

Type 24 True Union Ball Valves



PVC

CRN REGISTRATION
PENDING

SERIES: Type 24

SIZES: 1/2" to 4"

ENDS: Socket, Threaded, Flanged or ChemFlare™

SEATS: PTFE

SEALS: EPDM or FKM (Viton®)



Chemline's **Type 24** full-feature industrial True Union ball valve is a full port, fully blocking valve, pressure rated at 230 psi (16 bar). Actuation is quick and easy using the ISO standard mounting kits. An integral base mounting pad is provided for panel mounting. Extra manufacturing processes assure long trouble-free life. Valves are certified under NSF/ANSI Standard 61 for contact with drinking water.

Features

230 psi Working Pressure

Fully Blocking

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

Compact

- ISO short body length
- Space saving

PTFE Seats

- PTFE seats with elastomer seat cushions provide better sealing and longer life

Double Stem O-Rings

- Provide for high degree of safety on hazardous fluid applications

Quality Assurance

- Each valve is pressure tested before shipping and has a label showing manufacturing number traceable to production

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 ER Series Electric Actuator

Type 24 True Union Ball Valves



Features



Built in Spanner Wrench

- For removing or tightening the seat carrier
- All parts are replaceable



"Actuator Ready" with Mounting Kit

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



With Valve Tags

- Stainless steel tag that indicates drilled ball for sodium hypochlorite

ChemFlare™ Ends

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

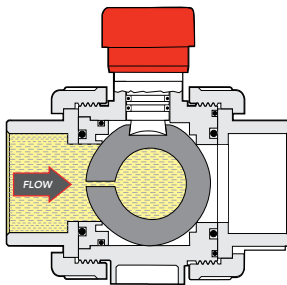


Base Mounting

- Threaded inserts allow valves to be panel mounted from behind or to attach the optional mounting pad for top side panel mounting

Optional Vented Ball

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



Optional Panel Mounting Pad

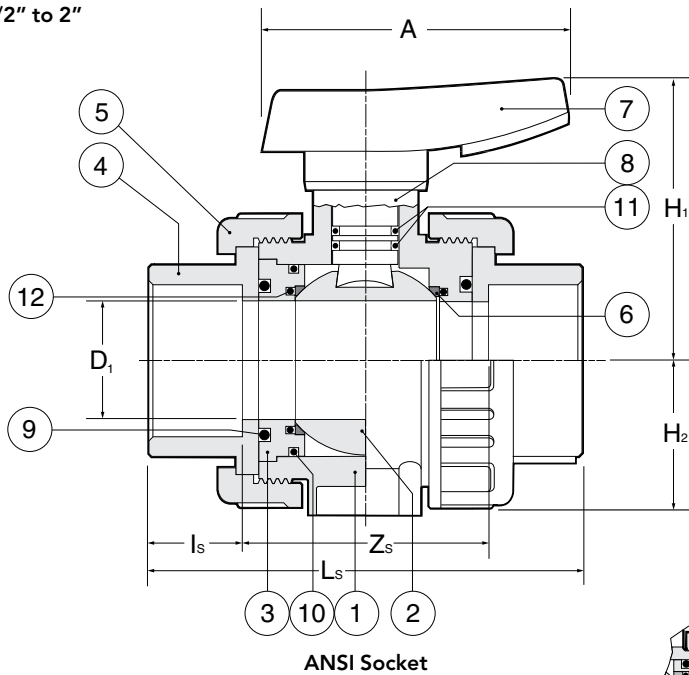
- Expandable bracket for mounting of valve to panel from the top side
- Pad provides additional height off the panel
- One bracket adjusts to for 1" to 2" valves



Type 24 True Union Ball Valves

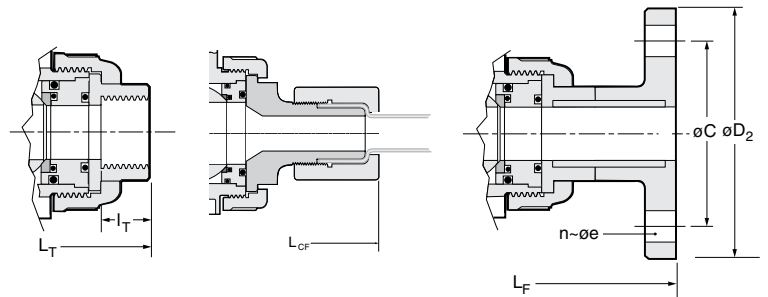
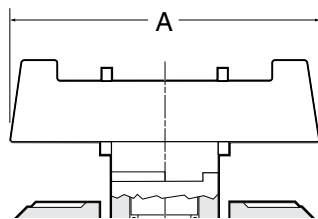


