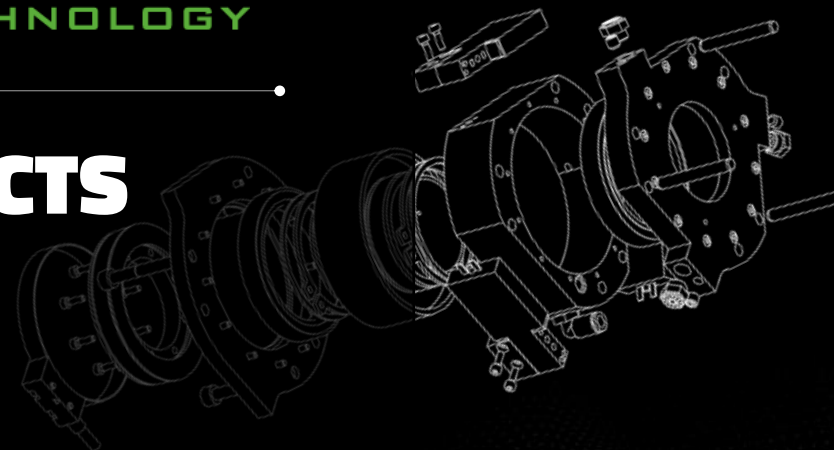


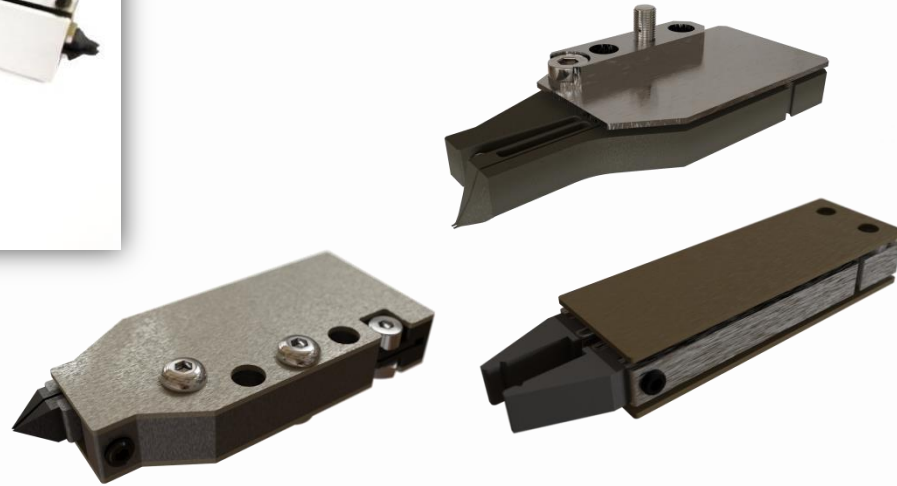
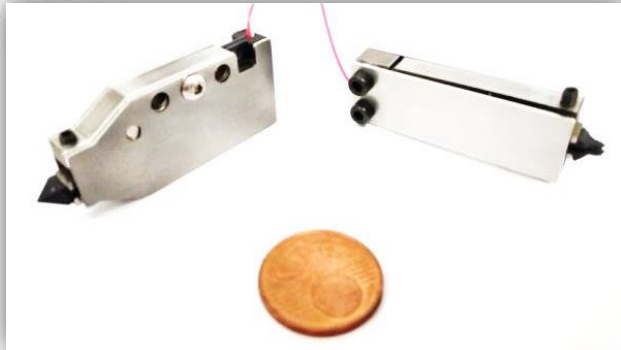
PHI**DRIVE**
DRIVING TECHNOLOGY

PRODUCTS



GRIPHI

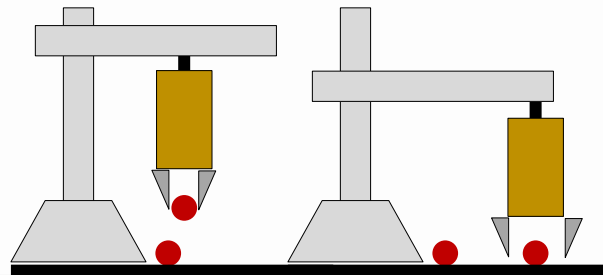
THE PIEZOELECTRIC GRIPPERS FOR MICRO MANIPULATION



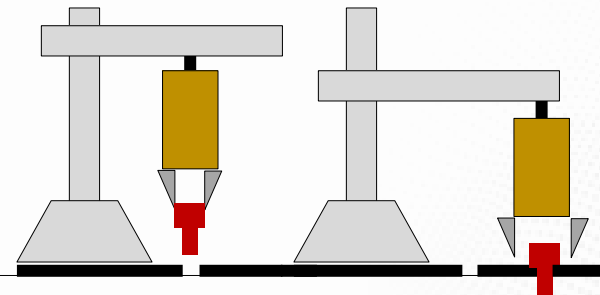
MAIN FEATURES

- ❑ Gripper stroke: up 0.7 mm
- ❑ Clamping force: up to 4 N
- ❑ Adjustable initial opening
- ❑ High dynamic range
- ❑ Customizable shape and performances
- ❑ Phi Drive's electronics available

