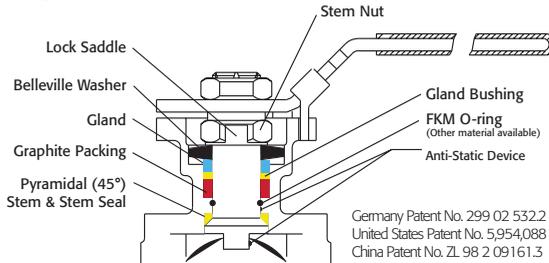


**API 607  
CERTIFIED**

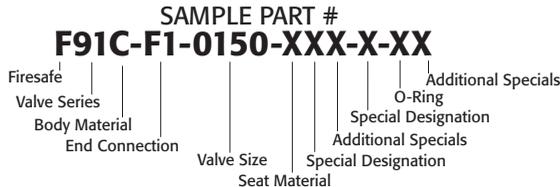


Triac Series F91 unibody flanged ball valves feature a high quality investment cast body and end. They are available in 1/2" through 6" regular port. Superior leak protection is accomplished by using our patented "pyramidal" stem seal system shown in the graphic below. This advanced system protects against wear and leakage 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

**A-T Controls, Inc.**

**Series F91**

**FIRESAFE**

**Unibody Direct Mount  
Flanged Ball Valve**

Sizes 1/2" – 6"

Available in 316SST or WCB

ASME Class 150

Regular 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

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	API 607-7th Edition
Sulfide Stress Protection	NACE MR0175
Mounting	ISO 5211
Marking System for Valves	MSS SP-25
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015

**TABLE OF CONTENTS:**

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

**SERIES F91 Unibody Flanged Ball Valve**

**Firesafe**

**A-T Controls, Inc.**

9955 International Blvd.  
Cincinnati, Ohio 45246  
www.atcontrols.com

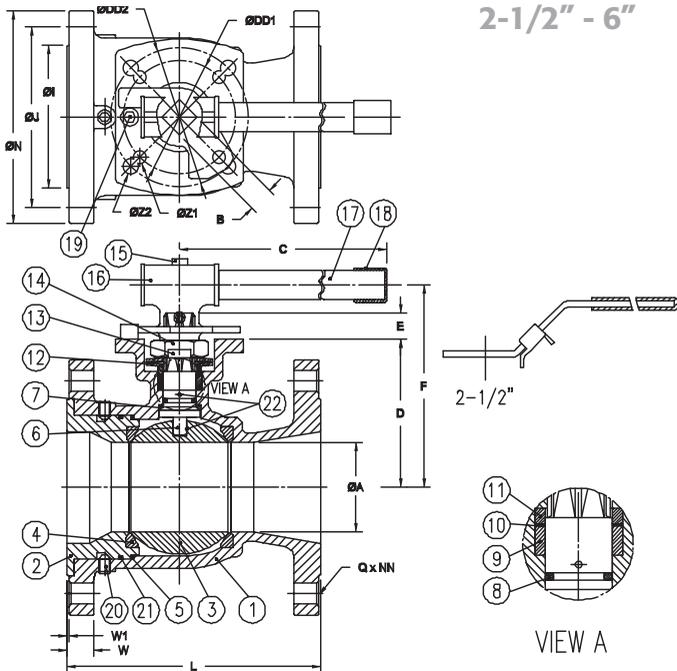
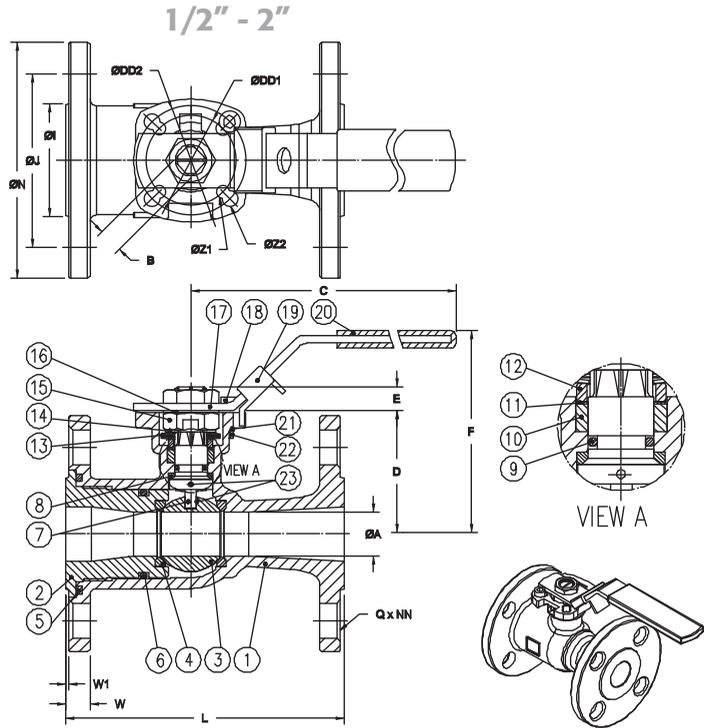
PHONE (513) 247-5465  
FAX (513) 247-5462  
sales@atcontrols.com

