



INDUSTRIAL FLUID POWER COMPONENTS
AND SYSTEMS

A SERIES

Pneumatic Actuated Ball Valves



Standard Features

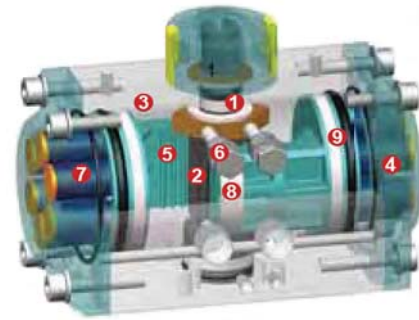
1 Indicator A position indicator with Namur mounting is standard on all pneumatic actuators for mounting accessories.

2 Pinion The hardened alloy steel pinion is precision ground and nickel plated (over 15um) in order to reduce friction, provide maximum wear resistance.

3 Actuator Body The aluminum extrusion is hard anodized (over 30um) to protect against wear and corrosion while reducing piston friction to the absolute minimum. Other options such as Nickel, Ceramic, PTFE, Polyester coated are available.

4 End Caps Epoxy coated (over 80um) die cast aluminum end caps provide maximum resistance against potentially corrosive elements.

5 Pistons The precisely-balanced and hard anodized treatment (over 30um) die cast aluminum pistons are fitted with high quality rings and guides. The twin rack and piston design creates a constant torque output on all actuators.



6 Travel Adjustment The standard adjustment is $\pm 5^\circ$ in both the open and closed positions through easily accessible external adjustment bolts.

7 High Performance Springs The high tensile steel springs Epoxy coated for corrosion resistance and longer service. The pre-loaded springs can be safely and rapidly disassembled.

8 Bearings and Guides The highly durable compound material provides high trust stability with minimum friction and long life.

