



Vacuum Automation

# Components Catalog

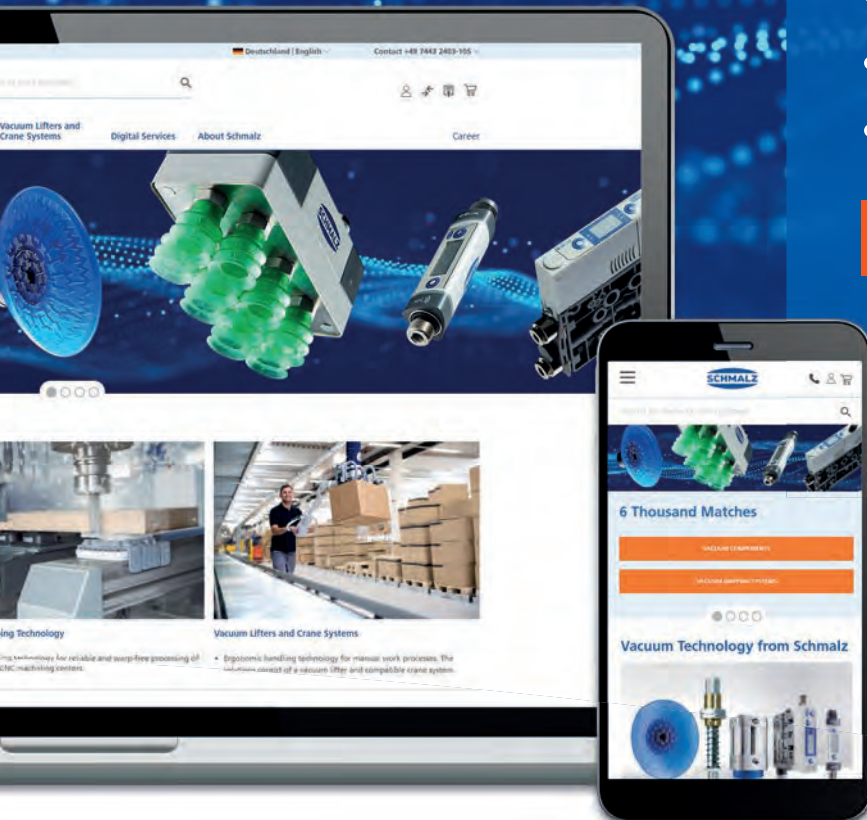
Edition 15

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# Product Overview



Full program, complete information:

[WWW.SCHMALZ.COM/AUTOMATION](http://WWW.SCHMALZ.COM/AUTOMATION)



# Vacuum Suction Cups

🛒 Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

## Flat Suction Cups (Round)



**Flat Suction Cups SUF**

- Diameter: 1 to 100 mm
- Material: NBR, NBR-ESD, SI, SI-CO, HT1

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**Flat Suction Cups PFYN**

- Diameter: 1 to 30 mm
- Material: FPM, HT1, NBR, NBR-CO, NBR-ESD, SI, SI-CO
- Conductive, dissipative and mark-free variants

 .../PFYN



**Flat Suction Cups PFYN VU1**

- Diameter: 15 to 95 mm
- Material: VU1
- Connection nipple plugged into elastomer part

 .../PFYN-VU1



**Suction Plates SUF**

- Diameter: 125 to 210 mm
- Material: NBR
- Reinforced plastic supporting plate

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## Flat Suction Cups (Oval)



**Flat Suction Cups SGON**

- Dimensions: 4 x 2 to 90 x 30 mm
- Material: HT1, NBR, SI
- Cups of the size 24 x 8 and larger are additionally secured

 .../SGON

## Bellows Suction Cups (Round)



**Bellows Suction Cups FSGA (1.5 Folds)**

- Diameter: 2 to 78 mm
- Material: HT1, NBR, NBR-ESD, NK, SI, SI-CO, SI-MD, SI-HD
- Connection nipple plugged into elastomer part

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**Bellows Suction Cups FSGA VU1 (1.5 Folds)**

- Diameter: 30 to 110 mm
- Material: VU1
- Connection nipple plugged into elastomer part

 .../FSGA-VU1



**Bellows Suction Cups FSGA SI-HD (1.5 Folds)**

- Diameter: 6 to 25 mm
- Material: SI-HD
- Food-safe material

 .../FSGA-SI-HD



**Bellows Suction Cups FSGA SI-MD (1.5 Folds)**

- Diameter: 11 to 33 mm
- Material: SI-MD
- Metal-detectable material

 .../FSGA-SI-MD



**Bellows Suction Cups FSGA (1.5 Folds) from Ø110 mm**

- Diameter: 110 and 150 mm
- Material: NBR, SI
- Support plate screwed to elastomer part

 .../FSGA-110



**Bellows Suction Cups FSGPL (1.5 Folds)**

- Diameter: 100 to 250 mm
- Material: HT1, NBR
- Support plate vulcanized to elastomer part

 .../FSGPL



**Bellows Suction Cups FSG (2.5 Folds)**

- Diameter: 3 to 88 mm
- Material: HT1, NBR, NBR-CO, NBR-ESD, NK, SI, SI-CO, SI-HD
- Connection nipple plugged into elastomer part

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# Vacuum Suction Cups

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## Bellows Suction Cups (oval)

**Bellows Suction Cups FSG VU1 (2.5 Folds)**

- Diameter: 30 to 85 mm
- Material: VU1
- Connection nipple plugged into elastomer part

.../FSG-VU1

**Bellows Suction Cups FSG SI-HD (2.5 Folds)**

- Diameter: 7 to 25 mm
- Material: SI-HD
- Food-safe material

.../FSG-SI-HD

**Bellows Suction Cups with Sealing Ring**

- Diameter: 53 to 200 mm
- Material: NBR / NK

.../FSGPL-DR

**Bellows Suction Cups FSGAO (1.5 Folds)**

- Dimensions: 95 x 40, 140 x 65 mm
- Material: VU1
- Connection plate screwed to elastomer part

.../FSGAO

## Suction Cups for Handling Sheet Metal

**Bell-Shaped Suction Cups SAX**

- Diameter: 30 to 115 mm
- Material: ED
- Vulcanized connection nipple

46

**Bellows Suction Cups SAB (1.5 Folds)**

- Diameter: 22 to 125 mm
- Material: NBR
- Connection nipple vulcanized to elastomer part

49

**Bell-Shaped Suction Cups SAXM**

- Diameter: 20 to 115 mm
- Material: ED
- Connection element modular (assembled)

.../SAXM

**Bell-Shaped Suction Cups SAOXM (Oval)**

- Dimensions: 60 x 20 to 100 x 40 mm
- Material: ED
- Connection element modular (assembled)

.../SAOXM

## Suction Cups for Handling Wood

**Flat Suction Cups SAF**

- Diameter: 30 to 125 mm
- Material: NBR
- Connection nipple vulcanized to elastomer part

.../SAF

**Flat Suction Cups SAOF (Oval)**

- Dimensions: 50 x 16 to 140 x 70 mm
- Material: NBR
- Connection nipple vulcanized to elastomer part

.../SAOF

**Bellows Suction Cups SAOB (Oval, 1.5 Folds)**

- Dimensions: 60 x 30 to 140 x 70 mm
- Material: NBR
- Connection nipple vulcanized to elastomer part

.../SAOB

**Flat Suction Cups SHFN**

- Diameter: 50 to 85 mm
- Material: NK
- Connection nipple plugged into elastomer part or support plate vulcanized to elastomer part





















.../SHFN



# Vacuum Suction Cups

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## Suction Cups for Packaging

 <p><b>Flat Suction Cups SPF</b></p> <ul style="list-style-type: none"> <li>• Diameter: 10 mm to 60 mm</li> <li>• Material: ED</li> <li>• Connection element modular</li> </ul> <p> <span style="float: right;">52</span></p>	 <p><b>Bellows Suction Cups SPB1 (1.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Diameter: 10 to 80 mm</li> <li>• Material: ED</li> <li>• Connection element modular</li> </ul> <p> <span style="float: right;">55</span></p>	 <p><b>Bellows Suction Cups SPOB1 (Oval, 1.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Dimensions: 60 x 20, 100 x 40 mm</li> <li>• Material: ED</li> <li>• Connection element modular</li> </ul> <p> <span style="float: right;">.../SPOB1</span></p>	 <p><b>Bellows Suction Cups SPOB1f (Oval, 1.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Dimensions: 35 x 15 to 80 x 35 mm</li> <li>• Material: SI (suitable for applications in the food industry)</li> </ul> <p> <span style="float: right;">.../SPOB1F</span></p>
 <p><b>Bellows Suction Cups SPB2 (2.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Diameter: 20 to 50 mm</li> <li>• Material: ED</li> <li>• Connection nipple modular</li> </ul> <p> <span style="float: right;">.../SPB2</span></p>	 <p><b>Bellows Suction Cups SPB2f (2.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Diameter: 15 to 50 mm</li> <li>• Material: SI (use in the food and beverage industry)</li> </ul> <p> <span style="float: right;">.../SPB2F</span></p>	 <p><b>Bellows Suction Cups SPB4 (4.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Diameter: 20 to 50 mm</li> <li>• Material: SI (suitable for applications in the food industry)</li> </ul> <p> <span style="float: right;">.../SPB4</span></p>	 <p><b>Bellows Suction Cups SPB4f (4.5 Folds)</b></p> <ul style="list-style-type: none"> <li>• Diameter: 30 to 50 mm</li> <li>• Material: SI</li> <li>• Modular connection nipple or push-in function</li> </ul> <p> <span style="float: right;">.../SPB4F</span></p>
 <p><b>Chocolate Suction Cups SPG</b></p> <ul style="list-style-type: none"> <li>• Diameter: 33 mm</li> <li>• Material: SI, SI-HD (suitable for applications in the food industry)</li> </ul> <p> <span style="float: right;">.../SPG</span></p>	 <p><b>Bin-Picking Suction Cups SVE</b></p> <ul style="list-style-type: none"> <li>• Diameter: 53 mm</li> <li>• Material: PU, SI-MD (use in the food and beverage industry)</li> </ul> <p> <span style="float: right;">.../SVE</span></p>		

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## Suction Cups for Plastic Films and Paper



**Flat Suction Cups SGPN**

- Diameter: 15 to 40 mm
- Material: FPM, HT1, NK, SI
- Connection nipple plugged into elastomer part

.../SGPN



**Suction Cups SFF / SFB1**

- Diameter: 10 mm to 40 mm
- Material: SI, EPDM, HT1

.../SFF-SFB1

## Suction Cups for Handling Glass



**Suction Plates SGF**

- Diameter: 125 to 400 mm
- Material: EPDM, HT1

.../SGF



**Bellows Suction Cups SAB HT1 (1.5 Folds)**

- Diameter: 22 to 125 mm
- Material: HT1
- Connection nipple vulcanized to elastomer part

.../SAB-HT1




**Bellows Suction Cups SAOB HT1 (Oval, 1.5 Folds)**

- Dimensions: 60 x 30 to 140 x 70 mm
- Material: HT1
- Connection nipple vulcanized to elastomer part

.../SAOB-HT1

## Suction Cups for High-Temperature Applications



**Flat Suction Cups SAF HT2**

- Diameter: 30 to 60 mm
- Material: HT2
- Connection nipple vulcanized to elastomer part

.../SAF-HT2



**Bellows Suction Cups SAB HT2 (1.5 Folds)**

- Diameter: 22 to 80 mm
- Material: HT2
- Connection nipple vulcanized to elastomer part

.../SAB-HT2



**Flat Suction Cups SAOF HT2 (Oval)**

- Dimensions: 60 x 23 to 100 x 50 mm
- Material: HT2
- Connection nipple vulcanized to elastomer part

.../SAOF-HT2



**Bellows Suction Cups SAOB HT2 (Oval, 1.5 Folds)**

- Dimensions: 60 x 30, 80 x 40 mm
- Material: HT2
- Connection nipple vulcanized to elastom. part

.../SAOB-HT2



# Vacuum Suction Cups

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## Suction Cups for Handling Composites



### Suction Plates SPL POM-NBR

- Diameter: 40 to 115 mm
- Material sealing ring: NBR
- Support plate made of aluminum



.../SPL-POM-NBR

## Sealing Profiles



### Sealing Cords DI-SCHN

- Diameter: 4 to 12 mm
- Cross-sections: 8 x 1 to 25 x 20 mm



.../DI-SCHN



### Sealing Profiles DI-PROF

- Dimensions: 4 x 6 to 30 x 25 mm



.../DI-PROF

## Accessories Vacuum Suction Cups



### Suction Cup Inserts SPI PEEK

- Diameter: 6 to 32 mm
- For suction cup type: FGA, FG
- Material: PEEK



.../SPI-PEEK



### Suction Cup Covers SU

- Diameter: 25 to 360 mm
- For suction cups and suction plates



.../SU

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# Special Grippers

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## Floating Suction Cups



**Floating Suction Cups SBS**

- Diameter: 20 to 120 mm
- Holding force: 2.0 to 104.0 N
- Rubber buffer on the bottom side of the suction cup

.../SBS



**Floating Suction Cups SBS-ESD**

- Diameter: 20 to 60 mm
- Holding force: 2.0 to 18.5 N
- Rubber buffer to protect against uncontrolled electrostatic discharge

.../SBS-ESD



**Floating Suction Cups SBS Thin**

- Diameter: 20 mm
- Holding force: 3.0 N
- Design: flat version

.../SBS-THIN

## Magnetic Grippers



**Magnetic Grippers SGM**

- Diameter: 30 to 70 mm
- Holding force: 35 to 290 N

59



**Magnetic Grippers SGM-HP/HT**

- Diameter: 20 to 50 mm
- Holding force: 28 to 560 N

.../SGM-HP-HT



**Handling Sets SGM-SV**

- Gripping surface magnetic gripper: Ø 40 mm
- Max. holding force: 100 N

.../SGM-SV

## Needle Grippers



**Electric Needle Grippers SNGi-AE**

- Needle diameter: 0.8 mm or 1.2 mm
- No. of needles: 10
- Needle stroke: 3 mm to 20 mm

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**Needle Grippers SNG-AP**

- Needle diameter: 0.8 mm or 1.2 mm
- No. of needles: 10
- Needle stroke: 3 mm to 20 mm (variable)

.../SNG-AP



**Needle Grippers SNG-V**

- Needle diameter: 0.8 mm to 1.5 mm
- Number of needles: 6 and 10
- Needle stroke: 0 mm to 25 mm (variable)

.../SNG-V



**Needle Grippers SNG-BV**

- Needle diameter: 1.2 mm
- Number of needles: 10
- Needle stroke: 0 mm to 7 mm (variable)

.../SNG-BV



# Special Grippers



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## Wafer Grippers



### Wafer Grippers SWGm

- Dimensions: 125 x 125 mm and 156 x 156 mm
- Selectable base model with axial exhaust air or sideways exhaust air
- Material suction surface: PEEK



.../SWGm

## Thin Glass Grippers



### Thin Glass Grippers STGG

- Suction area: 100 x 55 mm and 170 x 105 mm
- Material suction area: PEEK
- Suction rate: 31 to 235 l/min



.../STGG

## Flow Grippers



### Flow Grippers SCG

- Suction rate: 270 l/min to 650 l/min
- Diameter suction plate: 20 mm to 60 mm



.../SCG



### Flow Grippers SCGS

- Narrow design: 25 mm
- Suction rate: 270 l/min to 650 l/min
- Diameter suction plate: 20 mm to 50 mm



.../SCGS



### Flow Grippers for Food Products SFG

- Suction rate: 270 to 650 l/min
- Suction cup made from FDA-compliant silicone
- Contact element diameter: 20 to 60 mm



.../SFG



### Flow Grippers for Highly Structured Surfaces SCG-HSS

- Suction rate: 270 l/min to 650 l/min
- Suction area: pin curtain with Ø 47 mm
- ESD compliant



.../SCG-HSS

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# Area Gripping Systems and End Effectors

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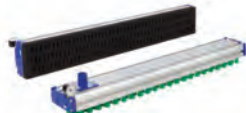


### Area Gripping Systems FXP

- Integrated vacuum generator (ejector)
- Sealing element: Sealing foam or suction cups



.../FXP



### Area Gripping Systems FMP

- Connection for external vacuum generation
- Sealing element: Sealing foam or suction cups



.../FMP



### Area Gripping Systems FMHD

- Maintenance-friendly and robust gripper for the wood industry
- Sealing element: sealing foam



.../FMHD



### Area Gripping Systems FQE

- Integrated pneumatic vacuum generator or connection for external vacuum generation
- Sealing element: Sealing foam or suction cup



.../FQE



### Area Gripping Systems FXCB

- Integrated vacuum generator (ejector)
- Suited for operation with collaborative robots
- Sealing element: Sealing foam or suction cups



.../FXCB



### Area Gripping Systems FMCB

- Connection for external vacuum generation
- Suitable for operation with collaborative robots
- Sealing element: Sealing foam or suction cups



.../FMCB

## Bin Picking



### Vision & Handling Sets 3D-R

- Gripping system including electrical vacuum generator, camera system and software
- Solution for Box- and Item-Pick



.../3D-R



### Bin Picker SBPG

- Suction rate up to 180 l/min
- Integrated or external vacuum generation
- Sealing element: Bin picking suction cup with quick-change function



.../SPBG

## Finger Grippers



### Finger Grippers OFG

- Load capacity up to 1,8 kg
- Pressure range from -0.8 to 1.6 bar
- Elastomer fingers conform to BfR and FDA



.../OFG

## Lightweight Grippers



### Lightweight Gripping Systems SLG

- Max. lift capacity 10 kg
- Dimensions max.: 350 x 350 x 350 mm
- External or integrated vacuum generation



.../SLG

# Mounting Elements



Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

## Jointed Mountings



**Flexolink FLK**

- Connection: M10x1.25 to G1/2"
- Deflection: max. 12°
- Rubber buffer (vulcanised into position) as a joint

 67



**Ball Joints KGL**

- Connection: G1/8" to G1/2"
- Deflection: max. 15°
- Sealed ball-and-socket joint with vacuum tight seal

 .../KGL

## Spring Plungers



**Spring Plungers FSTE**

- Connection: M3, M5, G1/8" to G1/2"
- Stroke: 5 to 90 mm
- Integrated vacuum feed

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**Spring Plungers FSTIm**

- Modular suction cup connection
- Stroke: 5 to 20 mm
- Internal damping spring
- With / without anti-rotation guard

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**Spring Plungers FSTE-HD**

- Connection: G1/8" to G1/2"
- Stroke: 15 to 90 mm
- Heavy duty
- Integrated vacuum feed

 .../FSTE-HD



**Spring Plungers FSTE-HDB**

- Connection: G1/8" to G1/2"
- Stroke: 15 to 120 mm
- Heavy duty, with anti-rotation guard
- Integrated vacuum feed

 .../FSTE-HDB



**Spring Plungers FSTA**

- Connection: G1/4" and G1/2"
- Stroke: 25 to 90 mm
- Integrated vacuum feed

 .../FSTA



**Spring Plungers FSTA-HD**

- Connection: G1/4" to G1/2"
- Stroke: 25 to 90 mm
- Version Heavy Duty
- Integrated vacuum feed

 .../FSTA-HD



**Spring Plungers FSTI**

- Connection: G1/4" and G3/8"
- Stroke: 10 to 50 mm
- Internal damping spring
- Integrated vacuum feed

 .../FSTI



**Spring Plungers FST-LOCK-HD**

- Connection: G3/8", G1/4" and M10
- Stroke: 50 and 100 mm
- Version Heavy Duty with lockable push rod
- Integrated vacuum feed

 .../FST-LOCK-HD



**Spring Plungers FSTF**

- Connection: G1/2"
- Stroke: 50 mm
- Variable mounting facility
- Integrated vacuum feed

 .../FSTF

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## Holders for Suction Cups and Spring Plungers



**Holders for Light-Metal Sections HTR-STA**

- Mountings for spring plungers FSTE/FSTA from M5 to G1/4"

[.../HTR-STA](#)



**Universal Holders HTR-UNI**

- Mounting thread: M5
- Connection: G1/4"

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## Holder System for Tooling



**Holders for Suction Cups HT-SG**

- For vacuum suction cups with connections for G, NPT and M threads and right-angled adapters

[.../HT-SG](#)



**Holders for Suction Cups HT-SG E**

- For vacuum suction cups with connections for G, NPT and M threads and right-angled adapters
- Mountings for decentralized vacuum generators

[.../HT-SG-E](#)



**Holders for Suction Cups HT-SG I**

- For vacuum suction cups with connections for G, NPT and M threads and right-angled adapters
- Holders with vacuum nozzles integrated

[.../HT-SG-I](#)



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## Ejector Modules



**Ejector Modules ecoPump SEP**

- Suction rate up to 309 l/min
- For airtight or porous workpieces

.../SEP

## Basic Ejectors



**Basic Ejectors SEG**

- Suction capacity up to 370 l/min
- Max. vacuum: 85 %
- Body made of anodized aluminum

.../SEG



**Basic Ejectors SBP**

- Suction capacity up to 215 l/min
- Max. vacuum: 85 %
- Plastic housing

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**Basic ejectors SBPL**

- Suction capacity: 290 to 1,140 l/min
- Max. vacuum: 61 or 90 %
- Basic body made of plastic

85



**Basic Ejectors SBP-C with Additional Functions**

- Suction capacity up to 215 l/min
- Max. vacuum: 85 %
- Body made of plastic
- With valve technology

.../SBP-C



**Basic Ejectors SBP-HV/HF**

- Suction rate up to 309 l/min
- For airtight or porous workpieces

.../SBP-HV-HF



**Basic Ejectors SBP-HV/HF With Plastic Main Body**

- Suction rate up to 309 l/min
- For airtight or porous workpieces

.../SBP-HV-HF

## Inline Ejectors




**Inline Ejectors SLP**

- Suction capacity up to 16 l/min
- Max. vacuum: 85 %
- Main body made of plastic

.../SLP

## Decentralized Ejectors



**Inline Ejectors VR**

- Suction capacity up to 24 l/min
- Max. vacuum: 85 %
- Body made of aluminum

.../VR



**Ejectors with Active Blow Off SEAC**

- Suction capacity up to 35 l/min
- Max. vacuum: 85 %
- Body made of plastic

.../SEAC



**Ejectors With Blow Off System SEAC RP**

- Suction capacity up to 35 l/min
- Max. vacuum: 85 %

.../SEAC-RP



**Ejectors with Atmospheric Ventilation SEAC ECO**

- Suction capacity up to 35 l/min
- Max. vacuum: 85 %
- With atmospheric ventilation

.../SEAC-ECO

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# Vacuum Generators

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## Compact Ejectors



### Compact Ejectors SCPMb / SCPMc / SCPMi

- Suction capacity up to 28 l/min
- Max. vacuum: 87 %
- Body made of plastic



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### Compact Ejectors SCPSb

- Suction capacity up to 67 l/min
- Max. vacuum: 85 %
- Body made of plastic



.../SCPSB



### Compact Ejectors SCPS / SCPSi

- Suction capacity up to 67 l/min
- Max. vacuum: 85 %
- Body made of plastic



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### Compact Ejectors SCPS- / SCPSb- / SCPSi-UHV-HD

- Suction rate up to 65.5 l/min
- Max. vacuum: 90 %



.../SCPS-UHV-HD



### Compact Ejectors SCPS-L / SCPSi-L

- Suction rate up to 363 l/min
- Max. vacuum: 90 %



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### Compact Ejectors SCPI / SMPi

- Suction capacity up to 185 l/min
- Max. vacuum: 85 %



100



### Compact Ejectors SCPb / SCPI FS RP

- Suction capacity up to 185 l/min
- Max. vacuum: 85 %



104



### Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

- Suction capacity up to 220 l/min
- Max. vacuum: 85 %
- Body made of plastic



107

## Compact Terminals



### Compact Ejectors SXMPi Class B

- Suction capacity up to 220 l/min
- Max. vacuum: 85 %
- Basic body made of plastic



111



### Compact Terminals SCTMb / SCTMc / SCTMi

- Suction capacity up to 33 l/min per ejector
- Max. vacuum: 87 %
- SCTMi version with IO-Link interface



114



### Compact Terminals SCTSi IO-Link

- Suction capacity up to 67 l/min
- Max. vacuum: 85 %
- IO-Link interface



116



### Compact Terminals SCTSi Ethernet

- Suction capacity up to 67 l/min
- Max. vacuum: 85 %
- Ethernet interface via EtherCat, Ethernet/IP or ProfiNet




116

# Vacuum Generators

🛒 Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

## Vacuum Generators End-of-Arm



**Pneumatic Vacuum Generators RECB**

- Suction rate up to 57.2 l/min
- Max. vacuum: 85 %
- Lift capacity up to 10 kg


🛒 .../RECB



**Handling Sets RECB**

- Vacuum generator including flange, gripper and connection cable
- Suction rate up to 57.2 l/min
- Max. vacuum: 85 %
- Lift capacity up to 10 kg

🛒 .../ROB-SET-RECB



**Vacuum Generators ECBPMi**

- Pumping speed up to 1.6 l/min
- Max. v acuum: 60%
- Integrated IO-Link and RS485 interface


🛒 118



**Handling Sets ECBPMi**

- Set includes vacuum generator, flange, suction cup and connection cable
- Suction rate up to 1.6 l/min
- Max. vacuum: 60 %

🛒 .../ROB-SET-ECBPM



**Vacuum Generators ECBPi**

- Max. 12 l/min suction rate
- Max. vacuum: 75 %

🛒 120



**Handling Sets ECBPi**

- Vacuum generator including flange, gripper and connection cable
- Suction rate up to 12 l/min
- Max. vacuum: 75 %

🛒 .../ROB-SET-ECBPI



**End-of-Arm Ecosystem MATCH**

- Lift capacity up to 25 kg
- Compatible with all common lightweight robots

🛒 .../MATCH



**Dry-Running Vacuum Pumps EVE-TR**

- Suction capacity up to 244 m³/h
- Max. vacuum: 92 %

🛒 123



**Dry-Running Vacuum Pumps EVE-TR X**

- Suction rate: 10 to 129 m³/h
- Max. vacuum: 92 %

🛒 .../EVE-TR-X



**Oil-Lubricated Vacuum Pumps EVE-OG**

- Suction capacity up to 255 m³/h
- Max. vacuum: 98 %


🛒 .../EVE-OG



**Vacuum Blowers SB**

- Suction rate: 75 to 1,250 m³/h
- Max. vacuum: 40 %

🛒 .../EVE-OG



**Vacuum Blowers SB with Electro-Pneumatic Reversing**

- Suction capacity up to 750 m³/h
- Max. vacuum: 45 %

🛒 .../SB-ER

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- Mounting Elements
- Vacuum Generators
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- Filters and Connections
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# Valve Technology

🛒 Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

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## Solenoid Valves



### Solenoid Valves EMV

- Nominal diameter: 2 to 25 mm
- Nominal flow rate: 1 to 88 m<sup>3</sup>/h
- Voltages =/~ 24/230 V



.../EMV



### Solenoid Valves EMVO

- Nominal diameter: 12 to 25 mm
- Nominal flow rate: 21 to 101 m<sup>3</sup>/h
- Voltages =/~ 24/230 V



.../EMVO



### Solenoid Valves EMVP

- Nominal diameter: 5 to 50 mm
- Nominal flow rate: 3 to 310 m<sup>3</sup>/h
- Voltages =/~ 24/230 V



.../EMVP

## Check Valves and Flow Restrictors



### Check Valves SVK, SVKG, SVV

- Max. blow off flow rate: 4.8 to 47.4 m<sup>3</sup>/h
- Connection thread: M5 to G1/2"



.../SVK



### Check Valves SVN

- Max. blow off flow rate: 27 m<sup>3</sup>/h
- Connection thread: G1/4"



.../SVN



### Flow Restrictors SW

- Nominal diameter: 0.25 to 2.0 mm



.../SW



### Touch Valves TV / TVN

- Flow rate: 0.7 to 9.6 m<sup>3</sup>/h
- Connection thread: G1/8" to G1/2"



.../TV

## Non-Return Valves



### Non-Return Valves RSV

- Nominal diameter: 6 to 54 mm
- Nominal flow rate: 5 to 350 m<sup>3</sup>/h
- Connection thread: G1/4" to G2"



.../RSV



### Two-Way Ball Valves KVZ

- Nominal diameter: 8 to 50 mm
- Nominal flow rate: 10 to 310 m<sup>3</sup>/h



.../KVZ



### Three-Way Ball Valves KVD

- Nominal diameter: 6 to 25 mm
- Nominal flow rate: 5 to 55 m<sup>3</sup>/h



.../KVD



### Manual Slide Valves HSV

- Nominal diameter: 7 to 24 mm
- Nominal flow rate: 6 to 50 m<sup>3</sup>/h



.../HSV



# Switches and System Monitoring

Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

## Vacuum and Pressure Switches



**Vacuum and Pressure Switches VSi**

- Electronic vacuum and pressure switch
- Measuring range: -1 to 10 bar
- Switching function: PNP, NPN


129



**Vacuum Switches VSi-HD**

- Compact vacuum switch VSi-HD without display with a robust design
- Measuring range: -1 to 0 bar

133



**Vacuum and Pressure Switches VS-V/P-W-D-K-3C-D**

- Electronic switch
- Measuring range: from -1 to 10 bar
- Switching function: PNP, NPN

.../VS-V-W-D-K




**Vacuum and Pressure Switches VS-V/P-AH-AV-T**

- Electronic switch
- Measuring range: from -1 to 10 bar
- Switching function: PNP

.../VS-V-AH

## Flow Sensors




**Flow sensors FS**

- Max. flow rate: 5 to 200 l/min
- Integrated vacuum and pressure sensor from -0.9 to 8 bar
- Clear, high-contrast, 3-colour display

.../FS

## Measuring and Control Devices



**Manometers VAM-D**

- Electronic manometer
- Measuring range: from -1 to 10 bar

.../VAM-D

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# Filters and Connections

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## Vacuum Filters



### Vacuum Filters VF / STF / STF-D

- Nominal flow rates: 6 m<sup>3</sup>/h to 480 m<sup>3</sup>/h
- Pore sizes: 3 to 10 µm



.../VF



### Vacuum Cup Filters VFT

- Pore size: 80 and 100 µm
- Connection thread: G1/8" to G3/4"
- Nominal flow rate: 45 to 770 l/min



.../VFT



### Inline Filters VFI

- Nominal flow rates: 2 to 4 m<sup>3</sup>/h
- Filter mesh: 50 µm
- Connection options: hose 4/2, 6/4 or 8/6



.../VFI

## Vacuum Distributors



### Vacuum / Compressed Air Distributors VTR

- 5-way and 9-way manifolds
- Connections: G1/8" and G1/4"



137

## Hoses and Connectors



### Vacuum / Compressed Air Hoses VSL

- External/internal diameters from 4/2 to 87/75
- Materials: PA, PE, PU, PVC



139



### Screw in Push Fittings

- Connection thread M5 to G1/2"
- Material: nickel-plated brass



.../STV

Product in the online shop at [WWW.SCHMALZ.COM/PRODUCTCODE](http://WWW.SCHMALZ.COM/PRODUCTCODE)

## Software



### Schmalz Connect Suite

- IoT software
- IO-Link compatible
- Hardware with integrated Ethernet connection



.../SCS



### Schmalz ControlRoom

- Control and service app for NFC devices
- Wireless data transfer from smartphone via NFC
- Parameterization and read out device data



.../CONTROL

## Device Management Tools



### Smart Device Interface SDI

- USB IO-Link master
- M12 connector, 5-pin
- Operating software for laptop



.../SDI

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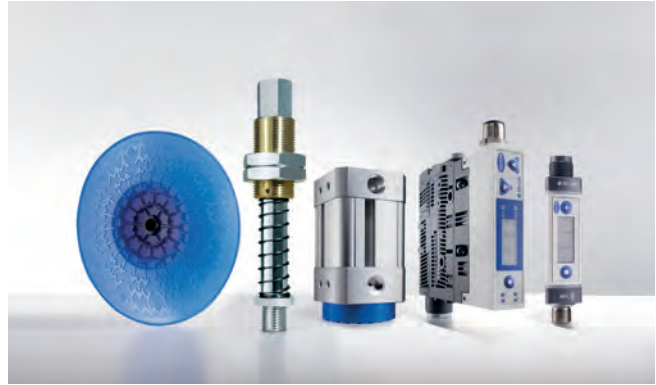
# Preferred Product Range Schmalz Select

Product Overview

## **S** Selected by Experts. Schmalz Select.

Vacuum Suction Cups

Automation with Schmalz vacuum technology is one of the keys to creating efficient processes in industry. With more than 6,000 components, Schmalz offers the most comprehensive portfolio on the market. With our preferred product range Schmalz Select we support you in selecting the right solution. Our experts have selected the components that suit about 80 percent of all standard applications. In addition, you benefit from quick procurement times. Products from the Schmalz Select range can be selected easily and quickly in our online shop. Our delivery promise: These components are on stock at our main warehouse in Germany and are ready to ship.



Special Grippers

Mounting Elements

Vacuum Generators

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### **Simple selection.**

Schmalz Select fits about 80% of all standard applications.



### **Fast shipping.**

Schmalz Select components are on stock at our main warehouse in Germany and are ready to ship.



### **Available worldwide.**

Schmalz Select products are available worldwide – and in the long term.

## SELECT PRODUCTS

### In the catalog

When selecting Select and Connect articles, look for the following designation in the order data.

10.01.12.12345 **S**

10.01.12.67890 **C**

### In the online shop

Combine the web address with the product designation code or article number, or filter Select and Connect articles easily using the facet search.

[WWW.SCHMALZ.COM/SCPMC](http://WWW.SCHMALZ.COM/SCPMC)  
[WWW.SCHMALZ.COM/10.01.12.12345](http://WWW.SCHMALZ.COM/10.01.12.12345)





# Schmalz Connect for the Industry 4.0

## *Connected to Control. Schmalz Connect.*

Industry 4.0 thrives on intelligent devices that communicate with each other in the digital factory. In the Schmalz Connect product range, Schmalz bundles a whole range of such smart field devices. The state-of-the-art vacuum components are quickly integrated into the application environment via interfaces such as IO-Link, Ethernet or NFC. They continually gather and interpret energy and condition data from the process and make it available at the control panel, on the operator's smartphone and in the cloud. Thus a seamless monitoring of the entire process becomes possible, enabling predictive maintenance to prevent downtime and optimize energy consumption.



### *Ready for immediate use.*

Integration via NFC, IO-Link and Ethernet makes the start of operations up to 75 percent faster.



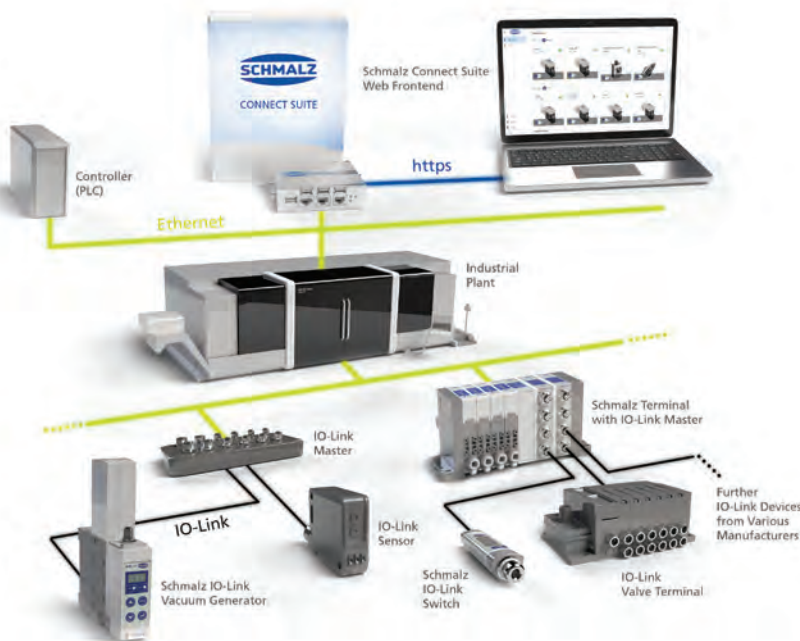
### *Optimum performance.*

Monitor and optimize machine data and statuses from anywhere and in real time.



### *Increased machine uptime.*

Detect subtle changes and reduce the likelihood of imminent malfunctions – before they lead to system downtime.



