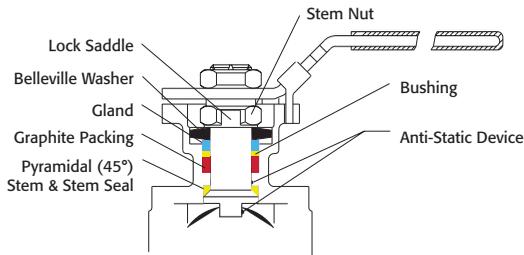


**API 607  
CERTIFIED**



The F8R Series Firesafe 3-piece ball valves are the finest quality 3-piece valves on the market. The high quality investment castings feature a fully machined bore. The superior live-loaded packing system is accomplished with Belleville washers, graphite packing and a unique primary pyramidal stem seal. This advanced sealing system provides protection against stem leaks experienced by ordinary ball valves.



**Conforms to ASME B16.34 (2020)**

- SST Body - Class 260 to 600
- WCB Body - Class up to 600

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.

**Easy to Automate!**

See automated data sheets for pre-sized assemblies



Pneumatic



Electric



**Series F8R**

**FIRESAFE**

**3-Piece Design**

Sizes 1/2" - 2-1/2"

Regular Port Design

Conforms to ASME B16.34 (2020)

Classes up to 600

1000 to 2000 psi (BPVC) by size

CF8M or WCB

Threaded, Socket Weld, or Butt Weld Ends

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)
END CONNECTIONS	ASME B16.25, B1.20.1, B16.11
PRESSURE TESTING	API 598
FIRE TESTING	API 607-7th Edition
SULFIDE STRESS PROTECTION	NACE MR0175
MOUNTING	ISO 5211
CE APPROVAL (optional)	2014/68/EU Module H
MARKING SYSTEM FOR VALVES	MSS SP-25, ISO 5209
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

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



**SERIES F8R  
3-Piece**

**Firesafe**

# Series F8R

API 607  
CERTIFIED

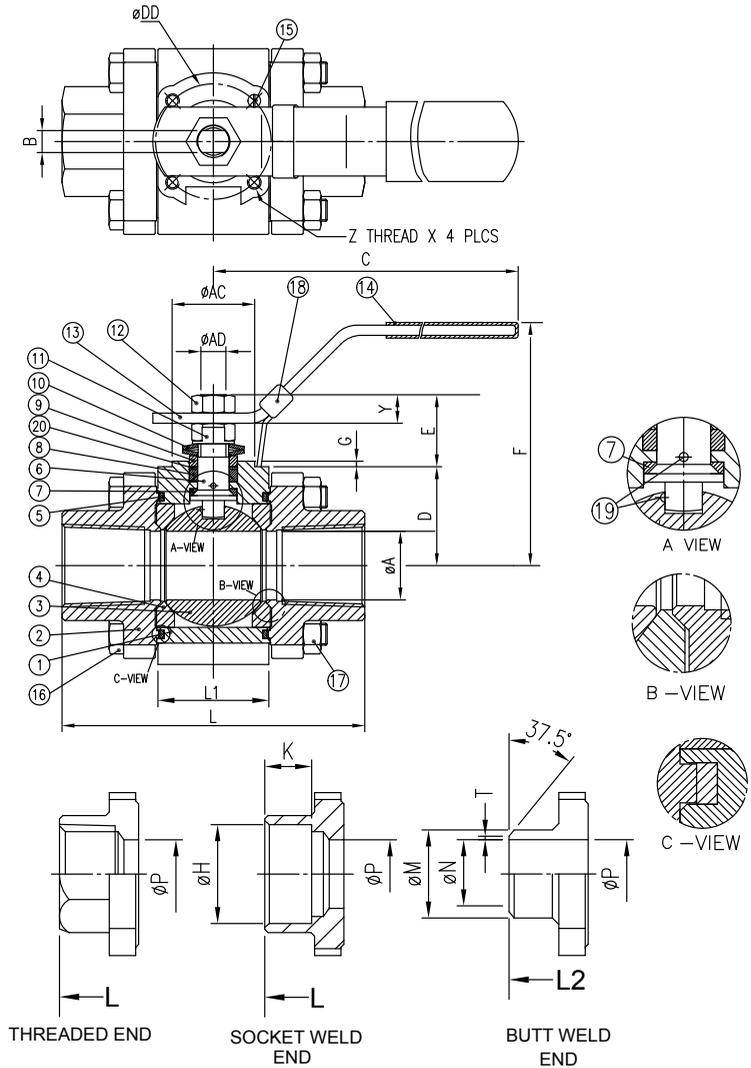
High Performance, Regular Port  
3-Piece Ball Valve  
ISO 5211 Mounting Pad

