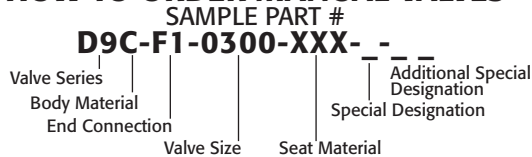


RTFE seats are standard, but various options are available for seat materials. The 50/50 STFE seat option is excellent for services that call for higher temperatures and more difficult applications, including steam. Call us for details.

### 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**

D9-3R-20240501  
 Copyright 2013 A-T Controls, Inc.

**A-T Controls, Inc.**

## Series D9

# Direct Mount Split Body Flanged Ball Valve

Sizes 1/2" - 12"

Available in 316SS or WCB

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                      |
| Mounting               | ISO 5211                     |
| CE Approval            | 2014/68/EU Module H          |
| Safety Integrity       | SIL 3; IEC 61508:2010        |
| Material Certification | EN 10204-3.1 MTR             |
| Quality Assurance      | ISO 9001:2015                |



### TABLE OF CONTENTS:

- 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.**

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

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

**SERIES D9 Direct Mount Split Body Flanged Ball Valve**

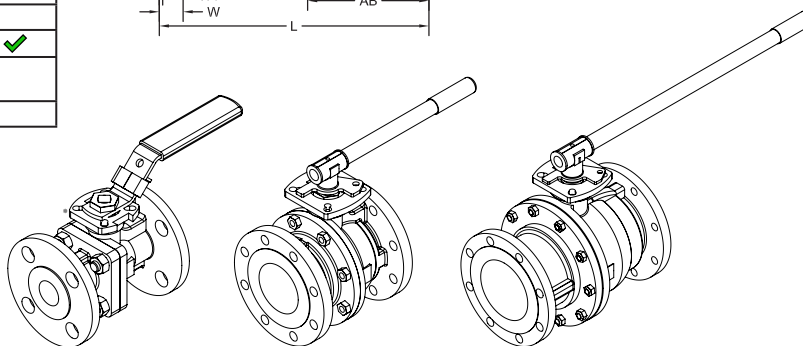
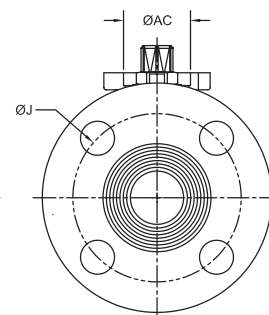
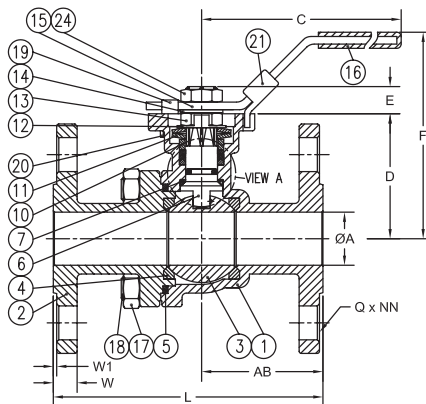
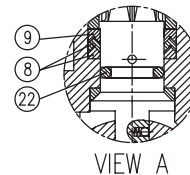
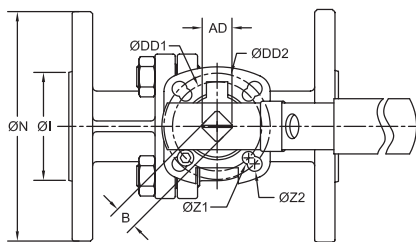
# Series D9

## High Performance, Full Port Split Body Ball Valve Series D9 (ASME Class 150)

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   | TFM™-1600            | TFM-1600             | ✓          |
| 6   | STEM               | 1   | ASTM A276 SS316      | ASTM A276 SS316      |            |
| 7   | STEM SEAL          | 1   | TFM™-1600            | TFM-1600             | ✓          |
| 8   | GLAND PACKING      | 1^  | PTFE                 | PTFE                 | ✓          |
| 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 8    | ASTM A194 GRADE 8    |            |
| 18  | BODY STUD          | *   | ASTM A193 GRADE B8   | ASTM A193 GRADE B8   |            |
| 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  | 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

