



Reliance[®]

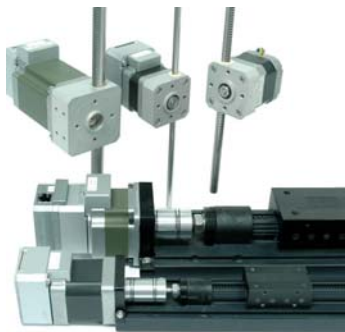
Precision Mechatronics



**Standard and Customised
Components and Assemblies**

A complete source for precise motion control

Motorised Actuators



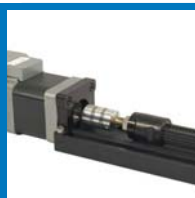
Precision positioning actuation systems

A selected range of intelligent motorised plug and play linear positioning actuator systems. Sizes range from NEMA sizes 11 - 23.



Rack Actuators

Resolutions of less than 1 micron
Available in NEMA sizes 17 and 23
Solid and tubular rack types



Leadscrew Actuators

Motorised linear rail slide system
Available with NEMA sizes 17 and 23



Bespoke Solutions

Contact our sales team to discuss your motion control and positioning requirements

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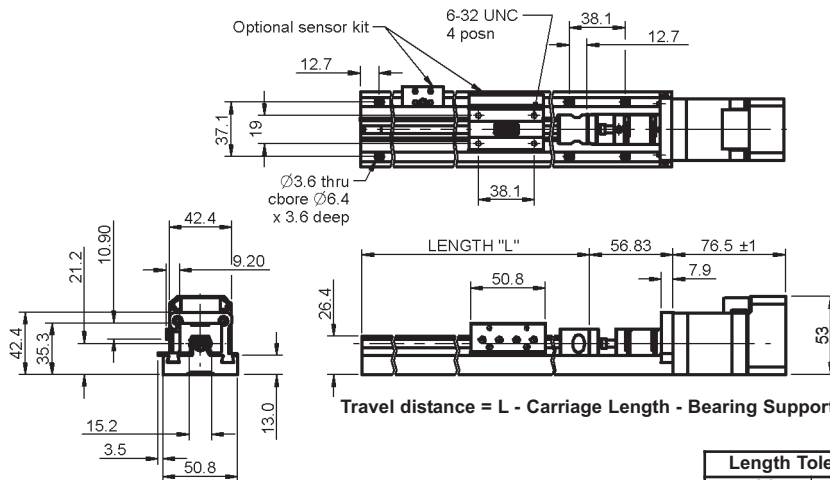
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All dimensions in mm
unless otherwise stated

Associated Products
Hardware: page 13-1



Length Tolerances	
< L4	± 0.1
4 < L ≤ 16	± 0.15
16 < L ≤ 63	± 0.2
63 < L ≤ 250	± 0.3

Part number selection table

Example Part No. RCMS17L-M04-C-1-18											
Basic Part Number	Screw Lead mm (Inch)	Motor Interface	No. Carriages #	Linear Resolution (Default) mm	Max Drag Torque Nm	Standard Guide Lengths 'L'					
						Inch					
RCMS17L-M02	2.0	C (Computer) P (Pulse)	1	0.002	0.03	12	18				
RCMS17L-M04	4.0			0.004	0.04	12	18				
RCMS17L-M012	12.0			0.012	0.04	12	24				
RCMS17L-M25	25.0		2	3	0.025	0.05	18	24			
RCMS17L-0100	(0.100)				0.00254	0.03	10	12	15	18	24
RCMS17L-0200	(0.200)				0.00508	0.04	10	12	15	18	24
RCMS17L-0500	(0.500)				0.0127	0.04	12	15	18	24	
RCMS17L-1000	(1.000)				0.0254	0.05	12	18	24	36	

#Carriage information:

- 1 = 1 driven carriage
- 2 = 1 driven and 1 passive carriage
- 3 = 1 driven and 2 passive carriages

Slide manufactured by HaydonKerk Motion Solutions

- The RCMS17 assembly combines the high speeds, linear accuracy and reliability of a screw driven linear slide with the intelligence of the Reliance Cool Muscle motor
- The size 17 Reliance Cool Muscle motor encompasses an integrated vector drive, amplifier, H-infinity control, 50,000 count magnetic encoder and a 0-3000 rpm high torque motor into one package
- High performance proprietary polymers and TFE coating extends the life of the slides moving parts
- Precision aluminium guide and carriage, driven by a precision rolled stainless steel leadscrew



