



5900 Series | Premier Testing Solutions



5900 Series

Premier Testing
Solutions



Make an Informed Decision

Exceptional performance packaged in innovative frames, designed with enhancements that deliver superior accuracy and reliability, improved ergonomics, and an enhanced overall experience for the operator.

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5900 Series at a Glance

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Applications

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Service and Support

What about after-sales support?

When performance matters, choose Instron® — the most trusted name in mechanical testing.

5900 Series at a Glance

Single Column Tabletop Systems for Low-Force Testing

- Capacities up to 2 kN
- Small footprint saves valuable laboratory space
- Commonly used for medical devices and biomaterials, textiles, elastomers, food, small components and microelectronics, wire, paper, and plastic film

Dual Column Tabletop Systems for Mid-Range Testing

- Capacities up to 50 kN
- Multi-purpose, tabletop instruments meet versatile requirements
- Commonly used for plastics, metals, rubber materials, automotive components, composites, and non-ambient temperature applications

Dual Column Floor Model Systems for High-Capacity Testing

- Capacities up to 600 kN
- Robust, heavy-duty frames for the most demanding applications
- Commonly used for high-strength metals and alloys, advanced composites, aerospace and automotive structures, bolts, fasteners, and plate steels





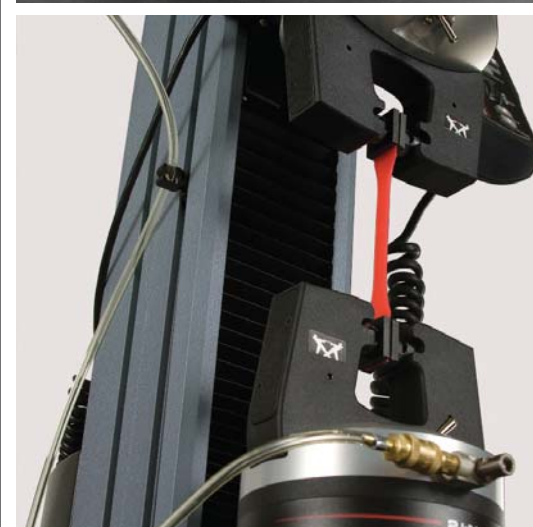
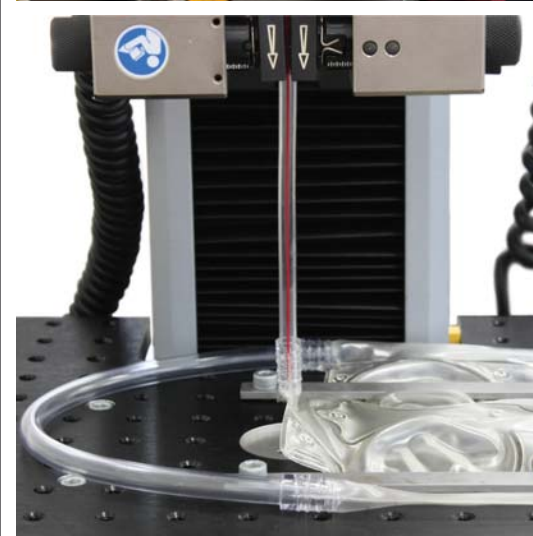
How Will the 5900 Meet My Needs?

