

PARALLEL PNEUMATIC GRIPPERS

MINIATURE SERIES RPMC

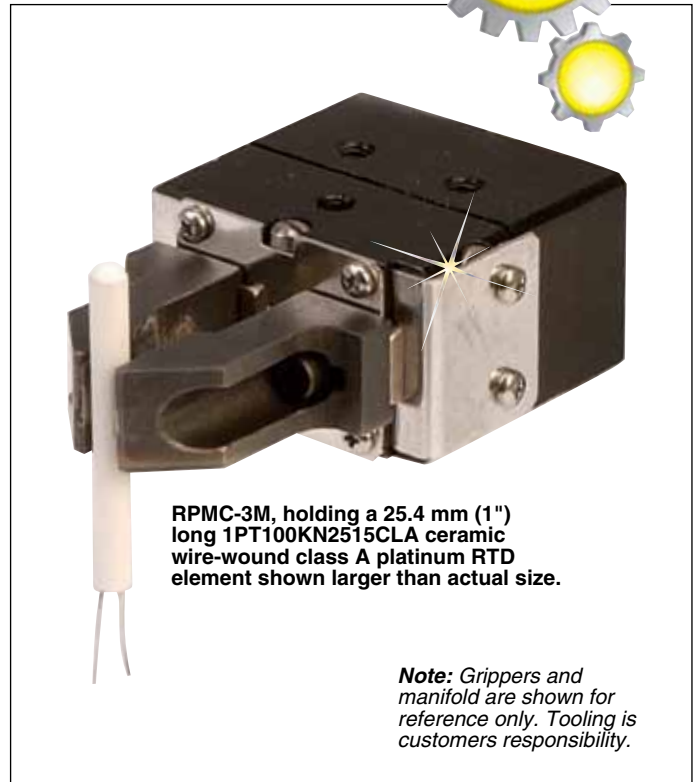
CLEAN ROOM AND HARSH ENVIRONMENTS

DESIGNED FOR MANIFOLD MOUNTING

RPMC Series



- Precision Gripping—Preloaded V Roller Bearings Eliminate Side Play Resulting in Excellent Part Positioning
- Clean Room Grease and Corrosion Resistant Shields Allow for Use in Clean Room and Harsh Environments
- Accuracy of 0.05 mm (0.002") and Repeatability of 0.03 mm (0.001")
- Rated Grip Force @ 7 Bar (100 psi), 36 N (8 lbs)
- Compact Design for Gripping Small Parts in Small Places
- Rigid and Low Friction Design Allows for Longer Finger Lengths for Use on Delicate Parts
- Group Multiple Grippers in Close Array Using Top Manifold Mounting Surface
- Up to 5 Million Cycles in Typical Operation and 10 Million with Maintenance
- Operating Temperature -35 to 80°C (-30 to 180°F)
- System Requires 3 to 7 bar (5 to 100 psi) Dry Filtered (40 Micron or Better) Air Supply
- Requires 4-Way, 2 Position Valve and Regulator for Delicate Parts



RPMC-3M, holding a 25.4 mm (1") long 1PT100KN2515CLA ceramic wire-wound class A platinum RTD element shown larger than actual size.

Note: Grippers and manifold are shown for reference only. Tooling is customers responsibility.

PRODUCT FEATURES

Preload Bearings

Bearings are preloaded for maximum support and zero side play

Hard Coat Anodize

The body has hard-coat anodize 60 RC with PTFE impregnation

Purge/Scavenge Port

Purge/Scavenge port for extreme environments from dirty and gritty to clean-room Class 10 or better

Adjustable Preload Screw

Adjustable preload screw allows for adjustment of preload on roller bearings

Clean-Room Contaminants

Units are lubricated with a clean-room grade grease

Quality Components

External components are made from corrosion resistant materials for resistance to de-ionized water or for use in FDA and medical parts handling applications

