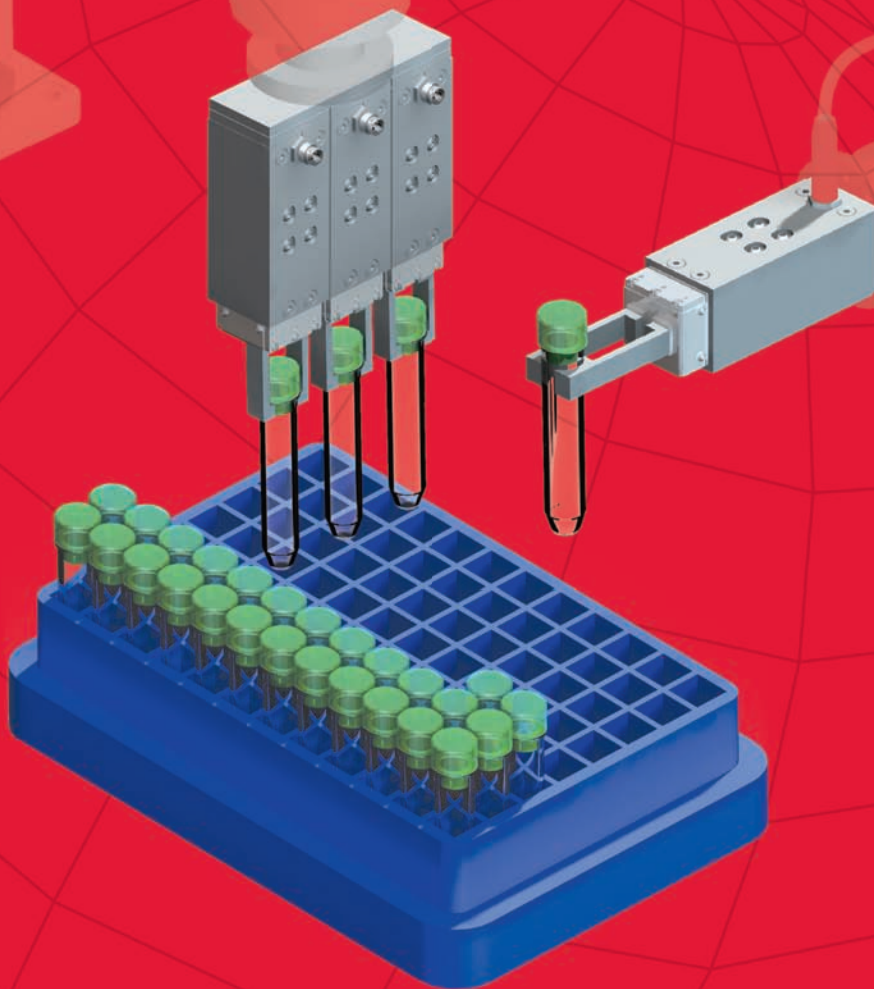




A DESTACO COMPANY  
**Automation**  
Robohand **FERGUSON**  
**CAMCO**

# E-Gripper



**HIGH SPEED ELECTRIC GRIPPING THAT  
COMBINES COST AND ENERGY EFFICIENCY  
WITH EASE OF USE**

**RPE ELECTRIC GRIPPER SERIES**

January 2009



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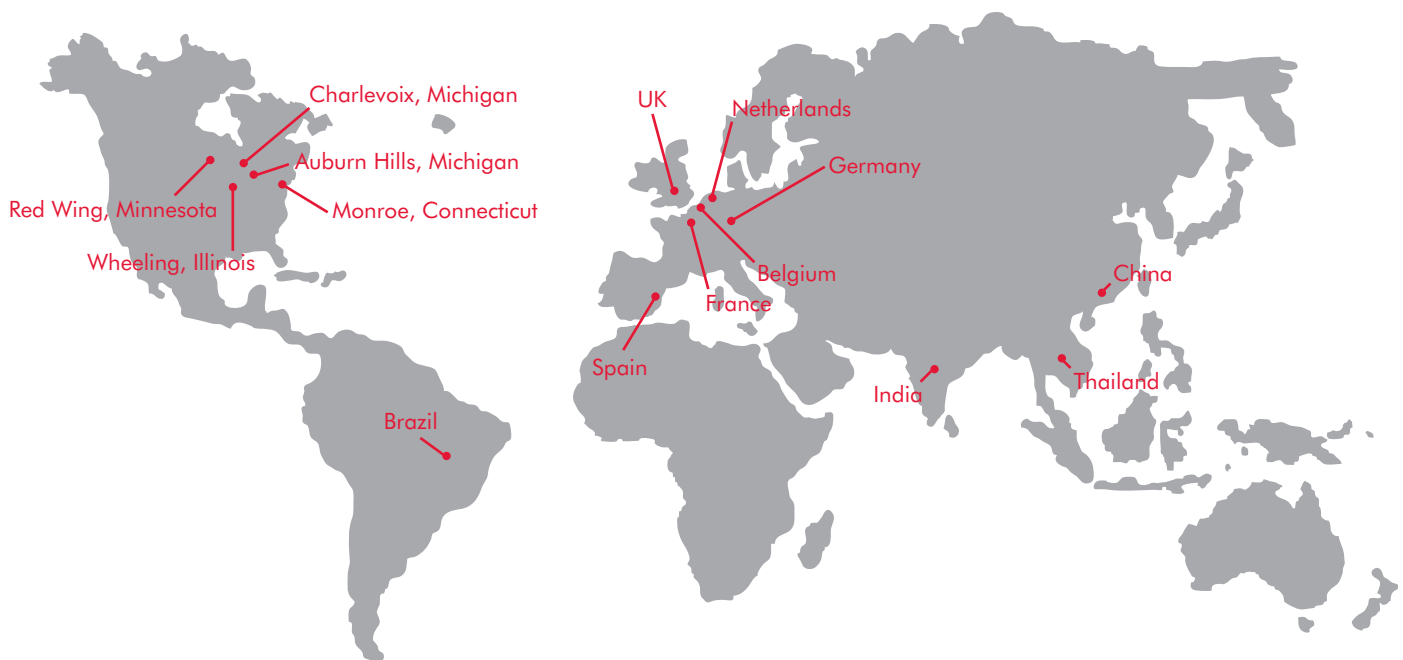
Precisely positioning our customers for productivity.

Visit us  
on the web at  
[www.destaco.com](http://www.destaco.com)

# DE-STA-CO OVERVIEW

## THE BEST PRODUCTS. UNMATCHED SERVICE. WORLDWIDE.

With a support network spanning the globe, DE-STA-CO offers consistent, comprehensive service to any location in the world. Whether your operations are localized or span multiple continents, you will always have access to the highest levels of customer service and technical support.