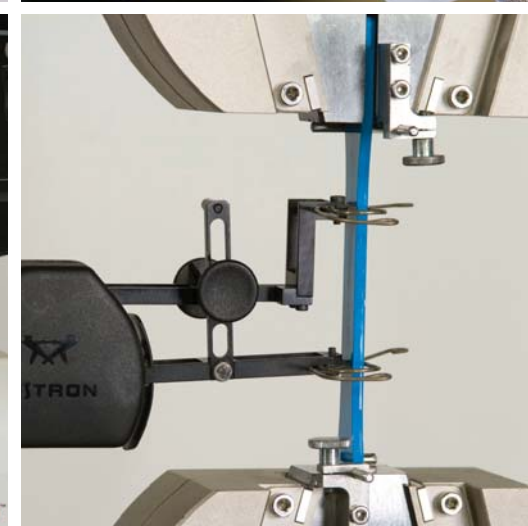
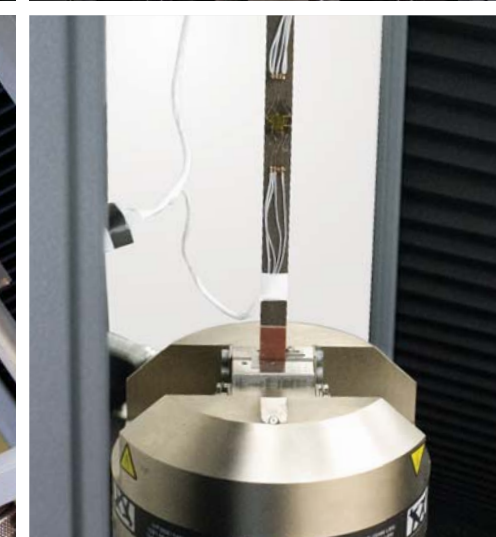
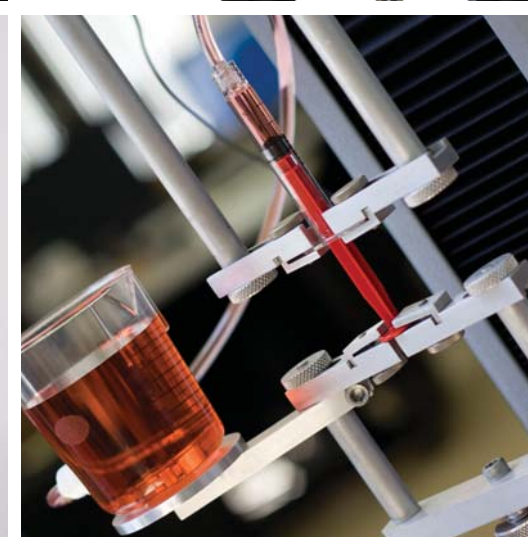
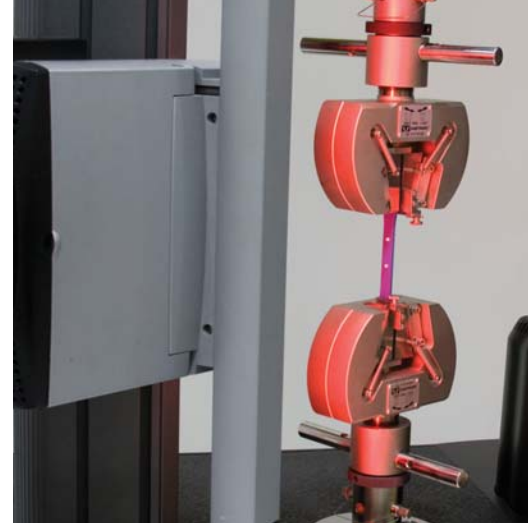
Application-Based Testing Solutions

Our mission at Instron® is to be recognized as the world's leader in mechanical testing instrumentation. Our goal is to provide our customers the best ownership experience by delivering the highest quality products, expert support, and world-class service.

With more than 75 years in the materials testing industry, Instron testing instruments are routinely found in applications and industries, such as plastics, metals, composites, elastomers, components, textiles, aerospace, automotive, and biomedical.

For the most up-to-date information on your specific application, visit Testing Solutions at www.instron.com.







What is Important to My Operators?

"I want to start testing with the least amount of steps and mouse-clicks possible, and monitor the data while the test is running."

View Real-time Data and Results

Constantly monitor vital measurements during pretest adjustments as well as throughout the test on the 4 user-defined live displays. Additionally, real-time results are easily displayed throughout the test.

With 4 user-defined 'Soft Key' buttons, the operator can initiate a variety of commands, allowing for customization of the panel while minimizing the numbers of buttons on the panel.

Minimize Steps

Conducting a test directly from the productivity panel allows the operator to remain at the working test space, which reduces repetitive motion and keystrokes between the control panel and PC.

View results and calculations without returning to the computer workstation.

Pre-populate specimen dimensions prior to testing with Bluehill Software – or use an Automatic Specimen Measuring Device (ASMD) to electronically capture specimen dimensions.

