

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 of 300 kN (67,500 lbf) and 600 kN (135,000 lbf). Understanding the critical importance of operator safety, the Instron® DX Models are CE compliant and incorporate high-quality materials, components, and craftsmanship.

Features and Benefits

- 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
- 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
- Convenient working height, large toe kick, 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:
 - 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, including (but not limited to):

- ASTM A370, A615, C39, C109, E4, E8, E9, E83, E290, F606
- ISO 6892-1, 6892-2, 7438, 7500-1, 9513, 15630-1, 13849-1, 12100
- 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

Specification Table

| Model | Crosshead Style | | Load Capacity | | | Maximum Test Speed | | Actuator Stroke | |
|--------|-----------------|--------|---------------|--------|---------|--------------------|--------|-----------------|----|
| | Open | Closed | kN | kgf | lbf | mm/min | in/min | mm | in |
| 300 DX | | | | | | | | | |
| | G7 | G1 | 300 | 30,000 | 67,500 | 150 | 6 | 152 | 6 |
| 600 DX | | | | | | | | | |
| | G7 | G1 | 600 | 60,000 | 135,000 | 80 | 3.2 | 152 | 6 |

| Model | Crosshead Adjusting Speed | | Vertical Compression Opening* | | Compression Table Size | | Floor Space Requirements (W×D) | |
|--------|---------------------------|--------|-------------------------------|------------|------------------------|---------|--------------------------------|-----------|
| | mm/min | in/min | mm | in | mm | in | mm | in |
| 300 DX | | | | | | | | |
| | 380 | 15 | 25-533 | 1-21 | 356×356 | 14×14 | 786×993 | 29.9×28.9 |
| 600 DX | | | | | | | | |
| | 380 | 15 | 6-540 | .025-21.25 | 556×279 | 21.9×11 | 974×1205 | 38.4×47.4 |

| Model | Tension Opening (Adjustable) | | Maximum Operating Height | | Tension Specimen Lengths ¹ | | Net Weight | |
|--------|------------------------------|---------|--------------------------|-----|---------------------------------------|---------|------------|------|
| | mm | in | mm | in | mm | in | kgs | lbs |
| 300 DX | | | | | | | | |
| G1E1 | 0-914 | 0-36 | 2440 | 96 | 270-1067 | 10.6-42 | 1110 | 2440 |
| G1E2 | 0-1524 | 0-60 | 3050 | 120 | 270-1676 | 10.6-66 | 1140 | 2510 |
| G7E1 | 0-711 | 0-28 | 2595 | 102 | 270-864 | 10.6-34 | 1290 | 2840 |
| G7E2 | 0-1321 | 0-52 | 3205 | 126 | 270-1473 | 10.6-58 | 1330 | 2910 |
| 600 DX | | | | | | | | |
| G1E1 | 44-914 | 1.75-36 | 2505 | 99 | 350-1168 | 13.8-46 | 2270 | 5000 |
| G1E2 | 44-1321 | 1.75-52 | 2910 | 115 | 350-1575 | 13.8-62 | 2310 | 5085 |
| G7E1 | 0-965 | 0-38 | 2910 | 115 | 300-1168 | 11.8-46 | 2390 | 5265 |
| G7E2 | 0-1372 | 0-54 | 3315 | 131 | 300-1575 | 11.8-62 | 2430 | 5350 |

Notes:

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.

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

High-Resolution Encoder
300DX resolution: 1.27 µm (0.00005 in)
600DX resolution: 1.0 µm (0.00004 in)
Position accuracy of ±0.5% or 0.13 mm (0.005 in) displacement (whichever is greater)

Hydraulic Power Supply
Voltage Options
200-250 VAC, 3PH, 50/60 HZ, 15 Amps
380-415 VAC, 3PH, 50/60 HZ, 10 Amps
440-480 VAC, 3PH, 50/60 HZ, 10 Amps



300DX-G1 with Tension Rods and Split Insert Tensile Grips for Testing .505 Specimens