## TEAM DE-STA-CO

Team DE-STA-CO represents our efforts to provide consistent, standard-setting service and products to every DE-STA-CO customer, regardless of geographic location. Through this commitment, we are able to draw on our extensive knowledge base to always provide the perfect solution specific to your unique applications. This progressive global approach to doing business provides a level of expertise that is unmatched in the industry.



# BEYOND PNEUMATICS...



A  **DOVER** COMPANY

**Automation**

**Robohand** *FERGUSON*

**CAMCO**

# E-Gripper

High Speed Electric Gripping that Combines Cost  
and Energy Efficiency with Ease of Use

# RPE Parallel Gripper- Electric Gripper Series

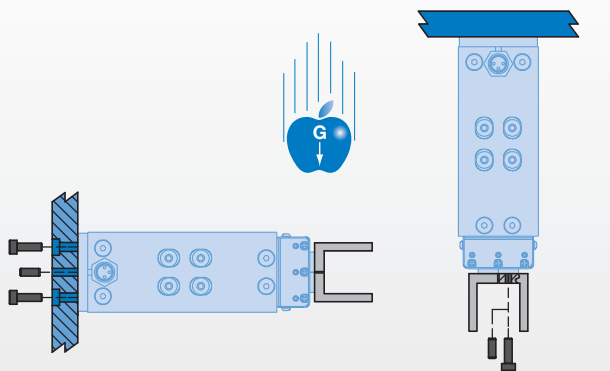
- Failsafe Operation:**  
 Spring closed feature allows for full grip force during power off conditions.
- Electrically Actuated:**  
 Requires simple 24VDC pulsed signal.  
**No programmable or expensive controller required.**
- Low System Impact:**  
 Easily integrated into current engineering and 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**

