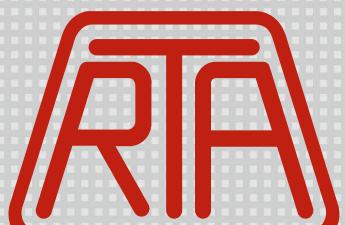


RC SERIES ELECTRIC CYLINDERS FOR STEPPING & SERVOMOTORS



Look Ahead!

RC SERIES ELECTRIC CYLINDERS FOR STEPPING & SERVOMOTORS

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INTRODUCING R.T.A. GROUP



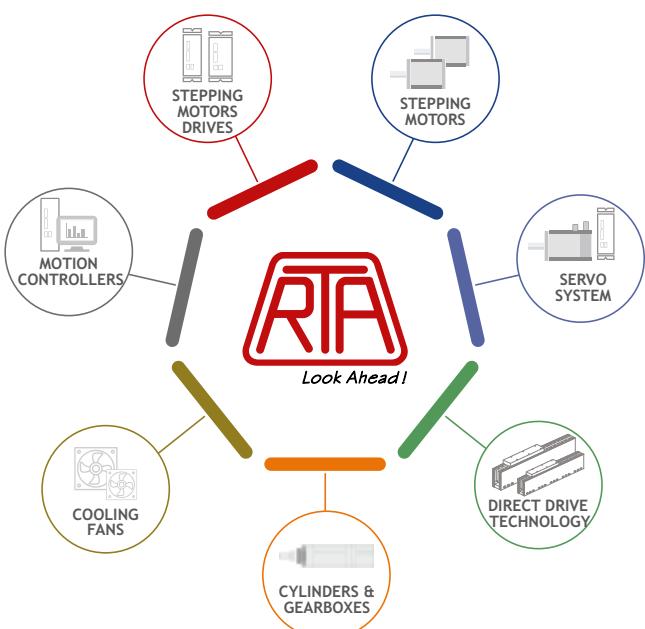
Founded in 1976 in Pavia (Italy), R.T.A. is a leading player in the industrial automation industry, with specific excellence in the core business: design and production of Stepping Motor Solutions.

Over the years the product portfolio and the technical expertise have expanded, integrating motion controllers, servo systems, cooling fans, gearboxes and the latest electric cylinders.

Today the “complete R.T.A. solution” responds to the most diverse motion control needs with a solid range of products and highly specialized technical support.

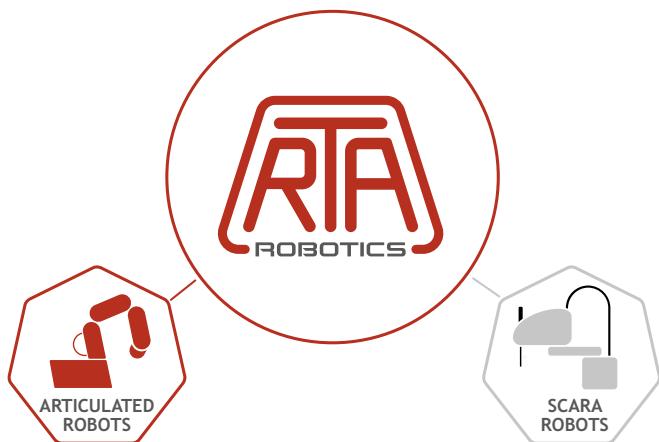
In 2021 R.T.A. launched R.T.A. Robotics, which offers high-performance integrated robotics solutions.

SINCE 1976



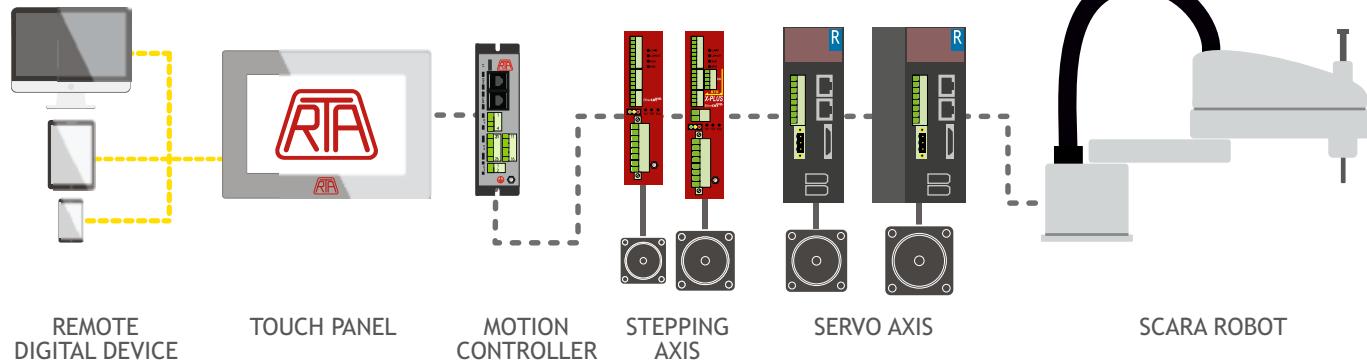
SINCE 2021

R.T.A. Robotics is focused on the robotic market with a dedicated technical team and a comprehensive portfolio of solutions made up by 6-axis articulated robots and 4-axis SCARA robots.

