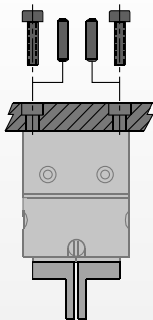


# Parallel Grippers - Miniature Series

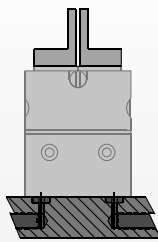
- Precision applications:**  
 Preloaded dual-"V" roller bearings eliminate side play for excellent part position repeatability.
- Miniature size:**  
 Compact design allows for gripping small parts in small spaces.
- Top manifold:**  
 Grippers can be manifolded through the top mounting surface. This eliminates the need for air fittings and allows grippers to be mounted in close array.
- Repeatable grip force:**  
 Low friction mechanism allows for consistent, repeatable gripping forces. To grip delicate parts, grip force can be easily altered by adjusting air pressure.

## Mounting Information:

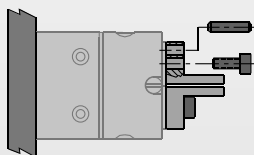
Grippers can be mounted & operated in any orientation



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

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

Imperial	Metric
40-100 psi	1.3-7 bar
<b>Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
<b>4-way, 2-position</b>	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

<b>40 Micron or Better</b>
<b>Not Necessary*</b>
<b>Low Moisture Content (dry)</b>

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F	-35°~80° C
-20°~250° F	-30°~120° C

### Maintenance Specifications†

Expected Life

Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

<b>5 million cycles</b>
<b>10+ million cycles*</b>
<b>Yes</b>
<b>Yes</b>

### Application restrictions

Dirty or gritty environments  
Machining operations generating chips  
Environments with loose particulate  
Applications where mechanism lubricant could cause contamination

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

## Product Features

**Slip Fit Dowel Pin Holes**  
Located in body and jaws

**Quality Components**  
Internal drive components are made from hardened bearing and tool steels

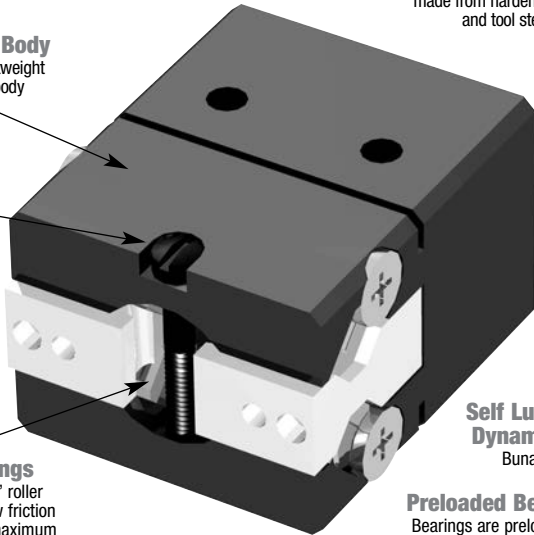
**One Piece Body**  
One piece lightweight aluminum body

**Adjustable Preload**  
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

**Self Lubricating Dynamic Seals**  
Buna-N only

**Preloaded Bearings**  
Bearings are preloaded for maximum support and zero side play



## Style-RPM Parallel Gripper

**Size -1M**

<b>Style:</b>	<b>RPM-1M</b>	
<b>Stroke:</b>	0.13 in.	3.2 mm
<b>Grip Force:</b>	8 lbs.	36 N
<b>Weight:</b>	0.052 lbs.	.02 Kg



See Page **1.108**

## Style-RPM Parallel Gripper

**Size -2M**

<b>Style:</b>	<b>RPM-2M</b>	
<b>Stroke:</b>	0.19 in.	4.8 mm
<b>Grip Force:</b>	8 lbs.	36 N
<b>Weight:</b>	0.058 lbs.	.03 Kg



