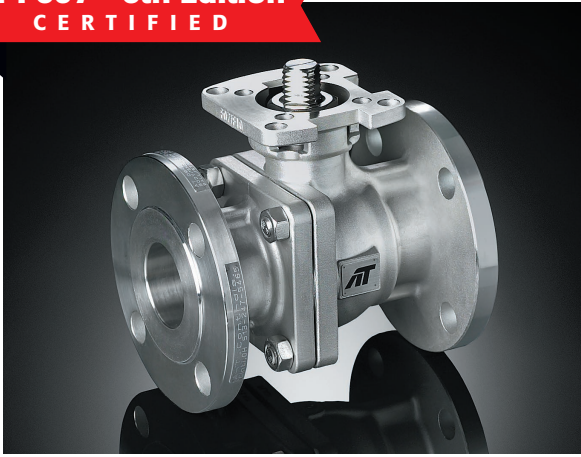
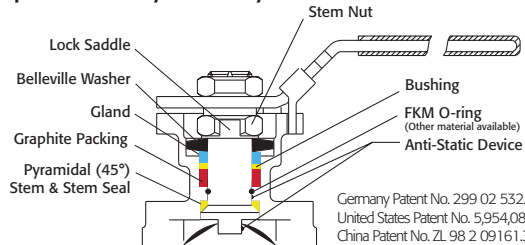


**API 607 - 6th Edition  
CERTIFIED**

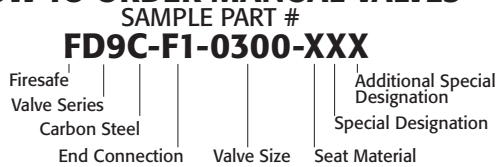


Triac FD9 Series Flanged Ball Valves feature a direct mount automation pad. The high quality investment castings feature a fully machined bore. The superior live-loaded packing system is accomplished with Belleville washers, "V" ring packing and a unique primary pyramidal stem seal. This advanced sealing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



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.

**HOW TO ORDER MANUAL VALVES**



See part number matrix for itemized options

**Easy to Automate!**

See automated data sheets for pre-sized assemblies



Pneumatic



Electric

FD9F1-2R-20221227  
Copyright 2013 A-T Controls, Inc.

**A-T Controls, Inc.**

**Series FD9**

**FIRESAFE**

**Direct Mount  
Split Body  
Flanged Ball Valve**

- Sizes 1/2"-12"
- ASME 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	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
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
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

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- Page 2,3 - Materials & Dimensions
- Page 4 - Technical Data
- Page 5 - Double Acting
- Page 6 - Spring Return
- Page 7 - Electric
- Page 8 - How to Order

**A-T Controls, Inc.**

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Cincinnati, Ohio 45246  
www.atcontrols.com