Class up to 600  
960 to 1480 psi (by size)  
1/2" to 2-1/2"

## MATERIALS LIST

NO.	PART NAME	QTY	STAINLESS STEEL	CARBON STEEL	REPAIR KIT
1	BODY	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB	
2	TH END CAP	2	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB	
2	SW/BW END CAP	2	ASTM A351 GRADE CF3M	ASTM A216 GRADE WCB	
3	BALL	1	1/4" THRU 3/8" ASTM A276 SS 316	1/4" THRU 3/8" ASTM A276 SS 316	
3	BALL	1	1/2" THRU 2-1/2" ASTM A351 GRADE CF8M	1/2" THRU 2-1/2" ASTM A351 GRADE CF8M	
4	SEAT	2	RTFE	RTFE	✓
5	JOINT GASKET	2	GRAPHITE	GRAPHITE	✓
6	STEM	1	ASTM A276 SS 316	ASTM A276 SS 316	
7	STEM SEAL	1	TFM™-1600	TFM™-1600	✓
8	STEM PACKING	1	GRAPHITE	GRAPHITE	✓
9	GLAND BUSHING	1	AISI 304	AISI 304	
10	BELLEVILLE WASHER	2	AISI 301	AISI 301	
11	LOCK SADDLE	1	AISI 304	AISI 304	
12	STEM NUT	2	AISI 304	AISI 304	
13	HANDLE	1	AISI 304	AISI 304	
14	HANDLE SLEEVE	1	VINYL	VINYL	
15	STOP BOLT	1	AISI 304	AISI 304	
16	BODY BOLT	*	ASTM A193 GRADE B8M	ASTM A193 GRADE B7M	
17	BOLT NUT	*	ASTM A194 GRADE 8M	ASTM A194 GRADE 2HM	
18	HANDLE LOCK	1	AISI 304	AISI 304	
19	ANTI-STATIC DEVICE	2	AISI 316	AISI 316	
20	GLAND WASHER	1	RTFE	RTFE	✓

\*1/2" THRU 2" - 4 PCS.  
\* 2-1/2" - 6 PCS.

