













A-T Controls, Inc.

## Product Overview



Valves, Valve Automation & Accessories



















	1-Piece	2-Piece				
						
Series	<b>SERIES 10</b>	<b>SERIES 20</b>	<b>SERIES 21C</b>	<b>SERIES 22</b>	<b>SERIES 24</b>	<b>SERIES F23/F26</b>
General Description & Features	1-piece unibody design, end-loaded ball	2-piece general purpose full port, locking handle	2-piece general purpose carbon steel reduced port, locking handle	2-piece high performance direct mount	2-piece high performance 3000 psi	2-piece high pressure seal welded
Automated Pneumatic	Not available	Not available	Not available			Call factory
Automated Electric	Not available	Not available	Not available			Call factory
Sizes	1/4" - 2"	1/4" - 3"	1/4" - 2"	1/4" - 3"	1/4" - 2"	1/4" - 2"
Port	Reduced	Full	Reduced	Full	See brochure	Full & Reduced See Dimensions
Direct Mount	No	No	No	Yes	Yes	No
Pyramidal Stem Packing	No	No	No	Yes	Yes	No
Body Materials	316SS	316SS	WCB	316SS	316SS	316SS & WCB
Trim Material	316SS	316SS	316SS	316SS	316SS	316SS
Available Seats	RTFE	RTFE	RTFE	RTFE, call for others	Delrin, PEEK	PEEK Standard Delrin available non-stock
End Connections	Threaded	Threaded	Threaded	Threaded	Threaded	Threaded
Max Pressure Rating	2000 psi	1000 psi	2000 psi	1000 psi	3000 psi	3600/6000 psi
Options	None	Vented Ball	Vented Ball	Call factory	NACE MR0175, Vented ball, Others call factory	Call factory
TA-Luft Certified	No	No	No	Yes	No	No



TA-Luft Certified

3-Piece








					
SERIES 55	SERIES 8R/83	SERIES F8R/F83	SERIES 88	SERIES F88	SERIES 77
3-piece standard service exposed bolt "swing-out" design, locking handle	3-piece high performance, locking handle	Firesafe 3-piece high performance, locking handle	3-piece high performance, direct mount, locking handle	Firesafe 3-piece high performance, direct mount, locking handle	Cavity and non-cavity filled 3 piece, sanitary clamp or tube OD ends
					
					
1/4" - 4"	1/4" - 2-1/2"	1/4" - 2-1/2"	1/4" - 4"	1/4" - 4"	1/2" - 4"
Full	Full or Regular	Full or Regular	Full	Full	Full
No	No	No	Yes	Yes	Yes
No	Yes	Yes	Yes	Yes	Yes
316SS & WCB	316SS & WCB	316SS & WCB	316SS, WCB & Alloy 20	316SS & WCB	316L
316SS	316SS	316SS	316SS, Monel & Hastelloy C	316SS, Monel & Hastelloy C	316L
RTFE, PTFE, 50/50, 25% CTFE, TFM-1600 and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	PTFE, cavity filled, non-cavity filled, RTFE, TFM-1600
Threaded, Socket Weld, Butt Weld	Threaded, Socket Weld, Butt Weld	Threaded, Socket Weld, Butt Weld	Threaded, Socket Weld, Butt Weld	Threaded, Socket Weld, Butt Weld	Sanitary clamp, tube OD
1000 psi	2000/1500 psi	2000/1500 psi	2000/1500/1000 psi	2000/1500/1000 psi	1000 psi
Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	NACE MR0175, Vented Ball, Gear Operator, Stem Extension and others	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	NACE MR0175, Vented Ball, Gear Operator, Stem Extension and others	Vented Ball, Oxygen Cleaned and Others
No	Yes	No	Yes	No	Yes






	150# Flanged			150# & 300# Flanged	600# Flanged	
Series						
General Description & Features	SERIES 90 & 93	SERIES F90	SERIES F91	SERIES D9	SERIES FD9	SERIES FD9/F6
	150# flanged 2-piece, full port, with pyramidal stem packing	Firesafe 150# flanged 2-piece, full port with pyramidal stem packing	Firesafe Unibody design 150# flanged regular port Direct mount	Direct mount 150# flanged 2-piece, full port with pyramidal stem packing	Firesafe direct mount 150# and 300# flanged 2-piece, full port with pyramidal stem packing	2-piece split body 600# flanged, full port with pyramidal stem seal
Automated Pneumatic						
Automated Electric						
Sizes	1/2" - 12"	1/2" - 4"	1/2" - 6"	1/2" - 8"	1/2" - 8"	1/2" - 2"
Port	Full	Full	Regular	Full	Full	Full
Direct Mount	No	No	Yes	Yes	Yes	Yes
Pyramidal Stem Packing	Yes	Yes	Yes	Yes	Yes	Yes
Body Materials	316SS, WCB & Alloy 20	316SS & WCB	316SS & WCB	316SS & WCB	316SS & WCB	316SS & WCB
Trim Material	316SS	316SS	316SS	316SS, Monel & Hastelloy C	316SS, Monel & Hastelloy C	316SS
Available Seats	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK and others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK & others	RTFE, PTFE, TFM, 50/50, 25% CTFE, UHMWPE, Delrin, PEEK & others	50/50, 25% CTFE, UHMWPE, Delrin, PEEK & others
End Connections	150# Flanged	150# Flanged	150# Flanged	150# Flanged	150# and 300# Flanged	600# Flanged
Max Pressure Rating	285 psi	285 psi	285 psi	285 psi	740 psi	1480 psi
Options	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	Vented Ball, Gear Operator, Stem Extension and others	NACE MR0175, Vented Ball, Gear Operator, Stem Extension and others	Vented ball, oxygen cleaned, gear operator, stem extension and others	NACE MR0175, Vented ball, gear operator, stem extension and others	NACE MR0175, Vented ball, gear operator, stem extension and others
	Yes	No	No	Yes	No	No








