











A-T Controls, Inc.














## Product Overview








Valves, Valve Automation & Accessories




1-Piece	2-Piece				
					
SERIES 10	SERIES 20	SERIES 21C	SERIES 22	SERIES 24	SERIES F23/F26
1-piece unibody design, end-loaded ball	2-piece general purpose full port, locking handle	2-piece general purpose carbon steel, regular port, locking handle	2-piece high performance direct mount	2-piece high performance 3000 psi	2-piece high pressure seal welded
Not available	Not available	Not available			Call factory
Not available	Not available	Not available			Call factory
1/4" – 2"	1/4" – 3"	1/4" – 2"	1/4" – 3"	1/4" - 2"	1/4" - 2"
Regular	Full	Regular	Full	See brochure	Full & Regular; See Dimensions
No	No	No	Yes	Yes	No
No	No	No	Yes	Yes	No
316SST	316SST	WCB	316SST	316SST	316SST & WCB
316SST	316SST	316SST	316SST	316SST	316SST
RTFE	RTFE	RTFE	RTFE, call for others	Delrin®, PEEK	PEEK Standard Delrin® available non-stock
NPT	NPT	NPT	NPT	NPT	NPT
2000 psi	1000 psi	2000 psi	1000 psi	3000 psi	3600/6000 psi
None	None	None	NACE MR0175, Others call factory	NACE MR0175, Others call factory	Call factory
			TA-Luft Certified		













## 3-Piece

Series						
	SERIES 55	SERIES 77	SERIES HP	SERIES H78	SERIES 8R/83	SERIES F8R/F83
General Description & Features	3-piece standard service exposed bolt "swing-out" design, locking handle	Cavity and non-cavity filled 3-piece, sanitary clamp or tube O.D. ends	HIGH PURITY 3-piece ASME BPE 2016 compliant, Forged	HIGH PURITY 3-piece ASME BPE 2016 compliant, Cast	3-piece high performance, locking handle	Firesafe 3-piece high performance, locking handle
Automated Pneumatic						
Automated Electric						
Sizes	1/4" – 4"	1/2" – 4"	1/2" – 4"	1/2" – 4"	1/4" – 2-1/2"	1/4" – 2-1/2"
Port	Full	Full	Full	Full	Full (8R) Regular (83)	Full (F8R) Regular (F83)
Direct Mount	No	Yes	No	Yes	No	No
Pyramidal Stem Packing	No	Yes	Yes	Yes	Yes	Yes
Body Materials	316SST & WCB	316L SST	F316L SST	CF3M	316SST & WCB	316SST & WCB
Trim Material	316SST	316L SST	316SST	316SST	316SST	316SST
Available Seats	RTFE, PTFE, 50/50 STFE, CTFE, TFM™-1600 and others	PTFE, cavity filled, non-cavity filled, RTFE, TFM™-1600	TFM™-1600 and others	TFM™-1600 and others	RTFE, PTFE, TFM™-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK and others	RTFE, PTFE, TFM™-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK and others
End Connections	NPT, Socket Weld, Butt Weld	Sanitary Clamp, Tube O.D.	Hygienic Clamp, Tube O.D.	Hygienic Clamp, Tube O.D.	NPT, Socket Weld, Butt Weld	NPT, Socket Weld, Butt Weld
Max Pressure (varies by size)	1000 psi	1000 psi	1500 psi	1000 psi	2000 psi	2000 psi
Options	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	Vented Ball, Oxygen Cleaned and Others	Electropolished, Vented Ball, Oxygen Cleaned, Lockable Handle, Gear Operator, Anti-Static Design	Electropolished, Vented Ball, Oxygen Cleaned, Gear Operator, Anti-Static Design	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	NACE MR0175, Vented Ball, Gear Operator, Stem Extension and others
Fugitive Emissions					TA-Luft Certified	


















	3-Piece		Multi-Port			High Performance Multi-Port
						
Series	<b>SERIES 88</b>	<b>SERIES F88</b>	<b>SERIES 38</b>	<b>SERIES 30</b>	<b>SERIES 31</b>	<b>SERIES 33,43,53</b>
General Description & Features	3-piece high performance, direct mount, locking handle	Firesafe 3-piece high performance, direct mount, locking handle	NPT general purpose 3-way	150# & 300# Flanged 3-way	150# & 300# Flanged Direct Mount 3-way	High performance, 3, 4 or 5-way, NPT, Socket Weld, Butt Weld, Flanged, Sanitary, Direct Mount
Automated Pneumatic						
Automated Electric						
Sizes	1/4" – 4"	1/4" – 4"	1/4" – 2"	8" – 12"	1-1/2" - 6"	1/4" – 4"
Port	Full	Full	Regular	Full	Full	Full
Direct Mount	Yes	Yes	No	No	Yes	Yes
Pyramidal Stem Packing	Yes	Yes	No	No	No	Yes
Body Materials	316SST, WCB & Alloy 20	316SST & WCB	316SST	316SST & WCB	316SST & WCB	316SST
Trim Material	316SST, Monel & Hastelloy C	316SST, Monel & Hastelloy C	316SST	316SST	316SST	316SST
Available Seats	RTFE, PTFE, TFM™-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK and others	RTFE, PTFE, TFM™-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK and others	RTFE	RTFE, PTFE, or 50/50 STFE	RTFE, PTFE, 50/50 STFE, TFM-1600 & others	RTFE, PTFE, 50/50 STFE, cavity fillers, others on request
End Connections	NPT, Socket Weld, Butt Weld	NPT, Socket Weld, Butt Weld	NPT	150/300# Flanged	150/300# Flanged	NPT, Socket Weld, Butt Weld, Sanitary, 150/300# Flanged
Max Pressure (varies by size)	2000 psi	2000 psi	1000 psi	285/740 psi	285/740 psi	See spec. sheets
Options	Vented Ball, Oxygen Cleaned, Gear Operator, Stem Extension and others	NACE MR0175, Vented Ball, Gear Operator, Stem Extension and others	"L" or "T" port	"L" or "T" port, Graphite or TFM-1600 Seals & Packing, FFKM O-Ring & others	"L" or "T" port	3, 4, 5-way, "L", "T", "LL", "I", "X", "TT" ports, various options
Fugitive Emissions	TA-Luft Certified					TA-Luft Certified

	150# Flanged				150# & 300# Flanged	600# Flanged
Series						
General Description & Features	<b>SERIES 90 &amp; 93</b>	<b>SERIES F90</b>	<b>SERIES F91</b>	<b>SERIES D9</b>	<b>SERIES FD9</b>	<b>SERIES FD9-F6</b>
	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" – 6, 8, or 12" <i>(depending on class &amp; material-see spec sheets)</i>	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	316SST, WCB & Alloy 20	316SST & WCB	316SST & WCB	316SST & WCB	316SST & WCB	316SST & WCB
Trim Material	316SST	316SST	316SST	316SST, Monel & Hastelloy C	316SST, Monel & Hastelloy C	316SST
Available Seats	RTFE, PTFE, TFM-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others	RTFE, PTFE, TFM-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others	RTFE, PTFE, TFM-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others	RTFE, PTFE, TFM-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others	RTFE, PTFE, TFM-1600, 50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others	50/50 STFE, CTFE, UHMWPE, Delrin®, PEEK & others
End Connections	150# Flanged	150# Flanged	150# Flanged	150# Flanged	150/300# Flanged	600# Flanged
Max Pressure <i>(varies by size)</i>	285 psi	285 psi	285 psi	285 psi	285/740 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
Fugitive Emissions	TA-Luft (up to 6")	ISO 15848-1		TA-Luft Certified	ISO 15848-1 (150#)	

