

Type 25 True Union Ball Valves



CRN
Registered
Consult Chemline

SERIES: Type 25

SIZES: 1/2" to 2"

ENDS: Socket, Threaded, Flanged, Butt¹ or ChemFlare™

SEATS: PTFE

SEALS: EPDM or FKM (Viton®)

Locking Handle

- Supplied as standard
- Manual locking in closed or open position with thumb lock



The Chemline **Type 25** is a fully engineered rugged design True Union ball valve for industrial services. The available materials (PVC, PP and PVDF) cover a wide range of chemicals and application processes. Manual locking handles are standard. A full selection of options include padlockable handles, base mount for panel mounting, all-PVC stem extensions, quick install actuator mounting kits, a full range of actuation and more.

Features

230 psi Working Pressure

- 230 psi for PVC valves
- 150 psi for PP and PVDF valves

Fully Blocking

- Downstream union nut may be safely disassembled for piping maintenance while valve is closed off under full pressure

Double Stem O-Rings

- Provide for high degree of safety on hazardous fluid applications

Compact

- ISO short body length
- Space saving

Ergonomic Handle

- Easy to operate
- With manual thumb lock
- Can indicate flow direction

Easy to Actuate

- Electric or pneumatic actuators may be easily mounted using ISO standard mounting kits

Panel Mountable

- Threaded inserts in valve base allow valve to be securely anchored to panel or support



with E Series Electric Actuator

¹ Butt ends for fusion to Chemline metric PP, PVDF or ECTFE (Halar®) piping

Type 25 True Union Ball Valves



Features



Optional Locking Device

- Accepts padlock or hasp
- Locks open or closed



"Actuator Ready" with Mounting Kit

- Actuation is easy. Screw on the standard ISO 5211 mounting kit. Coupling for actuator to valve stem is included.

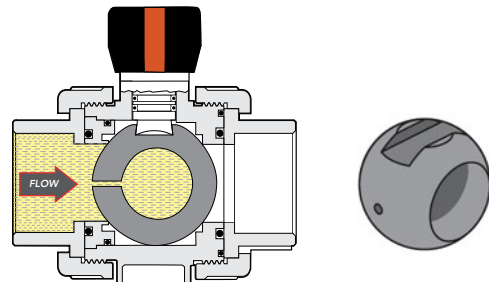


ChemFlare™ Ends

- For connection to PFA tube. Leak-free connections for difficult services such as sodium hypochlorite

With Valve Tags

- Stainless steel tag that indicates drilled ball for sodium hypochlorite



Optional Vented Ball

- Recommended for all sodium hypochlorite services
- Valve shown in closed position

Stem Extensions

- PVC stem and handle adaptors use PVC pipe for extensions up to 12 inches. Short extensions are for mounting behind panels or for displacement to allow for valve insulation.
- Long one-piece extensions are for indoors
- Long two-piece extensions are for outdoors, actuation or buried service



Optional Limit Switch Box

- Contains two normally open switches for open or closed position indication
- Micro switches or proximity switches are available



Compact Loose Ring Flanged Ends

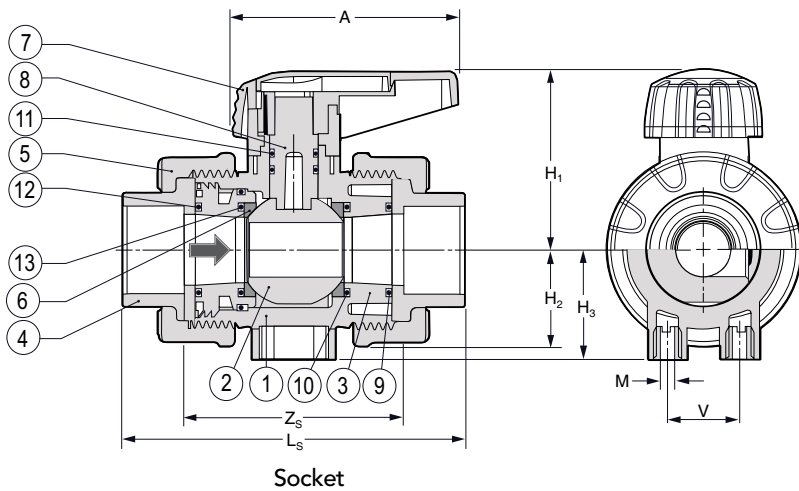
- Flanges are compact loose ring type. May be rotated to easily match up with pipeline flanges.
- Shorter face-to-face "L" length than standard one-piece socket flanges



Base Mounting

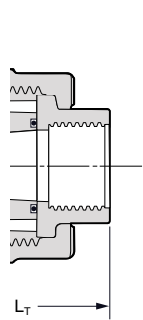
- Stainless steel threaded inserts are supplied as standard. They allow valves to be panel mounted from behind or to attach to a support if the valve is actuated or is to be an anchor point.