# Series F91

## High Performance, Regular Port Unibody Flanged Ball Valve Series F91 (ASME Class 150)

### MATERIALS LIST

NO.	PART NAME	QTY	STAINLESS STEEL	CARBON STEEL	REPAIR KIT
1	BODY	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB	
2	RETAINER	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB	
3	BALL	1	1/4" THRU 3/8" ASTM A276 SS316	1/4" THRU 3/8" ASTM A276 SS316	
3	BALL	1	1/2" THRU 2" ASTM A351 GRADE CF8M	1/2" THRU 2" ASTM A351 GRADE CF8M	
4	SEAT	2	RTFE	RTFE	✓
5	JOINT GASKET	1	GRAPHITE	GRAPHITE	✓
6	BODY O-RING	1	FKM	FKM	✓
7	STEM	1	ASTM A276 316SS	ASTM A276 316SS	
8	STEM SEAL	1	TFM™-1600	TFM™-1600	✓
9	STEM O-RING	1	FKM	FKM	✓
10	GLAND PACKING	1	GRAPHITE	GRAPHITE	✓
11	GLAND WASHER	1	RTFE	RTFE	✓
12	GLAND BUSHING	1	AISI 304	AISI 304	
13	BELLEVILLE WASHER	2	AISI 301	AISI 301	
14	STOP WASHER	1	AISI 304	AISI 304	
15	STEM NUT	2	AISI 304	AISI 304	
16	STEM WASHER	1	AISI 304	AISI 304	
17	HANDLE	1	AISI 304	AISI 304	
18	STOP BOLT	1	AISI 304	AISI 304	
19	HANDLE LOCK	1	AISI 304	AISI 304	
20	HANDLE SLEEVE	1	VINYL	VINYL	
21	WASHER	1	AISI 304	AISI 304	
22	STOP NUT	1	AISI 304	AISI 304	
23	ANTI-STATIC DEVICE	2	AISI 316	AISI 316	



### MATERIALS LIST

NO.	PART NAME	QTY	STAINLESS STEEL	CARBON STEEL	REPAIR KIT
1	BODY	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB	
2	RETAINER	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 316SS	ASTM A276 316SS	
7	STEM SEAL	1	TFM™-1600	TFM™-1600	✓
8	STEM O-RING	1	FKM	FKM	✓
9	GLAND PACKING	1	GRAPHITE	GRAPHITE	✓
10	GLAND WASHER	1	RTFE	RTFE	✓
11	GLAND BUSHING	1	AISI 304	AISI 304	
12	BELLEVILLE WASHER	2	AISI 301	AISI 301	
13	STOP WASHER	1	AISI 304	AISI 304	
14	STEM NUT	1	AISI 304	AISI 304	
15	HANDLE BOLT	2	AISI 304	AISI 304	
16	HANDLE HUB	1	AISI 304	AISI 304	
17	HANDLE BAR	1	AISI 304	AISI 304	
18	HANDLE SLEEVE	1	VINYL	VINYL	
19	STOP PIN	1	AISI 304	AISI 304	
20	SCREW	*	AISI 304	AISI 304	
21	BODY O-RING	1	FKM	FKM	✓
22	ANTI-STATIC DEVICE	2	AISI 316	AISI 316	

\* QTY = 4 for 2-1/2" thru 4", and QTY = 6 for 6"  
NOTE: 2-1/2" thru 6" valves are not to be used in dead end service on retainer side

