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**WG Series Parallel Gripper**

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WGS-50 Parallel Gripper Double Guided Wedge

Gripper summary of Operation:

Synchronous motion is achieved with a double acting piston attached via the piston shaft to a double sided wedge. The double sided angles of the wedge convert vertical motion to synchronous horizontal motion of the jaws.

A. Body
Hardcoat Anodized PTFE impregnated aluminum inside and out. Ultra high gripping force to weight ratio.

B. Jaws
Jaws machined from S7 tool steel to prevent jaw breakage.

C. Switches
Proximity switches are available to monitor open and closed position of the jaws.

D. Side Ports
Additional side mounting holes and side air ports for optional mounting and porting.

E. Lubrication
Pre-lubricated with our specially formulated oil based compound for extensive maintenance free performance.

WGL-50 Long Stroke and WGS-90 Short Stroke Parallel Grippers Double Guided Wedge

Gripper summary of Operation:

Synchronous motion is achieved with a double acting piston attached via the piston shaft to a double sided wedge. The double sided angles of the wedge convert vertical motion to synchronous horizontal motion of the jaws.

A. Body
Hardcoat Anodized PTFE impregnated aluminum inside and out. Ultra high gripping force to weight ratio.

B. Jaws
Hardcoat Anodized PTFE impregnated aluminum. Lightweight, Durable, high strength.

C. Purge Port
Unit can be slightly pressurized to prevent debris or coolant from entering. A vacuum can be applied to evacuate contaminants from inside the unit in a clean room environment.

D. Switches
Proximity switches are available to monitor open and closed position of the jaws.
Parallel Gripper
Double Guided Wedge

How to Order

WG  S  50 1 4  C  X

Gripper Stroke
S = Short stroke
L = Long stroke

Gripper Series
50
90

Seal Type
1 = Buna-N

Special Options
X = No Options

Sensing Position
A = Single Position Open
B = Single Position Closed
C = Open and Close Position Sensing
D = No Sensing

Sensing Type
Standard Cord Set
4 = Prox Switch - PNP (sourcing)
5 = Prox Switch - NPN (sinking)
6 = No Sensing
Quick Disconnect Cord Set
W = Prox Switch - PNP (sourcing)
V = Prox Switch - NPN (sinking)
U = Prox Switch - PNP (sourcing) 90 Deg.
T = Prox Switch - NPN (sinking) 90 Deg.
Prox switches are 4mm diameter

When ordering additional switches:

<table>
<thead>
<tr>
<th>Switch Description</th>
<th>Standard Part No.</th>
<th>Quick Disconnect Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prox Switch - PNP (Sourcing)</td>
<td>PROX-4FL2-P</td>
<td>PROX-4QDS-P</td>
</tr>
<tr>
<td>Prox Switch - NPN (Sinking)</td>
<td>PROX-4FL2-N</td>
<td>Not Available</td>
</tr>
<tr>
<td>Quick disconnect cable straight</td>
<td>–</td>
<td>PXCST</td>
</tr>
<tr>
<td>Quick disconnect cable 90 deg.</td>
<td>–</td>
<td>PXC90</td>
</tr>
</tbody>
</table>

Information subject to change without notice. For ordering information or regarding your local sales office visit www.numatics.com.
**Dimensions: Inches**

**WGS-50**

Gripper Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Force Open @100 PSI</th>
<th>Force Close @100 PSI</th>
<th>Displacement</th>
<th>Max. PSI</th>
<th>Repeatability</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGS-50</td>
<td>45 lbs</td>
<td>40 lbs.</td>
<td>.10 cu. inches</td>
<td>150 PSI</td>
<td>±.002</td>
<td>4 oz.</td>
</tr>
</tbody>
</table>

Recommended Maximum Load Rating

<table>
<thead>
<tr>
<th>Model</th>
<th>Mx</th>
<th>My</th>
<th>Mz</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGS-50</td>
<td>123 in.-lbs.</td>
<td>123 in.-lbs.</td>
<td>123 in.-lbs.</td>
</tr>
</tbody>
</table>

Grip Force vs. Finger Length

<table>
<thead>
<tr>
<th>&quot;L&quot; Max</th>
<th>Force Close @ 100 PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>42 lbs.</td>
</tr>
<tr>
<td>1.0</td>
<td>34 lbs.</td>
</tr>
<tr>
<td>1.5</td>
<td>30 lbs.</td>
</tr>
<tr>
<td>2.0</td>
<td>20 lbs.</td>
</tr>
<tr>
<td>2.5</td>
<td>16 lbs.</td>
</tr>
</tbody>
</table>