### 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

### Clean Room

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

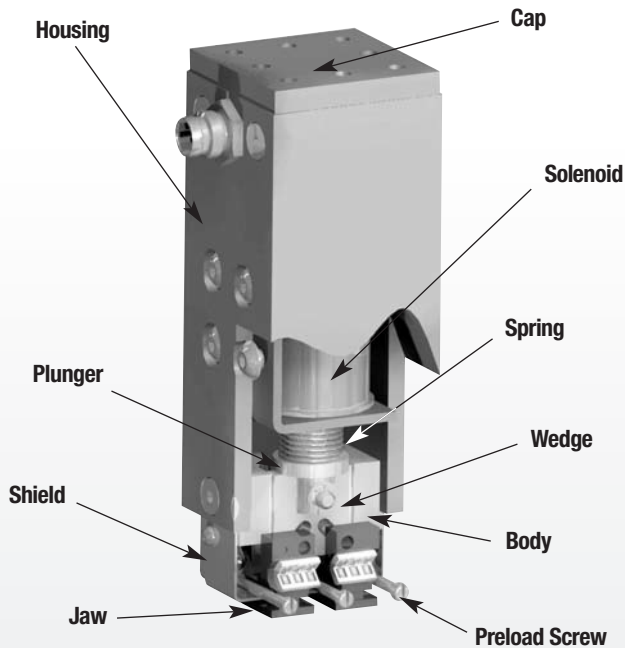
### Hardened Plated Jaws

For wear resistance and longer life

### Roller Bearings

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

## 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



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

See Page **6**

## Style-RPE

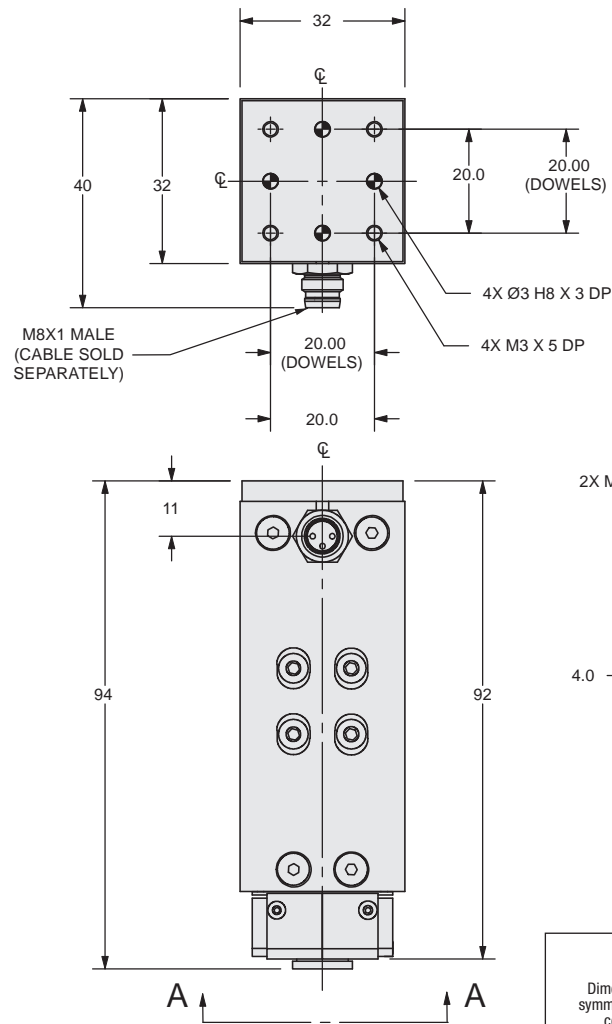
### Size -101M



<b>Style:</b>	RPE-101M
<b>Stroke:</b>	4 mm (0.16 in)
<b>Grip Force:</b>	5 N (1.1 lbs)
<b>Weight:</b>	226 g (0.50 lbs)