PHONE (513) 247-5465  
FAX (513) 247-5462  
sales@atcontrols.com

**SERIES FD9 150# Direct Mount Split Body Flanged Ball Valve**

**Firesafe**

# Series FD9

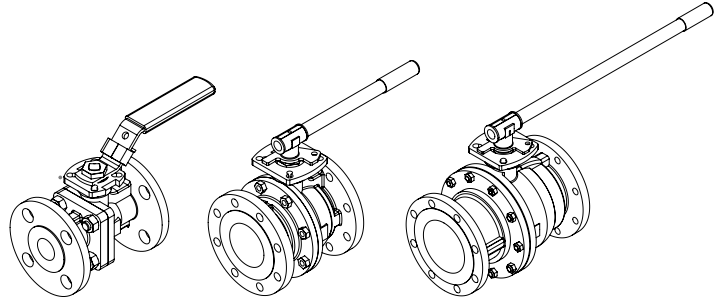
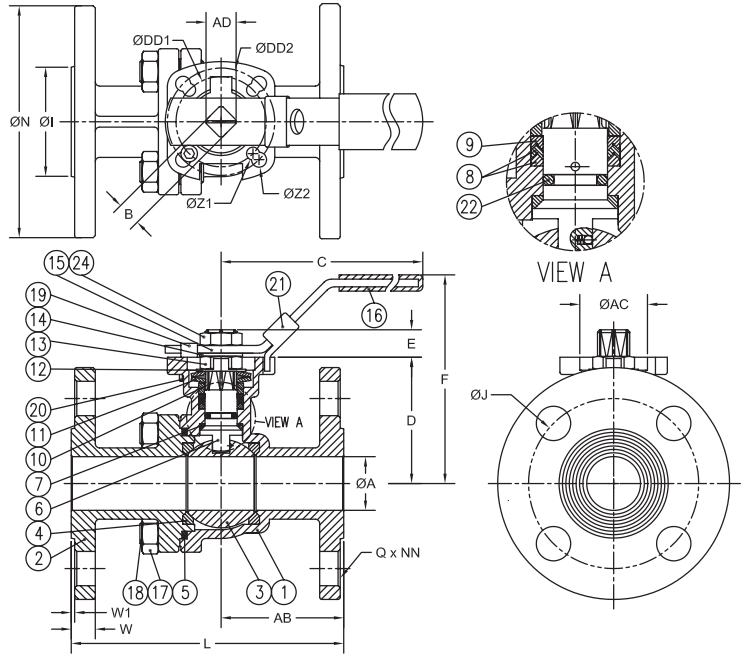
## High Performance, Full Port Split Body Ball Valve Series FD9 (ASME Class 150)

API 607 - 6th Edition  
CERTIFIED

1/2" to 6"

### MATERIAL LIST

NO.	PART NAME	QTY	STAINLESS STEEL	CARBON STEEL	REPAIR KIT
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	GRAPHITE	GRAPHITE	✓
6	STEM	1	ASTM A276 SS316	ASTM A276 SS316	
7	STEM SEAL	1	TFM™-1600	TFM™-1600	✓
8	GLAND PACKING	1	GRAPHITE	GRAPHITE	✓
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	FKM	FKM	✓
23	ANTI-STATIC DEVICE	2	AISI 316	AISI 316	
24	HANDLE NUT	1	AISI 304	AISI 304	



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

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

\*6" QTY = 10 PCS

### DIMENSIONS (IN)

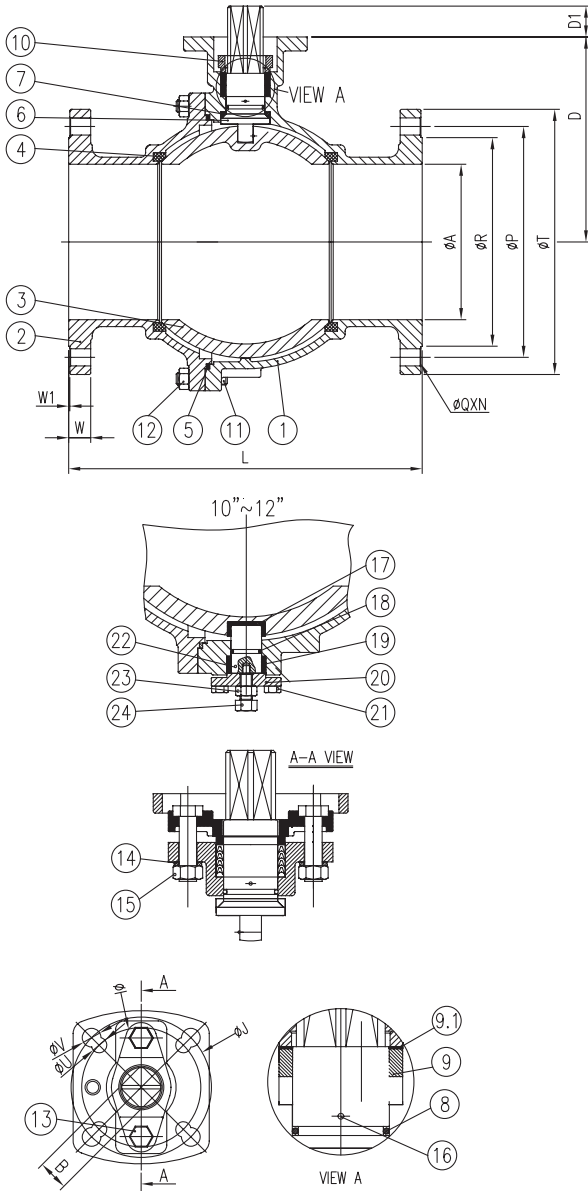
SIZE	A	B	C	D	E	F	I	J	L	N	Q	W	WI	Z1	Z2	AB	AC	AD	DD1	DD2	NN	ISO 5211	(LBS)
1/2"	0.59	0.433	6.50	1.84	0.39	3.30	1.38	2.38	4.26	3.50	0.63	0.44	0.06	0.26	0.28	1.84	1.26	0.55	1.654	1.969	4	F04/F05	4.0
3/4"	0.79	0.433	6.50	2.02	0.39	3.45	1.69	2.74	4.62	3.88	0.63	0.44	0.06	0.26	0.28	2.18	1.26	0.55	1.654	1.969	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