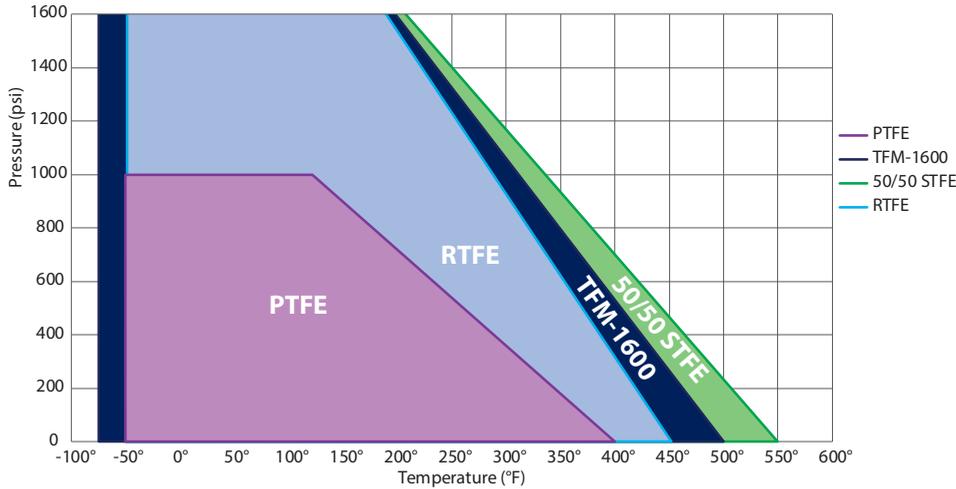


## DIMENSIONS (IN)

SIZE	A	AC	AD	B	C	D	DD	E	F	G	H	K	L	L1	L2	M	N	P	T	Y	Z	ISO 5211	LBS
1/2"	0.39	0.98	0.37	0.256	5.28	1.17	1.417	0.29	2.53	0.02	0.86	0.39	2.55	0.81	2.55	0.85	0.62	0.39	0.06	0.24	M5	F03	1.5
3/4"	0.59	0.98	0.37	0.256	5.28	1.14	1.417	0.63	2.81	0.08	1.07	0.51	2.85	0.96	2.94	1.07	0.83	0.59	0.06	0.29	M5	F03	1.9
1"	0.79	0.98	0.37	0.256	5.28	1.30	1.417	0.71	2.99	0.08	1.33	0.51	3.36	1.24	3.54	1.34	1.05	0.79	0.06	0.35	M5	F03	3.2
1-1/4"	0.98	1.18	0.44	0.315	6.69	1.56	1.654	0.97	3.39	0.08	1.69	0.51	4.15	1.63	4.31	1.68	1.38	0.98	0.06	0.43	M5	F04	4.0
1-1/2"	1.26	1.18	0.44	0.315	6.69	1.79	1.654	1.00	3.65	0.08	1.93	0.51	4.37	1.91	4.5	1.91	1.61	1.26	0.06	0.43	M5	F04	5.7
2"	1.50	1.38	0.56	0.382	8.15	2.09	1.969	1.19	4.30	0.07	2.41	0.63	5.01	2.22	5.12	2.38	2.07	1.50	0.06	0.48	M6	F05	8.1
2-1/2"	1.97	1.38	0.56	0.382	8.15	2.74	1.969	1.02	4.79	0.06	2.91	0.63	5.71	2.81	5.71	3.00	2.59	1.97	0.08	0.50	M6	F05	12.0

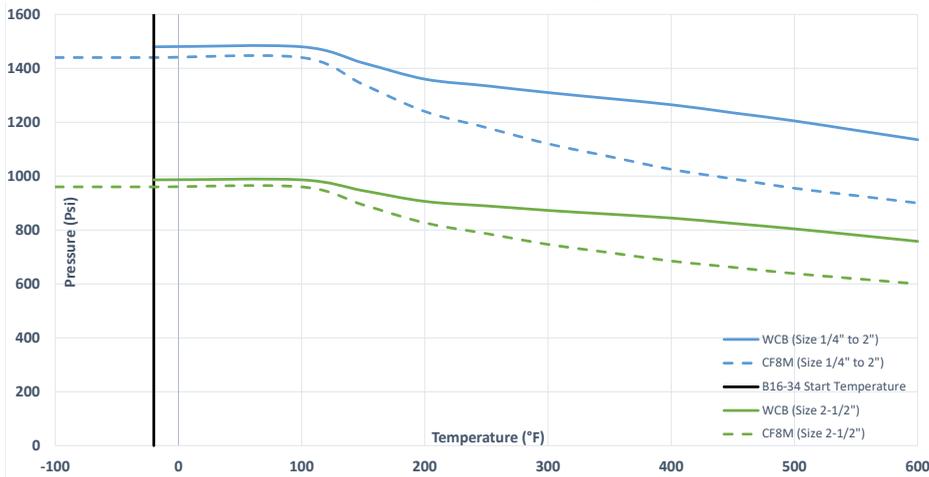
A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice.

### Pressure vs. Temperature | Series F8R 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 F8R Body & End Cap Pressure Ratings



NOTE: B16-34 Temperature Rating Starts at -20°F

Pressure Class/Rating		
Size	ASME B16.34-2020 Pressure Class	BPVC*-2019 Pressure Rating (psig)
1/2" - 1"	600	2000
1 1/4" - 1 1/2"	600	1500
2"	600	1500
2 1/2"	400	1500

\*ASME Boiler Pressure Vessel Code

Pressure Class B16.34 (2020)				
Size	CF8M		WCB	
	Class	Rating (psi)	Class	Rating (psi)
1/2"	600	1440	600	1480
3/4"	600	1440	600	1480
1"	600	1440	600	1480
1 1/4"	600	1440	600	1480
1 1/2"	600	1440	600	1480
2"	600	1440	600	1480
2 1/2"	400	960	400	986