	Metal Seat Flanged	Metal Seat 3-Piece	V-Port Control Valves	Segmented Valves
				
Series	<b>SERIES M (FMU, FMB, FMS)</b>	<b>SERIES M (FMX)</b>	<b>V SERIES</b>	<b>VS/VV/VM SERIES</b>
General Description & Features	150#, 300#, 600#, Split Body Unidirectional & Bidirectional	NPT, Socket Weld, Butt Weld, 3-Piece Class 600 Bidirectional	V-Port Control Valves (V7/V8/V9/FVD9)	Unibody V-Port Segmented
Automated Pneumatic				
Automated Electric				
Sizes	150#/300#: 1/2" - 8" 600#: 1/2" - 6"	600#: 1/2" - 2"	1/2" - 6"	1" - 16"
Port	Full	Full	30°, 60°, 90°, others on request	Segmented
Direct Mount	No	No	Some	No
Pyramidal Stem Packing	No	No	Yes	No
Body Materials	316SST, WCB, 316L SST, 317SST, Duplex & others	316SST, WCB, 316L SST, 317SST, Duplex & others	316SST & WCB	CF8M, WCB, 317SST, Duplex & others
Trim Material	Tungsten Carbide, HCr, Chrome Carbide	Tungsten Carbide, HCr, Chrome Carbide	316SST	See spec. sheet
Available Seats	Tungsten Carbide 316SST, Stellite®, Chrome Carbide 316SST	Tungsten Carbide 316SST, Stellite®, Chrome Carbide 316SST	RTFE, PTFE, 50/50 STFE, call with application	50/50 STFE, Stellite® Inlay, Tungsten Carbide Coated 316SST
End Connections	150/300/600# Flanged	NPT, Socket Weld & Butt Weld	NPT, Socket Weld, Butt Weld, Flanged, Tube O.D. & Sanitary Clamp	150/300#, Flanged or Wafer
Max Pressure (varies by size)	See spec. sheets	See spec. sheets	See spec. sheets	See spec. sheet
Options	Scraper seat, Black Liquor, See spec. sheets	See spec. sheets	Various, please call with requirements	See spec. sheet



	Butterfly Valves			Ball Valves	
	High Performance	Resilient Seated		NSF 61 & 372 Certified Valves	
Series	 <b>PS/PF/PM/PH SERIES</b> P1S/P1F/P1M/P1H SERIES	 <b>OC/OS SERIES</b>	 <b>AS SERIES</b>	 <b>NS SERIES</b>	 <b>NS20 / NS22 &amp; NS55 SERIES</b>
General Description & Features	High Performance Butterfly Valves	Resilient Butterfly Valves	PFA Lined Butterfly Valves	NSF 61 & 372 Certified / Dead-end Service Butterfly Valves	1 to 3 pc ball valves, Certified to NSF 61 & 372 for use in water applications  2 pc Flanged ball valves, Certified to NSF 61 & 372 for use in water applications
Automated Pneumatic					
Automated Electric					
Sizes	2" - 36" Stock, larger available	1-1/2" - 36" Stock (up to 126" available)	2" - 12" Stock, (CF for 14"-24")	2" - 24" Stock	1/4" - 4"  1/2" - 6"
Port	Through shaft disc	Stub shaft disc	Stub shaft 1-pc disc	Through shaft disc	Full  Full
Direct Mount	Yes	Yes	Yes	Yes	NS22 Series - yes NSD9 Series - yes
Pyramidal Stem Packing	No	No	No	No	Yes Yes
Body Materials	316SST, WCB, & others	Ductile Iron, 316SST	316SST, WCB, & others	Ductile Iron or 316SST	316SST 316SST
Trim Material	316SST, Alloy 20, Duplex, & others	Ductile Iron, Aluminum Bronze, 316SST, Nylon coated & others	PFA/304SST, PFA/316SST & others	Nylon Coated Ductile Iron, 316SST, or (non-NSF) Aluminum Bronze	316SST 316SST
Available Seats	RTFE (G2TFE), 50/50 STFE, 316L SST, Inconel®, TFM-1600™ & others	Buna, EPDM, Food Grade EPDM, High Temp EPDM, Viton®, PTFE & others	PTFE	EPDM or FKM, Buna-N (if NSF is not required)	RTFE or PTFE RTFE or PTFE
End Connections	150/300# Wafer or Lug	150# Wafer or Lug	150# Wafer or Lug	150# Wafer or Lug	NPT, Socket Weld, Butt Weld 150/300# Wafer or Lug
Max Pressure (varies by size)	See spec. sheets	See spec. sheet	150 psi	225 psi	1000 psi 275 /720 psi
Options	Call factory	Call factory	Call factory	Gear Operator, Handle options	Gear Operator, Handle options V-Port ball (30°, 60°, or 90°)
Fugitive Emissions				TA-Luft Certified	TA-Luft (NS22) TA-Luft Certified

## Trunnion Mounted Ball Valves



Series	TS SERIES	TM SERIES
General Description & Features	Trunnion Mounted Soft Seat Ball Valves TS2 - 2 pc cast TS3 - 3 pc forged	Trunnion Mounted Metal Seat Ball Valves TM3 - 3 pc cast
Automated Pneumatic	Call factory for Rack & Pinion or THD automation options	Call factory for Rack & Pinion or THD automation options
Automated Electric	Call factory for Electric automation options	Call factory for Electric automation options
Sizes	2" - 48"	2" - 24"
Port	Full/Regular	Full
Direct Mount	ISO 5211	No
Pyramidal Stem Packing	No	No
Body Materials	A105N, WCB, LF2, LCC, F316, CF8M & others	WCB, CF8M & others
Trim Material	See spec sheet	See spec sheet
Available Seats	RPTFE, Devlon®, PEEK (See spec sheet)	Tungsten Carbide, Chrome Carbide, Hard Chrome (See spec sheet)
End Connections	Raised Face, Weld End, RTJ	Raised Face, RTJ
Max Pressure (varies by size)	See spec sheet	See spec sheet
Options	Call factory	Call factory

### TS2 Series

2" to 12" Cast, ANSI Class 150/300

### 2-Piece CAST SOFT Seated

CE  
0035



SIL 3



### TS3 Series

2" to 48" Forged

ANSI Class 150/300/600

### 3-Piece FORGED SOFT Seated

CE  
0035



SIL 3



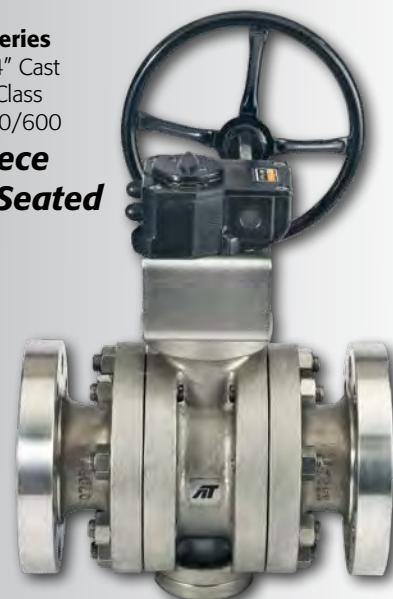
### TM3 Series

2" to 24" Cast















ANSI Class






150/300/600

### 3-Piece METAL Seated





Pig Valve	Dual Valve Isolation Assemblies		Cryogenic	Lined Ball Valve	Tank Bottom
					
P1 SERIES	WB SERIES	W6 SERIES	C8/CR SERIES	LB SERIES	TB SERIES
Full schedule 10 pipe diameter for pigging applications	Dual Valve Isolation Block and Bleed valves, 2000 psi, Firesafe API-607 6th Ed.	Dual Valve Isolation Block and Bleed valves, 6000 psi, Firesafe API-607 5th Ed.	3-Piece Extended Bonnet	PFA Lined, split body, 150# flanged ball valve	3-piece tank bottom valve
	N/A	N/A			
	N/A	N/A			
2", 3", 4"	3/8" - 2"	1/2"-2"	1/4" - 2"	1/2" - 8"	2", 3", 4"
SCH 10 Pipe Diameter	Full	Full & Regular	Full (C8) Regular (CR)	Full	Full
Yes	No	No	Yes	No	No
Yes	No	No	Yes	No	No
316SST	316SST	316SST	316SST	316SST & WCB	316SST
316SST	316SST	316SST	316SST	PFA + 316SST	316SST
PTFE & RTFE	CTFE	PEEK	PCTFE	PTFE	RTFE, PTFE, 50/50 STFE, CTFE, others on request
150# Flanged or Socket Weld	NPT	NPT, Female x Male Block Valve, Female End Bleed Valve	NPT & Socket Weld	150# Flanged	Tank weld pad + NPT, Socket Weld, Butt Weld, or Flanged
400/285 psi	2000 psi	6000 psi	1000 psi	232 psi	1000 psi
See spec. sheet	NACE MR0175	NACE MR0175	See spec. sheet	Oxygen Cleaned, Gear Operator	Vented Ball, Oxygen Cleaned, Gear Operator, & others