Multi-Port		High Performance Multi-Port	Metal Seat Flanged	Metal Seat 3-Piece	Tank Bottom
					
<b>SERIES 38</b>	<b>SERIES 30</b>	<b>SERIES 33,43,53</b>	<b>SERIES M</b>	<b>SERIES M</b>	<b>TB SERIES</b>
Threaded general purpose 3-way	150# & 300# Flanged general purpose 3-way	High performance, 3, 4 or 5-way, TH, SW, BW, flanged, sanitary, direct mount	150#, 300#, 600#, Split Body Unidirectional + Bidirectional	NPT & SW 3-Piece Class 600 Bidirectional	3-piece tank bottom valve
					
					
1/4" - 2"	1-1/2" - 12"	1/4" - 4"	150#/300#: 1/2" - 8" 600#: 1/2" - 6"	600#: 1/2" - 2"	2", 3", 4"
Reduced	Full	Full	Full	Full	Full
No	No	Yes	No	No	No
No	No	Yes	No	No	No
316SS	316SS & WCB	316SS	316SS, WCB, 316L, 317, Duplex & more	316SS, WCB, 316L, 317, Duplex & more	316SS
316SS	316SS	316SS	Tungsten Carbide, HCR, Chrome Carbide	Tungsten Carbide, HCR, Chrome Carbide	316SS
RTFE	RTFE, PTFE, 50/50, 25% CTFE, others on request	RTFE, PTFE, 50/50, cavity fillers, others on request	Tungsten Carbide 316 with Stellite Chrome Carbide	Tungsten Carbide 316 with Stellite Chrome Carbide	RTFE, PTFE, 50/50, 25% CTFE, others on request
Threaded	150# + 300# Flanged	TH, SW, BW, sanitary, flanged	150#, 300#, 600# Flanged	TH + SW	Tank weld pad + TH, SW, BW, Flanged
1000 psi	See spec. sheets	See spec. sheets	See spec. sheets	See spec. sheets	1000 psi
"L" or "T" port	"L" or "T" port	3, 4, 5-way, "L", "T", "LL", "I", "X", "TT" ports, various options	See spec sheets Scraper seat available	See spec sheets Scraper seat available	Vented Ball, Oxygen Cleaned, Gear Operator, others
No	No	Yes	No	No	No





	V-Port Control Valves	Segmented Valves	Butterfly Valves	
				
Series	<b>V SERIES</b>	<b>VS &amp; VM SERIES</b>	<b>SERIES OC/OS</b>	<b>SERIES PS/PM/PF/PH</b>
General Description & Features	"V" port control valves	Unibody V-Port Segmented	Resilient Butterfly Valves	High Performance Butterfly Valves
Automated Pneumatic				
Automated Electric				
Sizes	1/2" - 6"	1" - 16"	1-1/2" - 36" Stock up to 126" available	2" - 24" Stock larger available
Port	30°, 60°, 90°, others on request	Segmented	Stub shaft disc	Through shaft disc
Direct Mount	Some	No	Yes	No
Pyramidal Stem Packing	Yes	No	No	No
Body Materials	316SS & WCB	CF8M, WCB, 317SS, Duplex and more	Ductile iron 316SS	316SS, WCB, other
Trim Material	316SS	See spec. sheet	DI, AL Bronze, 316, Nylon coated, TFE coated, other	316SS, Alloy 20, Duplex, other
Available Seats	RTFE, PTFE, 50/50, call with application	Soft or Metal	Buna, EPDM, Viton, PTFE, others	TFE, Metal, Firesafe, High temp
End Connections	TH, SW, BW, Flanged, Tube OD + Tri-clamp	150#, 300# + Wafer Pattern	Wafer & Lug	Wafer & Lug
Max Pressure Rating	See spec. sheets	See spec. sheet	See spec. sheet	See spec. sheets
Options	Various, please call with requirements	See spec. sheet	Call factory	Call factory

Wellhead Block & Bleed	Cryogenic	FM Approved Assemblies	Spring Return Handle
			
WB SERIES	C8/CR SERIES	FM	SRH
Wellhead Service Block and Bleed valves	3-Piece Extended Bonnet	FM Approved Assemblies for gas safety shutoff applications	Fail-safe handle for manual valve operation
NA			
NA		Not Available	
1/2" - 2"	1/2" - 2"	1/4" - 6"	1/4" - 1-1/2"
Full	Full + Regular	Full	
No	Yes	Yes	
No	Yes	Yes	
316SS	316SS	316SS & WCB	
316SS	316SS	316SS	
CTFE	PCTFE	RTFE	
NPT	TH + SW	150#, 300#, NPT, SW + BW	
2000 PSI	See spec. sheet	See spec. sheet	
NACE MR0175	See spec. sheet	See spec. sheet	

	Heavy Duty Actuators	Pneumatic Scotch Yoke Actuators	Pneumatic Rack & Pinion Actuators	180° Pneumatic Actuators	Stainless Steel Pneumatic Actuators
					
