

RPE Parallel Gripper- Electric Gripper Series

- **Failsafe Operation:**

Spring closed feature allows for full grip force during power off conditions.

- **Electrically Actuated:**

Requires simple 24VDC pulsed signal. **No programmable or expensive controller required.**

- **Sensing:**

Adjustable inductive proximity sensors available.

- **Low System Impact:**

Easily integrated into current engineering and manufacturing processes.

- **Miniature size:**

Compact design allows for gripping small parts in small spaces.

- **Precision applications:**

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

- **Delicate part handling:**

Low friction mechanism allows for repeatable gripping forces for holding delicate parts. Grip force is constant throughout stroke.

- **Clean room suitable:**

A corrosion resistant shield protects the drive and bearing mechanism. All internal components are lubricated with Krytox™ grease.

- **Harsh environments:**

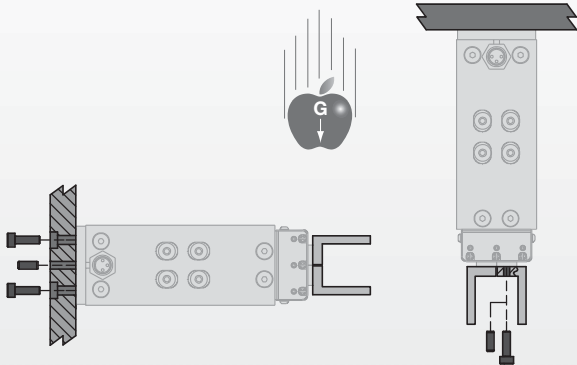
All moving components are located within the corrosion resistant cover.

Patent Pending.

The RPE is CE marked.

Mounting Information:

Gripper can be mounted and operated in any orientation



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

Fingers attach to jaws with screws and locate with dowel pins

Technical Specifications:

Product Specifications

Voltage	24 VDC
Power Max.	40 W
Operating Temperature	5° / 50° C (40° / 120°F)
Protection Class	IP54
Clean Room	100
Clean Room with Scavenge Port*	10

*Contact Tech Support.

Maintenance Specifications

Field Repairable	Yes
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Application Restrictions

- Timing, power and load beyond specifications
- Suitable for external gripping only

Product Features

Quality Components

Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Jaws, housing, and end cap nickel plated for use in medical parts handling applications.

Energy Efficient

Power is only required for 50 msec to open and close the gripper, no power is required to keep the part gripped or to keep the gripper fully opened.

Adjustable Preloaded Bearings

Adjustable preload screw allows for adjustment of preload on roller bearings. Bearings are preloaded for maximum support and zero side play.

Spring Close

Spring closed feature for failsafe operation

Slip Fit Dowel Pin Holes

Located in body and jaws

Sensor Option

Reads position of jaw (sold separately- see "How to order" Section for more info)

Stainless Steel Cover

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

Hardened Plated Jaws

For wear resistance and longer life

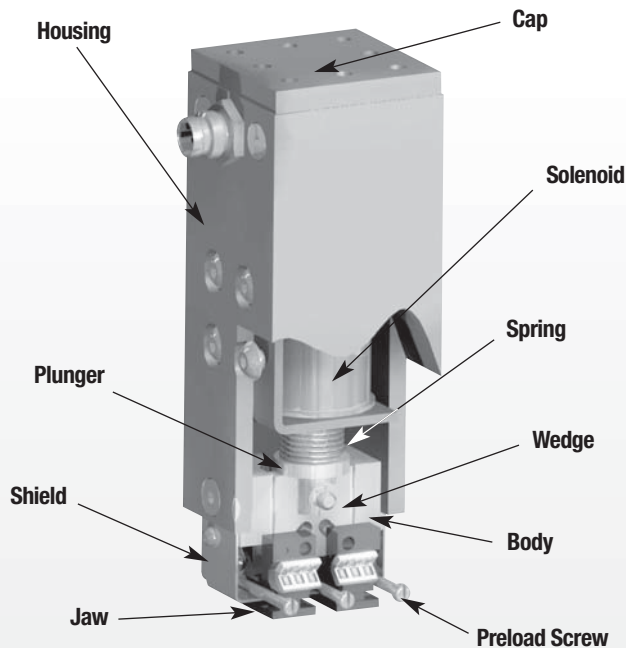
Roller Bearings

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

Clean Room

Krytox™ clean-room grade lubricant standard. FDA approved lubricants available. Vacuum scavenge ports are available