^ PACKING SET  
\* 1/2" THRU 2" QTY = 4 PCS  
\* 2-1/2" THRU 4" QTY = 8 PCS  
\* 6" QTY = 10 PCS

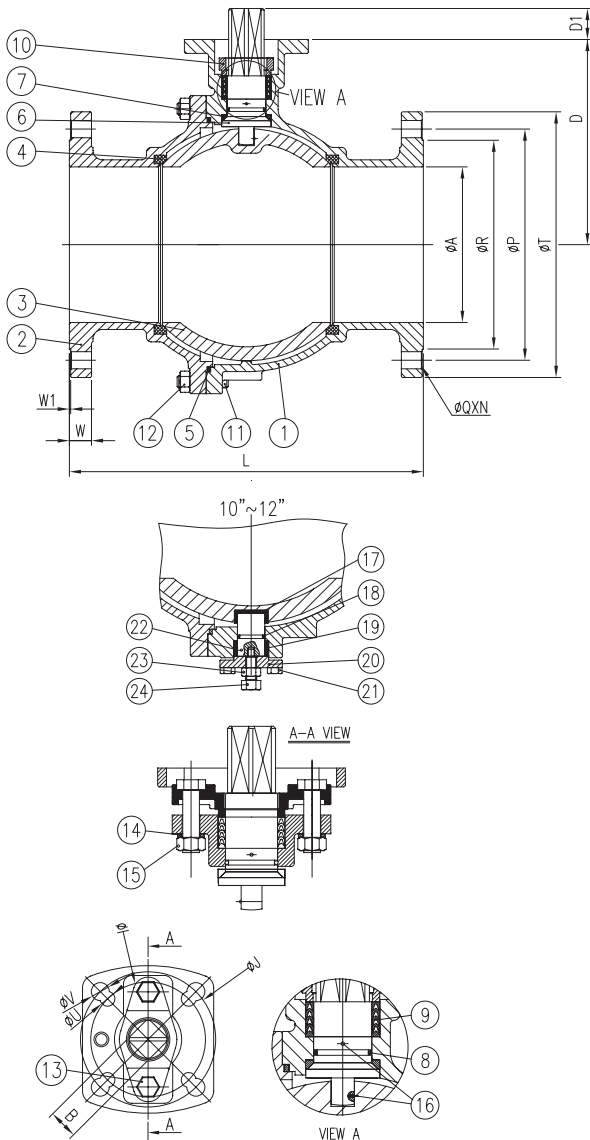
### DIMENSIONS (IN)

| SIZE   | A    | B     | C     | D    | E    | F     | I    | J    | L     | N    | Q    | W    | W1   | 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 D9 (ASME Class 150)

# Series D9

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 | PTFE                 | PTFE                 |
| 10  | GLAND               | 1     | ASTM A193 GRADE CF8  | ASTM A193 GRADE CF8  |
| 11  | BODY BOLT           | *     | ASTM A193 GRADE B8   | ASTM A193 GRADE B8   |
| 12  | BODY BOLT NUT       | *     | ASTM A193 GRADE 8    | ASTM A193 GRADE 8    |
| 13  | GLAND BOLT          | 2     | AISI 304             | AISI 304             |
| 14  | BOLT WASHER         | 2     | AISI 304             | AISI 304             |
| 15  | BOLT NUT            | 2     | AISI 304             | AISI 304             |
| 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     | AISI 304             | AISI 304             |
| 22  | SUPPORT GLAND PIN   | 1     | AISI 316             | AISI 316             |
| 23  | SET NUT             | 1     | AISI 304             | AISI 304             |
| 24  | TUNING SCREW        | 1     | AISI 304             | AISI 304             |

\* 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

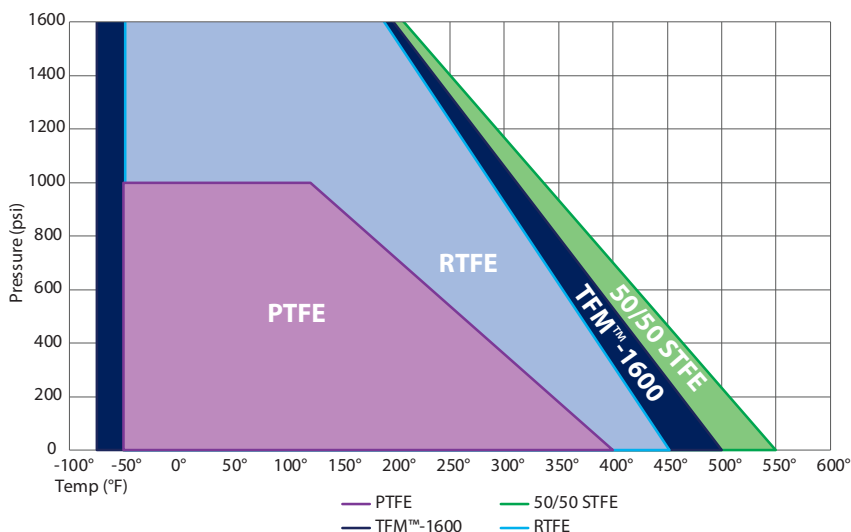
## DIMENSIONS (IN)