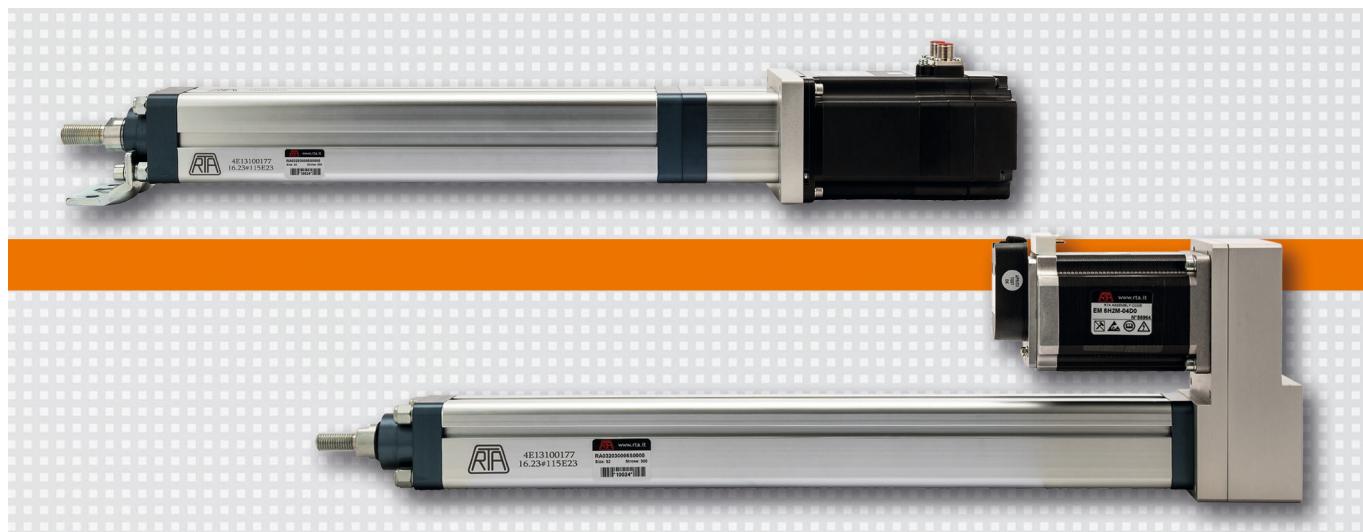


ROBOTICS & AUTOMATION IN TRUE TECHNICAL SINERGY

There is a strong commercial and technical synergy between Automation and Robotics and R.T.A. offers a true integration between robots and machines,



INTRODUCING R.T.A. ELECTRIC CYLINDERS



RC series is a full range of electric cylinders, combining high performances, excellent resistance and versatility, with possible customization, according to the technical characteristics of the application.

Two versions available:

- With recirculating ball profile, for high tip loads and whenever significant screw rotation speeds and good precision are required.
- With trapezoidal profile, when the peak load is very low or negligible in the system, i.e. when low loads, low speeds and lower accuracy are required.

Perfectly compatible with R.T.A. stepping and servomotors, forming a reliable modular system, electric cylinders can match with different types of motors and accessories:

- NEMA 23, NEMA 24 and NEMA 34 flange stepping motors.
- Up to 7500 W servomotors.
- Integrated electronics stepping motor (COMBO-UNIT solutions).
- Stepping motors with encoder and/or brake.
- Stepping or servomotors with gearbox.



 IN-LINE SOLUTION



SERVO SOLU



R.T.A. PLANETARY GEARBOXES

- Stepping and servomotor versions for different flange sizes.
- Gearbox body from 40 mm to 120 mm.



R.T.A. STEPPING MOTORS

- Flange size: NEMA 23, NEMA 24, NEMA 34.
- Holding torque from 0,65 Ncm to 920 Ncm.
- Encoder and/or brake versions available.



R.T.A. STEPPING MOTOR DRIVES

- Drive types: EtherCAT, Modbus TCP/IP, Step/Dir, Analog input, Programmable.
- Current range from 0,1 A to 10 A.
- Operating voltage range: from 24 VDC to 230 VAC.
- UL/CSA certified versions.

R.T.A. FRONT BRAKES

- Flange size: NEMA 23, NEMA 24, NEMA 34.
- 24 VDC power supply.
- M12 connectors.

R.T.A. COMBO-UNIT

- Five motor sizes series of stepping motor with integrated drives.
- EtherCAT interface.
- Incremental or battery less absolute encoder versions.

