engineering innovations
worldwide

Docking + **Interface**
Solutions

esmo semicon

Docking & Interface Solutions

Optimized Cost-Performance Ratio for Maximum Testing Reliability

esmo semicon docking and interface solutions are designed for seamless integration with all major handler, prober, and tester platforms. Our standardized designs ensure compatibility across various test environments, while optional configurations—such as direct-dock solutions—allow for enhanced flexibility and efficiency.

Our engineering team develops customized docking and interfacing solutions for precise test head manipulator integration, optimizing mechanical stability, electrical performance, and thermal management within both front-end and back-end test applications.

By working in close collaboration with our customers, esmo semicon ensures a comprehensive and application-specific approach—from requirement analysis and hardware selection to the development of fully customized docking architectures that enhance test cell throughput, repeatability, and accuracy.

DIN ISO 9001

TÜV SÜD C US

UK CA

S2|S8 conform

CE

GERMAN ENGINEERING GLOBAL SOLUTIONS

esmo's All in One Service | Packages

Highly specialized engineering team delivering expert design consulting and technical support

Minimized risk of test hardware damage
through optimized docking and interface solutions that reduce operator-induced errors

Precision-engineered designs,
manufactured to the highest standards for maximum reliability and minimal maintenance

Optimized cost-efficiency:
fast ROI, reduced setup times, increased test yields, and long-term operational stability

Rapid development cycles
with short design and lead times, complemented by customized installation and training services

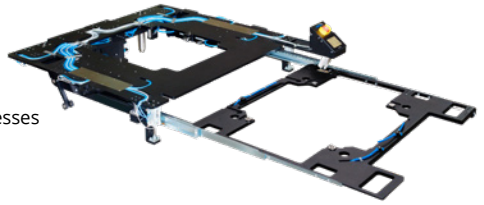
Docking and Interface Solutions

dib-changing system

quick + easy board change
in less than a minute

one person operation

dedicated for final test processes



quick + easy + ergonomic board access

- highly efficient + time-saving operation
- mechanical test head/handler connection during board change process
- statically defined test head positioning
- sensor monitoring feature preventing operating errors
- high locking force, designed for high parallel test setups
- single-sequence operation for docking/undocking contact force fully compensated by locking system
- touch panel operation, programmable user interface

helix e-docking

highest docking force
touch-panel operation
easily changeable pins

4 kN docking force

lowest electrical docking solution in the market

smart + interoperable

- teach-in functionality, 1-button operation
- pin-catch feature in pre-docked position
- autonomous intercommunication with other modules
- highest repeatability (z-axis: +/- 20 µm, x-/y-axes: +/- 25 µm)
- electrical synchronization of docking modules, individual positioning of each docking module
- zero risk of collision with docked board
- compatible with great variety of test heads, handler and probers

helix air-docking

high docking force
up to 1200 N at 6 bar

shortest Z-stack distance

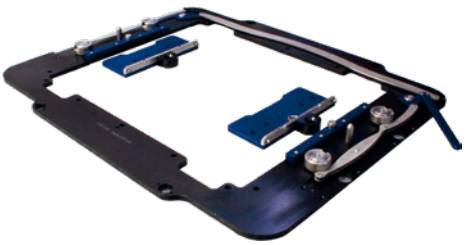
multi adaptable to all test head types

- suitable for all common test head/handler types
- pneumatic system with pin-catch feature in pre-docked position
- precise docking, highest repeatability <10 µm
- error prevention through sensor support, zero risk of collision with docked board
- durable and robust design, maintenance-free
- cost-/time-saving, simple operation

cam-dock

precise docking

cost-effective



low-cost, mechanical solution

- mechanical docking solution
- high repeat accuracy
- high docking force
- compatible with existing solutions
- modular + robust design
- no cable break/stretching

direct docking

smart + cost-effective

for top-load applications only

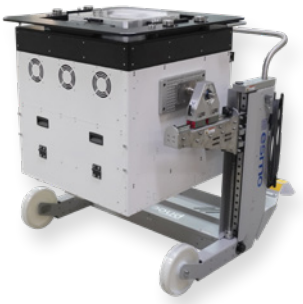
wafer probing w/o pogo tower

- compatible with various types of probers
- suitable for various types of test heads + probe cards
- inserts for various test head applications available
- retrofit of existing prober possible
- facilitated installation due to simple prober head plate exchange
- onsite installation possible
- easy of use + handling

