CABOL®
FLUID ENGINEERING

MADE IN ITALY

ROTARY HYDRAULIC CYLINDERS - ROT Series

PRESENTATION

The "ROT" rotary actuators featured in this catalog have been developed for industrial applications. This type of cylinder generates torque via a gear and a rack driven by a hydraulic piston. The care taken in selecting the materials and seals used, the attention to detail required at every stage of production and inspection, combined with rigorous final testing, make these hydraulic actuators a reliable choice for any application requiring maximum reliability and repeatability.

GENERAL CONSTRUCTION NOTES

- Compact construction with square ends and tie rods
- Alloy steel gear and rack
- Running tolerance 0 /+1°
- Standard low-friction seals
- Oil lines with GAS threads
- Optional adjustable front and/or rear end-of-travel brakes
- Optional proximity sensors on the limit switches
- 5° stroke adjustment optional
- Shaft end with keyway or spline DIN 5482

TECHNICAL SPECIFICATIONS

Piston diameter [mm]	40 - 50 - 63 - 80 - 100 - 125 - 160 - 200
Operating pressure [bar / psi]	100 / 1450,38 (continuous service)
Maximum pressure [bar / psi]	140 / 2030,53 (peak pressure)
Operating temperature [°C]	From -20°C to +100°C
Translation speed [m/s]	Up to15 m/s
Working fluid	Mineral oil compliant with ISO 6743/4
Degree of contamination	Class 20/18/15 according to ISO 4406:1999