Series	<b>THD SERIES</b>	<b>SY SERIES</b>	<b>2R, 2K, 2CI SERIES</b>	<b>180-AL SERIES</b>	<b>SS SERIES</b>
General Description & Features	Pneumatic and hydraulic scotch yoke design, Symmetrical and Canted yoke	Pneumatic Scotch Yoke design	Thirteen sizes of pneumatic actuators	180° rack & pinion pneumatic actuators	Stainless steel Rack & Pinion design
Models	Full range of torques to 1,600,000 in. lbs.	Three models	2R - ISO 5211 mounting 2K & 2CI - Butterfly direct mount	Five models 740 –6200 in. lbs.	Double Acting and Spring Return
Variations	Double Acting, Spring Return	Double Acting, Spring Return	Various mounting dimensions	180° Dribble and batch control	Double Acting, Spring Return
Types	Pneumatic and hydraulic	Pneumatic	Eleven sizes rack & pinion, two sizes scotch yoke	Pneumatic	Pneumatic
Materials	Ductile iron center body	Ductile iron center body	Hard anodized aluminum body	Hard anodized aluminum	316SS
Features	Torque stabilizer bar, travel stops, female drive	ISO 5211 mounting	Dual travel stops	Sturdy rack & pinion design	Corrosion resistant
Options	Manual overrides, various controls, low temp., high temp., accumulator tanks, others	Various control accessories	High & low temp seals, Extended travel stops, Reduced cycle times available, Marine epoxy coating on end caps, Various accessories	Dribble control 3-position control	Various control accessories



Declutchable Gear Operators	Gear Operators	Electric Actuators		
				
<b>2R, 2C, and 2K DGO SERIES</b>	<b>Q SERIES</b>	<b>WE/XE/SE SERIES</b>	<b>E SERIES</b>	<b>XEC SERIES CHOKE VALVE ELECTRICS</b>
"Sandwich" mount, gear overrides	Manual gear operators for quarter-turn valves	Eighteen sizes of electric actuators On-off & modulating	Thirteen sizes of electric actuators On-off & modulating	12 VDC electric actuators for choke valves
Six models	Eight standard sizes, Larger sizes available to 410,000 in/lbs.	WE-350 through WE-80000 XE-690 through XE-25900 SE-690 through SE-25900	ETI-300 through ETI-30000	690 and 1350 in. lbs.
ISO 5211, Keystone, and Centerline patterns stock, others on request	ISO 5211 mounting in inventory, others on request	On-off & modulating , Various AC & DC Voltages	On-off & modulating	On-off with choke specific controls
Declutchable	Quarter-turn	NEMA 4, 4X, Explosion-proof ATEX, CSA, submersible, IP68 10M 72HR	NEMA 4, 4X	NEMA 4, 4X, 7
Ductile iron	Cast iron	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure
Easy declutch mechanism, low profile	Travel stops	AWWA-C540-93, Manual override, Four switches standard, Heater & stat standard, Self-locking gear train	Manual overrides, Four switches standard, Heater & stat standard, Self-locking gear train	Manual overrides, Four switches standard, Heater & stat standard, Self-locking gear train
Dump valves, NAMUR adaptor plates	Top-mounted limit switches, others	Vibration and shock resistant, Fireproof coated enclosure, Intelligent and integral control unit, Analog & digital modulating control cards & busses	Manual on-off-auto station	See literature

	Limit Switches	Solenoids	Positioners	Control Options	Other Accessories
					
Series	<b>APL, EX, EC, ES and others (APL pictured)</b>	<b>TVCS, TVC5, TVC6 and others</b>	<b>PPR, EPR, SS2, SS3 and SS5</b>		
General Description & Features	Various limit switch boxes	NAMUR mount, solenoids or pipe mounted	Pneumatic, electro-pneumatic, digital or "smart"	Speed controls, flow controls, lock-up valves	Filter regulators, dribble controls, others
Models	APL, EX, EC & ES Series	TVCS, TVC5, TVC6 and others	EPR1000, PPR1200, SER1000, 760, PS2, TZIDC, SS2, SS3, SS5	Various	Various
Variations	Materials, switch types	Weatherproof, ex-proof, 3, 4 or 5-way	Pneumatic, electro-pneumatic, digital "smart" HART, BUS	Most any!	Most any!
Types	SPDT, proximity, low voltage, high amp. ASI & others	2-position, 3-position, single or dual coil	Rotary or linear	Most any!	Most any!
Materials	Aluminum, plastic or stainless steel	Aluminum or SS	Aluminum body	Most any!	Most any!
Features	2-way & 3-way position indicators	Direct-mount	Easy to calibrate, repeatable	Most any!	Most any!
Options	Several types of communication options	Various voltages & configurations	Transmitters, limit switches, mounting hardware, call with requirements	Most any!	Most any!

## Additional Ball Valve Options and Variations

### Spring Loaded Locking Handle

Adding a spring loaded component to this handle allows for secure positioning of the valve even in vertical orientations

### Oval Handle

The oval shaped handle allows for operation without the chance of dislodging a standard design handle that clothing or other equipment may catch in passing by a valve.

### Spring Return Fail-Safe Handle

This handle is designed for use in critical services where the open or closed position must be maintained by manual positioning. Manual release of the handle will result in spring-to-close or spring-to-open as the application requires.

### Side Vented Ball Option

Vents pressure to the upstream side. Equalizes pressure in the valve caused by thermal expansion of liquid. Maintains seat seal and prevents blowout of the seats. (Stem slot is vented as standard.)

### "V" Port Control Ball

"V" ported balls give better flow control properties to a traditionally round ported ball valve. They are available with a 15, 30, 60 or 90 degree "V" port. The 15 and 30 degree ports allow for finer control at lower flow rates. The 60 and 90 degree ports allow more precise control for higher Cv applications. Custom openings are also available per application. Also available in segment V-Ball.

