

piCOBOT® Electric

# Breaking the barriers of cobot movement





“The most versatile and energy efficient electric pump unit on the market for cobot applications.”

Madeleine Sheikh,  
Global Product Manager

# Vacuum excellence without compressed air

Our new piCOBOT® Electric vacuum gripper unit significantly expands a cobot's versatility without the use of compressed air. Its lightweight design allows direct mounting on the cobot tool flange, and the omission of air tubing gives the cobot arm a completely unrestricted operating range.

Another advantage with piCOBOT® Electric is its energy efficiency. The electric current provided on the cobot arm is sufficient to provide full functionality. With only one point of contact, for both the electric feed and the data flow, rapid unplugging and moving of the full set-up is facilitated.

piCOBOT® Electric is available with a serial communication protocol for UR e-series to utilize the full potential of both the vacuum gripper unit and the cobot.

Our new electric vacuum gripper unit can be fitted with many clever accessories:

- Paired with the piCOBOT® Tool changer, the piCOBOT® Docking station facilitates the use of many different end-effectors. The combination enables automatic change of grippers without human interference.
- As it is designed to handle objects with variations in shape, weight and size, piCOBOT® Electric can be equipped with a multitude of gripper tools – from Piab standard or Custom-Line solutions to inhouse developments.



Visit our product page:  
[go.piab.com/picobot-electric](https://go.piab.com/picobot-electric)

## ⚡ Fully electric

Every part of piCOBOT® Electric is completely independent of compressed-air infrastructure.

## ⚖️ Lightweight

Slim design and carefully selected materials enable direct mounting on the cobot arm.

## ⚡ Energy efficient

Remarkably low energy consumption despite superior performance.

