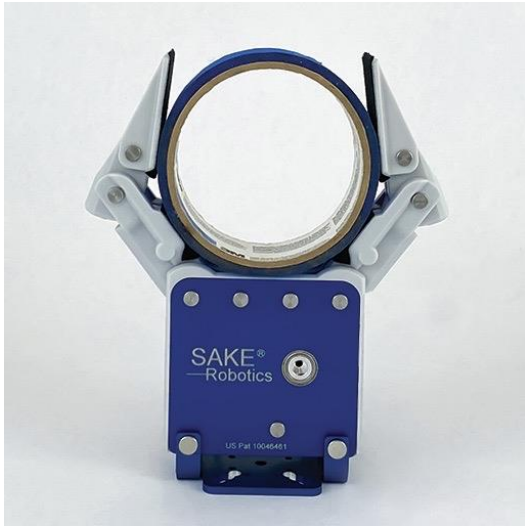# EZGripper™

Robotic Grippers

What do you want to pick up?

SAKE®
Robotics

- Easily pick up most objects

EZGrippers help provide a high success rate when picking up objects. The fingers stay straight when picking up objects at the end of the fingers. The fingers automatically wrap around objects when they are grasped closer to the palm of the gripper.

- Super durable for real work

EZGrippers are injection molded in PC/ABS for super toughness and a clean durable look. They can handle the abuse of real life use in human e

- Large payload

5 kg per gripper. If you need more payload, you can synchronize 2 or more EZGrippers together. We provide mounts for 1, 2 and 3 EZGripper configurations.

- Lightweight

Your robot payload includes your end-effector. The EZGripper weighs ~400 grams to maximize your remaining robot payload.

- Easy to use with your robot

ROS
Python/Linux/Windows 10
C#/Windows 10

- Human safe

Designed for robots that work with people in human environments

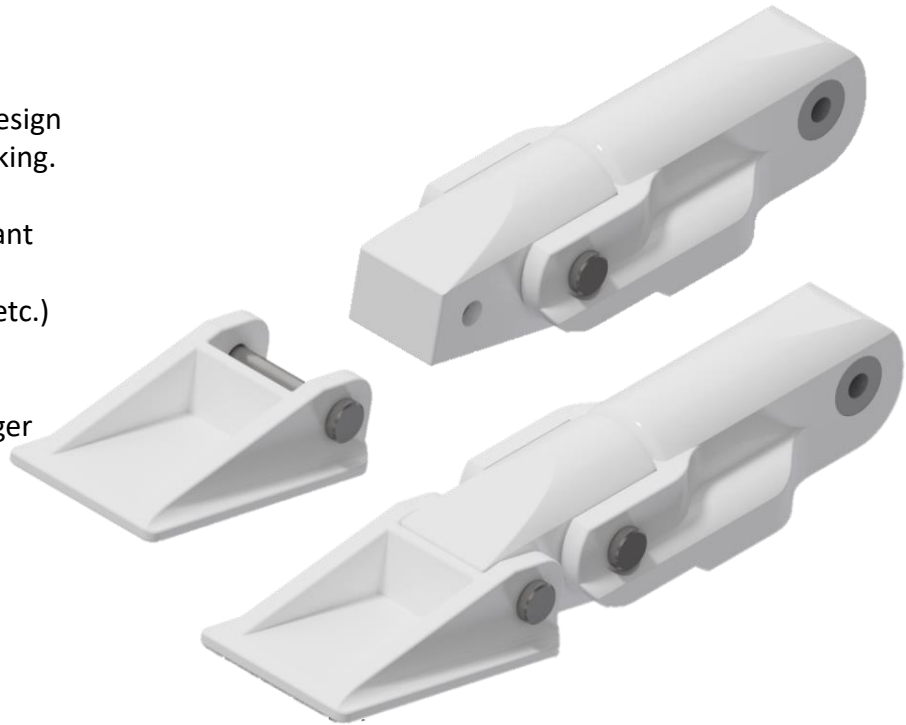| Grasp Width	145mm
Payload	5 kg (wrapping grasp on 9cm pipe) 2.5 kg (pinch grasp on 9cm pipe)
Gripper Weight	365g + 35g (mount)
Grasp Force	0N – 35N
Servo	Robotis Dynamixel MX-64AR
Operating Voltage	12V
Software	Opensource Python, ROS, Windows, Linux, URDF, 3D models
Robots	Attaches to most robots

SAKE
ROBOTICS

EZGripper Fingers

The EZGripper fingers have a sleek pointed design to enable slipping between objects when picking.

The fingers flexibly rotate inward in a compliant fashion enabling the fingers to easily slide between objects and a surface (table, crate, etc.)

The fingers tips are replaceable for custom applications. It is easy to develop specific finger pads for all kinds of applications.

The EZGripper standard finger tips measure 30mm by 50mm.