1/2" to 2"



ANSI Socket

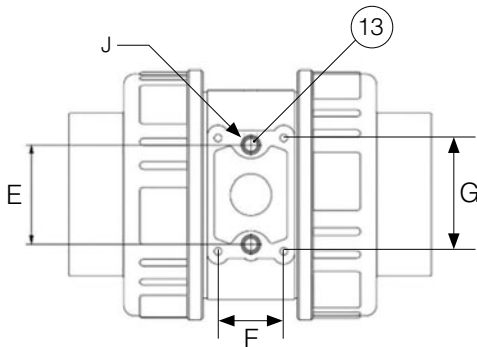
2-1/2" to 4"



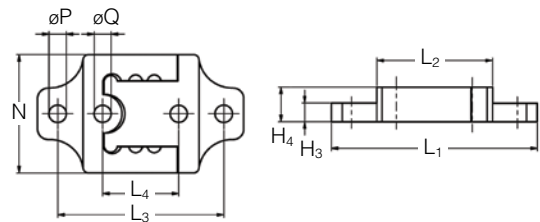
NPT Threaded

ChemFlare Ends
shown with PVDF nut

Flanged



Valve Base Mount



Optional Panel Mounting Pad
Available for 1" to 2" valve sizes.
For dimensions, contact Chemline.

PARTS

▲ Recommended Spare Parts

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

DIMENSIONS INCHES

Size	End Connections																Valve Base			
	A	D	H ₁	H ₂	Z ₅	Socket		Threaded		Flanged ¹				ChemFlare™		E	F	G	J (metric)	
						L _S	I _S	L _T	I _T	L _F	D ₂	C	n	e	L _{CF}	Tube ²				
1/2"	2.50	0.57	1.95	0.97	1.89	3.71	0.89	3.08	0.59	5.78	3.50	2.37	4	0.50	5.38	1/2"	0.70	-	-	M4 x 8
3/4"	2.84	0.78	2.30	1.18	2.09	4.18	1.00	3.58	0.75	6.72	3.87	2.75	4	0.50	5.62	3/4"	0.85	-	-	M4 x 8
1"	3.34	0.98	2.28	1.34	2.28	4.77	1.32	4.17	0.86	7.31	4.25	3.12	4	0.50	6.28	1"	1.11	0.80	1.19	M4 x 8
1-1/4"	3.87	1.25	3.00	1.58	2.68	5.20	1.67	4.76	0.98	8.12	4.62	3.50	4	0.50	-	-	1.40	0.95	1.50	M5 x 10
1-1/2"	4.38	1.57	3.70	1.85	3.07	5.83	1.91	5.63	1.19	9.30	5.06	3.87	4	0.50	-	-	1.50	1.04	1.72	M6 x 14
2"	4.92	1.97	4.53	2.27	3.66	6.67	2.38	6.65	1.47	10.44	6.00	4.75	4	0.625	-	-	1.75	1.22	2.12	M6 x 14
2-1/2"	6.64	2.56	5.70	3.30	4.65	9.00	1.75	8.96	1.74	12.32	7.00	5.50	4	0.625	-	-	-	1.42	1.90	-
3"	6.64	2.82	5.70	3.30	5.51	9.23	1.87	9.49	1.97	13.65	7.50	6.00	4	0.625	-	-	-	1.42	1.90	-
4"	8.03	3.76	6.67	4.12	6.30	11.11	2.25	10.86	2.37	16.37	9.06	7.50	8	0.625	-	-	-	1.57	2.30	-

¹ Flanged valves have solvent cement welded flanges. Dimension L_F is approximate. Before ordering, please specify a specific L_F if required.

² ChemFlare™ ends are available for reduced tube sizes down to 1/4"

Type 24 True Union Ball Valves



WORKING PRESSURES PSI, Water, Non-Shock

Cv VALUES

NET WEIGHTS LBS.