## Ball Valve Seat Materials

We offer a variety of seat materials to cover numerous flow and service applications. Below is a brief description of the seat materials. Some are stock and others are available upon special request.

### RTFE

#### Reinforced Teflon® to 450°F.

Glass fiber reinforced PTFE is our standard seat material. Has chemical resistance of PTFE with the improved wear and abrasion resistance. Versatile temperature characteristics.

### CTFE

#### 25% Carbon Steel Powder/75% PTFE to 480°F.

25% carbon/graphite powder and 75%PTFE. Good for low pressure steam applications and abrasive and slurry services.

### TFM-1600

#### To 500°F.

Second generation TFE. Offers better creep resistance. Lower coefficient of friction provides lower torque values and resists deformation. Ideal for applications requiring higher purity such as semi-conductor. Resists "popcorning" in monomer service.

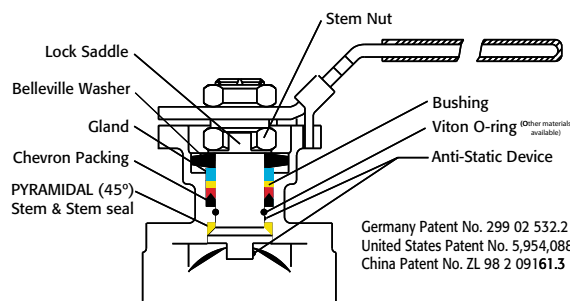
## Featuring Standard

Anti-Static Grounding

Blowout Proof Stems

Pyramidal Stem Seal Packing System

The best performing stem seal packing system on the market



### PTFE

#### "Virgin" Teflon® to 400°F.

Good chemical resistance and lower torque values. Used for many general applications. Good for low cycle life applications

### UHMWPE

#### Ultra high molecular weight polyethylene to 180°F.

UHMWPE has good abrasion resistance, good for abrasive and slurry services. Torques are significantly higher than RTFE. Good for tobacco and nuclear services.

### 50/50 STFE

#### 50% SS Powder/50% PTFE to 550°F.

50% stainless steel powder and 50% PTFE give this seat material good sealing and temperature resistant properties. Good for steam and abrasive applications. Better cold flow properties than RTFE.

### PEEK

#### Polyetherketone to 550°F.

Good chemical resistance with higher temperature tolerance.

### MG1241

#### Graphite, Glass Fiber, TFE to 480°F.

Good for high cycle applications and abrasive service.

### 316SS\*/Stellite

#### Metal Seat Good to 660°F.

Unidirectional or Bidirectional shut-off.

### 316SS\*/Tungsten Carbide

#### Metal Seat good to 930°F.

Unidirectional or Bidirectional shut-off.

\*Other base material available.

# Manual Ball Valve Part Number Matrix

1 Firesafe Designation	
F	Firesafe Tested

2 Valve Series	
10	1pc. Reduced Port 2000#
20	2pc. Full Port 2000#
21	2pc. Reduced Port 1000#
22	2pc. Direct Mount 1000/800# Full Port
23	2pc. 3600# Seal-Welded
24	2pc. 3000#
26	2pc. 6000# Seal-Welded
30	3-Way Flanged Full Port
33	3, 4, 5-Way Full Port, Multiport
38	3-Way Threaded Reduced Port
55	3pc. 1000# Full Port
77	3pc. 1000# Full Port Sanitary
83	3pc. 2000/1500# Full Port
8R	3pc. 2000/1500# Regular Port
88	3pc. Direct Mount 2000/1500# Full Port
R8	3pc. Direct Mount 2000/1500# Reduced Port
90	2pc. Flanged Full Port (Investment Cast)
91	Unibody Reduced Port Flange
93	2pc. Flanged Full Port (Sand Cast)
V7	3pc. Sanitary V-Port
V8	3pc. V-Port
V9	Flanged V-Port
D9	Direct Mount Flanged
T5	Tank Bottom 3pc.
C8	Cryogenic 3 Piece Full Port
CR	Cryogenic 3 Piece Regular Port
MU	Metal Seat Unidirectional Shutoff, Floating Ball
MB	Metal Seat Bidirectional Shutoff, Floating Ball
MS	Metal Seat Scraper Seat Design
MX	Metal Seat 3 pc. Bidirectional, Floating Ball
M3	3-Way Metal Seat
MT	Trunnion Metal Seat
TS	Trunnion Soft Seat
VS	Segment V-Port, Soft
VM	Segment V-Port, Metal Graphite Packing
VV	Segment V-Port, Metal Viton Packing
WB	Well Head Block and Bleed

3 Body Material	
Blank	No Designation=SST Body and Trim
A	Alloy 20
C	Carbon Steel Body
L	Low Carbon 316 Stainless Steel
J	Low Carbon 304 Stainless Steel
H	Carbon Body /Hastelloy Ball & Stem
Q	Carbon Steel Body/Monel Ball & Stem
R	316 SST Body/Monel Ball & Stem
E	Electropolished Stainless Steel
Z	Epoxy Coated Carbon Steel
7	CG8M 317 SST
D	CD3MN Duplex SST
G	CE3MN Super Duplex SST
4	F316H Forged
5	LCB
8	LCC
6	WC6
9	WC9

4 End Connection	
TH	Threaded Ends
SW	Socket Weld Ends
BW	Buttweld Ends
EW	Extended Butt Weld Ends
F1	150# Flanged Ends
F3	300# Flanged Ends
F6	600# Flanged Ends
FR	600# RTJ Flanged Ends
SA	Sanitary Ends
SF	Sanitary Ends w/ Cavity Filler
DA	Tube O.D. Ends
DF	Tube O.D. Ends w/ Cavity Filler
TE	Threaded x Extended Butt Weld
TS	Threaded x Socket Weld
QQ	Tube Socket Weld
W1	150# Wafer
W3	300# Wafer
W6	600# Wafer