CYLINDER TYPE

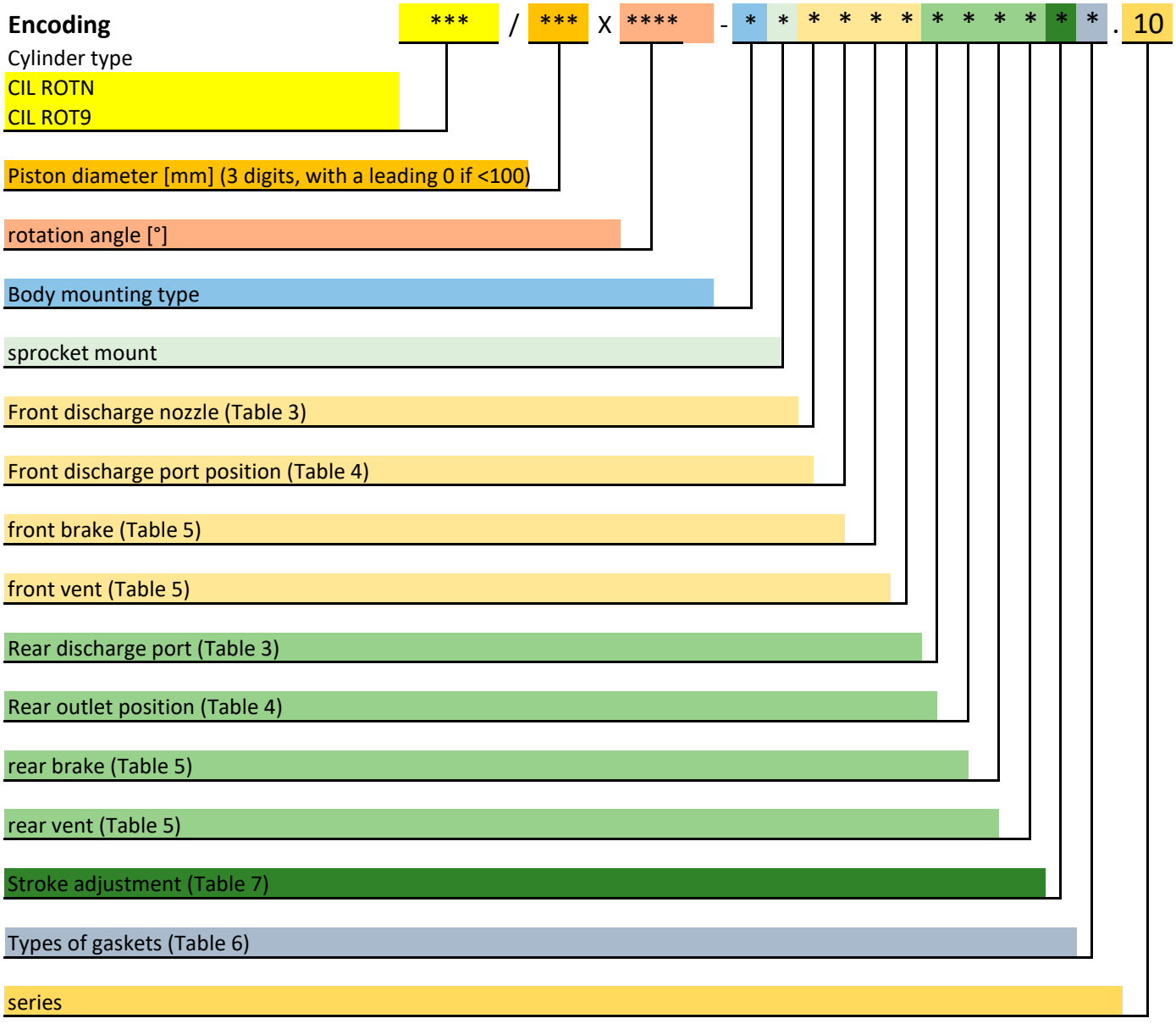
Table 1

CIL ROTN	Standard rotating cylinders
CIL ROT9	Special rotating cylinders

CODING EXAMPLE

CIL ROTN / 63 X 90 ° - A C S 1 0 0 S 1 0 0 1 2 . 10

Encoding



STANDARD FINISH BLACK PAINT RAL 9005

BODY MOUNT TYPE

table 1	DESCRIPTION
A	Threaded holes on the body
X	Special

Special fasteners can be manufactured upon request.

MOUNTING TYPE ROTATING SHAFT

table 2	DESCRIPTION
C	Key
S	Female groove
M	Male groove
X	Special

DIMENSIONS OF THE INLET OPENINGS (FRONT AND REAR)

table 3	DESCRIPTION
S	Standard
M	Enhanced
X	Special

LOCATION OF VENTS, BRAKE VENTS, AND AIR VENTS

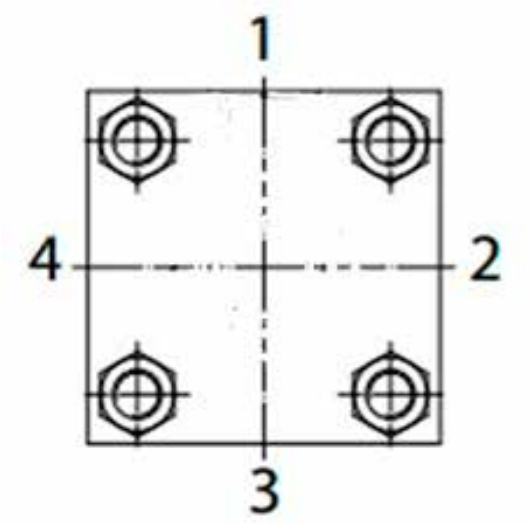


table 4	FRONT/REAR SUPPLY INLET POSITION
1	Position 1 front view (standard position)
2	Position 2 front view
3	Position 3 front view
4	Position 4 front view

BRAKING

It is advisable not to use the cylinder heads as end stops for the moving mass. In this regard, we recommend the use of brakes, adjustable via a pin, designed to slow the load's speed as it approaches the end of its travel.

To avoid damaging the cylinder, it is always advisable to use external mechanical stops.

AIR VENTS

Vent holes are a practical way to remove air from inside the cylinder during installation. They come standard with brakes or are available as an option upon request.

table 5	FRONT/REAR BRAKE/BLEED VALVE
0	Not present
1	Position 1 front view
2	Position 2 front view
3	Position 3 front view (standard position)
4	Position 4 front view

SEALING MATERIALS

The materials used in "ROT" cylinder seals meet the operational requirements of most industrial applications.

Our standard seals are characterized by low friction coefficients and the absence of sliding vibrations (stick-slip effect).
Seals for high-temperature operating conditions are also available.

If special fluids are used or specific operating conditions are required, specially designed seals are available.

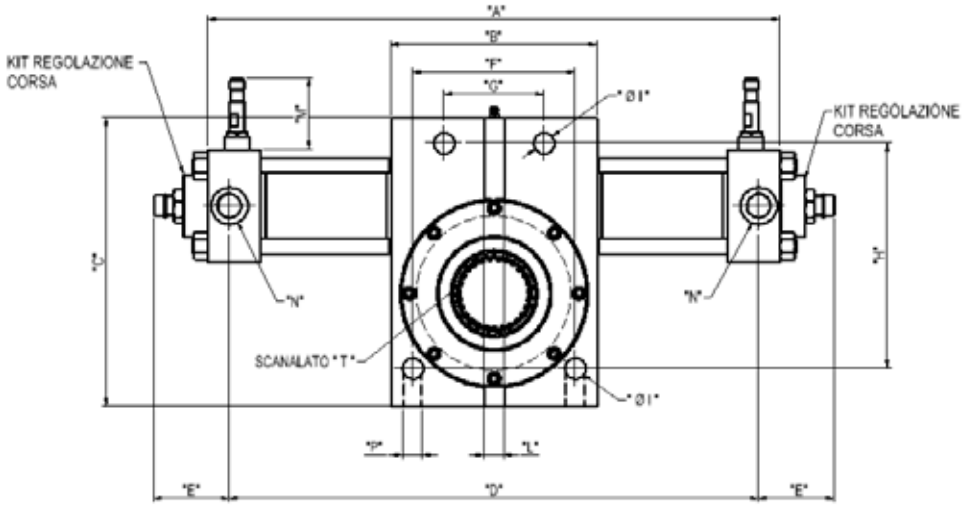
table 6	SEALING MATERIALS
1	NBR + polyurethane (standard material)
2	NBR + PTFE
3	VITON + PTFE
x	Special

