

ECFA Rod Style

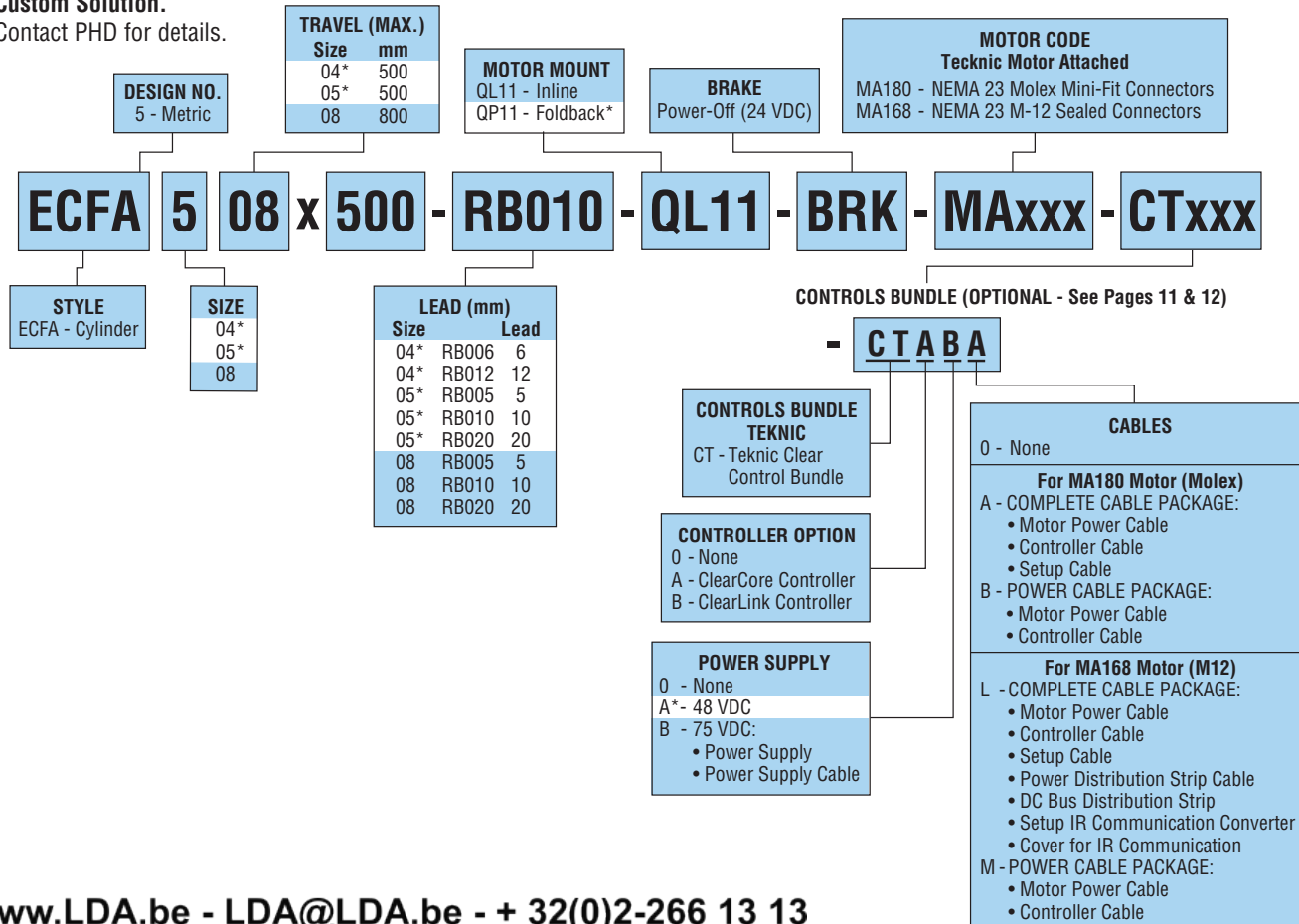
Major Benefits

- The Series ECFA offers a complete electric cylinder solution, including a single axis actuator, motor, power supply, and necessary cabling – all assembled and backed by PHD's industry leading service and support.
- An optional Power-Off Brake safeguards against power loss and serves as an emergency stop.
- The integrated linear guide minimizes mechanical vibration and enhances rod support for superior side load capability beyond that of typical electric cylinders.
- Precise actuator and payload location are provided by dowel holes on all mounting surfaces.
- Installation is straightforward with easily accessible top and bottom mounting geometry.
- Superior performance and value compared to similar robot positioners.



