

ALUMINUM PNEUMATIC ACTUATORS

Features & Specifications

- » Compact design utilizes the same body for double acting and spring return units.
- » Utilizing NAMUR VDI/VDE 3845 and ISO 5211 dimensions
- » Standard 90° rotation, with optional 120°, 135°, 150°, and 180°
- » Female pinion drive standard, with optional drives to meet specific application requirements
- » Ideal for high cycle applications
- » Rugged tooth design allowing for manual override
- » High visibility position indication
- » High cycle life wear pads serves as both guide and wear bearings
- » Epoxy coated spring cartridges are pre-loaded for safety
- » Alternative operating media includes air, water, nitrogen and compatible hydraulic fluids
- » Stainless steel fasteners
- » Honed bore for high cycle life
- » Full traceability of all component parts
- » Factory pressure and leak tested and boxed individually
- » Wide range of adapters and accessories available

THE NEW MT SERIES OFFERS A FLANGELESS DESIGN WHICH MAKES AUTOMATION EASY. THE MT SERIES ALSO OFFERS TWO ISO BOLT CIRCLES AS A STANDARD WHICH ELIMINATES THE NEED FOR THE FLANGE THUS PREVENTING CORROSION.



MT Series actuators have replaced the older UT series with mounting plate, however, sizes 51 and larger are still available with changeable mounting plate.



MT/UT SERIES

Double Acting

SIZE	40 PSIG	60 PSIG	80 PSIG	100 PSIG	120 PSIG
MT04	38	56	75	94	113
MT12	62	94	125	156	187
MT16	137	206	275	344	412
MT17	180	270	360	450	540
MT21	250	375	500	625	750
MT26	375	562	750	937	1125
MT31	500	750	1000	1250	1500
MT36	800	1200	1600	2000	2400
MT41	1000	1500	2000	2500	3000
MT46	1562	2344	3125	3906	4687
MT/UT51	2250	3375	4500	5625	6750
MT/UT56	3000	4500	6000	7500	9000
MT/UT61	4550	6825	9100	11375	13650
MT/UT66	6000	9000	12000	15000	18000
MT/UT71	11750	17625	23500	29375	35250
MT/UT76	15750	23625	31500	39375	47250

Large sized actuators are still supplied with interchangeable mounting flange.

DOUBLE ACTING

CLOSED

OPENING PHASE

OPEN



AIR IN #4 = PISTONS CLOSED

OPEN

CLOSING PHASE

CLOSED



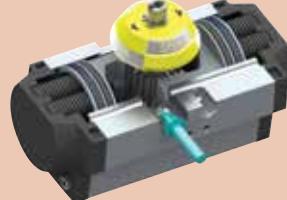
AIR IN #2 = PISTONS OPEN

SPRING RETURN

CLOSED

OPENING PHASE

OPEN



AIR IN #4 = PISTONS OPEN

OPEN

CLOSING PHASE

CLOSED



AIR FAILURE = PISTONS CLOSE (SPRING RELEASE)

