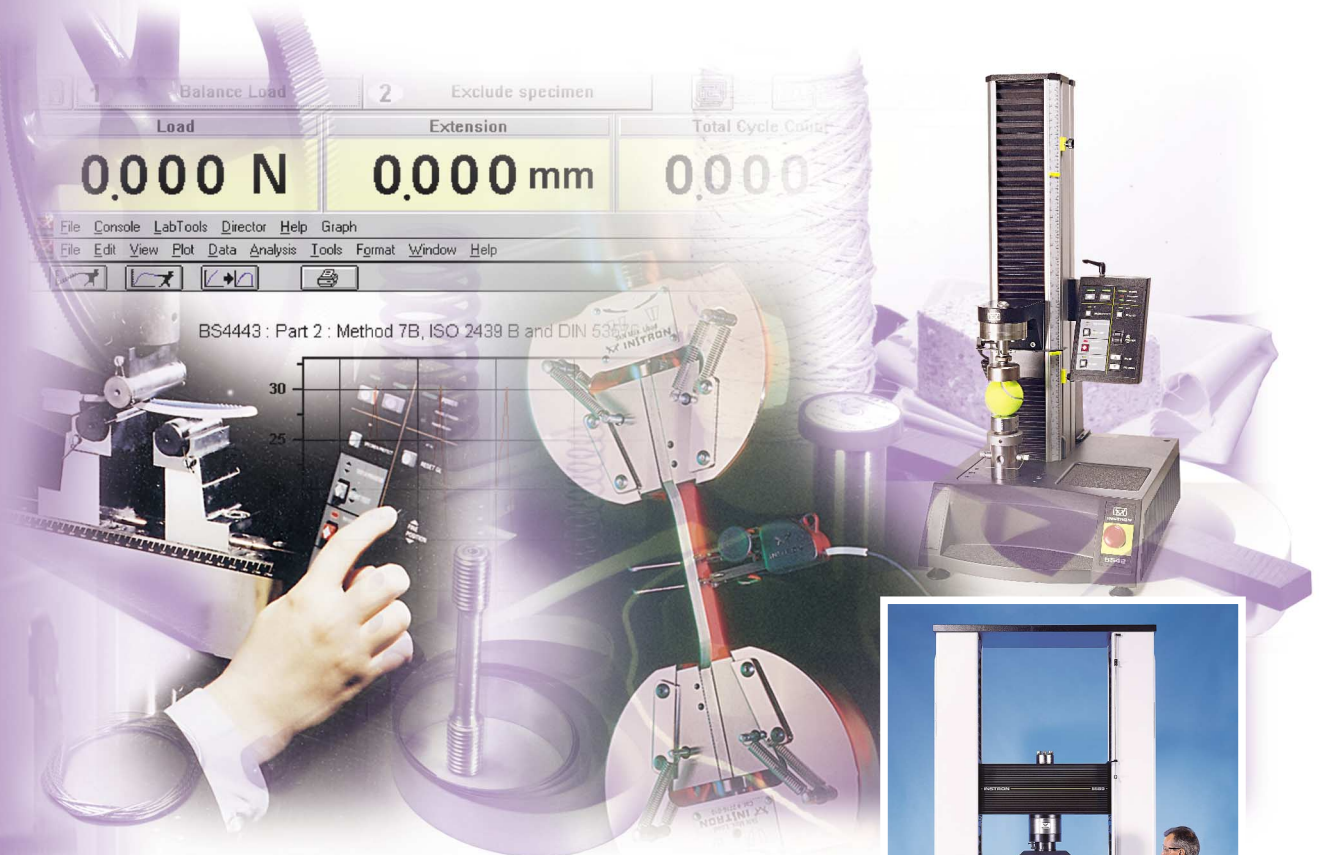


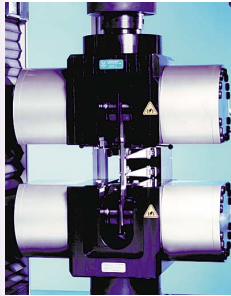
Models 5587 and 5589

Advanced material testing systems

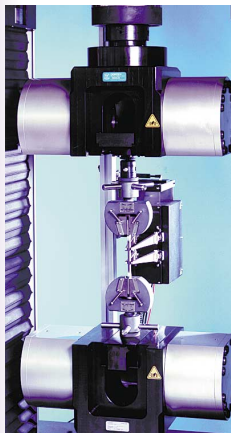


*The difference
is measurable*

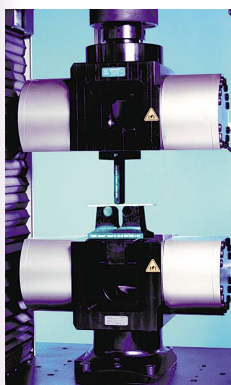
Test frame design features



▲ 600 kN hydraulic grips with metal extensometer



▲ Optional adapters allow secondary load strings of lower capacity fixturing without the need of removing large grips from test area



▲ Deep 180° bend test performed with large grips installed

These high force digital control servo-mechanical testing systems are a result of Instron's continual effort to provide the best in high capacity universal testing frames. Each frame component is designed and produced to maintain tolerances during long term usage. The design ensures the highest level of axial and concentric alignment while

maximizing stiffness. Virtually all of Instron's grips, fixtures, extensometers and environmental chambers are compatible with either of these high capacity frames and when coupled with the 5500 Series control electronics and Merlin software, provides the world standard in high capacity universal testing systems.



Frame features

- Counter rotating ball screws for outstanding axial alignment
- Precision ground ball screws for accurate crosshead position
- Epicycloidal gear reducer drive system to minimize backload during cyclic testing
- High performance brushless servo-motor drive system
- Available in two capacities; 300 kN and 600 kN
- Large horizontal test space to accommodate big chambers and large test specimens
- Extremely rugged, stiff load frame with solid steel table, crosshead and column tie plate
- Auxillary test space allows testing with some combinations of lower force grips and load cells
- Ergonomical working heights of the lower grip