See Page **1.109**

## Style-RPM Parallel Gripper

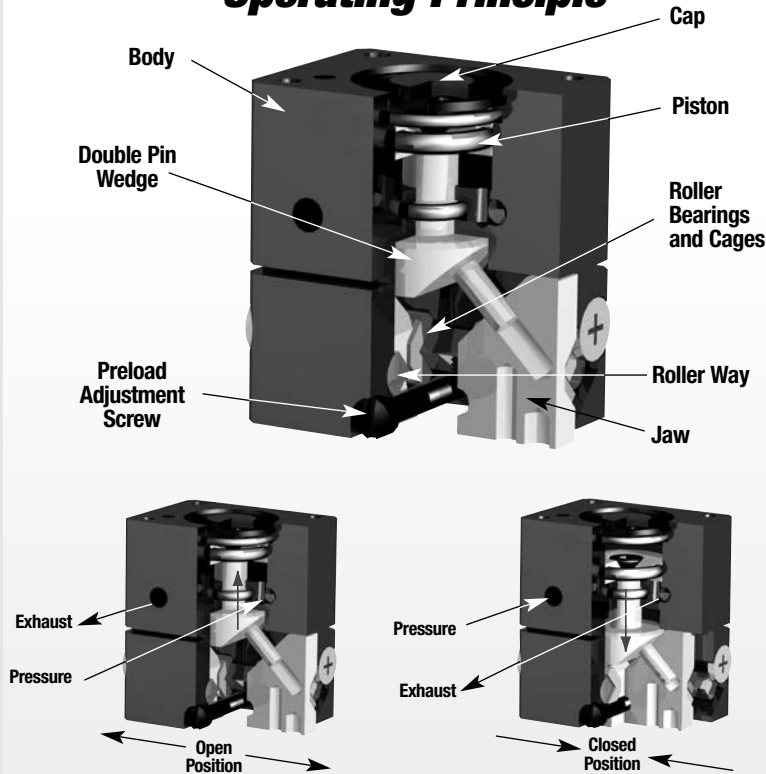
**Size -3M**

<b>Style:</b>	<b>RPM-3M</b>	
<b>Stroke:</b>	0.25 in.	6.3 mm
<b>Grip Force:</b>	8 lbs.	36 N
<b>Weight:</b>	0.074 lbs.	.03 Kg