See Page **6**

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



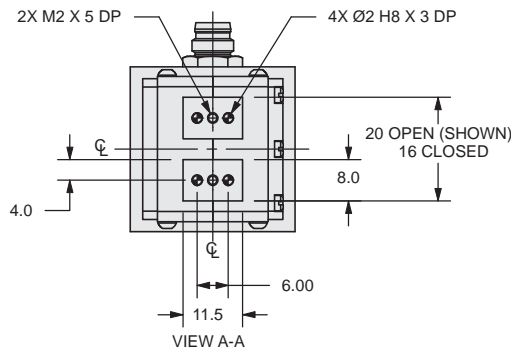
## Specifications

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.

-101M

-100M

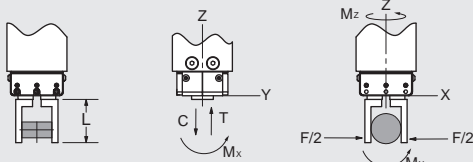
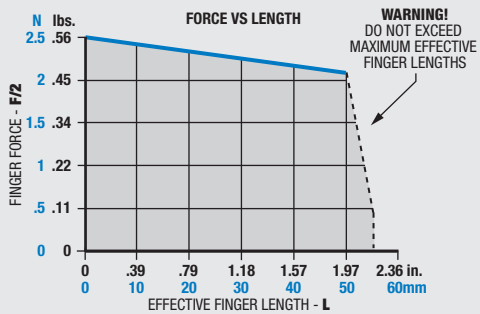


## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

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

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



### Loading Capacity†

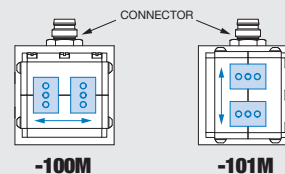
	Static	Dynamic
Maximum Tensile <b>T</b>	59 N (13 lbs)	20 N (4.5 lbs)
Maximum Compressive <b>C</b>	59 N (13 lbs)	20 N (4.5 lbs)
Maximum Moment <b>M<sub>x</sub></b>	0.75 Nm (6.6 lbf-in)	0.3 Nm (2.7 lbf-in)
Maximum Moment <b>M<sub>y</sub></b>	1.2 Nm (10.6 lbf-in)	0.4 Nm (3.5 lbf-in)
Maximum Moment <b>M<sub>z</sub></b>	0.75 Nm (6.6 lbf-in)	1.1 Nm (9.7 lbf-in)

†Capacities are per set of jaws and are not simultaneous

## BASIC MODEL GRIPPING ORIENTATION

**RPE - 100M**

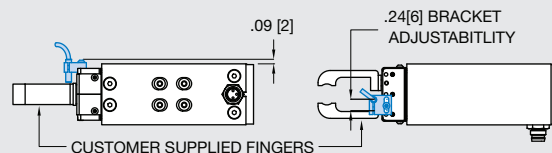
**GRIPPING ORIENTATION -100M** Gripping Direction Perpendicular to Connector  
**-101M** Gripping Direction In-line to Connector



### ACCESSORIES\*

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

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





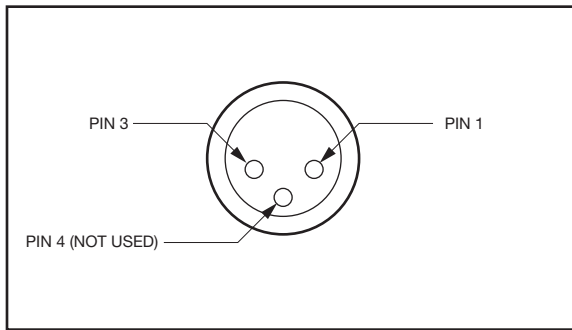
# PARALLEL GRIPPER RPE-100M/-101M E-GRIPPER SERIES