5 Valve Size	
0025	1/4"
0038	3/8"
0050	1/2"
0075	3/4"
0100	1"
0125	1-1/4"
0150	1-1/2"
0200	2"
0250	2-1/2"
0300	3"
0400	4"
0600	6"
0800	8"
1000	10"
1200	12"

6 Seat, Lining & Trim Materials	
X	Reinforced TFE Seats
P	Virgin TFE
U	UHMWPE Seats
D	Delrin
S	50% SS Powder/ 50% TFE Seats
C	25% CS Powder/ 75% TFE Seats
T	TFM-1600
F	TFE Cavity Filler
K	PCTFE (Cryogenic)
L	PFA Lined
M	MG1241
Z	Peek
2	Tungsten Carbide Coated 316 SST Seats & Ball
3	HCR Coated Ball/Stellite Inlay Seat
4	Chrome Carbide Coated 316 SST Seats & Ball
8	Inconel 718+CRC

7 Special Designations	
X	No Specials
G	Gear Operator
R	Reduced Port Valve
O	Oval Handle (available on some)
S	Spring Return Handle (Direct Mount only)

8 Additional Specials	
X	No Specials
O	Oxygen Cleaned
Z	Special End Configuration
V	Vented Ball
E	Bonnet Extension Lockable Handle
F	Fugitive Emissions Bonnet
D	Degreased & Bagged

9 Special Designation	
3	30° V-Port (v-ball)
6	60° V-Port (v-ball)
9	90° V-Port (v-ball)
Blank	No Designation = 316 SST Stem
A	17-4PH Stem
B	XM-19 (Nitronic 50) Stem
C	Duplex 2205 Stem
D	Inconel 718 Stem
L	L-Port 3-Way arrangement
T	T-Port 3-Way arrangement

HOW TO ORDER MANUAL VALVES										
<b>1</b>	-	<b>23</b>	-	<b>4</b>	-	<b>5</b>	-	<b>678</b>	-	<b>9</b>
↓		↓		↓		↓		↓		↓
<b>F</b>	-	<b>88C</b>	-	<b>TH</b>	-	<b>0150</b>	-	<b>XXX</b>	-	

# Automated Ball Valve Part Number Matrix

1 Firesafe Designation	
F	Firesafe Tested

2 Valve Series	
10	1pc. Reduced Port 2000#
20	2pc. Full Port 2000#
21	2pc. Reduced Port 1000#
22	2pc. Direct Mount 1000/800# Full Port
24	2pc. 3000#
30	3-Way Flanged Full Port
33	3, 4, 5-Way Full Port, Multiport
38	3-Way Threaded Reduced Port
55	3pc. 1000# Full Port
77	3pc. 1000# Full Port Sanitary
83	3pc. 2000/1500# Full Port
8R	3pc. 2000/1500# Regular Port
88	3pc. Direct Mount 2000/1500# Full Port
88	3pc. Direct Mount 2000/1500# Reduced Port
90	2pc. Flanged Full Port (Investment Cast)
91	Unibody Reduced Port Flange
93	2pc. Flanged Full Port (Sand Cast)
V7	3pc. Sanitary V-Port
V8	3pc. V-Port
V9	Flanged V-Port
D9	Direct Mount Flanged
T5	Tank Bottom 3pc.
C8	Cryogenic 3 Piece Full Port
CR	Cryogenic 3 Piece Regular Port
VS	Segment V-Port, Soft
VM	Segment V-Port, Metal Graphite Packing
VV	Segment V-Port, Metal Viton Packing

3 Body Material	
Blank	No Designation=SST Body and Trim
A	Alloy 20
C	Carbon Steel Body
L	Low Carbon 316 Stainless Steel
J	Low Carbon 304 Stainless Steel
H	Carbon Body /Hastelloy Ball & Stem
Q	Carbon Steel Body/Monel Ball & Stem
R	316 SST Body/Monel Ball & Stem
E	Electropolished Stainless Steel
Z	Epoxy Coated Carbon Steel
7	CG8M 317 SST
D	CD3MN Duplex SST
G	CE3MN Super Duplex SST
4	F316H Forged
5	LCB
8	LCC
6	WC6
9	WC9

4 End Connection	
T	Threaded Ends
S	Socket Weld Ends
B	Buttweld Ends
E	Extended Butt Weld Ends
F	150# Flanged Ends
3	300# Flanged Ends
6	600# Flanged Ends
R	600# RTJ Flanged Ends
C	Sanitary Ends *Clamp style ends
D	Tube O.D.Ends
M	Threaded x Socket Weld
Q	Tube Socket Weld

5 Seat, Lining & Trim Materials	
1	Valve Series Standard
X	Reinforced TFE Seats
P	Virgin TFE
U	UHMWE Seats
D	Delrin
S	50% SS Powder/ 50% TFE Seats
C	25% CS Powder/ 75% TFE Seats
T	TFM-1600
F	TFE Cavity Filler
K	PCTFE (Cryogenic)
L	PFA Lined
M	MG1241
Z	Peek
2	Tungsten Carbide Coated 316 SST Seats & Ball
3	HCR Coated Ball/Stellite Inlay Seat
4	Chrome Carbide Coated 316 SST Seats & Ball
8	Inconel 718+CRC