9 O-Rings NBR O-rings provide trouble-free operation at standard temperature ranges.

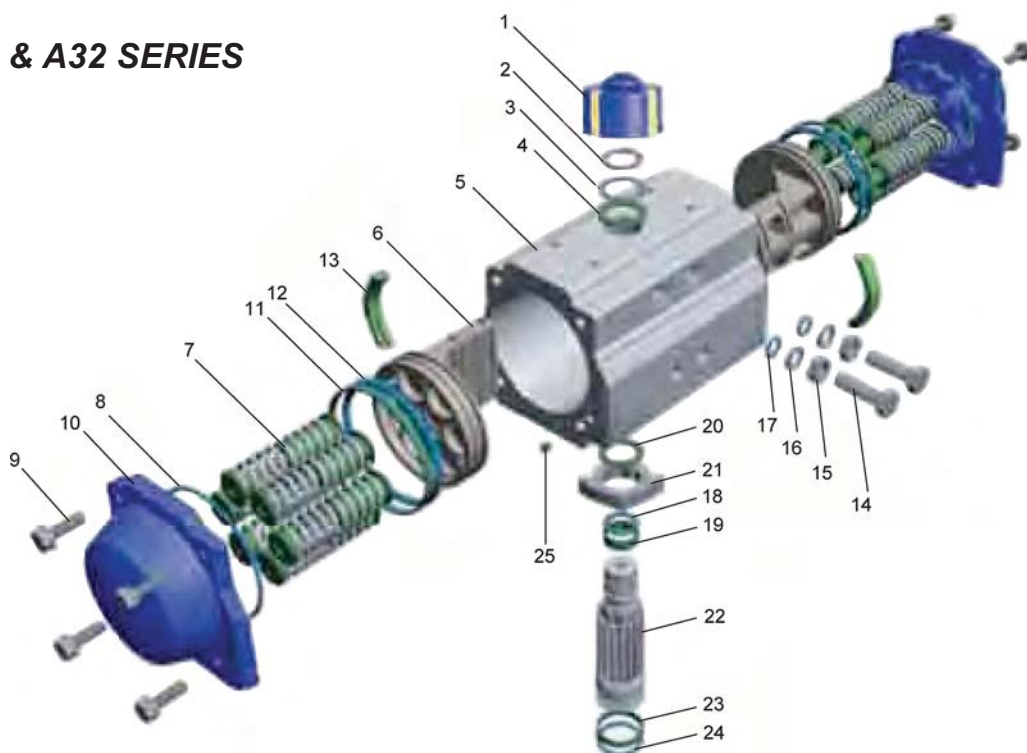
Specifications

Standard Operating Conditions

- **Pressure Ranges**.....Double Acting - 29 psig (2 bar) to 116 psig (8 bar)
Spring Return - 44 psig (3 bar) to 116 psig (8 bar)
- **Temp. Ranges**.....-4° to 176°F (-20° to 80°C)
- **Operating Media**.....Filtered dry or lubricated air for non-corrosive gas, water or light hydraulic oil. The maximum particle size must not exceed 30 microns.
- **Stroke Adjustment**....0° and 90° with standard adjustment $\pm 5^\circ$.
- **Lubrication**.....All moving parts are factory lubricated for the entire life cycle of actuator.
- **Construction**.....Twin piston rack & pinion actuator design, suitable for indoor & outdoor installation.
- **Connections**.....Bottom drilling complies with ISO 5211/DIN 3337 to match valve. Interface for solenoid valve, shaft top end and top drilling for assembling accessories are in accordance with VDI/ VDE-3845, NAMUR standard.
- **Inspection**Every actuator is hydraulically tested, certified and guaranteed for a minimum of 1,000,000 cycles.

Parts List

A16, A20 & A32 SERIES

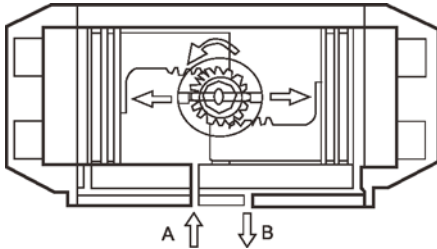


Item	Description	Material	Protection	Qty
1	Indicator	Plastic		1
2	Spring Clip	Stainless Steel		1
3	Thrust Washer (Pinion)	Stainless Steel		1
4	Thrust Bearing (Pinion)	Nylon 66		1
5	Actuator Body	Extruded Aluminum Alloy	Hard Anodized (over 30um)	1
6	Piston	Die Cast Aluminum Alloy	Hard Anodized (over 30um)	2
7	Spring (Cartridge)	High Performance Spring Steel	Epoxy Coated	8 or 10
8	End Cap Seals	NBR		2
9	End Cap Bolts	Stainless Steel		8
10	End Cap	Die Cast Aluminum	Epoxy Coated (over 80um)	2
11	Piston Bearing	Nylon 66		2
12	Piston Seal	NBR		2
13	Piston Guide	Nylon 66		2
14	Stroke Bolt	Stainless Steel		2
15	Stroke Bolt Retaining Nut	Stainless Steel		2
16	Stroke Bolt Washer	Stainless Steel		2
17	Stroke Bolt O-Ring	NBR		2
18	O-Ring (Top Pinion)	NBR		1
19	Bearing (Top Pinion)	Nylon 66		1
20	Thrust Bearing (Pinion)	Nylon 66		1
21	Stroke Cam	Stainless Steel		1
22	Pinion	Alloy Steel	Nickel Plated (over 15um)	1
23	Bearing (Lower Pinion)	Nylon 66		1
24	O-Ring (Lower Pinion)	NBR		1
25	Plug	NBR		2

Operating Principles

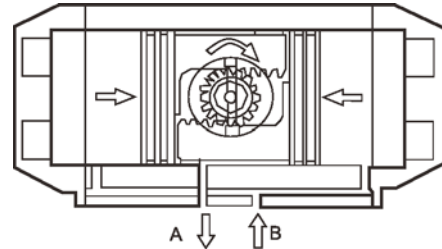
DOUBLE ACTING

CCW Counter-Clockwise



Air to port A forces the pistons outward, causing the piston to turn counter-clockwise while air is being exhausted from port B.

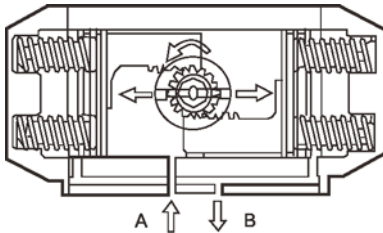
CW Clockwise



Air to port B forces the pistons inward, causing the piston to turn clockwise while air is being exhausted from port A.

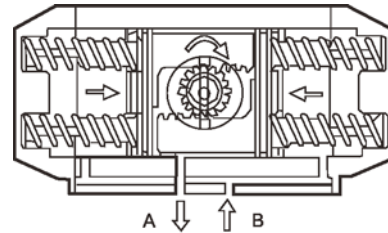
SPRING RETURN

CCW Counter-Clockwise



Air to port A forces the pistons outward, causing the springs to compress. The pinion turns counter-clockwise while air is being exhausted through port B.

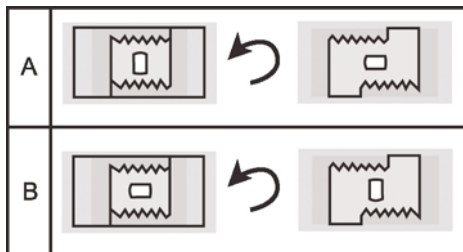
CW Clockwise



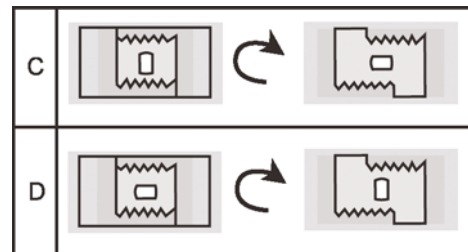
Loss of air pressure through port A allows the stored energy in the springs to force the pistons inward. The pinion turns clockwise while air is being exhausted through port A.

