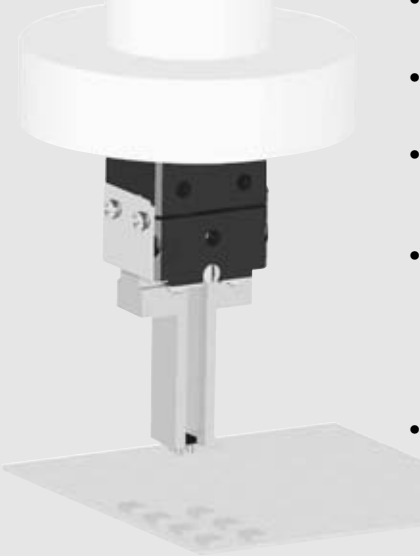


# Parallel Grippers - Miniature Clean Room Series

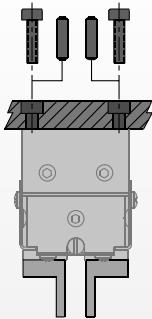


- Precision applications:**  
 Preloaded dual-"V" roller bearings eliminate side play for excellent part position repeatability.
- Miniature size:**  
 Compact design allows for gripping small parts in small spaces.
- Top manifold:**  
 Grippers can be manifolded through the top mounting surface. This eliminates the need for air fittings and allows grippers to be mounted in close array.
- Clean room rated:**  
 A corrosion resistant shield protects the drive and bearing mechanism. All internal components are lubricated with clean room grade grease. The scavenge port can be used with vacuum pressure to prevent escape of particulate generated by the internal mechanism.
- Harsh environments:**  
 All moving components are located within the corrosion resistant cover. The body has a purge port which can expel contaminants from the mechanism using low pressure compressed air.

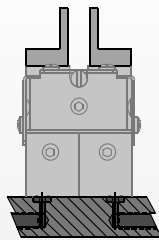


## Mounting Information:

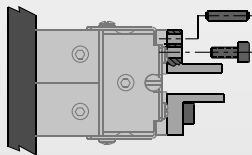
Grippers can be mounted & operated in any orientation



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

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~250° F	-30°~120° C
<b>Maintenance Specifications†</b>		
Expected Life	5 million cycles	
Normal Application w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

## 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 Teflon® impregnation

### Quality Components

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

### Clean Room Contaminants

Units are lubricated with a clean-room grade grease

### Purge/Scavenge Port

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

### Adjustable Preload Screw

Adjustable preload screw allows for adjustment of preload on roller bearings

### Roller Bearings

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

### Slip Fit Dowel Pin Holes

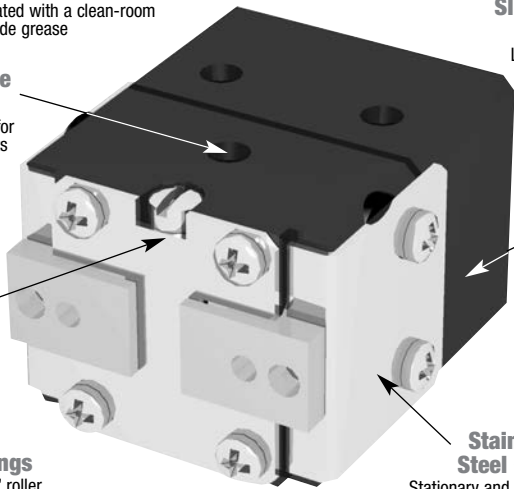
Located in body and jaws

### One Piece Body

One piece lightweight aluminum body

### Stainless Steel Cover

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



## Style-RPMC Parallel Gripper

### Size -1M

Style:	RPMC-1M	
Stroke:	0.13 in.	3.2 mm
Grip Force:	8 lb	36 N
Weight:	0.052 lb	.02 Kg



See Page **1.116**

## Style-RPMC Parallel Gripper

### Size -2M

Style:	RPMC-2M	
Stroke:	0.19 in.	4.8 mm
Grip Force:	8 lb	36 N
Weight:	0.058 lb	.03 Kg