Precise Positioning

Fine Position adjustment thumbwheel, with tactile feedback, with 0.004 mm resolution for precise positioning of the crosshead when performing sensitive testing.



Protect Your Specimen

Specimen Protect prevents any load from being applied to the specimen outside a set threshold — protecting your valuable specimens from damage.

How is Performance Defined?

A survey of our customers tells us that performance can be defined in numerous ways — durability, precision, flexibility, and usability. Performance is the most important criterion by which a decision to purchase a testing instrument is determined. At Instron®, performance is the foundation upon which our products are designed and built...

What does performance mean to you?

Engineered for Precision

All 5900 Series servo-control and signal conditioning electronics are designed by Instron specifically for materials testing applications.



Proprietary Load Cell Design

Instron is the only materials testing system supplier that designs and manufactures its own load cells. This allows us to control all components of force measurement — the most critical aspect of mechanical testing.



Cutting-Edge Load Cell Construction

The highest quality mechanical and electrical components ensure the maximum level of performance, producing the most accurate results. Temperature compensation, on-board calibration ID, data storage, and superior resistance to off-center loading are but a few things that set Instron-designed load cells apart from the competition.



Unparalleled Load Verification

Instron's significant investment in primary force calibration standards is unique in the industry and ensures the highest level of force measurement accuracy. Our factory-based calibration laboratory possesses capabilities normally found only in a National Standards Laboratory.



Superior Stiffness And Alignment

All 5900 Series Load Frames are designed to provide higher stiffness and precise alignment for testing everything from medical devices to high-strength composites. Rigid mechanical design ensures the best possible conditions for repeatable test conditions and reliable results.

Built for Durability

The biggest ball screws, the largest diameter guidance columns, and the strongest drive systems are how Instron® testing machines provide reliable, repeatable test conditions for decades.

The average lifespan of an Instron test frame exceeds 30 years

Stiff Frames for High-Strength Materials

Pre-loaded bearings and precision ball screws, a thick crosshead and base beam, and low-stretch drive belts contribute to better performance by producing more accurate modulus and strain values and minimizing the energy stored during a test. This is especially evident when testing high-strength materials such as aerospace composites, metal alloys, and crystalline polymers.

Precision Guidance for Alignment and Bending

When performing a uniaxial test, accurate stress and strain results can only be achieved with a system that contains robust, precise guidance columns that ensure minimal specimen bending under load.

Larger Motors for Better Reliability

Reliability is built into 5900 load frames through the use of powerful motors with reserve capacity that allows for quicker rates of acceleration when starting a test and faster turnaround times when performing a cyclic test. More of your testing occurs at the required speed.

Servo-Controlled Drive System

Along with a powerful motor, the 5900 drive system consists of a rugged steel casting with a dual-belt drive system. Unlike systems that use gear-reducers, which create backlash and lower drive system stiffness, the dual-belt system provides synchronous movement of the ball screws, eliminating crosshead tilt and aiding system alignment.



How is Performance Defined?

Flexibility to Change

Instruments used in Research and Development laboratories must adapt to continually changing environments. From the ability to quickly change load cells or reconfiguring software methods to easily adapting new fixtures, the 5900 Series offers the highest level of flexibility in a testing instrument.