One Piece Body

One piece lightweight aluminum body

Slip Fit Dowel Pin Holes

Located in body and jaws

Roller Bearings

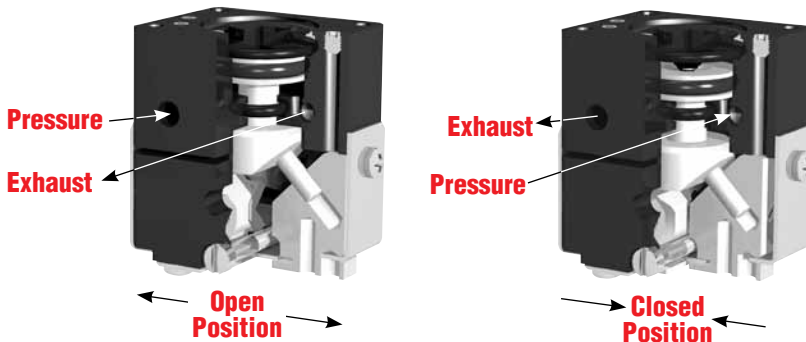
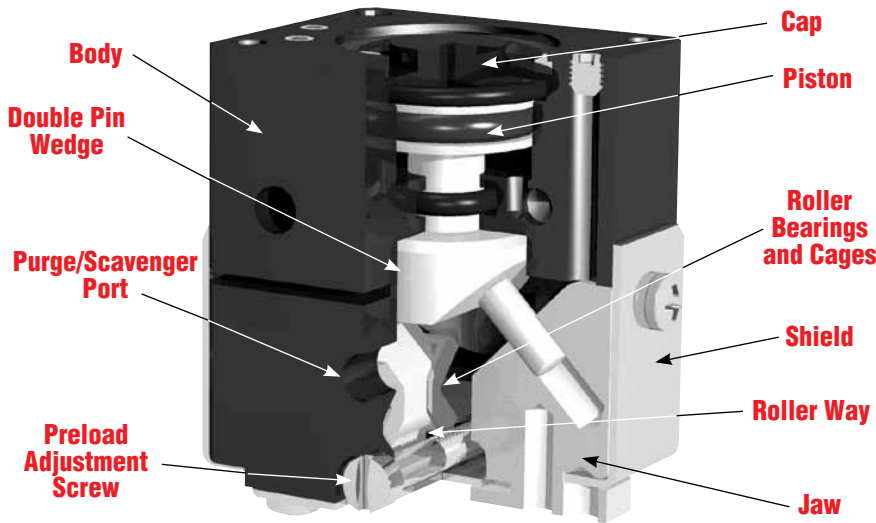
Patented Dual-"V" roller bearings provide low friction rolling motion and maximum rigidity for fingers

Stainless Steel Cover

Stationary and non-contacting cover eliminates the possibility of particle generation



OPERATING PRINCIPLE



- A double acting piston is connected by a shaft to a double sided pin wedge.
- The pin wedge slides in a hole located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- This gripper is suitable for internal or external gripping.

TECHNICAL SPECIFICATIONS

Pneumatic Specifications

Pressure Operating Range: 3 to 7 bar (40 to 100 psi)

Cylinder Type: Double acting

Dynamic Seals: Internally lubricated Buna-N

Valve Required to Operate: 4-way, 2-position

Air Quality Requirements

Air Filtration: 40 micron or better

Air Lubrication: Not necessary*

Air Humidity: Low moisture content (dry)

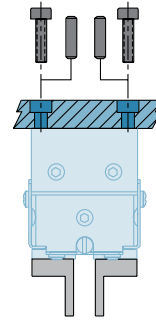
Temperature Operating Range

Buna-N Seals (Standard): -35 to 80°C (-30 to 180°F)

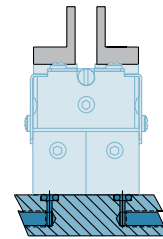
FKM Seals (Optional): -30 to 120°C (-20 to 250°F)

MOUNTING INFORMATION

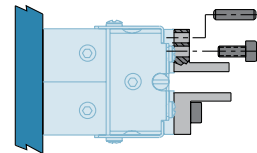
Grippers can be mounted and operated in any orientation.



Body mounts with screws and locates with slip-fit dowel pins for accuracy.



Unit has top manifold ports.



Fingers attach to jaws with screws and locate with dowel pins or by keying.