ORDERING DATA

* Currently available as a
Custom Solution.
Contact PHD for details.



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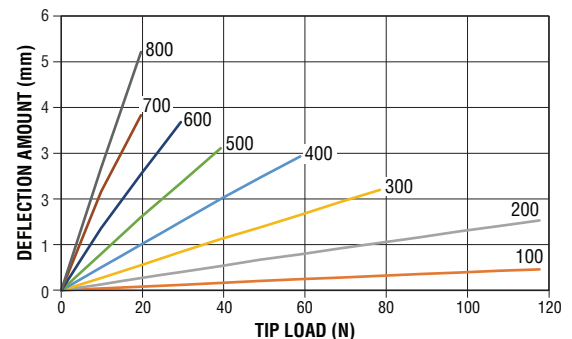
SPECIFICATIONS		SERIES ECFA		
REPEATABILITY ¹		+/-0.01 mm		
DRIVE MECHANISM		Ball screw Ø 16 (C7 class)		
TRAVEL		50 mm to 800 mm (50 mm pitch)		
MAXIMUM SPEED ²		1200 mm/sec	600 mm/sec	300 mm/sec
BALL SCREW LEAD		20 mm	10 mm	5 mm
MAXIMUM PAYLOAD	HORIZONTAL	30 kg	60 kg	80 kg
	VERTICAL	8 kg	20 kg	30 kg
MAXIMUM PRESSING FORCE		201 N	402 N	804 N
ROTATING BACKLASH		+/-0°		
MAXIMUM DIMENSIONS OF CROSS SECTION OF MAIN UNIT		W 82 mm x H 73.5 mm		
OPERATING TEMPERATURE & HUMIDITY		0 to 40°C, 35 to 80 %RH (non-condensing)		
ENCAPSULATION CLASS		IP50		

NOTES:

- Positioning repeatability in one direction.
- When a moving distance is short and depending on an operation condition, it may not reach the maximum speed. If the effective stroke exceeds 400 mm, the ball screw may resonate. (Critical speed)
At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.

ROD DEFLECTION AMOUNT (REFERENCE VALUE)

For the deflection amount per stroke, see the graph below.



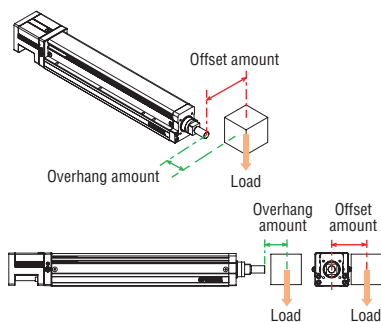
ALLOWABLE PAYLOAD

For the allowable payload per offset amount, see the graph below.

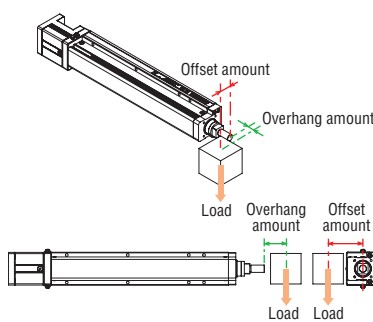
NOTES:

- When transferring an object with a weight exceeding the following, use an external support guide. Install the support guide flexibly so that no unnecessary load is applied to the rod.
- The values are when the service life of the guide is 5000 km.