SAKE Robotics: EZGripper Control Panel

| Main | Simple |

GoTo

Position Force

50   50

Close

Position Force

0   50

SAKE® Robotics

| Mem+ | P10 F100 | P50 F100 | P0 F50 | P100 F100 |

EZGripper Status

Position   12
Force   0
Temperature 54
Gripper IDs [1]

Open P100 F100

Calibrate   Release

Easy to Use Software

The EZGripper App makes controlling the grippers very intuitive and efficient. The EZGrippers have programmable position (0-100) and force (0-100).

You can also control the grippers through Python on Linux and ROS or C# or Python on Windows 10

Software available on GitHub https://github.com/SAKErobotics/SAKErobotics

SAKE ROBOTICS

Core Architecture

The EZGripper core architecture is designed to achieve the following objectives:
- High impact and wear durability
- Low cost
- Light weight
- Compactness for increased dexterity grippers

- Ceramic Tendon Technology

Ceramic Tendon Technology is a patented tendon architecture for all link based robotic systems. It provides multi-million cycle durability at full load with compact design and extreme light weight.

360kg 12 braid Dyneema tendons run through super hard, super smooth ceramic eyelets when passing between finger joints. The tendons are routed over double row, deep groove, concave bearings for super low resistance and long wear.

The tendon is connected to stainless steel posts in the fingers and are routed to a super strong winch.

- Compliance AND Stiffness

Compliance and stiffness are both useful characteristics in grippers. Stiffness is required for grasp precision, strength and control.
Compliance is required in bin picking and service applications when picking up objects against bin walls or on table tops.

EZGripper tendon based architecture provides stiffness in all directions when grasping objects, but provide inward compliance in the fingers when they have no load or light load.

Stiffness with compliance simplifies picking and placing objects in unstructured environments and increases human safety.

- Super Durable Components

Injection molded PC/ABS
Stainless steel bearings
Stainless steel pins
17/7 Stainless steel torsion springs
Aluminum winch
Aluminum plates
Dyneema tendons
Aluminum Oxide Ceramic eyelets

SAKE ROBOTICS
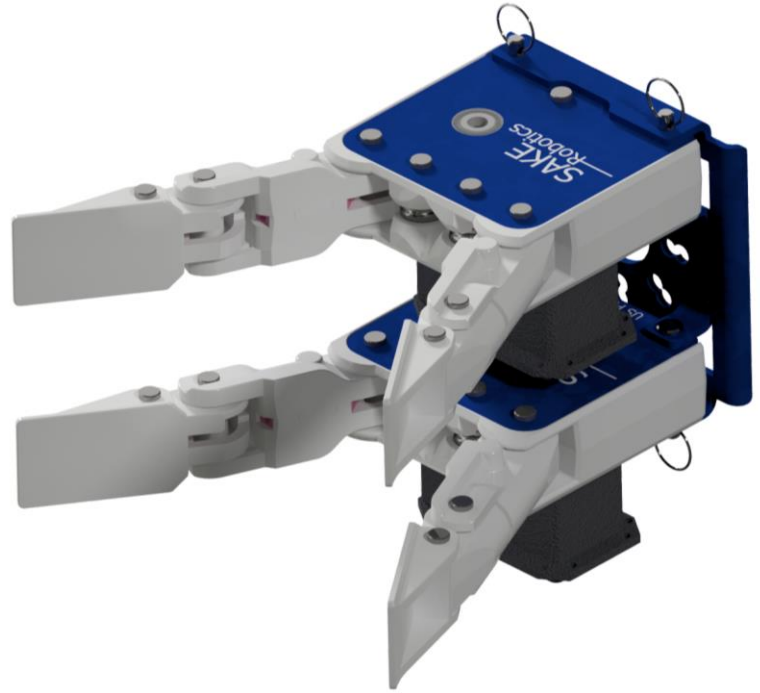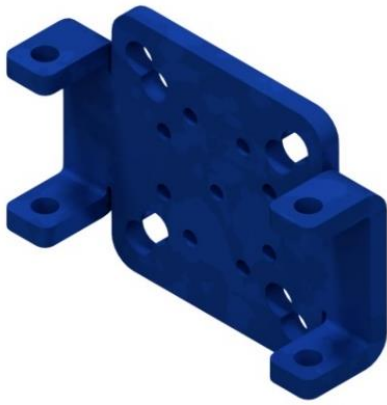
Robot Mount

This strong yet lightweight aluminum mount is easily bolted to a wide variety of robotic arms. The mount is designed for the EZGripper to be center aligned to the robot wrist for most robots.   This allows 360 degree rotation about the wrist with the grasp center aligned to the axis of rotation.

Other mounts are available that hold 2 and 3 grippers.

Universal Robots Integration

EZGrippers include all necessary hardware, cables and software for fast installation with UR3, UR5, and UR10. This includes our easy to use interface tightly integrated into PolyScope for controlling the grippers or programmatic control via the Python interface.