

DPE Parallel Gripper- Electric Gripper Series



- **Electrically Actuated**

24 VDC, 4-wire input: power, ground, open & closed signals.
100% duty cycle for high throughput.

- **“Light Switch” Simplicity**

Plug and play. No programming, tuning or adjusting required.
As easy as a pneumatic gripper to control and operate.

- **Energy Efficient**

Only 3W required. Can be driven directly by most PLC's
without a separate power supply. Can be battery driven
for remote applications.

- **High Cycle Life**

20+ million cycles with zero maintenance!
High reliability eliminates down time.
Lowest cost of ownership of any gripper,
pneumatic or electric.

- **Built-in Electronics**

All electronics are sealed
within the gripper. No external
control board needed.
4-pin/wire control cable
sold separately.

**NO
ADAPTER
PLATES!**



DIRECTCONNECT™
ADVANCED MODULAR AUTOMATION TECHNOLOGY

- **Long Stroke, Fast Actuation**

25mm stroke for picking multiple sized parts.
Full actuation in 0.25 second. Pick up to 150
parts per minute (with reduced stroke).

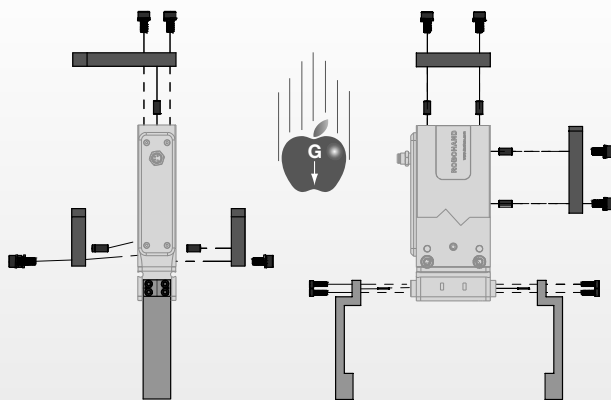
- **Failsafe operation**

In case of a power loss, the jaws will not
separate but grip force will be diminished.
Finger design should include features other
than just friction to retain part for critical
applications.

Patent Pending.

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

Multiple Position Sensing

Slot mounted magneto-resistive sensing. Sense up to 4 gripping positions. Internal magnetic targets and external sensor mounting slots come standard. Sensors & quick disconnect cables sold separately.

DirectConnect Mounting

Mounts directly to other automation products without adaptor plates. Versatile mounting on top, side front and back of body.

One-Piece Body

One-piece, lightweight aircraft quality aluminum body ensures product accuracy.

Hardcoat Anodize

The body and jaws are hardcoat anodized to 60Rc with Teflon impregnation.

Superior Jaw Support

Ridged design and full body support of the jaws allows for long finger lengths.



Sealed Design

IP 54 rating for tough application environments.

Slip Fit Dowel Pin Holes

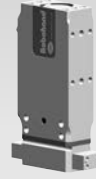
Located in body and jaws for precision mounting.

Rack & Pinion Drive

Precision drive components for smooth actuation. Zero backlash while gripping ensures excellent repeatability and accuracy.

Style-DPE

Size -200-25

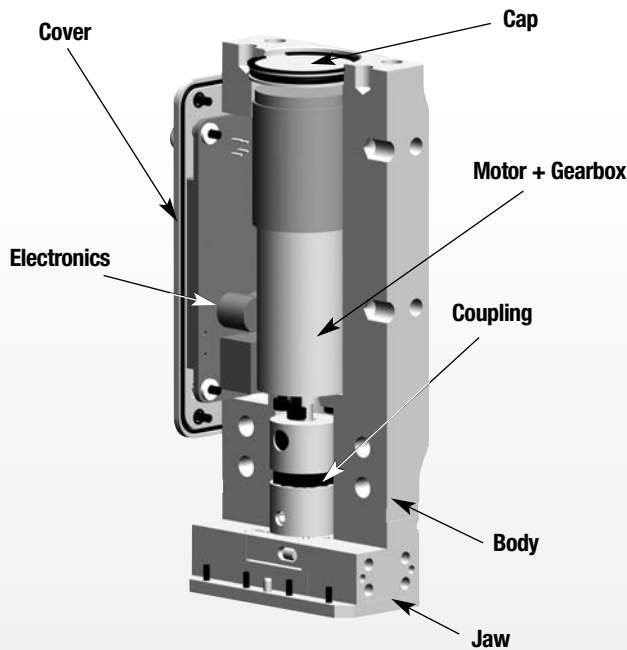


Style:	DPE-200-25	
Stroke:	25 mm	0.98 in
Grip Force:	90 N	20 lbs
Weight:	0.53 Kg	1.16 lbs