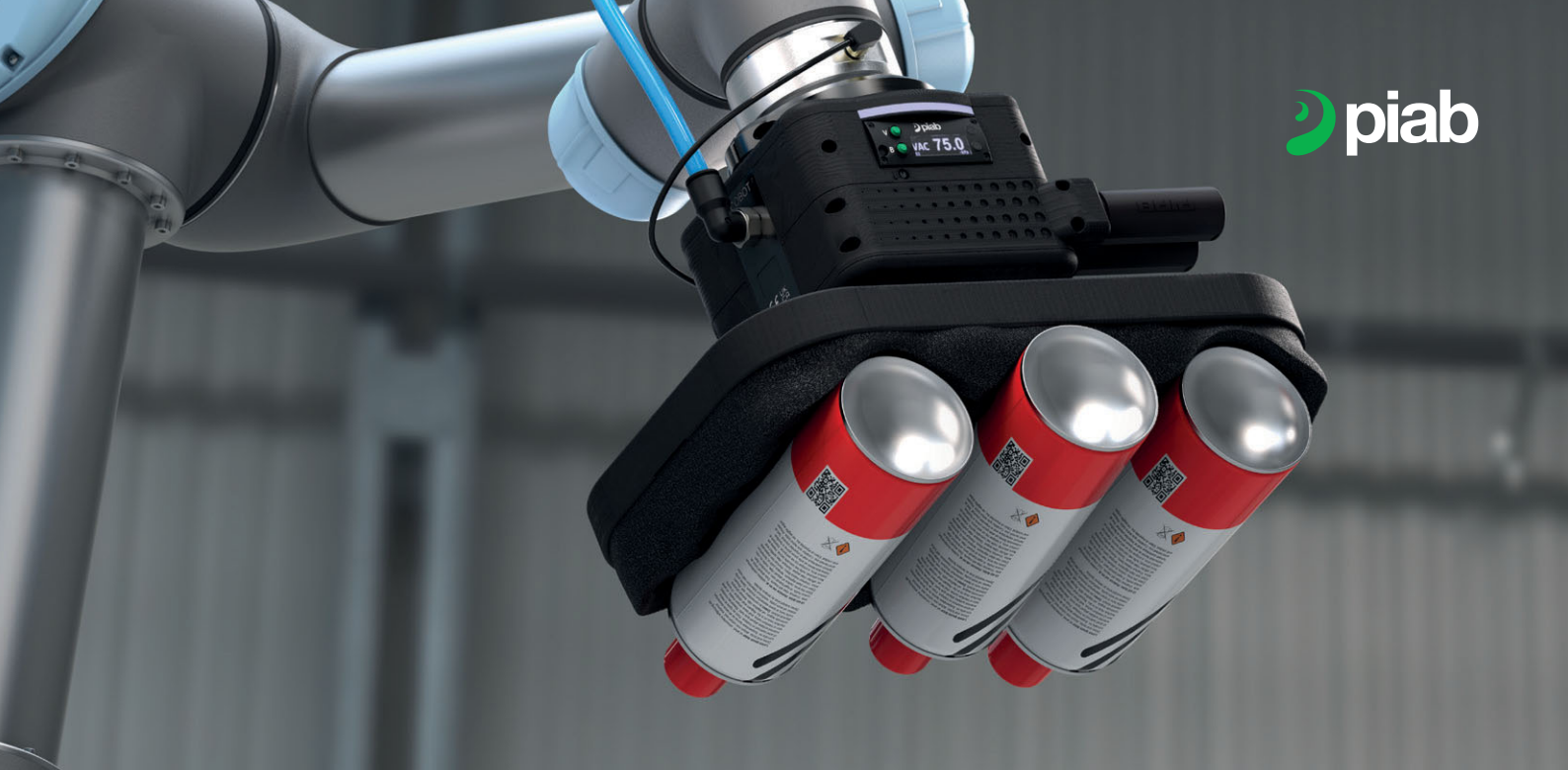




piCOBOT®L

# Lifting more with less





## Go to the limits

**Get the maximum** out of your cobot or small industrial robot. Saving on robot or cobot investment is a crucial factor to return on investment. piCOBOT®L allows you to make use of the full capacity of your equipment for anything up to 16kg.

**Serviceability is key** to keep your system running and reduce downtime for maintenance. The design of the unit allows easy access of parts for e.g. cleaning. Accordingly, the ejector cartridges can be extracted in portions and the vacuum stages cleaned where needed.



**“With the new piCOBOT®L, we explicitly want to support users working with small robots, in addition to those using cobots.”**

Madeleine Sheikh, Global Product Manager Ejectors, Piab

**Whatever you want to lift** - air permeable cartons or leakage free metal sheets, the hard- and software of the pump unit can be configured exactly to the requirements of your application. With the right vacuum flow, piCOBOT®L enables fast movement for high productivity in packaging and palletizing, part assembly or machine tending.

**High flexibility** to meet your needs. Choose the gripping unit for your application: a Kenos® foam gripper that allows handling parts of various sizes or materials, a Piab standard gripper, a solution developed for you by our Custom-Line team or a gripper you developed inhouse - the choice is yours!

## Benefits

- 1 **Powerful**  
Can be equipped with up to 4 COAX® SX42 ejectors for high speed applications.
- 2 **Lifting more with less**  
Allows to move bigger and heavier items thanks to a building height of just 107 mm and a payload of 16 kg.
- 3 **Safe for collaboration**  
Designed with round edges for direct human-robot interaction.
- 4 **Increased uptime**  
Minimal maintenance and cleaning requirements thanks to easy access to relevant parts and dust protection filters.
- 5 **Even for harsh environments**  
Its robust and IP 65 compliant pump body facilitates deployment in rough, damp or spray prone areas.

## Optional add-ons

### Automatic tool changer

Allows fast automatic exchange of grippers for different applications.

### Docking station

Keeps the relevant grippers in close reach. The automatic un-/locking lever on the adapter plate supports the quick and easy change of grippers.

### UR certified version

Easy operation of the automatic tool changer via the teaching pendant as it is part of the UR cap.



Visit our product page:  
[go.piab.com/picobot-large](https://go.piab.com/picobot-large)



Cobot Palletizing Tool

# The productivity booster



# Fast palletizing with cobots

If you need to increase efficiency and save costs in your palletizing operations check out our CPT. It does just that. With this smart and compact cobot gripper, you can get more products out at the same time and at lower cost.



Multiple picks in one cycle



IO-Link ready



Low noise level

**Increase your competitiveness** and time to market by palletizing products faster and picking several boxes even of different shapes in the same cycle. With its integrated piSMART® Valve Unit and multi-zone gripper surface the CPT boosts the productivity of your process.

**Achieve sytem ROI** faster by reducing your total cost of ownership. Thanks to its lightweight the CPT may allow you to use a smaller robot. Combined with the possibility of palletizing several cartons at once, the wear on the robot is reduced, increasing its lifetime.



**“Imagine how many more pallets you can ship out each day, if you palletize, for instance, 4 boxes instead of 1 at the same time.”**

**Bernd Gries, Head of Custom-Line Group, Piab**

**A high and reliable machine uptime** is mandatory today. With its modular design and use of standard parts, you can be sure that spare parts and further accessories for the CPT are available and can be exchanged quickly, when needed.

**By combining the** capabilities of multiple EOATs into just one tool, the CPT can help you reduce your equipment costs, as well as free up valuable development time for other important projects.



1

## Higher pallet output

The gripping surface is designed to cover multiple zones, allowing handling of different carton sizes or multiple cartons in each cycle.

2

## Maximum handling speed

The integrated piSMART® Valve Unit allows extremely fast response times increasing throughput.

3

## High energy efficiency

Equipped with COAX® vacuum generation technology, air consumption is reduced, while secure lifting power at maximum payload is ensured.

4

## One EOAT instead of several

For different configurations, for example when changing products, it is only necessary to change the lower suction plate from foam to suction cups or vice versa.

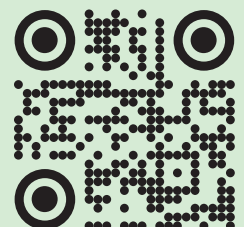
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## Industry 4.0 capabilities

Equipped with the IO-Link ready piSMART® Valve Unit, features like predictive maintenance are enabled.



