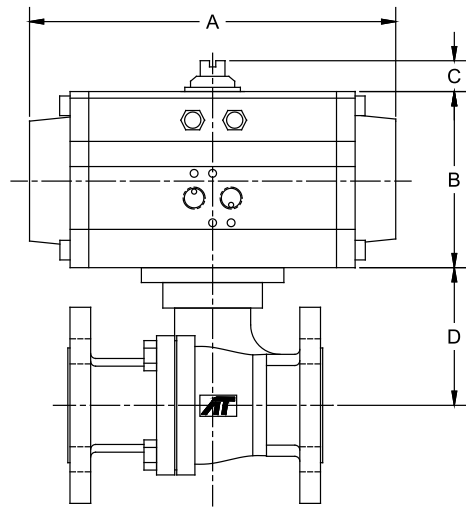
STANDARDS

DESIGN	ANSI/ASME B16.34
FACE TO FACE	ANSI/ASME B16.10
FLANGE DIMENSIONS	ANSI/ASME B16.5
PIPELINE VALVES	API 6D
PRESSURE TESTING	API 598
FIRE TESTING	
1/2"-4" (SST & WCB), 6"-12" (WCB only) - API 607-6th Edition	
6" (SST) - API-607-4th Edition	
FUGITIVE EMISSIONS	ISO 15848-1
1/2" - 1" ISO FE BH - CO3 - SSA 2 - t200C - CL150 - ISO 15848-1	
1 1/2" - 2 1/2" ISO FE BH - CO3 - SSA 1 - t200C - CL150 - ISO 15848-1	
3" - 6" ISO FE BH - CO3 - SSA 0 - t200C - CL150 - ISO 15848-1	
MOUNTING	ISO 5211
MARKING SYSTEM FOR VALVES	MSS SP-25
SULFIDE STRESS PROTECTION	NACE MR0175
SAFETY INTEGRITY	IEC 61508:2010; SIL 3
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

**API 607 - 6th Edition
CERTIFIED**



**150# Flanged
Firesafe Tested to API-607
Direct Mount**



DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	7.95	3.43	0.79	1.84	3.29	15
3/4"	9.29	4.49	0.79	2.02	4.49	45
1"	9.29	4.49	0.79	2.31	4.49	85
1-1/2"	10.87	4.88	0.79	3.51	4.69	275
2"	10.87	4.88	0.79	3.80	4.69	450
2-1/2"	13.90	6.18	0.79	4.57	5.91	700
3"	13.90	6.18	0.79	5.22	5.91	1100
4"	15.16	6.93	1.18	6.18	6.50	2200
6"	24.37	10.12	1.18	8.28	8.31	5150

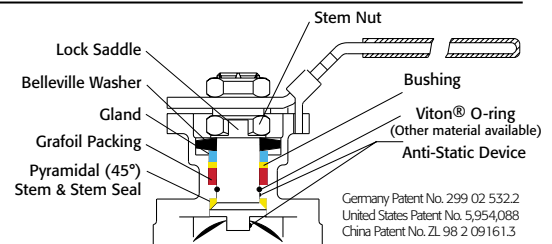
DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

SERIES FD9 150# Flanged Direct Mount

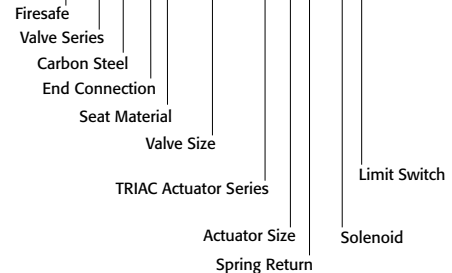
Firesafe

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	FD9-F1-050/2R2S-XX
3/4"	FD9-F1-075/2R3S-XX
1"	FD9-F1-100/2R3S-XX
1-1/2"	FD9-F1-150/2R4S-XX
2"	FD9-F1-200/2R4S-XX
2-1/2"	FD9-F1-250/2R6S-XX
3"	FD9-F1-300/2R6S-XX
4"	FD9-F1-400/2R7S-XX
6"	FD9-F1-600/2R0S-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	FD9-F1-050/2R3S-XX
3/4"	FD9-F1-075/2R3S-XX
1"	FD9-F1-100/2R3S-XX
1-1/2"	FD9-F1-150/2R4S-XX
2"	FD9-F1-200/2R5S-XX
2-1/2"	FD9-F1-250/2R6S-XX
3"	FD9-F1-300/2R6S-XX
4"	FD9-F1-400/2R7S-XX
6"	FD9-F1-600/2R0S-XX



SAMPLE PART #
FD9C-F1-150/2R3S-XX



See valve part number matrix for complete part number and options.

OPTIONS

DESCRIPTION	PART NO. SUFFIX	DESCRIPTION	PART NO. SUFFIX
NEMA 4 Solenoid	(A)	NEMA 4 Limit Switch (2) spdt	(A)
NEMA 7 Solenoid	(B)	NEMA 7 Limit Switch (2) spdt	(B)
Intrinsically Safe Solenoid	(C)	Intrinsically Safe Limit Switch	(C)

Other options available - call for details
Actuators are sized based on clean/clear fluid.