## SCHMALZ CONNECT SUITE

### Plug & Work access to your Smart Devices

With the services of the Schmalz Connect Suite, intelligent Schmalz products and IO-Link components from various manufacturers can be parameterized, managed and analyzed quickly and easily. A clear web front end gives users access to device and service data, allowing them to optimize processes and thus increase efficiency. The data is accessed independently of the PLC and fieldbus - without intervention in the controller.

[WWW.SCHMALZ.COM/SCS](http://WWW.SCHMALZ.COM/SCS)

# Schmalz Robotik

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## #getagrip on robotics

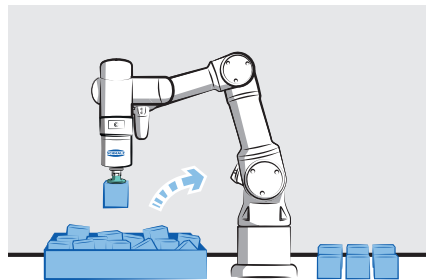
Lightweight robots and cobots play a key role in digitalization. They take on a wide range of tasks and make production more flexible. At the same time, they are relatively inexpensive and easy to program – and in this way, they make it easier to get started with automation. When it comes to the use of lightweight robots in the areas of assembly, logistics and packaging, the sky is the limit. But the easier cobots are to use, the more important it is to choose the right gripping system. The robot can only pick up, move, position, process, assemble, sort, stack and put down a wide variety of goods and parts in combination with suitable grippers.



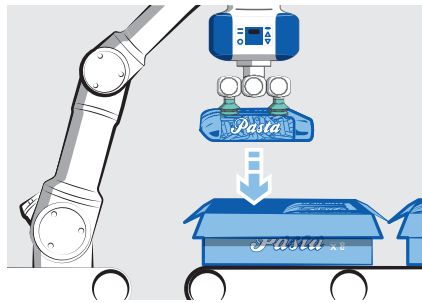
### TYPICAL AREAS OF APPLICATION

When it comes to assembly, logistics and packaging, there are virtually no limits to lightweight robots. They move, transport, handle and palletize goods and workpieces. They also have gre-

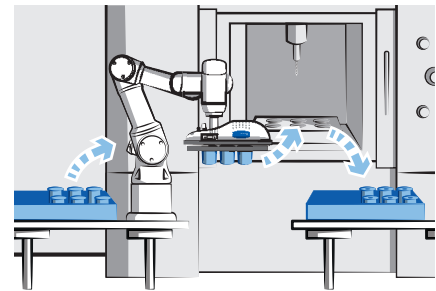
at potential in quality control or in the loading and unloading of machines – because these areas are often still little automated.



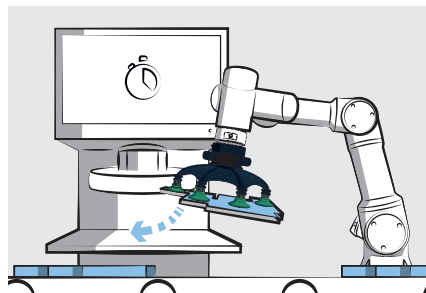
Pick and place



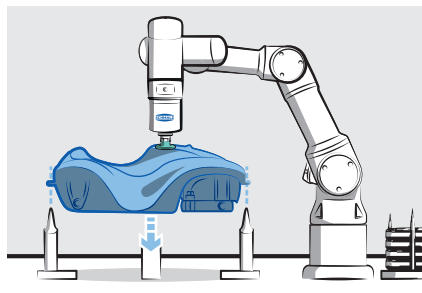
Packaging and palletizing



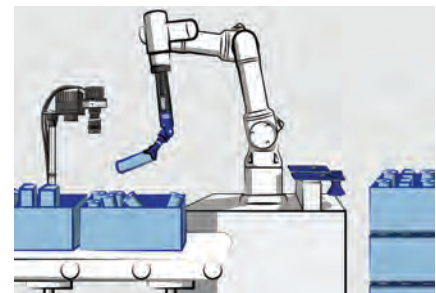
Machine loading and unloading



Quality testing and laboratory analysis



Assembly



Bin picking

## END-OF-ARM ECOSYSTEM MATCH

MATCH is the appropriate name for the new multifunctional end-of-arm platform for robotics from the two handling specialists Schmalz and Zimmer Group. Equipped with extensive functions and universal communication interfaces, MATCH is compatible with any lightweight robot, cobot and with all conventional 6-axis robots on the market.

# MATCH

- Suitable for any common lightweight robot – a system ideal for cobots and conventional 6-axis robots
- Mechanical connection by means of quick coupler and parameterization via setup wizard
- Any Robot, any Gripper, any End Effector – high flexibility due to extensive portfolio
- Smart ecosystem with useful digital services

Robot



Quick-change module (top)



Connection vacuum gripper



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# System Solutions

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## System Procurement with Added Value

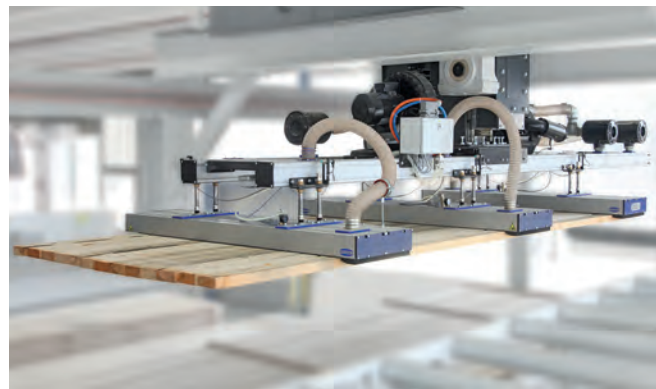


Schmalz develops plug & work capable gripping systems for use in automated production, order picking and distribution logistics. The quality of the gripping system is a decisive factor in how efficiently and effectively the handling process runs. Schmalz develops individual solutions for different requirements, workpieces and processes.



### Layer Gripping Systems SPZ

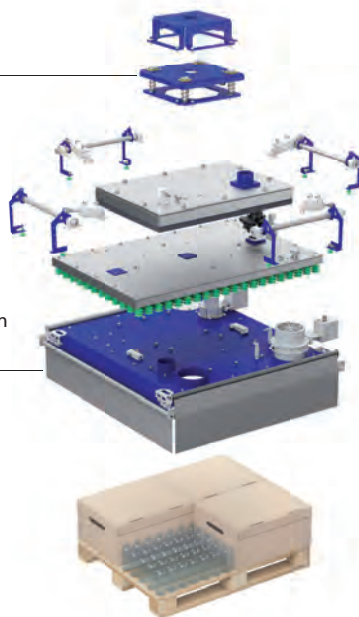
- Palletizing and de-palletizing various goods in warehouses and intra-logistics
- Intelligent mechanical, power and software interfaces
- Innovative gripping concept with mechanical support for additional holding force



### Suction Spiders SSP

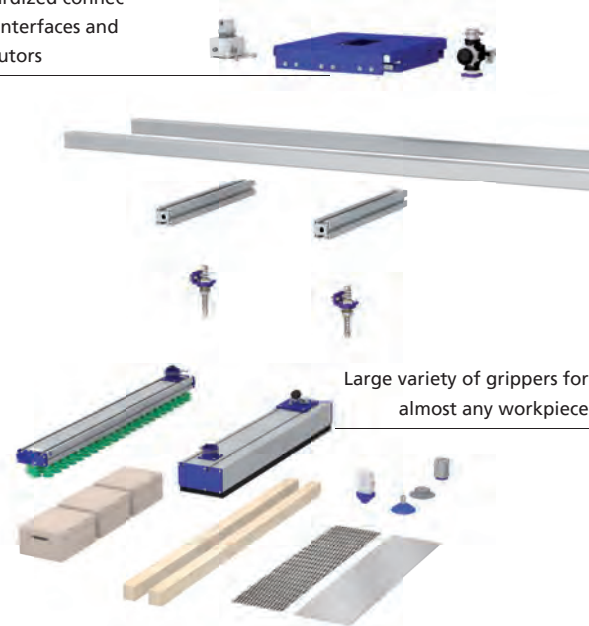
- Customized end-of-arm tooling for a wide range of automation tasks
- Modular system of standardized, optimally coordinated individual components

Modular flange connection



Different gripping modules and suction box variants

Standardized connections, interfaces and distributors



Large variety of grippers for almost any workpiece



# Industry Solutions

## At Home in Many Industries Worldwide



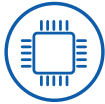
AUTOMOTIVE



BATTERY



COMPOSITE



ELECTRONICS



GLASS



LOGISTICS



METAL



PACKAGING



PLASTICS



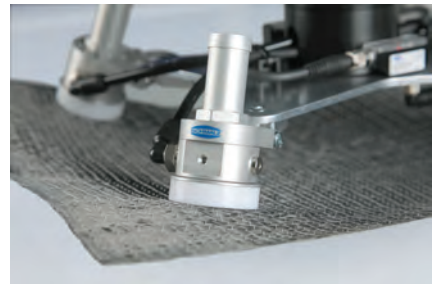
WOOD



Automotive



Battery



Composites



Electronics



Food



Glass



Logistics



Metal and Sheet Metal



Packaging



Pharmaceuticals



Plastics



Wood

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# Vacuum Suction Cups



Full program, complete information:

[WWW.SCHMALZ.COM/SUCTION-CUPS](http://WWW.SCHMALZ.COM/SUCTION-CUPS)

# Selection by Field of Application



## Universal Suction Cups

Shape		Family	Suction area	Page	
Round		SUF	Ø 1 mm – 100 mm	32	
		PFYN	Ø 1 mm – 200 mm		
		PFYN VU1	Ø 15 mm – 95 mm		
		SUF	Ø 125 mm – 210 mm	36	
		1.5	FSGA	Ø 2 mm – 78 mm	39
			FSGA VU1	Ø 30 mm – 110 mm	
			FSGA SI-HD	Ø 6 mm – 25 mm	
			FSGA SI-MD	Ø 11 mm – 33 mm	
			FSGA 110	Ø 110 mm – 150 mm	
			FSGPL	Ø 100 mm – 250 mm	
			FSGA/FSGPL-DR	Ø 53 mm – 200 mm	
		2.5	FSG	Ø 3 mm – 88 mm	42
			FSG VU1	Ø 30 mm – 85 mm	
		FSG SI-HD	Ø 7 mm – 25 mm		
Oval		SGON	4 x 2 – 90 x 30		
		1.5	FSGAO	95 x 40 – 140 x 65	



## Suction Cups for Handling Sheet Metal

Shape		Family	Suction area	Page	
Round		SAF	Ø 30 mm – 125 mm		
		SAX	Ø 30 mm – 115 mm	46	
		SAXM	Ø 20 mm – 115 mm		
Oval		1.5	SAB	Ø 22 mm – 125 mm	49
		SAOF	50 x 16 – 140 x 70		
		SAOXM	60 x 20 – 100 x 40		
		1.5	SAOB	60 x 30 – 140 x 70	



## Suction Cups for Handling Wood

Shape		Family	Suction area	Page
Round		SHFN	Ø 50 mm – 85 mm	



## Suction Cups for Plastic Films and Paper

Shape		Family	Suction area	Page
Round		SGPN	Ø 15 mm – 40 mm	
		SFF	Ø 10 mm – 40 mm	
		1.5	SFB1	Ø 10 mm – 40 mm



## Suction Cups for Packaging

Shape		Family	Suction area	Page	
Round		SPF	Ø 10 mm – 60 mm	52	
		SPG	Ø 33 mm		
		SVE	Ø 53 mm		
		1.5	SPB1	Ø 10 mm – 80 mm	55
		2.5	SPB2	Ø 20 mm – 50 mm	
			SPB2f	Ø 15 mm – 50 mm	
		4.5	SPB4	Ø 20 mm – 50 mm	
Oval		1.5	SPOB1	60 x 20 – 100 x 40	
			SPOB1f	35 x 15 – 80 x 35	



## Suction Cups for High-Temperature Applications

Shape		Family	Suction area	Page
Round		SAF HT2	Ø 30 mm – 60 mm	
		1.5	SAB HT2	Ø 22 mm – 80 mm
Oval		SAOF HT2	60 x 23 – 100 x 50	
		1.5	SAOB HT2	60 x 30 – 80 x 40



## Suction Cups for Handling Glass

Shape		Family	Suction area	Page	
Round		SGF	Ø 125 mm – 400 mm		
		1.5	SAB HT1	Ø 22 mm – 125 mm	
Oval		1.5	SAOB HT1	60 x 30 – 140 x 70	



## Suction Cups for Handling Composites

Shape		Family	Suction area	Page
Round		SPL-POM NBR	Ø 40 mm – 115 mm	

Flat suction cups

Bell-shaped suction cups

1.5 Bellows suction cups (1.5 / 2.5 / 3.5 / 4.5 folds)

Product in the online shop at [WWW.SCHMALZ.COM](http://WWW.SCHMALZ.COM)

# Selection by Material of the Suction Cup

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## Material Overview

	Abbreviation	NBR	NBR-CO	NBR-ESD	SI (SI-HD/SI-MD)	SI-CO	NK
Description	Chemical designation / trade name	Nitrile caoutchuc (CO = conductive) (ESD = electrostatic discharge)			Silicone caoutchuc (CO = conductive) (MD = metal detectable) (HD = heavy duty)		Natural rubber
	Color / coding	black, gray, blue, light blue	black with blue dot	dark yellow	nature, green, light blue	black with red dot	gray, light brown
Chemical resistance	General weathering resistance	●●	●●	●●	●●●●	●●●●	●●
	Ozone resistance	●	●	●	●●●●●	●●●●●	●
	Oil resistance	●●●●●	●●●●●	●●●●●	●●	●●	●
	Fuel resistance	●●	●●	●●	●	●	●
	Alcohol resistance, ethanol 96 %	●●●●●	●●●●	●●●●●	●●●●●	●●●●	●●●●●
	Solvents resistance	●●	●●	●●	●●	●●	●
	General resistance to acids	●	●	●	●●	●●	●●
	Bases resistance	●	●	●	●●	●●	●
	Steam resistance	●●	●●	●●●●	●●	●●	●
Mechanical characteristics	Abrasion values	●●	●●	●●●●	●(●)	●	●●
	Resistance to permanent deformation	●●	●●	●●	●●	●●	●●●●
	Tensile strength	●●	●●	●●	●	●	●●
	Specific resistance in [ $\Omega \times \text{cm}$ ]	–	$10^3$ to $10^{6^{1)}$	$10^6$ to $10^{9^{1)}$	–	$10^3$ to $10^{6^{1)}$	–
	Shore hardness to DIN ISO 7619	40 to $80 \pm 5$	$55 \pm 5$	$55 \pm 5$	40 to $70 \pm 5^{2)}$ ( $65 \pm 5$ )	$55 \pm 5$	$35$ to $55 \pm 5$
Temperature resistance <sup>3)</sup>	Short-term in °C (< 30 sec.)	-30° to +120°	-30° to +120°	-30° to +120°	-40° to +220°	-35° to +220°	-35° to +120°
	Longer-term in °C	-10° to +70°	-10° to +70°	-10° to +70°	-30° to +180°	-20° to +180°	-25° to +80°
Further characteristics	Target industry	Universal	(Universal), Electronics	Electronics	Packaging	Electronics	Wood, Packaging
	Food grade according to CFR 21 §177.2600 FDA				✓		
	Leaving few marks						
	Absence of PWIS (paint-wetting impairment substances)	NBR-60, NBR-45					
	Cleanroom suitability	on request	on request	●●●●	●●●●(●)	on request	on request

<sup>1)</sup> Depending on size and geometry

<sup>2)</sup> Tempering of silicone 4 h/200° C = ~+5 Shore A

<sup>3)</sup> Approximate value: depends on ambient temperature, application force, recovery time and wall thickness of suction cup

●●●● Excellent      ●●● Very good      ●● Good      ● Poor to satisfactory



HT1	HT2	ED	PU	VU1	PVC	FPM	EPDM
High temperature material	High temperature material	Elastodur	Polyurethane	Vulkollan® <sup>4)</sup>	Polyvinylchloride	Fluorcaoutchuc	Ethylene propylene caoutchuc
blue	black	green, blue	blue	dark green	blue (translucid)	black with white dot	grey
●●●	●●●●	●●●	●●●	●●●	●●	●●●●	●●●●
●●●●	●●●	●●●	●●●	●●●	●●●	●●●●	●●●●
●●●●	●●●●	●●●	●●●	●●●	●●●	●●●●	●● <sup>5)</sup>
●●	●●●	●●	●●	●●	●	●●●●	●
●●●●	●●	●●●	●●●	●●●	●	●●	●●●●
●●	●●●	●	●	●	●	●●	●●
●	●●●	●	●	●	●●	●●	●●●
●	●●	●	●	●	●●	●●	●●●
●●●	●●	●	●	●	●●●	●●	●●●
●●●	●	●●●(●)	●●●●	●●●●	●●●	●	●●
●●	●●	●	●●	●●	●	●●	●●
●●	●●	●●●(●)	●●●	●●●●	●●	●●	●●
-	-	-	-	-	-	-	-
60 ± 5	65 ± 5	60 to 85 ± 5	55 ± 5	72 ± 5	50 ± 5	65 ± 5	55 ± 5
-25° to +170°	-10° to +250°	-40° to +100°	-40° to +130°	-40° to +100°	-30° to +65°	-10° to +250°	-35° to +130°
-10° to +140°	-5° to +200°	-25° to +80°	-30° to +100°	-30° to +80°	-15° to +50°	-5° to +200°	-25° to +100°
Plastics, Glass	Glass, Solar, Metal	Packaging, Metal	Packaging	Metal, Packaging, Glass, Wood	Packaging	Glass, Solar, Metal	Glass
					✓ <sup>6)</sup>		
✓		✓				✓	
✓		ED-85					
●●●	●●●	●●●(●)	on request	on request	on request	●●●	on request

<sup>4)</sup>Vulkollan® is a registered trademark of Bayer AG

<sup>5)</sup>With slight oil wetting

<sup>6)</sup>For PVC: CFR 21 §175.300 FDA

# Flat Suction Cups SUF

Suction area (Ø) from 1 mm to 100 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

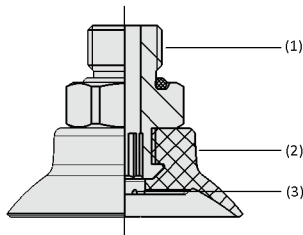
- Round flat suction cups for rapid pick&place applications of flat workpieces with a smooth or slightly rough surface
- Handling of hot workpieces, such as, plastic, glass or sheet metal parts
- Use in handling processes in which it is important that few marks are left (HT1) or which require protection against electrostatic discharge (NBR-ESD)



Flat Suction Cups SUF

### Design

- Wear resistant and compact suction cup SUF (2) consisting of suction cup with friction structure (3) and connection element SC (1)
- Uniform overall height within an SC grouping
- Available as assembled suction cup with connection element SC with sealing element and hexagon socket (Ø 10 to Ø 100 mm)



System Design Flat Suction Cups SUF



Flat suction cups SUF for handling cardboard boxes

### Product Highlights

- Wide range of applications thanks to a wide selection of diameters and materials (temperature-resistant, dissipative and non-marking)
- Efficient and precise component handling due to excellent suction performance with high positioning accuracy
- Suction cups with low intrinsic volume and optimized friction structure for fastest cycle times with high lateral force absorption

# Flat Suction Cups SUF

Suction area (Ø) from 1 mm to 100 mm



## Designation Code Flat Suction Cups SUF

<b>SUF</b>	–	<b>12</b>	–	<b>NBR-ESD-55</b>	–	<b>M5-AG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
SUF	Flat

### 2 – Suction area

Code	Diameter in mm
1...100	Ø 1 to 100

### 3 – Material

Code	Material
HT1-60	High temperature material
NBR-55	Nitrile caoutchuc
NBR-ESD-55	Nitrile caoutchuc
SI-55	Silicone
SI-CO-55	Silicone

### 4 – Connection

Code	Connection
M3-AG	M3-AG (AG = male (M))
M5-AG	M5-AG
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG
G1/2-IG	G1/2-IG

Suction cup SUF (elastomer part + connection nipple) is delivered assembled.

Available spare parts: suction cup SUF, connection nipple SC




























































## Ordering Data Flat Suction Cups SUF

Type			Suction cup material with ShA: *				
			HT1-60	NBR-55	NBR-ESD-55	SI-55	SI-CO-55
SUF	1.0	M3-AG	10.01.01.14206	10.01.01.14197	10.01.01.14210	10.01.01.14202	10.01.01.14214
SUF	1.5	M3-AG	10.01.01.14207	10.01.01.14198	10.01.01.14211	10.01.01.14203	10.01.01.14215
SUF	2.0	M3-AG	10.01.01.14208	10.01.01.14200	10.01.01.14212	10.01.01.14204	10.01.01.14216
SUF	3.0	M3-AG	10.01.01.14293	10.01.01.14291	10.01.01.14294	10.01.01.14292	10.01.01.14295
SUF	4.0	M3-AG	10.01.01.14209	10.01.01.14201	10.01.01.14213	10.01.01.14205	10.01.01.14217
SUF	5.0	M5-IG	10.01.01.14233	10.01.01.14221	10.01.01.14239	10.01.01.14227	10.01.01.14245
SUF	5.0	M5-AG	10.01.01.14230	10.01.01.14218	10.01.01.14236	10.01.01.14224	10.01.01.14242
SUF	6.0	M5-IG	10.01.01.14234	10.01.01.14222	10.01.01.14240	10.01.01.14228	10.01.01.14246
SUF	6.0	M5-AG	10.01.01.14231	10.01.01.14219	10.01.01.14237	10.01.01.14225	10.01.01.14243
SUF	8.0	M5-IG	10.01.01.14235	10.01.01.14223	10.01.01.14241	10.01.01.14229	10.01.01.14247
SUF	8.0	M5-AG	10.01.01.14232	10.01.01.14220	10.01.01.14238	10.01.01.14226	10.01.01.14244
SUF	10.0	M5-IG	10.01.01.14180	10.01.01.14156	10.01.01.14162	10.01.01.14168	10.01.01.14174
SUF	10.0	M5-AG	10.01.01.14177	10.01.01.14153	10.01.01.14159	10.01.01.14165	10.01.01.14171
SUF	12.0	M5-IG	10.01.01.14181	10.01.01.14157	10.01.01.14163	10.01.01.14169	10.01.01.14175
SUF	12.0	M5-AG	10.01.01.14178	10.01.01.14154	10.01.01.14160	10.01.01.14166	10.01.01.14172
SUF	15.0	M5-IG	10.01.01.14182	10.01.01.14158	10.01.01.14164	10.01.01.14170	10.01.01.14176
SUF	15.0	M5-AG	10.01.01.14179	10.01.01.14155	10.01.01.14161	10.01.01.14167	10.01.01.14173
SUF	15.0	G1/8-IG	10.01.01.14149	10.01.01.14117	10.01.01.14125	10.01.01.14133	10.01.01.14141
SUF	15.0	G1/8-AG	10.01.01.14145	10.01.01.14113	10.01.01.14121	10.01.01.14129	10.01.01.14137
SUF	18.0	G1/8-IG	10.01.01.14150	10.01.01.14118	10.01.01.14126	10.01.01.14134	10.01.01.14142
SUF	18.0	G1/8-AG	10.01.01.14146	10.01.01.14114	10.01.01.14122	10.01.01.14130	10.01.01.14138
SUF	20.0	G1/8-IG	10.01.01.14151	10.01.01.14119	10.01.01.14127	10.01.01.14135	10.01.01.14143
SUF	20.0	G1/8-AG	10.01.01.14147	10.01.01.14115	10.01.01.14123	10.01.01.14131	10.01.01.14139
SUF	25.0	G1/8-IG	10.01.01.14152	10.01.01.14120	10.01.01.14128	10.01.01.14136	10.01.01.14144

# Flat Suction Cups SUF

Suction area (Ø) from 1 mm to 100 mm

Type	Suction cup material with ShA: *					
	HT1-60	NBR-55	NBR-ESD-55	SI-55	SI-CO-55	
SUF 25.0 G1/8-AG	10.01.01.14148 	10.01.01.14116 	10.01.01.14124	10.01.01.14132 	10.01.01.14140	
SUF 30.0 G1/8-IG	10.01.01.14109 	10.01.01.14092 	-	10.01.01.14101 	-	
SUF 30.0 G1/8-AG	10.01.01.14105 	10.01.01.14088 	-	10.01.01.14097 	-	
SUF 35.0 G1/8-IG	10.01.01.14110 	10.01.01.14093 	-	10.01.01.14102 	-	
SUF 35.0 G1/8-AG	10.01.01.14106 	10.01.01.14089 	-	10.01.01.14098 	-	
SUF 40.0 G1/8-IG	10.01.01.14111 	10.01.01.14094 	-	10.01.01.14103 	-	
SUF 40.0 G1/8-AG	10.01.01.14107 	10.01.01.14090 	-	10.01.01.14099 	-	
SUF 50.0 G1/8-IG	10.01.01.14112 	10.01.01.14095 	-	10.01.01.14104 	-	
SUF 50.0 G1/8-AG	10.01.01.14108 	10.01.01.14091 	-	10.01.01.14100 	-	
SUF 60.0 G1/4-IG	10.01.01.14082 	10.01.01.14062 	-	10.01.01.14072 	-	
SUF 60.0 G1/4-AG	10.01.01.14077 	10.01.01.14057 	-	10.01.01.14067 	-	
SUF 70.0 G1/4-IG	10.01.01.14083 	10.01.01.14063 	-	10.01.01.14073 	-	
SUF 70.0 G1/4-AG	10.01.01.14078 	10.01.01.14058 	-	10.01.01.14068 	-	
SUF 80.0 G1/4-IG	10.01.01.14084 	10.01.01.14064 	-	10.01.01.14074 	-	
SUF 80.0 G1/4-AG	10.01.01.14079 	10.01.01.14059 	-	10.01.01.14069 	-	
SUF 90.0 G1/4-IG	10.01.01.14085 	10.01.01.14065 	-	10.01.01.14075 	-	
SUF 90.0 G1/4-AG	10.01.01.14080 	10.01.01.14060 	-	10.01.01.14070 	-	
SUF 100.0 G1/4-IG	10.01.01.14087 	10.01.01.14066 	-	10.01.01.14076 	-	
SUF 100.0 G1/4-AG	10.01.01.14081 	10.01.01.14061 	-	10.01.01.14071 	-	

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"



## Ordering Data Spare Parts Flat Suction Cups SUF

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)



# Flat Suction Cups SUF



Suction area (Ø) from 1 mm to 100 mm



## Technical Data Flat Suction Cups SUF

Type		Suction force (-600 mbar) [N]*	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]**	Nipple family
SUF	1.0	0.03	0.000	2	2	SC 010
SUF	1.5	0.08	0.001	2	2	SC 010
SUF	2.0	0.15	0.002	2	2	SC 010
SUF	3.0	0.30	0.003	8	2	SC 010
SUF	4.0	0.40	0.005	8	2	SC 010
SUF	5.0	0.90	0.013	8	2	SC 020
SUF	6.0	1.40	0.020	8	2	SC 020
SUF	8.0	2.40	0.044	8	2	SC 020
SUF	10.0	4.00	0.070	13	2	SC 030
SUF	12.0	5.00	0.120	13	2	SC 030
SUF	15.0	9.00	0.220	20	4	SC 030
SUF	18.0	13.00	0.370	20	4	SC 030
SUF	20.0	15.00	0.500	20	4	SC 030
SUF	25.0	23.00	0.900	25	4	SC 040
SUF	30.0	34.00	1.600	35	4	SC 040
SUF	35.0	46.00	2.400	40	4	SC 050
SUF	40.0	61.00	3.800	50	4	SC 050
SUF	50.0	95.00	7.100	75	4	SC 050
SUF	60.0	140.00	12.700	75	6	N 009
SUF	70.0	198.00	18.000	100	6	N 009
SUF	80.0	254.00	25.100	100	6	N 009
SUF	90.0	328.00	34.300	150	6	N 009
SUF	100.0	402.00	46.400	200	6	N 009

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The recommended hose diameter refers to a hose length of approx. 2 m



Further information: [WWW.SCHMALZ.COM/SUF](http://WWW.SCHMALZ.COM/SUF)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SUF](http://WWW.SCHMALZ.COM/SUF)

Product  
Overview

Vacuum  
Suction Cups

Special  
Grippers

Mounting  
Elements

Vacuum  
Generators

Switches and  
Monitoring

Filters and  
Connections

Services and  
Contact

# Flat Suction Cups SUF

Suction area (Ø) from 1 mm to 100 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

- Round suction plate for handling flat, smooth workpieces such as sheet metal, plastic, coated timber, granite or concrete
- For universal use in handling processes in vacuum automation and with manual vacuum lifting devices
- Use in processes requiring high suction forces or acceleration
- Use in dirty environmental conditions such as oil
- Handling thin-walled workpieces such as thin metal sheets



Suction Plates SUF

### Design

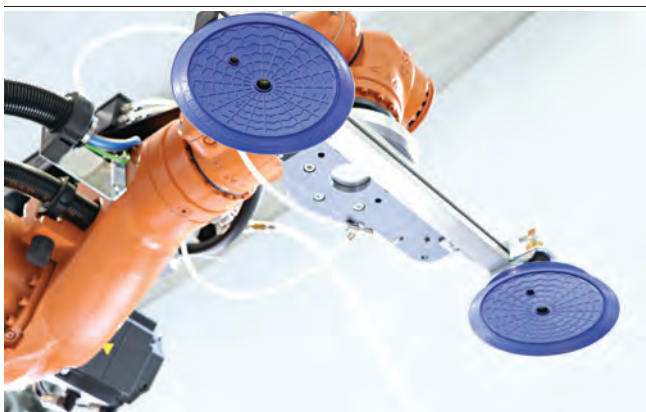
- Reinforced plastic support plate (1)
- Integrated NFC tag (2)
- Replaceable sealing ring (3) with special friction structure (4) and optimized sealing edge



System Design Suction Plates SUF

### Product Highlights

- Weight-optimized gripping system by 30 % due to a carrier plate made of reinforced plastic
- Sealing ring made of oil and ozone-resistant NBR with optimized friction structure for increased suction and lateral force
- Innovative connection between carrier plate and sealing ring simplifies replacement and protects against twisting
- Read out product information via NFC tag with the smartphone and carry out replacement procurement



Suction plates SUF being used for handling glass sheets

Suction surface (Ø) from 125 mm to 210 mm



## Designation Code Suction Plates SUF

<b>SUF</b>	–	<b>210</b>	–	<b>NBR-60</b>	–	<b>G1/2-IG</b>	<b>VRS</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>	<b>5</b>

**1** – Abbreviated designation

Code	Version
SUF	Flat

**2** – Suction area

Code	Diameter in mm
125...210	ø 125 to 210

**3** – Material

Code	Material
NBR-60	Nitrile caoutchuc

**4** – Connection

Code	Connection
G1/4-IG	G1/4-IG
G1/2-IG	G1/2-IG

**5** – Product addition

Code	Connection
VRS	Screw plug

Suction plate SUF (sealing ring + supportplate) is delivered pre-assembled. The product consists of:

- Sealing ring of type DR-SUF – elastomer part, available in various diameters
- Reinforced plastic support plate with various threads

Available spare parts: sealing ring DR-SUF

Available accessories: touch valve TV, filter sieve



## Ordering Data Suction Plates SUF

Type	Part no.
SUF 125 NBR-60 G1/4-IG	10.01.01.14521
SUF 125 NBR-60 G1/4-IG VRS	10.01.01.14316
SUF 160 NBR-60 G1/2-IG	10.01.01.14522
SUF 160 NBR-60 G1/2-IG VRS	10.01.01.14330
SUF 210 NBR-60 G1/2-IG	10.01.01.14523
SUF 210 NBR-60 G1/2-IG VRS	10.01.01.13536



## Ordering Data Accessories Suction Plates SUF

Type	Accessories	Part no.
SUF 125 NBR-60 G1/4-IG	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110
SUF 125 NBR-60 G1/4-IG VRS	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110
SUF 160 NBR-60 G1/2-IG	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110
SUF 160 NBR-60 G1/2-IG VRS	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110
SUF 210 NBR-60 G1/2-IG	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110
SUF 210 NBR-60 G1/2-IG VRS	Sieve, round	SIEB 27x1 M5-A2 100 10.07.01.00110

Type	Accessories	Part no.
SUF 160	Touch valve	TV G1/4-AG 12 10.05.10.00086
SUF 210	Touch valve	TV G1/4-AG 12 10.05.10.00086

# Suction Plates SUF

Suction surface (Ø) from 125 mm to 210 mm

Product Overview

## Ordering Data Spare Parts Suction Plates SUF

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

Vacuum Suction Cups

## Technical Data Suction Plates SUF

Special Grippers

Type		Suction force (-600 mbar) [N]*	Suction force d2 [N]**	Volume [cm <sup>3</sup> ]	Workpiece radius min. (convex) [mm]
SUF	125	730	450	96	250
SUF	160	1,200	790	176	400
SUF	210	2,070	1,400	362	750

Mounting Elements

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor  
 \*\*Suction force referred to the sealing edge diameter d2

Vacuum Generators

## Further information: [WWW.SCHMALZ.COM/SUF-125](http://WWW.SCHMALZ.COM/SUF-125)

Switches and Monitoring



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SUF-125](http://WWW.SCHMALZ.COM/SUF-125)

Filters and Connections

Services and Contact



# Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm



## Suitability for Industry Specific Applications

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



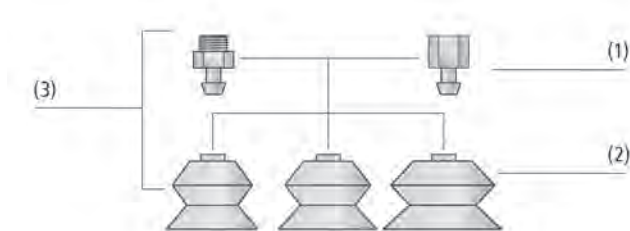
Bellows Suction Cups FSGA (1.5 Folds)

## Applications

- Round, bellows suction cup with 1.5 folds for handling of extremely sensitive workpieces (optimum damping effect due to folds and smooth sealing lip)
- Handling of workpieces with uneven surfaces, such as pipes (folds permit optimal adaptation to concave and convex surfaces)

## Design

- Robust, wear-resistant suction cup FSGA (3) with single sealing lip, consisting of suction cup FGA (2) with 1.5 folds and connection nipple (1)
- All nipples are plugged in
- Suction cups with a diameter of 25 mm or more with supports on the bottom
- With each nipple family, the replacement cups and nipples can be combined as desired



System Design Bellows Suction Cups FSGA (1.5 Folds)



Bellows suction cups FSGA being used for handling cardboard boxes

## Product Highlights

- Wide range of diameters and materials for the most varied workpieces
- Soft, tapered sealing lip adapts optimally to curved surfaces or uneven surfaces
- Effective damping of the workpieces during placement by 1.5 folds and support surfaces on the underside (from diameter 25 mm)
- High stiffness of the upper fold provides stability under horizontal forces and high accelerations

# Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

## Designation Code Bellows Suction Cups FSGA (1.5 Folds)

<b>FSGA</b>	-	<b>14</b>	-	<b>HT1-60</b>	-	<b>G1/8-IG</b>
1		2		3		4

### 1 – Abbreviated designation

Code	Version
FSGA	1.5 folds

### 2 – Suction area

Code	Diameter in mm
2...78	ø 2 to 78

### 3 – Material

Code	Material
HT1-60	High temperature material
NBR-55	Nitrile caoutchuc
NBR-ESD-55	Nitrile caoutchuc
NK-45	Natural rubber
SI-55	Silicone
SI-HD	Silicone
SI-MD	Silicone

### 4 – Connection

Code	Connection
M3-AG	M3-AG (AG = male (M))
M5-AG	M5-AG
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG

Suction cup FSGA (elastomer part + connection nipple) is delivered unassembled (diameters of 33 mm and more are assembled). The delivery consists of:

- Suction cup of type FGA – elastomer part, available in various diameters and materials
- Connection nipple of type SA-NIP – available with various threads