MOUNTING CHAIN FOR MICRO COMPONENTS

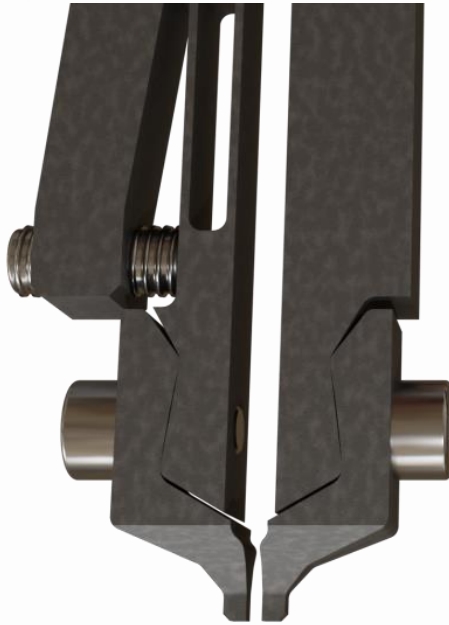


MANIPULATION OF MICRO COMPONENTS



GRIPHI

THE PIEZOELECTRIC GRIPPERS FOR MICRO MANIPULATION

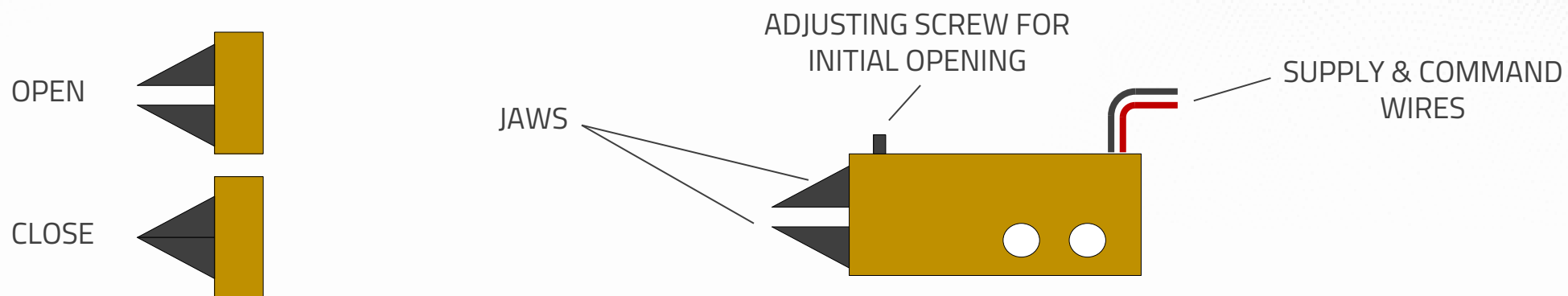


WIDE VARIETY OF JAWS TO CHOOSE FROM:

- ☐ Monolithic/interchangeable
- ☐ Normally-open/normally-closed
- ☐ Parallel/non-parallel
- ☐ Single-effect/double-effect

GRIPHI

THE PIEZOELECTRIC GRIPPERS FOR MICRO MANIPULATION

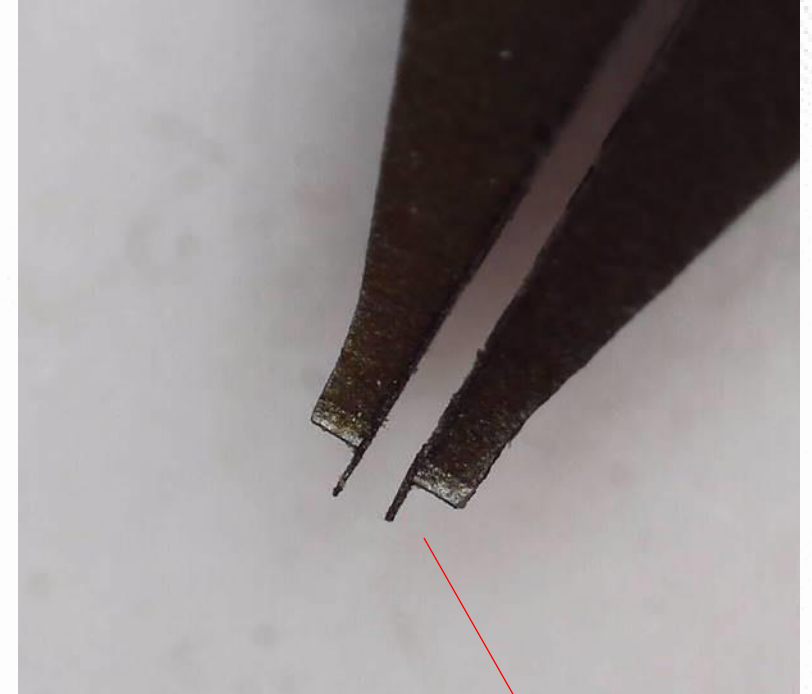
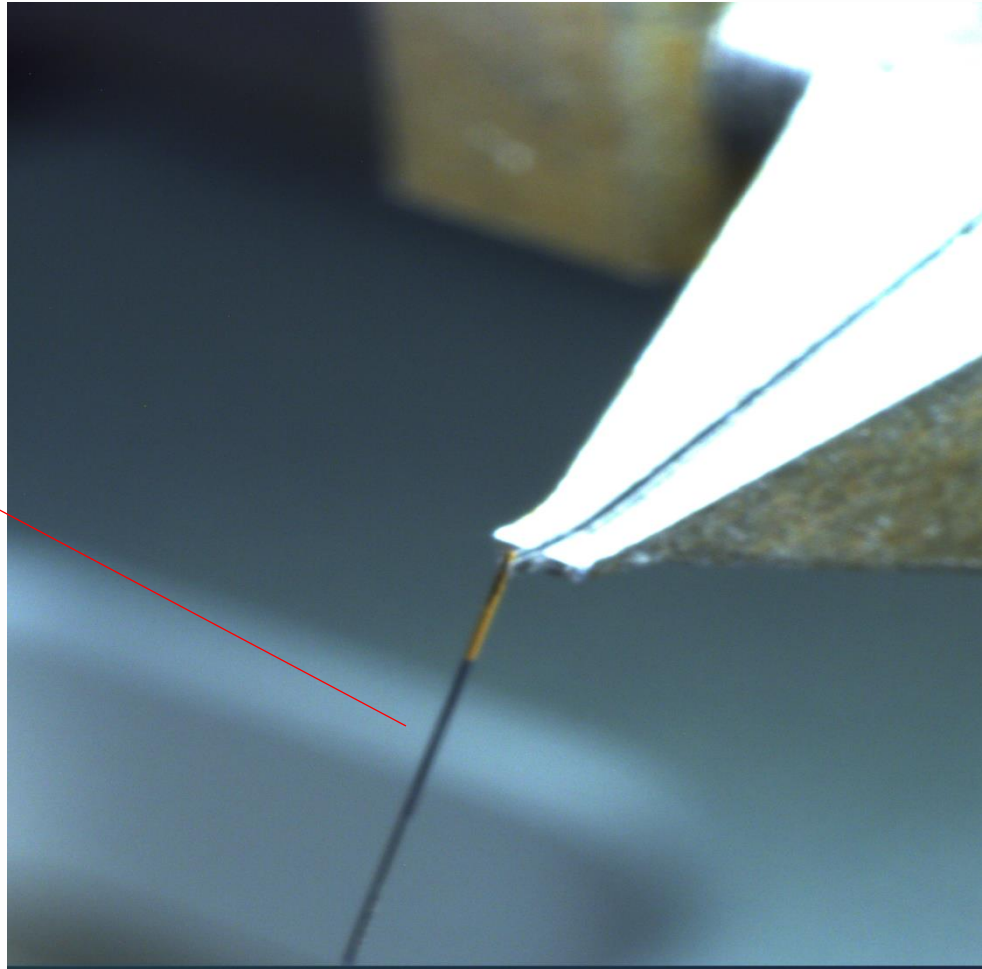