Special Equipment + Accessories

mechanical test head housing

for carrying customized
signal tester cards



customized design solutions

- fully integrated docking and board locking
- suitable for individual and high-volume production
- standard and customized dimensions
- quick and easy locking|unlocking process for board change
- large application space – load board
- optional number of channel boards as per customer specifications
- docking design in compliance with customer internal docking standards/dimensions

pogo tower planarity + pin compression measurement tool

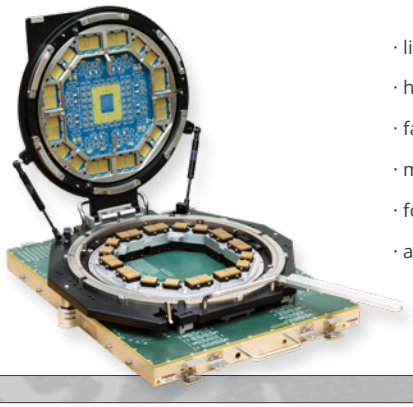
easy operating testing tool
for pogo tower positions

easy operating

- 66 mm to 48 mm touch screen display
- 4-distance sensor for diagonal/cross measuring 0.05 mm measuring tolerance
- measuring results may be saved and transmitted to PC
- stationary installation in pogo towers possible
- providing precise feedback on docking adjustments – works perfectly in combination with the esmo helios dock system
- eliminating pogo tower or docking open contacts or increased contact resistance – facilitated troubleshooting for customer

manual test adapter

easy hand test for
prober applications



debugging made easy

- linear pin compression
- hinged carrier for probe card
- facilitated probe tower positioning
- mounted onto test head stiffener
- for hand-test and debugging
- available for various test head and pogo tower types

clamp shell

probe card
easily accessible

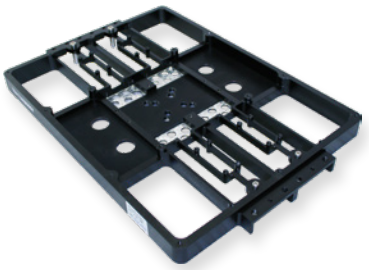
safe pogo tower
handling

easy probe card change

- hinged probe tower carrier and clamping mechanisms
- facilitated probe card change for top load prober
- hinged probe tower
- linear pin compression
- high repeatability

stiffeners

for extended boards
with safety covers



extende application space

- load board stiffener
- probe card stiffener
- cost-efficient and maintenance-free
- customized solutions

Pogo Towers

pogo tower triton

universal use –
compatible with existing solutions

- universal use for different tester types (e.g. ETS-364, Nextest Magnum HV, HD etc.)
  - internal ring: 7” = 640 to 1,280 pins
  - center ring: 9” = 1,280 pins
  - external ring: 11” = 1,280 to 2,496 pins
- various types of adapter rings available
- up to 1,280 pins for each ring (up to a total of 3,840 pins)
- different configurations possible

various configurations

pogo tower midas

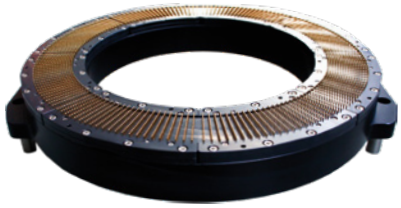
universal use –
compatible with existing solutions

- fully compatible with existing pogo towers
- designed with standardized units/dimensions for easy assembly|maintenance, and flexible arrangement|use
- pin arrangement allows for standard “pseudo” 50 Ohm
- signal pins (each signal pin is surrounded by 4 grounds)
- 12 pin modules with 160 pins each

field compatible

pogo tower J750

various pogo pin module options
on customer demand

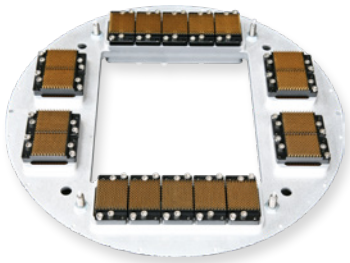


- available with various pogo pin modules on customer demand
  - standard: 1,496 pins
  - xt: 1,904 pins
  - full: 2,992 pins
- compatible with existing board layouts

standard footprint

pogo tower FLEX modular

various pogo pin module options
on customer demand



- fully compatible with existing pogo towers
- 360 | 900 | 1,080 | 1,320 | 1,620 | 2,070 pins
- 18 pin modules with 90 signal pins each, and 10 pin modules with 45 signal pins each
- application spaces: 224 cm^2 and 114 cm^2

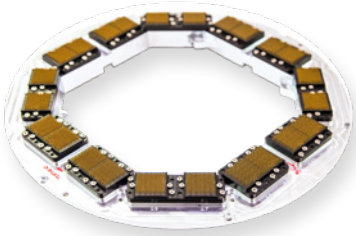
standard footprint

combo 350 pogo tower

with cold temp cover

various pogo pin module options
on customer demand

freely configurable



- available with various pogo pin modules on customer demand
- configurable from 800 to 4,800 pins
- compatible with all standard probers
- modular design allowing for easy pogo pin and block replacement as well as for facilitated maintenance
- extended application space
- modular pin block design, freely configurable spacing

extended application space

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