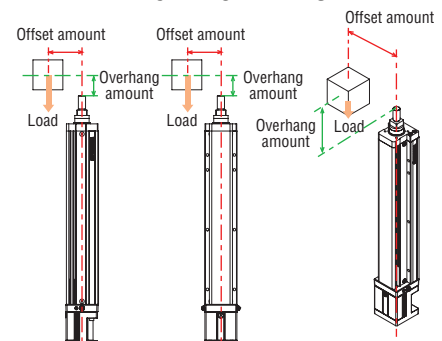
HORIZONTAL INSTALLATION



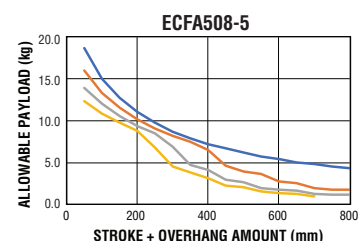
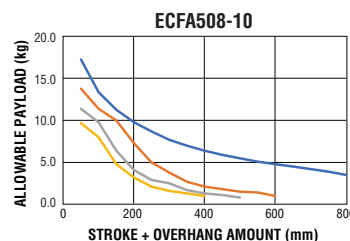
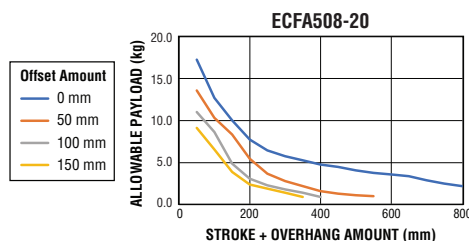
WALL INSTALLATION



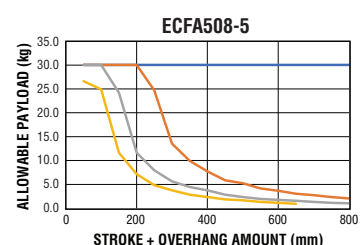
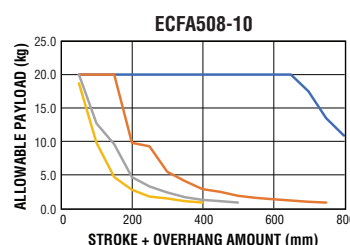
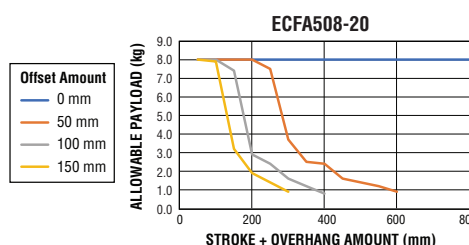
VERTICAL INSTALLATION



HORIZONTAL/WALL HANGING



VERTICAL



SIZING: Series ECFA Electric Cylinder

INSTRUCTION FOR SIZING SERIES ECFA:

Step 1: Check the maximum permissible speed for total actuator travel to avoid screw whip.
Step 2: Assess payload versus time for each individual move to confirm bearing life.

NOTES:

- 1) Customer responsibility not to exceed catalog limitations.
- 2) Bearing life based on 10,000 km.

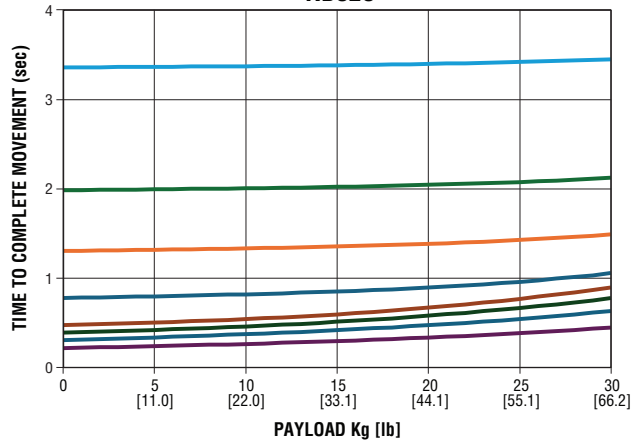
MAXIMUM ALLOWABLE SPEED

TOTAL ACTUATOR TRAVEL	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
MAXIMUM SPEED (mm/sec)	Lead 20								900	720	600	480	420	360	300	240
	Lead 10								450	360	300	240	210	180	150	120
	Lead 5								225	180	150	120	105	90	75	60