#### Break Away Torque for RTFE Seats

SIZE	IN-LBS.
1/2"	58
3/4"	58
1"	83
1 1/4"	120
1 1/2"	171
2"	235
2 1/2"	398

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

#### Cv

SIZE	Cv
1/2"	9
3/4"	15
1"	42
1 1/4"	45
1 1/2"	125
2"	165
2 1/2"	245

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

#### F8R Component Temperature Ratings

Component	Material	Temperature
Packing	Graphite	-100°F to 1000°F
Stem Seal	TFM™-1600	-75°F to 500°F
Gaskets	Graphite	-100°F to 1000°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

# Pneumatic Double Acting

## Automated Ball Valve Package

Series F8R  
3-Piece Ball Valve

Firesafe

Sizes 1/2" - 2-1/2"

Regular Port Design

Conforms to ASME B16.34 (2020)

Classes up to 600

1000 to 2000 psi (BPVC) by size

CF8M or WCB

Threaded, Socket Weld, or Butt Weld Ends

Superior Live Loaded Packing System

ISO 5211 Actuator Mounting Pad

Blowout Proof Stem w/ Dual

Anti-Static Devices

RTFE Seats Standard

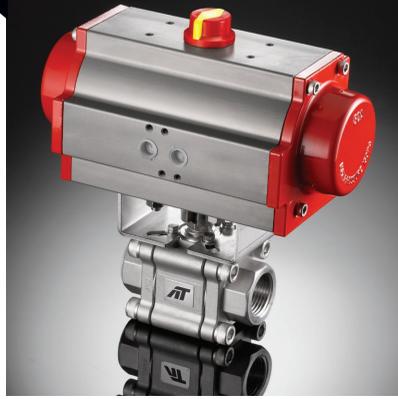
Pyramidal Stem Seal Design

Lockable Manual Handle

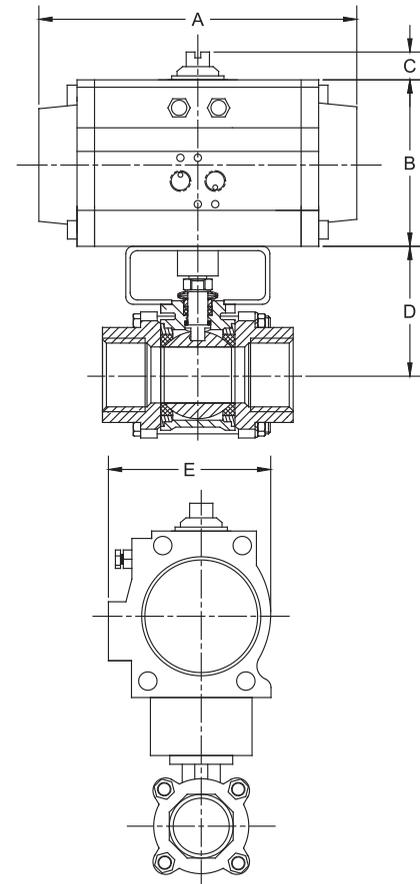
### STANDARDS

DESIGN	ASME B16.34 (fully conforms)
END CONNECTIONS	ASME B16.25, B1.20.1, B16.11
PRESSURE TESTING	API 598
FIRE TESTING	API 607-7th Edition
SULFIDE STRESS PROTECTION	NACE MR0175
MOUNTING	ISO 5211
CE Approval (optional)	2014/68/EU Module H
MARKING SYSTEM FOR VALVES	MSS SP-25, ISO 5209
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

**API 607  
CERTIFIED**



Firesafe tested to API-607  
(valve only)



### DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	6.50	2.84	0.787	2.65	2.82	9
3/4"	6.50	2.84	0.787	2.62	2.82	15
1"	6.50	2.84	0.787	2.78	2.82	42
1-1/4"	6.50	2.84	0.787	2.99	2.82	45
1-1/2"	6.50	2.84	0.787	3.14	2.82	125
2"	7.60	3.47	0.787	4.03	3.35	165
2-1/2"	9.29	4.30	0.787	4.91	4.18	245

