

# Mecmesin

testing to perfection

# Accessories Catalogue

for Force and Torque testing



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## How-to use this catalogue

This catalogue contains a very broad range of accessories and you should find exactly what you want. For most fixture types all you will need is a part number, which is indicated in a specification table associated with the accessory:

<a href="#">DATASHEET</a>										
Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-346	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	50 g	0.11 lb

Select the part number from the specification table

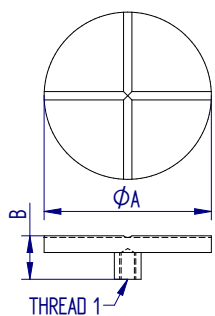

Note: All accessories are sold individually unless specified otherwise.

## Catalogue Listing

The catalogue is divided into two main sections. At the front is a concise listing of the accessories with a description, photograph, schematic drawing indicating the fundamental dimensions and the specification table:

**Slotted Compression Plates**

Slotted compression plates allow for escape of air from containers under top-load testing where a centring cone is unsuitable.

[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-346	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	50 g	0.11 lb

Catalogue listing entry

## Datasheets

The second section contains datasheets for those accessories where further details are relevant. The electronic version of this catalogue will have a hyperlink to the datasheet in the listing entry.

More complex fixtures, such as bend jigs, can be built from user specification, comprising a number of parts. These accessories have their specification table in the datasheet which provides more detail for selecting the correct part. The catalogue listing will show the following information with the datasheet link:

[DATASHEET](#)   [QC](#)

Part No.	
Mec103	Please see data sheet for full details

Click on the button to go to the datasheet

Refer to the datasheet for selecting part numbers for complex fixtures

If you cannot easily find what you want, or you are unsure, please call us, and we will be able to advise you. We also have a custom fixture design and manufacture capability, with expert engineers.

## QC Fittings

Accessories with Quick Change QC fitting will have a hyperlink labelled 'QC' to jump to the appropriate section within the catalogue. Please see table above for example of QC Hyperlink button.

# About Mecmesin

Mecmesin has been a specialist designer and manufacturer of force and torque testing equipment since 1977. Based in the UK, we have offices in six countries and distributors in over 50 more. Our aim has always been to provide cost-effective solutions to in-house product testing, from hand-held instruments to custom-built automation systems. Mecmesin is an established, leading, and trusted brand worldwide.

The systems and instruments we provide combine accuracy, reliability and affordability, in a range to suit all kinds of product testing. They are widely used in quality assurance situations, frequently on the production line or shop floor, where their robust design is ideal for continuous use with low training requirement. Design laboratories also represent a large part of our client base, where the computing power of our top-range systems is essential. Our gauges and instruments are market leaders, for their accuracy, reliability and sheer ruggedness.

Users of Mecmesin systems can be found across a very wide range of industries for an extremely diverse spread of applications. We frequently meet these needs by combining our standard products with customised solutions. Our highly talented and experienced engineers design bespoke systems, grips and fixtures to ensure optimal testing of any product presented to us.

## The importance of force and torque testing

The testing of products in-house brings control to engineering processes, guaranteeing fit-for-purpose functionality and allowing design optimisation. Mecmesin equipment provides the capability to meet quality standards for both internally manufactured and externally-sourced products and materials from suppliers.

Further benefits of testing include:

- Quality assurance protects your brand reputation and market position.
- Quality assurance demands standardised testing, whether to ASTM, BS, DIN, ISO, an industry body, or an internal corporate standard.
- Standards require systems that ensure repeatability from day to day and from site to site, anywhere in the world.
- Design frequently includes materials content optimisation; testing designs for strength and fitness for purpose are an essential component.
- Testing to detect problems before they affect production, minimises wastage.



## Your choice of grips and fixtures

Mecmesin supplies a full range of approved grips and fixtures for use with all our systems and instruments.

However, in testing flexible, moulded or asymmetric items, custom grips are often required. We have an expert in-house design and manufacturing facility for these specific needs.

## Comprehensive product range

Our modular product range includes test systems, instruments and accessories designed and manufactured to suit all force and torque test applications and environments.

Test systems have three distinct designs to meet different user-interface requirements, computer-controlled, touch screen controlled and motorised systems. Our systems measure force from 0.5 kN to 50 kN and torque from a few mN.m to 10 N.m.

For less exacting applications we have a range of force and torque gauges and table top manually operated instruments measuring up to 2.5 kN and 10 N.m respectively.

# Comprehensive Product Range



## Support and services

Our team of expert applications and service engineers are there to support you with a range of professional services. We can help you select the right test solution, including grips and fixtures, provide demonstrations, pre-program your system, install and train users, followed by full after-sales service.

- Comprehensive global network of international distributors
- 24 month warranty
- On-site installation and training
- Application support
  
- Online helpdesk live web chat
- Calibration and service centre
- Custom built systems
- Bespoke grips and fixtures



## Selecting the Most Appropriate Grips

Holding specimens in the most uniform manner is one of the basic requirements for obtaining reliable and repeatable test results. When selecting the best grips for a particular application there are a number of considerations. The specimen must be held in such a way that it does not slip within the grips nor should the specimen break at the jaw. Alignment of the grips is essential to ensure the forces are applied 'in axis' between the loadcell and the test frame. International test standards often define a type of grip to be used, which makes selection straightforward. However in most cases the choice of grip is often affected by the need to test a wide variety of different specimen shapes and materials. This situation lends itself to more 'general purpose' grips which can be tailored to several applications by choosing from a number of jaw faces to suit the material or component being held.

Other factors such as throughput of testing and ease-of-use play an important role in deciding which grip to choose. Whilst 'general purpose' grips have advantages in terms of flexibility, it can be time-consuming, particularly when testing small batches of differing specimen geometries, to have to change over jaw faces. In the long run it may be more cost-effective to select dedicated grips for certain applications and use the 'QC' (quick-change) connection to swiftly exchange complete grips.

The following Glossary section provides an overview of the various types of grips and fixtures available from Mecmesin. Each grip-type is listed in its own category under a summary-section. Within the summary you will see a link to the datasheet for each individual grip which provides comprehensive technical details and drawings to aid you in your selection.

If your application requirements are very specific to your product or component and you do not see a 'standard' grip, please consult our team of application-engineers who will be happy to use their vast experience to work with you to design and manufacture a custom grip.

## Compression

Compression tests are performed to evaluate the performance of a material or component under gradually increasing compressive load. This usually involves compressing a specimen to a pre-defined load limit and measuring its deformation or alternatively compressing the specimen until it breaks or cracks.

Specimens can be compressed between two uniform compression fixtures (e.g. plates) or alternatively the specimen can be placed on the base of a testing machine and compressed from above by a single compression fixture (e.g. probe).

The selection of compression fixtures should be determined by the variety of different shapes and sizes of the specimens you need to test plus the surface finish best suited to the application.

### Compression Plates

Compression Fixtures should be selected to suit the contact area of the sample which is to be tested. They are typically available as round, square or rectangular plates with either a threaded connection or a quick-change (QC) fixing.

A variety of surface finishes and configurations are provided:

- Nickel plated compression plates have a coating, which helps to prevent rust.
- Hardened and ground compression plates have a smooth, scratch-proof surface ideal for compression testing on samples such as tempered springs which could damage a standard compression plate.
- Rubber-faced compression plates have a protective layer, which helps to prevent damage from metal-to-metal contact during a compression test.
- Self-levelling compression plates are ideal for precise compression testing on a range of materials and finished products. Self-levelling allows exact parallelism to be set between the upper and lower plates—ideal for those applications where it is critical to accurately measure the deformation of a sample.
- Vented compression plates are ideal for top-load/crush testing of materials or products which contain air (e.g. empty PET bottles, foam, etc.). It allows for release of air from within the container whilst it is being compressed thereby avoiding potential measurement errors caused by measuring the force to compress the internal air.



## Probes

Probes are designed primarily for penetration and puncture resistance testing. There are a variety of tip profiles and sizes available (e.g. cone, chisel, radiused) to simulate the real-world conditions under which a specimen may be compressed.

Load buttons or extension rods can also perform the same function as a probe to measure the compressive strength of small components such as push-button switches.

## Flexure/Bend Jigs

Flexural load tests are popular since they closely characterise how a material or component may perform during its lifetime. As such they are often used to determine the mechanical properties of a whole range of materials including plastics, metals, wood, paper & board, ceramics.

'Flexure bend' tests usually draw upon loading at 3 or 4 points:

- The **3-point bend test** uses a jig which has 2 parallel 'lower' anvils to support the specimen. A single 'upper' anvil positioned exactly half-way between the 2 'lower' anvils is used to apply compressive load to the specimen to determine its material characteristics. The 3-point test is used mainly for elastic and ductile materials.
- The **4-point bend test** differs in so far as there are 2 'upper' anvils which apply compressive load to the specimen and are positioned symmetrically around the 2 'lower' anvils. The 4-point test is used mainly for determining the properties of brittle materials.

In both 3-point and 4-point bend tests the 'upper' and 'lower' anvils can be fixed, rotating or tilting according to the requirements of the test standard. Rotating anvils help minimize the effects of friction by allowing longitudinal movement. Tilting anvils ensure parallel contact with the specimen throughout the test.

Anvils can be radius-type or roller-type and may be held in a fixed position or be free to move. In addition the 'lower' anvils can be selected to make contact with the specimen at a single point or dual points.

The span of the anvils is set by manual positioning against a ruler-tape which indicates the span distance and using an allen key to secure. Alternatively support beams are available with leadscrews whereby anvil positions can be adjusted by using a hand-wheel.

## Dedicated compression fixtures

Dedicated compression fixtures are purposely designed to meet the challenges of a specific application. The requirements for the fixture may be outlined in an international test standard (e.g. ISO, ASTM standards for compressive shear testing) or they may come from industry requests to provide an appropriate attachment for holding specific components (e.g. long flexible springs).

Mecmesin offers a range of dedicated compression fixtures to suit common requirements. For non-standard applications a team of design-engineers is available to work with you to find a suitable solution to meet your technical and budgetary requirements.



## Tension

There are in essence two types of tensile grips:

- a) **'Self-tightening'** whereby the clamping force to hold the specimen increases as tensile load is applied. This is achieved by the action of wedges, levers, eccentric cams/rollers and pincer-scissors, which all move to tighten their hold as tensile load is applied during the test thereby reducing the risk of slippage.
- b) **'Side-action'** whereby the clamping force to hold the specimen is independent of the tensile load applied. The clamping force is achieved by parallel jaw faces which are set to a certain position by a screw-action or via pre-loaded springs. As the specimen decreases in thickness when it is stretched during the test there is a commensurate reduction in clamping force exerted by the 'fixed position' parallel jaw faces potentially increasing the risk of slippage. Such grips are 'screw-action' Vice Grips, Pinch Grips, Toggle Grips, Claw and Chuck Grips.

Please note that the tensile load rating provided for all grips is for indication only. It is dependent on a number of factors including the surface hardness of the material being held, the jaw faces selected, how much pre-tension is applied, etc.

Additionally, in the case of pneumatic grips, the clamping force is dependent on the pressure applied. As a general guide we advise 'clamping force x 50% = tensile load rating'. Example: a pneumatic grip with a nominal clamping force of 7kN at 7 bar (max. 16 bar) is rated to a tensile load of 3.5kN at 7 bar, 5kN at 10 bar and 8kN at 16 bar.

### Self-tightening Tensile Grips

**Wedge Grips** - consisting of 2 interchangeable or fixed jaws in the shape of a wedge which are secured in a metal body. Designed such that, when under tension, the two jaw faces are drawn tighter together in a firmer hold upon the specimen. For specimen removal /insertion the wedge-jaws are quickly and easily opened/closed by using a lever to move them up and down within the body. The initial clamping force to hold the specimen before the test begins is achieved by tension springs acting to bring the wedge-jaws together.

An ideal 'general-purpose' grip for testing plastic and metal dumbbells, sheets, strips and other flat or round specimens.

**Cam Grips** - operate by virtue of one or two opposing eccentric cams increasing their clamping force upon the specimen as tensile load is applied. The initial clamping is achieved by the cam being spring-loaded or having a lever-action to facilitate quick insertion and removal by the operator.

Suitable for soft and flexible plastics, rubbers and textiles.

**Scissor Grips** - self-tightening and self-aligning with the specimen initially being held by spring tension. The ratio of clamping force to tensile force changes in proportion to the opening width—therefore the wider the opening, the stronger the clamping force exerted upon the specimen. Available with locking function to facilitate removal of the specimen after testing.

Suitable for highly ductile plastics and elastomers.

**Belt and Strap Grips** - typically of a split-roller type in order to provide a rounded, smooth-surface around which a belt or strap can be looped several times. As the tensile load is applied the belt self-tightens around the roller providing excellent clamping force.

Suitable for flexible belts, straps and webbing of textile and plastic materials.

### Side-action Tensile Grips

**Vice Grips (Single-action)** - having one fixed jaw against which a second parallel jaw is tightened. The position of the fixed face may be adjustable to accommodate differing specimen thickness. They may be manually screw-operated, or pneumatic.

**Vice Grips (Double-action)** - having two adjustable parallel jaws to enable in-axis alignment of the test specimen. They may be manually screw-operated, or pneumatic.

Vice grips are typically used in pairs and are available with an extensive selection of interchangeable jaw faces and sizes.

Vice Grips are an ideal 'general-purpose' grip for testing thin sheets, films, foils, tapes and various





plastic, metal and textile fabrics.

**Pinch Grips** - designed for small-area contact to grip a specimen. Hinged with a screw-action mechanism to simultaneously open/close both jaws.

Suitable for low force pull-off tests of components, adhesive bonds, etc.

**Bollard Grips** - provide a rounded surface around which a specimen is curved or wound several times before its end is clamped between jaws. Contact with a greater surface area provides increased friction which reduces the risk of specimen slippage. Also helps avoid 'point contact' which can cause cutting, indentation or tearing of delicate specimens.

Suitable for strings, wires, filaments and yarns.

**Claw Grips and Chucks** - designed to either grip a cylindrical test specimen directly, or to grip a thin probe, such as a needle for penetration testing. Often used to help grip irregular shaped objects.

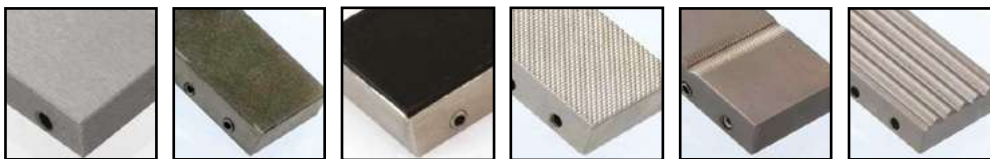
Suitable for low force pull-off tests of round components or joints.

**Hooks** - Round hooks are suitable for samples with loops, such as some springs, O-rings and seals. Peg hooks can engage smaller attachment holes in thinner and stiffer samples than round hooks.

**Flexible Links** - added into tension fixtures to allow a certain amount of lateral movement for maintaining natural axial alignment. This is particularly useful to allow a specimen with an off-centre connecting piece or tab to straighten, peel or tear.

## Selecting Jaws for Tensile Grips

Choosing the most appropriate jaw type for a tensile grip can be tricky. It is a balance between having sufficient hold of the specimen to prevent it slipping and not having too 'aggressive' a hold which damages the specimen. Below is a simple guide with tips on jaw selection to assist you:



Blank

Diamond

Rubber

Pyramid

'V'

Wave

**Blank Jaws** - for smooth surfaced materials. Allows user to machine or affix own surface (eg. emery paper)

**Pyramid or Diamond Jaws** - for materials which need a "bite" to secure a good grip (e.g. soft metals {aluminium, copper, soft steel}, paper and board)

**Rubber Jaws** - for fragile samples, which may get weakened by pinching at the contact-edge of the grip. (e.g. thin films, filaments, fibres and thin aluminium)

**V Jaws** - for round samples where flat jaws do not provide enough surface contact (e.g. wires, rods, tubes)

**Wave Jaws** - for slippery materials which need more surface contact to secure a good grip (e.g. textiles, fabrics and tissues)

## Specialised Jaws

**Line-contact Jaws** - for thin materials, requiring a point contact to determine the true gauge length of the specimen between the grips (e.g. rubber, textiles or paper). These jaws have a radiused contact face and are supplied with the equivalent rubber coated flat-faced jaw for the opposing jaw surface. Only to be used where specified in international standards. Available for several side-action grips, please contact Mecmesin with your requirements.



Line-contact



## Torque

Torque grips are designed to hold a sample vertically and precisely about its rotational axis. The choice of grip depends on the symmetry and shape of the sample. Since there are far fewer international testing standards relating to torque which define specimen forms and dimensions, it is often the case that a suitable 'standard' grip cannot be found. In this situation a custom grip will be needed - these can be designed and made by Mecmesin engineers to suit your exact requirements.

### Fixing Tables

Torque Fixing Tables typically comprise 2 threaded carriers whose position is controlled by a stainless-steel leadscrew. 4 rubber-coated pegs are affixed to the carriers and adjusted for holding and centring test specimens about the rotating axis. Fixing Tables attach either directly to the torque sensor or to the motor-spindle of a Motorised Torque Stand.

### Saddle Plates

Saddle Plates are an additional accessory to fit onto Fixing Tables for specimens with irregular underside on their base, which are not best suited to positioning on carriers/leadscrews. The Saddle Plate provides a stable flat base for placing such specimens perpendicular to the torque sensor thereby improving accuracy and repeatability of testing.

### V-Blocks

V-blocks are available in 2 versions.

- a) They can be provided as an additional accessory for use with standard Fixing Tables where they act as a substitute for the rubber-coated pegs. They consist of 2 V-shaped, rubber-coated jaws at a desired angle to maximise the contact area with the specimen and thereby minimise the risk of slippage.
- b) They can be provided affixed to their own dedicated fixing table with jaw profiles and coatings to suit the specimens being tested.

### Chucks

Chucks are designed to grip a cylindrical test sample directly. They are available in 3-jaw or 4-jaw versions with various jaw profiles.

### Mandrels

There are two versions of mandrels available to grip closures for torque testing.

- a) "Split-mandrels" - this comprises 2 mandrel halves which have been machined to suit a narrow span of closure diameters and profiles. The closure is located between the halves and is gripped by tightening the mandrels using a leadscrew.
- b) "Dedicated mandrels" - machined specifically as an exact fit to match the profile of a single closure type. The mandrel is placed upon the closure and the mandrel is then 'driven' by a holder to apply the required torque. The mandrel can then move vertically which is essential for testing screw-type closures. 'Dedicated mandrels' are made to the user's specific design requirement.

### Calibration Check Rig

A calibration check rig will give an indication whether a torque sensor lies within acceptable tolerance limits of its calibration—often used to make a simple verification check of accuracy between recalibration periods. It is not a substitute for official calibration and adjustment by an approved calibration laboratory.



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# Quick Change QC fittings

## How QC fittings work

QC fittings are mainly to standard post diameters of 20 mm or 32 mm. Smaller fixtures may have a QC diameter of 15.9 mm, for which you will require a QC converter.

The fixture is presented to the post, and a pin inserted through holes in the fixture sleeve and post, and secured with a clip.



Lighter QC fixtures can be mounted on a simple post (Type A or J) attached directly to either a loadcell or stand anvil by means of a grub screw. Whilst this is simpler, the orientation of the securing pin may not be ideal.



432-282



432-418

Larger fixtures are mounted onto a post with a broader base (Type C or L). This base is screw-mounted onto the anvil or stand base, and requires an additional single-screw mounting plate for attachment to a loadcell. These QC mounts also have a screw collar for tightening the fixture against the locking pin.



432-284



432-451

To convert a non QC type grip to a QC type, attach a female sleeve (Type B or K) to the grip.



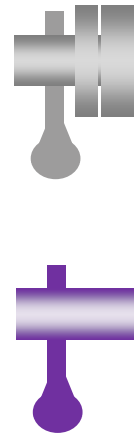
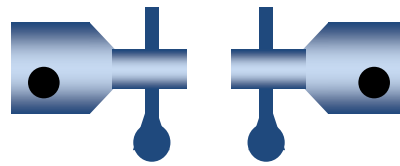
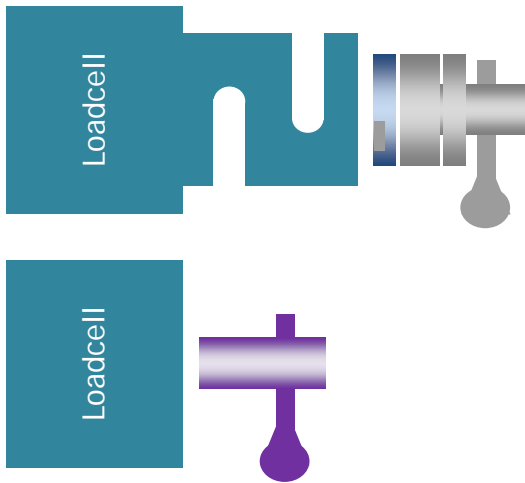
432-429

\*Take great care when selecting grips for use with loadcells below 50 N to avoid risk of overload.

DATASHEET

## Loadcell QC fitting

Loadcell	Capacity	Thread	Mounting plate	Part no.	Post & pin	Post Ø	Part no.
ILC/gauge	0.5–5 kN*	5/16 UNC	N/A	N/A	Type A	20 mm	432-282
ILC/gauge	0.5–5 kN*	10-32 UNF	N/A	N/A	Type J	20 mm	432-418
ILC-S	100 N, 200 N	M6	Type M	432-452	Type C	20 mm	432-284
ILC-S	500 N	M6	Type D	432-285	Type C	20 mm	432-284
ILC-S	1 kN	M10	Type E	432-286	Type C	20 mm	432-284
ILC-S	2.5 kN, 5 kN	M12	Type F	432-287	Type C	20 mm	432-284
ILC-T	10 kN	M12	Type F	432-287	Type C	20 mm	432-284
ILC-T	25 kN	M16	Type G	432-288	Type C	20 mm	432-284



QC fitting, loadcell and anvil / stand base schematic

## QC Converters

Sleeve Ø	Post Ø	Type	Part no.	Sleeve Ø	Thread	Type	Part no.
20 mm	15.9 mm	Type N	Mec187-158-M-20	20 mm	M12	Type B	432-283
32 mm	20 mm	N/A	432-623	20 mm	5/16 UNC	Type K	432-429

(please ask if you need other size converters)

## Stand QC fitting

Stand capacity	Post & pin	Post Ø	Part no.
MultiTest 0.5 kN to 5 kN	Type A (or J)	20 mm	432-282 (418)
MultiTest 0.5 kN to 25 kN	Type C	20 mm	432-284
MultiTest 50 kN	Type C	20 mm	432-622
MultiTest 50 kN	Type L	32 mm	432-451

### Compression

Compression testing takes many forms, from testing the hardness or compressive strength of a material or manufactured product, to how it deforms and/or recovers, or its resistance to penetration. Compression testing can be used to test an insertion force or sharpness of a needle, or the strength of an adhesive bond under shear. Measuring these forces requires test systems and fixtures that ensure precise repeatability through correct alignment and gripping.



### Types of compression test for which we can supply fixtures

- ultimate compressive strength
- break stress
- single pellet crush
- top-load (column) crush
- box crush (BCT)
- edge crush (ECT)
- ring crush (RCT)
- compressibility and recovery
- top load, glass containers
- lap shear under compression
- double sandwich shear
- compressive shear
- laminates compressive shear stress
- puncture shear
- three-point bend
- four-point bend
- cantilever bend
- ball burst
- short span compression
- short beam shear strength
- needle penetration
- cone penetration
- compressive hardness
- compressive hardness
- penetration resistance
- circular bend
- compressive strength
- five point bend
- flat crush (FCT)
- compressive deformation
- pinch
- bursting strength (sheet rupture)
- puncture resistance
- compressive burst



# Compression plates: fixed

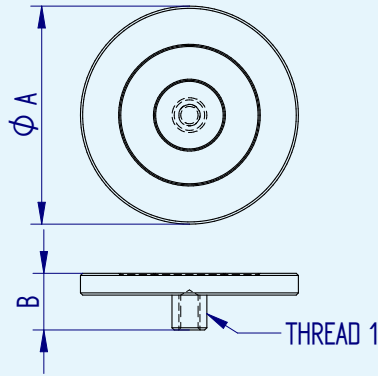
## Compression

### Nickel-Plated Compression Plates

Nickel-plated compression plates are resistant to rusting.

#### Applications:

- metals
- cylinders
- cubes
- mortar
- cement
- plaster



#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-119	5 kN	500 kgf	1100 lbf	10-32 UNF	12 mm	0.47"	12 mm	0.47"	6 g	0.01 lb
432-188-F95	5 kN	500 kgf	1100 lbf	M6	12 mm	0.47"	12 mm	0.47"	5 g	0.01 lb
432-121	5 kN	500 kgf	1100 lbf	10-32 UNF	19 mm	0.75"	16 mm	0.63"	12 g	0.03 lb
432-125	5 kN	500 kgf	1100 lbf	5/16 UNC	19 mm	0.75"	19 mm	0.75"	17 g	0.04 lb
432-005	5 kN	500 kgf	1100 lbf	M6	19 mm	0.75"	16 mm	0.63"	10 g	0.02 lb
432-343	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	79 g	0.17 lb
432-344	5 kN	500 kgf	1100 lbf	5/16 UNC	50mm	1.97"	16 mm	0.63"	84 g	0.19 lb

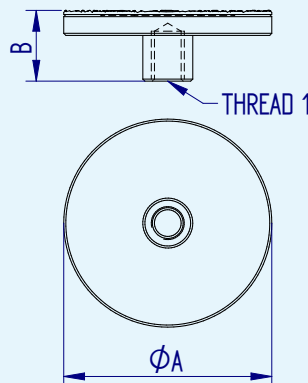
DS-1002

### Rubber-Faced Compression Plates

The rubber-faced compression plate has a rubber layer which helps to prevent damage to the sample that would occur from metal contact during a compression test. Also increases grip at the point of force application on low friction or curved specimens.

#### Applications:

- metals
- glass
- slippery or curved samples



#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-219	2.5 kN	250 kgf	550 lbf	5/16 UNC	50 mm	1.97"	17 mm	0.67"	84 g	0.19 lb
432-220	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	—	—

DS-1003

# Compression plates: fixed

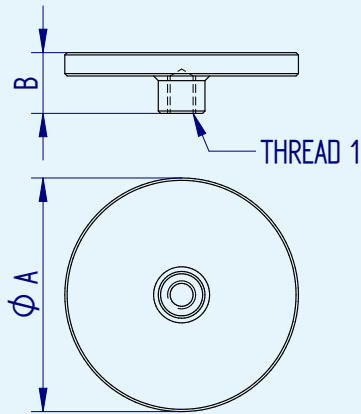
## Compression

### Hardened and Ground Compression Plates

Hardened and ground compression plates have a smooth, scratch-proof surface ideal for compression testing on samples that could damage a standard compression plate, such as metal springs.

#### Applications:

- springs
- bottles
- cans
- polymer foams



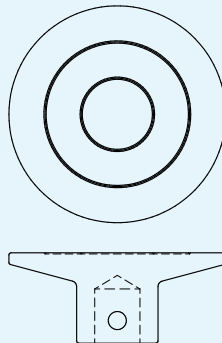
#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-197	5 kN	500 kgf	1100 lbf	M6	50 mm	1.97"	13 mm	0.51"	—	—
432-336	5 kN	500 kgf	1100 lbf	10-32 UNF	12 mm	0.47"	12 mm	0.47"	6 g	0.01 lb
432-337	5 kN	500 kgf	1100 lbf	10-32 UNF	19 mm	0.75"	12 mm	0.47"	12 g	0.03 lb
432-338	5 kN	500 kgf	1100 lbf	5/16 UNC	70 mm	2.76"	20 mm	0.79"	301 g	0.66 lb
432-341	5 kN	500 kgf	1100 lbf	5/16 UNC	100 mm	3.94"	20 mm	0.79"	624 g	1.37 lb
432-446	5 kN	500 kgf	1100 lbf	5/16 UNC	175 mm	6.89"	20 mm	0.79"	2 kg	4.41 lb
432-172-F95	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	—	—

DS-1004

### Phosphated Compression Plates, QC fitting

Phosphate-coated hardened steel compression plates are available in a range of diameters, and with male or female QC-fittings. They can also be combined with self-levelling plates.



#### DATASHEET

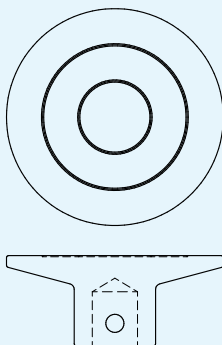
#### QC

Part No.	Please see datasheet for full details
Mec23	

DS-1005

### Aluminium Compression Plates, QC fitting

Anodised aluminium compression plates are available in a range of diameters, and with male or female QC-fittings. They can also be combined with self-levelling plates.



#### DATASHEET

#### QC

Part No.	Please see datasheet for full details
Mec23	

DS-1005

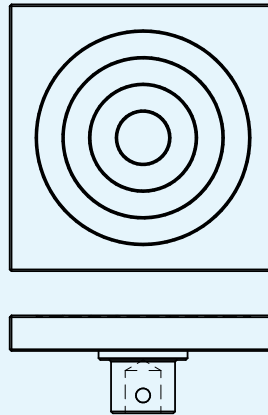


# Compression plates: fixed

## Compression

### Steel Rectangular Compression Plates, QC fitting

Nickel-plated hardened steel compression plates are available in a range of dimensions, square and rectangular, and with male or female QC-fittings. They can also be combined with self-levelling plates.



[DATASHEET](#) [QC](#)

Part No.

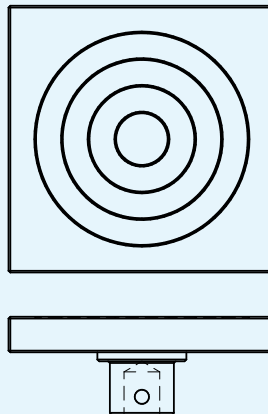
Mec36

Please see datasheet for full details

DS-1006

### Aluminium Rectangular Compression Plates, QC fitting

Anodised aluminium compression plates are available in a range of dimensions, square and rectangular, and with male or female QC-fittings. They can also be combined with self-levelling plates.



[DATASHEET](#) [QC](#)

Part No.

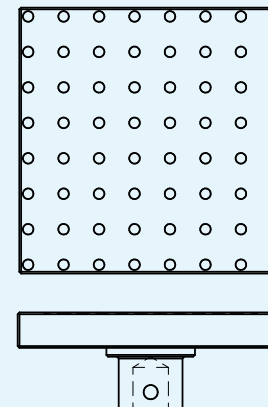
Mec36

Please see datasheet for full details

DS-1006

### Perforated Aluminium Compression Plates, QC fitting

Perforated anodised aluminium compression plates are used for compressing porous materials such as polymer foams. Supplied singly they can be paired with rigid or self-levelling plates. QC fitting.



[DATASHEET](#) [QC](#)

Part No.

Mec36

Please see datasheet for full details

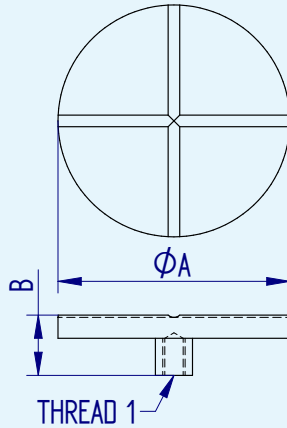
DS-1006

# Compression plates: fixed & vented

## Compression

### Slotted Compression Plates

Slotted compression plates allow for escape of air from containers under top-load testing where a centring cone is unsuitable.



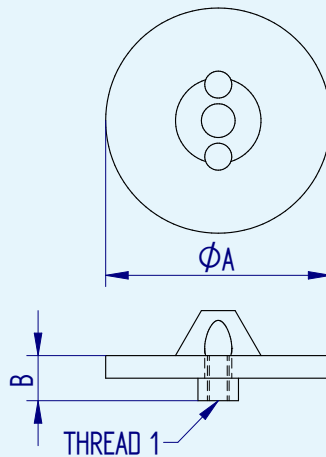
#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-346	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	50 g	0.11 lb

DS-1007

### Vented Compression Plates

Vented compression plates are ideal for top-load/crush testing of containers such as PET bottles. Two circular vents allow air to escape from the container during compression and an integrated nose cone helps to position containers centrally.



#### Applications:

- plastic bottles
- PET containers

#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-347	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	10 mm	0.39"	50 g	0.11 lb
432-348	5 kN	500 kgf	1100 lbf	5/16 UNC	50 mm	1.97"	10 mm	0.39"	50 g	0.11 lb

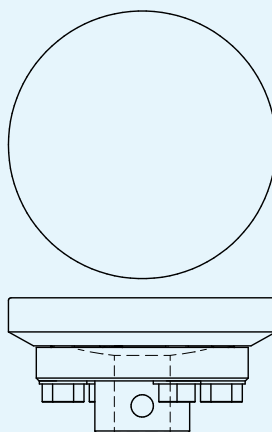
DS-1007

# Compression plates: self-levelling

## Compression

### Spherically-Seated Self-levelling Compression Plate, QC fitting

Spherically-seated self-levelling compression plates are ideal for general compression testing on a range of materials and finished products. Self-levelling allows parallelism to be set for those applications where it is critical to accurately measure the deformation of a sample, or where the sample has faces that are not exactly parallel and conventional plates would put an undue load on a very small area, causing a premature failure. QC fitting.



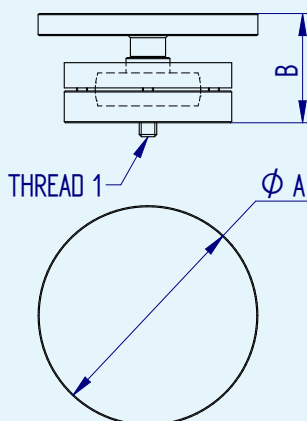
[DATASHEET](#) [QC](#)

Part No.	Please see datasheet for full details
MecS223	

DS-1008

### Self-levelling Compression Plate

Self-levelling compression plates are ideal for general compression testing on a range of materials and finished products. Self-levelling allows parallelism to be set for those applications where it is critical to accurately measure the deformation of a sample, or where the sample has faces that are not exactly parallel and conventional plates would put an undue load on a very small area, causing a premature failure.



#### Applications:

- metals
- cylinders
- springs
- cans
- polymer foams
- curved-face samples

[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-349	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	38 mm	1.50"	450 g	0.99 lb
432-350	5 kN	500 kgf	1100 lbf	5/16 UNC	70 mm	2.76"	50 mm	1.97"	—	—
432-351	5 kN	500 kgf	1100 lbf	5/16 UNC	100 mm	3.94"	50 mm	1.97"	—	—
432-352	5 kN	500 kgf	1100 lbf	5/16 UNC	175 mm	6.89"	50 mm	1.97"	2.2 kg	4.9 lb

DS-1009

# Compression Probes

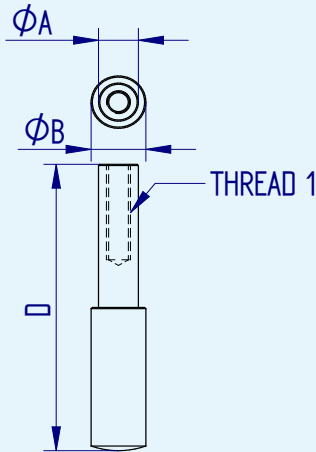
## Compression

### Radiused Probes

Radiused probes are used to perform penetration or puncture tests on a wide range for texture products. The radiused tip is specifically designed for penetrometry tests, including the determination of the firmness and ripeness of foods. Also used for cosmetics and similar products with measured texture attributes.

#### Applications:

- Baked goods
- Dairy products
- Fruit and vegetables
- Confectionery
- Cosmetics
- Gels



#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Diameter (ØB)		Length (D)	
432-354	500 N	50 kgf	110 lbf	10-32 UNF	6 mm	0.24"	8 mm	0.31"	60 mm	2.36"
432-355	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	11 mm	0.43"	60 mm	2.36"

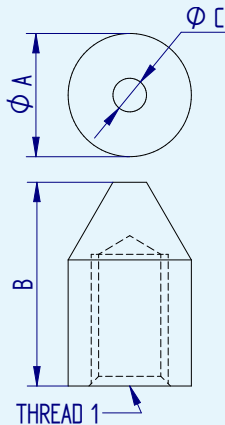
DS-1011

### Cone Points

Cone points are designed for puncturing, spreading and compressing samples.

#### Applications:

- Packaging
- Food products
- Cosmetics



#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Length (B)		Diameter (ØC)		Weight	
432-358	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14 mm	0.55"	0.5 mm	0.02"	2 g	0.004 lb
432-359	2.5 kN	250 kgf	550 lbf	5/16 UNC	12.7 mm	0.5"	21mm	0.83"	3.5 mm	0.14"	12 g	0.027 lb

DS-1012

# Compression Probes

## Compression

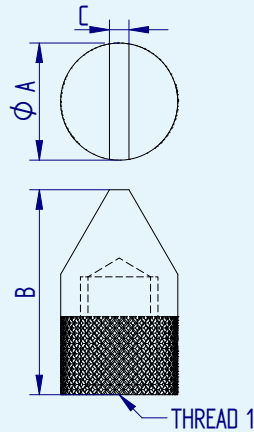
### Chisel Points

Chisel points are used for puncturing and splitting samples, e.g. a typical application would be a 'cleave test' on eye liner pencils.

#### Applications:

- Packaging
- Food products
- Cosmetics

#### DATASHEET



Part No.	Load Capacity			Thread 1	Diameter (ØA)		Length (B)		Tip Width (C)		Weight	
432-360	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14 mm	0.55"	0.5 mm	0.02"	3 g	0.007 lb
432-361	2.5 kN	250 kgf	550 lbf	5/16 UNC	12 mm	0.47"	21 mm	0.83"	2 mm	0.08"	12 g	0.027 lb

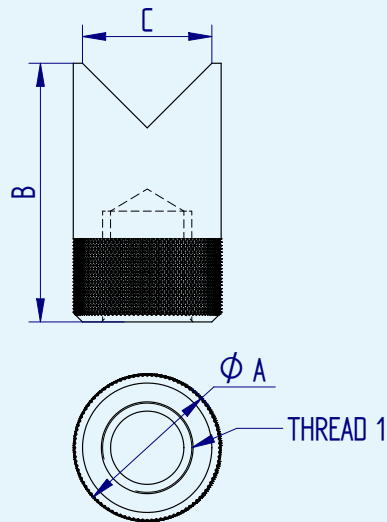
DS-1013

### Inverted Chisel Points

The inverted chisel is designed for compression testing of samples of a curved or rounded shape in cross-section.

#### Applications:

- Pipes
- Tubes



#### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Length (B)		Width (C)		Weight	
432-356	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14 mm	0.55"	7 mm	0.28"	3 g	0.006 lb
432-357	2.5 kN	250 kgf	550 lbf	5/16 UNC	12 mm	0.47"	21 mm	0.83"	10 mm	0.39"	13 g	0.029 lb

DS-1014

# Compression Probes

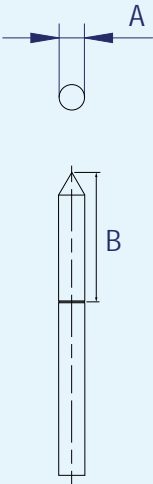
## Compression

### Set of 15 needle points

For use with the Mecmesin shotcrete penetrometer to test sprayed or poured concrete during the first few hours of development as a reliable indication of compressive strength.

**Applications:**

- sprayed concrete



**DATASHEET**

Part No.	Needle Diameter (A)		Exposed Needle Length (B)	
432-519	3 mm	0.118"	15 mm	0.59"

DS-1015

### 20 kN 3-Point Bend Jig, QC fitting

The 20 kN 3-point bend jig is ideal for performing a variety of flexure tests on medium-stiffness samples. It includes two lower support-anvils, which are adjustable and one upper anvil to apply load to the sample. The support beam is graduated lengthways in metric and imperial units for accurate positioning of the anvils.

#### Applications:

- ceramics
- composites
- flexible sheet materials
- glass
- plastics
- films
- wood



[QC](#) [DATASHEET](#)

Part No.	Load Capacity			Post Ø	Anvil Width			Anvil Radius		Bending Span		Length		Weight		
432-266	20 kN	2000 kgf	4500 lbf	QC 20 mm	58 mm	2.28"	5 mm	0.2"	24 mm - 300 mm		0.94" - 11.81"		380 mm	14.96"	12.4 kg	29.46 lb

DS-1017

### 2.5 kN 3-Point Bend Jig

The 2.5 kN 3-point bend jig is an easy-to-use fixture that relies on the test machine to maintain alignment between the top and bottom parts.

#### Applications:

- composites
- plastics
- flexible sheet materials
- wood
- films



[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Anvil Width		Anvil Radius		Bending Span		Length		Weight			
432-151	2.5 kN	250 kgf	550 lbf	M6	45 mm	1.77"	5 mm	0.2"	10 mm - 300 mm		0.39" - 11.81"		405 mm	15.9"	3 kg	6.6 lb

DS-1018

### 1 kN 3-Point Bend Jig

The 1 kN 3-Point bend jig is a lightweight three-point bend assembly with 60 mm high arms and 120 mm support span. Ideal for most snapping applications including food texture applications. Recommended for use with 'S' Beam type load cells where forces are below 1 kN.

#### Applications:

- food products
- circuit boards



[DATASHEET](#)

Part No.	Load Capacity			Anvil Width		Anvil Radius		Weight	
432-248	1 kN	100 kgf	225 lbf	120 mm	4.7 mm	1.5 mm	0.059"	653 g	1.43 lb
432-294	Base plate to attach bend jig to test stand							792 g	1.75 lb

DS-1019

# Bend Jigs

## Compression

### Mec22 50 kN Bend Jig (Aluminium), QC fitting

A 50 kN bending fixture in aluminium, with a bending span of 330 mm and a beam width of 100 mm. The main support bears two Type AX anvils, and an upper OX anvil, with 10 mm, 20 mm and 30 mm diameter rollers as standard. The addition of an upper anvil support converts this to a 4-point or 5-point bend jig. Attaches to QC adapter mounts.

[DATASHEET](#)[QC](#)

Part No.
Mec22

Please see datasheet for full details

DS-1022

### Mec103 50 kN Bend Jig (Steel), QC fitting

A 50 kN bending fixture in steel, with a bending span of 120 mm and beam width of 50 mm. The main support bears two Type A nickel-plated steel anvils, each with two milled radii of 3 mm and 5 mm. The upper anvil is radius 10 mm. The addition of an upper anvil support converts this to a 4-point bend jig. The jig fits 20 mm QC adapters.

[DATASHEET](#)[QC](#)

Part No.
Mec103

Please see datasheet for full details

DS-1021

### Mec238 2.5 kN Bend Jig (Aluminium), QC fitting

A 2.5 kN small bending system in aluminium, with a bending span of 4 mm – 150 mm and a beam width of 30 mm. Supplied with Type A anvils with a radius pair of 2 mm and 3 mm, and an upper anvil of radius 2 mm. The addition of an upper anvil support converts this to a 4-point bend jig. Fits QC 15.9 mm adapters.

[DATASHEET](#)[QC](#)

Part No.
Mec238

Please see datasheet for full details

DS-1020



## Bend jigs to your own specification

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

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

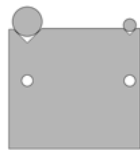
Certain anvil types allow a rocking movement, adjustable angle (articulated), or flat sideways movement. For sharp angle bending (e.g. to 160°) long-fin anvils are available, along with other specialised anvils. Standard anvil types are shown below. (Roller size is denoted by diameter, milled edges are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

## Lower Anvils

### Type A: dual-radius



A: milled edge

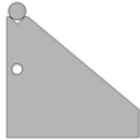


AX: v-notch roller bearings

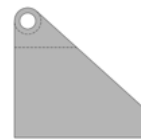
### Type C: single radius



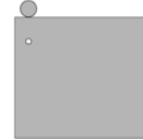
C: milled edge



CX: v-notch roller



CL: captive roller



CM: roller free to traverse

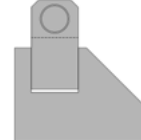
### Type CW, carrier style



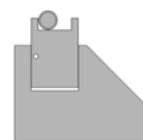
CW: milled edge



CWX: v-notch roller



CWL: captive roller



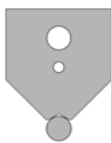
CWN: roller traverses to stop

## 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 dimensions
- 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.

# Puncture & Penetration jigs

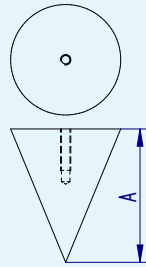
## Compression

### Perpex 45° Cone Probe with Extension Rod

The perspex cone probe has a 45° angle, and is used for texture testing to assess characteristics such as hardness and spreadability.

**Applications:**

- food products
- cosmetics



[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Thread 2	Height (A)		Weight	
432-081	200 N	20 kgf	45 lbf	M3	-	38.6 mm	1.52"	12 g	0.03 lb
432-100	200 N	20 kgf	45 lbf	10-32 UNF	M3	110 mm	4.33"	40 g	0.09 lb

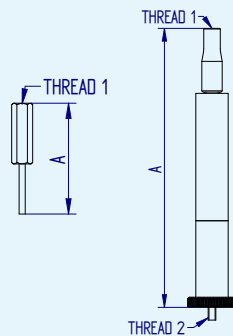
DS-1025

### 2 mm Needle Probe with Extension Rod

The needle probe is made from stainless steel and is designed for surface puncture and penetration tests.

**Applications:**

- food products



[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Thread 2	Length (A)		Weight	
432-087	100 N	10 kgf	22 lbf	M3	-	36.5 mm	1.44"	9 g	0.02 lb
432-100	100 N	10 kgf	22 lbf	10-32 UNF	M3	110 mm	4.33"	40 g	0.09 lb

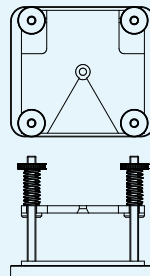
DS-1026

### Puncture Test Jig

This jig is designed also to accommodate spherical or irregular samples. Three sizes of holding plate are supplied.

**Applications:**

- films
- food products



[DATASHEET](#)

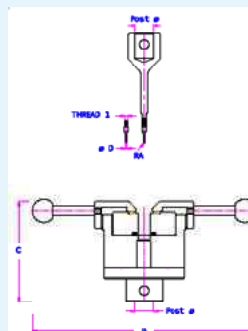
Part No.	Load Capacity			Max. Sample (Ø)		Weight	
432-243	200 N	20 kgf	45 lbf	-	-	757 g	1.66 lb
432-244	200 N	20 kgf	45 lbf	47 mm	1.85"	693 g	1.52 lb

DS-1027

### Puncture Resistance Test Jig, QC fitting

A puncture resistance fixture designed for tests based on European standard EN 14477: "Flexible packaging material – Determination of puncture resistance"; also known as the 'Parker Pen' or 'Parker Ball-Point' test.

Consult Mecmesin for test jigs to specifically conform to similar puncture tests for barrier films and laminates or for textiles.



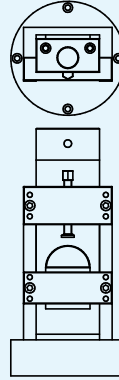
[DATASHEET](#)

Part No.	Thread 1	Post Ø	Probe Ø (D)	Probe Radius (A)	Width (B)	Height (C)
MecS511	M2	QC 20 mm	0.8 mm	0.4 mm	194 mm	87 mm

DS-1125

### 50 kN Wood Shear Test Jig, QC fitting

Wood shear test grips are used to maintain alignment in wood adhesive bonds, for testing to DIN 52367, ISO 6238, EN 392, EN 392, and BS 373. QC fitting. ASTM D143 version also available.



[DATASHEET](#)

[QC](#)

Part No.

Mec17

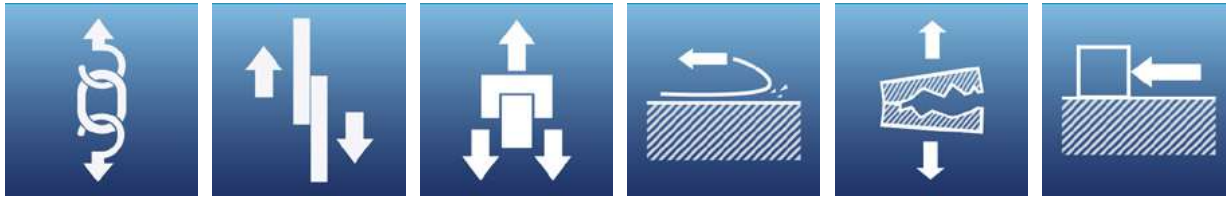
DS-1172

# Introduction

## Tension

### Tension

Tension testing is used to measure the tensile strength of a material or manufactured product, to how it deforms and/or recovers under elongation, or the strength of an adhesive bond under shear or pull-off. Tension testing can be used to test the removal force for a crimped joint, the peel strength of flexible adhesive joints, resistance of sheet materials to tearing, or the coefficient of friction between surfaces. Measuring these forces requires test systems and fixtures that ensure precise repeatability through correct alignment and gripping.



### Types of tension test for which we can supply fixtures

- ultimate tensile strength
- tensile strength
- elongation at break
- yield point
- shear in tension
- laminates tensile shear stress
- T-peel
- 90 degree peel
- 180 degree peel
- moving table peel
- floating roller peel
- peel wheel test
- loop tack
- climbing drum peel
- single rip (trouser) tear
- double rip (tongue) tear
- trapezoidal tear
- wing tear (Winkelman/Graves)
- single lap shear
- double lap shear
- friction, static and kinetic
- pull-off / pull-out
- butt joint
- parallel plate adhesion
- Delft tear
- tensile deformation
- 135 degree peel
- push-off / push-out
- grab method (fabrics)
- strip method (fabrics)

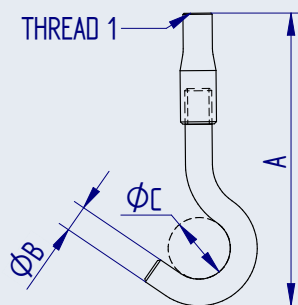


## Round Hooks

Round hooks are general purpose, suitable for any sample with a loop, eyelet or similar feature. Often used with a digital force gauge to perform tensile tests on tension springs.

### Applications:

- tension springs
- any sample with a loop or eyelet



### DATASHEET

Part No.	Load Capacity			Thread 1	Diameter (ØB)		Max. Specimen Diameter (ØC)		Length (A)		Weight	
	N	kgf	lbf		mm	"	mm	"	mm	"	g	lb
432-118	50 N	5 kgf	11 lbf	10-32 UNF	3 mm	0.12"	8 mm	0.32"	39 mm	1.54"	20 g	0.04 lb
432-171	50 N	5 kgf	11 lbf	M6	3 mm	0.12"	8 mm	0.32"	38 mm	1.50"	8 g	0.02 lb
432-120	500 N	50 kgf	110 lbf	10-32 UNF	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	30 g	0.07 lb
432-169	500 N	50 kgf	110 lbf	M6	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	20 g	0.04 lb
432-122	2.5 kN	250 kgf	550 lbf	5-16 UNC	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	30 g	0.07 lb

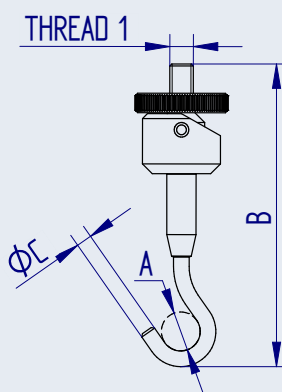
DS-1030

## Swivel Test Hooks

Swivel hooks are specifically designed to align samples when testing tension springs. They are usually used in conjunction with fixed test hooks.

