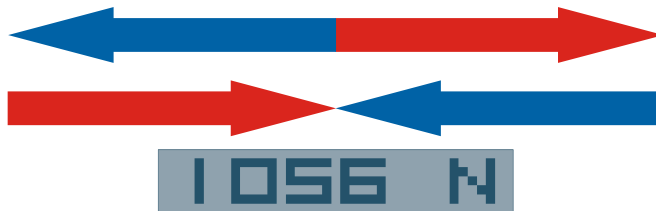




MI&T Mess- & Prüftechnik Berlin
Measuring Instruments & Testers

**Force Gauges
Test Systems
Test Stations**

Advanced Force Measurement



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Universal Test Station model MTM



MTM 500 with SG 90 and SHA-40/A

- Digital Test Stations with automatic motor drive for pull, press, bend, elongation and break tests
- Easy to operate units with comprehensive functions
- Internal measuring rate: 10000 Hz
- Great and good readable touch screen panel
- Adjustable test speed
- Optional with built-in printer that uses normal paper
- RS232C-, DIGIMATIC-, USB-, LAN- interface ports
- Real time clock for output of report
- Preset of test load for non-destructive tests
- Hold under load function with adjustable hold time
- Integrated stroke measuring unit
- Graphic display of measured curves
- Repeat tests
- Integration of measured crimp height value
- Test programme selection for standard test programmes and if applicable customized special test programmes.
- Universal quick change tool mounting adaptors.

Model overview MTM- and ATM Test Stations

| Type | Indication Range [N] | MTM Resolution [N] | ATM Resolution [N] |
|------|----------------------|--------------------|--------------------|
| 5 | 0- 50 | 0.005 | 0.01 |
| 10 | 0- 100 | 0.01 | 0.02 |
| 25 | 0- 250 | 0.02 | 0.05 |
| 50 | 0- 500 | 0.05 | 0.1 |
| 100 | 0- 1000 | 0.1 | 0.2 |
| 200 | 0- 2000 | 0.2 | 0.5 |
| 500 | 0- 5000 | 0.5 | 1 |
| 1000 | 0-10000 | 1 | 2 |



MTM 100 with SG 80 and DKS-20/A

Motorized Test Station model ATM



ATM 50 with UDT 100 and MK-8/A

- Motorized Test Stations with automatic motor drive for tension and compression tests
- Compact and space saving units
- Internal measuring rate of 10000 Hz and high resolution provides high accuracy and captures even critical peak force readings.
- Indications and operation of measuring system via durable infrared sensor screen with dot matrix LCD display
- Keypad control unit for operation of drive system
- Adjustable test speed
- Preset of test load for non-destructive tests
- Hold under load function, selectable 60, 120, 180 s
- Autoprint function
- Break Stop Function with automatic stop and reversal
- Continuous cycle operation
- Peak point and tracking mode.
- Real time clock for printout with date and time
- RS232C serial port for data output
- Setup menu for setting internal parameters and adjustment
- Rugged all metal construction
- Universal quick change tool mounting adaptors.

Motorized Tester model FTM



FTM 500 with SG 90 and SHA-40/A

- Digital Tester for tension, compression and break tests
- Tester with motor drive for constant test speed
- 3 factory-provided test speeds, selectable by customer between 5 and 600 (300) mm/min.
- Space saving and easy to operate testers
- Rapid internal measuring rate of 10000 Hz and high resolution for exact force readings
- Indications and operation of measuring system via durable infrared sensor screen with dot matrix LCD display
- Keypad control unit for operation of drive system
- Zero correction and tare compensation
- Set point capability
- Measured value memory and real time clock for report output via RS232C serial port
- Setup menu for setting device parameters and adjustment
- Universal quick change tool mounting adaptors.

Model overview FTM Testers

| Type | Indication range [N] | Resolution [N] |
|------|----------------------|----------------|
| 5 | 0- 50 | 0.01 |
| 10 | 0- 100 | 0.02 |
| 25 | 0- 250 | 0.05 |
| 50 | 0- 500 | 0.1 |
| 100 | 0- 1000 | 0.2 |
| 200 | 0- 2000 | 0.5 |
| 500 | 0- 5000 | 1 |
| 1000 | 0-10000 | 2 |

Model overview FTS Testers

| Type | Indication range [N] | Resolution [N] |
|------|----------------------|----------------|
| 5 | 0- 50 | 0.01 |
| 10 | 0- 100 | 0.02 |
| 25 | 0- 250 | 0.05 |
| 50 | 0- 500 | 0.1 |
| 100 | 0- 1000 | 0.2 |

Digital Tester model FTS



FTS 50 with SG 80 and MK-8/A

- Digital Tester for pull and press force tests
- Tester manually operated by hand wheel for evenly applied test load and good positioning
- Self-locking linear drive features hold under load
- High measuring accuracy and repeatability
- Indications and operation via infrared sensor screen
- Zero correction and tare compensation
- Set point capability
- Measured value memory and real time clock for report output via RS232C serial port
- Setup menu for setting device parameters and adjustment
- Universal quick change tool mounting adaptors.