Visit our product page:  
[go.piab.com/cpt](https://go.piab.com/cpt)

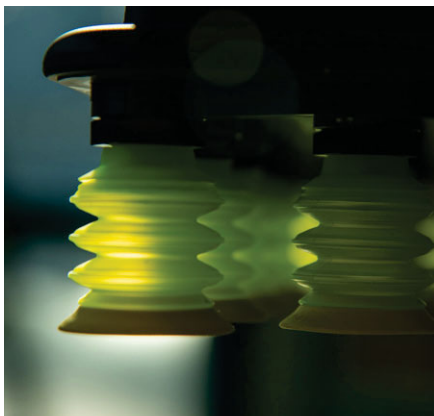






## Versatile suction plates

Depending on the application, the CPT can be equipped with different suction plates fitted with Piab's wide portfolio of suction cups or a technical foam layer. The suction plates can be easily exchanged offering maximal flexibility.





Get more pallets packed and shipped a day or reduce the speed of your cobot to increase its lifetime. The choice is yours!



By enabling multipicking of boxes, the CPT enables palletizing processes to reach a new level of efficiency.



No matter, at which angle you have to move the boxes - the powerful COAX® equipped CPT holds on to them safely and securely.





## Adaptor

Easy integration to any cobot.  
Adjustable offset of the TC (Tool Center Point) between 50-100 mm, for a greater reach of your cobot.



## Ejectors

Integrated multi-stage Piab ejectors with best power-to-energy ratio offer highest energy efficiency in the market.



## Suction plates

Interchangeable gripping surfaces  
Choose between suction cups or technical foam.



## Industry 4.0 ready

piSMART® valve integrated for full process control - prepared for IO Link connectivity.

## Configuration variants

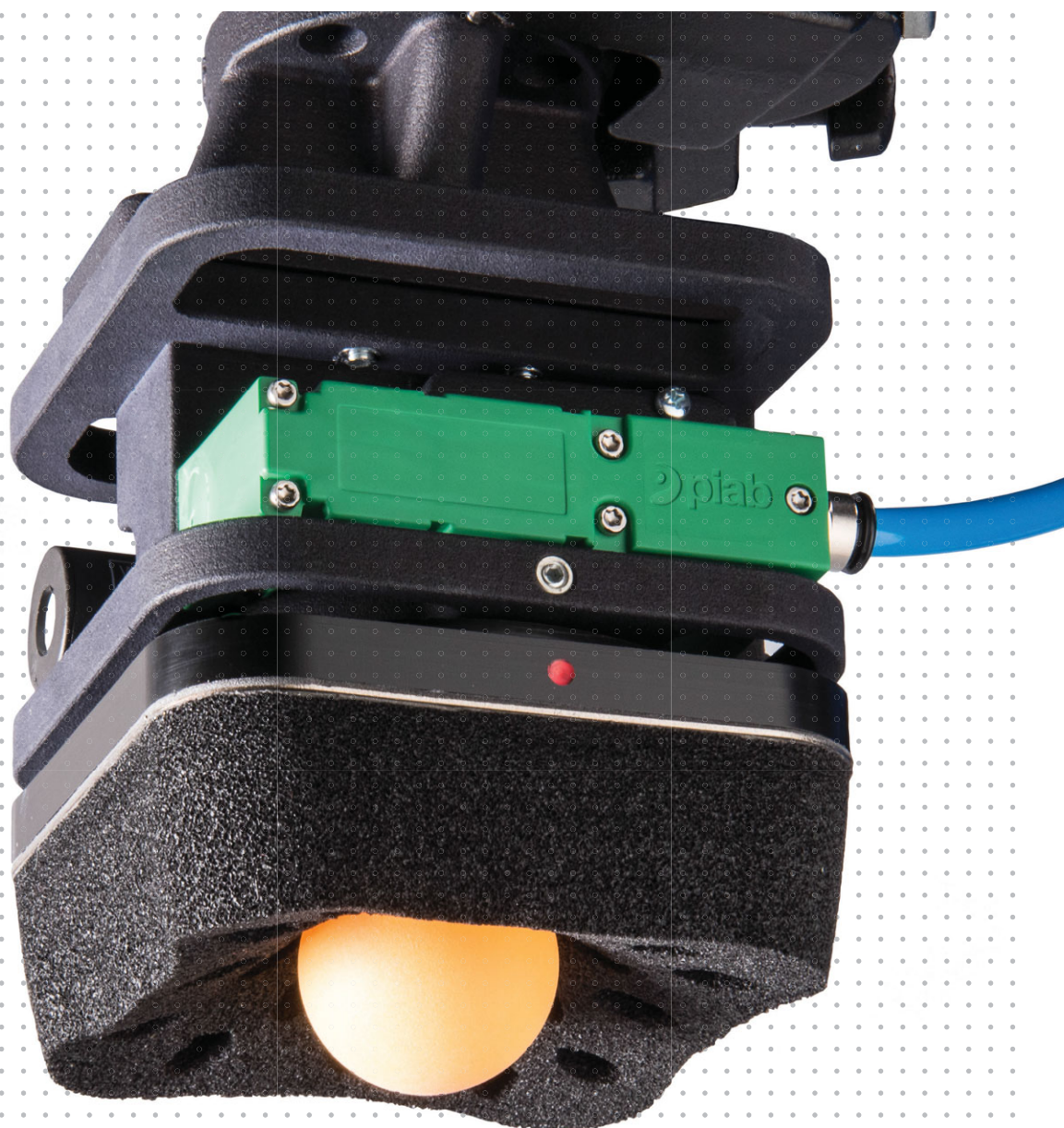
Technical specifics of variants.