MOUNTING VARIATIONS

CCW Counter-Clockwise



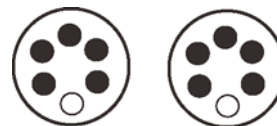
CW Clockwise



SPRING ARRANGEMENT



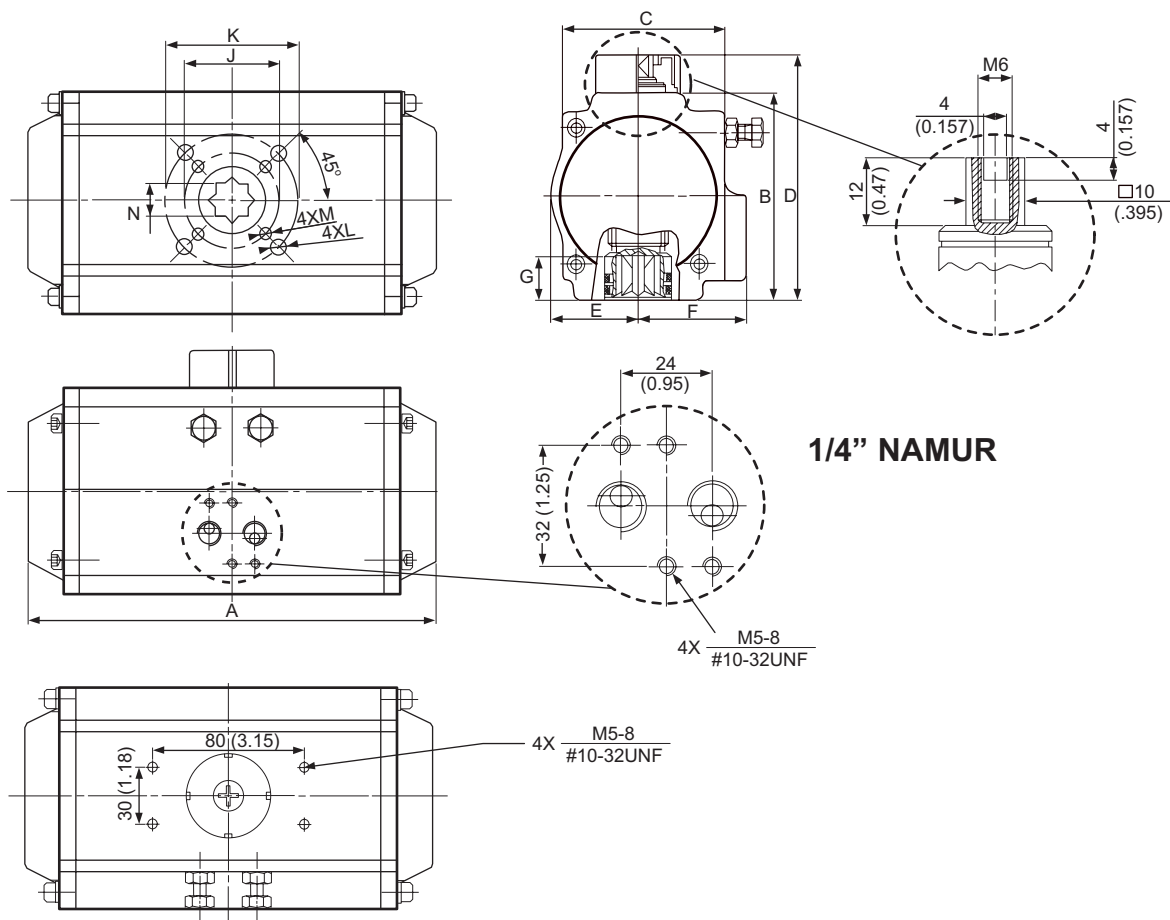
8 Springs
A16SR & A20SR



10 Springs
A32SR

Dimensional Data

Units: mm (inches)



