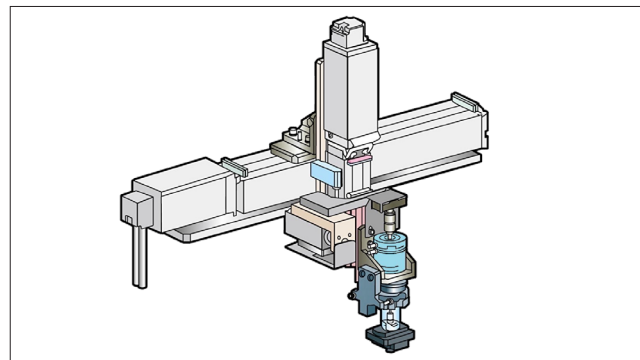


Applications

Maximizing Performance, Minimizing Space,
Achieving Excellence

Pick & Place End-effector θ -axis

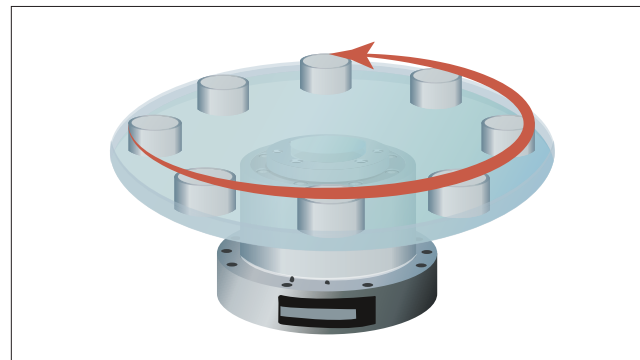
Pick & Place



Lightweight High Precision Low Particle

Wafer inspection & indexing

Indexing



High Precision Compact 5um NRRO

Wafer cleaning & polishing

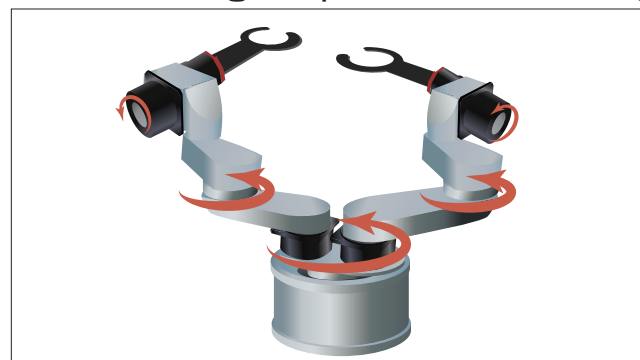
Cleaner/Polisher



High Torque Hollow Shaft Lightweight

Wafer handling & flip axis

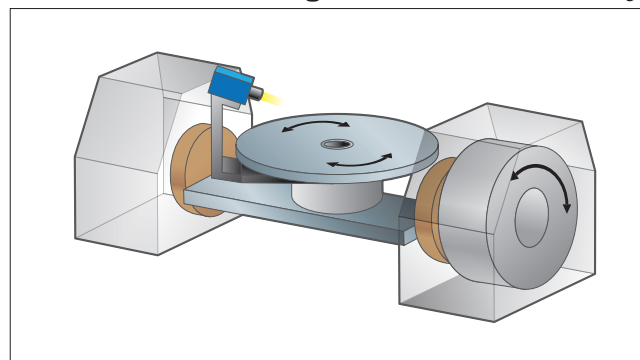
Wafer Handling



Lightweight High Torque Hollow Shaft

Pan-tilt table drive and gimbal drive

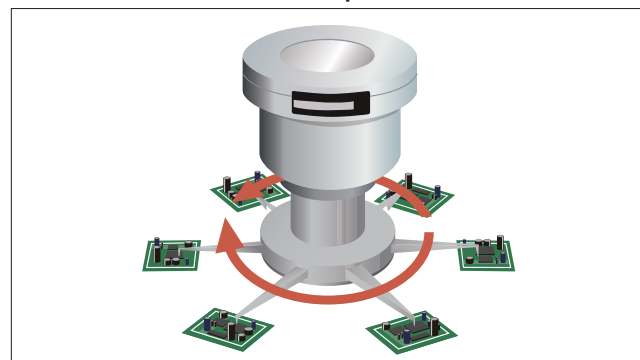
Pan-tilt/Stage



Compact High Precision Lightweight

Test handlers and inspection

Test Handler



Lightweight High Precision High Torque

Example Applications

- Die bonders Chip mounters Transfer robots Sputtering
- Dicing (singulation) Wire bonders Probers CMP
- Scanners Flip-chip bonders Etching Taping
- Vacuum deposition equipment Defect inspection equipment
- Exposure systems Scribing systems Solder ball mounters

Compliance Documents

- RoHS ChemSHERPA
- REACH PFAS

Certification Documents

- CE
- UL (Under Development)

Product specifications and designs are subject to change without prior notice for continuous improvement.

