



Reliance[®]

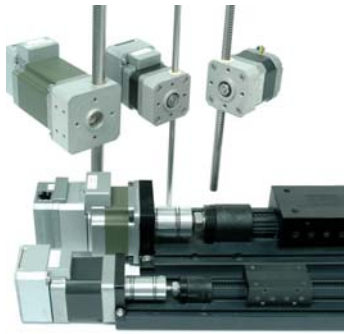
Precision Mechatronics



**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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Reliance Rackuator™ a Precision Rack Actuator

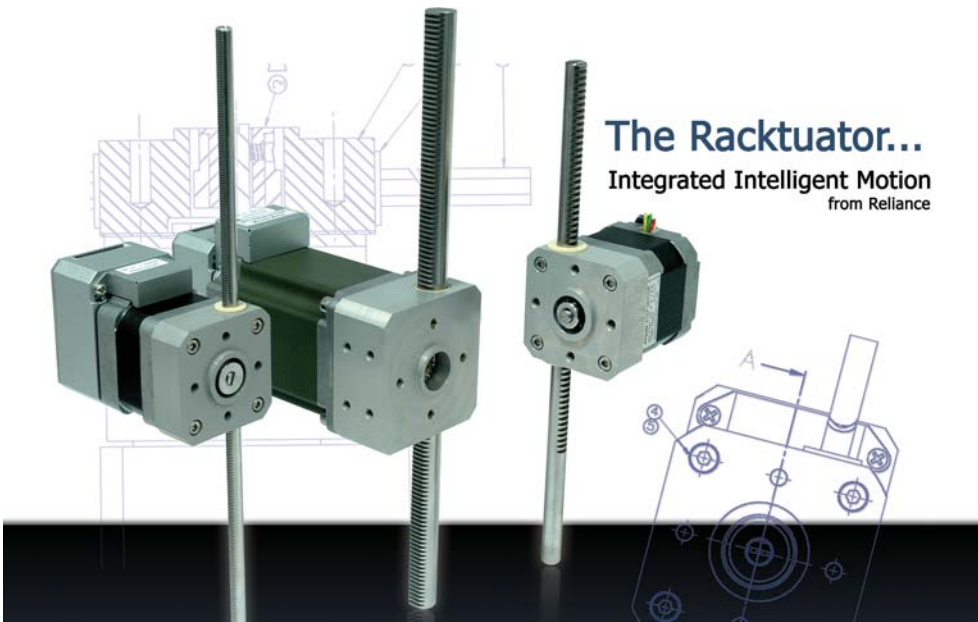
Precision efficiency

With resolutions of greater than 1 micron and standby power consumption of less than 1.7 watts the Reliance Rackuator™ is an amazing actuation system.

Multiple variations available. Developing a peak force up to 150N and rated speeds of 300mm per second. All run closed loop with integrated 32 bit CPU, magnetic encoder and PLC. This intelligent assembly can be programmed to decide for itself where it should be at any given time and to send out continuous motion data such as speed, position and torque. The unit is fully integrated and, with the exception of the power supply, is complete. This saves space and cost, and makes system integration faster and simpler with control at the point of use. The Reliance Rackuator™ can store onboard discrete positions, speeds, accelerations, timers, torque limits and variables, all to be recalled by up to 15 separate integrated programs. It also has integrated logic banks and advance math and S curve functions for additional motion profiles.

Multiple Rackutors™ can work in sequence with each other, either to produce circles, ellipses, or complex arc motions, or in a daisy chain network such as pick-and-place machines. The Rackuator™ can be safely operated entirely on its own or communicate via RS232, RS485, Ethernet, ModBus or CanOpen; driving from its own memory banks or dynamically from a PC or HMI. It can also be integrated into a traditional stepper motor drive, being driven step and direct, or with CW/CCW pulses to bring the smoothness of an AC servo system.