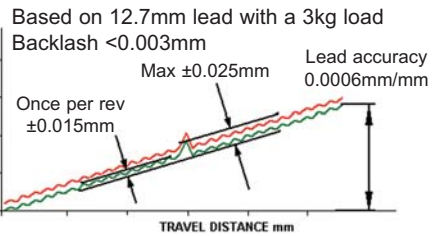
Technical information

Basic Part Number	Life @ ¼ Design Load mm	Torque to Move Carriage Design Load Nm/kg	Carriage Design Load kg	Max Linear Speed mm/sec	Axial Load kg	Screw Inertia Kgm ² /m	Carriage Roll Angle Deg.
RCMS17L-M02	254x10 ⁶	0.016	16	127	5	4.2x10 ⁻⁶	1
RCMS17L-M04		0.023		254			
RCMS17L-M12		0.039		635			
RCMS17L-M25		0.070		1270			
RCMS17L-0100		0.016		127			
RCMS17L-0200		0.023		254			
RCMS17L-0500		0.039		635			
RCMS17L-1000		0.070		1270			

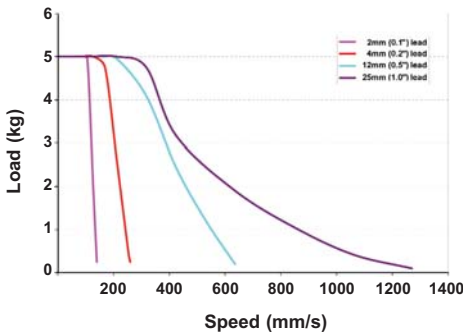
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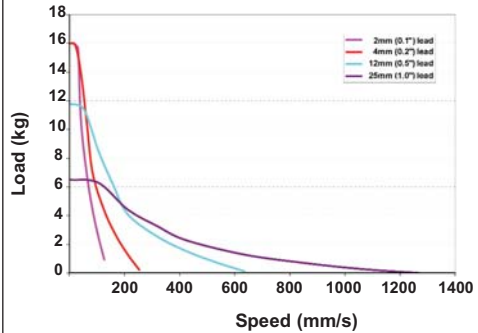
Typical RCMS Accuracy Graph



Typical Allowable Axial Load



Typical Allowable Design Load



For the Reliance Cool Muscle motor technical information, see [page T2-1](#)

RCMS non-standard options, please enquire:

- Special carriage, rail, screw or mounting configuration
- Higher accuracy lead screw, Left Hand (LH) or Left/Right (L/R) threads
- Metric leads and guide lengths available
- Alternative guide length
- Sensor kits

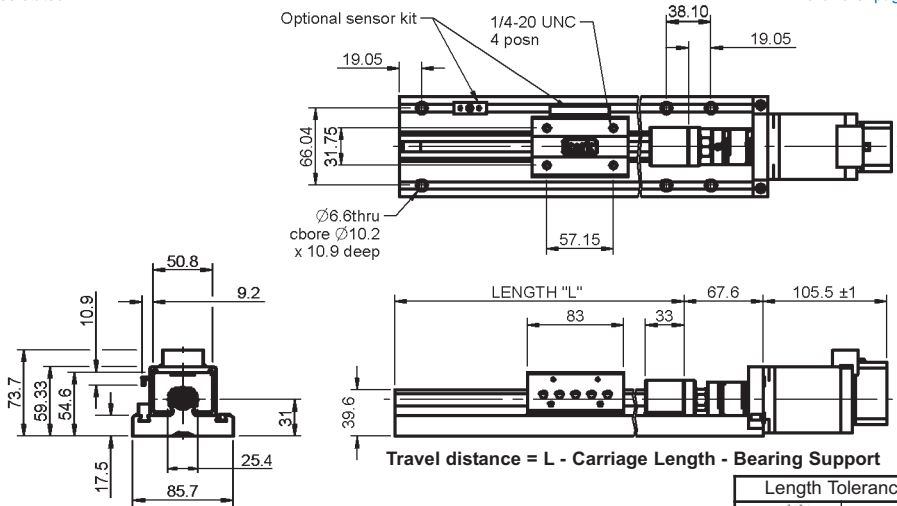


COOL MUSCLE



All dimensions in mm unless otherwise stated

Associated Products
Hardware: page 13-1



Length Tolerances	
< L4	± 0.1
4 < L ≤ 16	± 0.15
16 < L ≤ 63	± 0.2
63 < L ≤ 250	± 0.3

Part number selection table

Example Part No. RCMS23L-M08-C-1-18						
Basic Part Number	Screw Lead mm (Inch)	Motor Interface	No. Carriages	Linear Resolution (Default) mm	Max Drag Torque Nm	Standard Guide Lengths 'L' (Inch)
RCMS23L-M08	8.0	C (Computer) P (Pulse)	1	0.0080	0.04	18 24
RCMS23L-0100	(0.100)			0.00254	0.04	12 18 24 36
RCMS23L-0200	(0.200)		2	2	0.00508	0.04
RCMS23L-0500	(0.500)	0.0127			0.05	12 18 24 36
RCMS23L-1000	(1.000)	3		3	0.0254	0.06