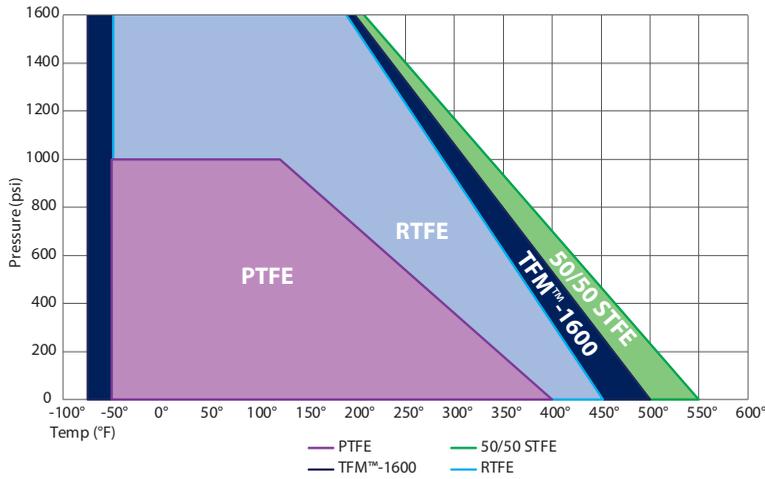
### DIMENSIONS (IN)

SIZE	A	B	C	D	E	F	I	J	L	N	Q	W	W1	Z1	Z2	DD1	DD2	NN	LBS.	ISO 5211
1/2"	0.50	0.433	6.50	1.80	0.37	3.22	1.38	2.38	4.26	3.50	0.63	0.44	0.06	0.26	0.28	1.654	1.969	4	4	F04/F05
3/4"	0.59	0.433	6.50	2.02	0.39	3.44	1.69	2.75	4.62	3.88	0.63	0.44	0.06	0.26	0.28	1.654	1.969	4	4.5	F04/F05
1"	0.79	0.433	6.50	2.19	0.39	3.61	2.00	3.12	5.00	4.25	0.63	0.44	0.06	0.26	0.28	1.654	1.969	4	6	F04/F05
1-1/2"	1.26	0.551	8.46	2.86	0.51	4.71	2.88	3.88	6.50	5.00	0.63	0.56	0.06	0.30	0.35	1.969	2.756	4	11	F05/F07
2"	1.50	0.748	10.35	3.51	0.75	5.68	3.62	4.75	7.02	6.00	0.75	0.63	0.06	0.39	0.47	2.756	4.016	4	18.5	F07/F10
2-1/2"	1.97	0.748	10.35	3.0	0.75	5.97	4.12	5.50	7.50	7.00	0.75	0.69	0.06	0.39	0.47	2.756	4.016	4	26	F07/F10
3"	2.56	0.748	14.37	4.57	0.75	6.31	5.00	6.00	8.00	7.50	0.75	0.75	0.06	0.39	0.47	2.756	4.016	4	35	F07/F10
4"	3.15	0.866	14.37	5.22	0.91	7.13	6.19	7.50	9.00	9.00	0.75	0.94	0.06	0.47	0.55	4.016	4.921	8	56	F10/F12
6"	4.37	1.063	29.53	7.07	1.12	9.63	8.50	9.50	10.50	11.00	0.87	1.00	0.06	0.55	0.71	4.921	5.512	8	103	F12/F14

**High Performance, Regular Port  
Unibody Flanged Ball Valve  
Series F91 (ASME Class 150)**

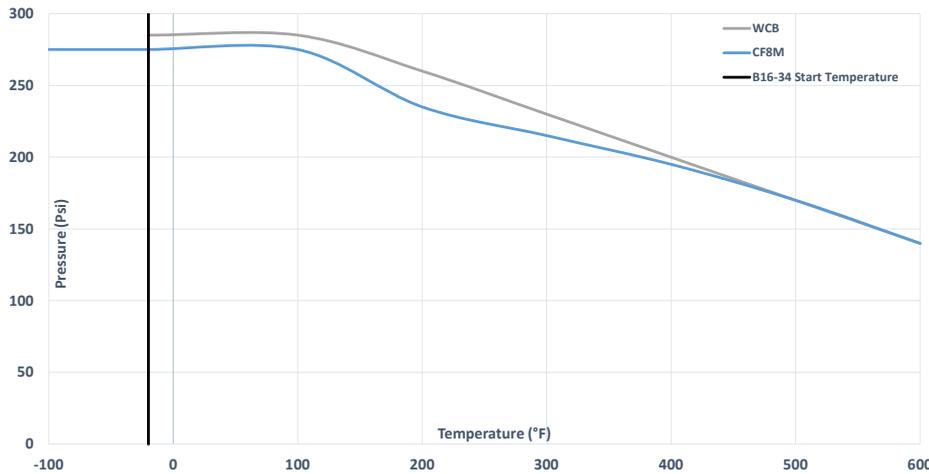
# Series F91

**Pressure vs. Temperature - Series F91  
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 F91  
Body Ratings ASME B16.34**