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

# Series FD9

API 607 - 6th Edition  
CERTIFIED

8" to 12"



## MATERIAL 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	PTFE	PTFE
6	STEM	1	ASTM A276 SS316	ASTM A276 SS316
7	STEM SEAL	1	RTFE	RTFE
8	STEM O-RING	1	FKM	FKM
9	STEM PACKING	1 SET	GRAPHITE	GRAPHITE
9.1	GLAND WASHER	1	RTFE	RTFE
10	GLAND	1	ASTM A193 GRADE CF8	ASTM A193 GRADE CF8
11	BODY BOLT	*	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M
12	BODY BOLT NUT	*	ASTM A194 GRADE 8M	ASTM A194 GRADE 2HM
13	GLAND BOLT	2	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M
14	BOLT WASHER	2	AISI 304	AISI 304
15	BOLT NUT	2	ASTM A194 GRADE 8M	ASTM A194 GRADE 2HM
16	ANTI-STATIC DEVICE	2	AISI 316	AISI 316
17	TRUNNION BEARING	1	50/50 STFE	50/50 STFE
18	TRUNNION O-RING	1	FKM	FKM
19	STEM PACKING	1 SET	RTFE	RTFE
20	SUPPORT GLAND	1	AISI 304	AISI 304
21	TRUNNION GLAND BOLT	4	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M
22	SUPPORT GLAND PIN	1	AISI 316	AISI 316
23	SET NUT	1	ASTM A194 GRADE 8M	ASTM A194 GRADE 2HM
24	TUNING SCREW	1	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M

\* FOR 8"=12 PCS OF BOLTS AND BOLT NUTS  
 \* FOR 10"=16 PCS OF BOLTS AND BOLT NUTS  
 \* FOR 12"=24 PCS OF BOLTS AND BOLT NUTS

MATERIALS LISTED ABOVE ARE FOR THE STANDARD CONFIGURATION, OTHER MATERIALS ARE AVAILABLE UPON REQUEST

## DIMENSIONS (IN)

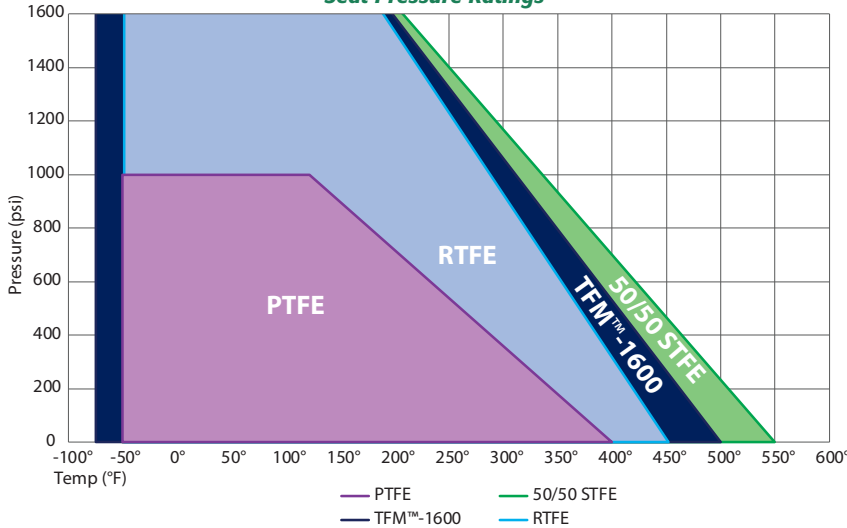
SIZE	Ø A	B	D	D1	ØI	ØJ	L	N	ØP	ØQ	ØR	ØT	W	W1	ØU	ØV	ISO 5211	(LBS)
8"	7.91	1.417	10.43	1.57	5.512	6.496	18.00	8	11.75	0.87	10.62	13.50	1.12	0.06	0.71	0.87	F14/F16	208
10"	9.92	1.811	11.81	1.77	—	6.496	21.00	12	14.25	1.00	12.76	16.00	1.19	0.06	—	0.87	F16	447
12"	11.93	1.811	13.39	1.77	—	6.496	24.00	12	17.00	1.00	15.00	19.00	1.25	0.06	—	0.87	F16	750