See Page **1.110**

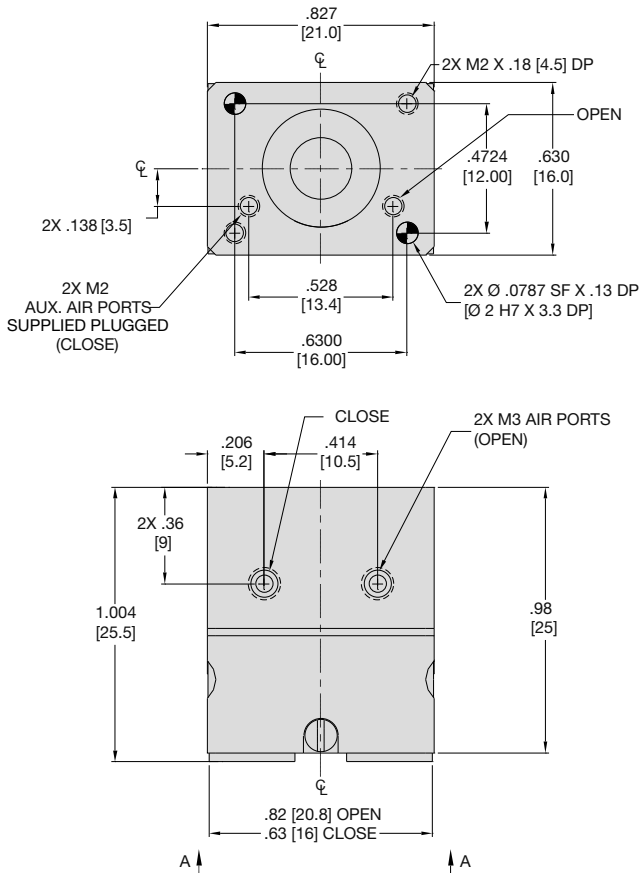
## Operating Principle



- 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**

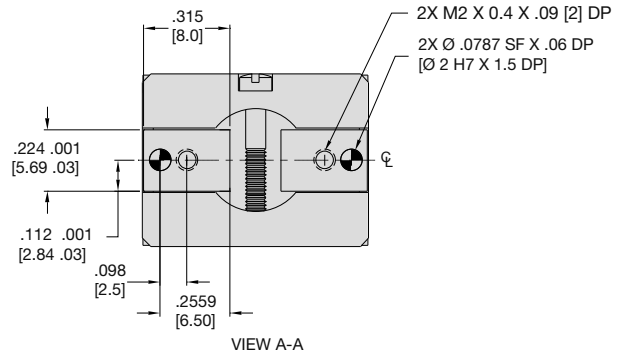




### Specifications

### RPM-2M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lbs.	36 N
Stroke	.19 in.	4.8 mm
Weight	0.058 lbs.	0.026 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.012 in <sup>3</sup>	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	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

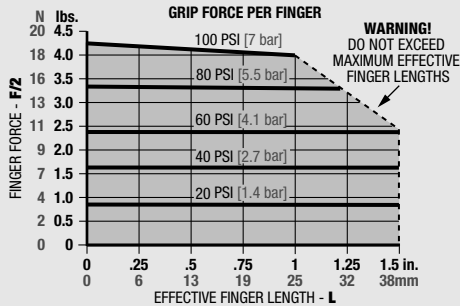


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	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

## How to Order: (Order Separately)



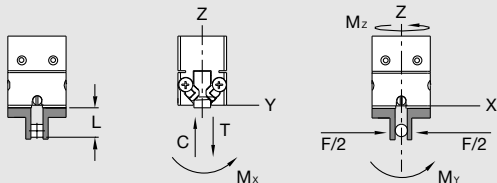
BASIC MODEL

**RPM-2M - V**

VITON® SEALS

### PNEUMATIC ACCESSORIES

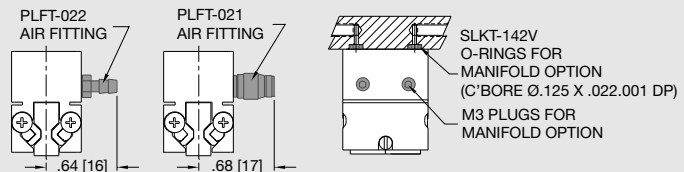
	Order #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-142V</b>	<b>1</b>



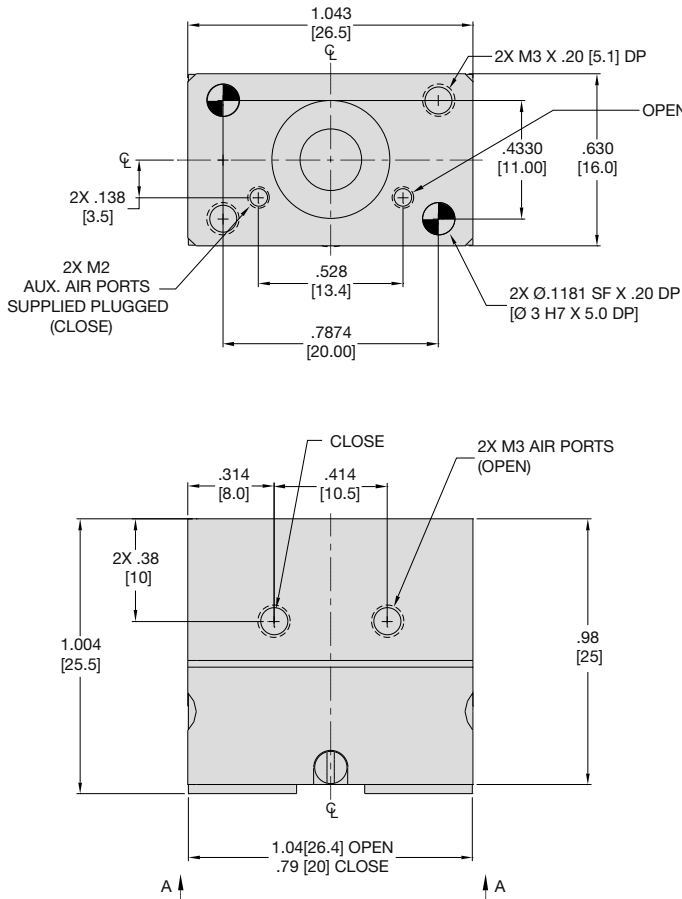
### Loading Capacity<sup>1</sup>

	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>1</sup>Capacities are per set of jaws and are not simultaneous