Available spare parts: suction cup FGA, connection nipple SA-NIP

## Ordering Data Bellows Suction Cups FSGA (1.5 Folds)

Type			Suction cup material with ShA: *						
			HT1-60	NBR-55	NBR-ESD-55	NK-45	SI-55	SI-HD-65	SI-MD-55
FSGA	2	M3-AG	10.01.06.04523	10.01.06.04521	10.01.06.04524	-	10.01.06.04522	-	-
FSGA	4	M3-AG	10.01.06.04145	10.01.06.04143	10.01.06.04147	-	10.01.06.04144	-	-
FSGA	6	M5-AG	10.01.06.02996	10.01.06.02994	10.01.06.04317	-	10.01.06.02995	10.01.06.04175	-
FSGA	6	M5-IG	10.01.06.03000	10.01.06.02998	10.01.06.04318	-	10.01.06.02999	10.01.06.04174	-
FSGA	11	M5-AG	10.01.06.01227	10.01.06.00076	10.01.06.04319	10.01.06.00406	10.01.06.00086	10.01.06.04176	10.01.06.04193
FSGA	11	G1/8-AG	10.01.06.01226	10.01.06.00075	10.01.06.04320	10.01.06.00408	10.01.06.00085	10.01.06.04177	10.01.06.04194
FSGA	11	G1/8-IG	10.01.06.01232	10.01.06.00061	10.01.06.04321	10.01.06.00407	10.01.06.00068	10.01.06.04178	10.01.06.04195
FSGA	14	M5-AG	10.01.06.00933	10.01.06.00379	10.01.06.04322	10.01.06.00385	10.01.06.00382	10.01.06.04179	10.01.06.04196
FSGA	14	G1/8-AG	10.01.06.00932	10.01.06.00381	10.01.06.04323	10.01.06.00387	10.01.06.00384	10.01.06.04180	10.01.06.04197
FSGA	14	G1/8-IG	10.01.06.00948	10.01.06.00380	10.01.06.04324	10.01.06.00386	10.01.06.00383	10.01.06.04181	10.01.06.04198
FSGA	16	M5-AG	10.01.06.01229	10.01.06.00078	10.01.06.04479	10.01.06.00409	10.01.06.00088	10.01.06.04182	10.01.06.04199
FSGA	16	G1/8-AG	10.01.06.01228	10.01.06.00077	10.01.06.04480	10.01.06.00411	10.01.06.00087	10.01.06.04183	10.01.06.04200
FSGA	16	G1/8-IG	10.01.06.01233	10.01.06.00062	10.01.06.04481	10.01.06.00410	10.01.06.00069	10.01.06.04184	10.01.06.04201
FSGA	20	M5-AG	10.01.06.00937	10.01.06.00388	10.01.06.04325	10.01.06.00394	10.01.06.00391	10.01.06.04185	10.01.06.04202
FSGA	20	G1/8-AG	10.01.06.00936	10.01.06.00390	10.01.06.04326	10.01.06.00396	10.01.06.00393	10.01.06.04186	10.01.06.04203
FSGA	20	G1/8-IG	10.01.06.00952	10.01.06.00389	10.01.06.04327	10.01.06.00395	10.01.06.00392	10.01.06.04187	10.01.06.04204
FSGA	22	M5-AG	10.01.06.01231	10.01.06.00080	10.01.06.04482	10.01.06.00412	10.01.06.00090	10.01.06.04188	10.01.06.04205
FSGA	22	G1/8-AG	10.01.06.01230	10.01.06.00079	10.01.06.04483	10.01.06.00414	10.01.06.00089	10.01.06.04189	10.01.06.04206
FSGA	22	G1/8-IG	10.01.06.01234	10.01.06.00063	10.01.06.04484	10.01.06.00413	10.01.06.00070	10.01.06.04190	10.01.06.04207
FSGA	25	G1/8-AG	10.01.06.00940	10.01.06.00399	10.01.06.04485	10.01.06.00405	10.01.06.00402	10.01.06.04191	10.01.06.04208
FSGA	25	G1/8-IG	10.01.06.00956	10.01.06.00398	10.01.06.04486	10.01.06.00404	10.01.06.00401	10.01.06.04192	10.01.06.04209
FSGA	33	G1/4-AG	10.01.06.00941	10.01.06.00081	10.01.06.04487	10.01.06.00330	10.01.06.00091	-	10.01.06.04210

# Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

Type			Suction cup material with ShA: *						
			HT1-60	NBR-55	NBR-ESD-55	NK-45	SI-55	SI-HD-65	
FSGA	33	G1/4-IG	10.01.06.00957	10.01.06.00064	10.01.06.04488	10.01.06.00415	10.01.06.00071	-	10.01.06.04211
FSGA	43	G1/4-AG	10.01.06.00942	10.01.06.00082	-	10.01.06.00418	10.01.06.00092	-	-
FSGA	43	G1/4-IG	10.01.06.00958	10.01.06.00065	-	10.01.06.00417	10.01.06.00072	-	-
FSGA	53	G1/4-AG	10.01.06.00943	10.01.06.00083	-	10.01.06.00326	10.01.06.00093	-	-
FSGA	53	G1/4-IG	10.01.06.00977	10.01.06.00066	-	10.01.06.00419	10.01.06.00073	-	-
FSGA	63	G1/4-AG	10.01.06.02476	10.01.06.00685	-	10.01.06.00687	10.01.06.00686	-	-
FSGA	63	G1/4-IG	10.01.06.02477	10.01.06.00691	-	10.01.06.00693	10.01.06.00692	-	-
FSGA	78	G1/4-AG	10.01.06.02478	10.01.06.00084	-	10.01.06.00340	10.01.06.00094	-	-
FSGA	78	G1/4-IG	10.01.06.02479	10.01.06.00067	-	10.01.06.00421	10.01.06.00074	-	-

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"

## Ordering Data Spare Parts Bellows Suction Cups FSGA (1.5 Folds)

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

## Technical Data Bellows Suction Cups FSGA (1.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]**	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]***	Nipple family
FSGA	2	0.08	0.2	0.016	1	3	N 003
FSGA	4	0.29	0.5	0.035	2	3	N 003
FSGA	6	0.40	1.4	0.098	4	4	N 004
FSGA	11	0.95	3.8	0.225	10	4	N 016
FSGA	14	1.20	5.0	0.420	15	4	N 016
FSGA	16	2.30	6.7	0.750	20	4	N 016
FSGA	20	4.70	10.7	1.150	20	4	N 016
FSGA	22	5.70	15.2	1.400	25	4	N 016
FSGA	25	5.30	17.3	2.944	25	4	N 016
FSGA	33	13.60	39.6	4.750	40	6	N 018
FSGA	43	22.80	64.5	9.250	60	6	N 018
FSGA	53	51.30	95.0	26.488	100	6	N 018
FSGA	63	85.00	135.0	43.829	100	6	N 018
FSGA	78	137.40	218.0	75.583	100	6	N 019

\*The suction force figures are theoretical values at a vacuum of -0.6 bar and with a smooth, flat workpiece surface. They are specified without any safety factor. For the system design the safety factors should be increased at least by the factor 3.

\*\*The pull-off force of the versions made of natural rubber is reduced by about 40 %

\*\*\*The recommended hose diameter refers to a hose length of approx. 2 m

## Further information: [WWW.SCHMALZ.COM/FSGA](http://WWW.SCHMALZ.COM/FSGA)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/  
FSGA](http://WWW.SCHMALZ.COM/FSGA)

# Bellows Suction Cups FSG (2.5 Folds)

Suction area (Ø) from 3 mm to 88 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

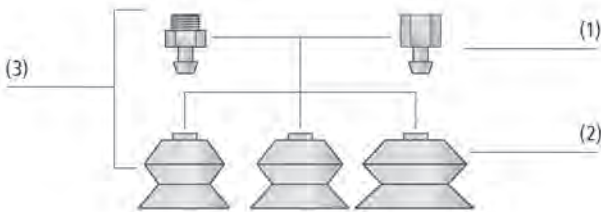
- Round, bellows suction cup with 2.5 folds for handling of extremely sensitive workpieces (optimum damping effect)
- Handling of workpieces with extremely uneven surfaces, such as pipes (optimal adaptation to concave and convex surfaces)
- Internal support (from diameter 52 mm) prevents workpiece from being sucked in
- Special design of the folds permits use in systems with very short cycle times



Bellows Suction Cups FSG (2.5 Folds)

### Design

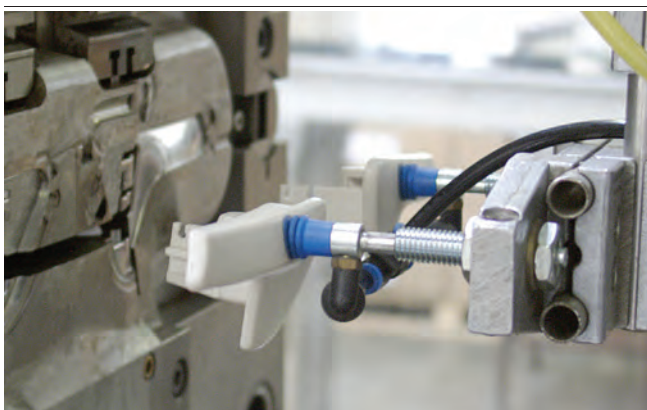
- Robust, wear-resistant suction cup FSG (3) with single sealing lip, consisting of suction cup FG (2) with 2.5 folds and connection nipple (1)
- All nipples are plugged in
- Suction cups with a diameter of 52 mm or more with supports on the bottom
- With each nipple family, the replacement cups and nipples can be combined as desired



System Design Bellows Suction Cups FSG (2.5 Folds)

### Product Highlights

- Wide range of diameters and materials for the most varied workpieces
- 2.5 folds ensure high suction force and effective damping of sensitive workpieces
- Very high suction stroke due to soft, flexible folds
- Soft, tapered sealing lip adapts optimally to curved surfaces
- Support surfaces on the bottom (from diameter 52 mm) prevent permanent deformation of thin-walled workpieces



Bellows suction cups FSG being used for handling hot plastic parts

# Bellows Suction Cups FSG (2.5 Folds)

Suction area (Ø) from 3 mm to 88 mm



## Designation Code Bellows Suction Cups FSG (2.5 Folds)

<b>FSG</b>	-	<b>18</b>	-	<b>SI-55</b>	-	<b>G1/8-IG</b>
1		2		3		4

### 1 – Abbreviated designation

Code	Version
FSG	2.5 folds

### 2 – Suction area

Code	Diameter in mm
3...88	ø 3 to 88

### 3 – Material

Code	Material
HT1-60	High temperature material
NBR-55	Nitrile caoutchuc
NBR-CO-55	Nitrile caoutchuc
NBR-ESD-55	Nitrile caoutchuc
NK-45	Natural rubber
SI-55	Silicone
SI-CO-55	Silicone
SI-HD	Silicone

### 4 – Connection

Code	Connection
M3-AG	M3-AG (AG = male (M))
M5-AG	M5-AG
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG

Suction cup FSG (elastomer part + connection nipple) is delivered unassembled (assembled from diameter 32 mm). The delivery consists of:

- Suction cup of type FG – elastomer part, available in various diameters and materials
- Connection nipple of type SA-NIP – available with various threads

Available spare parts: suction cup FG, connection nipple SA-NIP



## Ordering Data Bellows Suction Cups FSG (2.5 Folds)

Type			Suction cup material with ShA: *			
			HT1-60	NBR-55	NBR-CO-55	NBR-ESD-55
FSG	3	M3-AG	10.01.06.03711	10.01.06.03712	10.01.06.03714	10.01.06.04328
FSG	3	M5-AG	10.01.06.03716	10.01.06.03717	10.01.06.03719	10.01.06.04329
FSG	4	M5-AG	10.01.06.02968	10.01.06.02964	10.01.06.03073	10.01.06.04330
FSG	4	M5-IG	10.01.06.02969	10.01.06.02965	10.01.06.03074	10.01.06.04331
FSG	5	M5-AG	10.01.06.01235	10.01.06.00663	-	10.01.06.04332
FSG	5	M5-IG	10.01.06.01242	10.01.06.00662	-	10.01.06.04333
FSG	7	M5-AG	10.01.06.01237	10.01.06.00021	-	10.01.06.04336
FSG	7	G1/8-AG	10.01.06.01236	10.01.06.00020	-	10.01.06.04334
FSG	7	G1/8-IG	10.01.06.01243	10.01.06.00001	-	10.01.06.04335
FSG	9	M5-AG	10.01.06.00963	10.01.06.00023	-	10.01.06.04339
FSG	9	G1/8-AG	10.01.06.00962	10.01.06.00022	-	10.01.06.04337
FSG	9	G1/8-IG	10.01.06.00978	10.01.06.00002	-	10.01.06.04338
FSG	12	M5-AG	10.01.06.01255	10.01.06.00565	-	10.01.06.04342
FSG	12	G1/8-AG	10.01.06.01238	10.01.06.00562	-	10.01.06.04340
FSG	12	G1/8-IG	10.01.06.01244	10.01.06.00559	-	10.01.06.04341
FSG	14	M5-AG	10.01.06.00967	10.01.06.00025	-	10.01.06.04491
FSG	14	G1/8-AG	10.01.06.00966	10.01.06.00024	-	10.01.06.04489
FSG	14	G1/8-IG	10.01.06.00982	10.01.06.00003	-	10.01.06.04490
FSG	18	M5-AG	10.01.06.00969	10.01.06.00027	-	10.01.06.04494
FSG	18	G1/8-AG	10.01.06.00968	10.01.06.00026	-	10.01.06.04492
FSG	18	G1/8-IG	10.01.06.00984	10.01.06.00004	-	10.01.06.04493
FSG	20	M5-AG	10.01.06.01240	10.01.06.00029	-	10.01.06.04345



# Bellows Suction Cups FSG (2.5 Folds)

Suction area (Ø) from 3 mm to 88 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Type			Suction cup material with ShA: *			
			HT1-60	NBR-55	NBR-CO-55	NBR-ESD-55
FSG	20	G1/8-AG	10.01.06.01239	10.01.06.00028	-	10.01.06.04343
FSG	20	G1/8-IG	10.01.06.01245	10.01.06.00005	-	10.01.06.04344
FSG	25	G1/8-AG	10.01.06.00972	10.01.06.00334	-	10.01.06.04495
FSG	25	G1/8-IG	10.01.06.00988	10.01.06.00333	-	10.01.06.04496
FSG	32	G1/4-AG	10.01.06.01241	10.01.06.00030	-	10.01.06.04497
FSG	32	G1/4-IG	10.01.06.01246	10.01.06.00006	-	10.01.06.04498
FSG	42	G1/4-AG	10.01.06.00974	10.01.06.00031	-	-
FSG	42	G1/4-IG	10.01.06.00990	10.01.06.00007	-	-
FSG	52	G1/4-AG	10.01.06.02387	10.01.06.00582	-	-
FSG	52	G1/4-IG	10.01.06.02388	10.01.06.00584	-	-
FSG	62	G1/4-AG	10.01.06.02480	10.01.06.00032	-	-
FSG	62	G1/4-IG	10.01.06.02481	10.01.06.00008	-	-
FSG	88	G1/4-AG	-	10.01.06.00033	-	-
FSG	88	G1/4-IG	-	10.01.06.00009	-	-

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

Type			Suction cup material with ShA: *			
			NK-45	SI-55	SI-CO-55	SI-HD-65
FSG	3	M3-AG	-	10.01.06.03713	10.01.06.03715	-
FSG	3	M5-AG	-	10.01.06.03718	10.01.06.03720	-
FSG	4	M5-AG	-	10.01.06.02966	-	-
FSG	4	M5-IG	-	10.01.06.02967	-	-
FSG	5	M5-AG	-	10.01.06.00665	-	-
FSG	5	M5-IG	-	10.01.06.00664	-	-
FSG	7	M5-AG	-	10.01.06.00035	-	10.01.06.04154
FSG	7	G1/8-AG	-	10.01.06.00034	-	10.01.06.04155
FSG	7	G1/8-IG	-	10.01.06.00010	-	10.01.06.04156
FSG	9	M5-AG	10.01.06.00430	10.01.06.00037	-	10.01.06.04157
FSG	9	G1/8-AG	10.01.06.00432	10.01.06.00036	-	10.01.06.04158
FSG	9	G1/8-IG	10.01.06.00431	10.01.06.00011	-	10.01.06.04159
FSG	12	M5-AG	10.01.06.00567	10.01.06.00566	-	10.01.06.04160
FSG	12	G1/8-AG	10.01.06.00564	10.01.06.00563	-	10.01.06.04161
FSG	12	G1/8-IG	10.01.06.00561	10.01.06.00560	-	10.01.06.04162
FSG	14	M5-AG	10.01.06.00433	10.01.06.00039	-	10.01.06.04163
FSG	14	G1/8-AG	10.01.06.00435	10.01.06.00038	-	10.01.06.04164
FSG	14	G1/8-IG	10.01.06.00434	10.01.06.00012	-	10.01.06.04165
FSG	18	M5-AG	10.01.06.00436	10.01.06.00041	-	10.01.06.04166
FSG	18	G1/8-AG	10.01.06.00438	10.01.06.00040	-	10.01.06.04167
FSG	18	G1/8-IG	10.01.06.00437	10.01.06.00013	-	10.01.06.04168
FSG	20	M5-AG	10.01.06.00439	10.01.06.00043	-	10.01.06.04169
FSG	20	G1/8-AG	10.01.06.00441	10.01.06.00042	-	10.01.06.04170
FSG	20	G1/8-IG	10.01.06.00440	10.01.06.00014	-	10.01.06.04171
FSG	25	G1/8-AG	10.01.06.00443	10.01.06.00337	-	10.01.06.04172
FSG	25	G1/8-IG	10.01.06.00442	10.01.06.00336	-	10.01.06.04173
FSG	32	G1/4-AG	10.01.06.00445	10.01.06.00044	-	-
FSG	32	G1/4-IG	10.01.06.00444	10.01.06.00015	-	-
FSG	42	G1/4-AG	10.01.06.00447	10.01.06.00045	-	-
FSG	42	G1/4-IG	10.01.06.00446	10.01.06.00016	-	-
FSG	52	G1/4-AG	10.01.06.02385	10.01.06.00586	-	-
FSG	52	G1/4-IG	10.01.06.02386	10.01.06.00587	-	-
FSG	62	G1/4-AG	10.01.06.00449	10.01.06.00046	-	-
FSG	62	G1/4-IG	10.01.06.00448	10.01.06.00017	-	-
FSG	88	G1/4-AG	10.01.06.00451	10.01.06.00047	-	-
FSG	88	G1/4-IG	10.01.06.00450	10.01.06.00018	-	-

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"

# Bellows Suction Cups FSG (2.5 Folds)

Suction area (Ø) from 3 mm to 88 mm



## Ordering Data Spare Parts Bellows Suction Cups FSG (2.5 Folds)

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

## Technical Data Bellows Suction Cups FSG (2.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]**	Volume [cm <sup>3</sup> ]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]***	Nipple family
FSG	3	0.2	0.4	0.022	4	2	N 055
FSG	4	0.3	0.6	0.053	4	2	N 017
FSG	5	0.4	0.8	0.033	8	2	N 017
FSG	7	0.2	0.9	0.043	8	4	N 016
FSG	9	0.8	2.3	0.150	10	4	N 016
FSG	12	1.2	3.5	0.600	13	4	N 016
FSG	14	1.4	5.7	0.975	15	4	N 016
FSG	18	3.1	8.5	1.350	20	4	N 016
FSG	20	5.2	12.1	2.298	30	4	N 016
FSG	25	4.8	19.0	5.400	30	4	N 016
FSG	32	12.1	36.9	10.000	35	6	N 018
FSG	42	15.0	44.0	19.786	75	6	N 018
FSG	52	28.6	96.0	37.587	75	6	N 018
FSG	62	41.1	137.0	72.500	75	6	N 018
FSG	88	40.5	286.0	143.668	100	9	N 019

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The pull-off force of the versions made of natural rubber is reduced by about 40 %

\*\*\*The recommended hose diameter refers to a hose length of approx. 2 m



Further information: [WWW.SCHMALZ.COM/FSG](http://WWW.SCHMALZ.COM/FSG)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/  
FSG](http://WWW.SCHMALZ.COM/FSG)

# Bell-Shaped Suction Cups SAX

Suction area (Ø) from 30 mm to 115 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

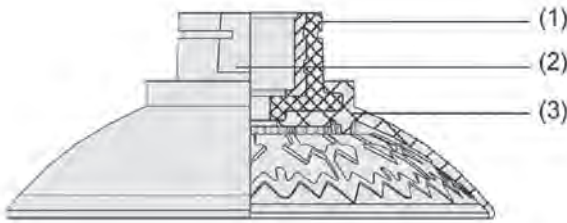
Switches and Monitoring

Filters and Connections

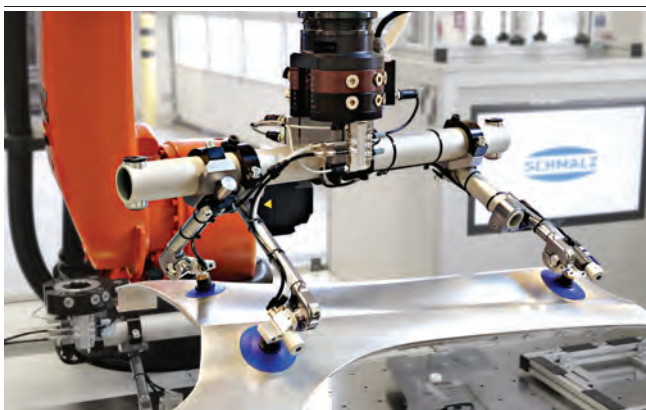
Services and Contact



Bell-Shaped Suction Cups SAX



System Design Bell-Shaped Suction Cups SAX



Bell-shaped suction cups SAX for handling formed sheet metal parts

## Suitability for Industry Specific Applications

### Applications

- Lightweight high-speed suction cups with demands for highest holding and shear forces for fast handling of sheet metal and car body parts
- Handling of workpieces with oily surfaces
- Loading and unloading CNC metal and laser cutting machines
- Handling of blanks at destackers
- Handling of workpieces with convex surfaces

### Design

- Lightweight, round bell-shaped suction cup with flexible sealing lip and optimal internal structure (3)
- Wear-resistant material Elastodur of suction cup (ED-85)
- Vulcanized connection nipple out of reinforced Plastics (1) (very high strength)
- Key surface for easy and quick installation (2)
- Available as mounted suction cup with various connection types

### Product Highlights

- Bell-shaped, specially structured suction cup for maximum holding force at high accelerations, especially on oily metal sheets
- Lightweight design of the tooling ideal for high-speed applications
- Very good adaptation to different workpiece contours thanks to the significantly increased stroke of the suction cup
- Flexible sealing lip seals very well even on rough workpiece surfaces

# Bell-Shaped Suction Cups SAX

Suction area (Ø) from 30 mm to 115 mm



## Designation Code Bell-Shaped Suction Cups SAX

<b>SAX</b>	–	<b>80</b>	–	<b>ED-85</b>	–	<b>G3/8-IG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
SAX	Bell-shaped

### 2 – Suction area

Code	Diameter in mm
30...115	ø 30 to 115

### 3 – Material

Code	Material
ED-85	Elastodur

### 4 – Connection

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))
G3/8-AG	G3/8-AG
G3/8-IG	G3/8-IG
M10-AG	M10-AG
M16-AG	M16-AG
NPT3/8-IG	NPT3/8-IG
RA	Rectangular adapter

Suction cup SAX, available in various diameters, is delivered with connection nipple vulcanized to elastomer part.



## Ordering Data Bell-Shaped Suction Cups SAX

Type		Vacuum connection:			
		G1/4"-M	G1/4"-F	G3/8"-M	G3/8"-F
SAX	30	10.01.19.00213	10.01.19.00179	10.01.19.00195	10.01.19.00146
SAX	40	10.01.19.00214	10.01.19.00180	10.01.19.00196	10.01.19.00148
SAX	50	10.01.19.00215	10.01.19.00181	10.01.19.00197	10.01.19.00150
SAX	60	10.01.19.00216	10.01.19.00182	10.01.19.00198	10.01.19.00152
SAX	80	10.01.19.00217	10.01.19.00183	10.01.19.00199	10.01.19.00141
SAX	100	10.01.19.00218	10.01.19.00184	10.01.19.00200	10.01.19.00154
SAX	115	10.01.19.00219	10.01.19.00185	10.01.19.00201	10.01.19.00156

Type		Vacuum connection:			
		M10-M	M16-M	NPT3/8-F	Rectangular adapter
SAX	30	10.01.19.00220	10.01.19.00229	10.01.19.00147	10.01.19.00172
SAX	40	10.01.19.00221	10.01.19.00230	10.01.19.00149	10.01.19.00173
SAX	50	10.01.19.00222	10.01.19.00231	10.01.19.00151	10.01.19.00174
SAX	60	10.01.19.00223	10.01.19.00232	10.01.19.00153	10.01.19.00175
SAX	80	10.01.19.00224	10.01.19.00233	10.01.19.00145	10.01.19.00176
SAX	100	10.01.19.00225	10.01.19.00234	10.01.19.00155	10.01.19.00177
SAX	115	10.01.19.00226	10.01.19.00235	10.01.19.00157	10.01.19.00178

# Bell-Shaped Suction Cups SAX

Suction area (Ø) from 30 mm to 115 mm

## Technical Data Bell-Shaped Suction Cups SAX

Type		Suction force (-600 mbar) [N]*	Lateral force [N]**	Lateral force oily surface [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]
SAX	30	39	38	41	3.2	18
SAX	40	69	49	71	8.5	25
SAX	50	109	74	110	15.2	25
SAX	60	154	107	155	25.2	30
SAX	80	270	192	269	51.0	33
SAX	100	412	284	414	96.0	40
SAX	115	549	390	584	142.0	50

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The specified lateral forces are values measured at a vacuum of -0.6 bar with a dry or oily, smooth, flat workpiece surface. Depending on the workpiece surface and its quality, the actual values may deviate from these values.

Further information: [WWW.SCHMALZ.COM/SAX](http://WWW.SCHMALZ.COM/SAX)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia

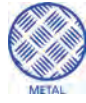


[WWW.SCHMALZ.COM/SAX](http://WWW.SCHMALZ.COM/SAX)



# Bellows Suction Cups SAB (1.5 Folds)

Suction area (Ø) from 22 mm to 125 mm



## Suitability for Industry Specific Applications

### Applications

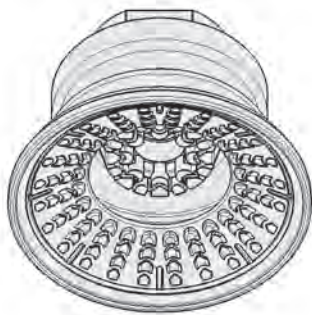
- Round, bellows suction cup with 1.5 folds for dynamic handling of metal sheets (short cycle times)
- Handling of thin steel sheets and aluminum sheets without deformation
- Handling of pre-shaped metal sheet parts, since bellows shape permits optimum adaptation
- For use e.g. in feeder systems for press lines in the automotive industry
- Special groove on the bottom of the cup prevents the oily metal sheets from slipping and permits precise positioning in punching presses etc.



Bellows Suction Cups SAB (1.5 Folds)

### Design

- Robust and wear-resistant suction cup SAB with 1.5 folds, made of NBR, special groove and inner support
- Suction cup SAB vulcanized to the connection nipple (very high strength)
- Suction cups available with various connection types



System Design Bellows Suction Cups SAB (1.5 Folds)



Bellows suction cups SAB being used for handling car bodywork parts

### Product Highlights

- Optimum adaptation and sealing even with curved workpieces and very good damping effect during placement on the workpiece
- Large, structured inner support prevents deep drawing and withstands the highest lateral forces
- High stiffness of the upper fold provides very good stability under horizontal forces and lateral acceleration

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Bellows Suction Cups SAB (1.5 Folds)

Suction area (Ø) from 22 mm to 125 mm

## Designation Code Bellows Suction Cups SAB (1.5 Folds)

<b>SAB</b>	-	<b>30</b>	-	<b>NBR-60</b>	-	<b>G1/4-AG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

**1 – Abbreviated designation**

Code	Version
SAB	1.5 folds

**2 – Suction area**

Code	Diameter in mm
22...125	ø 22 to 125

**3 – Material**

Code	Material
NBR-60	Nitrile caoutchuc

**4 – Connection**

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))
G3/8-IG	G3/8-IG
M10-AG	M10-AG
M14x1.5-AG	M14x1.5-AG
RA	Rectangular adapter

Suction cup SAB, available in various diameters, is delivered with connection nipple vulcanized to elastomer part.

## Ordering Data Bellows Suction Cups SAB (1.5 Folds)

Type*		Vacuum connection:					
		G1/4"-F	G1/4"-M	G3/8"-F	M10-M	M14x1.5-M	Rectangular adapter
SAB	22	10.01.06.01533	10.01.06.01653	10.01.06.01650	10.01.06.01654	10.01.06.01655	10.01.06.01663
SAB	30	10.01.06.01196	10.01.06.01197	10.01.06.01198	10.01.06.01200	10.01.06.01201	10.01.06.01203
SAB	40	10.01.06.00670	10.01.06.00803	10.01.06.00924	10.01.06.00994	10.01.06.01006	10.01.06.01054
SAB	50	10.01.06.00851	10.01.06.00804	10.01.06.00672	10.01.06.00996	10.01.06.01008	10.01.06.01055
SAB	60	10.01.06.00852	10.01.06.00805	10.01.06.00674	10.01.06.00998	10.01.06.01010	10.01.06.01056
SAB	80	10.01.06.00850	10.01.06.00806	10.01.06.00676	10.01.06.01000	10.01.06.01012	10.01.06.01057
SAB	100	10.01.06.00853	10.01.06.00807	10.01.06.00678	10.01.06.01002	10.01.06.01014	10.01.06.01058
SAB	125	10.01.06.00854	10.01.06.00825	10.01.06.00680	10.01.06.01004	10.01.06.01016	10.01.06.01059

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"

# Bellows Suction Cups SAB (1.5 Folds)

Suction area (Ø) from 22 mm to 125 mm



## Technical Data Bellows Suction Cups SAB (1.5 Folds)

Type	Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]**	Lateral force oily surface [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]***
SAB 22	16	24	18	6	2.5	20	4
SAB 30	22	33	30	13	5.8	40	4
SAB 40	38	59	58	33	8.7	40	4
SAB 50	53	87	95	52	16.1	50	4
SAB 60	82	130	145	77	28.8	65	6
SAB 80	135	221	205	140	67.6	75	6
SAB 100	190	357	295	214	115.0	90	6
SAB 125	250	558	410	335	220.0	140	9

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The specified lateral forces are values measured at a vacuum of -0.6 bar with a dry or oily, smooth, flat workpiece surface. Depending on the workpiece surface and its quality, the actual values may deviate from these values.

\*\*\*The recommended hose diameter refers to a hose length of approx. 2 m



Further information: [WWW.SCHMALZ.COM/SAB](http://WWW.SCHMALZ.COM/SAB)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SAB](http://WWW.SCHMALZ.COM/SAB)

# Flat Suction Cups SPF

Suction area (Ø) from 10 mm to 60 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

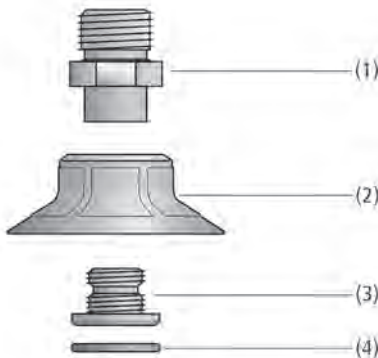
- Round, flat suction cup for usage in cardboard box and tray erectors
- Handling of cardboard and rigid packaging in top-loading and side-loading machines
- Palletizing and depalletizing processes
- Heavy-duty applications that require suction cups with excellent sealing and low wear
- Handling of narrow cardboard boxes with openings, windows or perforation for pharma or cosmetics (especially diameter 10 and 15 mm)



Flat Suction Cups SPF

### Design

- Round flat suction cup SPF (2) with soft, flexible sealing lip and supporting studs on the suction surface
- Made of wear-proof material Elastodur ED-65
- Models with diameter up to 30 mm feature plug-in connection element for quick change of suction cup
- Starting at 40 mm diameter with a 2-piece connection element: consisting of machine-side component (1) and suction-side component (3)
- Clip-in filter screen (4) as pre-filter (filter pore size 250 µm)
- All connection elements with male thread are equipped with integrated sealing



System Design Flat Suction Cups SPF

### Product Highlights

- Adaptable sealing lip provides optimum sealing on cardboard boxes and rigid packaging
- High intrinsic stability of the suction cup in dynamic processes
- High suction forces due to support ribs on the suction area for a maximized effective diameter
- Material Elastodur ED-65 minimizes wear (service life approx. 3 times higher than with NBR)



Flat suction cups SPF for use in carton erectors

# Flat Suction Cups SPF

Suction area (Ø) from 10 mm to 60 mm



## Designation Code Flat Suction Cups SPF

<b>SPF</b>	–	<b>20</b>	–	<b>ED-65</b>	–	<b>G1/8-AG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
SPF	Flat

### 2 – Suction area

Code	Diameter in mm
10...60	ø 10 to 60

### 3 – Material

Code	Material
ED-65	Elastodur

### 4 – Connection

Code	Connection
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG (AG = male (M))
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG

Suction cup SPF (elastomer part + connection element) is delivered assembled. The assembly consists of:

- Suction cup of type SPF – elastomer part, available in various diameters
- Connection element of type SC – available with various threads

Available spare parts: suction cup SPF, Schmalz-Connector

Available accessories: filter screen (sieve, round)



## Ordering Data Flat Suction Cups SPF

Type*	Part no.
SPF 10 ED-65 M5-IG	10.01.01.13254
SPF 15 ED-65 G1/8-AG	10.01.01.13238
SPF 15 ED-65 G1/8-IG	10.01.01.13239
SPF 20 ED-65 G1/8-AG	10.01.01.13240
SPF 20 ED-65 G1/8-IG	10.01.01.13241
SPF 25 ED-65 G1/8-AG	10.01.01.13242
SPF 25 ED-65 G1/8-IG	10.01.01.13243
SPF 30 ED-65 G1/8-AG	10.01.01.13244
SPF 30 ED-65 G1/8-IG	10.01.01.13245
SPF 40 ED-65 G1/4-AG	10.01.01.13246
SPF 40 ED-65 G1/4-IG	10.01.01.13247
SPF 50 ED-65 G1/4-AG	10.01.01.13248
SPF 50 ED-65 G1/4-IG	10.01.01.13249
SPF 60 ED-65 G1/4-AG	10.01.01.13250
SPF 60 ED-65 G1/4-IG	10.01.01.13251

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"



## Ordering Data Spare Parts Flat Suction Cups SPF

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)



Suction area (Ø) from 10 mm to 60 mm



## Ordering Data Accessories Flat Suction Cups SPF

Type	Accessories			Part no.
SPF	10	-	-	-
SPF	15	-	-	-
SPF	20	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16	10.07.01.00309
SPF	25	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16	10.07.01.00309
SPF	30	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16	10.07.01.00309
SPF	40	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16	10.07.01.00308
SPF	50	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16	10.07.01.00308
SPF	60	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16	10.07.01.00308



## Technical Data Flat Suction Cups SPF

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]**
SPF	10	4.41	5.2	3.5	0.3	8	4
SPF	15	9.81	11.0	7.9	0.8	13	4
SPF	20	16.00	19.2	10.5	1.2	20	4
SPF	25	22.70	27.1	17.0	1.7	30	4
SPF	30	29.50	35.3	22.5	2.6	35	6
SPF	40	49.50	62.5	25.0	5.1	70	6
SPF	50	74.20	87.4	44.0	8.0	75	6
SPF	60	107.00	135.0	65.0	12.7	75	6

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The recommended hose diameter refers to a hose length of approx. 2 m

Further information: [WWW.SCHMALZ.COM/SPF](http://WWW.SCHMALZ.COM/SPF)Spare parts  
and accessories

Technical data

Design and CAD  
data

Documentation



Multimedia


[WWW.SCHMALZ.COM/SPF](http://WWW.SCHMALZ.COM/SPF)

# Bellows Suction Cups SPB1 (1.5 Folds)

Suction area (Ø) from 10 mm to 80 mm



## Suitability for Industry Specific Applications

### Applications

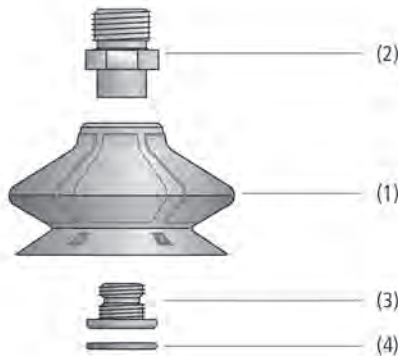
- Round, bellows suction cup with 1.5 folds for the use in cardboard box and tray erectors
- Handling of cardboard and rigid packaging in top-loading and side-loading machines
- Palletizing and depalletizing processes
- Heavy-duty applications that require suction cups with excellent sealing and low wear