Size	20°C 68°F	30°C 66°F	40°C 104°F	50°C 122°F	60°C 140°F	USGPM@1 psi Pressure Drop	Socket/Threaded
1/2"	230	200	150	100	45	13	0.3
3/4"	230	200	150	100	45	26	0.4
1"	230	200	150	100	45	49	0.7
1-1/4"	230	200	150	100	45	69	1.0
1-1/2"	230	200	150	100	45	118	1.5
2"	230	200	150	100	45	222	2.5
2-1/2"	230	200	150	100	45	347	6.7
3"	230	200	150	100	45	486	7.0
4"	230	200	150	100	45	694	11.9

Temperature Ranges: PVC 0 to 60°C (32 to 140°F)

SAMPLE SPECIFICATION

- All PVC ball valves 1/2" to 4" will be Chemline Type 24 True Union or equal.
- PVC valves with EPDM or FKM (Viton®) seals will be 230 psi rated up to 2" and 150 psi rated 2-1/2" to 4".
- Valves will be suitable for temperatures up to 60°C/140°F.¹
- Valves will be NSF/ANSI 61 certified for contact with drinking water.
- Valves will be full port with a threaded-in seat carrier, two-way blocking design.
- Handle will have a built-in spanner wrench for adjustment or removal of the seat carrier.
- Valves will have blowout-proof stems with double O-rings for safety.
- Ball seats will be PTFE with elastomer cushions for and better sealing at low pressures and longer life.
- Valves will have a base with threaded inserts for screws to panel mount or anchor the valve.
- Socket ends shall be Schedule 80 and conform to ASTM D-2467.
- Threaded ends shall be Schedule 80 and conform to ASTM D-2464.
- ChemFlare™ ends will be compatible with Chemline's ChemFlare™ leak-free tubing system.
- Flange dimensions will be according to ASME/ANSI B16.5 Class 150.
- Every valve will undergo a factory hydrostatic pressure test to assure quality. All valves will be labelled with manufacturers' inspection number for traceability to production.

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

VACUUM RATING - 29.9 inches mercury

OTHER OPTIONS & ACCESSORIES

- **Alternate O-Ring Seals**
- **Alternate End Connections**
- **Stem Extensions** made to any length
- **Limit Switches** – for open and/or closed position indication
- **Municipal Operating Nut**
- **Lubrication-free Valves** – factory clean room assembled

ORDERING EXAMPLE

Chemline Type 24 True Union Ball Valve	24	A	005	V	-A8N-1
Body Material	A – PVC				
Size	005 – 1/2" 007 – 3/4" 010 – 1" 012 – 1-1/4" 015 – 1-1/2" 020 – 2" 025 – 2-1/2" 030 – 3" 040 – 4"				
Seals	E – EPDM V – FKM (Viton®)				
Ends	S – Socket T – Threaded F – Flanged ChemFlare™ – Use Item Numbers below				

Example: Chemline Type 24 PVC True Union Ball Valve, 1/2", with FKM (Viton®), PVC ChemFlare™ end connectors, 1/2" tube size, including nuts

CHEMFLARE™ ITEM NUMBERS

Valve Size	Tube O.D.	End Connector	Nut	Item Number
1/2"	1/4"	PVC	PVDF	A4N-1
1/2"	3/8"	PVC	PVDF	A6N-1
1/2"	1/2"	PVC	PVC	A8N-1
3/4"	3/4"	PVC	PVDF	A12N-1
1"	1"	PVC	PVDF	A16N-1

Type 24.DS.11.01.23

Type 24 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



VS Series



Optional Local 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 24 valve sizes	1/2" to 2"	1/2" to 4"	1/2" to 2"	1/2" to 4"
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	50%	80%	30%	80%
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	✗	✓	✗	✓