MODEL		STROKE	SAMPLE SIZE	GRIPPING FORCE @0.5 STROKE	GRIPPING TIME	BROCHURE
A		0.8 mm	.02-.2 mm	2 N	<50 ms	Datasheet
B		0.7 mm	.2-1 mm	2 N	<50 ms	Datasheet
C		0.5 mm	1-3 mm	4 N	<50 ms	Datasheet

GRIPHI

MAIN APPLICATIONS: MICROELECTRONICS ASSEMBLY, SILICON-BASED DEVICES TESTING

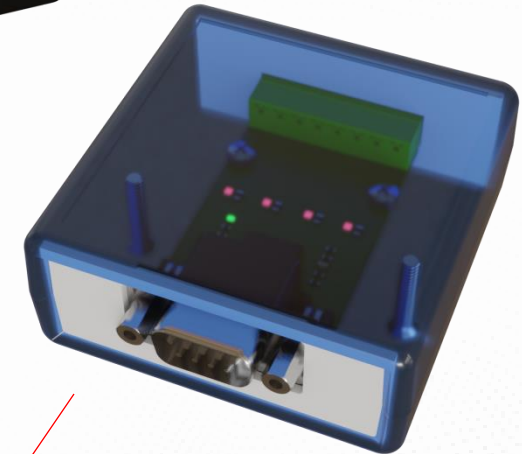
NEEDLE THICKNESS: 40 μm



JAW EDGES THICKNESS: 30 μm

GRIPHI DRIVER

DRIVER FOR PIEZOELECTRIC GRIPPERS



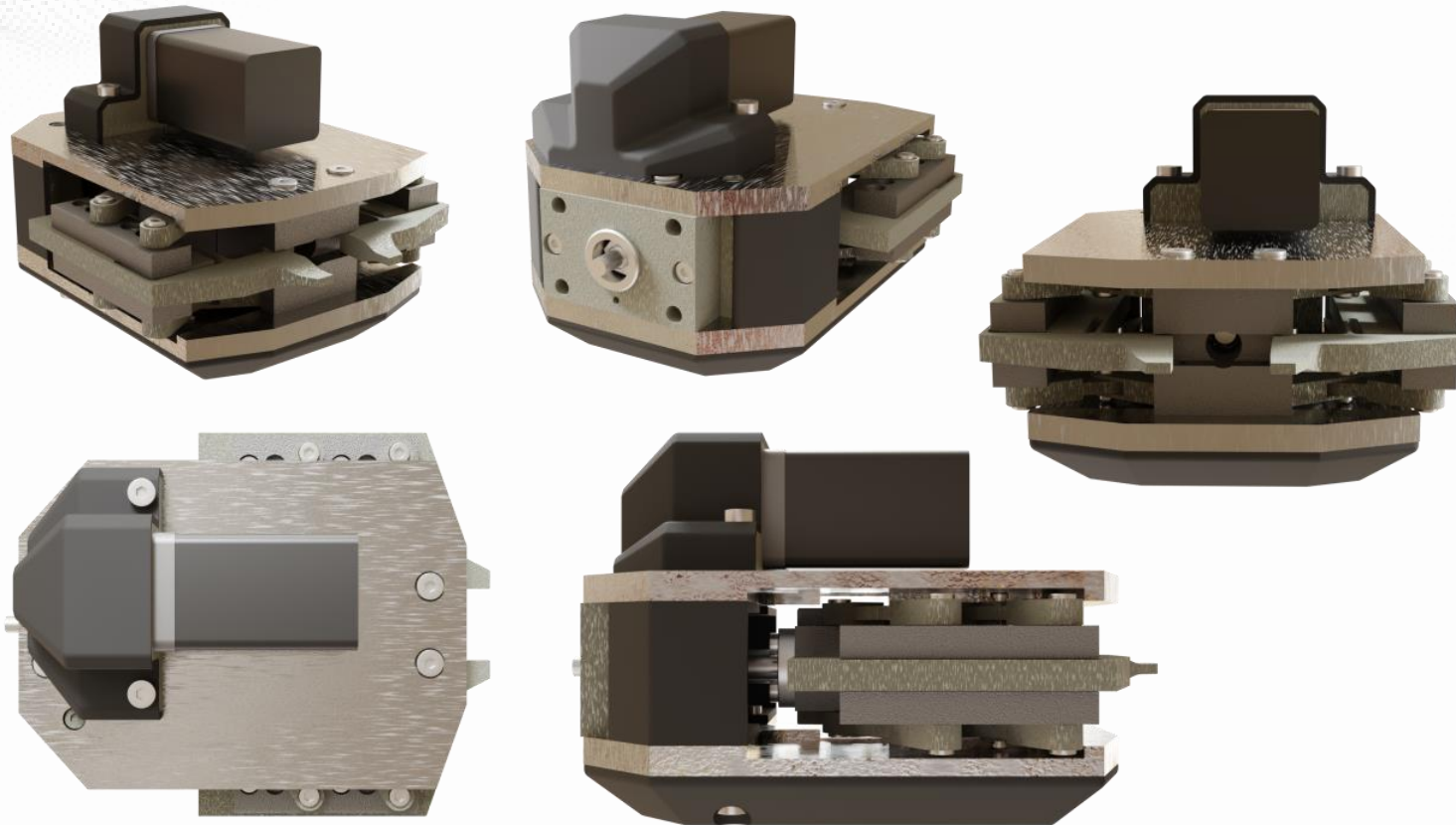
MAIN FEATURES

- ❑ Compatible with all GriPhi piezo grippers
- ❑ Expansion port
- ❑ USB PC interface
- ❑ 2 channels
- ❑ Standalone and Basic versions available
- ❑ PC software included
- ❑ Easy to use
- ❑ Programmable time diagrams
- ❑ API available for advanced users
- ❑ Compact device

OPTIONAL: E0018X MODULE TO
CONNECT GRIPHI DRIVER TO A PLC

GRIPHI REC

STEPPER AND HYBRID (STEPPER + PIEZO) GRIPPERS FOR HIGH STROKES



MAIN FEATURES

- ❑ Gripper stroke: up to 20 mm
- ❑ Clamping force: up to 235 N (stepper segment), 4 N (piezo segment)
- ❑ Adjustable initial opening
- ❑ High dynamic range
- ❑ Customizable shape and performances
- ❑ Phi Drive's electronics available

