

## MT MICROTORSION SERIES

### Low-Capacity Torsion Testing Systems

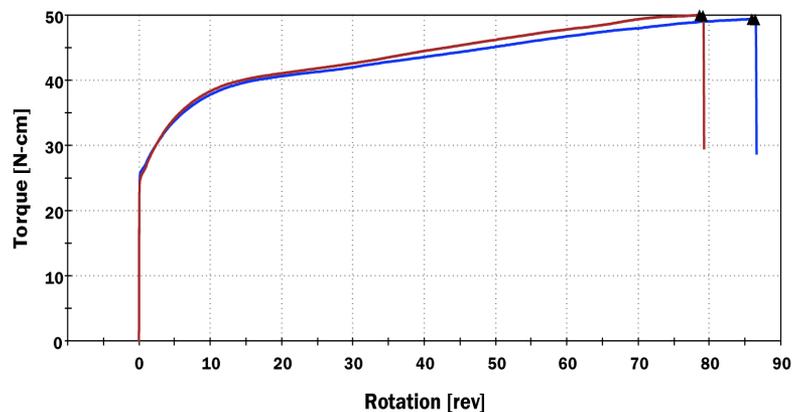
The preferred solution for low-force torsion testing and component in-service simulation, the MT MicroTorsion systems are available in two standard models with force capacities up to 225 N-m (2,000 lbf-in). The compact design requires minimal lab space and offers superior frame stiffness and alignment. Packaged with Instron high-performance control electronics, the MT Series provides highly accurate test data and control for testing a product portfolio that includes wire, fasteners, switches, and springs used in the biomedical, automotive, and aerospace industries. The system includes an integrated guard and safety control system that meets the stringent requirements for the European CE mark.

#### FEATURES AND BENEFITS

- Dual linear slide design offers high-torsional stiffness and low-axial friction
- Adjustable crosshead locking system allows crosshead to be free-floating or fixed
- Torque cells available from 0.225 - 225 N-m (2 - 2,000 lbf-in) provide superior accuracy and zeroing capability
- Comprehensive torsion testing software provides graphical data plots and performs a wide range of calculations on torque and angle data
- Productivity panel with multiple function keys and displays allows the operator to perform common testing functions and view key test information without returning to the computer
- Torque cell protection device prevents damage to low-capacity torque cells during test setup
- Safety features:
  - Interlocked enclosure protects the operator from the rotating drive by preventing testing when the guard is open
  - When in manual adjustment mode, speed is limited to 5 rpm
- Optional preload assembly provides constant axial force in compression or tension

#### STANDARDS

- ASTM: A938, F543 (except Annex A4)
- ISO: 594, 7864, 7886-1, 6475
- CE Compliant



Plot of Torque vs. Rotation when testing to ASTM A938

#### APPLICATION RANGE

- Biomedical
- Bone screws, syringes, needles, luer locks, fine wire, tools, insulin pens, and tubing
- Automotive/Aerospace
- Switches, torsion springs, wire, components and fasteners

## SPECIFICATIONS

			MT1	MT2
Torque Capacity	N-m		22.5	225
	lbf-in		200	2,000
Maximum Test Opening	E1	mm	470	470
		in	18.5	18.5
	E3	mm	775	720
		in	30.5	28.5
Maximum Test Speed	RPM		120	60
Maximum Rotations	CW or CCW		15,000	15,000
Rotation Resolution	arc-min		0.171	0.168
Maximum Frame Deflection	arc-min		1	1
Load Weighing Accuracy			±0.5% of Reading Down to 1/250th of Torque Cell Capacity	±0.5% of Reading Down to 1/250th of Torque Cell Capacity
Maximum Backlash	arc-min		6	10
Axial Preload <sup>1</sup>	N lbf		Up to 44.5 10	Up to 44.5 10
Voltage Options	D1	100-120 VAC, 1 Ph, 50/60 Hz, 10 Amp		200-230 VAC, 3 Ph, 50/60 Hz, 20 Amp
	D2	200-240 VAC, 1 Ph, 50/60 Hz, 10 Amp		—
	D4	—		380-460 VAC, 3 Ph, 50/60 Hz, 15 Amp
Machine Dimensions <sup>2</sup>	E1	mm	819 × 650 × 650	1130 × 764 × 711
		in	32.25 × 25.625 × 25.625	44.5 × 30 × 28
	E3	mm	1124 × 650 × 650	1435 × 764 × 711
		in	44.25 × 25.625 × 25.625	56.5 × 30 × 28
Weight (Machine Only)	E1	mm	90	181
		in	198	400
	E3	mm	110	220
		in	243	485