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Parallel Gripper
Double Guided Wedge

WGL-50

Gripper Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Stroke</th>
<th>Force Close @ 100 PSI</th>
<th>Displacement</th>
<th>Max. PSI</th>
<th>Repeatability</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGL-50</td>
<td>.375</td>
<td>40 lbs.</td>
<td>.20 cu. inches</td>
<td>150 PSI</td>
<td>±.002</td>
<td>7 oz.</td>
</tr>
<tr>
<td>WGS-90</td>
<td>.500</td>
<td>70 lbs.</td>
<td>.30 cu. inches</td>
<td>150 PSI</td>
<td>±.002</td>
<td>11 oz.</td>
</tr>
</tbody>
</table>

Recommended Maximum Load Rating

<table>
<thead>
<tr>
<th>Model</th>
<th>Mx</th>
<th>My</th>
<th>Mz</th>
<th>Lmax</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGL-50</td>
<td>70 in.-lbs.</td>
<td>70 in.-lbs.</td>
<td>70 in.-lbs.</td>
<td>2.5 inches</td>
</tr>
<tr>
<td>WGS-90</td>
<td>160 in.-lbs.</td>
<td>160 in.-lbs.</td>
<td>160 in.-lbs.</td>
<td>2.5 inches</td>
</tr>
</tbody>
</table>

Grip Force vs. Finger Length

<table>
<thead>
<tr>
<th>&quot;L&quot; Max</th>
<th>WGL-50</th>
<th>WGS-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>50 lbs.</td>
<td>92.5 lbs.</td>
</tr>
<tr>
<td>1.0</td>
<td>47 lbs.</td>
<td>90 lbs.</td>
</tr>
<tr>
<td>1.5</td>
<td>42 lbs.</td>
<td>80 lbs.</td>
</tr>
<tr>
<td>2.0</td>
<td>40 lbs.</td>
<td>75 lbs.</td>
</tr>
<tr>
<td>2.5</td>
<td>35 lbs.</td>
<td>70 lbs.</td>
</tr>
</tbody>
</table>

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WG Series Switch Information

WG Series Gripper

<table>
<thead>
<tr>
<th>Series</th>
<th>Bracket P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGS90</td>
<td>CT-500</td>
</tr>
<tr>
<td>WGL50</td>
<td>CT-500</td>
</tr>
</tbody>
</table>

Sensor Description

<table>
<thead>
<tr>
<th>Standard Cord Set</th>
<th>Quick Disconnect</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROX-4FL2-P</td>
<td>PROX-4QDS-P</td>
</tr>
<tr>
<td>PROX-4FL2-N</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

See below for sensor specifications

Prox Switch (NPN NO) Flying Lead - PROX-4FL2-N

Prox Switch (PNP NO) Flying Lead - PROX-4FL2-P

Prox Switch (PNP NO), 8 mm connector - PROX-4QDS-P

Electrical Design

- 3-Wire DC PNP/NPN
- Normally Open
- 10-36 VDC
- 100 mA
- Yes (Non-Latching)
- Yes
- < 2.5V
- < 15 mA @ 24V
- .8mm ± 10%
- > 2000 Hz
- < -25°C to 70°C
- IP 65, III
- -10 - 10% OF Sr
- 1 - 15% OF Sr
- 0 - .65mm
- Mild Steel=1, Stainless Steel=.7, Brass=.5, Alum.=.4,Copper=.3
- Yellow LED
- Housing; Stainless Steel: POM
- PVC Cable, 2m, 3 x .14mm²

Connection

- Function Display Switching Status
  - LED (4 x 90°)
- M8 Connector
- Remarks
  - cULus–Class 2 Source Required
- Agency Approvals
  - CE

Switches are not designed for wet environments. Please see your distributor for additional information.

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Parallel Gripper
Double Guided Wedge

Quick Disconnect Cables

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Type</th>
<th>Operating Voltage</th>
<th>Current Rating</th>
<th>Cable Material</th>
<th>Protection</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXST</td>
<td>Straight 5 m Cable (3 x 26 Gauge wire)</td>
<td>60 AC/75 DC</td>
<td>3 A</td>
<td>PUR</td>
<td>IP 68, III</td>
<td>M8</td>
</tr>
<tr>
<td>PXC90</td>
<td>90° 5 m Cable (3 x 26 Gauge wire)</td>
<td>60 AC/75 DC</td>
<td>3 A</td>
<td>PUR</td>
<td>IP 68, III</td>
<td>M8</td>
</tr>
</tbody>
</table>

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