See Page **1.10**



Operating Principle



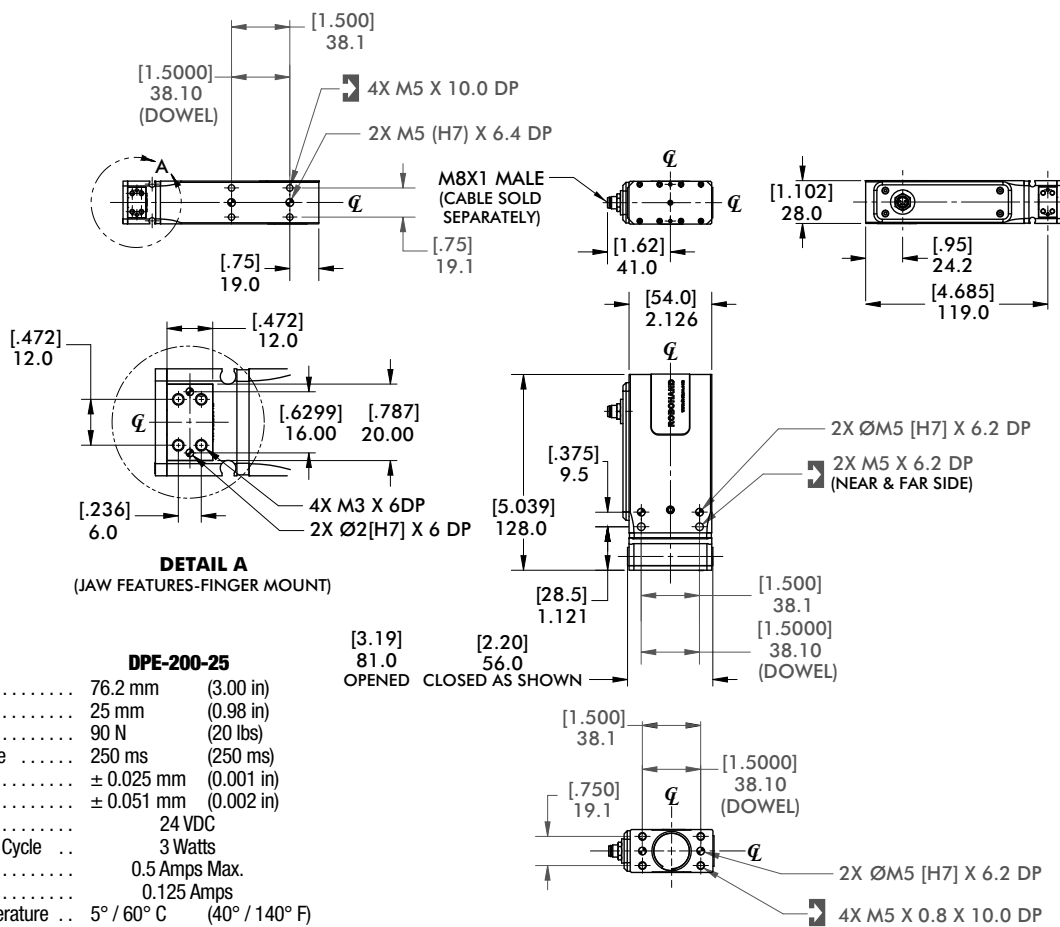
- Apply +24 VDC from the PLC to the gripper "Close" wire.
- The motor rotates a planetary gear reduction box that is connected to the drive pinion by a coupling
- The pinion drives the integral jaw racks causing the jaws to close synchronously
- Power is maintained to the closed signal to continue gripping force throughout the grip cycle.
- To open, remove signal to "Close" wire and apply +24 VDC from the PLC to the gripper "Open" wire
- Design is suitable for internal or external gripping

