

Automatic Universal Testing Machine (Load & Displacement Controlled)

Models: HT-802-600, HT-802-1000, HT-802-1200, HT-802-1500 & HT-802-2000

Capacities Available 600 kN, 1000 kN, 1200 kN, 1500 kN & 2000 kN

Reference Standards: IS 1608 (Part 1), IS 1786, ASTM A370, ASTM E8/E8M, IS 1828 (Part 1), IS 1599

The Hovoro Technologies Automatic Universal Testing Machine (UTM) – Hovoro UTM Series is a high-precision servo-controlled material testing system designed for tensile, compression, bending, shear, flexural, and displacement-controlled testing applications. The machine is engineered for superior accuracy, repeatability, and long-term reliability, making it suitable for quality control laboratories, research institutions, steel plants, automotive industries, construction laboratories, metallurgy industries, educational institutes, and advanced material testing facilities.



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The system utilizes a servo motor-controlled hydraulic loading mechanism integrated with a closed-loop PID feedback control system to ensure smooth and precise load and displacement application during testing. The intelligent controller continuously monitors load and displacement parameters in real time and supports automatic transition between load control and displacement control modes during testing.

The robust 6-pillar load frame construction ensures high rigidity, excellent load alignment, and minimum frame deformation under heavy loads. The machine incorporates motorized crosshead movement, hydraulic gripping arrangements, high-resolution displacement measurement, and advanced Windows-based testing software for real-time graphical analysis, automated calculations, data acquisition, and report generation.

Designed for modern laboratory requirements, the Hovoro UTM series offers versatile testing capabilities with operator-friendly controls, automatic test execution, overload protection, and compatibility with multiple accessories and extensometer systems.

Key Features

Mechanical & Structural Features

- Heavy-duty 6-pillar high-rigidity load frame
- Minimum frame deformation under full load
- Servo-controlled hydraulic loading system
- Automatic hydraulic gripping arrangement
- Adjustable middle crosshead for flexible test space
- Motorized threaded columns for quick specimen adjustment
- Large testing clearance for multiple specimen sizes
- Axial load application through precision ball seating
- High-resolution displacement sensor integration

Control & Operation Features

- Closed-loop PID feedback control system
- Automatic load and displacement controlled operation
- Real-time load and displacement monitoring
- Manual mode switching during testing
- Automatic transition from load control to displacement control
- Manual load release valve after test completion
- Multi-mode testing operation
- Overload protection system

Software Features

- Windows-based advanced testing software
- Real-time Load vs Displacement graph
- Real-time Stress vs Strain graph
- Automated test execution and report generation

- Crystal report generation with Excel export
- Database backup and restore facility
- Statistical analysis and batch comparison
- User-defined graph scaling and failure detection
- 0.1% and 0.2% proof stress analysis
- Extensometer graphical display integration
- Customizable report headers and footers

Hydraulic System Features

- Servo motor-controlled hydraulic pumping system
- Constant pressure and flow control
- Low-noise and low-heat operation
- Energy-efficient hydraulic performance
- Stable and repeatable load application

Optional Accessories

- Electronic extensometer
- Bend & rebend attachment
- Flexural test attachment
- Shear test attachment
- Brinell hardness attachment
- Transverse test set
- Gripping devices for threaded specimens
- Split rings for shouldered specimens
- Additional compression platens
- Customized fixtures and grips

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Technical Specifications

Parameter	600 kN	1000 kN	1200 kN	1500 kN	2000 kN
Model	HT-802-600	HT-802-1000	HT-802-1200	HT-802-1500	HT-802-2000
Machine Capacity	600 kN	1000 kN	1200 kN	1500 kN	2000 kN
Load Resolution	0.01 kN	0.1 kN	0.1 kN	0.1 kN	0.1 kN
Accuracy	±1%	±1%	±1%	±1%	±1%
Control Type	Automatic	Automatic	Automatic	Automatic	Automatic
Control Parameter	Load / Displacement	Load / Displacement	Load / Displacement	Load / Displacement	Load / Displacement
Displacement Control Range	0.001–10 mm/sec	0.001–10 mm/sec	0.001–10 mm/sec	0.001–10 mm/sec	0.001–10 mm/sec
Load Control Range	0.5–10 kN/sec	0.5–12 kN/sec	0.5–15 kN/sec	0.8–18 kN/sec	1–20 kN/sec
Load Release Type	Manual	Manual	Manual	Manual	Manual
Max Tensile Clearance	700 mm	800 mm	850 mm	850 mm	900 mm
Max Compression Clearance	650 mm	750 mm	800 mm	800 mm	850 mm
Clearance Between Columns	455 mm	540 mm	700 mm	850 mm	850 mm
Ram Stroke	200 mm	200 mm	250 mm	250 mm	300 mm
Round Specimen Capacity	8–15 mm / 26–40 mm	8–15 mm / 26–40 mm	8–16 mm / 40–60 mm	10–25 mm / 45–70 mm	20–40 mm / 60–80 mm
Flat Specimen Thickness	0–30 mm	0–40 mm	0–22 mm / 22–44 mm	0–22 mm / 44–70 mm	0–20 mm / 45–70 mm
Flat Specimen Width	90 mm	110 mm	70 mm	100 mm	90 mm
Compression Plate Diameter	200 mm	200 mm	200 mm	200 mm	220 mm
Crosshead Motor	0.55 kW	0.74 kW	0.74 kW	1.1 kW	1.5 kW
Power Pack Motor	1.5 kW	1.5 kW	1.5 kW	1.5 kW	1.5 kW
Extensometer Resolution	0.001 mm	0.001 mm	0.001 mm	0.001 mm	0.001 mm
Approx. Weight	2500 kg	3500 kg	5000 kg	6000 kg	9500 kg

Ordering Information:

- HT-802-600** Automatic Universal Testing Machine Computerised, Servo Controlled, Capacity 600 kN , 6 pillar type with Hydraulic Jaws
- HT-802-1000** Automatic Universal Testing Machine Computerised, Servo Controlled, Capacity 1000 kN , 6 pillar type with Hydraulic Jaws
- HT-802-1200** Automatic Universal Testing Machine Computerised, Servo Controlled, Capacity 1200 kN , 6 pillar type with Hydraulic Jaws
- HT-802-1500** Automatic Universal Testing Machine Computerised, Servo Controlled, Capacity 1500 kN , 6 pillar type with Hydraulic Jaws
- HT-802-2000** Automatic Universal Testing Machine Computerised, Servo Controlled, Capacity 2000 kN , 6 pillar type with Hydraulic Jaws

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