The modular design system for flexible gripping

Product Catalog 2022
Configure your individual gripper within minutes with the modular system of SoftGripping. The pneumatically powered elastic gripper allow easy, robust and very light designs. The soft and adaptive surfaces ensure safe and careful gripping of different shaped products.

If your application needs a special design, we are happy to develop a customized gripping system for you and support you in the entire automation process. The design and manufacturing method of SoftGripping allows a fast and cost-effective customization.

Let's find the perfect solution for your individual gripping needs.
Elastic Gripping Finger

The gripping fingers consist of a specially shaped silicon shell, which grips in dependence to the air pressure inside. By applying pressure the fingers close and grip an object carefully. Using vacuum the gripper can be spreaded.

The size of the fingers is inspired by human fingers. Most of the products we want to hold in our hands were once designed to be grasped by human hands - one of the most effective and flexible gripping tool.

Special emphasis in the development process was placed on the durability. Due to an optimized shape and a special developed material more than 10 million gripping cycles can be done.

- Safe collaboration
- Fault tolerant gripping
- High speed capable
- Optimized durability
- FDA approved material
- Optional: detectable material available
- Gripping differently shaped products with one gripper

<table>
<thead>
<tr>
<th>Finger material</th>
<th>Silicone FDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass</td>
<td>20 g</td>
</tr>
<tr>
<td>Pressure range</td>
<td>-0.5 ... 1.2 bar</td>
</tr>
<tr>
<td>Gripping force</td>
<td>5 N</td>
</tr>
<tr>
<td>Durability @1.0 bar 0.5 Hz</td>
<td>&gt;10 million cycles</td>
</tr>
<tr>
<td>Gripping speed</td>
<td>&lt;50 ms</td>
</tr>
</tbody>
</table>
The SoftGrippers are lightweight, easy to operate and have no sharp edges. They adapt to the shape of any object without damaging the surface. The main advantages are the low weight, the gripping speed and the capability to work with all kinds of objects. Our pneumatically driven fingers are made of FDA-approved silicon rubber. We guarantee a lifetime of more than 10 million cycles at 1 bar pressure.

Adapters are available for any robot on the market. The shape of the gripping object determines the base, which is an essential part of the gripper. A circular object needs a centric base, a long object a parallel one.

You can choose one of our standard gripper with a suitable number of fingers, their arrangement and orientation. With these standard grippers you can handle most objects. For special applications, we will gladly design a completely individual base for your task in shortest time.

You will be surprised how safe and easy one SoftGripper can handle a broad range of objects due to its flexibility. So it is not necessary to have different grippers for differently shaped objects.

Additionally a vacuum suction cup can be mounted centrically to support the gripping process.

- Integrated and very light design
- Ideal for gripping differently shaped objects
- Hygienic design
- Centric and parallel grippers available
- Connector for an optional suction cup or spacer
- Ideal for handling of food and sensitive objects
- High speed gripping with delta robots
- Customized grippers available (number of fingers and finger orientation)
Configure your Individual SoftGripper

Beside our standard grippers you can freely configure your customized gripper. Simply choose the number of fingers, their orientation and distance - according to your gripping objects and process. Choose the hygienic version to handle food.

Thanks to the design and manufacturing process your individual SoftGripper can be produced within two weeks.

Just follow the selection guide to specify your gripper and the article number.

You need support in your selection or design process? Just contact us. We are happy to help.

<table>
<thead>
<tr>
<th>Robot Flange</th>
<th>Angle of the Finger Orientation</th>
<th>Distance between the Fingers</th>
<th>Number of the Fingers</th>
</tr>
</thead>
<tbody>
<tr>
<td>R31</td>
<td>D0</td>
<td>A30</td>
<td>F6</td>
</tr>
<tr>
<td>R50</td>
<td>D15</td>
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</table>

<table>
<thead>
<tr>
<th>Finger Material</th>
<th>P</th>
<th>Parallel or Centric Gripper</th>
<th>H</th>
<th>Hygienic or Normal Gripper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centric gripper for round objects</td>
<td>P</td>
<td>Parallel gripper for rectangular objects</td>
<td>H</td>
<td>Hygienic or Normal Gripper</td>
</tr>
</tbody>
</table>

**Selection Guide for your Individual SoftGripper**

- **Robot Flange**: Choose the robot flange corresponding to your robot.
- **Angle of the Finger Orientation**: Choose the angle of the fingers.
- **Distance between the Fingers**: Choose the distance according to your object size.
- **Number of the Fingers**: Choose the number of fingers corresponding to the size and weight of your object: 1 Finger = 150 g.
- **Parallel or Centric Gripper**: Choose the type of gripper based on the shape of your object (round or rectangular).
- **Hygienic or Normal Gripper**: Choose the hygienic version for food handling.

You have a different robot flange? Contact us! We can deliver the right adapter for you.
2-Finger Parallel SoftGripper

Mass 110 g

Typical Gripping Objects
Rectangular or cubic
Feed size 5 mm - 120 mm
Weight < 300 g

3-Finger Centric SoftGripper

Mass 190 g

Typical Gripping Objects
Circular or cylindrical
Feed size 5 mm - 120 mm
Weight < 450 g

4-Finger Parallel SoftGripper

Mass 200 g

Typical Gripping Objects
Rectangular or cubic
Feed size 5 mm - 120 mm
Weight < 600 g
6-Finger Centric SoftGripper
Mass 300 g
Typical Gripping Objects
Rectangular or cubic Feed size 5 mm - 120 mm Weight <600 g

6-Finger Parallel SoftGripper
Mass 460 g
Typical Gripping Objects
Rectangular or cubic Feed size 40 mm - 120 mm Weight <1200 g

8-Finger Parallel SoftGripper
Art.No. SG.IN.P.8P.50.80D.G1
Mass 460 g
Typical Gripping Objects
Rectangular or cubic Feed size 40 mm - 120 mm Weight <1200 g
SoftGripper Accessories

**Spacer for Small Objects**
Art.No. SG.SP.M5.40.01
Safe gripping and avoiding of sliding upwards of small gripping objects.