Patent Pending

PARALLEL GRIPPER DPE-200-25 E-GRIPPER SERIES

DPE SERIES

1.10



Specifications

	DPE-200-25	
Maximum Finger Length	76.2 mm	(3.00 in)
Stroke	25 mm	(0.98 in)
Gripping Force in Closing	90 N	(20 lbs)
Closing Time/Opening Time	250 ms	(250 ms)
Repeatability	± 0.025 mm	(0.001 in)
Accuracy	± 0.051 mm	(0.002 in)
Voltage	24 VDC	
Power Req. @ 100% Duty Cycle	3 Watts	
Current - Peak	0.5 Amps Max.	
Current - Continuous	0.125 Amps	
Min./Max Operating Temperature	5° / 60° C (40° / 140° F)	
Protection Class	IP54	
Clean Room	100	
Clean Room with Scavenge*	10	
Weight	0.53 Kg	(1.16 lbs)

*Contact Tech Support.

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

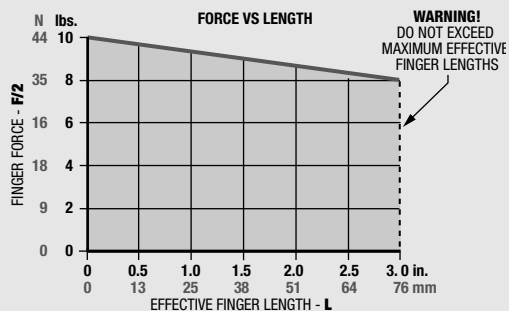
All Dowel Holes are SF (Slip Fit).
Locational Tolerance ±.013mm

Metric Threads
Course Pitch

Metric [mm]
[0.] = [±.25]
[0.0] = [±.13]
[0.00] = [±.013]

Loading Information

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



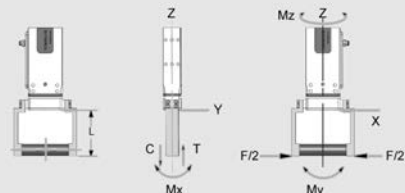
BASIC MODEL

DPE-200-25

ACCESSORIES*

4-wire Power and Signal Cable, 5m long	CABL-046	1
NPN Magneto Resistive Sensor	OHSN-017	1 or 2
PNP Magneto Resistive Sensor	OHSP-017	1 or 2
Quick Disconnect 5 Meter Cable Length*	CABL-013	1 or 2†

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

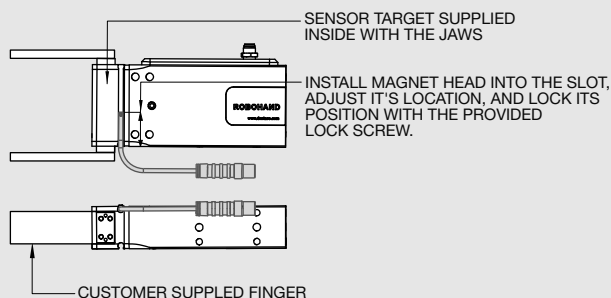


Loading Capacity†

Static

Maximum Tensile T	75 lbs	[10 N]
Maximum Compressive C	75 lbs	[10 N]
Maximum Moment M_x	120 lbf-in	[14 Nm]
Maximum Moment M_y	150 lbf-in	[17 Nm]
Maximum Moment M_z	120 lbf-in	[14 Nm]

† Capacities are per set of jaws and are not simultaneous





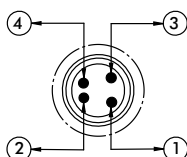
Installation and Operation:

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. To operate the DPE gripper, follow the instructions below:
Apply +24VDC to pin 1 (brown) and Ground to pin 3 (blue) to turn on the gripper. To open the fingers, apply +24VDC to pin 2 (white). To close the fingers, remove +24VDC from pin 2, and apply +24VDC to pin 4 (black). +24VDC signal must remain present on the open / close line to maintain the force output. The gripper will do nothing if a +24VDC signal is present on the open and close lines at the same time.

