

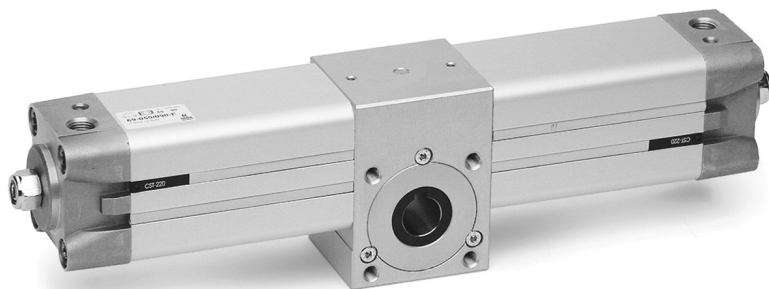
# Series 69 rotary cylinders

Magnetic, cushioned

∅ 32, 40, 50, 63, 80, 100, 125 mm

Rotational angles: 90°, 180°, 270° and 360°

- » Male or female version
- » Clean design



Through an adjustment screw it is possible to recover part of the play between pinion and rack.

On the heads there is a screw which allows rotation to be adjusted by  $\pm 5^\circ$ .

Series 69 rotary cylinders are available in 7 different bores and can satisfy a large range of operational requirements.

## GENERAL DATA

Type of construction	with internal tie-rods
Operation	double-acting
Materials	end blocks / tube / body = AL rack = steel rack guide shoe = acetal resin pinion = hardened steel seals = NBR
Type of mounting	threaded holes in the central body by means of brackets for ISO 15552 cylinders
Bore	∅ 32, 40, 50, 63, 80, 100, 125
Operating temperature	0°C ÷ 80°C (with dry air - 20°C)
Standard rotation angles	90°, 180°, 270°, 360° (others on request)
Bearings	Ball bearings (∅ 32 mm teflon bronze guide)
Operating pressure	1 ÷ 10 bar
Fluid	filtered air class 7.8.4 according to ISO 8573-1. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted

**TABLE OF TORQUE FORCE IN Nm (THEORETICAL)**

∅	1 bar	2 bar	3 bar	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
<b>32</b>	1,2	2,4	3,6	4,8	6	7,2	8,4	9,6	10,8	12
<b>40</b>	2,25	4,5	6,75	9	11,25	13,5	15,75	18	20,25	22,5
<b>50</b>	3,9	7,8	11,7	15,6	19,5	23,4	27,3	31,2	35,1	39
<b>63</b>	7,3	14,6	21,9	29,2	36,5	43,8	51,1	58,4	65,7	73
<b>80</b>	15,7	31,4	47,1	62,8	78,5	94,2	109,9	125,6	141,3	157
<b>100</b>	26,35	52,7	79,05	105,4	131,75	158,1	184,45	210,8	237,15	263,5
<b>125</b>	51	102	153	204	255	306	357	408	459	510

**CODING EXAMPLE**

<b>69</b>	-	<b>050</b>	/	<b>090</b>	-	<b>F</b>	
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<b>69</b>	SERIES	PNEUMATIC SYMBOL CD18
<b>050</b>	BORE 032 = 32 mm 040 = 40 mm 050 = 50 mm 063 = 63 mm 080 = 80 mm 100 = 100 mm 125 = 125 mm	
<b>090</b>	ROTATIONAL ANGLES 090 = 90° 180 = 180° 270 = 270° 360 = 360°	
<b>F</b>	PINION F = Female M = Male	
	SEALS MATERIAL: = NBR W = FKM + 130°C	

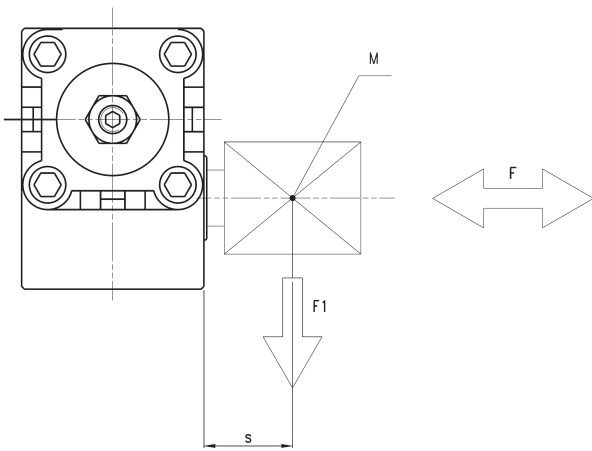
**PNEUMATIC SYMBOLS**

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.