Operating Principle



- A short power pulse releases the latching solenoid's plunger, allowing the spring to drive the wedge mechanism.
- The spring driven wedge drives the jaws towards one another to grip the part. No power is required to maintain grip force.
- To open the gripper, a short power pulse to the solenoid retracts the plunger to the latched position, which opens the jaws. No power is required to maintain the open position.
- Suitable for external gripping only.

U.S. Patent # 5,529,359. Other Patents Pending.

Style-RPE

Size -100M



Style: RPE-100M
Stroke: 4 mm (0.16 in)
Grip Force: 5 N (1.1 lbs)
Weight: 226 g (0.50 lbs)

See Page **1.16**

Style-RPE

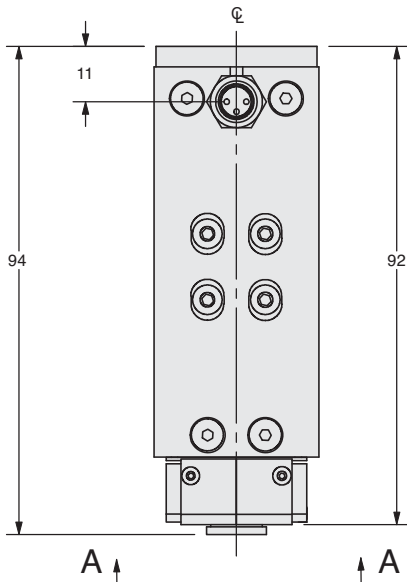
Size -101M



Style: RPE-101M
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See Page **1.16**

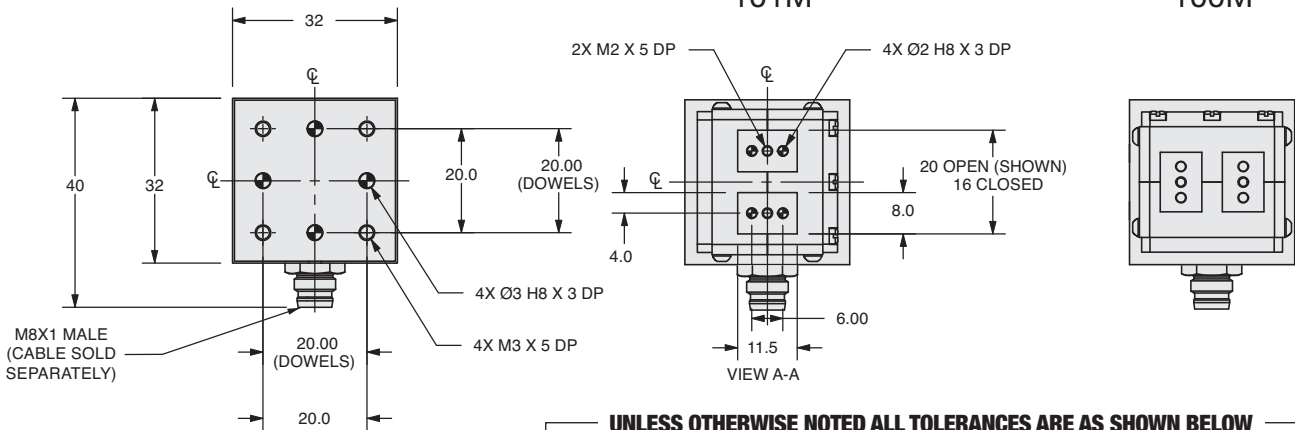
PARALLEL GRIPPER RPE-100M/-101M E-GRIPPER SERIES