Type 25 True Union Ball Valves

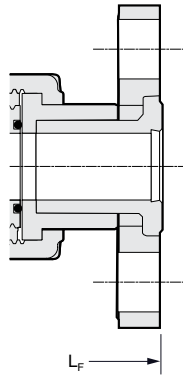


PARTS

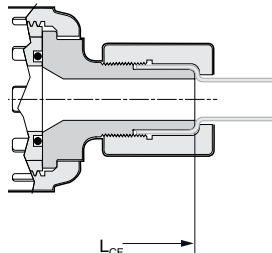
No.	Part	Pcs.	Materials
1	Body	1	PVC, PP, PVDF
2	Ball	1	PVC, PP, PVDF
3	Carrier	1	PVC, PP, PVDF
4	End Connector	2	PVC, PP, PVDF
5	Union Nut	5	PVC, PP, PVDF
6	Ball Seat	2	PTFE
7	Handle	1	PVC
8	Stem	1	PVC, PPG, PVDF
9	Carrier Face O-Ring	1	EPDM, FKM(Viton®)
10	Carrier O-Ring	1	EPDM, FKM(Viton®)
11	Stem O-Ring	2	EPDM, FKM(Viton®)
12	Face O-Ring	1	EPDM, FKM(Viton®)
13	Seat Cushion	2	EPDM, FKM(Viton®)



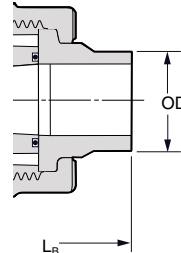
PVC Threaded



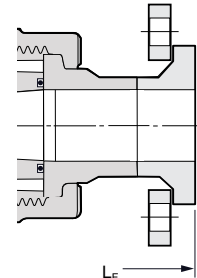
PVC Flanged



PVC with ChemFlare™



PP and PVDF Butt



PP and PVDF Welded Flanged

DIMENSIONS INCHES

Size	PVC											PP						PVDF					
	A	H ₁	H ₃	M	V	Z _s	L _s	L _T	L _F	L _{CF} ¹	H ₂	Z _s	L _s	L _B	L _F	H ₂	OD	Z _s	L _s	L _B	L _F	H ₂	OD
1/2"	2.62	2.48	1.10	M5	0.98	2.48	3.74	3.66	4.8	5.41	0.99	2.64	3.74	5.12	8.8	1.06	0.79	2.60	3.64	5.12	8.8	1.06	0.79
3/4"	3.21	3.03	1.20	M5	0.98	2.83	4.33	4.33	5.5	5.77	1.16	3.03	4.29	5.65	9.3	1.18	0.98	3.03	4.21	5.65	9.3	1.18	0.98
1"	3.21	3.39	1.60	M6	1.02	3.11	4.84	4.83	6.1	6.35	1.39	3.27	4.69	5.98	9.7	1.57	1.26	3.27	4.69	5.98	9.7	1.57	1.26
1-1/4"	3.60	4.33	1.80	M8	1.77	3.70	5.75	5.30	-	-	1.69	3.94	5.55	6.77	9.1	1.81	1.57	3.92	5.44	6.77	9.1	1.81	1.57
1-1/2"	3.60	4.57	2.20	M8	1.77	3.78	6.22	6.16	7.8	-	1.96	4.17	5.98	7.56	9.5	2.17	1.97	4.15	5.85	7.56	9.5	2.17	1.97
2"	5.63	5.94	2.80	M8	1.77	4.25	7.24	7.19	8.9	-	2.48	4.61	6.73	8.74	10.3	2.76	2.48	4.61	6.59	8.74	10.3	2.76	2.48

¹ChemFlare™ ends are available for reduced tube sizes down to 1/4"