# Series FD9

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

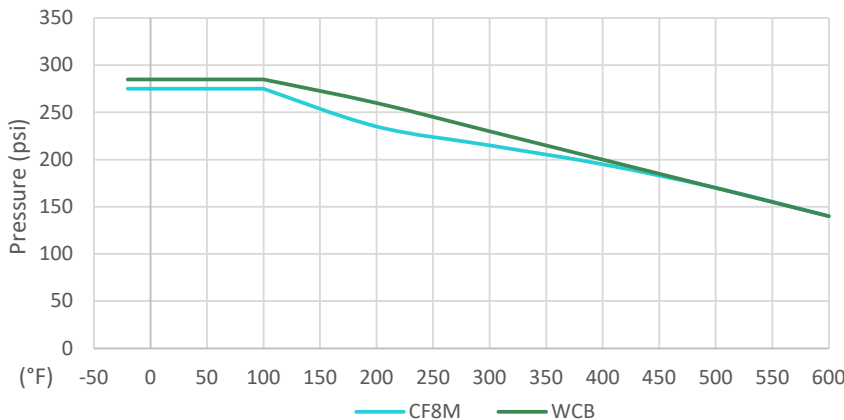
API 607 - 6th Edition  
CERTIFIED

Pressure vs. Temperature - Series D9/FD9-F1  
Seat Pressure Ratings



Temp	Pressure - Seat Material			
	RTFE	STFE	PTFE	TFM™-1600
-75°				2000
-50°	2000	2000	1000	2000
100°	2000	2000	1000	2000
122°	2000	2000	1000	2000
150°	1829	1869	899	1852
200°	1524	1636	719	1587
250°	1220	1402	540	1323
300°	915	1168	360	1058
350°	610	935	180	794
400°	305	701	0	529
450°	0	467		265
500°		234		0
550°		0		

Pressure vs. Temperature - Series D9/FD9-F1



Temp (°F)	WCB psi	CF8M psi
-20°	285	275
50°	285	275
75°	285	275
90°	285	275
99°	285	275
100°	285	275
200°	260	235
300°	230	215
400°	200	195
500°	170	170
600°	140	140

### Component Temperature Ratings

COMPONENT	MATERIAL	TEMPERATURE
Stem Packing	Graphite	-100°F to 1100°F
Stem Seal	TFM™-1600	-75°F to 500°F
Gaskets	Graphite	-100°F to 1100°F
Seats (Other Materials Available)	PTFE	-50°F to 400°F
	RTFE (standard)	-50°F to 450°F
	TFM™-1600	-75°F to 500°F
	50/50 STFE	-50°F to 550°F
O-Rings	FKM (standard)	-20°F to 450°F
	Markez® Z1028	5°F to 608°F
	Kalrez® 4079	30°F to 600°F
	Chemraz® 505	-22°F to 446°F
	Kalrez® 6375	-4°F to 527°F
	Perlast® G75M	5°F to 500°F
	Chemraz® 564	-40°F to 445°F
	Low Temp Buna	-65°F to 275°F
	EPDM	-70°F to 250°F
	Silicone	-60°F to 400°F

NOTE: At temperature, valves are limited by either the valve body/end cap pressure ratings, seat pressure ratings, or packing/stem seal/gaskets; whichever is lower.

