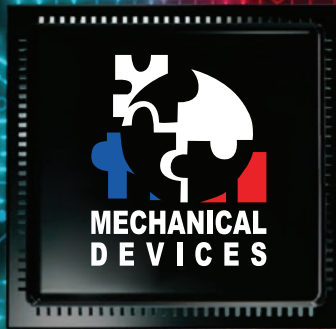


Industry's widest range & most advanced **THERMAL CONTROL UNITS**



Mechanical Devices newest innovation in thermal testing. Each TP system contains a **thermal chuck** or **thermal platform** and a self-contained thermal control unit.

The TP chuck and platforms is a **breakthrough product** that introduced the use of refrigerant for active cooling & heating of wafers and other components with no need of chiller, CDA, or consumable and expensive refrigerants such as liquid nitrogen and liquid carbon dioxide. It can be a perfect replacement system in the industry for uncompromising thermal and mechanical performance with a temperature ranging from -60 to $+220^{\circ}\text{C}$.

TP Thermal Chucks – for probe station -60°C to 220°C



TP chuck is a family of thermal controlled chucks used for test characterization, modeling, process development, design, de-bug or IC failure analysis of semiconductor wafers. The TP chuck system have the performance and versatility needed for all main analytical probe stations integration.

For analytical and production test applications calling for fast temperature change, cooling and heating times become particularly important for wafer test productivity. Time to temperature and soaking times with TP are considerably faster than any water or air based systems.

Available for 100 mm (4"), 150 mm (6"), 200 mm (8") and 300 mm (12") wafers.

TP Thermal Plates -60°C to 220°C



These precisely controllable temperature platforms from MD Systems provide an open work surface with rapid heating and cooling or holding at temperature. Also known as "hot/cold plates", they are ideal for testing or conditioning low profile items with a flat surface such as RF devices and high density power device testing (IGBTs and MOSFETs).

These hot/cold plates can be used also for custom product, Lab/Medical, benchtop, battery cooling, sample cooling, precise and ultra-low temp control applications. Several sizes and made-to-order thermal plate are available.

The TP system requires only electrical power to operate, so the system can be rolled to anyplace in the facility that it is needed and simply plugged-in to an AC outlet.

Key features of TP system:

- Industry's lowest soaking time
- Industry's fastest transition times
- Reaching -60°C without LN2, CO2
- Ultra-low noise
- OEM

Saving Costs:

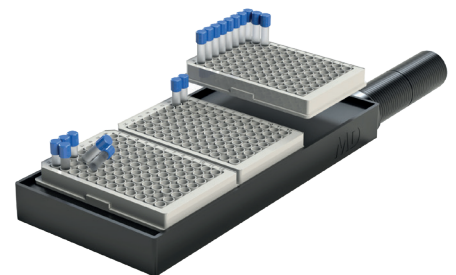
- Replace (LN2), (CO2) or water and air systems.
- Save infrastructure and maintenance costs of LN2, CO2, Chiller and CDA.
- Save consumable material costs.
- Save storage and distribution of expendable refrigerants.



*Customized chucks available.
OEM with probe station*

Features:

- Temperature range of -60°C to +220°C,
- Fast cooling/heating rates up to 25°C/min
- No LN2 or CO2 required
- No chiller or CDA required
- Temperature stability +/-0.1
- Fully programmable for automation
- Quite & portable
- Maintenance FREE



*made-to-order thermal plates
are available OEM with different
test equipment*

SYSTEM SPECIFICATIONS

Operating

| | |
|---------------------------------------|--|
| Temperature range | -60°C to +220°C |
| Surface flatness and base parallelism | ±50µm |
| Temperature resolution | 0.1°C |
| Temperature accuracy | ±0.1°C |
| Temperature stability | ±0.1°C |
| Temperature uniformity | -60°C to +200°C ±1°C >200°C ±0.6% |
| Heating rates | -60°C to +25°C: 2 min 0°C to +25°C: 3 min +25°C to +220°C: 6 min |
| Cooling rates | +220°C to +25°C: 2 min +25°C to -60°C: 6 min |

Mechanical Data

| | |
|----------------------------|-------------------------|
| System size (WxHxL) | 577,5mm x 370mm x 753mm |
| System weight | 100 Kg |
| Controller to chuck length | ~2 - 2.5 meter (6.5ft) |
| Chuck surface plating | Nickel (gold available) |

Data Communication

| | |
|----------------------|--|
| Ethernet TCP/IP | RJ-45 |
| Touch screen display | 7" LCD |
| Temperature sensor | PT100, 4-line wired |
| Interfaces | Ethernet RJ-45 |
| Control method | PID with Temperature Dynamic Control TDC |

Facilities

| | |
|-----------------------|------------------------|
| Power | 220V, 50/60Hz, 12A max |
| Operating temperature | 5°C to 27°C |
| Plug | Nema L6-20/30 |