

MMI-SERIES

Product features

MMI stands for man machine interface – because our focus is not only on first-class functionality, but also on ergonomically optimised operation, both when sitting and standing. Whether for functional testing, final testing or ICT applications with up to 1200 N* – 600 needles at 2 N each (and even up to 1600 N – 800 needles at 2 N each for the reinforced version), an MMI is always the ideal solution for mechanical test fixtures. Our renowned Premium MMI-series impresses not only with its outstanding ergonomics, but also with its exceptional performance, durability and precision, making it a future-proof investment. Thanks to the extraordinary range of sizes, designs and standard additional components, you will always find the right design for your individual requirements – all in a single, uncompromising series.

The premium fixture series for almost all areas of application, as a standalone or exchangeable system for varying products.

** The needle force we specify is not based on theoretical maximum values, but on real long-term tests with over a million strokes under practical conditions. In contrast to purely mathematical specifications, our force specifications stand for permanently tested reliability and quality that delivers what it promises.*

Ergonomics:

Optimised lever mechanism
for fatigue-free working

Hold-down plate:

Tool-free & quick replacement
for easy servicing and product
changes, **floating mounting**
with centring pins

Linear stroke:

Standard linear stroke
(22 mm)

Fixture mechanism:

No interfering components above
the carrier plate enable unhindered
and convenient assembly

Moving plate:

The easy-to-release
lock allows for effort-
less removal without
any tools

Fixture variants:

With 18 fixtures, the MMI-series
offers the **widest selection of sizes**
and **designs** – including an RF ver-
sion and an **isolated test station**

Opening angle:

Opening angle of up to 90° – for
more space when loading and
unloading, especially in automated/
robot-based processes

Automation:

Factory-integrated or
retrofitable AOC-E/P
module for full automation

Cassette removal:

Quick/easy removal
thanks to lever with
top loader function;
forced-centred inter-
faces with two pressure
points ensure consistent
contact

Rear panel:

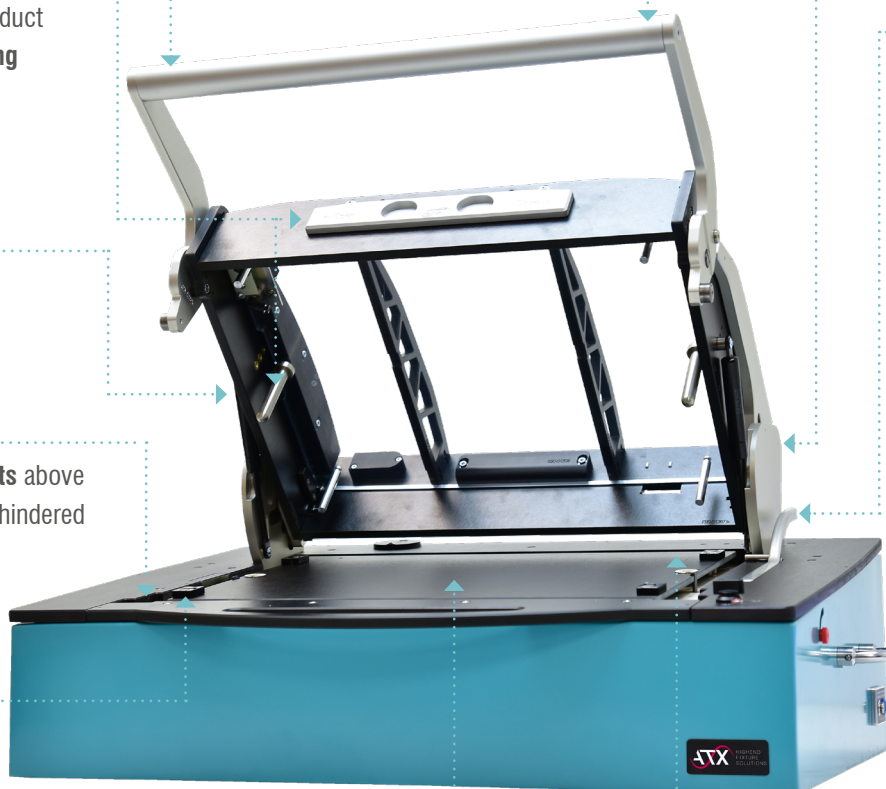
Individual adjust-
ments to the test
system

ESD safety:

Standard ESD dissipating
materials and protective
measures

3-pin connector & ESD pins:

Signal query and ESD
dissipating connection



Housing variants:

Customisable housings
and **covers** for example
for tall components or
additional hardware

Exchangeable cassette:

Robust, enclosed exchangeable
cassette protects contact sleeves
and enables easy, secure storage

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SPECIAL FEATURES

Details

• ERGONOMICS:



The lever movement is designed to match the movement of the human hand: thanks to the innovative lever mechanism, the lever tilts towards the user when the hood is opened, making it easy to reach in any position.

