

Low Temperature Tolerant Electromechanical Material Testing Frame

Test Type

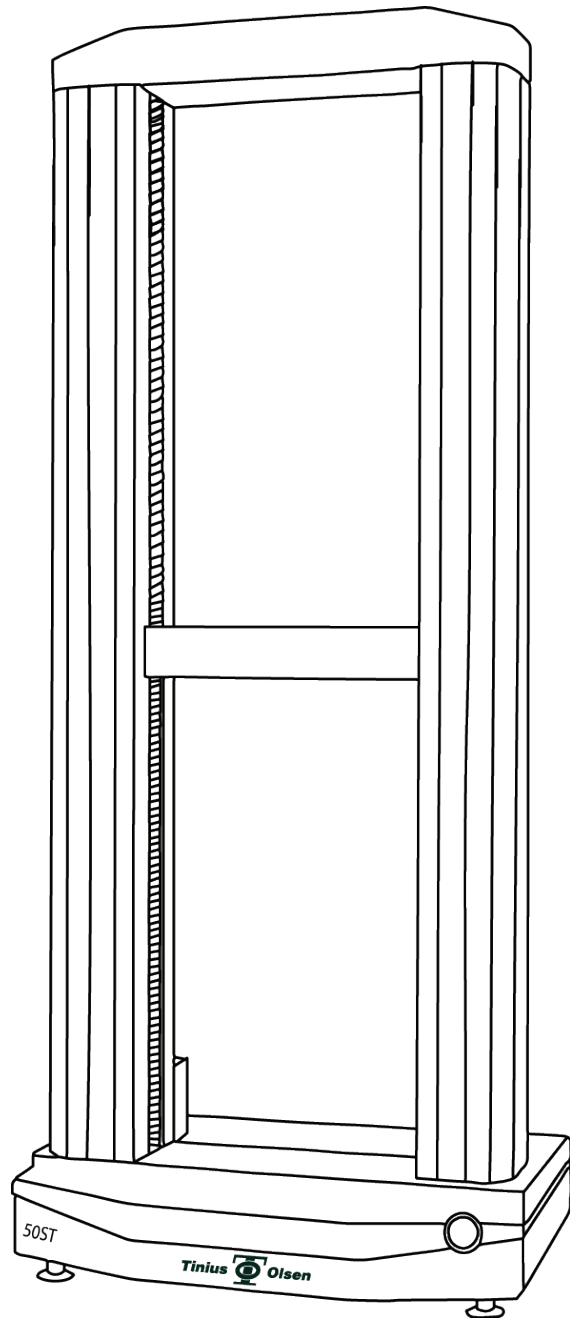
Tension, Compression, Flex,
Peel, Shear and more..

Interfaces

Horizon software,HMC, VMC,
Proterm

Applications

Medical devices, electrical
component



- + Capable of use within a cold box down to a temperature of -18°C non-condensing air
- + Suitable for tension, compression, flexure, shear and other tests to a maximum force of 50kN/11,000lbf.
- + Meets or exceeds the requirements of national and international standard for materials testing systems.
- + Bluetooth-enabled handheld interface allows maximum flexibility when paired to a testing frame.
- + 8 full-length T-slots built into the columns to allow accessories to be securely mounted to the test frame.
- + Built-in pneumatic distribution ports provide local air supply to pneumatic grips.

Model 50ST Low temperature tolerant

The 50ST low temperature tolerant model designed for tension, compression, flexure and shear strength testing on materials and assemblies. The frame is capable of use within a cold box down to a temperature of -18°C non-condensing air as compared to standard model. The robust design that incorporates quality materials and components ensures that our reputation for superior system performance, ease of use, and longevity is maintained. A variety of loadcells are available at differing capacities that give precise applied load measurements from the smallest test specimen to ones that go to full machine capacity. Test machines become complete, powerful test systems with the addition of grips to hold the specimen, strain measurement instrumentation and Tinius Olsen's Horizon Data Analysis software.

Interface Options

HMC3.0

Wireless handheld interface that is connected to the frame via Bluetooth. The interface features an Android-based operating platform and can be used to control the machine by itself or in conjunction with Tinius Olsen's Horizon software.

Proterm

Familiar handheld interface that is tethered to the machine. With its larger, tactile, sealed keypad, this interface is ideal for operators who use gloves to load and unload specimens and prefer a push button keypad. It requires virtual machine control software running on a connected PC to operate the basic machine functions and report basic numerical test data.



Options and Accessories

- + Grips and fixtures can be easily mounted securely with a simple locking pin, which also allows simple and rapid changes.
- + Full range of precision extensometers and deflectometers are available using optical, video, laser, encoder, strain gage and/or LVDT technologies.
- + Furnaces and environmental chambers can be installed for tests at high or low temperatures.
- + Safety enclosures with interlocks can be installed to protect operators from violent specimen breaks.
- + Tinius Olsen's Horizon software can be connected to the frame by the operator.