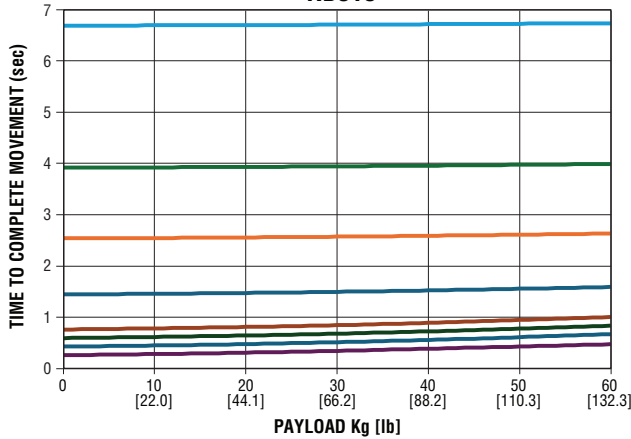
ECFA508 - PAYLOAD / MOVE

HORIZONTAL ORIENTATION

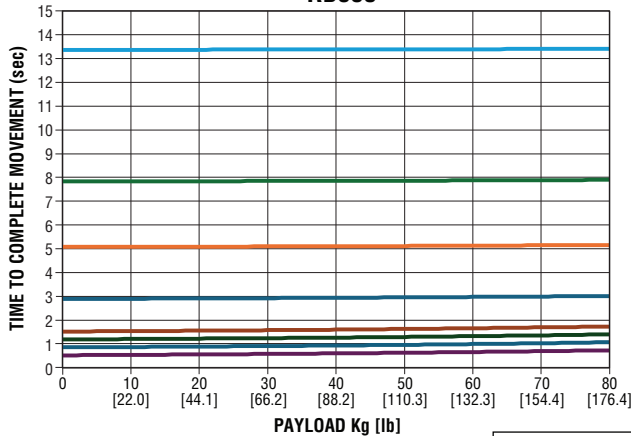
-RB020



-RB010

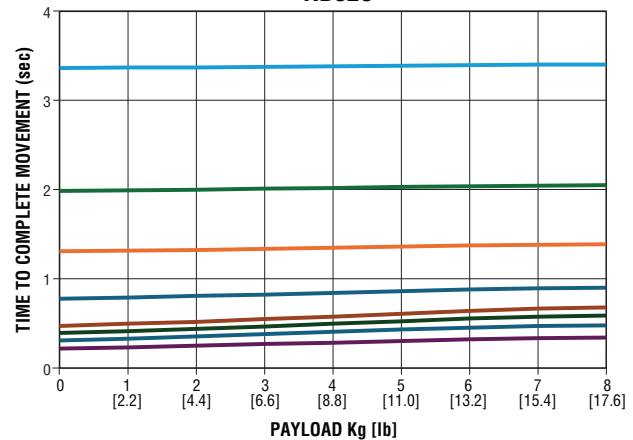


-RB005

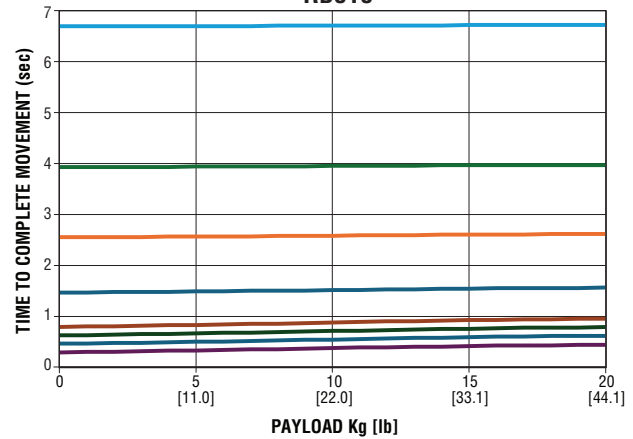


VERTICAL ORIENTATION

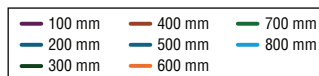
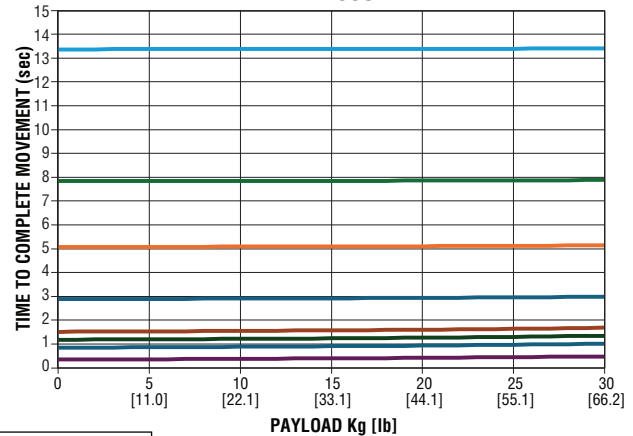
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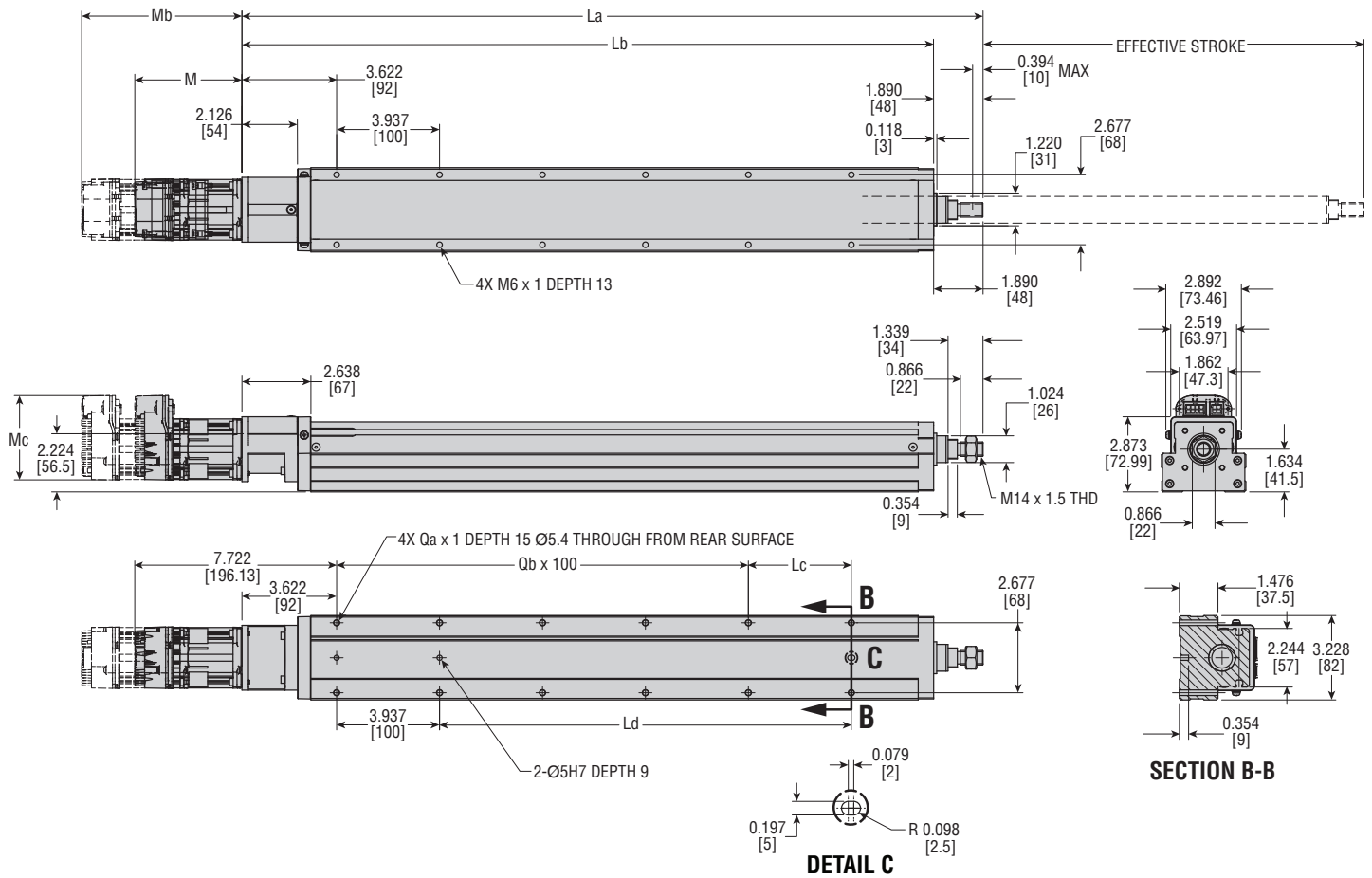


-RB005



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DIMENSIONS: Series ECFA Electric Cylinder



DIMENSION	EFFECTIVE STROKE (mm)															
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L_a	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120
L_b	322	372	422	472	522	572	622	672	722	772	822	872	922	972	1022	1072
L_c	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
L_d	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
Q_a	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
Q_b	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
Weight (kg)	3.9	4.3	4.7	5	5.3	5.7	6	6.3	6.6	7	7.4	7.7	8.1	8.4	8.6	8.9

MOTOR DIMENSION	MA180		MA168	
	in	mm	in	mm
M	4.098	104.09	4.339	110.21
M_b	6.130	155.7	6.374	161.91
M_c	3.223	81.87	3.306	83.98

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All dimensions are reference only unless specifically tolerated.