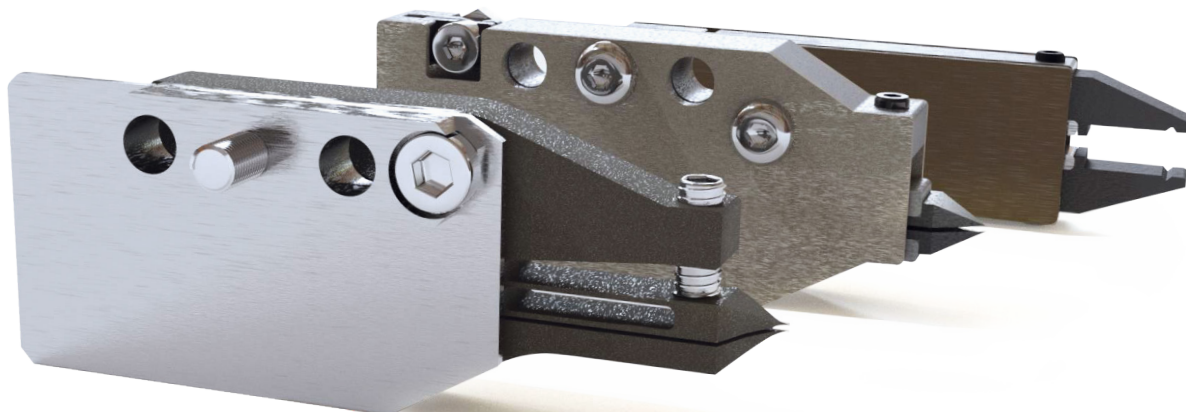


# GRI-PHI

## PIEZOELECTRIC MICROGRIPPERS

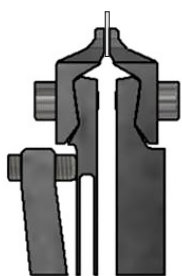


### Features

- **Sample size** to be manipulated: **from 10  $\mu\text{m}$  up to more than 20 mm**
- More than **40 mln cycles**
- **Customizable** jaws
- **Fast actuation**: up to tens of hz
- Proportional opening
- Programmable opening cycles
- **Fixed** or **removable** jaws
- **Customizable** shape and performance
- **Dedicated electronics** and **software** available

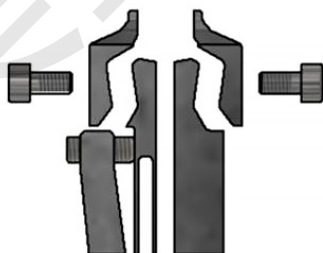
### Applications

- **Micro lens manipulation** and **positioning**
- **Fiber optic** sensors assembly
- **Precision** mounting on assembly chain
- **Micro-contacts** and **electronics** manipulation



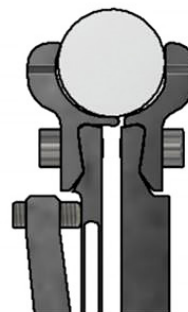
1

From very small specimen



2

Same body, jaws substitution



3

To specimens of different shapes and dimensions

*Phi Drive's grippers can be used for accurate and fast assembly of microcomponents in automatic process. Available in 3 different options, can be mounted on PHI-W the PhiDrive's robotic wrist.*

# 5 D.O.F.s

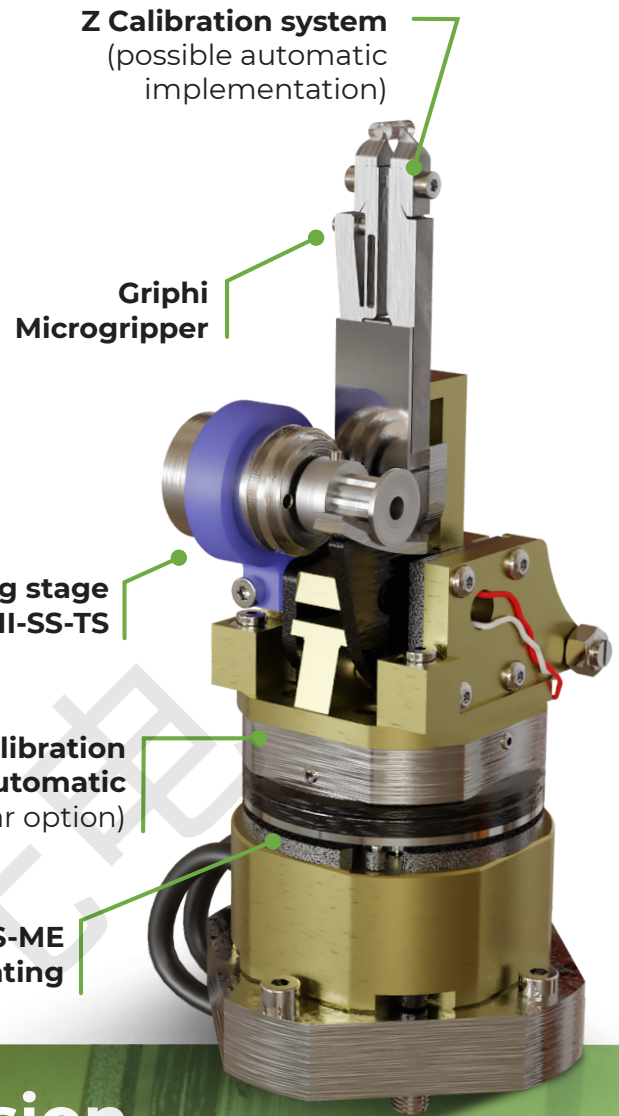
## GRIPPERS ROBOT WRIST

### Features

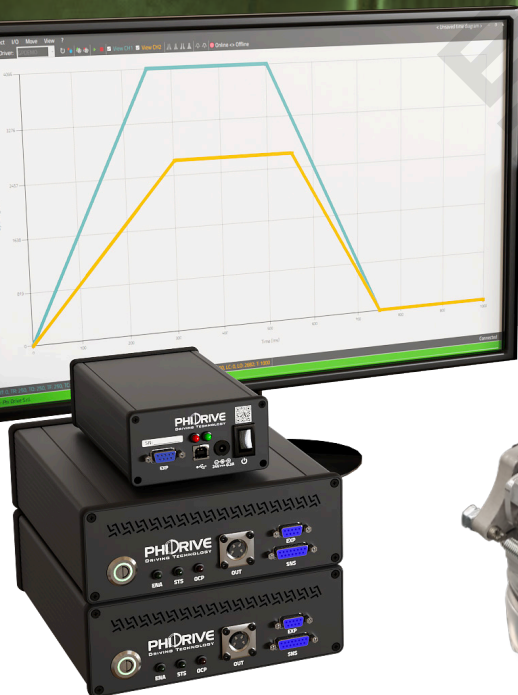
- From **2 up to 5 D.O.F.s** available (2 rotations and 3 translations)
- **Light and compact:** h152, Ø58 mm
- **Closed-loop** control available
- **Very high** resolution: up to nanoradians and micrometres
- **Easy-to-use** PC interface

### Applications

- **Optics**
- **Photonics**
- **Micromanipulation**
- **Microelectronics**
- **Mounting and positioning**
- **Assembly chain**



Increase *robot* precision  
in micromanipulation



“ Phi Drive's wrist can be mounted on commercial robots to enhance **their precision and accurately** grab even the smallest samples.

The **piezoelectric stages combined** in their DOFs make it possible to **align optics, manipulate electronic components, mount micro-contacts** in the production chain.