### Applications:

- tension springs



### DATASHEET

Part No.	Load Capacity			Thread 1	Max. Specimen Diameter (ØA)		Diameter (ØC)		Length (B)		Weight	
	N	kgf	lbf		mm	"	mm	"	mm	"	g	lb
432-392	50 N	5 kgf	11 lbf	10-32 UNF	8 mm	0.32"	3 mm	0.12"	50 mm	1.97"	28 g	0.06 lb
432-391	500 N	50 kgf	110 lbf	10-32 UNF	14 mm	0.55"	6 mm	0.24"	83 mm	3.28"	50 g	0.11 lb

DS-1033

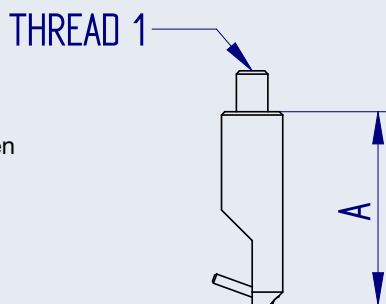
## Peg Hook

Peg hooks are designed for easy mounting of small and miniature tension springs. The extended peg hook is supplied with a flexible link.

Used for securely attaching samples of decorations when carrying out test-to-failure tests on textiles and clothing.

### Applications:

- tension springs
- clothing
- textiles



### DATASHEET

Part No.	Load Capacity			Thread 1	Length (A)		Peg Length		Peg Ø		Weight	
	N	kgf	lbf		mm	"	mm	"	mm	"	g	lb
432-399	50 N	5 kgf	11 lbf	10-32 UNF	30 mm	1.18"	6 mm	0.24"	1.5 mm	0.06"	30 g	0.07 lb
432-181	50 N	5 kgf	11 lbf	10-32 UNF	97 mm	3.82"	9 mm	0.35"	2 mm	0.08"	42 g	0.09 lb

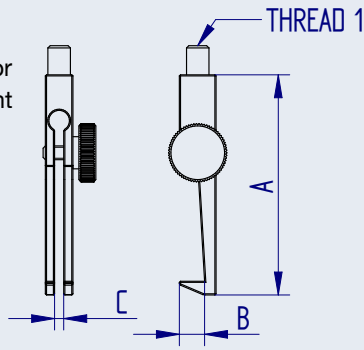
DS-1034

## Adjustable Test Hook

Used for securely holding smaller crimp terminals for tests to BSI spec. BS 5G 178 PART 1 and equivalent international standards.

### Applications:

- crimp terminals



### DATASHEET

Part No.	Load Capacity			Thread 1	Hook Depth (B)		Jaw Opening (C)		Length (A)		Weight	
432-380	50 N	5 kgf	11 lbf	10-32 UNF	5.5 mm	0.217"	2 mm	0.08"	48 mm	1.89"	13 g	0.03 lb

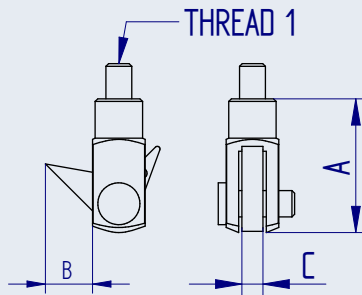
DS-1035

## Flip Cap Accessory

Designed to easily fit under bottle flip caps when testing their opening force.

### Applications:

- flip caps used in packaging



### DATASHEET

Part No.	Load Capacity			Thread 1	Hook Depth (B)		Hook Width (C)		Length (A)		Weight	
432-419	100 N	10 kgf	22 lbf	10-32 UNF	9 mm	0.35"	4 mm	0.16"	25.5 mm	1.00"	17 g	0.04 lb

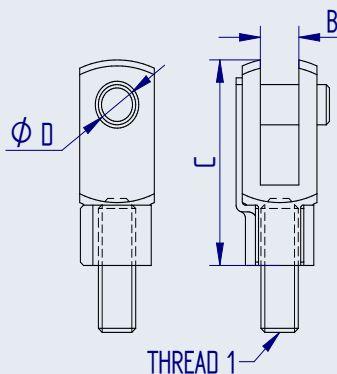
DS-1036

## Clevis Fastener

Used for testing heavy duty tension springs or for securing odd-shaped parts

### Applications:

- tension springs



### DATASHEET

Part No.	Load Capacity			Thread 1	Width (B)		Pin Diameter (ØD)		Length (C)		Weight	
432-403	500 N	50 kgf	110 lbf	10-32 UNF	5 mm	0.20"	5 mm	0.20"	26 mm	1.02"	13 g	0.03 lb
432-216	500 N	50 kgf	110 lbf	M6	6 mm	0.20"	6 mm	0.24"	31 mm	1.22"	13 g	0.03 lb
432-400	2.5 kN	250 kgf	550 lbf	M8	8 mm	0.31"	8 mm	0.31"	42 mm	1.65"	90 g	0.20 lb
432-443	5 kN	500 kgf	1100 lbf	M12	12 mm	0.47"	12 mm	0.47"	62 mm	2.44"	250 g	0.55 lb

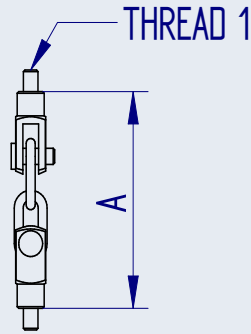
DS-1037

## Chain Link Assembly

The chain link assembly is used for flexible alignment and connection of other accessories, in particular manual handling test applications. The 500 N capacity version is often used for ease of sample loading with lightweight vice grips, vice clamps and wedge grips.

### Applications:

- manual handling



### DATASHEET

Part No.	Load Capacity			Thread 1	Length (A)		Weight	
	500 N	50 kgf	110 lbf		68 mm	2.68"	32 g	0.07 lb
PSV8057	2.5 kN	250 kgf	550 lbf	5/16 UNC	130 mm	5.12"	158 g	0.35 lb

DS-1038

# Cam grips

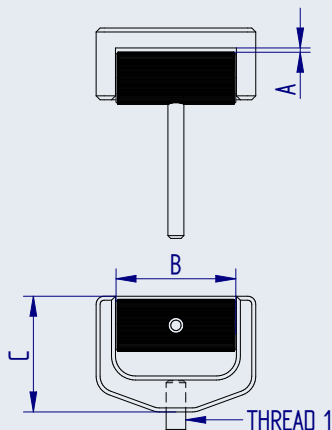
## Tension

### Lever-operated Cam Grip

Lever-operated cam grips are designed to self-tighten as load is applied, and spread the load evenly. The lever also allows for quick insertion and release of samples.

#### Applications:

- dumbbells
- elastomers



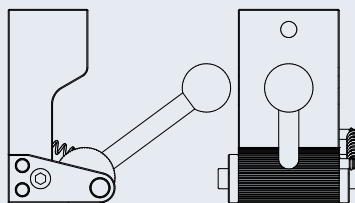
#### DATASHEET

Part No.	Load Capacity			Thread 1	Maximum Sample Size (A x B)		Length (C)		Weight	
432-383	500 N	50 kgf	110 lbf	10-32 UNF	30 mm x 5 mm	1.18" x 0.20"	29 mm	1.14"	100 g	0.22 lb
432-047	500 N	50 kgf	110 lbf	10-32 UNF	70 mm x 5 mm	2.76" x 0.20"	29 mm	1.14"	100 g	0.22 lb

DS-1040

### Eccentric Cam Grip, QC fitting

Eccentric Cam Grips are easy to apply, and self-tighten under load. They are used for soft, flat and flexible samples such as foils, plastic and rubber. Roller faces can be smooth or pyramidal. QC fitting, from 1 to 10 kN.



#### DATASHEET

QC

Part No.	Please see datasheet for full details
Mec7	

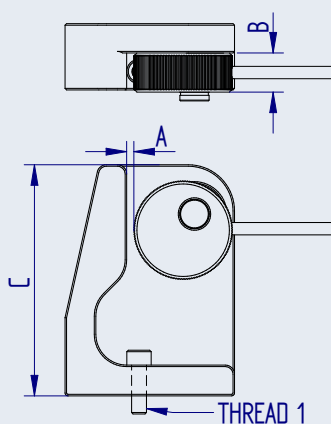
DS-1041

### Cable Cam Grip

Cable cam grips are designed for holding insulated cables and wire. The sample is secured by the cam, which self-tightens as load is applied and spreads the load evenly. Serrated or smooth cam. Supplied with socket-cap bolt for stand fixing.

#### Applications:

- crimp terminals
- tapes
- foils
- wires



#### DATASHEET

Part No.	Load Capacity			Thread 1	Type	Max. Sample Width (A)		Max. Sample Thickness (B)		Length (C)		Weight	
432-390	1 kN	100 kgf	225 lbf	10-32 UNF	Serrated	13 mm	0.51"	10 mm	0.39"	75 mm	2.95"	230 g	0.51 lb
432-404	1 kN	100 kgf	225 lbf	10-32 UNF	Smooth	13 mm	0.51"	10 mm	0.39"	75 mm	2.95"	230 g	0.51 lb
432-108	5 kN	500 kgf	1100 lbf	M10	Serrated	40 mm	1.57"	26 mm	1.02"	152 mm	5.98"	2.3 kg	5.10 lb

DS-1043

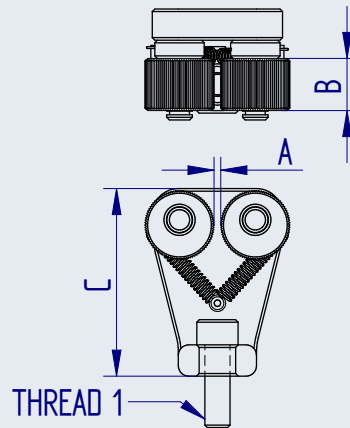


### Double Cam Grip

Double cam grips are designed for holding insulated cables and wire. The sample is secured by the cam, which self-tightens as load is applied, minimising slippage during testing.

#### Applications:

- crimp terminals
- wires



#### DATASHEET

Part No.	Load Capacity			Thread 1	Max. Sample Thickness (A)		Max. Sample Width (B)		Length (C)	
432-387	500 N	50 kgf	110 lbf	10-32 UNF	3 mm	0.12"	10 mm	0.40"	36 mm	1.42"
432-378	500 N	50 kgf	110 lbf	10-32 UNF	10 mm	0.39"	12.7 mm	0.50"	62 mm	2.44"

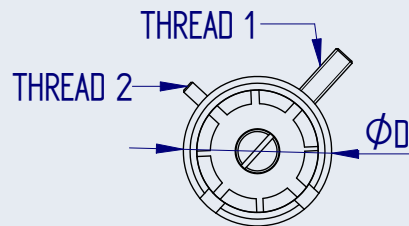
DS-1044

### Rotating Crimp Receptacle

The rotating crimp receptacle is a versatile crimp termination holder that accommodates a wide range of terminals. The inner slotted ring rotates to adjust to fit 8 different-sized crimp terminals. Used for BS 5G 178-1 and equivalent international standard test methods.

#### Applications:

- crimp terminals
- welded or bonded connectors



#### DATASHEET

Part No.	Load Capacity			Thread 1	Thread 2	Diameter (ØD)		Sample Diameter Range		Weight	
432-379	1 kN	100 kgf	225 lbf	5/16 UNC	10-32 UNF	55 mm	2.16"	1.5 mm - 5 mm	0.06" - 0.20"	200 g	0.44 lb

DS-1045

# Bollard & Roller grips

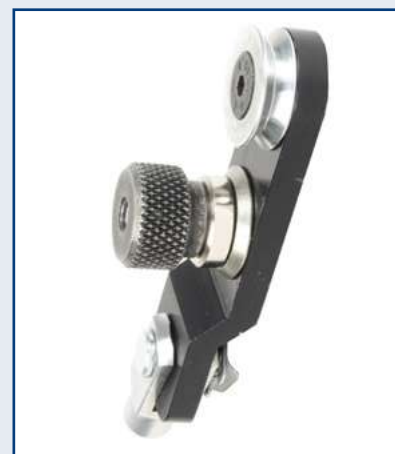
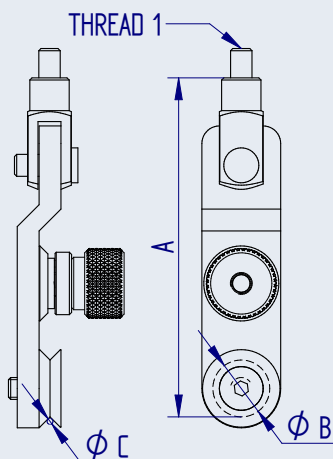
## Tension

### Wire/Filament Grip

The wire/filament grip is equipped with a grooved capstan and precision-machined swivel plate, which are designed to ensure centre break within the sample and specimen alignment when force is applied.

#### Applications:

- thin wires
- cords
- yarns
- filaments



#### DATASHEET

Part No.	Load Capacity			Thread 1	Pulley Diameter (ØB)		Max. Wire Diameter (ØC)		Length (A)		Weight	
432-363	250 N	25kgf	55 lbf	10-32 UNF	13 mm	0.5"	0.8 mm	0.03"	78 mm	3.07"	-	-
432-397	500 N	50 kgf	110 lbf	10-32 UNF	19 mm	0.75"	1.5 mm	0.06"	97 mm	3.82"	117 g	0.26 lb

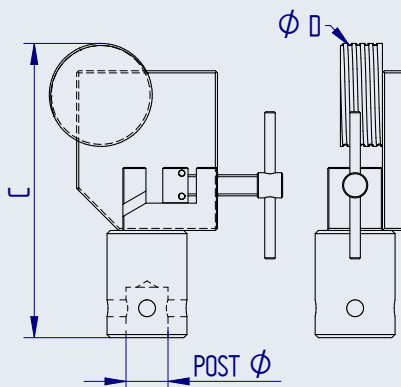
DS-1053

### Large Circular Bollard Grip, QC fitting

Large circular bollard grips are designed for testing flexible wire-type samples up to a maximum load of 2 kN. The sample is wrapped around the bollard and the free end is clamped tightly in place.

#### Applications:

- cord
- wire
- filaments
- yarn



#### DATASHEET QC

Part No.	Load Capacity			Post Ø	Max. Specimen Thickness		Length (C)		Weight	
432-271	2 kN	200 kgf	440 lbf	QC 20 mm	2 mm	0.08"	140 mm	5.51"	1.3 kg	2.9 lb

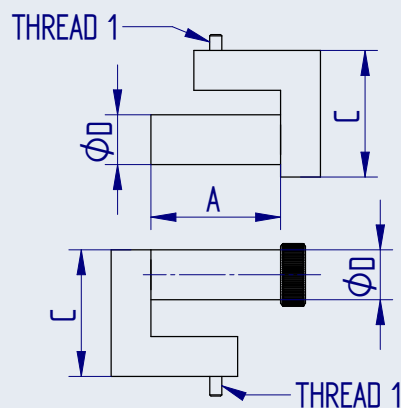
DS-1050

### Film Grips

These grips are used for flexible samples such as films, where conventional grips create stress points so reducing tensile strength. Samples are wrapped around the drum, spreading the load and avoiding breakage. Grips are supplied in pairs.

#### Applications:

- thin films
- elastomers
- polymers



#### DATASHEET

Part No.	Load Capacity			Thread 1	Sample Width (A)		Diameter (ØD)		Length (C)	
432-157	500 N	50 kgf	110 lbf	10-32 UNF	50 mm	1.97"	20 mm	0.79"	58.8 mm	2.00"

DS-1051

# Bollard & Roller grips

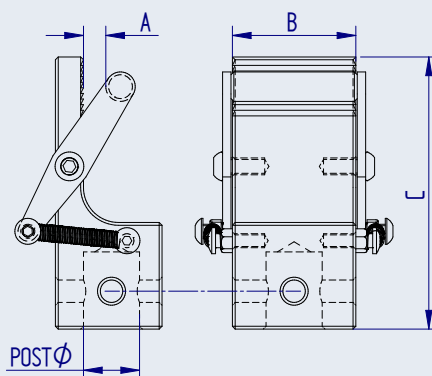
## Tension

### Spring-Loaded Fold Grip, QC fitting

The Spring-loaded fold grip is a self-tightening grip with a spring-loaded roller for holding flexible samples firmly as load is applied. Sample material is wound around the cross hatch knurl of the 10 mm (0.39") diameter roller and held in contact with the serrated rear body, preventing slippage within the grip.

#### Applications:

- elastomers
- films
- polymers
- rubber
- fabrics
- leather



[QC](#) [DATASHEET](#)

Part No.	Load Capacity			Post Ø	Max. Sample Thickness (A)		Max. Specimen Width (B)		Length (C)		Weight	
	2 kN	200 kgf	450 lbf		5 mm	0.20"	44 mm	1.73"	97 mm	3.81"	680 g	1.5 lb
432-262	2 kN	200 kgf	450 lbf	QC 20 mm	5 mm	0.20"	44 mm	1.73"	97 mm	3.81"	680 g	1.5 lb

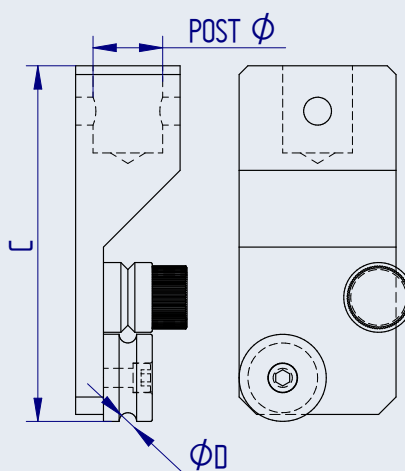
DS-1052

### Small Circular Bollard Grip, QC fitting

Small circular bollard grips are made from aluminium and are designed for testing delicate, flexible samples such as fine threads, wires and yarns, which may break easily when clamped. The maximum capacity is 100 N. The sample is wrapped around the bollard and the free end is held tightly in place using a pair of friction washers and a thumbscrew.

#### Applications:

- fibres
- filaments
- threads
- yarns
- twines
- fine wires



[QC](#) [DATASHEET](#)

Part No.	Load Capacity			Post Ø	Max. Load (to maintain tension)	Max. Filament Diameter (ØD)		Length (C)		Weight	
	100 N	10 kgf	22 lbf			5 mm	0.20"	102 mm	4.02"	210 g	0.46 lb
432-270	100 N	10 kgf	22 lbf	QC 20 mm	0.5 N	5 mm	0.20"	102 mm	4.02"	210 g	0.46 lb

DS-1049

# Belt and strap grips

## Tension

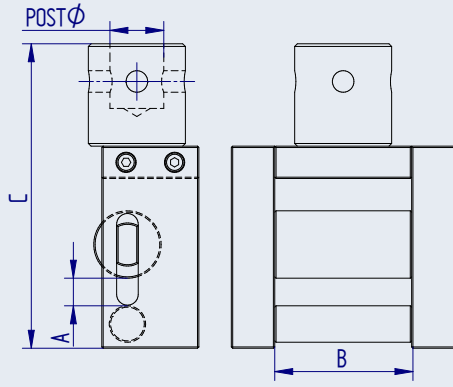
### Webbing Grip, QC fitting

Webbing grips are easy to use and designed for rapid testing of high-strength belts and tapes. The sample is wound around the knurled roller and then around the smooth roller. As load is applied, the smooth roller moves in the slot to secure tightly against the knurled surface ensuring maximum gripping strength.

#### Applications:

- fabrics
- textiles
- webbing

[DATASHEET](#) [QC](#)



Part No.	Load Capacity			Post Ø	Max. Sample Thickness (A)		Max. Specimen Width (B)		Length (C)		Weight	
	2 kN	200 kgf	440 lbf		11 mm	0.43"	50 mm	1.97"	113 mm	4.45"	1.1 kg	2.4 lb
432-269	2 kN	200 kgf	440 lbf	QC 20 mm	11 mm	0.43"	50 mm	1.97"	113 mm	4.45"	1.1 kg	2.4 lb

DS-1054

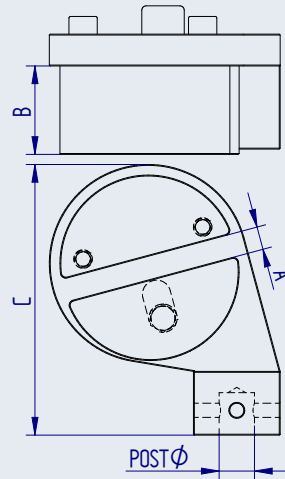
### Heavy-duty Belt Grips, QC fitting

Heavy-duty belt grips are designed for testing high-strength belts and straps such as conveyor belts, which require specialised grips to prevent sample slippage. By winding the sample around the split bodies the stresses in the specimen are distributed. Self-tightening for effective tensile testing up to 10 kN. Grips are supplied in pairs.

#### Applications:

- conveyor belts
- plastic and metal strapping
- seat belts
- webbing

[DATASHEET](#) [QC](#)



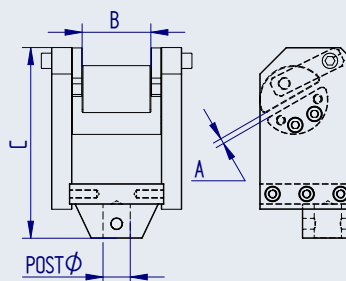
Part No.	Load Capacity			Post Ø	Max. Sample Thickness (A)		Max. Specimen Width (B)		Length (C)		Weight	
	10 kN	1000 kgf	2200 lbf		14 mm	0.55"	50 mm	1.97"	153 mm	6.02"	5 kg	11 lb
432-277	10 kN	1000 kgf	2200 lbf	QC 32 mm	14 mm	0.55"	50 mm	1.97"	153 mm	6.02"	5 kg	11 lb

DS-1055

### Heavy-duty Textile Grips, QC fitting

Heavy-duty textile grips are ideally suited to tension testing of fabrics, textiles and webbing. The grips are very easy to load, and the self-tightening action ensures that the sample does not slip. Grips are supplied in pairs.

[DATASHEET](#) [QC](#)

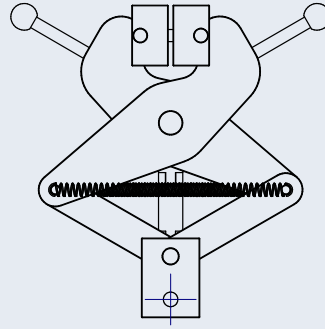


Part No.	Load Capacity			Post Ø	Sample Thickness Min./Max. (A)		Max. Specimen Width (B)		Length (C)	
	50 kN	5000 kgf	11000 lbf		0.5 mm - 3 mm	0.02" - 0.118"	81 mm	3.18"	224 mm	8.82"
432-434	50 kN	5000 kgf	11000 lbf	QC 32 mm	0.5 mm - 3 mm	0.02" - 0.118"	81 mm	3.18"	224 mm	8.82"

DS-1056

### Scissor Grips, QC fitting

Scissor grips are self-tightening and self-aligning, the sample initially being held by light spring tension. The ratio of clamping force to tensile force changes in proportion to opening width. The wider the opening, the stronger the grip on the sample. A range of jaw profiles and types is available. QC fitting.



QC

DATASHEET

Part No.	Please see datasheet for full details
Mec11	

DS-1057

# Pinch grips

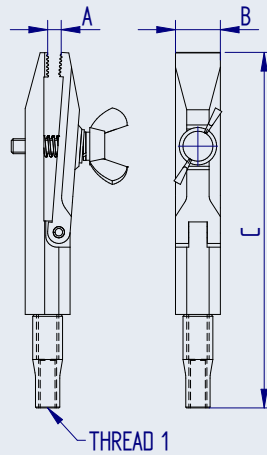
## Tension

### Small Pinch Grip

Pinch grips are lightweight miniature vice grips, which use a hinge action to initially grab a sample, with a wing nut to tighten the jaw faces. Each 10 mm x 10 mm (0.39" x 0.39") jaw face has a slight groove to hold the sample securely, yet avoid inducing a break within the grip. Pinch grips are particularly well suited for peel testing of thin plastic films.

**Applications:**

- woven yarn
- tissue
- thin films



**DATASHEET**

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)		Weight	
	N	kgf	lbf		mm	in	mm	in	mm	in	g	lb
432-280	200 N	20 kgf	44 lbf	M6	9 mm	0.35"	12 mm	0.47"	95 mm	3.74"	70 g	0.15 lb

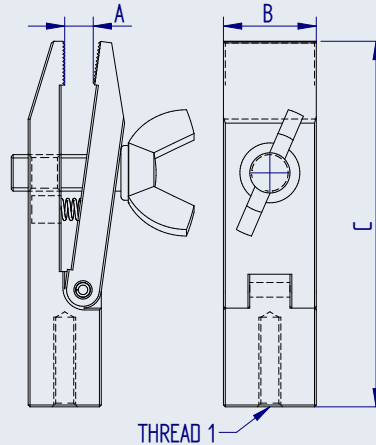
DS-1058

### Large Pinch Grip

The large pinch grip has cross-hatched jaw faces to ensure samples are held securely for tensile tests. Fast installation and release of samples is achieved by initially grabbing by hinge action, and manually tightening the wing nut.

**Applications:**

- small components
- welded tags
- textile attachments
- paper and tissue strips



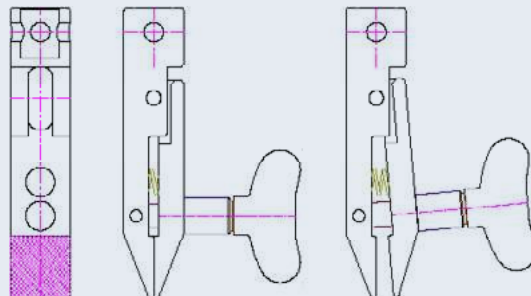
**DATASHEET**

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)		Weight	
	N	kgf	lbf		mm	in	mm	in	mm	in	g	lb
432-278	500 N	50 kgf	110 lbf	M6	9 mm	0.35"	25 mm	0.98"	100 mm	3.94"	300 g	0.66 lb

DS-1059

### 2 kN pinch grip, QC fitting

A versatile and easy to use pinch grip suitable for small components, or where access space is limited yet tensile forces are significant. The 2 KN Pinch Grip is fitted with 25 mm high x 25mm wide pyramid jaw faces to ensure samples are held securely.



**DATASHEET**

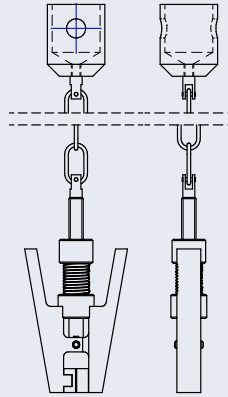
**QC**

Part No.	Please see datasheet for full details
MecS470	

DS-1061

### 20 N Spring-loaded Pinch Grip with chain link, QC fitting

Pinch grips are designed for small-area contact to grip a sample, and are hinged with a screw-adjustable mechanism. Available with the adapter mounted directly on the grip or on a chain for ease of positioning. QC fitting.



QC

DATASHEET

Part No.

Mecs205k

Please see datasheet for full details

DS-1060

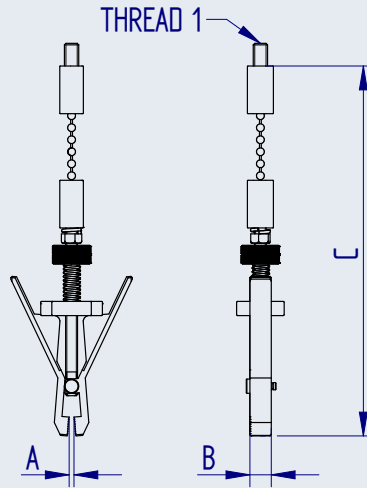
# Vice grips: Single-action Tension

## Lightweight Mini Vice Grip

Lightweight mini vice grips are ideal for testing extremely low forces by virtue of their spring-loaded clamping action. Samples are held without the need to tighten a thread which may damage very light loadcells or the sample itself. Supplied with a chain link for ease of alignment.

### Applications:

- sub-miniature components
- thin films
- tissue and cotton yarns
- delicate fine wires



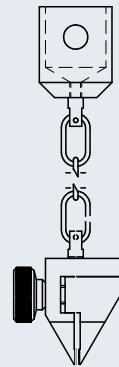
### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)		Weight	
432-281	5N	0.5kgf	1 lbf	M6	5 mm	0.197"	9 mm	0.35"	154 mm	6.06"	30 g	0.07 lb

DS-1062

## 100 N Miniature Vice-Grip with integral pyramid jaws, QC fitting

Miniature vice grips with jaw sizes from 5 mm (h) x 6 mm (w), are used for small samples and components. Their parallel faces achieve a better hold than a pinch grip. QC fitting. Supplied with chain for improved alignment or for post-mounting, and with pneumatic option.



### DATASHEET

### QC

Part No.	Please see datasheet for full details
MecS341	

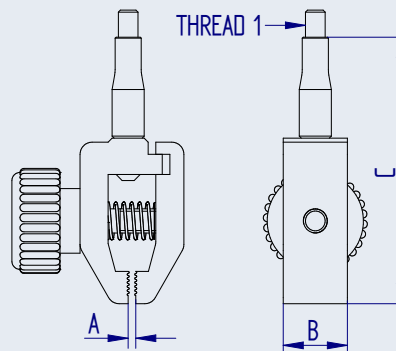
DS-1063

## Spring-action Vice Clamp

Spring-action vice clamps are lightweight clamps designed for gripping film, paper, labels, tape and other thin materials for tensile and peel testing. Ideal for testing at low forces, the clamps are fitted with adjustable serrated interlocking jaws. Often used with the chain link assembly for ease of sample loading and for alignment.

### Applications:

- films
- flexible sheet materials
- paper
- laminates
- textiles
- rubber
- woven fabrics
- tissue
- tape



### DATASHEET

### QC

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)	
432-381	200 N	20 kgf	45 lbf	10-32 UNF	3 mm	0.12"	16 mm	0.63"	66 mm	2.60"

DS-1064



# Vice grips: Single-action Tension

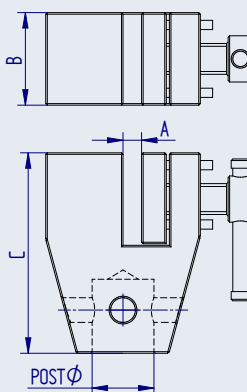
## Small Single-action Vice Grip, QC fitting

Small single-action vice grips are ideal for testing low force applications on flat samples. These general purpose vice grips are fitted with 30 mm x 30 mm (1.2" x 1.2") flat-faced jaws.

### Applications:

- films
- flexible sheet materials
- laminates
- rubber
- woven fabrics
- tissue
- paper
- tape
- textiles

[QC](#) [DATASHEET](#)



Part No.	Load Capacity			Post Ø	Jaw Opening		Jaw Dimensions (W x H)		Height		Weight	
432-264	200 N	20 kgf	45 lbf	QC20	0 - 8 mm	0 - 0.32"	30 x 30 mm	1.18" x 1.18"	65 mm	2.56"	215 g	0.47 lb

DS-1065

## Medium Single-action Vice Grip, QC fitting

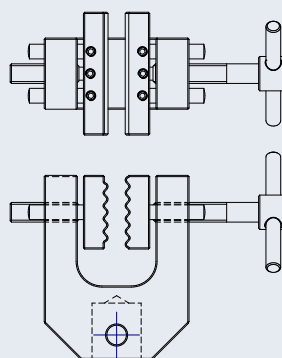
Medium single-action vice grips are suitable for tensile testing a wide range of samples. Available fitted with one of three different types of jaw face: diamond-faced, rubber-coated and wave-form, to securely grip most materials. Jaws may be ordered separately.

### Applications:

- films
- woven fabrics
- laminates
- flexible sheet materials
- rubber
- paper
- tape
- textiles
- tissue

[QC](#) [DATASHEET](#)

Part No.	Please see datasheet for full details
Mec240k	



DS-1066

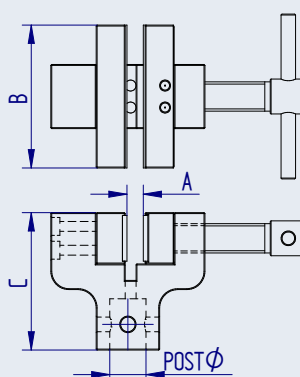
## Large Single-action Vice Grip, QC fitting

Large single-action vice grips are suitable for tensile testing a wide range of samples. Available fitted with one of three different types of jaw face: pyramid-faced, rubber-coated and wave-form, to securely grip most materials.

### Applications:

- metallic foils
- paper and card
- plastic sheet
- textiles
- woven fabrics
- tapes

[QC](#) [DATASHEET](#)



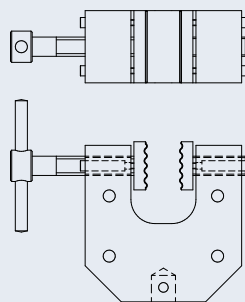
Part No.	Load Capacity			Post Ø	Jaw Type	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-267	2 kN	200 kgf	450 lbf	QC 20 mm	Pyramid-faced	9.0 mm	0.35"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb
432-267-V01	2 kN	200 kgf	450 lbf	QC 20 mm	Rubber-coated	9.0 mm	0.35"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb
432-267-V02	2 kN	200 kgf	450 lbf	QC 20 mm	Wave-form	6.5 mm	0.26"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb

DS-1067

# Vice grips: Single-action Tension

## Heavy-duty Single-action Vice Grip, QC fitting

Heavy-duty single-action vice grips are suitable for tensile testing a wide range of samples to higher loads. Available fitted with one of three different types of jaw face: diamond-faced, rubber-coated and wave-form, to securely grip most materials. Jaws may be ordered separately.



[DATASHEET](#)

[QC](#)

Part No.

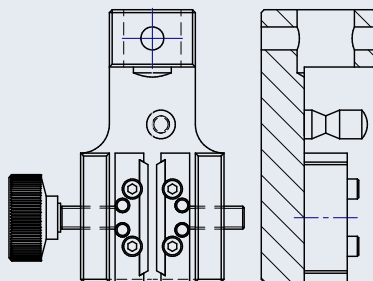
Please see datasheet for full details

Mec154

DS-1068

## 2.5 kN Screw-action Thin Wire Grip, QC fitting

Wire grips are designed to hold fine wires, cords or ropes, between flat faces. They are double-action vice grips, with alternative diamond or smooth jaw faces. QC fitting.



[DATASHEET](#)

[QC](#)

Part No.

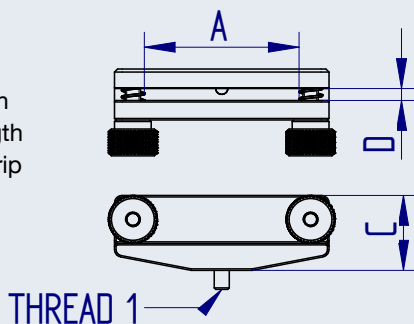
Please see datasheet for full details

Mec9

DS-1069

## Fabric Grip

Fabric grips are designed for tensile and elongation testing of fabric to a number of international strength standards. Two locking nuts at either side of the grip ensure the sample is clamped securely across its entire width during testing.



### Applications:

- fabric
- textiles

[DATASHEET](#)

Part No.	Load Capacity			Thread 1	Clamp Capacity (D)		Max. Sample Width (A)		Max. Length (C)		Weight	
432-384	100 N	10 kgf	22 lbf	10-32 UNF	4 mm	0.16"	50 mm	1.97"	29 mm	1.14"	81 g	0.18 lb
432-386	200 N	20 kgf	45 lbf	10-32 UNF	4 mm	0.16"	100 mm	3.97"	33 mm	1.30"	160 g	0.35 lb

DS-1070

# Vice grips: Double-action Tension

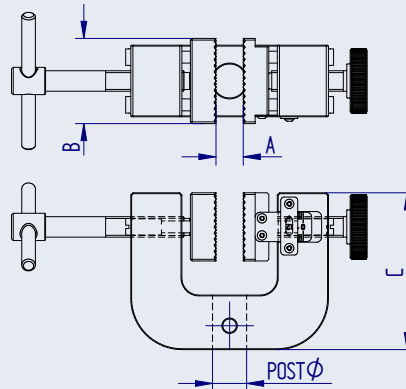
## Large Double-action Vice Grip, QC fitting

The large double-action vice grip is rated to 5 kN and can grip specimens with a thickness from 0.5 mm to 25 mm. It has a tommy-bar handle on one side for rapid tightening and a fine-action thumb-screw on the other for accurate sample positioning. An engraved millimetre scale on one jaw can be used to align the sample accurately.

### Applications:

- leather
- thin metal sheets
- plastics
- textiles
- paper & card
- thin films

[QC](#) [DATASHEET](#)



Part No.	Load Capacity			Post Ø	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-433	5 kN	500 kgf	1100 lbf	QC 20 mm	25 mm	0.98"	50 mm	1.97"	92 mm	3.62"	2.8 kg	6.2 lb

DS-1071

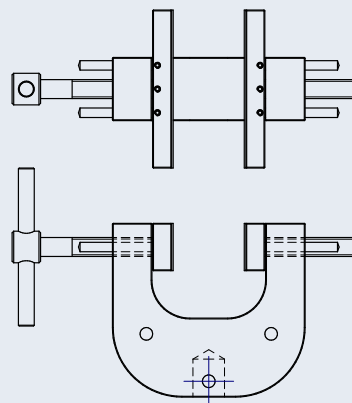
## U-Form Vice Grip, Double-action, 5 kN - Aluminium, QC fitting

U-form vice grips have dual side-action screw grips to enable wide specimens to be clamped quickly and securely. Available fitted with one of five different types of jaw faces: smooth, rubber-coated, pyramidal-faced, wave-form and diamond-faced to securely grip most materials. Jaws may be ordered separately.

### Applications:

- thick films
- polymers
- leather
- foam
- light metal/alloys

[QC](#) [DATASHEET](#)



Part No.	Please see datasheet for full details											
Mec240g												

DS-1072

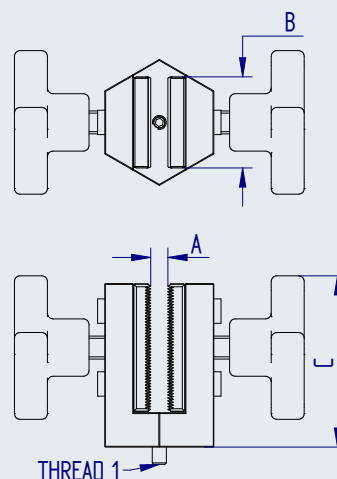
## Parallel Jaw Grips

Parallel jaw grips are fitted with individually adjustable serrated interlocking jaws.

### Applications:

- films
- flexible sheet materials
- paper and card
- laminates
- rubber
- tape
- textiles
- woven fabrics

[DATASHEET](#)



Part No.	Load Capacity			Thread 1	Jaw Dimensions (W x H)		Jaw Opening		Height		Weight	
432-396	500 N	50 kgf	110 lbf	10/32 UNF	32 x 44 mm	1.26" x 1.73"	6 mm	0.24"	60 mm	2.35"	300 g	0.66 lb

DS-1073

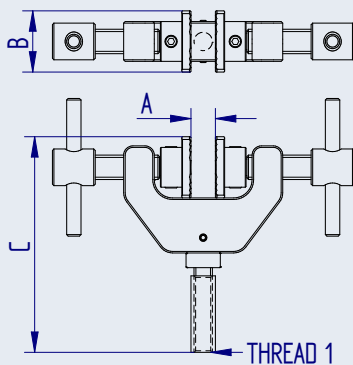
# Vice grips: Double-action Tension

## Small Parallel Grip

The small parallel grip has a rigid body with individually controlled serrated jaws. A floating ball screw attachment ensures central loading with correct alignment during tensile testing, and wing screws are used to easily adjust grip faces.

### Applications:

- flexible sheet materials
- textiles
- tape
- laminates
- paper



### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Dimensions		Jaw Opening		Length		Weight	
432-394	500 N	50 kgf	110 lbf	10/32 UNF	20 x 20 mm	0.79" x 0.79"	12 mm	0.47"	70.5 mm	2.78"	126 g	0.28 lb
432-211	500 N	50 kgf	110 lbf	M6	20 x 20 mm	0.79" x 0.79"	12 mm	0.47"	70.5 mm	2.78"	126 g	0.28 lb

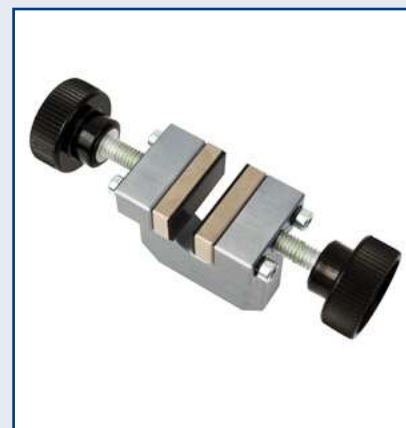
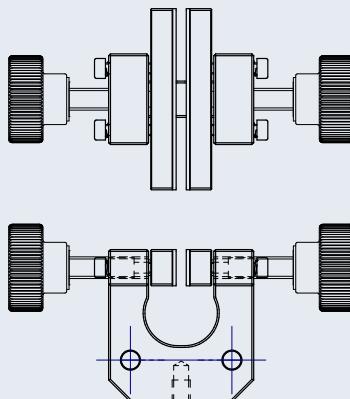
DS-1074

## Lightweight Double-action Vice Grip

Lightweight double-action vice grips are suitable for holding small, delicate samples, particularly when using low capacity loadcells. Available fitted with one of two different types of jaw faces: rubber-coated or pyramidal-faced, to securely grip most materials. Often used with the chain link assembly for ease of sample loading.

### Applications:

- light fabrics
- foils
- plastic films
- card & tissue
- packaging materials
- paper
- yarns
- wire



### DATASHEET

Part No.	Please see datasheet for full details
Mec227	

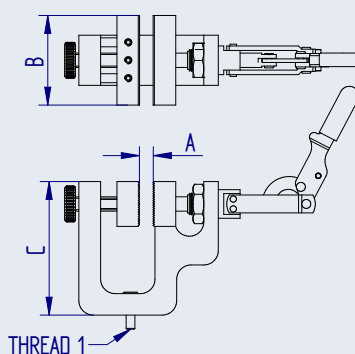
DS-1075

## Toggle Clamps

Toggle clamps are fitted with a lever to allow rapid, easy loading of specimens. They are available fitted with either flat or serrated jaw faces to securely grip most materials.

### Applications:

- fabric
- woven fabrics
- tapes
- polymers



### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Type	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-177	500 N	50 kgf	110 lbf	10-32 UNF	Flat	6 mm	0.24"	50 mm	1.97"	74 mm	2.19"	400 g	0.88 lb
432-176	500 N	50 kgf	110 lbf	10-32 UNF	Serrated	7 mm	0.28"	50 mm	1.97"	74 mm	2.19"	400 g	0.88 lb

DS-1077

## Pneumatic grips

Please note that the tensile load rating provided for all grips is for indication only. It is dependent on a number of factors including the surface hardness of the material being held, the jaw faces selected, how much pre-tension is applied, etc.

Additionally, in the case of pneumatic grips, the clamping force is dependent on the pressure applied. As a general guide we advise 'clamping force x 50% = tensile load rating'. Example: a pneumatic grip with a nominal clamping force of 7kN at 7 bar (max. 16 bar) is rated to a tensile load of 3.5kN at 7 bar, 5kN at 10 bar and 8kN at 16 bar.

### 2.5 kN U-Form Pneumatic Vice Grip, QC fitting

A highly versatile pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant.

Available in single actuation version.

#### Applications:

- plastics
- textiles
- thin metals

[DATASHEET](#)

[QC](#)

See datasheet for detailed drawing



Part No.

Please see datasheet for full details

Mec240g+Ko+2Ko

DS-1147

### Large Pneumatic Plane Grip, QC fitting

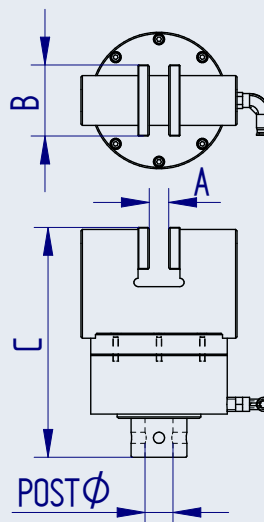
Large pneumatic plane grips have pyramidal-faced jaws and use a pneumatically-operated parallel vice action to firmly hold flat samples in place. Designed for fast loading and rapid testing of a large number of specimens. Supplied in pairs complete with 3 m long tube and footswitch for convenient operation.

#### Applications:

- plastics
- heavy-duty film
- paper and card
- rubber
- textiles
- light metals / alloys
- laminates
- insulating materials

[DATASHEET](#)

[QC](#)



Part No.	Load Capacity			Post Ø	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-276	1 kN	100 kgf	225 lbf	QC 20 mm	14 mm	0.55"	51 mm	2.01"	165 mm	6.50"	4 kg	8.8 lb

DS-1088

# Pneumatic grips

## Tension

### 5 kN U-Form Pneumatic Vice Grip, QC fitting

A highly versatile pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant.

Available in single actuation version.

See datasheet for detailed drawing



#### Applications:

- plastics
- textiles
- metals

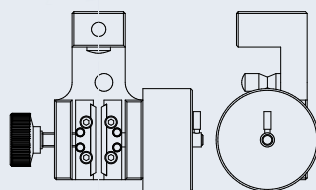
[QC](#) [DATASHEET](#)

Part No.	Please see datasheet for full details
Mec83	

DS-1175

### Pneumatic thin wire grip, QC fitting

Wire grips are designed to hold fine wires, cords or ropes, between flat faces. They are double action vice grips, with a pneumatic option, and alternative jaw faces. QC fitting.



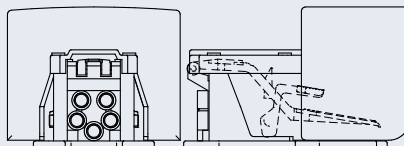
[QC](#) [DATASHEET](#)

Part No.	Please see datasheet for full details
Mec9+Ko	

DS-1069

### Dual Footswitches

Dual footswitches are used to operate the lightweight and medium pneumatic vice grips. Available in locking or non-locking types, including tubes and fittings.



[DATASHEET](#)

Part No.	Please see datasheet for full details
Mec205	

DS-1091

### Lightweight Pneumatic Plane grip, QC fitting

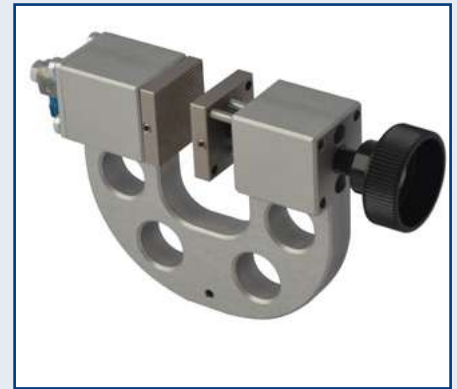
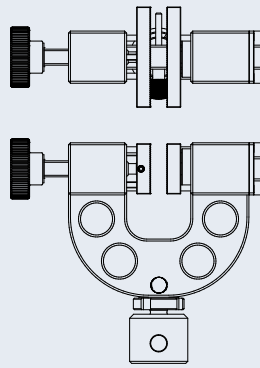
Lightweight pneumatic plane grips are made from aluminium and use a pneumatically-operated parallel vice action to firmly hold flat samples in place. Designed for fast loading and rapid testing of a large number of specimens. Supplied in pairs, smooth pyramid, rubber, or diamond-faced jaws are ordered separately. Suitable for use with ILC fitted with 10-32 UNF thread or 20 mm ØQC. The dual footswitch (locking or non-locking types available) including tubes and fittings, must be ordered separately

#### Applications:

- film
- laminates
- plastic sheet
- textiles
- paper
- woven fibre strips
- rubber
- elastomers

[DATASHEET](#) [QC](#)

Part No.	Please see datasheet for full details
Mec94	



DS-1084

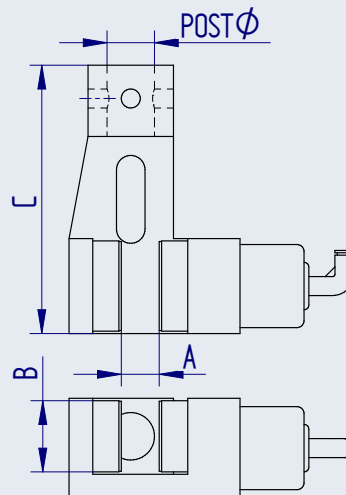
### Small Pneumatic Plane grip, Single actuator, QC fitting

Small pneumatic plane grips are made from aluminium, have rubber-faced jaws and use a pneumatically-operated parallel vice action to firmly hold flat samples in place. Designed for fast loading and rapid testing of a large number of specimens. Supplied in pairs complete with 3 m long tube and footswitch for convenient operation.

#### Applications:

- film
- laminates
- plastic sheet
- textiles
- paper
- woven fibre strips
- rubber
- elastomers

[DATASHEET](#) [QC](#)



DS-1085

Part No.	Load Capacity			Post Ø	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-275	200 N	20 kgf	45 lbf	QC 20 mm	11 mm	0.43"	30 mm	1.18"	113 mm	4.45"	600 g	1.3 lb

### 'Universal' Pneumatic Vice Grips, single & dual actuators, QC fitting

The most versatile and flexible model of pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant.

Available in single and double actuation versions.

#### Applications:

- plastics
- textiles
- medium-duty film
- very light metals / alloys
- paper & card
- laminates
- rubber
- insulating materials

[DATASHEET](#) [QC](#)

Part No.	Please see datasheet for full details
Mec240k+Ko+2Ko	

See datasheet for detailed drawing



DS-1113

# Claw grips

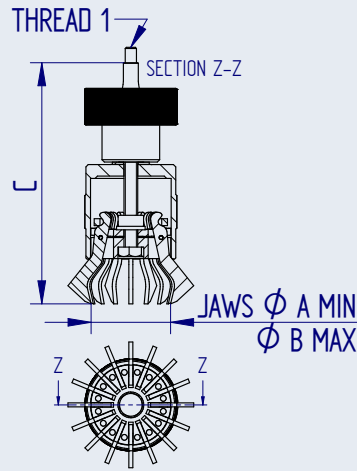
## Tension

### Multi-Jaw Grip

The multi-jaw grip is for grasping round or irregularly shaped items. By rotating the sleeve of the grip, the jaws can be opened and closed to achieve a secure grasp on a sample.