**MAXIMUM ADMISSIBLE LOADS AND FORCES**

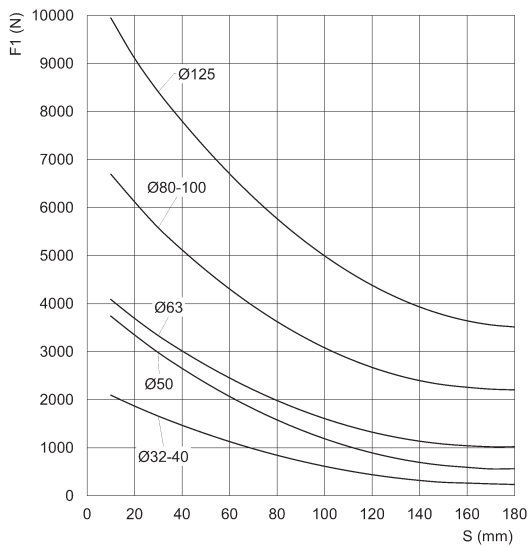
	Ø 32	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125
Maximum axial load F with F1 = 0	100 N	100 N	120 N	120 N	200 N	250 N	300 N
Maximum angular speed $\omega$ (rad/s)	66 (rad/s)	55 (rad/s)	49 (rad/s)	42 (rad/s)	31 (rad/s)	29 (rad/s)	23 (rad/s)
Maximum cushionable kinetic energy (J) calculated as $E = \frac{1}{2} \cdot J \cdot \omega^2$	0.8 (J)	1.4 (J)	2.1 (J)	4.0 (J)	7.5 (J)	9.0 (J)	15 (J)



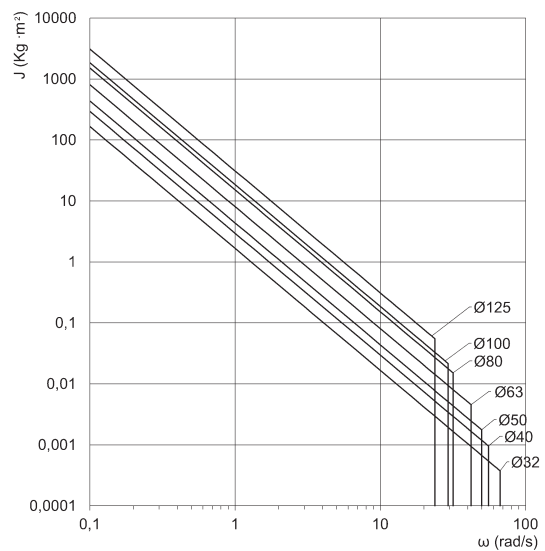
M = Center of gravity of the applied theoretical load  
 F = Axial load (N)  
 F1 = Radial load (N)

s = distance between actuator and center of gravity of the applied theoretical load (mm)

**CHOICE AND CHECK OF THE ACTUATOR TO BE USED**



Max. radial load F1 with F = 0  
 S = distance between actuator and center of gravity of the applied theoretical load (mm)