| 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 D9

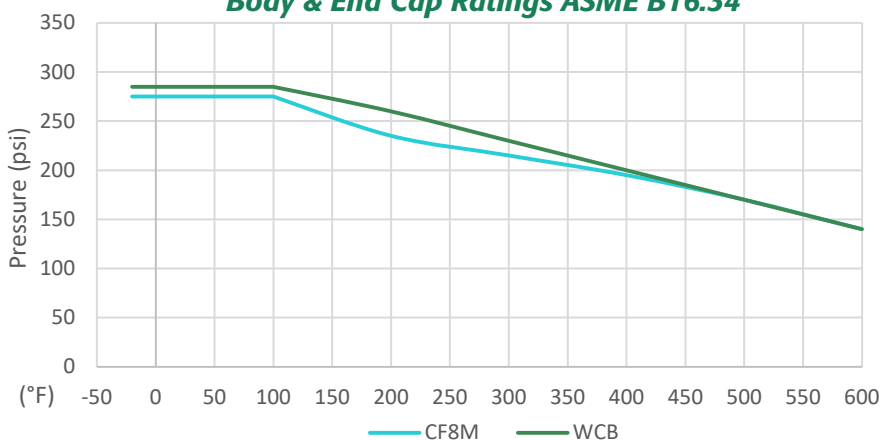
## High Performance, Full Port Split Body Ball Valve Series D9 (ASME Class 150)

**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**  
Body & End Cap 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 Seal                         | TFM™-1600       | -75°F to 500°F |
| Gaskets                           | TFM™-1600       | -75°F to 500°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"     | 1250     |
| 6"     | 3000     |
| 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.

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"   | 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 |

# Pneumatic Double Acting

## Automated Ball Valve Package

Series D9  
ASME Class 150  
Flanged Ball Valve  
Direct Mount

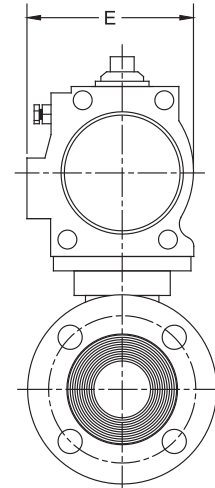
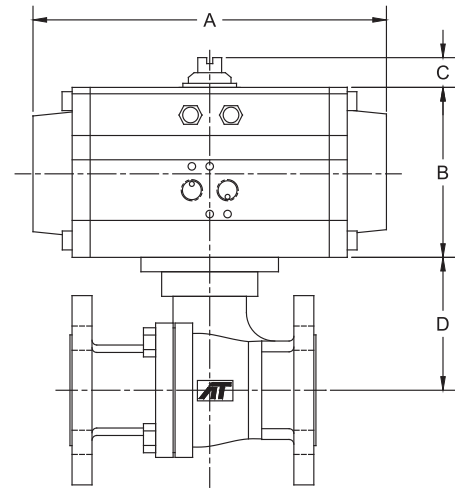
Sizes 1/2"-12"  
Available in 316SST or WCB  
ASME Class 150  
Full Port Design  
Superior Live Loaded  
Packing System  
Blowout Proof Stem w/ Dual  
Anti-Static Devices  
RTFE Seats Standard  
Pyramidal Stem Seal Design  
Monel Ball & Stem Available