#### Applications:

- fasteners
- small components
- textiles



#### DATASHEET

Part No.	Load Capacity			Thread 1	Sample Min./Max. Ø		Length (C)		Weight	
	N	kgf	lbf		mm	in	mm	in	g	lb
432-215	500 N	50 kgf	110 lbf	M6	11 mm / 42 mm	0.43" / 1.65"	105 mm	4.12"	173 g	0.38 lb
432-420	500 N	50 kgf	110 lbf	10-32 UNF	11 mm / 42 mm	0.43" / 1.65"	105 mm	4.12"	173 g	0.38 lb

DS-1082

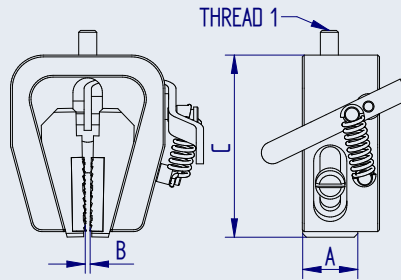


### 500 N and 200 N Wedge Grips

The 200 N / 500 N wedge grip is a small, lightweight grip designed for tensile testing. As load is applied, the wedge action of the jaws increases the grip on the sample. A spring-loaded lever allows the serrated jaws to open and close easily for the fast securing and release of samples. The 200 N grip includes the chain link assembly for ease of loading samples. A slot in the back accommodates samples wider than the jaws.

#### Applications:

- crimp and welded joints
- wires
- laminates
- flexible sheet materials
- films
- textiles



#### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Width (A)		Jaw Opening (B)		Height (C)		Weight	
	200 N	20 kgf	45 lbf		25 mm	0.98"	5 mm	0.20"	53 mm	2.09"	132 g	0.29 lb
432-385	500 N	50 kgf	110 lbf	10-32 UNF	16 mm	0.63"	5 mm	0.20"	53 mm	2.09"	120 g	0.26 lb

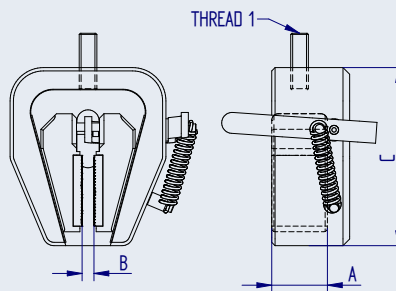
DS-1078

### 5 kN Wedge Grip

The 5 kN wedge grip is designed for tensile testing of flat and rigid materials including plastics, rubber and light metals. As load is applied, the wedge action of the jaws increases the grip on the sample. A spring-loaded lever allows the serrated jaws to open and close easily for the fast securing and release of samples.

#### Applications:

- adhesive joints
- cables
- composites
- crimp and welded joints
- metals
- plastics
- polymer
- rubber
- wood



#### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Width (B)		Jaw Opening (A)		Height (C)		Weight	
	5kN	500 kgf	1100 lbf		25 mm	0.98"	8 mm	0.31"	80 mm	3.15"	550 g	1.21 lb
432-398	5kN	500 kgf	1100 lbf	5/16 UNC	25 mm	0.98"	8 mm	0.31"	80 mm	3.15"	550 g	1.21 lb

DS-1079

# Wedge grips

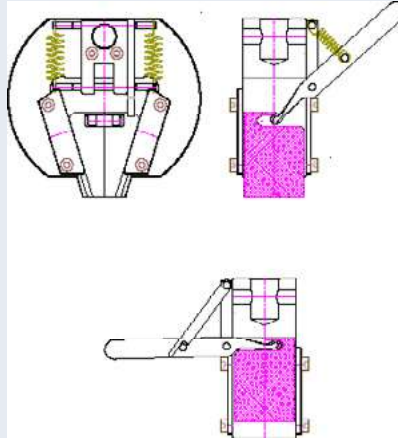
## Tension

### 10 kN Wedge Grip, Lever-action, QC fitting

The 10 kN wedge grip is designed for tensile testing. As load is applied, the wedge action of the jaws. The open back allows wider samples to be fitted although still held across the central 34 mm width. Supplied as body only - choose from either pyramidal-faced jaws for holding flat samples or toothed V-jaws for holding round samples.

#### Applications:

- welded joints
- flat or round metals
- adhesive joints
- wood
- plastics
- cardboard
- polymers
- leather
- composites
- cables



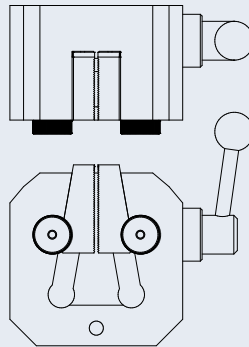
**QC** **DATASHEET**

<b>Part No.</b>	Please see datasheet for full details
MecS622	

DS-1080

### 20 kN and 50 kN Wedge Grips, Lever-action

The 20 kN / 50 kN wedge grip is designed for multi-purpose tensile testing of metal, plastic and other specimens. As load is applied, the wedge action of the jaws increases the grip on the sample. The grip features a lever arm for the fast securing and release of samples. Supplied as body only - choose from two sizes of pyramidal-faced jaws for holding flat samples, or two sizes of toothed V-jaws for holding round samples.



#### Applications:

- rigid wire
- board

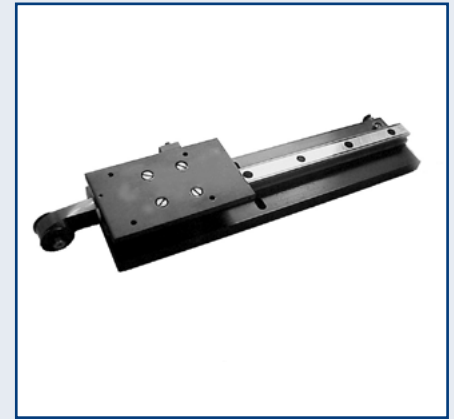
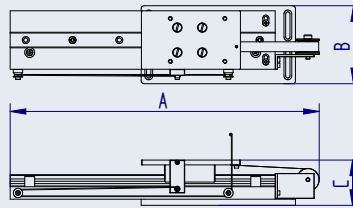
**DATASHEET**

<b>Part No.</b>	Please see datasheet for full details
Mec243	

DS-1081

### Assisted-Pull Peel Table

The assisted-pull peel table is fixed to the anvil plate and the crosshead of a test stand. The carriage of the peel table is directly driven horizontally by the vertical movement of the test stand crosshead, maintaining a constant 90 degree peel angle for the specimen.



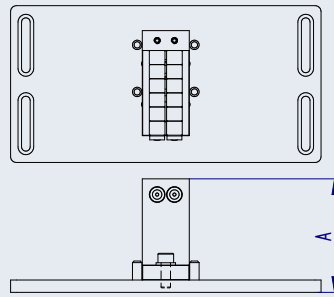
#### DATASHEET

Part No.	Load Capacity			Length (A)		Width (B)		Height (C)		Weight	
	1 kN	100 kgf	222 lbf	397 mm	15.60"	100 mm	3.94"	58 mm	2.28"	3.5 kg	7.7 lb
432-051											

DS-1093

### Floating Peel Jig

The floating peel jig is used to test flat samples with a flexible layer and a rigid or semi-rigid substrate, such as credit cards, and enables the card to move smoothly under the rollers while delamination tests are carried out. The fixture maintains a constant 90 degree peel angle for the specimen.



#### Applications:

- films
- laminates
- decals
- tapes
- labels

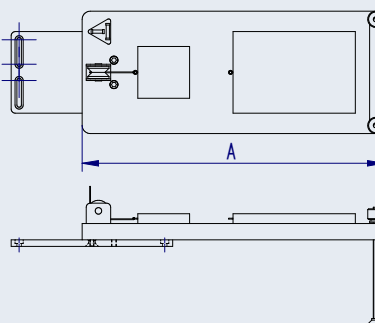
#### DATASHEET

Part No.	Load Capacity			Height (A)	
	500 N	50 kgf	110 lbf	72 mm	2.85"
432-413					

DS-1094

### Coefficient of Friction Fixture

The coefficient of friction fixture is designed to measure the coefficient of friction (COF) between two pieces of material. The COF test determines the kinetic and static resistance of one surface being dragged across another. Two versions available to test to the BS 2782 or ASTM D1894.



#### Applications:

- plastic
- film
- paper
- foil

#### DATASHEET

Part No.	Standard	Sled Dimensions		Length (A)	
		63.5 x 63.5 mm	2.48 x 2.48"	370 mm	14.57"
432-144	ASTM D1894				
432-501	ISO 8295	150 x 100 mm	5.91 x 3.94"	614 mm	24.17"

DS-1092

# Peel and friction jigs

## Tension

### Peel Jigs for test standards (FINAT, ASTM, AFERA, PSTC)

A number of test methods and standards employed by various industry bodies call upon specific peel jigs and associated accessories to be used in conjunction with a tensile tester. Mecmesin has developed a range of peel jigs and accessories to meet the demands of the most commonly used standards.

#### Applications:

- Seal strength of flexible film barrier materials
- Pressure sensitive adhesive tapes

[DATASHEET](#)

### Dedicated Peel Jigs

For use with Mecmesin Tensile Testers



▲ Sample Cutter



▲ 90° Peel Jig



▲ FINAT Roller



▲ 180° Peel Jig

Part No.	Description	QC connection
PDV13016-C	180 degree Peel Jig - lower (FINAT 1 & FINAT 3)	Yes - QC 20
PDV15031	90 degree Assisted Peel Table incl. rails for fixing Float Glass - lower (FINAT 2)	Yes - QC 20
PSV15030	Float Glass 2" wide x 8" long for use with above Assisted Peel Table	N/A
PSV14155	Standard FINAT Roller - 2kg	N/A
PSV13007	Sample cutter (15mm wide and 1 inch wide) + Protective Mat	N/A
PDV13016-A	Tack Test Jig - lower (FINAT 9)	Yes - QC 20

Note: There are several upper tensile grips suitable for holding specimens. The most popular is the Mec227 used in conjunction with 50mm wide rubber-coated jaws, see [page 214](#).

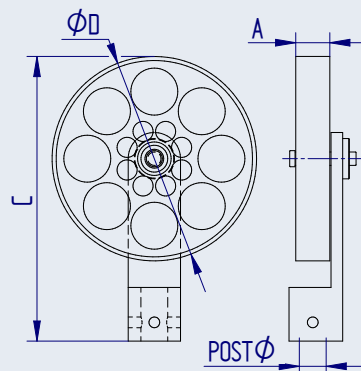
DS-1032

### Pull Peel Wheel Fixture, QC fitting

The pull peel wheel fixture is designed for mounting to the base of a motorised test stand to test the peel strength of flexible adhesive-backed materials. Samples are wound around the wheel and the free end is clamped in a suitable upper grip connected to a loadcell.

#### Applications:

- adhesive-backed tape
- adhesive-backed films and foils



[QC](#) [DATASHEET](#)

Part No.	Load Capacity			Post Ø	Rim Width (A)		Wheel Diameter (ØD)	Height (C)		Weight		
432-265	200 N	20 kgf	44 lbf	M8	25.4 mm	1.0"	152.4 mm	6.0"	212 mm	8.34"	246 g	0.54 lb

DS-1095

# FTP-H1 Friction, peel and tear fixtures

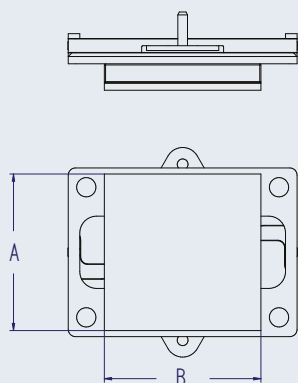
## Tension

### FPT-H1 Friction Sleds

The FPT-H1 Coefficient of Friction tester can be fitted with sample sleds of the correct weight, size and facings for a wide variety of international standard test methods. Sleds can be drawn from either end, and have magnetic catches for quickly and cleanly securing film samples.

Sleds for the FPT-H1 include the recommended linkages for the tests shown, to avoid slip-stick in kinetic friction testing.

[DATASHEET](#)



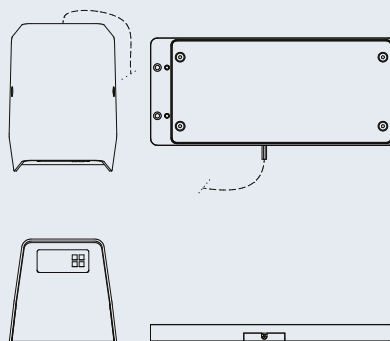
Part no.	Face Length	Face Width	Mass	Face Material	Suitable for standards
432-633	63.5 mm	63.5 mm	200 g	neoprene	TAPPI T 549
432-638	63.5 mm	63.5 mm	200 g	rubber foam	ASTM D1894, ISO 8295
432-639	63.5 mm	63.5 mm	800 g	neoprene	ISO 15359

DS-1151

### FPT-H1 Coefficient of Friction Heated Plane

The coefficients of friction of plastic films change with temperature. Testing at elevated temperatures can therefore be useful to establish hot-running machine settings. This heated plane has a control box and attaches to the FPT-H1 for use with its standard friction fixtures. With an operating temperature maintained to within 3 °C, this unit will enable repeatability in the testing of plastic films, in accordance with ASTM D1894, or your own requirements.

See datasheet for complete specification.



[DATASHEET](#)

Part no.	Heated area length	Heated area width	Height
432-640	318 mm (12.5 in)	148 mm (5.8 in)	24.5 mm (0.96 in)

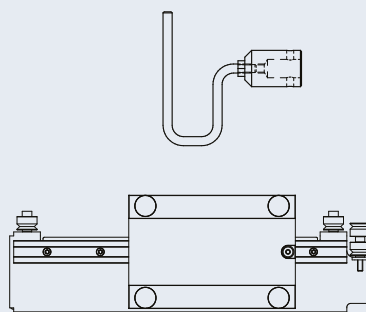
DS-1150

### FPT-H1 90° Peel Fixture Kit

The 90° fixture features an assisted sliding table to ensure constant alignment with the draw hook. The table accepts float glass and stainless steel sample plates, to comply with the requirements of a range of standard test methods, including Afera 5001, ASTM D3330, BS EN 1939, FINAT FTM2 and PSTC 101 Method F.

#### Applications:

- pressure-sensitive adhesive tapes and labels



[QC](#) [DATASHEET](#)

Part no.	Available travel	Max. sample length	Max. sample width
432-670	125 mm	125 mm	50 mm

Part no.	Material
432-651	Float glass
432-652	Stainless steel

DS-1148

# FTP-H1 Friction, peel and tear fixtures

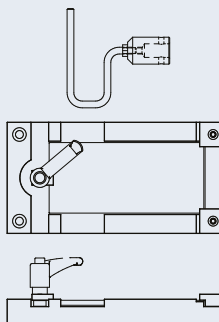
## Tension

### FPT-H1 180° Peel Fixture Kit

The 180° fixture features a raised bed to ensure accurate alignment with the draw hook. The bed itself accepts float glass and stainless steel sample plates, to comply with the requirements of a range of standard test methods, including Afera 5001, ASTM D3330, BS EN 1939, FINAT FTM1 and PSTC 101.

#### Applications:

- pressure-sensitive adhesive tapes and labels



[QC](#) [DATASHEET](#)

Part no.	Length	Width	Height	Max. sample width
432-636	173 mm	90 mm	26 mm	50 mm

Part no.	Material
432-651	Float glass
432-652	Stainless steel

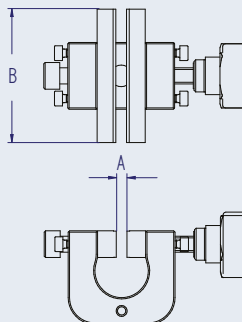
DS-1146

### FPT-H1 50 mm Peel Grip (FINAT 3), QC fitting

This peel grip can be used in conjunction with the FPT-H1 90 degree fixture kit (part no. 432-620) or the FPT-H1 180 degree peel fixture kit (part no. 432-636) where the drawn part of the sample is non-adhesive, in place of the standard hook fixture.

This single-action grip has rubber-faced jaws for securely gripping backing layers, plastic film, paper and card. Supplied as a single grip.

Suitable for test standards FINAT FTM1, 2 & 3; ASTM D3330, D6252, TLMI L-IA1 & 2



[DATASHEET](#)

Part no.	Jaw Opening	Jaw width	QC Ø
432-654	4 mm	50 mm	8 mm

DS-1153

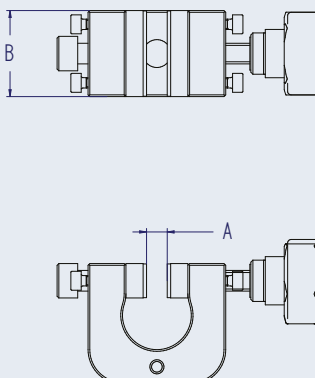
### FPT-H1 T-Peel Jig, QC fitting

The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel and tear test methods. For T-peel, two 25 mm vice grips are used.

Sold as a pair, these small vice grips have both jaws adjustable, and are rubber-faced for securely gripping plastic films, paper and card.

#### Applications:

- packaging seals and seams



[DATASHEET](#)

Part no.	Jaw Opening	Jaw width	QC Ø
432-642	6 mm	25 mm	8 mm

DS-1149

# FTP-H1 Friction, peel and tear fixtures

## Tension

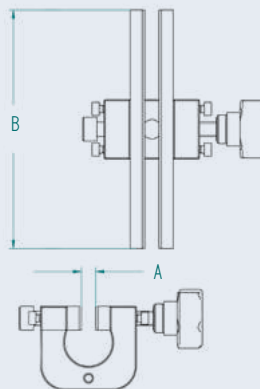
### FPT-H1 Lightweight Tear Grips, QC fitting

The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel and tear test methods. For tear testing, two 100 mm vice grips are used.

Sold as a pair, these small vice grips have both jaws adjustable, and are rubber-faced for securely gripping plastic films, paper and card.

#### Applications:

- paper
- textiles
- plastic films and foils



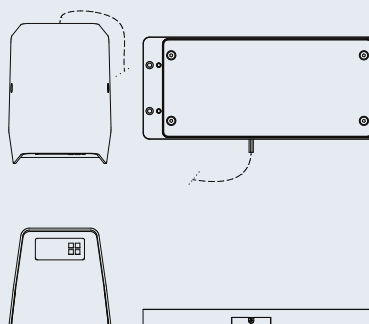
#### DATASHEET

Part no.	Jaw Opening	Jaw width	QC Ø
432-625	4 mm	100 mm	8 mm

DS-1152

### FPT-H1 Loadcell Calibration Check Rig and Masses

The Loadcell Calibration Check Rig is a bench-top pulley jig and cord which allows the on-site verification of the calibration status of an FPT-H1 Friction Peel Tear tester FPT loadcell. Using dead-weight masses (ordered separately), the kit allows you to quickly decide whether or not adjustment, recalibration or repair is required.



#### DATASHEET

Part No.	Description
432-635	FPT Calibration verification pulley-jig (excluding masses)
432-655	Lightweight hanger and 5 N slotted mass for verifying FPT 10 N
432-656	Lightweight hanger and 50 N slotted mass for verifying FPT 100 N

DS-1090

# Textile attachment grips

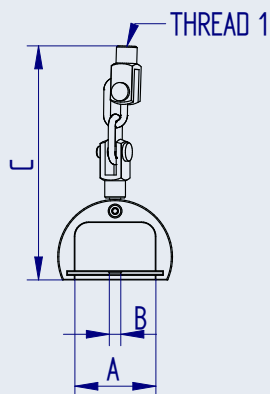
## Tension

### Button Pull-off Fixture with 3 Plates

This fixture engages the button shank in a slot for testing the tensile strength to failure. Three slotted interchangeable plates accommodate different shank diameters. A shatter-protection guard contains broken buttons. Typically used with the 25 mm / 50 mm 'grab test' textile fixture.

#### Applications:

- buttons



#### DATASHEET

Part No.	Load Capacity			Thread 1	Slot Widths (A)		Max. Button Ø (A)		Length (C)	
432-175	500 N	50 kgf	110 lbf	10-32 UNF	3 mm / 5 mm / 7 mm	0.12" / 0.2" / 0.28"	35 mm	1.38"	102 mm	4.01"

DS-1096

### Sequin Pull-off Fixture

This fixture holds the sequin in the serrated jaw of a pair of clamping forceps hooked over a stainless steel test hook. The sample fabric is held in a suitable lower fixture mounted to the anvil plate - typically the 25 mm / 50 mm "Grab Test" textile fixture.

No drawing available



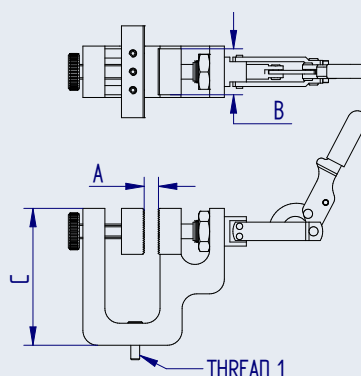
#### DATASHEET

Part No.	Load Capacity			Thread 1	Length		Weight	
432-291	50 N	5 kgf	11 lbf	10-32 UNF	157 mm	6.18"	20 g	0.04 lb

DS-1097

### 25 mm/50 mm "Grab Test" Textile Fixture

The 25 mm/50 mm "grab test" textile fixture has 2 different-sized jaws to comply with standard methods for textile strength and elongation.



#### DATASHEET

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Height (C)		Weight	
432-323	500 N	50 kgf	110 lbf	10-32 UNF	23.5 mm	0.93"	25 mm	0.98"	74 mm	2.91"	400 g	0.88 lb

DS-1102

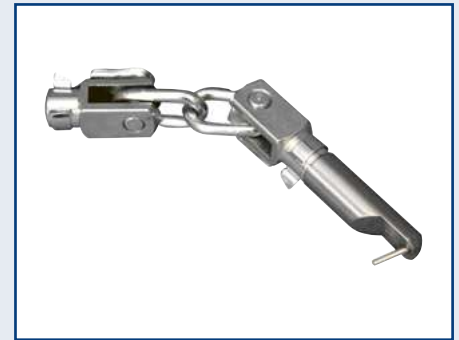
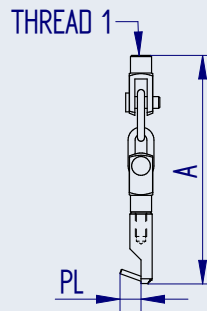


### Extended Peg Hook (Bow Pull-off Test)

The extended peg hook is used for securely attaching samples of decorations when carrying out test-to-failure tests on textiles and clothing adornments, for example a bow. Often used with the 25 mm / 50 mm 'Grab Test' textile fixture.

**Applications:**

- bows



**DATASHEET**

Part No.	Load Capacity			Thread 1	Length (A)		Peg Length		Peg Ø		Weight	
432-181	50 N	5 kgf	11 lbf	10-32 UNF	97 mm	3.82"	9 mm	0.35"	2 mm	0.08"	42 g	0.09 lb

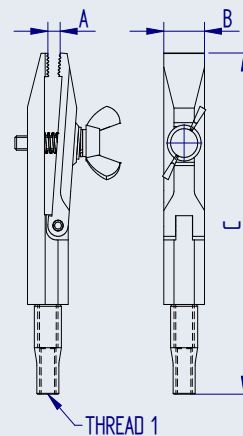
DS-1034

### Pinch Grip (for testing bows, appliques, patches)

Pinch grips are lightweight miniature vice grips, which use a hinge action to grab a sample and a wing nut to tighten the jaw face. Each jaw face has a slight groove to hold the sample securely, yet avoid inducing a break within the grip.

**Applications:**

- thin film
- tissue
- woven yarn



**DATASHEET**

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)		Weight	
432-280	200 N	20 kgf	44 lbf	M6	9 mm	0.35"	12 mm	0.47"	95 mm	3.744"	70 g	0.15 lb

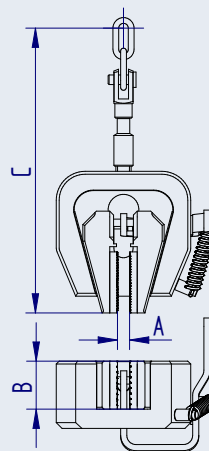
DS-1058

### Modified Large Wedge Grip

The modified large wedge grip has a shorter body with longer jaws to be able to securely hold S-spring poppers for tensile test-to-failure. As load is applied, the wedge action of the jaws increases the grip on sample.

**Applications:**

- poppers
- press studs



**DATASHEET**

Part No.	Load Capacity			Thread 1	Jaw Opening (A)		Jaw Width (B)		Length (C)		Weight	
432-212	1 kN	100 kgf	225 lbf	10-32 UNF	11 mm	0.43"	25 mm	0.98"	160 mm	6.30"	166 g	0.37 lb

DS-1099

# Textile attachment grips

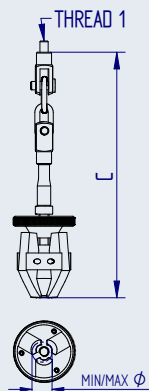
## Tension

### 3-Jaw Popper Pull-off Fixture

This fixture has 3 jaws and a swivelling action to securely hold 13-15 ligne poppers for tensile test to failure.

**Applications:**

- poppers
- press studs



**DATASHEET**

Part No.	Load Capacity			Thread 1	Sample Min./Max. Ø		Popper Size	Length (C)		Weight	
432-409	500 N	50 kgf	110 lbf	M5	6 mm / 13 mm	0.24" / 0.51"	13 - 15 ligne	149 mm	5.87"	166 g	0.37 lb

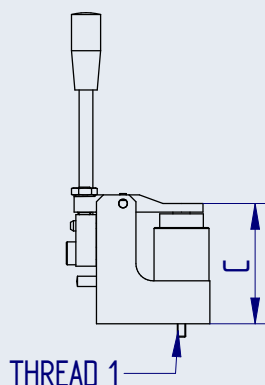
DS-1100

### Popper Cam Base

The popper cam base is secured to the base of a test stand to test the strength of poppers and press studs. The popper is fed through the retaining hole and positioned over the retaining post. The lever of the cam mechanism is locked down to raise the popper with the fabric so that it can easily be gripped - typically the 3-jaw popper pull-off fixture.

**Applications:**

Used by clothing manufacturers for test-to-failure testing for compliance with BS 7907:2007 on poppers and press studs



**DATASHEET**

Part No.	Load Capacity			Thread	Popper Size	Length (C)		Weight	
432-179	1 kN	100 kgf	225 lbf	10-32 UNF	13 - 15 ligne	68 mm	2.68"	760 g	1.7 lb

DS-1101

# Specialist tension fixtures

## Tension

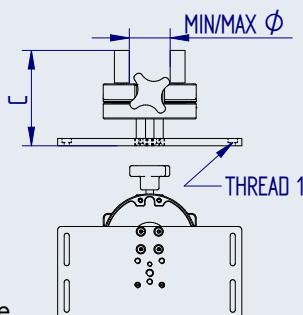
### V-jaw Vice Clamps, QC fitting

Two V-jaw Vice Clamp versions are available, each with opposing V-shaped, serrated rubber-faced jaws. These securely grip samples made of smooth or low-friction materials, such as plastics. The three-jawed version features a quick-release toggle-action lever.

#### Applications:

Used for tensile testing of:

- Plastic container closures; pull-off, disassembly resistance
- Opening force of pull-up, sports style or flip-cap closures
- General product or packaging pull test



#### DATASHEET

Part No.	Load Capacity			Post Ø	Opening Range		Lateral Adjustment		Height	
432-677	500 N	51 kgf	112 lbf	20 mm	10 - 80 mm	0.4 - 3.15"	±60 mm	±2.36"	110 mm	4.33"
432-678										
432-679	Repair kit including replacement rubber jaw faces for regular high-load usage									

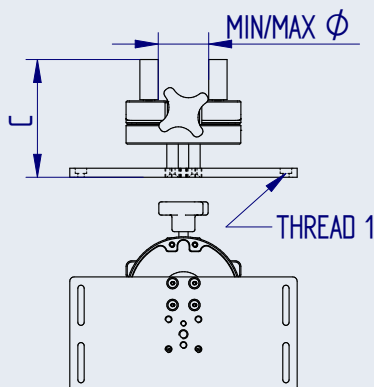
DS-1107

### Container Holder (4-peg adjustable)

The 4-peg container holder is designed to securely hold different shapes and sizes of containers during tensile testing. Available in two ranges of adjustability.

#### Applications:

- plastic containers



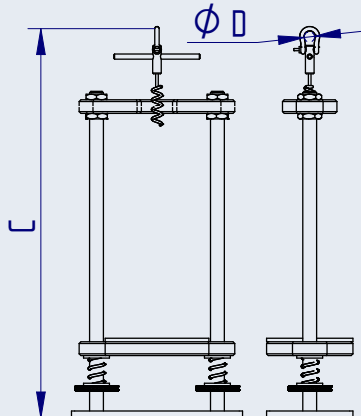
#### DATASHEET

Part No.	Load Capacity			Thread 1	Container Min./Max. Ø		Height	
432-411	100 N	10 kgf	22 lbf	4 x M5	10 mm / 190 mm	0.39" / 7.48"	102 mm	4.00"
432-493	100 N	10 kgf	22 lbf	4 x M5	10 mm / 78 mm	0.39" / 3.07"	103 mm	4.04"

DS-1107

### Cork Extraction Test Rig

The cork extraction test rig is used to test the extraction force of bottle stoppers. It has a bottle cradle with an antislip surface and is easily adjusted to accommodate different bottle heights, e.g. 200 ml to 750 ml. It is used in conjunction with corkscrew test accessories suitable for testing natural and synthetic corks.



#### DATASHEET

Part No.	Load Capacity			Thread 1	Loop Diameter (ØD)		Length (C)	
PDV11086	1 kN	100 kgf	225 lbf	4x M5	13 mm	0.51"	450.5 mm	17.34"

DS-1108

### General (tension and compression)

This section covers a number of grips and fixtures, which can be used either under compression or tension or both - for example a pin chuck can be used to pull a thin rod or it can hold a needle for pushing into a membrane for a puncture test.

It also covers accessories such as interface cables, battery chargers and dust covers, which are suitable for general use with many instruments and test systems from Mecmesin.

Sections covered are:

- Chucks
- Manual Handling Accessories
- Miscellaneous Accessories
  - Chargers
  - Interface cables
  - Safety guards
  - Dust covers & protective bellows
  - Feet kits for test stands

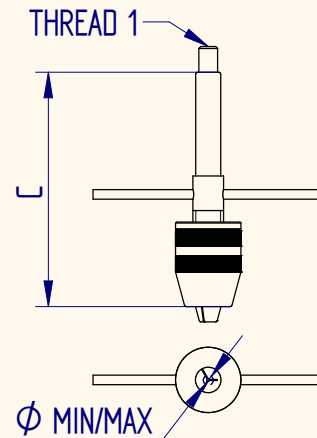
### Pin Chuck

Pin chucks are specifically designed for gripping circular or rod-type specimens, or needles for sharpness testing.

#### Applications:

- pin or rod components

[DATASHEET](#)



Part No.	Load Capacity			Thread 1	Capacity Min./Max. Ø		Length (C)		Weight	
	N	kgf	lbf		mm	"	mm	"	g	lb
432-382	100 N	10 kgf	22 lbf	10-32 UNF	0.5 mm - 3.5 mm	0.02" - 0.14"	61 mm	2.40"	36 g	0.08 lb
432-214	100 N	10 kgf	22 lbf	M6	0.5 mm - 3.5 mm	0.02" - 0.14"	86 mm	3.39"	36 g	0.08 lb

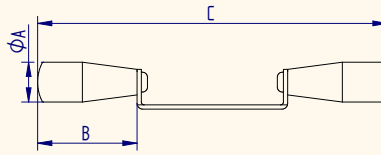
DS-1109

# Manual Handling Accessories

## General (tension and compression)

### Force Gauge Gripping Cradle

This cradle allows Mecmesin gauges to be used more easily as hand-held instruments. The dual-handle design allows the comfortable application of push/pull loads, with increased stability. Attachment screws supplied



#### Applications:

- doors
- filing cabinets
- emergency push bars
- handles and controls

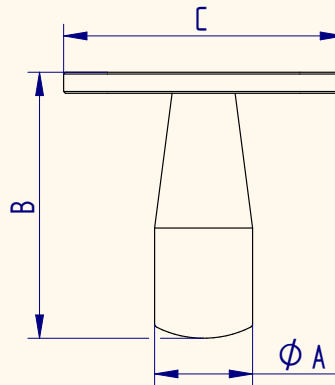
[DATASHEET](#)

Part No.	Load Capacity			Handle Diameter (ØA)		Handle Length (B)		Width (C)	
432-388	2.5 kN	250 kgf	550 lbf	28 mm	1.1"	70 mm	2.76"	246 mm	9.69"

DS-1111

### Pistol Grip

The pistol grip is attached to a Mecmesin force gauge to add comfort and stability in applications where only single-handed operation is possible.



#### Applications:

- doors
- filing cabinets
- emergency push bars
- handles and controls with restricted access

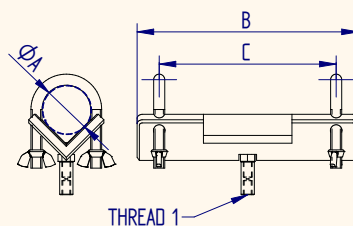
[DATASHEET](#)

Part No.	Load Capacity			Handle Diameter (ØA)		Handle Length (B)		Width (C)	
432-389	500 N	50 kgf	110 lbf	28 mm	1.1"	70 mm	2.76"	80 mm	3.15"

DS-1110

### Trolley-Pushing Fixture

The trolley-pushing fixture has been designed to attach to trolleys, carts and wheelie bins so that manual handling measurements can be made more easily. Typically used with a force gauge fitted to the force gauge gripping cradle or pistol grip (order separately).



#### Applications:

- trolleys
- carts
- wheelie bins

[DATASHEET](#)

Part No.	Load Capacity			Gripping Diameter (ØA)		Width (B)		Width (C)	
432-405	1 kN	100 kgf	225 lbf	44 mm	1.73"	200 mm	7.87"	160 mm	6.3"

DS-1112

# Manual Handling Accessories

## General (tension and compression)

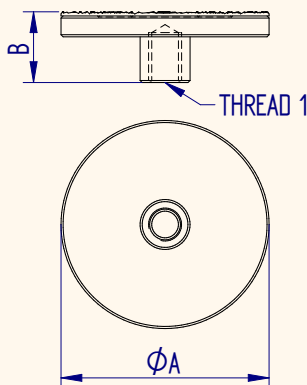
### Rubber-faced Compression Plate

This compression plate has a rubber layer which helps to prevent damage that might occur from metal contact during a push test. Also prevents slipping.

#### Applications:

- handles and bars
- slippery or curved samples
- glass

[DATASHEET](#)



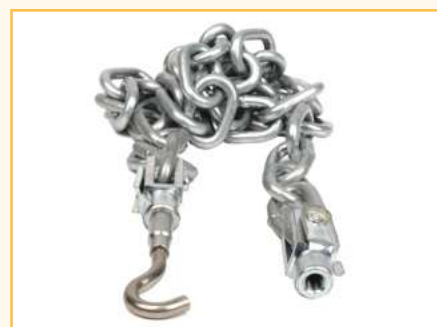
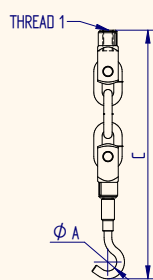
Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-219	2.5 kN	250 kgf	550 lbf	5/16 UNC	50 mm	1.97"	17 mm	0.67"	84 g	0.19 lb

DS-1003

### Chain Link and Hook Assembly

The chain link and hook assembly is used to attach to a variety of objects, which are otherwise difficult to hold. The chain is 1 m long and is supplied with a clevis fastener at each end.

[DATASHEET](#)



Part No.	Load Capacity			Thread 1	Max. Sample Diameter (ØA)		Length (B)	
432-410	2.5 kN	250 kgf	550 lbf	5/16 UNC	14 mm	0.55"	187 ±25 mm	7.352" ±0.98"

DS-1114

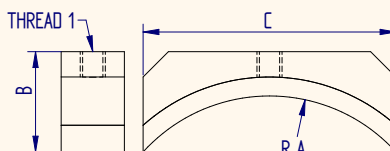
### Padded Radiused Probe

The padded radiused probe is specially designed for use against limbs for rehabilitation and physical therapy assessment. Use with a short extension rod.

#### Applications:

- physical therapy assessments
- leg extension tests

[DATASHEET](#)



Part No.	Load Capacity			Thread 1	Radius (A)		Height (B)		Width (C)	
432-414	500 N	50 kgf	110 lbf	5/16 UNC	54 mm	2.13"	32 mm	1.249"	80 mm	3.15"

DS-1116

### Transit Case for Manual Handling/ Ergonomic Kit

A foam-lined rugged metal case for the components of the advanced or basic manual handling kit. Supplied as standard with the kit, has space for: a force gauge including rechargeable batteries, mains adaptor / battery charger, gripping cradle, chain link assembly, 50 mm rubber-faced compression plate and test hook.

[DATASHEET](#)

No drawing available



Part No.	Weight	
416-007	2.61 kg	5.76 lb

DS-1115

# Miscellaneous Accessories

## General (tension and compression)

### Adaptor/Charger for use with AFG/AFTI/BFG/CFG

For use with Mecmesin AFG / BFG / CFG digital gauges and the AFTI universal display. Versions for specific geographical locations are available.

No drawing available



DS-1117

#### DATASHEET

Part No.	Region	Voltage	Pins	Type
304-004	Europe	230 V	2-pin	Round
304-005	UK	230 V	3-pin	Square
304-006	USA	110 V	2-pin	Flat

### Universal Expansion Module

Where a gauge or instrument requires output to a MultiTest-*d* or -*dV* test stand (e.g. for reverse or stop control) but also simultaneously to a RS232 printer, analogue output or other peripheral device, this expansion module can be used.

No drawing available



DS-1159

#### DATASHEET

Part No.

432-127

Please see datasheet for full details

### Digital I/O Loop-back Plug

The 25-pin Digital I/O Loop-back Plug is inserted into the I/O port of any Mecmesin -*i* or -*xt* test stand using Emperor™ control software. By virtue of directly routing digital outputs to inputs, it allows the system user to create test programs with an added layer of sophistication.

No drawing available



DS-1103

#### DATASHEET

Part No.	Description
432-663	Digital I/O Loop-back plug (allows multi-function programming in Emperor™ software)



# General (tension and compression)

## Interface Cables

For data communications and control with Mecmesin systems and instruments



### DATASHEET

Part No.	Connect from	Connect to
351-090	CAPTEST	9-pin RS232
351-096	CrimpTest-1 kN	9-pin RS232
351-077	CFG+	9-pin RS232
351-055	BFG/Orbis Mk 1	Mitutoyo printer/DigiCon-X interface
351-054	BFG/Orbis Mk 1	9-pin RS232*
351-087	BFG/Orbis Mk 1	USB
351-057	BFG/Orbis Mk 1	Analog
351-076	BFG/Orbis Mk 1	MultiTest-d
351-058	AFG/AFTI/Orbis/Tornado	Mitutoyo Printer/DigiCon-X interface
351-059	AFG/AFTI/Orbis/Tornado	9-pin RS232*
351-086	AFG/AFTI/Orbis/Tornado	USB
351-060	AFG/AFTI/Orbis/Tornado	Analog
351-063	AFG/AFTI	PLC
432-127	AFG/AFTI/Orbis/Tornado	4 x 15-pin RS232 (M)
351-062	AFG	Old motorised stands (VersaTest/UltraTest/M5KNE), stand reverse
351-074	AFG/AFTI	MultiTest-d/Vortex-d
351-092	AFG/AFTI	MultiTest-dV/Vortex-dV
351-051	MultiTest-d/Vortex-d	9-pin RS232 (with Emperor Lite)
351-093	MultiTest-dV/Vortex-dV	USB B, to PC USB A (with VectorPro Lite)
351-095	AFG/AFTI	MultiTest-dV/Vortex-dV, for gauge control only
432-450	9-pin RS232	USB

DS-1124

## Interface Options for the family of '-i' and '-xt' systems

The USB to USB RS232 cable enables transmission via the COMMS port of an 'xt' system's console to a PC. The event-input cable enables applications such as "switch-testing" on the current range of MultiTest/Vortex/Helixa-i and 'xt' stands. The footswitch is used to simulate "Start" on MultiTest-i and 'xt' stands.



### DATASHEET

Part No.	Description
351-081	USB to USB RS232 cable (2m long) for transmitting via COMMS port of 'xt' console to a PC
351-080	Event-input cable for MultiTest/Vortex/Helixa-i and 'xt' stands
PDV14081	Footswitch to simulate 'Start' on MultiTest-i and 'xt' stands

DS-1124

# General (tension and compression)

## Digital Gauge to PC Input Tool

The PC input tool allows for individual gauge readings from AFG, AFTI, Tornado, BFG or Orbis to be sent directly to an open PC application such as Excel. After each test with the gauge, press the blue button to send the displayed numerical value to the PC.

No drawing available



### DATASHEET

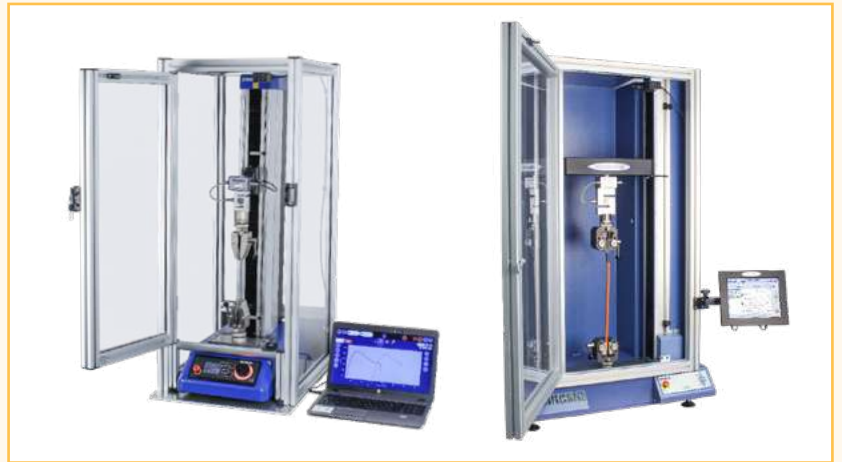
Part No.	Please see datasheet for full details
432-234	

DS-1171

## Test Stand Safety Guards and Interlock Override Plug

Health and safety are of paramount concern when using machinery with moving parts and motorised test equipment is no exception. Safety guards prevent access by the operator to the testing area whilst the test is in progress, acting as a barrier from moving parts where there exists a risk of hands and arms getting caught.

Mecmesin test system can be supplied with a standard safety guard. In addition, due to individual requirements for accommodating different-sized grips and samples, safety guards are often made to custom design. Please contact us with your requirements and details of your stand model.



No drawing available

### DATASHEET

## Single-column Systems

## Twin-column Systems

Part No.	Description
432-680	MultiTest 0.5-i, -xt, -dV
432-681	MultiTest 1-i, -xt, -dV
432-682	MultiTest 2.5-i, -xt, -dV
432-684	OmniTest 5 and 7.5

Part No.	Description	Part No.	Description	Part No.	Description
805-017+G	MultiTest 10-i	805-016+G	MultiTest 25-i	805-023+G	MultiTest 50-i
805-004+G	MultiTest 10-xt	805-005+G	MultiTest 25-xt	805-006+G	MultiTest 50-xt
805-010+G	OmniTest 10	805-025+G	OmniTest 25	805-050+G	OmniTest 50

DS-1158

## Dust Covers

Dust covers offer protection to all types of Mecmesin motorised test stand in dusty and dirty environments. They are durable and easy to clean, and feature quick-acting Velcro fastening strips for simple fitting and removal.

### DATASHEET

Part No.	System
432-481	Vortex Systems (without console)
432-482	Vortex Systems (with console)
432-483	MultiTest Systems (without console)
432-484	MultiTest Systems (with console)

No drawing available



DS-1120

# General (tension and compression)

## Bellows Kits

Protective bellows fit into the crosshead aperture in the test stand to guard against sample ingress and dust or liquid splash getting inside the column and damaging internal components. Kits are available for the single-column range of stands, the length being appropriate for the particular column dimension.

No drawing available



DS-1031

### DATASHEET

Part No.	Description
432-471	Bellows kit for fitting to MultiTest 2.5 stand (500 mm)
432-472	Bellows kit for fitting to MultiTest 1 stand (1000 mm)
432-473	Bellows kit for fitting to MultiTest 0.5 stand (1200 mm)

## Single-column Test Stand Horizontal Feet Kits

The Horizontal Feet Kits enable a single column test stand to be mounted horizontally, aligning the front panel either on its side or facing upwards.

No drawing available



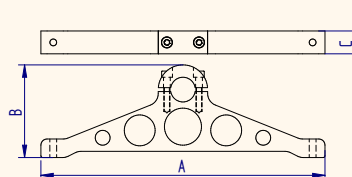
DS-1031

### DATASHEET

Part No.	Description
PDV11065	Feet kit; allows front-panel to be mounted horizontally on its side
PDV10105	Feet kit; allows front-panel to be mounted horizontally facing upwards

## MDD Horizontal Feet Kit

The MDD horizontal feet kit allows for the horizontal operation of the MDD manual test stand.



### DATASHEET

Part No.	Width (A)		Height (B)		Depth (C)		Length	
432-126	230 mm	9.06"	75 mm	2.95"	18.5 mm	0.73"	187 ±25 mm	7.352" ±0.98"

DS-1119

## Dial Gauge Bracket Set for MDD

The dial gauge bracket set allows an analogue gauge to be securely fitted to the MDD manual test stand.

No drawing available



Part No.

432-167

### Adapters

A number of fixtures under test conditions require height extension, or connector thread, gender or size conversion. We have here a selection of parts, including mounting brackets, to ensure the best fixturing for your test.

# Adapters

## Adapters (tension and compression)

### Adapters

Our range of adapters provide interchangeability between grips and fixtures and our range of force testing instruments and test systems. Adapters are usually threaded into the accessory.

No drawing available



#### DATASHEET

Part No.	Load Capacity			Thread	Length		Weight	
432-193	1 kN	100 kgf	225 lbf	10-32 M to M6 F	25 mm	0.98"	6 g	0.01 lb
432-293	5 kN	500 kgf	1100 lbf	5/16 F to 5/16 F	35 mm	1.38"	19 g	0.04 lb
432-328	1 kN	100 kgf	225 lbf	10-32 F to 10-32 F	30 mm	1.18"	4 g	0.01 lb
432-329	1 kN	100 kgf	225 lbf	10-32 F to 5/16 F	25 mm	0.98"	8 g	0.02 lb
432-330	5 kN	500 kgf	1100 lbf	5/16 F to M6 F	25 mm	0.98"	6 g	0.01 lb
432-331	5 kN	500 kgf	1100 lbf	5/16 M to M12 M	29 mm	1.14"	21 g	0.05 lb
432-332	5 kN	500 kgf	1100 lbf	5/16 M to M12 F	34 mm	1.34"	—	—
432-333	5 kN	500 kgf	1100 lbf	5/16 M to M10 M	29 mm	1.14"	—	—
432-334	1 kN	100 kgf	225 lbf	M6 F to M6 F	25 mm	0.98"	5 g	0.01 lb
432-335	10 kN	1000 kgf	2200 lbf	M10 M to M12 M	29 mm	1.14"	—	—
432-364	1 kN	100 kgf	225 lbf	10-32 M to M10 M	29 mm	1.14"	—	—
432-417	1 kN	100 kgf	225 lbf	10-32 F to M6 F	25 mm	0.98"	5 g	0.01 lb

DS-1128

### Extension Rods

Extension rods are used to add length to a fixture often to prevent the specimen making contact with the gauge/loadcell e.g., when compressing a plunger into a cylinder. They are also used to connect a force gauge or loadcell to a grip or fixture.



#### DATASHEET

Part No.	Load Capacity	Securing	Thread 1	Thread 2	Length (A)	Diameter (B)	Length (C)	Weight	
432-006	500 N	thumbwheel	10-32 UNF F	10-32 UNF M	30 mm	8 mm	11 mm	20 g	0.04 lb
432-116	500 N	nut	10-32 UNF F	10-32 UNF M	30 mm	6 mm	10 mm	7 g	0.02 lb
432-167	500 N	nut	10-32 UNF F	10-32 UNF M	130 mm	6 mm	10 mm	28 g	0.06 lb
432-007	500 N	thumbwheel	10-32 UNF F	M6 M	30 mm	8 mm	12 mm	20 g	0.04 lb
432-186	500 N	thumbwheel	M6 F	M6 M	25 mm	8 mm	12 mm	20 g	0.04 lb
432-187	500 N	thumbwheel	M6 F	M6 M	130 mm	8 mm	12 mm	32 g	0.07 lb
432-008	2.5 kN	thumbwheel	5/16 UNC F	5/16 UNC M	30 mm	12 mm	14 mm	32 g	0.07 lb
432-123	2.5 kN	—	5/16 UNC F	5/16 UNC M	130 mm	12 mm	10 mm	111 g	0.24 lb

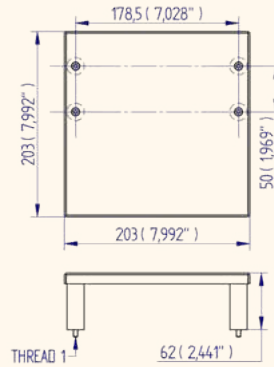
DS-1127

# Mounting brackets

## Adapters (tension and compression)

### Crosshead Extension and Elevated Base Plate

The 38 mm crosshead extension and elevated base plate are used together for fitting larger samples up to 200 mm diameter, to a single-column MultiTest system.



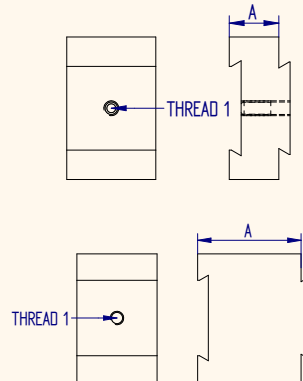
#### DATASHEET

Part No.	Load Capacity			Thread 1	Width (A)		Depth (B)		Height (C)	
432-406	2.5 kN	250 kgf	550 lbf	M5	203 mm	7.99"	203 mm	7.99"	62 mm	2.44"

DS-1122

### Crosshead Extension

The crosshead extension allows the loadcell on a single-column MultiTest stand to be positioned further from the column, to accommodate larger test samples.



#### DATASHEET

Part No.	Thread 1	Depth (A)	
432-307	M5	16 mm	0.63"
432-508	M5	38 mm	1.50"

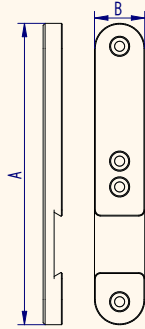
DS-1122

# Mounting brackets

## Adapters (tension and compression)

### Extended Dovetail Bracket

The extended dovetail bracket is used for mounting Mecmesin Advanced Force Gauge (AFG) and Basic Force Gauge (BFG) force gauges to the crosshead of manual and motorised test stands, to allow precise lateral alignment of the gauge. The extended length provides 70 mm (2.76") of extra daylight. Supplied with socket-head fixing screws M5 x 10 mm.