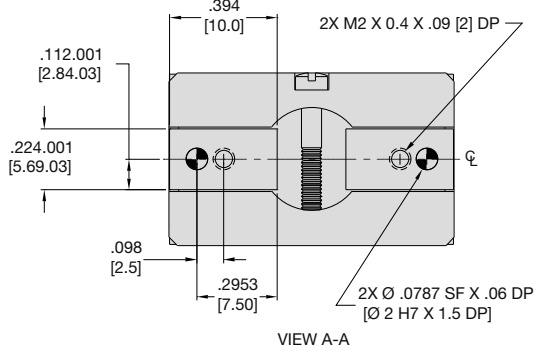


# PARALLEL GRIPPER RPM-3M MINIATURE SERIES



### Specifications

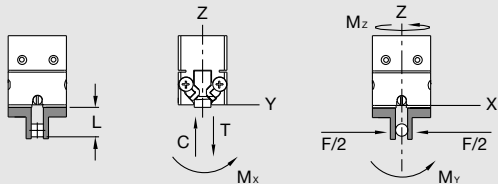
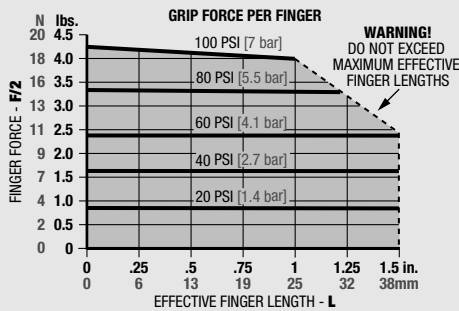
		RPM-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lbs.	36 N
Stroke	.25 in.	6.3 mm
Weight	0.074 lbs.	0.034 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$	0.394 in.	10.0 mm
Displacement	0.015 in <sup>3</sup>	0.25 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	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†

	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

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

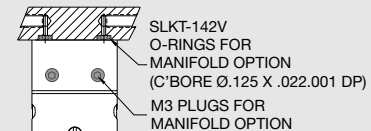
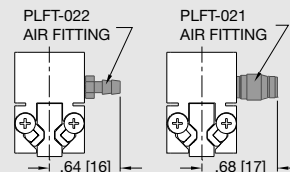
BASIC MODEL

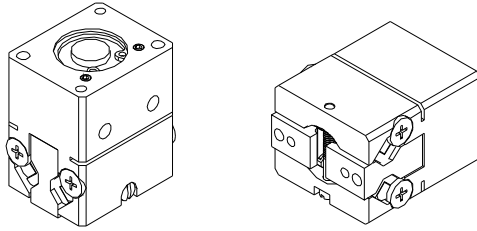
**RPM-3M - V**

VITON® SEALS

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	PLFT-021	2
M3 Plumbing Fitting Barb for 2mm I.D. Tube	PLFT-022	2
Standard Seal Repair Kit	SLKT-121	1
Viton® Seal Repair Kit	SLKT-121V	1
Top Air Ports Manifold Seal Kit (available in Viton® only)	SLKT-142V	1





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	Preload
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.

