INSTRON®

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Industrial Series | HDX Models

Industrial Series HDX Models are designed for high-capacity tension, compression, bend/flex, and shear testing. Featuring a dual test space and long test stroke, these frames are available in 1,000 kN (225,000 lbf) and 1,500 kN (337,500 lbf) capacities. Understanding the critical importance of operator safety, Instron® HDX Models incorporate high-quality materials, components, and craftsmanship.

Features and Benefits

- Two test space design makes changing between tension and compression testing safer and more efficient – no need to remove heavy fixtures
- Open-front grip design improves operator safety and throughput, and allows a limited number of jaw faces to cover a large range of specimen sizes
- Long test stroke accommodates a variety of test fixtures and applications
- Productivity panel with multiple function keys and displays improves ergonomics, and allows the operator to perform common testing functions and view key test information without returning to the computer
- Powerful, yet user-friendly materials testing software provides repeatable and reproducible results for simple to sophisticated testing requirements
- Variable pressure hydraulic power supply provides pressure on demand, reducing heat generation, increasing oil life, and eliminating the need for water cooling
- External hydraulic power supply provides convenient tabletop working surface
- Available capacities:
  - 1000 kN (225,000 lbf)
  - 1500 kN (337,500 lbf)

Testing Applications

- Metals - Bar, Plate, Pipe & Tube, Rebar, Structural
- Wire - Rod, Strand
- Fasteners
- Concrete - Cubes, Cylinders, Beams
- Wood

Standards

HDX Models conform to many international standards:

- ASTM A370, A615, C39, C109, E4, E8, E9, E83, E290, F606
- ISO 6892-1, 6892-2, 7438, 7500-1, 9513, 15630-1
- BS4449
- EN10002-1, 10002-2
- JIS Z2241, Z2248

Accessories

- In-Head Grip Jaws/Faces - Flat, Round
- Bend/Flex and Shear Fixtures
- Compression Platens - Plane and Self-Aligning
- External Load Strings
  - Button Head, Shoulder End Holders
  - Fastener Fixtures
  - Low-Capacity Load Cells
- Extensometers, Deflectometers
- Interlocked Safety Enclosures
- T-Slot Tables
- Furnaces

Specifications

		1000HDX	1500HDX
Load Capacity	kN	1000	1500
	kgf	100,000	150,000
	lbf	225,000	337,500
Maximum Test Speed	mm/min	100	114
	in/min	3.9	4.5
Actuator Stroke	mm	254	305
	in	10	12
Crosshead Adjusting Speed	mm/min	300	305
	in/min	11.8	12
Horizontal Opening (Between Columns)	mm	741	762
	in	29.2	30
Floor Space Requirements (W × D)	mm	1228 × 832	1279 × 962
	in	48.4 × 32.8	50.4 × 37.9
Compression Table Size (W × D)	mm	784 × 356	812 × 457
	in	30.9 × 14	31.9 × 18

Compression Opening

G1B	mm	0 - 1003	0 - 1219
	in	0 - 39.5	0 - 48
G7B	mm	0 - 1003	0 - 1067
	in	0 - 39.5	0 - 42
G7C	mm	0 - 1511	0 - 1676
	in	0 - 59.5	0 - 66

Tension Opening

G1B	mm	0 - 1524	76 - 1295
	in	0 - 60	3 - 51
G7B	mm	0 - 1016	0 - 1067
	in	0 - 40	0 - 42
G7C	mm	0 - 1524	0 - 1676
	in	0 - 60	0 - 66

Maximum Operating Height

G1B	mm	3380	3610
	in	133	142
G7B	mm	3380	3610
	in	133	142
G7C	mm	3890	4216
	in	153	166

Tension Specimen Lengths[1]

G1B	mm	400 - 1824	425 - 1638
	in	15.7 - 72	16.7 - 64.5
G7B	mm	400 - 1321	400 - 1372
	in	15.7-52	15.7-54
G7C	mm	400 - 1829	400 - 1981
	in	15.7 - 72	15.7 - 78

Net Weight (Frame)

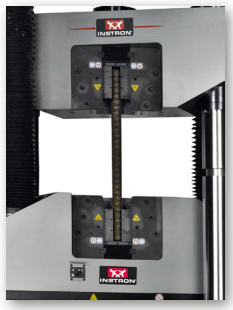
G1B	kgs	3675	5540
	lbs	8100	12200
G7B	kgs	4175	6175
	lbs	9200	13600
G7C	kgs	4405	6410
	lbs	9700	14115

Column Notches

G1B 4* Notches Provide Crosshead Adjustment of	mm	762	610
	in	30	24
G7B 3 Notches Provide Crosshead Adjustment of	mm	508	610
	in	20	24
G7C 5 Notches Provide Crosshead Adjustment of	mm	1016	1219
	in	40	48

Increments on 1000HDX are 254 mm (10 in); Increments on 1500HDX are 305 mm (12 in); *3 notches on 1500HDX-G1B

Crosshead Options



G7 - Open Front with Hydraulic Actuation

G1 - Closed with Manual Crank and Pinion

Common Specifications

Data Acquisition Rate by Software
Up to 1 kHz synchronous on load and strain

Load Measurement Accuracy
± 0.5% of reading down to 1/500 of load cell capacity.

