General

These rotary actuators convert linear motion of a piston into a rotary motion via a rack and pinion device, using a single pinion-rack system for the 6410 version and a double system on 6400 versions. The 6410 series actuators have fixed stops at 90 and 180 degrees; while on the 6400 series, rotation can be adjusted between 0 and 190 degrees using variable stops that can also be substituted with hydraulic stoppers (shock absorbers). These devices are equipped with a rotating table upon which the load is fixed.

Ordering code

6400. _ . _

- **A** = Standard
- **R** = Cushioning (Shock absorber)

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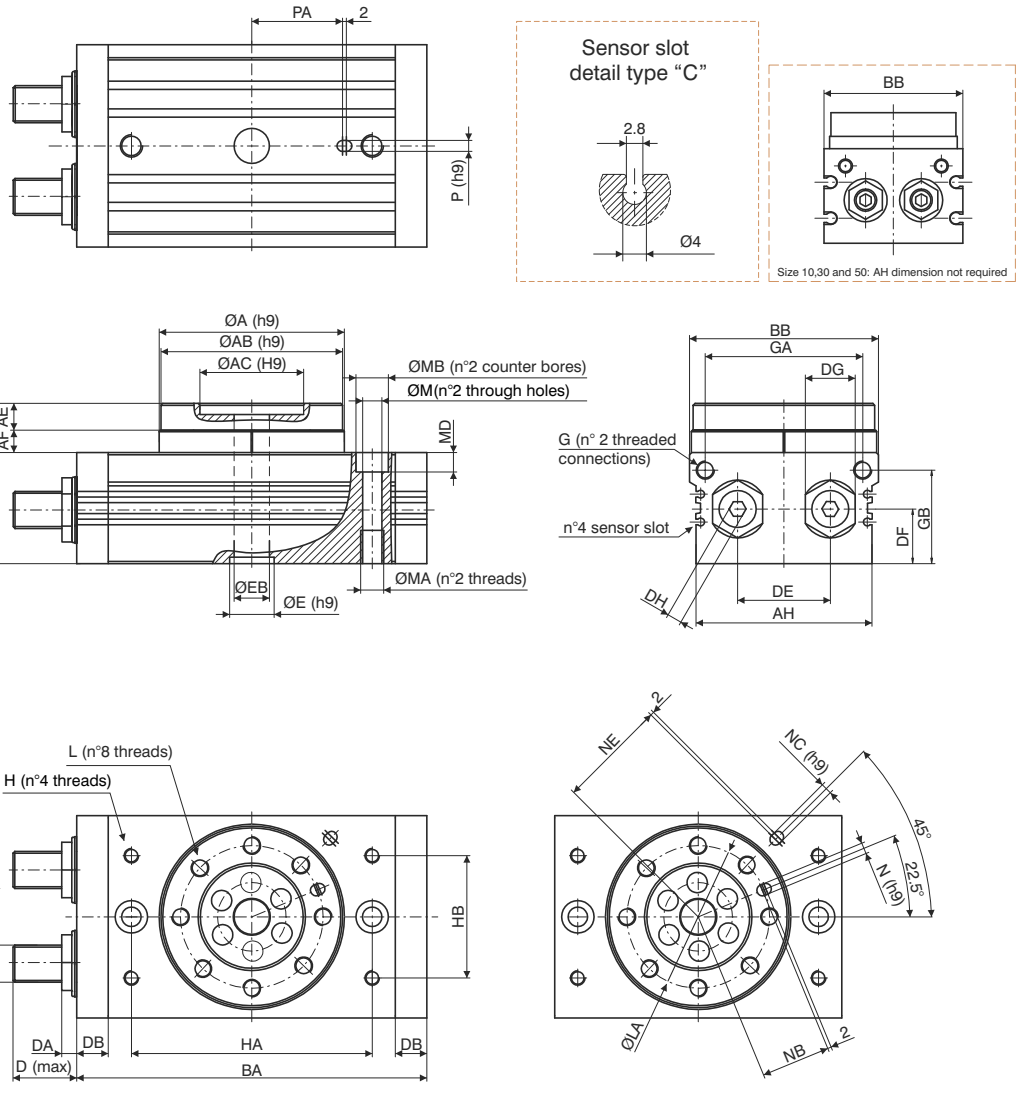
- **10** (piston ø15)
- **30** (piston ø21)
- **50** (piston ø25)
- **100** (piston ø32)
- **200** (piston ø40)