WORKING PRESSURES PSI

NET WEIGHTS LBS. Cv VALUES

Size	PVC			PP				PVDF						PVC	PP	PVDF	USGPM Flow at 1 psi ΔP	
	20°C 68°F	40°C 104°F	60°C 140°F	20°C 68°F	40°C 104°F	60°C 140°F	80°C 176°F	20°C 68°F	40°C 104°F	60°C 140°F	80°C 176°F	100°C 212°F	120°C 248°F					140°C 284°F
1/2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.35	0.29	0.50	14
3/4"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.62	0.55	0.70	25
1"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	0.80	0.77	1.06	52
1-1/4"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	1.58	1.25	1.98	77
1-1/2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	2.20	1.43	2.90	119
2"	230	130	30	150	100	65	29	230	190	150	116	87	65	50	3.75	2.84	4.54	224

Temperature Ranges: PVC 0 to 60°C (32 to 140°F), PP 10 to 80°C (50 to 176°F), PVDF -30 to 140°C (-22 to 284°F)

Type 25 True Union Ball Valves



SAMPLE SPECIFICATION

1. All plastic ball valves 1/2" to 2" will be Chemline Type 25 or equal.
2. PVC valves with EPDM or FKM (Viton®) seals are 230 psi rated, suitable for temperatures up to 60°C / 140°F.¹
3. Polypropylene valves with EPDM or FKM (Viton®) seals will be 150 psi rated, suitable for temperatures up to 80°C / 176°F.¹
4. PVDF valves 1/2" to 2" with FKM (Viton®) seals are 230 psi rated, suitable for temperatures up to 140°C / 284°F.¹
5. Valves will be full port with a threaded-in seat carrier, two-way blocking design.
6. Valves will have blowout-proof stems with double O-rings for safety.
7. Ball seats will be PTFE with elastomer cushions for and better sealing at low pressures and longer life.
8. Handle will have thumb lock to fix position open or closed.
9. Valves will have a base with stainless steel threaded inserts for screws to panel mount or anchor the valve.
10. PVC Socket ends shall be Schedule 80 and conform to ASTM D-2467.
11. Threaded ends shall be Schedule 80 and conform to ASTM D-2464.
12. ChemFlare™ ends will be compatible with Chemline's ChemFlare™ leak-free tubing system.
13. PP or PVDF Butt fusion ends in will be compatible with Chemline PP, PVDF or ECTFE metric piping systems.
14. Flanged ends shall be ANSI Class 150.
15. Every valve will undergo a factory hydrostatic pressure test to assure quality.

¹ At maximum temperatures, pressure ratings are lower than the maximums stated. Refer to the Chemline data sheet

OTHER OPTIONS & ACCESSORIES

- **Municipal Operating Nut**
- **Lubrication-free Valves** – factory clean room assembled

ORDERING EXAMPLE

Chemline Type 25 True Union Ball Valve	25	A	005	V	-A8N-1
Body Material	A – PVC B – PP K – PVDF				
Size	005 – 1/2" 007 – 3/4" 010 – 1" 012 – 1-1/4" 015 – 1-1/2" 020 – 2"				
Seals	E – EPDM V – FKM (Viton®)				
Ends	S – Socket T – Threaded F – Flanged B – Butt¹ ChemFlare™ – Use Item Numbers below				

Example: Chemline Type 25 PVC True Union Ball Valve, 1/2", with FKM (Viton®), PVC ChemFlare™ end connectors, 1/2" tube size, including nuts

¹ Butt ends for fusion to Chemline metric PP, PVDF or ECTFE (Halar®) piping

CHEMFLARE™ ITEM NUMBERS

Valve Size	Tube O.D.	for PVC Valves			for PP, CPVC and PVDF Valves		
		End Connector	Nut	Item Number	End Connector	Nut	Item Number
1/2"	1/4"	PVC	PVDF	A4N-1	PVDF	PVDF	K4N-1
1/2"	3/8"	PVC	PVDF	A6N-1	PVDF	PVDF	K6N-1
1/2"	1/2"	PVC	PVC	A8N-1	PVDF	PVDF	K8N-1
3/4"	3/4"	PVC	PVDF	A12N-1	PVDF	PVDF	K12N-1
1"	1"	PVC	PVDF	A16N-1	PVDF	PVDF	K16N-1