- Precision guidance available (option)
- Extra height (610 mm/24 in) available (option)
- Custom height and width available

Controller and software solutions

The Instron 5587 and 5589 are both supplied with the 5500 Series electronic controller and Instron's Merlin application software. The 5500 Series electronics use advanced DSP technology to ensure fast response, high accuracy and exceptional reliability.

A second and integral component of the 5500 electronics is the 5500 frame control panel. This frame-mounted panel provides the immediacy and tactile feedback paramount in user interface design.

Merlin software is a fully integrated modular software package that provides the highest level of flexibility without sacrificing easy-of-use. Merlin software is divided into major application modules, each tailored to address the unique application requirements of that test type. This means that users get unit choices, test terminology, and calculations specific to their needs allowing them to quickly achieve maximum productivity.



▲ 3119 Series chamber for non-ambient temperature testing

Capable of testing a wide variety of applications

- Tension
- Compression
- Bend
- Flexure
- Shear
- Simple cyclic fatigue

Capable of testing a wide variety of materials

- Metals
- Ceramics
- Advanced materials
- Plastics
- Composites
- Component structures
- Plus many others

Accessories

- Non-ambient temperature packages
- Test area lighting
- Test area enclosures
- Extensometry, clip-on and automatic



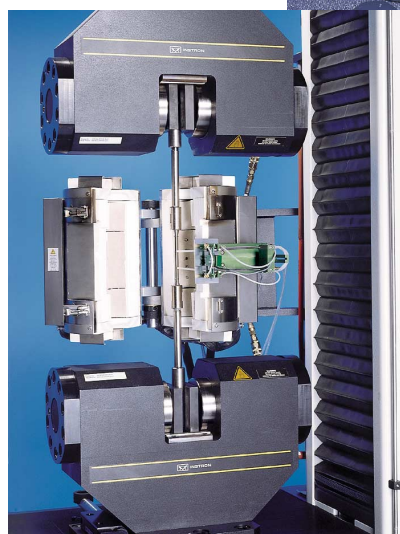
▲ T-slot table for the hard to hold down large component testing

Special purpose fixtures

- Tension fixtures
- Flexure fixtures
- Compression fixtures
- Composite material testing fixtures
- T-slot tables
- Custom fixturing is also available