	Heavy Duty Actuators	Pneumatic Scotch Yoke Actuators	Pneumatic Rack & Pinion Actuators	180° Pneumatic Actuators	Stainless Steel Pneumatic Actuators	Declutchable Gear Operators
						
Series	<b>THD SERIES</b>	<b>SY SERIES</b>	<b>2R, 2K, 2CI SERIES</b>	<b>180-AL SERIES</b>	<b>S2 SERIES</b>	<b>2RDGO, 2CDGO, and 2KDGO SERIES</b>
General Description & Features	Pneumatic and hydraulic scotch yoke design, Symmetrical and Canted yoke	Pneumatic Scotch Yoke design	Pneumatic Actuators designed to direct mount on ball & butterfly valves	180° Rack & Pinion pneumatic actuators	Corrosion Resistant Stainless steel Rack & Pinion design	"Sandwich" mount, gear overrides
Models	Full range of torques to 1,600,000 in-lbs	Five pressure group models 1,465-12,191 in-lbs, Twenty spring cartridge models 537-10,900 in-lbs	Thirteen models 60-35,550 in-lbs (Double Acting) 96-24,500 in-lbs (Spring Return)	Five models 740 –6200 in-lbs (Double Acting only)	Eight models 88-18,033 in-lbs (Double Acting) 147-9,899 in-lbs (Spring Return)	Six models
Variations	Double Acting, Spring Return	Double Acting, Spring Return	ISO 5211, Keystone®, and Centerline® patterns stock, others on request	180° Dribble and batch control	Double Acting, Spring Return	ISO 5211, Keystone®, and Centerline® patterns stock, others on request
Types	Pneumatic and hydraulic	Pneumatic	Eleven sizes rack & pinion, two sizes scotch yoke	Pneumatic	Pneumatic	Declutchable
Materials	Ductile iron center body	Ductile iron center body	Hard anodized aluminum body	Hard anodized aluminum body	316SST	Ductile iron
Features	Torque stabilizer bar, Dual travel stops, female drive	Identical mounting configuration on both sides, Flip 180° to change rotation of actuator, Dual travel stops	Dual travel stops	Excellent for multi-port valve automation	Dual travel stops, Direct mount, ISO 5211 mounting	Easy declutch mechanism, low profile
Options	Manual overrides, various controls, high/low temp, accumulator tanks, Dribble control, 3-position control & others	Dribble control, 3-position control, Various control accessories	High & low temp seals, Extended travel stops, Reduced cycle times available, Marine epoxy coating on end caps, Dribble control, 3-position control, Various accessories	Dribble control, 3-position control	Dribble control, 3-position control, Various control accessories	Dump valves, NAMUR adaptor plates

	Gear Operators	Electric Actuators			Fail Safe Electric Actuators	
						
Series	<b>Q SERIES</b>	<b>WE/XE/SE SERIES</b>	<b>XC SERIES</b>	<b>KE SERIES</b>	<b>FSE SERIES</b>	<b>BFS SERIES</b>
General Description & Features	Manual gear operators for quarter-turn valves	Weather-Proof, Explosion-Proof, or Submersible electric actuators	CSA Explosion-Proof electric actuators	Weather-Proof electric actuators	Weather-Proof Spring Return electric actuators	Weather-Proof Battery backup electric actuators
Models/ Sizes	Eight standard sizes, Larger sizes available to 410,000 in-lbs	Fourteen sizes, WE-350 to WE-80000 XE-690 to XE-25900 SE-690 to SE-25900	Ten sizes, XC-00690 to XC-25900	Four sizes, KE-440 to KE-3500	Four sizes, FSE-440 to FSE-2300	Four sizes, BFS-690 to BFS-2640
Variations	ISO 5211 mounting in inventory, others on request	On-off & modulating, 12VAC/DC, 24VAC/DC, 110VAC, 220VAC/1PH & other voltages on request	On-off & modulating, 12VAC/DC, 24VAC/DC, 110VAC, 220VAC/1PH	On-Off & Modulating, 12VDC, 24VDC, 24VAC, 110VAC, 220VAC/1PH	On-Off & Modulating, 24VDC, 110VAC, 220VAC/1PH	On-Off & Modulating, 110VAC, 220VAC/1PH
Types	Quarter-turn	Type 4, 4X, 7, Explosion-proof ATEX, submersible, IP68 10M 72HR	 C <sub>258948</sub> US CSA Type 4, 4X, 6 & 7, Explosion-proof	IP67 Weather-Proof	IP67 & Type 4,4X Weather-Proof	IP67 & Type 4,4X Weather-Proof
Materials	Cast iron (others available)	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure	Die cast aluminum Epoxy coated enclosure
Features	Dual travel stops	AWWA-C540-93, Manual override, Four switches standard, Heater & stat standard, Self-locking gear train	AWWA-C540-93, Manual override, Four switches standard, Heater & stat standard, Self-locking gear train	Self-Locking worm gear train, manual override with wrench, (2) Aux switches, Heater & Stat	Fail-Safe Spring Return, (2) Aux switches, Heater & stat, Visual Dome Indicator	Fail-Safe Battery back-up, (2) Aux switches, Heater & stat, Visual Dome Indicator, Manual override
Options	Top-mounted limit switches, others	Vibration and shock resistant, Fireproof coated enclosure, Intelligent and integral control unit, Analog & digital modulating control cards	Vibration and shock resistant, Intelligent and integral control unit, Analog & digital modulating control cards	Analog Modulating Control Module	Manual override, Analog Modulating Control Module	Analog Modulating Control Module



Limit Switches		Solenoids	Positioners	FM Approved Assemblies	Mighty Controllers	Control Options & Other Accessories
						
APL SERIES	EX, EC, ES, EY & EW SERIES	TVCS, TVC5, TVC6 & others	PPR, EPR, SS2, SS3 & SS5	FM Assemblies	MVC SERIES	
Various models of CSA limit switch boxes 	Various limit switch boxes	NAMUR mount, solenoids or pipe mounted	Pneumatic, electro-pneumatic, digital or "smart"	FM Approved Assemblies for gas safety shutoff and gas safety vent applications	Edge Computing Controller	Speed controls, flow controls, lock-up valves, Filter regulators, dribble controls, & others
APL-2, APL-3, APL-4, APL-5, APL-9	EX, EC, ES, EY & EW Series	TVCS, TVC5, TVC6 & others	EPR1000, PPR1200, 760, PS2, TZIDC, SS2, SS3, SS5	Sizes 1/4" - 6"	MVCG1, MVCG2, MVCG3	Various, Call Factory
Weatherproof, Explosion-Proof Materials, switch types	Weatherproof, Explosion-Proof Materials, switch types	Weatherproof, Explosion-Proof, 3, 4 or 5-way	Pneumatic, electro-pneumatic, digital "smart" HART, FieldBus	Gas Safety Shut-off, Gas Safety Vent or Manual Safety Cocks Assemblies	Functionality configurable via software	Various, Call Factory
CSA Type 4, 4X, 7, SPDT, proximity, low voltage, high amp. & others	SPDT, proximity, low voltage, high amp. AS-i & others	2-position, 3-position, single or dual coil	Rotary or linear	150/300# Flanged, NPT, Socket Weld, & Butt Weld	Safe areas, Explosion Proof	Various, Call Factory
Aluminum or Stainless Steel	Aluminum or Stainless Steel	Aluminum or Stainless Steel	Aluminum body	316SST & WCB	Polycarbonate, Aluminum, or Stainless Steel	Various, Call Factory
2-way & 3-way position indicators	2-way & 3-way position indicators	Direct-mount	Easy to calibrate, repeatable	Full Port, Direct-mount, Pyramidal Stem Packing	24 point iGPIO, Universal Power, Industrial Temp Range, IP68, Industry standard communication protocols	Various, Call Factory
Several types of communication options	Several types of communication options	Various voltages & configurations	Transmitters, limit switches, mounting hardware, call with requirements	See spec. Sheet	Factory installed apps, local hand controls	Various, Call Factory