### STANDARDS

|                        |                              |
|------------------------|------------------------------|
| Design                 | ASME B16.34 (fully conforms) |
| Face to Face           | ASME B16.10                  |
| Flange Dimensions      | ASME B16.5                   |
| Pressure Testing       | API 598                      |
| Mounting               | ISO 5211                     |
| CE Approval            | 2014/68/EU Module H          |
| Safety Integrity       | SIL 3; IEC 61508:2010        |
| Material Certification | EN 10204-3.1 MTR             |
| Quality Assurance      | ISO 9001:2015                |



ASME Class 150 Flanged  
Direct Mount



### DIMENSIONS (IN)

| VALVE SIZE | A     | B    | C     | D    | E    | VALVE Cv |
|------------|-------|------|-------|------|------|----------|
| 1/2"       | 6.50  | 2.84 | 0.787 | 1.84 | 2.82 | 15       |
| 3/4"       | 6.50  | 2.84 | 0.787 | 2.02 | 2.82 | 45       |
| 1"         | 6.50  | 2.84 | 0.787 | 2.31 | 2.82 | 85       |
| 1-1/2"     | 9.29  | 4.30 | 0.787 | 3.51 | 4.18 | 275      |
| 2"         | 9.29  | 4.30 | 0.787 | 3.80 | 4.18 | 450      |
| 2-1/2"     | 9.29  | 4.30 | 0.787 | 4.57 | 4.18 | 700      |
| 3"         | 13.39 | 6.14 | 0.787 | 5.22 | 5.59 | 1,100    |
| 4"         | 13.39 | 6.14 | 0.787 | 6.18 | 5.59 | 2,200    |
| 6"         | 15.35 | 6.81 | 1.181 | 8.28 | 5.98 | 5,150    |

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY



SERIES D9 150# Flanged Direct Mount

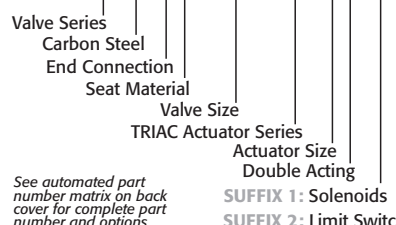
| SIZED FOR 80 psi AIR SUPPLY |                   |
|-----------------------------|-------------------|
| SIZE                        | MODEL             |
| 1/2"                        | D9-F1-050/3RDD-XX |
| 3/4"                        | D9-F1-075/3RDD-XX |
| 1"                          | D9-F1-100/3RDD-XX |
| 1-1/2"                      | D9-F1-150/3RFD-XX |
| 2"                          | D9-F1-200/3RFD-XX |
| 2-1/2"                      | D9-F1-250/3RFD-XX |
| 3"                          | D9-F1-300/3RJD-XX |
| 4"                          | D9-F1-400/3RJD-XX |
| 6"                          | D9-F1-600/3RKD-XX |

| SIZED FOR 60 psi AIR SUPPLY |                   |
|-----------------------------|-------------------|
| SIZE                        | MODEL             |
| 1/2"                        | D9-F1-050/3RDD-XX |
| 3/4"                        | D9-F1-075/3RDD-XX |
| 1"                          | D9-F1-100/3RDD-XX |
| 1-1/2"                      | D9-F1-150/3RFD-XX |
| 2"                          | D9-F1-200/3RFD-XX |
| 2-1/2"                      | D9-F1-250/3RFD-XX |
| 3"                          | D9-F1-300/3RJD-XX |
| 4"                          | D9-F1-400/3RJD-XX |
| 6"                          | D9-F1-600/3RKD-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     | TVCS-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          |

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 # D9C-F1-150/3RFD-XX



# Pneumatic Spring Return

## Automated Ball Valve Package

Series D9  
ASME Class 150  
Flanged Ball Valve  
Direct Mount

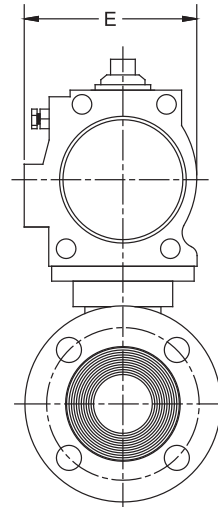
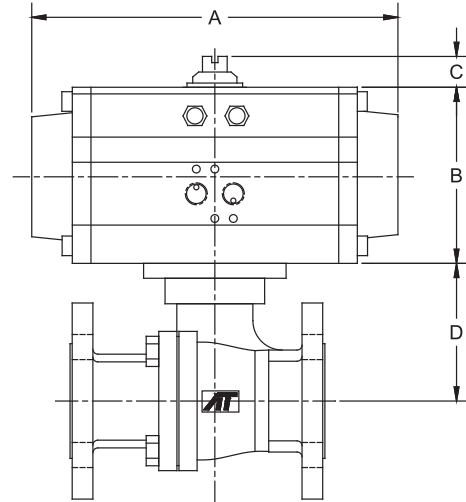
- Sizes 1/2"-12"
- Available in 316SST or WCB
- ASME Class 150
- Full Port Design
- Superior Live Loaded Packing System
- Blowout Proof Stem w/ Dual Anti-Static Devices
- RTFE Seats Standard
- Pyramidal Stem Seal Design
- Monel Ball & Stem Available

