

Vacuum End Effectors VEE

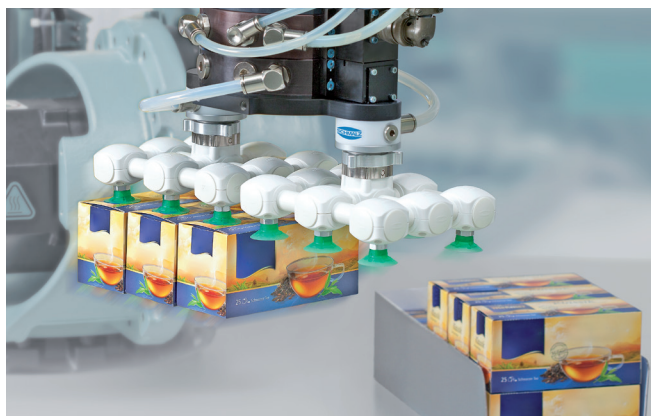
Configuring Rather than Designing



PACKAGING



The vacuum end effector with vacuum module and bellows suction cups SPB1 handling flexible packages



Vacuum end effector with flat suction cups SPF handling boxes of tea

Suitability for Industry Specific Applications

Application

- Fast and cost-effective design of vacuum end effectors for highspeed packaging processes
- Pick-and-place applications with Delta, SCARA and articulated robots
- Fully automated filling of cardboard boxes and case packers
- Mainly used in primary and secondary packaging processes
- Transporting products into top-loading machines, and cardboard box and tray erectors
- Use in flexible packaging machines with frequent format changes



The vacuum end effector with bellows suction cups SPB4f handling pouches with strong wrinkling and low filling degree

Our highlights...

- Perfectly coordinated individual components
- Online configurator with generation of CAD data and parts list
- Light weight (ready-to-connect end effectors starting at 150 g)
- FDA and BfR compliant (German Federal Institute for Risk Assessment) high performance thermoplastic
- With optional integrated vacuum generation using the Schmalz eco nozzle technology
- Assembly service

Your benefits...

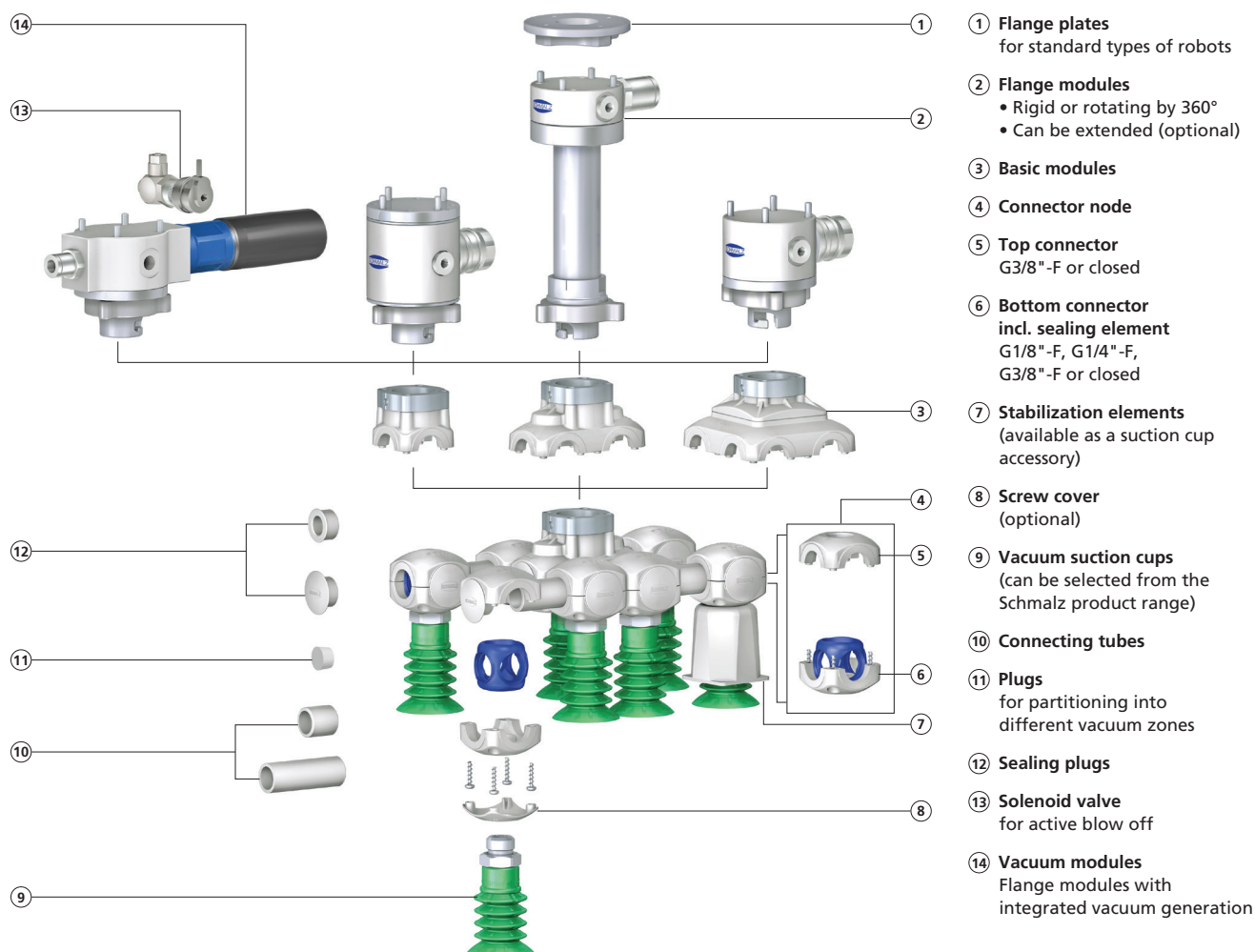
- Flexible gripper configurations with variable suction cup number and positioning
- Minimizes configuration and setup times by more than 80 %
- Designed for high-speed applications with accelerations of up to 10 g (100 m/s²)
- Excellent resistance to alkaline cleaning agents
- Fast, energy-efficient vacuum generation right at the gripper
- Delivery of entire assembled, ready-to-connect vacuum end effectors