6 Valve Size			
025	1/4"	250	2-1/2"
038	3/8"	300	3"
050	1/2"	400	4"
075	3/4"	600	6"
100	1"	800	8"
125	1-1/4"	AAA	10"
150	1-1/2"	BBB	12"
200	2"		

7 Actuators - Pneumatic (DA)	
TRYD	TR10 Double Acting
TR1D	TR20 Double Acting
2R2D	2R40 Double Acting
2R3D	2R80 Double Acting
2R4D	2R130 Double Acting
2R5D	2R200 Double Acting
2R6D	2R300 Double Acting
2R7D	2R500 Double Acting
2R8D	2R850 Double Acting
2R9D	2R1200 Double Acting
2R0D	2R1750 Double Acting
2RAD	2R2500 Double Acting
2RBD	2R3500 Double Acting

7 Actuators - Pneumatic (SR)	
TR1S	TR20 Spring Return
2R2S	2R40 Spring Return
2R3S	2R80 Spring Return
2R4S	2R130 Spring Return
2R5S	2R200 Spring Return
2R6S	2R300 Spring Return
2R7S	2R500 Spring Return
2R8S	2R850 Spring Return
2R9S	2R1200 Spring Return
2R0S	2R1750 Spring Return
2RAS	2R2500 Spring Return
2RBS	2R3500 Spring Return

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		

7 Actuator - Pneumatic Stainless (DA)	
SS1D	SS45DA Double Acting
SS2D	SS60DA Double Acting
SS3D	SS85DA Double Acting
SS4D	SS105DA Double Acting
SS5D	SS125DA Double Acting
SS6D	SS140DA Double Acting
SS7D	SS160DA Double Acting

7 Actuator - Pneumatic Stainless (SR)	
SS1S	SS45SR Spring Return
SS2S	SS60SR Spring Return
SS3S	SS85SR Spring Return
SS4S	SS105SR Spring Return
SS5S	SS125SR Spring Return
SS6S	SS140SR Spring Return
SS7S	SS160SR Spring Return

8 Accessories/Options	
X	No Specials
A	NEMA 4 Solenoid 120VAC
B	NEMA 7 Solenoid 120VAC
C	Intrinsically Safe Solenoid
Q	NEMA 4 SST Solenoid
M	NEMA 7 SST Solenoid
P	Pneumatic Positioner
E	Electro-Pneumatic Positioner
R	24VDC Electric Actuator
S	220VAC Electric Actuator
T	Other Voltage Electric Actuator
W	12VDC Electric Actuator
Y	24VAC Electric Actuator
Blank	*No voltage specified on electric assemblies denotes 120VAC

9 Accessories	
X	No Specials
A	NEMA 4 Limit Switch
B	NEMA 7 Limit Switch
C	Intrinsically Safe Limit Switch
Q	NEMA 4 SST Limit Switch
M	NEMA 7 SST Limit Switch
Z	180 degree Operation
1	HS1 High Speed Electric
2	HS2 High Speed Electric

10 Special Designation	
3	30° V-Port (v-ball)
6	60° V-Port (v-ball)
9	90° V-Port (v-ball)
Blank	No Designation = 316 SST Stem
A	17-4PH Stem
B	XM-19 (Nitronic 50) Stem
C	Duplex 2205 Stem
D	Inconel 718 Stem
L	L-Port 3-Way arrangement
T	T-Port 3-Way arrangement

HOW TO ORDER AUTOMATED VALVES															
1	-	2	-	3	-	4	-	5	-	6 / 7	-	8	9	-	10
↓		↓		↓		↓		↓		↓		↓	↓		↓
F	-	88	-	C	-	T	-	X	-	025 / 2R2D	-	X	X		

# Resilient Seated Butterfly Valve Part Number Matrix

1 Valve Series	
AS**	A-T Split Body BFV with Square Stem
OC	A-T BFV with DD Stem
OS	A-T BFV with Square Stem (Standard)

2 Body Material	
blank	(No Designation)= Stainless Steel (SST) Body
I	Cast Iron
B	Ductile Iron (Standard)

3 End Connection	
L1	125/150# Lug
W1	125/150# Wafer with Guide Holes
W2	125/150# Wafer (no Guide Holes)

4 Valve Size			
0200	2"	1200	12"
0250	2-1/2"	1400	14"
0300	3"	1600	16"
0400	4"	1800	18"
0500	5"	2000	20"
0600	6"	2400	24"
0800	8"	3000	30"
1000	10"	3600	36"

5 Seat Material/Style			
B	Buna	P	PTFE
E	EPDM	V	Viton®
F	Food Grade EPDM		
H	High Temp EPDM		

6 Disc Material/Style	
B	Aluminum Bronze
D	Ductile Iron (Nickel Plated)
F	PTFE Encapsulated over 316 SST (AS Series only)
N	Nylon Coated Ductile Iron
P	PTFE Coated Ductile Iron
S	316 SST
T	PTFE Coated 316 SST
U	Undercut Aluminum Bronze
W	Polished 316 SST
Z	Undercut 316 SST

7 Stem Bushing	
R	Teflon®
B	Bronze (Standard)

8 Operator Designation	
X	Bare Stem
H	Standard 10 point Handle
I	Infinite adjustment Handle
G	Gear Operator

9 Stem	
blank	(No Designation) = 316 SST Stem
E	416 SST Stem (Standard)

10 Additional Specials	
D	Dead End Service

\*\* AS Series has limited options as below:  
AS (ASB) - W1 (L1) - SIZE - PFR - X (XE)