TO order numbers

| | |
|----------------|--|
| 99-991-1050/1Q | Materials Testing Machine, Model 50ST, Low Temp -18 Deg C, Twin Column, 50kN |
| 99-991-9000/03 | HMC 3.0 Wireless Handheld Sys. w/Locking dock and arm assembly; Fit ST Series |
| 03070246 | Handheld Terminal for Mech. Sys. w/ Display, Keypad, Interface, Black Case; 1114 |

Specifications

| | | |
|---------------------------------|-----------------------------|-----------------------------------|
| Frame capacity | 50kN / 5,000kgf / 11,000lbf | |
| Proof tested | 50% over frame capacity | |
| Mounting | Table mounting | |
| Test zone | One | |
| Number of columns | Two | |
| Column | Material | Aluminium extrusion |
| | Finish | Anodized |
| | Color | Natural |
| Base | Material | Mild Steel |
| | Finish | Pre-primed, top powder coat paint |
| | Color | TO Cool Grey Web # E63027 |
| Crosshead | Material | Mild Steel Solid |
| | Finish | Pre-primed, top powder coat paint |
| | Color | TO Green Web # 004C45 |
| Base Cover | Material | ABS recyclable |
| | Color | Cal Black Web # 111820 |
| Distance Between Columns | mm | 405 |
| | in | 16 |
| Max. Crosshead travel | mm | 1065 |
| | in | 42 |
| Stiffness | mm | 100 |
| | in | 571 |
| Height | mm | 1655 |
| | in | 65 |
| Width | mm | 729 |
| | in | 29 |
| Depth | mm | 506 |
| | in | 20 |
| Weight | kg | 192 |
| | lbs | 423 |
| Force protection system | Yes, digital | |

Specifications

| | |
|--|--|
| Displacement protection system | Yes, mechanical and user programmable |
| Accessory fitting interface type | Female diameter |
| Ball screw type | High precision low backlash |
| Ball screw cover/ protection | Yes |
| Crosshead drive | DC servo motor |
| Feet material | Non-adjustable impact resistance plastic |
| Pneumatic air distribution | 4mm OD hose with pushfit coupling, rated to 100psi maximum |
| Reference rule to support crosshead positioning | Yes, mm and inches |
| T slots in columns for accessory mounting | 8 x M6/M8 |
| Noise at full crosshead speed 2m radius | 22db |

Controller Specifications

| | | |
|--|-----------------------------|-------|
| Max data processing rate | 168MHz | |
| Data acquisition rate at PC | 1000Hz | |
| Number of instrument device connections | Internal | Three |
| | External | Four |
| Bluetooth enabled | v4.0 with A2DP, LE, EDR | |
| External PC connection | USB | |
| User interface connectivity | TO HMC3.0, Proterm, Horizon | |

Force Measurement

| | |
|------------------------------------|---|
| Force measuring device type | Strain gage-based load cell |
| Load cells available | 25N, 50N, 100N, 250N, 500N, 1kN, 2.5kN, 5kN, 10kN, 25kN, 50kN |
| Resolution | One part in 8,388,608 |
| Accuracy | 0.2% of applied force across load cell force range |

Specifications

| | |
|------------------------|-------------------------------|
| Range | 0.2-100% |
| Calibration standard | ± 0.5% to ISO 7500-1, ASTM E4 |
| Internal sampling rate | 1000Hz |

Extension Measurement

| | |
|------------------------|-----------------|
| Resolution | 0.1µm |
| Accuracy | ±50µm |
| Range | 0.1µm to 1065mm |
| Calibration standard | ISO 9513 |
| Internal sampling rate | 2.73kHz |

Position Control

| | | |
|------------|--------|-----------------------|
| Test Speed | mm/min | 0.0001-500 to 25kN |
| | mm/min | 0.0001 -250 to 50kN |
| | in/min | 0.000004-20 to 5klbf |
| | in/min | 0.000004-10 to 11klbf |
| Resolution | µm | 0.1 |
| | in | 0.000004 |

Specifications

| | | |
|-----------------------------|---------------------------|-------------|
| Accuracy | ±0.05% of indicated speed | |
| Return speed post test | mm/min | 0.0001-500 |
| | in/min | 0.000004-20 |
| Crosshead positioning Speed | mm/min | 0.0001-500 |
| | in/min | 0.000004-20 |
| Return to 0 function | Yes | |

Power Requirements

| | |
|----------------|------------|
| Supply voltage | 115/230V |
| Frequency | 50/60Hz |
| Power | 530W ± 10% |

Atmospheric Requirements

| | |
|--------------------|---------------------------------------|
| Operating temp. | 5 to 40°C (41 to 104°F) |
| Operating humidity | 10-80% non-condensing wet bulb method |
| Storage temp. | -10 to 45°C (14 to 113°F) |
| Storage humidity | 10-80% non-condensing wet bulb method |