For inquiries about this product, please contact us at the email address below.

https://motor.mtl.co.jp/Eng_Contact.html



MTL マイクロテック・ラボラトリー株式会社
MICROTECH LABORATORY INC.

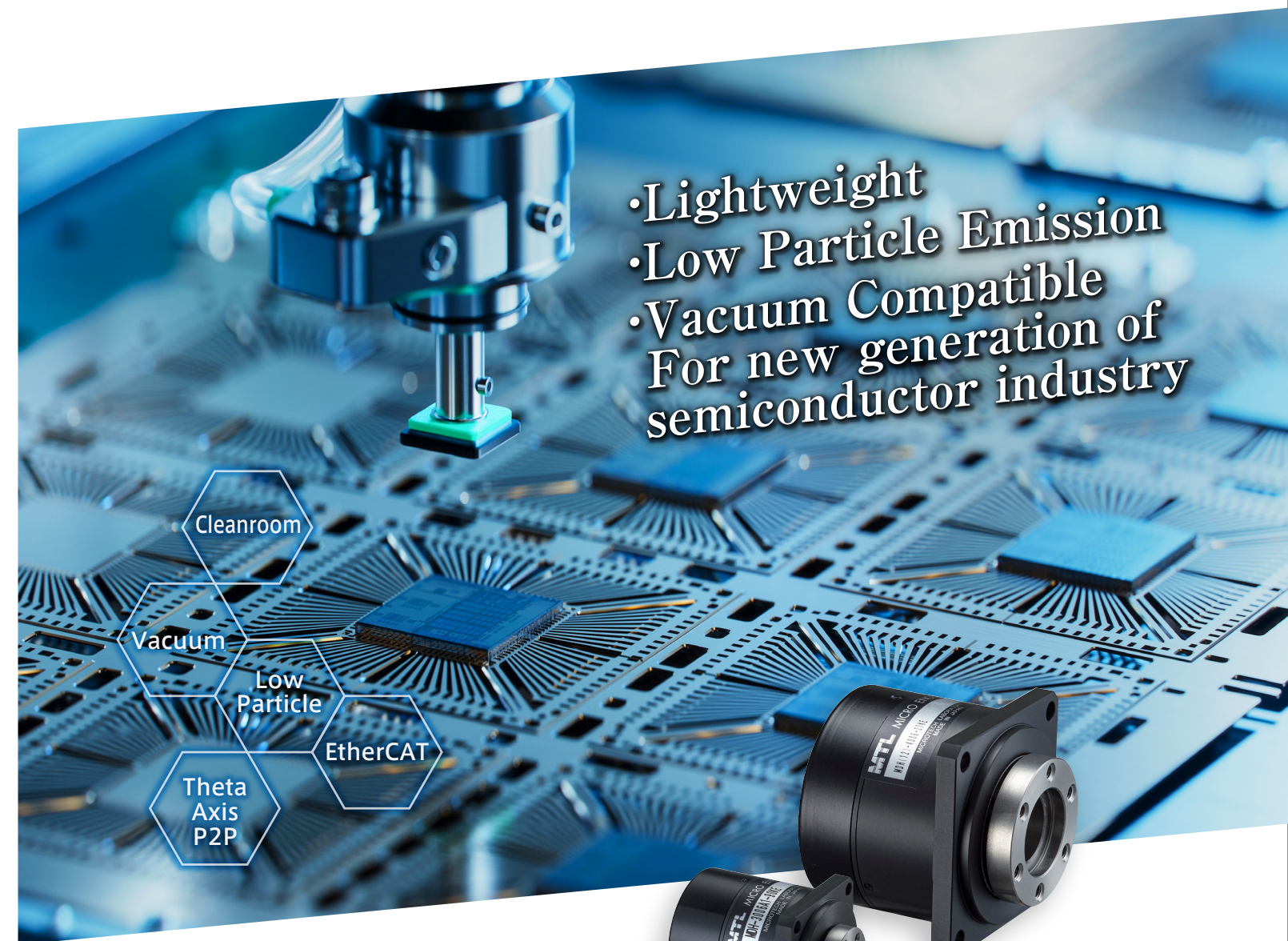
Head office: 8-1-46 Honcho, Kamitsuruma, minami-ku Sagami-hara-shi
Kanagawa 252-0318, Japan
PHONE: 81-42-746-0123 FAX: 81-42-746-0960

<https://www.mtl.co.jp>



MTL
MICROTECH LABORATORY INC.

μ DD Motor Specialized for Semiconductor



- Lightweight
 - Low Particle Emission
 - Vacuum Compatible
- For new generation of semiconductor industry

Cleanroom
Vacuum
Low Particle
EtherCAT
Theta Axis P2P

MICROTECH LABORATORY INC.