## Additional Ball Valve Options and Variations

### 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. Sizes 1/4" to 1 1/2" available on direct mount valves.



### 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.)

## 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. *Temperatures are for reference only. Refer to pressure-temperature charts on individual valve sheets.*

Name	Material Composition	Max. Temp.	Application & Benefits
RTFE	Reinforced Teflon® 15% Glass Fiber/ 85% PTFE	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.
50/50 STFE	50% SST Powder/ 50% PTFE	550°F	The 50/50 composition gives this seat material good sealing and temperature resistant properties. Good for steam and abrasive applications. Better cold flow properties than RTFE.
PTFE	Virgin Teflon®	400°F	Good chemical resistance and lower torque values. Used for many general applications. Good for low cycle life applications
TFM™-1600	Modified Teflon®	500°F	Second generation PTFE. 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, like Butadine.
CTFE	25% Carbon Graphite/ 75% PTFE	480°F	Good for low pressure steam applications and abrasive and slurry services.
PCTFE	Polychlorotrifluorethene	212°F	Ideal for applications with low or cryogenic temperatures.
PEEK	Polyether Ether Ketone	550°F	Good chemical resistance with higher temperature tolerance.
Delrin®	DuPont™ Polyoxymethylene	180°F	Good for high pressure applications.
UHMWPE	Ultra High Molecular Weight Polyethylene	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.
MG1241	5% Graphite/ 20% Glass Fiber/ 75% PTFE	480°F	Good for high cycle applications and abrasive service.
Stellite®/ 316SST	Stellite® Inlay/ 316SST*	661°F	Unidirectional or Bidirectional shut-off. *Other base material available.
TC/316SST	Tungsten Carbide Coated 316SST*	842°F	Unidirectional or Bidirectional shut-off. *Other base material available.
CrC/316SST	Chrome Carbide Coated 316SST*	932°F	Unidirectional or Bidirectional shut-off. *Other base material available.

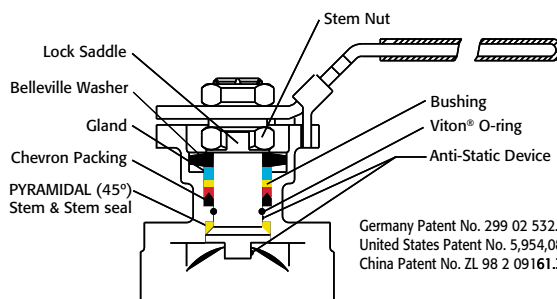
### "V" Port Control Ball

"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° "V" port. The 15° and 30° ports allow for finer control at lower flow rates. The 60° and 90° ports allow more precise control for higher Cv applications. Custom openings are also available per application. Also available in segment V-Ball.

### Featuring Standard

Anti-Static Grounding  
Blowout Proof Stems  
Pyramidal Stem Seal Packing System

The best performing  
stem seal packing system  
on the market



\*See individual product specification brochures for additional seat options and applications.





Cincinnati OH Headquarters

A-T Controls is a global leader in the design, manufacturing and sale of manual & automated process valves for all types of industries. We are known for our extensive inventory and highly experienced staff that enable us to provide the customer solutions needed to fulfill most valve and actuator requirements, while offering both a competitive price and the fastest turnaround in the industry.

*Our mission at A-T Controls is to provide quality valve and automation products through solutions-oriented selling and manufacturing with responsive communication.*

Our products are used in virtually every industry including: Oil & Gas, Refining, Petrochemical, Chemical Processing, Pulp & Paper, Mining, Transportation, Food and Beverage, Pharmaceuticals, Marine, HVAC, Power and more.



Stafford TX

Founded in 1994, A-T Controls currently operates out of the primary facility in Cincinnati, Ohio and another in Stafford, Texas with several sales offices throughout North America. Our Products are sold and serviced through a network of distributors throughout the U.S. and Canada, parts of Central and South America, South Africa, and Asia-Pacific.



A-T Controls is proud to be a member of the PON family with shared core values.

- » Passion to Perform
- » Trust to Act
- » Act Responsibly
- » Make it Fun





## A-T Product Literature: Offering, Policy, and How to Order



### Full Product Line Catalog Binders

- LIT0001 BLUE - Ball Valves & Automation
- LIT0002 WHITE - Automation
- LIT0030 BLACK - Butterfly Valves & Automation
- LIT0040 RED - Trunnion Mounted Ball Valves & Automation

### Printed Copies

To request copies of printed literature, please visit our website to submit the online form from the Literature Request button on the home page (<http://www.a-tcontrols.com/literature-request.aspx>).

LITERATURE REQUEST

For your reference, a date code and item number (LIT00XX) is printed on each brochure, typically on the lower left of back cover. Please reference the item code, brochure title and quantity when ordering.

### Electronic Documents

ATControls.com contains a wealth of resources, including PDF downloads of all A-T product catalogs, application-specific white papers and more.

- Product Catalog
- Installation and Operation Manual
- Certifications
- Electric Schematic
- Product Drawing
- 3D Models

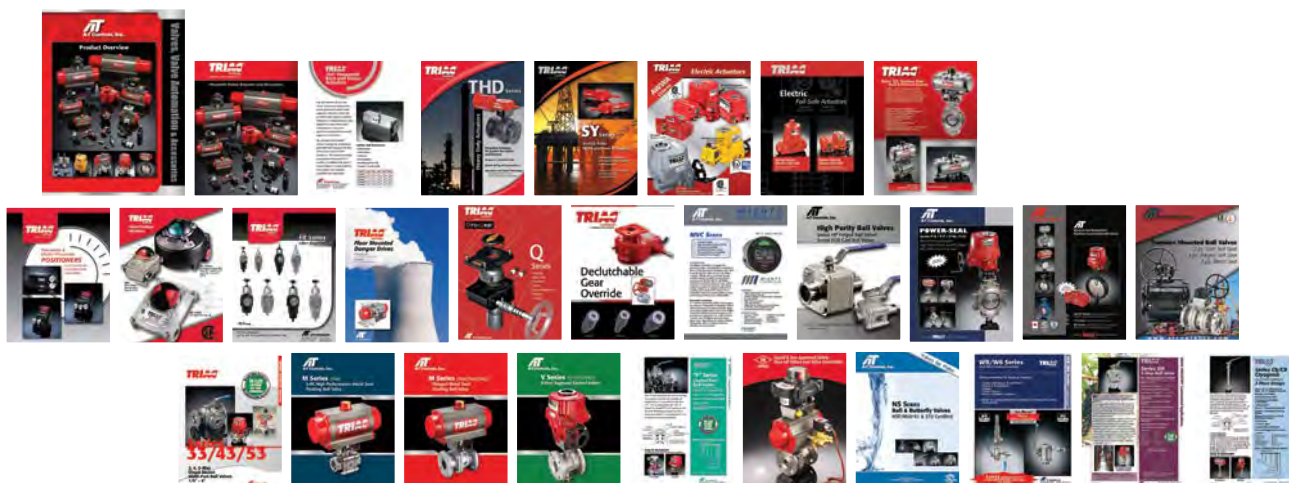
### A-T Literature Policy:

Our printed literature and price books are available to you free of charge, but we do ask that you pay shipping costs. Please be sure to provide a collect shipping code with your request.

We do our printing in-house from our Cincinnati facility, and aim to print-on-demand so that printed copies remain as up to date as possible. Please plan your requests to allow a few days time for processing prior to shipment.



LIT0047 Product Specification Battlecards  
LIT0048 Trunnion Mounted Battlecards



### Quality & Certifications

At A-T Controls, we are committed to quality and it is our mission to supply the highest value and best quality valve and valve automation products available in the industry. Our objective is to provide these quality products in a timely manner to our valued customers and distribution partners. We will strive to attain continuous improvement and innovation in product design, performance, value and quality management system, which we will measure based on internal and customer driven feedback. The goal of A-T Controls is to operate at the highest level of integrity in our relations with customers, vendors and personnel. For quality documentation not linked here, please call the office to request from our quality manager.