### Notes:

- Weight supplied is 4.54 kg (10 lbs). Actual tension or compression load on specimen does not correspond to the weight used due to linear guide and pulley friction.
- Includes clearance above and behind the frame to open guard door. Also includes feet height. Does not include clearance to mount optional axial preload assembly.

## FRAME OPTIONS

			MT1	MT2
Axial Alignment Fixture			IP-MT1-G1	NA
Torque Cell Protection Device			Included	IP-MT2-G1
Linear Guide Covers	E1		IP-MT1-H2A <sup>1</sup>	IP-MT2-HTA <sup>3</sup>
	E3		IP-MT1-H2C <sup>2</sup>	IP-MT2-H2C <sup>4</sup>
Axial Preload Assembly			IP-MT1-J1	IP-MT2-J1

### Notes:

- Reduces horizontal opening by 65 mm (2.5 in)
- Reduces horizontal opening by 90 mm (3.5 in)
- Reduces horizontal opening by 40 mm (1.5 in)
- Reduces horizontal opening by 65 mm (2.5 in)



## TORQUE CELLS

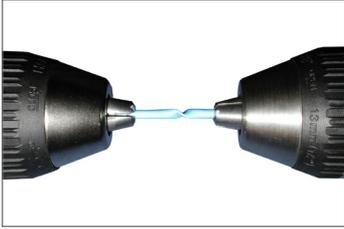
	MT1	MT2
225 N-m (2,000 lbf-in)	—	W-5510-T1
22.5 N-m (200 lbf-in)	W-5510-T2	W-5510-T2 <sup>1</sup>
2.25 N-m (20 lbf-in)	W-5510-T3	W-5510-T3 <sup>1</sup>
0.225 N-m (2 lbf-in)	W-5510-T4	W-5510-T4 <sup>1</sup>

### Notes:

- Requires IP-MT2-G1 (purchase separately)

## DRILL CHUCKS

Universal drill-type chuck assembly.



		W-MT01	W-MT01-B
Description		Keyless	Keyed
Specimen Range	mm in	1.6 - 12.77 0.063 - 0.5	0.5 - 9.5 0.02 - 0.374
Capacity	N-m in-lb	22.5 200	22.5 200
Machine Interface		M12 × 1.75 m	M12 × 1.75 m
Effective Length (each)	mm in	89 3.5	75 2.95

## COLLET CHUCKS

Collet grip assembly, ideal for smooth, round specimens.



		W-MT02	W-MT02-B
Description		Small	Large
Specimen Range	mm in	1.19 - 6.3 0.046 - 0.25	6.3 - 14.25 0.25 - 0.5625
Capacity	N-m in-lb	57 500	57 500
Machine Interface		M12 × 1.75 m	M12 × 1.75 m
Effective Length (each)	mm in	83 3.27	83 3.27

## SOCKET DRIVES

For gripping specimens with hex shapes. Provides 1/2-inch drive with adapters for motor and torque cell mounting.



		W-MT03	W-MT03-M
Description		Includes two complete (11 pieces) 6 Point US Customary socket sets	Includes two complete (15 pieces) 12 Point Metric socket sets
Specimen Range		MT1	MT1
Capacity	N-m in-lb	57 500	57 500
Machine Interface		3/8 to 1 inch (1/16 inch increments)	10 to 24 mm (1 mm increments)
Effective Length (each)		Adapting thread M12 × 1.75m	Adapting thread M12 × 1.75m

## SPARE PART KITS

W-1398-A	Basic	Includes Fuses and External Cables
W-1398-B	Recommended	Includes Fuses, External Cables, DSP Circuit Board, and Ethernet Frame Interface
W-1398-C	Comprehensive	Includes Fuses, External Cables, DSP Circuit Board, Ethernet Frame Interface, and other Circuit Boards

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