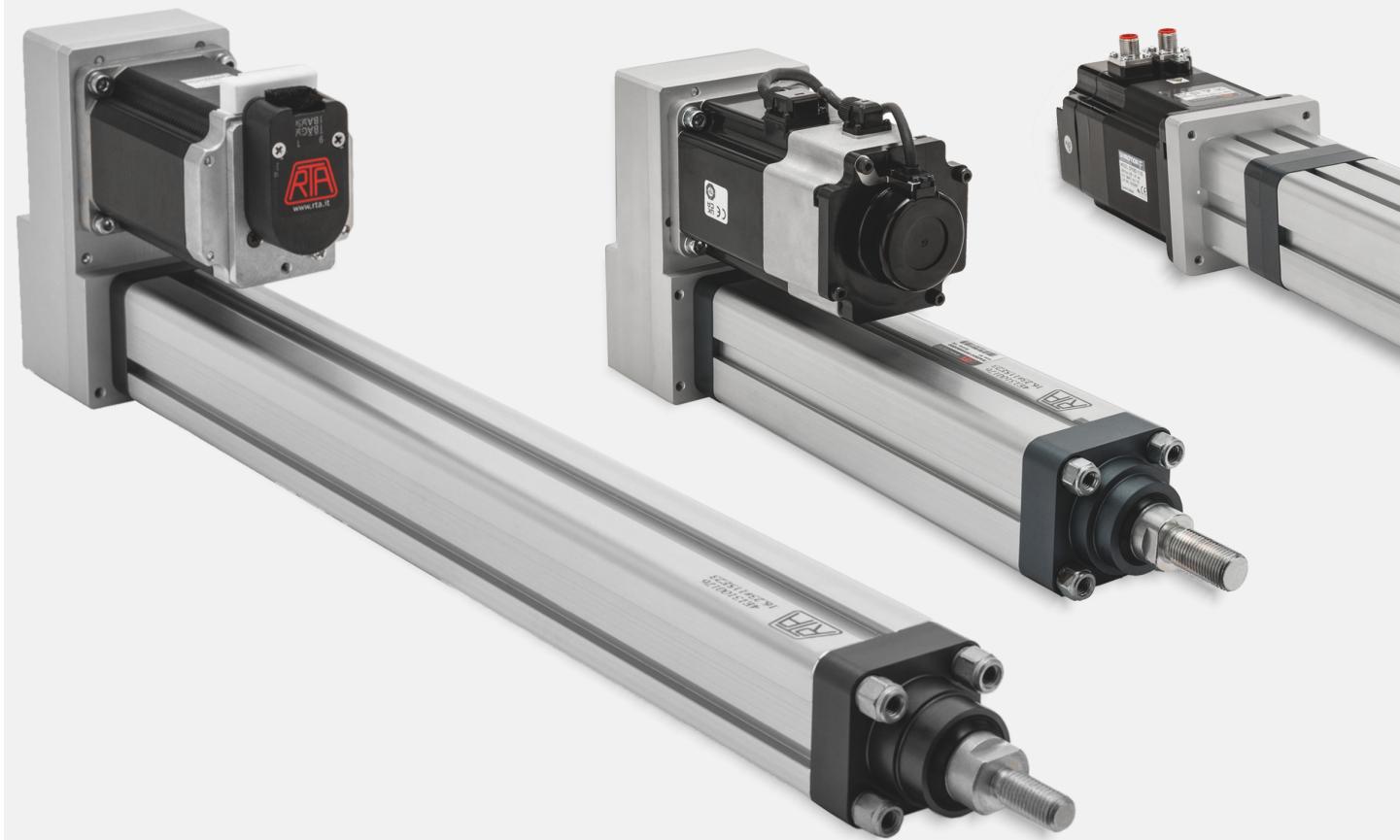


R.T.A. SERVOMOTORS

- 48 VDC - Incremental encoder.
- 230 VAC - Battery less Absolute encoder.
- 230 VAC - Incremental encoder.
- 400 VAC - Incremental encoder.

R.T.A. SERVOAMPLIFIERS

- 48 VDC servoamplifiers.
- 230 VAC servoamplifiers.
- 400 VAC servoamplifiers.



◆ TECHNICAL FEATURES & SUGGESTED MOTORS

SIZE	32	40	50	63
Screw pitch	mm 5 10	4 12.7	5 10 16	5 10 20
Actuator flange	mm 60X60	70X70	86X86	90X9
Standard stroke up to	mm 800	1000	1200	1400
Suggested stepping motor	NEMA 23 NEMA 24	NEMA 23 NEMA 24	NEMA 34	NEMA 34
Suggested servo motor	100 W 200 W	200 W 400 W	400W 750 W	750 W 1000 W
Maximum axial force	N 2100 2100	3000 3400	6400 5400 6400	9500 7300 7300
Average axial force for 2500 km life	N 832 698	702 1375	1594 1573 2276	1854 1542 2453
Maximum speed	mm/s 556 1111	381 1333	444 889 1422	333 667 1333
Maximum acceleration	m/s ² 3.2 6.4	2.5 8.1	3.2 6.4 10.2	3.2 6.4 12.7
Maximum air humidity (without condensation)	%			90
Actuator protection degree				IP44 o IP65
Accuracy	mm			± 0.035
Reference standard				ISO 15552
Duty cycle	%			100
Internal rotation stopper				Available on all sizes
Rod end				Male or female
Rod material				Chromium plated (standard) Stainless steel upon request
Mounting				On front cap or with accessories
End stroke sensor				Available on all sizes

NOTE: the technical data refer to the cylinder only, without the motor

NOTE 2: the technical data refer to the standard screw version cylinder, for the oversized screw data contact R.T.A.



KEY ADVANTAGES OF R.T.A. ELECTRIC CYLINDERS

- Motion transmission using large, strong and durable ball screw.
- Anti-rotation device onboard on all models.
- High resistance to radial loads due to oversized stem diameter.
- Modular solution with high scalability.
- Extremely compact and easy-to-install motor + cylinder solution.
- Different options of pitch-screws for motion transmission.
- Extensive customization possibilities.
- Aluminium structure tested for systems where high strength is required.

ISO 15552

R.T.A. electric cylinders comply with ISO 15552 standard and are fully compatible with most of the accessories for pneumatic solutions on the market.

R.T.A. PLUG&GO SOLUTION

AN EXAMPLE OF IN-LINE SOLUTION



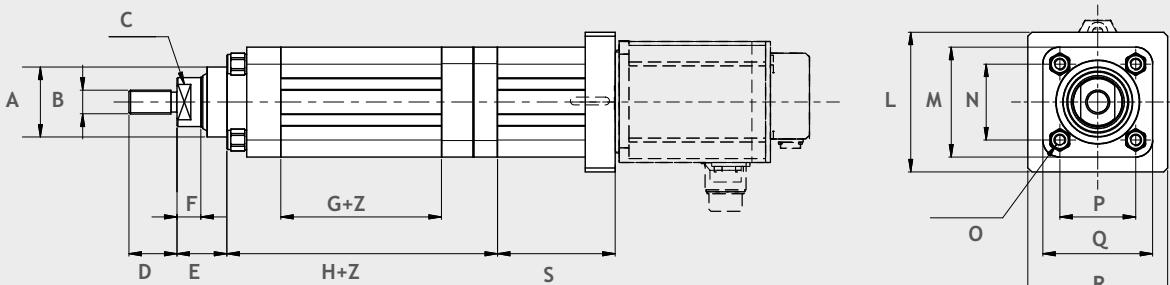
R.T.A. offers an exclusive professional assembly service of stepping and servomotors with the wide range of electric cylinders.