FD9SR-20190121

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Electric

Automated Ball Valve Package

Series FD9
ANSI Class 150
Flanged Ball Valve
Direct Mount

Firesafe

Available in 316SST, Sizes 1/2"-6"
Available in WCB, Sizes 1/2"-12"
(Call factory for 10" & 12")

ANSI Class 150
Full Port Design
Superior Live Loaded
Packing System
Blowout Proof Stem w/ Dual
Anti-Static Devices
RTFE Seats Standard
Pyramidal Stem Seal Design
Monel Ball & Stem Available

STANDARDS

DESIGN	ANSI/ASME B16.34
FACE TO FACE	ANSI/ASME B16.10
FLANGE DIMENSIONS	ANSI/ASME B16.5
PIPELINE VALVES	API 6D
PRESSURE TESTING	API 598
FIRE TESTING	
1/2"-4" (SST & WCB), 6"-12" (WCB only) - API 607-6th Edition	
6" (SST) - API-607-4th Edition	
FUGITIVE EMISSIONS	ISO 15848-1
1/2" - 1" ISO FE BH - CO3 - SSA 2 - t200C - CL150 - ISO 15848-1	
1 1/2" - 2 1/2" ISO FE BH - CO3 - SSA 1 - t200C - CL150 - ISO 15848-1	
3" - 6" - ISO FE BH - CO3 - SSA 0 - t200C - CL150 - ISO 15848-1	
MOUNTING	ISO 5211
MARKING SYSTEM FOR VALVES	MSS SP-25
SULFIDE STRESS PROTECTION	NACE MR0175
SAFETY INTEGRITY	IEC 61508:2010; SIL 3
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

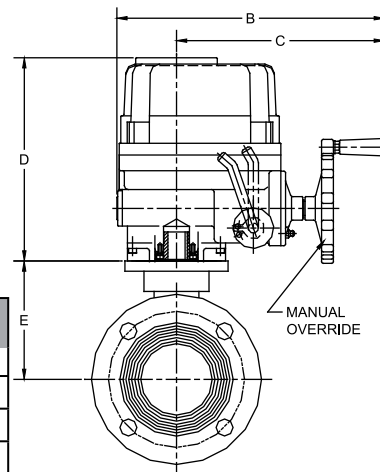
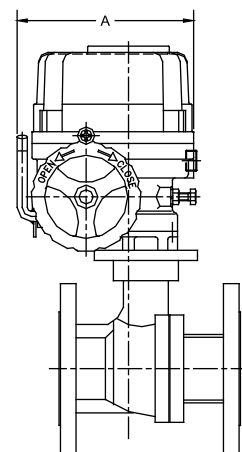
API 607 - 6th Edition
CERTIFIED



150# Flanged
Firesafe Tested to API-607
Direct Mount

DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE CV
1/2"	4.98	4.08	N/A	5.24	1.84	15
3/4"	4.98	4.08	N/A	5.24	2.02	45
1"	4.98	4.08	N/A	5.24	2.31	85
1-1/2"	4.98	4.08	N/A	5.24	3.51	275
2"	4.98	4.08	N/A	5.24	3.80	450
2-1/2"	9.02	13.31	8.19	10.55	4.57	700
3"	9.02	13.31	8.19	10.55	5.22	1,100
4"	10.20	14.49	10.43	11.42	6.18	2,200
6"	10.20	14.49	11.26	11.97	8.28	5,150



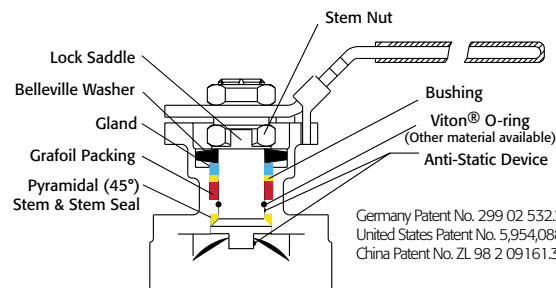
SERIES FD9

150# Flanged Direct Mount

Firesafe

ON-OFF	
SIZE	MODEL
1/2"	FD9-F1-050/WEA1-XX
3/4"	FD9-F1-075/WEA1-XX
1"	FD9-F1-100/WEA1-XX
1-1/2"	FD9-F1-150/WEA1-XX
2"	FD9-F1-200/WEA1-XX
2-1/2"	FD9-F1-250/WEC1-XX
3"	FD9-F1-300/WEC1-XX
4"	FD9-F1-400/WEE1-XX
6"	FD9-F1-600/WEF1-XX

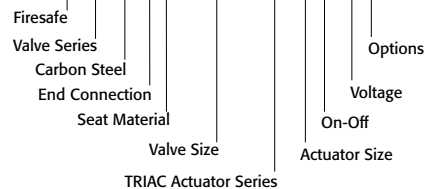
MODULATING	
SIZE	MODEL
1/2"	FD9-F1-050/WEA2-XX
3/4"	FD9-F1-075/WEA2-XX
1"	FD9-F1-100/WEA2-XX
1-1/2"	FD9-F1-150/WEA2-XX
2"	FD9-F1-200/WEA2-XX
2-1/2"	FD9-F1-250/WEC2-XX
3"	FD9-F1-300/WEC2-XX
4"	FD9-F1-400/WEE2-XX
6"	FD9-F1-600/WEF2-XX



Germany Patent No. 299 02 532.2
United States Patent No. 5,954,088
China Patent No. ZL 98 2 09161.3

SAMPLE PART #

FD9C-F1-150/WEA1-XX



OPTIONS

DESCRIPTION
24 VAC/24 VDC/220VAC
Feedback potentiometer

NOTE: Heater and thermostat standard
(2) auxiliary switches standard

Other options available - call for details
Actuators are sized based on clean/clear fluid.

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See valve part number matrix for complete part number and options.

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