### STANDARDS

|                        |                              |
|------------------------|------------------------------|
| Design                 | ASME B16.34 (fully conforms) |
| Face to Face           | ASME B16.10                  |
| Flange Dimensions      | ASME B16.5                   |
| Pressure Testing       | API 598                      |
| Mounting               | ISO 5211                     |
| CE Approval            | 2014/68/EU Module H          |
| Safety Integrity       | SIL 3; IEC 61508:2010        |
| Material Certification | EN 10204-3.1 MTR             |
| Quality Assurance      | ISO 9001:2015                |



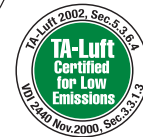
ASME Class 150 Flanged Direct Mount



### DIMENSIONS (IN)

| VALVE SIZE | A     | B    | C     | D    | E    | VALVE Cv |
|------------|-------|------|-------|------|------|----------|
| 1/2"       | 7.60  | 3.47 | 0.787 | 1.84 | 3.35 | 15       |
| 3/4"       | 7.60  | 3.47 | 0.787 | 2.02 | 3.35 | 45       |
| 1"         | 7.60  | 3.47 | 0.787 | 2.31 | 3.35 | 85       |
| 1-1/2"     | 9.29  | 4.30 | 0.787 | 3.51 | 4.18 | 275      |
| 2"         | 11.02 | 4.61 | 0.787 | 3.80 | 4.27 | 450      |
| 2-1/2"     | 11.50 | 5.28 | 0.787 | 4.57 | 5.78 | 700      |
| 3"         | 15.35 | 6.81 | 1.181 | 5.22 | 5.98 | 1,100    |
| 4"         | 15.35 | 6.81 | 1.181 | 6.18 | 5.98 | 2,200    |
| 6"         | 22.36 | 9.06 | 1.181 | 8.28 | 8.11 | 5,150    |

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY



SERIES D9 150# Flanged Direct Mount

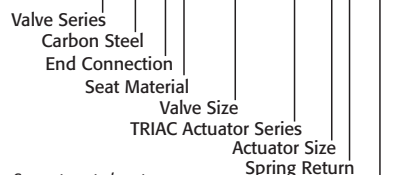
| SIZED FOR 80 psi AIR SUPPLY |                   |
|-----------------------------|-------------------|
| SIZE                        | MODEL             |
| 1/2"                        | D9-F1-050/3RES-XX |
| 3/4"                        | D9-F1-075/3RES-XX |
| 1"                          | D9-F1-100/3RES-XX |
| 1-1/2"                      | D9-F1-150/3RFS-XX |
| 2"                          | D9-F1-200/3RGS-XX |
| 2-1/2"                      | D9-F1-250/3RHS-XX |
| 3"                          | D9-F1-300/3RKS-XX |
| 4"                          | D9-F1-400/3RKS-XX |
| 6"                          | D9-F1-600/3RPS-XX |

| SIZED FOR 60 psi AIR SUPPLY |                   |
|-----------------------------|-------------------|
| SIZE                        | MODEL             |
| 1/2"                        | D9-F1-050/3RE4-XX |
| 3/4"                        | D9-F1-075/3RE4-XX |
| 1"                          | D9-F1-100/3RF4-XX |
| 1-1/2"                      | D9-F1-150/3RG4-XX |
| 2"                          | D9-F1-200/3RG4-XX |
| 2-1/2"                      | D9-F1-250/3RJ4-XX |
| 3"                          | D9-F1-300/3RK4-XX |
| 4"                          | D9-F1-400/3RL4-XX |
| 6"                          | D9-F1-600/3RR4-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          | 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             | 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          |