- Select the characteristics you need for the electric cylinders and any accessories and motors from our wide range of possibilities.
- Our highly qualified staff will make the assembly and testing of the products.
- The assembled motor/accessories/cylinder combo is ready to use.
- More assembled products - only one code to manage. No more storage charges, assembly and quality control.



MECHANICAL DIMENSIONS (mm) FOR STANDARD BALL SCREW

IN-LINE SOLUTION



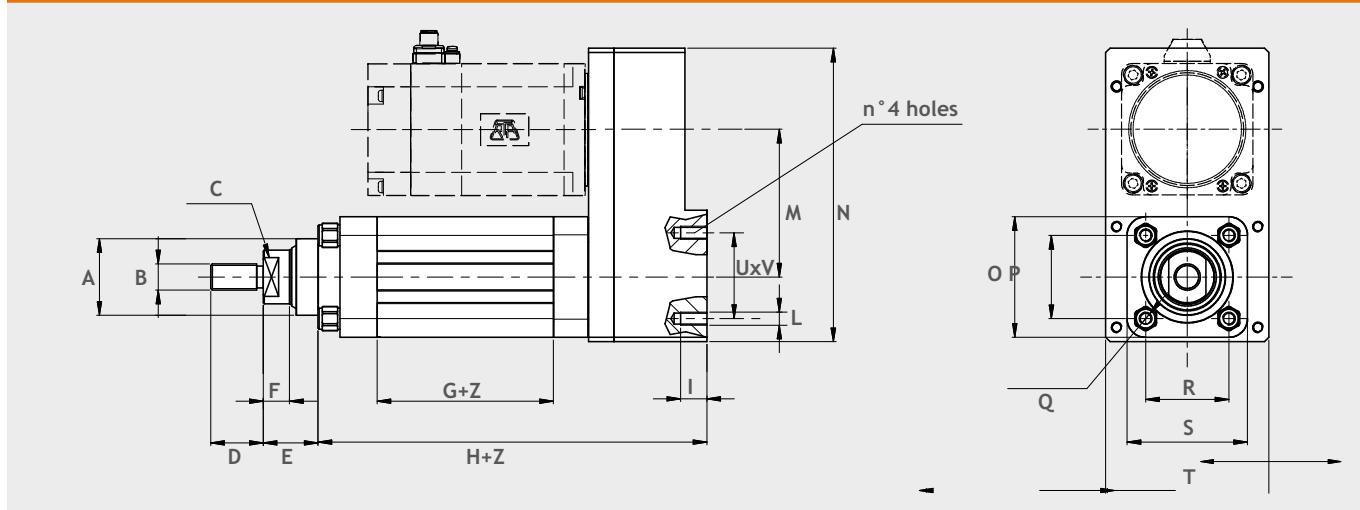
SIZE	32	40	50	63	80	100	125
A	Ø30h7	Ø35h7	Ø40h7	Ø45h7	Ø60h7	Ø90h7	Ø125h7
B	M10x1.25	M12x1.25	M16x1.25	M16x1.5	M20x1.5	M42x2	M48x2
C	CH15	CH17	CH20	CH24	CH42	CH65	CH80
D	22	24	32	32	40	70	96
E	22,5	25	25	28	34	42,3	63
F	10	12	12	12	16	16	21
G+Z	73,5 + Z (for BS* 12x5)	80,5 + Z (for BS* 12,7x12,7)	83,2 + Z (for BS* 16x5)	93,1 + Z (for BS* 20x5)	121,4 + Z (for BS* 25x5)	166,5 + Z (for BS* 38x10)	
	73,5 + Z (for BS* 12x10)	64,5 + Z (for BS* 14x4)	83,2 + Z (for BS* 16x10)	93,1 + Z (for BS* 20x10)	121,4 + Z (for BS* 25x10)	166,5 + Z (for BS* 38x20)	247 + Z (for BS* 50x20)
			85,2 + Z (for BS* 16x16)	95,1 + Z (for BS* 20x20)	121,4 + Z (for BS* 25x25)		
H+Z	120,4 + Z (for BS* 12x5)	135,6 + Z (for BS* 12,7x12,7)	148,3 + Z (for BS* 16x5)	163,1 + Z (for BS* 20x5)	233,2 + Z (for BS* 25x5)	321,1 + Z (for BS* 38x10)	
	120,4 + Z (for BS* 12x10)	119,6 + Z (for BS* 14x4)	148,3 + Z (for BS* 16x10)	163,1 + Z (for BS* 20x10)	233,2 + Z (for BS* 25x10)	321,1 + Z (for BS* 38x20)	422,5 + Z (for BS* 50x20)
			150,3 + Z (for BS* 16x16)	165,1 + Z (for BS* 20x20)	233,2 + Z (for BS* 25x25)		
L	60	70	86	90	130	150	185
M	45,5	55	63,5	77	98	120	150
N	32,5	38	46,5	56,5	72	89	110
O	M6x13	M6x13	M8x15	M8x16	M12x22	M14x28	M16x30
P	32,5	38	46,5	56,5	72	89	110
Q	45,5	55	63,5	77	98	120	150
R	60	70	86	90	130	150	185

Z: Stroke up value - BS*: Ball screw (Diameter Ø x Pitch)

Note: for the mechanical measurements of the oversized screw or acme screw versions, please, contact R.T.A.