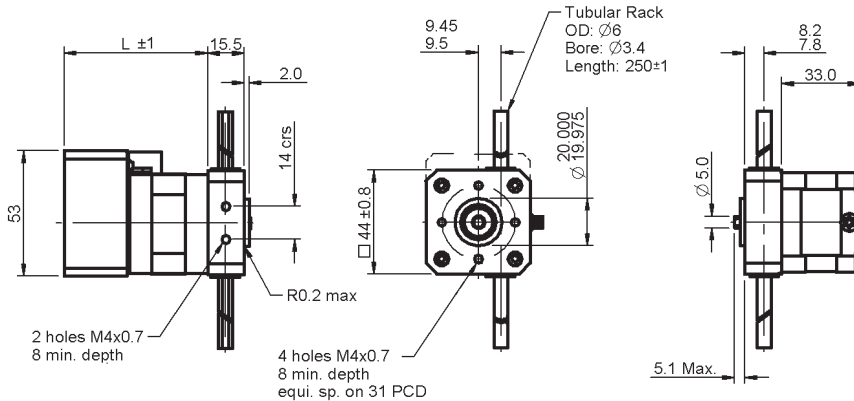
Available with both solid and tubular racks, its uses are many and varied, from scientific research, to food preparation and packaging, to simple domestic installation. The assembly has a number of different mounting options for ease of mechanical installation.





Associated Products
Hardware: [page 13-1](#)

All dimensions in mm



Reliance Cool Muscle Motor Option

Hybrid Stepper Motor Option

Part number selection table

Part Number	Motor	Pinion Material	L	Axial Load (N)	Momentary Load (N)	Travel Range (mm)
RCMRA17S-6-250-C	Reliance Cool Muscle Motor ¹	PEEK™	60.5	3	12	200
RCMRA17L-6-250-C-S		St Steel	76.5	15	25	
RRA17-6-250	Hybrid Stepper Motor ²	PEEK™	33.0	3	12	
RRA17-6-250-S		St Steel	33.0	15	25	

¹ Reliance Cool Muscle motor option, see [pages 2-4](#) and [2-5](#) for motor details (if a pulse interface is required change **-C** to a **-P**)

² Hybrid stepper motor option, see [page 2-14](#) for motor details

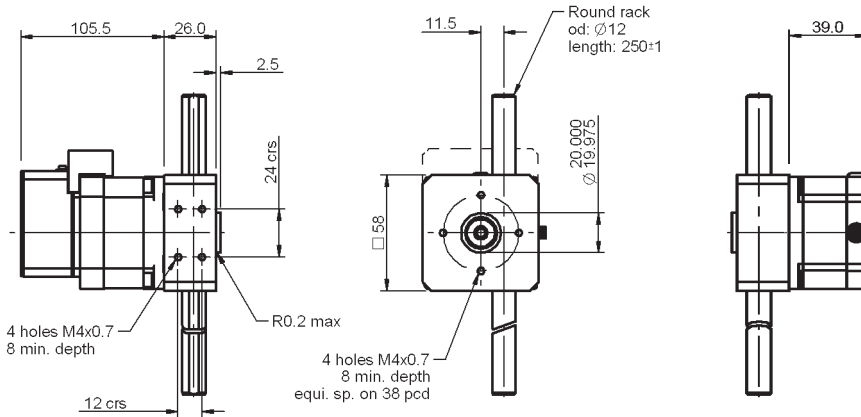
Technical information

		RCMRA17 Reliance Cool Muscle	RRA17 Reliance Stepper
Resolution		0.00085mm with 50,000 steps/rev	0.21mm with 200 steps/rev
Max speed		300mm/sec	
Temperature range		Between 0°C and 40°C	Between -20°C and +50°C
Repeatability		0.025mm	
Side wobble (fully extended)		±0.2mm	
Life time		5 million cycles minimum	
Wire length		N/A	200mm
Backlash		0.08mm linear movement	
Rack material		316 grade stainless steel	
Lubrication	St Steel	PTFE based grease	
	PEEK™	Lubrication free, provides smooth quiet operation	