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

**SERIES F8R  
3-Piece**

**Firesafe**

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F8R-TX-050/3RDD-XX
3/4"	F8R-TX-075/3RDD-XX
1"	F8R-TX-100/3RDD-XX
1-1/4"	F8R-TX-125/3RDD-XX
1-1/2"	F8R-TX-150/3RDD-XX
2"	F8R-TX-200/3RED-XX
2-1/2"	F8R-TX-250/3RFD-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F8R-TX-050/3RDD-XX
3/4"	F8R-TX-075/3RDD-XX
1"	F8R-TX-100/3RDD-XX
1-1/4"	F8R-TX-125/3RDD-XX
1-1/2"	F8R-TX-150/3RED-XX
2"	F8R-TX-200/3RED-XX
2-1/2"	F8R-TX-250/3RFD-XX

OPTIONS		
SUFFIX 1	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	TVSS-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
SUFFIX 2	Accessories	Model no.
X	No Specials	
A	TYPE 4 Limit Switch	APL-210N
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

SAMPLE PART #  
**F8RC-TX-100/3RDD-XX**

Prefix | Valve Series | Carbon Steel | End Connection | Seat Material | Valve Size | TRIAC Actuator Series | Actuator Size | Double Acting

SUFFIX 1: Solenoids  
SUFFIX 2: Limit Switch

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

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.

# Pneumatic Spring Return Automated Ball Valve Package

Series F8R  
3-Piece Ball Valve

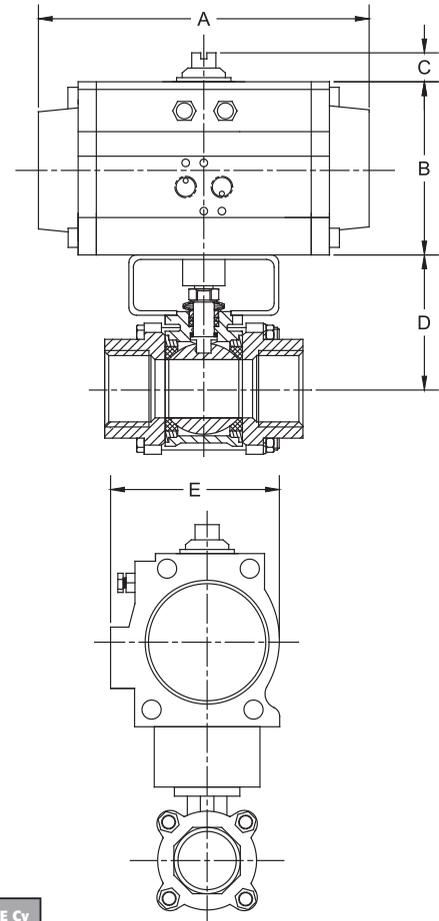
- Firesafe
- Sizes 1/2" - 2-1/2"
- Regular Port Design
- Conforms to ASME B16.34 (2020) Classes up to 600 1000 to 2000 psi (BPVC) by size
- CF8M or WCB
- Threaded, Socket Weld, or Butt Weld Ends
- Superior Live Loaded Packing System
- ISO 5211 Actuator Mounting Pad
- Blowout Proof Stem w/ Dual Anti-Static Devices
- RTFE Seats Standard
- Pyramidal Stem Seal Design
- Lockable Manual Handle

### STANDARDS

DESIGN	ASME B16.34 (fully conforms)
END CONNECTIONS	ASME B16.25, B1.20.1, B16.11
PRESSURE TESTING	API 598
FIRE TESTING	API 607-7th Edition
SULFIDE STRESS PROTECTION	NACE MR0175
MOUNTING	ISO 5211
CE Approval (optional)	2014/68/EU Module H
MARKING SYSTEM FOR VALVES	MSS SP-25, ISO 5209
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015



Firesafe tested to API-607 (valve only)



### DIMENSIONS (IN)

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	6.50	2.84	0.787	2.65	2.82	9
3/4"	6.50	2.84	0.787	2.62	2.82	15
1"	7.60	3.47	0.787	2.78	3.35	42
1-1/4"	9.29	4.30	0.787	2.98	4.18	45
1-1/2"	9.29	4.30	0.787	3.13	4.18	125
2"	9.29	4.30	0.787	4.03	4.18	165
2-1/2"	11.02	4.61	0.787	4.91	4.27	245