SIZE	MOTOR TYPE	S	SIZE	MOTOR TYPE	S		
32	STEPPER	NEMA 23 NEMA 24	52,7 52,7	63	STEPPER	NEMA 34	82,5
32	SERVO	100 W 200W	57,1 62,1	63	SERVO	750 W	92,5
40	STEPPER	NEMA 23 NEMA 24	53,5 53,5	80	SERVO	1000 W	87,5
40	SERVO	200 W 400 W	66,4 66,4	80	SERVO	1500 W	97,5
50	STEPPER	NEMA 34	69,4	80	SERVO	2000 W	102,2
50	SERVO	400 W 750 W	68,4 81,4	100	SERVO	2000 W	123,6
				100	SERVO	3000 W	123,6
				125	SERVO	3500 W	166,6
						4500 W	166,6
						7500 W	180,6

PARALLEL SOLUTION



SIZE	32	40	50	63	80	100	125
A	Ø30h7	Ø35h7	Ø40h7	Ø45h7	Ø60h7	Ø90h7	Ø125h7
B	M10x1.25	M12x1.25	M16x1.25	M16x1.5	M20x1.5	M42x2	M48x2
C	CH15	CH17	CH20	CH24	CH42	CH65	CH80
D	22	24	32	32	40	70	96
E	22.5	25	25	28	34	42.3	63
F	10	12	12	12	16	16	21
G+Z	73.5 + Z (for BS* 12x5)	80.5 + Z (for BS* 12.7x12.7)	83.2 + Z (for BS* 16x5)	93.1 + Z (for BS* 20x5)	121.4 + Z (for BS* 25x5)	166.5 + Z (for BS* 38x10)	
	73.5 + Z (for BS* 12x10)	64.5 + Z (for BS* 14x4)	83.2 + Z (for BS* 16x10)	93.1 + Z (for BS* 20x10)	121.4 + Z (for BS* 25x10)	166.5 + Z (for BS* 38x20)	247 + Z (for BS* 50x20)
			85.2 + Z (for BS* 16x16)	95.1 + Z (for BS* 20x20)	121.4 + Z (for BS* 25x25)		
H+Z	161.25 + Z (for BS* 12x5)	177.6 + Z (for BS* 12.7x12.7)	196.3 + Z (for BS* 16x5)	231.6 + Z (for BS* 20x5)	302.9 + Z (for BS* 25x5)	397.8 + Z (for BS* 38x10)	
	161.25 + Z (for BS* 12x10)	161.5 + Z (for BS* 14x4)	196.3 + Z (for BS* 16x10)	231.6 + Z (for BS* 20x10)	302.9 + Z (for BS* 25x10)	397.8 + Z (for BS* 38x20)	514.2 + Z (for BS* 50x20)
			198.3 + Z (for BS* 16x16)	233.6 + Z (for BS* 20x20)	302.9 + Z (for BS* 25x25)		
I	11	10.5	14	15	16	30	32
L	M6	M6	M8	M8	M10	M14	M16
M	67.5	67.5	82.5	90	120	148	200
N	130	134	164	186	243	300	380
O	45.5	55	63.5	77	98	120	150
P	32.5	38	46.5	56.5	72	89	110
Q	M6x13	M6x13	M8x15	M8x15	M12x22	M14x18	M16x30
R	32.5	38	46.5	56.5	72	89	110
S	45.5	55	63.5	77	98	120	150
T	65	74.5	90	99	136	159	198
□ UxV	32.5x32.5	38x38	46.5x46.5	56.5x56.5	72x72	64x133	133x168

Z: Stroke up value - BS*: Ball screw (Diameter Ø x Pitch)

Note: for the mechanical measurements of the oversized screw or acme screw versions, please, contact R.T.A.



R.T.A. ELECTRIC CYLINDERS ENCODING MODEL

ROD END

M = Male thread (standard)
 F = Female thread
 C = Clevis cap
 S = Spherical cap
 L = Self-centreing coupler
 X = Special

FLANGE TYPE / MOTOR MOUNTING FLANGE

1 = Parallel (ratio 1:1) (standard)
 L = In line
 2 = Parallel (ratio 1:2)

BACKLASH (ARCMIN)

0 = no gearbox coupled
 3 = 3' 5 = 5' 6 = 6' 8 = 12' 9 = 15'

END STROKE SENSOR PCS

N = None A = Single
 D = Double T = Triple
 Q = Quadruple

LUBRIFICATION POINT

N = None
 (compulsory for EC*3-032)
 0 = Centred ore 12 o'clock
 3 = Centred 3 o'clock
 6 = Centred 6 o'clock
 9 = Centred 9 o'clock

NUMBERS OR LETTERS

Coding for
 possible special
 P/N

For servomotors:
 1 = Incremental
 encoder

2 = Absolute
 encoder

For stepping
 motors with
 encoder:

1 = 400 cpr with
 index version

2 = 4000 cpr with
 index version

ANTI-ROTATION + BRAKE

B = Anti-rotation and brake version
 A = Brake version
 0 = No anti-rotation and no brake version
 1 = Anti-rotation version

MOTOR SERIES

HH = H motor series
 SM = SM motor series
 RM = RM motor series
 VM = VM motor series
 R2 = R2 motor series
 EM = EM motor series

SCREW TYPE

S = Ball screw
 T = Lead screw
 R = Roller screw
 M = Oversized ball screw

SIZE

032, 040, 050,
 063, 080,
 100, 125

RC 063-1350-S 10-HH782X-BTT0L-053-3N030-000

R.T.A. electric
 cylinders series name

STROKE (mm)

Max 800 mm for size 032
 Max 1000 mm for size 040
 Max 1200 mm for size 050
 Max 1400 mm for size 063
 Max 1800 mm for size 080
 Max 2400 mm for size 100
 Max 3000 mm for size 125

