



50 Series Actuators

Catalog 4121-50 Series

April 2013

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



ENGINEERING YOUR SUCCESS.

Introduction

The 50 Series is a quarter-turn rack & pinion pneumatic actuator that is patented worldwide. The superiority of the 50 Series actuator over single and double rack & pinion actuator designs results from the four pistons which generate torque around a centrally located pinion. This design produces more than double the torque achieved by these other designs. The increased number of pistons in the actuator allows their diameter to be reduced while maintaining its high torque. This also allows the actuator to be more compact in size.

Features

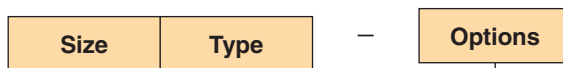
- **Four cylinders and a central pinion design** produces superior torque
- **Space saving, fast acting**
- **Superior corrosion resistance**
- **Less air consumption** reduces energy requirements
- **Balanced forces** of the piston design results in less stress on seals
- **Nested springs** avoid entanglement
- **Highly visible and adjustable indicators**

Specifications

Actuator Size		51	52	53	54
Air Consumption					
Air Consumption (CCW)	In ³	4.3	7.3	15	45
	Litre	(0.07)	(0.12)	(0.25)	(0.44)
per stroke (CW) (AD only)	In ³	5.5	9.2	20	49
	Litre	(0.09)	(0.15)	(0.33)	(0.54)
Stroke Time					
at 80 psig actuation air	Sec.	0.15	0.15	0.23	0.28
Weight					
Spring Return (AC/AO)	Lb.	2.4	4.2	7.7	11.0
	Kg	(1.1)	(1.9)	(3.5)	(5.0)
Double Acting (AD)	Lb.	1.98	3.3	6.2	9.7
	Kg	(0.9)	(1.5)	(2.8)	(4.4)
Pressure Rating					
Spring Return (AC/AO)	60 to 120 psi (4.1 to 8 bar)				
Double Acting (AD)	60 to 120 psi (4.1 to 8 bar)				
Operating Temperature					
Buna N	-4°F to 176°F (-20°C to 80°C)				
Viton	-4°F to 250°F (-20°C to 120°C)				
EPDM	-40°F to 176°F (-40°C to 80°C)				
LT NBR FX428	-67°F to 213°F (-55°C to 100°C)				

How to Order

The correct part number is easily derived from the following example and ordering chart. The three product characteristics required are coded as shown in the chart.