Whether standing or sitting, users can work without fatigue and without straining their joints, in a natural posture.

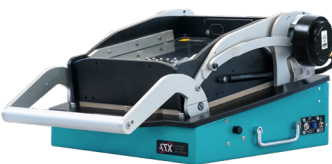
• OPENING ANGLE:

Coming soon



The extended opening angle of up to 90°, which **will be available soon**, makes it easy for both employees and robots to get in – perfect for loading and unloading the assembly. This ensures seamless integration into automated workflows and provides optimal support for use in automated/robot-based processes.

• AUTOMATION:



The Auto-Open-Close module is available in both an electric (AOC-E) and a pneumatic (AOC-P) version and enables the automated opening, closing and contacting of test objects from the MMI-series. This compact solution is ideal as an addition to new test equipment or as a flexible retrofit option for increasing quantities and changing requirements. **Because only one thing matters to us: finding the best solution for our customers in every situation!**

• CASSETTE REMOVAL:

Exchangeable system



Thanks to the innovative top loader function, the exchangeable cassette can be easily unlocked via a lever and then removed upwards without any problems. It is not necessary to open the housing for this. The interfaces of the exchangeable system are forcibly centred by bolts, preventing damage to the interface pins when inserting the exchangeable cassette. Despite single-sided lever operation, the cassette is pressed onto both sides of the solid and torsion-resistant interface via a smooth-running, parallel-guided mechanism to ensure secure and consistent contact. The interface, which can be optionally equipped with high-quality pylon blocks, is characterised by its durability and maintenance-free design. In addition, the consistent dimensions of the flexibly configurable interface blocks contribute to a tailor-made application solution.

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• REAR PANEL:



The rear panel can be replaced with interfaces of all common types, **allowing individual adaptation to the test system**. Both the prepared cut-out and the housing with included interface frame can be ordered.

• ESD SAFETY:



ATX fixtures are able to **dissipate ESD as standard**, unlike some other manufacturers. Except for the pin plate, all fixture components are made of **ESD dissipative material**. Even the metal housing is equipped with an ESD-compatible powder coating. An ESD shield including a connection for ESD dissipation, an ESD wrist strap and a mounted dissipation resistor is pre-installed on each fixture.

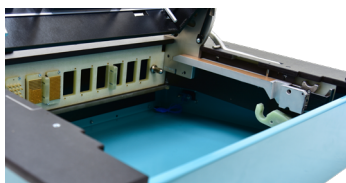
• 3-PIN CONNECTOR & ESD PINS:



A 'start switch' (internal: 3-pin connector) is installed in the MMI as standard. This contacts a brass plate on the moving plate. This allows the 'fixture down' signal to be queried during ICT. Also possible with bi-level: In addition to ICT, there is also the FKT query. The **ESD needles (long stroke!)** **contact the moving plate on the underside of the plate in each fixture**. The underside is connected to the top side in an **ESD dissipative** manner by means of a so-called Tapex socket and a screw.

• EXCHANGEABLE CASSETTE:

Exchangeable system



The exchangeable cassette is **completely enclosed in a robust housing** beneath the pin plate to **protect the contact sleeve and wiring from damage** even during frequent exchanges and to **ensure easy and safe storage**. The exchangeable cassette is **flush with the carrier plate**, which creates space and improves accessibility when inserting and removing the test object.



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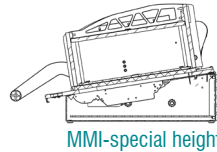
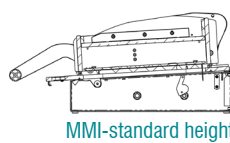
SPECIAL FEATURES

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• HOUSING VARIANTS:



Many different housing variants are available to adapt the fixture to the test conditions. Tall designs are also available as an option for both the fixture housing and the fixture cover.



• FIXTURE VARIANTS:

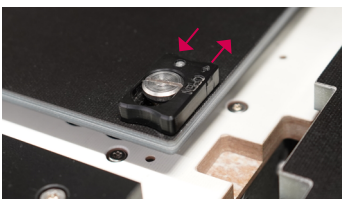


With 18 fixture variants in different sizes and designs – from compact (185 x 310 mm) to large (800 x 600 mm) – the MMI-series offers the greatest variety on the market in a single product series. In addition to standalone and exchangeable systems, our MMI-series is also available as an **isolated, mechanical manual test station**. We also offer an **high frequency version** in our range. Hood locks, including secure versions, are available as an option and can be adapted to your requirements. In addition, numerous other functional additions and safety packages are available to optimally meet your individual requirements.