Strain Measurement Accuracy
Meets or surpasses the following standards: ASTM E8, ISO 9513, and EN 10002-4.

Position Measurement Accuracy

Standard Encoder
6.35 µm (0.00025 in) resolution; position accuracy of ± 1% or 0.254 mm (0.01 in) displacement (whichever is greater).

High Resolution Encoder
1.27 µm (0.00005 in) resolution; position accuracy of ± 0.5% or 0.13 mm (0.005 in) displacement (whichever is greater).

Hydraulic Power Supply Voltage Options
208/230 VAC, 3 Ph, 50/60 Hz
380/400/415 VAC, 3 Ph, 50/60 Hz
460 VAC, 3 Ph, 50/60 Hz

Spare Parts Kits
W-1353-A 1000HDX Basic Kit
W-1353-B 1000HDX Recommended Kit
W-1353-C 1000HDX Comprehensive Kit
W-1388-A 1500DX Basic Kit
W-1388-B 1500DX Recommended Kit
W-1388-C 1500DX Comprehensive Kit

[1] Minimum tension specimen length measured using 152 mm (6 in) clearance between adjustable and tension crosshead, piston fully retracted, and 80% specimen engagement in grip faces when grip faces are flush with crosshead. Maximum tension specimen length measured using maximum clearance between adjustable and tension crossheads, piston fully extended, and 100% specimen engagement in grip faces when grip faces are flush with crosshead.

Grip Jaws for Flat Specimens

1000 kN and 1500 kN for G7 Open Front Crosshead		W-5331-A	W-5331-B
Specimen Thickness Range	mm	0 - 35	35 - 70
	in	0 - 1.4	1.4 - 2.75
Maximum Specimen Width	mm	100	100
	in	4	4
Jaw Dimensions (W × L)	mm	100 × 150	100 ×150
	in	4 × 6	4 × 6
Tooth Profile (Per Inch)	Horizontal Cut	8	8

1000 kN for G1 Closed Crosshead		W-1559	W-1560
Specimen Thickness Range	mm	0 - 50	0 - 50
	in	0 - 2	0 - 2
Maximum Specimen Width	mm	82	82
	in	3.25	3.25
Jaw Dimensions (W × L)	mm	82 × 150	82 × 150
	in	3.25 × 6	3.25 × 6
Tooth Profile (Per Inch)	Horizontal Cut	8	16

1500 kN for G1 Closed Crosshead		W-1660
Specimen Thickness Range	mm	0 - 76
	in	0 - 3
Maximum Specimen Width	mm	90
	in	3.5
Jaw Dimensions (W × L)	mm	90 × 170
	in	3.5 × 6.75
Tooth Profile (Per Inch)	Horizontal Cut	8

Grip Jaws for Round Specimens

1000 kN and 1500 kN for G7 Open Front Crosshead		W-5332-A	W-5332-B	W-5332-C
Specimen Diameter Range	mm	12 - 45	45 - 70	3 - 12
	in	0.5 - 1.75	1.75 - 2.75	0.12 - 0.47
Jaw Length	mm	150	150	150
	in	6	6	6
Tooth Profile (Per Inch)	Horizontal Cut	10	10	20

1000 kN for G1 Closed Crosshead		W-1561	W-1562	W-1563	W-1563-A
Specimen Diameter Range	mm	12.7 - 51	45 - 85	12.7 - 57	6 - 12.7
	in	0.5 - 57	1.75 - 3.25	0.5 - 2.25	0.25 - 0.5
Jaw Length	mm	150	150	150	150
	in	6	6	6	6
Tooth Profile (Per Inch)	Horizontal Cut	10	10	16	16

1500 kN for G1 Closed Crosshead		W-1662	W-1669-A*
Specimen Diameter Range	mm	12.7 - 82	10 - 57
	in	0.5 - 3.25	0.375 - 2.25
Jaw Length	mm	171.5	171.5
	in	6.75	6.75
Tooth Profile (Per Inch)	Horizontal Cut	10	8

*Rated for rebar sizes from 10 mm (#3) to 45 mm (#14)

Note: Minimum engagement is the minimum depth of specimen insertion in the jaw for clamping, defined as 80% of the jaw length

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