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 # D9C-F1-150/3RGS-XX



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

SUFFIX 1: Solenoids  
SUFFIX 2: Limit Switch

# Electric

## Automated Ball Valve Package

Series D9  
ASME Class 150  
Flanged Ball Valve  
Direct Mount

Sizes 1/2"-12"  
Available in 316SST or WCB  
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                      |
| Mounting               | ISO 5211                     |
| CE Approval            | 2014/68/EU Module H          |
| Safety Integrity       | SIL 3; IEC 61508:2010        |
| Material Certification | EN 10204-3.1 MTR             |
| Quality Assurance      | ISO 9001:2015                |

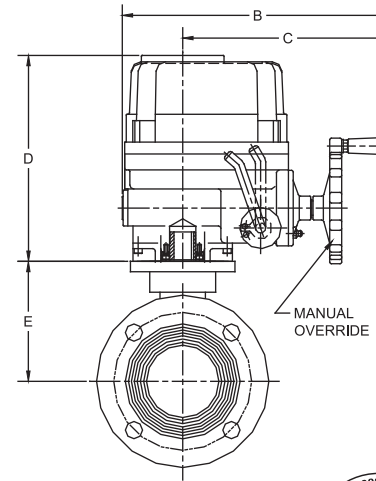
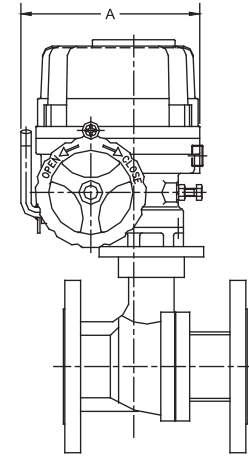


ASME Class 150 Flanged Direct Mount

### 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 | 10.43 | 10.55 | 4.57 | 700      |
| 3"         | 9.02  | 13.31 | 10.43 | 10.55 | 5.22 | 1,100    |
| 4"         | 10.20 | 14.49 | 11.26 | 11.42 | 6.18 | 2,200    |
| 6"         | 10.20 | 14.49 | 11.26 | 11.97 | 8.28 | 5,150    |

(D) DIMENSION IS FROM CENTERLINE TO END OF HANDWHEEL ON 2-1/2" - 6" OR MODULATING ACTUATORS 1/2" - 2". FOR SPECIALS, CONSULT FACTORY



SERIES D9 150# Flanged Direct Mount

| ON-OFF |                   |
|--------|-------------------|
| SIZE   | MODEL             |
| 1/2"   | D9-F1-050/WEA1-XX |
| 3/4"   | D9-F1-075/WEA1-XX |
| 1"     | D9-F1-100/WEA1-XX |
| 1-1/2" | D9-F1-150/WEA1-XX |
| 2"     | D9-F1-200/WEA1-XX |
| 2-1/2" | D9-F1-250/WEC1-XX |
| 3"     | D9-F1-300/WEC1-XX |
| 4"     | D9-F1-400/WEE1-XX |
| 6"     | D9-F1-600/WEF1-XX |

| MODULATING |                   |
|------------|-------------------|
| SIZE       | MODEL             |
| 1/2"       | D9-F1-050/WEA2-XX |
| 3/4"       | D9-F1-075/WEA2-XX |
| 1"         | D9-F1-100/WEA2-XX |
| 1-1/2"     | D9-F1-150/WEA2-XX |
| 2"         | D9-F1-200/WEA2-XX |
| 2-1/2"     | D9-F1-250/WEC2-XX |
| 3"         | D9-F1-300/WEC2-XX |
| 4"         | D9-F1-400/WEE2-XX |
| 6"         | D9-F1-600/WEF2-XX |

| 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.

SAMPLE PART #  
**D9C-F1-150/WEA1-XX**

Valve Series | Carbon Steel | End Connection | Seat Material | Valve Size | TRIAC Actuator Series | Actuator Size | On-Off

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

SUFFIX 1: Voltage  
SUFFIX 2: Options

# Series D9 HOW TO ORDER: Manual Valves

| 1     | Prefix                              |      |     |
|-------|-------------------------------------|------|-----|
| 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                      |      |     |
| 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" |

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.