### Break Away Torque for RTFE Seats

SIZE	IN-LBS.
1/2"	45
3/4"	73
1"	91
1-1/2"	230
2"	297
2-1/2"	535
3"	768
4"	1,250
6"	3,000
8"	6,500
10"	13,000*
12"	26,000*

\*NOTE: 10" & 12" torques are at 100 psig with clean, lubricating fluid. Please consult factory for torques at full differential pressure.

SIZE	Cv
1/2"	15
3/4"	45
1"	85
1-1/2"	275
2"	460
2-1/2"	700
3"	1,100
4"	2,200
6"	5,150
8"	10,000
10"	16,400
12"	23,800

Published torques are based on full differential pressure with clean water. Consult the Application Sizing Guide for assistance with sizing actuators.

# Pneumatic Double Acting Automated Ball Valve Package

Series FD9  
ASME 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")

ASME 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

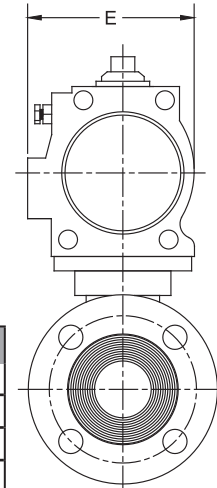
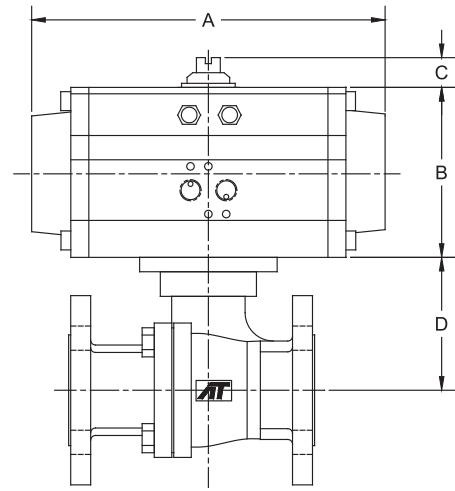
### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
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
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

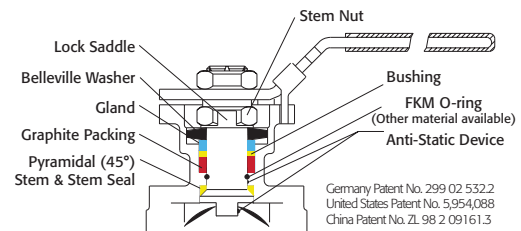
DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

**SERIES FD9 150# Flanged Direct Mount**

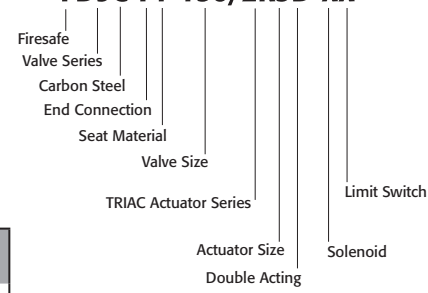
**Firesafe**

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



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  
ASME 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")

ASME 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

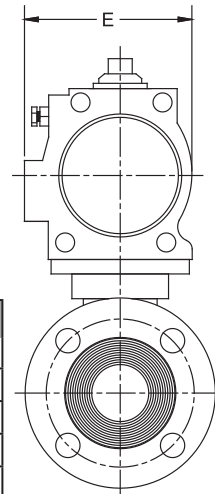
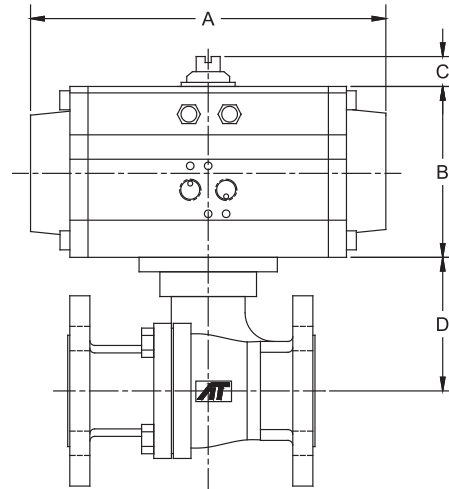
### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
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
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