Specifications

	RPE-100M/-101M	
Maximum Finger Length	50 mm	(1.9 in)
Stroke	4 mm	(0.16 in)
Gripping Force in Closing	5 N	(1.1 lbs)
Closing Time/Opening Time	0.1 sec	(0.1 sec)
Repeatability	± 0.02 mm	(0.0008 in)
Accuracy	± 0.05 mm	(0.002 in)
Voltage	24 VDC	
Power Max.	40 Watts	
Min./Max Operating Temperature	5° / 50° C (40° / 120° F)	
Protection Class	IP54	
Clean Room	100	
Clean Room with Scavenge*	10	
Weight	226 g	(0.50 lbs)

*Contact Tech Support.

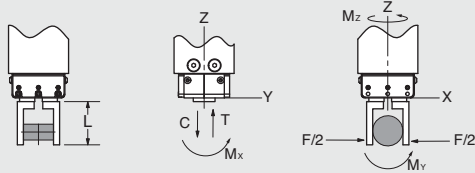
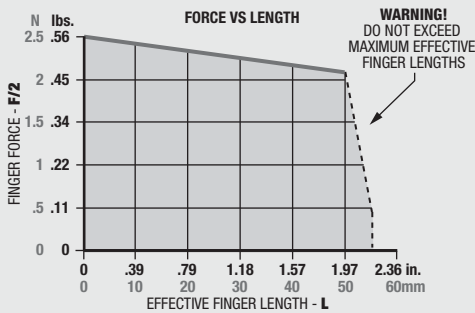


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.013mm	Metric Threads Course Pitch	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Loading Information

How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†

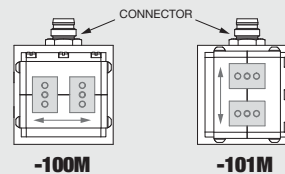
	Static	Dynamic
Maximum Tensile T	13 lbs [59 N]	4.5 lbs [20 N]
Maximum Compressive C	13 lbs [59 N]	4.5 lbs [20 N]
Maximum Moment M_x	2.7 lbf-in [0.75 Nm]	6.6 lbf-in [0.3 Nm]
Maximum Moment M_y	10.6 lbf-in [1.2 Nm]	3.5 lbf-in [0.4 Nm]
Maximum Moment M_z	6.6 lbf-in [0.75 Nm]	9.7 lbf-in [1.1 Nm]

† Capacities are per set of jaws and are not simultaneous

BASIC MODEL GRIPPING ORIENTATION

RPE - 100M

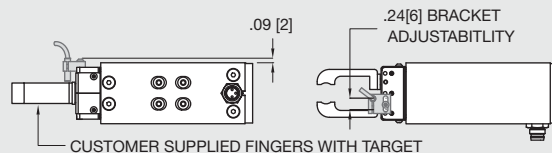
GRIPPING ORIENTATION -100M Gripping Direction Perpendicular to Connector
-101M Gripping Direction In-line to Connector



ACCESSORIES*

Inductive Sensor Mounting Kit (mounts one sensor)	OSMK-130	1 or 2
NPN Inductive Sensor with Quick Disconnect*	OISN-019	1 or 2
PNP Inductive Sensor with Quick Disconnect*	OISP-019	1 or 2
Quick Disconnect 2 Meter Cable Length*	CABL-010	1, 2, or 3†
Quick Disconnect 5 Meter Cable Length*	CABL-013	1, 2, or 3†

*Sensor and cables sold separately. † Power cable plus 1 or 2 sensor cables.

