



pneumatic rack and pinion

actuators



actuator features

Nominal Values:

Pressure rating of 120 psig (8 barg). Standard temperature range is -4°F to 185°F (-20°C to 85°C). High temperature range is -4°F to 302°F (-20°C; 150°C). Low temperature range is -40°F to 185°F (-40°C to 85°C). Pre-lubricated for life of actuator on assembly. Fully tested on manufacture 100%.

Rotation adjustment 0-90°

From MOD. 52 up to 125

- standard + or - 5° in both clockwise and counterclockwise direction by means of adjusting screws outside the internal air supply chambers
- standard visual position indicators

From MOD. 160-200-270

- standard + or - 5° in counterclockwise direction by means of adjusting screws in the caps
- kit for = or - 5° in clockwise direction available on request

Die cast aluminum end caps

- Standard polyester powder coated
- Nickel plated upon request

Concentrating spring sets

- Standard treatment phosphated
- High resistance and reliability
- Spring sets to suit different air pressure/torque requirements
- Long securing screws to allow safe dismantling for maintenance
- Same body dimensions for DA/SR versions

Assembling screws

- Stainless steel as standard

External connection

- Namur pinion mounting
- Namur solenoid valve mounting
- Bottom of pinion according to ISO 5211-DIN 3337

Operating Pressure

Range - 40 psig to 120 psig (2.8 barg to 8 barg)

Operating Media

Clean, dry air or clean, dry, non-corrosive gas

Stroke

90 degrees standard, 120 and 180 degrees optional

Steel pinion

- Nickel-plated for resistance to corrosion
- Stainless steel (optional) for corrosive environments
- Anti-blowout design

Body manufactured from extruded aluminum UNI 6060

- Hard-coat anodized as standard finish 45-50 (micron)
- Good wear resistance
- Bore finished to high standard to ensure low friction and long life

Piston guides

- Large contact area
- Self-lubricating materials
- Long life

Seals

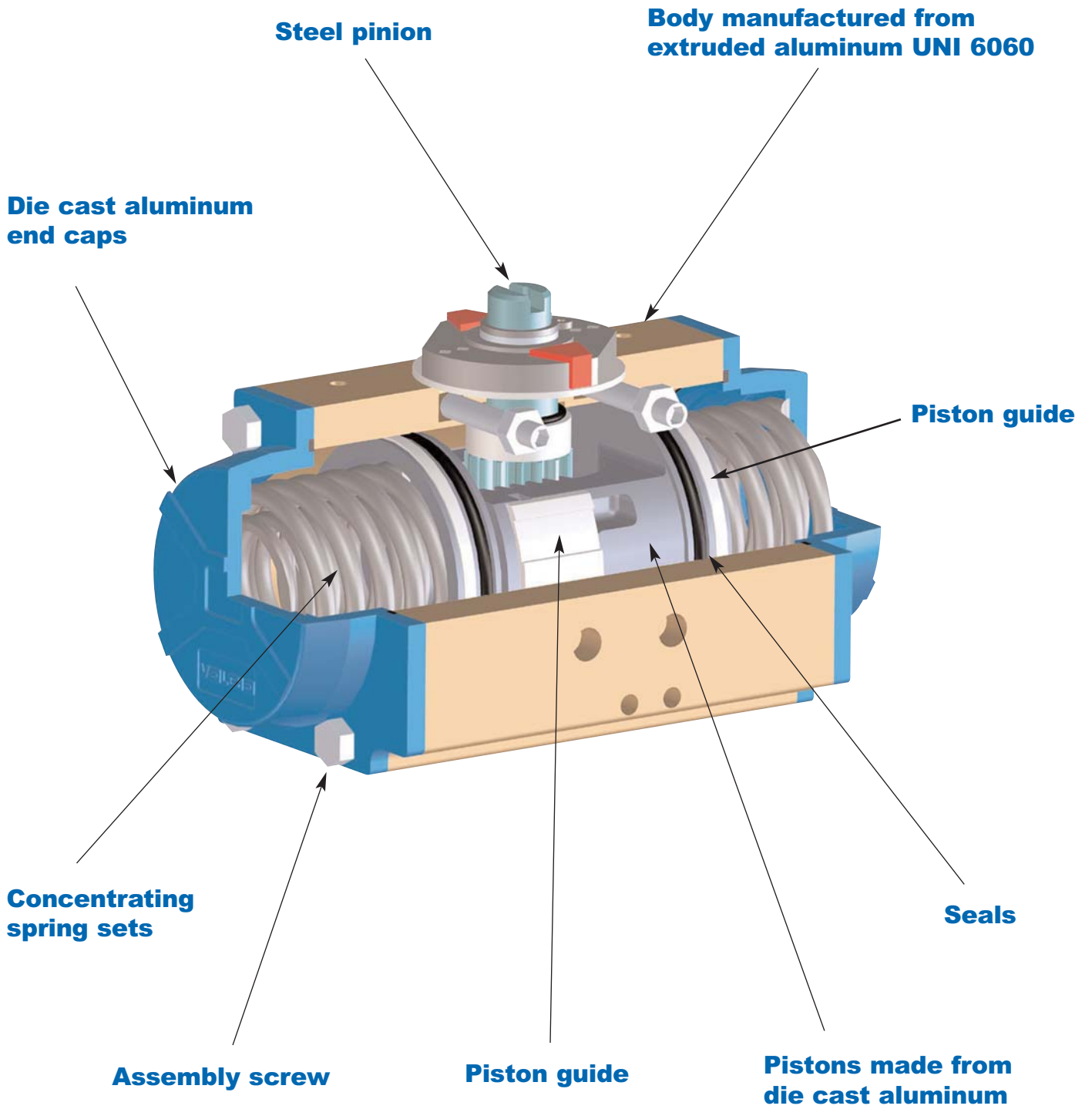
- NBR standard
- Viton high temperature (optional)
- HNBR low temperature (optional)

