

## KEYSTONE FIGURE 79U/79E PNEUMATIC ACTUATORS MODEL 002 TO 036

Double acting and spring return pneumatic actuators for on/off or modulating control of most quarter turn applications. Output torques to 619 Nm.



### FEATURES

- Compact rack and pinion design utilising the whole piston area to develop output torque.
- Pistons with integral rack drive reducing the number of dynamic seals, minimising air leakage.
- Double pistons nullify sideloads on the pinion shaft, minimising bearing wear.
- Internal air porting.
- Hard anodised aluminium body protects against corrosive environments.
- Female output drive enabling direct mounting in certain applications, thereby eliminating special connections to guarantee correct alignment.
- Bottom entry pinion shaft.
- Anti-friction piston pads ensuring no metal to metal contact, providing a smooth operation. Ideal for modulating or on/off control applications.
- Grease lubricated for life.

### GENERAL APPLICATION

For remote control of any quarter turn application, for example ball, butterfly, rotary plug or damper valves.

**Figure 79U:**  
for direct mounting to standard Keystone valve top plates.

**Figure 79E:**  
for direct mounting to ISO 5211 valve top plates.

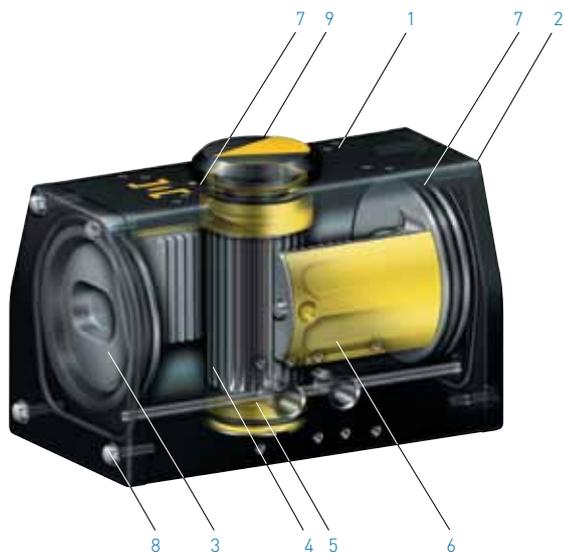
### TECHNICAL DATA

Temperature range:	Minus 30° to +90°C*
Min. supply pressure:	240 kPa (2.4 bar)
Max. supply pressure:	1000 kPa (10 bar)
Rated supply pressure:	830 kPa (8.3 bar)
Output torque:	up to 619 Nm @ 830 kPa

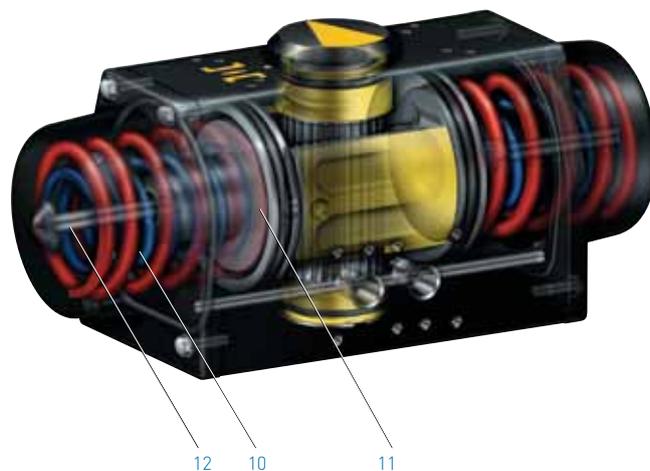
\* For higher temperature applications other materials available on request.

# KEYSTONE FIGURE 79U/79E PNEUMATIC ACTUATORS

## MODEL 002 TO 036



**NOTE:** F79U 006 double acting actuator illustrated.



**NOTE:** F79U 006 spring return actuator illustrated.

### PARTS LIST

No.	Description	Material	Specification
1	Body	Extruded aluminium (Hard anodised & ESPC)	BS 1474 6063
2	End cap	Die cast aluminium (LM6 or LM24 anodised & ESPC)	BS 1490
3	Piston	Die cast aluminium (LM6 or LM24 anodised)	BS 1490
4	Pinion shaft	Carbon steel (Sealbond - N coated)	BS 970 080M40 -
5	Bearings (003-036)	Glass filled nylon 66 - (002 model) Polymer	- -
6	Anti-friction piston pads (006-036)	ABS	-
7	O-rings & Seals	Nitrile	-
8	Fasteners	304 S/S	BS 970 Part 3 - 304/305
9	Position indicator	ABS	-
10	Spring*	Spring steel (ESPC)	BS 5216 HS3
11	Spring cone*	Die cast aluminium LM6	BS 1490
12	Spring retaining bolt*	Stainless steel	-
13	Adaptor plate (not shown)	Glass filled Nylon (002/003 model)	-