#Carriage information:

- 1 = 1 driven carriage
- 2 = 1 driven and 1 passive carriage
- 3 = 1 driven and 2 passive carriages

Slide manufactured by HaydonKerk Motion Solutions

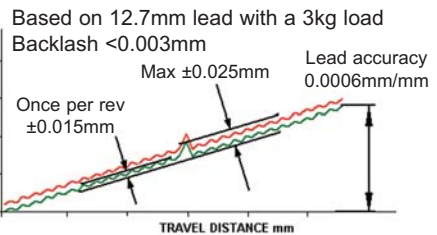
- The assembly combines the high speeds, linear accuracy and reliability of a screw driven linear slide with the intelligence of the Reliance Cool Muscle motor
- The size 17 Reliance Cool Muscle motor encompasses an integrated vector drive, amplifier, H-infinity control, 50,000 count magnetic encoder and a 0-3000 rpm high torque motor into one package
- High performance proprietary polymers and TFE coating extends the life of the slides moving parts
- Precision aluminium guide and carriage, driven by a precision rolled stainless steel leadscrew
- For more information regarding the size 23 Cool Muscle Motor, see [page 2-6](#)

Technical information

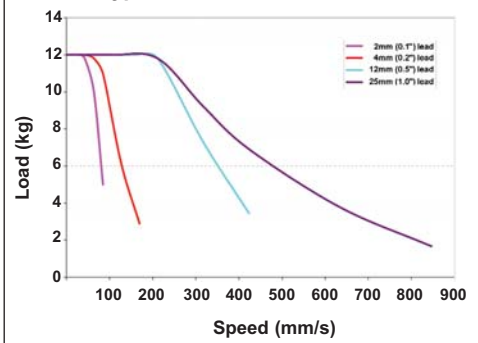
Basic Part Number	Life @ ¼ Design Load mm	Torque to Move Carriage Design Load Nm/kg	Carriage Design Load kg	Max Linear Speed mm/sec	Axial Load kg	Screw Inertia Kgm ² /m	Carriage Roll Angle Deg.
RCMS23L-M08	254x10 ⁶	0.038	46	267	14	3.9x10 ⁻⁵	1
RCMS23L-0100		0.020		85			
RCMS23L-0200		0.031		169			
RCMS23L-0500		0.047		423			
RCMS23L-1000		0.101		847			



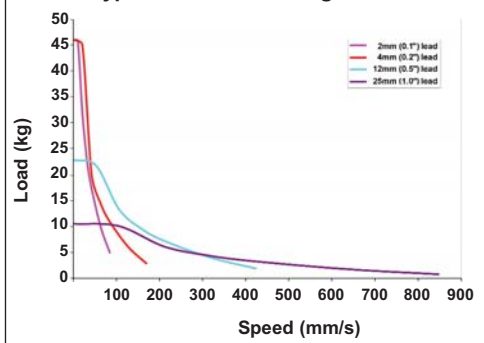
Typical RCMS Accuracy Graph



Typical Allowable Axial Load



Typical Allowable Design Load



For the Reliance Cool Muscle motor technical information, see [page T2-1](#)

RCMS non-standard options, please enquire:

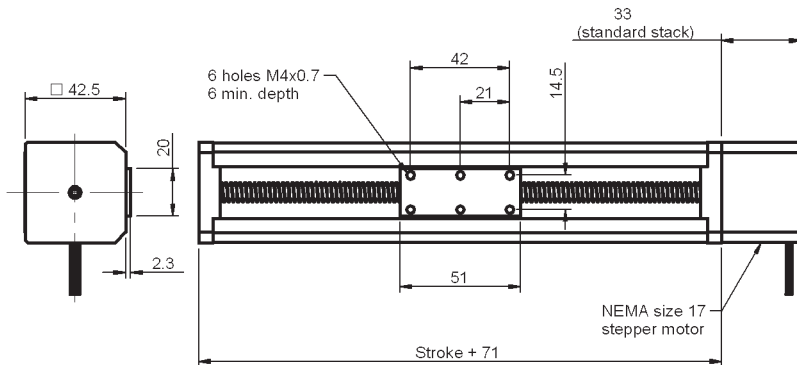
- Special carriage, rail, screw or mounting configuration
- Higher accuracy lead screw, Left Hand (LH) or Left/Right (L/R) threads
- Metric leads and guide lengths available
- Alternative guide length
- Sensor kits