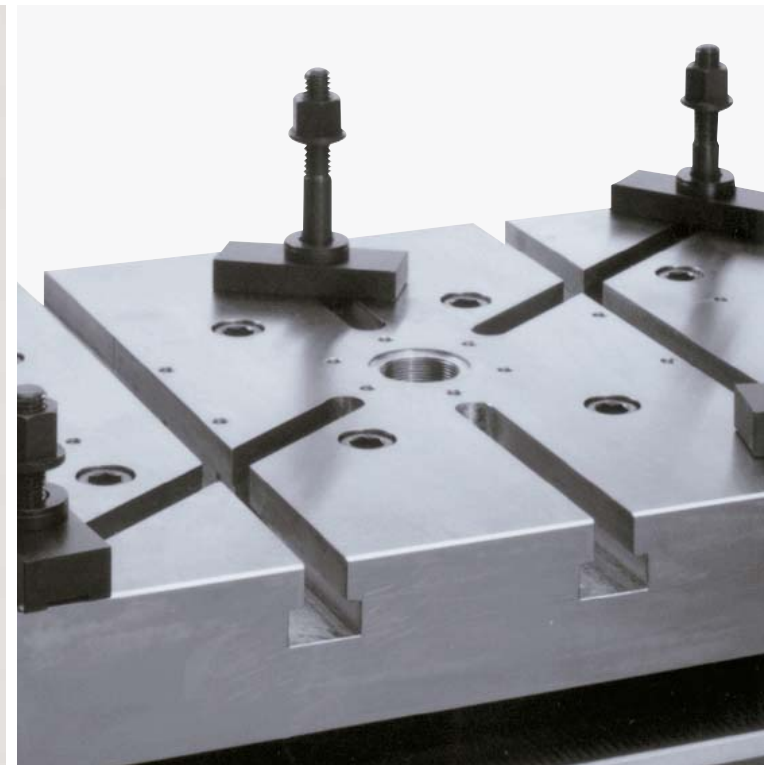
Expansion Channel Module

Provides up to eight additional channels of data acquisition with signal conditioning and auto-calibration for transducers.



Piggyback Adapter

Allows you to quickly attach a low-capacity load cell without removing the primary cell. No tools needed!

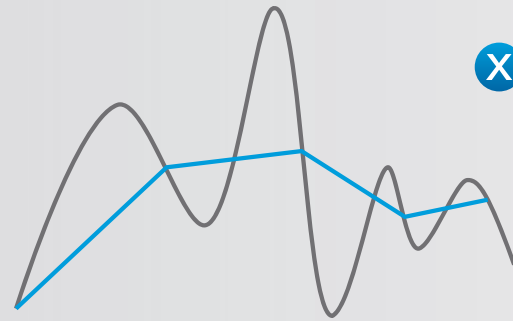


T-Slot Table

Available for testing components, parts, or unusual shapes. The table mounts to the load frame base and uses standard hold-down clamps to secure the test piece.

Fast 2.5 KHz Data Sampling

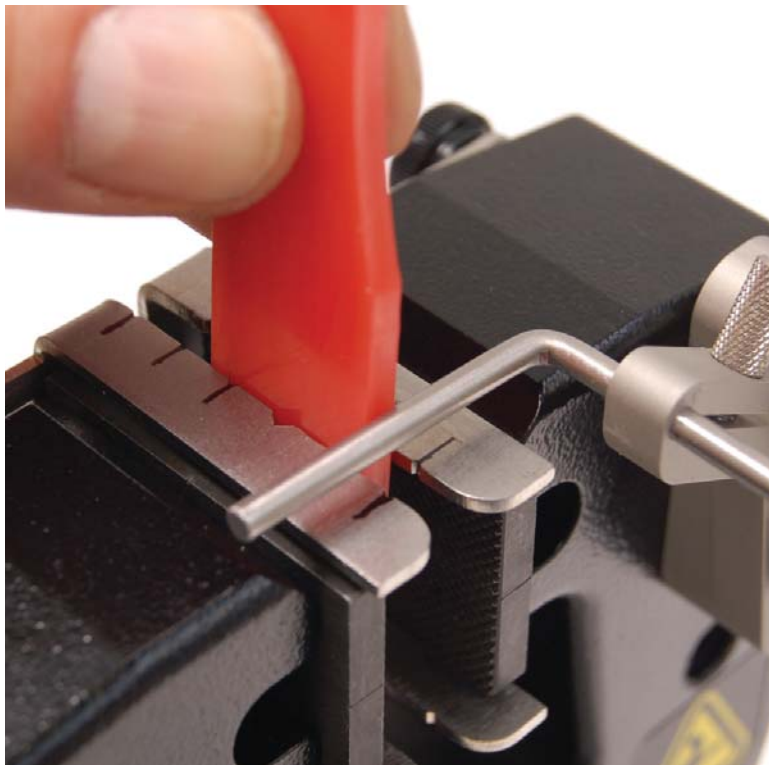
Fast data sampling rates of up to 2.5 KHz capture all points of significance in fast changing test events, e.g. peaks, yields, and failure, that would otherwise be missed and incorrectly recorded by systems offering slower data acquisition intervals. This offers a true picture of your test.