COR-RS

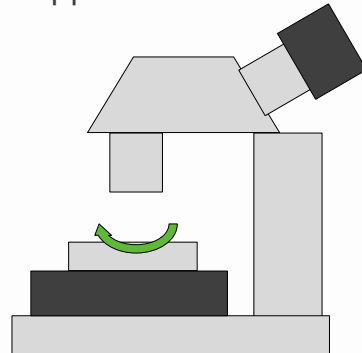
THE HIGH PRECISION ROTARY POSITIONER



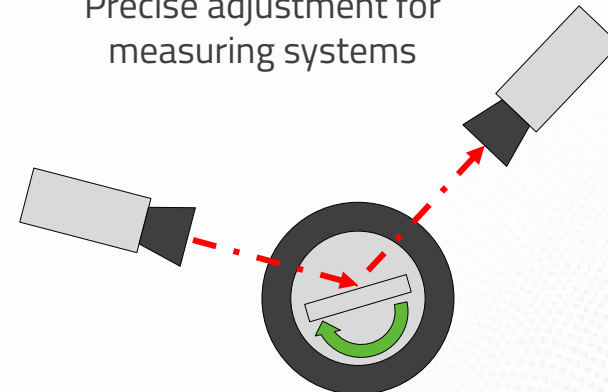
MAIN FEATURES

- ❑ $\pm 360^\circ$ travel range
- ❑ High precision, no backlash, no friction and no lubricant
- ❑ Customizable shape and performances
- ❑ Nanometric resolution
- ❑ Custom electronics available

Moving table for precision optics applications

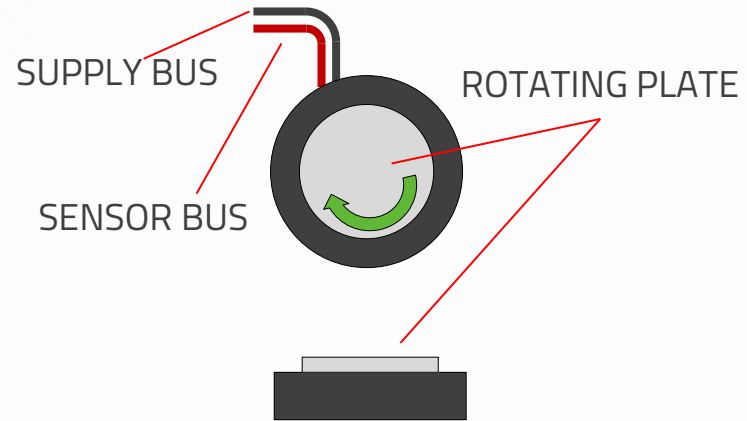


Precise adjustment for measuring systems

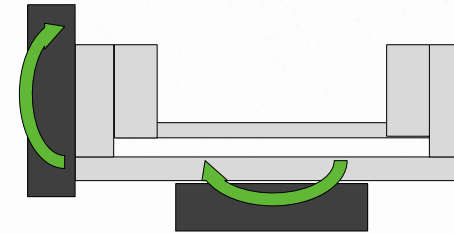


COR-RS

THE HIGH PRECISION ROTARY POSITIONER



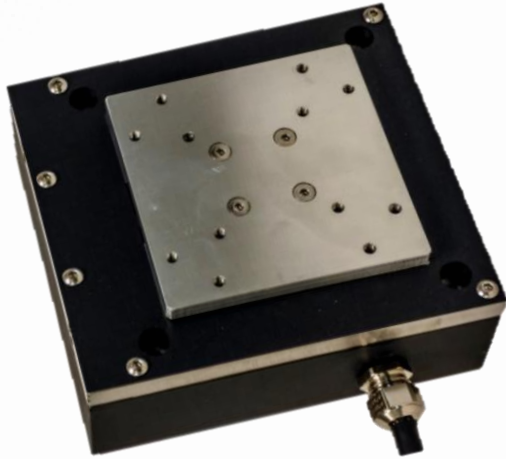
COMBINABLE FOR MULTIPLE AXIS SYSTEMS



MODEL	MINIMUM STEP	STALL TORQUE	MAXIMUM LOAD	ANGULAR SPEED	BROCHURE
RS.SS.E0.2	200 μ rad	0.30 Nm	5 kg	1.6 RPM	Datasheet
RS.SS.E0.1	60 μ rad	0.28 Nm	5 kg	1.7 RPM	Datasheet

COR-PS

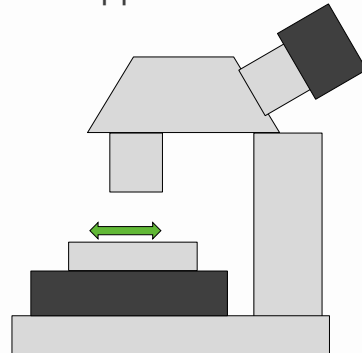
THE LINEAR NANO-POSITIONING PIEZO STAGE



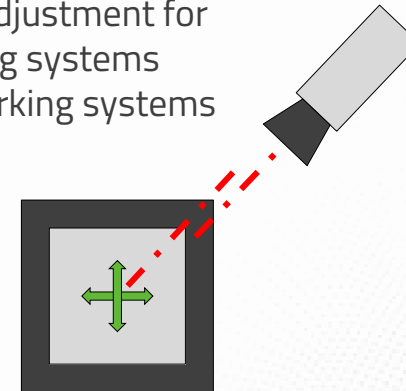
MAIN FEATURES

- ❑ Resolution: 0.18÷ 15 nm
- ❑ Travel range: up to 160 μ m
- ❑ Close loop available
- ❑ Electronics and PC GUI available