Temp (°F)	WCB psi	CF8M psi
-20°	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 Torques	
SIZE	IN-LBS
1/2"	45
3/4"	73
1"	91
1-1/2"	149
2"	230
2-1/2"	297
3"	535
4"	768
6"	1250

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

SIZE	Cv
1/2"	9
3/4"	15
1"	42
1-1/2"	125
2"	165
2-1/2"	245
3"	350
4"	680
6"	1020

NOTE: For other seat material, consult factory.

# Pneumatic Double Acting

## Series F91 Unibody Direct Mount Flanged Ball Valve

Firesafe

Sizes 1/2" - 6"

Available in 316SST or WCB

ASME Class 150

Regular Port Design

Superior Live Loaded Packing System

Blowout Proof Stem w/ Dual Anti-Static Devices

RTFE Seats Standard

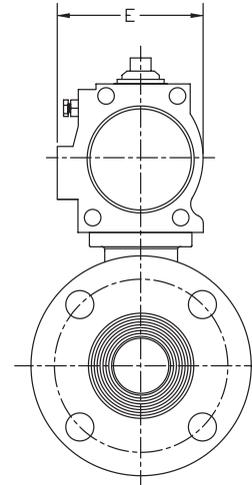
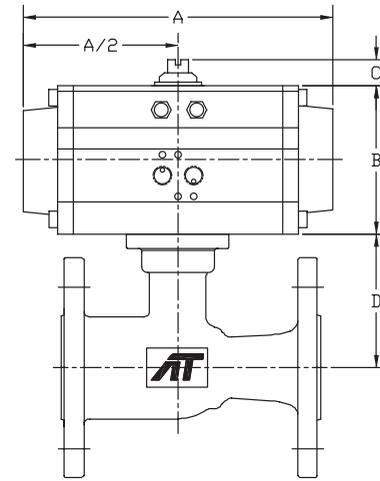
Pyramidal Stem Seal Design

### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
Pressure Testing	API 598
Fire Testing	API 607-7th Edition
Sulfide Stress Protection	NACE MR0175
Mounting	ISO 5211
Marking System for Valves	MSS SP-25
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015



ASME Class 150 Flanged  
Firesafe Tested to API 607



### DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	6.50	2.84	0.787	1.80	2.82	9
3/4"	6.50	2.84	0.787	2.02	2.82	15
1"	6.50	2.84	0.787	2.19	2.82	42
1-1/2"	7.60	3.47	0.787	2.86	3.35	125
2"	9.29	4.30	0.787	3.51	4.18	165
2-1/2"	9.29	4.30	0.787	3.80	4.18	245
3"	9.29	4.30	0.787	4.57	4.18	350
4"	13.39	6.14	0.787	5.22	5.59	680
6"	15.35	6.81	1.181	7.07	5.98	1020

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

SERIES F91 Unibody Flanged  
Firesafe

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F91-F1-050/3RDD-XX
3/4"	F91-F1-075/3RDD-XX
1"	F91-F1-100/3RDD-XX
1-1/2"	F91-F1-150/3RED-XX
2"	F91-F1-200/3RFD-XX
2-1/2"	F91-F1-250/3RFD-XX
3"	F91-F1-300/3RFD-XX
4"	F91-F1-400/3RJD-XX
6"	F91-F1-600/3RKD-XX

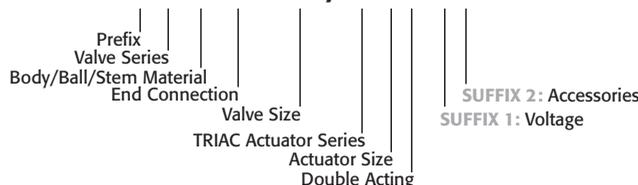
SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F91-F1-050/3RDD-XX
3/4"	F91-F1-075/3RDD-XX
1"	F91-F1-100/3RDD-XX
1-1/2"	F91-F1-150/3RED-XX
2"	F91-F1-200/3RFD-XX
2-1/2"	F91-F1-250/3RFD-XX
3"	F91-F1-300/3RGD-XX
4"	F91-F1-400/3RJD-XX
6"	F91-F1-600/3RKD-XX