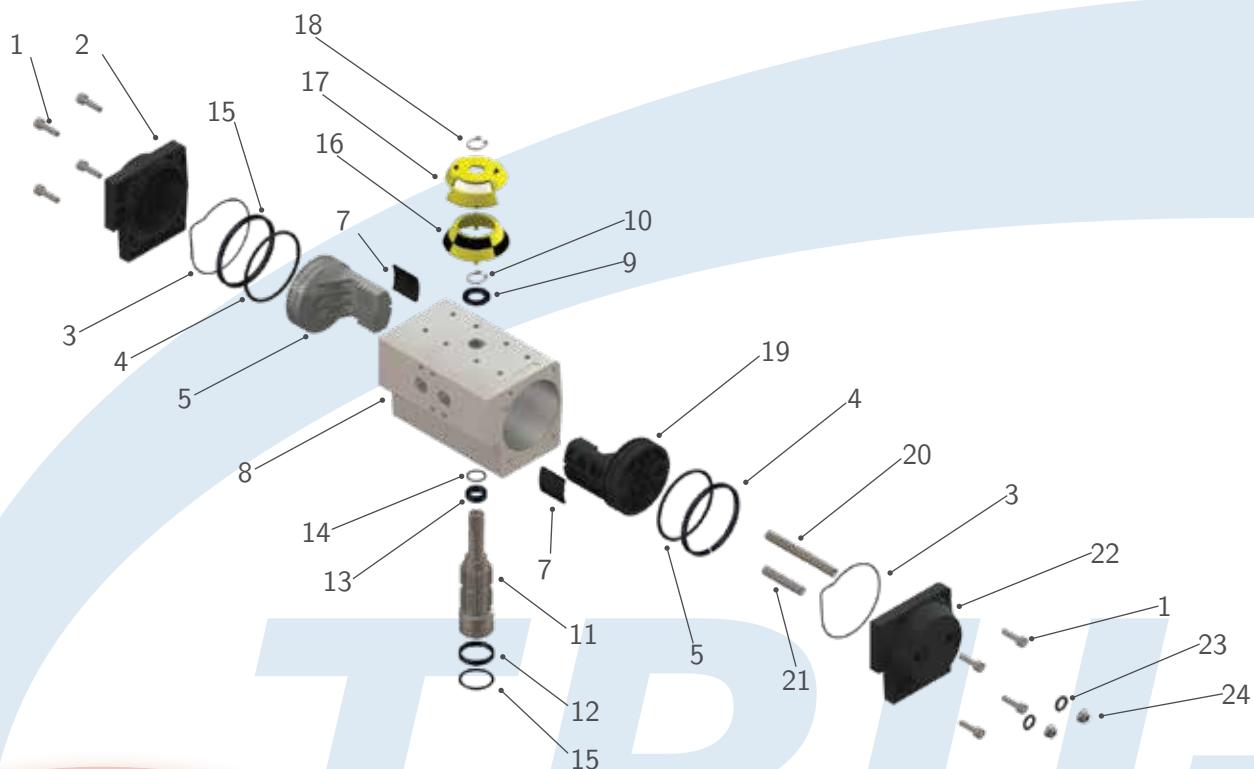


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ALUMINUM PNEUMATIC ACTUATORS



SEVERE COLD SERVICE

For temperatures below -4°F down to -40°F, special low temperature seals and lubricant must be used.

STANDARD SERVICE

Actuators come standard with BUNA-N seals, which are good for normal temperature ranges of -4°F to 176°F.

ELEVATED TEMP SERVICE

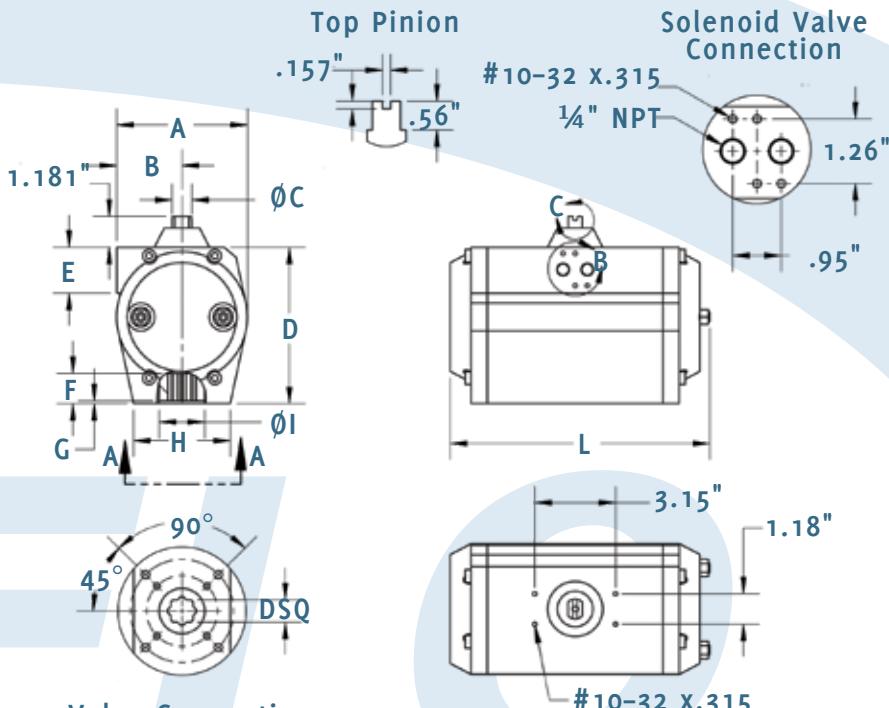
For elevated temperatures up to 300°F, VITON® seals are available. Typical VITON® installations are good for 250°F continuous and 300°F cyclic.

HIGH TEMP SERVICE

For extremely hot environments, special high temperature seals and lubricant must be used. Temperature ranges up to 500°F can be accommodated with our specially manufactured actuator units.