Moving table for precision optics applications

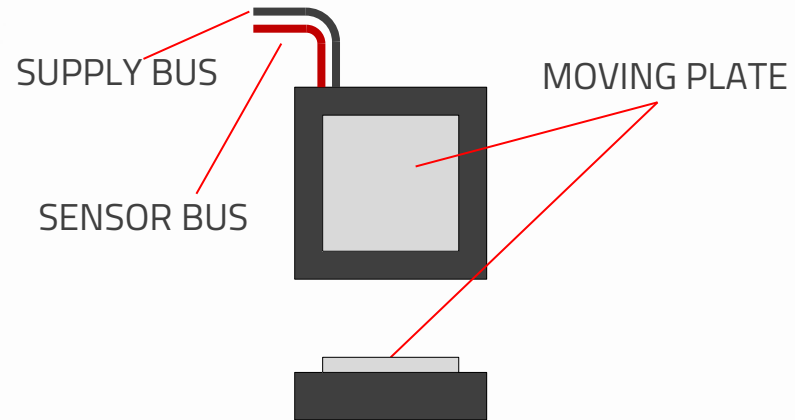


- Precise adjustment for measuring systems
- Laser marking systems

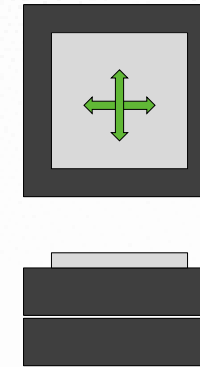


COR-PS

THE LINEAR NANO-POSITIONING PIEZO STAGE



COMBINABLE FOR
MULTIPLE AXIS SYSTEMS



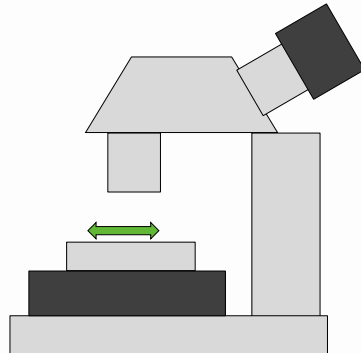
MODEL	STROKE	RESOLUTION @OPEN LOOP	MAXIMUM LOAD	SETTLING TIME @UNLOADED	BROCHURE
COR.PS.SC	150 μm	0.2 nm	5 kg	0.1 ms	Datasheet
COR.PS.HC	135 μm	0.2 nm	5 kg	0.1 ms	Datasheet

PHI-SS-LI

THE MICRO LINEAR POSITIONING PIEZO STAGE



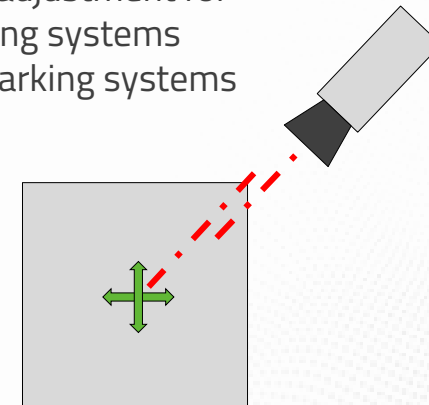
Moving table for precision optics,
EDM, machine tools applications



MAIN FEATURES

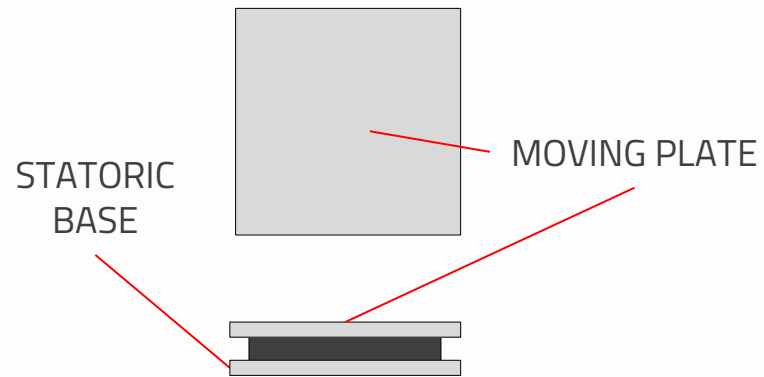
- ❑ Resolution: 0.05 μm
- ❑ Travel range: 10 mm
- ❑ Close loop available
- ❑ Electronics and PC GUI available

- Precise adjustment for measuring systems
- Laser marking systems

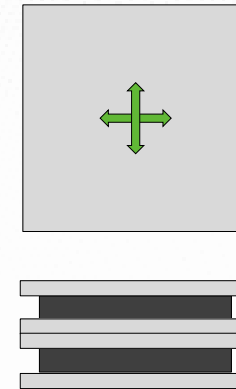


PHI-SS-LI

THE MICRO LINEAR POSITIONING PIEZO STAGE



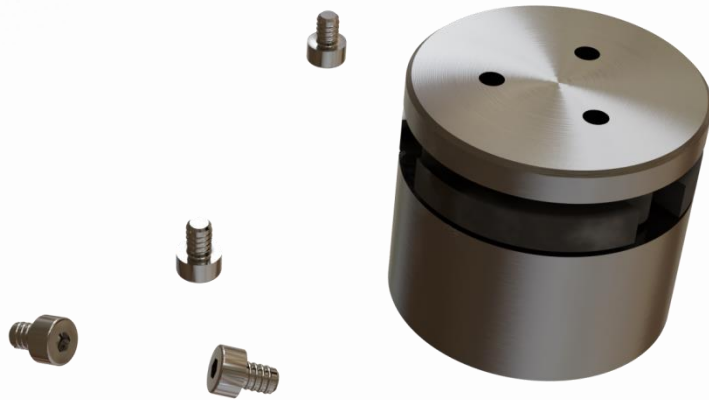
COMBINABLE FOR
MULTIPLE AXIS SYSTEMS
(X-Y-Z DIRECTIONS)



MODEL	STROKE	RESOLUTION @OPEN LOOP	MAXIMUM LOAD	SETTLING TIME @UNLOADED	BROCHURE
COR.PS.LS.A10	10 mm (STD) 50 mm (CUSTOM)	0.05 μm	500 g (V RAIL) 2500 g (S RAIL)	0.1 ms	Datasheet