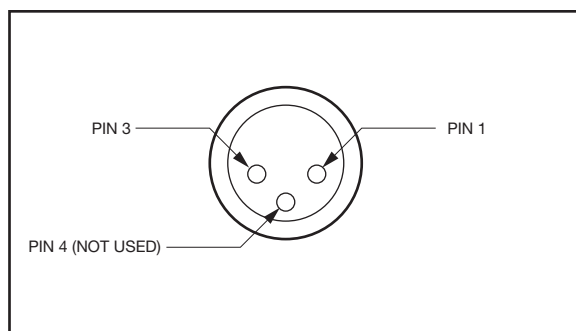


Installation and Operation:

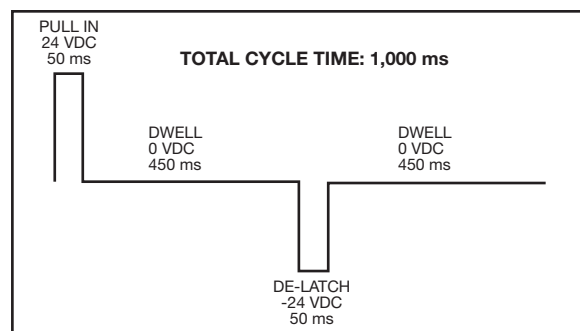
1. Mount fingers (customer supplied) to gripper jaws using dowel pins and threaded fasteners. See dimensional drawing for hole sizes. Use Loctite® 242 threadlocker or equivalent.
2. Mount gripper using dowel pins and threaded fasteners. Gripper can be mounted and operated in any orientation. See dimensional drawing for mounting hole pattern and sizes. Use Loctite® 242 threadlocker or equivalent.
3. The following instructions apply to standard operation and require a 24VDC power supply:
To open gripper, connect positive lead of power supply to Pin 1 of the connector and negative lead to Pin 3 of the connector. See below for pin orientation. Pulse for 50msec maximum as shown in Timing Diagram. After 50 msec pulse, allow 450msec minimum dwell time. To close gripper, connect positive lead of power supply to Pin 3 of connector and negative lead to Pin 1 of connector. Pulse for 50msec maximum as shown in Timing Diagram. After 50msec pulse, allow 450msec minimum dwell time.

WARNING:

- Operating gripper outside of power voltages and pulse times will cause damage and void warranty
- Do not insert any foreign objects (tools, body parts, etc) between gripper fingers when power is applied.
- Disconnect power from gripper before performing maintenance or making adjustments.
- Do not apply power to gripper for more than 100msec maximum. Observe 10% duty cycle at all times.