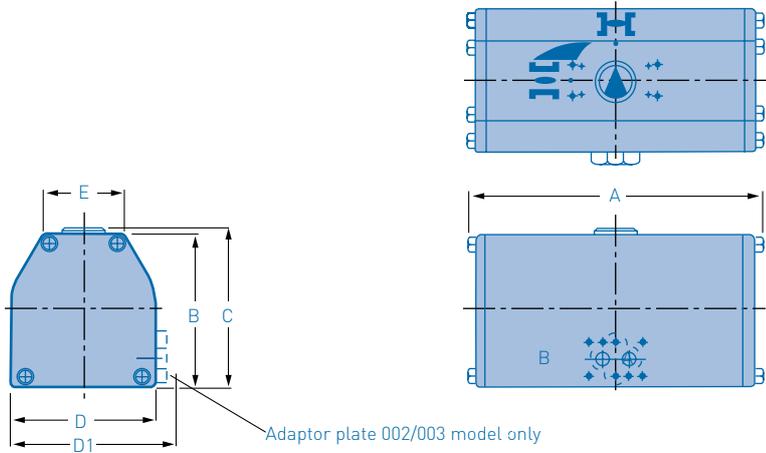
**NOTE:**

\* Only applies to spring return actuators  
 ESPC = Electrostatic Powder Coating  
 ABS = Acrylonitrile Butadiene Styrene.

# KEYSTONE FIGURE 79U/79E PNEUMATIC ACTUATORS

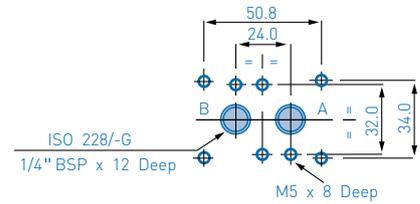
## MODEL 002 TO 036

### DOUBLE ACTING ACTUATORS



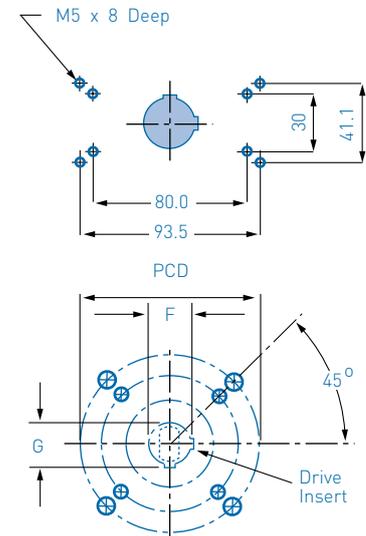
### BODY DRILLING/PORTING DETAIL

Air port hole B -CLOSED  
 Air port hole A -OPEN  
 Solenoid mounting dual drilled to suit  
 Keystone and Namur standard.

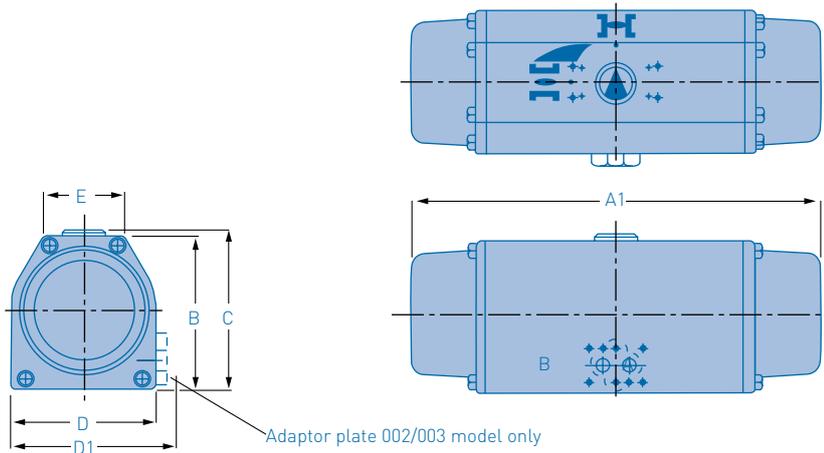


### TOP DRILLING DETAILS

Top face dual drilled to suit Keystone and Namur standard accessory mountings



### SPRING RETURN ACTUATORS



### BASE MOUNTING DETAILS

Mounting code	PCD	Holes
AAA	44.5	4 x M6 x 10 deep
AAB	44.5	4 x M6 x 10 deep
BAD	82.6	4 x M10 x 13 deep
CAF	127.0	4 x M12 x 16 deep
F05	50.0	4 x M6 x 10 deep
F07	70.0	4 x M8 x 13 deep
F12	125.0	4 x M12 x 19 deep

#### NOTE:

1. A comprehensive range of double D adaptors are available to suit all Keystone valve stems.
2. Actuators can be mounted to valves in line or transversely.
3. F07 mounting is only available on this model with the use of a 8mm thick mounting plate.
4. Drive details obtained using appropriate adaptions.