Pistons

- Die cast aluminum
- Nickel-plating upon request

Twin rack and pinion design

- Constant torque output (double acting)
- compact design
- Balanced internal forces
- Robust design to ensure long life



Torque Ratings

All published torque values are guaranteed minimum values

Double Acting Actuators

Actuator Model	Air Pressure at Actuator (psig)	
	60 psig	80 psig
	Constant Torque Output (in-lbs.)	
PAVBL453D- -0052	133	179
PAVBL453D- -0063	238	321
PAVBL453D- -0075	435	586
PAVBL453D- -0085	629	851
PAVBL453D- -0100	991	1,336
PAVBL453D- -0115	1,640	2,210
PAVBL453D- -0125	2,157	2,906
PAVBL453D- -0160	4,394	5,859
PAVBL453D- -0200	8,239	10,981
PAVBL453D- -0270	19,097	25,469

Spring Return Actuators

Model	Spring Set	Spring Torque Output (in-lbs.)		Air Pressure at Actuator (psig)			
				60		80	
		Torque Output from Pressure (in-lbs.)					
		Start	End	Start	End	Start	End
PAVBL253S- -0052	03	66	38	80	47	N/A	N/A
PAVBL453S- -0052	05	88	60	N/A	N/A	101	55
PAVBL253S- -0063	03	128	71	149	79	N/A	N/A
PAVBL453S- -0063	05	196	111	N/A	N/A	193	95
PAVBL253S- -0075	03	234	125	275	137	N/A	N/A
PAVBL453S- -0075	05	358	193	N/A	N/A	354	157
PAVBL253S- -0085	03	307	183	387	211	N/A	N/A
PAVBL453S- -0085	05	456	273	N/A	N/A	503	257
PAVBL253S- -0100	03	495	279	628	329	N/A	N/A
PAVBL453S- -0100	05	733	417	N/A	N/A	802	378
PAVBL253S- -0115	03	786	442	1,044	541	N/A	N/A
PAVBL453S- -0115	05	1,176	657	N/A	N/A	1,352	637
PAVBL253S- -0125	03	969	530	1,351	640	N/A	N/A
PAVBL453S- -0125	05	1,412	779	N/A	N/A	1,762	789
PAVBL253S- -0160	04	2,443	1,522	2,447	1,350	N/A	N/A
PAVBL453S- -0160	05	2,860	1,917	N/A	N/A	3,452	2,240
PAVBL253S- -0200	04	4,040	2,686	4,788	3,080	N/A	N/A
PAVBL453S- -0200	06	5,900	4,009	N/A	N/A	5,893	3,539
PAVBL253S- -0270	05	10,788	6,915	11,495	6,884	N/A	N/A
PAVBL453S- -0270	08	14,387	9,229	N/A	N/A	15,363	9,221