▲ Fastener tensile loading



▲ Ultra-high temperature testing with extensometry

Specifications

		Model 5587	Model 5589
Load Capacity:	kN	300	600
	kgf	30,000	60,000
	lbf	67,500	135,000
Maximum Speed:	mm/min	500	476
	in/min	20	18.75
Minimum Speed:	mm/min	0.001	0.001
	in/min	0.00004	0.00004
Maximum Force at Full Speed:	kN	225	450
	lbf	50,580	101,160
Maximum Speed at Full Load:	mm/min	380	380
	in/min	15	15
Return Speed:	mm/min	500	500
	in/min	20	20
Position Control Resolution:	μm	0.05	0.05
	μinch	2.0	2.0
Frame Axial Stiffness: (note 5)	kN/mm	300	530
	lb/inch	1,700,000	3,000,000
Total Crosshead Travel: (note 3)	mm	1,270	1,422
	in	50	56
Total Crosshead Travel: Extra High (note 3)	mm	1,832	1,971
	in	72	78
Total Vertical Test Space: (note 6)	mm	1,403	1,606
	in	55.25	63.25
Total Vertical Test Space: Extra High (note 6)	mm	1,991	2,187
	in	78.5	86
Space Between Columns:	mm	851	851
	in	33.5	33.5
Weight:	kg	2,214	3,629
	lb	4,880	8,000
Weight: Extra High	kg	2,449	3,719
	lb	5,400	8,200
Maximum Power Requirement 50/60 Hz:	VA	3,000	5,000

Common specifications:

Position Measurement Accuracy: ±0.02 mm or 0.05% of displacement (whichever is greater)

Crosshead Speed Accuracy (Zero or constant load): ±0.1% of set speed

Load Measurement Accuracy: ±0.4% of reading down to 1/50 of load cell capacity, ±0.5% of reading down to 1/250 of load cell capacity

Strain Measurement Accuracy: ±0.5% of reading down to 1/50 of full range with ASTM E83 class B or ISO 9513 class 0.5 extensometer

Three Phase Voltage: 200-240, 360-440, or 440-480 VAC ±10% 50/60 Hz. Power supply must be free of spikes, surges or sags exceeding 10% of the average voltage.

Operating Temperature: +10 to 38 °C (+50 to 100 °F)

Storage Temperature: -40 to +66 °C (-40 to 150 °F)

Humidity Range: +10% to +90%, non-condensing

Atmosphere: Designed for use under normal laboratory conditions. Protective measures may be required if excessive dust, corrosive fumes, electromagnetic field or hazardous conditions are encountered.

Notes:

- Load weighing system meets or surpasses the following standards: ASTM E4, BS 1610, DIN 51221, ISO 7500-1, EN10002-2 and AFNOR A03-501.
Instron recommends that systems are verified on customer site as required by ASTM E4 (par. 20.3) and ISO 7500-1 (section 9) standards.
- Strain Measurement system meets or surpasses the following standards: ASTM E83, BS3846, ISO 9513, EN 10002-4
- Extra high and extra wide load frames and extra high or low speed drive systems are also available. Contact your nearest Instron office for details.
- These systems conform to all relevant European standards and carry a CE mark.
- Measured with crosshead 600 mm above base platen. * Precision guidance is a standard option (provides superior frame and crosshead stability).
- Total vertical test space is the distance from the top surface of the base platen to the bottom surface of the moving crosshead, excluding load cell, grips and fixtures.

Dimensions mm (inch)

		Model 5587	Model 5589
		mm (in)	mm (in)
A	Overall Column Width	1334 (52.5)	1384 (54.5)
B	Space Between Columns	851 (33.5)	851 (33.5)
C	Column Depth	406 (16)	445 (17.5)
D	Overall Height	2,553 (100.5)	2,972 (117)
	Extra Height Option	3,162 (124.5)	3,582 (141)
E	Base Height	787 (31)	870 (34.25)
F	Base Width	1,617 (63.7)	1,604 (63.2)
G	Overall Depth	762 (30)	762 (30)
H	Vertical Test Space (note 6)	1,403 (55.25)	1,606 (63.25)
	Extra Height Option	1,991 (78.5)	2,187 (86)
I	Crosshead Travel (note 3)	1,270 (50)	1,422 (56)
	Extra Height Option	1,832 (72)	1,971 (78)
J	Crosshead Thickness	300 (8.25)	330 (13)
K	Top Plate Thickness	38 (1.5)	44 (1.75)