See Page **1.117**

## Style-RPMC Parallel Gripper

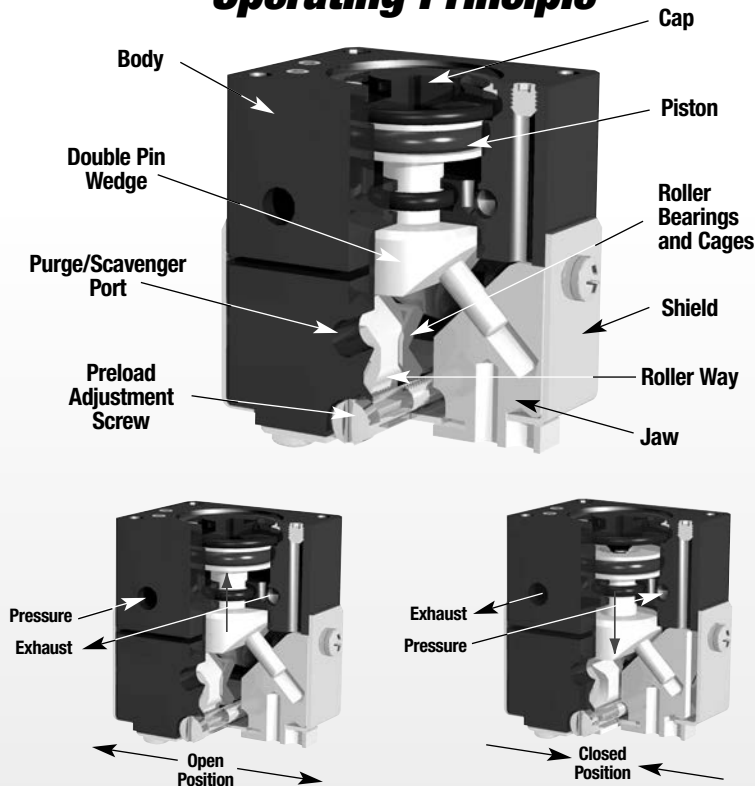
### Size -3M

Style:	RPMC-3M	
Stroke:	0.25 in.	6.3 mm
Grip Force:	8 lb	36 N
Weight:	0.074 lb	.03 Kg



See Page **1.118**

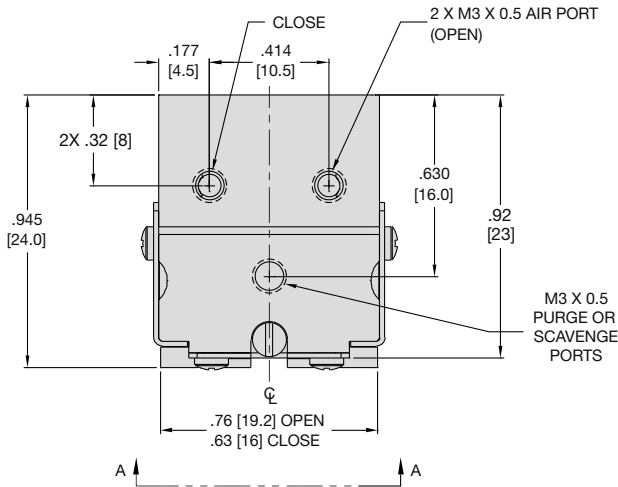
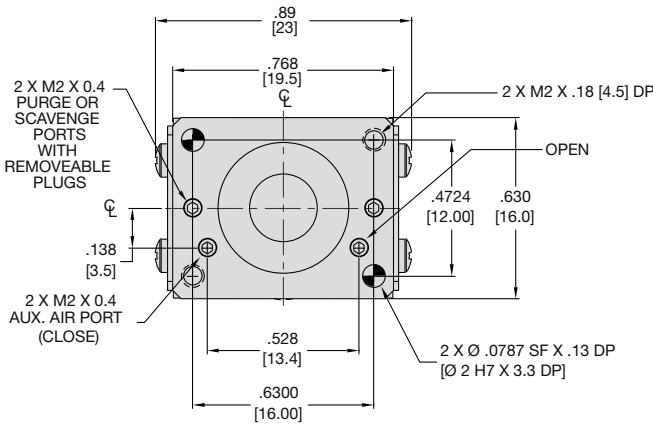
## Operating Principle



- 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.