Weights & Operation Volumes

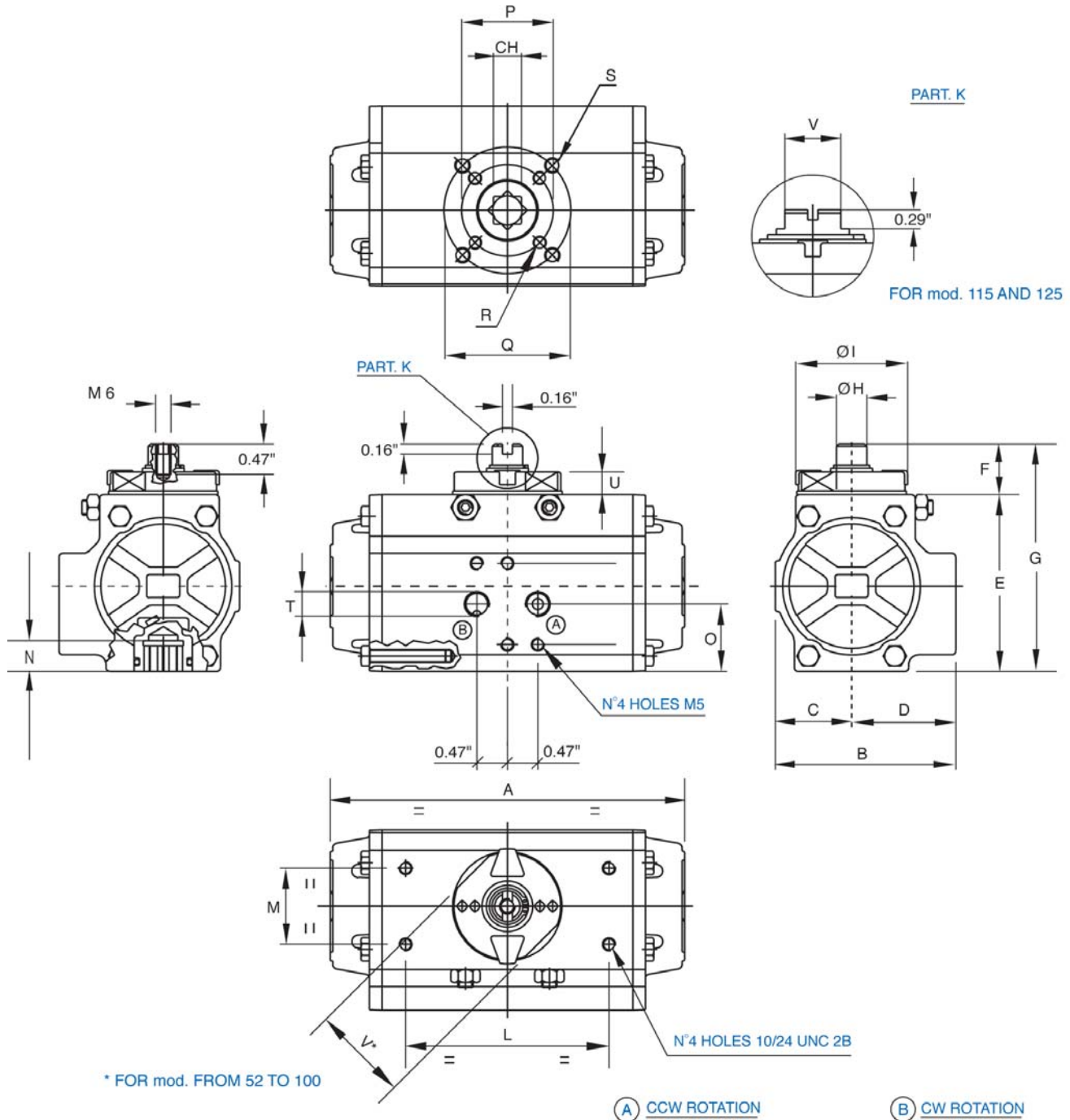
Double Acting Actuators

Actuator Model	Volume (cu. in.)		Approximate Weight (lbs.)
	Rotate CCW	Rotate CW	
PAVBL453D- -0052	6.1	7.9	2.3
PAVBL453D- -0063	12	14	3.3
PAVBL453D- -0075	22	27	5.5
PAVBL453D- -0085	31	39	7.4
PAVBL453D- -0100	48	61	11
PAVBL453D- -0115	79	104	18
PAVBL453D- -0125	99	135	22
PAVBL453D- -0160	220	290	44
PAVBL453D- -0200	350	600	72
PAVBL453D- -0270	920	1,100	158

