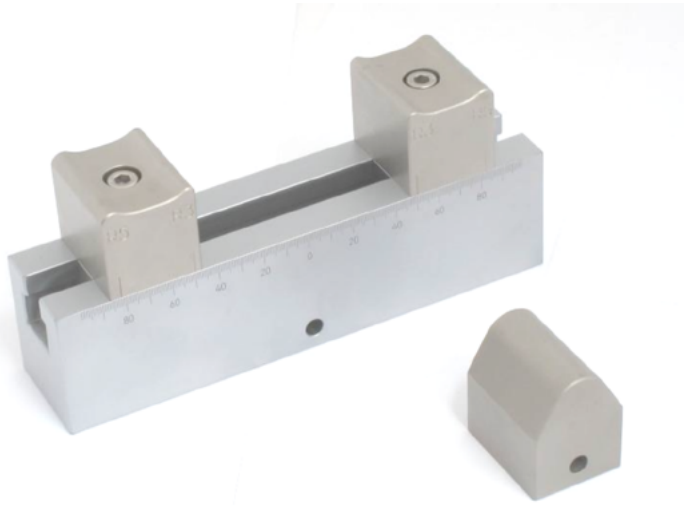
50 kN Bend Jig, QC fitting

Mec103 - steel



A 50 kN Bend Jig in steel having a bending span up to 120 mm and beam width of 50 mm.

A comprehensive selection of Mec103 anvil types and sizes are available to allow you to configure for 3-point or 4-point flexure bend testing.

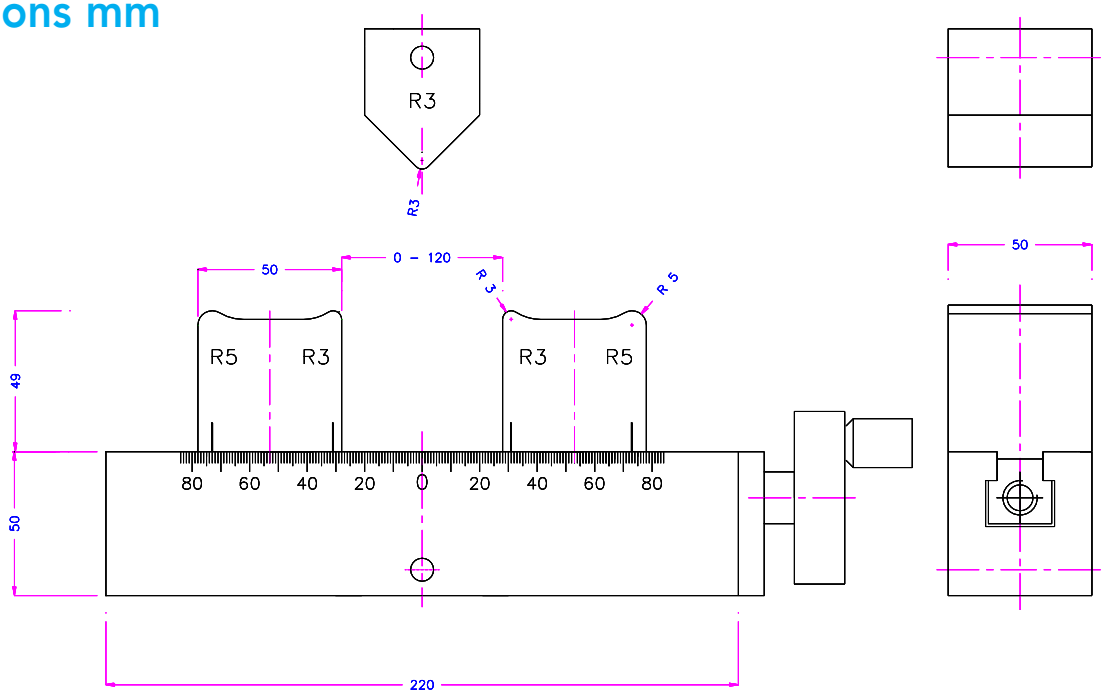
'Upper' anvils and the 'lower' bending beam are supplied fitted with a bore hole to allow connection to either QC-20 or QC-32 fixing posts … please specify which size when ordering. When used with the QC-20 fixing post, the maximum rated capacity is 25 kN.