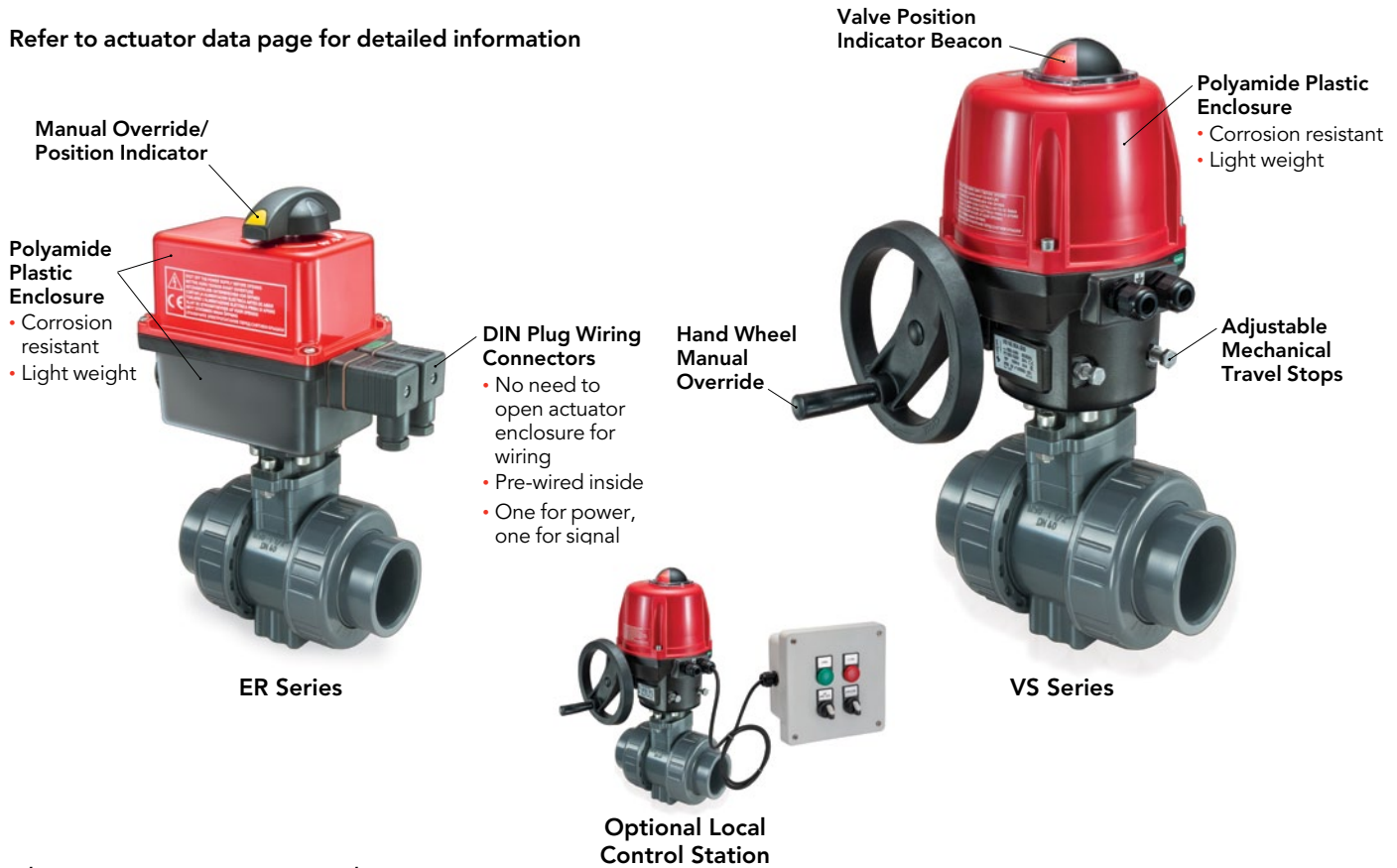
¹ 2 feedback switches are already supplied as standard

Type 24 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			
Voltage	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"	24005-ERS20.12	12 sec	24005-ERS20.346	12 sec	24005-ERF20.35	6 sec	24005-ERF20.46	3.5 sec
3/4"	24007-ERS20.12	12 sec	24007-ERS20.346	12 sec	24007-ERF20.35	6 sec	24007-ERF20.46	3.5 sec
1"	24010-ERS20.12	12 sec	24010-ERS20.346	12 sec	24010-ERF20.35	6 sec	24010-ERF20.46	3.5 sec
1-1/4"	24012-ERS20.12	12 sec	24012-ERS20.346	12 sec	24012-ERF20.35	6 sec	24012-ERF20.46	3.5 sec
1-1/2"	24015-ERS20.12	12 sec	24015-ERS20.346	12 sec	24015-ERF20.35	6 sec	24015-ERF20.46	3.5 sec
2"	24020-ERS20.12	12 sec	24020-ERS20.346	12 sec	24020-ERF20.35	6 sec	24020-ERF20.46	3.5 sec