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

| 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% CS Powder/75% TFE Seats (CTFE)         |  |  |  |
| T | TFM™-1600 Seats                            |  |  |  |
| A | 50% SS Powder / 50% TFM™-1600 (STFM) Seats |  |  |  |
| F | PTFE Cavity Filler Seats                   |  |  |  |
| H | TFM Cavity Filler Seats and Seals          |  |  |  |
| J | STFE Cavity Filler Seats                   |  |  |  |
| R | RTFE Cavity Filler Seats                   |  |  |  |
| M | MG1241 Seats                               |  |  |  |
| Z | PEEK Seats                                 |  |  |  |
| 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                           |  |
| 5     | Chemraz 505                           |  |
| 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                           |  |
| E     | CE/PED Certified                      |  |
| M     | Marine Epoxy Coating                  |  |

**HOW TO ORDER MANUAL VALVES**

1 2 3 - 4 - 5 - 6 7 8 - 9 - 10 11  
 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓  
**D9 C - F1 - 0150 - X X X**

## HOW TO ORDER: Automated Valves

| 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) Seats         |     |        |
| P     | Virgin TFE Seats (PTFE)                    |     |        |
| U     | UHMWPE Seats                               |     |        |
| S     | 50/50 STFE Seats                           |     |        |
| C     | 25% CS Powder/75% TFE Seats (CTFE)         |     |        |
| T     | TFM™-1600 Seats                            |     |        |
| A     | 50% SS Powder / 50% TFM™-1600 (STFM) Seats |     |        |
| M     | MG1241 Seats                               |     |        |
| Z     | PEEK Seats                                 |     |        |
| 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"   | AAA | 10"    |
| 800   | 8"   | BBB | 12"    |
| 7 (A) | Pneumatic Actuator - 3R, 3N, 3P Series     |     |        |
| 3RC   | 3R10                                       | 3RM | 3R850  |
| 3RD   | 3R20                                       | 3RN | 3R1000 |
| 3RE   | 3R40                                       | 3RP | 3R1200 |
| 3RF   | 3R80                                       | 3RR | 3R1750 |
| 3RG   | 3R130                                      | 3RS | 3R2400 |
| 3RH   | 3R200                                      | 3RT | 3R2500 |
| 3RJ   | 3R300                                      | 3RU | 3R2700 |
| 3RK   | 3R500                                      | 3RV | 3R3300 |
| 3RL   | 3R700                                      | 3RW | 3R3500 |

3R=Standard, 3N=Electroless Nickel Plating,  
3P=Teflon™ (PTFE) Coating

| 7 (A)   | Pneumatic Actuator - S2 Series   |      |           |  |
|---|----------------------------------|------|-----------|--|
| S2C   | S2-052                           | S2G  | S2-125    |  |
| S2D   | S2-063                           | S2H  | S2-140    |  |
| S2E   | S2-083                           | S2J  | S2-160    |  |
| S2F   | S2-105                           | S2K  | S2-210    |  |
| 7 (B)   | Pneumatic Action                 |      |           |  |
| D   | Double Acting (DA)               |      |           |  |
| S   | Spring CW (5 springs)*           |      |           |  |
| O   | Spring CCW (5 springs)*          |      |           |  |
| 4   | Spring CW (4 springs)**          |      |           |  |
| F   | Spring CCW (4 springs)**         |      |           |  |
| 6   | Spring CW (6 springs)            |      |           |  |
| H   | Spring CCW (6 springs)           |      |           |  |
| *2500 & 3500 80 psig spring<br>**2500 & 3500 60 psig spring |                                  |      |           |  |
| 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**  
SAMPLE PART #

**D9C-F1-150/3R3D-XX-**

(2) Valve Series | (10) Special Designation  
 (3) Body/Ball/Stem Material | (9) Accessory  
 (4) End Connection | (8) Accessory  
 (5) Seat/Trim Material | (7B) Double Acting  
 (6) Valve Size | (7A) TRIAC Actuator Series

| 8  | Accessories/Options             |  | Model no.         |
|--|---------------------------------|--|-------------------|
| X  | No Specials                     |  |                   |
| A  | TYPE 4 Solenoid 120VAC          |  | TVCS-X411-4N-A120 |
| B  | TYPE 7 Solenoid 120VAC          |  | TVCG-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           |  | TVCG-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  |
| 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                                      |  |
| E     | CE/PED Certified                                   |  |
| F     | Viton® Seal for Pneumatic Actuators (0°F to 300°F) |  |