G7 - Open Front with Hydraulic Actuation



G7 Style Jaws for Round Specimens



G7 Style Jaws for Flat Specimens

Flat Specimens

| Model | Specimen Thickness Range | | Maximum Specimen Width | | Jaw Dimensions (W×L) | | Tooth Profile (Per Inch) |
|-------|--------------------------|----|------------------------|----|----------------------|----|--------------------------|
| | mm | in | mm | in | mm | in | Horizontal Cut |

300 kN

| | | | | | | | |
|----------|-------|-----------|----|------|-------|--------|----|
| W-5246-A | 0-16 | 0-0.63 | 70 | 2.75 | 70×76 | 2.75×3 | 20 |
| W-5246-B | 16-32 | 0.63-1.25 | 70 | 2.75 | 70×76 | 2.75×3 | 20 |
| W-5246-C | 32-50 | 1.25-2.0 | 70 | 2.75 | 70×76 | 2.75×3 | 20 |

600 kN

| | | | | | | | |
|----------|-------|-----------|-----|---|---------|-----|----|
| W-5197-A | 0-30 | 0-1.18 | 100 | 4 | 100×100 | 4×4 | 20 |
| W-5197-B | 30-60 | 1.18-2.36 | 100 | 4 | 100×100 | 4×4 | 20 |

Round Specimens

| Model | Specimen Diameter Range | | Jaw Length | | Tooth Profile (Per Inch) |
|-------|-------------------------|----|------------|----|--------------------------|
| | mm | in | mm | in | Horizontal Cut |

300 kN

| | | | | | |
|----------|-------|------------|----|---|----|
| W-5247-A | 3-10 | 0.118-0.39 | 76 | 3 | 20 |
| W-5247-B | 10-20 | 0.39-0.78 | 76 | 3 | 20 |
| W-5247-C | 20-30 | 0.78-1.18 | 76 | 3 | 20 |
| W-5247-D | 30-40 | 1.18-1.57 | 76 | 3 | 20 |

600 kN

| | | | | | |
|----------|-------|-----------|----|---|----|
| W-5198-A | 3-10 | 0.12-0.39 | 10 | 4 | 20 |
| W-5198-B | 10-35 | 0.39-1.38 | 10 | 4 | 20 |
| W-5198-C | 35-57 | 1.38-2.25 | 10 | 4 | 20 |

Note:

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



G1 - Closed with Manual Crank and Pinion



G1 Style Jaws for Flat Specimens



G1 Style Jaws for Round Specimens

Flat Specimens

| Model | Specimen Thickness Range | | Maximum Specimen Width | | Jaw Dimensions (W×L) | | Tooth Profile (Per Inch) |
|-----------|--------------------------|-------|------------------------|------|----------------------|--------|--------------------------|
| | mm | in | mm | in | mm | in | Horizontal Cut |
| 300 kN | | | | | | | |
| W-1214 | 0-25 | 0-1 | 50 | 2 | 50×76 | 2×3 | 16 |
| 600 kN | | | | | | | |
| W-1408 | 0-45 | 0.175 | 70 | 2.75 | 70×125 | 2.75×5 | 8 |
| W-1408-A* | 0-45 | 0.175 | 70 | 2.75 | 70×125 | 2.75×5 | 8 |
| W-1409 | 0-45 | 0.175 | 70 | 2.75 | 70×125 | 2.75×5 | 8 |
| W-1409-A* | 0-45 | 0.175 | 70 | 2.75 | 70×125 | 2.75×5 | 8 |

Round Specimens

| Model | Specimen Diameter Range | | Jaw Length | | Tooth Profile (Per Inch) |
|----------|-------------------------|----------|------------|----|--------------------------|
| | mm | in | mm | in | Horizontal Cut |
| 300 kN | | | | | |
| W-1215 | 12-32 | 0.5-1.25 | 76 | 3 | 16 |
| W-1215-A | 5-13 | 0.2-0.5 | 76 | 3 | 16 |
| 600 kN | | | | | |
| W-1410 | 12.7-57 | 0.5-2.25 | 125 | 5 | 10 |
| W-1410-A | 7-25 | 0.25-1 | 125 | 5 | 16 |
| W-1411 | 12.7-57 | 0.5-2.25 | 125 | 5 | 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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