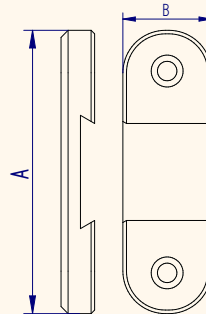
#### DATASHEET

Part No.	Height (A)		Width (B)	
432-326	150 mm	5.91"	25 mm	0.98"

DS-1123

### Dovetail Bracket

The dovetail bracket is used for mounting Mecmesin Advanced Force Gauge (AFG) and Basic Force Gauge (BFG) force gauges to the crosshead of manual and motorised test stands, to allow precise lateral alignment of the gauge. Supplied with socket-head fixing screws M5 x 10 mm.



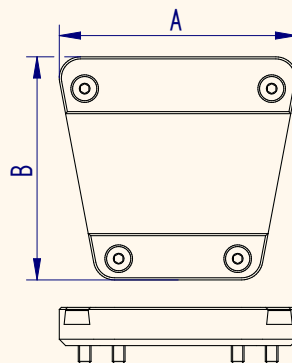
#### DATASHEET

Part No.	Height (A)		Width (B)	
432-427	80 mm	3.15"	25 mm	0.98"

DS-1123

### CFG+ Mounting Plate

The CFG mounting plate allows a Mecmesin Compact Force Gauge+ (CFG+) to be mounted onto the crosshead of a test stand. Supplied with 4 x M3 fixing screws.



#### DATASHEET

Part No.	Height (B)		Width (A)	
432-131	56 mm	2.2"	9 mm	0.36"

DS-1123

## Torque

Torque testing involves measuring what it takes to rotate one component against another. Bearings, for example, are meant to rotate very freely, and the torque testing measures unevenness in manufacture or wear, or the torque required to initiate free-running rotation. Other tests involve fastening or closure, and the torque required to secure or release a screw cap or a screw fastener. In manufactured products, tolerances in torque performance are crucial. In some cases, torque and force are combined, for example to extract a crown cork from a bottle, or release a child-resistant closure from a container. Measuring these turning forces requires test systems and fixtures that ensure precise repeatability through correct alignment and gripping.



### Types of torque test for which we can supply fixtures

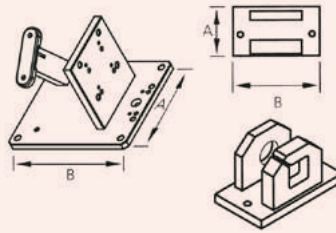
- removal torque
- strip torque
- incremental torque
- bridge torque
- reverse ratchet torque
- breakaway torque
- running torque
- rotational shear
- fastening torque
- breaking torque test





### Mounts for Torque Sensors

Bench Mounting Stands are equipped with fixing holes to enable secure and stable support for Mecmesin Static Torque Sensors when in use on a table or work-bench. Two versions are available; for mid & hi-torque 'ST' Torque and for 'TS' Torque Screwdrivers.



#### DATASHEET

Part No.	Type	Depth (A)		Width (B)	
432-401	Mid & hi-torque 'ST' Torque	155 mm	1/2"	190 mm	6.10"
432-402	'TS' Torque Screwdrivers	76 mm	3/8"	170 mm	6.10"

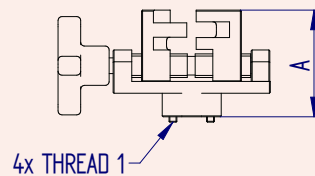
DS-1029

### Mini V-block

The mini V-block is a precision-engineered mounting block which allows smaller samples to be securely held in a centrally-aligned position, without excessive clamping force. For use with Orbis and Tornado.

Alternative V-block fixtures to hold irregular-shaped samples can be manufactured for specific requirements.

Contact Mecmesin for details.



#### DATASHEET

Part No.	Thread 1	Jaw Opening		Height (A)	
432-423	4 x M4	5 - 26 mm	0.2" - 1.02"	54 mm	2.13"

DS-1139

### 3-Jaw and 4-Jaw Torque Chucks

A range of key-operated and keyless Torque Chucks are available in 3-jaw or 4-jaw versions. Suitable for use with either Vortex, Helixa or 'TS' Torque Screwdrivers.

No drawing available

#### DATASHEET

Part No.	Jaw Size	Weight	
432-233	3/8"	170 g	0.37 lb



Part No.	Type	Post Ø	Sample Min./Max. Ø		Height (A)	
432-444	Upper Keyless Chuck	3/8" square	23 mm / 35 mm	0.91" / 1.38"	75 mm	2.95"
432-445	Lower Keyless Chuck	QC 12 mm	37.5 mm / 70 mm	1.48" / 2.76"	107 mm	4.21"
432-496	Lower Keyless Chuck	QC 12 mm	23 mm / 35 mm	0.91" / 1.38"	103 mm	4.05"

DS-1130

### Closure Mandrels

Specifically designed to grip closures for torque testing. Available in two designs:

- 'Split mandrels' - comprising 2 mandrel halves which have been machined to suit a narrow span of closure diameters and profiles.
- 'Dedicated mandrels' - machined specifically as an exact fit to match the profile of a single closure type.

Contact Mecmesin with your specific requirements.



#### DATASHEET

DS-1104

### Fixing Tables for Torque Testing

Developed specifically to fit to the Vortex or Helixa range of Torque Testers. Upper Fixing Tables connect directly to the respective torque sensor and Lower Fixing Tables connect to the motor spindle of the Vortex or Helixa.

Upper and Lower Fixing Tables can be used in combination with each other. Alternatively they can be used individually in conjunction with other torque grips or custom fixtures. They are a useful general- purpose grip offering highly versatile clamping of specimens, being fully adjustable to accommodate a variety of forms.

[DATASHEET](#)

Please see datasheet for full details



DS-1132

### V-jaw Clamps for Helixa

Features V-shaped rubber faces with an angle of both 90 and 120 degrees to suit various small or low-friction specimen geometries. The jaws can be easily removed and reversed by means of the fixing screws. Stable clamping is achieved by two vertically-spaced jaws and a single opposing jaw.

This accessory fits to the Helixa's Precision Lower Fixing Table (432-600).

[DATASHEET](#)

Please see datasheet for full details



DS-1132

### V-jaw Clamps for Vortex/Orbix/Tornado

Features V-shaped rubber faces with an angle of both 90 and 120 degrees to suit various small or low-friction specimen geometries. The jaws can be easily removed and reversed by means of the fixing screws. Stable clamping is achieved by two vertically-spaced jaws and a single opposing jaw.

This accessory fits to the Helixa's Precision Lower Fixing Table (432-600).

[DATASHEET](#)

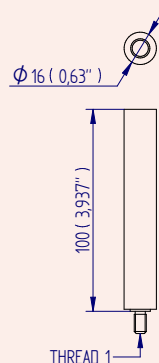
Please see datasheet for full details



DS-1132

### Set of 4 pegs; standard and extended lengths

These pegs attach to the upper and lower fixing tables to keep samples secure during torque testing. The extended length pegs are to keep taller samples vertically aligned.



[DATASHEET](#)

Part No.	Thread 1	Diameter Ø		Length (A)	
432-447	M6	16 mm	0.63"	35 mm	1.38"
432-250	M6	16 mm	0.63"	100 mm	3.94"

DS-1134

### Saddle Plates

For 1.5 N.m and 3 N.m Tornado. Saddle plates provide a more stable base on which to mount awkwardly shaped samples. Held in place by standard or extended pegs.

See datasheet for detailed drawing



Saddle plates provide a more stable base on which to mount awkwardly shaped samples. Held in place by standard or extended pegs. For Orbis, Tornado or Vortex.

#### DATASHEET

##### Part No.

432-407

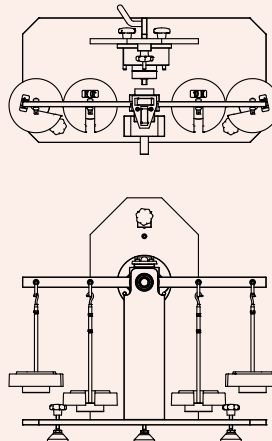
Please see datasheet for full details

432-424

DS-1136

### Orbis and Tornado Mk II, and Vortex Torque Cell, Check Calibration Rig

This bench-top unit enables the on-site verification of the calibration status of Orbis MkII, Tornado MkII testers, and static torque sensors rated from 1.5 N.m to 10 N.m. Using dead-weight masses, the kit allows you to quickly decide whether or not adjustment, recalibration or repair is required. The kit does not replace the need for regular professional calibration.



#### DATASHEET

##### Part No.

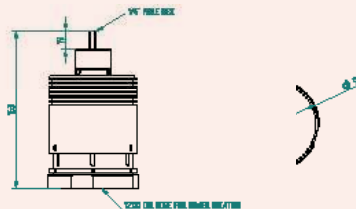
432-621

Please see datasheet for full details

DS-1142

### Torque Reference Bottles

The Torque Reference Bottle (also known as 'Gold Bottle') provides a means of quickly verifying the calibration of motorised torque measuring systems Helixa and Vortex. Its magnetic clutch repeatedly slips at a factory-set, specified torque value. The Torque Reference Bottle is available in three nominal torque values—the part number-suffix indicates the value in N.m.



#### DATASHEET

Load measurement	
Loadcell range	10 N, 100 N, (2.2 lbf, 22.5 lbf)
Load resolution	1:6500
Load accuracy	±0.1% of full scale output

DS-1144

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## Nickel Plated Compression Plates



### Description

Nickel plated compression plates are resistant to rusting.

Supplied individually.

### Applications

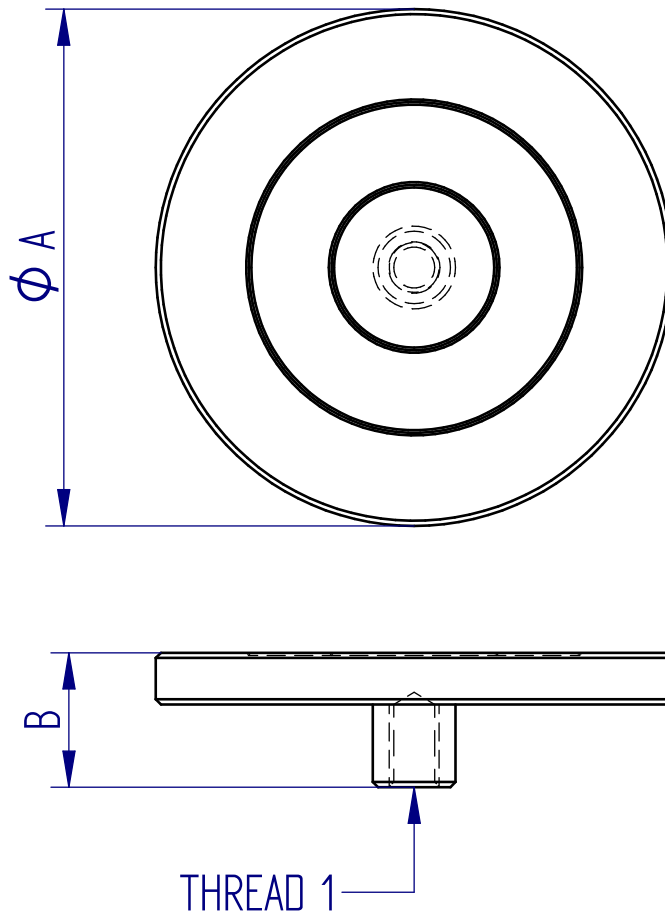
Used for compression testing of:

- metals
- mortar
- cement
- plaster

### Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
432-119	5 kN	500 kgf	1100 lbf	10-32 UNF	12 mm	0.47"	12 mm	0.47"	6 g	0.01 lb
432-188-F95	5 kN	500 kgf	1100 lbf	M6	12 mm	0.47"	12 mm	0.47"	5 g	0.01 lb
432-121	5 kN	500 kgf	1100 lbf	10-32 UNF	19 mm	0.75"	16 mm	0.63"	12 g	0.03 lb
432-125	5 kN	500 kgf	1100 lbf	5/16 UNC	19 mm	0.75"	19 mm	0.75"	17 g	0.04 lb
432-005	5 kN	500 kgf	1100 lbf	M6	19 mm	0.75"	16 mm	0.63"	10 g	0.02 lb
432-343	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	79 g	0.17 lb
432-344	5 kN	500 kgf	1100 lbf	5/16 UNC	50mm	1.97"	16 mm	0.63"	84 g	0.19 lb

## Dimensions mm (inch)



FS 58553

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## Rubber-Faced Compression Plates



### Description

The rubber-faced compression plate has a rubber layer which helps to prevent damage to the sample that would occur from metal contact during a compression test. Also increases grip at the point of force application on low friction or curved specimens.

Supplied individually.

### Applications

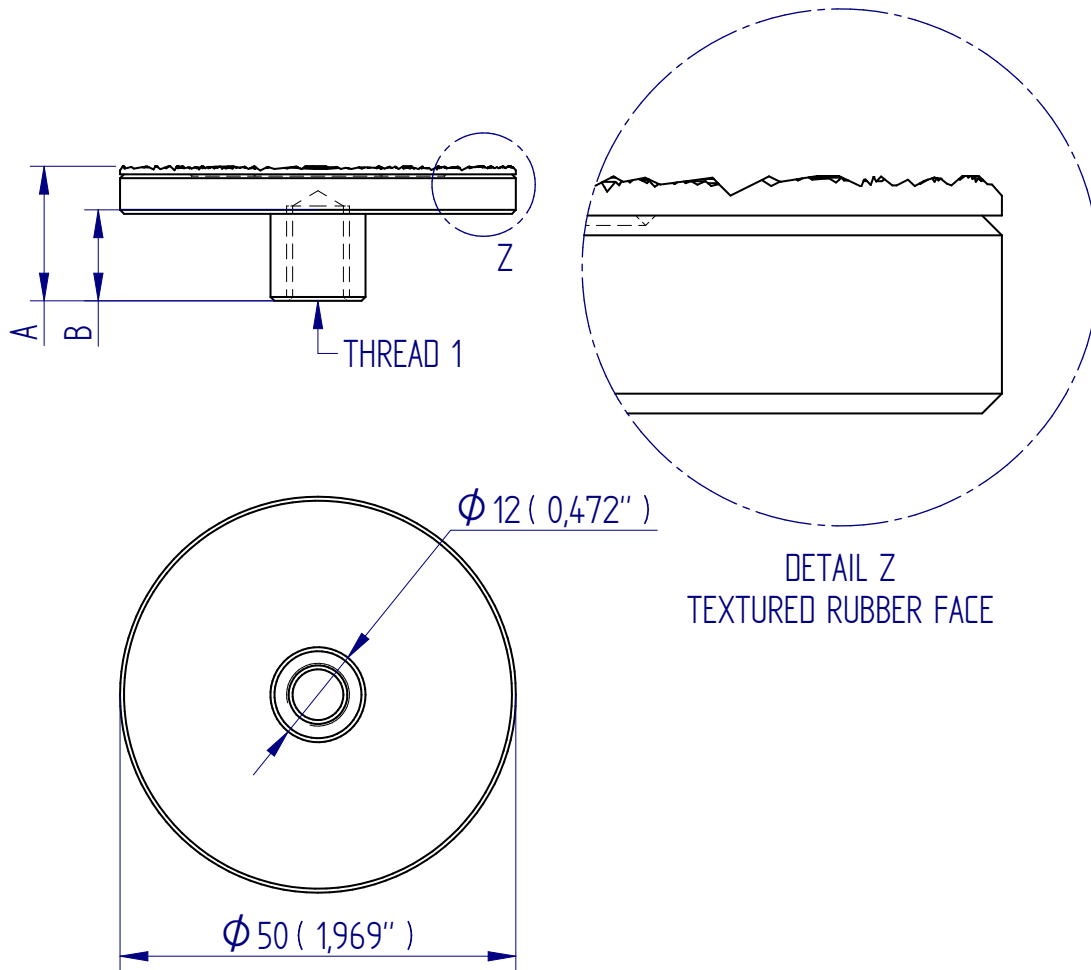
Used for compression testing of components:

- metals
- glass
- slippery or curved samples

### Specifications

Part No.	Load Capacity			Thread 1	Diameter Ø		Height (A)		Height (B)		Weight	
432-219	2.5 kN	250 kgf	550 lbf	5/16 UNC	50 mm	1.97"	17 mm	0.67"	17 mm	0.67"	84 g	0.19 lb
432-220	500 N	50 kgf	110 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.52"	13 mm	0.51"	—	—

## Dimensions mm (inch)



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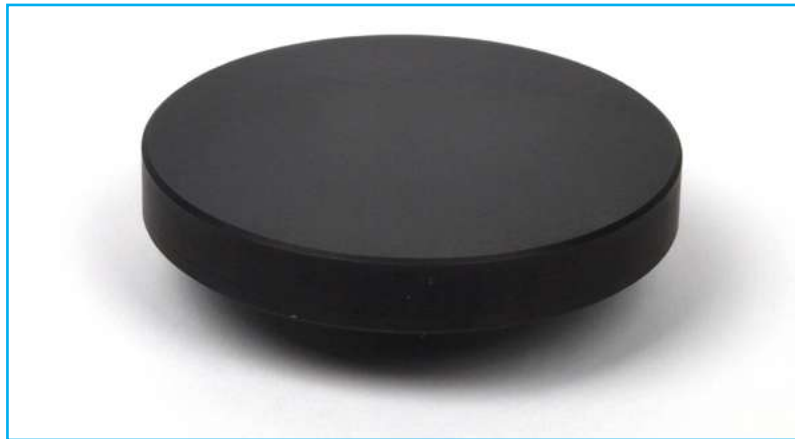
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# Hardened and Ground Compression Plates



## Description

Hardened and ground compression plates have a smooth, scratch-proof surface ideal for compression testing on samples that could damage a standard compression plate, such as metal springs.

Supplied individually.

## Applications

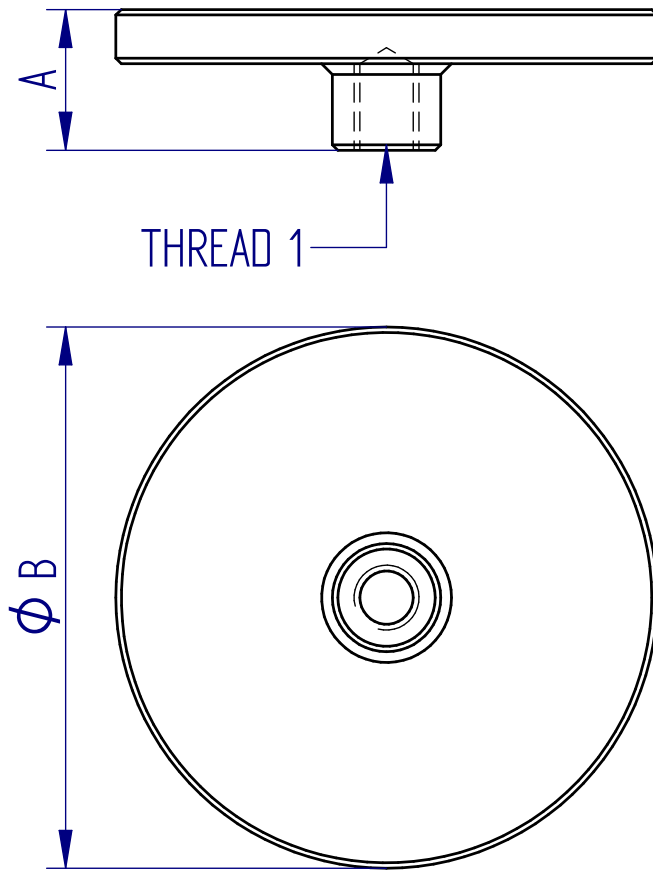
Used for compression testing of:

- springs
- bottles
- cans
- polymer foams

## Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
	kN	kgf	lbf		mm	"	mm	"	g	lb
432-197	5	500	1100	M6	50	1.97"	13	0.51"	—	—
432-336	5	500	1100	10-32 UNF	12	0.47"	12	0.47"	6	0.01
432-337	5	500	1100	10-32 UNF	19	0.75"	12	0.47"	12	0.03
432-338	5	500	1100	5/16 UNC	70	2.76"	20	0.79"	301	0.66
432-341	5	500	1100	5/16 UNC	100	3.94"	20	0.79"	624	1.37
432-446	5	500	1100	5/16 UNC	175	6.89"	20	0.79"	2	4.41
432-172-F95	5	500	1100	10-32 UNF	50	1.97"	13	0.51"	—	—

## Dimensions



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## Compression Plates, QC fitting



### Mec23-Al Aluminium plate

- For soft samples, cardboards, plastics, etc.
- Aluminium anodized
- Max capacity depends on the size of coupling

### Ordering information

Scope of delivery: 1 plate

Item No.	Diameter	Coupling	Weight / each plate
Mec23-56-B-Al	56 mm	B*	~0.1 kg
Mec23-96-B-Al	96 mm	B*	~0.3 kg
Mec23-116-B-Al	116 mm	B*	~0.4 kg
Mec23-156-B-Al	156 mm	B*	~0.6 kg
Mec23-196-B-Al	196 mm	B*	~1.2 kg
Mec23-246-B-Al	246 mm	B*	~1.5 kg
Mec23-296-B-Al	296 mm	B*	~3.3 kg

Plates with other dimensions and surfaces on request



### Mec23-St Steel plate

- For hard materials, steel, plastics, stone, etc.
- hardened steel 58 HRC, nickel plated
- Max capacity depends on the size of coupling

### Ordering information

Scope of delivery: 1 plate

Item No.	Diameter	Coupling	Weight / each plate incl. 1 pin
Mec23-56-B-St	56 mm	B*	~0.3 kg
Mec23-96-B-St	96 mm	B*	~0.7 kg
Mec23-116-B-St	116 mm	B*	~1.1 kg
Mec23-156-B-St	156 mm	B*	~1.6 kg
Mec23-196-B-St	196 mm	B*	~4.0 kg
Mec23-246-B-St	246 mm	B*	~4.3 kg
Mec23-296-B-St	296 mm	B*	~9.0 kg
Mec23-344-B-St	344 mm	B*	~25 kg

Plates with other dimensions and surfaces on request

### Description of Item number: Mec23-A-B-C

**A** Diameter of plate [mm] 56, 96, 116, 156, 196...etc

**B\*** Coupling: Female= Af [mm] 15.9, 19.1, 20, 30, 31.8, 32, 36, 40 ...  
(Adapter) Male=Am [mm] Am15.8, Am20, Am31.7 ....

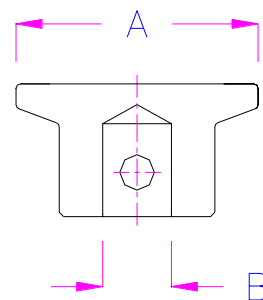
**C** Material: Al = Aluminum St = Steel

Mec23 Plates are rigid platens. For self adjusting plates see MecS223

Mec23 and MecS223 plates can be combined.

Ordering Information for combination rigid + self adjusting plate:

0.5 pair Mec23 + 1x MecS223



Examples for other versions and special solutions



Mec23-116-Af159-Al with additional adapter  
MecS626-158-158



Mec23-156-Af38-Ni: Nickel plated steel plate



Mec23-156-Am20-St



Mec23-196-Af30-St-20xM8  
Steel plate with M8 thread



Mec23-20-Am12-St



Mec23-56-Af159-V2A



Mec23 nickel plated

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



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## Compression Plates, Rectangular, QC fitting

### Mec36



#### Mec36-Al Aluminum compression plate

- Soft samples, cardboards, plastics, etc.
- Aluminium anodised
- Max capacity:  
with QC 20 bore-hole = 25 kN  
with QC 32 bore-hole = 50 kN
- Scope of supply 1 plate

#### Mec36L Aluminum plate

- Perforated plate allows air to be released when sample is compressed - suitable for foam testing
- Aluminium anodised
- Diameter of holes: 6 mm spaced every 20 mm
- Max capacity:  
with QC 20 bore-hole = 25 kN  
with QC 32 bore-hole = 50 kN
- Scope of supply 1 plate

#### Mec36-St Steel compression plate

- For hard materials, steel, plastics, stone, etc.
- Hardened steel
- Max capacity:  
with QC 20 bore-hole = 25 kN  
with QC 32 bore-hole = 50 kN
- Scope of supply 1 plate

Item No.	Dimensions	Weight
Mec36-50-Al	50 x 50 mm	0.20 kg
Mec36-100-Al	100 x 100 mm	0.52 kg
Mec36-120-Al	120 x 120 mm	0.78 kg
Mec36-120x180-Al	120 x 180 mm	1.14 kg
Mec36-125x250-Al	125 x 250 mm	1.73 kg
Mec36-150-Al	150 x 150 mm	1.23 kg
Mec36-150x300-Al	150 x 300 mm	2.35 kg
Mec36-200-Al	200 x 200 mm	2.10 kg
Mec36-250-Al	250 x 250 mm	3.40 kg
Mec36-300-Al*	300 x 300 mm	4.35 kg
Mec36-350-Al*	350 x 350 mm	6.60 kg
Mec36-400-Al*	400 x 400 mm	8.70 kg

Item No.	Dimensions	Weight
Mec36L-150-L6x20	150 x 150 mm	1.10 kg
Mec36L-200-L6x20	200 x 200 mm	1.95 kg
Mec36L-400-L6x20	400 x 400 mm	8.20 kg

Item No.	Dimensions	Weight
Mec36-100-St	100 x 100 mm	1.54 kg
Mec36-196-St	196 x 196 mm	6.60 kg
Mec36-246-St*	246 x 246 mm	10.40 kg
Mec36-296-St*	296 x 296 mm	13.60 kg
Mec36-396-St*	396 x 396 mm	33.00 kg
Mec36-396x496-St*	396 x 496 mm	41.00 kg
Mec36-396x596-St*	396 x 596 mm	50.00 kg

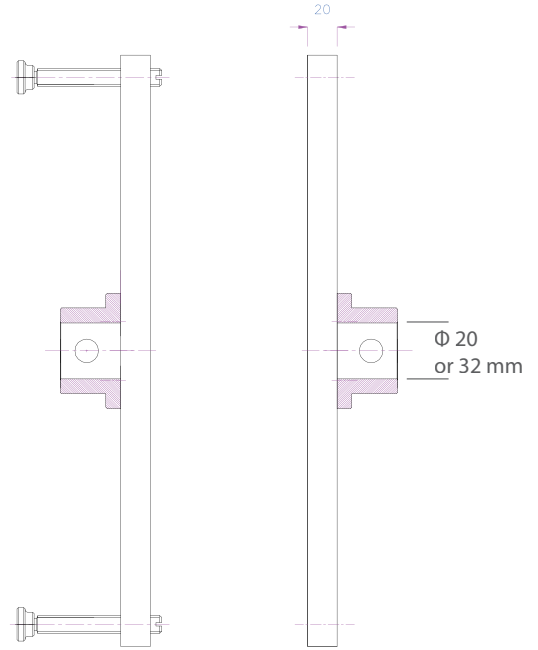
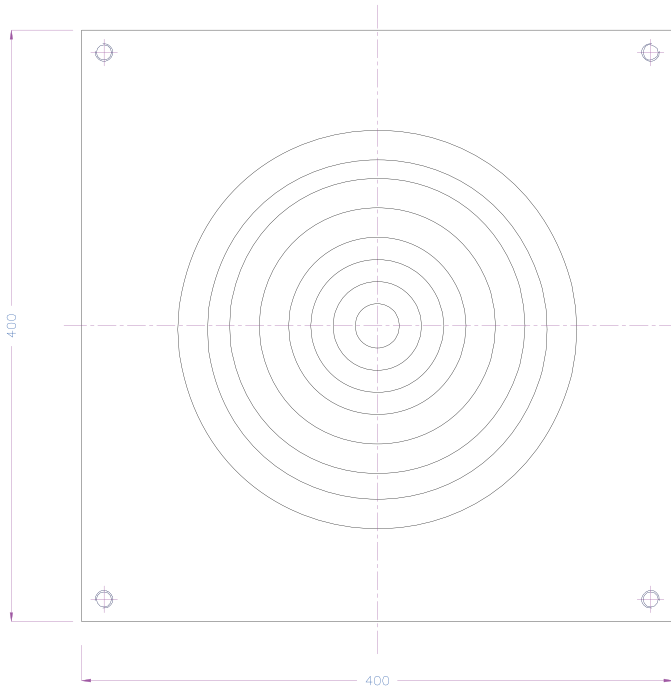
\*Supplied with fixing legs and hole in each corner to assist with mounting of large plates

Further dimensions and versions on request

Note: When ordering any of the above plates specify whether you require it to be fitted with a QC-20 or QC-30 mm diameter bore-hole adapter.

## Dimensions mm (inch)

Example drawing: Mec36-400-AL



TH 36 – 400

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



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## Vented Compression Plates



### Description

Vented compression plates are ideal for top-load/crush testing of containers such as PET bottles. Two circular vents allow air to escape from the container during compression and an integrated nose cone helps to position containers centrally, minimising bottle slippage during testing. These compression plates are suitable for bottles with necks up to 50 mm (1.97") in diameter.

Supplied individually.

### Applications

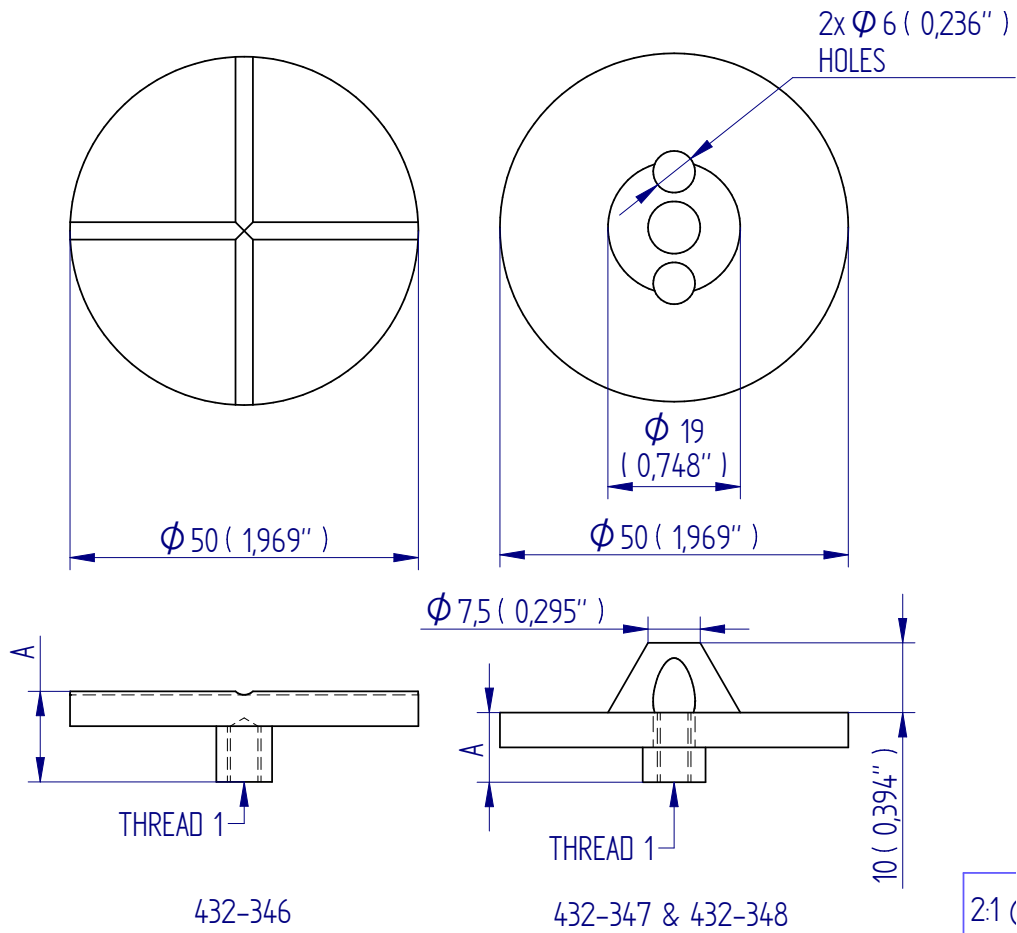
Used for compression testing of:

- plastic bottles
- PET containers

### Specifications

Part No.	Load Capacity			Thread 1	Diameter Ø		Height (B)		Weight	
432-346	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	13 mm	0.51"	50 g	0.11 lb
432-347	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	20 mm	0.79"	50 g	0.11 lb
432-348	5 kN	500 kgf	1100 lbf	5/16 UNC	50 mm	1.97"	22 mm	0.87"	50 g	0.11 lb

## Dimensions mm (inch)



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## Self-levelling Compression Plates, QC fitting

### MecS223

Self-levelling compression plates are ideal for precise compression testing on a range of materials and finished products. Self-levelling allows exact parallelism to be set between the upper and lower plates—ideal for those applications where it is critical to accurately measure the deformation of a sample.

The MecS223 range of hardened steel self-levelling plates features a spherical seating mechanism which allows the plate to 'float' and adjust to the specimen geometry during the compression test. Alternatively there are 4 nuts which can lock the self-levelling plate in position when it has been set completely parallel to the opposite 'fixed' plate (type Mec23).

MecS223k self-levelling plates are fitted with QC-20 mm bore hole adaptors suitable for compressive load applications up to 25kN (e.g. metals, rigid plastics etc.).

MecS223g self-levelling plates are fitted with QC-32 mm bore hole adaptors suitable for compressive load applications up to 50kN (e.g. metals, concrete etc.).

#### Ordering Information

Scope of delivery: 1 plate

##### MecS223k for 20 mm coupling (B)

Item No.	Diameter (A)	Weight
MecS223k-56	56 mm	~ 1.27 kg
MecS223k-96	96 mm	~ 1.4 kg
MecS223k-116	116 mm	~ 1.7 kg
MecS223k-156	246 mm	~ 2.7 kg
MecS223k-196	196 mm	~ 3.95 kg

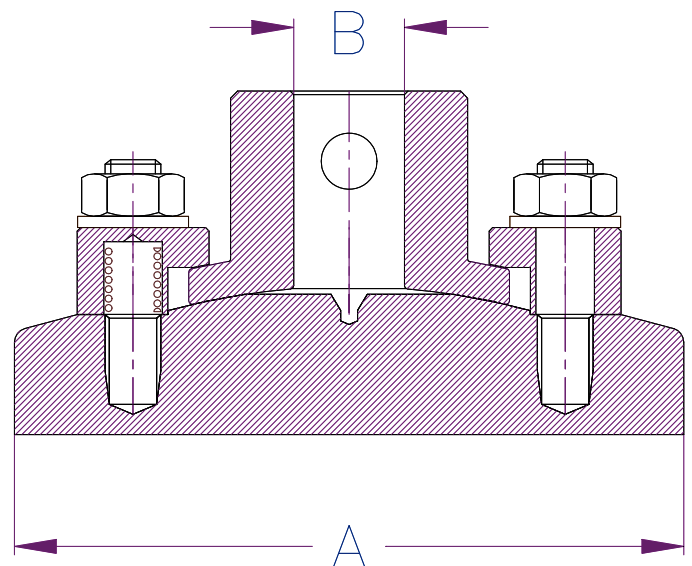
##### MecS223g for 32 mm coupling (B)

Item No.	Diameter (A)	Weight
MecS223g-56	56 mm	~ 5.3 kg
MecS223g-96	96 mm	~ 6.1 kg
MecS223g-116	116 mm	~ 6.5 kg
MecS223g-156	156 mm	~ 7.1 kg
MecS223g-196	196 mm	~ 7.4 kg

Other dimensions on request



MecS223▲



The fixed plate Mec23 can be combined with a MecS223 self-levelling plate to form a pair of plates between which specimens are compressed.



MecS223k-116



Mec23-56-B-St Fixed  
Compression Plate 56mm  
diameter with QC-32mm bore-  
hole



Mec23-116-B-St Fixed  
Compression Plate 116mm  
diameter with QC-20mm bore-  
hole



MecS223g-56

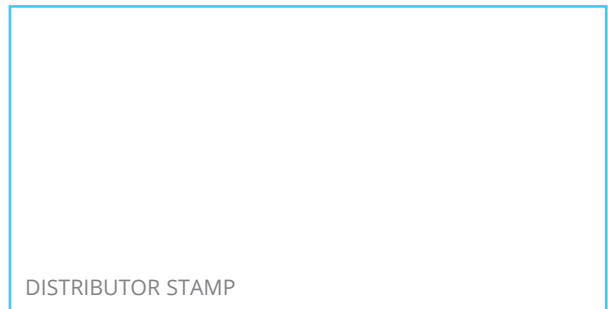
Examples of MecS223 self-levelling compression plates used in combination with Mec23 'fixed' compression plates

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



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# Self-levelling Compression Plate



## Description

Self-levelling compression plates are ideal for general compression testing on a range of materials and finished products. Self-levelling allows parallelism to be set for those applications where it is critical to accurately measure the deformation of a sample, or where the sample has faces that are not exactly parallel and conventional plates would put an undue load on a very small area, causing a premature failure.

Supplied individually.

## Applications

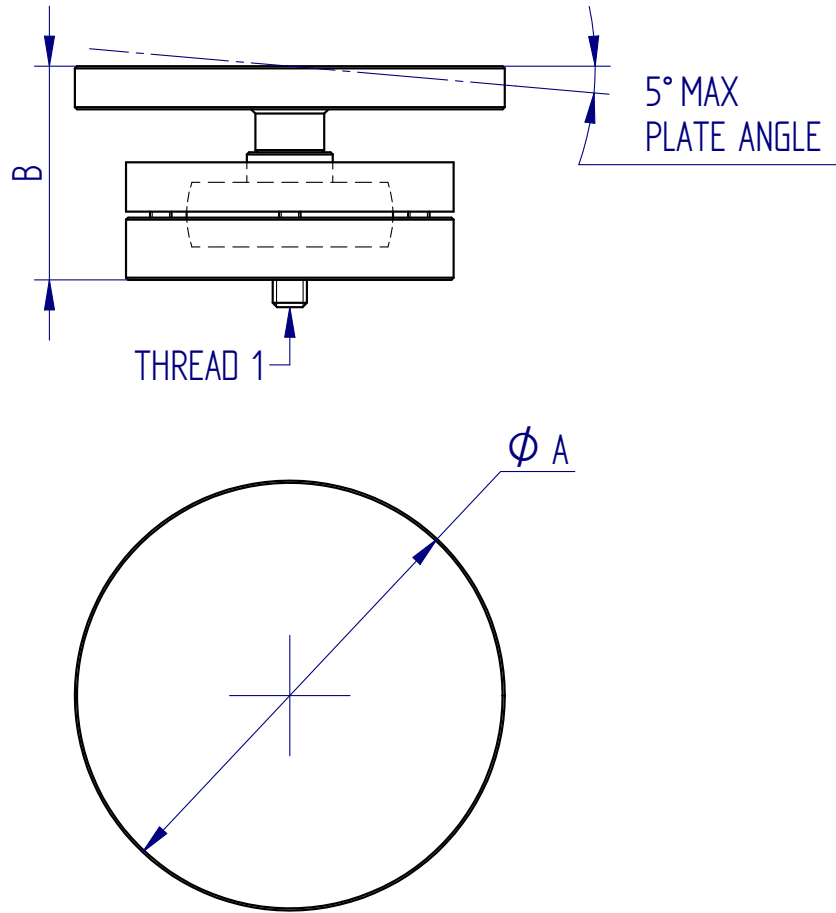
Used for compression testing of:

- metals
- cylinders
- springs
- cans
- polymer foams
- curve-faced samples

## Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Height (B)		Weight	
	5 kN	500 kgf	1100 lbf		50 mm	1.97"	38 mm	1.50"	450 g	0.99 lb
432-349	5 kN	500 kgf	1100 lbf	10-32 UNF	50 mm	1.97"	38 mm	1.50"	450 g	0.99 lb
432-350	5 kN	500 kgf	1100 lbf	5/16 UNC	70 mm	2.76"	50 mm	1.97"	—	—
432-351	5 kN	500 kgf	1100 lbf	5/16 UNC	100 mm	3.94"	50 mm	1.97"	—	—
432-352	5 kN	500 kgf	1100 lbf	5/16 UNC	175 mm	6.89"	50 mm	1.97"	2.2 kg	4.9 lb

## Dimensions mm (inch)



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## Radiused Probes



### Description

Radiused probes are used to perform penetration or puncture tests on a wide range of products. The radiused tip is specifically designed for penetrometry tests, including the determination of the firmness and ripeness of foods. Also used for cosmetics and similar products with measured texture attributes.

### Applications

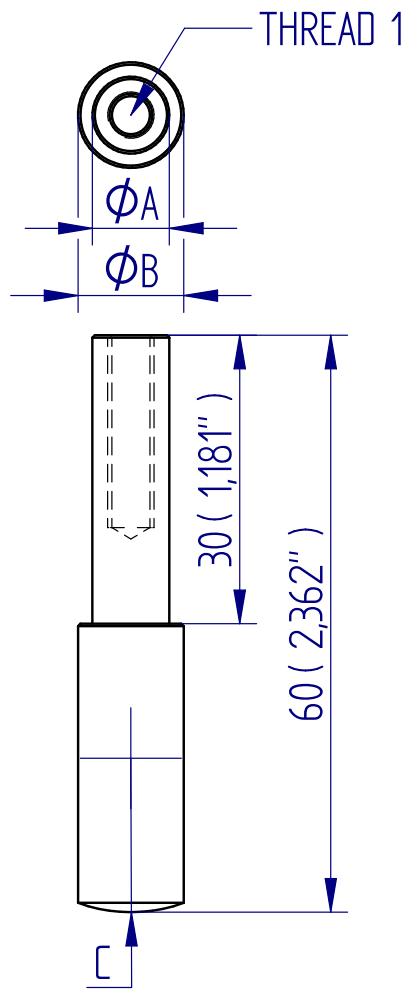
Used for penetration and puncture testing of:

- Baked goods
- Dairy products
- Fruit and vegetables
- Confectionery
- Cosmetics

### Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Diameter (ØB)		Length	
432-354	500 N	50 kgf	110 lbf	10-32 UNF	6 mm	0.24"	8 mm	0.31"	60 mm	2.36"
432-355	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	11 mm	0.43"	60 mm	2.36"

## Dimensions mm (inch)



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## Cone Points



### Description

Cone points are designed for puncturing, spreading and compressing samples.

### Applications

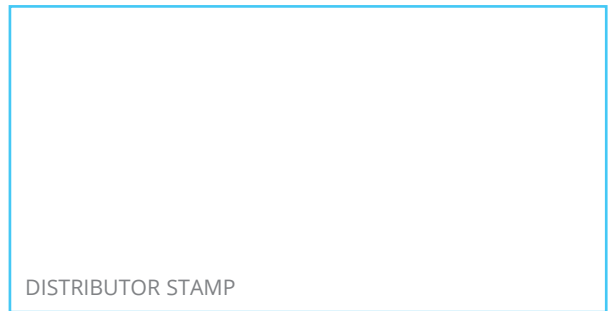
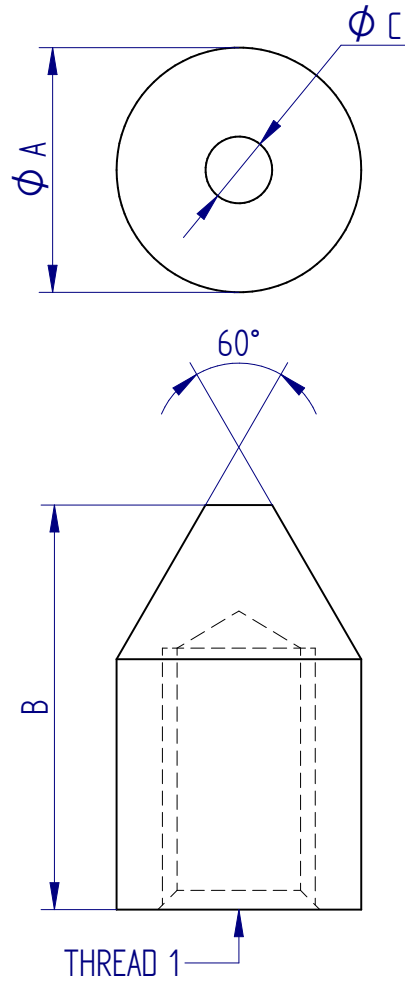
Used for compression testing of:

- Packaging
- Food products
- Cosmetics

### Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØA)		Length (B)		Diameter (ØC)		Weight	
432-358	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14 mm	0.55"	0.5 mm	0.02"	2 g	0.004 lb
432-359	2.5 kN	250 kgf	550 lbf	5/16 UNC	12 mm	0.47"	21mm	0.83"	3.5 mm	0.14"	12 g	0.020 lb

## Dimensions mm (inch)



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## Chisel Points



### Description

Chisel points are used for puncturing and splitting samples, e.g. a typical application would be a 'cleave test' on eye liner pencils.

### Applications

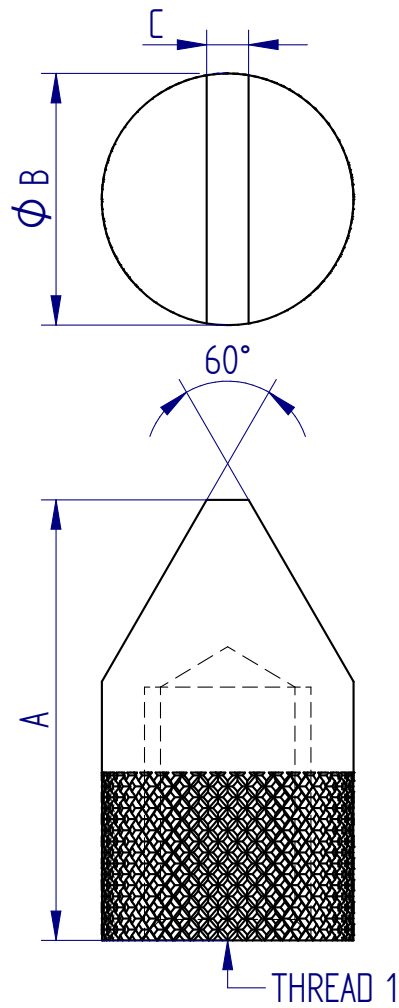
Used for compression testing of:

- Packaging
- Food products
- Cosmetics

### Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØB)		Length (A)		Tip Width (C)		Weight	
432-360	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14mm	0.55"	0.5 mm	0.02"	3 g	0.006 lb
432-361	2.5 kN	250 kgf	550 lbf	5/16 UNC	12 mm	0.47"	21mm	0.83"	2 mm	0.08"	12 g	0.020 lb

## Dimensions mm (inch)



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## Inverted Chisel Points



### Description

The inverted chisel is designed for compression testing of samples of a curved or rounded shape in cross-section.

### Applications

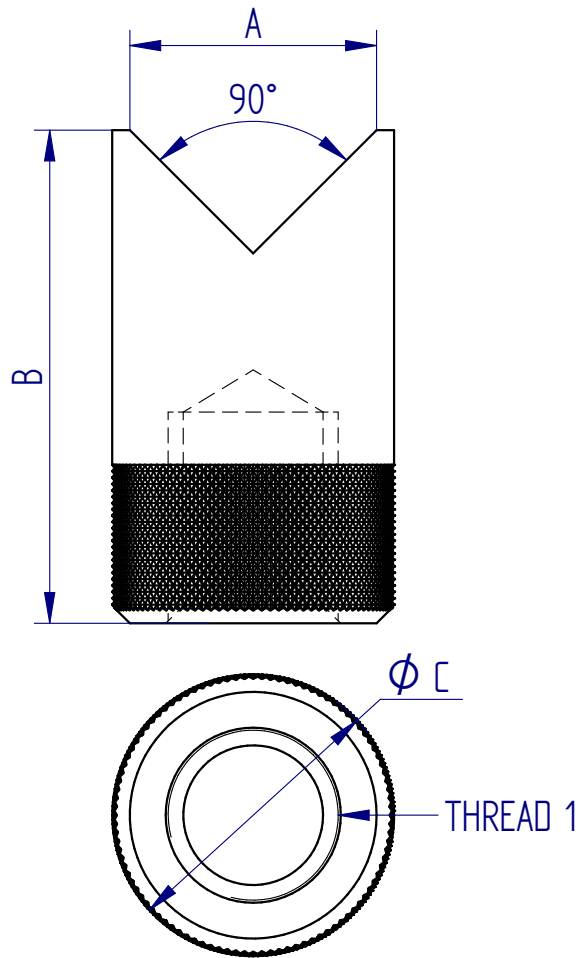
Used for compression testing of:

- Pipes
- Tubes

### Specifications

Part No.	Load Capacity			Thread 1	Diameter (ØC)		Length (B)		Width (A)		Weight	
432-356	500 N	50 kgf	110 lbf	10-32 UNF	8 mm	0.31"	14 mm	0.55"	7 mm	0.28"	3 g	0.006 lb
432-357	2.5 kN	250 kgf	550 lbf	5/16 UNC	11 mm	0.43"	21 mm	0.83"	10 mm	0.39"	13 g	0.030 lb

## Dimensions mm (inch)



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# Set of 15 needles for Shotcrete Penetrometer



## Description

Set of 15 needle points for use with the Mecmesin shotcrete penetrometer to test sprayed or poured concrete during the first few hours of development as a reliable indication of compressive strength.

## Applications

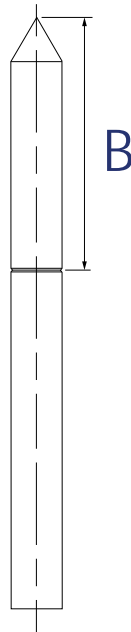
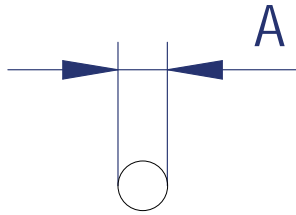
Used to determine the compressive strength of:

- sprayed concrete

## Specifications

Part No.	Needle Diameter (A)	Exposed Needle Length (B)
432-519	3 mm (0.118")	15 mm (0.59")

## Dimensions mm (inch)



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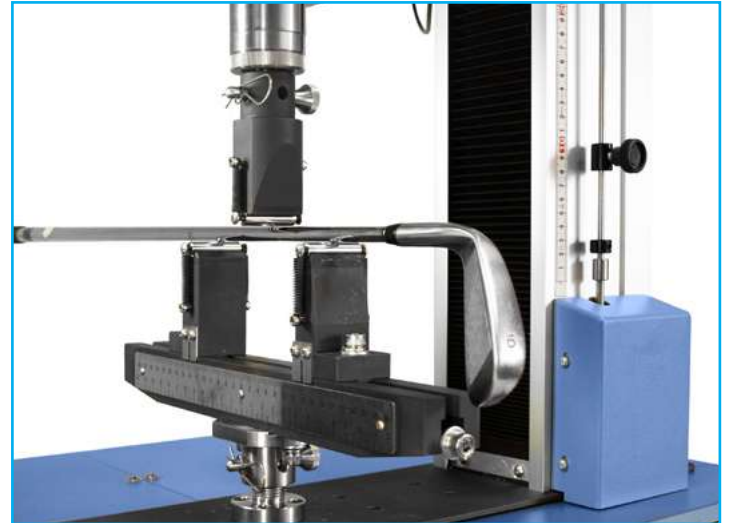
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## 20 kN 3-Point Bend Jig, QC fitting



### Description

The 20 kN 3-point bend jig is ideal for performing a variety of flexure tests on medium-stiffness samples. It includes two lower support-anvils, which are adjustable and one upper anvil to apply load to the sample. The support beam is graduated lengthways in metric and imperial units for accurate positioning of the anvils.