Cable Tester models FTC and PTC



FTC 50 with SG 80

- Space-saving testers for pull-off force testes at crimped terminals, connectors, end sleeves and other pressed, glued and soldered parts
- Manual operation by hand lever, with cable clamping fixture with automatic gripping during hand lever actuation.
- Indications and operation via infrared sensor screen
- Peak point and tracking mode.
- Automatic zero point correction / Tare compensation.
- High internal update rate and measuring accuracy for exact force readings.
- Serial port for data output.
- for more technical details of measuring systems see description of FTH and PTH testers.

Motorized Testers

Manually Operated Testers

Pull & Press Tester model FTH



Tester FTH with SG 80 and MK-8/A

- Force Tester for pull and press force tests in material testing and quality control, e. g. for pull-off test at crimped terminals, connectors, components, etc.
- Easy to operate and space-saving testers.
- Load slide with precise linear motion, actuated by hand lever
- 4 types with different measuring ranges are available for selection of highest possible measuring accuracy for the respective application (0-50/100/250/500 N, each with 5000 Digits resolution); Accuracy class 0.25.
- 10000 Hz internal update rate for exact force readings
- Indication and operation of the measuring system via durable infrared sensor screen with dot matrix LCD-Display
- Set point capability
- Measured value memory and real time clock for protocol
- RS232C serial interface for data output
- Set-up menu for internal parameter setting and adjustment

Pull & Press Tester model PTH 50



PTH 50 with SG 80 and MK-8/A

- Tester for pull and press force tests
- Indication range 0 to 500 N
- Resolution 0.5 N
- Peak point and tracking mode.
- Load slide with precise linear motion, actuated by hand lever
- RS232C serial interface for output of measured values
- Set-up menu for internal parameter setting and adjustment
- Quick change tool mounting adapters for tool and test fixture assembly.

Test Benches models PTB and FTB for testing cable tie tighten pistols



FTB 50 with tool set KBP-MK7



FTB 50 with SG 80 and KBP-MK7

- Small and handy Test Benches for testing the tension force of cable tie tighten pistols (tie rap guns)
- Quick change tool mounting adapters for assembly of different KBP fixtures for different models of cable tie pistols and for test fixtures for the cable tie head.
- Test benches can be positioned length- and crosswise to the operator because the force gauge can be fixed user-defined at both sides of the test bench's housing and in any orientation.
- Models series PTB 50 and FTB with various indication ranges up to max. 1000 N.
- High-precision force measuring system and
- High internal measuring rate of 10000 Hz as well as high resolution provide high accuracy and reproducibility and consistently captures even critical peak force readings.
- Peak point Mode and Tracking Mode.
- Easy to operate and space-saving test benches.
- The KBP fixtures for the cable tie pistols are available for almost all cable tie pistol models.
- The exact positioning and secure fixing of the cable tensioning tools on the test benches ensure precise measurements and user-independent reproducibility.

Testers operated by hand lever

Test Benches

High-precision Measuring System model CMS



Display with presentation of measured values



Sensor (example)

Display with force-time graph

- Digital high-precision force measuring system for measurements of tensile and compressive forces.
- Force measuring system consisting of high-precision remote load cell with sensor interface CMS (A/D converter and USB interface) integrated in the connection cable of the load cell and CMS configuration and evaluation software for analysis and graphical presentation. Optional the force measuring system can be supplied with a tablet display, tablet computer or laptop, each with installed and fully configured software.
- High measuring accuracy, resolution and repeatability.
- Easy operation.
- Rapid internal update rate consistently captures even critical force readings
- Load cells with different capacities (0.5 N to 50 kN) and designs can be used and operated alternately. After factory parameterization of the CMS interface of the respective load cell, the CMS software recognizes each load cell automatically.