Spring Return Actuators

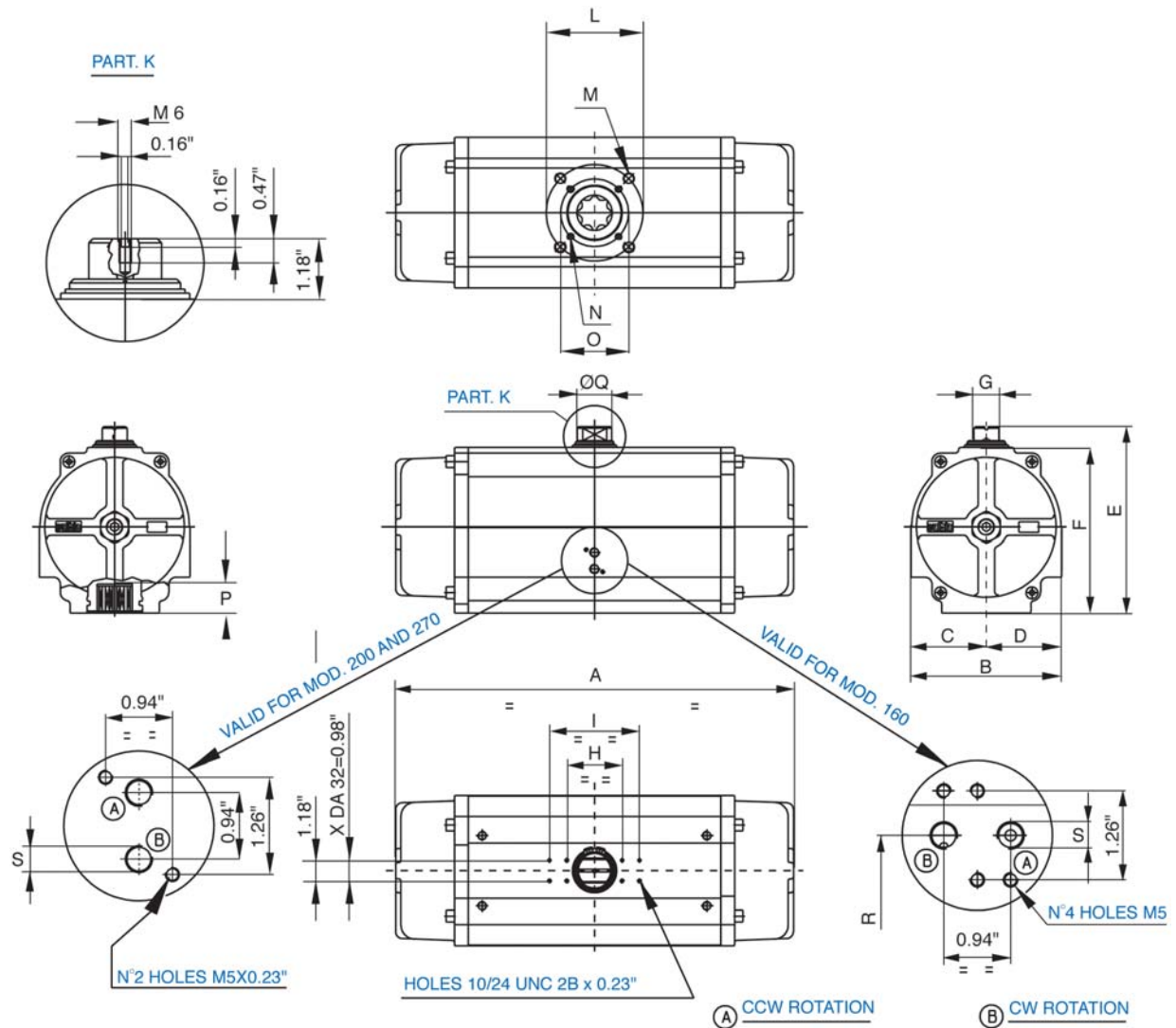
Actuator Model	Volume (cu. in.)		Approximate Weight (lbs.)
	Rotate CCW	Rotate CW	
PAVBL453S- -0052	6.1	6.7	2.7
PAVBL453S- -0063	12	11.6	3.9
PAVBL453S- -0075	22	22	6.8
PAVBL453S- -0085	31	32	9.4
PAVBL453S- -0100	48	49	15
PAVBL453S- -0115	79	84	24
PAVBL453S- -0125	99	109	30
PAVBL453S- -0160	220	215	65
PAVBL453S- -0200	350	463	111
PAVBL453S- -0270	920	946	194