**Suction Cup Extender with G1/8 thread**
Art.No. SG.SP.M5.40.01
Suction cups can be used to add gripping force for flat objects.

SoftGripper Construction Kit

Do you have diverse applications and would like to test the versatility of SoftGripping? You can do it with the Construction Kit!

**The Construction Kit includes:**
- 6x SoftGripping Finger
- 2 Finger Gripper Base
- 3 Finger Gripper Base
- 4 Finger Gripper Base
- 6 Finger Gripper Base
- Suction Cup
- Spacer
- Pneumatic Accessories
- Roboter adapter
SoftActuator

You need a more flexible gripper? Do you want to modify the gripper as you go? Or you want to integrate SoftActuators into your own handling device?

SoftActuators are the right choice for you! Build up your personal gripper out of SoftActuators and attachment plates and a robot connector.

- Fits to all SoftGripping plates and profiles
- High speed pick and place applications
- Custom actuators are available (number of fingers and finger distance)

Get the CAD-models of the SoftActuators and integrate it into your design.

www.soft-gripping.com
### SoftActuators

<table>
<thead>
<tr>
<th>Name</th>
<th>Art.No.</th>
<th>Mass (g)</th>
</tr>
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<tbody>
<tr>
<td>1-Finger SoftActuator</td>
<td>SG.AN.F1.560</td>
<td>40</td>
</tr>
<tr>
<td>2-Finger SoftActuator</td>
<td>SG.AN.F2.560</td>
<td>100</td>
</tr>
<tr>
<td>3-Finger SoftActuator</td>
<td>SG.AN.F3.560</td>
<td>120</td>
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</tbody>
</table>

### Plates for SoftActuators

<table>
<thead>
<tr>
<th>Name</th>
<th>Art.No.</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Plate Robot Adapter</td>
<td>SG.AN.R50</td>
<td>80</td>
</tr>
<tr>
<td>Construction Plate</td>
<td>SG.AN.P1.144</td>
<td>30</td>
</tr>
<tr>
<td>2 Arm Plate</td>
<td>SG.AN.P2.A185</td>
<td>40</td>
</tr>
<tr>
<td>3 Arm Plate</td>
<td>SG.AN.P3.A185</td>
<td>50</td>
</tr>
<tr>
<td>4 Arm Plate</td>
<td>SG.AN.P4.A185</td>
<td>60</td>
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<tr>
<td>6 Arm Plate</td>
<td>SG.AN.P6.A185</td>
<td>75</td>
</tr>
<tr>
<td>8 Arm Plate</td>
<td>SG.AN.P8.A185</td>
<td>90</td>
</tr>
</tbody>
</table>

### Universal Plate Robot Adapter
- ISO 9409-A31.5
- ISO 9409-A40
- ISO 9409-A50

### Construction Plate
- Art.No. SG.AN.P1.144
- Mass 30 g

### Plates
- Art.No. SG.AN.P2.A185
- Mass 40 g
- Art.No. SG.AN.P3.A185
- Mass 50 g
- Art.No. SG.AN.P4.A185
- Mass 60 g
- Art.No. SG.AN.P6.A185
- Mass 75 g
- Art.No. SG.AN.P8.A185
- Mass 90 g
SoftGripping Controlbox

The Controlbox can be used to operate SoftGripper and SoftActuator. It has two outputs for air supply at the back panel. One for the vacuum suction cup and one for the fingers.

At the front panel, you can adjust the maximum output pressure according to your requirements and monitor the pressure output. With digital signals via the signal connector you can switch between three states for the fingers: grip, release or relaxed. The suction cup can be switched between grip and release.

- Suitable for High Speed Industrial Applications
- Cobot Applications
- 1 Channel for Gripping Fingers: grip, release and relax
- 1 Channel for Suction Cup

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Art.No.</td>
<td>SG.BP.2V.C3</td>
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<tr>
<td>Input Pressure</td>
<td>4-8 bar</td>
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<tr>
<td>Output Pressure Finger</td>
<td>0...1.5 bar</td>
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<tr>
<td>Output Pressure Vacuum Cup</td>
<td>-0.7 bar</td>
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<tr>
<td>Switching Speed</td>
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<tr>
<td>Input Pressure Tube</td>
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<tr>
<td>Output Pressure Tube</td>
<td>8 mm</td>
</tr>
<tr>
<td>Digital Input</td>
<td>3x 24 V DC</td>
</tr>
<tr>
<td>Signal Connector</td>
<td>M12 IEC 61076-2-101</td>
</tr>
</tbody>
</table>

SoftGripping Pump

The Pump can be used to operate SoftGripper if you have no central air pressure supply. It has one pressure outlet for the gripper. With digital signals you can switch between three states for the fingers: grip, release and relaxed. At the front panel, you can adjust the maximum output pressure according to your requirements and monitor the pressure output.

- Suitable for Mobile Applications
- Integrated Pump
- 1 Channel for Gripping Fingers: grip, release and relax

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Art.No.</td>
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<td>Output Pressure Finger</td>
<td>-0.5...2.0 bar</td>
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<tr>
<td>Output Pressure Tube</td>
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<tr>
<td>Digital Input</td>
<td>3x 24 V DC</td>
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<tr>
<td>Signal Connector</td>
<td>M12 IEC 61076-2-101</td>
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