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F8R-TX-050/3RDS-XX
3/4"	F8R-TX-075/3RDS-XX
1"	F8R-TX-100/3RES-XX
1-1/4"	F8R-TX-125/3RFS-XX
1-1/2"	F8R-TX-150/3RFS-XX
2"	F8R-TX-200/3RFS-XX
2-1/2"	F8R-TX-250/3RGS-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	F8R-TX-050/3RD4-XX
3/4"	F8R-TX-075/3RD4-XX
1"	F8R-TX-100/3RE4-XX
1-1/4"	F8R-TX-125/3RF4-XX
1-1/2"	F8R-TX-150/3RF4-XX
2"	F8R-TX-200/3RG4-XX
2-1/2"	F8R-TX-250/3RH4-XX

OPTIONS		
SUFFIX 1	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
SUFFIX 2	Accessories	Model no.
X	No Specials	
A	TYPE 4 Limit Switch	APL-210N
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

SAMPLE PART #  
**F8RC-TX-100/3RES-XX**

Prefix | Valve Series | Carbon Steel | End Connection | Seat Material | Valve Size | TRIAC Actuator Series | Actuator Size | Spring Return

SUFFIX 1: Solenoids  
SUFFIX 2: Limit Switch

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

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.

**Electric**  
Automated  
Ball Valve Package  
Series F8R  
3-Piece Ball Valve

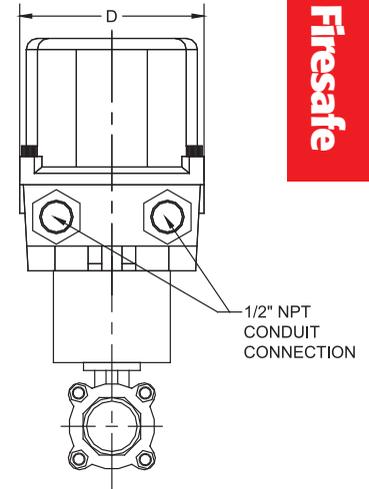
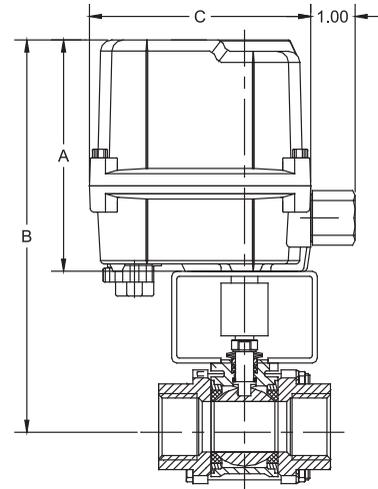
- Firesafe
- Sizes 1/2"- 2-1/2"
- Regular Port Design
- Conforms to ASME B16.34 (2020)  
Classes up to 600  
1000 to 2000 psi (BPVC) by size
- CF8M or WCB
- Threaded, Socket Weld, or Butt Weld Ends
- Superior Live Loaded Packing System
- ISO 5211 Actuator Mounting Pad
- Blowout Proof Stem w/ Dual Anti-Static Devices
- RTFE Seats Standard
- Pyramidal Stem Seal Design
- Lockable Manual Handle

**STANDARDS**

DESIGN	ASME B16.34 (fully conforms)
END CONNECTIONS	ASME B16.25, B1.20.1, B16.11
PRESSURE TESTING	API 598
FIRE TESTING	API 607-7th Edition
SULFIDE STRESS PROTECTION	NACE MR0175
MOUNTING	ISO 5211
CE Approval (optional)	2014/68/EU Module H
MARKING SYSTEM FOR VALVES	MSS SP-25, ISO 5209
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015



Firesafe tested to API-607 (valve only)



**DIMENSIONS (IN)**

VALVE SIZE	A	B	C	D	VALVE Cv
1/2"	5.24	7.89	4.94	4.08	9
3/4"	5.24	7.89	4.94	4.08	15
1"	5.24	8.02	4.94	4.08	42
1-1/4"	5.24	8.14	4.94	4.08	45
1-1/2"	5.24	8.29	4.94	4.08	125
2"	5.24	8.66	4.94	4.08	165
2-1/2"	5.24	9.54	4.94	4.08	245