Dimensional Data for models 52 to 125



Model	Drilling ISO 5211	CH	A	B	C	D	E	F	G	ØH	ØI	L	M	N	O	P	Q	R	S	T NPT	U	V	ØZ	Y	X
52	F03 - F05	0.43	5.49	2.80	1.18	1.61	2.74	0.79	3.52	0.47	1.73	3.15	1.18	0.47	1.04	1.42	1.97	10-24 UNC 2Bx0.29"	1/4-20 UNC 2Bx0.35"	1/8"	0.32	1.49	0.55	0.43	0.47
63	F05 - F07	0.55	6.38	3.17	1.40	1.77	3.17	0.79	3.96	0.58	1.97	3.15	1.18	0.63	1.08	1.97	2.76	1/4-20 UNC 2Bx0.31"	5/16-18 UNC 2Bx0.47"	1/8"	0.32	1.61	0.71	0.55	0.63
75	F05 - F07	0.67	8/15	3.72	1.65	2.07	3.82	0.79	4.61	0.71	2.48	3.15	1.18	0.75	1.38	1.97	2.76	1/4-20 UNC 2Bx0.31"	5/16-18 UNC 2Bx0.47"	1/8"	0.35	1.97	0.87	0.67	0.75
85	F05 - F07	0.67	9.35	4.17	1.87	2.30	4.27	0.79	5.06	0.79	2.48	3.15	1.18	0.75	1.65	1.97	2.76	1/4-20 UNC 2Bx0.31"	5/16-18 UNC 2Bx0.47"	1/8"	0.35	1.97	0.87	0.67	1.18
100	F07 - F10	0.67	10.69	4.84	2.17	2.68	4.78	0.79	5.57	0.79	2.48	3.15	1.18	0.81	1.97	2.76	4.02	5/16-18 UNC 2Bx0.31"	3/8-16 UNC 2Bx0.55"	1/4"	0.35	1.97	0.87	0.67	1.18
115	F07 - F10	0.87	12.91	5.39	2.52	2.87	5.57	1.18	6.75	1.26	3.39	5.12	1.18	0.94	1.97	2.76	4.02	5/16-18 UNC 2Bx0.47"	3/8-16 UNC 2Bx0.59"	1/4"	0.57	0.86	1.11	0.86	1.53
125	F07 - F10	0.87	14.41	5.83	2.68	3.15	6.04	1.18	7.22	1.26	3.39	5.12	1.18	0.94	2.40	2.76	4.02	5/16-18 UNC 2Bx0.47"	3/8-16 UNC 2Bx0.59"	1/4"	0.57	0.86	1.11	0.86	1.53

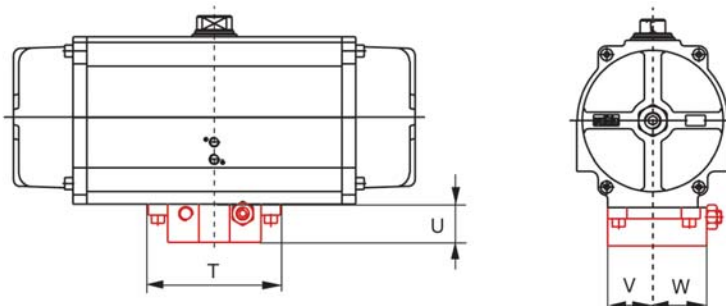
Dimensions for models 160 - 200 - 270



Model	Drilling ISO 5211	CH	A	B	C	D	E	F	G	H	I	L	M	N	O	P	QQ	R	S NPT	T	U	V	W	ØZ	Y	X
160	F10 - F12	1.06	20.55	7.36	3.43	3.94	8.58	7.40	1.18	3.15	5.12	4.92	1/2-13 unc 2Bx0.71"	3/8-16 unc 2Bx0.59"	4.72	1.26	1.38	3.21	1/4"	6.29	1.77	2.20	2.50	1.42	1.06	1.89
200	F14	1.42	22.64	8.58	4.29	4.29	10.59	9.41	1.42	3.15	5.12	5.51	5/8-11 unc 2Bx0.98"	-	-	1.54	1.97	3.46	1/4"	7.48	2.03	2.52	3.11	1.90	1.41	1.52
270	F16	1.81**	26.46	11.42	5.71	5.71	14.21	13.03	1.42	3.15	5.12	6.50	3/4-10 unc 2Bx1.18"	-	-	2.05	1.97	4.76	1/4"	9.05	2.68	3.11	4.37	2.37	1.81	3.23

** only with square connection at 45°

Kit for closed position adjustment optional model 160 - 200 - 270



For order kit

Model 160 ACVBDTS160
 Model 200 ACVBDTS200
 Model 270 ACVBDTS270