	Technical foam			Suction cups		
Configuration	CPT300	CPT400	CPT500	CPT300	CPT400	CPT500
Size (mm)	140 x 330	140 x 400	140 x 500	140 x 330	140 x 400	140 x 500
Gripper surface	30 mm foam	30 mm foam	30 mm foam	FX39 suction cups	FX39 suction cups	FX39 suction cups
Weight (g)	1650	1850	2100	1950	2250	2650

\* CPT300 and CPT500 only available on request.

# The ultimate cobot gripper

Kenos® KCS Gripper







## Stay Flexible - with the Kenos® KCS Gripper

For cobots to make processes more efficient, they must be as flexible as possible. Supporting the growing cobot market - an easy entry solution into automation technology - Piab has developed a single end effector for handling objects of just about any material, surface and shape.

In an environment of ever shorter product life cycles, a growing product mix and a continuous quest for individualized products, the use of an automation tool like the cobot in as many areas as possible is crucial for a profitable business. It plays an essential role in how flexible the cobot can handle things. Especially in the large application field of providing parts for processing by humans, the end effector is central. With the new compact Kenos® KCS vacuum gripper, Piab has taken exactly these requirements into account.

The Kenos® KCS gripper is an all-rounder and offers a unique level of flexibility when it comes to picking up objects. It allows for a wide range of use thereby eliminating the need for retooling. Thus, the cobot is ready for immediate use at different processes, ensuring optimal usage of its capacity. Paired with time and cost savings achieved through shorter downtimes and the lack of need for retooling, the Kenos® KCS gripper allows for a quick return on investment.

The concept is rounded up by features like its lightweight structure, powerful integrated air-driven COAX®SX cartridge vacuum technology as well as control valve and vacuum sensors access options turning the Kenos® KCS gripper into a plug-and-play system.

# Lightweight Flexible Powerful

The Kenos® KCS gripper consists of a separate pump unit that integrates modular vacuum generation in the smallest of spaces with a gripper unit. Both are connected by a quick-change system. The entire unit can be attached to all common cobot models with a respective adapter.

## SAVE LOAD CAPACITY FOR YOUR HEAVYWEIGHTS

With its body 3D printed in high quality SLS technology, the Kenos® KCS gripper is extremely lightweight. This allows customers to make the most of their cobot load carrying capacity - providing for extra weight to be lifted, moved and placed.

## KEEP MOVING - EVERYTHING, EVERYWHERE, EVERYTIME

The main gripper consists of a technical foam, which can adapt to a wide variety of contours and can thus accommodate different parts flexibly. This eliminates in many cases the need for accurate identification of a workpiece as well as the gripping surfaces. When the foam layer is worn, it can simply be exchanged - without needing to replace the entire gripper.

## GET MORE FOR LESS - HIGHER POWER AT LOWER INPUT

The pump unit is equipped with Piab's powerful new generation COAX® SX cartridge vacuum technology. The lightweight pump unit is a small, integration-optimized vacuum pump and was selected because of its almost silent operation, making it ideal for use directly next to the operator. Because COAX® ejectors are up to twice as fast as other ejectors and deliver three times more flow than a conventional ejector with identical air consumption, the pump unit can deliver high performance even with low or fluctuating supply pressure.\* This makes them particularly energy efficient. Accordingly, their use reduces the cost of providing compressed air and thus the total cost of production.

\*Independent comparison tests at the Fraunhofer Institute for Machine Tools and Forming Technology IWU in Dresden have shown that the Piab ejectors require significantly lower compressed air to achieve the same output compared to ejectors from other manufacturers.

## TURN YOUR COBOT INTO YOUR WORKER'S BEST FRIEND

Both gripper units are characterized by their edgeless design. Due to the rounded sides and the surface of technical foam, possible injury hazards are largely eliminated. This makes the gripper units particularly safe to use on cobots, which cooperate freely with humans and thus increases the acceptance by the employees.





# All Features and Options at a Glance



## **PLUG-AND-PLAY - COMPACT AND LIGHT, THE KCS HAS ALL IT TAKES**

The Kenos® KCS pump unit has everything needed already included - the powerful vacuum components, sensor technology, silencer and optional valve technology - requiring only a single mounting and connection step to the cobot. The connection to the Rethink Robotics brand cobots Clicksmart system is directly possible, for others adapters are available.

## **SMALL BUT POWERFUL - PUMP UNIT WITH COAX®SX CARTRIDGES**

The pump unit is equipped with Piab's newest generation COAX®SX ejectors - providing high performance even at low or fluctuating feed pressures. It can be modified to double the unit's output easily if processes change.