Digital Force Gauge model DFG



DFG Force Gauge

- Digital force gauge with internal load cell for measurements of tensile and compressive forces.
- Small and handy unit for mobile use and stationary use with test stands.
- Ergonomic and rigid metal housing protects the accurate load cell and electronics when used in rugged environments.
- High measuring accuracy, resolution and repeatability.
- Simple and user-friendly operation.
- Easy handling: operation by 5 capacitive touch keys.
- Peak Point Mode (Peak & Auto Peak) and Tracking Mode.
- Ranges: 2/5/10/20/50/100/200/500/1000 N.
Resolution: 10000 Digits
- Vertical test stands for use with DFG available.

Data recording and evaluation

MI&T testers and test stations provide ports for the data output. Measured values can be send e. g. via a serial port to a suitable printer or transfer them to a PC. MI&T offers various hard and software solutions for the data acquisition and evaluation.

With the **MI&T KeyTast** measured values from measuring instruments and testers with serial port can be send via an USB port on the PC directly to word processing programs or statistics programs, e. g. MS Excel. With the **MI&T KeySoft** PC Software Interface measured values from measuring instruments and testers with serial port can be send via a serial port on the PC directly to word processing programs or statistics programs, e. g. MS Excel.

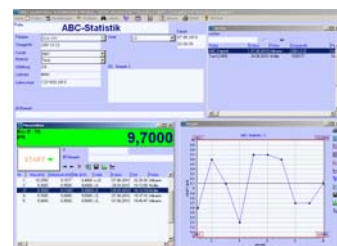
The **MI&Tstat** statistics software provides the data transfer between tester and PC via a serial port on the PC for the data logging, measured value acquisition and comprehensive statistical analyses.



MI&T KeyTast



MI&T KeySoft



MI&Tstat

Force Measuring Systems

Force Gauges

Software

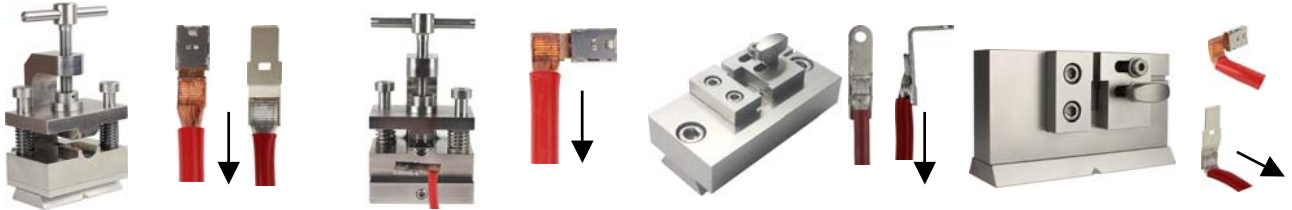
Clamping Tools and Test Fixtures

The MI&T offers a wide range of standard tools and test fixtures as well as especially designed special tools for customer-specific applications. Equipped with custom-designed testing tools and fixtures the MI&T testers and test stations can be used for manifold applications.

Standard Testing Tools and Fixtures



Special Tools and Fixtures e. g. for pull and peel tests of welded joints



Services

Competence for your measuring instruments and testers:
 Calibration at regular intervals and faultless operating measuring instruments are the precondition for verifiable and reliable measuring data.
 The qualified team of the MI&T GmbH offers a wide variety of services in the field of service, traceable calibration and repairs of measuring instruments and testers manufactured by our company, as well as for measuring instruments and testers of other manufacturers.

MI&T GmbH Measuring Instruments & Testers

Advanced Force Measurement

The MI&T GmbH is specialized in measuring and testing technologies in the field of force, force/stroke as well as strain measurements. We offer testers and test stations e. g. for tensile and peel tests of electrical wiring harnesses, tensile and compressive force measurements of test electronic components and assemblies, as well as for testing springs, plastic materials, medical products and packages, among many others. The MI&T GmbH stands for consequent innovations in the area of high-precision force measurement and industrial controls. We place particular emphasis on precision, easy operation and high reliability and particularly on competent advice and satisfaction of our customers and business partners.
 The MI&T GmbH provides a comprehensive range of high-quality test stations, test systems and force measuring gauges for force, force/stroke as well as strain measurement. The versatile MI&T measuring instruments and testers in combination with application specific clamping tools and test fixtures provide flexible test systems for diverse test applications in quality control, research, development and production control. In addition MI&T offers customized special test systems as well as customized clamping tools and test fixtures adapted to the respective customer-specific application.



High-quality test equipment Made in Germany

Download of catalogue with detailed technical descriptions at www.MIT-Tester.de