**SERIES F8R 3-Piece**

**Firesafe**

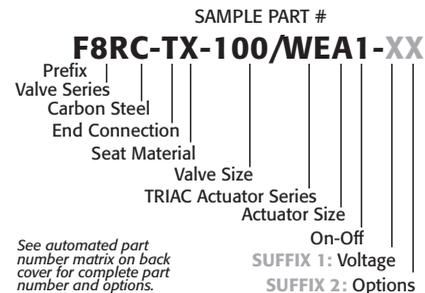
ON-OFF	
SIZE	MODEL
1/2"	F8R-TX-050/WEA1-XX
3/4"	F8R-TX-075/WEA1-XX
1"	F8R-TX-100/WEA1-XX
1-1/4"	F8R-TX-125/WEA1-XX
1-1/2"	F8R-TX-150/WEA1-XX
2"	F8R-TX-200/WEA1-XX
2-1/2"	F8R-TX-250/WEA1-XX

MODULATING	
SIZE	MODEL
1/2"	F8R-TX-050/WEA2-XX
3/4"	F8R-TX-075/WEA2-XX
1"	F8R-TX-100/WEA2-XX
1-1/4"	F8R-TX-125/WEA2-XX
1-1/2"	F8R-TX-150/WEA2-XX
2"	F8R-TX-200/WEA2-XX
2-1/2"	F8R-TX-250/WEA2-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.



# HOW TO ORDER: Manual Valves w/ Options

# Series F8R

API 607  
CERTIFIED

1	Prefix
F	Firesafe

2	Valve Series
8R	3 Piece Ball Valve, Regular Port

3	Body/Ball/Stem Material
Blank	Valve Series Standard (316SST)
C	Carbon Steel Body
D*	CD3MN Body/Duplex SST Ball & Stem

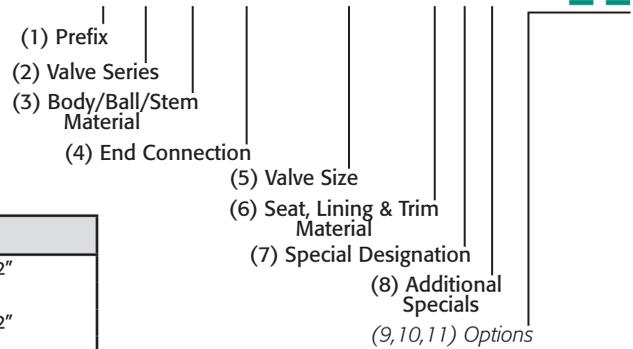
\* Firesafe Design

4	End Connection
TH	NPT Ends
SW	Socket Weld Ends
BW	Butt Weld Ends
EW	4" Long, Sch. 80, Extended Butt Weld Ends
TE	NPT x 4" Long, Sch. 80, Extended Butt Weld Ends
TS	NPT x Socket Weld
TB	NPT x Butt Weld

5	Valve Size	
0050	1/2"	0150 1-1/2"
0075	3/4"	0200 2"
0100	1"	0250 2-1/2"
0125	1-1/4"	

## MANUAL VALVE SAMPLE PART #

### F8RC-TH-0200-XXX-X-\_-\_-



6	Seat, Lining & Trim Materials
X	Reinforced TFE Seats (RTFE)
P	Virgin TFE Seats (PTFE)
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)

TFM™ is a trademark of Dyneon™, a 3M Company.

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

8	Special Designation
X	No Specials, Series Standard
O	Oxygen Cleaned
V	Vented Ball
E	Bonnet Extension Lockable Handle
F	Fugitive Emissions Bonnet
D	Degreased & Bagged
A	Vented Ball, Degreased & Bagged
B	Vented Ball, Oxygen Cleaned

## OPTIONS:

9	Special Designation
Blank	No Designation, Valve Series Standard
X	Multiple Option Designation
H	Hard Coated (HMF) Ball

10	O-Ring
Blank	No Designation, Valve Series Standard
X	Multiple Option Designation

11	Special Designation
Blank	No Designation, Valve Series Standard
B	B7M Bolting
E	CE/PED Certified
M	Marine Epoxy Coating