Maintenance Specifications

Expected Life:

Normal Application: 5 million cycles

With Preventative Maintenance: 10+ million cycles*

Field Repairable: Yes

Seal Repair Kits Available: Yes

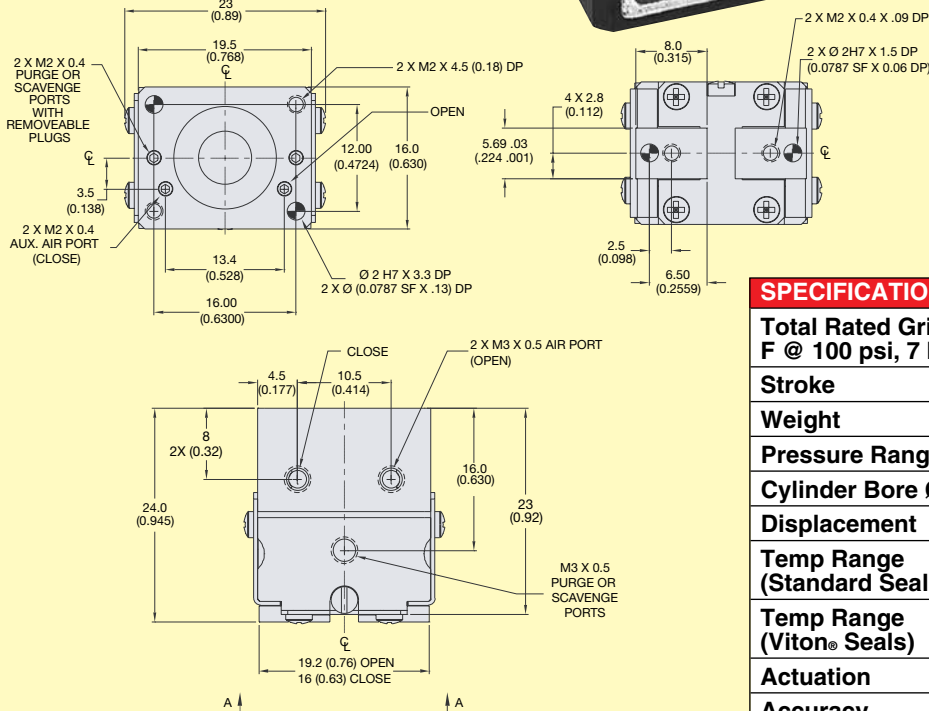
*Addition of lubrication will greatly increase service life.

PARALLEL PNEUMATIC GRIPPER— MINIATURE CLEAN ROOM SERIES RPMC-1M



RPMC-1M shown larger than actual size.

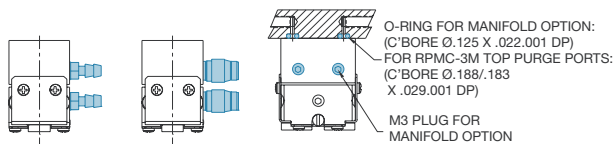
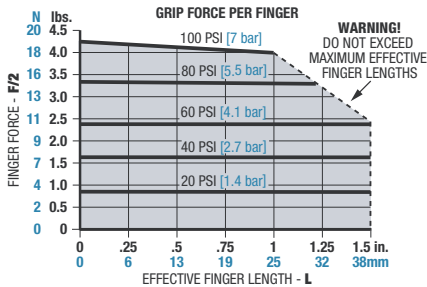
Dimensions: mm (inch)



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance = ±.0005" or (±.013mm)
Metric Threads Course Pitch	Metric mm 0.0 = ±.25 0.0 = ±.13 0.00 = ±.013	Imperial (inch) (0.00) = (±.01) (0.000) = (±.005) (0.0000) = (±.0005)

SPECIFICATIONS	RPMC-1M
Total Rated Grip Force F @ 100 psi, 7 bar	36 N (8 lb)
Stroke	3.2 mm (0.13")
Weight	0.024 Kg (0.052 lb)
Pressure Range	3 to 7 bar (40 to 100 psi)
Cylinder Bore Ø	10 mm (0.394")
Displacement	0.13 cm ³ (0.008"³)
Temp Range (Standard Seals)	-35 to 80°C (-30 to 180°F)
Temp Range (Viton® Seals)	-30 to 120°C (-20 to 250°F)
Actuation	0.10 sec
Accuracy	±0.05 mm (±0.002")
Repeatability	±0.03 mm (±0.00")
Valve Required to Actuate	4-way, 2-position