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

Other options available - call for details

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

### SAMPLE PART # F91C-F1-150/3RED-XX



### OPTIONS

SUFFIX 1	Voltage/Accessory	Model no.
X	No Specials	
A	TYPE 4 Solenoid 120VAC	TVCS-X411-4N-A120
B	TYPE 7 Solenoid 120VAC	TVC6-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	TVC6-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
SUFFIX 2	Accessories	Model no.
X	No Specials	
A	TYPE 4 Limit Switch	APL210-N
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
H	NEMA 4 Std. Enc.	APL-310N

See automated part number matrix on back cover for complete part number and options.

# Pneumatic Spring Return

## Series F91 Unibody Direct Mount Flanged Ball Valve

Firesafe

Sizes 1/2" - 6"

Available in 316SST or WCB

ASME Class 150

Regular Port Design

Superior Live Loaded Packing System

Blowout Proof Stem w/ Dual Anti-Static Devices

RTFE Seats Standard

Pyramidal Stem Seal Design

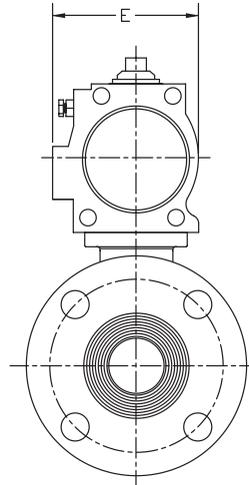
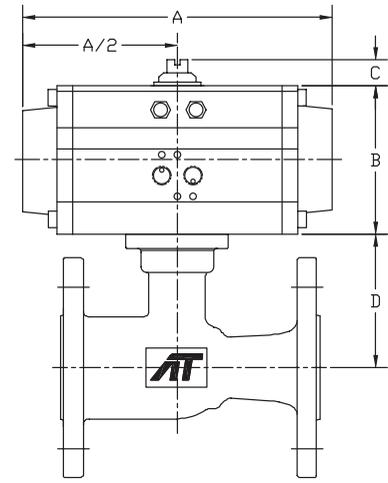
### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
Pressure Testing	API 598
Fire Testing	API 607-7th Edition
Sulfide Stress Protection	NACE MR0175
Mounting	ISO 5211
Marking System for Valves	MSS SP-25
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015

**API 607  
CERTIFIED**



ASME Class 150 Flanged  
Firesafe Tested to API 607



### DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	6.50	2.84	0.787	1.80	2.82	9
3/4"	7.60	3.47	0.787	2.02	3.35	15
1"	7.60	3.47	0.787	2.19	3.35	42
1-1/2"	9.29	4.30	0.787	2.86	4.18	125
2"	9.29	4.30	0.787	3.51	4.18	165
2-1/2"	11.02	4.61	0.787	3.80	4.27	245
3"	13.39	6.14	0.787	4.57	5.59	350
4"	13.39	6.14	0.787	5.22	5.59	680
6"	15.35	6.81	1.181	7.07	5.98	1020

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

**SERIES F91 Unibody Flanged  
Firesafe**

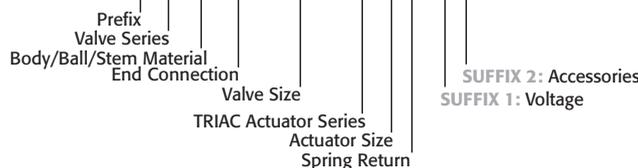
SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F91-F1-050/3RDS-XX
3/4"	F91-F1-075/3RES-XX
1"	F91-F1-100/3RES-XX
1-1/2"	F91-F1-150/3RFS-XX
2"	F91-F1-200/3RFS-XX
2-1/2"	F91-F1-250/3RGS-XX
3"	F91-F1-300/3RJS-XX
4"	F91-F1-400/3RJS-XX
6"	F91-F1-600/3RKS-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F91-F1-050/3RD4-XX
3/4"	F91-F1-075/3RE4-XX
1"	F91-F1-100/3RF4-XX
1-1/2"	F91-F1-150/3RF4-XX
2"	F91-F1-200/3RG4-XX
2-1/2"	F91-F1-250/3RG4-XX
3"	F91-F1-300/3RJ4-XX
4"	F91-F1-400/3RK4-XX
6"	F91-F1-600/3RL4-XX