Construction characteristics

Body	aluminium alloy
Cover plate/End plate	steel
Piston seal	NBR rubber
Pinion	steel
Rack	steel
Turn table	steel
Cushioning	elastic bumper (hydraulic damper available on request)

Technical characteristics

Fluid	filtered and non lubricated air
Max. pressure	10 bar (for type 100 and 200, 6 bar)
Working temperature	-5°C - +70°C
Rotation angle range	0 - 190°
Max. rotation	190°
Rotation speed	s/90° (see table pag. 52)

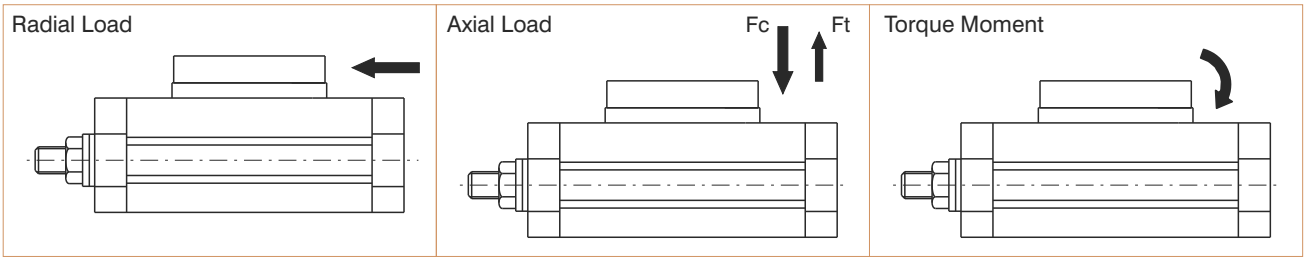


Size	10	30	50	100	200
Ø piston	Ø15	Ø21	Ø25	Ø32	Ø40
ØA h9	46	67	77	100	118
ØAB h9	45	65	75	98	116
ØAC h9	20	32	35	56	64
Useful depth	4	4.5	5	6	9
AE	8	10	12	14.5	16.5
AF	5	7	8	12.5	15.5
AG	13	17	20	27	32
AH	/	/	/	95	115
B +0,5 / 0	34	40	46	59	74
BA	92	127	152	189	240
BB +0,5 / 0	50	70	80	102	120
C +0,5 / 0	47	57	66	86	106
D	17.7	25	31.4	34.3	40.2
DA	8.6	10.6	14	8	8
DB	9.5	12	15.5	17	24
DC	M8x1	M10x1	M14x1.5	M20x1.5	M27x1.5
DE	20	29	38	50	60
DF	15.5	18.5	22	29.5	36.5
DG	12	14	19	27	36
DH	4	5	6	8	10
ØE h9	15	22	26	24	32
Useful depth	3	3	3	3.5	5.5
ØEB	5	9	10	19	24
G	M5x0.8	G1/8	G1/8	G1/8	G1/8