Model	ER Series				V Series			
Valve Size	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	24005-ER20.12	24005-ER20.346	230	30 sec	24005-VS150.12	24005-VS150.346
3/4"	230	12 sec	24007-ER20.12	24007-ER20.346	230	30 sec	24007-VS150.12	24007-VS150.346
1"	230	12 sec	24010-ER20.12	24010-ER20.346	230	30 sec	24010-VS150.12	24010-VS150.346
1-1/4"	230	12 sec	24012-ER20.12	24012-ER20.346	230	30 sec	24012-VS150.12	24012-VS150.346
1-1/2"	230	12 sec	24015-ER20.12	24015-ER20.346	230	30 sec	24015-VS150.12	24015-VS150.346
2"	230	12 sec	24020-ER20.12	24020-ER20.346	230	30 sec	24020-VS150.12	24020-VS150.346
2-1/2"	150	26 sec	24025-ER35.12	24025-ER35.346	150	30 sec	24025-VS150.12	24025-VS150.346
3"	150	36 sec	24030-ER35.12	24030-ER35.346	150	30 sec	24030-VS150.12	24030-VS150.346
4"	100	12 sec	24040-ER60.12	24040-ER60.346	150	30 sec	24040-VS150.12	24040-VS150.346

Type 24 True Union Ball Valves



Electric Actuation

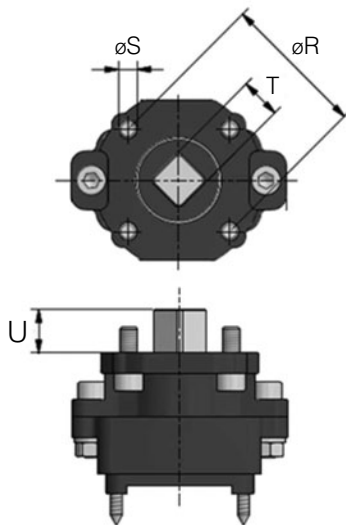
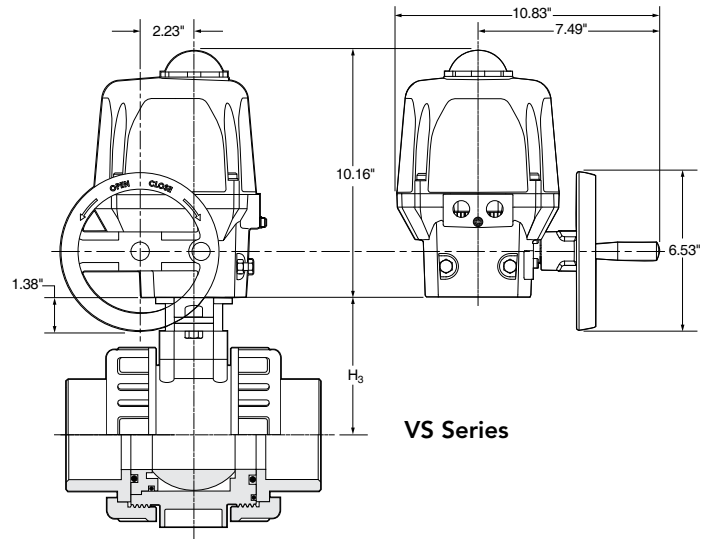
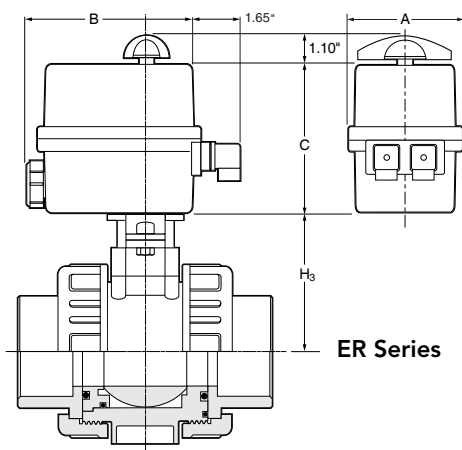
Refer to actuator data page for detailed information



ER Series



VS Series



Valve Top Mounting Kit

DIMENSIONS INCHES

Size	A	B	C	H ₃	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
2-1/2"	5.35	5.94	5.98	4.6	2.760	50	F05	0.335	0.67	0.590
3"	5.35	5.94	5.98	4.6	2.760	70	F07	0.335	0.67	0.590
4"	5.35	5.94	5.98	5.5	2.760	70	F07	0.335	0.67	0.590