Type 25.DS.10.30.24

Type 25 True Union Ball Valves



Electric Actuation

Refer to actuator data page for detailed information

All electric actuators have these STANDARD FEATURES:

- Polyamide plastic housings or covers – corrosion resistant and light weight
- NEMA 4X/IP65 water resistance enclosure rating
- CSA Approved or Special Inspection labelled
- Reversible operation
- Multi-voltage operation
- Standard ISO 5211 mounting dimensions
- Irreversible gearing – backlash is impossible



ER Series



V Series



Optional Control Station

- Adjustable travel through the full range
- No maintenance is required
- Heater/thermostats for humid locations and cold weather operation
- Two extra switches for valve position feedback

Electric Actuator Selection

Model	ERS Series	ER Series	ERF Series	V Series
FEATURES	STANDARD	FULL FEATURE	FAST ACTING	HIGHER TORQUE
Type 25 valve sizes	1/2" to 2"	1/2" to 2"	1/2" to 2"	1/2" to 2"
Voltage	120/240 VAC	120/240 VAC 12/24 VDC 24 VAC	12 VAC/VDC 24 VAC/VDC	120/240 VAC 12/24 VDC 24 VAC
Cycle Time sec/90°	12	12	6 3.5	30
Duty Cycle	30%	50%	30%	50%
CSA	Special Inspection Label	Approved	Special Inspection Label	Approved
ON/OFF Control	3-Wire/2-Wire	3-Wire/2-Wire	3-Wire/2-Wire	3-Wire/2-Wire
Gear Train	Spur Gears	Spur Gears	Spur Gears	Epicyclic
Mechanical Travel Stops	Fixed	Fixed	Fixed	Adjustable
DIN Plug Wiring Connectors	✓	✓	✓	✗
Two Position Feedback Switches	✓	✓	✓	✓
Valve Position Indicator	Knob	Knob	Knob	Dome
Manual Override	Declutching	Declutching	Declutching	Without Declutching
Override Device	Knob	Knob	Knob	Hand Wheel
Operating Temperature Range	-10 to 60C (15 to 140°F)	-10 to 60C (15 to 140°F)	-10 to 60C (15 to 140°F)	-20 to 70C (-4 to 158°F)
Onboard Electronic Torque Limiter	✗	✓	✗	✓
Onboard General Fault Relay	✗	✓	✗	✓
Onboard Diagnostics	✗	✓	✗	✓
ENCLOSURE OPTIONS				
Metal Cover for IP68 Rating	✗	✗	✗	✓
Low Temperature Option	✗	✗	✗	-50 to 70C (-58 to 158°F)
POSITION FEEDBACK OPTIONS				
Position Feedback Potentiometer	✓	✓	✓	✓
Transmitter	✓	✓	✓	✓
Extra Limit Switches ¹	✓	✓	✓	✓
CONTROL OPTIONS				
Digital Positioner	✗	✓	✗	✓
Failsafe Internal Battery Pack	✗	✓	✗	✓
Local/Remote Control Switch Box	✓	✓	✓	✓
MODBUS Module	✗	✓	✗	✓
Bluetooth Control	✗	✓	✗	✓

¹ 2 feedback switches are already supplied as standard

Type 25 True Union Ball Valves



Electric Actuation

Refer to actuator data page for detailed information



Electric Actuation Item Numbers

Item numbers are for actuators including mounting to valve and bench testing

Model	ERS Series				ERF Series			
	120/240 VAC		12/24 VDC & 24 VAC		12 VAC/VDC		12 VAC/VDC	
Valve Size	Item No.	Cycle Time/90°	Item No.	Cycle Time/90°	Item No.	Cycle Time/90°	Item No.	Cycle Time/90°
1/2"	25005-ERS20.12	12 sec	25005-ERS20.346	12 sec	25005-ERF20.35	6 sec	25005-ERF20.46	3.5 sec
3/4"	25007-ERS20.12	12 sec	25007-ERS20.346	12 sec	25007-ERF20.35	6 sec	25007-ERF20.46	3.5 sec
1"	25010-ERS20.12	12 sec	25010-ERS20.346	12 sec	25010-ERF20.35	6 sec	25010-ERF20.46	3.5 sec
1-1/4"	25012-ERS20.12	12 sec	25012-ERS20.346	12 sec	25012-ERF20.35	6 sec	25012-ERF20.46	3.5 sec
1-1/2"	25015-ERS20.12	12 sec	25015-ERS20.346	12 sec	25015-ERF20.35	6 sec	25015-ERF20.46	3.5 sec
2"	25020-ERS20.12	12 sec	25020-ERS20.346	12 sec	25020-ERF20.35	6 sec	25020-ERF20.46	3.5 sec