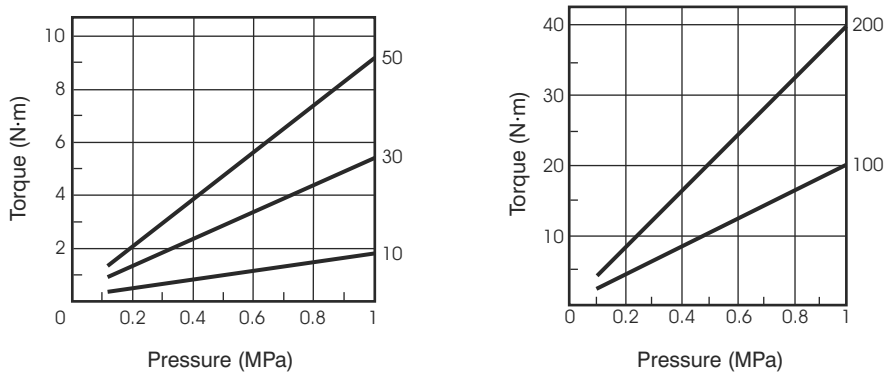
Size	10	30	50	100	200
Ø piston	Ø15	Ø21	Ø25	Ø32	Ø40
GA	34.5	50	63	85	103
GB	27.8	32	37.5	50.5	65.5
H	M5x0.8	M6x1	M8x1.25	M8x1.25	M12x1.75
Useful depth	8	8	8	10	13
HA	60	84	100	130	150
HB	27	37	50	66	80
L	M5x0.8	M6x1	M8x1.25	M10x1.5	M12x1.75
Useful depth	8	10	12	14.5	16.5
LA	32	48	55	77	90
M	6.8	8.6	10.5	10.4	14.2
MA	M8x1.25	M10x1.5	M12x1.75	M12x1.75	M16x2
Useful depth	12	15	18	18	25
MB	11	14	18	17.5	20
MD	6.5	8.5	10.5	10.5	12.5
N h9	3	4	5	6	8
Useful depth	3.5	4.5	5.5	6.5	8.5
NB	15	23	26.5	37.5	44
NC h9	/	/	/	6	8
Useful depth	/	/	/	4.5	4.5
NE	/	/	/	59	69
P h9	/	/	/	6	8
Useful depth	/	/	/	4.5	6.5
PA	/	/	/	49	54
Weight (gr)	530	1230	2080	4100	7650

Permissible Loads

		Size				
		10	30	50	100	200
Radial Load (N)		80	200	320	400	550
Axial Load (N)	Fc	80	370	450	710	1000
	Ft	75	200	300	500	750
Torque Moment (Nm)		2,5	5,5	9,5	18	25



Torque Diagrams



Rotation time (sec./90°)

Dimension	With adjusting screw	With hidraulic decelerator
10 - 30 - 50	0.2 - 1	0.2 - 0,7
100	0.2 - 2	0.2 - 1
200	0.2 - 2.5	0.2 - 1

Kinetic energy

Dimension	With adjusting screw	With hidraulic decelerator
10	0.006	Please apply to our tech-dpt for info (as general rule expressed valves can be multiplied by 3)
30	0.045	
50	0.08	
100	0.30	
200	0.52	

Ordering code

6410.Ø.

- **50**
- **63**
- **80**
- **100**

- **90** = rotation 90°
- **180** = rotation 180°

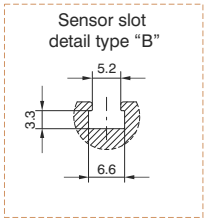
Construction characteristics

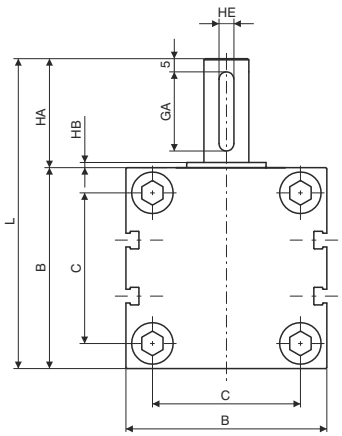
Body	aluminium alloy
Piston	aluminium
End plate	aluminium
Piston seal	NBR rubber
Pinion	steel
Rack	steel