OPTIONS		
SUFFIX 1	Voltage/Accessory	Model no.
X	No Specials	
A	TYPE 4 Solenoid 120VAC	TVCS-X411-4N-A120
B	TYPE 7 Solenoid 120VAC	TVC6-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	TVC6-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
SUFFIX 2	Accessories	Model no.
X	No Specials	
A	TYPE 4 Limit Switch	APL210-N
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
H	NEMA 4 Std. Enc.	APL-310N

NOTE: Heater and thermostat standard  
(2) auxiliary switches standard  
Other options available - call for details  
Actuators are sized based on full differential pressure with clean water.  
Consult the Application Sizing Guide for assistance with sizing actuators.

### SAMPLE PART # F91C-F1-150/3RFS-XX



See automated part number matrix on back cover for complete part number and options.

# Electric

## Series F91 Unibody Direct Mount Flanged Ball Valve

Firesafe

Sizes 1/2" - 6"

Available in 316SST or WCB

ANSI Class 150

Regular Port Design

Superior Live Loaded Packing  
System

Blowout Proof Stem w/ Dual  
Anti-Static Devices

RTFE Seats Standard

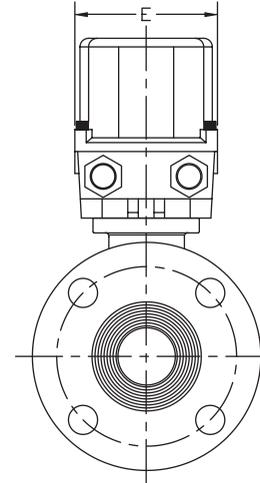
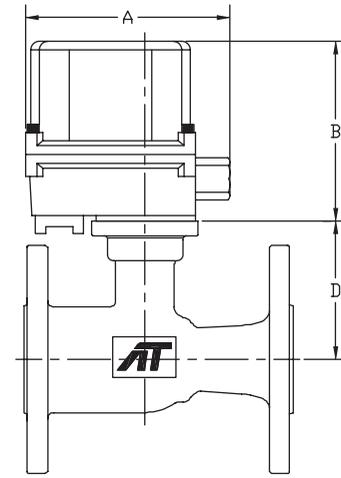
Pyramidal Stem Seal Design

### STANDARDS

Design	ASME B16.34 (fully conforms)
Face to Face	ASME B16.10
Flange Dimensions	ASME B16.5
Pipeline Valves	API 6D
Pressure Testing	API 598
Fire Testing	API 607-7th Edition
Sulfide Stress Protection	NACE MR0175
Mounting	ISO 5211
Marking System for Valves	MSS SP-25
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015



ASME Class 150 Flanged  
Firesafe Tested to API 607



### DIMENSIONS (IN)

VALVE SIZE	A	B	D	E	VALVE Cv
1/2"	5.94	5.24	1.80	4.15	9
3/4"	5.94	5.24	2.02	4.15	15
1"	5.94	5.24	2.19	4.15	42
1-1/2"	5.94	5.24	2.86	4.15	125
2"	5.94	5.24	3.51	4.15	165
2-1/2"	5.94	5.24	3.80	4.15	245
3"	13.31	10.55	4.57	9.02	350
4"	14.49	11.42	5.22	10.20	680
6"	14.49	11.42	7.07	10.20	1020

DIMENSIONS FOR ON/OFF ACTUATORS ONLY, MODULATING NOT SHOWN 3" THRU 6" HAVE HANDWHEELS THAT ARE NOT SHOWN

SERIES F91 Unibody Flanged  
Firesafe

ON-OFF	
SIZE	MODEL
1/2"	F91-F1-050/WEA1-XX
3/4"	F91-F1-075/WEA1-XX
1"	F91-F1-100/WEA1-XX
1-1/2"	F91-F1-150/WEA1-XX
2"	F91-F1-200/WEA1-XX
2-1/2"	F91-F1-250/WEA1-XX
3"	F91-F1-300/WEC1-XX
4"	F91-F1-400/WEE1-XX
6"	F91-F1-600/WEE1-XX