PHI-SS-MI

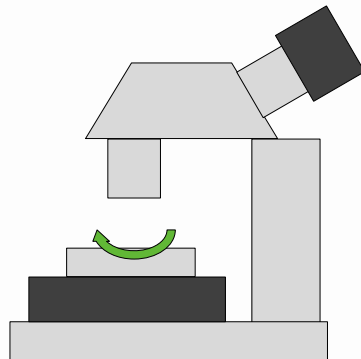
THE MICRO PIEZOELECTRIC PRECISION ROTARY POSITIONER



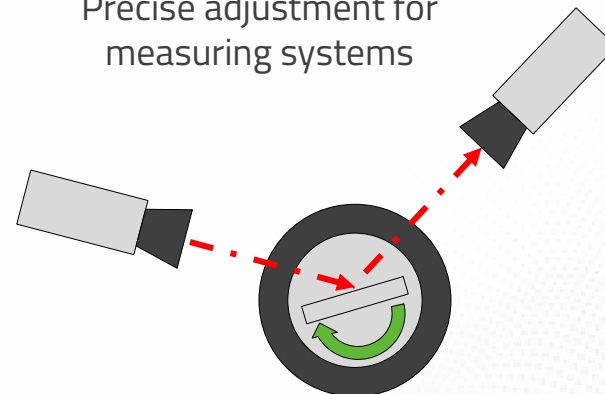
MAIN FEATURES

- ❑ $\pm 360^\circ$ travel range
- ❑ High precision, no backlash, no friction and no lubricant
- ❑ Customizable shape and performances
- ❑ Nanometric resolution
- ❑ Compatible with PHI-SS driver

Moving table for precision optics

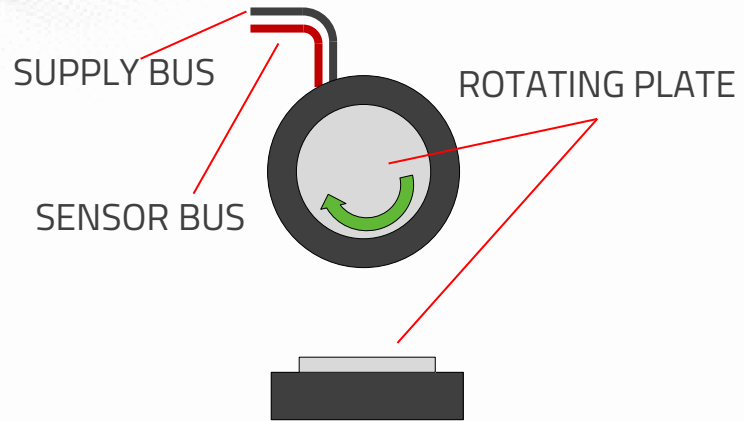


Precise adjustment for measuring systems

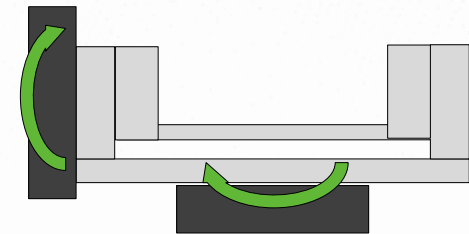


PHI-SS-MI

THE MICRO PIEZOELECTRIC PRECISION ROTARY POSITIONER



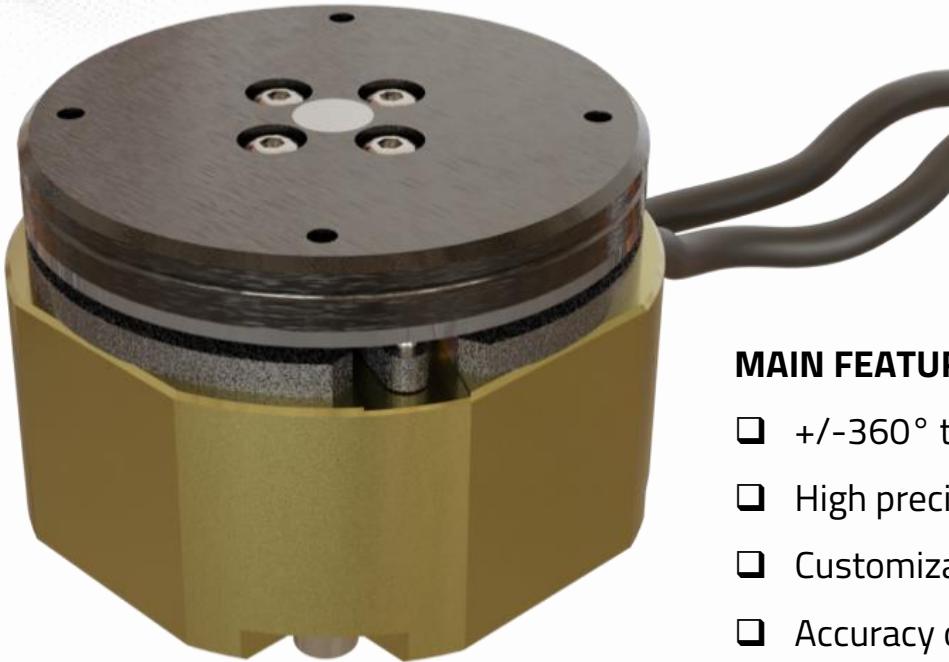
COMBINABLE FOR MULTIPLE AXIS SYSTEMS



MODEL	MINIMUM STEP	MAXIMUM LOAD	ENCUMBRANCE: MINIMUM DIAMETER	ANGULAR SPEED	BROCHURE
M.SS	500 nrad	0.5 kg	22 mm	8 RPM	Datasheet

PHI-SS-ME

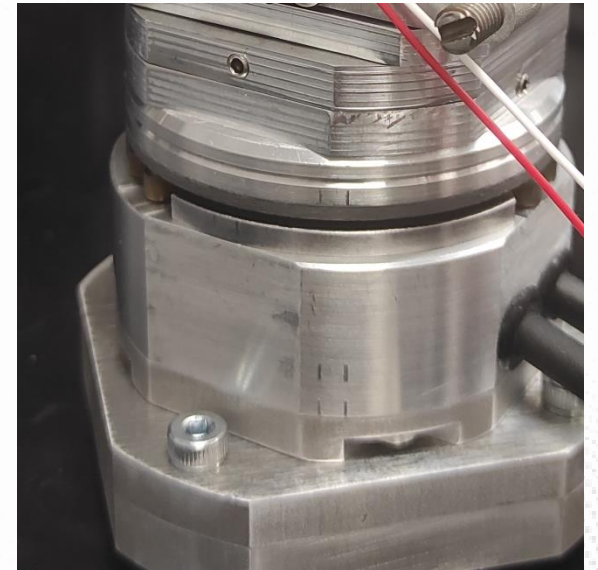
INTERMEDIATE SIZE PRECISION ROTARY POSITIONER



PHI DRIVE'S SMALLEST SOLUTION WITH
ON-BOARD ENCODER!