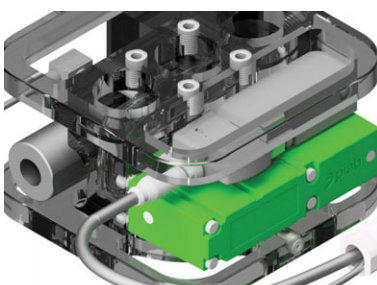


## **QUIET SYSTEM, HAPPY EMPLOYEES - THANKS TO THE SILENCER**

Reducing the noise of operation the silencer ensures a pleasant work environment with the lowest audible strain possible when the vacuum unit is in operation. The digital or analog vacuum sensor above the silencer provides the "part present" signal to the cobot, when an object is taken.

## **WHEN SPEED MATTERS - OPTIONAL BLOW-OFF VALVE**

In case a fast product release is essential to production processes or to enhance efficiency, Piab can supply an optional blow-off valve allowing for fast vacuum reduction to speed-up product placement.



## **YOUR CHOICE - CONFIGURABLE VALVE UNIT**

For installations on a new cobot without its own valves, Piab can provide a configured valve unit. For deployment with an existing robot equipped with an valve unit simply connect to your own.

## 5 Years Warranty on the Vacuum Pump Unit

### MADE TO FIT ALL - ISO NORMED ADAPTERS FOR EASY ATTACHMENT

Choose between ISO normed adapters to easily attach the Kenos® KCS gripper to any cobot type you may be using - or planning to deploy.



### TIME IS MONEY - CHANGE GRIPPERS IN THE BLINK OF AN EYE

The quick change system allows to exchange grippers with a simple twist - reducing downtime for retooling to a few seconds. For security it is equipped with a metal threaded insert to lock the system.

### THE ALL-ROUNDER - TECHNICAL FOAM FOR A UNIVERSAL GRIP

The technical foam can easily adapt to almost any surface or shape. As a flow reduction version it treats products very gently while maintaining a reliable grip during movement.



### KEEP IT SIMPLE AND CLEAN - WITH FDA APPROVED FOAM

For direct handling of food, the gripper can also be equipped with a special FDA-approved silicon technical foam. To maintain utmost flexibility for sensitive product handling, the general technical foam can be used as an intermediate layer.

### LET IT SWING - SPECIAL BAG GRIPPER LIFTING UP TO 2 KG / 4.4 LBS

For special applications, such as the handling of plastic bags of concentrates or granulates, Piab has developed another gripper unit, which can be swiftly exchanged via the quick-change system.





Piab Custom-Line



# Mini Cobot Gripper

## Overview

# Our featherweight! Probably the lightest cobot gripper in the world.

At only 270 grams [9 ounces] it lifts up to 5 kilograms [11 pounds] and can be flexibly equipped with various suction units. Its integrated COAX® vacuum ejector is extremely energy efficient, providing a safe and quick hold.

**In the automated** packaging of goods for example in e-commerce or when handling of goods in production in small and medium-sized businesses, the weight of the gripper is crucial. Because in addition to the objects to be moved, the weight of the gripper determines the size of the robot or cobot to be used.

**As a specialist** for lightweight, high-performance vacuum grippers, especially for the growing cobot market, Piab has now developed the lightest cobot gripper. With the Mini Cobot Gripper (MCG), customers can maximize the load capacity of even the smallest cobots, reducing investment costs.



Extremely light



Less energy  
usage



Quick-Click-  
Tool Changer



User friendly



Plug & Play

**This is made** possible by its components produced by high-quality, lightweight 3-D printing. The combination of pump unit with integrated COAX® vacuum ejector technology allows maximum flexibility.

**This is further** enhanced by the new Quick-Click Tool Changer (QCT), which allows customers to change from one gripper type to another in seconds without any tools.

**Thanks to its** round shape, the MCG is very safe.



**Get in touch!**

Send us an email and get to know more about product: [custom-line@piab.com](mailto:custom-line@piab.com)

### Vacuum flow (NI/s) [scfm]

Pump type	Feed pressure MPa [psi]	Air consumption NI/s [scfm]	Vacuum flow (NI/s) [scfm] at different vacuum levels (-kPa) [-inHg]								Max. vacuum -kPa [-inHg]
			0 [0]	10 [3]	20 [6]	30 [9]	40 [12]	50 [15]	60 [18]	70 [21]	
Xi 10-2	0.6 [87]	0.54 [1.14]	0.74 [1.57]	0.63 [1.33]	0.53 [1.12]	0.42 [0.89]	0.30 [0.64]	0.16 [0.34]	0.11 [0.23]	0.04 [0.17]	93 [27.5]
Si 08-2	0.6 [87]	0.44 [0.93]	0.77 [1.63]	0.67 [1.42]	0.51 [1.08]	0.33 [0.70]	0.23 [0.49]	0.16 [0.34]	0.12 [0.25]	0.08 [0.17]	75 [22.1]
Di 16-2	0.6 [87]	0.75 [1.59]	0.64 [1.36]	0.57 [1.21]	0.49 [1.04]	0.41 [0.87]	0.35 [0.74]	0.29 [0.61]	0.18 [0.38]	0.04 [0.08]	73 [21.6]

All values subject to change without prior notice.