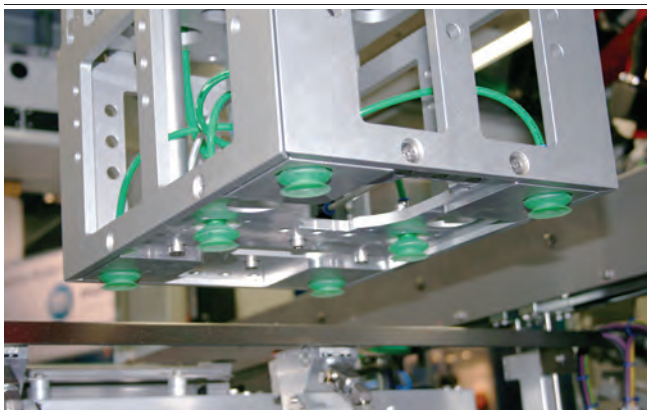
Bellows Suction Cups SPB1 (1.5 Folds)

### Design

- Round, bellows suction cup SPB1 (1) with 1.5 folds and soft, flexible sealing lip
- Made of wear-proof material Elastodur ED-65
- Models with diameter up to 30 mm feature plug-in connection element
- Starting at 40 mm diameter with a two-piece connection element: consisting of machine-side component (2) and suction-side component (3)
- Clip-in filter screen (4) as pre-filter
- All connection elements with male thread are equipped with integrated sealing



System Design Bellows Suction Cups SPB1 (1.5 Folds)



Bellows suction cups SPB1 being used for handling of cardboard

### Product Highlights

- Suction cup seals optimally on cardboard boxes and rigid packaging
- High intrinsic stability of the suction cup in dynamic processes
- Spacing elements between the sealing lip and fold prevent the suction cup from moving
- High suction power with small dimensions thanks to large effective suction area
- Material Elastodur ED-65 minimizes wear (service life approx. 3 times higher than with NBR)

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

# Bellows Suction Cups SPB1 (1.5 Folds)

Suction area (Ø) from 10 mm to 80 mm

## Designation Code Bellows Suction Cups SPB1 (1.5 Folds)

<b>SPB1</b>	–	<b>30</b>	–	<b>ED-65</b>	–	<b>G1/8-AG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
SPB1	1.5 folds

### 2 – Suction area

Code	Diameter in mm
10...80	ø 10 to 80

### 3 – Material

Code	Material
ED-65	Elastodur

### 4 – Connection

Code	Connection
M5-AG	M5-AG (AG = male (M))
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG

Suction cup SPB1 (elastomer part + connection element) is delivered assembled. The assembly consists of:

- Suction cup of type SPB1 – elastomer part, available in various diameters
- Connection element of type SC – available with various threads

Available spare parts: suction cup SPB1, connection element (Schmalz-Connector)

Available accessories: filter screen (sieve, round), suction cup insert

## Ordering Data Bellows Suction Cups SPB1 (1.5 Folds)

Type*	Part no.
SPB1 10 ED-65 M5-AG	10.01.06.03489
SPB1 10 ED-65 M5-IG	10.01.06.03568
SPB1 15 ED-65 G1/8-AG	10.01.06.03490
SPB1 15 ED-65 G1/8-IG	10.01.06.03491
SPB1 20 ED-65 G1/8-AG	10.01.06.03492
SPB1 20 ED-65 G1/8-IG	10.01.06.03493
SPB1 25 ED-65 G1/8-AG	10.01.06.03494
SPB1 25 ED-65 G1/8-IG	10.01.06.03495
SPB1 30 ED-65 G1/8-AG	10.01.06.03496
SPB1 30 ED-65 G1/8-IG	10.01.06.03497
SPB1 40 ED-65 G1/4-AG	10.01.06.03498
SPB1 40 ED-65 G1/4-IG	10.01.06.03499
SPB1 50 ED-65 G1/4-AG	10.01.06.03500
SPB1 50 ED-65 G1/4-IG	10.01.06.03501
SPB1 60 ED-65 G1/4-AG	10.01.06.03502
SPB1 60 ED-65 G1/4-IG	10.01.06.03503
SPB1 80 ED-65 G1/4-AG	10.01.06.03504
SPB1 80 ED-65 G1/4-IG	10.01.06.03505

\*Additional material specifications at beginning of the section "Vacuum Suction Cups"

## Ordering Data Spare Parts Bellows Suction Cups SPB1 (1.5 Folds)

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

# Bellows Suction Cups SPB1 (1.5 Folds)

Suction area (Ø) from 10 mm to 80 mm



## Ordering Data Accessories Bellows Suction Cups SPB1 (1.5 Folds)

Type		Accessories	Part no.
SPB1	10	Pad Insert PA	SPI 8 PA SPB1-10
SPB1	15	Pad Insert PA	SPI 12 PA SPB1-15
SPB1	20	Pad Insert PA	SPI 18 PA SPB1-20
SPB1	25	Pad Insert PA	SPI 22 PA SPB1-25
SPB1	30	Pad Insert PA	SPI 26 PA SPB1-30
SPB1	40	Pad Insert PA	SPI 33 PA SPB1-40
SPB1	50	Pad Insert PA	SPI 40 PA SPB1-50
SPB1	60	-	-
SPB1	80	-	-

Type		Accessories	Part no.
SPB1	10	-	-
SPB1	15	-	-
SPB1	20	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16
SPB1	25	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16
SPB1	30	Sieve, round	SIEB 11x1 MS-A2 280 0.28/0.16
SPB1	40	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16
SPB1	50	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16
SPB1	60	Sieve, round	SIEB 17.5x0.8 MS-A2 280 0.28/0.16
SPB1	80	Sieve, round	SIEB 32.5x0.8 MS-A2 280 0.28/0.16



## Technical Data Bellows Suction Cups SPB1 (1.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]**
SPB1	10	1.5	4.0	2.0	0.5	5	4
SPB1	15	4.3	9.0	5.0	1.5	8	4
SPB1	20	9.9	16.2	9.8	3.2	20	4
SPB1	25	14.9	23.4	13.0	5.3	20	4
SPB1	30	20.7	30.6	15.5	8.0	35	6
SPB1	40	35.9	46.8	24.8	18.4	70	6
SPB1	50	54.7	72.7	31.2	30.2	100	6
SPB1	60	78.0	100.9	49.4	49.3	100	6
SPB1	80	166.0	200.0	59.0	98.4	150	6

\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The recommended hose diameter refers to a hose length of approx. 2 m



Further information: [WWW.SCHMALZ.COM/SPB1](http://WWW.SCHMALZ.COM/SPB1)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SPB1](http://WWW.SCHMALZ.COM/SPB1)



# Special Grippers



Full program, complete information:

[WWW.SCHMALZ.COM/SPECIAL-GRIPPERS](http://WWW.SCHMALZ.COM/SPECIAL-GRIPPERS)

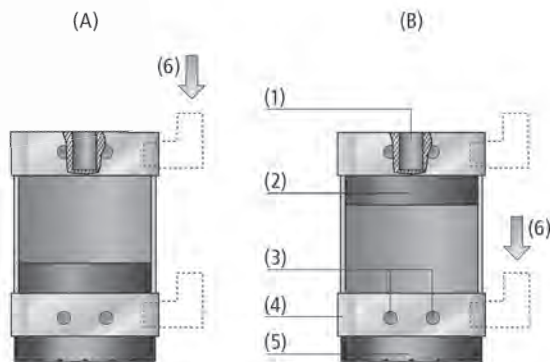


# Magnetic Grippers SGM

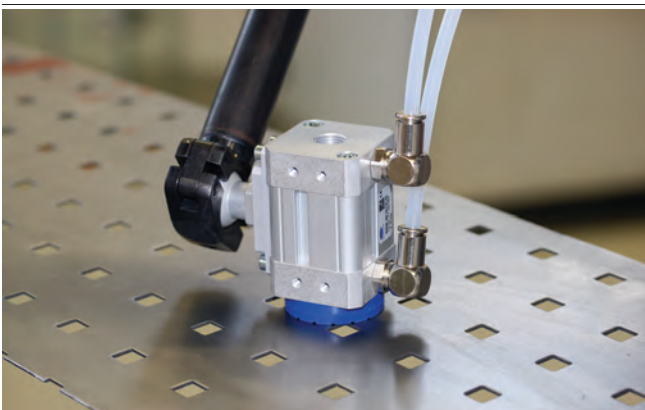
Suction area (Ø) from 30 mm to 70 mm



Magnetic Grippers SGM



System Design Magnetic Grippers SGM



Magnetic grippers SGM being used for handling perforated metal sheets

## Suitability for Industry Specific Applications

### Applications

- Magnetic gripper for handling of perforated metal sheets, complex laser-cut workpieces and metal sheets with holes and apertures
- Handling of ferromagnetic workpieces

### Design

- Robust aluminum housing (4) with permanent magnet (2)
- Clip-on, easy to replace friction ring (5)
- Bistable design: the magnet settings "grip" (A) and "deposit" (B) are maintained in event of power failure at the compressed air connection (6)
- Standard connection threads (1) in top cover; mounting threads (3) for holder systems HTS on three sides
- The holder system HTS offers several options for mounting a gripper onto the gripping apparatus; HTS...D version for interlocking and mounting two grippers
- SGM-S with piston control for sensor recognition of piston position of the magnetic gripper, can not be retrofitted

### Product Highlights

- Permanent magnet allows safe handling without voltage source
- Compact design and low weight
- Easily replaceable friction ring absorbs high lateral forces
- Robust design for use in welding cells
- Due to the possibility of interlocking also optimal for elongated workpieces

# Magnetic Grippers SGM

Suction area (Ø) from 30 mm to 70 mm

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

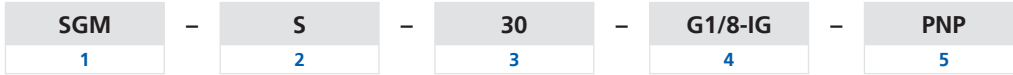
Switches and Monitoring

Filters and Connections

Services & Contact



## Designation Code Magnetic Grippers SGM



### 1 – Abbreviated designation

Code	Version
SGM	SGM

### 2 – Product addition

Code	Type
S	With piston control
HD	Heavy Duty

### 3 – Diameter

Code	Diameter in mm
30...70	ø 30 to 70

### 4 – Connection

Code	Connection
G1/8-IG	G1/8-IG (IG = female (F))
G1/4-IG	G1/4-IG

### 5 – Switching function sensor

Code	Type
NPN	Switches to minus
PNP	Switches to plus

Magnet gripper SGM is delivered assembled. It is available in three versions:

- Gripper of type SGM - available in various diameters
- Gripper of type SGM-HD - stainless-steel grip surface for robust applications - available in various diameters
- Gripper of type SGM-S - with a piston control by a sensor

Available spare parts: friction ring, proximity switch

Available accessories: holder hystem



## Ordering Data Magnetic Grippers SGM

Type*	Part no.
SGM 30 G1/8-IG	10.01.17.00162
SGM 40 G1/4-IG	10.01.17.00163
SGM 50 G1/4-IG	10.01.17.00164
SGM 70 G1/4-IG	10.01.17.00165
SGM-S 30 G1/8-IG NPN	10.01.17.00216
SGM-S 40 G1/4-IG NPN	10.01.17.00217
SGM-S 50 G1/4-IG NPN	10.01.17.00218
SGM-S 70 G1/4-IG NPN	10.01.17.00219
SGM-S 30 G1/8-IG PNP	10.01.17.00200
SGM-S 40 G1/4-IG PNP	10.01.17.00201
SGM-S 50 G1/4-IG PNP	10.01.17.00202
SGM-S 70 G1/4-IG PNP	10.01.17.00203
SGM-HD 30 G1/8-IG	10.01.17.00184
SGM-HD 40 G1/4-IG	10.01.17.00185
SGM-HD 50 G1/4-IG	10.01.17.00273
SGM-HD 70 G1/4-IG	10.01.17.00272

\*Suitable screw in push fittings can be found under "Screw in push fittings" in section "Filters and Connections"



## Ordering Data Spare Parts Magnetic Grippers SGM

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

# Magnetic Grippers SGM

Suction area (Ø) from 30 mm to 70 mm



## Ordering Data Accessories Magnetic Grippers SGM

Type*		Holder system HTS-A2	Holder system HTS-A3
SGM	30	10.01.17.00581	10.01.17.00558
SGM	40	10.01.17.00581	10.01.17.00558
SGM	50	10.01.17.00578	10.01.17.00576
SGM	70	10.01.17.00578	10.01.17.00576

\*Complete with mounting screws

Type*		Holder system HTS-A2 D	Holder system HTS-A3 D
SGM	30	10.01.17.00586	10.01.17.00582
SGM	40	10.01.17.00586	10.01.17.00582
SGM	50	10.01.17.00587	10.01.17.00583
SGM	70	10.01.17.00587	10.01.17.00583

\*Complete with mounting screws



## Technical Data Magnetic Grippers SGM

Type	Holding force max. friction ring [N]*	Remaining force [N]	Pressure range (operating pressure) [bar]	Installation position	Control valve	Operating temperature [°C]	Weight [g]
SGM 30 G1/8-IG	35	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	130
SGM 40 G1/4-IG	100	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	240
SGM 50 G1/4-IG	180	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	440
SGM 70 G1/4-IG	290	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	715
SGM-S 30 G1/8-IG NPN	35	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	145
SGM-S 40 G1/4-IG NPN	100	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	255
SGM-S 50 G1/4-IG NPN	180	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	445
SGM-S 70 G1/4-IG NPN	290	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	730
SGM-S 30 G1/8-IG PNP	35	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	145
SGM-S 40 G1/4-IG PNP	100	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	255
SGM-S 50 G1/4-IG PNP	180	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	445
SGM-S 70 G1/4-IG PNP	290	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	730
SGM-HD 30 G1/8-IG	35	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	191
SGM-HD 40 G1/4-IG	100	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	342
SGM-HD 50 G1/4-IG	180	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	594
SGM-HD 70 G1/4-IG	290	0.3	3.5 ... 6.0 bar	Any	Bistable	5 ... 70 °C	975

\*The value given is a static value with no safety factor; based on a plate with a thickness of 2 mm. For system configurations with magnetic grippers SGM, a safety factor of S = 3 must be applied.



Further information: [WWW.SCHMALZ.COM/SGM](http://WWW.SCHMALZ.COM/SGM)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SGM](http://WWW.SCHMALZ.COM/SGM)

# Electric Needle Grippers SNGi-AE

Needle stroke max. 3 mm to max. 20 mm (variable)

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services &amp; Contact



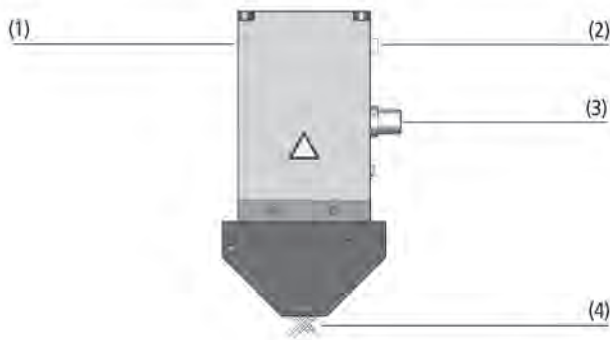
## Suitability for Industry Specific Applications

### Applications

- Needle gripper for handling non-rigid and highly porous materials (primary textiles)
- Handling materials that are difficult to grip using vacuum such as textiles, fleece, filter materials, insulation and foam materials, and much more
- Flexible handling of materials with changing stacking height due to free selectable stroke adjustment



Electric Needle Grippers SNGi-AE



### Design

- Electrically driven gripper
- High-strength housing with lightweight design (1)
- Three sizes with needle strokes of max. 3 mm, 10 mm or 20 mm
- Ten needles (4) with diameters of 0.8 mm or 1.2 mm (depending on the model)
- Insertion angle of 30° or 45° (depending on the model)
- LED status display (2); IO-Link interface with M12 plug connection, 5-pin (3)

System Design Electric Needle Grippers SNGi-AE



Needle grippers SNGi-AE being used for handling composite textiles

### Product Highlights

- Gripping with crossing needles ideal for very unstable and small workpieces
- Needle stroke can be individually adapted to the workpiece by means of process profiles; comprehensive process monitoring and control
- Single layer handling and restacking possible with only one gripper, as stroke can be individually adjusted for each cycle
- Blow-off function enables fast and process-safe depositing with shortest cycle times

# Electric Needle Grippers SNGi-AE

Needle stroke max. 3 mm to max. 20 mm (variable)



## Designation Code Electric Needle Grippers SNGi-AE

<b>SNGi-AE</b>	-	<b>10</b>	-	<b>0.8</b>	-	<b>V</b>	-	<b>3</b>	-	<b>IOL</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>		<b>6</b>

### 1 – Abbreviated designation

Code	Version
SNGi-AE	Crossed needles

### 2 – Number of needles

Code	Number
10	10

### 3 – Needle diameter

Code	Diameter in mm
0.8...1.2	ø 0.8 and 1.2

### 4 – Product addition

Code	Type
V	Variable needle stroke

### 5 – Needle stroke

Code	Stroke in mm
3...20	3 to 20

### 6 – Product addition

Code	Type
IOL	IO-Link compatible

Needle gripper SNGi-AE is delivered assembled. The product consists of:

- Gripper of type SNGi-AE – available with various needle diameters and strokes

Available spare parts: needle modules, maintenance cover

Available accessories: mounting plate, holder system, connection cable, connection distributor



## Ordering Data Electric Needle Grippers SNGi-AE

Type	Part no.
SNGi-AE 10 0.8 V 3 IOL	10.01.29.00390
SNGi-AE 10 0.8 V 10 IOL	10.01.29.00392
SNGi-AE 10 1.2 V 3 IOL	10.01.29.00394
SNGi-AE 10 1.2 V 10 IOL	10.01.29.00396
SNGi-AE 10 1.2 V 20 IOL	10.01.29.00393



## Ordering Data Spare Parts Electric Needle Grippers SNGi-AE

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)



## Ordering Data Accessories Electric Needle Grippers SNGi-AE

Type		Part no.
Holder system HTS-A2	HTS-A2 SNG AP/AE OP	10.01.29.00622
Holder system HTS-A3	HTS-A3 SNG AP/AE OP	10.01.29.00619
Mounting plate	BEF-PL 38x15x11.5 G1/4-IG SNG	10.01.29.00403
Connection distributor 1x M12, 5-pole, 2x M12, 4-pole	ASV IO-L-A B-M12-5 2xS-M12-4	10.02.02.04336
Connection cable, M12 5-pole, M12 5-pole, 1 m, PUR, straight	ASK B-M12-5 1000 S-M12-5	21.04.05.00158
Connection cable, M12 5-pole, M12 5-pole, 2 m, PUR, straight	ASK B-M12-5 2000 S-M12-5	21.04.05.00211
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080



# Electric Needle Grippers SNGi-AE

Needle stroke max. 3 mm to max. 20 mm (variable)

Product Overview

## Technical Data Electric Needle Grippers SNGi-AE

Vacuum Suction Cups

Type	Number of needles	Needle diameter [mm]	Needle stroke Z(NA) [mm]*	Operating temperature [°C]	Electrical connection	Weight [g]	Protection type IP	Voltage [V]	Current consumption [mA]**
SNGi-AE 10 0.8 V 3 IOL	10	0.8	3	5 ... 50 °C	Male connect M12, 5 pol	500	IP 53	24V - DC	900
SNGi-AE 10 0.8 V 10 IOL	10	0.8	10	5 ... 50 °C	Male connect M12, 5 pol	515	IP 53	24V - DC	900
SNGi-AE 10 1.2 V 3 IOL	10	1.2	3	5 ... 50 °C	Male connect M12, 5 pol	500	IP 53	24V - DC	900
SNGi-AE 10 1.2 V 10 IOL	10	1.2	10	5 ... 50 °C	Male connect M12, 5 pol	515	IP 53	24V - DC	900
SNGi-AE 10 1.2 V 20 IOL	10	1.2	20	5 ... 50 °C	Male connect M12, 5 pol	600	IP 53	24V - DC	900

Special Grippers

\*Needle speed approx. 8 mm/s per stroke  
 \*\*Max. power consumption during normal operation 600 mA

Mounting Elements

Further information: [WWW.SCHMALZ.COM/SNGI-AE](http://WWW.SCHMALZ.COM/SNGI-AE)

Vacuum Generators

Switches and Monitoring



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SNGI-AE](http://WWW.SCHMALZ.COM/SNGI-AE)

Filters and Connections

Services & Contact



# Mounting Elements



Full program, complete information:

[WWW.SCHMALZ.COM/MOUNTING-ELEMENTS](http://WWW.SCHMALZ.COM/MOUNTING-ELEMENTS)

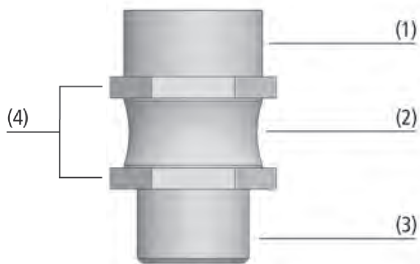
Jointed Mountings  
**Flexolink FLK**



Connection thread G1/4" and G1/2"



Flexolink FLK



System Design Flexolink FLK



Flexolink FLK for adaptation to sloping metal sheets

**Suitability for Industry Specific Applications**

**Applications**

- Flexolink for handling of workpieces with sloping surfaces with the aid of large suction cups or suction plates
- Handling of large sheets of materials such as wood or sheet metal, which may sag when lifted; Flexolink prevents the sheet from being pulled off due to one-sided forces
- Can be used together with spring plungers to compensate for differing workpiece heights and uneven surfaces
- Automatic resetting

**Design**

- Flexible mounting made of high-quality steel with a rubber buffer (vulcanized into position) as a joint (2)
- Maximum deflection angle limited by a screw-in stop
- Force is transferred via a shaped metal connection within the joint
- Flats on upper and lower halves for damage free installation (4)
- Connection thread for top connection (1) and (3) in various sizes
- Max. deflection: 12°

**Product Highlights**

- All-round articulated mounting of suction cups and suction plates ideal for inclined workpiece surfaces
- Automatic return to the neutral starting position by means of rubber-metal joint
- Low swivel point of the suction pad minimizes wear when touching down on sloping surfaces
- Vacuum-tight, heavy-duty design with integrated protection against damage

Program Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

Connection thread G1/4" and G1/2"

Program Overview  
 Vacuum Suction Cups  
 Special Grippers  
 Mounting Elements  
 Vacuum Generators  
 Switches and Monitoring  
 Filters and Connections  
 Services and Contact



**Designation Code Flexolink FLK**

<b>FLK</b>	-	<b>G1/2-IG</b>	-	<b>G1/2-AG</b>	-	<b>V</b>
1		2		3		4

**1 – Abbreviated designation**

Code	Version
FLK	FLK

**2 – Connection 1**

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))
G1/2-AG	G1/2-AG
G1/2-IG	G1/2-IG

**3 – Connection 2**

Code	Connection
M10x1.25-AG	M10x1.25-AG (AG = male (M))
G1/4-AG	G1/4-AG
G1/2-AG	G1/2-AG

**4 – Product addition**

Code	Type
V	Special reinforced Flexolink

Jointed mounting Flexolink FLK is delivered as a ready-to-connect product.



**Ordering Data Flexolink FLK**

Type*	Part no.
FLK G1/4-AG G1/4-AG	10.01.03.00152
FLK G1/4-IG M10x1.25-AG	10.01.03.00206
FLK G1/4-IG G1/4-AG	10.01.03.00178
FLK G1/2-AG G1/2-AG	10.01.03.00153
FLK G1/2-IG G1/2-AG	10.01.03.00175
FLK G1/2-IG G1/2-AG V	10.01.03.00207

\*V = Special reinforced Flexolink for use with suction plates SPU 300 and SPU 400



**Technical Data Flexolink FLK**

Type	Vertical load [N]	Bending moment [Nm]	Weight [g]
FLK G1/4-AG G1/4-AG	750	10	30
FLK G1/4-IG M10x1.25-AG	500	8	26
FLK G1/4-IG G1/4-AG	750	10	30
FLK G1/2-AG G1/2-AG	3,000	65	100
FLK G1/2-IG G1/2-AG	3,000	50	100
FLK G1/2-IG G1/2-AG V	4,500	65	190



**Further information: [WWW.SCHMALZ.COM/FLK](http://WWW.SCHMALZ.COM/FLK)**



Spare parts and accessories



Technical data



Design and CAD data



Documentation



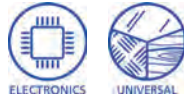
Multimedia



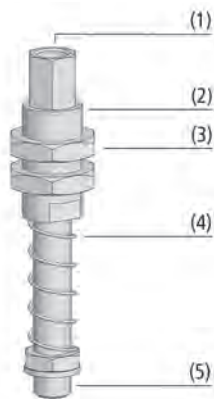
[WWW.SCHMALZ.COM/FLK](http://WWW.SCHMALZ.COM/FLK)



Stroke from 5 mm to 90 mm



Spring Plungers FSTE



System Design Spring Plungers FSTE



Mounting example Spring Plungers FSTE

## Suitability for Industry Specific Applications

### Applications

- Spring plunger for handling of workpieces with differing heights, such as curved metal sheets, etc.
- Handling of sensitive workpieces (such as sheets of glass) without additional control functions to prevent damage, since the plunger ensures soft placement

### Design

- Spring plunger consisting of a high strength rod made of galvanized steel, guide sleeve (2) and lower damping springs (4)
- Plunger rod with integrated vacuum feed, always female connection thread (1)
- Always female connection thread for suction cups (5) up to size M5, otherwise male thread
- Two lock nuts (3) for attachment

### Product Highlights

- With lower damping spring optimised for sensitive workpieces; very good height compensation
- Large range of connection threads and lifting heights enables use for a wide variety of applications and suction cups
- Optionally in non-rotating version for oval suction cups

# Spring Plungers FSTE

Stroke from 5 mm to 90 mm

Program Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Designation Code Spring Plungers FSTE

<b>FSTE</b>	-	<b>M3-IG</b>	-	<b>5</b>	-	<b>VG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
FSTE	FSTE

### 2 – Suction cup connection

Code	Connection
M3-IG	M3-IG (IG = female (F))
M5-IG	M5-IG
G1/8-AG	G1/8-AG (AG = male (M))
G1/4-AG	G1/4-AG
G1/2-AG	G1/2-AG

### 3 – Plunger stroke

Code	Plunger stroke in mm
5...90	5 to 90

### 4 – Product addition

Code	Type
VG	With anti-rotation guard

Spring plunger FSTE is delivered as a ready-to-connect product.



## Ordering Data Spring Plungers FSTE

Type*			Plunger stroke in mm: **			
			5	10	15	20
FSTE	M3-IG	-	10.01.02.00613	-	-	-
FSTE	M3-IG	VG	10.01.02.00614	-	-	-
FSTE	M5-IG	-	10.01.02.00607	10.01.02.00608	-	10.01.02.00609
FSTE	M5-IG	VG	10.01.02.00610	10.01.02.00611	-	10.01.02.00612
FSTE	G1/8-AG	-	-	-	10.01.02.00602	-
FSTE	G1/8-AG	VG	-	-	10.01.02.00605	-

\*VG = Version with anti-rotation guard for repeatably accurate positioning of suction cups

\*\*Recommendation: To raise the lifetime in continuous operation, prevent the maximal slide stroke

Type*			Plunger stroke in mm [mm]: **			
			25	50	75	90
FSTE	G1/8-AG	-	10.01.02.00603	10.01.02.00604	-	-
FSTE	G1/8-AG	VG	-	10.01.02.00606	-	-
FSTE	G1/4-AG	-	10.01.02.00567	10.01.02.00568	10.01.02.00569	-
FSTE	G1/4-AG	VG	10.01.02.00570	-	10.01.02.00571	-
FSTE	G1/2-AG	-	10.01.02.00574	-	10.01.02.00575	10.01.02.00576

\*VG = Version with anti-rotation guard for repeatably accurate positioning of suction cups

\*\*Recommendation: To raise the lifetime in continuous operation, prevent the maximal slide stroke

Stroke from 5 mm to 90 mm



## Technical Data Spring Plungers FSTE

Type	Spring rate [N/mm]	Spring pretension [N/mm]	Spring force center [N]*	Vertical load [N]**	Horizontal load [N]***	Weight [g]	Operating temperature [°C]
FSTE M3-IG 5	0.596	1.49	2.98	550	47	9	0 ... 80 °C
FSTE M3-IG 5 VG	0.596	1.49	2.98	550	47	9	0 ... 80 °C
FSTE M5-IG 5	0.508	3.30	4.57	1,500	132	16	0 ... 80 °C
FSTE M5-IG 5 VG	0.508	3.30	4.57	1,500	132	16	0 ... 80 °C
FSTE M5-IG 10	0.323	2.75	4.37	1,500	97	19	0 ... 80 °C
FSTE M5-IG 10 VG	0.323	2.75	4.37	1,500	97	19	0 ... 80 °C
FSTE M5-IG 20	0.209	1.78	3.87	1,500	63	25	0 ... 80 °C
FSTE M5-IG 20 VG	0.209	1.78	3.87	1,500	63	25	0 ... 80 °C
FSTE G1/8-AG 15	0.221	3.53	5.19	3,700	385	80	0 ... 80 °C
FSTE G1/8-AG 15 VG	0.221	3.53	5.19	3,700	385	80	0 ... 80 °C
FSTE G1/8-AG 25	0.143	3.57	5.36	3,700	283	90	0 ... 80 °C
FSTE G1/8-AG 50	0.097	2.92	5.34	3,700	173	110	0 ... 80 °C
FSTE G1/8-AG 50 VG	0.097	2.92	5.34	3,700	173	110	0 ... 80 °C
FSTE G1/4-AG 25	0.711	6.47	15.36	2,400	747	145	0 ... 80 °C
FSTE G1/4-AG 25 VG	0.711	6.47	15.36	2,400	747	144	0 ... 80 °C
FSTE G1/4-AG 50	0.452	1.40	12.70	2,400	466	175	0 ... 80 °C
FSTE G1/4-AG 75	0.262	5.38	15.20	2,400	340	190	0 ... 80 °C
FSTE G1/4-AG 75 VG	0.262	5.38	15.20	2,400	340	202	0 ... 80 °C
FSTE G1/2-AG 25	3.829	25.64	73.50	4,900	1,870	400	0 ... 80 °C
FSTE G1/2-AG 75	1.072	37.21	77.41	4,900	800	530	0 ... 80 °C
FSTE G1/2-AG 90	1.072	24.38	75.30	4,900	730	544	0 ... 80 °C

\*Referred to 50 % of operating stroke

\*\*Maximum static loading

\*\*\*The specification of the horizontal load refers to the lower edge of the plunger with extended spring. It is a maximum static stress and it impairs the spring compression and extension in horizontal position.

Further information: [WWW.SCHMALZ.COM/FSTE](http://WWW.SCHMALZ.COM/FSTE)Spare parts  
and accessories

Technical data

Design and CAD  
data

Documentation



Multimedia


[WWW.SCHMALZ.COM/  
FSTE](http://WWW.SCHMALZ.COM/FSTE)

# Spring Plungers FSTIm

Stroke from 5 mm to 20 mm

Program Overview

Vacuum Suction Cups

Special Grippers

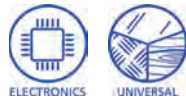
Mounting Elements

Vacuum Generators

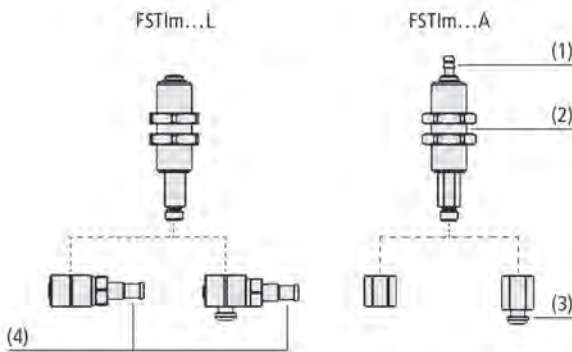
Switches and Monitoring

Filters and Connections

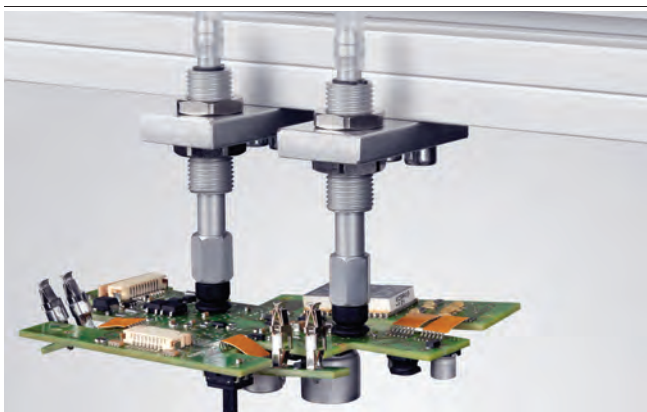
Services and Contact



Spring Plungers FSTIm



System Design Spring Plungers FSTIm



Spring plungers being used for handling conductor boards

## Suitability for Industry Specific Applications

### Applications

- Spring plunger in small design with internal damping spring for handling of workpieces with differing heights and curvatures
- Handling of very sensitive workpieces (e.g. printed circuit boards) without additional control expenses; ensures gentle placement
- Handling tasks in the electronics industry
- Suitable for cleanroom applications – depending on the application and the loading case, up to cleanroom class ISO1 (according to ISO 14644-1)

### Design

- Modular spring plunger with axial (1) or lateral (4) vacuum connection with anti-rotation guard only axial
- Two lock nuts (2) for mounting
- Connection for suction cups of the nipple families N004 and N016 (3) or alternatively via internal thread

### Product Highlights

- Low spring forces protect very sensitive workpieces
- Minimal, lightweight design optimized for the smallest space and highest dynamics
- Internal damping spring protected against dirt and mechanical damage
- Connection of a second lateral vacuum guide possible for series connection of several spring plungers

Stroke from 5 mm to 20 mm



## Designation Code Spring Plungers FSTIm

<b>FSTIm</b>	-	<b>M3-IG</b>	-	<b>4/2.5</b>	-	<b>A</b>	-	<b>5</b>	-	<b>VG</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>		<b>6</b>

**1** – Abbreviated designation

Code	Version
FSTIm	FSTIm

**2** – Suction cup connection

Code	Connection
M3-IG	M3-IG (IG= female(F))
M5-IG	M5-IG
N004	N004
N016	N016

**3** – Hose diameter

Code	Dimensions in mm
4/2.5	4/2.5
6/4	6/4

**4** – Vacuum connection

Code	Connection
A	Axial
L	Lateral

**5** – Plunger stroke

Code	Plunger stroke in mm
5...20	5 to 20

**6** – Product addition

Code	Type
CO	Conductive
IN	Insulating
VG-CO	With anti-rotation guard and conductive
VG-IN	With anti-rotation guard and insulating

Spring plunger FSTIm is delivered assembled.