WARNING:

- Operating gripper outside of power voltages and can cause damage and void warranty
- Disconnect power from gripper before performing maintenance or making adjustments.

ELECTRICAL INTERFACE



PIN OUT (LOOKING INTO HEADER CONNECTOR ON GRIPPER)

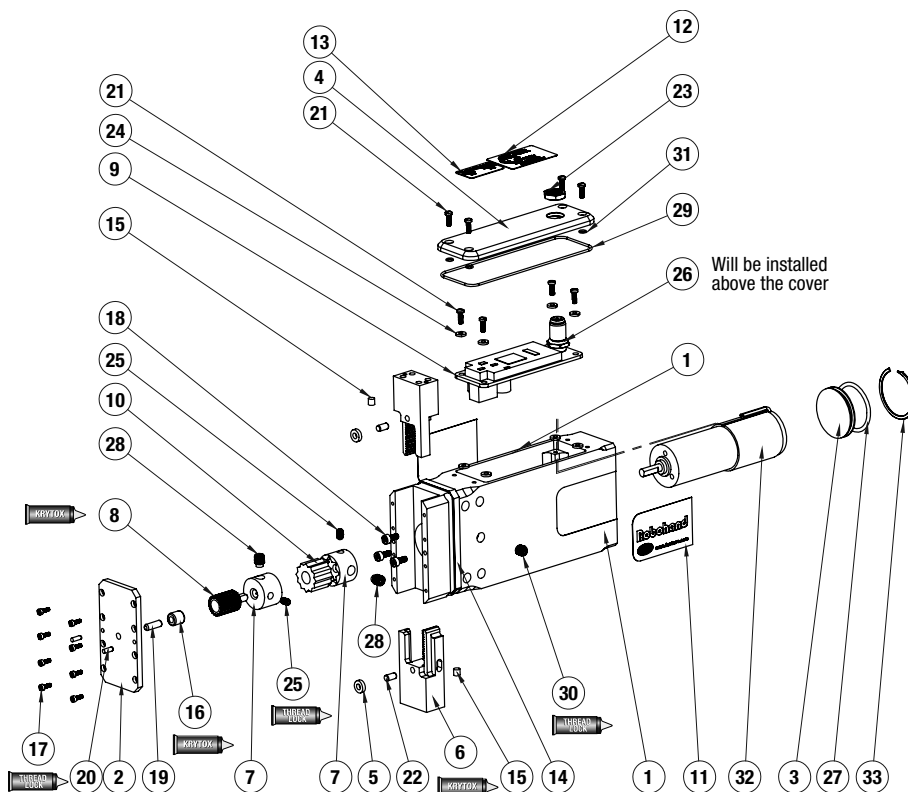
- 1 BROWN (+ 24 VDC)
- 2 WHITE (OPEN GRIPPER) +24 VDC = ACTIVE
- 3 BLUE (GROUND)
- 4 BLACK (CLOSE GRIPPER) +24 VDC = ACTIVE

CABLE # CABL-046

DPE SERIES EXPLODED VIEW

DPE SERIES

1.12



Item	Qty	Name
01	1	Body
02	1	Bottom Plate
03	1	Cap
04	1	Cover
05	2	Bumper
06	2	Jaw
07	2	Coupling Pin
08	1	Drive Pin
09	1	Motor Control Board
10	1	Coupling Insert
11	2	Tag-Destaco-Robohand
12	1	Tag-Electric Pin Out
13	1	Tag-Production
14	1	Tag-VBL Collar
15	2	Magnet
16	1	Bearing
17	8	SHCS, M1.6*5mm, Alloy
18	3	SHCS, M2.5*5mm, Alloy
19	1	Dowel Pin: 1/8 Dia X 3/8
20	2	Dowel Pin: 2mm dia*6mm lg
21	8	Screw, Fillister HD, M2x6mm
22	2	Dowel Pin: 3mm dia*6mm lg.
23	0	Jam Nut-Ref Only (Part Of Motor Control Board)
24	8	Washer
25	2	Set Screw
26	0	O-Ring - Ref Only (Comes With Connector)
27	1	O-Ring
28	2	Set Screw
29	1	O-Ring
30	1	Set Screw
31	4	O-Ring, Buna, 70d, 0.026 CS, .097id
32	1	Gear Motor
33	1	Ret. Ring