# Manual Ball Valve Part Number Matrix

1 Prefix	
F	Firesafe Tested
F	(on 31 Series) Graphite Packing and Seals
T	(on 31 Series) TFM Packing and Seals
NS	NSF 61 & 372 Certified Series

2 Valve Series	
10	1pc. Regular Port 2000 WOG
20	2pc. Full Port 1000 WOG
21	2pc. Regular Port 2000/1500 WOG
22	2pc. Direct Mount 1000 WOG, Full Port
23	2pc. 3600 WOG, Seal-Welded
24	2pc. 3000 WOG
26	2pc. 6000 WOG, Seal-Welded
30	3-Way Flanged, Full Port
31	3-Way Flanged, Direct Mount, Full Port
33	3, 4, 5-Way Full Port, Multiport
38	3-Way NPT, Regular Port
55	3pc. 1000/800 WOG, Full Port
77	3pc. 1000/800 WOG, Full Port, Sanitary
HP	3pc. Forged High Purity
H78	3pc. Cast High Purity, Encapsulated Bolts
83	3pc. 2000/1500 WOG, Full Port
8R	3pc. 2000/1500 WOG, Regular Port
88	3pc. Direct Mount 2000/1500/1000 WOG, Full Port
R8	3pc. Direct Mount 2000/1500 WOG, Regular Port
90	2pc. Flanged Full Port (Investment Cast)
91	Unibody Regular Port Flanged
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 3pc. Full Port
CR	Cryogenic 3pc. Regular Port
DR	3-Way Bottom Entry Diverter Valve
LB	PFA Lined Split Body Flanged Ball Valve
P1	Schedule 10 Piggable Valve
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
VS	Segment V-Port, Soft
VM	Segment V-Port, Metal Graphite Packing
VV	Segment V-Port, Metal Viton® Packing
WB	Block and Bleed Isolation Valve, 2000 WOG
W6	Block and Bleed Isolation Valve, 6000 WOG

3 Body Material	
Blank	No Designation=SST Body and Trim
A	Alloy 20
C	Carbon Steel Body
L	Low Carbon 316L 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
T	Hastelloy C-276 Body & Trim
E	Electropolished Stainless Steel
Z	Epoxy Coated Carbon Steel
D	CD3MN Duplex SST
G	CE3MN Super Duplex SST
2	F316L (SF4) Electropolished Forged
3	CF3M (SF4) Electropolished Cast
4	F316H Forged
5	LCB
8	LCC
6	WC6
9	WC9

4 End Connection	
TH	NPT Ends
SW	Socket Weld Ends
BW	Butt Weld 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 Clamp Ends
SF	Sanitary Clamp Ends w/ Cavity Filler
DA	Tube O.D. Ends
DF	Tube O.D. Ends w/ Cavity Filler
DS	Sanitary Clamp x Tube O.D. Ends
TE	NPT x Extended Butt Weld
TS	NPT x Socket Weld
MF	Male NPT x Female NPT
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 (RTFE)
P	Virgin TFE (PTFE)
U	UHMWPE Seats
D	Delrin®
S	50/50 STFE Seats
C	25% CS Powder/ 75% TFE Seats (CTFE)
T	TFM™-1600
F	TFE Cavity Filler
K	PCTFE (Cryogenic)
L	PFA Lined w/ PTFE Seats
M	MG1241
Z	PEEK
2	Tungsten Carbide Coated 316 SST Seats & Ball
3	HCr Coated Ball/Stellite® Inlay Seats
4	Chrome Carbide Coated 316 SST Seats & Ball
8	Inconel® 718+CrC

Viton® is a registered trademark of E.I. DuPont de Nemours.  
 Delrin® is a registered trademark of DuPont Performance Polymers.  
 17-4 PH® is a registered trademark of AK Steel Corporation.  
 TFM™ is a trademark of Dyneon™ a 3M Company.  
 Stellite® is a registered trademark of the Deloro Stellite Company, Inc.  
 Inconel® is a registered trademark of Inco Alloys/Special Metals Corporation.

7 Special Designations	
X	No Specials, Series Standard
G	Gear Operator
L	Lockable Handle (HP Series)
R	Regular Port Valve
O	Oval Handle (available on some)
S	Spring Return Handle (Direct Mount only)

8 Additional Specials	
X	No Specials, Series Standard
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, SST Stem
A	17-4 PH® 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
K	FFKM O-Ring (31 Series)
X	No Specials, Standard (HP/H78 Series)
S	Anti-Static Option (HP/H78 Series)

HOW TO ORDER MANUAL VALVES									
1	-	2	3	-	4	-	5	-	6 7 8 - 9
↓		↓ ↓		↓		↓		↓	↓
F	-	88	C	-	TH	-	0150	-	X X X

# Automated Ball Valve Part Number Matrix

1 Prefix	
F	Firesafe Tested
F	(on 31 Series) Graphite Packing and Seals
T	(on 31 Series) TFM Packing and Seals
NS	NSF 61 & 372 Certified Series

2 Valve Series	
10	1pc. Regular Port 2000 WOG
20	2pc. Full Port 2000 WOG
21	2pc. Regular Port 1000 WOG
22	2pc. Direct Mount 1000/800 WOG, Full Port
24	2pc. 3000 WOG
30	3-Way Flanged Full Port
31	3-Way Flanged, Direct Mount, Full Port
33	3, 4, 5-Way Full Port, Multiport
38	3-Way NPT, Regular Port
55	3pc. 1000 WOG, Full Port
77	3pc. 1000 WOG, Full Port, Sanitary
HP	3pc. Forged High Purity
H78	3pc. Cast High Purity, Encapsulated Bolts
83	3pc. 2000/1500 WOG, Full Port
8R	3pc. 2000/1500 WOG, Regular Port
88	3pc. Direct Mount 2000/1500 WOG, Full Port
R8	3pc. Direct Mount 2000/1500 WOG, Regular Port
90	2pc. Flanged Full Port (Investment Cast)
91	Unibody Regular Port Flanged
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 3pc. Full Port
CR	Cryogenic 3pc. Regular Port
DR	3-Way Bottom Entry Diverter Valve
LB	PFA Lined Split Body Flanged Ball Valve
P1	Schedule 10 Piggable Valve
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
T	Hastelloy C-276 Body & Trim
E	Electropolished Stainless Steel
Z	Epoxy Coated Carbon Steel
D	CD3MN Duplex SST
G	CE3MN Super Duplex SST
2	F316L (SF4) Electropolished Forged
3	CF3M (SF4) Electropolished Cast
4	F316H Forged
5	LCB
8	LCC
6	WC6
9	WC9

4 End Connection	
T	NPT Ends
S	Socket Weld Ends
B	Butt Weld 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 Clamp Ends
D	Tube O.D. Ends
H	Sanitary Clamp x Tube O.D. Ends
M	NPT x Socket Weld
Q	Tube x Socket Weld

5 Seat, Lining & Trim Materials	
1	Valve Series Standard
X	Reinforced TFE Seats (RTFE)
P	Virgin TFE (PTFE)
U	UHMWPE Seats
D	Delrin®
S	50/50 STFE Seats
C	25% CS Powder/ 75% TFE Seats (CTFE)
T	TFM™-1600
F	TFE Cavity Filler
K	PCTFE (Cryogenic)
L	PFA Lined
M	MG1241
Z	PEEK
2	Tungsten Carbide Coated 316SST Seats & Ball
3	HCr Coated Ball/Stellite® Inlay Seats
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 Actuator - Pneumatic (DA)			
TRYD	TR10DA	2R7D	2R500DA
TR1D	TR20DA	2R8D	2R850DA
2R2D	2R40DA	2R9D	2R1200DA
2R3D	2R80DA	2R0D	2R1750DA
2R4D	2R130DA	2RAD	2R2500DA
2R5D	2R200DA	2RBD	2R3500DA
2R6D	2R300DA		

7 Actuator - Pneumatic (SR)			
80 PSIG		60 PSIG	
TR1S	TR20SR	TR1S4	TR20SR4
2R2S	2R40SR	2R2S4	2R40SR4
2R3S	2R80SR	2R3S4	2R80SR4
2R4S	2R130SR	2R4S4	2R130SR4
2R5S	2R200SR	2R5S4	2R200SR4
2R6S	2R300SR	2R6S4	2R300SR4
2R7S	2R500SR	2R7S4	2R500SR4
2R8S	2R850SR	2R8S4	2R850SR4
2R9S	2R1200SR	2R9S4	2R1200SR4
2R0S	2R1750SR	2R0S4	2R1750SR4
2RAS	2R2500SR	2RAS4	2R2500SR4
2RBS	2R3500SR	2RBS4	2R3500SR4

All 80 psi Spring Return assemblies will have the standard 5 springs, and all 60 psi Spring Return assemblies will have 4 springs (indicated by 4 at the end of the size and model number).