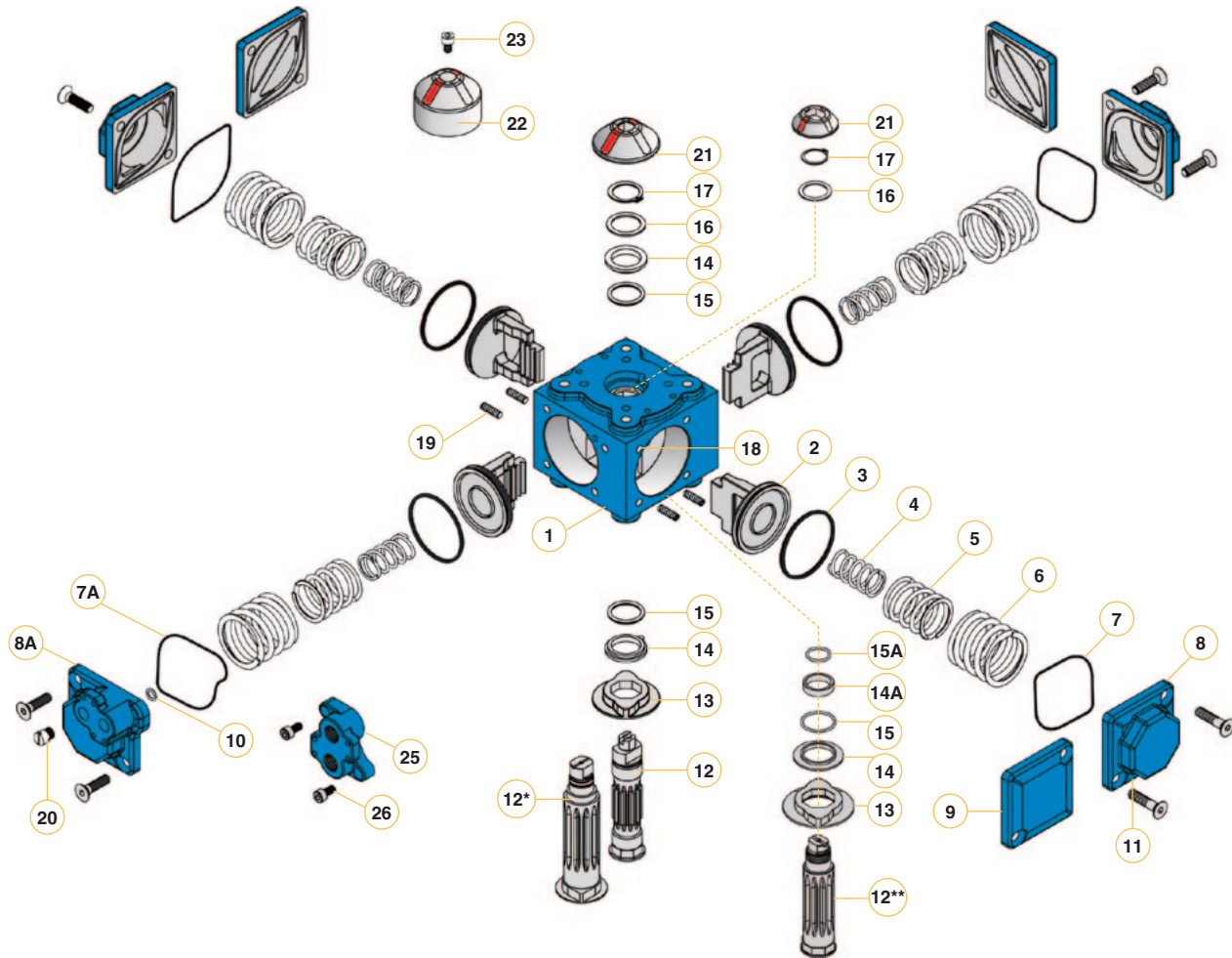


Example: **51** **AD** – **LTE**

Describes a size 51 double acting actuator with EPDM O-rings.

Size	Type	Options
51	AD Double Acting	Blank Buna N
52	AO Spring Return	HT Viton O-rings
53	AC Spring Return	LTE EPDM O-rings
54		LTN NBR Special Compound for Low Temperature

Materials of Construction



Item	Description	Material	Item	Description	Material
1	Body	AL 356-T6	15	Pinion O-ring	Buna N, Viton, EPDM, LT
2	Piston	AL 356/380	15B	Top Pinion O-Ring	Buna N, Viton, EPDM, LT
3	Piston O-ring	Buna N, Viton, EPDM, LT	16	Disc Bearing	ST. ST. / Delrin
4	Inner Spring	Spring steel, Painted	17	Circlip	ST. ST., Spring Steel Zinc Coated
5	Middle Spring	Spring steel, Painted	18	Pad	Delrin, NRG, UHMWPE
6	Outer Spring	Spring steel, Painted	19	Stroke Adjustment Screw	ST. ST.
7	Cover O-ring	Buna N, Viton, EPDM, LT	20	Exhaust Plug (Silencer)	Delrin, (Brass)
7a	Namur Cover O-ring	Buna N, Viton, EPDM, LT	21	Indicator	Plastic (ABS), Red & White
8	Spring Return Cover	AL 380	22	Puck	Plastic (ABS), Red & White
8a	Namur Cover	AL 380	23	Indicator Screw	ST.ST.
9	Double Acting Cover	AL 380	24	Tag (not shown)	ST.ST.
10	Air Supply O-ring	Buna N, Viton, EPDM, LT	25	Namur insert	AL 380
11	Cover Screw	ST. ST.	26	Insert screw	ST.ST
12	Pinion	Steel E.N.Coated	27	Namur Insert O-Ring	Buna, Viton, EPDM, LT
13	Stop	ST.ST 316			
14	Thrust Washer	Delrin, NRG, UHMWPE			
14B	Bearing	Delrin, NRG, UHMWPE			

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