Assembly Procedure

- 1) Clean all make details free of dirt, oil and other contaminants.
- 2) Insert # 32 motor into the # 1 body, line up the motor holes and assemble motor to the body by using # 18 screws. Make sure that the motor wires are carefully routed to the top for it's connection to the motor control board.
- 3) Assemble # 25 set screws one of the # 7 coupling hubs, but not all the way in. Assemble the coupling to the motor shaft, with flat on the motor shaft facing one of the set screws and adjust the inside face of the coupling, flat with end face of the motor shaft. Tighten the set screw on the motor shaft thru the access hole at set screw # 30 location.
- 4) Assemble the # 10 coupling insert into the # 7 hub, as assembled to the motor shaft, as above.
- 5) Assemble # 8 drive pinion with it's shaft all the way into the second # 7 coupling hub and tighten the set screws. Assemble # 16 bearing and # 19 dowel pin into the drive pinion. Now install this assembly hub / insert assembly installed earlier to the motor shaft.
- 7) Assemble # 15 magnets into # 6 jaws, using lok-tite as recommended.
- 8) Lubricate the pinion, the bearing, the jaws and inside surfaces of jaw-ways with lubricant as recommended.
- 9) Install the jaws into the body, meshed with the pinion and symmetrically positioned w.r.t the pinion.
- 10) Install # 5 stop and # 22 dowel pins into the jaws.
- 11) Assemble # 2 cover to the body, with dowel pins # 19 and # 29 aligned to the corresponding holes in the cover. Install fasteners # 17 to secure the cover to the body.
- 12) Install / connect the motor cable connector the motor control board. Use # 21 & # 24 fasteners and install the motor control board to the body. Note: Remove the hex nut supplied with the connector on the motor control board. This hex nut will be re-installed after # 4 cover is installed.
- 13) Install # 4 cover to the body with # 29 gasket and # 21 screws as shown.
- 14) Installed the previously removed hex nut back to the connector. Caution: Only snug tighten this hex nut.
- 15) Install # 3 cap with O ring and snap ring, as shown.
- 16) Install tags and labels as shown.

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

DIRECTCONNECT™



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



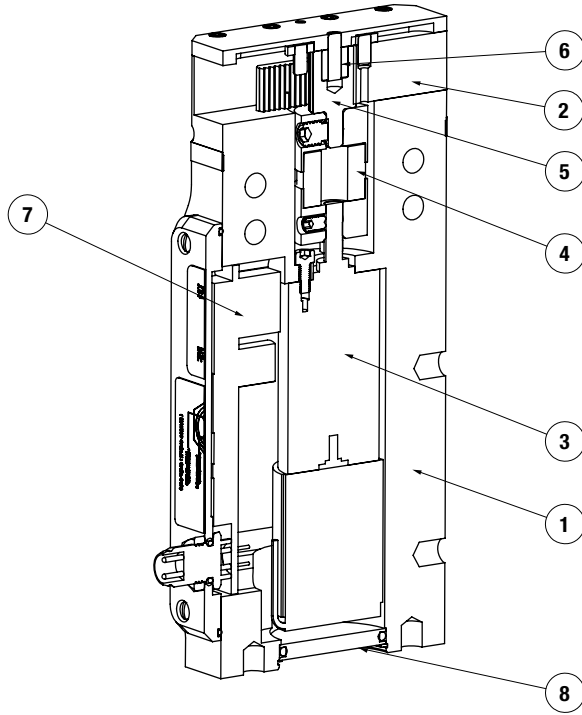
Teflon™ Based Grease



Super Bonder



Third Angle Projection



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Motor/Gear ASM
04	1	Coupling Asm
05	1	Pinion
06	1	Bearing
07	1	Motor Control Board
84	1	End Cap

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



<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX™ Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon™ Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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