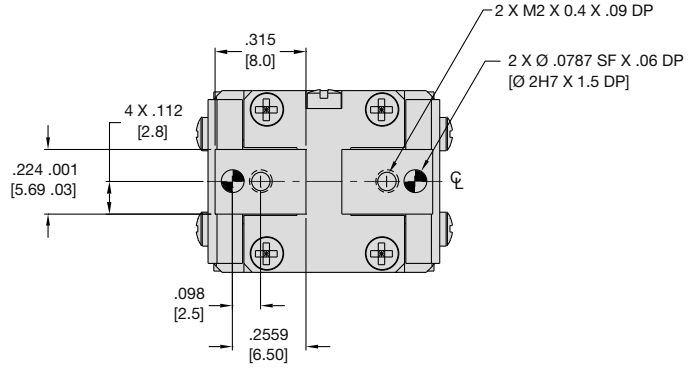
**U.S. Patent #5,529,359**  
**Designed and manufactured in the USA**

# PARALLEL GRIPPER RPMC-1M MINIATURE CLEAN ROOM SERIES



### Specifications

		RPMC-1M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	lb	36 N
Stroke	in.	3.2 mm
Weight	lb	0.024 Kg
Pressure Range	psi	3-7 bar
Cylinder Bore $\varnothing$	in.	10.0 mm
Displacement	in <sup>3</sup>	0.13 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	sec.	0.10 sec.
Accuracy	in.	±0.05 mm
Repeatability	in.	±0.03 mm
Valve required to actuate		4-way, 2-position

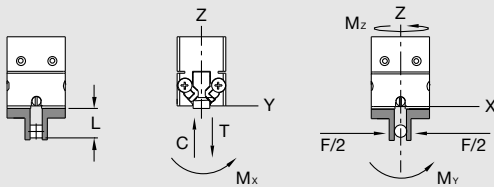
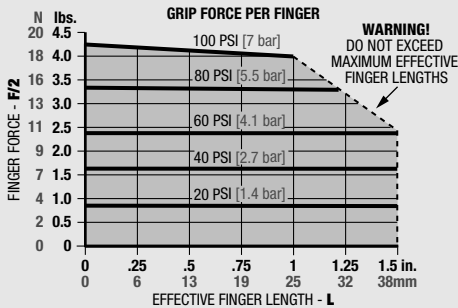


VIEW A-A

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	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



### Loading Capacity†

	Imperial		Metric	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	2 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL

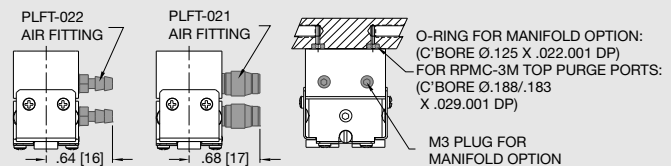
**RPMC-1M - V**

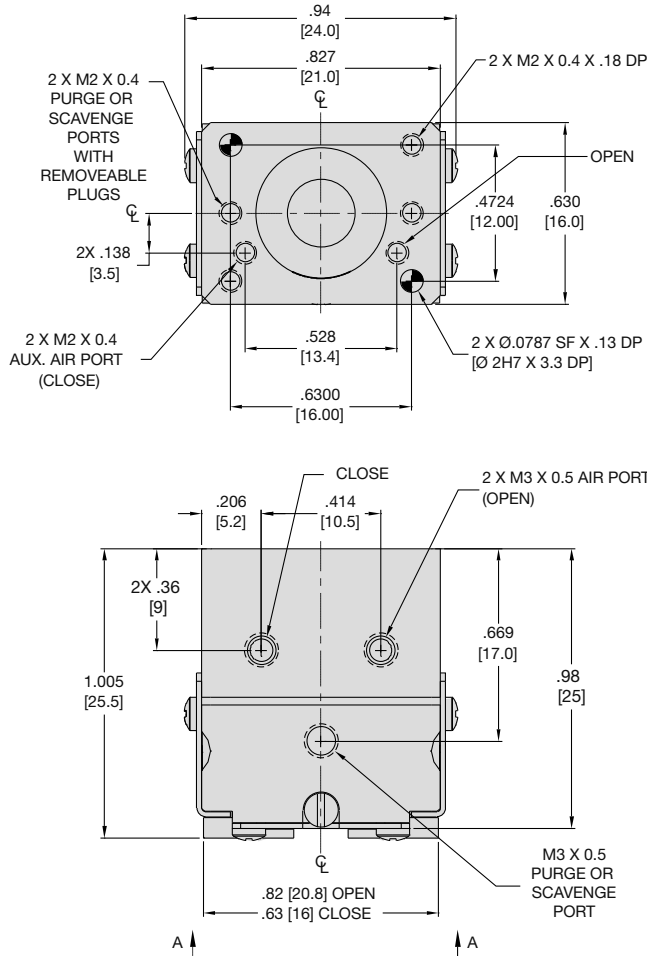
VITON® SEALS

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-143V</b>	<b>1</b>

For Detailed Accessory Mounting Technical Data Refer to Accessories Section

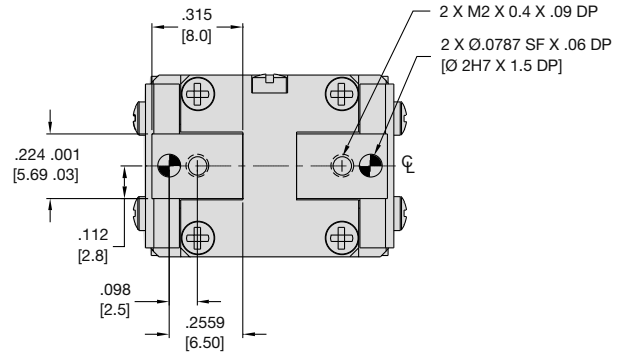




### Specifications

### RPMC-2M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar 8 lb	.19 in.	36 N
Stroke	0.058 lb	4.8 mm
Weight	40-100 psi	0.026 Kg
Pressure Range	0.394 in.	3-7 bar
Cylinder Bore Ø	0.012 in <sup>2</sup>	10.0 mm
Displacement		0.20 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate		4-way, 2-position

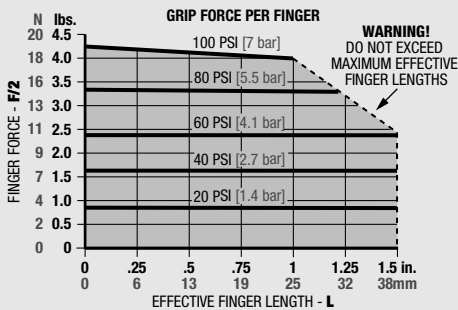


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

## Loading Information

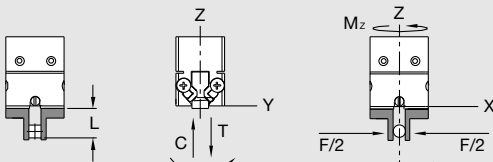
## How to Order: (Order Separately)



BASIC MODEL

**RPMC-2M - V**

VITON® SEALS



### Loading Capacity†

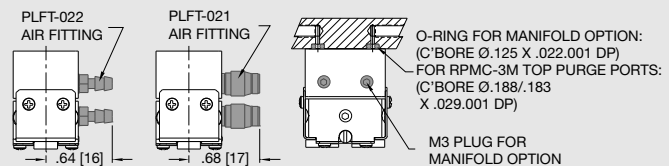
	Imperial		Metric	
	Static	Dynamic	Static	Dynamic
Maximum Tensile <b>T</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Compressive <b>C</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	5 in.-lbs.	2 Nm	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm

†Capacities are per set of jaws and are not simultaneous

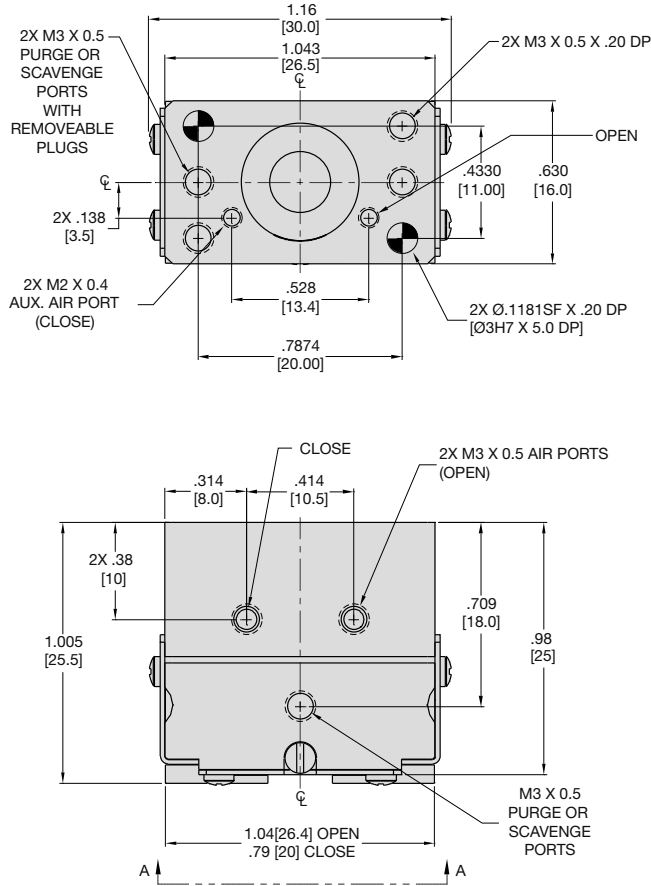
### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-143V</b>	<b>1</b>