How To Order Manual Resilient Seated Butterfly Valves	
1 2 - 3 - 4 - 5 6 7 - 8 9 10	
↓↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
OSB - W1 - 0200 - EDB - X E	

How To Order Automated Resilient Seated Butterfly Valves	
1 2 - 3 - 4 - 5 6 7 - 8 9 / actuator size - options	
↓↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
OSB - W1 - 0200 - E D B - X E / 2R3S - XX	
(see Actuator Size Legend)	

# High Performance Butterfly Valve Part Number Matrix

1 Valve Series	
PS	Power-Seal Soft seat (450° F)
PF	Power-Seal Firesafe Seat (450° F)
PM	Power-Seal Metal seat (600° F)
PH	Power-Seal Metal Seat High Temp (1100° F)

2 Body Material			
blank	(No Designation)= Stainless Steel (SST) Body		
C	Carbon Steel	5	LCB
A	Alloy 20	N	Inconel 625
M	Monel	B	Aluminum-Bronze
D	CD3MN Duplex SST	*	Other
W	Hastelloy C		

3 End Connection	
L1	150# Lug
L3	300# Lug
W1	150# Wafer with Guide Holes
W3	300# Wafer with Guide Holes

4 Valve Size			
0200	2"	1400	14"
0300	3"	1600	16"
0400	4"	1800	18"
0500	5"	2000	20"
0600	6"	2400	24"
0800	8"	3000	30"
1000	10"	3600	36"
1200	12"	4200	42"
		4800	48"

5 Seat Material			
P	PTFE	6	316L SST (Standard on PM Series)
R	RTFE (Standard)	7	Inconel 625 (Standard on PH Series)
S	50/50 STFE	F	RTFE/ 316L SST (Standard on PF Series)
Z	PEEK		
U	UHMWPE		

6 Disc Material/Style	
S	316 SST (Standard on CS and SST body)
X	Same as Body Material
7	316 SST/Stellite (Standard on PH Series)
6	316 SST/HCr (Standard on PM & PF Series)

7 Stem Bearing	
R	Teflon® Composite (Standard on PS Series)
C	Carbon Graphite (Standard on PM/PH & PF Series)
B	Bronze
*	Other

8 Operator Designation	
X	Bare Stem
H	Standard 10 point Handle
G	Gear Operator

9 Stem	
A	17-4 pH Stem (Standard)
X	316 SST Stem
B	XM-19
*	Other

10 Packing (Live Loaded)	
G	Graphite (Standard)
P	Double PTFE V-Ring
V	Double PTFE Inverted V-Ring (Vacuum Service)
D	Pressure/Vacuum V-Ring

How To Order Manual Power-Seal High Performance Butterfly Valves	
1 2 - 3 - 4 - 5 6 7 - 8 9 10	
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
PSC - W1 - 0300 - R S R - X A G	

How To Order Automated Power-Seal High Performance Butterfly Valves	
1 2 - 3 - 4 - 5 6 7 - 8 9 10 / actuator size - options	
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
PSC - W1 - 0300 - R S R - X A G / 2R5S - XX	
(see Actuator Size Legend & Automated Accessories)	

## How to Order Triac Pneumatic Actuators



### TRIAC Model Number Matrix for Pneumatic Actuators

<b>2</b>	Triac Rack & Pinion Actuator with double travel stops
<b>T</b>	Triac Rack & Pinion Actuator with single travel stop (TR10DA, TR20DA, TR20SA only)
<b>R</b>	ISO / DIN mounting configuration
<b>CI</b>	Direct mount to Centerline BFV**
<b>K</b>	Direct mount to Keystone / ABZ / Ultraflow BFV
<b>N</b>	Direct mount to Nibco BFV
<b>D</b>	Direct mount to Demco BFV
	Note: Others available, call for details
<b>0000</b>	Actuator size (10, 20, 40, 80, 130, 200, 300, 500, 850, 1200, 1750, 2500, 3500)
<b>DA</b>	Double acting configuration
<b>DAR</b>	Double acting (reverse acting) configuration
<b>SR</b>	Spring return fail clockwise configuration
<b>SO</b>	Spring return fail counter-clockwise configuration
<b>Blank</b>	Standard Buna seals (-5°F to 175°F)
<b>V</b>	Viton seals (0°F to 300°F)
<b>LT</b>	Low temperature Buna seals (-45°F to 175°F)
<b>Blank</b>	5 springs per side (SR & SO only)
<b>0</b>	Number of spring per side (1, 2, 3, 4, 6) (SR & SO only)
<b>E</b>	Extra long travel stops

**Example: 2R80SRE** (Model 80 Rack & Pinion Actuator with Travel Stop in both directions, Spring Return fail clockwise, with Extra long travel stops)

\*\*Note: When ordering a 2CI actuator, please specify spring set and valve size.



# Triac WE / XE Series Part Number Reference

Model	
WE	Weather Proof, IP67, TYPE 4, 4X, 6
XE	Explosion Proof Design, ATEX & IECEx Ex d IIB T4, IP67
FE	Fire Proof Unit (1050°F for 50 Min)
SE	Submersible unit (IP68, 10 meters for 72 Hours)

Control	
Blank	(2) Position Control (Open / Close)
M	Standard Modulating Control Card (TMC3)
D	TDC Series (standard on DC versions)
P	Profibus DP
R	Modbus (RS485)
L	Boiler Feed (4-20mA)
S	Boiler Feed (0-135ohm)