Type 24 True Union Ball Valves



Pneumatic Actuation

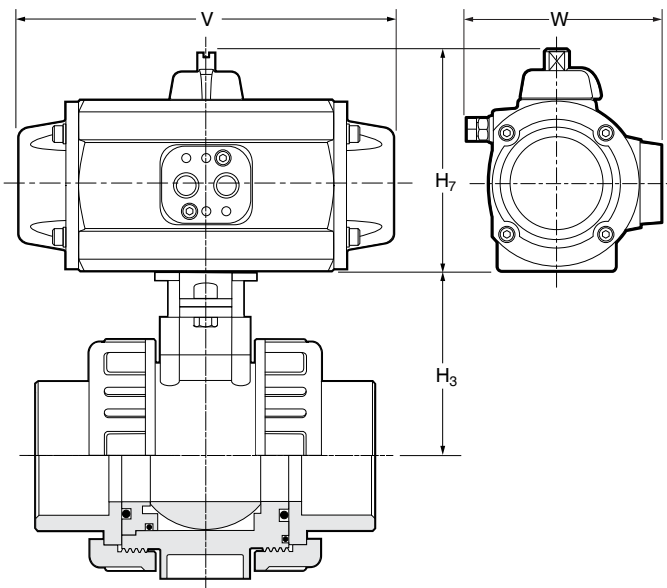
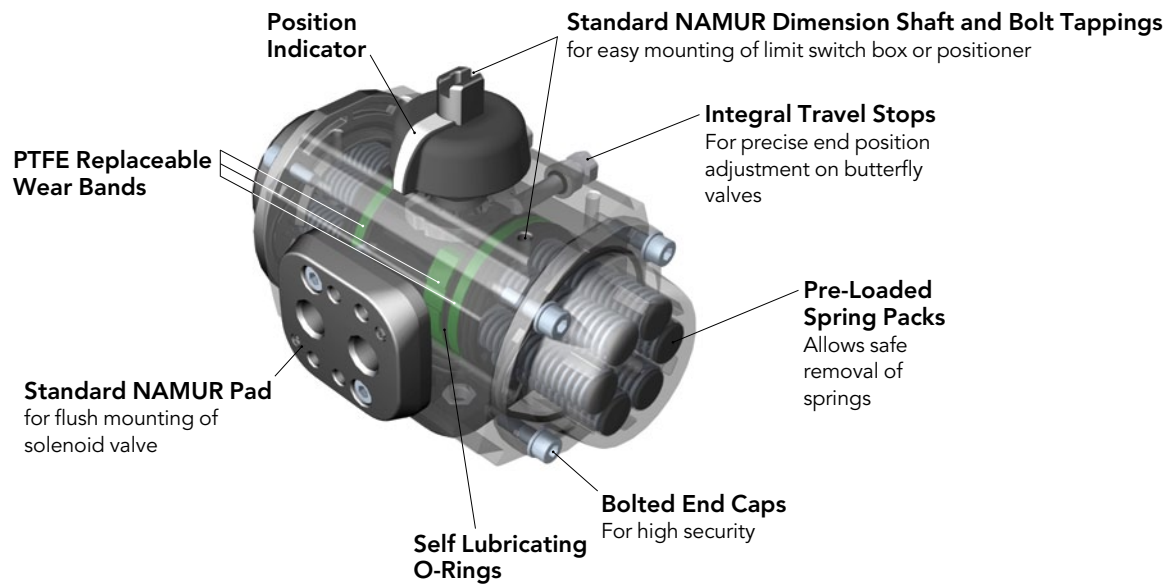
Refer to actuator data page for detailed information

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 ₃	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
2-1/2"	4.6	5.82	10.40	4.70	5.05	7.91	4.00
3"	4.6	5.82	10.40	4.70	5.05	7.91	4.00
4"	5.5	5.82	10.40	4.70	5.05	7.91	4.00

For actuator sizes based on normal 80 psi available air supply

Type 24 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
2-1/2"	150	24025-PAD05	24025-PAD05	24025-PAD05
3"	150	24030-PAD05	24030-PAD05	24030-PAD05
4"	150	24040-PAD10	24040-PAD05	24040-PAD05

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
2-1/2"	150	24025-PAS20	24025-PAS15	24025-PAS10
3"	150	24030-PAS20	24030-PAS15	24030-PAS10
4"	150	24040-PAS20	24040-PAS15	24040-PAS15

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.