MODEL	ISO5211 MTG. SIZE	A	B	C	D	E	F	G	N	J (dia)	K (dia)	L	M	Air Connection
A16 SR	F03 & F05	161 (6.34)	72 (2.83)	60 (2.36)	97.5 (3.84)	30 (1.18)	41.5 (1.63)	14 (0.55)	11 (0.43)	36 (1.42)	50 (1.97)	M6x10 1/4"-20UNC	M5x7.5 #10-32UNF	1/8" or 1/4" std.
A20 SR	F05 & F07	187 (7.36)	88 (3.46)	69 (2.72)	113 (4.45)	36 (1.42)	47 (1.85)	18 (0.71)	14 (0.55)	50 (1.97)	70 (2.76)	M8x13 5/16"-20UNC	M6x10 1/4"-20UNC	1/8" or 1/4" std.
A32 SR	F05 & F07	206 (8.11)	100 (3.94)	80 (3.15)	126 (4.96)	42 (1.65)	53 (2.09)	20 (0.79)	14 (0.55)	50 (1.97)	70 (2.76)	M8x13 5/16"-20UNC	M6x10 1/4"-20UNC	1/8" or 1/4" std.

Technical Data

AIR CONSUMPTION- Air Volume Opening & Closing

MODEL	Air Volume @ opening liter/ (cu. in.)	Air Volume @ closing liter/ (cu. in.)
A16 SR	0.09 (5.49)	0.12 (7.32)
A20 SR	0.14 (8.54)	0.20 (12.20)
A32 SR	0.21 (12.81)	0.30 (18.30)

WEIGHT/ OPENING & CLOSING TIME

MODEL	A16		A20		A32	
	DA	SR	DA	SR	DA	SR
Screw Stroke adj. for 1° adj need	1/5 turn		1/5 turn		1/5 turn	
Opening Time (Sec.)	0.20	0.25	0.25	0.30	0.30	0.35
Closing Time (Sec.)	0.25	0.30	0.30	0.35	0.40	0.50
Approximate Weight kg (lbs)	1.0(2.2)	1.0(2.2)	1.6(3.5)	1.8(4.0)	2.6(5.7)	3.1(6.8)

Torque Ratings

DOUBLE ACTING

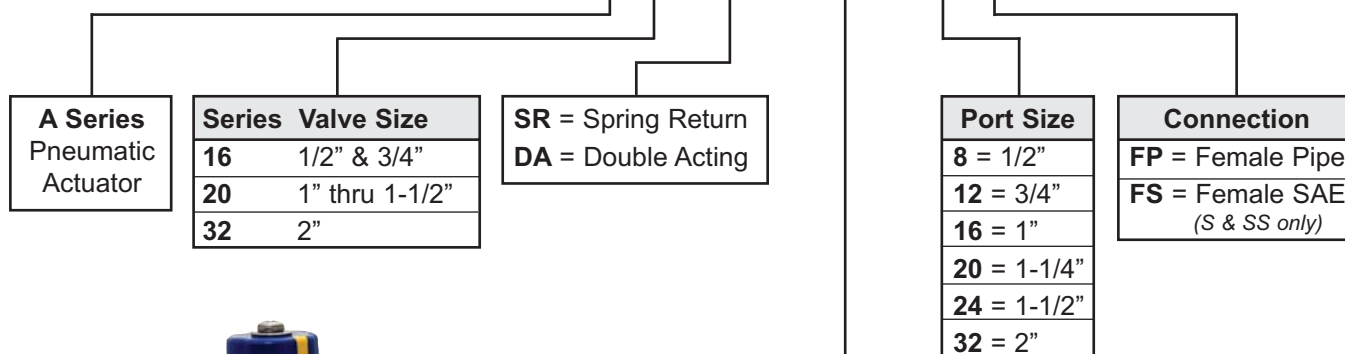
DOUBLE ACTING TORQUE RATINGS IN (in/ lbs)								
Supply Pressure	40psi	50psi	60psi	70psi	80psi	90psi	100psi	115psi
MODEL								
A16 DA	100	125	149	174	199	224	249	286
A20 DA	180	225	269	314	359	404	449	516
A32 DA	290	363	435	508	580	653	725	834

SPRING RETURN

SPRING RETURN TORQUE RATINGS IN (in/ lbs)																
Supply Pressure	40psi		50psi		60psi		70psi		80psi		90psi		100psi		Spring Torque	
MODEL	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End
A16 SR			69	37	93	61	118	86							56	88
A20 SR			125	72	169	116	214	161							100	153
A32 SR					244	175	318	248	390	320	462	393	535	465	190	260

Ordering Information

A 20 - SR - D2BV - 24 FP



A32SR-D2BV-32FP

D2 = 2 Pc SS Ball Valve, ISO5211 Mount
D3 = 3 Pc SS Ball Valve, ISO5211 Mount
B2 = 2 Pc Brass Ball Valve, ISO5211 Mount
B3 = 3 Pc Brass Ball Valve, ISO5211 Mount
S = 3 Pc High Pressure Steel Ball Valve
SS = 3 Pc High Pressure SS Ball Valve



A20DA-SBV-8FP