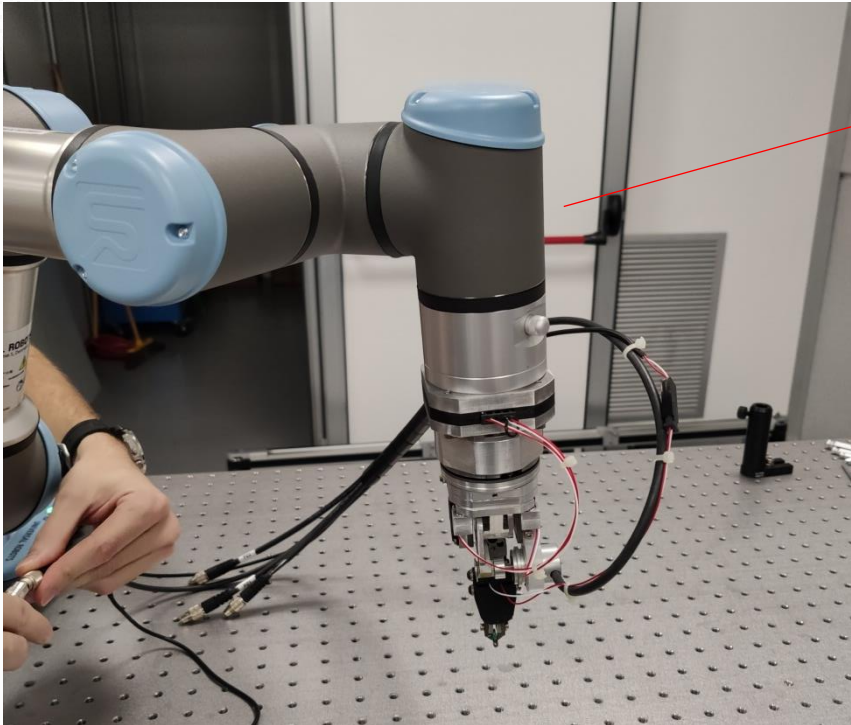
MAIN FEATURES

- ❑ $\pm 360^\circ$ travel range
- ❑ High precision, no backlash, no friction and no lubricant
- ❑ Customizable shape and performances
- ❑ Accuracy of 1 mrad
- ❑ Closed-loop control
- ❑ Compatible with PHI-SS driver



ROBOT WRIST – MULTIPLE PIEZOELECTRIC DEVICE

MAIN APPLICATIONS: OPTICS, LASER SYSTEMS, PRECISE MANIPULATORS



AUTOMATIC MICROASSEMBLY STATIONS →
CUSTOMIZABLE MICROPOSITIONING STAGES FOR
MAXIMUM PRECISION

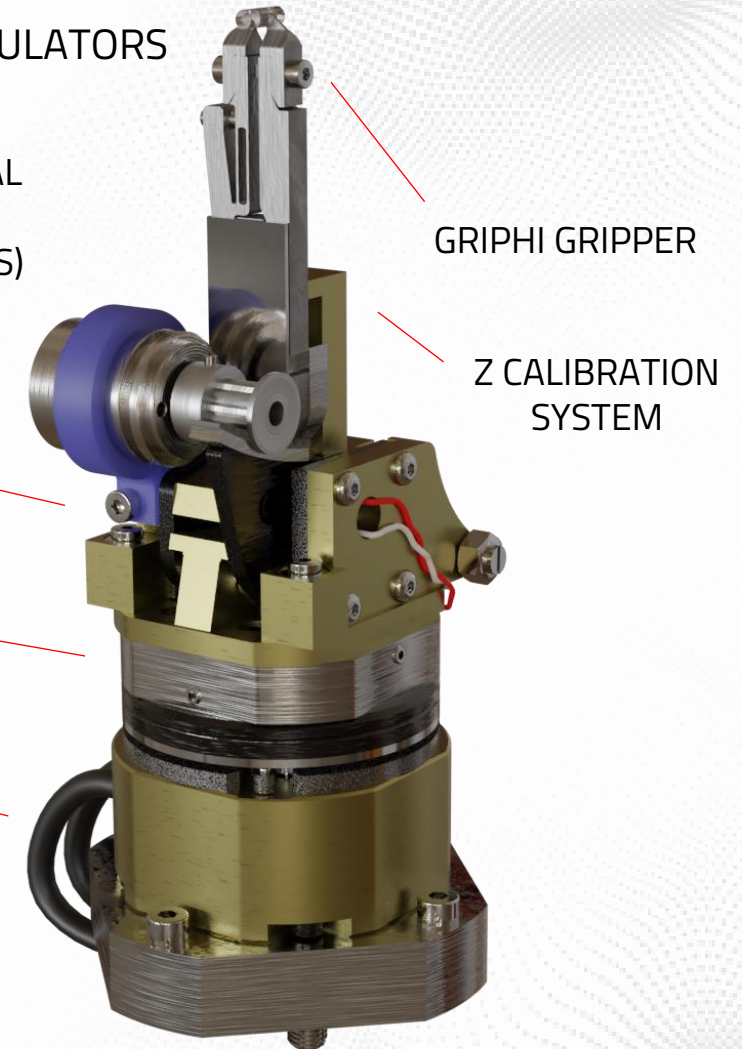
MOUNTED ON A COMMERCIAL
COBOT
(UR3E BY UNIVERSAL ROBOTS)