LOADING CAPACITY [†]	STATIC	DYNAMIC
Maximum Tensile T	89 N (20 lbs)	31 N (7 lbs)
Maximum Compressive C	89 N (20 lbs)	31 N (7 lbs)
Maximum Moment M _x	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)
Maximum Moment M _y	2 Nm (15"/lbs)	0.6 Nm (5"/lbs)
Maximum Moment M _z	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)

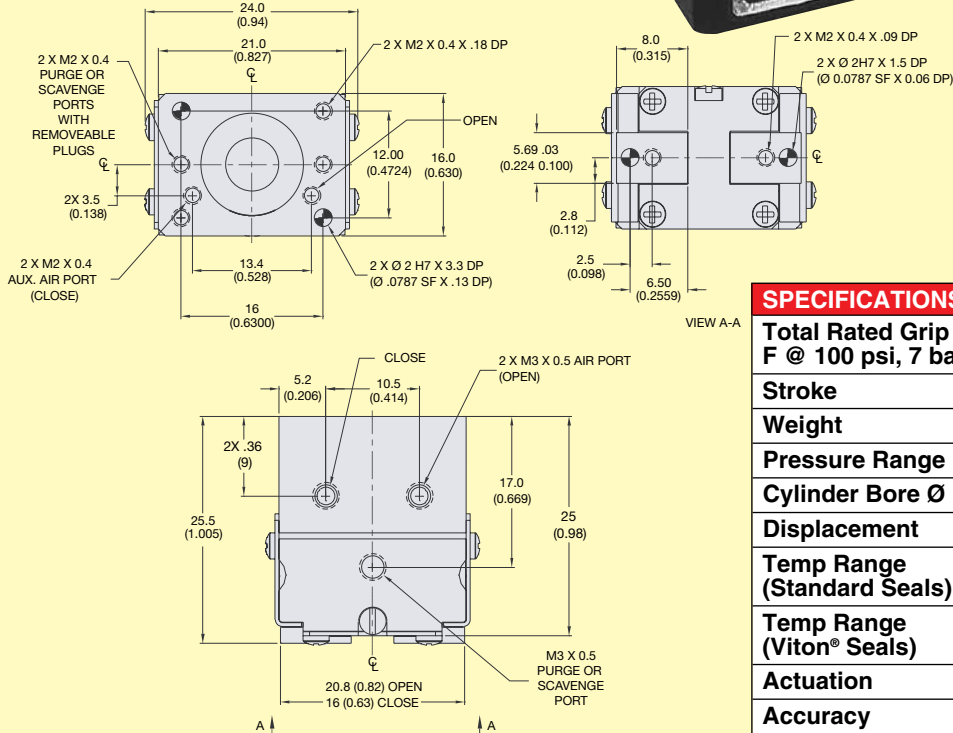
[†] Capacity are per set of jaws and not simultaneous.

PARALLEL PNEUMATIC GRIPPER— MINIATURE CLEAN ROOM SERIES RPMC-2M



RPMC-2M shown larger than actual size.

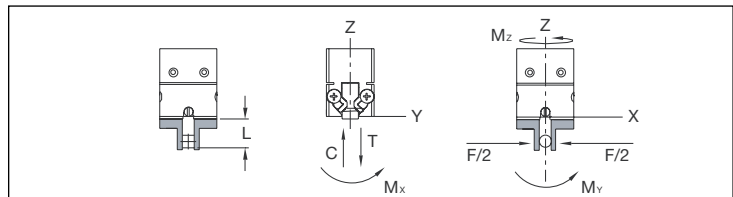
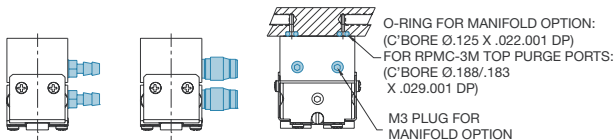
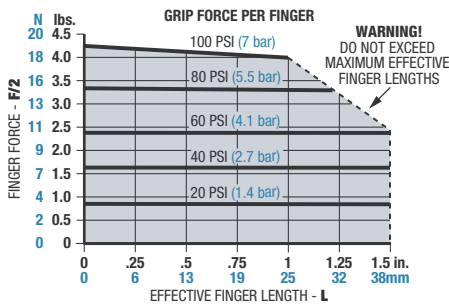
Dimensions: mm (inch)