7 Actuator - Pneumatic Stainless (DA)			
S21D	S2-052DA	S25D	S2-125DA
S22D	S2-063DA	S26D	S2-140DA
S23D	S2-083DA	S27D	S2-160DA
S24D	S2-105DA	S28D	S2-210DA

7 Actuators - Pneumatic Stainless (SR)			
80 PSIG		60 PSIG	
S21S	S2-052SR	S21S4	S2-052SR4
S22S	S2-063SR	S22S4	S2-063SR4
S23S	S2-083SR	S23S4	S2-083SR4
S24S	S2-105SR	S24S4	S2-105SR4
S25S	S2-125SR	S25S4	S2-125SR4
S26S	S2-140SR	S26S4	S2-140SR4
S27S	S2-160SR	S27S4	S2-160SR4
S28S	S2-210SR	S28S4	S2-210SR4

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		

8 Accessories/Options	
X	No Specials
A	TYPE 4 Solenoid 120VAC
B	TYPE 7 Solenoid 120VAC
C	Intrinsically Safe Solenoid
D	TYPE 4 Solenoid 24VDC
F	TYPE 7 Solenoid 24VDC
Q	TYPE 4 SST Solenoid 120VAC
M	TYPE 7 SST Solenoid 120VAC
L	TYPE 4 SST Solenoid 24VDC
N	TYPE 7 SST Solenoid 24VDC
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
2	2 Position, 180° control for Wine Industry
3	3 Position, 180° control for Wine Industry
Blank	*No voltage specified on electric assemblies denotes 120VAC

9 Accessories	
X	No Specials
A	TYPE 4 Limit Switch
B	TYPE 7 Limit Switch
C	Intrinsically Safe Limit Switch
Q	TYPE 4 SST Limit Switch
M	TYPE 7 SST Limit Switch
Z	180° 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, SST Stem
A	17-4 PH® 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
K	FFKM O-Ring
X	No Specials, Standard (HP/H78 Series)
S	Anti-Static Option (HP/H78 Series)

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

## A-T Controls OC/OS Series Resilient Seated Butterfly Valves

1 Valve Series			
OC	A-T BFV with DD Stem (14" and larger)		
OS	A-T BFV with Square Stem (2-12") (Standard)		
2 Body Material			
blank	(No Designation)= SST Body		
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			
0150	1-1/2"	1400	14"
0200	2"	1600	16"
0250	2-1/2"	1800	18"
0300	3"	2000	20"
0400	4"	2400	24"
0500	5"	3000	30"
0600	6"	3600	36"
0800	8"		
1000	10"		
1200	12"		
5 Seat Material/Style			
B	Buna	P	PTFE
E	EPDM	V	Viton®
H	High Temp EPDM		
F	Food Grade EPDM (FDA compliant) (up to 12")		
6 Disc Material/Style			
B	Aluminum Bronze		
D	Ductile Iron (Nickel Plated)		
N	Nylon Coated Ductile Iron		
S	316 SST		
U	Undercut Aluminum Bronze (6" and larger only)		
W	Polished 316 SST		
Y	Undercut Polished 316 SST (6" and larger only)		
Z	Undercut 316 SST (6" and larger only)		
7 Stem Bushing			
R	PTFE (Standard)		
B	Lubricated Bronze		
8 Operator Designation			
X	Bare Stem		
H	Standard 10 point Handle		
S	Stainless Steel 10 point Handle		
I	Infinite Adjustment Handle		
G	Gear Operator		
9 Stem			
E	420 SST Upper and Lower Stem (Standard with DI Body)		
F	431 SST Upper Stem, 316 SST Lower Stem (Standard with PTFE seat or SST Body)		
A	17-4 PH® Upper stem, 316 SST Lower Stem		

PTFE seat: F or A stem options only

## AS Series Lined

### Resilient Seated Butterfly Valves

1 Valve Series			
AS	A-T Split Body Lined Butterfly Valve		
2 Body Material			
blank	(No Designation)= SST Body		
C	Carbon Steel (ASTM A216 Grade WCB)		
3 End Connection			
L1	125/150# Lug		
W1	125/150# Wafer		
4 Valve Size			
0150	1-1/2"	1000	10"
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"		
5 Seat Material/Style			
P	PTFE		
6 Disc Material/Style			
F	PFA Encapsulated over 304 SST (standard with WCB body)		
M	PFA Encapsulated over 316 SST (standard with SST body)		
7 Stem Bushing			
R	PTFE		
8 Operator Designation			
X	Bare Stem		
H	Standard 10 point Handle		
S	Stainless Steel 10 point Handle		
G	Gear Operator		
9 Stem			
A	17-4 PH® Stem		

#### EXAMPLE:

ASC-L1-0600-PFR-XA

(6" A-T Controls Split Body Lined Butterfly Valve, ASTM A216 Grade WCB Body, 150# Lug Style, PTFE Seat, PFA Encapsulated over 304 SST Disc, PTFE Stem Bushing, 17-4 PH Stem.)

### HOW TO ORDER MANUAL AS SERIES BUTTERFLY VALVES

1 2 - 3 - 4 - 5 6 7 - 8 9  
 ↓ ↓   ↓   ↓   ↓ ↓ ↓ ↓ ↓ ↓  
 ASC - L1 - 0600 - PFR - X A

## NS Series Butterfly Valves

1 Valve Series			
NS	A-T NSF 61 & 372 Certified Dead-End Service Butterfly Valve		
2 Body Material			
blank	A351 CF8M (No Designation)		
P	A395 Ductile Iron (Standard)		
3 End Connection			
L1	125/150# Lug		
W1	125/150# Wafer		
4 Valve Size			
0200	2"	1400	14"
0250	2-1/2"	1600	16"
0300	3"	1800	18"
0400	4"	2000	20"
0500	5"	2400	24"
0600	6"		
0800	8"		
1000	10"		
1200	12"		
5 Seat Material/Style			
B	Buna-N (Dead-End Service only)		
N	EPDM (NSF 61 & 372 and Dead-End Service)		
V	FKM (Dead-End Service only)		
6 Disc Material/Style			
N	Nylon Coated Ductile Iron (NSF 61 & 372)		
S	A351 CF8M (NSF 61 & 372)		
B	Aluminum Bronze		
8 Operator Designation			
X	Bare Stem		
S	Stainless Steel 10 position Handle		
L	Locking Handle 10 position (up to 6")		
G	Gear Operator		

**NOTE:** In order for a complete valve to be NSF 61 & 372 rated, it must have a NSF 61 & 372 rated seat and a NSF 61 & 372 disc.

#### EXAMPLE:

NS-L1-0400-NBR-XA

4" NS Series RSBFV, Class 125/150 Lug Style, A351 CF8M Body, EPDM Dead-End Service Seat, Aluminum Bronze Disc, PTFE Stem Bushing, 17-4 PH Square Stem, Bare Stem.

NS-L1-0400-NSR-XA

NSF 61 & 372 Approved 4" NS Series RSBFV, Class 125/150 Lug Style, A351 CF8M Body, EPDM Dead-End Service Seat, A351 CF8M Disc, PTFE Stem Bushing, 17-4 PH Square Stem, Bare Stem.