Available accessories: vacuum hose, hose sleeve



## Ordering Data Spring Plungers FSTIm

Type*							Plunger stroke in mm:		
							5	10	20
FSTIm	M3-IG	-	M5-F	A	IN	10.01.02.01488	-	-	
FSTIm	M3-IG	-	M5-F	A	VG-IN	10.01.02.01487	-	-	
FSTIm	M5-IG	-	M5-F	A	IN	10.01.02.01480	10.01.02.01474	10.01.02.01477	
FSTIm	M5-IG	-	M5-F	A	VG-IN	10.01.02.01485	10.01.02.01482	10.01.02.01483	
FSTIm	M3-IG	-	Hose 4/2.5	A	IN	10.01.02.01333	-	-	
FSTIm	M3-IG	-	Hose 4/2.5	A	VG-IN	10.01.02.01259	-	-	
FSTIm	M3-IG	-	Hose 4/2.5	L	IN	10.01.02.01334	-	-	
FSTIm	-	N004	Hose 4/2.5	A	IN	10.01.02.01335	-	-	
FSTIm	-	N004	Hose 4/2.5	A	VG-IN	10.01.02.01275	-	-	
FSTIm	-	N004	Hose 4/2.5	L	IN	10.01.02.01336	-	-	
FSTIm	M5-IG	-	Hose 6/4	A	IN	-	10.01.02.01337	10.01.02.01344	
FSTIm	M5-IG	-	Hose 6/4	A	VG-IN	-	10.01.02.01247	10.01.02.01293	
FSTIm	M5-IG	-	Hose 6/4	L	IN	-	10.01.02.01338	10.01.02.01343	
FSTIm	-	N004	Hose 6/4	A	IN	-	10.01.02.01339	-	
FSTIm	-	N004	Hose 6/4	A	VG-IN	-	10.01.02.01282	-	
FSTIm	-	N004	Hose 6/4	L	IN	-	10.01.02.01340	-	
FSTIm	-	N016	Hose 6/4	A	IN	-	-	10.01.02.01342	
FSTIm	-	N016	Hose 6/4	A	VG-IN	-	-	10.01.02.01285	
FSTIm	-	N016	Hose 6/4	L	IN	-	-	10.01.02.01341	
FSTIm	M5-IG	-	-	A	CO	10.01.02.01621	10.01.02.01549	-	
FSTIm	M5-IG	-	-	A	VG-CO	10.01.02.01620	10.01.02.01619	-	

\*Recommendation: To raise the lifetime in continuous operation, prevent the maximal slide stroke



Stroke from 5 mm to 20 mm



## Ordering Data Accessories Spring Plungers FSTIm

Type					Vacuum hose (meter)	Hose sleeve
FSTIm	M3-IG	-	A	5	10.07.09.00142	-
FSTIm	M3-IG	-	L	5	10.07.09.00142	10.08.03.00312
FSTIm	-	N004	A	5	10.07.09.00142	-
FSTIm	-	N004	L	5	10.07.09.00142	10.08.03.00312
FSTIm	M5-IG	-	A	10	10.07.09.00141	-
FSTIm	M5-IG	-	L	10	10.07.09.00141	10.08.03.00311
FSTIm	-	N004	A	10	10.07.09.00141	-
FSTIm	-	N004	L	10	10.07.09.00141	10.08.03.00311
FSTIm	M5-IG	-	A	20	10.07.09.00141	-
FSTIm	M5-IG	-	L	20	10.07.09.00141	10.08.03.00311
FSTIm	-	N016	A	20	10.07.09.00141	-
FSTIm	-	N016	L	20	10.07.09.00141	10.08.03.00311



## Technical Data Spring Plungers FSTIm

Type	Spring rate [N/mm]	Spring pretension [N]	Spring force center [N]*	Vertical load [N]**	Horizontal load [N]***	Weight [g]	Operating temperature [°C]
FSTIm M3-IG 4/2.5 A 5 IN	0.055	0.5	0.64	15	10.0	14	0 ... 80 °C
FSTIm M3-IG 4/2.5 A 5 VG-IN	0.055	0.5	0.64	15	10.0	14	0 ... 80 °C
FSTIm M3-IG 4/2.5 L 5 IN	0.055	0.5	0.64	15	10.0	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 10 IN	0.050	0.5	0.75	15	10.0	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 10 VG-IN	0.050	0.5	0.75	15	10.0	16	0 ... 80 °C
FSTIm M5-IG 6/4 A 20 IN	0.052	0.5	1.02	15	10.0	21	0 ... 80 °C
FSTIm M5-IG 6/4 A 20 VG-IN	0.052	0.5	1.02	15	10.0	21	0 ... 80 °C
FSTIm M5-IG 6/4 L 10 IN	0.050	0.5	0.75	15	10.0	18	0 ... 80 °C
FSTIm M5-IG 6/4 L 20 IN	0.052	0.5	1.02	15	10.0	23	0 ... 80 °C
FSTIm M5-IG M5-IG A 10 CO	0.050	0.5	0.75	15	10.0	19	0 ... 80 °C
FSTIm M5-IG M5-IG A 10 VG-CO	0.050	0.5	0.75	15	10.0	19	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 CO	0.055	0.5	0.64	15	10.0	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 IN	0.055	0.5	0.64	15	10.0	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 VG-CO	0.055	0.5	0.64	15	10.0	18	0 ... 80 °C
FSTIm M5-IG M5-IG A 5 VG-IN	0.055	0.5	0.64	15	10.0	18	0 ... 80 °C
FSTIm N004 4/2.5 A 5 IN	0.055	0.5	0.64	15	10.0	12	0 ... 80 °C
FSTIm N004 4/2.5 A 5 VG-IN	0.055	0.5	0.64	15	10.0	12	0 ... 80 °C
FSTIm N004 4/2.5 L 5 IN	0.055	0.5	0.64	15	10.0	16	0 ... 80 °C
FSTIm N004 6/4 A 10 IN	0.050	0.5	0.75	15	10.0	15	0 ... 80 °C
FSTIm N004 6/4 A 10 VG-IN	0.050	0.5	0.75	15	10.0	15	0 ... 80 °C
FSTIm N004 6/4 L 10 IN	0.050	0.5	0.75	15	10.0	18	0 ... 80 °C
FSTIm N016 6/4 A 20 IN	0.052	0.5	1.02	15	10.0	20	0 ... 80 °C
FSTIm N016 6/4 A 20 VG-IN	0.052	0.5	1.02	15	10.0	19	0 ... 80 °C
FSTIm N016 6/4 L 20 IN	0.052	0.5	1.02	15	10.0	23	0 ... 80 °C

\*Referred to 50 % of operating stroke

\*\*Maximum static loading

\*\*\*The specification of the horizontal load refers to the lower edge of the plunger with extended spring. It is a maximum static stress and it impairs the spring compression and extension in horizontal position.

Spring plungers

# Spring Plungers FSTIm



Stroke from 5 mm to 20 mm



Further information: [WWW.SCHMALZ.COM/FSTIM](http://WWW.SCHMALZ.COM/FSTIM)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/  
FSTIM](http://WWW.SCHMALZ.COM/FSTIM)

Program  
Overview

Vacuum  
Suction Cups

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Mounting  
Elements

Vacuum  
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Connections

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# Universal Holders HTR-UNI

Connection G1/4"

Program Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



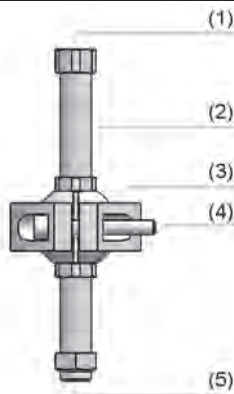
## Suitability for Industry Specific Applications

### Applications

- Universal holder for mounting of vacuum components on existing cross beams made of square or round tubes with the aid of various adapters
- Adjustable height and inclination for flexible adaptation to workpieces



Universal Holders HTR-UNI



### Design

- Holder made of high strength, anodized aluminum, consisting of holder tube (2), ball clamp (3) and various adapters for mounting of square and round tubes
- Threaded tube (5) has a G1/4" thread at the bottom for a suction cup and a G1/4" thread at the top (1) for connection of a vacuum line or an inline ejector
- Including securing screws (4)

System Design Universal Holders HTR-UNI



Suction cups with universal holders HTR-UNI for handling sheet metal

### Product Highlights

- Simple adjustment and fixing allows flexible use, quick changes and short set-up times
- Adjustable height and inclination for optimum adaptation to workpieces, e.g. curved metal sheets
- Mounting on round and square tubes possible
- Quick and inexpensive assembly of gripping systems, as suction cups with G1/4" thread can be attached directly

# Holder for Suction Cups and Spring Plungers

## Universal Holders HTR-UNI



Connection G1/4"

### Designation Code Universal Holders HTR-UNI

<b>HTR-UNI</b>	–	<b>1N</b>	–	<b>G2</b>	–	<b>80</b>
1		2		3		4

#### 1 – Abbreviated designation

Code	Version
HTR-UNI	HTR-UNI

#### 2 – Cross-beam connection

Code	Connection
1N	1 sliding block
2N	2 sliding blocks

#### 3 – Connection

Code	Connection
G2	Connection thread G1/4-AG

#### 4 – Length

Code	Length in mm
80...200	80 to 200

Holder HTR-UNI is delivered unassembled. The delivery consists of:

- Holder tube – available in various lengths
- Ball clamp – available in various versions

Available accessories: section adapter, tube adapter, tube adapter reducing set, suction cup connection

### Ordering Data Universal Holders HTR-UNI

Type	Part no.
HTR-UNI 1N G2 80	10.01.03.00107
HTR-UNI 2N G2 80	10.01.03.00223
HTR-UNI 2N G2 80	10.01.03.00298
HTR-UNI 2N G2 110	10.01.03.00328
HTR-UNI 2N G2 140	10.01.03.00299
HTR-UNI 2N G2 200	10.01.03.00309

### Ordering Data Accessories Universal Holders HTR-UNI

Type		Part no.
Section adapter	HTR-STB 30x30 UNI	10.01.03.00135
Tube adapter	HTR-STC D32 UNI	10.01.03.00108
Tube adapter reducing set	BUCHSE 32-25x21 PA	10.01.03.00097
Suction cup connection	SAUG-ANB G1/4-AG 80	10.01.03.00292
Suction cup connection	SAUG-ANB G1/4-AG 110	10.01.03.00327
Suction cup connection	SAUG-ANB G1/4-AG 140	10.01.03.00291
Suction cup connection	SAUG-ANB G1/4-AG 200	10.01.03.00308

### Further information: [WWW.SCHMALZ.COM/HTR-UNI](http://WWW.SCHMALZ.COM/HTR-UNI)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/HTR-UNI](http://WWW.SCHMALZ.COM/HTR-UNI)

# Vacuum Generators



Full program, complete information:

[WWW.SCHMALZ.COM/VACUUM-GENERATORS](http://WWW.SCHMALZ.COM/VACUUM-GENERATORS)



# Technology Overview

Schmalz vacuum generators are equipped with extensive technologies, see also the selection matrix on the next page. Some technologies are explained in more detail below.

## Basic and additional functions

<p><b>Eco-nozzle technology</b></p> <ul style="list-style-type: none"> <li>The eco nozzle technology provides a considerably higher suction rate with minimal compressed air consumption, permitting energy efficient vacuum generation</li> </ul>	<p><b>Automatic air saving function</b></p> <ul style="list-style-type: none"> <li>80 % reduction of compressed air consumption</li> <li>Switches off the suction function once a safe vacuum value has been reached until the next cycle</li> <li>No electrical signals are required for the pneumatically operated air saving function</li> </ul>	<p><b>Power blow off</b></p> <ul style="list-style-type: none"> <li>Integrated power blow off module for maximum blow off volume flow</li> <li>Reduction of release times, especially for suction-tight workpieces</li> </ul>
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## Communication interfaces

<p><b>IO-Link</b></p> <ul style="list-style-type: none"> <li>IO-Link is a point-to-point communications standard for automation technology</li> <li>It permits integrated communication at all levels, from sensors and actuators through superordinated controllers (PLCs) and beyond to the control level</li> </ul>	<p><b>Industrial Ethernet</b></p> <ul style="list-style-type: none"> <li>Industrial Ethernet describes a series of protocols based on Ethernet as a communication medium</li> <li>Industrial Ethernet systems such as PROFINET, EtherCAT and Ethernet/IP are designed for high real-time performance and robustness</li> </ul>	<p><b>Near Field Communication</b></p> <ul style="list-style-type: none"> <li>Via NFC, data can be exchanged contactlessly over short distances</li> <li>Two NFC-capable devices are connected via point-to-point contact, e.g. a mobile terminal device such as a smartphone and a Schmalz component</li> </ul>
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Interfaces in comparison		IO-Link	Industrial Ethernet	NFC
Transmission of static data	Device information	●	●	●
	Serial number	●	●	●
	Operating instructions	●	●	●
Transmission of dynamic data	Process parameters such as switching points, etc.	●	●	●
	Process data such as energy consumption, etc.	●	●	○
	Errors in clear text	●	●	●
Parameterization	Data transmission via	SPS	SPS	App

## Analysis functions

<p><b>Condition Monitoring</b></p> <ul style="list-style-type: none"> <li>Condition monitoring to increase system availability based on a detailed condition analysis and early fault recognition</li> </ul>	<p><b>Predictive Maintenance</b></p> <ul style="list-style-type: none"> <li>Predictive maintenance to increase the performance of gripping systems</li> <li>Quick and easy system optimization through evaluation of gripper system performance</li> </ul>	<p><b>Energy Monitoring</b></p> <ul style="list-style-type: none"> <li>Energy monitoring to optimize the energy consumption of the vacuum system</li> <li>Identification of disproportionate energy consumption</li> </ul>
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Product Overview	Vacuum Suction Cups	Page	Suction rate [l/min]					Nozzle size [mm]				Technical data				
			1 – 10	11 – 100	101 – 500	501 – 1,000	1,001 – 5,000	5,001 – 10,000	0 – 0.5	0.5 – 1	1 – 2	2 – 3	3 – 4	Max. vacuum [%]	Operating pressure [bar]	Operating temperature [°C]
<b>Ejector modules</b>																
				13 – 309					0.3 – 1.6				60/91	3 – 5	0 – 60	0.8 – 22.8
<b>Basic ejectors</b>																
				7 – 370					0.5 – 3				55/85	3 – 6	-10 – 80	10 – 404
		82		8 – 215					0.5 – 2.5				85	3 – 6	0 – 60	7.5 – 50
				8 – 215					0.5 – 2.5				85	3 – 6	0 – 60	87 – 143
				13 – 309					0.3 – 1.6				60/91	3 – 5	0 – 60	21.5 – 295
		85			290 – 1,140					1.3 – 1.5 <sup>1)</sup>			60/91	3 – 5	0 – 60	750 – 1,500
<b>Inline ejectors</b>																
				8 – 16					0.5 – 0.7				85	3 – 6	0 – 60	5
				7 – 21					0.5 – 0.9				87/90	3 – 6	0 – 60	15
<b>Decentralized ejectors</b>																
				35					1.0				85	3 – 6	0 – 50	62 – 157
				35					1.0				85	3 – 6	0 – 50	180
				35					1.0				85	4 – 6	0 – 60	95
<b>Compact ejectors</b>																
		89		2 – 28					0.3 – 1.0				87	4 – 4.5	0 – 50	65 – 80
		93		16 – 67					0.7 – 1.5				85	2 – 6	0 – 50	165
		97			227 – 323					2.0			90	4 – 6	5 – 50	440 – 460
				13 – 53					0.7 – 1.6				91	3 – 6	5 – 50	210
				16 – 67					0.7 – 1.5				85	2 – 6	0 – 50	195
		100		75 – 195					0.7 – 1.5				85	4 – 7	0 – 50	560
		104		75 – 185						1.5 – 2.5			85	4 – 7	5 – 50	585 – 615
		107		185 – 220					2.5 – 3.0				85	3 – 7	0 – 50	770 – 910
					338 – 673					1.3 <sup>2)</sup>			81 – 87	4 – 6	0 – 50	1,600 – 2,200
<b>Vacuum generators end-of-arm</b>																
				57.2									85	2 – 6	0 – 50	750
		118	1.6										60	–	0 – 40	450
		120		12									75	–	5 – 45	775
<b>Electrical vacuum generation</b>																
		123		33 – 4,067									92	–	0 – 45	2.4 – 250 kg
				166 – 4,250									98	–	-20 – 210	19 – 195 kg
				1,300 – 9,000									11 – 46	–	0 – 40	11 – 1,125 kg
				1,250 – 20,000									11 – 41	–	0 – 40	13 – 125 kg



# Basic Ejectors SBP

Suction rate from 8 l/min to 215 l/min

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

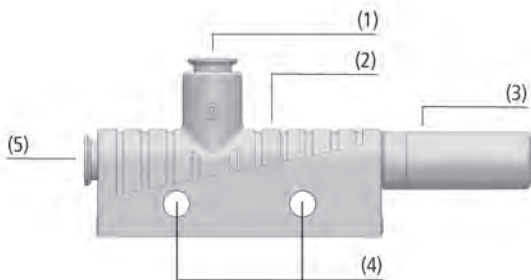
Switches and Monitoring

Filters and Connections

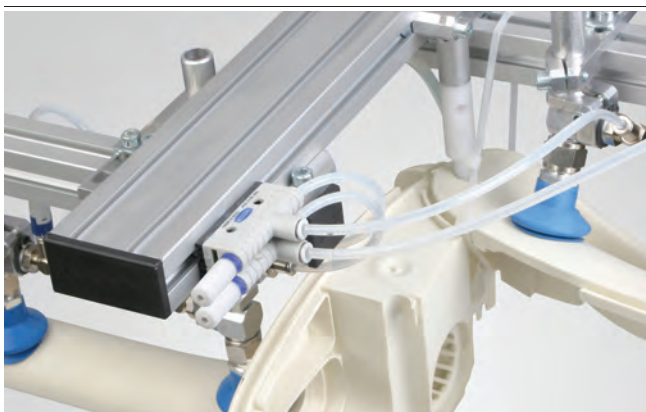
Services and Contact



Basic Ejectors SBP



System Design Basic Ejectors SBP



Central vacuum generation by basic ejectors SBP for handling plastic injection molded parts

## Suitability for Industry Specific Applications

### Applications

- Basic ejector with plastic housing for use in feeder systems
- Handling of electronic components
- Use in separation systems for plastic and sheet-metal machining
- Construction of ejector blocks for decentralized individual control of suction cups

### Design

- One piece housing (2) made of light, impact resistant plastic
- Connection of compressed air (5) and vacuum (1) with quick action push-in coupling (S01 to S03) or threaded holes (G01 to G03)
- Open silencer (3)
- Vacuum generator with single nozzle, available in six power ratings, 0.5 to 2.5 mm
- Can be fixed horizontally with mounting holes (4) or vertically with the base on a mounting plate
- Optional mounting with mounting plate and mounting kit on DIN top-hat rails

### Product Highlights

- Compact, lightweight plastic housing optimized for decentralised vacuum supply in highly dynamic processes
- Fine power gradation (six levels) for minimum air consumption
- Compact and easy to install, since connections either with threaded holes or push-in couplings
- Open, maintenance-friendly silencer

# Basic Ejectors SBP

Suction rate from 8 l/min to 215 l/min

## Designation Code Basic Ejectors SBP

<b>SBP</b>	-	<b>05</b>	-	<b>G01</b>	-	<b>SDA</b>
1		2		3		4

### 1 – Abbreviated designation

Code	Version
SBP	SBP

### 2 – Nozzle size

Code	Diameter in mm
05...25	ø 0.5 to 2.5

### 3 – Connection

Code	Connection
G01	Connection thread 1
G02	Connection thread 2
G03	Connection thread 3
S01	Quick connect push-in coupling 1
S02	Quick connect push-in coupling 2
S03	Quick connect push-in coupling 3

### 4 – Variant

Code	Type
SDA	Silencer axial

The basic ejector SBP is delivered as a ready-to-connect product.

Available spare parts: silencer

Available accessories: mounting plate, mounting set

## Ordering Data Basic Ejectors SBP

Type*		G01	G02	G03	S01	S02	S03
SBP	05	10.02.01.00599	-	-	10.02.01.00563	-	-
SBP	07	10.02.01.00600	-	-	10.02.01.00564	-	-
SBP	10	-	10.02.01.00601	-	-	10.02.01.00565	-
SBP	15	-	10.02.01.00602	-	-	10.02.01.00566	-
SBP	20	-	-	10.02.01.00603	-	-	10.02.01.00567
SBP	25	-	-	10.02.01.00604	-	-	10.02.01.00568

\*Connection geometry: see design data of basic ejectors SBP

## Ordering Data Spare Parts Basic Ejectors SBP

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

## Ordering Data Accessories Basic Ejectors SBP

Type	Mounting plate	Mounting set
SBP	10.02.01.00511	10.02.01.00769



# Basic Ejectors SBP

Suction rate from 8 l/min to 215 l/min



## Technical Data Basic Ejectors SBP

Type	Nozzle diameter [mm]	Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]*	Air consumption suction [m³/h]**	Sound level suction [dB(A)]
SBP 05	0.5	85	8.0	0.5	14	0.8	53
SBP 07	0.7	85	16.0	1.0	22	1.3	59
SBP 10	1.0	85	37.7	2.3	48	2.9	59
SBP 15	1.5	85	71.0	4.3	105	6.3	65
SBP 20	2.0	85	127.0	7.6	197	11.8	68
SBP 25	2.5	85	215.0	12.9	311	18.7	70

\*At optimal operating pressure

\*\*At optimal operating pressure

Type	Sound level free [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]*	Recomm. internal hose diameter vacuum [mm]**	Weight [g]	Operating temperature [°C]
SBP 05	58	3.0 ... 6.0 bar	2	2	7.5	0 ... 60 °C
SBP 07	65	3.0 ... 6.0 bar	2	2	7.5	0 ... 60 °C
SBP 10	65	3.0 ... 6.0 bar	4	6	22.0	0 ... 60 °C
SBP 15	72	3.0 ... 6.0 bar	4	6	22.0	0 ... 60 °C
SBP 20	77	3.0 ... 6.0 bar	6	7	50.0	0 ... 60 °C
SBP 25	78	3.0 ... 6.0 bar	6	7	50.0	0 ... 60 °C

\*For max. length 2 m

\*\*For max. length 2 m



Further information: [WWW.SCHMALZ.COM/SBP](http://WWW.SCHMALZ.COM/SBP)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SBP](http://WWW.SCHMALZ.COM/SBP)

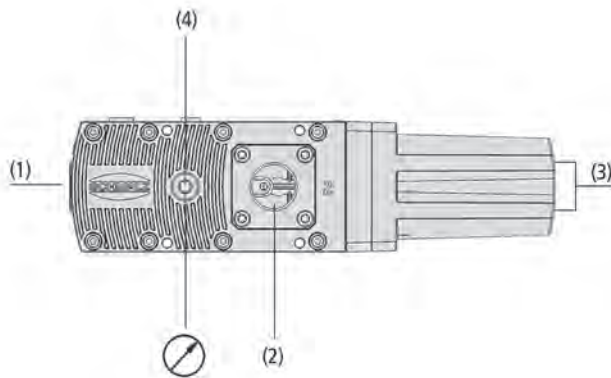
# Basic ejectors SBPL



Suction capacity from 290 l/min to 1,140 l/min



Basic ejectors SBPL



System Design Basic ejectors SBPL



Central vacuum generation with basic ejectors SBPL

## Suitability for Industry Specific Applications

### Applications

- Basic ejector with highest suction capacity for handling cardboard boxes, packaging materials, insulating materials and other porous materials
- Processes that require high volume flows with simultaneously optimized energy consumption

### Design

- Base body and nozzle system made of extremely robust plastic
- Pneumatic connections for compressed air (1), vacuum (2) and exhaust air (silencer) (3)
- Connections for valves, vacuum switches or vacuum gauges (4)
- Optional accessories: vacuum switch, vacuum manometer, quick exhaust valves, electromagnetic valves

### Product Highlights

- Ejector ideally suited for porous materials due to very high suction capacity
- Air consumption optimized for either airtight (HV) or porous (HF) workpieces
- Integrated eco nozzle technology with highest energy efficiency
- Working vacuum is reached very quickly
- Simple and fast maintenance, due to modular design

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

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# Basic ejectors SBPL

Suction capacity from 290 l/min to 1,140 l/min

## Designation Code Basic ejectors SBPL

<b>SBPL</b>	-	<b>100</b>	-	<b>HF</b>	-	<b>NPT</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>

### 1 – Abbreviated designation

Code	Version
SBPL	SBPL

### 2 – Size

Code	Type
25...150	25 to 150

### 3 – Variant

Code	Type
HF	High Flow
HV	High Vacuum

### 4 – Special thread

Code	Type
NPT	NPT (thread)

The basic ejector SBPL is supplied as a product ready for connection.

Available accessories: retrofit kit, sealing plugs, vacuum manometer, quick exhaust valves, solenoid valves, mounting brackets, exhaust air set

## Ordering Data Basic ejectors SBPL

Type	Size:						
	25.00	50.00	75.00	100.00	125.00	150.00	
SBPL HF -	10.02.01.01596	10.02.01.01597	10.02.01.01650	10.02.01.01598	10.02.01.01652	10.02.01.01599	
SBPL HV -	10.02.01.01586	10.02.01.01590	10.02.01.01649	10.02.01.01591	10.02.01.01651	10.02.01.01592	
SBPL HF NPT	10.02.01.01604	10.02.01.01605	10.02.01.01654	10.02.01.01606	10.02.01.01656	10.02.01.01607	
SBPL HV NPT	10.02.01.01600	10.02.01.01601	10.02.01.01653	10.02.01.01602	10.02.01.01655	10.02.01.01603	

## Ordering Data Accessories Basic ejectors SBPL

Type	Part no.
Retrofitting kit	SET SBPL 75/100 10.02.01.01685
Retrofitting kit	SET SBPL 125/150 10.02.01.01686
Sealing Plug (inst)	VRS-ST 15x101.7 SBPL 10.02.01.01687
Mounting bracket (inst.)	BEF-WIN 72x25x77 SBPL 10.02.01.01705
Solenoid valve pressure	EMV 3 24V-DC 2/2 NC K-2P 10.05.01.00366
Quick exhaust valve	SEV G1/8-IG G1/4-AG 10.02.01.01471
Vacuum gauge (electronic)	VAM-D 30x30 VP10 G1/8-AG 10.07.02.00055
Vacuum gauge	VAM 40 V H 10.07.02.00007
Exhaust air set	ABL-SET SBPL M 10.02.01.01939
Exhaust air set	ABL-SET SBPL L 10.02.01.01940

Suction capacity from 290 l/min to 1,140 l/min



## Technical Data Basic ejectors SBPL

Type	Degree of evacuation [%]	Suction rate [l/min]	Suction rate [m <sup>3</sup> /h]*	Air consumption suction [l/min]**	Air consumption suction [m <sup>3</sup> /h]	Sound level free [dB(A)]
SBPL 25 HF	60	290	17.4	80	5	61
SBPL 25 HV	90	300	18.0	105	7	65
SBPL 50 HF	60	500	30.0	160	10	65
SBPL 50 HV	90	510	30.6	210	13	66
SBPL 75 HF	60	710	42.6	230	14	67
SBPL 75 HV	90	720	43.2	305	19	68
SBPL 100 HF	60	860	51.6	300	19	69
SBPL 100 HV	90	870	52.2	395	25	70
SBPL 125 HF	60	1,010	60.6	370	23	70
SBPL 125 HV	90	1,010	60.6	470	29	72
SBPL 150 HF	60	1,120	67.2	435	27	71
SBPL 150 HV	90	1,140	68.4	545	34	73

\*The information regarding the suction capacity are values measured under operating conditions. The value in brackets represents the calculated suction capacity of the installed ejector modules. The measured value should always be applied for designs.

\*\*At optimal operating pressure

Type	Sound level suction [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]*	Recomm. internal hose diameter vacuum [mm]**	Weight [kg]	Operating temperature [°C]
SBPL 25 HF	54	2.0 ... 6.0 bar	6	20	0.8	0 ... 60 °C
SBPL 25 HV	55	2.0 ... 6.0 bar	6	20	0.8	0 ... 60 °C
SBPL 25 HF NPT	54	2.0 ... 6.0 bar	6	20	0.8	0 ... 60 °C
SBPL 25 HV NPT	55	2.0 ... 6.0 bar	6	20	0.8	0 ... 60 °C
SBPL 50 HF	55	2.0 ... 6.0 bar	6	25	0.8	0 ... 60 °C
SBPL 50 HV	59	2.0 ... 6.0 bar	6	25	0.8	0 ... 60 °C
SBPL 50 HF NPT	55	2.0 ... 6.0 bar	6	25	0.8	0 ... 60 °C
SBPL 50 HV NPT	59	2.0 ... 6.0 bar	6	25	0.8	0 ... 60 °C
SBPL 75 HF	57	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 75 HV	62	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 75 HF NPT	57	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 75 HV NPT	62	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 100 HF	58	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 100 HV	64	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 100 HF NPT	58	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 100 HV NPT	64	2.0 ... 6.0 bar	9	32	1.1	0 ... 60 °C
SBPL 125 HF	60	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 125 HV	65	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 125 HF NPT	60	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 125 HV NPT	65	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 150 HF	61	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 150 HV	66	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 150 HF NPT	61	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C
SBPL 150 HV NPT	66	2.0 ... 6.0 bar	11	32	1.5	0 ... 60 °C

\*For max. length 2 m

\*\*For max. length 2 m

# Basic ejectors SBPL



Suction capacity from 290 l/min to 1,140 l/min

Product Overview



Further information: [WWW.SCHMALZ.COM/SBPL](http://WWW.SCHMALZ.COM/SBPL)

Vacuum Suction Cups



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



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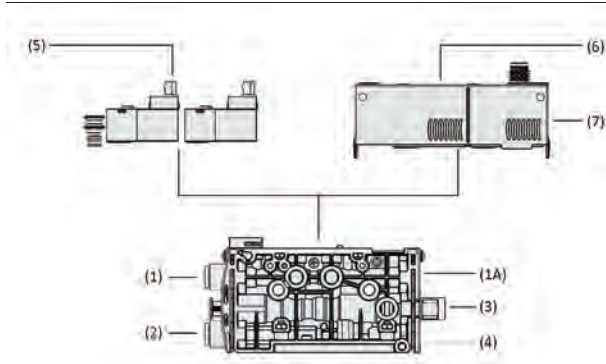


# Compact Ejectors SCPMb / SCPMc / SCPMi

Suction rate up to 28 l/min



Compact Ejectors SCPMb / SCPMc / SCPMi



System Design Compact Ejectors SCPMb / SCPMc / SCPMi



Compact ejector SCPMc handling a plastic part

## Suitability for Industry Specific Applications

### Applications

- Mini compact ejector for handling airtight workpieces, such as display glass, plastic parts, printed circuit boards (PCB), electronic parts or batteries
- For use in highly dynamic pick-and-place applications with extremely short cycle times, e.g. SMD machines with a small footprint
- For use in robotic handling applications and on linear axes as close to the suction pads as possible
- Fully-automatic handling applications with downtime requirements through intelligent condition monitoring
- Optional: Ejector can be used in combination with an external vacuum supply

### Design

- Minimal footprint thanks to compact main body made from high-strength plastics and individual control module (7)
- 3-digit display with 2-button operation and M8 electrical connection, 6-pin plug (6)
- Pneumatic valves which can either be integrated (6) or mounted directly (5) for the NO or NC switching function
- Screw for adjusting blow-off (4)
- Optional: Connector for external vacuum supply "EV"; connector for external blow-off medium "EB" (1A)
- Changeable silencer or exhaust air duct (3); compressed air connection (1) and vacuum connection (2)

### Product Highlights

- Maximized suction power in the smallest space
- Robust ejector with low interference contour
- Central air supply and independent vacuum circuits allow pneumatic manifold with up to 16 ejectors

# Compact Ejectors SCPMb / SCPMc / SCPMi

Suction rate up to 28 l/min



## Designation Code Compact Ejectors SCPMb / SCPMc / SCPMi

<b>SCPMc</b>	-	<b>07</b>	-	<b>S01</b>	-	<b>NC</b>	-	<b>M8-6</b>	-	<b>PNP</b>	-	<b>AAU</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>		<b>6</b>		<b>7</b>

### 1 – Abbreviated designation

Code	Version
SCPMb	SCPMb (basic version)
SCPMc	SCPMc (with air saving function)
SCPMi	SCPMi (intelligent, IO-Link)

### 2 – Nozzle size

Code	Diameter in mm
03...10	ø 0.3 to 1.0
EV	For external vacuum supply

### 3 – Connection

Code	Connection
S01	Push-in quick coupling 4 mm
S04	Push-in quick coupling 6 mm

### 4 – Idle position suction valve

Code	Type
NC	Normally closed
NO	Normally open

### 5 – Connection electrical

Code	Connection
M8-6	M8, 6-pole

### 6 – Switching function

Code	Type
PNP	Switches to plus
NPN	Switches to minus

### 7 – Product addition

Code	Specification
AAU	Individual configuration code

Compact ejector SCPM is delivered as a ready-to-connect product (without connection cable).

Available spare parts: silencer, filter element

Available accessories: mounting bracket, thread adapter, mounting set, silencer, plug union, connection cable, distributor



## Ordering Data Compact Ejectors SCPMb / SCPMc / SCPMi

Type				Nozzle size:			
				03	05	07	10
SCPMb	NC	-	-	10.02.02.05732	10.02.02.05734	10.02.02.05735	10.02.02.05737
SCPMb	NO	-	-	10.02.02.05731	10.02.02.05733	10.02.02.05591	10.02.02.05736
SCPMc	NC	M8-6	Switches to +	10.02.02.05739	10.02.02.05559	10.02.02.05742	10.02.02.05588
SCPMc	NC	M8-6	Switches to -	10.02.02.05745	10.02.02.05747	10.02.02.05749	10.02.02.05751
SCPMc	NO	M8-6	Switches to +	10.02.02.05738	10.02.02.05740	10.02.02.05741	10.02.02.05743
SCPMc	NO	M8-6	Switches to -	10.02.02.05744	10.02.02.05746	10.02.02.05748	10.02.02.05750
SCPMi	NC	M8-6	-	10.02.02.05753	10.02.02.05755	10.02.02.05757	10.02.02.05692
SCPMi	NO	M8-6	-	10.02.02.05752	10.02.02.05754	10.02.02.05756	10.02.02.05758



## Ordering Data Accessories Compact Ejectors SCPMb / SCPMc / SCPMi

Accessories		Part no.
Mounting bracket	BEF-WIN 15x50x36.1 1.5 SCPM	10.02.02.05824
Thread adapter (inst)	ADP-G M5-IG 10.5x8.6 SCPMi/c/b	10.02.02.05643
Thread adapter (inst)	ADP-G M7-IGx15 SCPMi/c/b	10.02.02.05641
Mounting set	SET SCPM MOUNT1	10.02.02.05805
Silencer (round)	SD 10.5x31.7 SCPM	10.02.02.05807
Plug union, straight	STV-GE M5-AG 4	10.08.02.00468
Plug union, straight	STV-GE M7-AG 6	10.08.02.00469

Suction rate up to 28 l/min

Type	Connection cable for solenoid valves, 3 m, PUR	Connection cable for SCPMc/i, angle M8-6 socket, cable 6-pin, 2 m, PUR, angled	Connection cable for SCPMc/i, angle M8-6 socket, M12-5 plug, 2 m, PUR, angled
SCPMb	21.04.06.00086	-	-
SCPMc	-	21.04.05.00488	21.04.05.00489
SCPMi	-	21.04.05.00488	21.04.05.00489

Type	Accessories	Part no.
SCPMb	-	-
SCPMc	Distributor	ASV SCPMi B-M8-6 2xS-M12-4 10.02.02.05602
SCPMi	Distributor	ASV SCPMi B-M8-6 2xS-M12-4 10.02.02.05602



### Technical Data Compact Ejectors SCPMb / SCPMc / SCPMi

Type		Degree of evacuation [%]	Suction rate (max.) [l/min]	Air consumption suction [l/min]*	Max. air consumption blow off [l/min]	Pressure range (operating pressure) [bar]
SCPMb	03	87	2	4	10	2.0 ... 6.0 bar
SCPMb	05	87	8	9	10	3.0 ... 6.0 bar
SCPMb	07	87	15	22	10	3.0 ... 6.0 bar
SCPMb	10	87	28	45	10	3.0 ... 6.0 bar
SCPMc	03	87	3	4	10	2.0 ... 6.0 bar
SCPMc	05	87	8	9	10	3.0 ... 6.0 bar
SCPMc	07	87	15	22	10	3.0 ... 6.0 bar
SCPMc	10	87	28	45	10	3.0 ... 6.0 bar
SCPMi	03	87	3	4	10	2.0 ... 6.0 bar
SCPMi	05	87	8	9	10	3.0 ... 6.0 bar
SCPMi	07	87	15	22	10	3.0 ... 6.0 bar
SCPMi	10	87	28	45	10	3.0 ... 6.0 bar

\*At optimal operating pressure (4 bar)

Type		Sound level free [dB(A)]*	Sound level suction [dB(A)]	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]***	Weight [g]	Operating temperature [°C]
SCPMb	03	51	42	2	2	80	0 ... 50 °C
SCPMb	05	66	55	2	2	70	0 ... 50 °C
SCPMb	07	70	70	2	2	70	0 ... 50 °C
SCPMb	10	71	72	4	4	70	0 ... 50 °C
SCPMc	03	51	42	2	2	65	0 ... 50 °C
SCPMc	05	66	55	2	2	70	0 ... 50 °C
SCPMc	07	70	70	2	2	70	0 ... 50 °C
SCPMc	10	71	72	4	4	70	0 ... 50 °C
SCPMi	03	51	42	2	2	65	0 ... 50 °C
SCPMi	05	66	55	2	2	70	0 ... 50 °C
SCPMi	07	70	70	2	2	70	0 ... 50 °C
SCPMi	10	71	72	4	4	70	0 ... 50 °C

\*At optimal operating pressure (4 bar)

\*\*For max. length 2 m

\*\*\*For max. length 2 m

# Compact Ejectors SCPMb / SCPMc / SCPMi



Suction rate up to 28 l/min

Product Overview



Further information: [WWW.SCHMALZ.COM/SCPMC](http://WWW.SCHMALZ.COM/SCPMC)

Vacuum Suction Cups



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCPMC](http://WWW.SCHMALZ.COM/SCPMC)

Special Grippers

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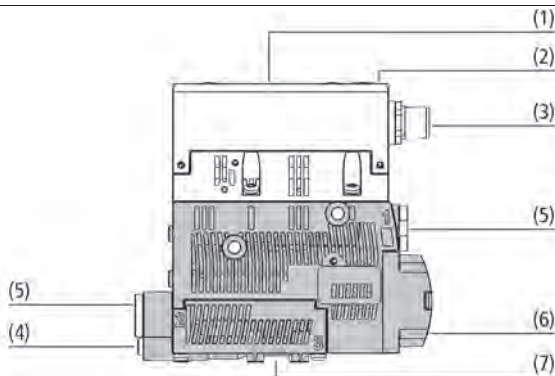
Services and Contact



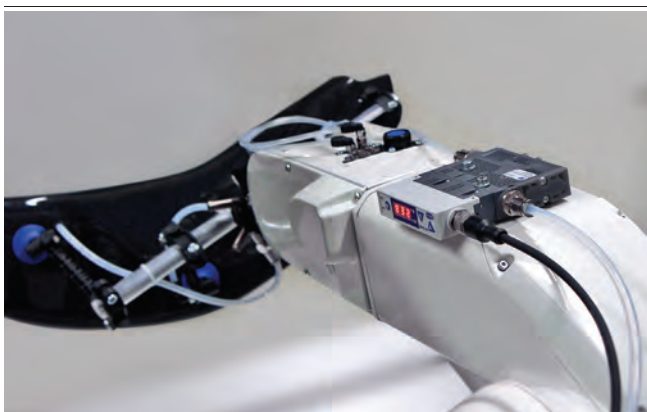
Suction rate from 16 l/min to 67 l/min



Compact Ejectors SCPS / SCPSi



System Design Compact Ejectors SCPS / SCPSi



Centralized vacuum generation by means of compact ejector SCPSi

## Suitability for Industry Specific Applications

### Applications

- Compact ejector for handling of airtight and slightly porous workpieces
- Generation and monitoring of vacuum in automated systems
- Use in robotic handling applications and on linear axes
- Pick-and-place applications with extremely short cycle times
- For systems that require highly dynamic gripping of workpieces and where space is limited
- Typically for use in fully automated small parts handling applications

### Design

- Basic module made of high strength plastic and open silencer (6)
- Display screen or LED bar display (1)
- Keyboard (2) makes it easy to set the system parameters
- Electrical connection via standard M12 plug (3) with metal thread
- Integrated pneumatic valves for switching functions NO or NC
- Screw (4) to adjust blow off for lightweight pieces, pneumatic connection (5), optional mounting to DIN rails (7)

### Product Highlights

- Eco nozzle technology allows high suction rate with minimized compressed air consumption
- Integrated air saving function reduces compressed air consumption by up to 80 %
- IO-Link simplifies commissioning and access to device and process data
- Vacuum parameters on bright display or LED bar display very easy to read

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# Compact Ejectors SCPS / SCPSi

Suction rate from 16 l/min to 67 l/min

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## Designation Code Compact Ejectors SCPS / SCPSi



### 1 – Abbreviated designation

Code	Version
SCPS	SCPS
SCPSi	SCPSi (IO-Link)

### 2 – Nozzle size

Code	Diameter in mm
07...15	ø 0.7 to 1.5 (single stage)
2-07...2-14	ø 0.7 to 1.4 (double stage)

### 3 – Connection

Code	Connection
G02	Connection thread 2

### 4 – Idle position suction valve

Code	Type
NC	Normally closed
NO	Normally open

### 5 – Connection electrical

Code	Connection
M12-5	M12, 5-pole

### 6 – Switching function

Code	Type
PNP	Switches to plus

Compact ejector SCPS / SCPSi is delivered as a ready-to-connect product (without connection cable).

Available accessories: connection cable, distributor, DIN rail mount, filter, compressed air connection plate, mounting set, exhaust air set

## Ordering Data Compact Ejectors SCPS / SCPSi

Type	Part no.
SCPS 07 G02 NC M12-5 PNP	10.02.02.04112
SCPSi 07 G02 NC M12-5	10.02.02.04121
SCPS 07 G02 NO M12-5 PNP	10.02.02.04111
SCPSi 07 G02 NO M12-5	10.02.02.04120
SCPS 10 G02 NC M12-5 PNP	10.02.02.04114
SCPSi 10 G02 NC M12-5	10.02.02.04123
SCPS 10 G02 NO M12-5 PNP	10.02.02.04113
SCPSi 10 G02 NO M12-5	10.02.02.04122
SCPS 15 G02 NC M12-5 PNP	10.02.02.04116
SCPSi 15 G02 NC M12-5	10.02.02.04125
SCPS 15 G02 NO M12-5 PNP	10.02.02.04115
SCPSi 15 G02 NO M12-5	10.02.02.04124
SCPS 2-07 G02 NC M12-5 PNP	10.02.02.04360
SCPSi 2-07 G02 NC M12-5	10.02.02.04366
SCPS 2-07 G02 NO M12-5 PNP	10.02.02.04359
SCPSi 2-07 G02 NO M12-5	10.02.02.04365
SCPS 2-09 G02 NC M12-5 PNP	10.02.02.04362
SCPSi 2-09 G02 NC M12-5	10.02.02.04368
SCPS 2-09 G02 NO M12-5 PNP	10.02.02.04361
SCPSi 2-09 G02 NO M12-5	10.02.02.04367
SCPS 2-14 G02 NC M12-5 PNP	10.02.02.04364
SCPSi 2-14 G02 NC M12-5	10.02.02.04370
SCPS 2-14 G02 NO M12-5 PNP	10.02.02.04363
SCPSi 2-14 G02 NO M12-5	10.02.02.04369

Suction rate from 16 l/min to 67 l/min



## Ordering Data Accessories Compact Ejectors SCPS / SCPSi

Type		Part no.
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080
Connection distributor 1x M12, 5 pol, 2x M12, 4 pol	ASV SMPI/SCPI 2xS-M12-4	10.02.02.03490
Top-hat rail clamp	HUT-SN-KL SCPS	10.02.02.04149
Vacuum filter	VFI CN6/4 50	10.07.01.00241
Vacuum filter	VFI CN8/6 50	10.07.01.00245
Compressed-air connection plate	GP 4 SCPS 07..15 G2	10.02.02.04338
Mounting set	SET SCPS	10.02.02.04343

Type	Accessories	Part no.
SCPS/SCPSi	Exhaust air set	ABL-SET SCPS single stage
SCPS/SCPSi 2	Exhaust air set	ABL-SET SCPS double stage



## Technical Data Compact Ejectors SCPS / SCPSi

Type		Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m <sup>3</sup> /h]	Air consumption suction [l/min]*	Air consumption suction [m <sup>3</sup> /h]**	Air consumption blow off [m <sup>3</sup> /h]
SCPS	07	85	16.0	0.98	22.0	1.35	7.20
SCPS	10	85	36.0	2.21	46.0	2.85	7.20
SCPS	15	85	65.5	4.03	98.0	6.03	7.20
SCPS	2-07	85	37.0	2.28	22.0	1.35	7.20
SCPS	2-09	85	49.5	3.05	40.5	2.49	7.20
SCPS	2-14	85	71.5	4.40	82.0	5.04	7.20

\*At optimal operating pressure (4 bar)

\*\*At optimal operating pressure (4 bar)

Type		Sound level free [dB(A)]*	Sound level suction [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]***	Weight [kg]	Operating temperature [°C]
SCPS	07	63	58	3.0 ... 6.0 bar	4	4	0.195	0 ... 50 °C
SCPS	10	75	61	3.0 ... 6.0 bar	4	4	0.195	0 ... 50 °C
SCPS	15	77	65	3.0 ... 6.0 bar	4	6	0.195	0 ... 50 °C
SCPS	2-07	63	58	3.0 ... 6.0 bar	4	4	0.195	0 ... 50 °C
SCPS	2-09	73	62	3.0 ... 6.0 bar	4	4	0.195	0 ... 50 °C
SCPS	2-14	75	70	3.0 ... 6.0 bar	4	6	0.195	0 ... 50 °C

\*At optimal operating pressure (4 bar)

\*\*For max. length 2 m

\*\*\*For max. length 2 m

# Compact Ejectors SCPS / SCPSi



Suction rate from 16 l/min to 67 l/min

Product Overview



Further information: [WWW.SCHMALZ.COM/SCPS](http://WWW.SCHMALZ.COM/SCPS)

Vacuum Suction Cups



Spare parts and accessories



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Design and CAD data



Documentation



Multimedia



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Suction rate up to 363 l/min



## Suitability for Industry Specific Applications

### Applications

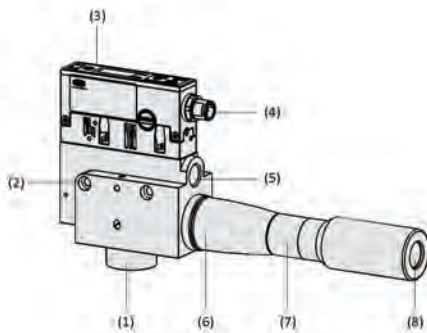
- Compact ejector for handling highly air-permeable as well as suction-tight workpieces
- Handling of not rigid workpieces such as bags or cartons
- Use in robot handling and on linear axes
- Pick & Place applications with shortest cycle times
- For systems with limited space and high dynamics when gripping parts
- Typically used for fully automated part handling



Compact Ejectors SCPS-L / SCPSi-L

### Design

- Pneumatic connections (1) and (5)
- Mounting holes (2)
- Display and control element: SCPS-L (with bar display) and SCPSi-L (with display) (3)
- Central electrical connection via M12-5 plug (4)
- Integrated multi-stage nozzle (6) with retaining cap and inserted silencer (7)
- Exhaust air outlet (8)



System Design Compact Ejectors SCPS-L / SCPSi-L



Central vacuum generation by compact ejector SCPSi-L

### Product Highlights

- Efficient eco nozzle technology for high suction rate with minimized compressed air consumption
- Simple, tool-free exchange of SEP nozzles for fast cleaning due to modular design
- Transfer and output of device and process parameters, both in IO-Link and in SIO mode
- Vacuum connection G1/2" for a wide range of capacities through flexible use of the SEP 22 nozzles

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Compact Ejectors SCPS-L / SCPSi-L

Suction rate up to 363 l/min

## Designation Code Compact Ejectors SCPS-L / SCPSi-L

<b>SCPSi-L</b>	–	<b>HV</b>	–	<b>3-16</b>	–	<b>NC</b>	–	<b>M12-5</b>	–	<b>PNP</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>		<b>6</b>

### 1 – Abbreviated designation

Code	Version
SCPS-L	with bar display
SCPSi-L	with display (IO-Link)

### 2 – Nozzle type

Code	Type
HV	High vacuum

### 3 – Nozzle size

Code	Diameter in mm
3-16	ø 1.6 (3-stage)
3-20	ø 2.0 (3-stage)

### 4 – Idle position suction valve

Code	Type
NC	Normally closed
NO	Normally open

### 5 – Connection electrical

Code	Connection
M12-5	M12, 5-pole

### 6 – Switching function

Code	Type
PNP	Switches to plus

The compact ejector SCPS-L / SCPSi-L is delivered as a ready-to-connect product (without connection cable).

Available accessories: connection cable, ejector module, silencer, filter

## Ordering Data Compact Ejectors SCPS-L / SCPSi-L

Type	Part no.
SCPSi-L HV 3-16 NO M12-5	10.02.02.06052
SCPSi-L HV 3-16 NC M12-5	10.02.02.06051
SCPSi-L HV 3-20 NO M12-5	10.02.02.06050
SCPSi-L HV 3-20 NC M12-5	10.02.02.05827
SCPS-L HV 3-16 NO M12-5 PNP	10.02.02.06057
SCPS-L HV 3-16 NC M12-5 PNP	10.02.02.06058
SCPS-L HV 3-20 NO M12-5 PNP	10.02.02.06055
SCPS-L HV 3-20 NC M12-5 PNP	10.02.02.06056

## Ordering Data Spare Parts Compact Ejectors SCPS-L / SCPSi-L

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)

## Ordering Data Accessories Compact Ejectors SCPS-L / SCPSi-L

Type		Part no.
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080
Connection cable, M12 5-pole, M12 5-pole, 2 m, PUR, straight	ASK B-M12-5 2000 S-M12-5	21.04.05.00211
Ejector module SEP	SEP HV 3 16 22	10.02.01.01397
Ejector module SEP	SEP HV 3 20 22	10.02.01.01631
Silencer	SD 29x70 SHC 22	10.02.01.01517
Silencer	SD 29x121.5 SHC	10.02.01.01831
Vacuum cup filter	VFT G1/2-IG 100	10.07.01.00126

Suction rate up to 363 l/min



## Technical Data Compact Ejectors SCPS-L / SCPSi-L

Type	Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]*	Air consumption suction [m³/h]**	Air consumption blow off [m³/h]
SCPSi-L 3-16	90	227	13.6	102	6.1	15.4
SCPSi-L 3-20	90	323	19.4	172	10.3	15.4
SCPS-L 3-16	90	227	13.6	102	6.1	15.4
SCPS-L 3-20	90	323	19.4	172	10.3	15.4

\*At optimal operating pressure (4 bar)  
 \*\*At optimal operating pressure (4 bar)

Type	Sound level free [dB(A)]*	Sound level suction [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]***	Weight [g]	Operating temperature [°C]
SCPSi-L 3-16	80	72	4.0 ... 6.0 bar	6	12	460	5 ... 50 °C
SCPSi-L 3-20	81	77	3.0 ... 6.0 bar	6	14	460	5 ... 50 °C
SCPSi-L 3-20	81	77	4.0 ... 6.0 bar	6	14	460	5 ... 50 °C
SCPS-L 3-16	80	72	4.0 ... 6.0 bar	6	12	460	5 ... 50 °C
SCPS-L 3-20	81	77	4.0 ... 6.0 bar	6	14	460	5 ... 50 °C

\*At optimal operating pressure (4 bar)  
 \*\*For max. length 2 m  
 \*\*\*For max. length 2 m



Further information: [WWW.SCHMALZ.COM/SCPS-L](http://WWW.SCHMALZ.COM/SCPS-L)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCPS-L](http://WWW.SCHMALZ.COM/SCPS-L)

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



Suction rate from 75 l/min to 195 l/min

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

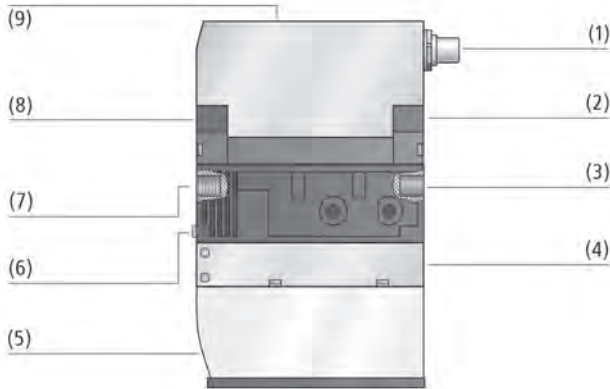
- Handling of airtight as well as porous workpieces
- Vacuum supply and vacuum monitoring in automated systems
- For use in sheet metal processing, the automotive industry, with packaging machines, and in various robotic applications
- Pick-and-place applications with very short cycle times (fast gripping and release realized by means of the power blow off function)



Compact Ejectors SCPi / SMPi

### Design

- Main body made of high strength plastic
- User display (9) with seven segments, operating keyboard and luminous display that indicates system status
- Electrical connection (1) via standard M12 plug, optional with potential separation of sensor and actor power supply
- Integrated pneumatic valves for NO, NC or pulse switch functions (2) and (8)
- Power blow off piston for type SMPi (4) provides extremely high blow off capacity for reduced cycle times
- Adjusting screw to adjust the blow off capacity (6); pneumatic connections (G3/8" and G1/4") with protective filters (3) and (7); integrated silencer (5)



System Design Compact Ejectors SCPi / SMPi

### Product Highlights

- IO-Link functionality allows bus connection and remote parameterization
- Clear user display with user-friendly keys
- Integrated air saving function reduces energy costs to a minimum
- Minimum space requirement thanks to disc design
- Weight-optimized housing ideal for high accelerations



Centralized vacuum generation by compact ejectors SMPi

# Compact Ejectors SCPi / SMPi

Suction rate from 75 l/min to 195 l/min



## Designation Code Compact Ejectors SCPi / SMPi

<b>SMPi</b>	–	<b>15</b>	–	<b>NO</b>	–	<b>VD</b>	–	<b>M12-5</b>
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>

### 1 – Abbreviated designation

Code	Version
SCPi	Without power blow off
SMPi	With power blow off

### 2 – Nozzle size

Code	Diameter in mm
15...25	ø 1.5 to 2.5

### 3 – Idle position suction valve

Code	Type
IMP	Bistable switched with pulse
NC	Normally closed
NO	Normally open

### 4 – System monitoring

Code	Type
RD	Air saving function with digital vacuum switch
VD	Digital vacuum switch

### 5 – Connection electrical

Code	Connection
M12-5	M12, 5-pole

Compact ejector SCPi / SMPi is delivered as a ready-to-connect product (without connection cable).

Available accessories: connection cable, connection distributor, compressed air connection plate, ejector blanking plate, quick change adapter, ejector tester



## Ordering Data Compact Ejectors SCPi / SMPi

Type				Nozzle size:		
				15	20	25
SCPi	IMP	RD	M12-5	10.02.02.03347	10.02.02.03359	10.02.02.03371
SCPi	IMP	VD	M12-5	10.02.02.03344	10.02.02.03356	10.02.02.03368
SCPi	NO	VD	M12-5	10.02.02.03342	10.02.02.03354	10.02.02.03366
SCPi	NO	RD	M12-5	10.02.02.03345	10.02.02.03357	10.02.02.03369
SCPi	NC	RD	M12-5	10.02.02.03346	10.02.02.03358	10.02.02.03370
SCPi	NC	VD	M12-5	10.02.02.03343	10.02.02.03355	10.02.02.03367

Type				Nozzle size:		
				15	20	25
SMPi	IMP	RD	M12-5	10.02.02.03341	10.02.02.03353	10.02.02.03365
SMPi	IMP	VD	M12-5	10.02.02.03338	10.02.02.03350	10.02.02.03362
SMPi	NO	RD	M12-5	10.02.02.03339	10.02.02.03351	10.02.02.03363
SMPi	NO	VD	M12-5	10.02.02.03336	10.02.02.03348	10.02.02.03360
SMPi	NC	RD	M12-5	10.02.02.03340	10.02.02.03352	10.02.02.03364
SMPi	NC	VD	M12-5	10.02.02.03337	10.02.02.03349	10.02.02.03361

# Compact Ejectors SCPI / SMPi

Suction rate from 75 l/min to 195 l/min



## Ordering Data Accessories Compact Ejectors SCPI / SMPi

Type	Part no.
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P
Connection distributor 1x M12, 5 pol, 3x M12, 4 pol	ASV SMPi/SCPI 3xS-M12-4
Connection distributor 1x M12, 5 pol, 2x M12, 4 pol	ASV SMPi/SCPI 2xS-M12-4
Compressed air connection plate	GP 2 SMP 15..30/SCP 20..30
Compressed-air connection plate	GP 3 SMP 15..25/SCP 20..25
Compressed-air connection plate	GP 4 SMP 15..20/SCP 20
Compressed-air connection plate	GP 5 SMP 15
Compressed-air connection plate	GP 6 SMP 15
Ejector blanking plate	EJEK-PL SMP(i)15..30/SCP(i)20..30
Quick-Change-Adapter	ADP-Q 90.5x22x29.7 SMPi/SCPi
Ejector tester	EJEK-TEST SMPi/SCPi



## Technical Data Compact Ejectors SCPI / SMPi

Type*	Nozzle diameter [mm]	Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]**	Air consumption suction [m³/h]***	Max. air consumption blow off [l/min]
SCPi	15	85	75	4.5	115	7.2	200
SCPi	20	85	140	8.4	180	11.7	200
SCPi	25	85	195	11.7	290	17.4	200
SMPi	15	85	75	4.5	115	7.2	200
SMPi	20	85	135	8.1	180	10.8	200
SMPi	25	85	185	11.1	290	17.4	200

\*The supply voltage for vacuum switches and solenoid valves is 24V DC

\*\*At optimal operating pressure (4.5 bar)

\*\*\*At optimal operating pressure (4.5 bar)

Type*	Sound level free [dB(A)]	Sound level suction [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]***	Weight [kg]	Operating temperature [°C]
SCPi	75	70	4.0 ... 7.0 bar	6	6	0.6	0 ... 50 °C
SCPi	75	65	4.0 ... 7.0 bar	6	8	0.6	0 ... 50 °C
SCPi	78	75	4.0 ... 7.0 bar	8	9	0.6	0 ... 50 °C
SMPi	75	74	4.0 ... 7.0 bar	6	6	0.6	0 ... 50 °C
SMPi	75	70	4.0 ... 7.0 bar	6	8	0.6	0 ... 50 °C
SMPi	78	77	4.0 ... 7.0 bar	8	9	0.6	0 ... 50 °C

\*The supply voltage for vacuum switches and solenoid valves is 24V DC

\*\*For max. length 2 m

\*\*\*For max. length 2 m

# Compact Ejectors SCPI / SMPi



Suction rate from 75 l/min to 195 l/min



Further information: [WWW.SCHMALZ.COM/SCPI](http://WWW.SCHMALZ.COM/SCPI)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCPI](http://WWW.SCHMALZ.COM/SCPI)

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

Suction rate from 75 l/min to 185 l/min

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



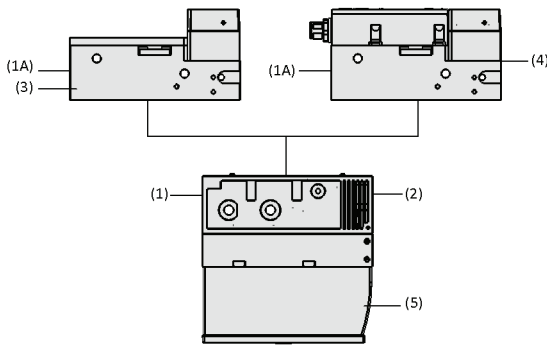
## Suitability for Industry Specific Applications

### Applications

- Compact ejectors for energy-efficient and reliable vacuum generation for handling airtight and slightly porous workpieces
- Suction and blow-off functions controlled via external compressed air
- Use in automated systems without external voltage supply directly on the robot or gripping device
- Use in harsh environmental conditions, e.g. greasy workpieces, contamination, air humidity or vibrations
- Pick-and-place applications with very short cycle times



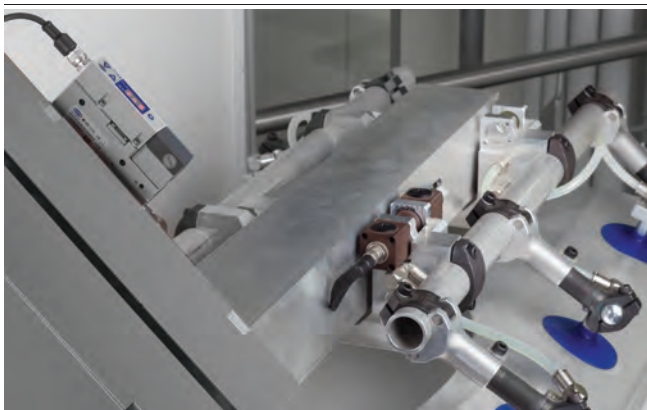
Compact Ejectors SCPb / SCPI FS RP



### Design

- Main body made of high strength plastic
- Integrated pneumatic air-saving regulation, also without electrical interface
- Pneumatic connections for controlling the suction (1) and blow-off (1A) functions; vacuum connection (2)
- SCPb (3) design without electronic components; adjusting screw for switching point setting
- SCPI (4) design with operating and display elements; electrical connection via standard M12 connector
- integrated silencer (5)

System Design Compact Ejectors SCPb / SCPI FS RP



Compact ejector SCPI FS RP handling a car body part

### Product Highlights

- Purely pneumatically controlled compact ejector without electronic components; minimum installation effort
- Integrated air saving function reduces compressed air consumption by up to 80 %
- Version SCPI with digital switching outputs and IO-Link for communication in common fieldbus systems
- Condition monitoring enables predictive maintenance and increases plant efficiency

# Compact Ejectors SCPb / SCPI FS RP

Suction rate from 75 l/min to 185 l/min



## Designation Code Compact Ejectors SCPb / SCPI FS RP

SCPI-FS	-	25	-	NO	-	RP	-	M12-5
1		2		3		4		5

### 1 – Abbreviated designation

Code	Version
SCPb-FS	Without digital vacuum switch
SCPI-FS	With digital vacuum switch

### 2 – Nozzle size

Code	Diameter in mm
15...25	ø 1,5 to 2,5

### 3 – Idle position suction valve

Code	Type
NO	Normally open

### 4 – Product addition

Code	Type
RP	Pneumatic regulation

### 5 – Connection electrical

Code	Connection
M12-5	M12, 5-pole

The compact ejector SCPb / SCPI FS RP is supplied as a ready-to-connect product (without connection cable).

Available spare parts: Silencer

Available accessories: Connection cable



## Ordering Data Compact Ejectors SCPb / SCPI FS RP

Type	Part no.
SCPb-FS 15 NO RP	10.02.02.05560
SCPb-FS 20 NO RP	10.02.02.05561
SCPb-FS 25 NO RP	10.02.02.05562
SCPI-FS 15 NO RP M12-5	10.02.02.05436
SCPI-FS 20 NO RP M12-5	10.02.02.05438
SCPI-FS 25 NO RP M12-5	10.02.02.05440



## Ordering Data Spare Parts Compact Ejectors SCPb / SCPI FS RP

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)



## Ordering Data Accessories Compact Ejectors SCPb / SCPI FS RP

Type		Part no.
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080
Connection cable, M12 5-pole, M12 5-pole, 1 m, PUR, straight	ASK B-M12-5 1000 S-M12-5	21.04.05.00158



# Compact Ejectors SCPb / SCPI FS RP

Suction rate from 75 l/min to 185 l/min



## Technical Data Compact Ejectors SCPb / SCPI FS RP

Type	Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]	Air consumption suction [m³/h]	Max. air consumption on blow off [l/min]
SCPb 15	85	75	4.5	115	7	310
SCPb 20	85	135	8.1	190	12	310
SCPb 25	85	185	11.1	290	18	310
SCPi 15	85	75	4.5	115	7	310
SCPi 20	85	135	8.1	190	12	310
SCPi 25	85	185	11.1	290	18	310

Type	Sound level free [dB(A)]	Sound level suction [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]*	Recomm. internal hose diameter vacuum [mm]**	Weight [g]	Operating temperature [°C]
SCPb 15	76	66	4.0 ... 7.0 bar	6	6	585	5 ... 50 °C
SCPb 20	76	73	4.0 ... 7.0 bar	6	8	585	5 ... 50 °C
SCPb 25	77	74	4.0 ... 7.0 bar	6	9	585	5 ... 50 °C
SCPi 15	76	66	4.0 ... 7.0 bar	6	6	615	5 ... 50 °C
SCPi 20	76	73	4.0 ... 7.0 bar	6	8	615	5 ... 50 °C
SCPi 25	77	74	4.0 ... 7.0 bar	6	9	615	5 ... 50 °C

\*For max. length 2 m  
\*\*For max. length 2 m



Further information: [WWW.SCHMALZ.COM/SCPI-FS-RP](http://WWW.SCHMALZ.COM/SCPI-FS-RP)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCPI-FS-RP](http://WWW.SCHMALZ.COM/SCPI-FS-RP)



Suction rate from 185 l/min to 220 l/min



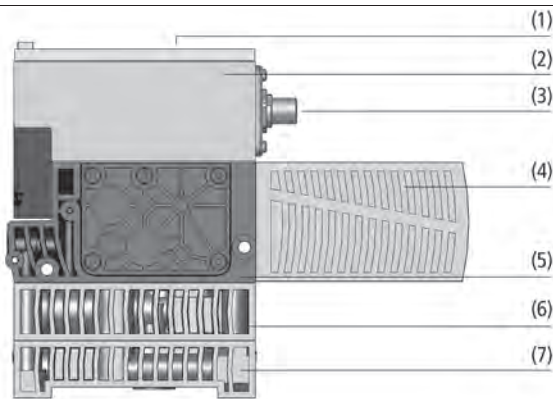
## Suitability for Industry Specific Applications

### Applications

- High performance vacuum generator for handling suction tight workpieces under extreme conditions, e.g. in vacuum systems in press lines for handling metal sheets
- In pick-and-place applications with short cycle times
- In automated systems for preparation and precise monitoring of the vacuum system



Compact Ejectors X-Pump SXPi / SXMPi with IO-Link



### Design

- User display (1) with large scale operating and display elements
- Control electronics (2) with diverse monitoring functions
- Electrical connection (3) via M12 plug
- Removable silencer (4)
- Basic body (5) made of extremely robust plastic, compact ejector SXMPi is additionally equipped with the power blow off module (6)
- Horizontal connection plate with vacuum and compressed air connection (7); optional with quick change adapter

System Design Compact Ejectors X-Pump SXPi / SXMPi with IO-Link



Central vacuum generation by compact ejectors X-Pump SXPi / SXMPi

### Product Highlights

- Communication of process and status data via IO-Link
- Integrated air saving function reduces energy consumption to a minimum
- Condition monitoring for process and plant monitoring reduces downtime and errors
- Voltage regulator ensures a constant voltage
- Pressure monitoring optionally provides additional information about the operating status

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

Suction rate from 185 l/min to 220 l/min



## Designation Code Compact Ejectors X-Pump SXPi / SXMPi with IO-Link



### 1 – Abbreviated designation

Code	Version
SXPi	Without power blow off
SXMPi	With power blow off

### 2 – Nozzle size

Code	Diameter in mm
25...30	ø 2.5 and 3

### 3 – Idle position suction valve

Code	Type
IMP	Bistable switched with pulse
NC	Normally closed
NO	Normally open

### 4 – Connection pneumatical

Code	Connection
H	Horizontal
Q	Quick change

### 5 – Additional function

Code	Type
PC	Pressure monitoring

### 6 – Connection electrical

Code	Connection
M12-8	M12, 8-pole
2xM12-5	2xM12, 5-pole

Compact ejector SXPi / SXMPi is delivered as a ready-to-connect product (without connection cable).

Available spare parts: connection cable, base plate, ejector tester



## Ordering Data Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

Type				Nozzle size:	
				25	30
SXPi	IMP	H	M12-8	10.02.02.03792	10.02.02.03796
SXPi	IMP	Q	M12-8	10.02.02.03793	10.02.02.03797
SXPi	IMP	H	2xM12-5	10.02.02.03794	10.02.02.03798
SXPi	IMP	Q	2xM12-5	10.02.02.03795	10.02.02.03799
SXPi	NC	H	M12-8	10.02.02.03784	10.02.02.03788
SXPi	NC	Q	M12-8	10.02.02.03785	10.02.02.03789
SXPi	NC	H	2xM12-5	10.02.02.03786	10.02.02.03790
SXPi	NC	Q	2xM12-5	10.02.02.03787	10.02.02.03791
SXPi	NO	H	M12-8	10.02.02.03776	10.02.02.03780
SXPi	NO	Q	M12-8	10.02.02.03777	10.02.02.03781
SXPi	NO	H	2xM12-5	10.02.02.03778	10.02.02.03782
SXPi	NO	Q	2xM12-5	10.02.02.03779	10.02.02.03783

Type				Nozzle size:		
				25	30	
SXMPi	IMP	H	-	M12-8	10.02.02.03816	10.02.02.03820
SXMPi	IMP	H	PC	M12-8	-	10.02.02.04561
SXMPi	IMP	Q	-	M12-8	10.02.02.03817	10.02.02.03821
SXMPi	IMP	H	-	2xM12-5	10.02.02.03818	10.02.02.03822
SXMPi	IMP	H	PC	2xM12-5	10.02.02.04022	10.02.02.04097
SXMPi	IMP	Q	-	2xM12-5	10.02.02.03819	10.02.02.03823
SXMPi	IMP	Q	PC	2xM12-5	10.02.02.04563	10.02.02.03731
SXMPi	NC	H	-	M12-8	10.02.02.03808	10.02.02.03812
SXMPi	NC	H	PC	M12-8	10.02.02.04189	-
SXMPi	NC	Q	-	M12-8	10.02.02.03809	10.02.02.03813
SXMPi	NC	Q	PC	M12-8	10.02.02.04025	-
SXMPi	NC	H	-	2xM12-5	10.02.02.03810	10.02.02.03814

# Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

Suction rate from 185 l/min to 220 l/min

Type					Nozzle size:	
					25	30
SXMPi	NC	H	PC	2xM12-5	10.02.02.04021	-
SXMPi	NC	Q	-	2xM12-5	10.02.02.03811	10.02.02.03815
SXMPi	NC	Q	PC	2xM12-5	10.02.02.04024	-
SXMPi	NO	H	-	M12-8	10.02.02.03800	10.02.02.03804
SXMPi	NO	Q	-	M12-8	10.02.02.03801	10.02.02.03805
SXMPi	NO	H	-	2xM12-5	10.02.02.03802	10.02.02.03806
SXMPi	NO	H	PC	2xM12-5	10.02.02.04023	-
SXMPi	NO	Q	-	2xM12-5	10.02.02.03803	10.02.02.03807



## Ordering Data Accessories Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

Type		Part no.
Connection cable, M12 8-pole, 5 m, PUR, straight	ASK B-M12-8 5000 K-8P	21.04.05.00079
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080
Connection cable, M12 8-pole, M12 4-pole, 1 m, PUR, straight	ASK B-M12-8 1000 S-M12-4	21.04.05.00167
Basic plate	GPQ1 122x46x43 SXPi/SXMPi	10.02.02.02473
Basic plate	GPQ2 122x87x48 SXPi/SXMPi	10.02.02.02154
Ejector tester	EJEK-TEST SMPI/SCPi	10.02.02.03588



## Technical Data Compact Ejectors X-Pump SXPi / SXMPi with IO-Link

Type*	Nozzle diameter [mm]	Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]**	Air consumption suction [m³/h]***	Max. air consumption blow off [l/min]
SXPi	2.5	85	185	11.1	290	17.4	200
SXPi	3.0	85	220	13.2	380	22.8	200
SXMPi	2.5	85	185	11.1	290	17.4	320
SXMPi	3.0	85	220	13.2	380	22.8	320

\*The supply voltage for vacuum switches and solenoid valves is 24V DC

\*\*At optimal operating pressure (4.5 bar)

\*\*\*At optimal operating pressure (4.5 bar)

Type*	Sound level free [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]***	Weight [kg]	Operating temperature [°C]
SXPi	67	3.0 ... 6.0 bar	8	9	0.77	0 ... 50 °C
SXPi	72	3.0 ... 6.0 bar	8	9	0.77	0 ... 50 °C
SXMPi	67	3.0 ... 6.0 bar	8	9	0.91	0 ... 50 °C
SXMPi	72	3.0 ... 6.0 bar	8	9	0.91	0 ... 50 °C

\*The supply voltage for vacuum switches and solenoid valves is 24V DC

\*\*For max. length 2 m

\*\*\*For max. length 2 m

# Compact Ejectors X-Pump SXPi / SXMPi with IO-Link



Suction rate from 185 l/min to 220 l/min

Product Overview



Further information: [WWW.SCHMALZ.COM/SXPI](http://WWW.SCHMALZ.COM/SXPI)

Vacuum Suction Cups



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SXPI](http://WWW.SCHMALZ.COM/SXPI)

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

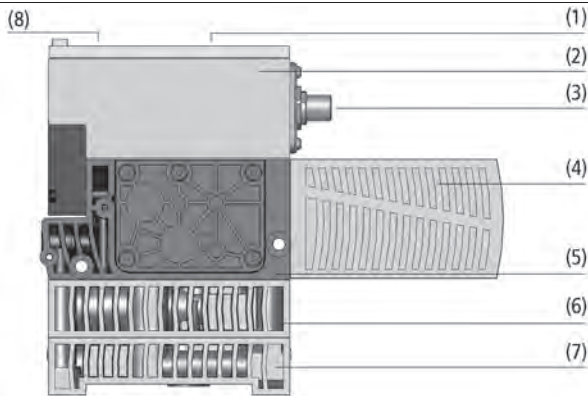


# Compact Ejectors SXMPi Class B

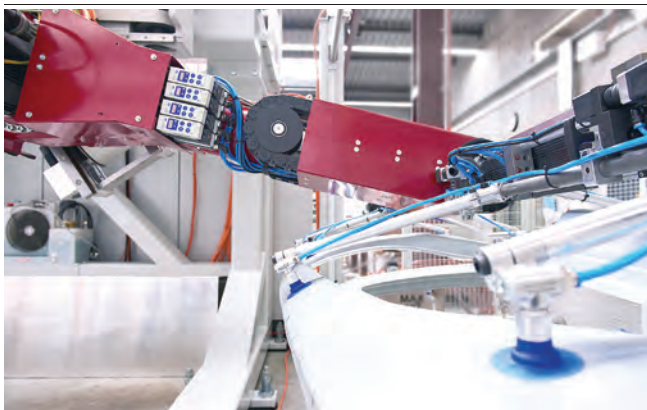
Suction capacity from 185 l/min to 220 l/min



Compact Ejectors SXMPi Class B



System Design Compact Ejectors SXMPi Class B



Compact ejectors SXMPi Class B handling a sheet metal bending part

## Suitability for Industry Specific Applications

### Applications

- Powerful ejector for handling suction-tight workpieces under extreme conditions, e.g. in vacuum systems in press lines for sheet metal working
- Pick-and-place applications with short cycle times
- In automated systems for providing and precise monitoring of the vacuum system
- Connection via IO-Link port Class B

### Design

- User display (1) with large display and operating elements
- Control electronics (2) with various monitoring functions
- Electrical connection (3) via standard M12 plug 5-pin with electrical isolation (IO-Link Class B)
- Removable silencer (4); base body (5) made of extremely robust plastic, power blow-off module (6)
- Horizontal connection plate with vacuum and compressed air connection (7); optionally with Quick-Change adapter
- NFC antenna (8) for wireless data transmission

### Product Highlights

- IO-Link Class B interface with separate supply line for sensors and actuators for communication with the controller
- NFC interface allows readout and parameterization via smartphone
- Integrated air saving function reduces energy costs to a minimum
- Condition monitoring to increase efficiency and avoid downtime
- Voltage regulator ensures a constant voltage



# Compact Ejectors SXMPi Class B

Suction capacity from 185 l/min to 220 l/min

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

## Designation Code Compact Ejectors SXMPi Class B



### 1 – Abbreviated designation

Code	Version
SXMPi	With power blow off

### 2 – Nozzle size

Code	Diameter in mm
25...30	ø 2.5 and 3.0

### 3 – Idle position suction valve

Code	Type
IMP	Bistable switched with pulse
NC	Normally closed
NO	Normally open

### 4 – Connection pneumatical

Code	Connection
H	Horizontal
Q	Quick-Change

### 5 – Additional function

Code	Type
PC	Pressure monitoring

### 6 – Connection electrical

Code	Connection
M12-5	M12, 5-pole

The compact ejector SXMPi Class B is supplied as a product ready for connection (without connection cable).