1 kHz



2.5 kHz



Pneumatic Grips

Only the Instron® family of 2712-04x pneumatic grips feature 7 key advances for usability and safety, including pinch-guards and a specimen-centering device.



1/1000th Load Measurement Range

A wider load measurement range means one load cell is capable of meeting more, if not all, of your test needs. Less load cells also means fewer periodic service verifications. The quick mount-load cell adapter positions and holds the cell in place when securing or removing bolts, as an added convenience if a change is required.



Test Area Light

Increased lighting in the test area allows for better visibility of the specimen and grips.

Support for the Life of Your Equipment

Instron® is the largest supplier of materials testing machines in the world. Our reliable testing systems can run 24 hours a day, 7 days a week, 365 days of the year. However, if something does go wrong, or you have a question, we offer a variety of resources to ensure you receive the assistance you need as soon as you need it.



You can count on us

- Represented in more than 160 countries, speaking 40 different languages
- Our on-site and laboratory calibration and verification processes are ISO 17025 accredited throughout Europe, North America, Brazil, Australia, China, Japan, Korea, Singapore, India, Thailand, and Taiwan



We are only a phone call away

- Technical support hotline accessible anywhere in the world
- Expert consultants provide tailored solutions to meet your testing needs
- Preventative maintenance, calibration, emergency repair, system refurbishment services, training, and parts



Resources at your fingertips • www.instron.com

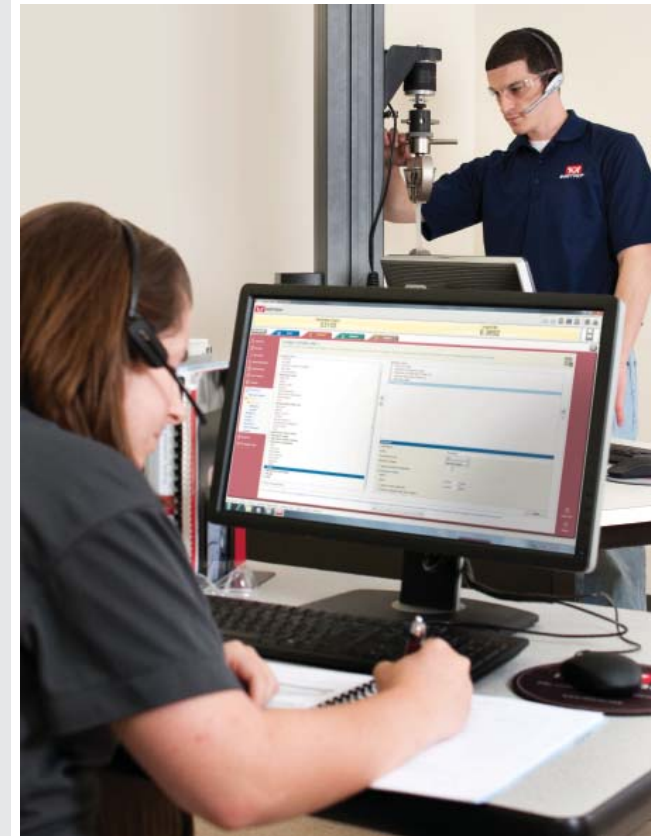
- Our *Testing Solutions* section provides answers to your most current testing challenges
- WSA is a dedicated support website, providing web-based delivery of information specific to your system
- Access to our complete online Accessories catalog



Stay at the forefront of materials science

- Training courses available on-site or in one of our Regional Training Centers
- Utilize our Applications Engineering Lab or Custom Engineered Solutions Group for the latest technological advances in materials testing
- Our state-of-the-art Calibration Laboratory offers a comprehensive range of accredited calibration and verification services complying with ASTM, ISO, and Nadcap standards for: Force, Speed, Strain (extensometers), Displacement, Impact, Temperature, Torque, Creep, Strain Gauge Channel, and Alignment.

We build more than testing systems; we build relationships.