Model	ER Series				V Series			
	Max. Line Pressure (psi)	Cycle Time/90°	120/240 VAC Item No.	12/24 VDC & 24 VAC Item No.	Max. Line Pressure (psi)	Cycle Time/90°	120/240 VAC Item No.	12/24 VDC & 24 VAC Item No.
1/2"	230	12 sec	25005-ER20.12	25005-ER20.346	230	30 sec	25005-VS150.12	25005-VS150.346
3/4"	230	12 sec	25007-ER20.12	25007-ER20.346	230	30 sec	25007-VS150.12	25007-VS150.346
1"	230	12 sec	25010-ER20.12	25010-ER20.346	230	30 sec	25010-VS150.12	25010-VS150.346
1-1/4"	230	12 sec	25012-ER20.12	25012-ER20.346	230	30 sec	25012-VS150.12	25012-VS150.346
1-1/2"	230	12 sec	25015-ER20.12	25015-ER20.346	230	30 sec	25015-VS150.12	25015-VS150.346
2"	230	12 sec	25020-ER20.12	25020-ER20.346	230	30 sec	25020-VS150.12	25020-VS150.346

Type 25 True Union Ball Valves



Electric Actuation

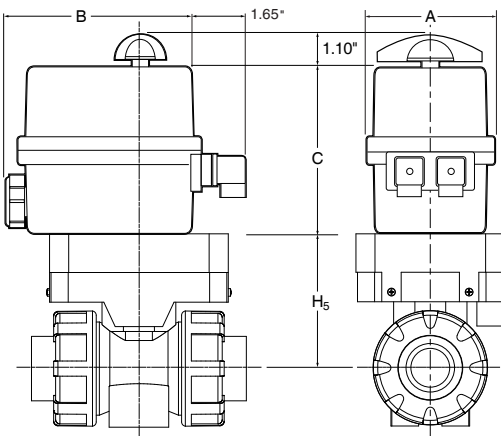
Refer to actuator data page for detailed information.