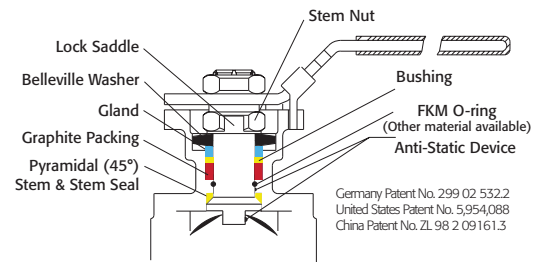
DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

SERIES FD9 150# Flanged Direct Mount

Firesafe

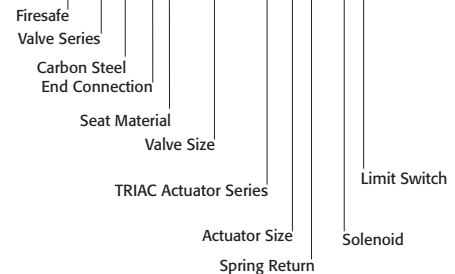
SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	FD9-F1-050/2R2S-XX
3/4"	FD9-F1-075/2R3S-XX
1"	FD9-F1-100/2R3S-XX
1-1/2"	FD9-F1-150/2R4S-XX
2"	FD9-F1-200/2R4S-XX
2-1/2"	FD9-F1-250/2R6S-XX
3"	FD9-F1-300/2R6S-XX
4"	FD9-F1-400/2R7S-XX
6"	FD9-F1-600/2R0S-XX

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



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-F1-150/2R3S-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.

# Electric

## Automated Ball Valve Package

Series FD9  
ASME 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")

ASME 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

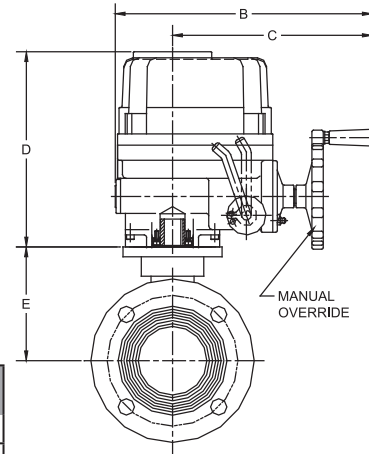
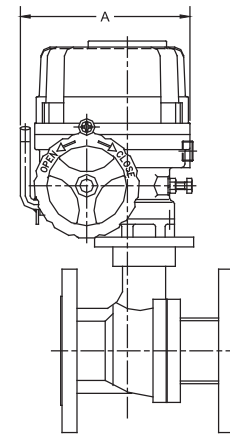
### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
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
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



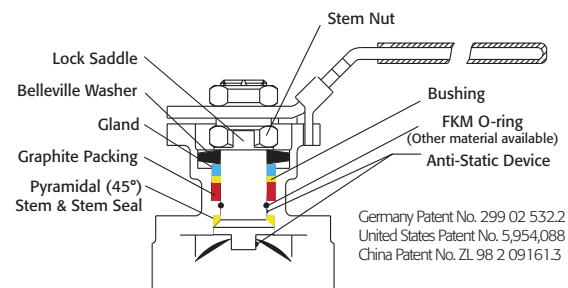
### DIMENSIONS (IN)

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

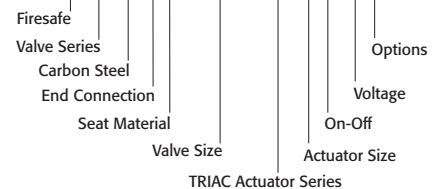
**SERIES FD9 150# Flanged Direct Mount Firesafe**

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



### SAMPLE PART # FD9C-F1-150/WEA1-XX



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

### 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.

# Series FD9 HOW TO ORDER: Manual Valves

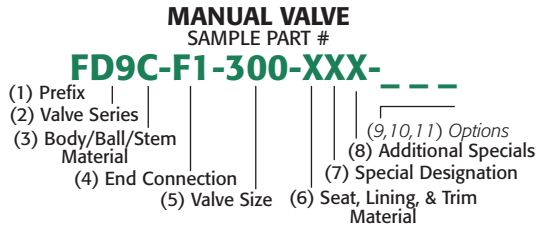
1	Prefix		
F	Firesafe Tested (see valve series for details & testing)		
2	Valve Series		
D9	Direct Mount Flanged		
3	Body/Ball/Stem Material		
Blank	Valve Series Standard (316SST)		
C	Carbon Steel Body		
L	Low Carbon 316L Stainless Steel		
Q	Carbon Body/Monel Ball & Stem		
R	316 SST Body/Monel Ball & Stem		
4	End Connection		
F1	150# Flanged Ends		
5	Valve Size		
0050	1/2"	0300	3"
0075	3/4"	0400	4"
0100	1"	0600	6"
0150	1-1/2"	0800	8"
0200	2"	1000	10"
0250	2-1/2"	1200	12"

