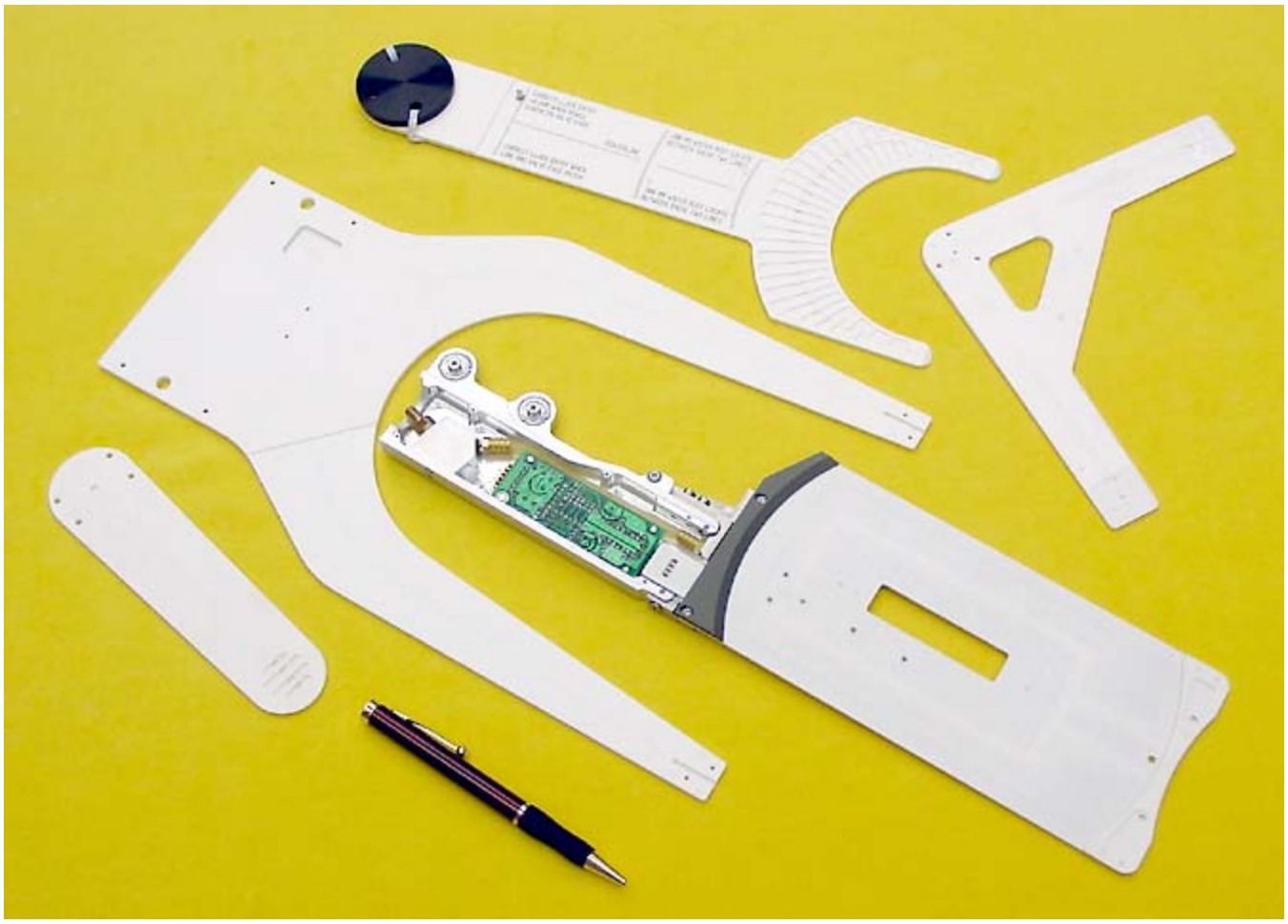

END-EFFECTORS

CC SERIES

CUSTOM CERAMIC DESIGNS

FEATURES

- Reduction of back-side scratches to near zero levels
- Elimination of defusible contamination (no metal contaminants)
- Highest rigidity material for similar cross-sections
- Virtual elimination of thermal shock to the substrate handled
- Ability to operate continuously at elevated temperatures without warpage
- No tape or epoxy and no out-gassing
- Infinite life without vacuum leakage
- Elimination of ESD damage
- Proprietary fabrication process

End-Effectors, paddles, spatulas, vacuum fingers... whatever your technology calls them, we build them. Robotic end-effectors of almost any intricate design can be produced in ceramic with or without vacuum clamping. They are normally constructed to operate to 500^{O}C and can be designed for higher temperatures. These end-effectors can be fitted with mechanical clamping devices for fail-safe operation. In addition, ceramic end-effectors can be supplied with ESD dissipation which will protect sensitive products during handling. Our end-effectors can be configured for vacuum sensing, optical sensing or electrical circuitry for capacitive sensing as well as electrical switch sensing. All EEI end-effectors are designed for "3G" or greater clamping loads to permit fast robot operation without wafer dislodgement.

EEI END-EFFECTORS, INC.
1230 Coleman Avenue, Santa Clara, California 95050-4338
408/727-0100 FAX 408/727-2100 www.fjaind.com

"Giving Robotics A Hand"

The CC series of ceramic end-effectors are all custom-designed to customer specifications. They are configured to the customer's requirements and designed using End-Effectors Inc. design rules. All products so designed will meet or exceed the EEI 3G clamping requirement and all designs are customer approved and proprietary. A custom design will only be sold to the contracting customer unless direction is given, in writing, authorizing sale to a designated party. All products designed by EEI remain the property of EEI and the contracting company. These designs cannot be replicated or produced in part or in whole without the expressed written consent of the contracting customer.

SIZE & AVAILABILITY

Size (std.)

Length up to 16 inches (400 mm)
Width up to 5 inches (125 mm)
Thickness up to .160 inches (4 mm)
(Special Larger sizes quoted)

Substrate Holding Methods

Gravity pocketed
Vacuum clamped: A - Single sided
B - Double sided
Mechanically clamped: A - Vacuum driven
B - Pressure driven
C - Electrically driven

End-Effector Mounting

Through Hole
Stainless Steel Bracket: A - Unthreaded
B - Threaded
Threaded Ceramic Insert

Sensing Methods

Vacuum sense (Remote, not end-effector mounted)
Optical sense (Fiber optic bundle)
Electrical sense
- Conductive - substrate must be conductive
- Capacitive - substrate must effect magnetic field
- Micro switch - contact to substrate

Electrical Properties

Non-conductive (standard ceramic)
ESD dissipating Contacts (stainless steel touches substrate)

Fail-Safe Options

Vacuum driven
Pressure Driven
Electrically Driven

Temperature Options

Ambient
Heated End-effecor
Cooled End-effector