More informations:

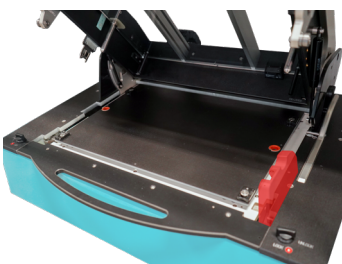
- ✓ **Mechanical test station | isolated**
- ✓ **Mechanical high frequency fixture**

• MOVING PLATE:



The moving plate can be removed **without tools using four easy-to-release locks**. This provides easy access to the spring-loaded contact pins and contact sockets – ideal for maintenance work, inspections or quick replacement of individual components.

• FIXTURE MECHANISM:



Unlike other common products, there are **no interfering components above the carrier plate**. This ensures **unimpeded and convenient loading** of the fixture in both manual and robotic operation. In addition, **damage to the test specimen due to component destruction or bending is avoided**, as the operating personnel cannot get stuck. This avoids waste and ensures quality. The robust fixture mechanism, designed for high volumes, has successfully passed endurance tests with 1 million strokes. Consistent **smoothness is a given, even with a high number of needles**. In endurance testing, 600 spring-loaded contact pins with 2 N spring force each were successfully tested – with the reinforced fixture version, up to 800 contact pins are technically possible.

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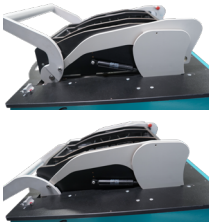
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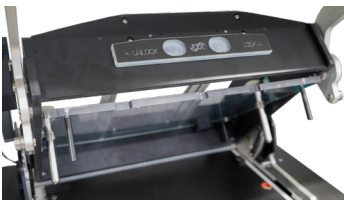
• LINEAR STROKE:



Our fixtures (regardless of the series) are equipped with a linear stroke as standard. For the MMI, this is 22 mm. In conjunction with the pre-centring of the floating hold-down plate (also in the exchangeable system) via bolts and Teflon-coated DUT sockets, component hits are avoided even on densely populated assemblies. This ensures uncompromising reproducibility of the hit pattern (with TOP contacting) and the contacting stroke throughout the entire service life.

• HOLD-DOWN PLATE:

Exchangeable system



The hold-down plate can be quickly changed without tools for simple servicing and product changes. Unlike other products, the hold-down plate does not fall down uncontrollably, even after accidental unlocking. It is held at an oblique angle in the hood and can be easily removed from the hood with a controlled forward movement. The hold-down plate is mounted on a floating bearing and is guided precisely by centring pins.

FURTHER SPECIAL FEATURES

Key points

- ✓ Available as both MMI (standalone) and MMIW (exchangeable system)
- ✓ Wide range of sizes available → Standard sizes range from 185 x 310 mm to 800 x 600 mm (special sizes outside this range are also available on request)
- ✓ Lockable housing lock, finger pinch protection
- ✓ Play-free guidance of the slides of the hold-down system
- ✓ Quick-release fasteners on the test specimen carrier plate for tool-free needle service
- ✓ Free space on base plate for installing push buttons/switches → left/right of mechanism
- ✓ An integrated transport lock prevents the hood from being opened accidentally
- ✓ Reinforcement kit available → up to 2000 N
- ✓ Spring-assisted stand → easy opening/closing of the fixture base housing
- ✓ Cassette interface with up to 12 pylon blocks
- ✓ Large number of different interface connection options on the rear panel, e.g. VPC G12, VPC G12X, VPC G20, VPC G25, Reinhardt available
- ✓ Gentle contact with the exchangeable cassette in the base unit despite the high number of needles, thanks to a robust tightening mechanism
- ✓ Expandable with a wide range of additional options and safety modules, e.g. starter package, electric/pneumatic locking, bi-level options, hood switch (micro & reed switch), transfer options (drag chain, armoured conduit), auto-open function, auto-open-close function, strut, mounting plate, top interface, plug connection, manual button actuation, circuit board locking, safety switch, safety package

MAINTENANCE RECOMMENDATION

To ensure consistent functionality, we recommend performing maintenance measures at regular intervals. Further information can be found on our homepage in the download area or here: [Maintenance recommendation](#) ✨