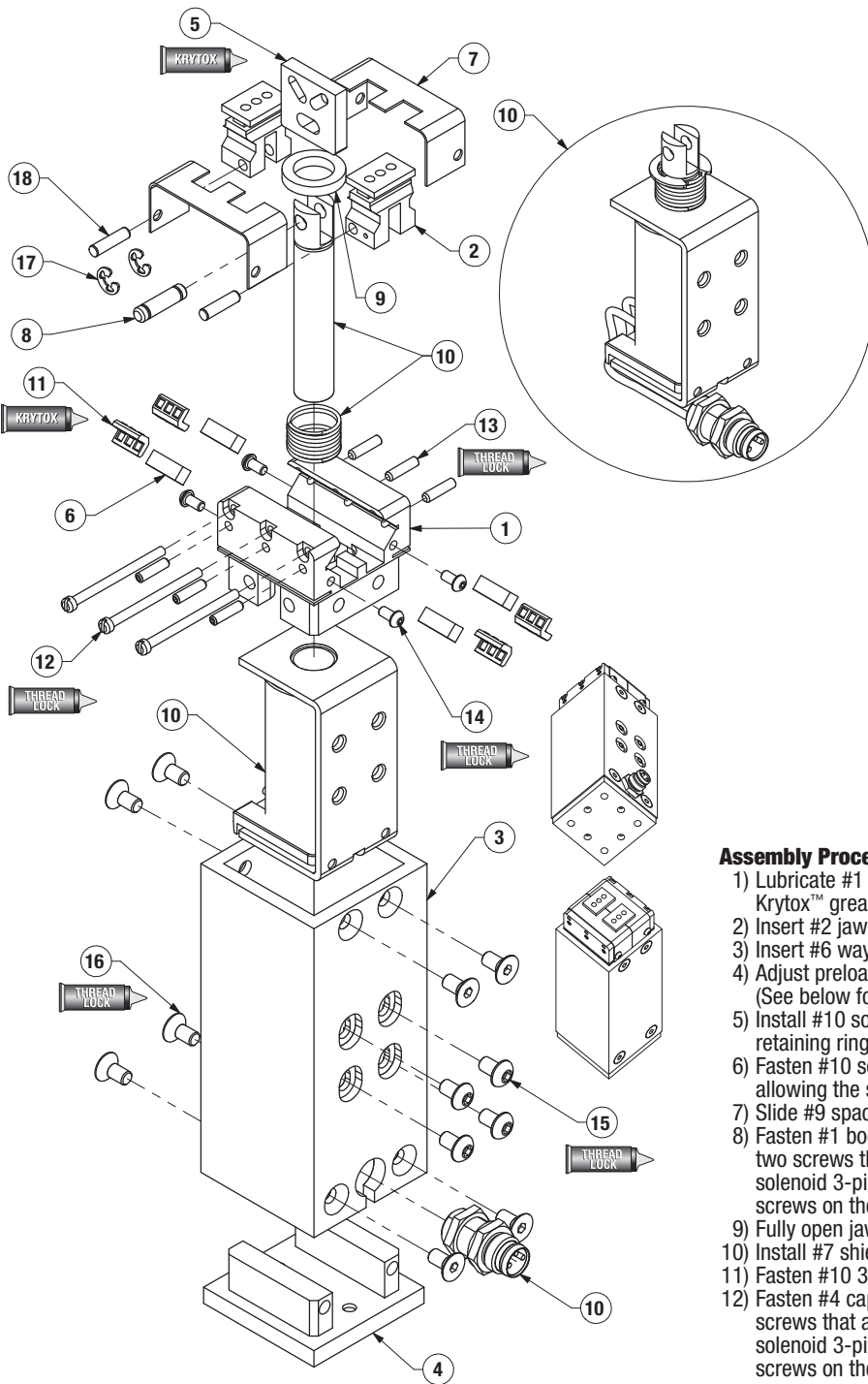
PIN ORIENTATION



TIMING DIAGRAM

NOTE: The RPE is CE marked.

RPE SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Housing
04	1	Cap
05	1	Wedge
06	4	Way
07	2	Shield
08	1	Clevis Pin
09	1	Spacer
10	1	Solenoid
11	4	Kit, Roller Bearing and Cage
12	3	Preload Screw
13	6	Set Screw-Way Locating
14	4	BHCS-Shield Mounting Screw
15	4	BHCS Solenoid Mounting Screw
16	8	FHCS-Housing Mounting Screw
17	2	Retaining Ring
18	2	Dowel Pin

NOTE: Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.

Assembly Procedure

- 1) Lubricate #1 body, #5 wedge, and #11 bearings using Krytox™ grease.
- 2) Insert #2 jaws and #5 wedge into body.
- 3) Insert #6 way and #11 bearings into each end of the body.
- 4) Adjust preload by adjusting #12 preload screws. (See below for procedure)
- 5) Install #10 solenoid plunger with #8 clevis pin and #17 retaining rings.
- 6) Fasten #10 solenoid to housing. Do not tighten yet, allowing the solenoid to freely move within slots.
- 7) Slide #9 spacer and #10 solenoid spring onto plunger.
- 8) Fasten #1 body into #3 housing. Completely fasten the two screws that are located on the same side as the #10 solenoid 3-pin connector then fasten the two remaining screws on the opposite side.
- 9) Fully open jaws and tighten #15 screws securely.
- 10) Install #7 shields to gripper.
- 11) Fasten #10 3-pin connector.
- 12) Fasten #4 cap into housing. Completely fasten the two screws that are located on the same side as the #10 solenoid 3-pin connector then fasten the two remaining screws on the opposite side.