The world's lightest vacuum cobot gripper is ready to Pick & Place any of your applications.



Starter-Kit



Pump unit with integrated ejector and vacuum blow-off valve

## The Starter Kit

To cater for any application, the MCG Starter-Kit consists of a pump unit, an adapter plate with 10 mm foam, an adapter plate with 13x BX10 suction cups, adapter plate 3/8" female as well as three different sized suction cups.

- **Extremely light** - full utilization of cobot capacity
- **Quick gripper change** with Quick-Click Tool Changer in Plug & Play design
- **Various gripper units** for every application



**“The MCG is the essence of modular, flexible, light weight design, with a strong yet energy efficient grip on any product.”**

Bernd Gries, Manager Global Strategic Accounts Head of Custom-Line-Products Vacuum Automation

# Specifications of MCG

**Blow-off**  
for optimal  
product release  
and fast processes

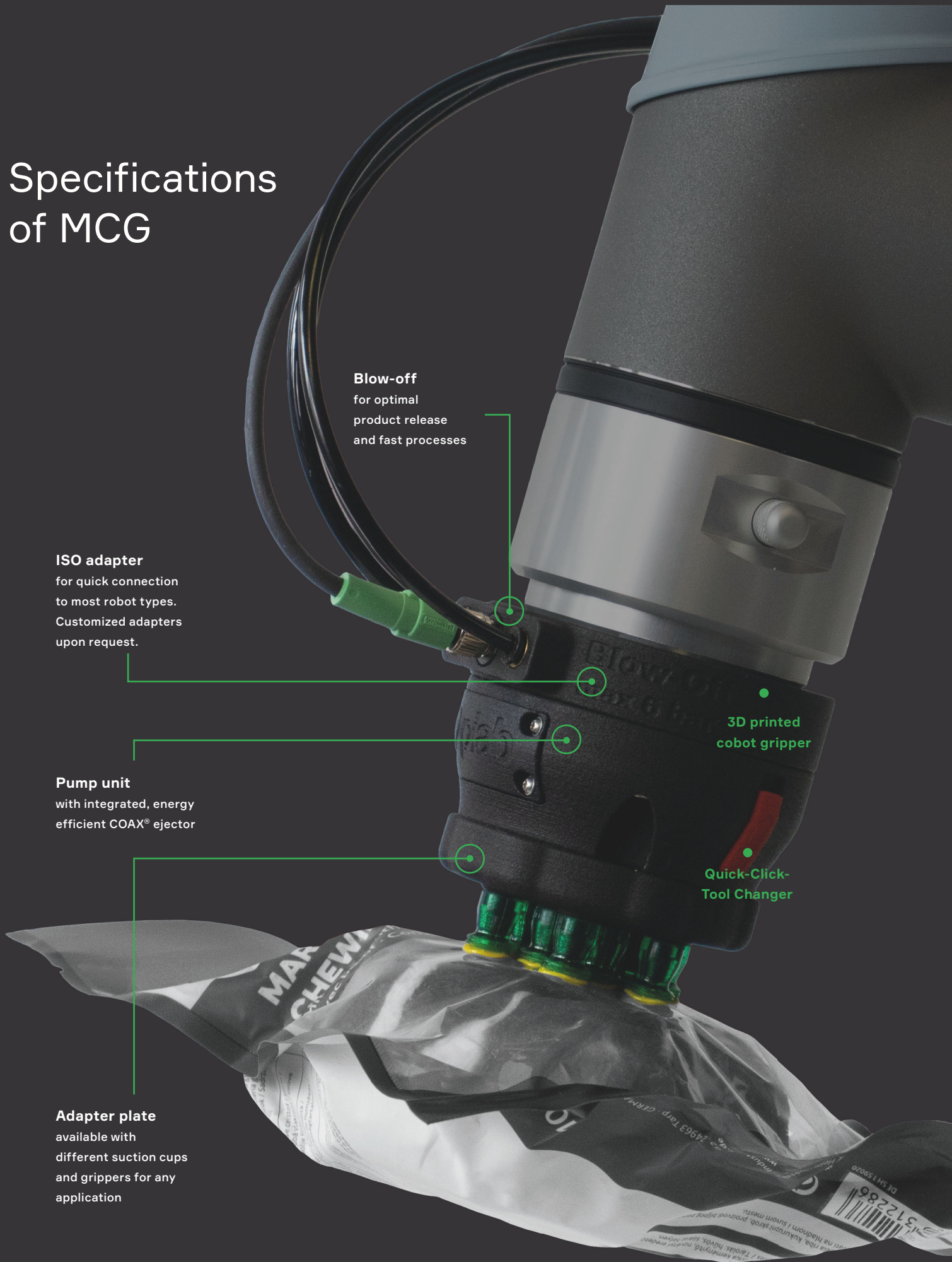
**ISO adapter**  
for quick connection  
to most robot types.  
Customized adapters  
upon request.