Available accessories: connection cable, base plate, ejector tester

## Ordering Data Compact Ejectors SXMPi Class B

Type	Part no.
SXMPi 25 NO H PC M12-5	10.02.02.05286
SXMPi 25 NO Q PC M12-5	10.02.02.05287
SXMPi 25 NO H M12-5	10.02.02.05288
SXMPi 25 NO Q M12-5	10.02.02.05289
SXMPi 30 NO H PC M12-5	10.02.02.05290
SXMPi 30 NO Q PC M12-5	10.02.02.05291
SXMPi 30 NO H M12-5	10.02.02.05292
SXMPi 30 NO Q M12-5	10.02.02.05293
SXMPi 25 NC H PC M12-5	10.02.02.05294
SXMPi 25 NC Q PC M12-5	10.02.02.05295
SXMPi 25 NC H M12-5	10.02.02.05296
SXMPi 25 NC Q M12-5	10.02.02.05297
SXMPi 30 NC H PC M12-5	10.02.02.05298
SXMPi 30 NC Q PC M12-5	10.02.02.05299
SXMPi 30 NC H M12-5	10.02.02.05300
SXMPi 30 NC Q M12-5	10.02.02.05301
SXMPi 25 IMP H PC M12-5	10.02.02.05302
SXMPi 25 IMP Q PC M12-5	10.02.02.05303
SXMPi 25 IMP H M12-5	10.02.02.05304
SXMPi 25 IMP Q M12-5	10.02.02.05305
SXMPi 30 IMP H PC M12-5	10.02.02.05306
SXMPi 30 IMP Q PC M12-5	10.02.02.05307
SXMPi 30 IMP H M12-5	10.02.02.05308
SXMPi 30 IMP Q M12-5	10.02.02.05309

# Compact Ejectors SXMPi Class B



Suction capacity from 185 l/min to 220 l/min



## Ordering Data Accessories Compact Ejectors SXMPi Class B

Type		Part no.
Connection cable, M12 5-pole, 5 m, PUR, straight	ASK B-M12-5 5000 K-5P	21.04.05.00080
Ejector tester	EJEK-TEST SMPi/SCPi	10.02.02.03588
Basic plate	GPQ1 122x46x43 SXPi/SXMPi	10.02.02.02473
Basic plate	GPQ2 122x87x48 SXPi/SXMPi	10.02.02.02154



## Technical Data Compact Ejectors SXMPi Class B

Type		Degree of evacuation [%]	Suction rate (max.) [l/min]	Suction rate (max.) [m³/h]	Air consumption suction [l/min]	Air consumption suction [m³/h]	Max. air consumption on blow off [l/min]
SXMPi	25	85	185	11.1	290	18	320
SXMPi	30	85	220	13.2	380	23	320

Type		Sound level free [dB(A)]	Pressure range (operating pressure) [bar]	Recomm. internal hose diameter compressed air [mm]*	Recomm. internal hose diameter vacuum [mm]**	Weight [kg]	Operating temperature [°C]
SXMPi	25	67	3.0 - 6.0 bar	8	9	1	0 ... 50 °C
SXMPi	30	72	3.0 - 6.0 bar	8	9	1	0 ... 50 °C

\*For max. length 2 m

\*\*For max. length 2 m



Further information: [WWW.SCHMALZ.COM/SXMPi-CLASS-B](http://WWW.SCHMALZ.COM/SXMPi-CLASS-B)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SXMPi-CLASS-B](http://WWW.SCHMALZ.COM/SXMPi-CLASS-B)

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

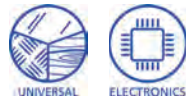
Filters and Connections

Services and Contact

# Compact Terminals SCTMb / SCTMc / SCTMi

Electrically blocked compact terminal consisting of up to 16 compact ejectors

- Product Overview
- Vacuum Suction Cups
- Special Grippers
- Mounting Elements
- Vacuum Generators
- Switches and Monitoring
- Filters and Connections
- Services and Contact



## Suitability for Industry Specific Applications

### Applications

- Compact terminal for handling airtight workpieces, such as display glass, plastic parts, printed-circuit boards (PCB), electronic parts or batteries
- For use in highly dynamic pick-and-place applications with extremely short cycle times and low space requirement, e.g. SMD machines
- Fully automatic handling applications without downtime through intelligent condition monitoring
- Use as a valve with IO-Link function enables condition monitoring in combination with an external vacuum supply (e.g. a central vacuum pump)

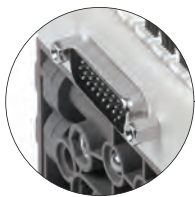


Compact Terminals SCTMb / SCTMc / SCTMi

## Design

### Pneumatic manifold

- Common compressed air connection for up to 16 single ejectors
- Compact and lightweight design

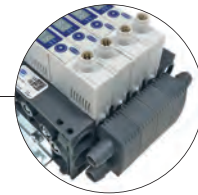


### Electrical manifold

- Terminal SCTMc-MP with Sub-D multi-pol plug connection (up to 8 ejectors)

### External blow-off function or external vacuum supply

- External blow-off "EB" or external vacuum supply "EV"
- Push-in: 8/6 or G1/8-F

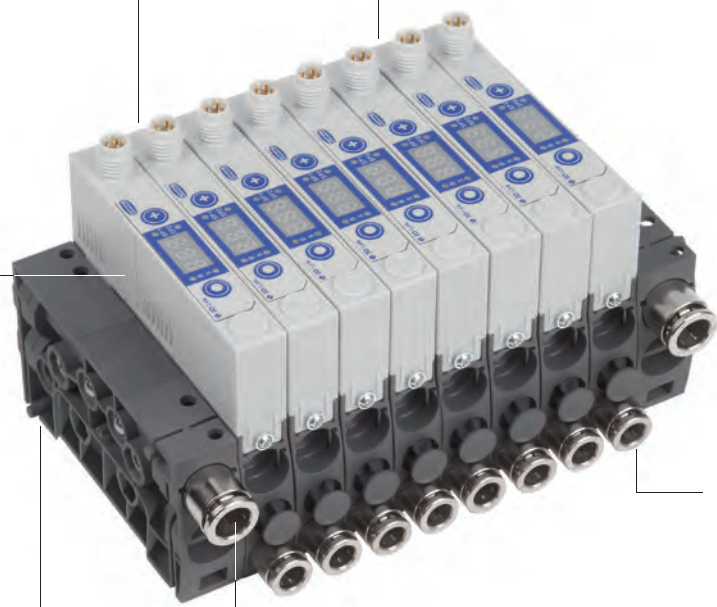


### Combined exhaust air duct

- Left, right or both sides

### Combined silencer

- For noise reduction



### Vacuum connections

- Design and control of up to 16 individual vacuum circuits

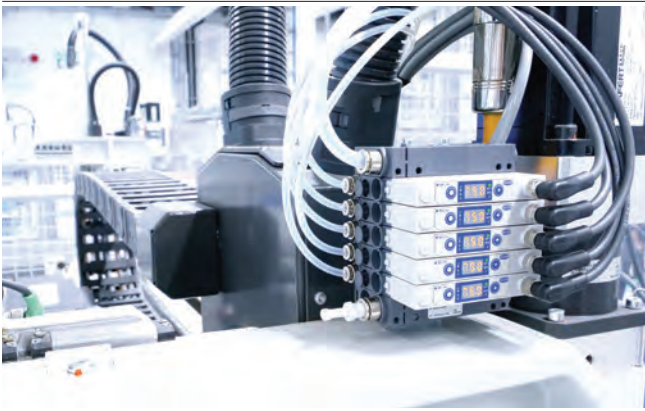
### Common compressed air supply

- Compressed air supply via only one connection
- Push-in: 8/6 or G1/8-F

# Compact Terminals SCTMb / SCTMc / SCTMi



Electrically blocked compact terminal consisting of up to 16 compact ejectors



SCTMi compact terminal for vacuum generation when removing injection molded parts

## Produkt-Highlights

- Simple setup and control of up to 16 individual vacuum circuits
- Low interference contour when installed with high suction power at the same time
- Minimal hoses effort thanks to central compressed air connection and, if desired, central exhaust air collection
- Electrical manifold connection of up to 7 ejectors with Sub-D multi-pin connector (SCTMC-MP)

## Function overview

		SCTMb "basic"	SCTMc "controlled"	SCTMi "intelligent"
Basic functions	Suction valve (NO or NC)	●	●	●
	Blow-off function (NC)	●	●	●
	Version for external vacuum generation (EV)	○	○	○
	Version with external blow-off (EB)	○	○	○
	Display (3-digit)		●	●
Pneumatic connections:	Push-in	●	●	●
	Thread	○	○	○
	Electrical connections:			
Valve connector MIC 10		●		
	M8-6		●	●
	JST-5		○	
Additional functions	Condition monitoring:			
	Via display		●	
	Via IO-Link (incl. energy and process control)			●
	IO-Link interface			●
NFC			●	
Sensor:	Via external connection	●		
	Digital (PNP or NPN)		●	●
	Via IO-Link			●
Terminal	Manifold:			
	Pneumatic (individual control)	●	●	●
	Pneumatic and electrical (Multipol)	up to 16 ejectors	up to 16 ejectors	up to 16 ejectors
			●	
Combined exhaust air duct	○	○	○	
Combined silencer	○	○	○	

● Standard function    ○ Configurable option



Further information: [WWW.SCHMALZ.COM/SCTMC](http://WWW.SCHMALZ.COM/SCTMC)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCTMC](http://WWW.SCHMALZ.COM/SCTMC)

# Compact Terminals SCTSi

Central control unit for vacuum systems

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

- Compact terminal for simultaneous, independent handling of different parts with only one vacuum system
- Handling of airtight and slightly porous workpieces
- Central unit for vacuum generation, control and monitoring
- Integration into fully automated handling and production systems



Compact Terminals SCTSi

### Design

**Bus module** — Ethernet / IO-Link

- Interface for integration into various fieldbus systems
- **Ethernet** – ProfiNet / EtherCAT / Ethernet/IP
- **IO-Link** – IO-Link Class B with potential isolation

**IO-Link master**

- Connection of intelligent field devices (sensors and actuators)
- Up to 2 expansion modules with 4 ports each (M12-5 socket)

**Impulse valves (IMP)**

- Ejector discs with bistable suction valve increase process reliability
- If the actuator voltage fails, the ejector remains in the last active state
- Valve requires only a short voltage pulse for switching

**NFC interface**

Process and device parameters simply configurable via smartphone

**Ejector discs** — Vacuum line

- Up to 16 ejectors, individually selectable according to nozzle size, NO / NC / impulse or nozzle type
- Automatic air saving function

**Digital input modules**

- Connection of digital field devices (sensors)
- Up to 6 expansion modules with 4 ports each (M12-5 socket)



Central control unit for vacuum systems



Compact Terminal SCTSi IO-Link handling display glass

## Product Highlights

- Central compressed air and power supply for up to 16 ejectors
- Direct connection to the controller via only one data line
- Modular design with different, individually controllable vacuum circuits for the handling of different workpieces
- Process transparency, energy consumption control and a variety of diagnostic functions for use in intelligent factories
- Ethernet version with integrated IO-Link master saves additional IO-Link master or I/O modules

## Function overview

		SCTSi IO-Link	SCTSi Ethernet
Basic functions	<b>Vacuum generation:</b>		
	Single stage nozzle	○	○
	Multi stage nozzle	○	○
	<b>Suction valve (NO, NC or IMP)</b>	○	○
	<b>Blow off function (NC)</b>	●	●
	<b>Display (LED bar display)</b>	●	●
Pneumatic connections:	Push-in	○	○
	Thread	○	○
<b>Electrical connections:</b>	M12-5	2 x M12-5-D	
Additional functions	<b>Condition monitoring</b>	●	●
	<b>Communication interfaces</b>	IO-Link Class B	ProfiNet / EtherCAT / Ethernet/IP
	<b>NFC</b>	●	●
	<b>Power blow off</b>	○	○
Terminal	<b>Manifold</b>	●	●
		up to 16 ejectors	up to 16 ejectors
	<b>Digital input modules</b>		○
	<b>IO-Link master modules</b>		○

● Standard function    ○ Configurable option



Further information: [WWW.SCHMALZ.COM/SCTSI-IO-LINK](http://WWW.SCHMALZ.COM/SCTSI-IO-LINK) .../SCTSI-ETHERNET



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/SCTSI-IO-LINK](http://WWW.SCHMALZ.COM/SCTSI-IO-LINK)





# Vacuum Generators ECBPMi

Suction rate up to 1.6 l/min

Product Overview



Vacuum Suction Cups

Special Grippers

Mounting Elements

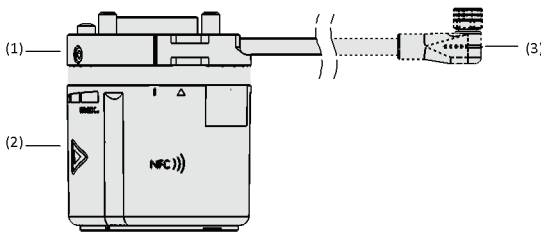


Vacuum Generators ECBPMi

Vacuum Generators

Switches and Monitoring

Filters and Connections



System Design Vacuum Generators ECBPMi

Services and Contact



Electrical vacuum generator ECBPMi for handling cans

## Suitability for Industry Specific Applications

### Applications

- Electric vacuum generator for handling suction-tight workpieces
- Flexible application in lightweight robotics, human-robot collaboration (MRK environment) as well as in mobile robotics
- Simple and fast commissioning on lightweight robots thanks to intelligent software support
- Small dimensions and low weight for robots with payloads < 3kg
- Ideal for automated handling of small parts, e.g. bin-picking with a single suction gripper
- One bellows suction cup inclusive for a complete vacuum gripping system

### Design

- Modular adapter flange (1) incl. cable strain relief
- Interference-free design adapted to the size of the robot flange
- Available robot integration sets (incl. all necessary parts) for plug & work integration with common lightweight robot types
- Intuitive operation via user interface with capacitive keys (2) and rotating status display
- Integrated NFC interface for commissioning and parameterization via smartphone
- Electrical connection cable (3)

### Product Highlights

- Extremely compact electric vacuum generator for handling workpieces with a single suction cup
- Universal adaptation to lightweight robots or cobots using a flange adapter plate
- Simple and fast commissioning thanks to central electrical interface (Plug & Work)
- Electrical connection through external cabling or internal pins saves tubing on the robot

# Vacuum Generators ECBPMi

Suction rate up to 1.6 l/min

## Designation Code Vacuum Generators ECBPMi

<b>ECBPMi</b>	–	<b>24V-DC</b>	–	<b>M12-8</b>
<b>1</b>		<b>2</b>		<b>3</b>

### 1 – Abbreviated designation

Code	Version
ECBPMi	Electrical CobotPump

### 2 – Voltage

Code	Operating voltage
24V-DC	24V-DC

### 3 – Electrical connection

Code	Type
M12-8	M12, 8-pin plug

The electrical vacuum generator ECBPMi is supplied as a ready-to-connect product.

## Ordering Data Vacuum Generators ECBPMi

Type	Part no.
ECBPMi 24V-DC M12-8	10.03.01.00556

## Technical Data Vacuum Generators ECBPMi

Type	Suction rate (max.) [l/min]	Rated power [W]	Voltage [V]	Rated current [A]	Operating temperature [°C]
ECBPMi 24V-DC M12-8	1.6	7.2	24V - DC	0.3	0 ... 40 °C

## Further information: [WWW.SCHMALZ.COM/ECBPMI](http://WWW.SCHMALZ.COM/ECBPMI)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/ECBPMI](http://WWW.SCHMALZ.COM/ECBPMI)

# Vacuum Generators ECBPi

Suction rate up to 12 l/min

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



## Suitability for Industry Specific Applications

### Applications

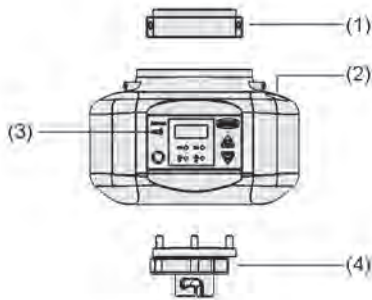
- Intelligent electrical vacuum generator for handling airtight and slightly porous workpieces
- Integrated interface for controlling and monitoring the handling process
- For use in mobile robotics, fully automated small parts handling and stationary handling tasks



Vacuum Generators ECBPi

### Design

- Flange adapter plate (1) for mechanical connection to all common cobot models
- M12 8-pin plug connection or terminal block as digital interface (2) between the ECBPi and the robot
- NFC interface (3) for conveniently transferring data using a smartphone
- Flange for gripper connection (4)



System Design Vacuum Generators ECBPi

### Product Highlights

- Integrated ventilation valve for fast and precise depositing
- Targeted process monitoring and predictive maintenance through connection via IO-Link
- Condition monitoring reduces errors and improves plant availability
- NFC interface allows readout and parameterization via smartphone
- Improved energy efficiency through automatic adjustment of the suction power



Electric vacuum generator ECBPi when handling cardboard boxes

# Vacuum Generators ECBPi

Suction rate up to 12 l/min



## Designation Code Vacuum Generators ECBPi

<b>ECBPi</b>	–	<b>24V-DC</b>	–	<b>M12-8</b>
<b>1</b>		<b>2</b>		<b>3</b>

### 1 – Abbreviated designation

Code	Version
ECBPi	Electrical CobotPump

### 2 – Voltage

Code	Operating voltage
24V-DC	24V-DC

### 3 – Electrical connection

Code	Type
M12-8	M12, 8-pin plug
TB-8	Terminal strip

The electrical vacuum generator ECBPi is delivered as a ready-to-connect product.

Available accessories: flange plate, connection cable, connection distributor



## Ordering Data Vacuum Generators ECBPi

Type	Part no.
ECBPi 12 24V-DC M12-8	10.03.01.00314
ECBPi 12 24V-DC TB-8	10.03.01.00364



## Ordering Data Accessories Vacuum Generators ECBPi

Type		Part no.
Flange plate robot UR, KUKA iiwa	FLAN-PL UR-KUK-1	10.03.01.00313
Flange plate robot application RETHINK	FLAN-PL RET-1	10.03.01.00358
Flange plate robot RETHINK ClickSmartAdapter	FLAN-PL RET-2	10.03.01.00373
Flange plate robot universal	FLAN-PL ECBPi	10.03.01.00379
Flange plate robot FANUC	FLAN-PL FAN-1	10.03.01.00390
Connection cable, M12 8-pole, M8 8-pole, 0.28 m, PUR, straight	ASK B-M12-8 280 WB-M8-8 UR	21.04.05.00350
Connection distributor 1x M12, 8 pol, 1x M8, 8 pol, 1x M8, 3 pol	ASV ECBPi WS-M8-3 WS-M8-8	21.04.05.00361
Connection distributor 1x M12, 8 pol, 1x M8, 8 pol, 1x M8, 4 pol	ASV ECBPi WS-M8-4 WS-M8-8	21.04.05.00362



## Technical Data Vacuum Generators ECBPi

Type	Suction rate (max.) [l/min]	Rated power [W]	Voltage [V]	Rated current [A]	Operating temperature [°C]	Weight [g]
ECBPi 12 24V-DC M12-8	12	13	24V - DC	0.6	5 ... 45 °C	775
ECBPi 12 24V-DC TB-8	12	13	24V - DC	0.6	5 ... 45 °C	775

# Vacuum Generators ECBPi

Suction rate up to 12 l/min

Product Overview



Further information: [WWW.SCHMALZ.COM/ECBPI](http://WWW.SCHMALZ.COM/ECBPI)

Vacuum Suction Cups



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/ECBPI](http://WWW.SCHMALZ.COM/ECBPI)

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



# Dry-Running Vacuum Pumps EVE-TR



Suction rate from 2.3 m<sup>3</sup>/h to 250 m<sup>3</sup>/h



Dry-Running Vacuum Pumps EVE-TR

## Design

- Dry-running vacuum pump, with or without additional filter
- Available in versions for single phase AC, three phase AC or DC power supplies
- Available as a multi cell compressor with very little vibration and constant output or as a compact diaphragm pump
- Compact design with integrated cooling fan and permanently lubricated bearings
- Mounting holes with integrated damping elements
- To be preferably mounted with the motor shaft horizontal

## Suitability for Industry Specific Applications

### Applications

- Vacuum pump for universal use in a wide range of different applications in the sector of manual and automatic handling
- Handling of airtight workpieces
- Rapid evacuation of vacuum systems
- Mobile use for picking up and clamping workpieces (EVE-TR-T)

## Product Highlights

- Robust, low-maintenance vacuum pump in dry-running design
- Multi-cell compressor principle guarantees vibration-free operation and low-pulsation, continuous output
- Excellent heat dissipation thanks to permanently lubricated bearings and powerful cooling fan
- Individually adjustable suction flow rate for optimized air consumption and a wide range of applications
- Low power consumption for economical continuous operation

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



# Dry-Running Vacuum Pumps EVE-TR

Suction rate from 2.3 m<sup>3</sup>/h to 250 m<sup>3</sup>/h

Product Overview



## Designation Code Dry-Running Vacuum Pumps EVE-TR

Vacuum Suction Cups



Special Grippers

### 1 – Abbreviated designation

Code	Version
EVE	EVE

### 2 – Pump type

Code	Type
TR	Dry-running
TR-M	Diaphragm pump
TR-T	Transportable

### 3 – Performance class

Code	Suction rate in m <sup>3</sup> /h
2.3...250	2.3 to 250

Mounting Elements

### 4 – Supply voltage

Code	Type
AC	Single phase
AC3	Three phase
DC	Direct current
12V-DC	
24V-DC	

### 5 – Motor type

Code	Region
IE3-TYP1	EU/CN/IND
IE3-TYP2	US/CAN

### 6 – Product addition

Code	Type
F	Additional filter

Vacuum Generators

The vacuum pump EVE-TR is delivered ready to connect.

Available spare parts: Filter insert, wearing part set

Available accessories: Vacuum limiter valve

Switches and Monitoring



## Ordering Data Dry-Running Vacuum Pumps EVE-TR

Filters and Connections

Services and Contact

Type	Part no.
EVE-TR-M 2.3 24V-DC	10.03.01.00192
EVE-TR 4 AC	10.03.01.00120
EVE-TR 4 AC F	10.03.01.00114
EVE-TR 4 AC3	10.03.01.00111
EVE-TR 4 AC3 F	10.03.01.00113
EVE-TR-T 4 AC F	10.03.01.00197
EVE-TR 8 AC	10.03.01.00121
EVE-TR 8 AC F	10.03.01.00117
EVE-TR 8 AC3	10.03.01.00112
EVE-TR 8 AC3 F	10.03.01.00116
EVE-TR 8 DC	10.03.01.00288
EVE-TR 8 24V-DC F	10.03.01.00401
EVE-TR 10 AC	10.03.01.00138
EVE-TR 10 AC F	10.03.01.00144
EVE-TR 10 AC3	10.03.01.00137
EVE-TR 10 AC3 F	10.03.01.00143
EVE-TR 16 AC	10.03.01.00140
EVE-TR 16 AC F	10.03.01.00146
EVE-TR 16 AC3	10.03.01.00139
EVE-TR 16 AC3 F	10.03.01.00145



Suction rate from 2.3 m<sup>3</sup>/h to 250 m<sup>3</sup>/h

Type	Part no.
EVE-TR 25 AC3	10.03.01.00141
EVE-TR 25 AC3 F	10.03.01.00147
EVE-TR 25 AC3 IE3-TYP2	10.03.01.00349
EVE-TR 25 AC3 IE3-TYP2 F	10.03.01.00353
EVE-TR 40 AC3	10.03.01.00142
EVE-TR 40 AC3 F	10.03.01.00148
EVE-TR 40 AC3 IE3-TYP2	10.03.01.00350
EVE-TR 40 AC3 IE3-TYP2 F	10.03.01.00354
EVE-TR 60 AC3 IE3-TYP1	10.03.01.00319
EVE-TR 60 AC3 IE3-TYP1 F	10.03.01.00335
EVE-TR 60 AC3 IE3-TYP2	10.03.01.00320
EVE-TR 60 AC3 IE3-TYP2 F	10.03.01.00336
EVE-TR 80 AC3 IE3-TYP1	10.03.01.00321
EVE-TR 80 AC3 IE3-TYP1 F	10.03.01.00337
EVE-TR 80 AC3 IE3-TYP2	10.03.01.00322
EVE-TR 80 AC3 IE3-TYP2 F	10.03.01.00338
EVE-TR 100 AC3 IE3-TYP1	10.03.01.00323
EVE-TR 100 AC3 IE3-TYP1 F	10.03.01.00339
EVE-TR 100 AC3 IE3-TYP2	10.03.01.00324
EVE-TR 100 AC3 IE3-TYP2 F	10.03.01.00340
EVE-TR 140 AC3 IE3-TYP1	10.03.01.00325
EVE-TR 140 AC3 IE3-TYP1 F	10.03.01.00341
EVE-TR 140 AC3 IE3-TYP2	10.03.01.00326
EVE-TR 140 AC3 IE3-TYP2 F	10.03.01.00342
EVE-TR 250 AC3 IE3-TYP2 F	10.03.01.00328
EVE-TR 250 AC3 IE3-TYP1 F	10.03.01.00327



## Ordering Data Spare Parts Dry-Running Vacuum Pumps EVE-TR

Find the right spare part quickly and easily in our online shop: [WWW.SCHMALZ.COM/ARTICLE-NUMBER](http://WWW.SCHMALZ.COM/ARTICLE-NUMBER)



## Ordering Data Accessories Dry-Running Vacuum Pumps EVE-TR

Type	Accessories	Part no.	
EVE-TR 4	Vacuum limiter valve	VBV -850...0 G3/8-AG EVE 4-8	10.03.01.00107
EVE-TR 10	Vacuum limiter valve	VBV -950...0 G1-AG EVE 10-40	10.03.01.00136
EVE-TR 16	Vacuum limiter valve	VBV -950...0 G1-AG EVE 10-40	10.03.01.00136
EVE-TR 25	Vacuum limiter valve	VBV -950...0 G1-AG EVE 10-40	10.03.01.00136
EVE-TR 40	Vacuum limiter valve	VBV -950...0 G1-AG EVE 10-40	10.03.01.00136
EVE-TR 80	Vacuum limiter valve	VBV -950...0 G1-1/4-AG EVE 60-140	10.03.01.00153
EVE-TR 100	Vacuum limiter valve	VBV -950...0 G1-1/4-AG EVE 60-140	10.03.01.00153
EVE-TR 140	Vacuum limiter valve	VBV -950...0 G1-1/4-AG EVE 60-140	10.03.01.00153

# Dry-Running Vacuum Pumps EVE-TR

Suction rate from 2.3 m<sup>3</sup>/h to 250 m<sup>3</sup>/h

Product Overview



## Technical Data Dry-Running Vacuum Pumps EVE-TR

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Type*	Vacuum (50 Hz) [mbar]	Suction rate DC [m <sup>3</sup> /h]	Suction rate (50 Hz) [m <sup>3</sup> /h]	Suction rate (60 Hz) [m <sup>3</sup> /h]	Voltage [V]	Protection type IP	Weight [kg]	Sound level at 50 Hz [dB(A)]
EVE-TR-M 2.3 24V-DC	-	2.0	-	-	24V - DC	-	2.4	72
EVE-TR 4 AC	-850	-	4.1	4.7	-	IP 54	7.0	59
EVE-TR 4 AC3	-850	-	4.1	4.7	-	IP 54	7.0	59
EVE-TR-T 4 AC F	-	-	4.0	4.7	-	IP 54	8.5	59
EVE-TR 8 AC	-850	-	8.0	9.1	-	IP 54	11.5	58
EVE-TR 8 AC3	-850	-	8.0	9.1	-	IP 54	11.5	58
EVE-TR 8 DC	-	9.7	-	-	24V - DC	-	12.0	61
EVE-TR 10 AC	-850	-	10.0	12.0	-	IP 54	16.0	60
EVE-TR 10 AC3	-850	-	10.0	12.0	-	IP 54	16.0	60
EVE-TR 16 AC	-850	-	16.0	19.0	-	IP 54	22.4	61
EVE-TR 16 AC3	-850	-	16.0	19.0	-	IP 54	22.4	61
EVE-TR 25 AC3	-850	-	25.0	30.0	-	IP 54	26.0	62
EVE-TR 40 AC3	-850	-	40.0	48.0	-	IP 55	38.5	67
EVE-TR 60 AC3 IE3-TYP1	-900	-	55.0	66.0	-	IP 55	76.0	71
EVE-TR 80 AC3 IE3-TYP1	-900	-	67.0	78.5	-	IP 55	78.0	72
EVE-TR 100 AC3 IE3-TYP1	-900	-	98.0	112.0	-	IP 55	100.0	75
EVE-TR 140 AC3 IE3-TYP1	-900	-	129.0	154.0	-	IP 55	112.0	76

\*Specifications for 230 V / 230 V or 400 V

Switches and Monitoring



Further information: [WWW.SCHMALZ.COM/EVE-TR](http://WWW.SCHMALZ.COM/EVE-TR)

Filters and Connections



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/EVE-TR](http://WWW.SCHMALZ.COM/EVE-TR)

Services and Contact



Product  
Overview

Vacuum  
Suction Cups

Special  
Grippers

Mounting  
Elements

**Vacuum  
Generators**

Switches and  
Monitoring

Filters and  
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Services and  
Contact

# Switches and System Monitoring



Full program, complete information:

[WWW.SCHMALZ.COM/SYSTEM-MONITORING](http://WWW.SCHMALZ.COM/SYSTEM-MONITORING)

# Vacuum and Pressure Switches VSi

Measuring range from -1 bar to 10 bar



Vacuum and Pressure Switches VSi

## Design

- Switch with compact units in two designs: without display or with integrated display
- Robust fiberglass reinforced plastic housing
- Installation via stainless steel vacuum / compressed air connection and with optional additional mounting bracket
- M8-4 pin or M12-4 pin connection plug
- Mode and switching point display using LEDs that are visible from all sides

## Suitability for Industry Specific Applications

### Applications

- Electronic vacuum and pressure switch with IO-Link interface for measuring and monitoring vacuum and overpressure in automation and handling systems
- Input and output of parameters via the controller
- Sensor unit can be positioned independently from the control and indicator display in the system
- Compact switch for installation directly on the suction cup, particularly in decentralized vacuum systems
- Setting and programming of the vacuum and pressure switch even at points in the process that are difficult to work on manually
- Output of device data such as type or operating instructions via smartphone, even with variants without display

### Product Highlights

- Electronic vacuum and pressure switch with optional display for exact measurements and digital signal output
- NFC interface allows parameterization and reading of service and maintenance data via smartphone
- Input and output of relevant process data via the controller thanks to IO-Link interface

Product Overview

Vacuum Suction Cups

Special Grippers

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Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact



# Vacuum and Pressure Switches VSi

Measuring range from -1 bar to 10 bar

## Designation Code Vacuum and Pressure Switches VSi



### 1 – Abbreviated designation

Code	Version
VSi	VSi (IO-Link)

### 2 – Measuring range

Code	Measuring range in bar
V	-1 to 0
VP8	-1 to 8
P10	0 to 10

### 3 – Display

Code	Type
D	With integrated display

### 4 – Connection electrical

Code	Connection
M8-4	Male connect M8, 4-pole
M12-4	Male connect M12, 4-pole

Vacuum and pressure switch VSi is delivered as a ready-to-connect product (without connection cable). The product consists of:

- Vacuum and pressure switch of type VSi - available as vacuum version, pressure version or combined version without display or with integrated display

Available accessories: connection cable, mounting bracket

## Ordering Data Vacuum and Pressure Switches VSi

Type	Part no.
VSi V M8-4	10.06.02.00567
VSi V D M8-4	10.06.02.00577
VSi VP8 M8-4	10.06.02.00569
VSi VP8 D M8-4	10.06.02.00579
VSi P10 M8-4	10.06.02.00568
VSi P10 D M8-4	10.06.02.00578
VSi V M12-4	10.06.02.00570
VSi V D M12-4	10.06.02.00580
VSi VP8 M12-4	10.06.02.00572
VSi VP8 D M12-4	10.06.02.00582
VSi P10 M12-4	10.06.02.00571
VSi P10 D M12-4	10.06.02.00581

## Ordering Data Accessories Vacuum and Pressure Switches VSi

Type	Part no.
Connection cable, M8 4-pole, 5 m, PUR, straight	ASK B-M8-4 5000 K-4P 10.06.02.00031
Connection cable, M12 4-pole, 5 m, PUR, straight	ASK B-M12-4 5000 K-4P 21.04.05.00263
Mounting bracket	BEF-WIN 21x22x60.5 1.5 VS 10.06.02.00061
Mounting bracket	BEF-WIN 21x22x61.5 1.5 VSi-D-M12 10.06.02.00663
Mounting bracket	BEF-WIN 21x22x61.5 1.5 VSi-D-M8 10.06.02.00664
Mounting bracket	BEF-WIN 21x22x39 1.5 VSi-M12 10.06.02.00665
Mounting bracket	BEF-WIN 21x22x39 1.5 VSi-M8 10.06.02.00666

# Vacuum and Pressure Switches VSi

Measuring range from -1 bar to 10 bar



## Technical Data Vacuum and Pressure Switches VSi

Type	Measured medium	Measuring range [bar]	Max. overpressure safety [bar]	Repeatability	Switching capacity max. [mA]	Hysteresis	Inputs/ outputs
VSi V M8-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 0.0 bar	8	± 3% of full-scale value	100	Adjustable	2 digital
VSi V D M8-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 0.0 bar	8	± 3% of full-scale value	100	Adjustable	2 digital
VSi VP8 M8-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 8.0 bar	12	± 3% of full-scale value	100	Adjustable	2 digital
VSi VP8 D M8-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 8.0 bar	12	± 3% of full-scale value	100	Adjustable	2 digital
VSi P10 M8-4	Non-aggressive gases; dry, oil-free air	0.0 ... 10.0 bar	15	± 3% of full-scale value	100	Adjustable	2 digital
VSi P10 D M8-4	Non-aggressive gases; dry, oil-free air	0.0 ... 10.0 bar	15	± 3% of full-scale value	100	Adjustable	2 digital
VSi V M12-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 0.0 bar	8	± 3% of full-scale value	100	Adjustable	2 digital
VSi V D M12-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 0.0 bar	8	± 3% of full-scale value	100	Adjustable	2 digital
VSi VP8 M12-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 8.0 bar	12	± 3% of full-scale value	100	Adjustable	2 digital
VSi VP8 D M12-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 8.0 bar	12	± 3% of full-scale value	100	Adjustable	2 digital
VSi P10 M12-4	Non-aggressive gases; dry, oil-free air	0.0 ... 10.0 bar	15	± 3% of full-scale value	100	Adjustable	2 digital
VSi P10 D M12-4	Non-aggressive gases; dry, oil-free air	0.0 ... 10.0 bar	15	± 3% of full-scale value	100	Adjustable	2 digital

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Vacuum and Pressure Switches VSi

Measuring range from -1 bar to 10 bar

Product Overview

Vacuum Suction Cups

Special Grippers

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Type	Indication	Electrical connection	Connection	Voltage	Current consumption [mA]	Protection type IP	Temperature influence	Operating temperature [°C]	Weight [g]
VSi V M8-4	LED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi V D M8-4	2xLED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16
VSi VP8 M8-4	LED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi VP8 D M8-4	2xLED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16
VSi P10 M8-4	LED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi P10 D M8-4	2xLED	Male connect M8, 4 pole	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16
VSi V M12-4	LED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi V D M12-4	2xLED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16
VSi VP8 M12-4	LED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi VP8 D M12-4	2xLED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16
VSi P10 M12-4	LED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	12
VSi P10 D M12-4	2xLED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	35	IP 65	± 3% of full-scale value	0 ... 50 °C	16

Further information: [WWW.SCHMALZ.COM/VS1](http://WWW.SCHMALZ.COM/VS1)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/VS1](http://WWW.SCHMALZ.COM/VS1)

# Vacuum Switches VSi-HD

Measuring range from -1 bar to 0 bar



Vacuum Switches VSi-HD

## Design

- Compact Vacuum Switch VSi-HD without display with a robust design
- Robust aluminium housing
- Operating and switching point indication by LED
- Assembly via large key area
- Connection plug M12-4 Pin

## Suitability for Industry Specific Applications

### Applications

- Electronic vacuum switch VSi-HD with an IO-Link interface for measuring and monitoring vacuum in automation and handling systems
- Heavy-duty version for use in rugged environments (e.g. due to acceleration, dirt or vibrations)
- Installation directly on the suction cup, especially in decentralised vacuum systems
- Input and output of process parameters via the control

### Product Highlights

- Electronic vacuum switch with digital switching signals precisely measures and evaluates process data
- Robust, compact design optimized for harsh environments
- Input and output of relevant process data via the controller using IO-Link
- Leakage monitoring through visual or digital output enables predictive maintenance

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Vacuum Switches VSi-HD

Measuring range from -1 bar to 0 bar

## Designation Code Vacuum Switches VSi-HD

<b>VSi HD</b>	-	<b>V</b>	-	<b>M12-4</b>
1		2		3

**1** – Abbreviated designation

**2** – Measuring range

**3** – Connection electrical

Code	Type	Code	Measuring range in bar	Code	Connection
VSi HD	VSi (IO-Link), Heavy Duty	V	-1 to 0	M12-4	Plug M12, 4-pole

The vacuum switch VSi-HD is delivered as a ready-to-connect product (without a connection cable).