Preload Adjustment Procedure

- 1) Install preload screws (12) with Loctite® 7649 primer and Loctite® 242 thread locker on 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 Kit Items



Thread Locker



Krytox™ Lubricant



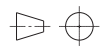
Lightweight Machine Oil



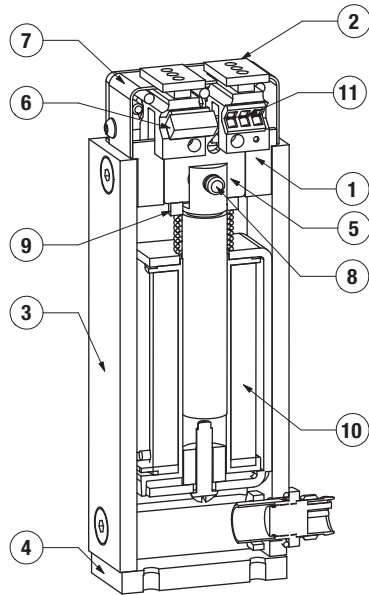
Teflon™ Based Grease



Super Bonder



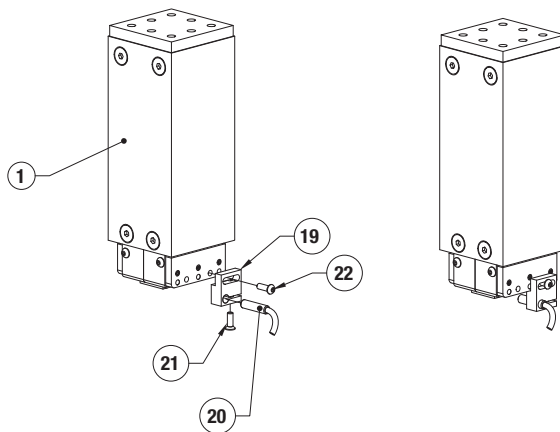
Third Angle Projection



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Housing
04	1	Cap
05	1	Wedge
06	4	Way
07	2	Shield
08	1	Clevis Pin
09	1	Spacer
10	1	Solenoid
11	4	Kit, Roller Bearing and Cage

NOTE: Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.

ACCESSORY INSTALLATION & ADJUSTMENT INSTRUCTIONS



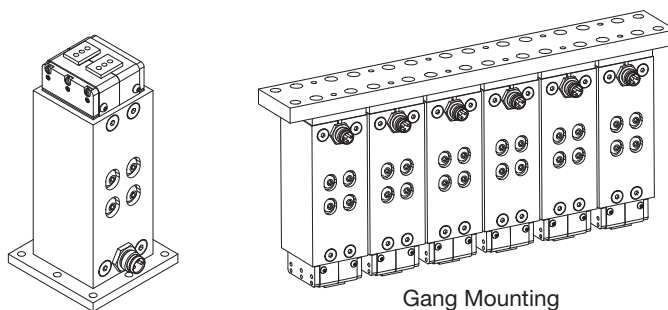
Installation*

- 1) Install sensors as shown.
- 2) Adjust for desired end of stroke detection.

* Fingers should be designed to act as target for inductive sensor. Sensing range is 0.031 [0.8]. The center line of the sensor diameter is located 0.094 [2.4] off of jaw mounting surface.

Fingers supplied by customer.

FLANGE MOUNTING PLATE, GANG MOUNTING AND MORE...



Flange Mounting Plate

Gang Mounting

Drawings shown are for concept only. Contact DE-STA-CO Tech Support with project requirements.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder



Third Angle Projection