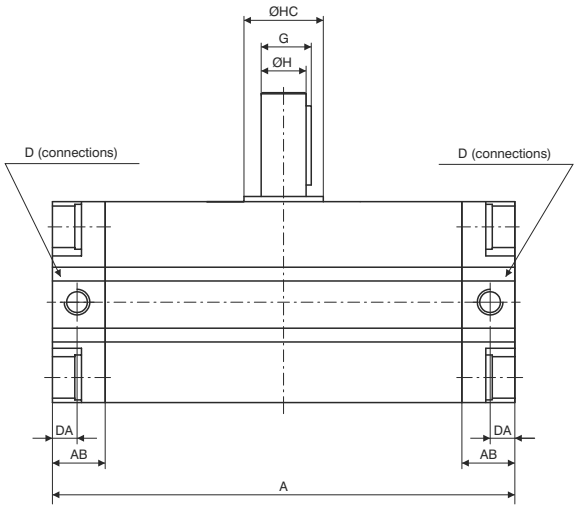
Technical characteristics

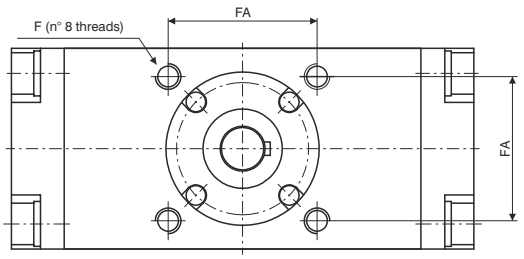
Fluid	filtered and non lubricated air
Max. pressure	10 bar
Working temperature	-5°C - +70°C

Overall dimensions Ø50 and Ø100





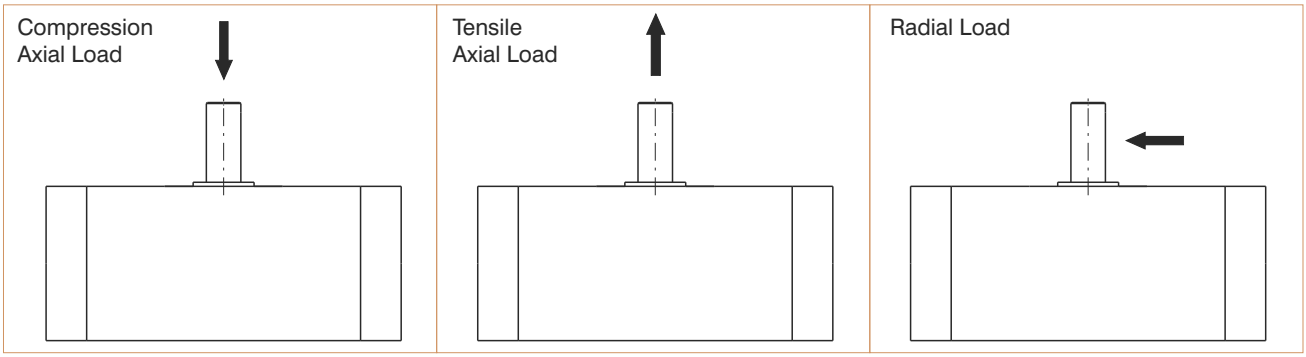




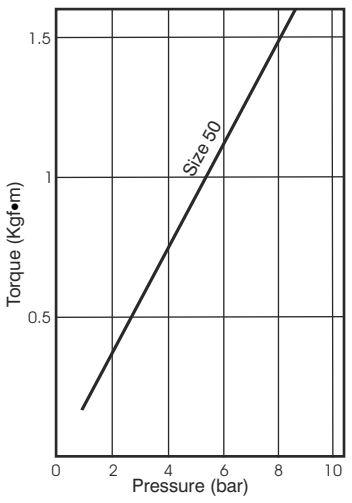
Bore		Ø50	Ø63	Ø80	Ø100
A	90°	156	175	199	259
	180°	189	214	243	325
AB		17	20	23.5	25
B		64	77	93	113
C		46	57	70	85
D		G1/8	G1/8	G1/4	G3/8
DA		8,5	10	12	12.5
F		M8x1.25	M10x1.5	M12x1.75	M12x1.75
	Useful depth	8	12	13	14
FA		48	60	72	85
G		17	19.5	22.5	28
GA		25	30	40	45
H		15	17	20	25
HA		36	41	50	60
HB		2.5	2.5	3	4
HC		25	30	35	40
HE		$5^{0/-0.03}$	$6^{0/-0.03}$	$6^{0/-0.03}$	$8^{0/-0.036}$
L		98	117	142	172
Weight (gr)	90°	1500	2500	4300	8500
	180°	1700	3000	5000	9500