## Installation and Operation:

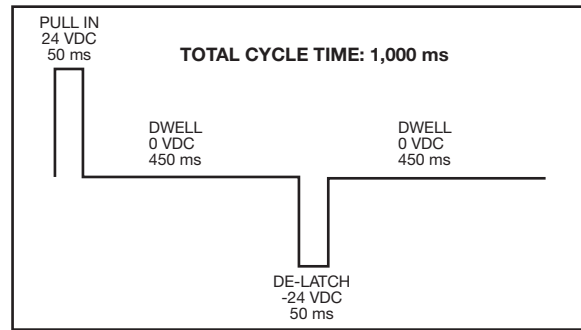
1. Mount fingers (customer supplied) to gripper jaws using dowel pins and threaded fasteners. See dimensional drawing for hole sizes. Use Loctite® 242 threadlocker or equivalent.
2. Mount gripper using dowel pins and threaded fasteners. Gripper can be mounted and operated in any orientation. See dimensional 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.

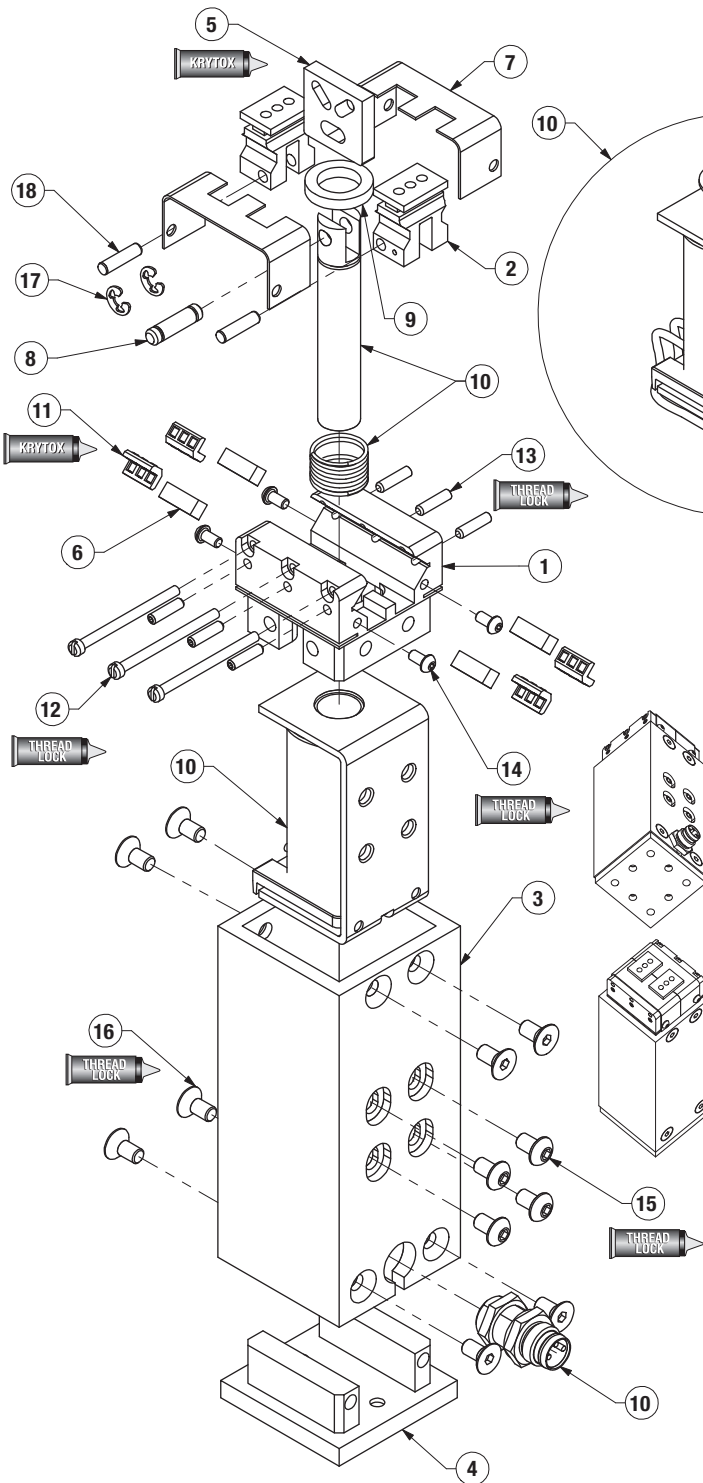


# RPE Series Exploded View



42 00000 000000

8 RPE SERIES



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. (See below for procedure)
- 4) Adjust preload by adjusting #12 preload screws.
- 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.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder

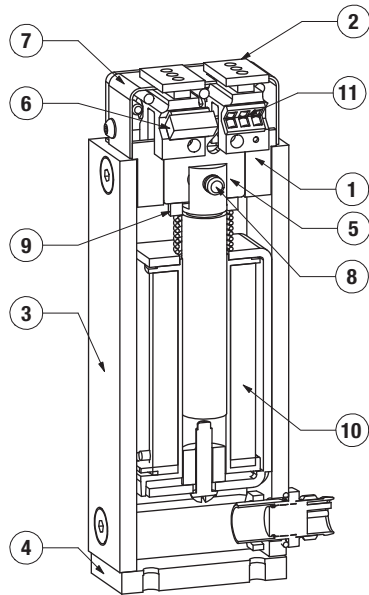


Third Angle Projection





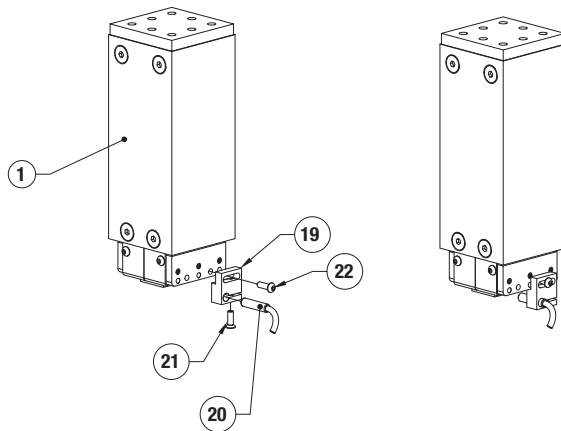
# RPE Series Assembled View



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

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

## Accessory Installation & Adjustment Instructions

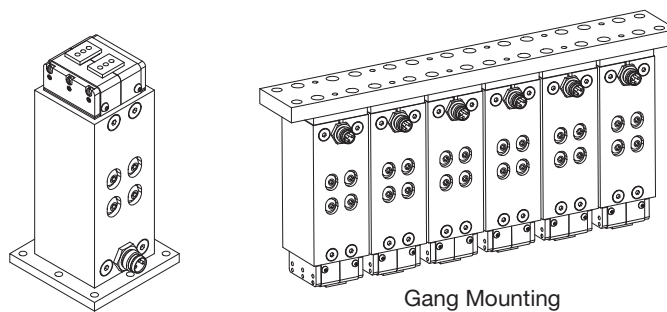


### Installation\*

- 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 0.8mm. 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