5900 Series Specifications



	Load Capacity			Maximum Speed		Return Speed		Crosshead Travel		Vertical Test Space		Column Spacing		Dimensions (h × w × d)		Weight	
	kN	kgf	lbf	mm/min	in/min	mm/min	in/min	mm	in	mm	in	mm	in	mm	in	kg	lb
Single Column Tabletop Models																	
5942	0.5	50	112.5	2500	100	1875	75	488	19.2	726	28.6	100	3.9	986 × 459 × 614	38.8 × 18.1 × 24.2	43	95
5943	1	100	225	2500	100	2500	100	885	34.8	1123	44.2	100	3.9	1383 × 459 × 614	54.5 × 18.1 × 24.2	54.4	120
5944	2	200	450	2500	100	2500	100	885	34.8	1123	44.2	100	3.9	1383 × 459 × 614	54.5 × 18.1 × 24.2	54.4	120



Dual Column Tabletop Models																	
5965	5	500	1125	3000	120	3200	128	1140	44.9	1256	49.5	418	16.4	1630 × 779 × 725	64.2 × 30.7 × 28.5	146	322
5965-E2	5	500	1125	3000	120	3200	128	1640	64.5	1756	69.1	418	16.4	2148 × 779 × 725	84.6 × 30.7 × 28.5	161	355
5966	10	1000	2250	1500	60	1700	67	1140	44.9	1256	49.5	418	16.4	1630 × 779 × 725	64.2 × 30.7 × 28.5	146	322
5966-E2	10	1000	2250	1500	60	1700	67	1640	64.5	1756	69.1	418	16.4	2148 × 779 × 725	84.6 × 30.7 × 28.5	161	355
5967*	30	3000	6750	1000	40	1000	40	1140	44.9	1212	47.7	418	16.4	1630 × 779 × 725	64.2 × 30.7 × 28.5	192	423
5967-E2	30	3000	6750	1000	40	1000	40	1640	64.5	1712	67.4	418	16.4	2148 × 779 × 725	84.6 × 30.7 × 28.5	210	463
5969	50	5000	11250	600	24	600	24	1140	44.9	1212	47.7	418	16.4	1630 × 779 × 725	64.2 × 30.7 × 28.5	250	551
5969-E2	50	5000	11250	600	24	600	24	1640	64.5	1712	67.4	418	16.4	2148 × 779 × 725	84.6 × 30.7 × 28.5	273	602



Dual Column Floor Models																	
5982*	100	10000	22400	1000	40	1000	40	1330	52.4	1430	56.3	575	22.6	2273 × 1130 × 777	89.5 × 44.5 × 30.6	784	1725
5982-E2*	100	10000	22400	1000	40	1000	40	1830	72.0	1930	76.0	575	22.6	2773 × 1130 × 777	109.2 × 44.5 × 30.6	898	1975
5984*	150	15000	33600	762	30	800	31.5	1330	52.4	1430	56.3	575	22.6	2273 × 1130 × 777	89.5 × 44.5 × 30.6	882	1940
5984-E2*	150	15000	33600	762	30	800	31.5	1830	72.0	1930	76.0	575	22.6	2773 × 1130 × 777	109.2 × 44.5 × 30.6	955	2100
5985*	250	25000	56200	508	20	600	23.6	1330	52.4	1430	56.3	575	22.6	2273 × 1130 × 777	89.5 × 44.5 × 30.6	882	1940
5985-E2*	250	25000	56200	508	20	600	23.6	1830	72.0	1930	76.0	575	22.6	2773 × 1130 × 777	109.2 × 44.5 × 30.6	955	2100
5988	400	40000	89700	508	20	508	20	1850	72.8	2050	80.7	762	30.0	3128 × 1594 × 964	123.1 × 62.8 × 37.9	2255	4960
5989	600	60000	134800	508	20	508	20	1850	72.8	2000	78.8	762	30.0	3128 × 1594 × 964	123.1 × 62.8 × 37.9	2516	5535

* Also available with extra wide option. Second test space option available on Tabletop Models and 5982, 5984, and 5985 Floor Models

Common Specifications

Load Measurement Accuracy: ± 0.4% of reading down to 1/100 of load cell capacity with 2525, 2530 or 2580 Series load cells; ± 0.5% of reading down to 1/1000 of load cell capacity with 2580 Series load cells (with Advanced Performance Option); ± 0.5% of reading down to 1/500 of load cell capacity with 2580 Series load cells; ± 0.5% of reading to 1/250 of load cell capacity with 2525 or 2530 Series load cells.