All dimensions in mm unless otherwise stated

Associated Products
Hardware: page 13-1



Part number selection table

Example Part No. **RLRW04 - B - R - M - 43 - 0025 - 12**

Basic Part Number	Screw Coating ⁽¹⁾	Performance Specifications			Thread Code	Lead	Lead	Stroke ⁽²⁾
		Max Stroke Length (mm)	Max Speed (m/sec)	Straight Line Accuracy (mm/m)		(mm)	(inch)	
RLRW04	B (Black Ice™)	1,000	0.5	±1.0	0025	0.635	0.025	07 = 7in 08 = 8in 12 = 12in
					0031	0.794	0.03125	
					0039	1.0	0.0394	
					0050	1.27	0.05	
					0063	1.588	0.0625	
					0079	2.0	0.0787	
					0100	2.54	0.1	
					0125	3.175	0.125	
					0197	5.0	0.1969	
					0250	6.35	0.25	
					0394	10.0	0.3937	
					0500	12.70	0.5	
0750	19.05	0.75						
1000	25.40	1.0						

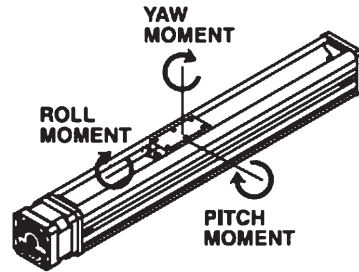
⁽¹⁾ Alternative screw coatings available, please contact our sales team for more information

⁽²⁾ Stroke length in inches and will be rounded up. Maximum length 40in



Load ratings

	RLRW04
Top load (Z direction)	225N
Overhang	225N
Moment roll	8.5Nm
Moment yaw	8.5Nm
Moment pitch	8.5Nm
Twist	±0.75°/m



Product features

- “T” slots integrated into exterior rail bottom and sides that accommodate full length support and various mounting options
- Loads easily attach to the compact, moving carriage with four or six M4 x 0.7 size screws
- Load bearing carriage moves efficiently and smoothly within the internal rail geometry of this specially designed aluminum extrusion
- Rail provides end-to-end axial stability and precise motion system accuracy
- Automatic adjustments of slide bearing play with a patent pending “anti-backlash” linear bearing
- Rated life equals that of the existing leadscrews of similar size
- Leadscrew end configurations adapt to various rotary motion sources
- Black Ice™ TFE coatings on a 303 stainless steel leadscrew
- For extreme control, actuator can be used with LCM or LWD high-precision anti-backlash nuts, as well as a freewheeling general purpose nut



RLRW Linear Rail Systems - Powered Slide Technology

For optimum performance, the system can be fitted with the Size 17 Hybrid Linear Actuators available in a wide variety of resolutions - from 0.001524 mm per step to 0.048768 mm per step, and delivers thrust of up to 222N. For greater performance Size 17 Hybrid Double Stack Linear actuators provide 0.0158 mm per step to 0.127mm per step and deliver thrust of up to 337N.



In addition to these conditions of sale, our standard Conditions of Sale also apply. A copy of these is available on request and from our website www.rpmechatronics.co.uk/en/help

Minimum order charge - Orders are subject to a minimum order charge of £25.00 unless they have been placed on our website at www.rpmechatronics.co.uk

Carriage and packing - Additional charges are made for carriage and packing.

Payment - Payment terms are 30 days. New customers are requested to complete an application form for a credit account. Customers who do not have a credit account with Reliance are requested to supply cheque with order. In addition, orders may be paid for by Visa and Mastercard.

Telephone orders - An order number must be quoted by customers and a written confirmatory order, clearly marked "CONFIRMATION", sent within 7 days. We reserve the right to supply parts against a telephone order. All telephone orders are accepted subject to these conditions of sale and those detailed on the acknowledgement of order. An acknowledgement will normally be sent by Reliance on receipt of order and goods will be supplied in accordance with the order acknowledgement.

Certificates of Conformance - Reliance's quality management system is certified to AS9100 and ISO 9001. A Certificate of Conformance can be supplied at an additional charge of £10.00 per delivery. Alternatively, a Certificate with full material traceability can be supplied at a charge of £20.00 per delivery.

Confirmation - All orders, other than telephone orders with a value of less than £500 and orders placed through our website, are subject to acceptance in writing by Reliance Precision Mechatronics.

Order amendments - Order amendments are subject to our approval and a charge will be made for reasonable compensation for any costs incurred.

Returns - Unused items may, solely at our discretion, be accepted for credit within 90 days of delivery. Any parts so accepted will be subject to a 20% service charge for re-inspection and handling. No credit can be allowed after the above period, or for any used or modified part, or for parts manufactured to a customer's specification.

Additional charges - Reliance reserves the right to charge for all additional expenses and taxes incurred over and above published prices (including without limitation duty, VAT, exchange rate fluctuations etc.)

Alterations - As a result of continuous product development, Reliance reserves the right to alter prices and other details without prior notice and to change dimensions where this does not affect the function of the item.

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www.rpmechatronics.co.uk and www.reliance.co.uk

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