6	Seat, Lining & Trim Materials		
X	Reinforced TFE Seats (RTFE)		
P	Virgin TFE (PTFE)		
U	UHMWPE Seats		
S	50/50 STFE Seats		
C	25% CS Powder/75% TFE Seats (CTFE)		
T	TFM™-1600		
A	50% SS Powder / 50% TFM™-1600 (STFM)		
F	PTFE Cavity Filler		
M	MG1241		
Z	PEEK		
7	Special Designation		
X	No Specials/Series Standard		
G	Gear Operator		
H	Gear Operator with Lockout Plate		
O	Oval Handle (available in some)		
S	Spring Return (Direct Mount Only)		
4	4" Lockable Stem Extension		
8	Additional Specials		
X	No Specials, Series Standard		
O	Oxygen Cleaned		
V	Vented Ball		
E	Bonnet Extension Lockable Handle		
D	Degreased & Bagged		
A	Vented Ball, Degreased & Bagged		
B	Vented Ball, Oxygen Cleaned		

9	Special Designation	
Blank	No Designation, Valve Series Standard	
X	Multiple Option Designation	
A	17-4 PH® Stem	
H	Hard Coated (HMF) Ball	
10	O-Ring	
X	Multiple Option Designation	
2	Markez® Z1028	
4	Karlez 4079	
6	Karlez 6375	
7	Perlast® G75M	
9	Chemraz® 564	
B	Low Temp Buna	
E	EPDM	
11	Additional Specials	
X	Multiple Option Designation	
B	B7M Bolting	
M	Marine Epoxy Coating	

17-4 PH® is a registered trademark of AK Steel Corporation.  
 Chemraz® is a registered trademark of Greene, Tweed & Co.  
 TFM™ is a trademark of Dyneon™, a 3M Company.

Perlast® is a registered trademark of Precision Polymer Engineering Limited.  
 Markez® is a registered trademark of Marco Rubber & Plastic Products Inc.

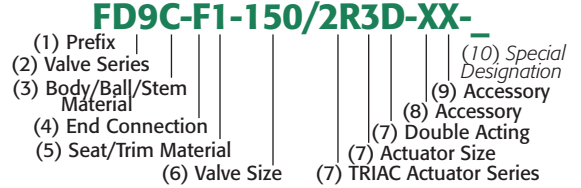


## HOW TO ORDER: Automated Valves

1	Prefix		
F	Firesafe Tested (see valve series for details & testing)		
NS	NSF 61 & 372 Certified Series		
2	Valve Series		
D9	Direct Mount Flanged		
3	Body/Ball/Stem Material		
Blank	Valve Series Standard (316SST)		
A	Alloy 20 Body, Ball, & Stem		
C	Carbon Steel Body		
L	Low Carbon 316L Stainless Steel		
H	Carbon Body / Hastelloy Ball & Stem		
Q	Carbon Body/Monel Ball & Stem		
R	316 SST Body/Monel Ball & Stem		
4	End Connection		
F	150# Flanged Ends		
5	Seat, Lining & Trim Materials		
1	Valve Series Standard (RTFE)		
P	Virgin TFE (PTFE)		
U	UHMWPE Seats		
S	50/50 STFE Seats		
C	25% CS Powder/75% TFE Seats (CTFE)		
T	TFM™-1600		
A	50% SS Powder / 50% TFM™-1600 (STFM)		
M	MG1241		
Z	PEEK		
6	Valve Size		
050	1/2"	200	2"
075	3/4"	250	2-1/2"
100	1"	300	3"
150	1-1/2"	400	4"
		600	6"
		800	8"
		AAA	10"
		BBB	12"
7	Actuator - Pneumatic (DA)		
TRYD	TR10DA	2R7D	2R500DA
TR1D	TR20DA	2R8D	2R850DA
2R2D	2R40DA	2R9D	2R1200DA
2R3D	2R80DA	2R0D	2R1750DA
2R4D	2R130DA	2RAD	2R2500DA
2R5D	2R200DA	2RBD	2R3500DA
2R6D	2R300DA		