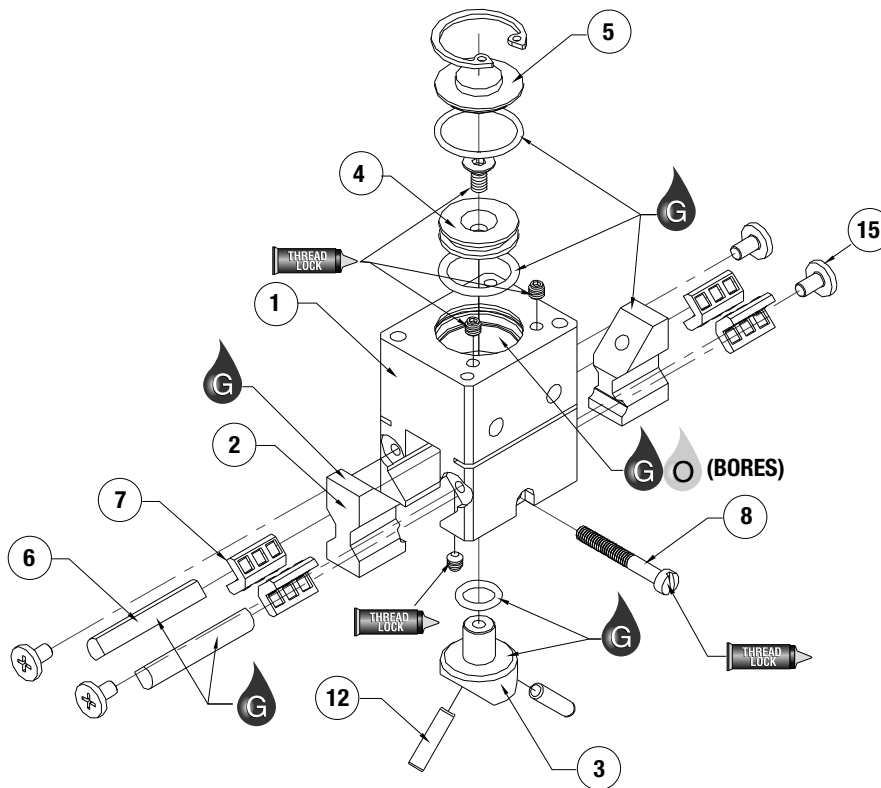
**Assembly Procedure**

- 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 airport plugs
- 5) Install jaws (2) over pins
- 6) Install ways (6), cages (7), & screws (15)

**Preload Adjustment**

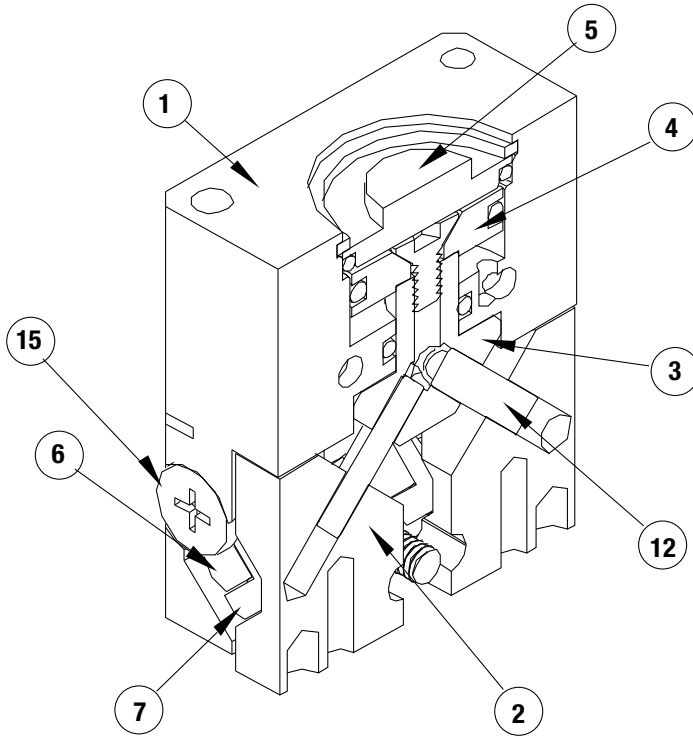
- 1) Install preload screw (8) w/Loctite on 1st 6-8 threads
- 2) Tighten until there is no side-play in the jaws
- 3) Cycle gripper (w/fingers preferably)
- 4) Recheck for play in jaws & tighten or loosen as needed

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



<b>SK</b> Seal Kit Items	 Thread Locker	 Krytox™ Lubricant	 Lightweight Machine Oil	 Teflon® Based Grease	 Super Bonder	 Third Angle Projection
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# RPM 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	Preload
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.

**Non-Repairable Items List**  
NONE



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



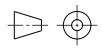
Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection