INSTRON®

The difference is measurable®

Industrial Series | DX Models

Industrial Series DX Models are designed for high-capacity tension, compression, bend/flex, and shear testing. Featuring a dual test space and a single footprint, these frames are available in capacities from 150 kN (33,750 lbf) to 600 kN (135,000 lbf). Understanding the critical importance of operator safety, the Instron® DX 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
- Load frame, hydraulic power supply, and controller combined in a single package saves valuable lab floor space while providing a protective environment for hydraulic and electrical components
- 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
- Convenient working height and ergonomic controls increase operator productivity and comfort
- 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
- 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
- Available capacities:
  - 150 kN (33,750 lbf)
  - 300 kN (67,500 lbf)
  - 600 kN (135,000 lbf)

Testing Applications

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

Standards

DX 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

		150DX	300DX	600DX
Crosshead Style	Closed Open	G1E, G1F G7E, G7F	G1E, G1F G7E, G7F	G1E, G1F G7F,G7G
Load Capacity	kN kgf lbf	150 15,000 33,750	300 30,000 67,500	600 60,000 135,000
Maximum Test Speed	mm/min in/min	76 3	76 3	76 3
Actuator Stroke	mm in	152 6	152 6	152 6
Crosshead Adjusting Speed	mm/min in/min	380 15	380 15	380 15
Horizontal Opening (Between Columns)	mm in	381 15	381 15	526 20.7
Vertical Compression Opening (Minimum Compression includes Stroke, Measured between Crosshead and Table)	mm in	25 - 533 1 - 21	25 - 533 1 - 21	6 - 540 .025 - 21.25
Compression Table Size	mm in	356 × 356 14 × 14	356 × 356 14 × 14	556 × 279 21.9 × 11
Floor Space Requirements (W × D)	mm in	759 × 736 29.9 × 28.9	759 × 736 29.9 × 28.9	974 × 970 38.4 × 38.2
Tension Opening (Adjustable)				
G1E	mm in	0 - 914 0 - 36	0 - 914 0 - 36	44 - 914 1.75 - 36
G1F	mm in	0 - 1524 0 - 60	0 - 1524 0 - 60	44 - 1321 1.75 - 52
G7E	mm in	0 - 711 0 - 28	0 - 711 0 - 28	- -
G7F	mm in	0 - 1321 0 - 52	0 - 1321 0 - 52	0 - 965 0 - 38
G7G	mm in	- -	- -	0 - 1372 0 - 54
Maximum Operating Height				
G1E	mm in	2440 96	2440 96	2505 99
G1F	mm in	3050 120	3050 120	2910 115
G7E	mm in	2540 100	2540 100	- -
G7F	mm in	3150 124	3150 124	2910 115
G7G	mm in	- -	- -	3315 131
Tension Specimen Lengths[1]				
G1E	mm in	270 - 1067 10.6 - 42	270 - 1067 10.6 - 42	350 - 1168 13.8 - 46
G1F	mm in	270 - 1676 10.6 - 66	270 - 1676 10.6 - 66	350 - 1575 13.8 - 62
G7E	mm in	270 - 864 10.6 - 34	270 - 864 10.6 - 34	- -
G7F	mm in	270 - 1473 10.6 - 58	270 - 1473 10.6 - 58	300 - 1168 11.8 - 46
G7G	mm in	- -	- -	300 - 1575 11.8 - 62
Net Weight				
G1E	kgs lbs	965 2130	965 2130	2170 4780
G1F	kgs lbs	995 2195	995 2195	2210 4865
G7E	kgs lbs	1145 2520	1145 2520	- -
G7F	kgs lbs	1175 2585	1175 2585	2270 5000
G7G	kgs lbs	- -	- -	2305 5080

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
115V±10%, 1 Ph, 60 Hz, 30 Amp
230V±10%, 1 Ph, 60 Hz, 15 Amp
220V±10%, 1 Ph, 50 Hz, 15 Amp

Spare Parts Kits
W-1338-A 150/300DX Basic Kit
W-1338-B 150/300DX Recommended Kit
W-1338-C 150/300DX Comprehensive Kit
W-1337-A 600DX Basic Kit
W-1337-B 600DX Recommended Kit
W-1337-C 600DX 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 Faces for G7 Style Crossheads

G7 - Open Front with Hydraulic Actuation

Flat Specimens

150 kN and 300 kN		W-5246-A	W-5246-B	W-5246-C
Specimen Thickness Range	mm	0 - 16	16 - 32	32 - 50
	in	0 - 0.63	0.63 - 1.25	1.25 - 2.0
Maximum Specimen Width	mm	70	70	70
	in	2.75	2.75	2.75
Jaw Dimensions (W × L)	mm	70 × 76	70 × 76	70 × 76
	in	2.75 × 3	2.75 × 3	2.75 × 3
Tooth Profile (Per Inch)	Horizontal Cut	20	20	20

600 kN		W-5197-A	W-5197-B
Specimen Thickness Range	mm	0 - 30	30 - 60
	in	0 - 1.18	1.18 - 2.36
Maximum Specimen Width	mm	100	100
	in	4	4
Jaw Dimensions (W × L)	mm	100 × 100	100 × 100
	in	4 × 4	4 × 4
Tooth Profile (Per Inch)	Horizontal Cut	20	20

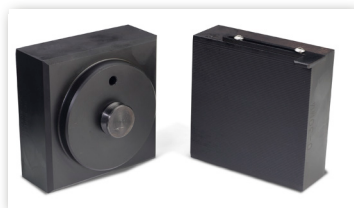

G7 Style Jaws for Flat Specimens

Round Specimens

150 kN and 300 kN		W-5247-A	W-5247-B	W-5247-C	W-5247-D
Specimen Diameter Range	mm	3 - 10	10 - 20	20 - 30	30 - 40
	in	0.118 - 0.39	0.39 - 0.78	0.78 - 1.18	1.18 - 1.57
Jaw Length	mm	76	76	76	76
	in	3	3	3	3
Tooth Profile (Per Inch)	Horizontal Cut	20	20	10	10

600 kN		W-5198-A	W-5198-B	W-5198-C
Specimen Diameter Range	mm	3 - 10	10 - 35	35 - 57
	in	0.12 - 0.39	0.39 - 1.38	1.38 - 2.25
Jaw Length	mm	100	100	100
	in	4	4	4
Tooth Profile (Per Inch)	Horizontal Cut	20	20	10

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

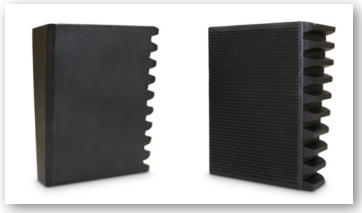

G7 Style Jaws for Round Specimens

Wedge Grip Jaws for G1 Style Crossheads

G1 - Closed with Manual Crank and Pinion

Flat Specimens

150 kN and 300 kN		W-1214
Specimen Thickness Range	mm in	0 - 25 0 - 1
Maximum Specimen Width	mm in	50 2
Jaw Dimensions (W × L)	mm in	50 × 76 2 × 3
Tooth Profile (Per Inch)	Horizontal Cut	16



G1 Style Jaws for Flat Specimens

600 kN		W-1408	W-1408-A*	W-1409	W-1409-A*
Specimen Thickness Range	mm in	0 - 45 0 - 1.75	0 - 45 0 - 1.75	0 - 45 0 - 1.75	0 - 45 0 - 1.75
Maximum Specimen Width	mm in	70 2.75	70 2.75	70 2.75	70 2.75
Jaw Dimensions (W × L)	mm in	70 × 125 2.75 × 5	70 × 125 2.75 × 5	70 × 125 2.75 × 5	70 × 125 2.75 × 5
Tooth Profile (Per Inch)	Horizontal Cut	8	8	16	16

*Diamond Cut Tooth Profile

Round Specimens

150 kN and 300 kN		W-1215	W-1215-A
Specimen Diameter Range	mm in	12 - 32 0.5 - 1.25	5 - 13 0.2 - 0.5
Jaw Length	mm in	76 3	76 3
Tooth Profile (Per Inch)	Horizontal Cut	16	16

G1 Style Jaws for Round Specimens

600 kN		W-1410	W-1410-A	W-1411
Specimen Diameter Range	mm in	12.7 - 57 0.5 - 2.25	7 - 25 0.25 - 1	12.7 - 57 0.5 - 2.25
Jaw Length	mm in	125 5	125 5	125 5
Tooth Profile (Per Inch)	Horizontal Cut	10	16	16

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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