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Location Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	Metric mm	Imperial (inch)
	0. = ±.25	(0.00) = (±.01)
	0.0 = ±.13	(0.000) = (±.005)
	0.00 = ±.013	(0.0000) = (±.0005)

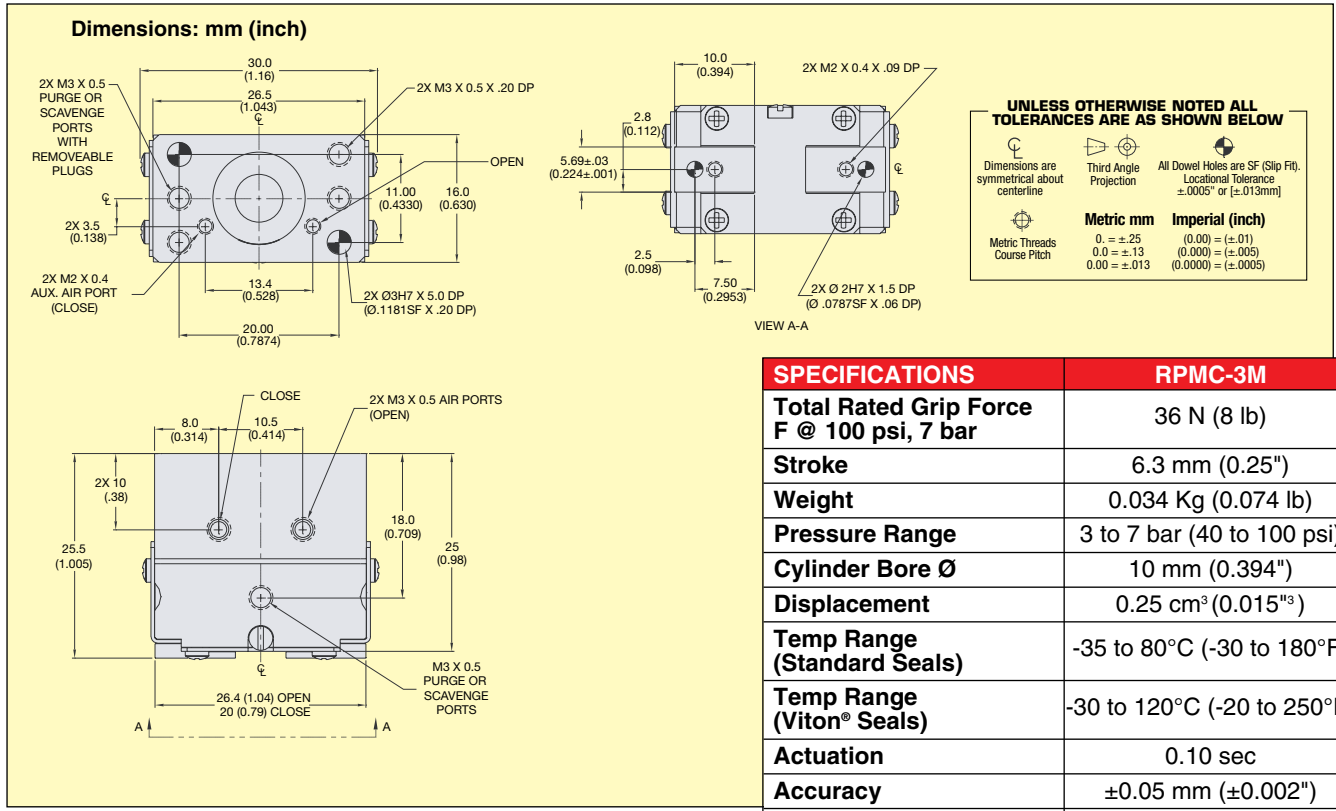
SPECIFICATIONS	RPMC-2M
Total Rated Grip Force F @ 100 psi, 7 bar	36 N (8 lb)
Stroke	4.8 mm (0.19")
Weight	0.026 Kg (0.058 lb)
Pressure Range	3 to 7 bar (40 to 100 psi)
Cylinder Bore Ø	10 mm (0.394")
Displacement	0.20 cm ³ (0.012 ⁱⁿ ³)
Temp Range (Standard Seals)	-35 to 80°C (-30 to 180°F)
Temp Range (Viton® Seals)	-30 to 120°C (-20 to 250°F)
Actuation	0.10 sec
Accuracy	±0.05 mm (±0.002")
Repeatability	±0.03 mm (±0.001")
Valve Required to Actuate	4-way, 2-position