### HOW TO ORDER MANUAL NS SERIES BUTTERFLY VALVES

1 2 - 3 - 4 - 5 6 7 - 8 9  
 ↓ ↓   ↓   ↓   ↓ ↓ ↓ ↓ ↓ ↓  
 NS - L1 - 0400 - NBR - X A

### HOW TO ORDER MANUAL RESILIENT SEATED BUTTERFLY VALVES

1 2 - 3 - 4 - 5 6 7 - 8 9  
 ↓ ↓   ↓   ↓   ↓ ↓ ↓ ↓ ↓ ↓  
 OSB - W1 - 0200 - EDR - 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 - EDR - X E / 2R3S - XX  
 (see Actuator Size Legend)

# High Performance Butterfly Valve Part Number Matrix

## A-T Controls **POWER-SEAL** High Performance Butterfly Valves

1 Valve Series	
PS	Power-Seal Soft Seat
PF	Power-Seal Firesafe Seat
PM	Power-Seal Metal Seat
PH	Power-Seal Metal Seat High Temp
P1S	Power-Seal P1S Soft Seat
P1F	Power-Seal P1F Firesafe Seat
P1M	Power-Seal P1M Metal Seat
P1H	Power-Seal P1H Metal Seat High Temp

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
T	Hastelloy C-276		

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

4 Valve Size			
0200	2"	2000	20"
0250	2-1/2"	2400	24"
0300	3"	2600	26"
0400	4"	2800	28"
0500	5"	3000	30"
0600	6"	3200	32"
0800	8"	3600	36"
1000	10"	4000	40"
1200	12"	4400	44"
1400	14"	4800	48"
1600	16"		
1800	18"		

5 Seat Material			
P	PTFE	6	316L SST (Standard on PM & P1M)
R	RTFE (Standard on PS)	7	Inconel® 625 (Standard on PH & P1H)
G	G2TFE (Standard on P1S)	F	RTFE/316L SST (Standard on PF) G2TFE/316L SST (Standard on P1F)
S	50/50 STFE*	T	TFM™-1600*
		W	Hastelloy C-276

\*When used in P1F valves the soft seat is backed up with a 316L SST secondary seat.

6 Disc Material/Style	
S	316 SST (Standard on CS and SST body PS & P1S)
X	Same as Body Material
7	316 SST/Stellite® (Standard on PH & P1H)
6	316 SST/HCr (Standard on PM, P1M, PF & P1F)

7 Stem Bearing	
R	PTFE Composite (Standard with Soft Seat)
C	Carbon Graphite (Standard with Firesafe & Metal Seat) or Metaloplast (Standard on P1F)
B	Bronze
*	Other

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

9 Stem	
A	17-4 PH® Stem (Standard)
B	XM-19
T	Hastelloy C-276
*	Other

10 Packing (Live Loaded)	
G	Graphite (Standard)
P	PTFE V-Ring (Standard for P1S)
V	PTFE Inverted V-Ring (Vacuum Service)
D	PTFE Pressure & Vacuum V-Ring

## How to Order **POWER-SEAL** High Performance Butterfly Valves

How To Order MANUAL POWER-SEAL HIGH PERFORMANCE BUTTERFLY VALVES									
1	2	-	3	-	4	-	5	6	7 - 8 9 10
↓	↓		↓		↓		↓	↓	↓
PSC	-		W1	-	0300	-	RS	R	- X A G

1	2	-	3	-	4	-	5	6	7 - 8 9 10
↓	↓		↓		↓		↓	↓	↓
P1SC	-		W1	-	0300	-	GSR	-	X A P

How To Order Automated Power-Seal High Performance Butterfly Valves									
1	2	-	3	-	4	-	5	6	7 - 8 9 10 / actuator size - options
↓	↓		↓		↓		↓	↓	↓
P1SC	-		W1	-	0300	-	GS	R	- X AP / 2R5S - XX

(see Actuator Size Legend & Automated Accessories)

## How to Order Triac Pneumatic Actuators



### TRIAC® Model Number Matrix for Pneumatic Rack & Pinion Actuators

- 2** TRIAC® Rack & Pinion Actuator with double travel stops
- T** TRIAC® Rack & Pinion Actuator with single travel stop (TR10DA, TR20DA, TR20SR only)

- R** ISO / DIN mounting configuration
- CI** Direct mount to Center Line® BFV\*\*
- K** Direct mount to Keystone® / ABZ / Ultraflow® BFV
- N** Direct mount to Nibco® BFV (special order: CF)
- D** Direct mount to Demco® BFV (special order: CF)

Note: Others available, call for details

**0000** Actuator size (10, 20, 40, 80, 130, 200, 300, 500, 850, 1200, 1750, 2500, 3500)

- DA** Double acting configuration
- DAR** Double acting (reverse acting) configuration
- SR** Spring return fail clockwise configuration
- SO** Spring return fail counter-clockwise configuration

- Blank** Standard Buna seals (-5°F to 175°F)
- V** Viton® seals (0°F to 300°F)
- LT** Low temperature Buna seals (-45°F to 175°F)

- Blank** 5 springs per side (SR & SO only) (See brochure for 2CI model numbers)
- 0** Specify number of springs per side (1-6) (SR & SO only)  
(See brochure for 2CI model numbers)

- E** Extra long travel stops

**Example: 2R80SRE** (TRIAC 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 the valve size per the 2CI model numbers on page 9 of our Rack & Pinion brochure (LIT0004).



# Triac WE / XE Series Part Number Reference

Model	
WE	Weather Proof, CSA TYPE 4, 4X, IP67
XE	Explosion Proof Design, ATEX & IECEx Ex d IIB T4 Gb, 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) with 4-20mA transmitter
D	High Resolution Modulating Card (TDC)
	(TDC-100 or TDC-400; see Misc. Options for transmitter)
P	Profibus DP On/Off (motor option X only)
Q	Profibus DP Proportional Control/Position Feedback (motor option X only)
R	Modbus RTU (RS485) On/Off
Z	Modbus RTU (RS485) Proportional Control/Position Feedback
L	Boiler Feed (4-20mA) TSM extension recommended
S	Boiler Feed (0-135ohm) TSM extension recommended



Actuator	
Size	
-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	110VAC/1PH* Place holder only - Omit when at end of part number
A	24VDC/VAC - On/Off* (Sizes 500 - 2640)
B	12VDC (Size 690)
C	24VDC WED/XED/SED models only (Sizes 500 - 2640)
D	24VAC/1PH WED/XED/SED models only (Sizes 500 - 2640)
E	220VAC/1PH* (Sizes 500 - 80000)
H	440/460/480VAC/3PH (Sizes 1350 - 80000)
N	12VDC/VAC - On/Off (Size 690)

Options	
X	No options (Place holder only) Omit when at end of part number
B	Semi-integral Control Unit (1PH/3PH) (Sizes 13500 - 25900)
C	Intelligent Digital Control Unit (3PH) (Sizes 13500 - 80000)
D	Local / Remote Control Switches (Sizes 500 - 25900)
E	RCT Electronic Speed Control Module - 110 VAC only (Sizes 500 - 25900)
F	AMI 2-Wire Relay & Speed Control - 110 VAC only (Sizes 500 - 25900)
G	AST Sequence Timer (Sizes 500 - 25900)
HS1/HS2	See High Speed Options
R	2 Wire Control, Relay* - 110 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 -On/off or Modulating Control "D"
N	1000 Ohm Potentiometer*
O	5000 Ohm Potentiometer*
P	10K Ohm Potentiometer*
Y	180° Operation (Sizes 690 thru 10500)
Y-3P	180° Operation, 3 Position Control (Sizes 690 thru 10500)
L	-40°F Low Temp Kit (Sizes 500 thru 25900)
I	Visual LED Indicator (Open, Close, Power) (Sizes 690 thru 10500)
S	(4) Auxiliary limit switches (6 total) (Sizes 690 thru 25900)
	Floor Drive Mounting Configuration - See Floor Drive Catalog

## Examples

**WEM-1350**  
(Weather Proof Housing, Modulating Control, model size 1350, 110VAC / 1PH)

**WEM-1350XXT**  
(Weather Proof Housing, Modulating Control, model size 1350, 110VAC / 1PH, 4-20mA Transmitter)

\*XE-500 is only available as On/Off; applicable options marked with (\*).