For Detailed Accessory Mounting Technical Data Refer to Accessories Section

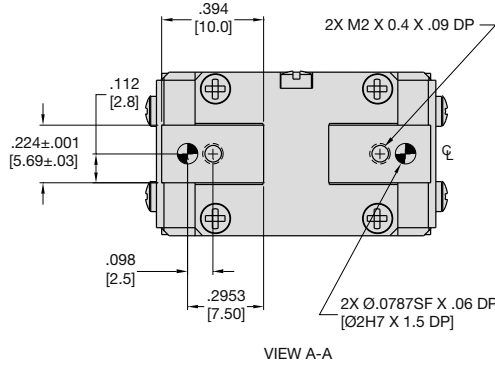


# PARALLEL GRIPPER RPMC-3M MINIATURE CLEAN ROOM SERIES



### Specifications

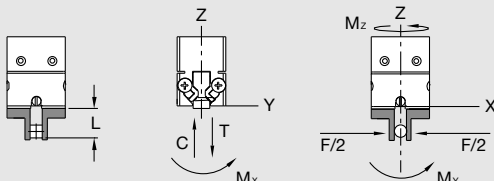
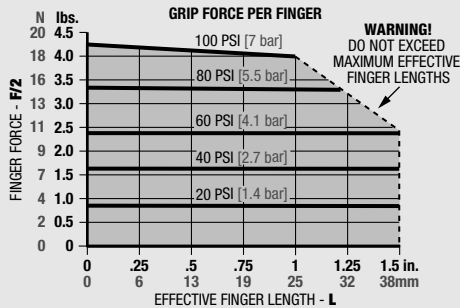
		RPMC-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lb	36 N
Stroke	.25 in.	6.3 mm
Weight	0.074 lb	0.034 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.015 in <sup>3</sup>	0.25 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate		4-way, 2-position



**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	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	2 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL

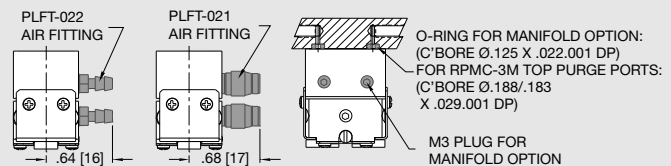
**RPMC-3M - V**

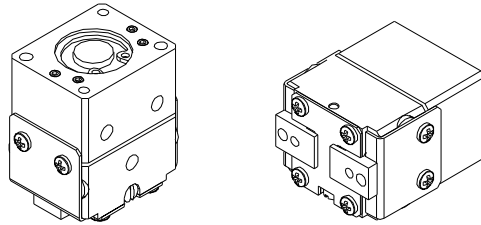
VITON® SEALS

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-143V</b>	<b>1</b>

For Detailed Accessory Mounting Technical Data Refer to Accessories Section





Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Screw, Preload
10	2	Shield, Side
11	1	Shield, Top
12	2	Dowel Pin
15	4	Stop Screw