# APPLICATION DATA SHEET

Company Name: \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ - \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ - \_\_\_\_\_ Fax: ( ) \_\_\_\_\_ - \_\_\_\_\_ Web: \_\_\_\_\_

Key Contact Name: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ - \_\_\_\_\_ Fax: ( ) \_\_\_\_\_ - \_\_\_\_\_ Email: \_\_\_\_\_

**What is your expectation on delivery?** \_\_\_\_\_ weeks    Quantity required? \_\_\_\_\_ pcs

**Stroke required:** \_\_\_\_\_ mm    Finger length: \_\_\_\_\_ mm    Part Weight: \_\_\_\_\_ kg

**Cycle time:** \_\_\_\_\_ sec    Cycle rate: \_\_\_\_\_ cycles/hour    Duty cycle: \_\_\_\_\_ %

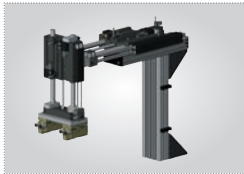
**Environment:**  Dirty     Corrosive     Clean Room     High Temp     Washdown     Other

**Please describe your application:** (Include a sketch or attach additional sheets if necessary. Please provide any photos you have available)

Please photocopy this page, complete and fax to DE-STA-CO Technical Support at 248-836-6901,  
e-mail to [tech-automation@destaco.com](mailto:tech-automation@destaco.com) or visit [destaco.com](http://destaco.com) to download application form.