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Design



VEE OnlineConfigurator









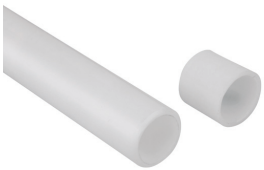

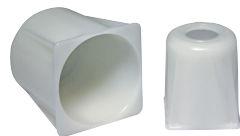

- Live 3D preview of the configuration
- Creation of a 3D PDF data sheet including a parts list and CAD data
- Simple importing in your consisting construction
- Quick request for proposal (RFP)

WWW.SCHMALZ.COM/VEE

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Components VEE

Schmalz – The Company				
Vacuum Suction Cups				
Special Grippers				
Gripping Systems	 <p>Flange plates FLAN-PL Quick and easy connection of the flange module to the robot; available for common robot types and as an universal flange.</p>	 <p>Flange modules VEE-QCM Quick-change adapters and vacuum connection; either horizontal or vertical (max. flow rate 60 m³/h). Alternative: rotary unit VEE-RU for continuous rotation of the end effector without decreasing the flow or winding up the hose.</p>	 <p>Vacuum modules VEE-QCMV Quick-change adapters with space-saving integrated, energy-efficient vacuum generation using the Schmalz ecoPump (max. suction rate: 10.5 m³/h); with silencer or holder cap.</p>	 <p>Solenoid valve EMV for active blow off Minimal cycle times with active blow off through a controlled compressed air pulse; available as an accessory for vacuum module VEE-QCMV.</p>
Clamping Systems				
Mounting Elements				
Vacuum Generators	 <p>Flange extensions VEE-FE Option for flange modules for dipping into cardboard boxes or trays; available in three lengths. Can be swapped quickly thanks to the bayonet mount.</p>	 <p>Basic modules VEE-QCF Tool-free connection of the end effector to the flange module and central vacuum feed; available as a 1-, 2-, or 4-connection module.</p>	 <p>Top connector VEE-CO-U Top half-shell for assembly of connection nodes; available in closed design or with connection for additional vacuum feed (G3/8"-F).</p>	 <p>Bottom connector VEE-CO-L Bottom half-shell including sealing element and screws for assembly of connecting nodes; either closed or with connection for suction cup (G1/8"-F, G1/4"-F, G3/8"-F); optional screw cover available.</p>
Valve Technology				
Switches and Monitoring				
Filters and Connections				
Services	 <p>Connection tubes VEE-TU Vacuum guide and variable connection of nodes; available in 18 mm and 200 mm lengths. Pipe scissors for quick and safe cutting available as accessory.</p>	 <p>Plugs VEE-PL For sealing unused connections on connector nodes, vacuum feed on the side and partitioning into different vacuum zones.</p>	 <p>Stabilization elements SPSE Increases process speed by supporting the workpiece; available as an accessory for bellows suction cups.</p>	 <p>Tool center point VEE-TCP For determining the robot tool position with a center point that can be flange mounted directly; suitable for the quick-change interfaces of the flange modules or vacuum modules.</p>
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Technical Data

Specification	Vacuum end effectors from the VEE system
Max. rated flow	60 m³/h
Max. vacuum value	-980 mbar
Overpressure resistance	up to 3 bar
Temperature range	-25° C to +80° C (QCMV 0° C to +60° C)
Material	High performance thermoplastic (compliant with FDA guidelines)
Max. load capacity	2,000 g



Design Data

Vacuum end effectors VEE can be freely configured within the framework values. When used in connection with our wide selection of suction cups, the possibilities are practically endless.

Specifications	Vacuum end effectors from the VEE system	
	Minimum configuration	Maximum configuration
Basic module	1 connection	4 connection
Suction cups connection thread	G1/8"-F, G1/4"-F, G3/8"-F	G1/8"-F, G1/4"-F, G3/8"-F
Gripper size (LxW)	38 x 38 mm	300 x 200 mm
Weight*	65 g	500 g
Qty. of suction cups	1	12
Workpiece sizes (LxW)	15 x 15 mm	400 x 300 mm

*without flange module and suction cup

VEE Starter Set

Whether for use directly in a robotic system or as a handy design tool; with the VEE Starter Set you have all of the most important components for quickly assembling your effector right at your fingertips.

Content

120-piece starter set with all of the components necessary for installing up to two VEE vacuum end effectors, including:

- 8 vacuum suction cups SPB4f-30 for bags and flexible packaging
- Lockable quick-change adapter with bayonet mount

Supplied in a sturdy plastic case with detailed assembly instructions
Part no.: 10.01.36.00030



VEE Starter Set

