

**October 2019**

### **NEW! Selection Tool for Collaborative Robot Applications**

Gripping, moving, setting down – all of this would be impossible in automated processes without the right gripper. That is why Schmalz, the vacuum specialist, develops flexible systems and helps users choose and configure the right components: no small feat given the fact that the diversity of variants continues to grow as batch size steadily shrinks.

Lightweight robots with lift capacities of up to 25 kilograms (55 lbs.) are becoming increasingly important. They are also interesting for SMEs because they make it possible to automate manufacturing and logistics tasks. These kinds of robots can be programmed without any technical knowledge and are relatively inexpensive. “The right gripping system is the foundation for economical use of these robots,” explains Dr. Kurt Schmalz, Managing Director of J. Schmalz GmbH. “We offer our customers tailored systems and components that are extremely intuitive to configure and modify.”

In order for systems operators to use their lightweight robots in a safe, economical and reliable way, the grippers must meet certain requirements. Cobots can weigh between 3 and 25 kilograms, depending on type. “In order to achieve maximum lift capacity, the gripper must be as light as possible,” explains Dr. Kurt Schmalz. Round shapes and design that complies with ISO TS 15066 – a standard that regulates work between human beings and collaborative industrial robots – reduce potential sources of injury during use. Moreover, it must be possible to quickly and simply integrate the gripping systems and allow for continuous condition monitoring. J. Schmalz GmbH considers these characteristics – communicative, flexible, intuitive in terms of configuration, and available at short notice – during the development phase of its vacuum components for lightweight robots.

One of these components is the electrically powered vacuum generator ECBPi: an intelligent vacuum pump that works without compressed air and features an integrated interface for connecting grippers and robots. Because the vacuum is generated without compressed air and, without the corresponding hoses, the lightweight robot remains mobile, flexible and easy to set up. The CobotPump ECBPi provides the user with important data via IO-Link for comprehensive transparency. This allows for functions such as condition

monitoring and predictive maintenance. “This considerably increases the reliability of the system for the user,” emphasizes Dr. Kurt Schmalz.

The “little brother” – CobotPump ECBPM – has recently been launched. It was designed for use with lightweight robots with less than four kilograms of lift capacity and features a particularly compact, lightweight construction. This vacuum generator is ideal for automated small-parts handling with individual suction pads. It can demonstrate its full strength even in tight spaces. Like the vacuum pump ECBPi, the ECBPM is easy to integrate into existing systems and does not require a separate compressed air supply.

### **Expertise for the right gripper solutions**

Schmalz developed the area gripper FXCB/FMCB specifically for handling workpieces with cobots regardless of size and geometry. Thanks to its large contact surface and low impact forces, the gripper fulfills the requirements of ISO TS 15066. Using flexible foam as a gripping surface or equipped with bellows suction cups, the device can safely hold cardboard, boxes and structured components or components with recesses and three-dimensional outer shapes weighing up to eight kilograms. The innovative system is available with or without integrated vacuum generation. Thanks to its communication technology with IO-Link, the FXCB/FMCB is easy to install in any automation environment. Moreover, with the “Schmalz ControlRoom” app, users can access all device data and quickly and easily parameterize the gripping system via smartphone.

The modular system VEE is ideal for creating individual vacuum end effectors. It is comprised of a range of single components that can be combined using configuration software to form an individual gripper. The key is for the user to be able to configure and modify their solution. Schmalz is happy to help customers determine the optimal configuration for their needs, and will even ship pre-assembled units upon request.

### **Digital platform and 3D printing**

“With our latest innovation, the lightweight gripper SLG, we are satisfying the demand for flexibility and rapid availability,” says Dr. Kurt Schmalz. This allows the user to implement automation solutions more quickly. With the lightweight gripper SLG, Schmalz is breaking new ground in a number of respects: Users can assemble the right gripper for their needs using a digital platform and without any expert knowledge. In addition to this web-based configuration, Schmalz also relies on additive manufacturing processes. The

result: Extremely lightweight, safe and durable grippers that are tailored to the respective application and are available at short notice.

Schmalz offers individual complete packages suitable for different robotic models from a range of manufacturers – optionally available with the electrical vacuum generator ECBPi, the area gripper FXCB, or the end effector VEE. The sets contain all of the required components to build a complete gripper, including a flange for simple mounting on your robot. This means the pre-configured gripping solution is ready for use in an extremely short period of time.

“The right gripping system is what is needed to turn a bare robot arm into a functioning system that can move or process components and workpieces,” explains Dr. Kurt Schmalz. And with its custom-made gripping solutions, the company is enabling users to quickly put their robotic systems into operation and operate them intuitively. The simpler and more efficient the use of lightweight robots is for a variety of tasks, the more attractive they will be for SMEs, for which the purchase of a traditional industrial robot has not been a profitable investment up to now.

<https://www.schmalz-robotics.com/?lang=en>

## Images:



**Image 1:**

New online selection tool, leads users to the best collaborative solution.



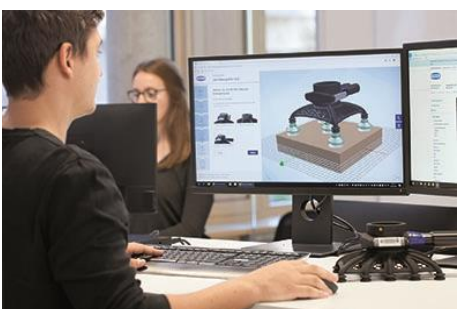
**Image 2:**

“Big brother” and “little brother”: the electrical vacuum generators ECBPi and ECBPM were specially designed for mobile robotics.



**Image 3:**

The area gripper FXCB/FMCB is ISO TS 15066-compliant. The gripping surface is available with flexible foam or bellows suction cups; the gripper itself is available with or without integrated vacuum generation.



**Image 4:**

Configured with just a few clicks of the mouse, additively manufactured, and delivered quickly: the lightweight robot SLG is the newest product in Schmalz’s cobot range.



**Image 5:**

Modular and variable: robot grippers like the vacuum end effector VEE can be configured and adapted based on your application.



**Image 6:**

Dr. Kurt Schmalz, Managing Director of J. Schmalz GmbH: “All of our robotics components are communicative, flexible, intuitive in terms of configuration, and available at short notice.”



**Image 7:**

Schmalz develops individual systems and components for human-robot collaboration that are easy and intuitive to configure and modify.

Images: Schmalz



## **Company**

Schmalz is the global market leader in vacuum automation and ergonomic handling solutions. Schmalz products are used worldwide in applications in the logistics, glass, metal, automotive, packaging, and wood industry sectors.

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. Our Handling Systems unit offers innovative handling solutions with vacuum lifters and crane systems for industrial applications.

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.

With its own locations and its sales partners, Schmalz is represented in more than 80 countries and in all important markets. The family owned company has over 1,100 employees at its headquarters in Glatten (in the Black Forest region of Germany) and its 17 international subsidiaries.

Schmalz' US headquarters in Raleigh, N.C., has been in operation since 1993 and employs about 100 people

## **Contact for questions**

Schmalz, Inc

Mark Westphal

5850 Oak Forest Drive

Raleigh NC 27601

T: 919-865-0566

[mark.westphal@schmalz.us](mailto:mark.westphal@schmalz.us)

[www.schmalz.com](http://www.schmalz.com)

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