

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 10 mm (0.4 in) diameter lower anvils which are adjustable to accommodate specimens of different spans. Deflection of the specimen can be measured either through crosshead displacement, or for more precise measurement use the mid span direct measurement deflectometer plunger with clip-on extensometer.

Features and Benefits

- 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
- Includes a deflectometer plunger assembly
- Rugged design for minimum maintenance
- Temperature range: -100 °C to +350 °C (-148 °F to +660 °F)

Principle of Operation

The specimen is supported on two precision machined (free to rotate) anvils of a 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.

Application Range

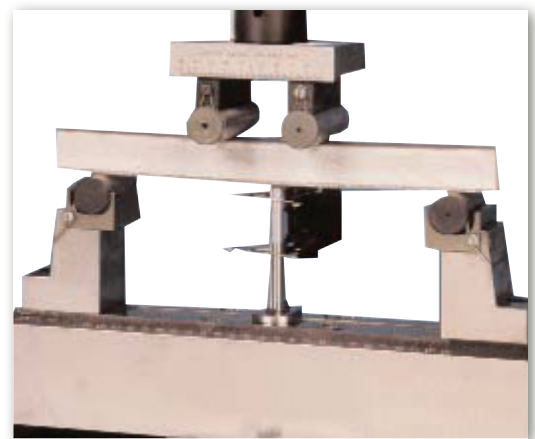
- Type of loading: Static flexure, cyclic flexure tests.
- Specimen material: Plastics, metals, alloys, composites, ceramics and other materials
- Specimen shapes: Strip, bar, components.
- Component testing
- EN10002-1, ISO 6892, ASTM E8, ASTM C39, ASTM F606, SAE J429, and others
- CE Compliant



Three-point flexure fixture



Three-point flexure fixture performing toughness test



Four-point loading using mid point deflectometer

Specifications

Catalogue number		2810-182
Maximum Capacity	kN	100
	lbf	22,500
	kgf	10,000

Lower Support Roller	mm	10
	in	0.39
Upper Support Roller	mm	10
	in	0.39
Anvil Depth	mm	50.8
	in	2

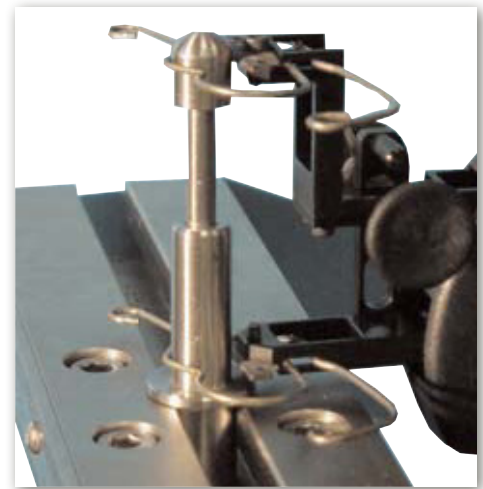
Lower Anvils	mm	10 - 250
	in	0.39 - 10
Maximum Specimen Width	mm	50.8
	in	2

Upper Fitting		M30X2RH female (Type If)
Lower Fitting		M30X2RH female (Type If)
Overall Width (A)	mm	352
	in	14

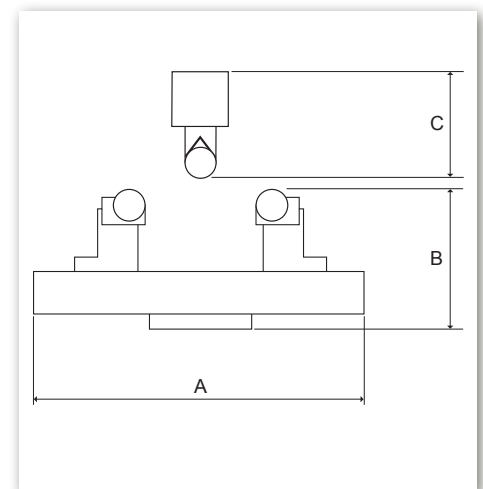
(Effective Length) (B) Lower Fixture	mm	180
	in	7
Three-Point Loading (C) Upper Fixture	mm	90
	in	3.54
Four-Point Loading (C) Upper Fixture	mm	180
	in	7
Overall Depth	mm	70
	in	2.75
Weight	lb	44
	kg	20
Temperature Range	°C	-100 to +350
	°F	-148 to +660

Notes:

- Catalog number provides a support frame, one upper and two lower 10mm anvils, and a deflectometer plunger
- Upper connection will require a rigid coupling



Deflectometer using clip-on extensometer



Flexure fixture dimensions

Accessories

Catalog Number	Description
2810 - 184	Bend fixture conversion kit, three-point to four-point, for 2810-182 fixture: Converts 2810-182 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
2810 - 185	Upper roller, 25 mm (0.97 in) diameter
2810 - 186	Upper roller, 25 mm (0.97 in) diameter
2810 - 187	Upper roller, 5 mm (0.20 in) diameter
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)

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