**Pump unit**  
with integrated, energy  
efficient COAX® ejector

**3D printed  
cobot gripper**

**Quick-Click-  
Tool Changer**

**Adapter plate**  
available with  
different suction cups  
and grippers for any  
application

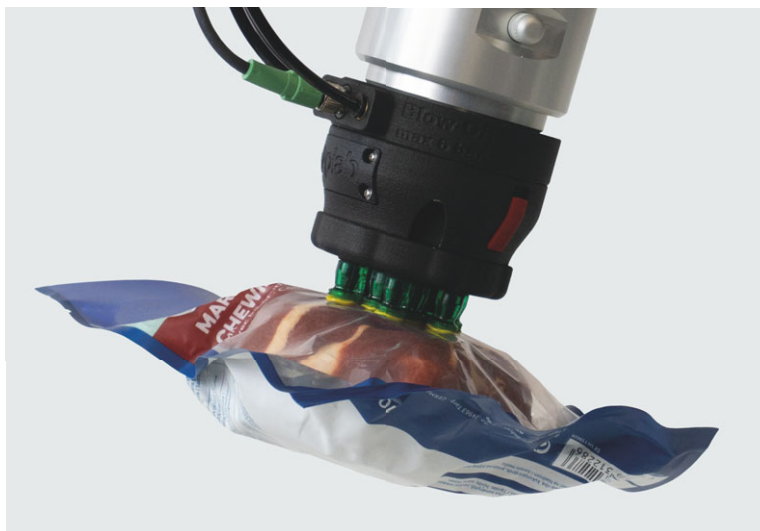




## A selection of potential applications



Adapter plate with 3/8" female and piSOFTGRIP® 30-3 handling fruits



Adapter plate with 13x BX10 suction cups handling a bag with pet food



Adapter plate with 3/8" female and MX cups handling a bag with soap



Adapter plate with F-BX20FCM cups handling a package with batteries



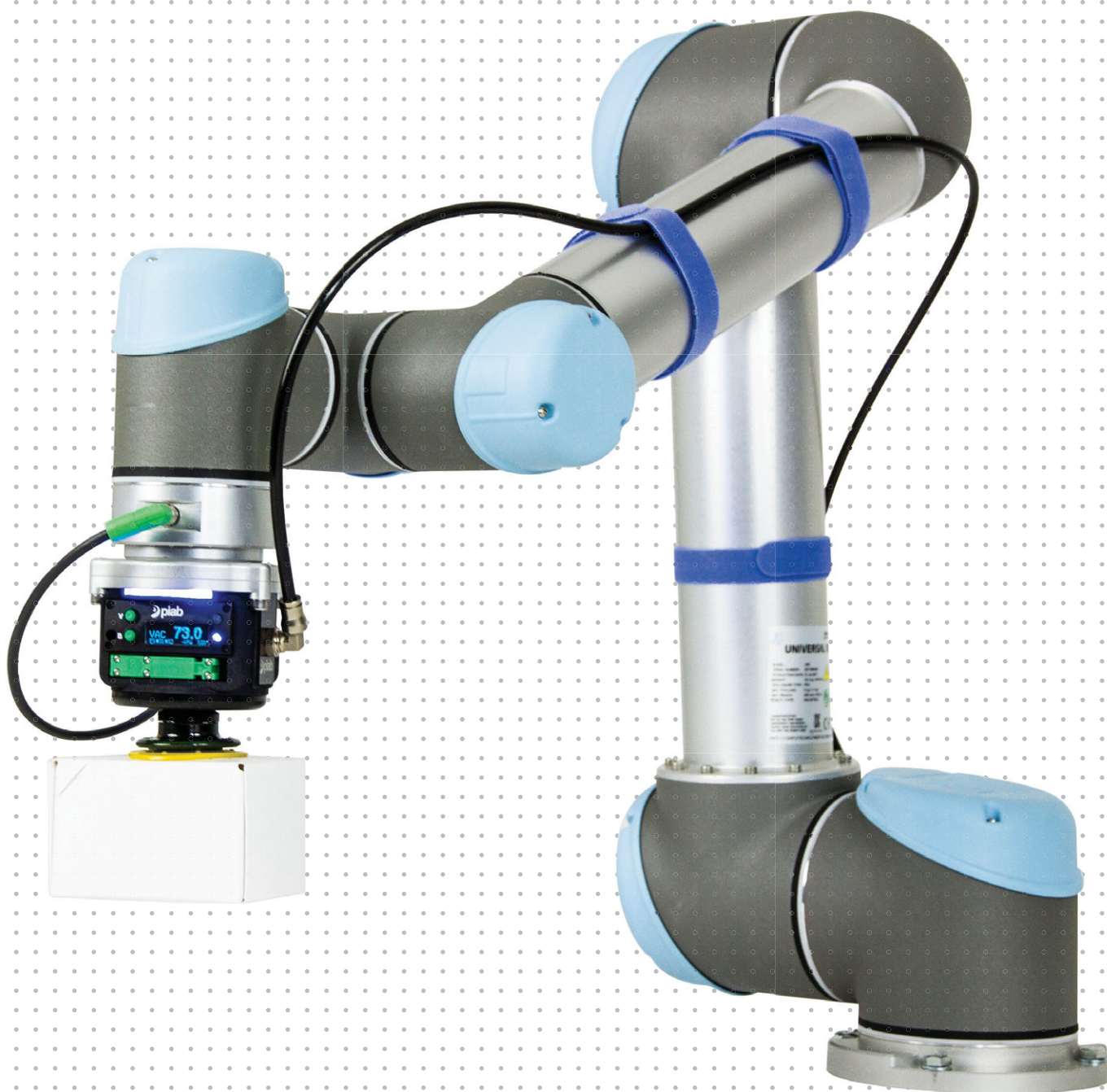
Adapter plate with 3/8" female, extantion and MX cup handling a bag with nuts