0 = standard
 screw
 M = Oversized
 screw

ROD OFFSET

0 = No offset
 (standard)
 1 = Offset 10 mm
 Custom offset on
 request

SCREW LEAD (mm)

04 = 4 mm for lead screw
 05 = 5 mm - 04 = 4 mm
 10 = 10 mm - 12 = 12 mm
 13 = 12.7 mm - 16 = 16 mm
 20 = 20 mm
 25 = 25 mm

MOTOR TYPE

712X = For H7123 and H7126 motor series
 782X = For H7823 and H7822 motor series
 2861 = For SM2861 motor series
 286X = For SM2862 and SM2863 motor series
 0X00 = For R2 200W and R2 400W motor series
 0400 = For R2 400W motor series
 0750 = For R2 750W motor series
 1000 = For R2 1000W motor series

END STROKE SENSOR TYPE

0 = No sensor
 1 = PNP normally open
 2 = PNP normally closed
 3 = NPN normally open
 4 = NPN normally closed

MOTOR POSITION

0 = 12 o'clock
 3 = 3 o'clock
 6 = 6 o'clock
 9 = 9 o'clock

GEAR RATIO

00 0 no gearbox coupled
 03 = 3
 05 = 5
 09 = 9
 10 = 10
 25 = 25

CYLINDER PROTECTION DEGREE

N = IP44
 S = IP65
 0 = Not specified

MOUNTING TYPE

T = Front threaded holes (standard)
 A = Front flange (MF1)
 C = Rear clevis (MP2)
 D = Rear eye (MP4)
 G = Feet (MS1)
 L = Intermediate trunnions (Mt4)

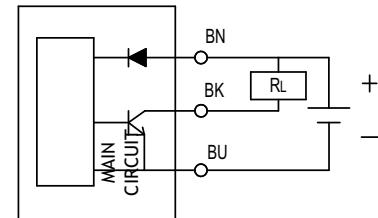
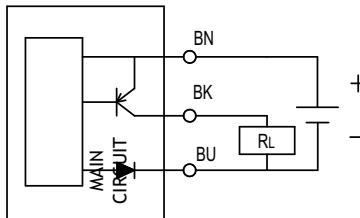
LIMIT SENSORS

All ECL3 and ECS3 electric cylinders can be equipped with PNP or NPN type limit sensors, with either normally open or normally closed function. The sensors can be single or multiple, up to 4 sensors. The limit sensors are housed in the longitudinal channel of the cylinder. The sensor must then be manually positioned at the desired location. All models are equipped with signalling LEDs.

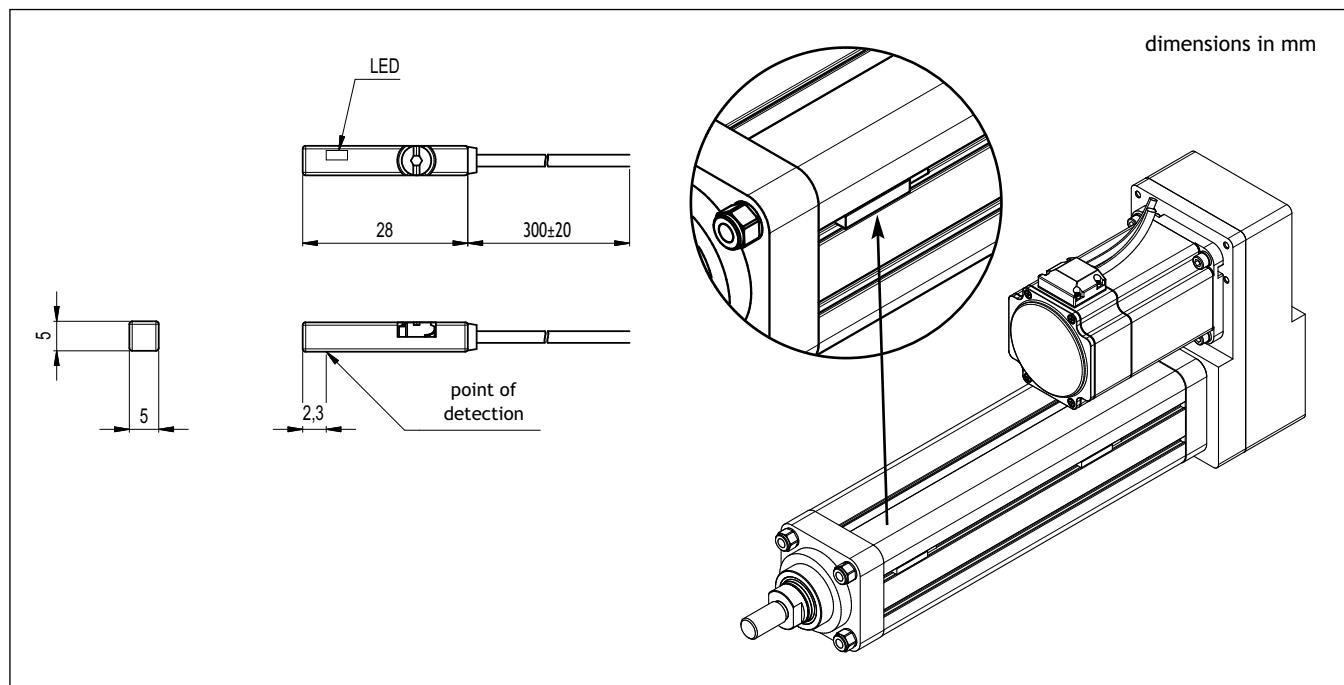
TYPE		1	2	3	4
Logic		PNP		NPN	
Function		NO	NC	NO	NC
Supply Voltage	VDC	5 ÷ 30	10 ÷ 28	5 ÷ 30	10 ÷ 28
Max. switching current	mA		200		
Max. contact capability	W	6	5.5	6	5.5
Max. current consumption at 24VDC	mA	6	10	6	10
Max. power loss	V	0.5 (a 200 mA)	1.5	0.5 (a 200 mA)	1.5
Max. leakage current	mA	0.01	0.05	0.01	0.05
Switching frequency	kHz	max 1000			
Temperature	°C	-10 / +70			
Cable		Ø2.8 PUR - 26 AWG (0.15 mm ²) - 3 cables - lenght 3 meters			