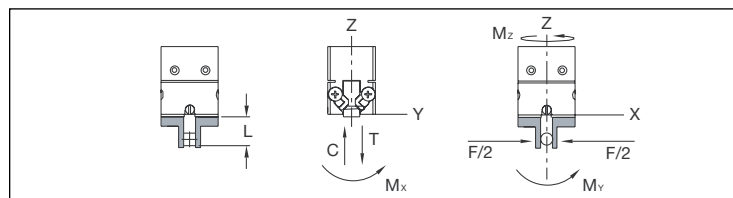
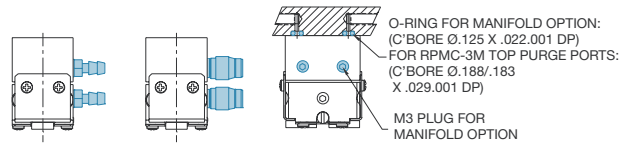
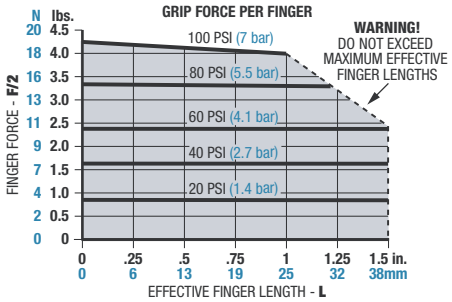
LOADING CAPACITY†	STATIC	DYNAMIC
Maximum Tensile T	89 N (20 lbs)	31 N (7 lbs)
Maximum Compressive C	89 N (20 lbs)	31 N (7 lbs)
Maximum Moment Mx	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)
Maximum Moment My	2 Nm (15"/lbs)	0.6 Nm (5"/lbs)
Maximum Moment Mz	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)

† Capacity are per set of jaws and not simultaneous.

PARALLEL PNEUMATIC GRIPPER— MINIATURE CLEAN ROOM SERIES RPMC-3M



SPECIFICATIONS	RPMC-3M
Total Rated Grip Force F @ 100 psi, 7 bar	36 N (8 lb)
Stroke	6.3 mm (0.25")
Weight	0.034 Kg (0.074 lb)
Pressure Range	3 to 7 bar (40 to 100 psi)
Cylinder Bore Ø	10 mm (0.394")
Displacement	0.25 cm ³ (0.015"³)
Temp Range (Standard Seals)	-35 to 80°C (-30 to 180°F)
Temp Range (Viton® Seals)	-30 to 120°C (-20 to 250°F)
Actuation	0.10 sec
Accuracy	±0.05 mm (±0.002")
Repeatability	±0.03 mm (±0.001")
Valve Required to Actuate	4-way, 2-position



LOADING CAPACITY†	STATIC	DYNAMIC
Maximum Tensile T	89 N (20 lbs)	31 N (7 lbs)
Maximum Compressive C	89 N (20 lbs)	31 N (7 lbs)
Maximum Moment Mx	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)
Maximum Moment My	2 Nm (15"/lbs)	0.6 Nm (5"/lbs)
Maximum Moment Mz	1 Nm (12"/lbs)	0.5 Nm (4"/lbs)

† Capacity are per set of jaws and not simultaneous.

To Order Visit omega.com/rpmc_series for Pricing and Details				
MODEL NO.	LENGTH mm (inch)	DEPTH mm (inch)	HEIGHT mm (inch)	STROKE mm (inch)
RPMC-1M	23 (0.89)	16 (0.630)	23 (0.92)	3.2 (0.13)
RPMC-2M	24 (0.94)	16 (0.630)	25 (0.98)	4.8 (0.19)
RPMC-3M	30 (1.16)	16 (0.630)	25 (0.98)	6.3 (0.25)

Ordering Example: RPMC-2M mini gripper clean-room series with maximum stroke of 4.8 mm (0.19"). Recommended accessories **SLKT-143V** top air port manifold seal kit for remote air fitting use.

ACCESSORIES

MODEL NO.	DESCRIPTION
SLKT-121	Standard seal repair kit
SLKT-143V	Top air port manifold seal kit (FKM only)