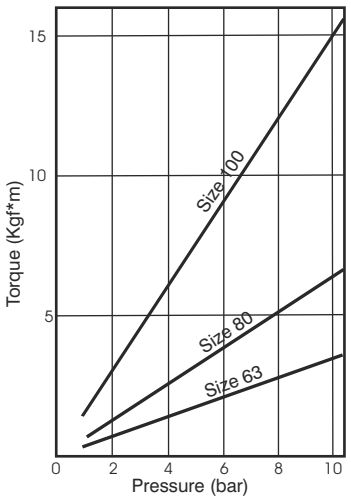
Allowable Loads

	Bore			
	Ø50	Ø63	Ø80	Ø100
Radial Load (N)	200	300	400	600
Axial Load in compression(N)	500	600	900	1000
Tensile Axial Load (N)	200			



Torque Diagrams



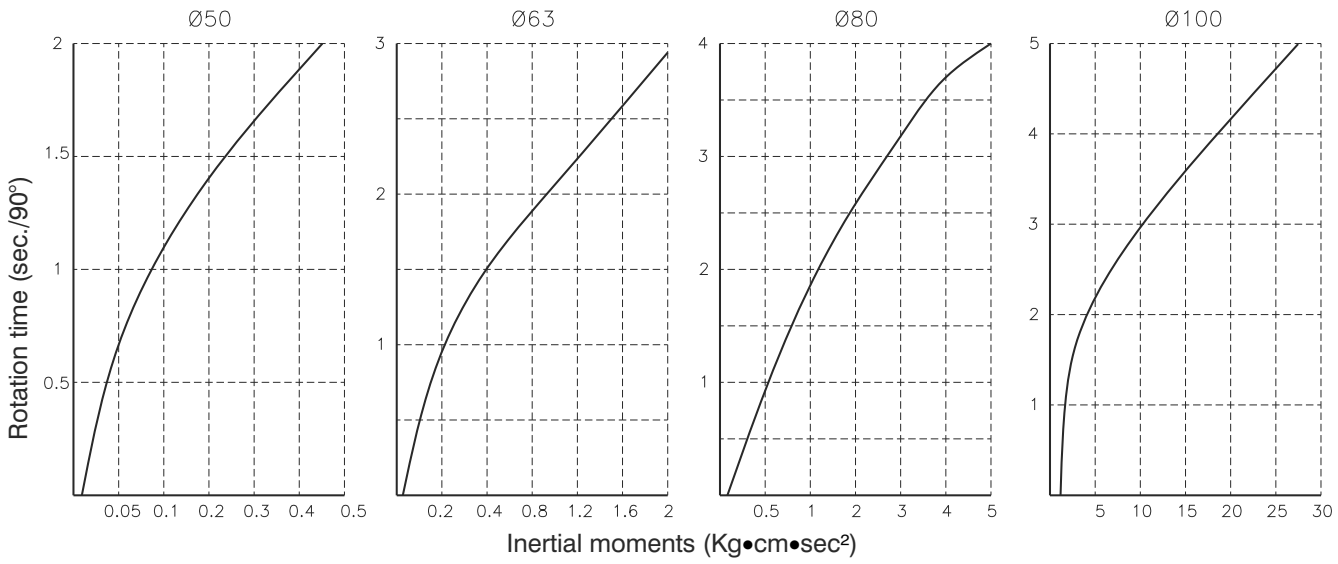


Max Kinetic energy (Kg·cm)

Kinetic energy (cushioning angle 35°)

Bore			
Ø50	Ø63	Ø80	Ø100
10	15	20	30

Rotation time according to inertial moments



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