Actuator	
<b>Size</b>	
-350	350 In-Lbs
-350HS	270 In-Lbs
-500	500 In-Lbs
-690	690 In-Lbs
-1350	1350 In-Lbs
-1700	1700 In-Lbs
-2640	2640 In-Lbs
-4400	4400 In-Lbs
-5200	5200 In-Lbs
-6900	6900 In-Lbs
-10500	10500 In-Lbs
-17500	17500 In-Lbs
-25900	25900 In-Lbs
-53000	53000 In-Lbs
-80000	80000 In-Lbs

Motor		
X	115VAC/1PH	Place holder only - Omit when at end of part number
A	24V AC/DC	On/Off only, (N/A 4400 - 25900)
B	12VDC	
C	24VDC*	(N/A 4400 - 25900)
	*Requires additional relays for customer supplied wiring	
D	24VAC/1PH	(N/A 4400 - 25900)
E	220VAC/1PH	
F	220VAC/3PH	(N/A 500, 690)
G	380VAC/3PH	(N/A 500, 690)
H	440VAC/3PH	(N/A 500, 690)
J	460VAC/3PH	(N/A 500, 690)
K	480VAC/3PH	(N/A 500, 690)

Options		
X	No options	Place holder only - Omit when at end of part number
Z	ADM-100 Control Board	- 24 VDC On/Off
B	Semi-integral Control Unit	(N/A 500, 690)
C	Intelligent Digital Control Unit	(N/A 500, 690)
D	Local / Remote Control Switches	(Only 500, 690)
E	Electronic Speed Control Module	- 115 VAC only
F	2 Wire Control & Speed Control	- 115 VAC only
G	End of travel time delay	(same in both directions)
HS1/HS2	See High Speed Options	
R	2 Wire Control, Relay	- 115 VAC control voltage
S	2 Wire Control, Relay	- 24 VAC control voltage
T	2 Wire Control, Relay	- 24 VDC control voltage

Miscellaneous Options Note: Add all miscellaneous options to end of part number		
Blank	No options	
T	4-20mA Transmitter	
N	1000 Ohm Potentiometer	
O	5000 Ohm Potentiometer	
P	10K Ohm Potentiometer	
X	120° Operation	(N/A 17500 or 25900)
Y	180° Operation	(N/A 17500 or 25900)
Z	270° Operation	(N/A 17500 or 25900)
L	-40° Low Temp Kit	
I	Position Indicator Lamps (Open, Close, Torque)	(N/A 500, 690)
S	(2) additional limit switches (6 total)	(N/A 500, 690)
	Floor Drive Mounting Configuration - See Floor Drive Catalog	

## Examples

### WEM-1350

(Weather Proof Housing, Modulating Control, model size 1350, 115VAC / 1PH)

### WEM-1350XTT

(Weather Proof Housing, Modulating Control, model size 1350, 115VAC / 1PH, 4-20mA Transmitter)

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

# TRIAC THD Model Number Matrix



**S** - Symmetrical Scotch Yoke  
**C** - Canted Slot (Not available in S09 center body)

**Actuator Center Body**

- 09
- 11
- 13
- 16
- 20
- 27

**DA** - Double Acting  
**SC** - Spring Return  
 Fail Clockwise  
**SO** - Spring Return  
 Fail Counter-Clockwise

**Power Group**

- |            |             |
|------------|-------------|
| <b>200</b> | <b>735</b>  |
| <b>280</b> | <b>785</b>  |
| <b>335</b> | <b>835</b>  |
| <b>385</b> | <b>935</b>  |
| <b>435</b> | <b>985</b>  |
| <b>485</b> | <b>1020</b> |
| <b>535</b> |             |
| <b>585</b> |             |
| <b>685</b> |             |

**Blank** - Double Acting  
 - Select spring code from  
 spring return torque charts  
 for specific actuator

**Blank** - No Override  
**D** - Declutchable Gear (S09 only)  
**J** - Jackscrew  
**H** - Hydraulic (NA on S09)

**Blank** - Standard Seals (-29°C to 93°C) (-20°F to 200°F)  
**V** - High Temperature Seals  
 (-18°C to 177°C) (0°F to 350°F)  
**L** - Low Temperature Seals  
 (-40°C to 82°C) (-40°F to 180°F)  
**L1** - Low/High Temperature Seals  
 (-50°C to 177°C) (-58°F to 350°F)

**Example:**    **S**    **13**    **SC**    **435**    **CB**    **H** - **L**

(Triac Heavy Duty Actuator , Spring Return, fails clockwise with hydraulic manual override, low temperature seals)

## **Specials and Applied Solutions**

While you have come to know A-T Controls for superior service in automated valves and day-to-day automation and controls, we specialize in offering solutions to your more unique and difficult applications. Listed below are some of the specials and solutions oriented products and services we offer.

### **Special End Connections**

### **Virtually any Control Accessories**

### **Filter Regulators**

### **Speed Controls**

### **Solenoids**

### **Pneumatic Positioners**

### **Electro-pneumatic Positioners**

### **Dribble and "Batch" Controls**

### **Complete Mounting and Assembly**

### **Lockup Valves**

### **Declutchable Gear Operators**

### **Dump Valves**

### **Flow Controls**

### **Mounting Kits**

### **Various Metallurgy**

### **Special Coatings and Treatments**

### **Special Tubing and Fittings**

### **Alloy Trim**

#### **Limit Switches**

Mounted on Manual Valves



#### **180 Actuators**



#### **Dual Valve Assemblies**



#### **Fusible Link Assemblies**



#### **Stem Extensions**



#### **Lockout Mounting Kits**



#### **Special Seats**

Balls & Seal Designs / Various handle & operator options



#### **Steam Jackets**



**Floor Mounted  
Damper Drives**

## Product Overview

### Valves, Valve Automation & Accessories



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