TILTING STAGE ($\pm 5^\circ$)
A.K.A. PHI-SS-GP

X-Y CALIBRATION SYSTEMS

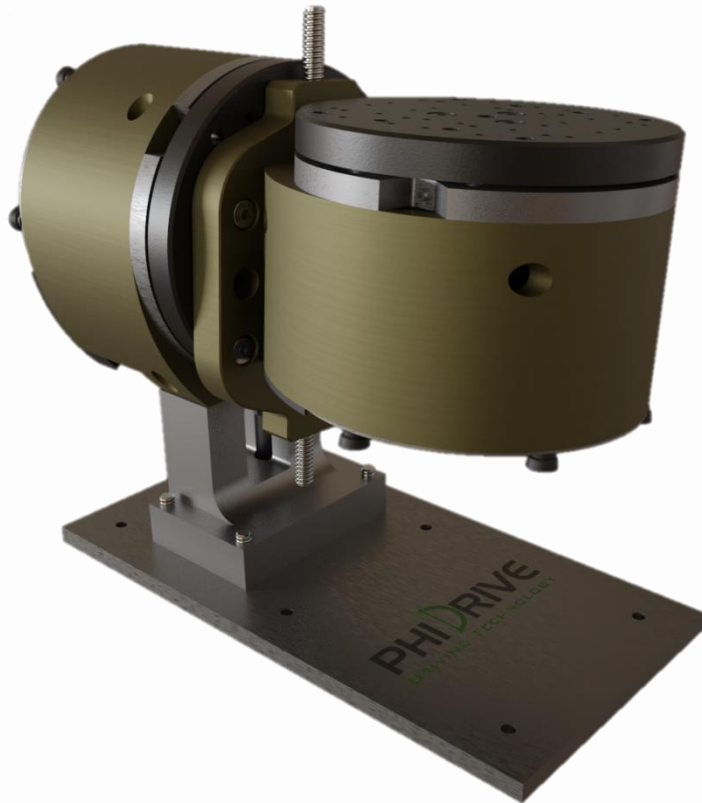
PHI-SS-ME

ANGULAR CORRECTION
RESOLUTIONS DOWN TO 0.5
 μRAD



PHI-SS-MA

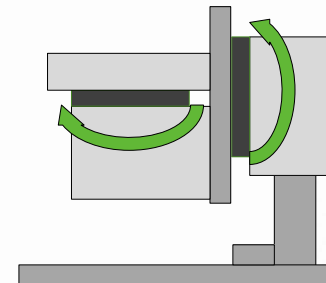
HIGHLY-PERFORMING PRECISION ROTARY POSITIONER



MAIN FEATURES

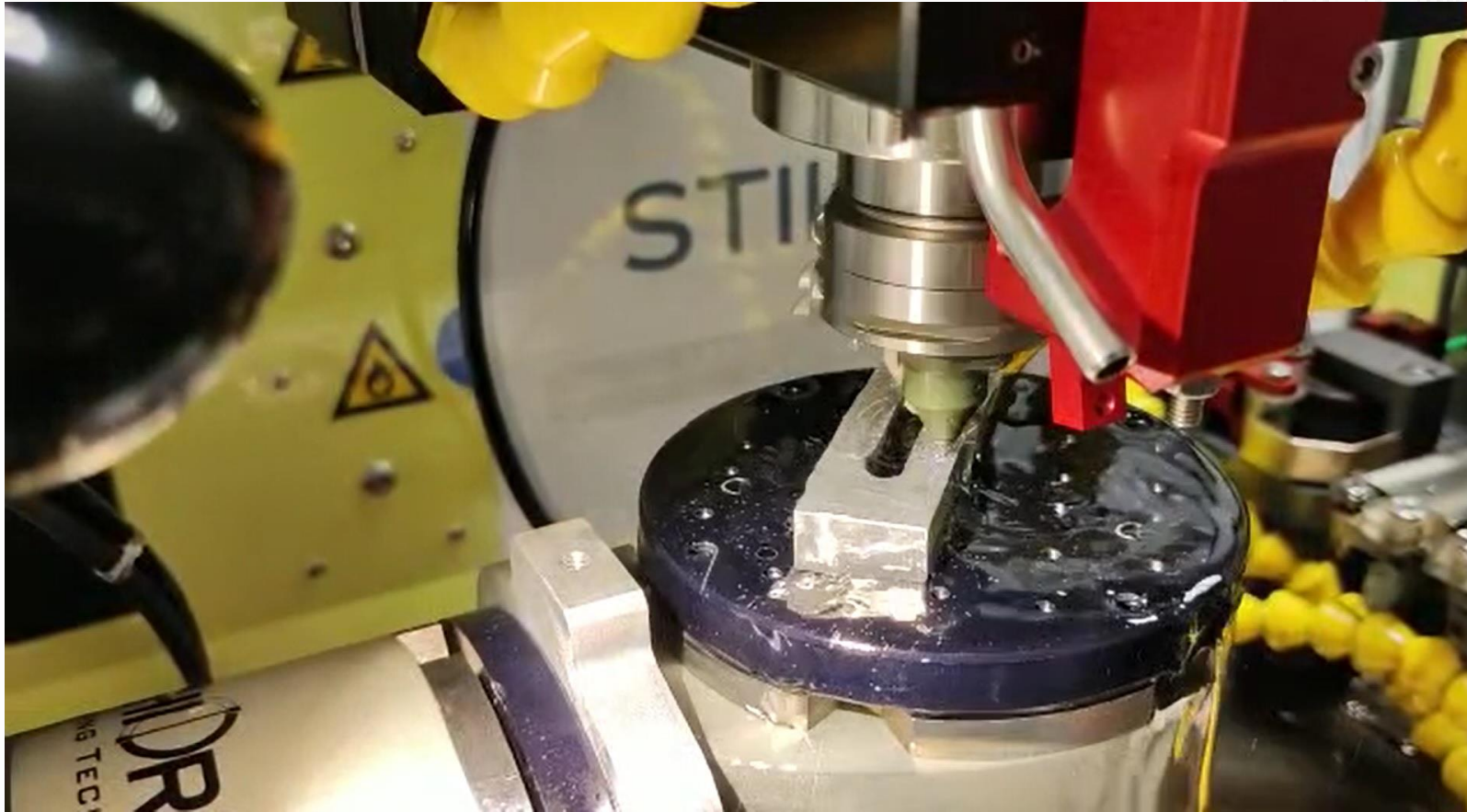
- ❑ Available with 2 degrees of freedom
- ❑ High precision, no backlash, no friction and no lubricant
- ❑ Customizable shape and performance
- ❑ Extremely high resolution
- ❑ High achievable torque
- ❑ Closed-loop control

Moving table for Electrical Discharge Machining



PHI-SS-MA

MAIN APPLICATIONS: EDM (ELECTRICAL DISCHARGE MACHINING)



PHI-SS

DRIVER FOR ROTARY AND LINEAR TABLES



MAIN FEATURES

- ☐ Compatible with PHI-SS-MI
- ☐ Compatible with PHI-SS-ME
- ☐ Compatible with PHI-SS-MA
- ☐ Compatible with PHI-SS-LI
- ☐ USB PC interface
- ☐ Encoder data acquisition
- ☐ PC software included
- ☐ Elegant design
- ☐ Driver and ampli versions



CONTACT US



PHI DRIVE SRL

Via Bolzano 1E –
20871 Vimercate (MB) – ITALY



+39 039 6250971
+39 349 2586770



sales@phidrive.eu
marco.bacciocchi@comestero.com



www.phidrive.eu



Gruppo Comestero Sistemi



Co-funded by the Horizon 2020 programme
Of the European Union