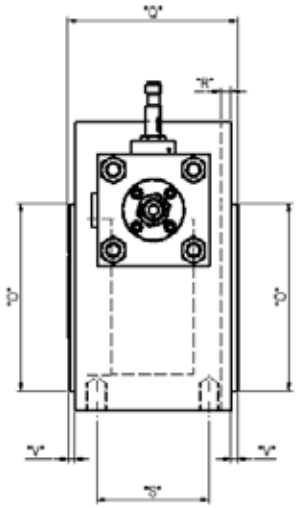
STROKE ADJUSTMENT

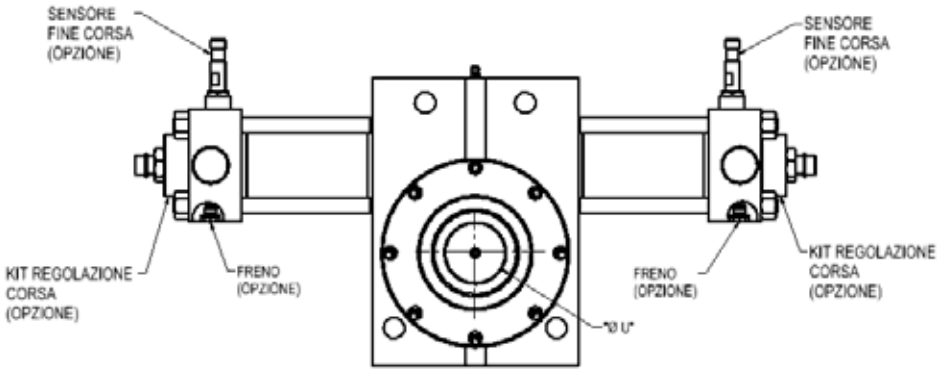
End-of-travel switches are available to allow system alignment with an adjustment range of 5°.

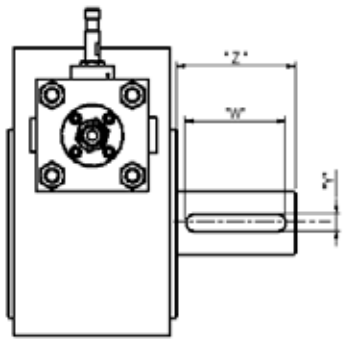
table 7	STROKE ADJUSTMENT
0	NO
1	YES

	TURNING POINTS							
Bore	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø160	Ø200
p work [bar]	100							
peak p max [bar]	120							
Working p torque [Nm]	390	770	1400	3500	6100	11500	24800	49000









	Ø 40	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	Ø 160	Ø 200
A [mm]	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)	YY+((AA*GRADO)X2)
B [mm]	128	146	165	230	268	296	380	500
C [mm]	160	195	230	300	370	420	520	700
D [mm]	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)	XX+((AA*GRADO)X2)
E [mm]	55,5	58	60,5	70	81	90	98	112
F [mm]	100	115	130	180	210	230	280	320
G [mm]	60	70	80	90	100	110	120	130
H [mm]	120	150	180	250	300	340	440	570
I [mm]	10,5	15	17	21	25	31	37	43
L [mm]	10 H9	13 H9	16 H9	19 H9	22 H9	25 H9	28 H9	31 H9
M [mm]	30,4	49,1	57,1	64,1	87,1	72,6	54,6	45,1
N	3/8" G	1/2" G	1/2" G	3/4" G	3/4" G	1" G	1" G	1" 1/4 G
O[mm]	112f7	130f7	150f7	200f7	220f7	255f7	330f7	410f7
P	M10x1,5	M14x2	M16x2	M20x2,5	M24x3	M30x3,5	M36x4	M42x4,5
Q [mm]	88,2	111,2	135,2	182,2	194,2	222,2	284,2	334,2
R [mm]	7,9	7,9	7,9	7,9	7,9	7,9	7,9	7,9
S [mm]	58	74	90	106	138	138	170	230
T	DIN 5482-A40x36 Z20	DIN 5482-A50x45 Z24	DIN 5482-A58x53 Z27	DIN 5482-A68x62 Z31	DIN 5482-A80x74 Z36	DIN 5482-A90x84 Z40	DIN 5482-A100×94 Z44	DIN 5482-A100×94 Z44
V [mm]	7,1	7,1	7,1	7,1	7,1	7,1	7,1	7,1
U [mm]	40	45	50	60	70	80	110	180
Y [mm]	12	14	14	18	20	22	28	45
W [mm]	60	70	80	90	110	125	160	300
Z [mm]	75	85	95	105	135	150	185	325
AA [mm/°]	0,558	0,698	0,838	1,257	1,396	1,676	2,199	2,827
XX [mm]	228,942	238,678	264,430	364,620	407,354	470,826	583,084	749,394
YY [mm]	264,942	274,678	298,430	404,620	447,354	528,826	641,084	821,394

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Quality Management
System Certificate
ISO 9001:2015