

2810 Series Flexure Fixture

Catalog Number 2810-181

Features

- Rated capacity: 100 kN (10,000 kgf, 22,500 lbf)
- Three-point flexure fixture with an optional conversion kit for four-point loading
- Conforms to ISO, ASTM, DIN and many other standards.
- Fully adjustable span distance to suit a wide range of specimen sizes
- Rollers free to rotate
- Interchangeable rollers, diameters for different specimen types
- Deflectometer plunger assembly
- Rugged design for minimum maintenance
- Temperature range: -100 °C to +350 °C (-148 °F to +660 °F)
- Built-in anti-rotation

Description

The flexure fixture allows a variety of flexural and fracture toughness bond tests to be performed, including determination of flexural modulus, flexural strength and flexural yield strength. Easy-to-install, the three-point fixture can be modified with an optional conversion kit to provide a four-point bending conversion. The fixture includes a 25 mm (1 in) diameter upper anvil and two 25 mm (1 in) diameter lower anvils which are adjustable to accommodate specimens of different spans. Deflection of the specimen can be measured either through crosshead, actuator displacement, or for more precise measurement use the mid-span direct measurement deflectometer plunger with a clip-on extensometer.

Principle of Operation

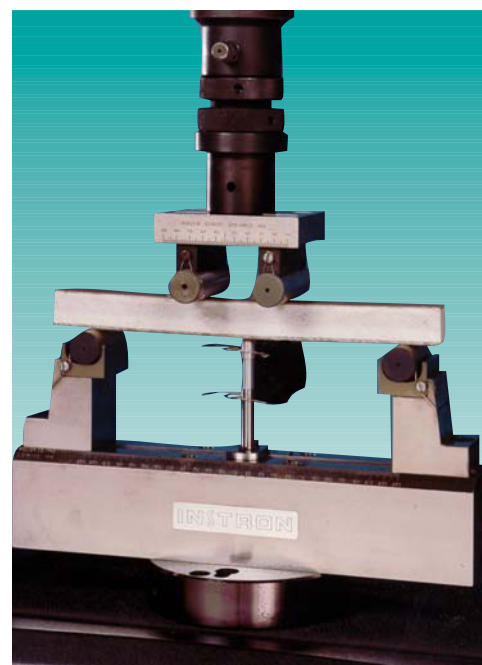
The specimen is supported on two precision machined fixed anvils of defined radius. The force is applied either centrally (three-point) or at a defined distance either side of the center (four-point). The support beam is graduated lengthways in metric units for accurate positioning of the anvils equally spaced to the center line. This feature also applies to the four-point loading beam and anvils. Adjustable specimen stops are provided so that the specimen may be quickly and accurately positioned on the lower anvils.

Application Range

- Type of loading: Static flexure, cyclic flexure tests.
- Specimen material: Plastics, metals, alloys, composites, ceramics and other materials.
- Specimen shapes: strip, bar, components.



▲ Three-point flexure fixture - three-point loading



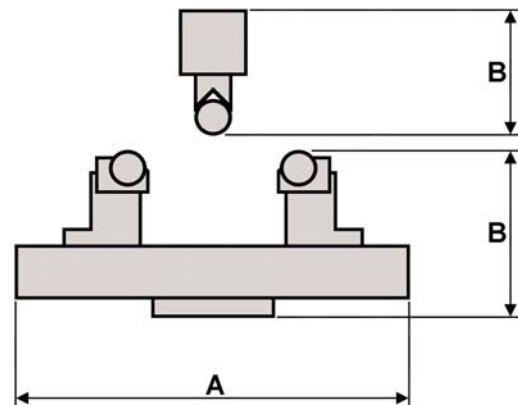
▲ Fourpoint loading using mid point deflectometer

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Specifications

Catalog Number	2810-181
Maximum Capacity	100 kN (10,000 kgf, 22,500 lbf)
Roller Diameters	
Lower Support Roller	25 mm (0.97 in)
Upper Support Roller	25 mm (0.97 in)
Anvil Length	50 mm (1.97 in)
Span Distance (Adjustable)	Lower anvils: 30 mm to 250 mm (1.18 in to 10 in)
Maximum Specimen Width	50 mm (2 in)
Mechanical Connection	Upper fitting: M30X2RH threaded female end (Type I) Lower fitting: M30X2RH threaded female end (Type I)
Overall Width (A)	352 mm (14 in)
Overall Height (B)	Upper fixture: 90 mm (3.54 in)
(Effective Length)	Lower fixture: 180 mm (7 in)
Overall Depth	70 mm (2.75 in)
Weight	20 kg (44 lb)
Temperature Range	-100 °C to +350 °C (-148 °F to +660 °F)



▲ Flexure fixture dimensions

Note

1. Scope of supply - one test fixture

Accessories

Catalog number	Application
2810-184	Bend fixture conversion kit, three-point to four-point, for 2810-181 fixture - Converts 2810-181 three-point bend fixture to four-point - Upper span is adjustable from 25 mm to 90 mm (0.97 in to 3.54 in) - Includes one 25 mm (1 in) diameter roller Requires: Two upper rollers for use in 10 mm (0.4 in) or 5 mm (0.2 in) configurations and extensometer for center point deflection measurement
2810-186	Upper roller, 25 mm (0.97 in) diameter, rated capacity 100 kN (22,500 lb)
2810-185	Upper roller, 10 mm (0.39 in) diameter, rated capacity 100 kN (22,500 lb)
2810-187	Upper roller, 5 mm (0.20 in) diameter, rated capacity 100 kN (22,500 lb)
2810-188	Lower roller and anvil set, 25 mm (0.97 in) diameter (includes two rollers)
2810-189	Lower roller and anvil set, 10 mm (0.39 in) diameter (includes two rollers)
2810-190	Lower roller and anvil set, 5 mm (0.20 in) diameter (includes two rollers)



▲ Deflectometer using clip on extensometer

Notes:

1. Lower anvils are supplied with 25 mm (0.98 in) diameters. Other appropriate sizes are optional. *Custom anvil diameters may be supplied. Contact factory.
2. Deflectometer plunger requires a suitable clip-on extensometer for measurement. Extensometer is not included in the deflectometer package. Plunger travel: 30 mm (1.81 in). Overall height: 91 mm (3.58 in)
3. Extensometer will determine temperature range of four-point configuration.
4. To carry out fracture toughness tests a suitable 2670 series COD gauge is required.



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