7	Actuator - Pneumatic (SR)			
TR1S	TR20SR	2R7S	2R500SR	
2R2S	2R40SR	2R8S	2R850SR	
2R3S	2R80SR	2R9S	2R1200SR	
2R4S	2R130SR	2R0S	2R1750SR	
2R5S	2R200SR	2RAS	2R2500SR	
2R6S	2R300SR	2RBS	2R3500SR	
7	Actuator - Pneumatic Stainless (DA)			
S21D	S2-052DA	S25D	S2-125DA	
S22D	S2-063DA	S26D	S2-140DA	
S23D	S2-083DA	S27D	S2-160DA	
S24D	S2-105DA	S28D	S2-210DA	
7	Actuator - Pneumatic Stainless (SR)			
S21S	S2-052SR	S25S	S2-125SR	
S22S	S2-063SR	S26S	S2-140SR	
S23S	S2-083SR	S27S	S2-160SR	
S24S	S2-105SR	S28S	S2-210SR	
7	Actuator - Electric (On-Off)			
WEX1	WE-350	WEG1	WE-5200	
WEA1	WE-500	WEH1	WE-6900	
WEB1	WE-690	WEJ1	WE-10500	
WEC1	WE-1350	WEK1	WE-17500	
WED1	WE-1700	WEL1	WE-25900	
WEE1	WE-2640	WEM1	WE-53000	
WEF1	WE-4400	WEN1	WE-80000	
7	Actuator - Electric (Modulating)			
WEA2	WEM-500	WEH2	WEM-6900	
WEB2	WEM-690	WEJ2	WEM-10500	
WEC2	WEM-1350	WEK2	WEM-17500	
WED2	WEM-1700	WEL2	WEM-25900	
WEE2	WEM-2640	WEM2	WEM-53000	
WEF2	WEM-4400	WEN2	WEM-80000	
WEG2	WEM-5200			

## AUTOMATED VALVE



8	Accessories/Options		Model no.
X	No Specials		
A	TYPE 4 Solenoid 120VAC		TVCS-X411-4N-A120
B	TYPE 7 Solenoid 120VAC		TVCS-X411-7N-A120
C	Intrinsically Safe Solenoid		TVIS-X411-4N-D24
D	TYPE 4 Solenoid 24VDC		TVCS-X411-4N-D24
F	TYPE 7 Solenoid 24VDC		TVCS-X411-7N-D24
Q	TYPE 4 SST Solenoid 120VAC		TVSS-X411-4N-A120
M	TYPE 7 SST Solenoid 120VAC		TVSS-X411-7N-A120
L	TYPE 4 SST Solenoid 24VDC		TVSS-X411-4N-D24
N	TYPE 7 SST Solenoid 24VDC		TVSS-X411-7N-D24
P	Pneumatic Positioner		PPR-1200
E	Electro-Pneumatic Positioner		EPR-1000
R	24VDC Electric Actuator		
S	220VAC Electric Actuator		
T	Other Voltage Electric Actuator		
W	12VDC Electric Actuator		
Y	24VAC Electric Actuator		
* No voltage specified on electric assemblies denotes 120VAC			
9	Accessories		Model no.
X	No Specials		
A	TYPE 4 Limit Switch		APL-210N/APL-310N
B	TYPE 7 Limit Switch		APL-510N
C	Intrinsically Safe Limit Switch		APL-218N
Q	TYPE 4 SST Limit Switch		APL-910N
M	TYPE 7 SST Limit Switch		APL-510S
1	HS1 High Speed Electric		
2	HS2 High Speed Electric		
10	Special Designation		
Blank	No Designation, Valve Series Standard		
X	Multiple Option Designation		
A	17-4 PH® Stem		



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