μ DD Motor series



μDD Motor Website



φ13mm

MDS-13 series



φ21mm

MDS/MDH-20 series



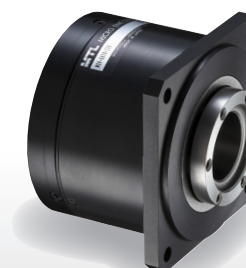
φ30mm

MDS/MDH-30 series



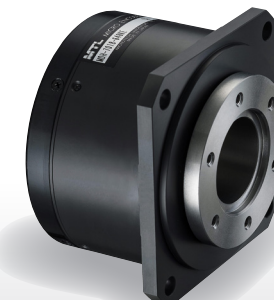
φ40mm

MDH(12)-40 series



φ60mm

MDH-60 series



φ70mm

MDH-70 series

New Innovation Servo Motor High Precision MRS-70

A table-type motor equipped with a cross-roller bearing, achieving $\pm 5 \mu\text{m}$ deflation and improved NRRO. Ideal for semiconductor wafer cleaning, polishing, and inspection equipment.

- Outer Diameter : $\phi 70\text{mm}$
- Height : 44/56mm
- Peak Torque : 1.0/3.1N·m
- Max Speed : 200rpm
- Resolution : 2,592,000P/R(4x interpolation)
- Hollow Shaft : $\phi 25\text{mm}$



Highest Torque μ DD Motor MDH-100

A high-performance model delivering the highest output torque and a hollow structure in the μ DD series. Suitable for a wide range of applications, including semiconductor inspection tables, robotic arms, and AGVs.

- Outer Diameter : $\phi 100\text{mm}$
- Length : 70mm
- Peak Torque : 10N·m
- Max Speed : 300rpm
- Resolution : 21bit
- Hollow Shaft : $\phi 40\text{mm}$



Compact Driver with EtherCAT MC-200-7220B

EtherCAT-compatible versions have been added to the MC-200 series. Fieldbus connectivity enables multi-axis control.

EtherCAT



Driver Collaboration

Panasonic

EtherCAT
RTEX
RealTime Express



MINAS A6 Family



SSCNET III/H
SERVO SYSTEM CONTROLLER NETWORK



MELSERVO-J4
MELSERVO-J5

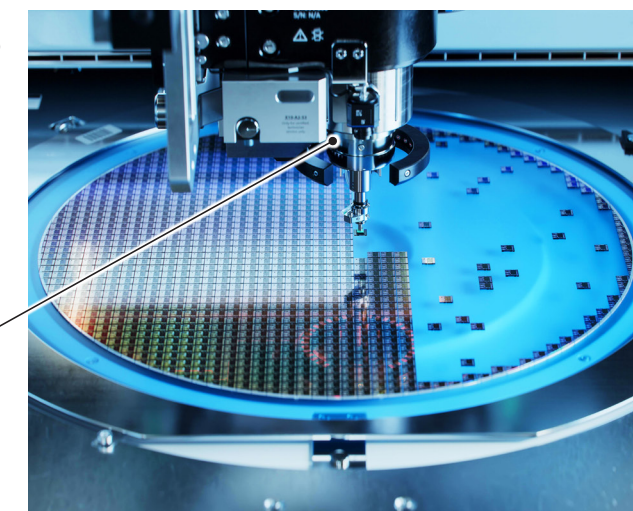
MECHATROLINK

2025 Collaboration
Coming Soon

Custom Hollow-Tapped μ DD Motors Hollow Shaft × Rotary Joint

- Application : Die bonding, pick and place, etc.
- Repeatability : $\pm 1 \text{ arc-sec}^*$
- Mass : 210g*

*MDH-4006-324KE Model



Ideal for θ -axis head alignment and pick to place.

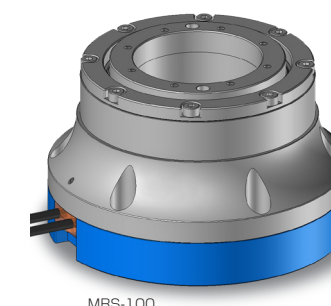
Micro Encoder for High-Vacuum & Contamination Compatible

- Expertise in outgassing control: adhesives, bearings, and housing materials.
- Compatible with vacuum environments such as sputtering systems, vapor deposition equipment, and electron microscopes.
- Wide lineup of high-precision rotary encoders for optimal selection and proposals.
- Vacuum-Compatible Direct Drive Motor Currently in Development.

Under Development*

Rotary θ Stage MRS-100

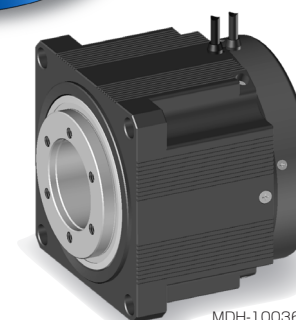
- Mounting : $\phi 75\text{mm}$
- Runout : $\pm 5 \mu\text{m}$
- Axial Load : 1500N
- Hollow : $\phi 55\text{mm}$
- Resolution : 21bit



MRS-100

High Torque MDH-10036

- Outer Diameter : $\phi 100\text{mm}$
- Length : 88mm
- Peak Torque : 19.6Nm
- Hollow : $\phi 40\text{mm}$
- Resolution : 21bit



MDH-10036