Electrical diagrams
sensor type 1 and 2

sensor type 3 and 4



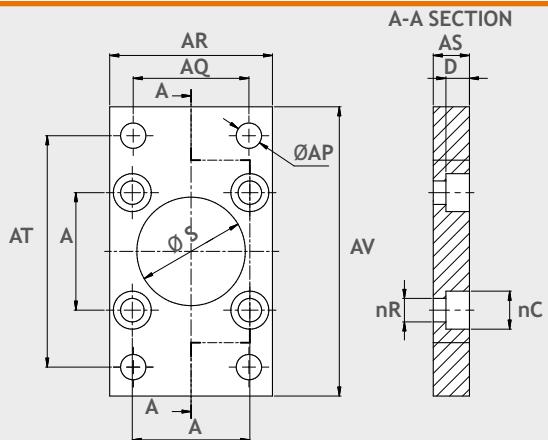
Overall dimensions



ACCESSORIES

The range of accessories is not limited to just the examples shown here. Contact R.T.A. for further information on all the available accessories and for the special versions.

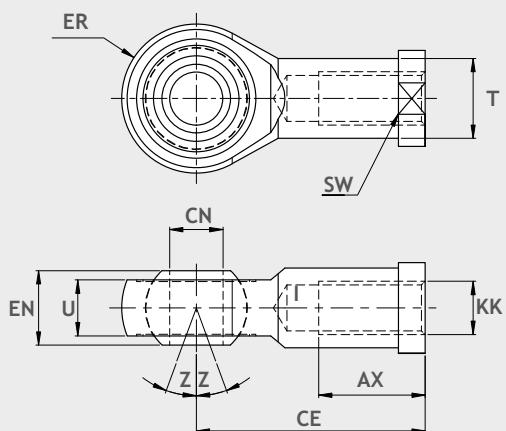
■ FRONT FLANGE



TYPE	SIZE	S H11	A ± 0.2	AP H13	R ± 0.2	AS JS14	AR JS14	AQ	AT	AV	C	D
FFP-032	032	30	32.5	7	6.5	10	45	32	64	80	10.5	6.5
FFP-040	040	35	38	9	6.5	10	52	36	72	90	10.5	6.5
FFP-050	050	40	46.5	9	8.5	12	65	45	90	110	13.5	8.5
FFP-063	063	45	56.5	9	8.5	12	75	50	100	120	13.5	8.5
FFP-080	080	60	72	12	12.5	18	95	63	126	150	19	13
FFP-100	100	90	89	14.5	14.5	20	115	75	150	170	22	15
FFP-125	125	125	110	16.5	16.5	25	140	90	180	205	25	18

NOTE: Withstands the same loads as for cylinders - dimensions in mm

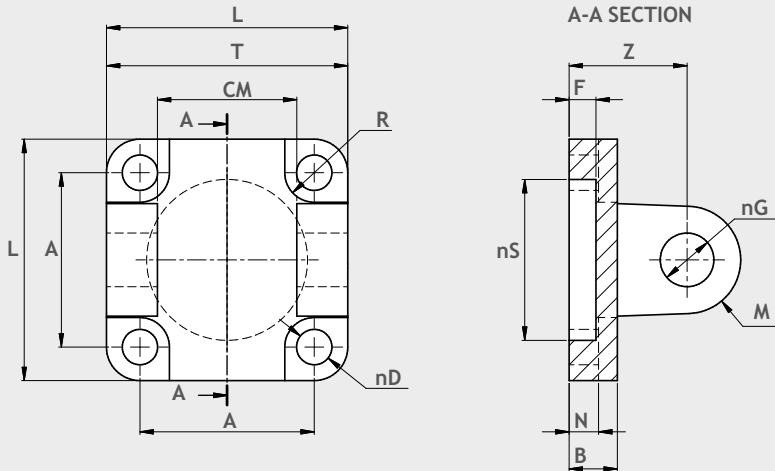
■ SPHERICAL EYE (ISO 8139)



TYPE	SIZE	KK	CN	U	EN	ER	AX	CE	T	Z	SW	MAX LOAD (N)
SPP-M10	032	M10x1.25	10	10.5	14	28	20	43	15	6.5	17	3.500
SPP-M12	040	M12x1.25	12	12	16	32	22	50	17.5	6.5	19	4.750
SPP-M16	050	M16x1.5	16	15	21	42	28	64	22	7.5	22	12.000
SPP-M16	063	M16x1.5	16	15	21	42	28	64	22	7.5	22	12.000
SPP-M20	080	M20x1.5	20	18	25	50	33	77	27.5	7	30	13.000
SPP-M42	100	M42x2	40	33	49	91	60	142	53	8	55	65.000
SPP-M48	125	M48x2	50	45	60	117	65	162	65	7	65	77.000