Below you will see an example configuration showing:

- 'Lower' anvils Type A = nickel-plated 'dual radii' (3mm R3 and 5mm R5)
- 'Upper' anvil Type O having 3mm radius
- 'Lower' bending beam (B) of 220mm length with QC-20 bore hole

This generates a combined part number of : Mec103-AR3R5-OR3-B220-QC20

Dimensions mm



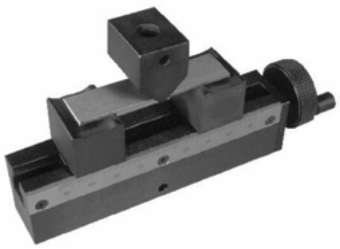
The illustrations overleaf are selected examples of the component parts and assemblies to build precisely the bending jig you require. You choose:

- Bending beam length (lower)
- Bending beam length (upper) … only applicable if you wish to perform 4-point flexure bend testing
- 'Lower' and 'Upper' anvil type (roller or milled-edge) and their dimensions
- Special requirements (eg. Wide anvils for large specimens, tall anvils for folding tests, movement in anvils for increased accuracy)

Please refer to the outline at the back of this datasheet for how to identify and specify the components you require.

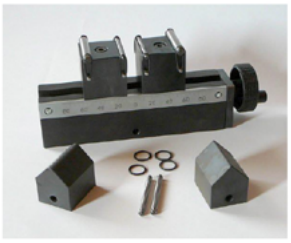
Mec103-cgr

Phosphate coated steel with centric gearing. Rotating the hand-wheel adjusts the position of the anvils symmetrically around the central point of the beam



Example configurations

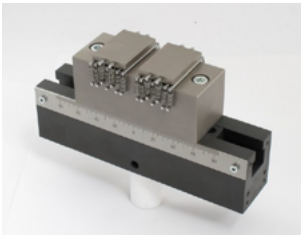
3-point bend jig, 220 mm beam with centric gear, lower anvils with dual interchangeable O-ring retained rollers, diameters 3 mm and 5 mm; upper anvils of diameter 2 mm and 3 mm. Black (phosphate coated).



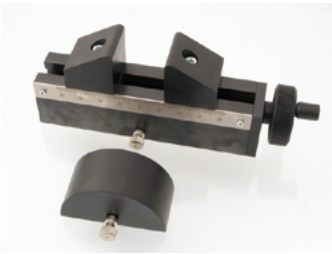
Folding jig comprising 300mm beam, black finish 'Lower' roller anvils of diameter 50 mm with retaining sidebars for 180° folding tests

300 mm beam, with 80 mm tall 'lower' anvils having 50 mm diameter rollers, and 90mm tall 'upper' anvils (various radii) for 160° folding tests.

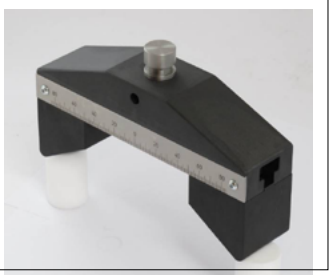
Rolling table



220 mm beam, black finish with centric gearing, 5 mm milled 'lower' anvils and 'upper' anvil radius 30 mm

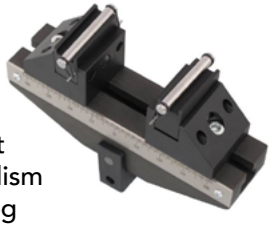


200 mm upper beam to convert to 4-point bend jig, 'upper' anvils having milled radius 5 mm



Folding jig comprising 220 mm beam, black finish with centric gearing, 'lower' roller anvils of diameter 20mm & width 50mm Upper 'anvils' with fins radius 2 mm and 5 mm both having a height of 80 mm

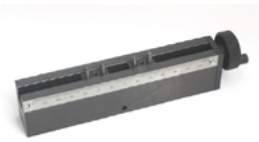
200 mm upper beam to convert to 4-point bend jig, anvils with 'articulated' inserts and interchangeable rollers, diameter 8 mm. Addition of articulated' QC-20 adapter to allow movement during the test to maintain parallelism of specimen (for brittle materials eg ceramics)