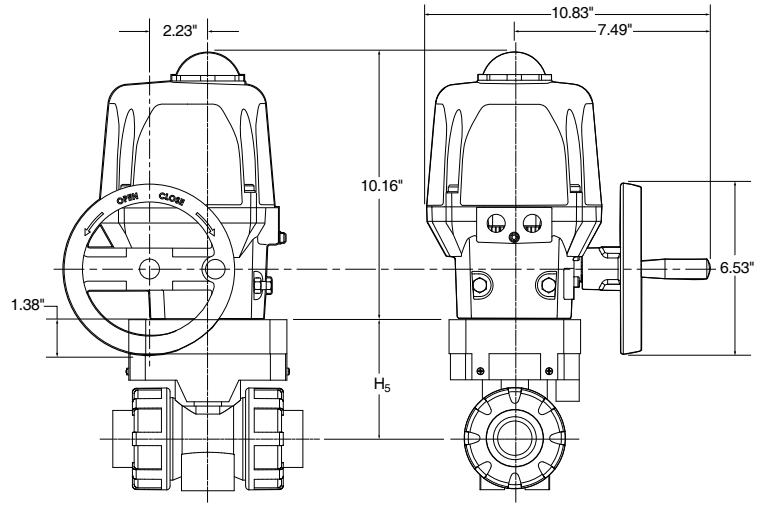
ER Series



V Series



E Series

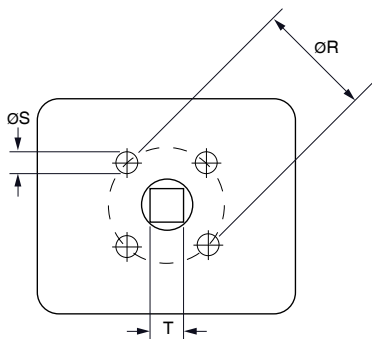


V Series

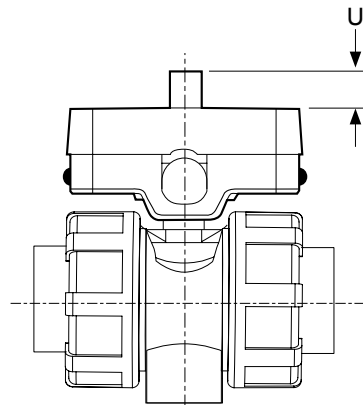
DIMENSIONS INCHES

Size	A	B	C	H ₅	ISO 5211 Topworks					
					øR			øS	T	U
					inches	mm	ISO			
1/2"	3.62	5.04	4.88	2.3	1.968	50	F05	0.248	0.55	0.590
3/4"	3.62	5.04	4.88	2.6	1.968	50	F05	0.248	0.55	0.590
1"	3.62	5.04	4.88	2.9	1.968	50	F05	0.252	0.55	0.590
1-1/4"	3.62	5.04	4.88	3.1	1.968	50	F05	0.252	0.55	0.590
1-1/2"	3.62	5.04	4.88	3.4	1.968	50	F05	0.252	0.55	0.590
2"	3.62	5.04	4.88	4.2	1.968	50	F05	0.252	0.55	0.590

Actuator Mounting Kit



Top View



Side Views

Type 25 True Union Ball Valves



Pneumatic Actuation

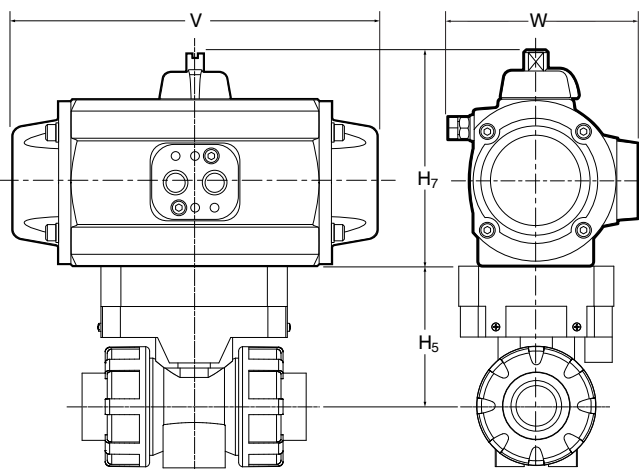
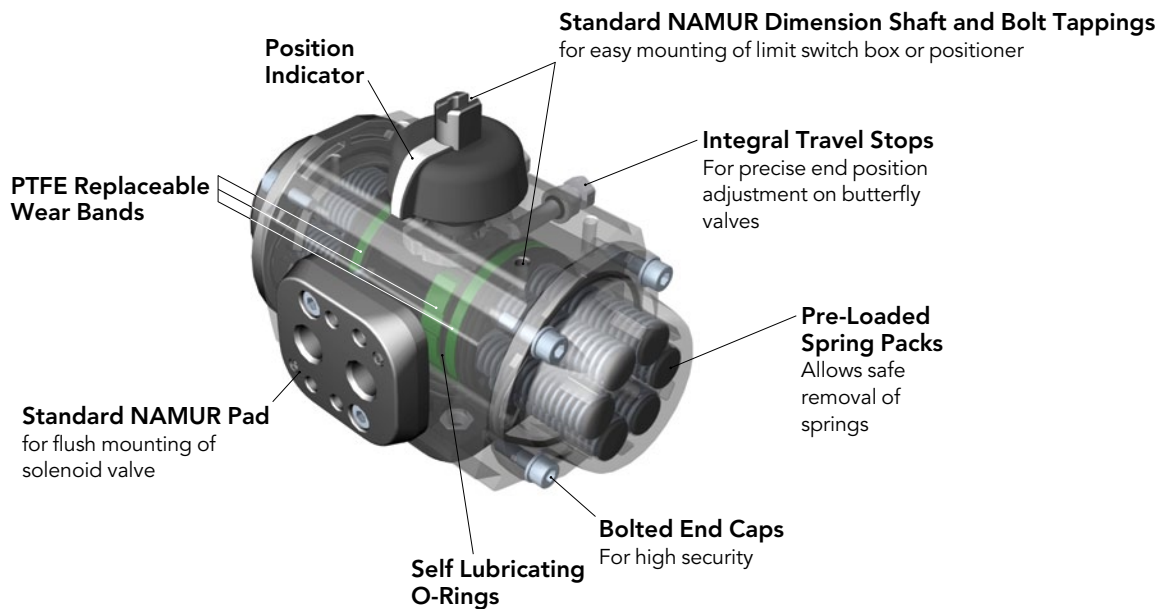
Refer to actuator data page for detailed information