Item	Description	Materials	Item	Description	Materials
1	End Cap Bolts	AISI 304 Stainless Steel	13	Upper Pinion Bearing	Technopolymer
2	Left End Cap	Die Cast Aluminum Epoxy Coated	14	Upper Pinion O-ring	BUNA-N
3	End Cap O-ring	BUNA-N	15	Lower Pinion O-ring	BUNA-N
4	Piston Wear Bearing	Technopolymer	16	Open/Closed Indicator	Technopolymer
5	Piston O-ring	BUNA-N	17	Indicator Window	Technopolymer
6	Left Piston	Die Cast Aluminum Epoxy Coated	18	Indicator Snap Ring	AISI 304 Stainless Steel
7	Piston Skate	Technopolymer	19	Travel Stop Piston	Die Cast Aluminum Epoxy Coated
8	Actuator Body	Extruded Aluminum (6063 or 6005)	20	Closed Travel Stop	AISI 304 Stainless Steel
9	Upper Pinion Washer	Technopolymer	21	Open Travel Stop	AISI 304 Stainless Steel
10	Pinion Snap Ring	AISI 304 Stainless Steel	22	Travel Stop End Cap	Die Cast Aluminum Epoxy Coated
11	Pinion	Nickel Plated Carbon Steel	23	Travel Stop O-rings	BUNA-N
12	Lower Pinion Bearing	Technopolymer	24	Travel Stop Nuts	AISI 304 Stainless Steel

MT/UT SERIES



Technopolymer actuators are available for extra corrosion resistance to general environmental conditions. A matching limit switch box is available to accompany our technopolymer line of actuators. Please call or visit online at www.tru-flo.com to view the technical data and for more information regarding our various automation options for corrosive environments.

Type	A	B	C	D	E	F	G	H	I	L	M	J	K	W	X	DSQ	ISO 5211
MT12	2.64	1.57	0.47	2.80	1.77	0.49	0.06	1.85	0.87	4.69	0.39	1.42	#10-32x.394	1.969	1/4"-20x.394	0.4331	F03/F05
												1.65	#10-32x.394				F04
MT16	3.19	1.85	0.47	3.19	1.75	0.75	0.08	2.44	1.30	6.89	0.39	1.97	1/4"-20x.394	2.756	5/16"-18x.512	0.5512	F05/F07
												1.65	#10-32x.394				F04/F07
MT17	3.19	1.85	0.47	3.19	1.75	0.75	0.08	2.44	1.30	8.15	0.39	1.97	1/4"-20x.394	2.756	5/16"-18x.512	0.5512	F05/F07
												1.65	#10-32x.394				F05/F07
MT21	3.78	2.13	0.55	3.86	1.77	0.75	0.08	3.01	1.38	7.32	0.39	1.97	1/4"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT26	3.78	2.13	0.55	3.86	1.77	0.75	0.08	3.01	1.38	9.76	0.39	1.97	1/4"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT31	4.49	2.44	0.77	4.61	1.73	0.91	0.08	3.56	1.59	9.49	0.55	1.97	1/4"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT36	5.16	2.60	0.77	6.06	1.77	1.18	0.12	3.76	1.59	10.28	0.55	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT41	5.16	2.60	0.77	6.06	1.77	1.18	0.12	3.76	1.77	12.01	0.55	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT46	5.71	2.87	1.10	6.63	1.77	1.18	0.12	3.88	2.22	14.45	0.79	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT51	7.13	3.58	1.10	7.95	1.73	1.57	0.12	4.33	2.13	14.98	0.79	4.02	3/8"-16x.709	4.921	1/2"-13x.787	1.063	F12
MT56	7.13	3.58	1.10	7.95	1.73	1.57	0.12	4.90	2.62	17.22	0.79	4.02	3/8"-16x.709	4.921	1/2"-13x.787	1.063	F10/F12
MT61	9.13	4.49	1.10	10.12	1.77	1.97	0.16	6.32	3.15	20.67	0.79	5.51	3/8"-16x.709	5.512	5/8"-11x.984	1.4173	F14
MT66	9.13	4.49	1.10	10.12	1.77	1.97	0.16	6.32	3.15	20.67	0.79	5.51	3/8"-16x.709	5.512	5/8"-11x.984	1.4173	F14/F10

ACTUATOR CORROSION RESISTANCE OPTIONS

TRU-FLO OFFERS A WIDE VARIETY OF ACTUATOR COATINGS WHICH
EXTEND THE LIMITS OF SERVICE FOR ALUMINUM ACTUATORS.

Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
Appearance	Silver-gray with a low gloss appearance	Black with a medium gloss finish	Medium gloss silver finish	Glossy black/ optional white finish	Silver; low to medium gloss unless polished
General Properties	Good general corrosion properties in most "natural" environments with pH from 4.5 to 8.5. Good resistance to salt air environments. The coating is extremely hard and resistant to abrasion.	This epoxy coating is a relatively thick coating which creates a barrier against many of the chemicals which anodizing alone cannot adequately resist. It will resist more acidic or basic environments than anodizing alone.	Uniformly thick coating with essentially no porosity and a reasonably high hardness. The coating is pure, tough, hard, and resistant to many types of corrosion media.	This coating provides complete surface coverage and exhibits excellent corrosion resistance properties in a wide variety of applications. In addition, it is FDA approved for food contact.	304 and 316 Stainless steel are the most commonly used alloys. Both have good corrosion resistance but 316 is generally considered superior, however more expensive.
Relative Cost to Purchase	Lowest cost option	Moderate	Moderately high	Moderately high	Highest cost option by a significant margin
Performance Limitations	Highly acidic or basic environments will break down the coating.	Good general corrosion resistance, particularly in salt or alkaline environments. Limited resistance to acids. Surface chalking will occur when exposed to UV radiation. Also suitable for low concentrations of caustic washdown solutions.	The coating will provide enhanced corrosion protection in very acidic environments but will not withstand attack from strong alkaline media. Also suitable for low to medium concentrations of caustic washdown solutions.	These coatings are resistant to any environment into which an actuator would be installed. Provided the integrity of the surface is intact, the coating can resist a broad array of chemical environments at temperatures ranging from sub-zero to over 300°F.	Although Stainless Steel does offer enhanced corrosion resistance, it also is dramatically higher in both cost and weight. The weight differential will often necessitate the use of special support bracketry.



Increased Corrosion Resistance

Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
General Indoor Atmosphere	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Exposed with Salt Spray	AR	AR	BR	AR	BR
Caustic Washdown: Low Concentration	NR	LL	AR	AR	BR
Caustic Washdown: High Concentration	NR	LL	LL	AR	AR

BR	Better than Recommended; may cost significantly more than necessary for reliable long-term service
AR	Acceptable and Recommended
LL	Limited Life; actuator will function for a period of time with a shortened life due to external corrosive attack
NR	Not Recommended

The service guidelines presented here are intended to provide general information about the service limitations and performance of coated actuators. Tru-Flo should be contacted to verify the suitability of the coating in a specific environment.

STAINLESS STEEL ACTUATORS SS SERIES

Features & Specifications



- » Compact design utilizes the same body for double acting and spring return units.
- » NAMUR VDI/VDE 3845 and ISO 5211 mounting dimensions
- » Female pinion drive standard, with optional drives to meet specific application requirements
- » Ideal for high cycle applications with honed bore
- » Rugged tooth design allowing for manual override
- » High visibility position indication
- » High cycle life wear pads serves as both guide and wear bearings
- » Epoxy coated spring cartridges are pre-loaded for safety
- » Alternative operating media includes air, water, nitrogen and compatible hydraulic fluids
- » Stainless steel fasteners
- » Full traceability of all component parts
- » Factory pressure and leak tested and boxed individually
- » Wide range of adapters and accessories available

TRU-FLO'S NEW STAINLESS STEEL ACTUATORS ARE BY DESIGN, BEST IN CLASS. THE SS SERIES ACTUATORS TAKE CORROSION RESISTANCE TO THE EXTREME WITH ALL OF THE GREAT ENGINEERING FEATURES THAT SEPARATE **TRU-FLO** FROM THE COMPETITION. OUR STAINLESS STEEL ACTUATORS CONFORM TO THE ISO STANDARD WHICH MAKES VALVE AUTOMATION EASY AND COST EFFECTIVE. **TRU-FLO'S** DUAL PATENTED TRAVEL STOPS ALLOW UP TO 110° OF STROKE IN A 90° ACTUATOR, FAR SUPERIOR IN POSITIONING ADJUSTMENT.



Model	40 PSIG	60 PSIG	80 PSIG	100 PSIG	120 PSIG
SS12*	62	94	125	156	187
SS16	137	206	275	344	412
SS21	250	375	500	625	750
SS26	375	562	750	937	1125
SS31	500	750	1000	1250	1500
SS36	800	1200	1600	2000	2400
SS46	1562	2344	3125	3906	4687
SS56	3000	4500	6000	7500	9000
SS66	6000	9000	12000	15000	18000

*SS12 comes standard without dual travel stops

Torque values (in-lbs)