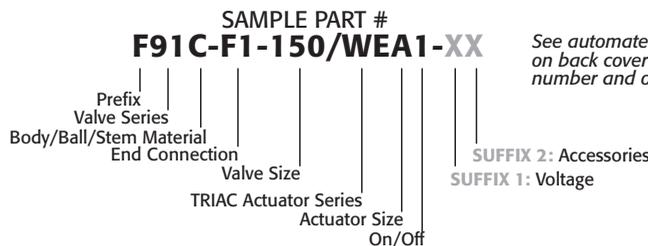
MODULATING	
SIZE	MODEL
1/2"	F91-F1-050/WEA2-XX
3/4"	F91-F1-075/WEA2-XX
1"	F91-F1-100/WEA2-XX
1-1/2"	F91-F1-150/WEA2-XX
2"	F91-F1-200/WEA2-XX
2-1/2"	F91-F1-250/WEA2-XX
3"	F91-F1-300/WEC2-XX
4"	F91-F1-400/WEE2-XX
6"	F91-F1-600/WEE2-XX

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

OPTIONS		
Suffix 1	Voltage / Accessory	Model No.
X	No Specials	
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		
Suffix 2 Accessories		
X	No Specials	
1	HS1 High Speed Electric	
2	HS2 High Speed Electric	

Other options available - call for details.

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



See automated part number matrix on back cover for complete part number and options.

# HOW TO ORDER: Manual Valves

## Series F91

1	Prefix
F	Firesafe (see valve series for details & testing)

2	Valve Series
91	Unibody Ball Valve, Regular Port

HOW TO ORDER MANUAL VALVES													
1	2	3	-	4	-	5	-	6	7	8	9	10	11
↓	↓	↓		↓		↓		↓	↓	↓	↓	↓	↓
F	91	C	-	F1	-	0150	-	X	X	X			

3	Body/Ball/Stem Material
Blank*	Valve Series Standard
A	Alloy 20 Body, Ball, & Stem
C*	Carbon Steel Body
L*	Low Carbon 316L Stainless Steel
J*	Low Carbon 304 Stainless Steel
H	Carbon Body /Hastelloy Ball & Stem
Q	Carbon Body/Monel Ball & Stem
R	316 SST Body/Monel Ball & Stem
T	Hastelloy C-276 Body, Ball & Stem
D	CD3MN Body/Duplex SST Ball & Stem
G	CE3MN Body/Super Duplex SST Ball & Stem
P*	CF8 (304 SST) Body/304 SST Ball & Stem

4	End Connection
F1	150# Flanged Ends

5	Valve Size	
0050	1/2"	0250 2-1/2"
0075	3/4"	0300 3"
0100	1"	0400 4"
0150	1-1/2"	0600 6"
0200	2"	

\* Firesafe Tested

6	Seat, Lining & Trim Materials
X*	Reinforced TFE Seats (RTFE)
P*	Virgin TFE Seats (PTFE)
U	UHMWPE Seats
S*	50/50 STFE Seats
C*	25% Carbon Graphite, 75% PTFE Seats (CTFE)
T*	TFM™-1600 Seats
A*	50% SS Powder/50% TFM™-1600 Seats (STFM)
M	MG1241 Seats
Z	PEEK Seats (Required 17-4 PH® Stem)

7	Operator Options
X	No Specials, Series Standard Handle
G	Gear Operator
H	Gear Operator with Lockout Plate
S	Spring Return Handle (Sizes 1/2" - 1 1/2")
4	4" Lockable Stem Extension

8	Special Designation
X	No Specials, Series Standard
V	Vented Ball
E	Bonnet Extension Lockable Handle
D	Degreased & Bagged
A	Vented Ball, Degreased & Bagged

\* Firesafe Tested

### OPTIONS:

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	Kalrez 4079
5	Chemraz 505
6	Kalrez 6375
7	Perlast® G75M
9	Chemraz® 564
B	Low Temp Buna
S	Silicone
E	EPDM

11	Special Designation
M	Marine Epoxy Coating

17-4 PH® is a registered trademark of AK Steel Corporation.  
Chemraz® is a registered trademark of Greene, Tweed & Co.  
Markez® is a registered trademark of Marco Rubber & Plastic Products Inc.  
Perlast® is a registered trademark of Precision Polymer Engineering Limited.  
TFM™ is a trademark of Dyneon™, a 3M Company.