Adapter plate with 20 mm foam handling a tube with hand cream

# Small, powerful and ready to collaborate with human and cobot workers

piCOBOT® – UR certified vacuum gripper unit





piCOBOT<sup>®</sup> is certified by  
Universal Robots...



# ... and covers a wide range of applications

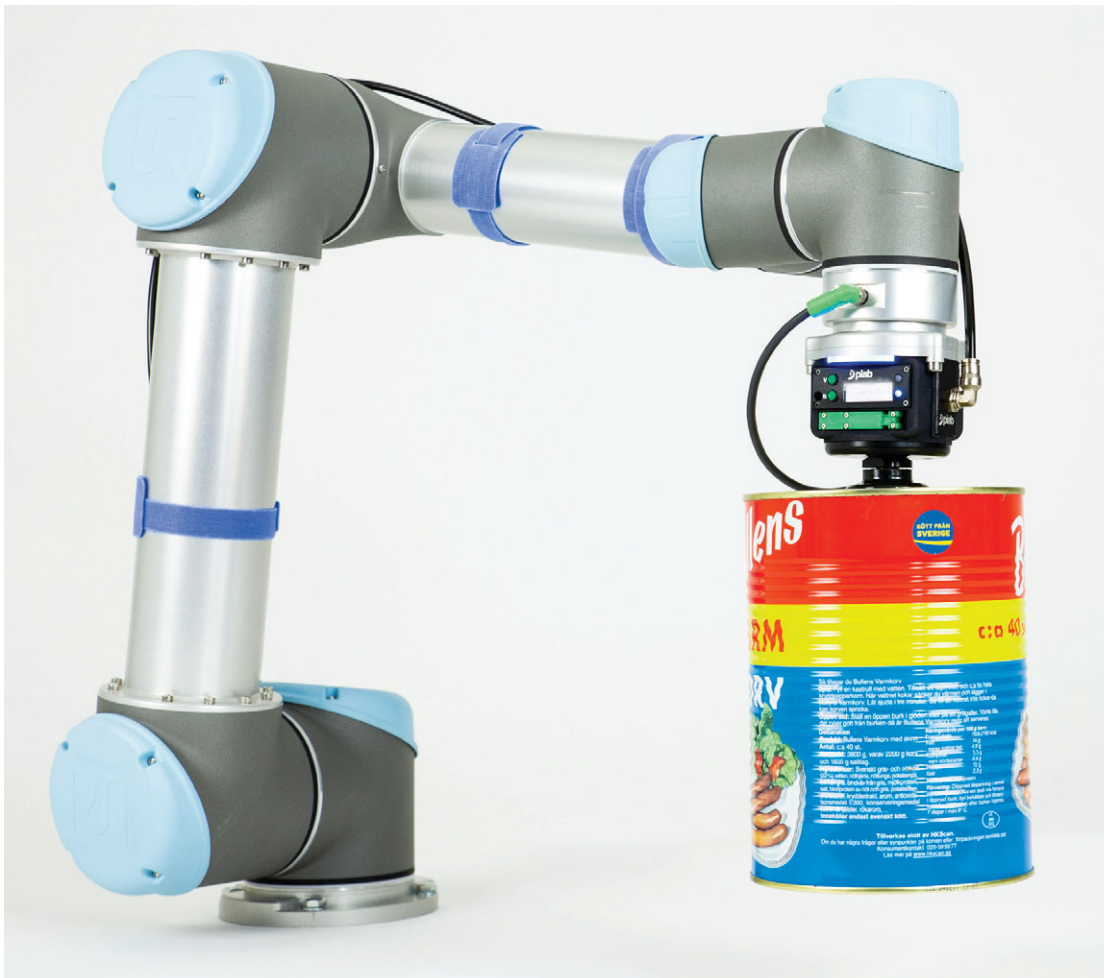


Heavy leaking bags with various contents, one or two application specific bag cups to increase flexibility and productivity.



Gripping and moving corrugated cardboard (leaking material) in a safe way. With one or two cups to increase stability and productivity.





An extended robot arm gripping and moving up to 7 kg [15.5 lbs] object.



Increased productivity with integrated **piSAVE®** Sense valves (object sensing valves), double or single picking of objects.





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