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

## Triac® XC Series CSA Approved Explosion Proof Actuators

Model	
XC	Explosion Proof, CSA Class I, Division 1, Groups C, D; T4 Type 4, 4X, 6 & 7, IP66/IP67 Ex d IIB T4 Gb Class I, Zone 1, AEx d IIB T4 Gb

## Part Number Reference

Control	
Blank	(2) Position Control (Open / Close)
D	Modulating Controller* (Sizes 01350 - 01700), motor options C & E only

Actuator Size	Output Torque			
	110 VAC	220 VAC	24V AC/DC	12 VDC
-00690	690	690	620	350
-00860	860	790	700	440
-01350	1350	1350	1350	-
-01700	1700	1590	1410	-
-02640	2640	2300	2120	-
-04400	3980	3980	-	-
-06900	6900	6900	-	-
-10500	9600	8300	-	-
-17500	17500	17500	-	-
-25900	25900	25900	-	-

Motor	
X	110VAC/1PH
A	24V AC/DC 3-wire on/off (Sizes 00690 - 02640)
B	12VDC (Sizes 00690 & 00860)
C	24VDC XCD MODELS ONLY (Sizes 01350 - 01700)
E	220VAC/1PH
N	12V AC/DC 3-wire on/off (Sizes 00690-00860)

Misc. Options	
Note: Add all miscellaneous options to end of part number	
Blank	No options
XT	0-10VDC/4-20mA Transmitter (XCD models only)

NOTE: Class 1, Division 2 areas require a certified seal-off fitting during installation

## Example

**XC-01350X** - Triac Explosion Proof Electric Actuator, 1350 In-Lbs (150Nm), 21 Second Operation, 110VAC/1PH, 50-60Hz, 2 FLA, Two Position Control, ISO Mounting, 10 Watts Compartment Heater & Thermostat, (2) Auxiliary Limit Switches with Independent Cams, (2) Torque Switches, Diecast Anodized Aluminum Polyester Coated Construction, Class F Extended Duty Fan Motor, Manual Override, (2) 3/4" NPT Conduit Connections, F07/F10 ISO Mounting Pad, 19MM (0.748) Star Output Drive, cCSAus Approved Class I, Division 1, Groups C, D; T4, Ex d IIB Gb T4, Class I, Zone 1, AEx d IIB Gb T4, Type 4, 4X, 6 & 7, IP66, IP67, Ambient Temp = -20°C to +60°C; Color - Silver

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



## TRIAC THD Model Number Matrix

### TRIAC® THD Model Number Matrix



#### THD Series

- S** - Symmetrical Scotch Yoke
- C** - Canted Scotch Yoke (N/A in S09 model)

#### Model (Center Body)

**09**  
**11**  
**13**  
**16**  
**20**  
**27**

#### Actuator Action

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

#### Pressure Group

**200**    **735**  
**280**    **785**  
**335**    **835**  
**385**    **935**  
**435**    **985**  
**485**    **1020**  
**535**  
**585**  
**685**

#### Spring Cartridge

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

#### Manual Override

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

#### Seals & Grease

- Blank** - Standard Buna 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**

**S13SC435CBH-L:** Triac S13 435 Pressure Group Heavy Duty Spring Return, Spring Cartridge SCS13CE, Spring Clockwise, Symmetrical Scotch Yoke Actuator with Travel Stop Adjustment in Both Directions, 11.73" Bolt Circle ISO 5211 Valve Mounting, 1/2" NPT Air Supply Connection Complete with Hydraulic Override and Low Temperature Seals

# How To Order

## TRUNNION MOUNTED BALL VALVES PART NUMBER MATRIX

### Fire Safe Designation (must be included)

- X Non-Firesafe
- F Firesafe (standard)

### Port

- F Full Port
- R Regular Port

### Valve Series

- TS2 Soft seat Trunnion, 2 pc design (cast)
- TS3 Soft seat Trunnion, 3 pc design (forged)
- TSW Soft seat Trunnion, seal welded
- TM3 Metal seat Trunnion, 3 pc design (cast)
- TMW Metal seat Trunnion, seal welded

### Body Material

- C A216 WCB (-20°F to 800°F)
  - 5 A352 LCB (-50°F to 800°F)
  - 8 A352 LCC (-50°F to 650°F)
  - X CF8M 316 SST (-450°F to 1200°F)
  - L CF3M 316L SST (-450°F to 800°F)
  - 7 A105N Forged Steel (-20°F to 800°F)
  - D CD3MN Duplex SST (-50°F to 550°F)
  - G CE3MN Super Duplex SST (-50°F to 550°F)
  - 6 WC6, A217 (-20°F to 1100°F)
  - 9 WC9, A217 (-20°F to 1100°F)
  - F A350 LF2 (-50°F to 800°F)
  - 4 A182 F316 (-450°F to 1200°F)
- (other options: consult factory)

### End Connection

- |             |              |
|-------------|--------------|
| F1 150 RF   | R1 150 RTJ   |
| F3 300 RF   | R3 300 RTJ   |
| F6 600 RF   | R6 600 RTJ   |
| F9 900 RF   | R9 900 RTJ   |
| F15 1500 RF | R15 1500 RTJ |
| F25 2500 RF | R25 2500 RTJ |
- WE Weld End (\*please see chart)
- X Special Configuration (BW x Flanged, etc.)

### Bevel

- XX Standard Bevel or not applicable
- \*See chart below for various options

### \* Weld End Connections Chart for ordering

Pipe Schedule	ANSI Class						
	150	300	600	900	1500	2500	Special
10	AA	AB	AC	AD	AE	AF	AY
20	BA	BB	BC	BD	BE	BF	BY
30	CA	CB	CC	CD	CE	CF	CY
40	DA	DB	DC	DD	DE	DF	DY
60	EA	EB	EC	ED	EE	EF	EY
80	FA	FB	FC	FD	FE	FF	FY
XH	GA	GB	GC	GD	GE	GF	GY
100	HA	HB	HC	HD	HE	HF	HY
120	JA	JB	JC	JD	JE	JF	JY
140	KA	KB	KC	KD	KE	KF	KY
160	LA	LB	LC	LD	LE	LF	LY
XXH	MA	MB	MC	MD	ME	MF	MY
Spec	YA	YB	YC	YD	YE	YF	YY

### Valve Size

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

### Ball

- S 316 SS
- 9 LF2 / ENP
- 7 A105N / ENP
- 2 Tungsten Carbide Coated 316SST
- 3 316SST / HCr
- 4 Chrome Carbide Coated 316SST

### Stem

- H 4140 / ENP
- A 17-4 PH®
- B XM-19
- S 316SST
- D Inconel® 718
- C Duplex 2205
- 9 A350 LF2 / ENP
- 7 A105N / ENP

### Seat

- R1 RTFE (Single Piston)
- R2 RTFE (Double Piston)
- V1 Devlon® (Single Piston)
- V2 Devlon® (Double Piston)
- Z1 PEEK (Single Piston)
- Z2 PEEK (Double Piston)
- 3 316/Stellite®
- 2 Tungsten Carbide Coated 316SS
- 4 Chrome Carbide Coated 316SS

### Packing

- G Graphite packing (standard)
- P TFE packing

### Seals

- E EPDM
- B HNBR
- N HNBR AED
- W FKM
- V FKM AED
- X Custom Material/Compound

### Paint

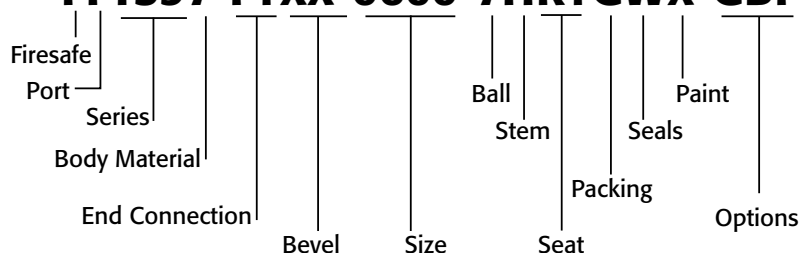
- X Standard
- S Special (Customer Specified Coating)

### Options

- H Wrench Operated to 4"
  - G Gear Operator
  - L Gear Operator w/ Locking Plate
  - X Bare Stem
  - E Extended Bonnet (specify extension length required)
  - B Bypass Piping w/ 2-way valve
  - F Factory Acceptance Test
  - C Customer to specify custom testing
  - S Spool Piece Mounting Kit for Automation
  - M Channel Design Mounting Kit for Automation
- (other options: consult factory)



## HOW TO ORDER A-T Trunnion Mounted Ball Valves: FFTS37-F1XX-0600-7HR1GWX-GBF





## ***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.

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### ***Filter Regulators***

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LIT0003

### **Limit Switches**

Mounted on Manual Valves



### **180° Actuators**



### **Dual Valve Assemblies**



### **Fusible Link Assemblies**



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