### DIMENSIONS (MM)

Actuator Type	A	A1	B	C	D	D1	E	F79U			F79E			Mass (kg)	
								Shaft hole	Keyway	Mount	Shaft hole	Keyway	Mount	DA	SR
								F x G		code	F x G		code		
F79U/E 002	126	186	81	91	80	95	53	Ø9.5 x 6.4A/F(4)	-	AAA	Ø16.0 x 11 A/F	-	F05	1.2	1.6
F79U/E 003	150	210	81	91	80	95	53	Ø14.3 x 9.5A/F(4)	-	AAB	-	-	-	-	-
F79U/E 006	176	258	103	112	93	-	57	Ø20.7 x 21.8	4.85	AAA/BAD	Ø20.7 x 21.8	4.85	F05/F07	1.7	2.1
F79U/E 012	195	282	127	136	112	-	82	Ø25.5 x 27.0	6.4	BAD	Ø25.5 x 27.0	6.4	F05/F07	3.2	4.0
F79U/E 024	250	355	150	159	136	-	84	Ø25.5 x 27.0	6.4	BAD	Ø25.5 x 27.0	6.4	F07	5.4	7.5
F79U/E 024	250	355	150	159	136	-	84	Ø28.6 x 31.7	6.4	BAD/CAF	Ø25 x 18	6.4	F07/F12	10.0	14.7
F79U/E 036	289	425	175	184	152	-	88	Ø28.6 x 31.7	6.4	BAD/CAF	Ø30 x 22	6.4	F07(3)F12	13.0	19.5

# KEYSTONE FIGURE 79U/79E PNEUMATIC ACTUATORS

MODEL 002 TO 036

## OUTPUT TORQUES FOR DOUBLE ACTING ACTUATORS (NM)

Actuator Type	Air supply kPa/(bar)						
	300 (3)	400 (4)	500 (5)	550 (5.5)	600 (6)	700 (7)	830 (8.3)
002	15	20	26	28	31	37	43
003	20	27	33	37	40	48	55
006	37	52	64	70	77	91	107
012	73	101	124	136	151	177	207
024	145	202	248	272	301	354	414
036	217	301	370	407	450	529	619

## OUTPUT TORQUES FOR SINGLE ACTING ACTUATORS (NM)

Actuator Type	Spring Type	Air supply - kPa/(bar)															
		410 (4.1)		500 (5)		550 (5.5)		600 (6)		700 (7)		800 (8)		830 (8.3)		Spring only	
		start	end	start	end	start	end	start	end	start	end	start	end	start	end	start	end
002S	4.1	11	6	16	10	19	13	21	16	26	21	32	27	34	28	14	9
	4.8	-	-	14	8	17	11	20	13	25	18	31	24	26	17	17	10
	5.5	-	-	13	5	16	8	18	11	23	16	29	22	23	20	20	12
003S	4.1	15	8	21	14	25	18	28	21	40	35	43	36	44	37	18	11
	4.8	-	-	18	10	22	14	25	17	31	23	39	31	41	33	22	13
	5.5	-	-	17	7	21	11	24	14	32	22	39	29	40	30	25	15
006S	4.1	27	14	39	26	45	32	52	36	66	53	80	67	82	69	35	22
	4.8	-	-	34	19	41	26	47	32	59	44	74	58	77	62	42	27
	5.5	-	-	30	13	36	19	43	26	57	40	71	54	73	56	48	31
012S	4.1	52	26	75	49	87	61	102	76	128	102	155	129	158	132	70	44
	4.8	-	-	63	36	77	49	89	61	112	84	140	113	147	120	82	54
	5.5	-	-	58	25	70	37	85	52	111	78	138	105	141	108	94	61
024S	4.1	104	53	150	99	174	123	203	152	256	205	309	258	316	265	138	87
	4.8	-	-	132	73	158	99	183	124	229	170	286	226	300	241	163	103
	5.5	-	-	117	49	141	73	170	102	223	155	276	208	283	215	188	120
036S	4.1	155	82	224	151	261	188	304	231	383	310	462	389	473	400	203	130
	4.8	-	-	198	113	237	152	274	189	343	258	428	343	449	364	239	154
	5.5	-	-	176	79	213	116	256	159	335	238	414	317	425	328	275	178

## ACTUATOR PISTON DISPLACEMENT (L)

Actuator	Type	Open	Close
002	DA	0.137	0.097
002S	SR	0.137	-
003	DA	0.187	0.123
003S	SR	0.187	-
006	DA	0.346	0.234
006S	SR	0.346	-
012	DA	0.629	0.455
012S	SR	0.629	-
024	DA	1.290	0.912
024S	SR	1.290	-
036	DA	1.945	1.363
036S	SR	1.945	-

## STANDARD SPRING COLOUR CODES

Spring Rating (kPa)	Colour
410	White (each end)
480	Light blue/Dark blue* - white (other end)
550	Light blue/Dark blue* (each end)

\* Nested (double) springs



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