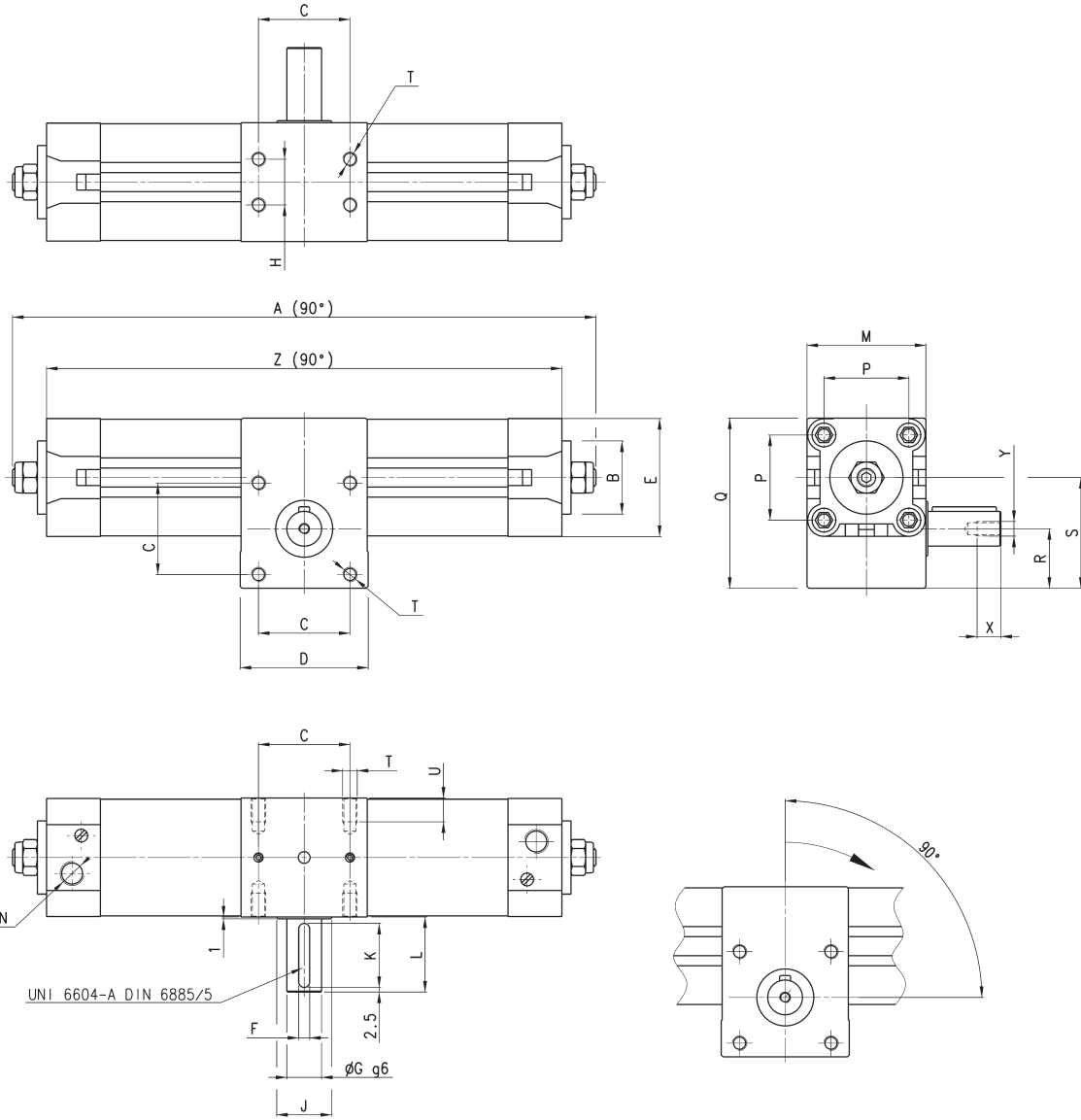


Maximum energy that can be cushioned according to the angular speed.  
 J = Moment of inertia (Kg · m<sup>2</sup>)  
 $\omega$  = Angular speed (rad/s)