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedures

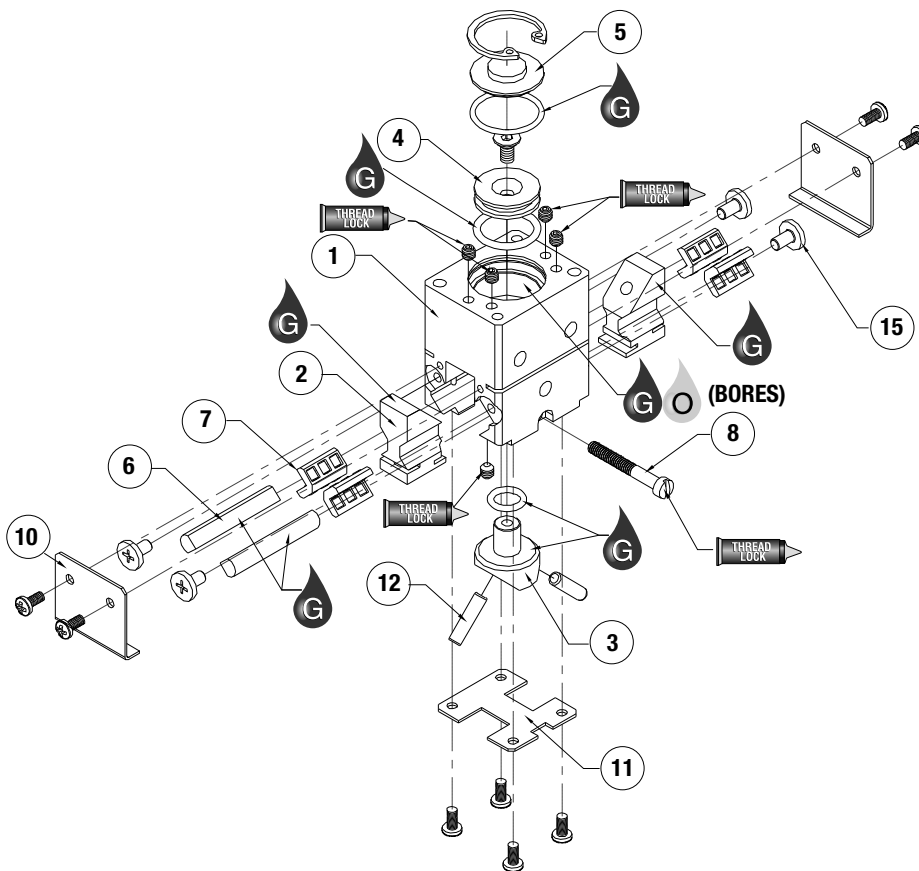
- 1) Lubricate and install seals.
- 2) Install pins (12) and wedge (3) into body.
- 3) Install piston (4), screw, cap (5), & Retaining Ring.
- 4) Install set screws for air port plugs.
- 5) Install jaws (2) over pins.
- 6) Install ways (6), cages (7), & screws (15).

### Preload Adjustment

- 1) Install preload screw (8) with Loctite on first 6 -8 threads.
- 2) Tighten until there is no side play in the jaws.
- 3) Cycle gripper(w/finger assembly)
- 4) Recheck for play in jaws & tighten or loosen as needed.

**SK**

**Seal Repair Kit Order #'s  
See Product Data Sheets**



**SK**

Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease

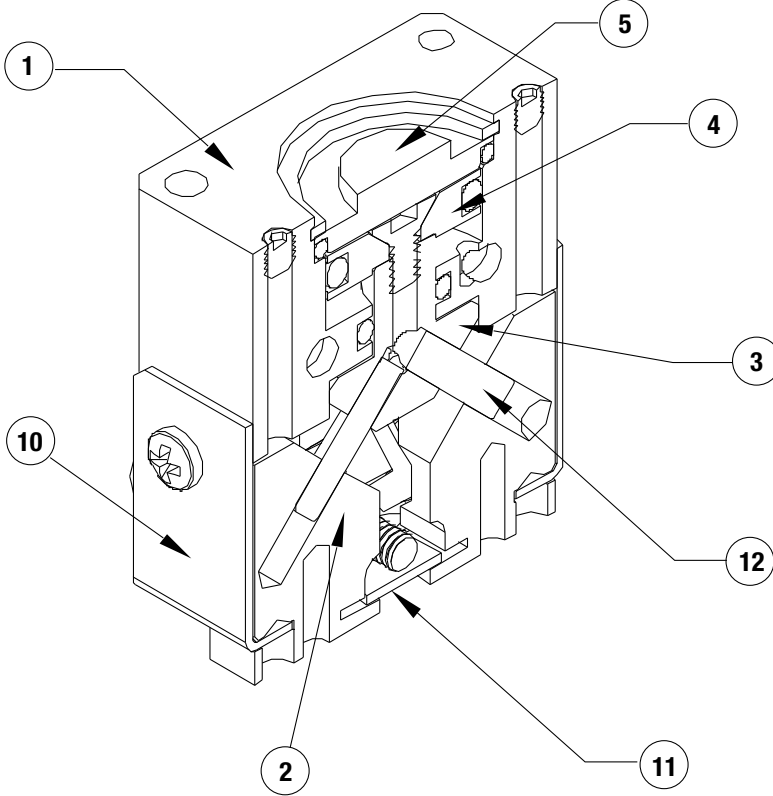


Super Bonder



Third Angle Projection

# RPMC Series Assembled View



Item	Qty	Name
------	-----	------

01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Screw, Preload
10	2	Shield, Side
11	1	Shield, Top
12	2	Dowel Pin
15	4	Stop Screw

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)