Available accessories: connection cable, mounting bracket

## Ordering Data Vacuum Switches VSi-HD

Type	Part no.
VSi HD V M12-4	10.06.02.00677

## Ordering Data Accessories Vacuum Switches VSi-HD

Type	Part no.
-	ASK B-M12-4 2000 S-M12-4 21.04.05.00087
Connection cable, M12 4-pole, 5 m, PUR, straight	ASK B-M12-4 5000 K-4P 21.04.05.00263
-	ASK B-M12-4 5000 S-M12-4 21.04.05.00265
-	EINB-RAx25.6x36 VS 10.06.02.00115

## Technical Data Vacuum Switches VSi-HD

Type	Measured medium	Measuring range [bar]	Max. overpressure safety [bar]	Repeatability	Switching capacity max. [mA]	Hysteresis	Inputs/outputs
VSi HD V M12-4	Non-aggressive gases; dry, oil-free air	-1.0 ... 0.0 bar	8	± 3% of full-scale value	100	Adjustable	2 digital

Type	Indication	Electrical connection	Connection	Voltage	Protection type IP	Temperature influence	Operating temperature [°C]	Weight [g]
VSi HD V M12-4	LED	Male connect M12, 4 pol	G1/8"-M + M5-F	10-30V DC	IP 65 (with plug)	± 3% of full-scale value	0 ... 50 °C	21

Electronic Vacuum and Pressure Switches  
**Vacuum Switches VSi-HD**



Measuring range from -1 bar to 0 bar



Further information: [WWW.SCHMALZ.COM/VSI-HD](http://WWW.SCHMALZ.COM/VSI-HD)



Spare parts  
and accessories



Technical data



Design and CAD  
data



Documentation



Multimedia



[WWW.SCHMALZ.COM/  
VSI-HD](http://WWW.SCHMALZ.COM/VSI-HD)

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Mounting  
Elements

Vacuum  
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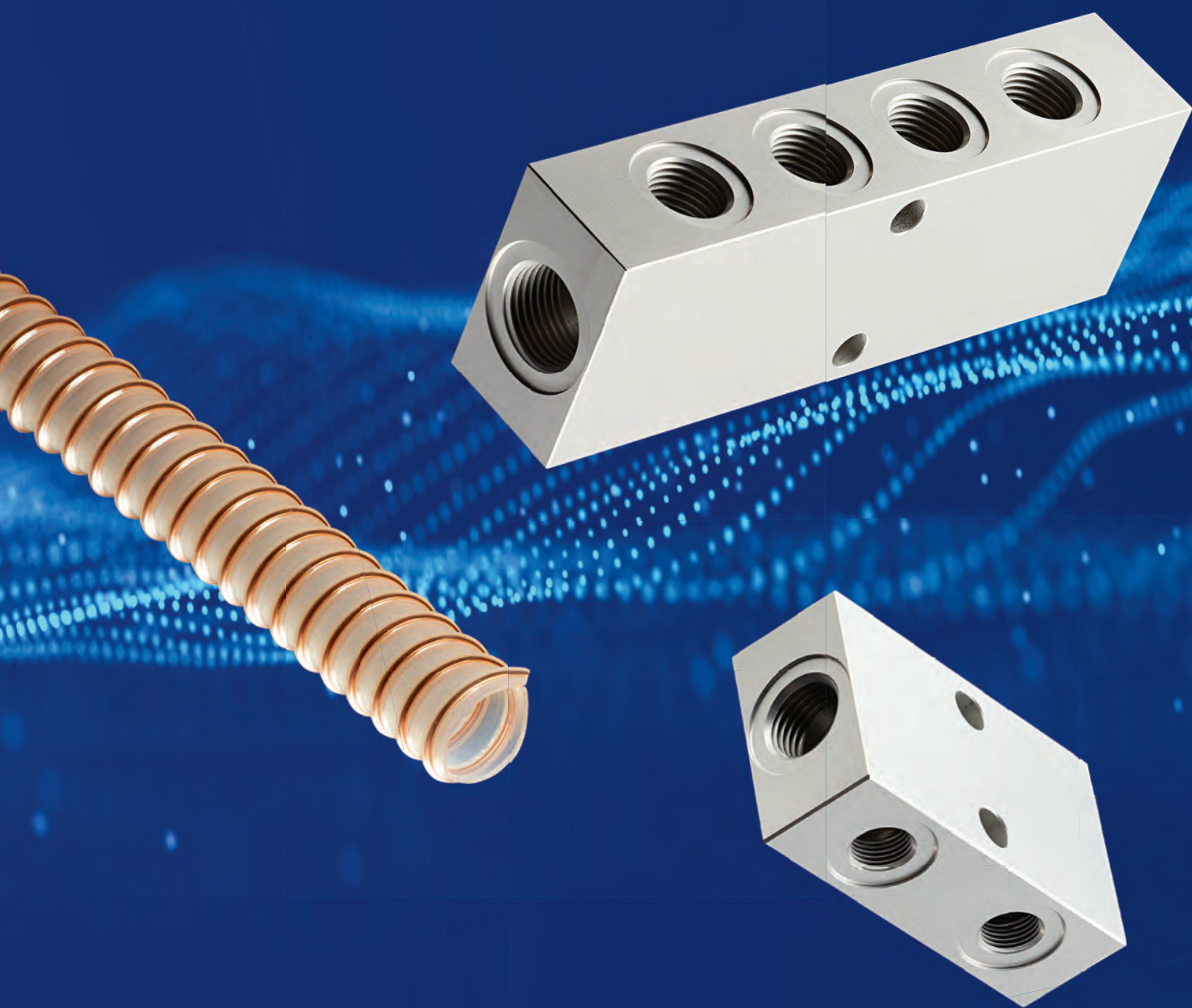
Switches and  
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Connections

Services and  
Contact



# Filters and Connections



Full program, complete information:

[WWW.SCHMALZ.COM/FILTERS-AND-CONNECTIONS](http://WWW.SCHMALZ.COM/FILTERS-AND-CONNECTIONS)

# Vacuum / Compressed Air Distributors VTR

Number of threads from 5 to 9



## Suitability for Industry Specific Applications



Vacuum / Compressed Air Distributors VTR

## Applications

- Distribution of vacuum in systems with a central vacuum generator and several suction cups
- Distribution of compressed air in systems with several distributed vacuum generators

## Design

- Distributor made of high strength aluminum with mounting holes

## Product Highlights

- Optimized flow restrictor due to large dimensioned cross sections and coordinated inlets and outlets
- Two sizes to optimize evacuation time and flow resistance
- Suitable solution for a complete installation thanks to coordinated sizes

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Vacuum / Compressed Air Distributors VTR

Number of threads from 5 to 9



## Designation Code Vacuum / Compressed Air Distributors VTR



### 1 – Abbreviated designation

Code	Version
VTR	VTR

### 2 – Connection 1

Code	Connection
G1/4-IG	G1/4-IG (IG = female (F))
G3/8-IG	G3/8-IG

### 3 – Number of threads

Code	Number
5x...9x	5x and 9x

### 4 – Connection 2

Code	Connection
G1/8-IG	G1/8-IG (IG = female (F))
G1/4-IG	G1/4-IG

Vacuum / compressed air distributor VTR is delivered as a ready-to-connect product.



## Ordering Data Vacuum / Compressed Air Distributors VTR

Type	Part no.
VTR G1/4-IG 5xG1/8	10.09.03.00058
VTR G3/8-IG 5xG1/4	10.09.03.00060
VTR G1/4-IG 9xG1/8	10.09.03.00056
VTR G3/8-IG 9xG1/4	10.09.03.00054



## Technical Data Vacuum / Compressed Air Distributors VTR

Type	Distribution type	Weight [g]
VTR G1/4-IG 5xG1/8	5 x thread G1/8"-F	90
VTR G3/8-IG 5xG1/4	5 x thread G1/4"-F	110
VTR G1/4-IG 9xG1/8	9 x thread G1/8"-F	120
VTR G3/8-IG 9xG1/4	9 x thread G1/4"-F	240



Further information: [WWW.SCHMALZ.COM/VTR](http://WWW.SCHMALZ.COM/VTR)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/VTR](http://WWW.SCHMALZ.COM/VTR)



# Vacuum / Compressed Air Hoses VSL

Material PA, PE, PU, PVC



## Suitability for Industry Specific Applications



Vacuum / Compressed Air Hoses VSL

### Applications

- Hose connections in vacuum systems
- Polyurethane (PU) hoses for energy distribution systems

### Design

- Vacuum hoses made of PVC, PU, PA and PE, some in the form of a hard PVC spiral (PS), with a wire spiral (DS) or a textile layer (G)

### Product Highlights

- Vacuum hoses with clear diameter from 2 to 75 mm to optimize evacuation time and flow resistance
- Wide range of materials for every application



## Designation Code Vacuum / Compressed Air Hoses VSL

<b>VSL</b>	-	<b>15-9</b>	-	<b>PVC</b>	-	<b>G</b>
1		2		3		4

#### 1 – Abbreviated designation

Code	Version
VSL	VSL

#### 2 – Diameter

Code	Diameter in mm
4-2...87-75	ø 4-2 to 87-75 (outside-inside)

#### 3 – Material

Code	Material
PA	Polyamide
PE	Polyethylene
PU	Polyurethane
PVC	Polyvinyl chloride

#### 4 – Product addition

Code	Type
DS	Wire spiral
G	Textile layer
PS	PVC spiral

Vacuum/compressed air hose VSL is delivered in the desired length.

Available accessories: hose clamp

# Vacuum / Compressed Air Hoses VSL

Material PA, PE, PU, PVC



## Ordering Data Vacuum / Compressed Air Hoses VSL

Product Overview

Vacuum Suction Cups

Special Grippers








Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

Type	Part no.	Accessories	Part no.
VSL 4-2 PE	10.07.09.00013	-	-
VSL 4-2 PU	10.07.09.00001 	-	-
VSL 4-2.7 PA	10.07.09.00063	-	-
VSL 6-4 PE	10.07.09.00014	-	-
VSL 6-4 PU	10.07.09.00002 	-	-
VSL 8-6 PE	10.07.09.00015	-	-
VSL 8-6 PU	10.07.09.00003 	-	-
VSL 10-7 PE	10.07.09.00083	Hose clamp	SSB 10-16 ST-VZ
VSL 10-7 PU	10.07.09.00084	Hose clamp	SSB 10-16 ST-VZ
VSL 12-9 PE	10.07.09.00050	Hose clamp	SSB 10-16 ST-VZ
VSL 12-9 PU	10.07.09.00037 	Hose clamp	SSB 10-16 ST-VZ
VSL 14-11 PU	10.07.09.00038	Hose clamp	SSB 10-16 ST-VZ
VSL 15-9 PVC-G	10.07.09.00005	Hose clamp	SSB 10-16 ST-VZ
VSL 18-12 PVC-DS	10.07.09.00016	Hose clamp	SSB 16-27 ST-VZ
VSL 21-12 PVC-G	10.07.09.00006	Hose clamp	SSB 20-32 ST-VZ
VSL 26-19 PVC-DS	10.07.09.00007	Hose clamp	SSB 20-32 ST-VZ
VSL 27-20 PU-DS-AS	10.07.09.00047 	Hose clamp	SSD 24-27 ST-VZ
VSL 33-25 PVC-DS	10.07.09.00041	Hose clamp	SSB 32-50 ST-VZ
VSL 33-25 PU-DS-AS	10.07.09.00051 	Hose clamp	SSB 32-50 ST-VZ
VSL 41-32 PVC-DS	10.07.09.00008	Hose clamp	SSB 32-50 ST-VZ
VSL 42-32 PU-DS-AS	10.07.09.00036 	Hose clamp	SSD 38-43 ST-VZ
VSL 41-35 PVC-PS	10.07.09.00010	Hose clamp	SSD 38-43 ST-VZ
VSL 44-38 PU-DS-AS	10.07.09.00031	Hose clamp	SSD 43-49 ST-VZ
VSL 47-38 PU-DS-AS	10.07.09.00052	Hose clamp	SSD 43-49 ST-VZ
VSL 48-38 PVC-DS	10.07.09.00009	Hose clamp	SSB 32-50 ST-VZ
VSL 48-40 PVC-PS	10.07.09.00011	Hose clamp	SSD 43-49 ST-VZ
VSL 60-50 20 PUR-AS	10.07.09.00020	Hose clamp	SSD 60-68 ST-VZ
VSL 61-50 PVC-DS	10.07.09.00033	Hose clamp	SSD 60-68 ST-VZ
VSL 71-60 PVC-DS	10.07.09.00012	Hose clamp	SSD 65-71 ST-VZ
VSL 71-60 PU-DS-AS	10.07.09.00034	Hose clamp	SSD 65-71 ST-VZ
VSL 71-60 PU-DS-AS	10.07.09.00065	Hose clamp	SSD 65-71 ST-VZ
VSL 85-75 PVC-PS	10.07.09.00048	Hose clamp	SSD 85-90 ST-VZ
VSL 85-75 PU-DS-AS	10.07.09.00054	Hose clamp	SSD 85-90 ST-VZ
VSL 87-75 PU-DS-AS	10.07.09.00061	Hose clamp	SSD 85-90 ST-VZ



# Vacuum / Compressed Air Hoses VSL

Material PA, PE, PU, PVC



## Technical Data Vacuum / Compressed Air Hoses VSL

Type	Material hose	Pressure range (operating pressure) [bar]*	Operating temperature [°C]	Bending radius min. [mm]**	Length max. [m]***
VSL 4-2 PE	PE	-0.95 ... 10.00 bar	-30 ... 70 °C	20	100
VSL 4-2 PU	PU	-0.95 ... 10.00 bar	-40 ... 60 °C	20	50
VSL 4-2.7 PA	PA	-0.95 ... 20.00 bar	-40 ... 90 °C	30	50
VSL 6-4 PE	PE	-0.95 ... 10.00 bar	-30 ... 70 °C	35	100
VSL 6-4 PU	PU	-0.95 ... 10.00 bar	-20 ... 90 °C	35	500
VSL 8-6 PE	PE	-0.95 ... 10.00 bar	-30 ... 70 °C	45	100
VSL 8-6 PU	PU	-0.95 ... 10.00 bar	-20 ... 90 °C	45	500
VSL 10-7 PE	PE	-0.95 ... 10.00 bar	-30 ... 70 °C	60	50
VSL 10-7 PU	PU	-0.95 ... 10.00 bar	-40 ... 85 °C	60	50
VSL 12-9 PE	PE	-0.95 ... 10.00 bar	-20 ... 70 °C	70	100
VSL 12-9 PU	PU	-0.95 ... 10.00 bar	-20 ... 90 °C	70	50
VSL 14-11 PU	PU	-0.95 ... 10.00 bar	-20 ... 90 °C	100	50
VSL 15-9 PVC-G	PVC with tissue	-0.95 ... 10.00 bar	-20 ... 65 °C	50	50
VSL 18-12 PVC-DS	PVC with wire spiral	-0.90 ... 5.00 bar	-15 ... 65 °C	85	50
VSL 21-12 PVC-G	PVC with tissue	-0.95 ... 10.00 bar	-20 ... 65 °C	80	50
VSL 26-19 PVC-DS	PVC with wire spiral	-0.90 ... 5.00 bar	-15 ... 65 °C	85	50
VSL 27-20 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 4.72 bar	-40 ... 90 °C	17	20
VSL 33-25 PVC-DS	PVC with wire spiral	-0.85 ... 4.00 bar	-15 ... 65 °C	95	50
VSL 33-25 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 3.86 bar	-40 ... 90 °C	20	20
VSL 41-32 PVC-DS	PVC with wire spiral	-0.85 ... 4.00 bar	-15 ... 65 °C	110	30
VSL 42-32 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 3.77 bar	-40 ... 90 °C	25	20
VSL 41-35 PVC-PS	PVC with PVC-spiral	-0.50 ... 0.50 bar	-20 ... 70 °C	65	50
VSL 44-38 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 3.21 bar	-40 ... 90 °C	29	20
VSL 47-38 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 4.47 bar	-20 ... 90 °C	104	15
VSL 48-38 PVC-DS	PVC with wire spiral	-0.88 ... 7.00 bar	-15 ... 65 °C	120	30
VSL 48-40 PVC-PS	PVC with PVC-spiral	-0.49 ... 1.00 bar	-20 ... 70 °C	70	50
VSL 60-50 20 PUR-AS	PUR antistatic	-0.82 ... 2.48 bar	-40 ... 90 °C	35	20
VSL 61-50 PVC-DS	PVC with wire spiral	-0.78 ... 1.50 bar	-20 ... 70 °C	90	10
VSL 71-60 PVC-DS	PVC with wire spiral	-0.73 ... 1.27 bar	-20 ... 70 °C	110	25
VSL 71-60 PU-DS-AS	PU, wire spiral, antistatic	-0.69 ... 2.09 bar	-40 ... 90 °C	40	20
VSL 71-60 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 2.92 bar	-40 ... 90 °C	156	15
VSL 85-75 PVC-PS	PVC with PVC-spiral	-0.29 ... 1.00 bar	-20 ... 70 °C	114	10
VSL 85-75 PU-DS-AS	PU, wire spiral, antistatic	-0.50 ... 1.69 bar	-40 ... 90 °C	66	15
VSL 87-75 PU-DS-AS	PU, wire spiral, antistatic	-1.00 ... 2.36 bar	-40 ... 90 °C	195	15

\*In reference to media and ambient temperature of +20 °C

\*\*Referred to the inner side of the hose bend in a static state

\*\*\*Please indicate the tube length when placing the order



Further information: [WWW.SCHMALZ.COM/VSL](http://WWW.SCHMALZ.COM/VSL)



Spare parts and accessories



Technical data



Design and CAD data



Documentation



Multimedia



[WWW.SCHMALZ.COM/VSL](http://WWW.SCHMALZ.COM/VSL)

Product Overview  
Vacuum Suction Cups  
Special Grippers  
Mounting Elements  
Vacuum Generators  
Switches and Monitoring  
Filters and Connections  
Services and Contact



# Services and Contact



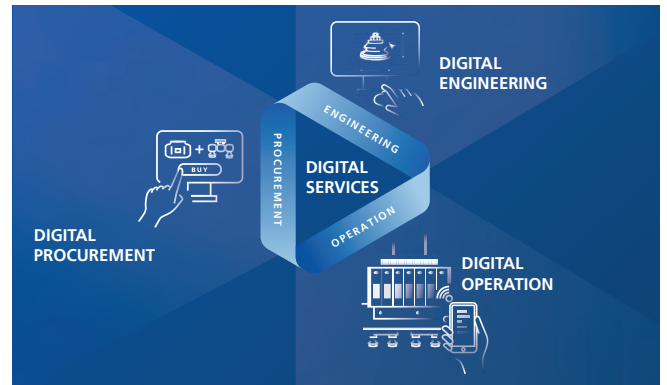
Digital Services by Schmalz

[WWW.SCHMALZ.COM/DIGITAL-SERVICES](http://WWW.SCHMALZ.COM/DIGITAL-SERVICES)

# Digital Services by Schmalz

## Fast forward

Schmalz also offers a comprehensive range of digital services to help you and get you ahead quickly. Tools such as filters, configurators, ordering aids or apps simplify your processes – regardless of which phase you are in: product design, procurement or operation.



## OVERVIEW OF ALL DIGITAL SERVICES

DIGITAL ENGINEERING	DIGITAL PROCUREMENT	DIGITAL OPERATION
<p><b>Select</b> Filters and selection aids guide you quickly and accurately through our extensive product portfolio. With technical data as well as lists of accessories and spare parts, you will be convinced that you have chosen the right component.</p>	<p><b>Inform</b> Our experts will answer your remaining questions in a live chat or via video consultation. Our online shop is supplemented by live information about your individual price and product availability.</p>	<p><b>Setup &amp; Parameterization</b> With software and function modules, you can integrate Schmalz products even faster into your process and control system. Our tools also support you in device management and parameterisation, so that you can put your product into operation quickly.</p>
<p><b>Configure &amp; Design</b> Sophisticated configurators guide you step by step through the design of your individual gripping solution. You will receive a solution that is precisely tailored to your application. Design and construction has never been so easy.</p>	<p><b>Order</b> Procure your vacuum technology efficiently in our online shop. Functions such as direct ordering or reordering from the personal order history save time. It is even faster with saved standard order settings – with just one click you can place your order.</p>	<p><b>Monitoring</b> Take a look at your process. Open interfaces make device information accessible, dashboards visualize performance and possible faults. Messages are displayed in plain text, so you can wait preventively and keep your process stable.</p>
<p><b>Simulate</b> Simulate your handling process with a digital twin of our products and test the function of your plant – long before the plant is built. For example, you will obtain information about the behaviour of a suction cup in the suctioned state.</p>	<p><b>Transaction</b> We offer you a variety of payment methods and of course we will inform you about the status of your order. With a direct connection to your ERP system, you can integrate the Schmalz online shop into your internal procurement processes.</p>	<p><b>Administration</b> Software-supported, you can manage information about the use and status of Schmalz solutions in your process. In addition, a digital life record provides you with information about the maintenance intervals of your vacuum lifter.</p>

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# Services Around Your Vacuum System

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

## Support for a product life

Benefit from our expertise as system provider and our years of experience as component manufacturer. A purchase from Schmalz gives you real competitive advantages. Our highly qualified system consultants offer quality advice regarding all your vacuum system needs, from planning and design to installation, start of operations and even beyond. Thanks to our future-proof approach with a sharp focus on technological innovation and functional performance, Schmalz customers can count on an economical system design and efficient processes throughout the whole product service life.



### OVERVIEW OF ALL SERVICES



#### Consultation

- Catalogs
- Product inquiries
- CAD data
- Project planning aids
- Set-up time optimization

#### Procurement

- Online shop
- Delivery service
- Financing / leasing
- Used devices
- Test sets

#### Start of Operations

- Project planning
- Function and durability tests
- System solutions
- Design solutions
- Start-up on site



#### Operation

- Maintenance
- Preventative maintenance
- Certified approval
- Energy efficiency
- Spare parts

#### Training

- Training courses
- Seminars
- Customer-specific training
- Training materials
- How-to videos

#### Repairs

- Emergency service
- Repair service
- Seamless returns management
- Warranty



## Advantage through vacuum knowledge

Qualified, motivated employees with a high level of expertise and technical knowledge are vital for an innovative and competitive business. They form the basis for commercial success. Schmalz imparts knowledge – carefully tailored to meet the needs of your company’s employees. Get in touch with us; we would be happy to offer a seminar tailored to your requirements.



### SEMINAR OVERVIEW

Basic knowledge	Detailed knowledge	Expert knowledge
Compact seminar		
	Advanced seminar	
Training course for vacuum technician (Schmalz)		
		Specialist seminar*
Customer specific trainings		

\*Specialist seminars offer expert knowledge in the respective field of specialization within vacuum technology

#### Training course

A vacuum technology course provides an overview of the application areas of vacuum components and vacuum systems.

#### Seminars

Vacuum technology seminars deliver compact and target group-specific knowledge about vacuum technology in one training day.

#### Customer specific trainings

In customer specific training courses, we impart customized vacuum technology knowledge modules – tailored to your requirements.

### TEACHING AND LEARNING MATERIALS



Schmalz Vacuum-Training-Set

[WWW.SCHMALZ.COM/10.02.02.03043](http://WWW.SCHMALZ.COM/10.02.02.03043)



Schmalz Test-Set – Suction cups for the packaging industry

[WWW.SCHMALZ.COM/30.02.03.00226](http://WWW.SCHMALZ.COM/30.02.03.00226)

# About Schmalz

Product Overview

Vacuum Suction Cups

Special Grippers

Mounting Elements

Vacuum Generators

Switches and Monitoring

Filters and Connections

Services and Contact

# 1500

**employees**

working hard for our customers.



# 21

**locations**

for outstanding customer service worldwide.

# 9

**percent**

of our revenue is invested in innovative ideas and new products.

# 580

**copyrights**

are proof of our groundbreaking innovations.

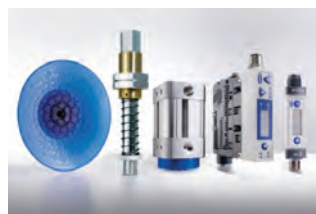
## Schmalz is the Market Leader in Vacuum Automation and Ergonomic Handling Systems.

The wide range of products in the Vacuum Automation unit includes individual components such as suction cups and vacuum generators, as well as complete gripping systems and clamping solutions for holding workpieces, for example in CNC machining centers. The Handling Systems unit offers innovative handling solutions with vacuum lifters and crane systems for industrial and handicraft applications.

Our products are used in different applications for example in the logistics industry, the automotive industry, the electronics sector and in furniture production.

With comprehensive consulting, a focus on innovation and first-class quality, Schmalz offers its customers long-lasting benefits. Schmalz's intelligent solutions make production and logistics processes more flexible and efficient, while also preparing them for the increasing trend toward digitalization.

### Vacuum Automation



Components



Systems

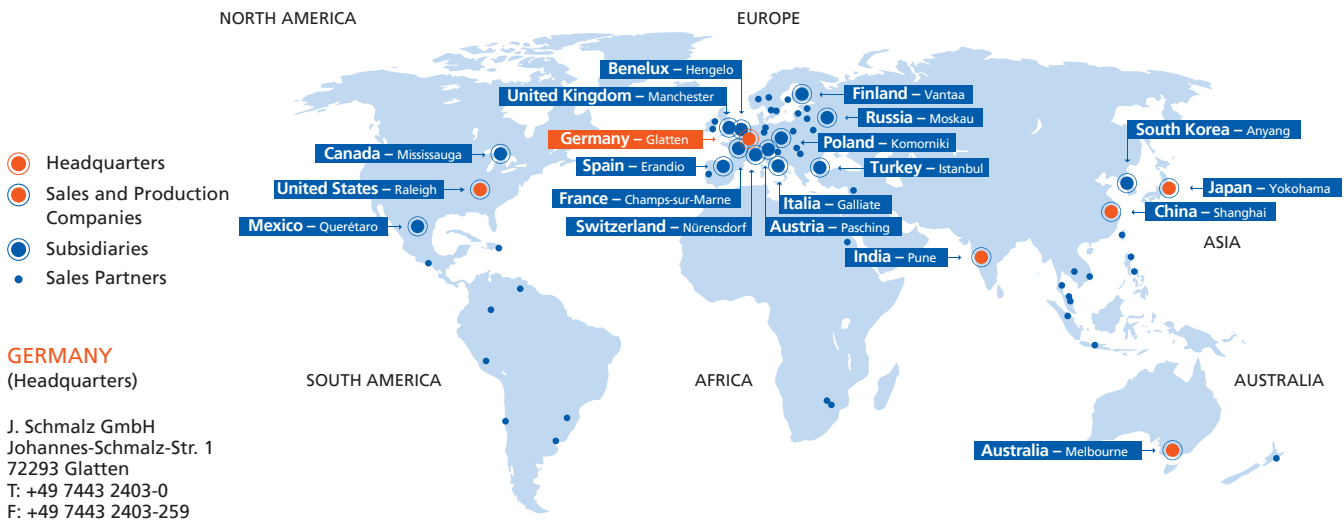


Clamping solutions

### Handling Systems



Vacuum lifters and crane systems



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Product  
Overview

## VACUUM AUTOMATION COMPONENTS CATALOG

Vacuum  
Suction Cups

Time of printing: 10/2021

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Grippers

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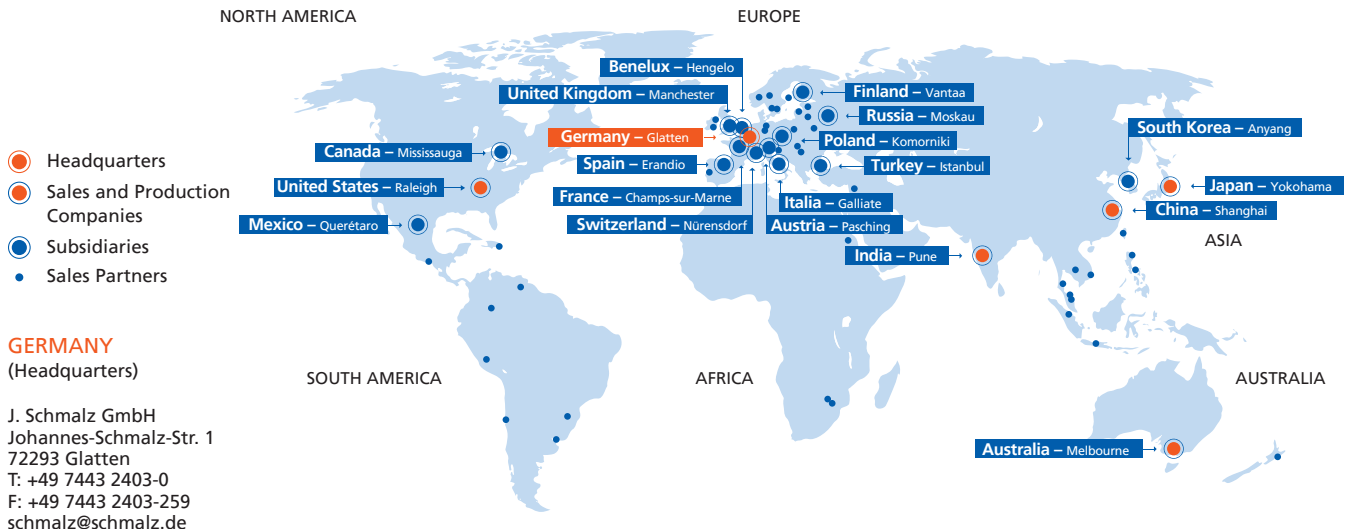
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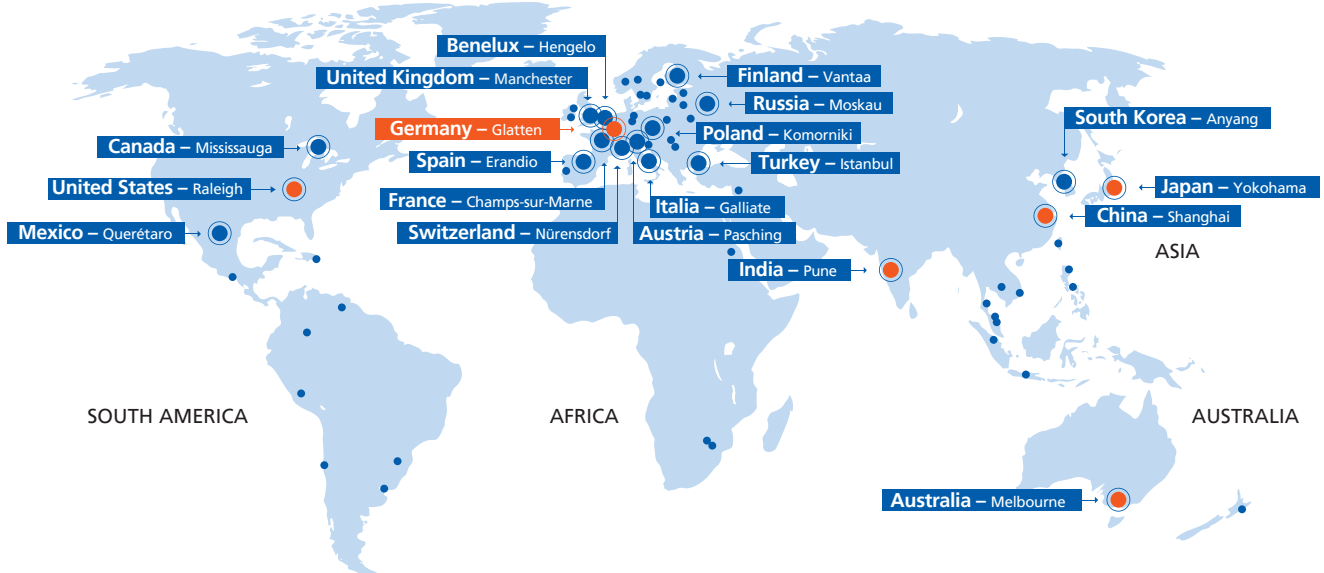
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