### Applications

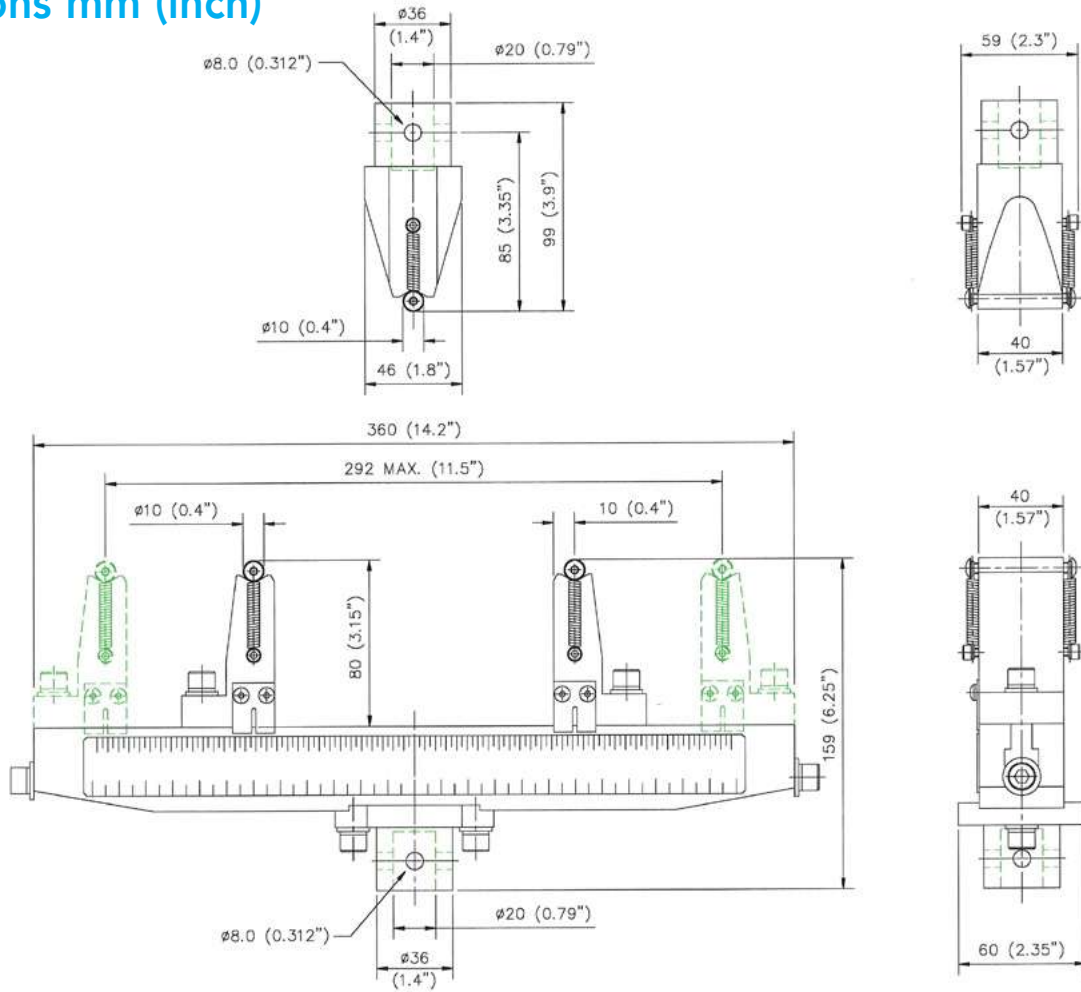
Used to determine the flexural properties of rigid and semi-rigid materials:

- ceramics
- glass
- composites
- plastics
- flexible sheet materials
- wood
- films

### Specifications

Part No.	Load Capacity			Post Ø	Anvil Width		Anvil Radius		Bending Span		Length		Weight	
432-266	20 kN	2000 kgf	4500 lbf	QC 20 mm	50 mm	2.28"	10 mm	0.4"	24 mm - 300 mm	0.94" - 11.81"	380 mm	14.96"	12.4 kg	29.46 lb

## Dimensions mm (inch)



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



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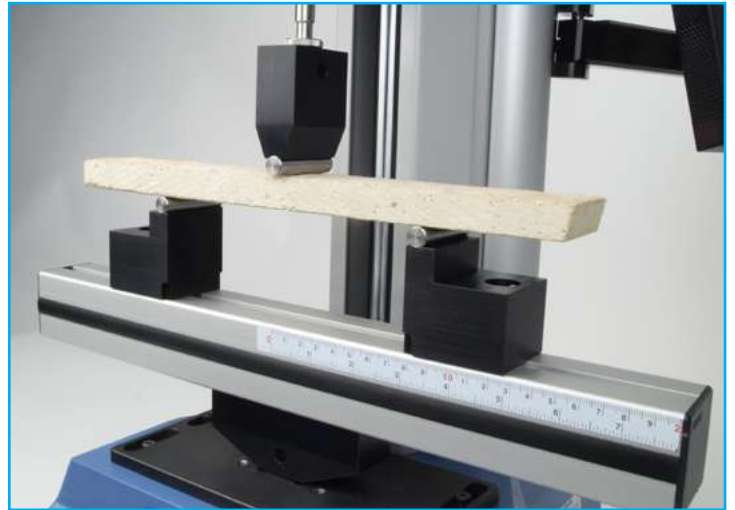
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## 2.5 kN 3-Point Bend Jig



### Description

The 2.5 kN 3-point bend jig is an easy-to-use fixture that relies on the test machine to maintain alignment between the top and bottom parts.

### Applications

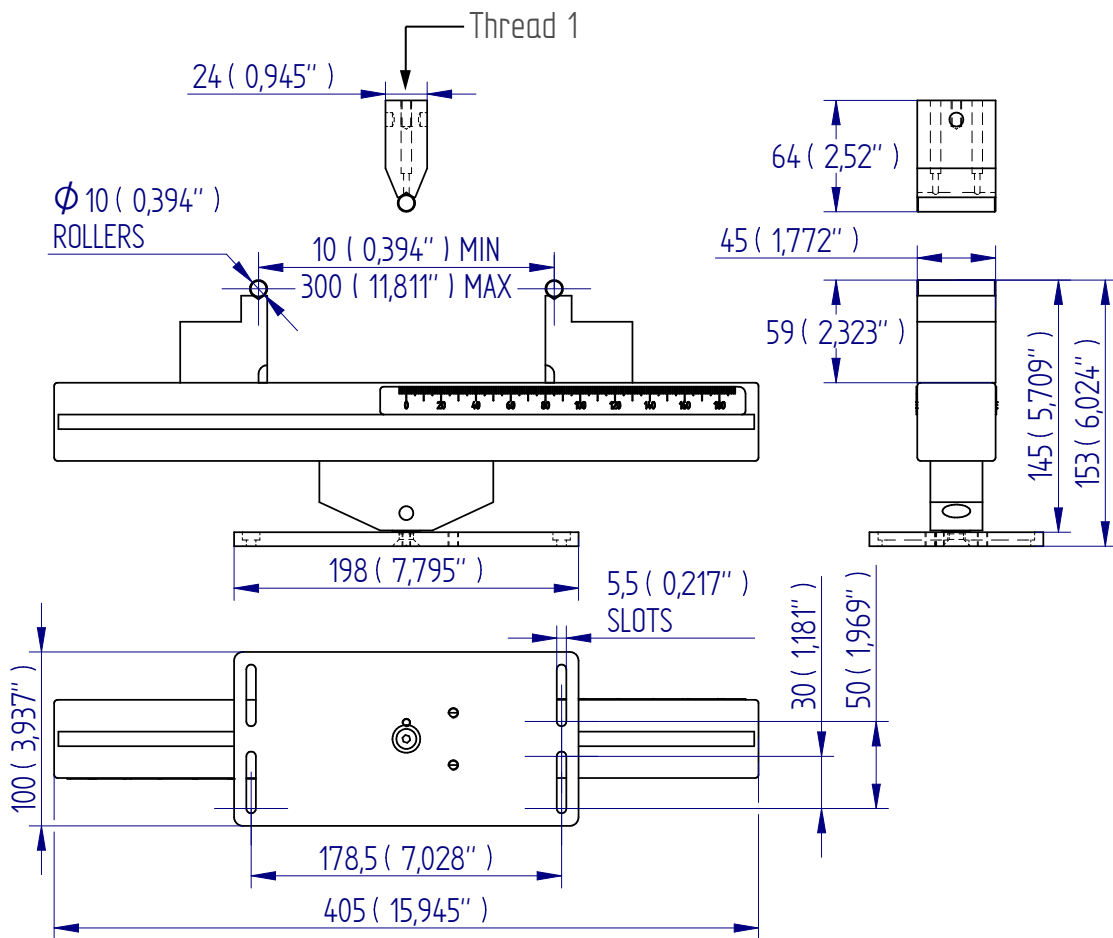
Used to determine the flexural properties of rigid and semi-rigid materials:

- ceramics
- glass
- composites
- plastics
- flexible sheet materials
- wood
- films

### Specifications

Part No.	Load Capacity			Thread 1	Anvil Width	Anvil Radius		Bending Span		Length		Weight		
432-151	2.5 kN	250 kgf	550 lbf	M6	45 mm	1.77"	5 mm	0.2"	10 mm - 300 mm	0.39" - 11.81"	405 mm	15.9"	3 kg	6.6 lb

## Dimensions mm (inch)



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# 1 kN 3-Point Bend Jig



## Description

The 1 kN 3-point bend jig is a lightweight three-point bend assembly with 60 mm high arms and 120 mm support span. Ideal for most snapping applications including food texture applications. Recommended for use with 'S' Beam type load cells where forces are below 1 kN.

## Applications

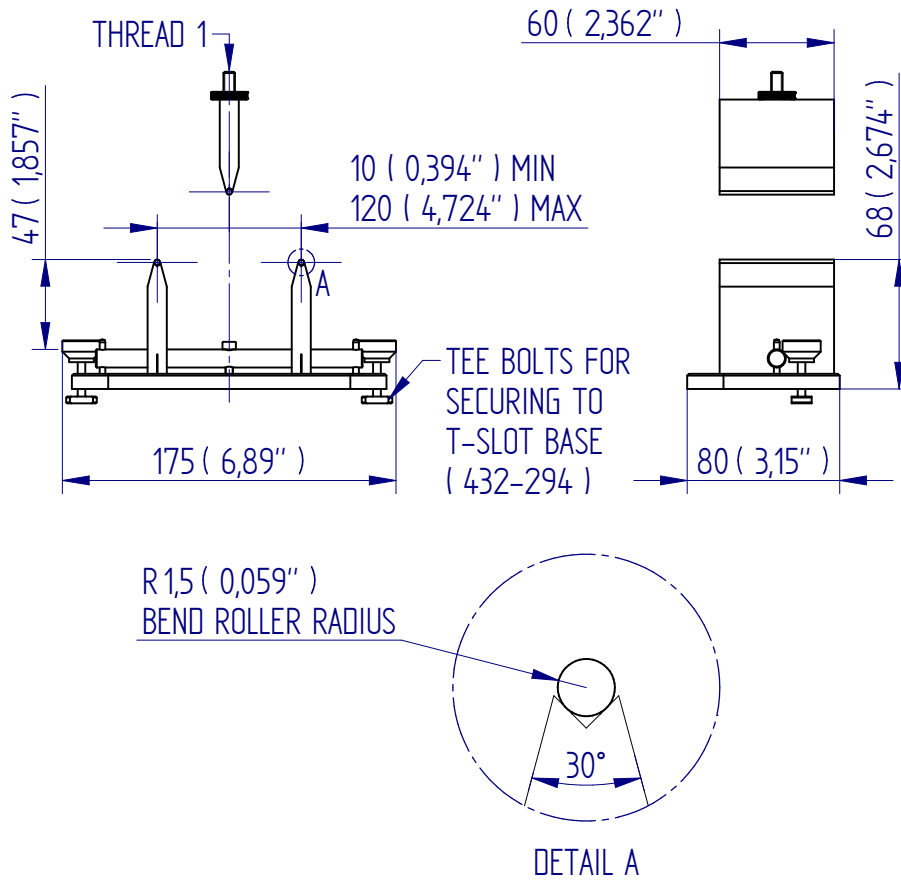
Used to determine the flexural and snap properties of:

- food products
- flexible materials

## Specifications

Part No.	Load Capacity			Anvil Radius		Anvil Width		Weight	
432-248	1 kN	100 kgf	225 lbf	1.5 mm	0.059"	120 mm	4.7 mm	653 g	1.43 lb
432-294	Base plate to attach bend jig to test stand					792 g	1.75 lb		

## Dimensions mm (inch)



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## 2.5 kN Bend Jig, QC fitting

### Mec238 - aluminium

A 2.5 kN Bend Jig in aluminium having a bending span up to 150 mm and a beam width of 30 mm.

A comprehensive selection of Mec238 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 a QC-20 fixing post.

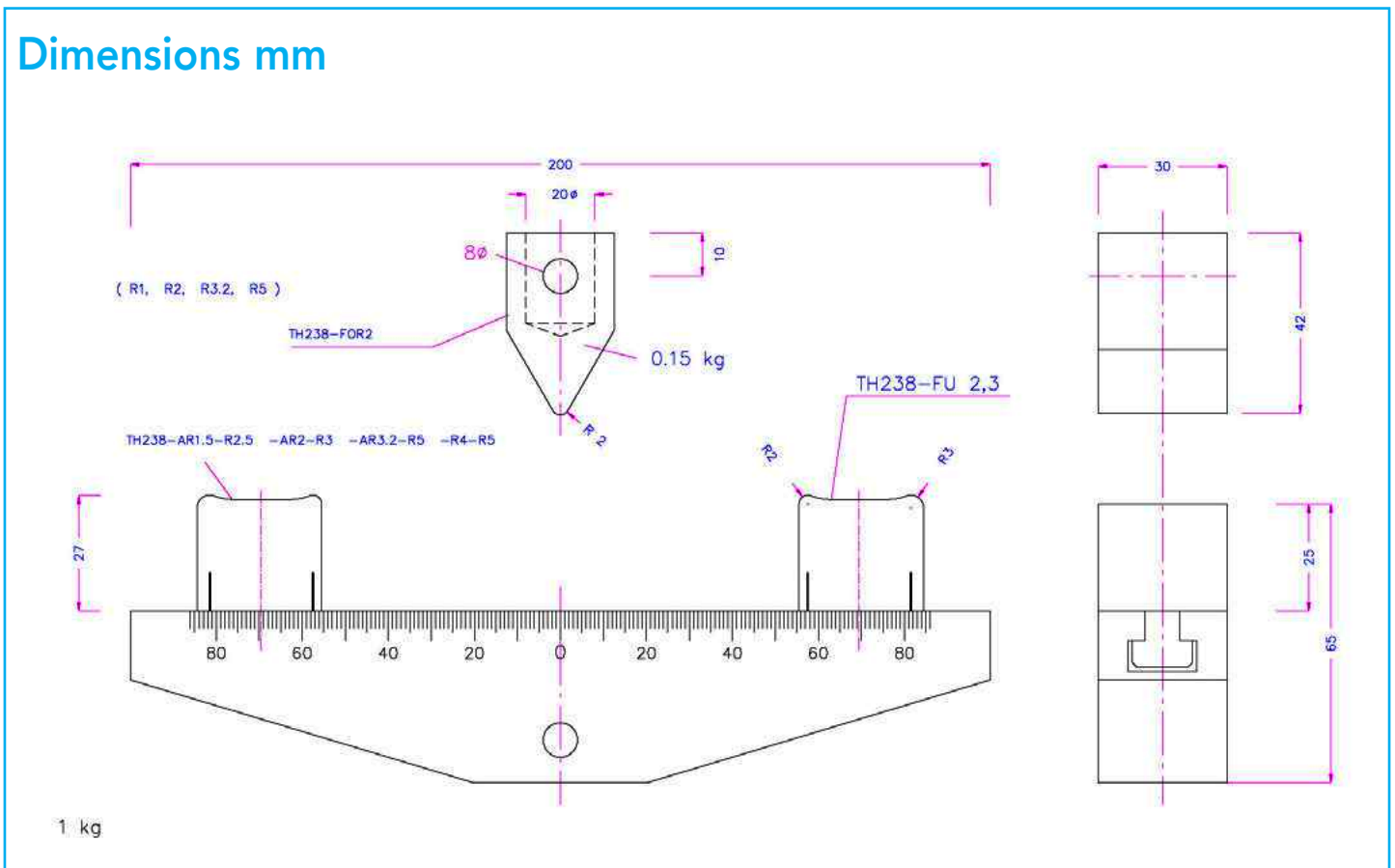
Below you will see an example configuration showing:



- 'Lower' anvils Type A = 'dual' anvil having milled edge radii of 2mm and 3mm
- 'Upper' anvil Type O = single anvil having milled edge radius of 2mm
- 'Lower' bending beam (B) of 150mm length with QC-20 bore hole

This generates a combined part number of : Mec238-AR3R2-OR2-B150-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.

## Bend jig configurations

### 3-point bending jig

Lower radii 1, 2, 3, 4, 5, 8, 10  
Upper radius 0.5, 1, 2, 3, 4, 5, 8, 10



### 4-point bending jig with interchangeable rollers on CX anvils



### 4-point bending jig with interchangeable rollers Lower AX supports Upper CX supports Width 30 mm



### Interchangeable rollers diameter 6 mm, width 100 mm



### 300 mm beam with supports for interchangeable rollers



## Anvils

Anvil with dual milled radii, 2 mm and 5 mm ×2  
Available radius pairs (mm):  
1.5+2.5; 2+3; 2+5; 3.2+5;  
4+5



Anvils with 1 milled radius edge ×2  
Available radius: 0.5; 1; 1.5;  
2; 2.5; 3.2; 5 mm



Special anvils with 1 milled edge ×2  
CR1H130 = radius 1 mm,  
height 130 mm



Anvil for interchangeable rollers ×2  
Diameters 1 to 12.7 mm



Anvil for single interchangeable roller ×2



Flat simple anvil, interchangeable roller, for glass ×2

no image available

Roller, hardened, width 30 mm ×3  
Diameters: 1; 2; 2.5; 3;  
3.175; 4; 4.5; 5; 6; 6.35; 8;  
9; 10; 12; 12.7 mm



Roller with special length + 2 O-Rings + 2 extra pins to fix or magnets to fix 3x56; 3x105; 6x105; 10x105 ×3



## Beams



200 mm lower beam, anodised aluminium ×1

200 mm lower beam, chromed steel ×1

300 mm lower beam, chromed steel ×1

350 mm lower beam, chromed steel ×1

400 mm lower beam, chromed steel ×1

## Removable insert anvils

Articulated lower carrier for removable inserts; can be fixed at an angle ×2



Removable insert for interchangeable roller retained by O-rings ×3



Articulated carrier for removable insert with interchangeable roller retained by O-rings ×2



Flat removable insert for glass ×2 no image available

Removable insert for interchangeable roller retained by O-rings Roller diameter 5 mm on a flat plane area, height 3 mm ×2



Wide fin removable insert for articulated carrier ×3

Radius 2 mm, width 120 mm



Zero-span removable insert ×2



## Upper anvils

Upper anvil with milled radius 1; 1.5; 2; 3; 4; 5; or 12.5 mm ×1



Upper v-notch anvil to carry different diameters ×1  
OX2 holds 1–3.2 mm Ø  
OX8 holds 4–12.7 mm Ø



Articulated upper carrier for removable anvil inserts; can be fixed at an angle For inserts see Mec238-W ×1



Articulated upper carrier with insert for interchangeable rollers retained by O-rings ×1



## Special anvils

Anvil with removable needle-bearing insert ×2



Support with integral roller, centerline radius 5 mm ×2



Support with diameter 10 mm tube, width 100 mm ×2



Support with non-interchangeable 60 mm wide anvil, radius 1.5 mm, for 4-point bend system ×4



## Bend jigs to your own specification

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

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

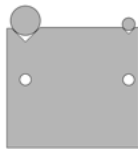
Certain anvil types allow a rocking movement, adjustable angle (articulated), or flat sideways movement. For sharp angle bending (e.g. to 160°) long-fin anvils are available, along with other specialised anvils. Standard anvil types are shown below. (Roller size is denoted by diameter, milled edges are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

### Lower Anvils

#### Type A: dual-radius



A: milled edge

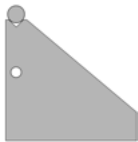


AX: v-notch roller bearings

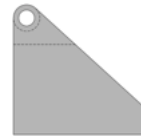
#### Type C: single radius



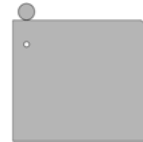
C: milled edge



CX: v-notch roller



CL: captive roller



CM: roller free to traverse

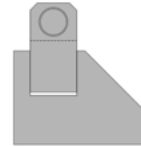
#### Type CW, carrier style



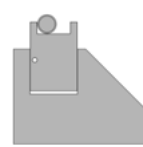
CW: milled edge



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 dimensions
- 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)

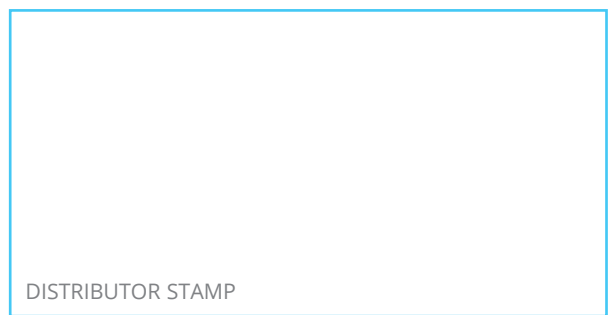
For full details and examples, refer to the datasheets for the three base models: Mec238, Mec103 and Mec22.



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



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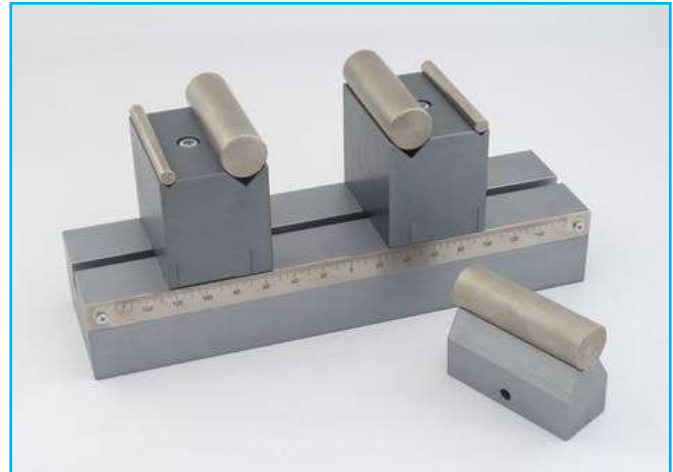
## 50 kN Bend Jig (Aluminium), QC fitting

### Mec22 - aluminium

A 50 kN Bend Jig in steel having a bending span up to 330 mm and beam width of 100 mm.

A comprehensive selection of Mec22 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.

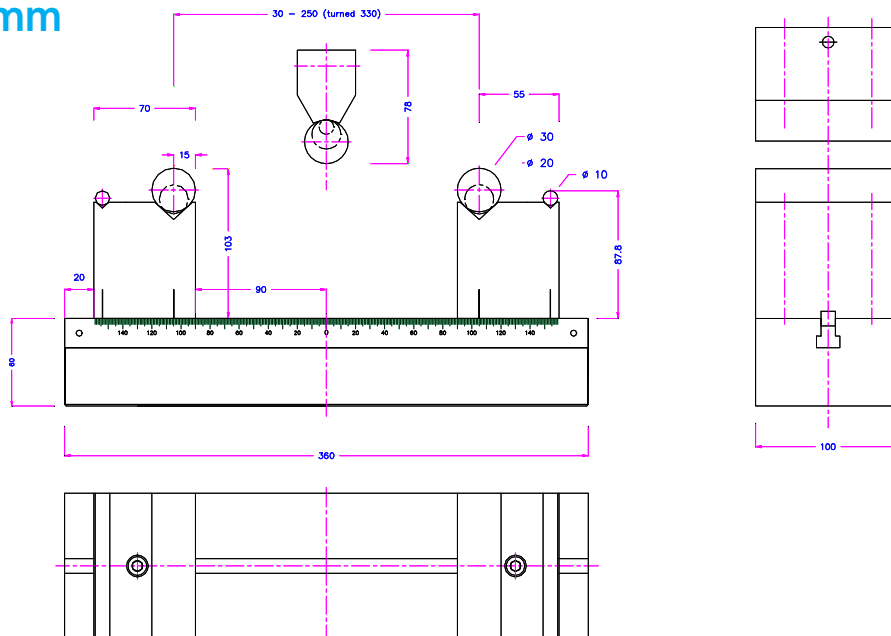


Below you will see an example configuration showing:

- 'Lower' anvils Type AX = 'dual' roller bearings in a v-notch having diameters of 10mm and 30mm
- 'Upper' anvil Type OX = roller bearing in a v-notch having diameter of 30mm
- 'Lower' bending beam (B) of 360mm length with QC-32 bore hole

This generates a combined part number of : Mec22-AX30\_10-OX30-B330-QC32

### 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.

## Example configurations

3-point bend jig, 600 mm beam with AX type lower dual v-notch rollers of diameters 30mm and 10mm. Roller width 160 mm



Upper OX type v-notch roller of 30 mm diameter

4-point bend jig, 1000mm lower beam, 'lower' anvil type C of radius 10mm & height of 200 mm.



'Upper' beam 600mm, 'upper' anvils OWX rollers diameter 20 mm,

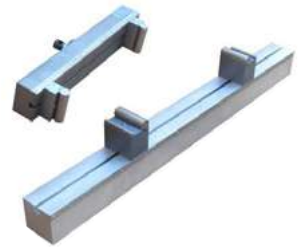
3-point bend jig, 360 mm beam with CW type 'lower' carrier roller of diameter 15mm. Rollers are articulated to provide an adjustable angle for maintaining parallelism during test



4-point bend jig 1200 mm lower beam

'lower' anvil type CX rollers of 20mm.

'Upper' beam 600mm, 'upper' anvils OX rollers diameter 20 mm



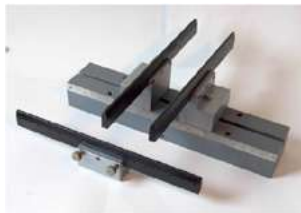
3-point bend jig, 800 mm beam with CX type 'lower' v-notch rollers of diameter 15 mm, width 350 mm. 'Upper' OX roller diameter 30 mm, width 350mm.



4-point bend jig, 1200 mm beam illustrating CWX carrier roller anvils with special articulation on half- bearings to allow sideways movement



3-point bend jig, 500mm beam with CW type 'lower' anvil of milled edge radius 5mm 'Upper' O type anvil also of milled edge radius 5mm. Anvils width 420mm



3-point bend jig, 900 mm beam with CWN 'lower' anvils of dia. 30mm rolling to end-stop, 'upper' anvil OWX with articulated roller



3-point bend jig 1310 mm beam with handles, 'lower' AX v-notch rollers of diameters 10mm & 20mm. 'Upper' type OX v-notch roller of 20mm diameter.



## Anvils

Type C anvil. Nickel-plated hardened steel, milled radius of 2 mm



Type C Nickel-plated hardened steel, milled radius of 5 mm for 4-point bend jig upper beam



Type AX v-notch lower anvil for interchangeable rollers of diameter 8 mm to 35 mm



Nickel-plated hardened steel diameter 30 mm rollers for v-notch anvils



Lower Type AX aluminium v-notch anvils with rollers of diameter 10 mm, 20 mm, and 30 mm



Lower anvil type CL, captive roller diameter 10 mm, height 150 mm



V-notch anvil type CX with roller diameter 50 mm



Lower anvil type CL, captive roller diameter 10 mm, height 200 mm



## Articulated carrier anvils

Lower articulated carrier for removable inserts, aluminium to 50 kN



Upper articulated carrier for removable inserts,



Insert for articulated carrier, width 100 mm, available radii: 2; 5; 10; 15 and 20 mm



Articulated carrier with radius 5 mm insert



Rubber-faced sprung roller insert for articulated carrier, roller radius 30 mm, width 100 mm



V-notch upper anvil for interchangeable rollers available in aluminium or steel



Spring-retained roller on flat bed with end-stops. Type CWN



#### 4-point bend fixtures

Upper beam to convert Mec22 3-point bend jig to 4-point bend



Anvil Support with integral roller, diameter 50 mm, width 50 mm



Upper v-notch carrier for interchangeable rollers for 4-point bending



Upper anvil, nickel-plated hardened steel, milled radius 5 mm



Upper beam hardened steel roller, radius 30 mm, width 100 mm, spring-retained on flat bed, recommended for glass testing



Upper anvil, milled radius 25 mm



Upper beam articulated anvil support.



#### Special accessories

For holder with large adapter size



V-notch adapters for smallest or largest-radius rollers



V-notch upper anvil for interchangeable rollers, diameters: 32, 36, 40, 50 and 60 mm



V-notch diameter reducer



T-nut for mounting anvils on beams, 10 mm x 40 mm



## Bend jigs to your own specification

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

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

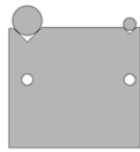
Certain anvil types allow a rocking movement, adjustable angle (articulated), or flat sideways movement. For sharp angle bending (e.g. to 160°) long-fin anvils are available, along with other specialised anvils. Standard anvil types are shown below. (Roller size is denoted by diameter, milled edges are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

### Lower Anvils

#### Type A: dual-radius



A: milled edge

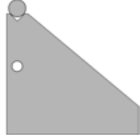


AX: v-notch roller bearings

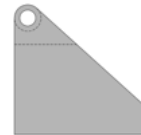
#### Type C: single radius



C: milled edge



CX: v-notch roller



CL: captive roller

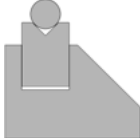


CM: roller free to traverse

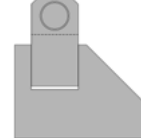
#### Type CW, carrier style



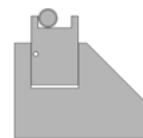
CW: milled edge



CWX: v-notch roller



CWL: captive roller



CWN: roller traverses to stop

### Upper Anvils

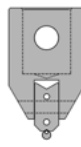
#### Type O



O: milled edge



OX: v-notch roller bearing



OWX: carrier-style v-notch

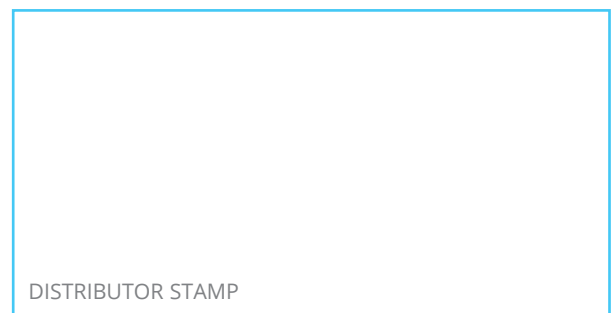
## How to specify your particular bend jig requirement

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 dimensions
- 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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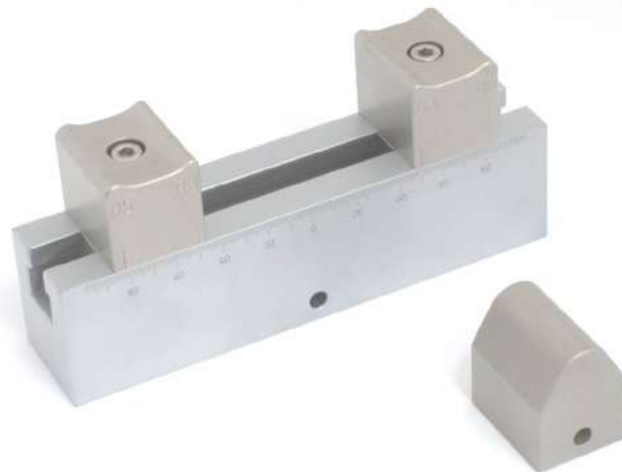
## 50 kN Bend Jig, QC fitting

### 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.

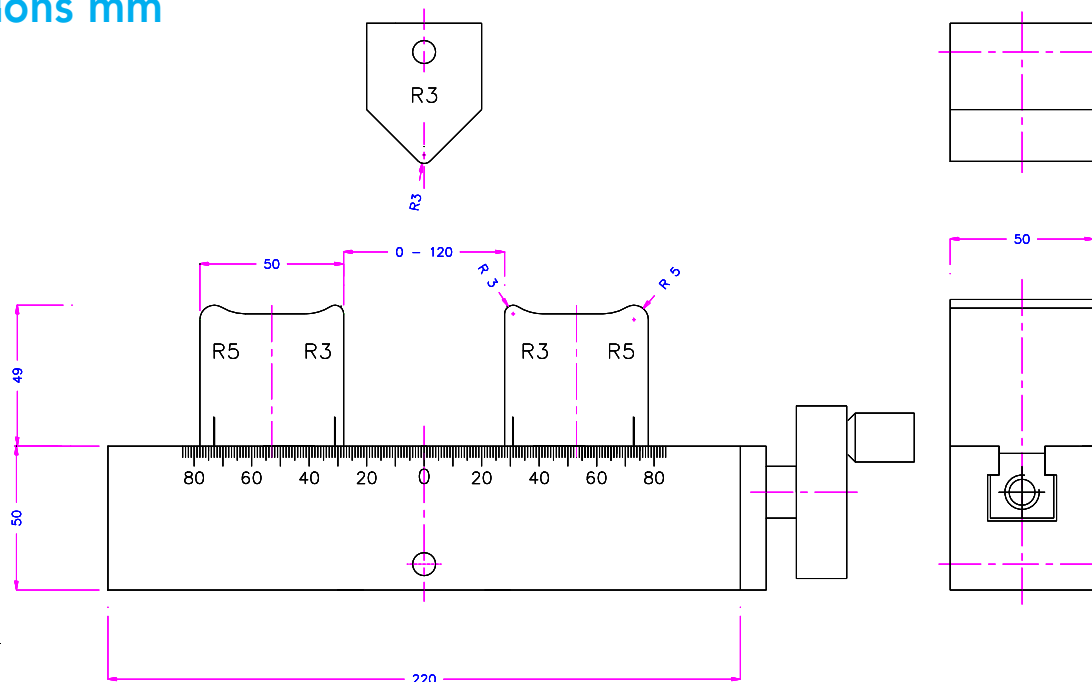


Below you will see an example configuration showing:

- '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).



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.



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



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



Rolling table



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

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

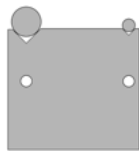
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### Lower Anvils

#### Type A: dual-radius



A: milled edge

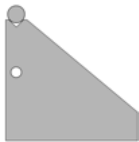


AX: v-notch roller bearings

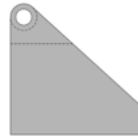
#### Type C: single radius



C: milled edge



CX: v-notch roller



CL: captive roller



CM: roller free to traverse

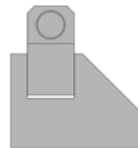
#### Type CW, carrier style



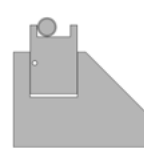
CW: milled edge



CWX: v-notch roller



CWL: captive roller



CWN: roller traverses to stop

### Upper Anvils

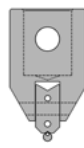
#### Type O



O: milled edge



OX: v-notch roller bearing



OWX: carrier-style v-notch

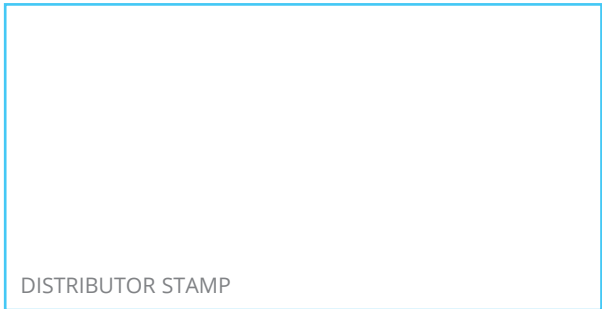
## How to specify your particular bend jig requirement

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- 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 dimensions
- 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.

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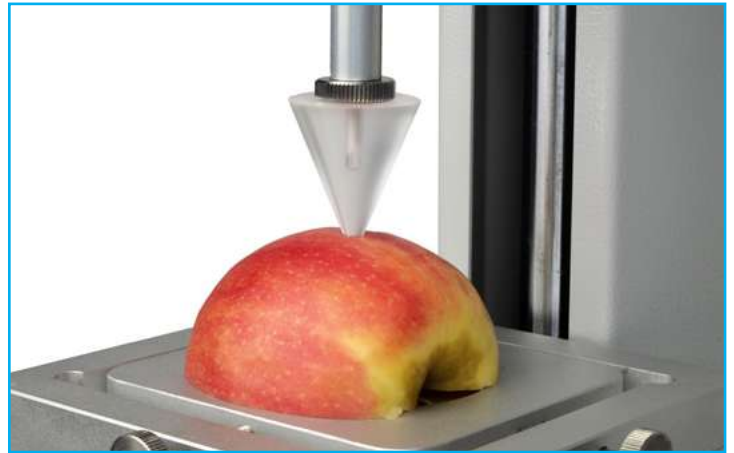
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## Perpex 45° Cone Probe with Extension Rod



### Description

The perspex cone probe has a 45° angle, and is used for texture testing to assess characteristics such as hardness and spreadability.

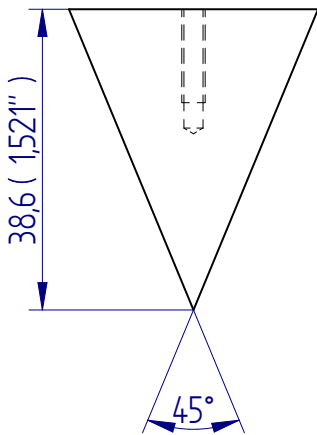
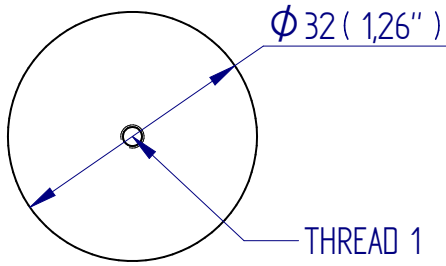
### Applications

Used to determine the firmness and spreadability properties of:

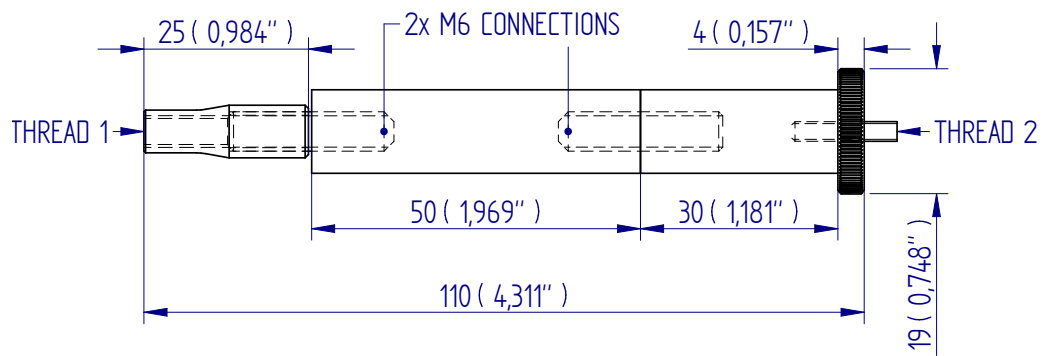
- food products
- cosmetics

### Specifications

Part No.	Load Capacity			Thread 1	Thread 2	Length		Weight	
	N	kgf	lbf			mm	in	g	lb
432-081	200 N	20 kgf	45 lbf	10-32 UNF	—	38.6 mm	1.52"	12 g	0.03 lb
432-100	200 N	20 kgf	45 lbf	M3	10-32 UNF	110 mm	4.33"	40 g	0.09 lb



432-081

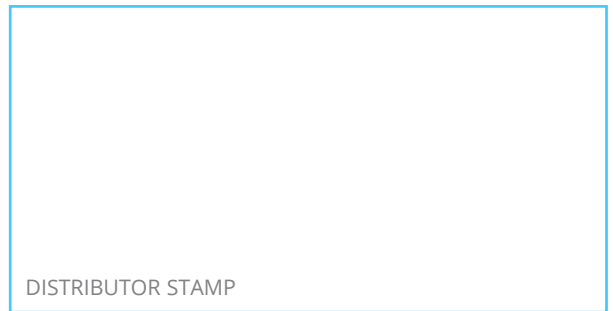


432-100



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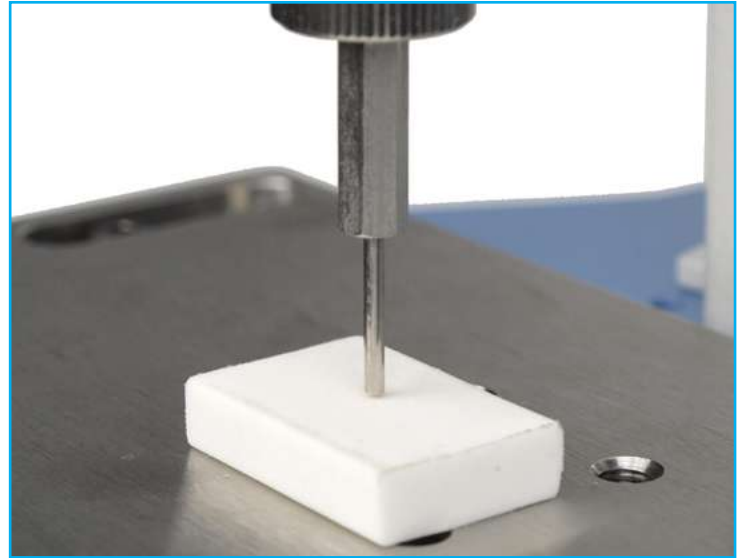
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## 2 mm Needle Probe



### Description

The needle probe is made from stainless steel and is designed for surface puncture and penetration tests.

### Applications

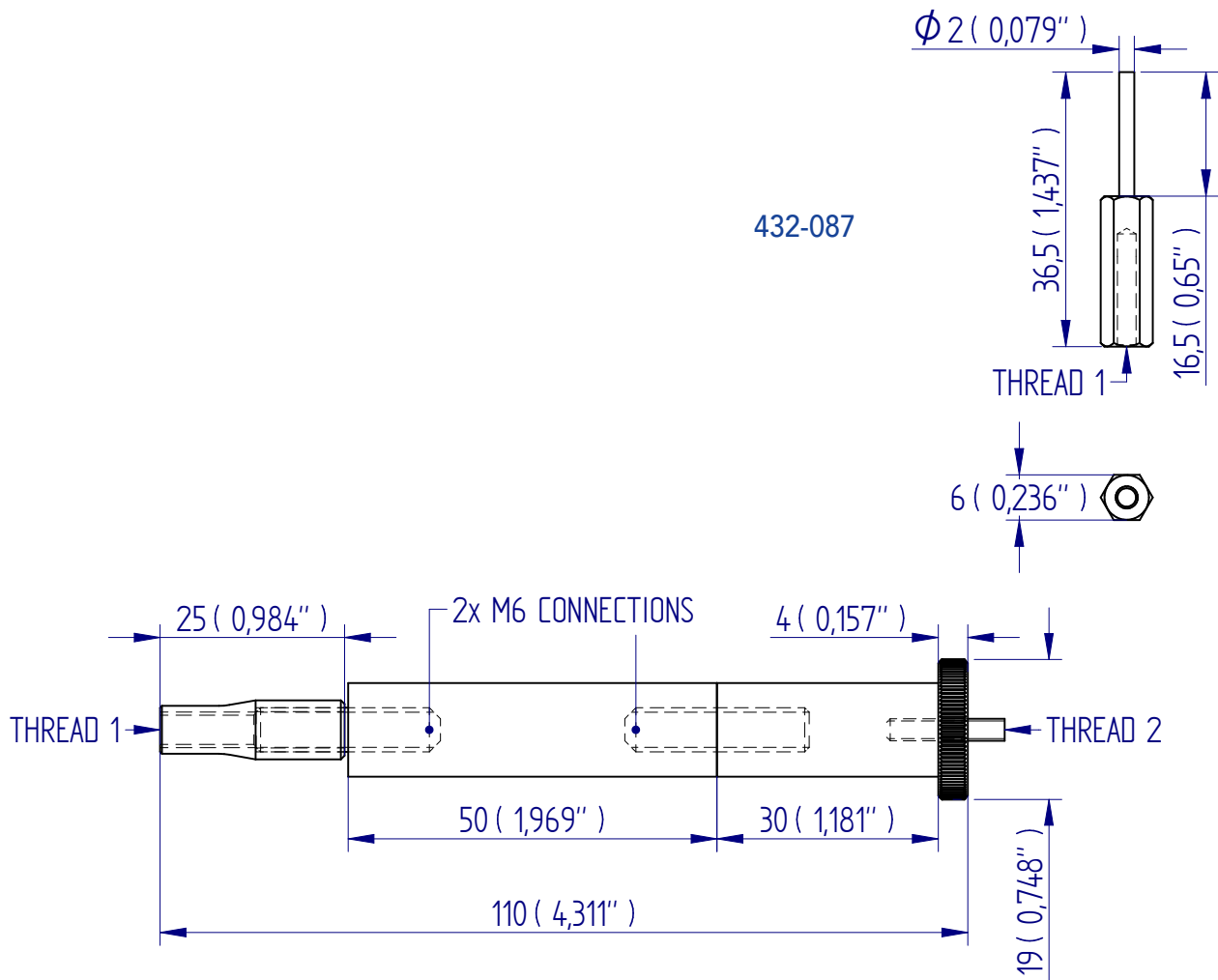
Used to determine the firmness and spreadability properties of:

- food products

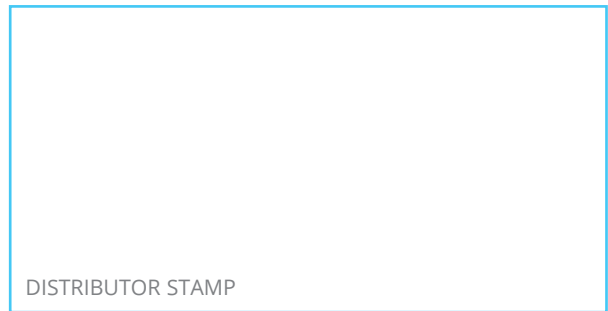
### Specifications

Part No.	Load Capacity			Thread 1	Thread 2	Weight	
432-087	100 N	10 kgf	22 lbf	M3	N/A	9 g	0.02 lb
432-100	100 N	10 kgf	22 lbf	10-32 UNF	M3	40 g	0.09 lb





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## Puncture Test Jig



### Description

This jig is designed also to accommodate spherical or irregular samples. Three sizes of holding plate are supplied.

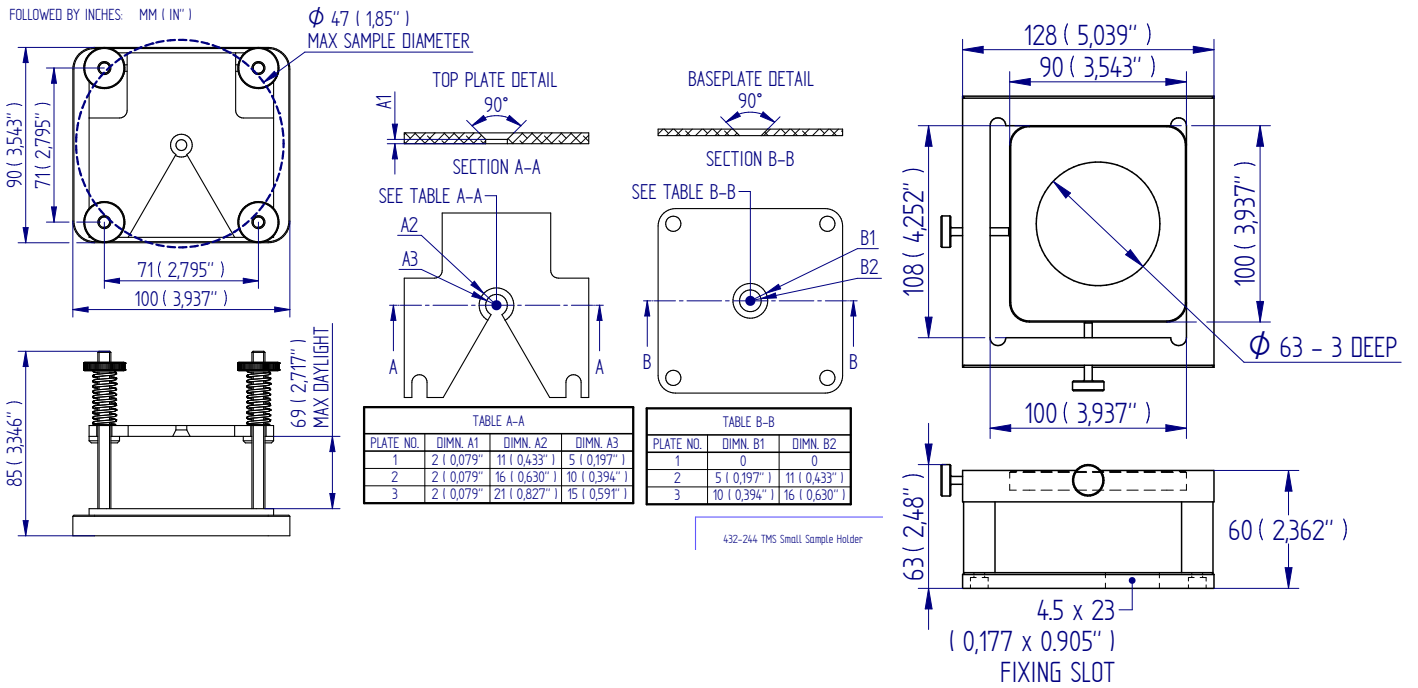
### Applications

Used to determine the puncture resistance properties of:

- films
- food products

### Specifications

Part No.	Load Capacity			Max. Sample Diameter Ø		Weight	
432-243	200 N	20 kgf	45 lbf	—	—	757 g	1.66 lb
432-244	200 N	20 kgf	45 lbf	47 mm	1.85"	693 g	1.52 lb



432-244

432-243



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## Puncture Resistance Test Jig, QC fitting

### MecS511

A puncture resistance fixture designed for tests based on European standard EN 14477: "Flexible packaging material—Determination of puncture resistance"; also known as the 'Parker Pen' or 'Parker Ball-Point' test.