All dimensions in mm

Associated Products

Hardware: page 13-1



Reliance Cool Muscle Motor Option

Hybrid Stepper Motor Option

Part number selection table

Part Number	Motor	Pinion Material	Axial Load (N)	Momentary Load (N)	Travel Range (mm)
RCMRA23L-12-250-C	Reliance Cool Muscle Motor ¹	St Steel 17-4Ph Coated	90	150	150
RRA23-12-250	Hybrid Stepper Motor ²		90	150	

¹ Reliance Cool Muscle motor option, see page 2-7 for motor details (if a pulse interface is required change -C to a -P)

² Hybrid stepper motor option, please contact our sales team

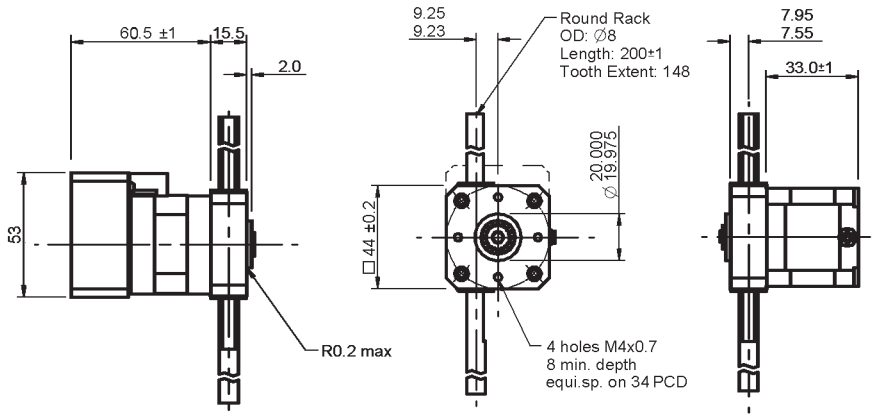
Technical information

	RCMRA23 Reliance Cool Muscle	RRA23 Hybrid Stepper
Resolution	0.0008mm with 50,000steps/rev	0.2mm with 200 steps/rev
Max speed	300mm/sec	
Temperature range	Between 0°C and 40°C	Between -10°C and +50°C
Repeatability	0.012mm	
Side wobble (50mm from housing)	±0.2mm	
Life time	5 million cycles minimum (Based on 40mm stroke)	
Wire length	N/A	200mm
Backlash	0.06mm linear movement	
Rack material	440B grade stainless steel	
Lubrication	PTFE based grease	



Associated Products
Hardware: [page 13-1](#)

All dimensions in mm



Reliance Cool Muscle Motor Option

Hybrid Stepper Motor Option

Part number selection table

Part Number	Motor	Pinion Material	Axial Load (N)	Momentary Load (N)	Travel Range (mm)
RCMRAK17-8-200-C	Reliance Cool Muscle Motor ¹	St Steel 304	25	50	100
RRAK17-8-200	Hybrid Stepper Motor ²		25	50	

¹ Reliance Cool Muscle motor option, see [page 2-4](#) for motor details (if a pulse interface is required change -C to a -P)

² Hybrid stepper motor option, see [page 2-14](#) for motor details

Technical information

	RCMRAK17 Reliance Cool Muscle	RRAK17 Reliance Stepper
Resolution	0.00075mm with 50,000steps/rev	0.19mm with 200 steps/rev
Max speed	500mm/sec	
Temperature range	Between 0°C and +40°C	Between -20°C and +50°C
Repeatability	0.025mm	
Side wobble (fully extended)	±0.29mm	
Life time	5 million cycles minimum	
Wire length	N/A	200mm
Backlash	0.08mm linear movement	
Rack material	304 grade stainless steel	
Lubrication	PTFE based grease	



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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