**Series 69 cylinders - male pinion**



\* increase in "A" and "Z" for each 90° of rotation

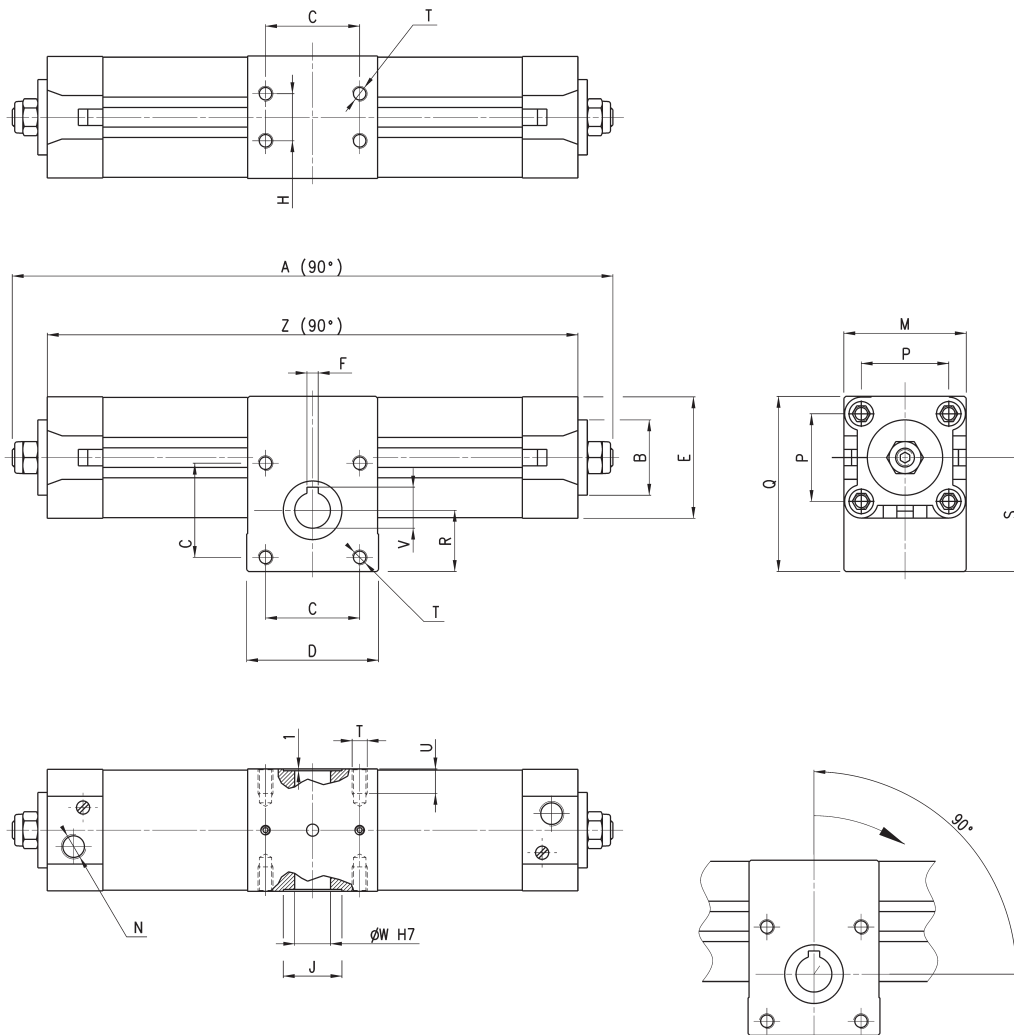


DIMENSIONS																							
Ø	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	Y	X	Z	
32	249	30	47	33	50	46	5	14	18	25	25	31	50	G1/8	32,5	71,5	25	46,5	M6	10	M5	12,5	219
40	295	35	56,5	40	60	55	5	14	22	25	25	31	60	G1/4	38	82	30	54,5	M6	10	M5	12,5	263
50	316	40	63	50	70	64,5	6	19	25	30	35	41	65	G1/4	46,5	94	32,5	60,5	M8	13	M6	16	282
63	357	45	74,5	60	75	75	8	24	35	30	35	41	75	G3/8	56,5	110	37	70,8	M8	13	M8	19	325
80	443	45	99	80	99	93	8	28	50	45	45	51	99	G3/8	72	142	50	93,5	M10	16	M8	19	404
100	472	55	107	80	115	110	10	38	60	50	45	51	115	G1/2	89	156,5	54	99	M10	16	M10	22	434
125	549	60	132	90	125	135	10	38	70	60	45	51	140	G1/2	110	188	60	118	M12	20	M10	22	505

**Series 69 cylinders - female pinion**



\* increase in "A" and "Z" for each 90° of rotation



SERIES 69 ROTARY CYLINDERS

DIMENSIONS																				
Ø	A	B	C	D	E	F	H	J	M	N	P	Q	R	S	T	U	V	W	Z	
32	249	30	47	33	50	46	5	18	25	50	G1/8	32,5	71,5	25	46,5	M6	10	16,3	14	219
40	295	35	56,5	40	60	55	5	22	25	60	G1/4	38	82	30	54,5	M6	10	16,3	14	263
50	316	40	63	50	70	64,5	6	25	30	65	G1/4	46,5	94	32,5	60,5	M8	13	21,8	19	282
63	357	45	74,5	60	75	75	6	35	30	75	G3/8	56,5	110	37	70,8	M8	13	21,8	19	325
80	443	45	99	80	99	93	8	50	45	99	G3/8	72	142	50	93,5	M10	16	27,3	24	404
100	472	55	107	80	115	110	8	60	50	115	G1/2	89	156,5	54	99	M10	16	31,3	28	434
125	549	60	132	90	125	135	8	70	60	140	G1/2	110	188	60	118	M12	16	31,3	28	505