# VALUE ADDED SERVICES

EACH DAY, DE-STA-CO PROVIDES CUSTOMERS WITH A COMPLETE RANGE OF WORKHOLDING AND AUTOMATION PRODUCTS AND SERVICES that reduce costs, minimize waste and eliminate bottlenecks. As a global supplier, we have extensive experience in bringing optimal solutions to customers of all needs and sizes. When you partner with DE-STA-CO, you put a world of resources at your fingertips.



## MODULAR AUTOMATION

Our full continuum of products provides an extremely flexible approach to automation. Through DE-STA-CO, you receive a solution that is specifically tailored to meet the needs and demands of your operations.



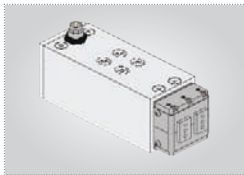
## TRAINING

Providing true solutions requires more than just standard-setting products. DE-STA-CO provides customers with a variety of optional training opportunities, including online, onsite and customized training programs.



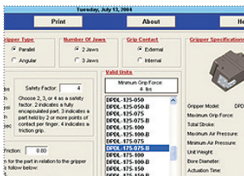
## GLOBAL WEB RESOURCE

In addition to working closely with customers on a face-to-face basis, we provide a wealth of accessible, user-friendly material through our website, [www.destaco.com](http://www.destaco.com). DE-STA-CO's website contains the comprehensive product information you would expect, as well as intuitive tools designed to provide instant customer support.



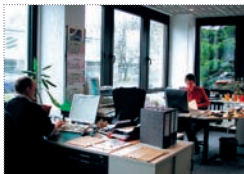
## 3D CAD & CONFIGURATOR

To ensure applicability to the broadest possible base of manufacturers, DE-STA-CO supports a wide variety of CAD programs, ranging from Catia to Unigraphics. All CAD formats are accessible through multiple channels, including our cutting-edge online digital catalog, located at [www.destaco.com](http://www.destaco.com). This web-based 3D CAD library allows engineers to configure individual 3D models from DE-STA-CO's extensive array of workholding and automation products. The intuitive system is part of DE-STA-CO's commitment to providing the exact CAD information you need, whenever you need it.



## ROBOSIZER™ SIZING SOFTWARE

Our web-based Robosizer sizing software allows users to size automation products to fit their application parameters. Product categories featured in the Robosizer software include grippers, rotaries, slides, thrusters, lift tables, load limiters, compliance devices, tool changers, machine load and unload, and feed escapements.



## CUSTOMER SUPPORT

DE-STA-CO provides support to customers available via fax, email or telephone. Our highly trained customer service staff work diligently to address any and all questions you might have.



## TECHNICAL SUPPORT

DE-STA-CO customers receive technical support from our own expert engineers. These highly trained employees work hand-in-hand with you to develop and implement the best possible solutions for your operations.



A DOVER COMPANY

# PRECISELY POSITIONING OUR CUSTOMERS FOR PRODUCTIVITY.

## Workholding

- Widest variety of workholding products
- High durability and reliability
- Flexible solutions for all applications
- Custom products for unique requirements

## Automation

- Broad range of engineered automation products
- Complementary products for modular integration
- Unmatched accuracy, reliability and performance
- Unparalleled global sales, service and engineering support

## DE-STA-CO GLOBAL LOCATIONS

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A DOVER COMPANY

### Automation

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 Monroe, CT 06468-2653

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Web: [www.destaco.com](http://www.destaco.com)



Precisely positioning our customers for productivity.

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