Strain Accuracy: Meets or surpasses the following standards: ASTM E83, ISO 9513, and EN 10002-4

Position Accuracy: Dual Column Tabletop and Floor Models: ± 0.01 mm or 0.05% of displacement (whichever is greater); Single Column Tabletop Models: ± 0.02 mm or 0.1% displacement (whichever is greater)

Americas

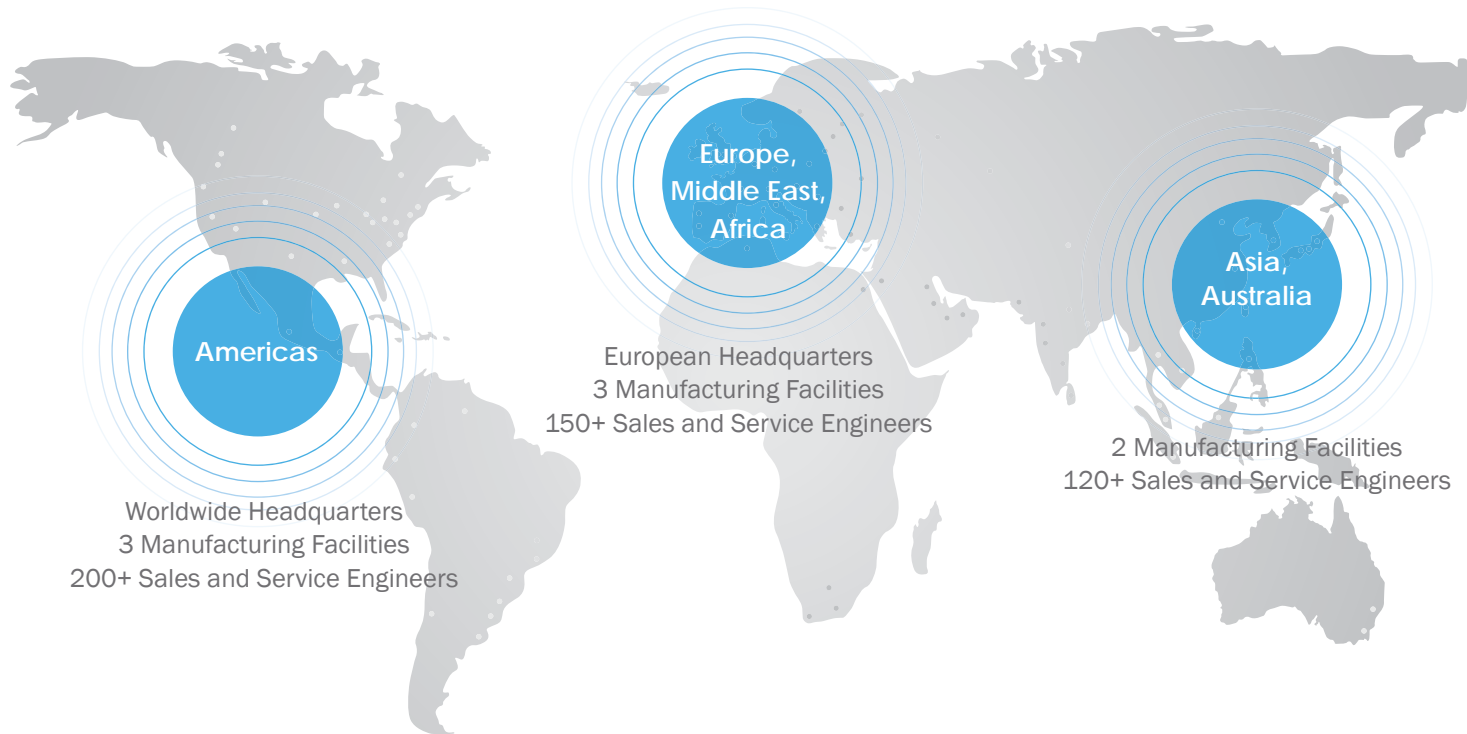
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Global Support that is Local to You

Instron® has a global infrastructure that is local to you and remains committed to being the leader in mechanical testing instrumentation.

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