All pneumatic actuators have these STANDARD FEATURES:

- Aluminum rack and pinion type
- Coating is two-part epoxy/Rilsan polyamide, applied inside and out. Epoxy offers high chemical resistance and Rilsan offers coating durability.
- Rated for over one million cycles
- ISO standard valve mounting dimensions allow for direct mounting of most valves
- Mechanical travel stops are standard. They allow up to 5 degrees of piston travel adjustment
- Standardized accessories (solenoid valves, limit switch boxes, positioners) may be direct mounted



PA Series



DIMENSIONS INCHES

Size	H ₅	Spring Return		Double Acting			
		H ₇	V	W	H ₇	V	W
1/2"	2.3	3.52	5.52	3.00	3.52	5.52	3.00
3/4"	2.6	3.52	5.52	3.00	3.52	5.52	3.00
1"	2.9	3.52	5.52	3.00	3.52	5.52	3.00
1-1/4"	3.1	4.38	6.00	3.31	3.52	5.52	3.00
1-1/2"	3.4	4.38	6.00	3.31	3.52	5.52	3.00
2"	4.2	5.05	7.91	4.00	3.52	5.52	3.00

For actuator sizes based on normal 80 psi available air supply

Type 25 True Union Ball Valves



Pneumatic Actuation

Refer to actuator data page for detailed information.

Pneumatic Actuation Item Numbers

Item numbers are for actuators including mounting to valve and bench testing. Actuators are sized for "normal" service. For gas, vapour or severe chemical service, consult Chemline.



PA Series

Double Acting

Valve Size	Max. Line Pressure (psi)	Air Supply Pressure (psi)		
		60	80	100
		Item No.	Item No.	Item No.
1/2"	230	24005-PADW	24005-PADW	24005-PADW
3/4"	230	24007-PADW	24007-PADW	24007-PADW
1"	230	24010-PADW	24010-PADW	24010-PADW
1-1/4"	230	24012-PADW	24012-PADW	24012-PADW
1-1/2"	230	24015-PADW	24015-PADW	24015-PADW
2"	230	24020-PAD00	24020-PADW	24020-PADW

Spring Return

Valve Size	Max. Line Pressure (psi)	Air Supply Pressure (psi)		
		60	80	100
		Item No.	Item No.	Item No.
1/2"	230	24005-PASW	24005-PASW	24005-PASW
3/4"	230	24007-PASW	24007-PASW	24007-PASW
1"	230	24010-PASW	24010-PASW	24010-PASW
1-1/4"	230	24012-PAS05	24012-PAS00	24012-PASW
1-1/2"	230	24015-PAS05	24015-PAS00	24015-PASW
2"	230	24020-PAS10	24020-PAS05	24020-PAS05

Accessories



Solenoid Valves

- Solenoid valves are electrically actuated. They control air supply in and out of the actuators to open or close the valve. They bolt flush onto the actuator.



Positioners

- Positioners control actuator-valve position responding to a control signal. They are either 3-15 psi pneumatic, 4-20 mA electro-pneumatic or 4-20 mA Smart (fully digital with intelligent functions).



Limit Switches

- Limit switches are for ON and/or OFF valve position feedback. They feature a valve position indicator dome with high visibility. The standard NEMA 4X/IP65 version has mechanical switches. Explosion proof versions are available.



End Cap Travel Stops

- These are to adjust the full length of piston travel but for only one direction of travel - either open for a normally closed valve or closed position for a normally open valve



Travel Stop Plate

- This is required to reduce end of travel by more than 5 degrees. It allows independent adjustment of the full length of piston travel for both opening and closing strokes.



Declutchable Gear Override

- This allows manual operation of the actuated valve in case the supply air pressure fails. It is normally disengaged. To engage, press the lever bar down.

Type 25.DS.10.30.24