NOTE: Please contact us for heavier loads.- dimensions in mm

REAR CLEVIS



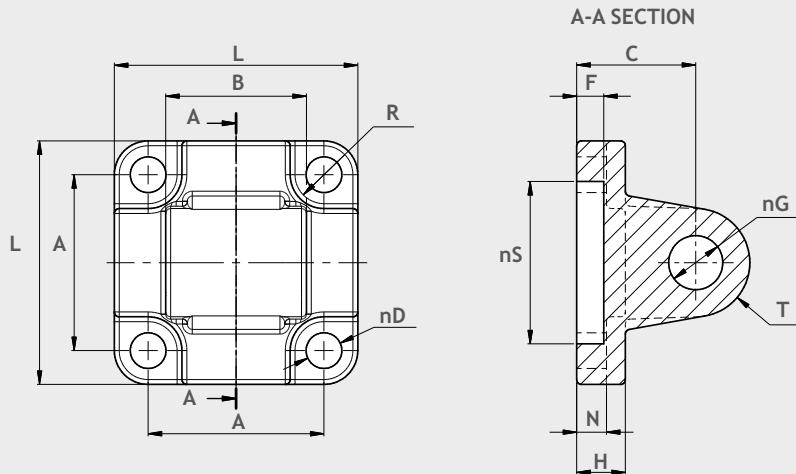
TYPE	SIZE H9	G ± 0.2	A	L H13	D H13	R ± 0.5	N	B H11	S	F ± 0.2	Z	M H14	CM H14	T (N)	MAX LOAD
RPC-032	032	10	32.5	45	6.6	11	5.5	9	30	5	22	10	26	45	1.760
RPC-040	040	12	38	52	6.6	11	5.5	9	35	5	25	12	28	52	3.230
RPC-050	050	12	46.5	65	9	15	6.5	11	40	5	27	12	32	60	5.150
RPC-063	063	16	56.5	75	9	15	6.5	11	45	5	32	16	40	70	7.010
RPC-080	080	16	72	95	11	18	10	14	45	5	36	16	50	90	12.060
RPC-100	100	25	110	140	14	20	10	20	60	7	50	25	70	130	20.220
RPC-125	125	30	140	180	18	26	10	20	65	7	55	25	90	170	32.730

NOTE: The pin is to be ordered separately

The clevis withstands loads up to the value indicated in the table. For heavier loads please contact us.

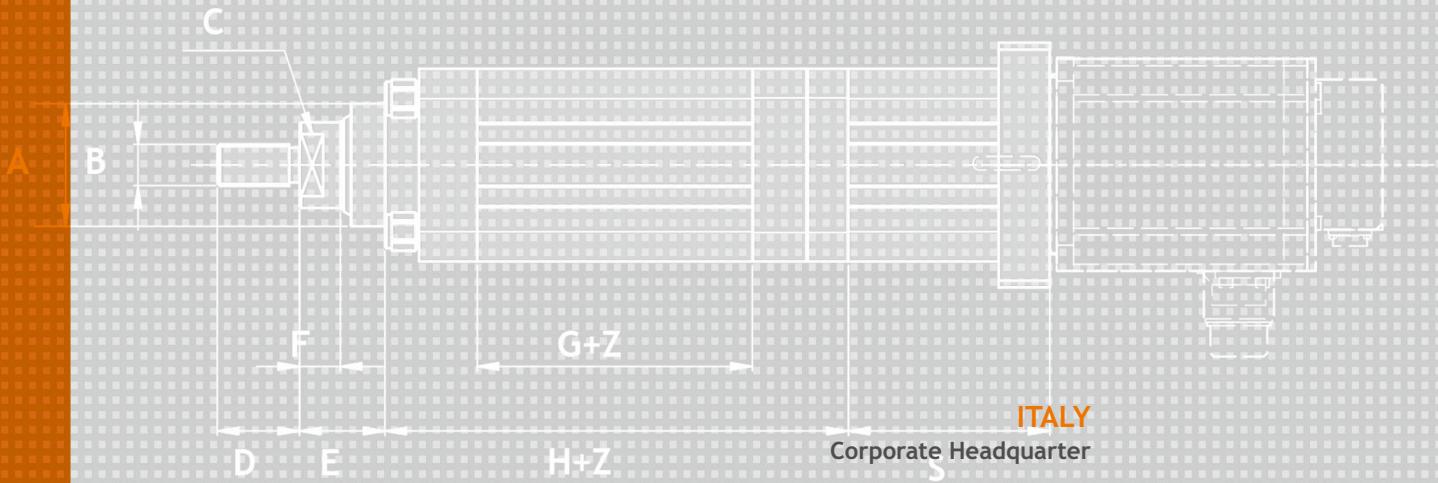
Dimensions in mm

REAR EYE



TYPE	SIZE H9	G ± 0.2	A	L H13	D H13	R ± 0.5	N	H H11	S	F ± 0.2	C MAX -0.2 - 0.6	T -0.2 - 0.6	B (N)	MAX LOAD
REP-032	032	10	32.5	45	6.6	11	5.5	9	30	5	22	10	26	2.410
REP-040	040	12	38	52	6.6	11	5.5	9	35	5	25	12	28	3.770
REP-050	050	12	46.5	65	9	15	6.5	11	40	5	27	12	32	5.890
REP-063	063	16	56.5	75	9	15	6.5	11	45	5	32	16	40	9.550
REP-080	080	16	72	95	11	18	10	14	45	5	36	16	50	15.080
REP-100	100	25	110	140	14	20	10	20	60	7	50	25	70	23.560
REP-125	125	30	140	180	18	26	10	26	65	7	55	25	90	36.820

NOTE: Please contact us for heavier loads - dimensions in mm



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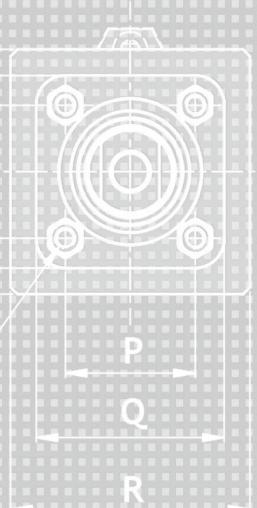
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