The procedure is used to measure the resistance of flexible (including multilayer) packaging materials to penetration or puncture by sharp internal items or external objects. The peak force, energy, and elongation to break are determined.

A sample specimen of film is clamped in the lower fixture holder and is punctured from above by the 0.8 mm diameter probe.



Item No:	MecS511
Rated capacity	500 N
Body	Steel

Scope of delivery: 1 test jig including both lower and upper fixtures each with a bore-hole to allow connection to QC-20 fixing posts.

### Applications

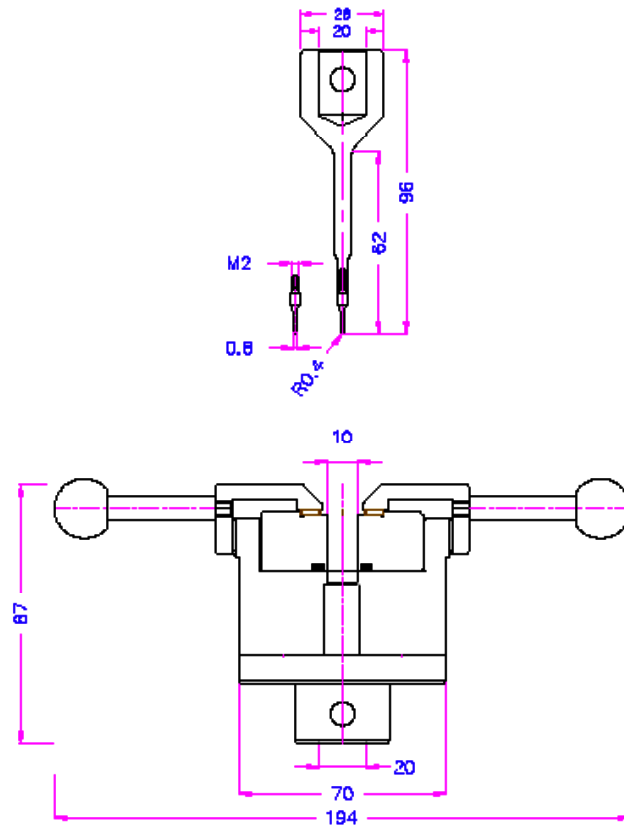
Characterisation of flexible packaging films, laminates and other similar materials for slow-rate penetration resistance.

- Food packaging
- Medical instruments and sharps packaging
- Textiles with a high degree of elongation

Consult Mecmesin for test jigs to specifically conform to:

- ASTM F1306 Slow Rate Penetration Resistance of Flexible Barrier Films and Laminates
- ASTM D3787 Bursting Strength of Textiles—Constant-Rate-of-Traversal (CRT) Ball Burst Test.

## Dimensions mm (inch)



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## 50 kN Wood Shear Test Jig, QC fitting

Mec17 – steel

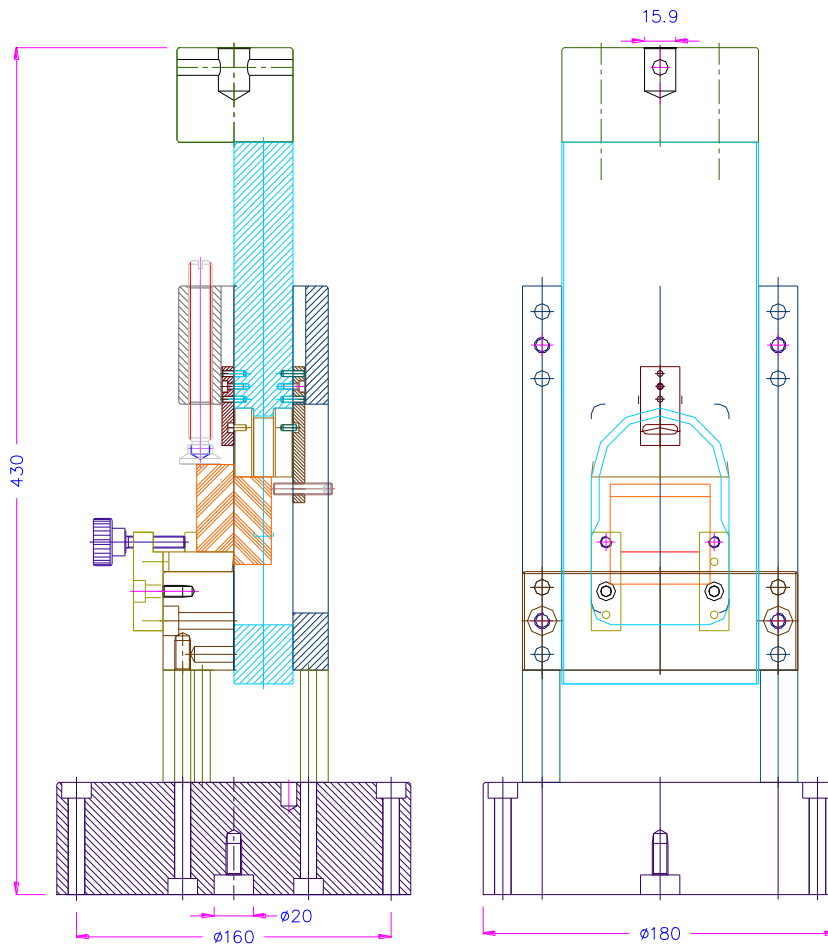


### Description

A 50 kN Compressive Shear Jig designed for testing the shear strength in compression of adhesive bonds used for wood and similar materials. It facilitates testing to various international and industry standards such as ASTM-D905, ASTM-D143, DIN 52187, EN 392, ISO 6238 and UNE 56543:88.

It operates on the principle of the self-aligning upper 'shear blade' cutting the two blocks of material which have been bonded together. The two blocks are positioned in the lower fixture, which is secured to the base of a testing machine. The resistance of the adhesive to the cut is calculated by the software of the testing system as 'force required to shear divided by the bond area'.

Due to the size and weight of the Mec17 Shear Jig it is suitable primarily for use on twin-column test frames. The Mec17 is 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.

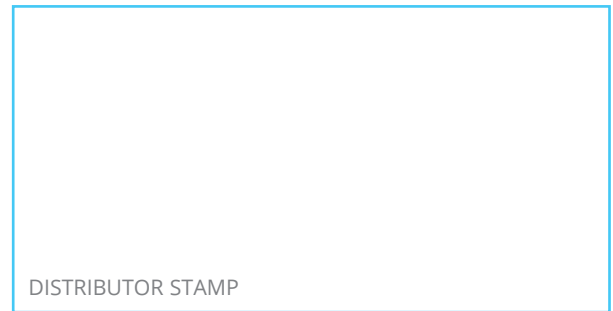


Mec17

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



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## Round Hooks



### Description

Round hooks are general purpose, suitable for any sample with a loop, eyelet or similar feature. Often used with a digital force gauge to perform tensile tests on tension springs.

### Applications

Used for general purpose tensile testing of:

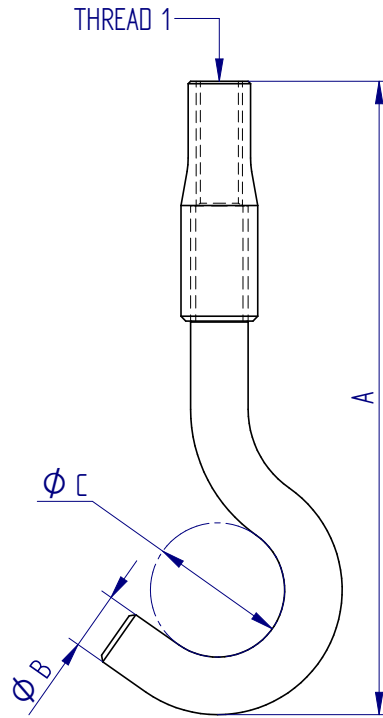
- tension springs
- any sample with a loop or eyelet

### Specifications

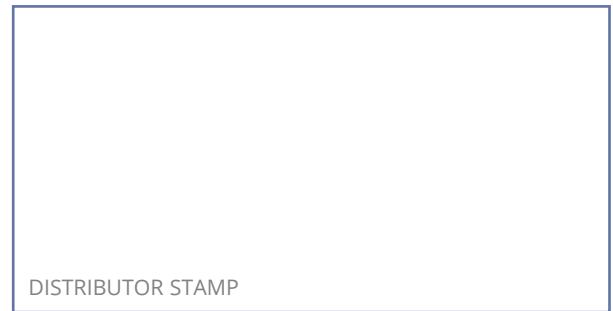
Part No.	Load Capacity			Thread 1	Diameter (ØB)		Max. Specimen Diameter (ØC)		Length (A)		Weight	
432-118	50 N	5 kgf	11 lbf	10-32 UNF	3 mm	0.12"	8 mm	0.32"	39 mm	1.54"	20 g	0.04 lb
432-171	50 N	5 kgf	11 lbf	M6	3 mm	0.12"	8 mm	0.32"	38 mm	1.50"	8 g	0.02 lb
432-120	500 N	50 kgf	110 lbf	10-32 UNF	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	30 g	0.07 lb
432-169	500 N	50 kgf	110 lbf	M6	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	20 g	0.04 lb
432-122	2.5 kN	250 kgf	550 lbf	5-16 UNC	6 mm	0.24"	14 mm	0.55"	66 mm	2.60"	30 g	0.07 lb



## Dimensions mm (inch)



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## Swivel Test Hooks



### Description

Swivel hooks are specifically designed to align samples when testing tension springs. They are usually used in conjunction with fixed test hooks.

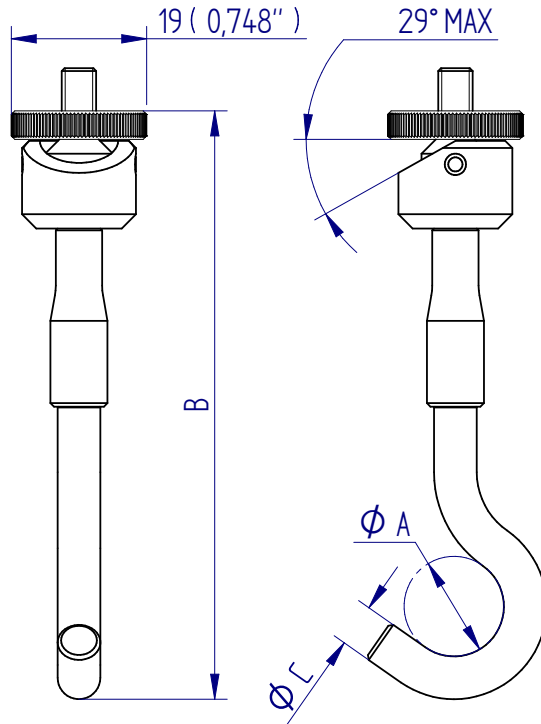
### Applications

Used for general purpose tensile testing of:

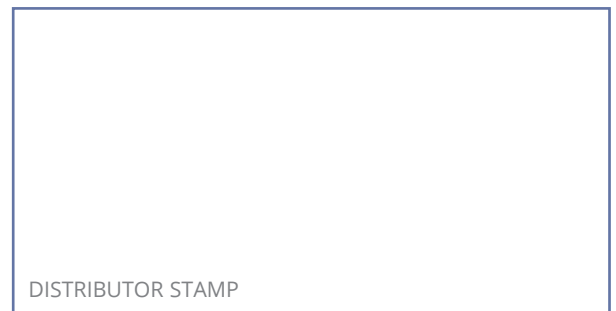
- tension springs

### Specifications

Part No.	Load Capacity	Thread 1	Max. Specimen Diameter (ØA)	Diameter (ØC)	Length (B)	Weight
432-392	50 N / 5 kgf / 11 lbf	10-32 UNF	8 mm (0.32")	3 mm (0.12")	50 mm (1.97")	28 g (0.06 lb)
432-391	500 N / 50 kgf / 110 lbf	10-32 UNF	14 mm (0.55")	6 mm (0.24")	83 mm (3.28")	50 g (0.11 lb)



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## Extended Peg Hook (Bow Pull-off Test)



### Description

The extended peg hook is used for securely attaching samples of decorations when carrying out test-to-failure tests on textiles and clothing adornments, for example a bow. Often used with the 25 mm / 50 mm 'grab test' textile fixture.

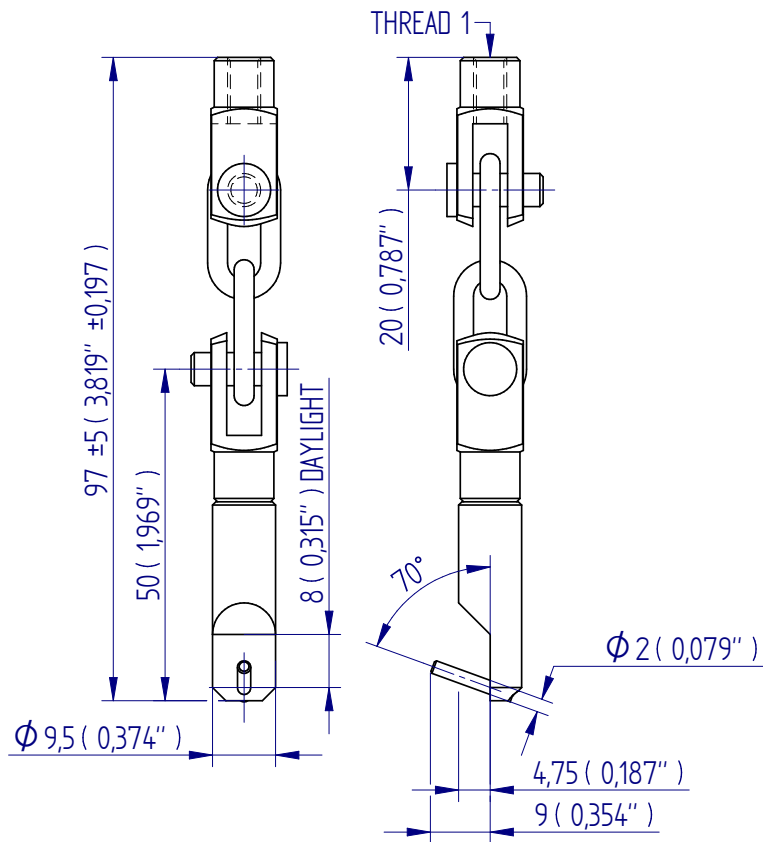
### Applications

- bows and loops

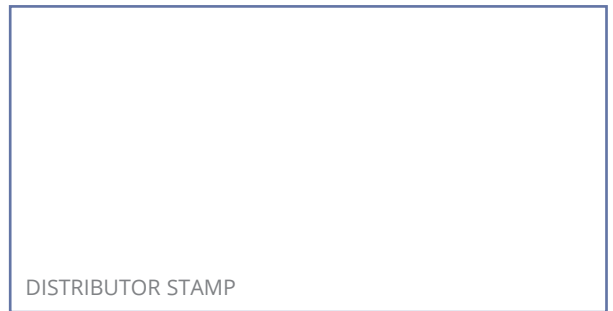
### Specifications

Part No.	Load Capacity			Thread 1	Length (A)	Peg Length			Peg Ø		Weight	
	50 N	5 kgf	11 lbf			9 mm	0.35"	2 mm	0.08"	42 g	0.09 lb	
432-181	50 N	5 kgf	11 lbf	10/32 UNF	97 mm	3.82"	9 mm	0.35"	2 mm	0.08"	42 g	0.09 lb

## Dimensions mm (inch)



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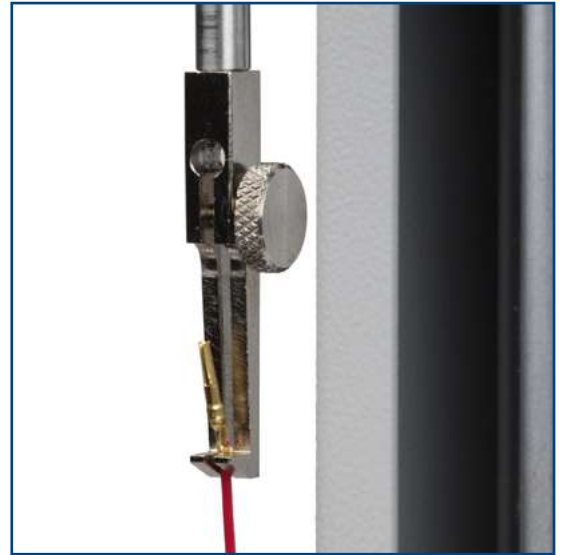
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## Adjustable Test Hook



### Description

Used for securely holding smaller crimp terminals for tests to BSI spec. BS5G178 PART 1 and equivalent international standards.

### Applications

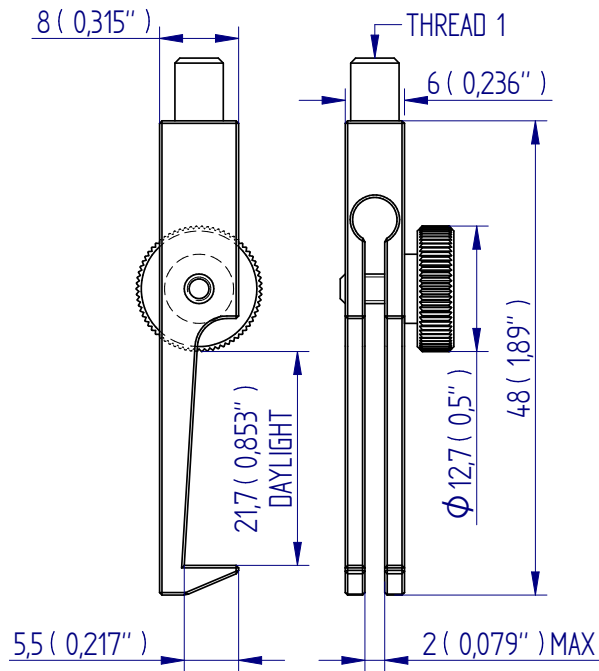
Used for general purpose tensile testing of:

- crimp terminals

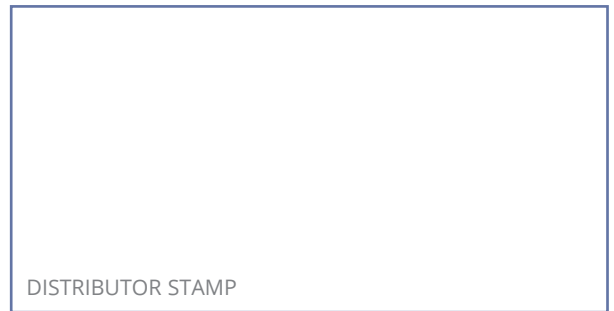
### Specifications

Part No.	Load Capacity			Thread 1	Hook Depth		Jaw Opening		Length		Weight	
432-380	50 N	5 kgf	11 lbf	10-32 UNF	5.5 mm	0.217"	2 mm	0.08"	56 mm	2.21"	13 g	0.02 lb

## Dimensions mm (inch)



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## Flip Cap Accessory



### Description

Designed to easily fit under bottle flip caps when testing their opening force.

### Applications

Used for general purpose tensile testing of:

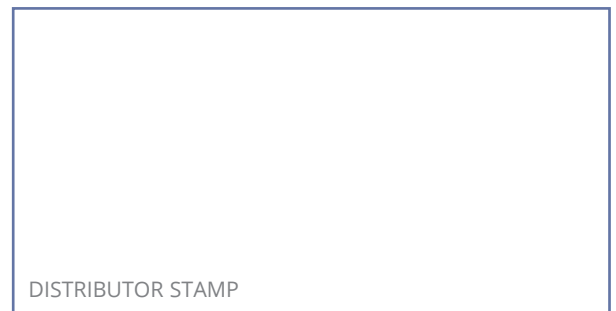
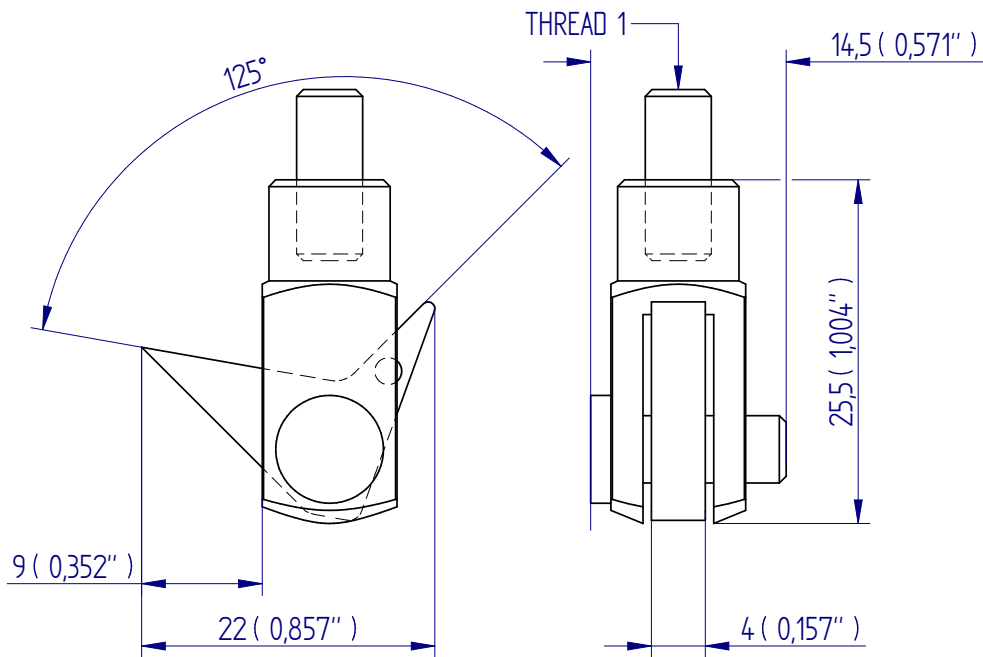
- flip caps used in packaging

### Specifications

Part No.	Load Capacity			Thread 1	Hook Depth		Hook Width		Length		Weight	
432-419	100 N	10 kgf	22 lbf	10-32 UNF	22 mm	0.857"	4 mm	0.16"	25.5 mm	1.00"	17 g	0.04 lb



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## Clevis Grips



### Description

Clevis grips feature a removable pin which can be inserted into the U-shaped clevis. The specimen is usually pre-conditioned with a hole or eyelet through which the clevis pin is passed to secure it in place. Models 432-400 and 432-443 have a clevis pin with quick-release detents to speed up inserting and removing the pin.

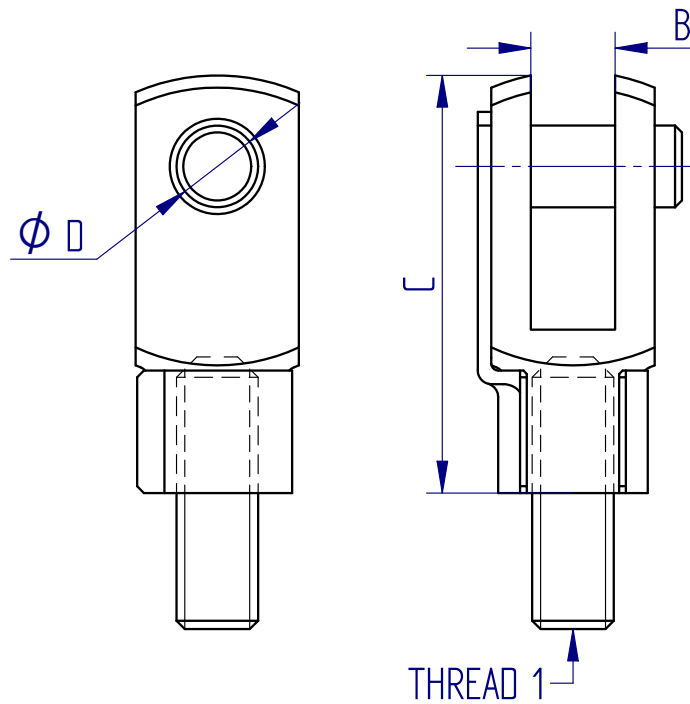
### Applications

Used for testing heavy duty tension springs or for securing odd-shaped parts which have an eyelet.

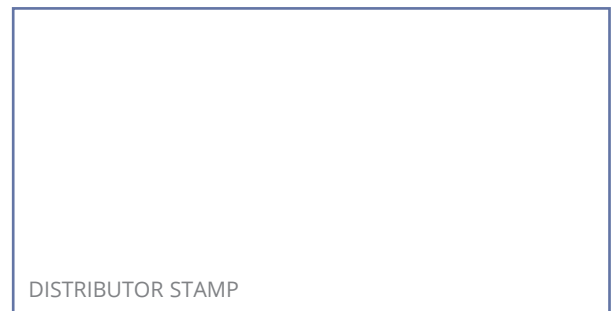
### Specifications

Part No.	Load Capacity			Thread 1	Width (B)		Pin Diameter (ØD)			Length (C)		Weight	
432-403	500 N	50 kgf	110 lbf	10-32 UNF	5 mm	0.20"	5 mm	0.20"	26 mm	1.02"	13 g	0.03 lb	
432-216	500 N	50 kgf	110 lbf	M6	6 mm	0.20"	6 mm	0.24"	31 mm	1.22"	13 g	0.03 lb	
432-400	2.5 kN	250 kgf	550 lbf	M8	8 mm	0.31"	8 mm	0.31"	42 mm	1.65"	90 g	0.20 lb	
432-443	5 kN	500 kgf	1100 lbf	M12	12 mm	0.47"	12 mm	0.47"	62 mm	2.44"	250 g	0.55 lb	

## Dimensions mm (inch)



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## Chain Link Assembly



### Description

The chain link assembly is used for flexible alignment and connection of other accessories, in particular manual handling test applications. The 500 N capacity version is often used for ease of sample loading with lightweight vice grips, vice clamps and wedge grips.

### Applications

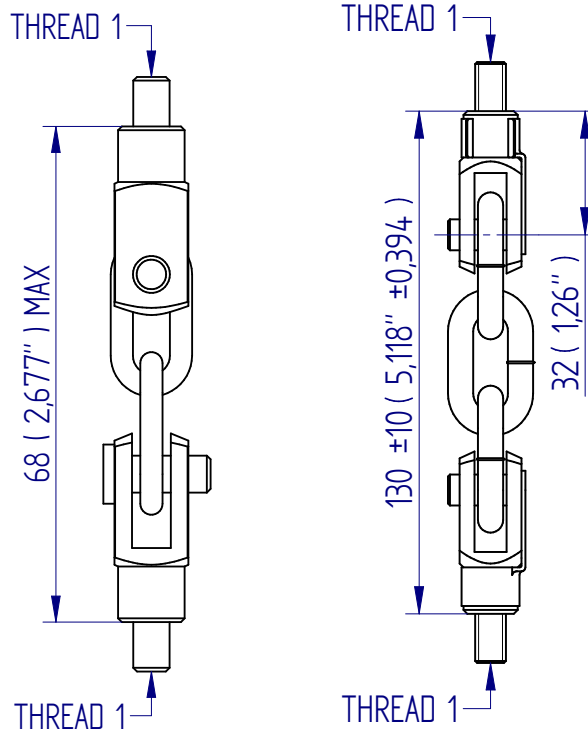
Used for general purpose tensile testing of:

- manual handling

### Specifications

Part No.	Load Capacity			Thread 1	Length		Weight	
432-259	500 N	50 kgf	110 lbf	10-32 UNF	68 mm	2.68"	32 g	0.07 lb
PSV8057	2.5 kN	250 kgf	550 lbf	5/16 UNC	130 mm	2.68"	158 g	0.35 lb

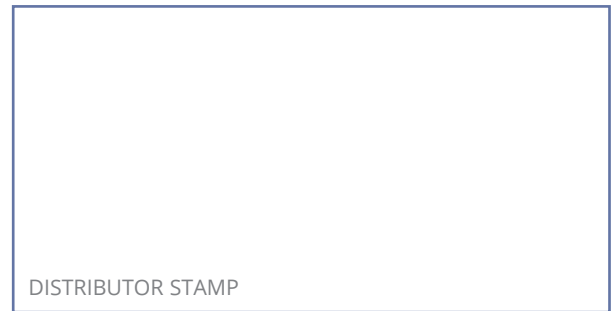
## Dimensions mm (inch)



PSV8057



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## Lever-operated Cam Grips



### Description

Lever-operated cam grips are designed to self-tighten as load is applied, and spread the load evenly. The lever also allows for quick insertion and release of samples.

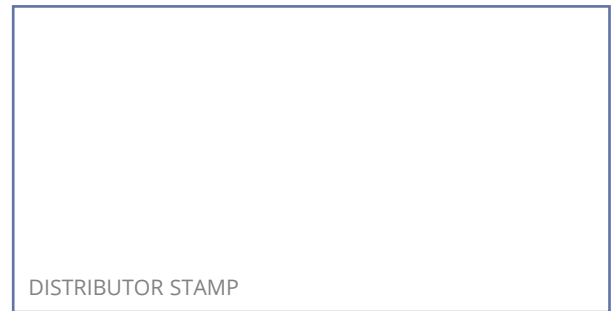
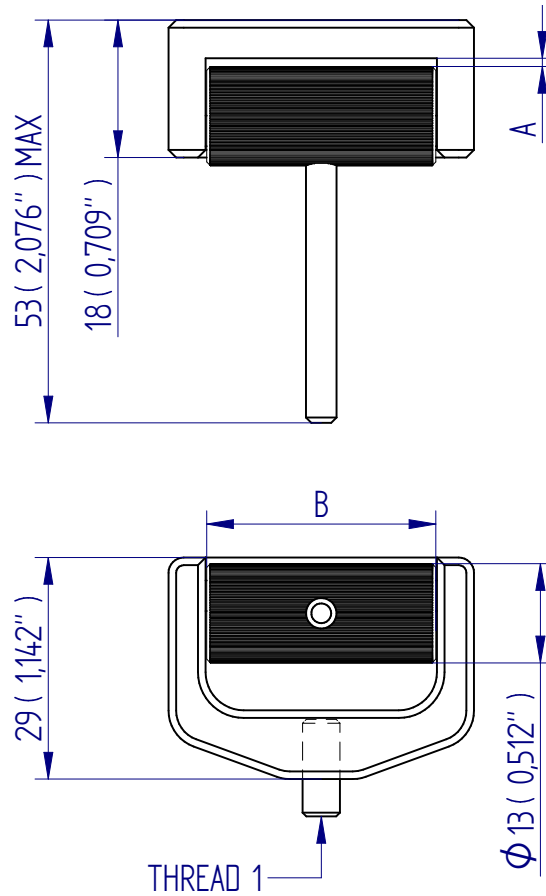
### Applications

- dumbbells
- elastomers

### Specifications

Part No.	Load Capacity			Thread 1	Maximum Sample Size (Width x Thickness)		Height		Weight	
432-383	500 N	50 kgf	110 lbf	10-32 UNF	30 mm x 5 mm	1.18" x 0.20"	29 mm	1.14"	100 g	0.22 lb
432-047	500 N	50 kgf	110 lbf	10-32 UNF	70 mm x 5 mm	2.76" x 0.20"	29 mm	1,14"	100 g	0.22 lb

## Dimensions mm (inch)



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## Eccentric Cam Grip, QC fitting

Eccentric Cam Grips – easy to use and self-tightening  
Applicable for soft and flexible samples, foils, plastics, rubber, etc.

### Mec7-1 Eccentric Cam Grip

- Tensile force: 1 kN
- Pyramid (serrated) faced roller, 25mm Ø
- Clamping width 50mm, specimen thickness 0 – 7 mm
- Body: aluminum anodized
- Weight: 509 gram
- Scope of delivery: 1 grip

### Mec7-1-SR Eccentric Cam Grip

- Tensile force: 1 kN
- Smooth roller, 25mm Ø, rubber base plate
- Clamping width 50mm, specimen thickness 0 – 7 mm
- Body: aluminum anodized
- Weight: 509 gram
- Scope of delivery: 1 grip

### Mec7-5 Eccentric Cam Grip

- Tensile force: 5 kN
- Pyramid (serrated) faced roller, 30mm Ø
- Clamping width 50mm, specimen thickness 0 – 7mm
- Body: aluminum anodized
- Weight: 667 gram
- Scope of delivery: 1 grip

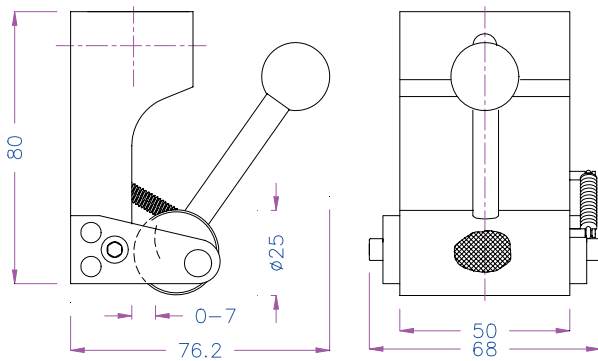
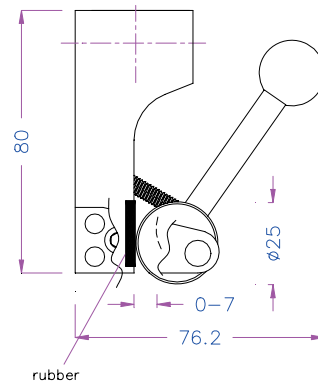
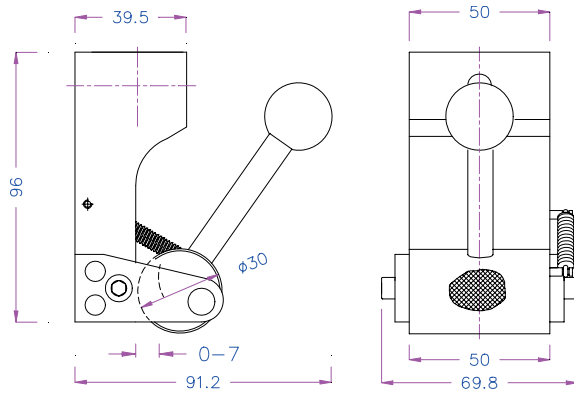
### Mec7-10 Eccentric Cam Grip

- Tensile force: 10 kN
- Pyramid (serrated) faced roller, 50mm Ø
- Clamping width 60mm, specimen thickness 0 – 8 mm
- Body: steel, manganese phosphate coating
- Weight: 3.35 Kg
- Scope of delivery: 1 grip

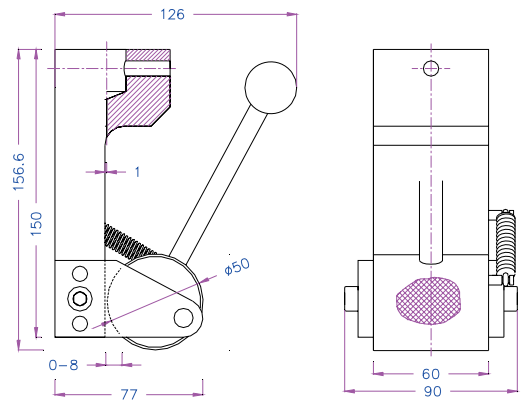




## Dimensions mm (inch)



Mec7-5

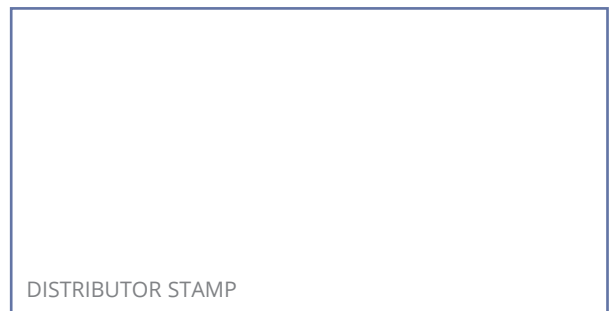


Mec7-10

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



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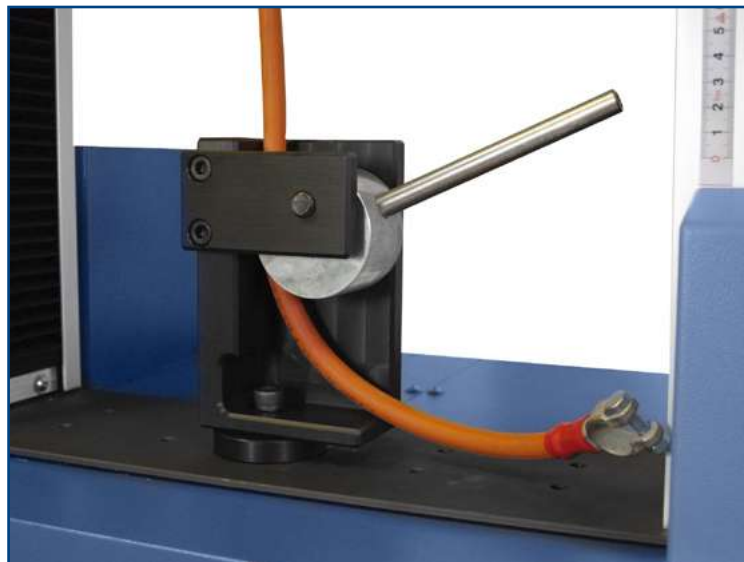
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## Cable Cam Grips



### Description

Cable cam grips are designed for holding insulated cables and wire. The sample is secured by the cam, which self-tightens as load is applied and spreads the load evenly. Serrated or smooth cam. Supplied with socket-cap bolt for stand fixing.

Supplied individually.

### Applications

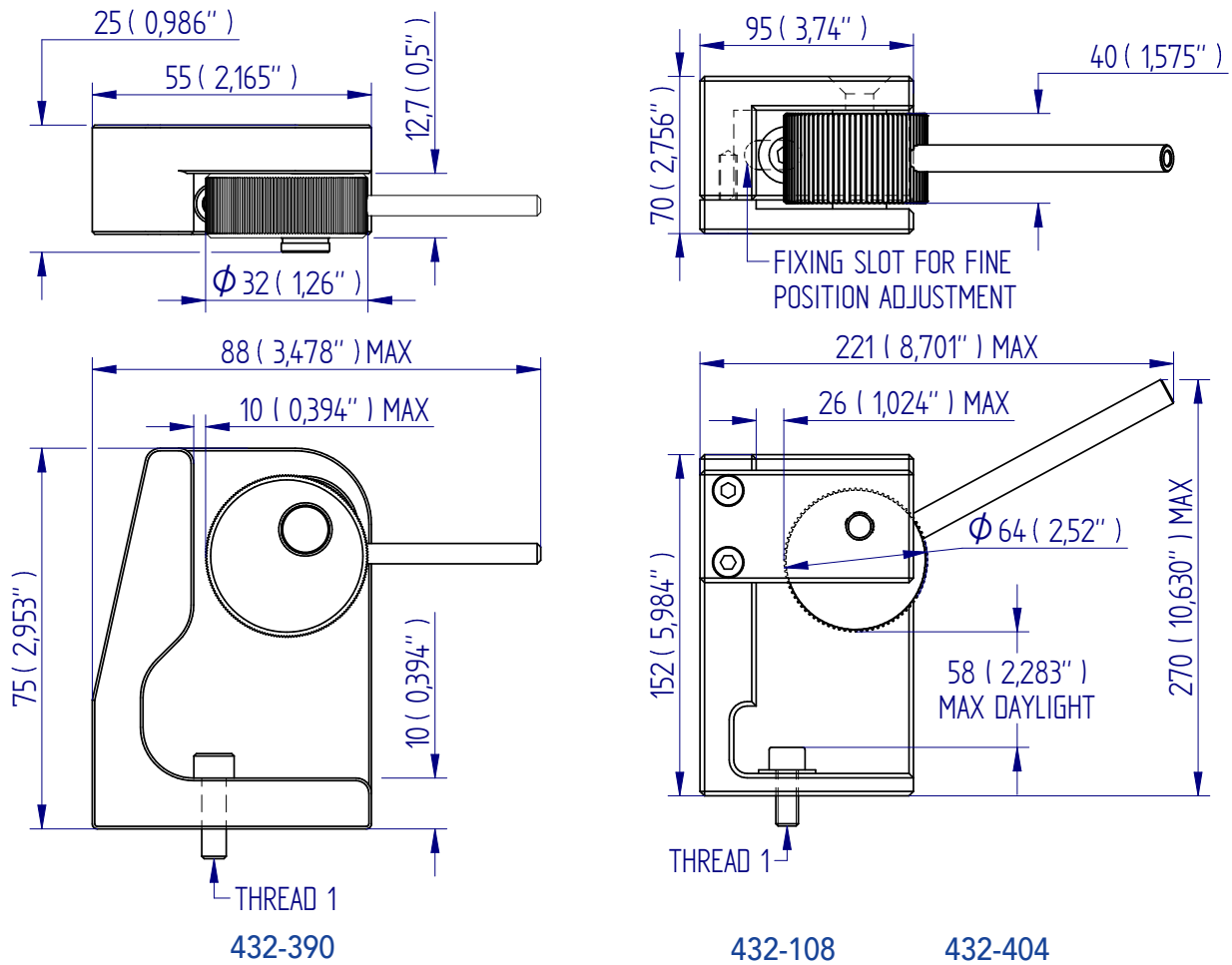
Used for general purpose tensile testing of:

- crimped terminals
- tapes
- foils
- wires

### Specifications

Part No.	Load Capacity			Thread 1	Type	Max. Sample Width		Max. Sample Thickness		Length		Weight	
432-390	1 kN	100 kgf	225 lbf	10-32 UNF	Serrated	13 mm	0.51"	10 mm	0.39"	75 mm	2.95"	230 g	0.51 lb
432-404	1 kN	100 kgf	225 lbf	10-32 UNF	Smooth	13 mm	0.51"	10 mm	0.39"	75 mm	2.95"	230 g	0.51 lb
432-108	5 kN	500 kgf	1100 lbf	M10	Serrated	40 mm	1.57"	26 mm	1.02"	152 mm	5.98"	2.3 kg	5.10 lb

## Dimensions mm (inch)



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## Double Cam Grip



### Description

Double cam grips are designed for holding insulated cables and wire. The sample is secured by the cam, which self-tightens as load is applied, minimising slippage during testing.

Supplied individually.

### Applications

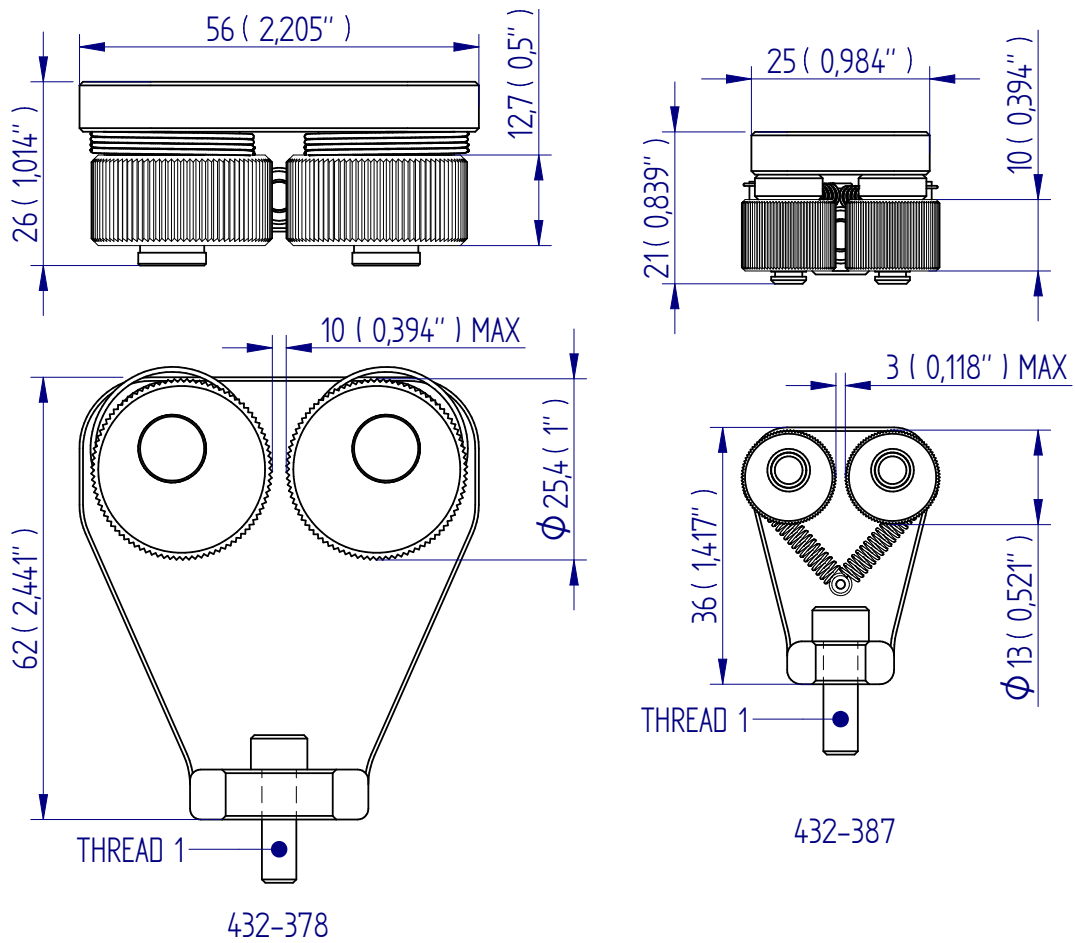
Used for tensile testing of:

- crimp terminals
- wires

### Specifications

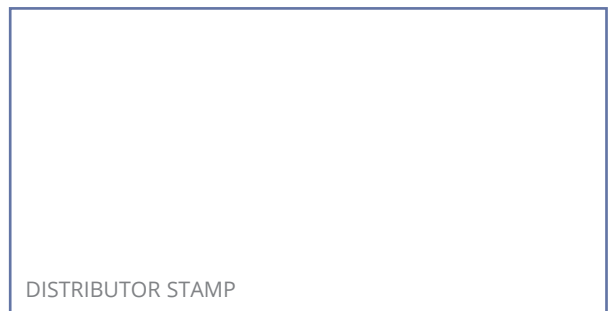
Part No.	Load Capacity			Thread 1	Max. Sample Thickness		Max. Sample Width		Length	
432-387	500 N	50 kgf	110 lbf	10-32 UNF	2 mm	0.08"	10 mm	0.40"	36 mm	1.42"
432-378	500 N	50 kgf	110 lbf	10-32 UNF	5 mm	0.20"	15 mm	0.59"	62 mm	2.44"

## Dimensions mm (inch)



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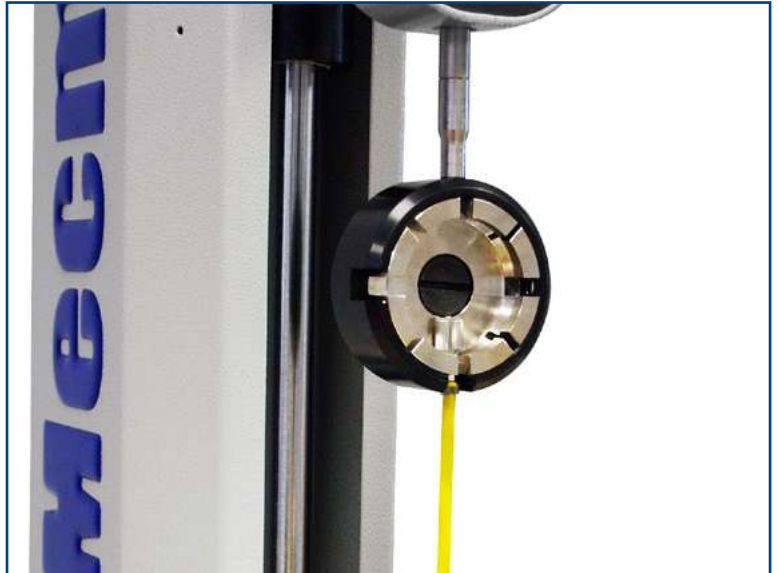
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## Rotating Crimp Receptacle



### Description

The rotating crimp receptacle is a versatile crimp termination holder that accommodates a wide range of terminals. The inner slotted ring rotates to adjust to fit 8 different-sized crimp terminals. used for BS SG 178-1 and equivalent international standard test methods.

### Applications

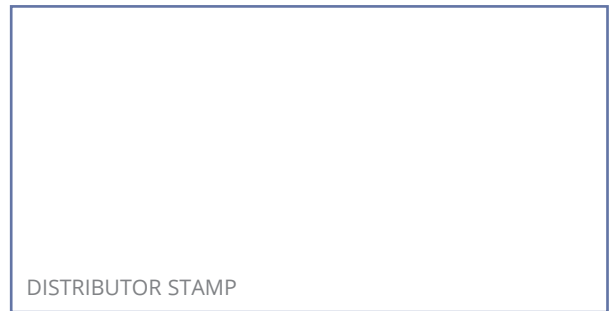
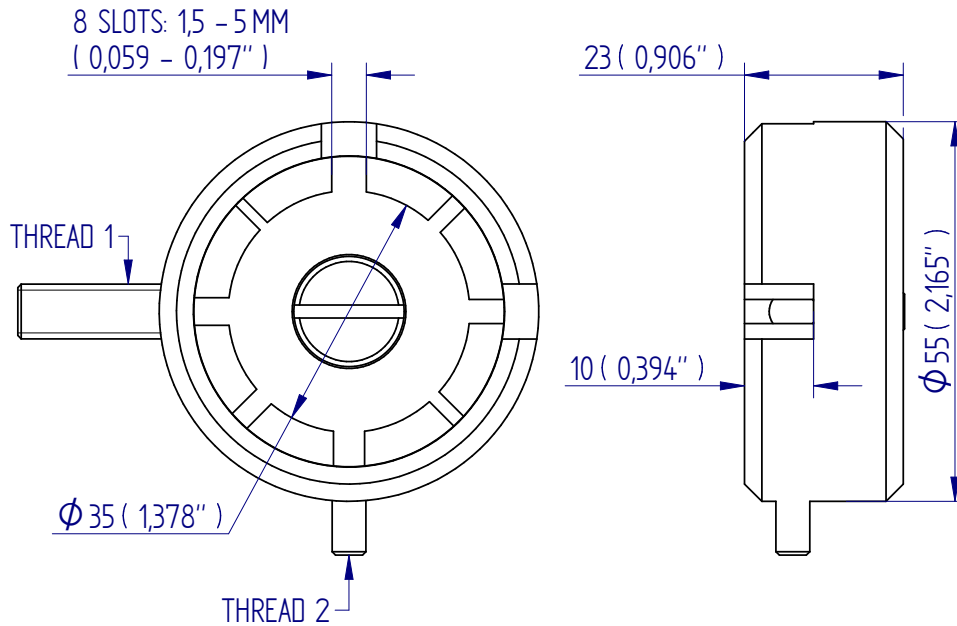
Used for general purpose tensile testing of:

- crimp terminals
- welded or bonded connectors

### Specifications

Part No.	Load Capacity			Thread 1	Thread 2	Diameter Ø		Sample Diameter Range		Weight	
432-379	1 kN	100 kgf	225 lbf	5/16 UNC	10-32 UNF	55 mm	2.16"	1.5 mm - 5 mm	0.06" - 0.20"	200 g	0.44 lb

## Dimensions mm (inch)



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## Wire/Filament Grips



### Description

The wire/filament grip is equipped with a grooved capstan and precision-machined swivel plate, which are designed to ensure centre break within the sample and specimen alignment when force is applied.