Bending Beams

220 mm bending beam with QC-20mm bore hole

300 mm bending beam, black, with centric gearing, & QC-20mm bore hole



220 mm bending beam, black, with centric gearing & QC-20mm bore hole

220 mm upper bending beam for 4-point bending conversion, & QC-20mm bore hole

Lower anvils (pair)

Dual-radii 2 mm and 4 mm, milled hardened steel, black finish

Single milled radius 5 mm hardeMec103ned steel, black finish

V-notch to receive interchangeable rollers of diameters 3 mm to 15 mm, rollers are retained in position with O-rings,

Roller retaining sidebars – recommended for folding tests

Interchangeable rollers, diameter 10 mm, 6 mm and 4 mm

Rotating roller, diameter 10 mm, nickel-plated

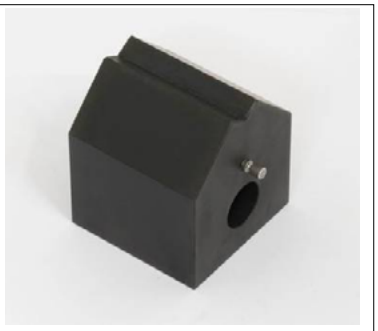
Articulated carrier with insert for interchangeable roller of diameter 8 mm on flat-bed with end-stop. Allows movement of the roller along the 'flat-bed' during the test.

Upper anvils

Milled radius 2 mm, hardened steel & QC-20mm bore hole

V-notch to receive interchangeable roller, retained by O-rings.

QC-20mm bore hole



Milled radius 10 mm, hardened steel, height 80 mm.

QC-20mm bore hole

Milled radius 0.2 mm, hardened steel fin for folding tests.

QC-20mm bore hole

Milled Radius 50 mm, hardened steel

QC-20mm bore hole

Bend jigs to your own specification

Bend jigs can be assembled to user specification tomeet test requirements:

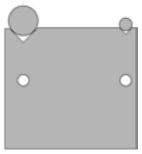
- load rating
- bending span width
- anvil mount type
- anvil edge type
- anvil movement type
- anvil width
- anvil height
- 3 or 4-point bend capability
- individual positioning of anvils, or by centric gearing using a leadscrew / handle.

Certain anvil types allow a rocking movement, adjustable angle (articulated), or flat sideways movement. For sharp angle bending (e.g. to 160°) long-fin anvils are available, along with other specialised anvils. Standard anvil types are shown below. (Roller size is denoted by diameter, milled edges are denoted by radius.)

Lower Anvils

Type A: dual-radius

A: milled edge

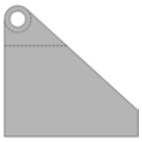


AX: v-notch roller bearings

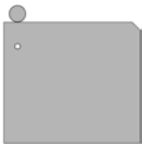
Type C: single radius

C: milled edge

CX: v-notch roller



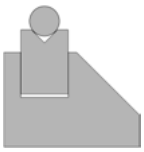
CL: captive roller



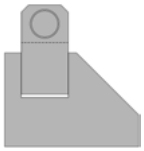
CM: roller free to traverse

Type CW, carrier style

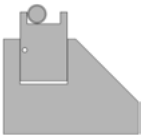
CW: milled edge



CWX: v-notch roller



CWL: captive roller

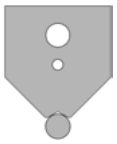


CWN: roller traverses to stop

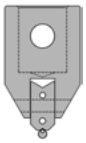
Upper Anvils

Type O

O: milled edge



OX: v-notch roller bearing



OWX: carrier-style v-notch

How to specify your particular bend jig requirement

Let us know your requirement by:

- beam model: Mec238, Mec103, Mec22 and length (long versions available)
- aluminium or steel, and finish (where available)
- anvil mount type as above (A, C, CW, O, with extra designation of W, X, L, M or N where appropriate)
- the upper and lower anvil radii type (milled or rollers) with diamensions
- any special requirements such as anvil height or width, or movement
- if you require centric gearing (Mec103 only)
- if you require an upper support for two anvils for 4-point testing
- the QC coupling size (20 mm or 32 mm)

For full details and examples, refer to the datasheets for the three base models: Mec238, Mec103 and Mec22.

For more information on QC fittings, refer to datasheet 431-354 Adapters for QC range of grips.

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