Supplied individually.

### Applications

Used for tensile testing of:

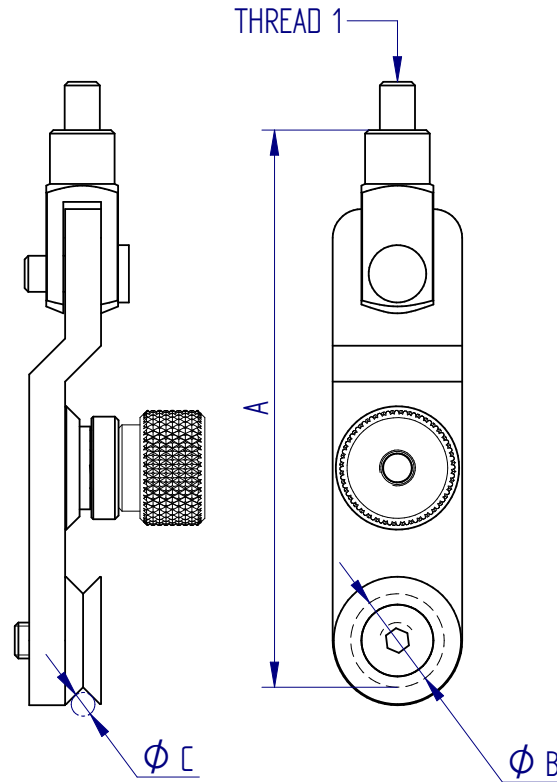
- thin wires
- cords
- filaments
- yarns

### Specifications

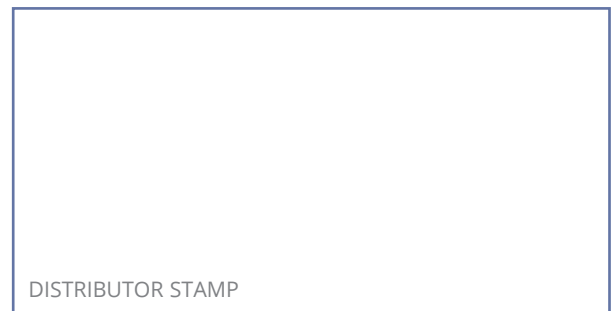
Part No.	Load Opening			Thread 1	Pulley Diameter (ØB)	Max wire Diameter (ØC)	Length (A)		Weight			
	N	kgf	lbf				mm	"	g	lb		
432-363	250 N	25kgf	55 lbf	10-32 UNF	13 mm	0.50"	0.8 mm	0.03"	78 mm	3.07"	-	-
432-397	500 N	50 kgf	110 lbf	10-32 UNF	19 mm	0.75"	1.5 mm	0.06"	97 mm	3.82"	117 g	0.26 lb



## Dimensions mm (inch)



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## Large Circular Bollard Grip, QC fitting



### Description

Large circular bollard grips are designed for testing flexible wire-type samples up to a maximum load of 2 kN. The sample is wrapped around the bollard and the free end is clamped tightly in place.

Supplied individually.

### Applications

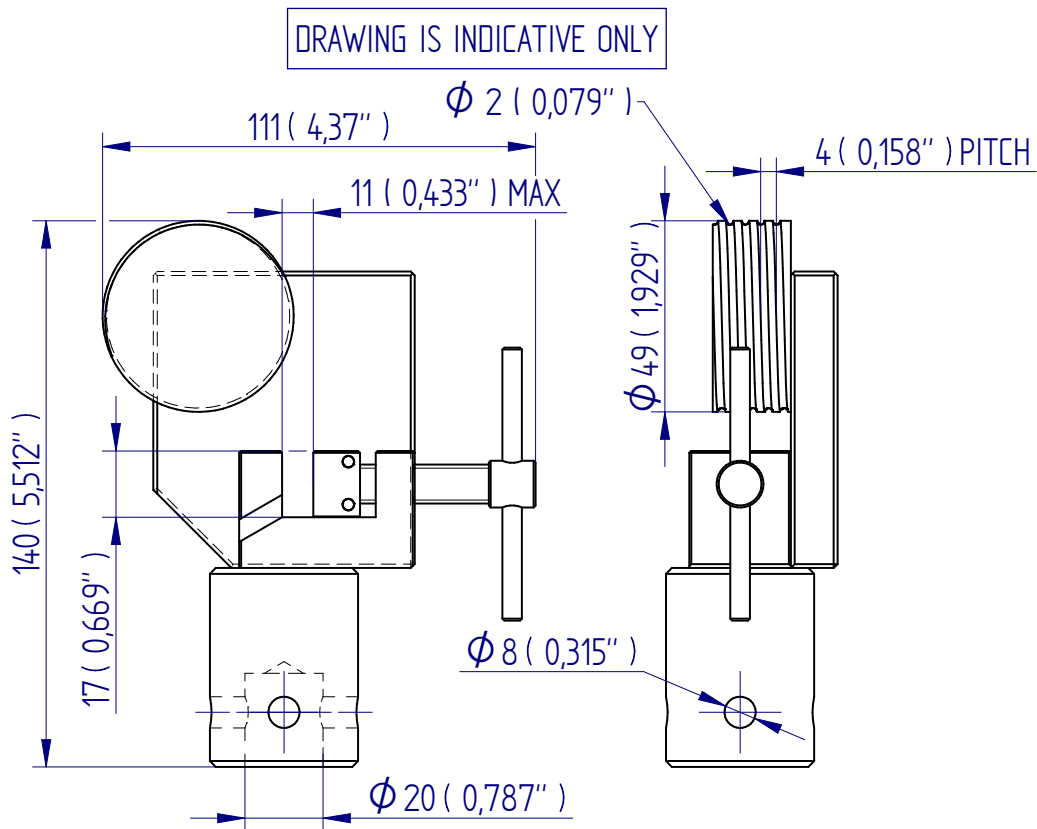
Used for tensile testing of:

- cord
- filaments
- wire
- yarn

### Specifications

Part No.	Load Capacity			Post Ø	Max. Specimen Thickness		Length		Weight	
432-271	2 kN	200 kgf	440 lbf	QC20	2 mm	0.08"	140 mm	5.51"	1.3 kg	2.9 lb

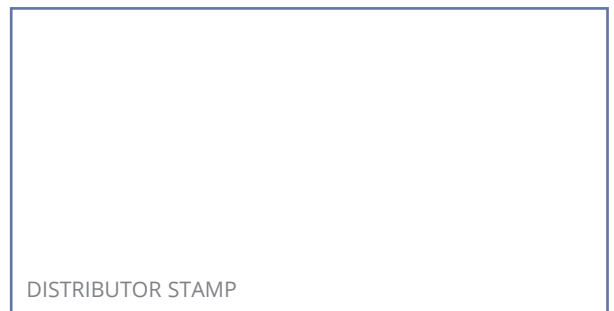
## Dimensions mm (inch)



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



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## Film Grips



### Description

These grips are used for flexible samples such as films, where conventional grips create stress points so reducing tensile strength. Samples are wrapped around the drum, spreading the load and avoiding breakage. Grips are supplied in pairs.

### Applications

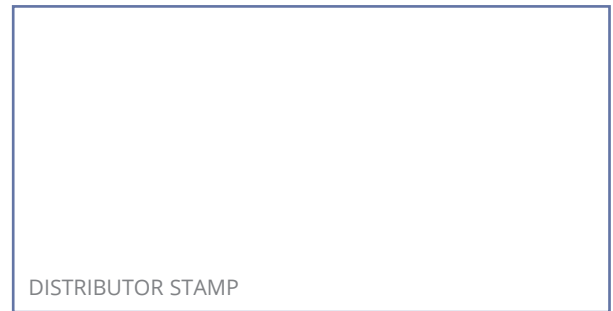
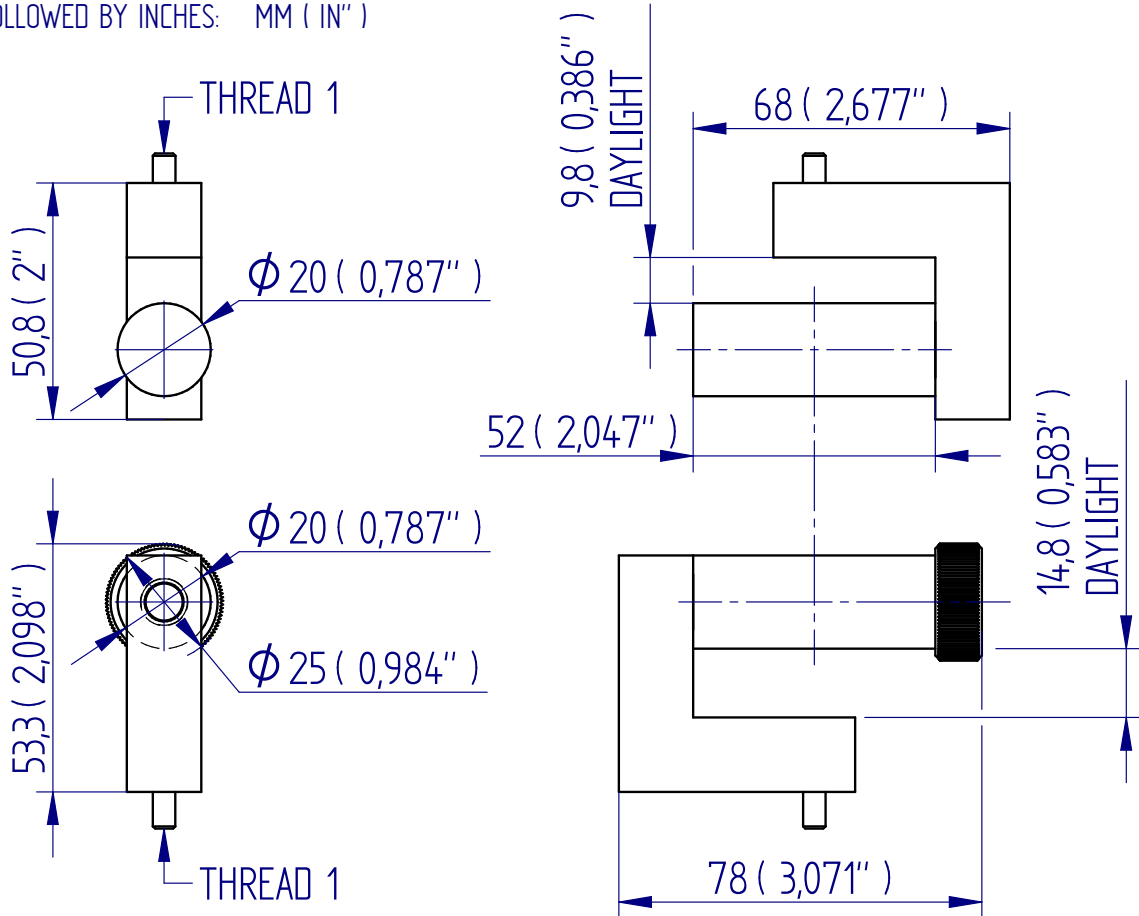
- thin films
- polymers
- elastomers

### Specifications

Part No.	Load Capacity			Thread 1	Sample Width		Diameter Ø		Length	
432-157	500 N	50 kgf	110 lbf	10-32 UNF	50 mm	1.97"	20 mm	0.79"	58.8 mm	2.00"

## Dimensions mm (inch)

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## Spring-Loaded Fold Grip, QC fitting



### Description

The spring-loaded fold grip is a self-tightening grip with a spring-loaded roller for holding flexible samples firmly as load is applied. Sample material is wound around the cross hatch knurl of the 10 mm (0.39") diameter roller and held in contact with the serrated rear body, preventing slippage within the grip.

Supplied individually.

### Applications

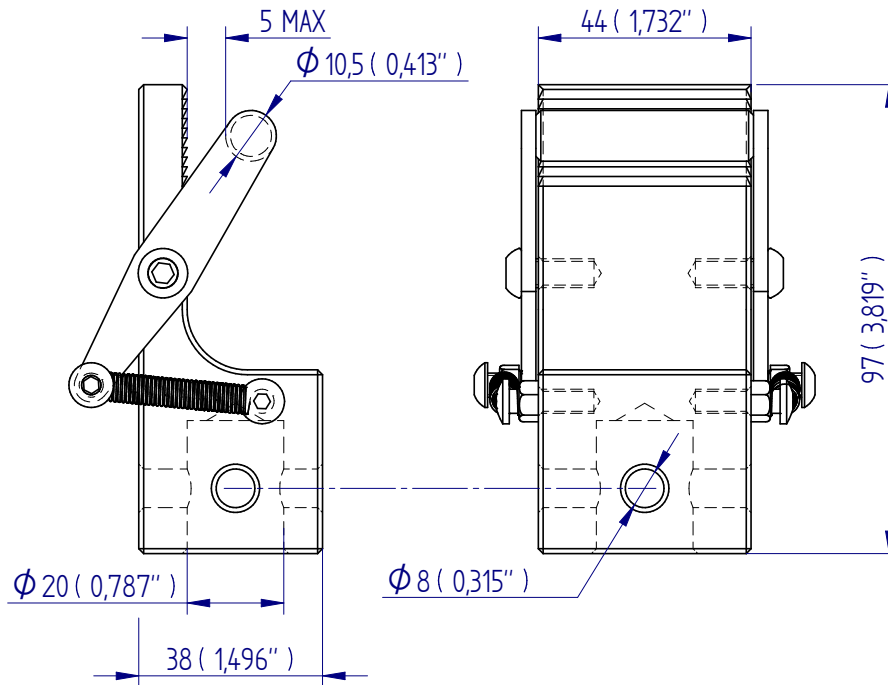
Used for tensile testing of flexible materials:

- elastomers
- rubber
- films
- fabrics
- polymers
- leather

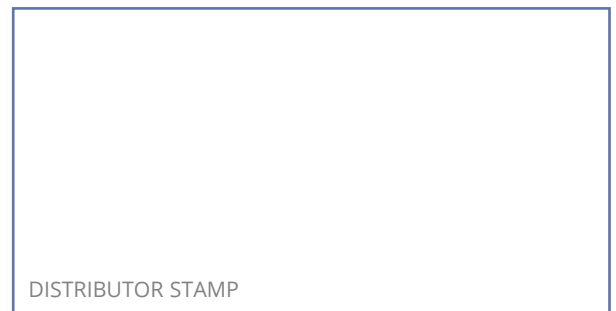
### Specifications

Part No.	Load Capacity			Post Ø	Max. Sample Thickness		Max. Specimen Width		Length		Weight	
432-262	2 kN	200 kgf	450 lbf	QC20	5 mm	0.20"	45 mm	1.75"	97 mm	3.81"	680 g	1.5 lb

## Dimensions mm (inch)



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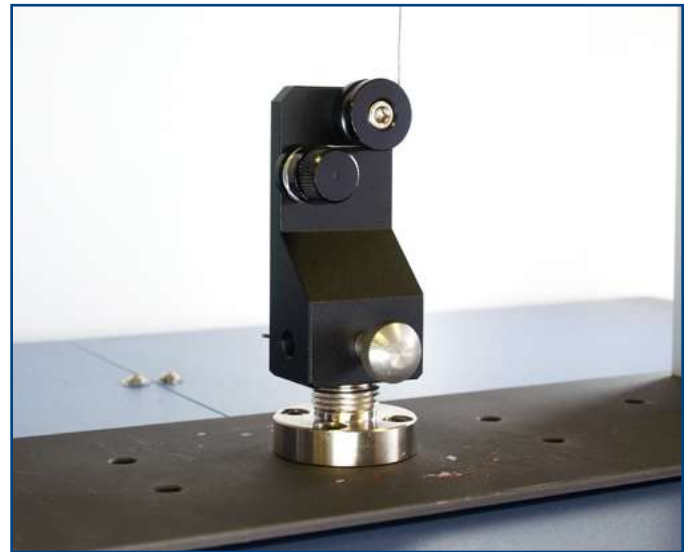
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## Small Circular Bollard Grip, QC fitting



### Description

Small circular bollard grips are made from aluminium and are designed for testing delicate, flexible samples such as fine threads, wires and yarns, which may break easily when clamped. The maximum capacity is 100 N. The sample is wrapped around the bollard and the free end is held tightly in place using a pair of friction washers and a thumb-screw. The bollard has a single 5 mm (0.197") wide smooth groove to align the sample centrally and has a diameter of 20 mm (0.79") around which it can be wound.

Supplied individually.

### Applications

Used for tensile testing of:

- fibres
- yarns
- filaments
- twines
- threads
- fine wires

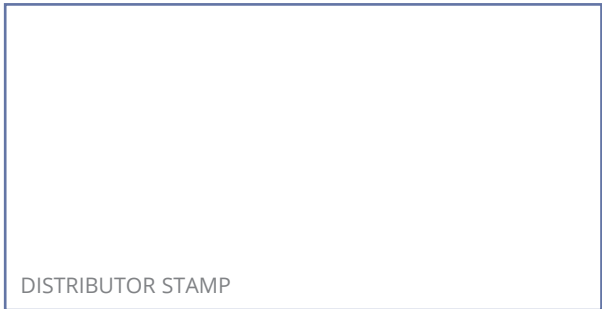
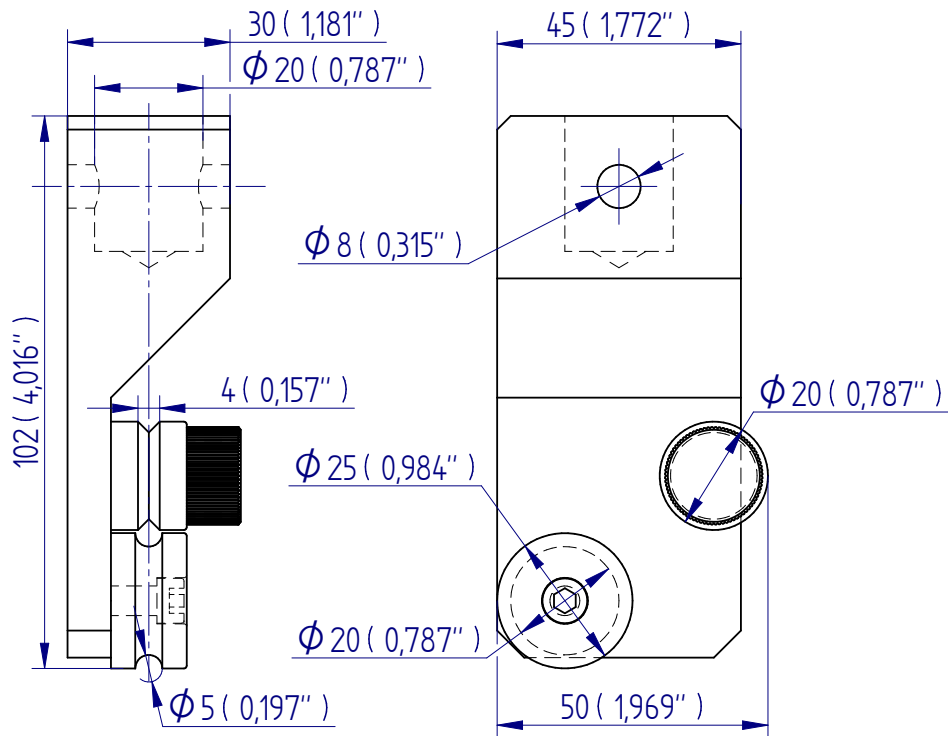
### Specifications

Part No.	Load Capacity			Post Ø	Max. Load (to maintain tension)	Max. Diameter			Length		Weight	
432-270	100 N	10 kgf	22 lbf	QC20	0.5 N	5 mm	0.20"	102 mm	4.02"	210 g	0.46 lb	



# Dimensions mm (inch)

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## Webbing Grip, QC fitting



### Description

Webbing grips are easy to use and designed for rapid testing of high-strength belts and tapes. The sample is wound around the knurled roller and then around the smooth roller. As load is applied, the smooth roller moves in the slot to secure tightly against the knurled surface ensuring maximum gripping strength.

Supplied individually.

### Applications

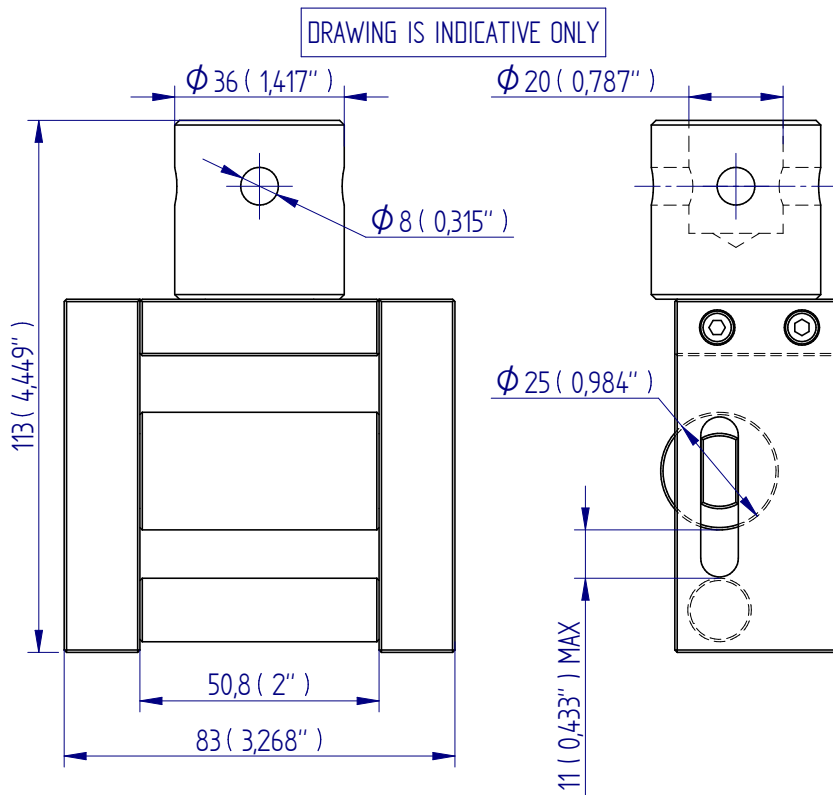
Used for tensile testing of:

- fabrics
- webbing
- textiles

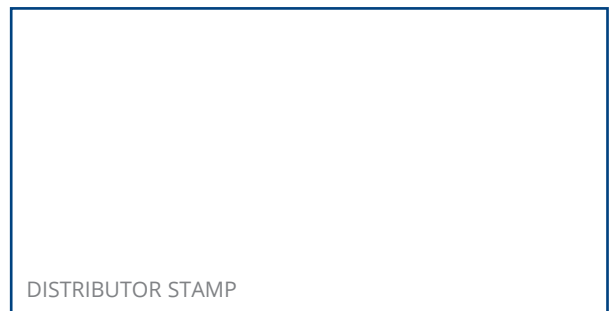
### Specifications

Part No.	Load Capacity			Post Ø	Max. Sample Thickness		Max. Specimen Width		Length		Weight	
432-269	2 kN	200 kgf	440 lbf	QC20	11 mm	0.43"	50 mm	1.97"	113 mm	4.45"	1.1 kg	2.4 lb

## Dimensions mm (inch)



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



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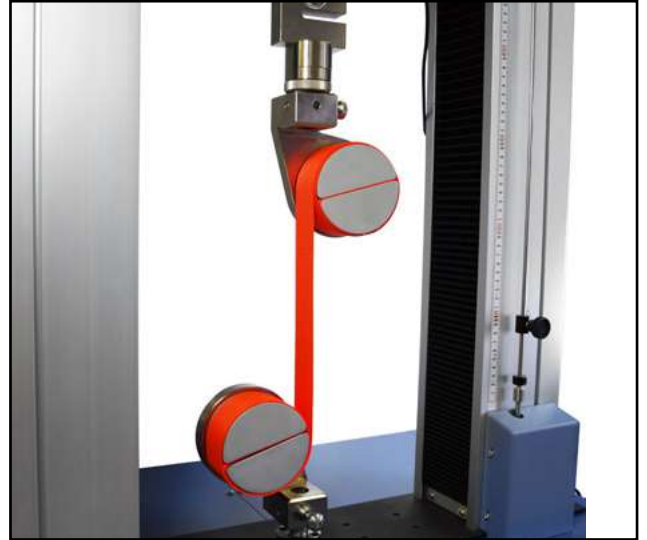
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## Heavy-duty Belt Grips, QC fitting



### Description

Heavy-duty belt grips are designed for testing high-strength belts and straps such as conveyor belts, which require specialised grips to prevent sample slippage. By winding the sample around the split bodies the stresses in the specimen are distributed. Self-tightening for effective tensile testing up to 10 kN. Grips are supplied in pairs.

### Applications

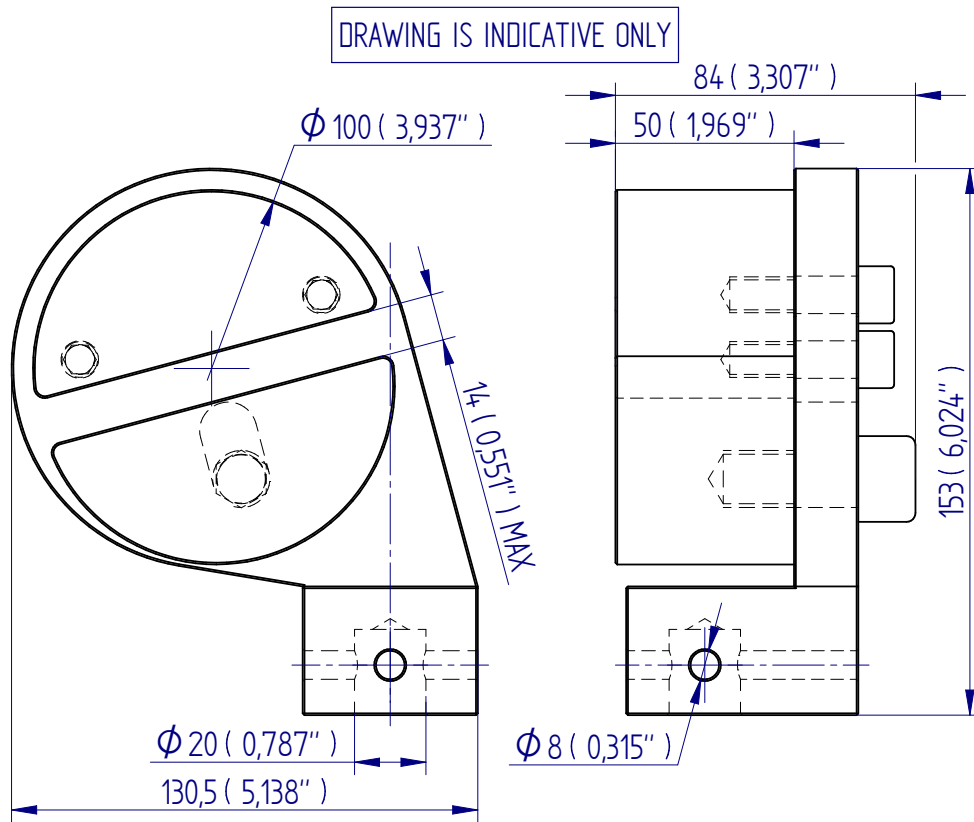
Used for tensile testing of:

- conveyor belts
- plastic and metal strapping
- safety harnesses
- seat belts
- tapes

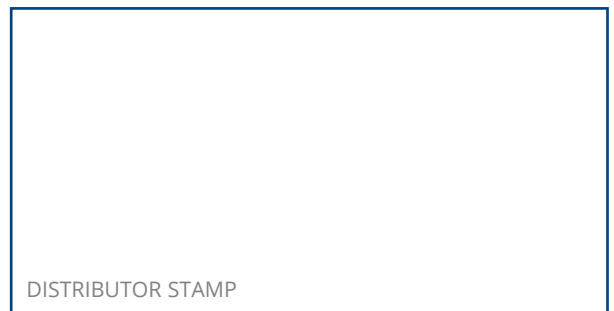
### Specifications

Part No.	Load Capacity		Post Ø	Max. Sample Thickness		Max. Specimen Width		Length		Weight		
432-277	10 kN	1000 kgf	2200 lbf	QC-20	14 mm	0.55"	50 mm	1.97"	152 mm	5.98"	5 kg	11 lb

## Dimensions mm (inch)



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



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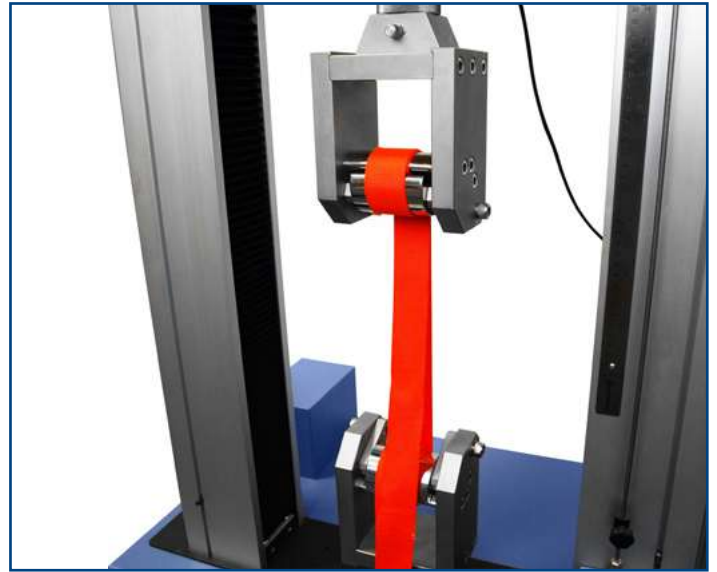
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## Heavy-duty Textile Grips, QC fitting



### Description

Heavy-duty textile grips are ideally suited to tension testing of fabrics, textiles and webbing. The grips are very easy to load, and the self-tightening action ensures that the sample does not slip. Grips are supplied in pairs.

### Applications

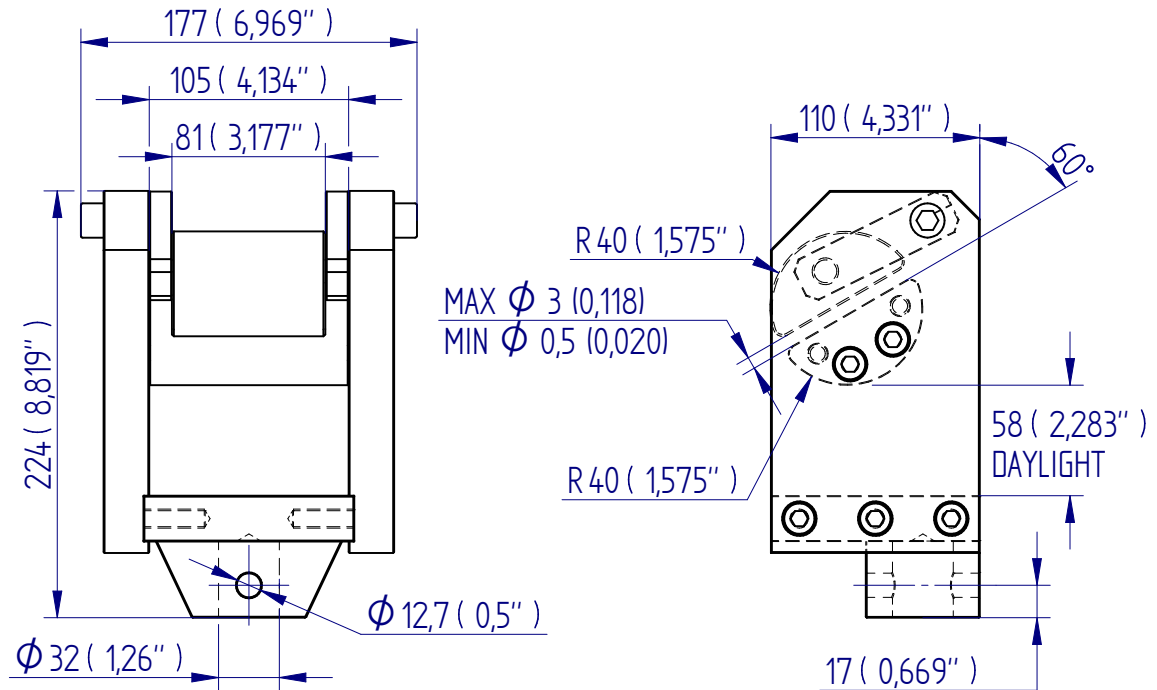
Used for tensile testing of:

- fabrics
- webbing
- textiles

### Specifications

Part No.	Load Capacity			Post Ø	Sample Thickness Min./Max. (A)		Max. Specimen Width		Length	
	50 kN	5000 kgf	11000 lbf		0.5 mm / 3 mm	0.02" / 0.118"	81 mm	3.18"	224 mm	8.82"
432-434	50 kN	5000 kgf	11000 lbf	QC32	0.5 mm / 3 mm	0.02" / 0.118"	81 mm	3.18"	224 mm	8.82"

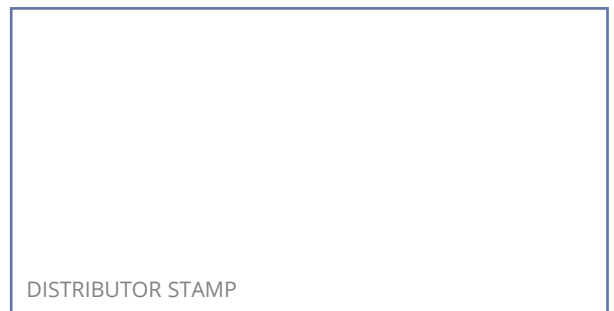
## Dimensions mm (inch)



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



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## Scissor Grips, QC fitting

### Scissor Grips 5, 20 and 50 kN

Self-tightening and self-aligning grips

The initial gripping force to prevent the specimen from slipping when initially inserted is provided by spring tension. The ratio of clamping force to tensile force changes according to the opening width. The larger the opening width the stronger the grips tightens the specimen. The jaws then tighten themselves during force application to ensure the specimen can be pulled to break. Most commonly used for testing high-ductile plastics and elastomers.

#### Mec11-5 Scissor Grip (5 kN)

##### Ordering information

Mec11-5 grips are supplied individually, not as a pair. Mec11-5 grips are supplied with bore-hole to allow connection to QC-20 fixing post

• Item No.	Mec11-5
• Tensile force	5 kN
• Opening	0 – 19 mm
• Sample width	50 mm
• Body	Stainless steel
• Weight	980 gram (without jaws)

##### Jaws for Mec11-5: Scope of delivery 0.5 set = 2 jaws (left and right)

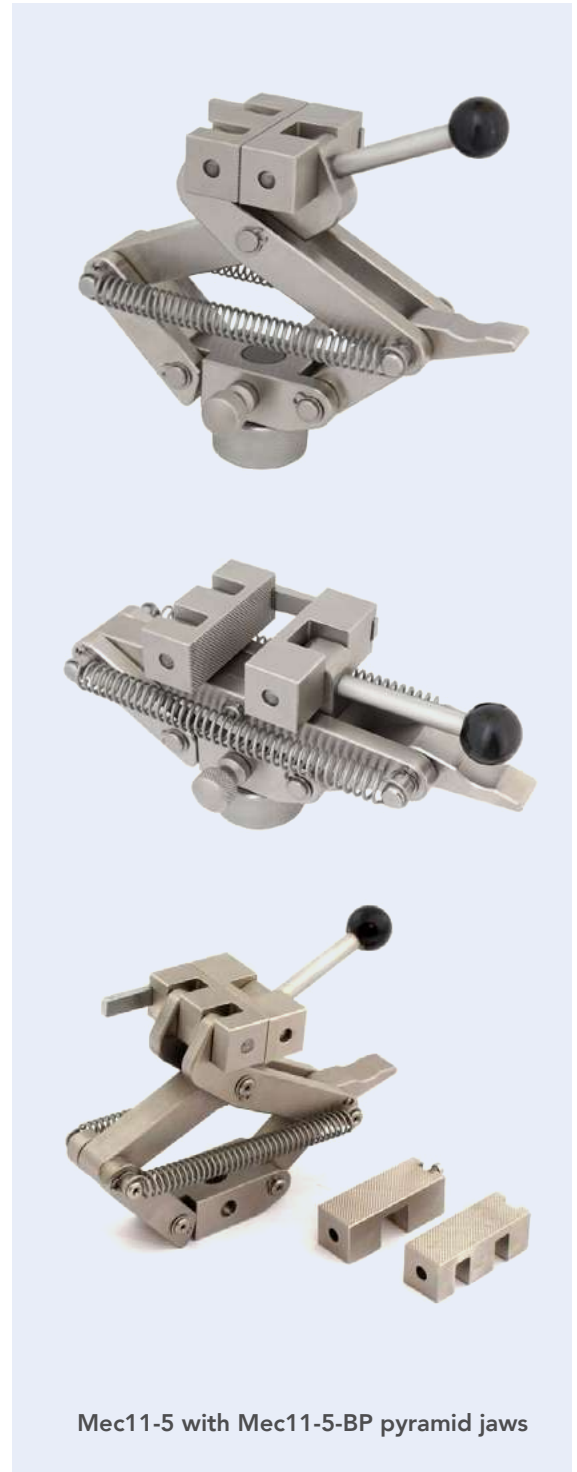
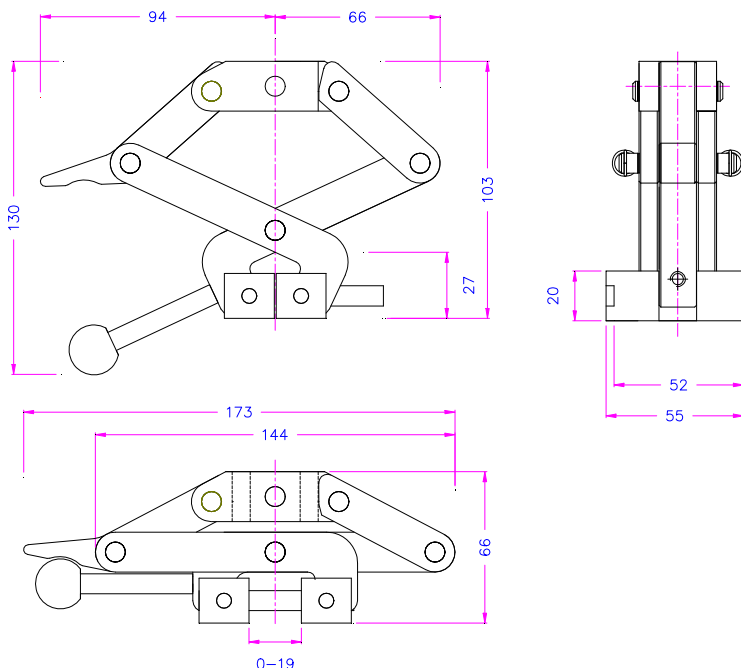
Item number	Surface	Clamping surface H x W	Weight per 0.5 set
Mec11-5-B	Blank (smooth) jaws	20x50 mm	240 gram
Mec11-5-BP	Pyramid (serrated) jaws	20x50 mm	240 gram

Other surfaces on request



Blank jaws (smooth)  
- Suitable for own further treatments  
- Steel blanks without coating

BP –multi-purpose application range  
- Pyramid (serrated) jaws 1.2x45°  
- Hardened steel 58HRC, nickel plated



Mec11-5 with Mec11-5-BP pyramid jaws



# Mec11-20 Scissor Grip (20 kN)

With locking function (snap in): the grip locks in the opened position.  
(Not functional when using round jaws type - BR)

### Ordering information

Mec11-20 grips are supplied individually, not as a pair.

Mec11-20 grips are supplied with bore-hole to allow connection to QC-20 fixing post

• Item No.	Mec11-20
• Tensile force	20 kN
• Opening	Flat jaws 0 – 25 mm Round jaws 0 – 20 mm V-jaws for round specimen: 4 – 16 mm Ø
• Sample width	50 mm and 100 mm
• Body	Stainless steel
• Weight	2 kg (without jaws)



Mec11-20 with Mec11-20-BW100 jaws

Mec11-20 with Mec11-20-BW100 jaws

### Jaws for Mec11-20: Scope of delivery 0.5 set = 2 jaws (left and right)

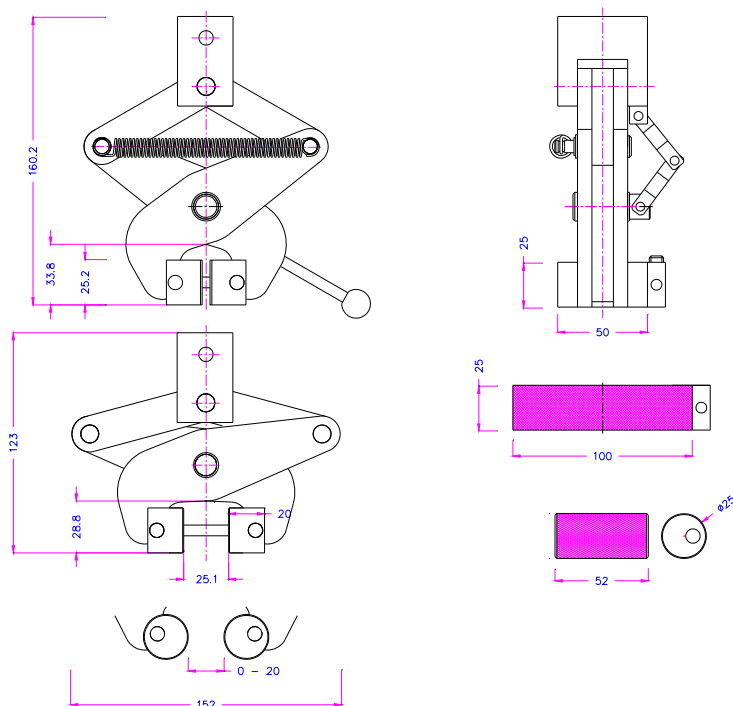
Item number	Surface	Clamping surface H x W	Weight per 0.5 set
Mec11-20-B	Blank (smooth) jaws	25x50 mm	0.34 kg
Mec11-20-BP	Pyramid (serrated) flat jaws	25x50 mm	0.33 kg
Mec11-20-BPR*	Pyramid (serrated) round jaws	Ø 25 mm x 52 mm	0.31 kg
Mec11-20-BV	V-jaws for round specimen	Samples 4-15 mm Ø	0.45 kg
Mec11-20-BW	Wave jaws	25x50 mm	0.32 kg
Mec11-20-B100**	Blank (smooth) jaws	25x 100 mm	0.74 kg
Mec11-20-BP100**	Pyramid (serrated) flat jaws	25x100 mm	0.72 kg
Mec11-20-BW100**	Wave jaws	25x100 mm	0.69 kg

Other surfaces on request

\* Round jaws are applicable for dumbbell-shaped specimen ("dog-bone").

\*\*When using 100 mm wide jaws the maximum tensile force is reduced to 10kN.

			
B - Blank (smooth) jaws - Suitable for own further treatments - Steel blanks without coating	BP – Multi purpose application range - Pyramid (serrated) jaws 1.2x45° - Hardened steel 58HRC, nickel plated	BV-jaws- for all kinds of round samples - Tooth pitch 1.2 mm - Hardened steel 58 HRC, nickel plated	BW Wave jaws – For textile specimen - Wave 5mm - Hardened steel 58 HRC, nickel plated



Mec11-20 with Mec11-20-BR jaws shown testing dumbbell specimen

## Mec11-50 Scissor Grips (50 kN)

With locking function (snap in): the grip locks in the opened position.

### Ordering information

Mec11-50 grips are supplied individually, not as a pair.

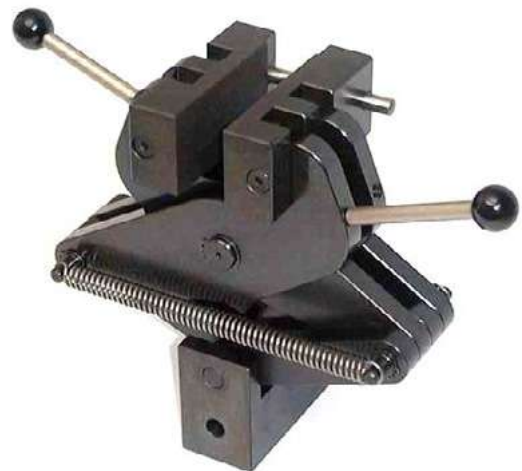
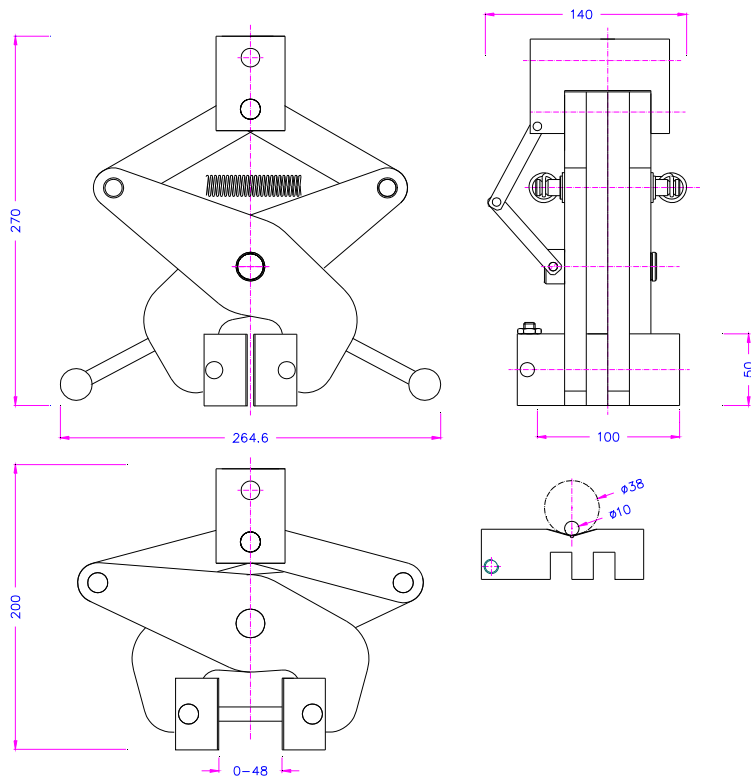
Mec11-50 grips are supplied with bore-hole to allow connection to QC-32 fixing post

• Item No.:	Mec11-50
• Tensile force:	50 kN
• Opening	Flat jaws 0 – 48 mm V-jaws for round specimen: 10 - 48 mm Ø
• Sample width	100 mm
• Body	Steel, manganese phosphate coating
• Weight	9.1 kg (without jaws)

### Jaws for Mec11-50: Scope of delivery 0.5 set = 2 jaws (left and right)

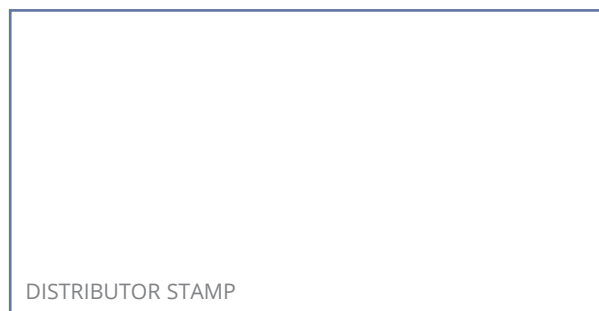
Item number	Surface	Clamping surface H x B	Weight per 0.5 set
Mec11-50-BP	Pyramid (serrated) jaws	50x100 mm	1.9 kg
Mec11-50-BV10	V-jaws for round specimen	Samples 10-48 mm Ø	2.0 kg

Other surfaces on request



Mec11-50 with Mec11-50-BP pyramid jaws

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



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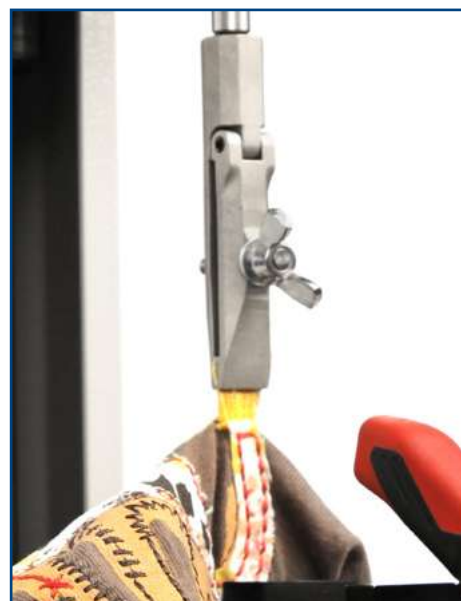
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## Pinch Grip (for testing bows, applique, patches)



### Description

Pinch grips are lightweight miniature vice grips, which use a hinge action to close and separate the jaws. The sample is inserted, and a wing nut serves to tighten and release the jaws for tensile tests up to 200N.

Each jaw face is lightly serrated to hold the sample securely yet avoid inducing a break within the grip. Pinch grips are particularly well suited for peel testing of plastic films and other thin laminates or fabric clothing attachments.

The body of the grip has an M6 threaded hole. The grip is supplied with an M6 to 10-32 UNF adapter and grub screw (as shown) for connection to Mecmesin loadcells and test stands.

Supplied individually.

### Applications

Used for peel and tensile testing of:

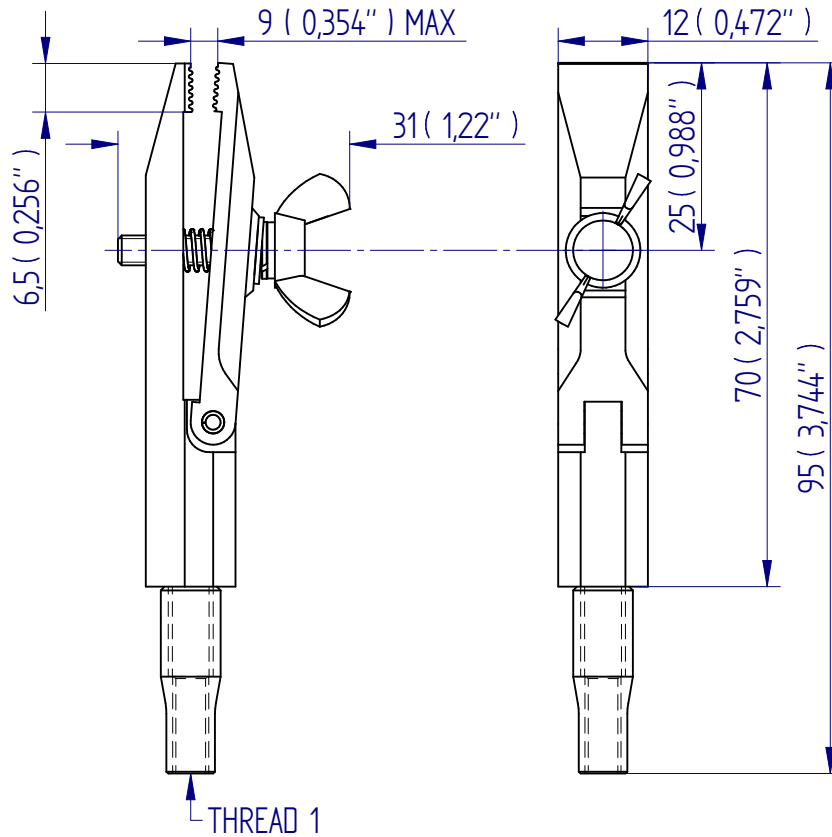
- thin film
- tissue
- woven yarn

### Specifications

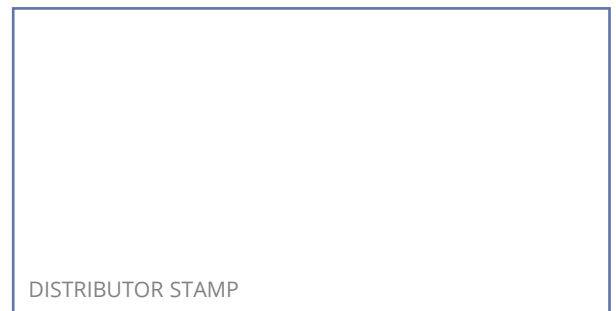
Part No.	Load Capacity	Thread 1	Jaw Opening	Jaw Width	Length	Weight
432-280	200 N / 20 kgf / 44 lbf	M6 10-32 UNF	9 mm (0.35")	12 mm (0.47")	95 mm (3.744")	54.7 g (0.12 lb) 63.2 g* (0.14 lb)*

\* Weight including adapter

## Dimensions mm (inch)



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## Large Pinch Grip



### Description

The large pinch grip has cross-hatched jaw faces to ensure samples are held securely for tensile tests. Fast installation and release of samples is achieved by initially grabbing by hinge action, and manually tightening the wing nut.

Supplied individually.

### Applications

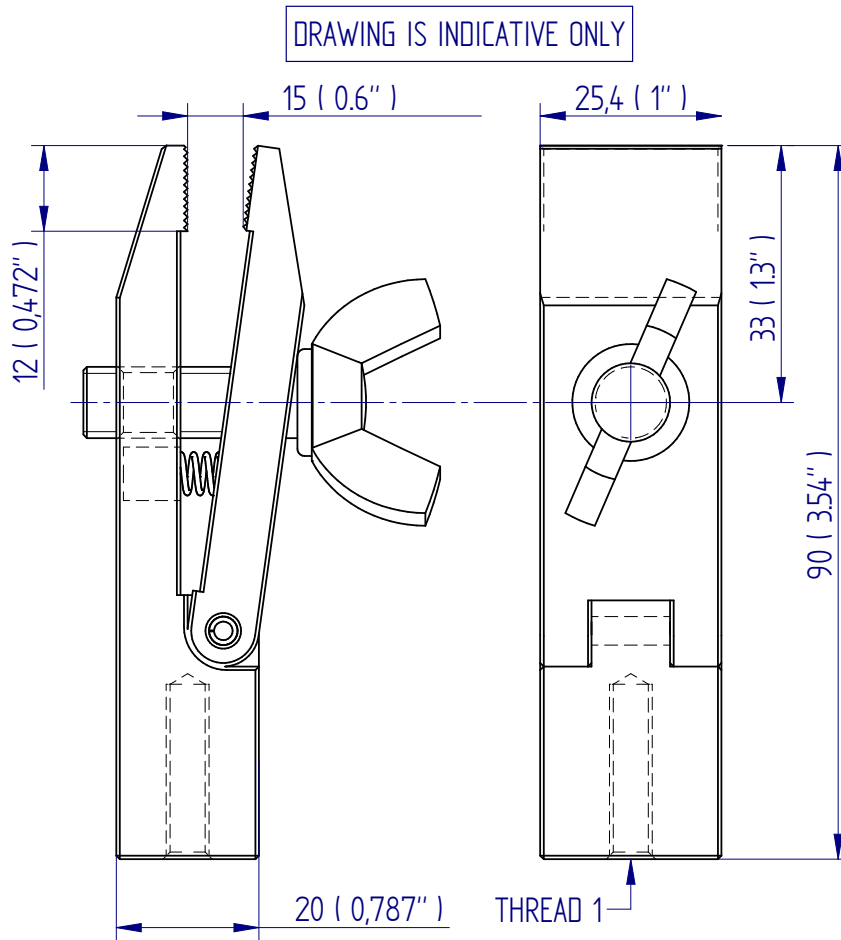
Used for tensile and heavy duty peel testing of:

- small components
- textile attachments
- welded tags
- paper and tissue strips

### Specifications

Part No.	Load Capacity			Thread 1	Jaw Opening		Jaw Width		Length		Weight	
432-278	500 N	50 kgf	110 lbf	M6	15 mm	0.6"	25 mm	0.98"	90 mm	3.54"	300 g	0.66 lb

## Dimensions mm (inch)



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## 2 kN Pinch Grip, QC fitting



### Description

A versatile and easy to use pinch grip suitable for small components, or where access space is limited yet tensile forces are significant. The 2 kN Pinch Grip is fitted with 25 mm high x 25mm wide pyramid jaw faces to ensure samples are held securely for tensile tests below 2 kN. One jaw is fixed and the other jaw is on a spring-loaded hinge which opens to 10 mm. Fast installation and release of samples is achieved by manually tightening the wing nut.

Fitted with a QC-15.9 mm hole and supplied with a male-to-female adaptor from QC-15.9 mm to QC-20 mm hole for connection to QC-20 posts on the base of a test stand or loadcell. Supplied individually.

### Applications

Used for tensile and heavy-duty peel testing of:

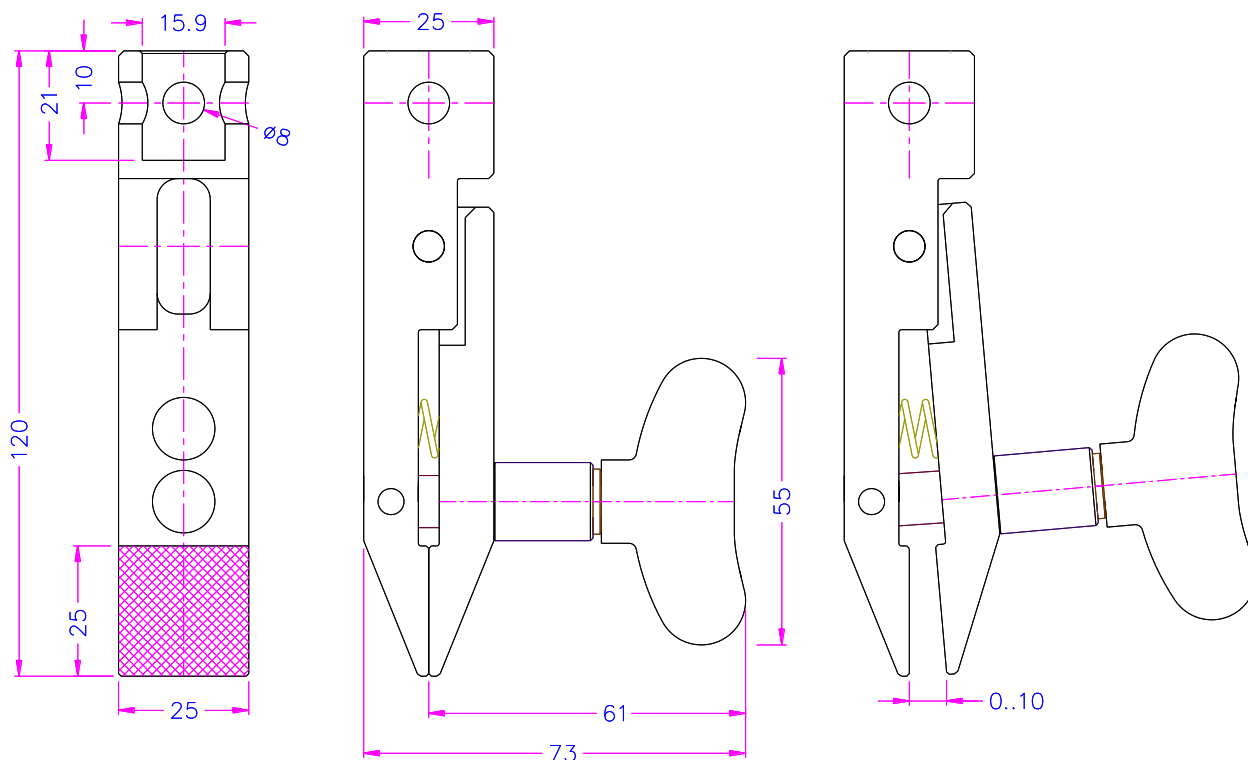
- small engineering components
- electronic components
- textile attachments
- welded tags
- adhesive tapes and laminate coatings



Item number:	MecS470
Tensile force:	2 kN
Fixing hole:	Af15.9
Opening:	0 – 10 mm
Jaws:	Pyramid (serrated) jaws, pyramids 1.2 x 45°
Clamping surface:	25 x 25 mm (HxW)
Body:	Steel, nickel-plated, hardened steel
Weight:	462 g per grip 188 g per adapter
Scope of delivery	1 grip



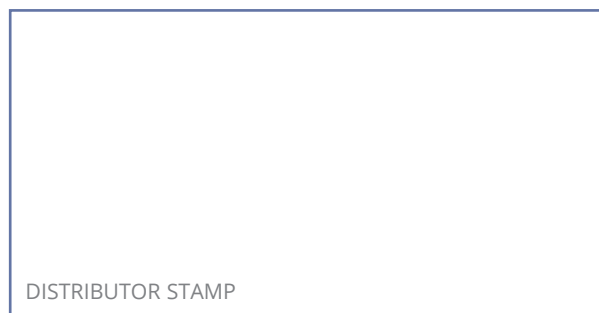
## Dimensions mm (inch)



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



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## 20 N Spring-loaded Pinch Grip with chain link, QC fitting

### Pinch Grip (spring-loaded)

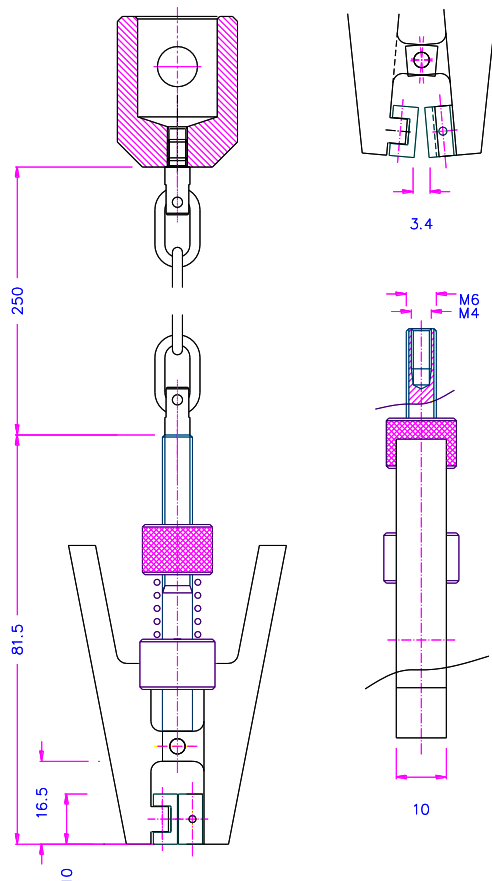
A small spring-loaded Pinch Grip ideal for low-force tension tests below 20 N.

Light-weight, versatile and easy to use. Suitable for pull-off and tear tests of components, peel testing of adhesive bonds plus testing the separation force of welded joints (e.g. plastic, paper & rubber). The flexible chain-link connection allows easy access to components in limited spaces and ensures self-alignment during testing.

MecS205k: Supplied as standard with chain and adapter to allow connection to QC-20 fixing post

### MecS205k Spring-loaded Pinch Grip (20 N)

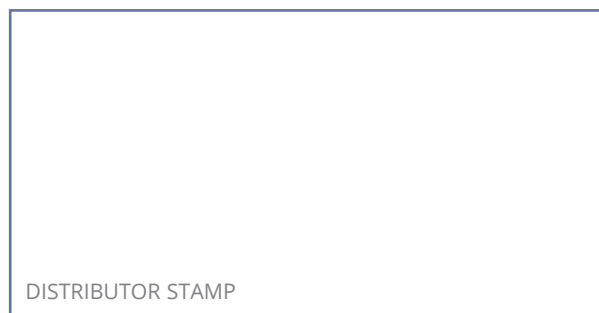
• Item No.	MecS205k
• Tensile force	20 N
• Opening	0 – 3.4 mm
• Jaws	Smooth (blank) jaws
• Clamping surface H x W	10 x 10 mm
• Body	Aluminium, anodized
• Weight	98 gram
• Scope of delivery	MecS205k: 1 pinch grip incl. chain and adapter



#### Similar grips



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



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## Lightweight Mini Vice Grip



### Description

Lightweight mini vice grips are ideal for testing extremely low forces by virtue of their spring-loaded clamping action. Samples are held without the need to tighten a thread which may damage very light loadcells or the sample itself. Supplied with a chain link for ease of alignment.

Supplied individually.

### Applications

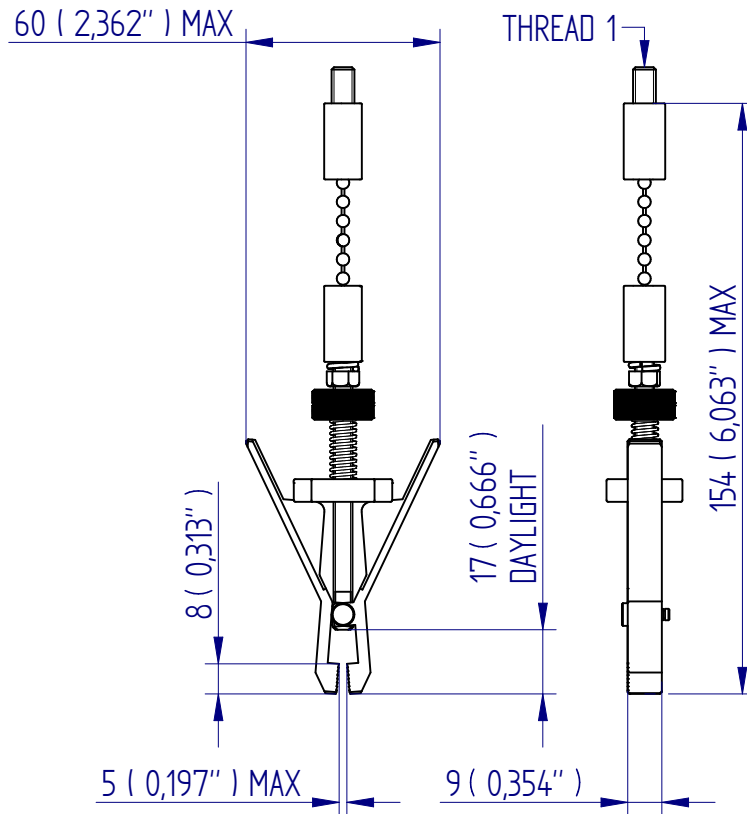
Used for tensile and low-force peel testing of:

- thin films
- delicate fine wire
- sub-miniature components
- tissue and cotton yarns

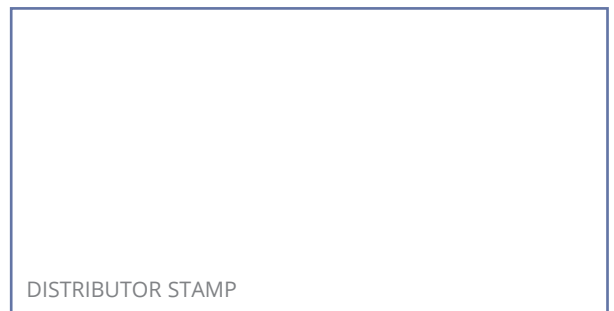
### Specifications

Part No.	Load Capacity		Thread 1	Jaw Opening		Jaw Width		Length		Weight		
432-281	5N	0.5kgf	1 lbf	M6	5 mm	0.197"	9 mm	0.35"	154 mm	6.06"	30 g	0.07 lb

## Dimensions mm (inch)



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# 100 N Miniature Vice-Grip, QC fitting

Versatile, easy to use. Suitable for small components (eg. bonded joints) where access space is very limited and tensile forces are below 100 N. Clamping surfaces are machined with pyramid-shaped serrations to ensure optimum gripping force.

The flexible chain-link connection allows easy access to fix the grip to components ensuring self-adjustment during testing. Supplied with adapter to allow connection to QC-20 fixing post

## MecS341 Miniature Vice Grip (100 N)

• Item No.	MecS341
• Tensile force	100 N
• Opening	0 – 4 mm
• Jaws	Pyramid jaws (serrated), 0.6x45°
• Clamping surface HxW	5 x 6 mm
• Grip	Hardened steel, nickel coated
• Adapter	Aluminium, anodised
• Chain	Total length 150 mm; chain link: Ø1.9, length 16.6 mm V4A stainless steel
• Temperature range	0 to +130°C -70 to +280°C (MecS341-Ni)
• Weight	90 Gram
• Scope of delivery	1 piece including chain & adapter



Similar grips



MecS470

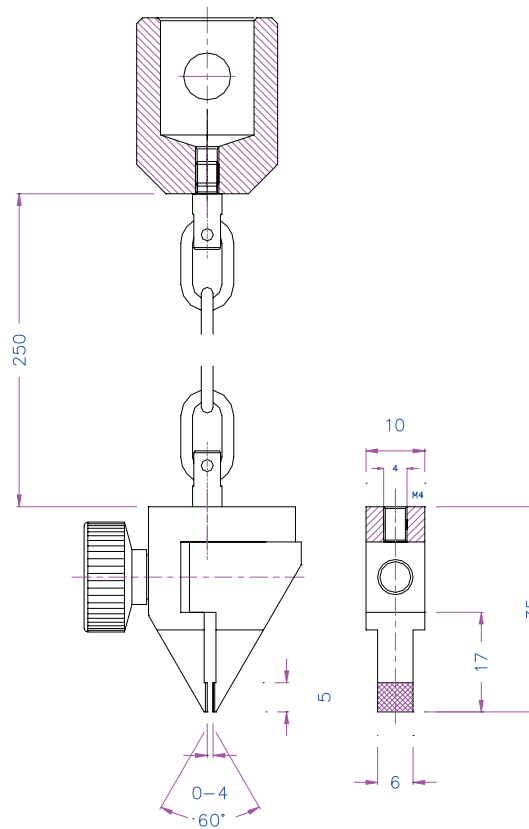


MecS205k

Close-up of MecS341



## Dimensions mm (inch)



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



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## Spring-action Vice Clamp



### Description

Spring-action vice clamps are lightweight clamps designed for gripping film, paper, labels, tape and other thin materials for tensile and peel testing. Ideal for testing at low forces, the clamps are fitted with adjustable serrated interlocking jaws. Often used with the chain link assembly for ease of sample loading and for alignment.

Supplied individually.

### Applications

Used for tensile and peel testing of:

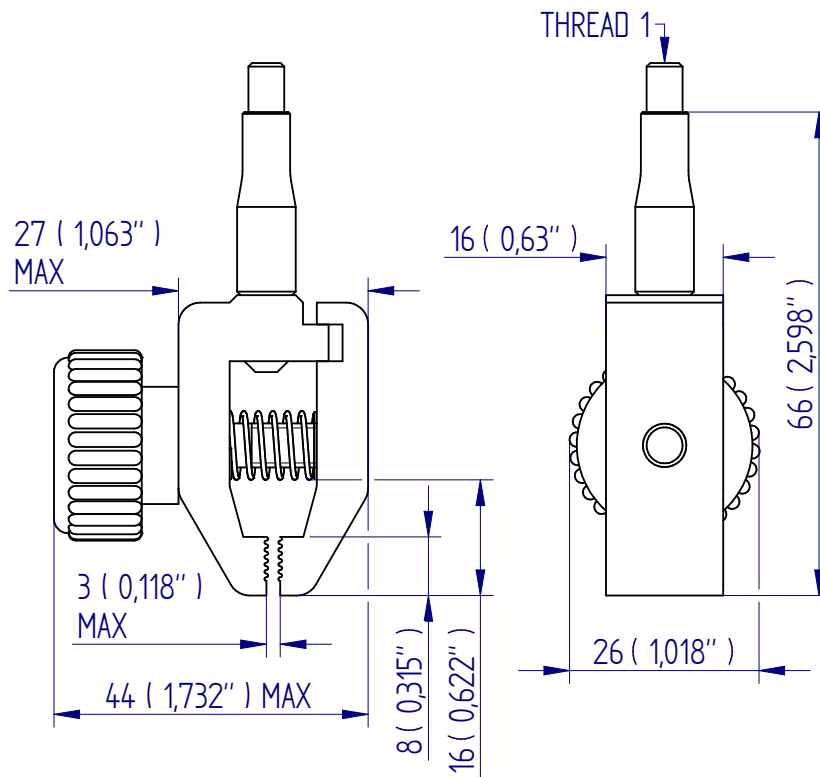
- films
- rubber
- flexible sheet materials
- woven fabrics
- paper
- tissue
- laminates
- tape
- textiles

### Specifications

Part No.	Load Capacity			Thread 1	Jaw Opening		Jaw Width		Length	
432-381	200 N	20 kgf	45 lbf	10-32 UNF	3 mm	0.12"	16 mm	0.63"	66 mm	2.60"



## Dimensions mm (inch)

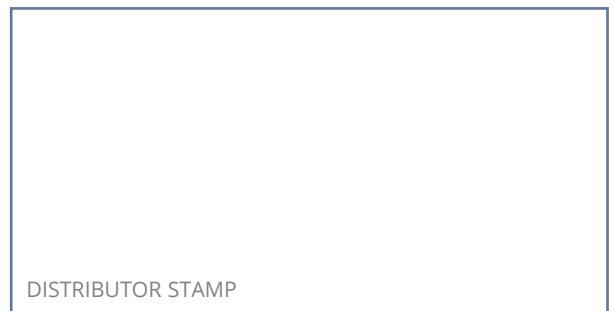


For more information on QC fittings, refer to datasheet 431-354  
Adapters for QC range of grips.



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## Small Single-action Vice Grip, QC fitting



### Description

Small single-action vice grips are ideal for testing low force applications on flat specimens. These general purpose side loading vice grips are fitted with 30 mm x 30 mm (1.2" x 1.2") flat faced jaws.

Supplied individually.

### Applications

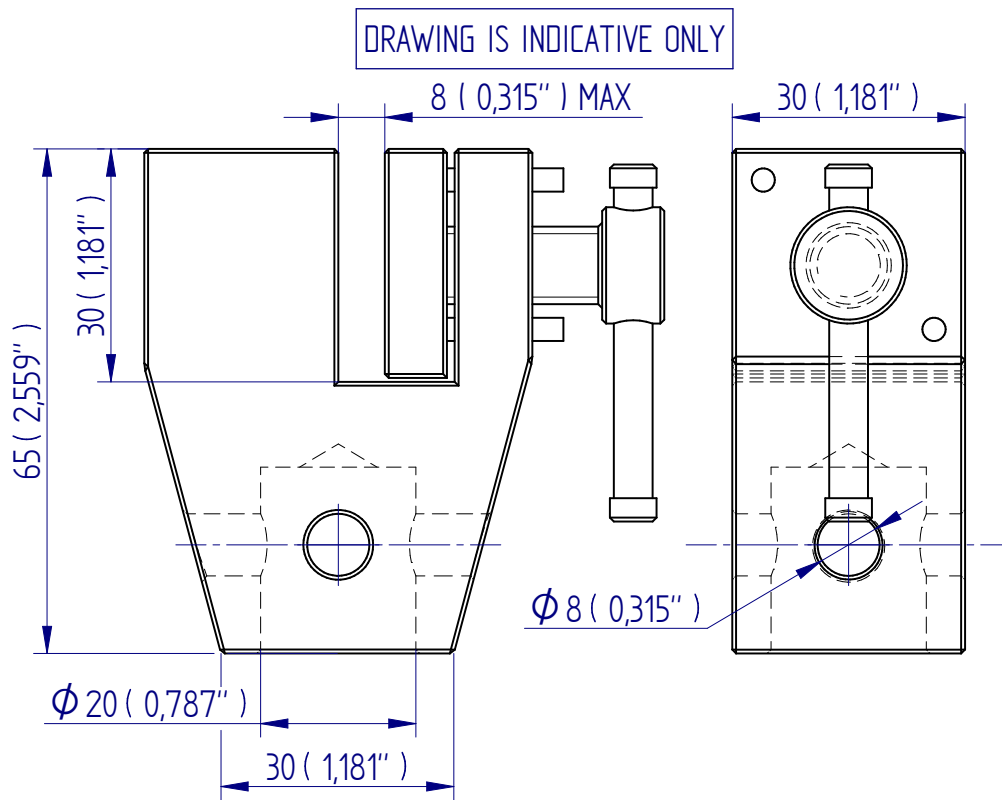
Used for tensile and peel testing of:

- films
- rubber
- flexible sheet materials
- woven fabrics
- tape
- paper
- tissue
- laminates
- textiles

### Specifications

Part No.	Load Capacity			Post Ø	Jaw Opening		Jaw Dimensions (H x W)		Height		Weight	
432-264	200 N	20 kgf	45 lbf	QC20	0 - 8 mm	0 - 0.32"	30 x 30 mm	1.18" x 1.18"	65 mm	2.56"	215 g	0.47 lb

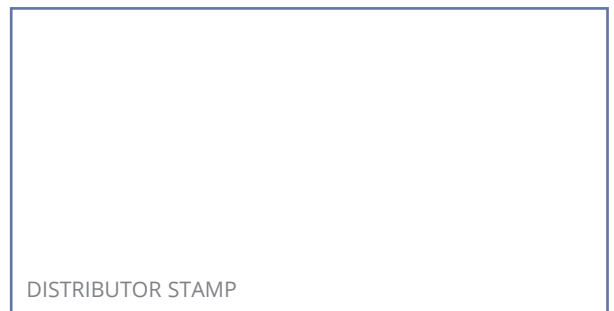
## Dimensions mm (inch)



For more information on QC fittings, refer to datasheet 431-354  
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## Medium Single-action Vice Grip, QC fitting



Mec240k - 2.5 kN

Mec240k-S20 - 2 kN

Mec240k-S30 - 1 kN

Mec240k-S50 - 1 kN

Mechanical Vice Grips apply a clamping force by manually tightening parallel jaw faces directly onto the specimen. Single-action vice grips allow one jaw to be set in position to align the specimen around the central axis and the other jaw to be freely adjustable to clamp it in place. Consequently they are best suited for tensile testing of symmetrical specimens which do not vary greatly in thickness.

The Mec240k Medium Vice Grips are rated between 1 – 2.5 kN and available in 4 sizes with jaw openings ranging from 0-10mm right up to 0-50mm depending on the jaw types selected. An extensive collection of interchangeable, high-performance jaws with differing surface profiles provide excellent gripping characteristics to ensure that a variety of materials and components can be securely held.

Ideal for tension tests below 2.5kN on flat strips of metal and plastic, thin sheets and tapes plus non-woven and general fabrics.

Item No:	Mec240k	Mec240k-S20	Mec240k-S30	Mec240k-S50
Rated capacity:	2.5 kN	2 kN	1 kN	1 kN
Opening (depending on jaws):	0-10 mm	0-20 mm	0 – 30 mm	0-52 mm
Weight each grip(without jaws):	0.27 kg	0.32kg	0.33 kg	0.49 kg

Scope of delivery: 1 grip supplied fitted with bore-hole to allow connection to QC-20 fixing post

**Note:** Jaws (see table below) must be ordered separately.

Scope of delivery 0.5 set = 2 jaws (left & right). Order any combination of 2 half-sets of jaws to fit into a pair of any Mec240k Medium Vice grips (upper & lower)

Item no.	Surface	Clamping surface H x W	Opening for Mec240k	Opening for Mec240k-S20	Opening for Mec240k-S30	Opening for Mec240k-S50	Weight per 0.5 set
Mec240k-B	Blank jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.13 kg
Mec240k-BG	Rubber jaws	30 x 30 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.13 kg
Mec240k-BP	Pyramid jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.12 kg
Mec240k-BV2	V jaws	30 x 30 mm	Ø 2 – 10 mm	Ø 2 - 20 mm	Ø 2 - 30 mm	Ø 2 – 52 mm	0.12 kg
Mec240k-BV3	V jaws	30 x 30 mm	Ø 3 – 10 mm	Ø 3 – 20 mm	Ø 3 - 30 mm	Ø 3 – 52 mm	0.13 kg
Mec240k-BW	Wave jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.12 kg
Mec240k-BD	Diamond jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.13 kg
Mec240k-B50	Blank jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.22 kg
Mec240k-BG50	Rubber jaws	30 x 50 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.23 kg
Mec240k-BP50	Pyramid jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.21 kg
Mec240k-BW50	Wave jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.20 kg
Mec240k-BD50	Diamond jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.22 kg
Mec240k-B80	Blank jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.36 kg
Mec240k-BG80	Rubber jaws	30 x 80 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.37 kg
Mec240k-BP80	Pyramid jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.35 kg
Mec240k-BW80	Wave jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.32 kg
Mec240k-BD80	Diamond jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.36 kg
Mec240k-B100	Blank jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.45 kg
Mec240k-BG100	Rubber jaws	30 x 100 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.46 kg
Mec240k-BP100	Pyramid jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.45 kg
Mec240k-BW100	Wave jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.51 kg
Mec240k-BD100	Diamond jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 50 mm	0.45 kg

Jaws with other dimensions and surface coatings on request

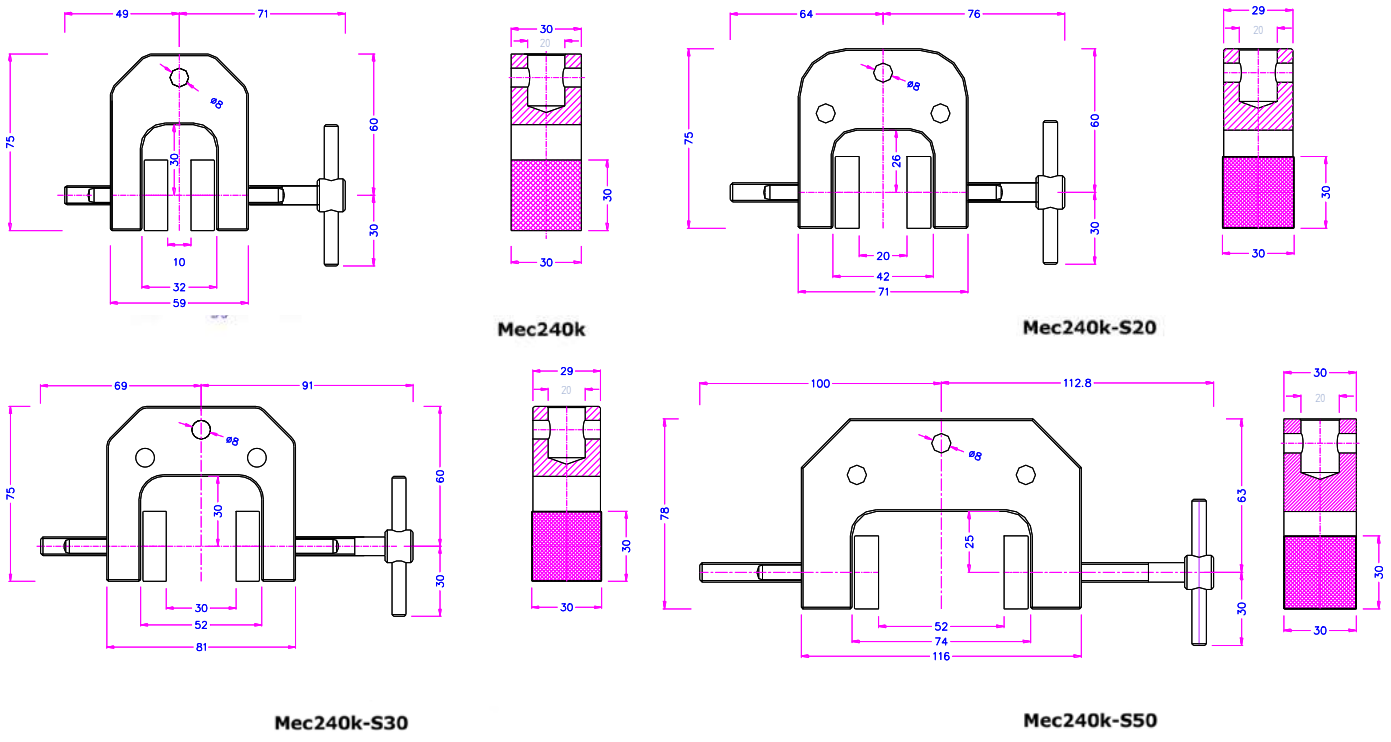
- Blank jaws**
  - Applicable for own further treatments
  - Steel-blanks without coating
- Rubber jaws**
  - 1mm rubber coating (NBR)
  - Nickel plated
- Pyramid jaws**
  - Pyramids 1.2x45°
  - Hardened steel 58 HRC
  - Nickel plated
- V-jaws**
  - For all kinds of round samples
  - Tooth pitch 1.2 mm
  - Hardened steel 58HRC
  - Nickel plated
- Wave jaws**
  - For flexible materials
  - Wave 5 mm
  - Hardened steel 58HRC
  - Nickel plated
- Diamond jaws**
  - Clamping surface coated with synthetic diamonds D91 (170/200 mesh)
  - Nickel plated



Mec240k-BV2

Mec240k-BV3

# Dimensions mm



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



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## Large Single-action Vice Grips, QC fitting



### Description

Large single-action vice grips are suitable for tensile testing a wide range of samples. Available fitted with one of three different types of jaw face: pyramid-faced, rubber-coated and wave-form, to securely grip most materials.

Supplied individually.

### Applications

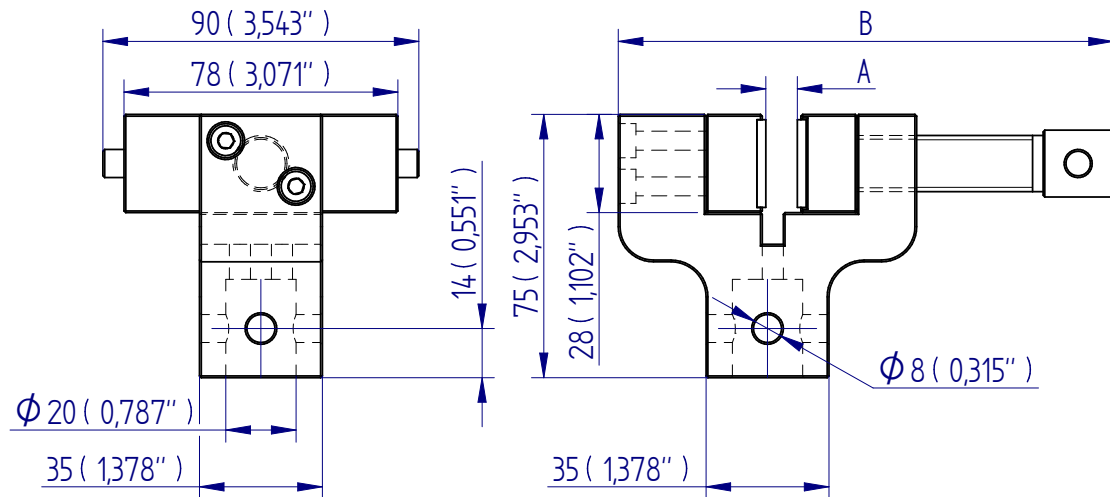
Used for tensile testing of:

- metallic foils
- textiles
- paper and card
- woven fabrics
- plastic sheet
- tapes

### Specifications

Part No.	Load Capacity			Post Ø	Jaw Type	Jaw Opening (A)		Jaw Width		Height		Weight	
432-267	2 kN	200 kgf	450 lbf	QC20	Pyramid-faced	9.0 mm	0.35"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb
432-267-V01	2 kN	200 kgf	450 lbf	QC20	Rubber-coated	9.0 mm	0.35"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb
432-267-V02	2 kN	200 kgf	450 lbf	QC20	Wave-form	6.5 mm	0.26"	78 mm	3.07"	75 mm	2.95"	1.5 kg	3.3 lb

## Dimensions mm



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



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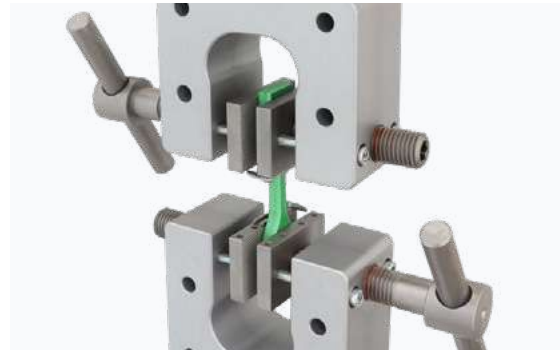
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## Heavy-duty Single-action Vice Grip, QC fitting

Mec154 - 10kN – aluminium, Mec154 - 20kN – steel



Mechanical Vice Grips apply a clamping force by manually tightening parallel jaw faces directly onto the specimen. Single-action vice grips allow one jaw to be set in position to align the specimen around the central axis and the other jaw to be freely adjustable to clamp it in place. Consequently they are best suited for tensile testing of symmetrical specimens which do not vary greatly in thickness.

The Mec154 Heavy-duty Vice Grips are rated to either 10 kN (aluminium body) or 20 kN (steel body) and available in with jaw openings ranging from up to 0-34 mm depending on the jaw types selected. An extensive collection of interchangeable, high-performance jaws with differing surface profiles provide excellent gripping characteristics to ensure that a variety of materials and components can be securely held.

Ideal for tension tests below 20 kN on a range of materials including flat strips of metal, rigid plastics, plus non-woven and general fabrics.

Scope of delivery: 1 grip supplied fitted with bore-hole to allow connection to QC-20 fixing post

Item No:	Mec154-10	Mec154-20
Rated capacity:	10 kN	20 kN
Opening (depending on jaws):	0-32 mm	0-32 mm
Weight each grip (without jaws):	2.36 kg	5 kg

Note: Jaws (see table below) must be ordered separately.

**Jaws for Mec154:** Scope of delivery 0.5 set = 2 jaws (left & right). Order any combination of 2 half-sets of jaws to fit into a pair of any Mec154 Heavy-duty Vice grips (upper & lower)

Item No.	Surface	Clamping surface H x W	Opening	Weight per 0.5 set
Mec154-B	Blank jaws	40 x 60 mm	0 – 32 mm	0.35 kg
Mec154-BG	Rubber jaws	40 x 60 mm	0 – 30 mm	0.36 kg
Mec154-BP	Pyramid jaws	40 x 60 mm	0 – 32 mm	0.33 kg
Mec154-BV4*	V-jaws	Clamping height 40 mm	4 – 32 mm Ø	0.35 kg
Mec154-BV6*	V-jaws	Clamping height 40 mm	6 – 32 mm Ø	0.32 kg
Mec154-BW	Wave jaws	40 x 60 mm	0 – 32 mm	0.32 kg
Mec154-BD	Diamond jaws	40 x 60 mm	0 – 32 mm	0.35 kg
Mec154-BWC	Jaws for bitumen	40 x 60 mm	0 – 14 mm	0.63 kg
Mec154-B100	Blank jaws	40 x 100 mm	0 – 28 mm	0.72 kg
Mec154-BG100	Rubber jaws	40 x 100 mm	0 – 26 mm	0.74 kg
Mec154-BP100	Pyramid jaws	40 x 100 mm	0 – 28 mm	0.69 kg
Mec154-BW100	Wave jaws	40 x 100 mm	0 – 28 mm	0.66 kg
Mec154-BD100	Diamond jaws	40 x 100 mm	0 – 28 mm	0.72 kg
Mec154-BW200	Wave jaws	60 x 200 mm	0 – 20 mm	3.00 kg

\*We recommend BV6 jaws for samples with a larger diameter



**Blank jaws**  
 • Suitable for own further treatments  
 • Steel blanks without coating



**Rubber jaws**  
 • 1 mm rubber coating (NBR)  
 • Nickel-plated



**Pyramid jaws**  
 • Pyramids 1.2x45°  
 • Hardened steel 58HRC  
 • Nickel-plated



**V-jaws**  
 • For all kinds of round samples  
 • Tooth pitch 1.2 mm  
 • Hardened steel 58HRC, nickel-plated



**Wave jaws**  
 • For flexible materials  
 • Wave 5 mm  
 • Hardened steel 58HRC, nickel-plated



**Diamond jaws**  
 • Covered with synthetic diamonds  
 • Nickel-plated



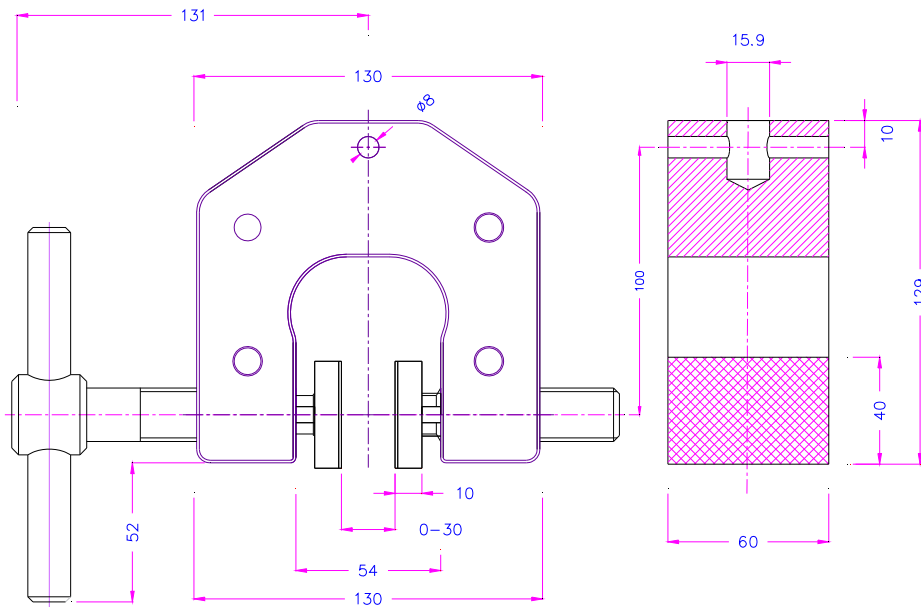
Mec154-BG 100 40x100 mm rubber-coated



Mec154-BW 40x60 mm wave form



## Dimensions mm



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



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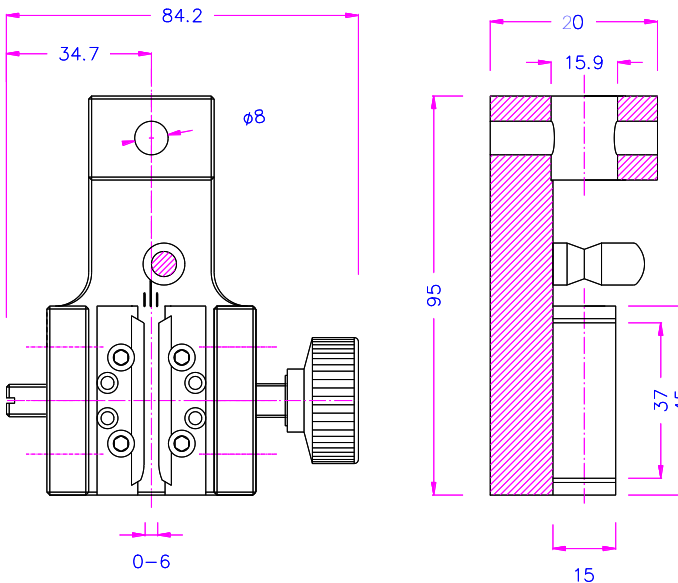
## 2.5 kN Thin Wire Grip, QC fitting

### Mec9

The Mec9 'Thin Wire grip' is designed for holding fine wires, thin ropes and narrow bands which have a tendency to slip under load. The specimen is wrapped around the lower bollard to provide more contact area thereby increasing clamping friction. The specimen is then passed through the screw-action jaws before being tightened in place - care should be taken to avoid excessive tightening which may induce specimen break.

The Mec9-Ko version operates in the same way except tightening occurs via the pneumatic cylinders. These can be controlled to apply a suitable constant pressure thus minimising the risk of inducing specimen break at the jaws.

Item no.:	Mec9
Max. load:	2.5 kN
Body:	Aluminum, anodized
Weight per grip with jaws:	380 gram
Scope of delivery:	1 piece includes Mec9-GT carrier for inset jaws. Inset jaws must be ordered separately

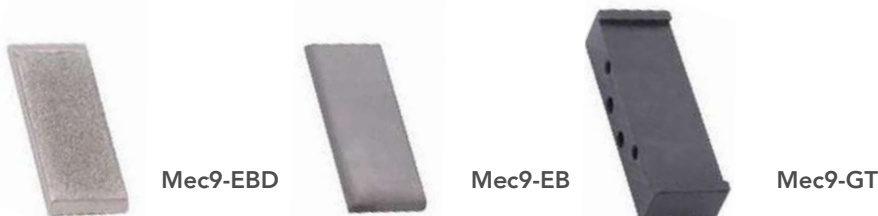


#### Inset jaws for Mec9:

For a quick change of inset jaws, a carrier is provided as standard (Mec9-GT). Scope of delivery: 0.5 set

Item No.	Surface	Clamping surface (H x W)	Opening	Weight per 0.5 set
Mec9-EB	Blank inset jaws	37x15 mm	0 - 5 mm	26 g
Mec9-EBD	Diamond-coated inset jaws	37x15 mm	0 - 5 mm	26 g

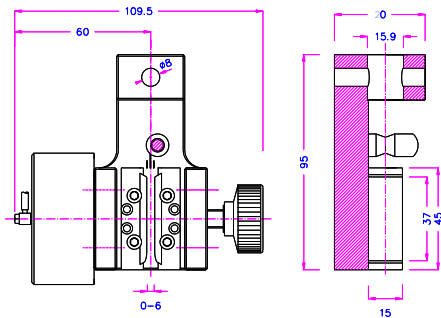
Jaws faces with other dimensions and surface coatings are available on request



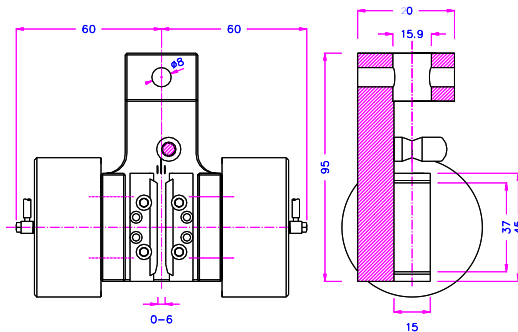
## Dimensions mm



Mec9+ko



Mec9+2ko



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



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## Fabric Grips



### Description

Fabric grips are designed for tensile and elongation testing of fabric to a number of international strength standards. Two locking nuts at either side of the grip ensure the sample is clamped securely across its entire width during testing.

Supplied individually.

### Applications

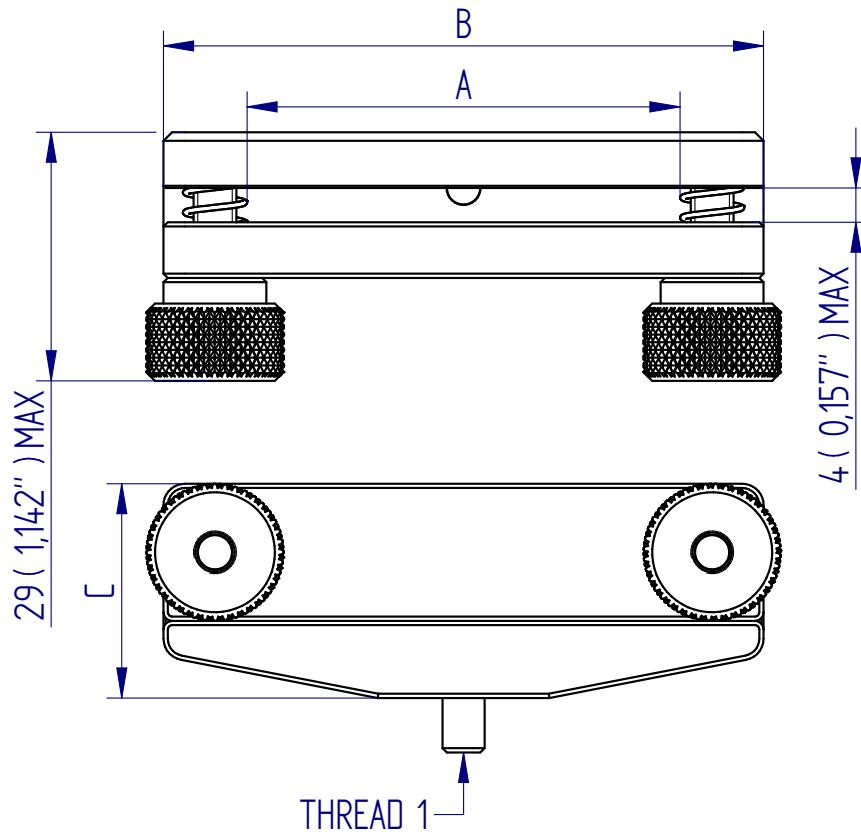
Used for tensile testing of:

- fabric
- textiles

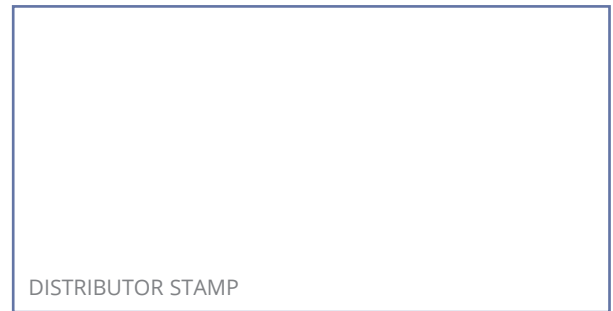
### Specifications

Part No.	Load Capacity			Thread 1	Clamp Capacity		Max. Sample Width (A)		Length (C)		Weight	
432-384	100 N	10 kgf	22 lbf	10-32 UNF	4 mm	0.16"	50 mm	1.97"	25 mm	0.98"	81 g	0.17 lb
432-386	200 N	20 kgf	45 lbf	10-32 UNF	4 mm	0.16"	100 mm	3.97"	33 mm	1.30"	160 g	0.35 lb

## Dimensions mm



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## Large Double-action Vice Grip, QC fitting



### Description

The large double-action vice grip is rated to 5 kN and can grip specimens with a thickness from 0.5 mm to 25 mm. It has a tommy-bar handle on one side for rapid tightening and a fine-action thumb-screw on the other for accurate sample positioning. An engraved millimetre scale on one jaw can be used to align the sample accurately.

Supplied individually.

### Applications

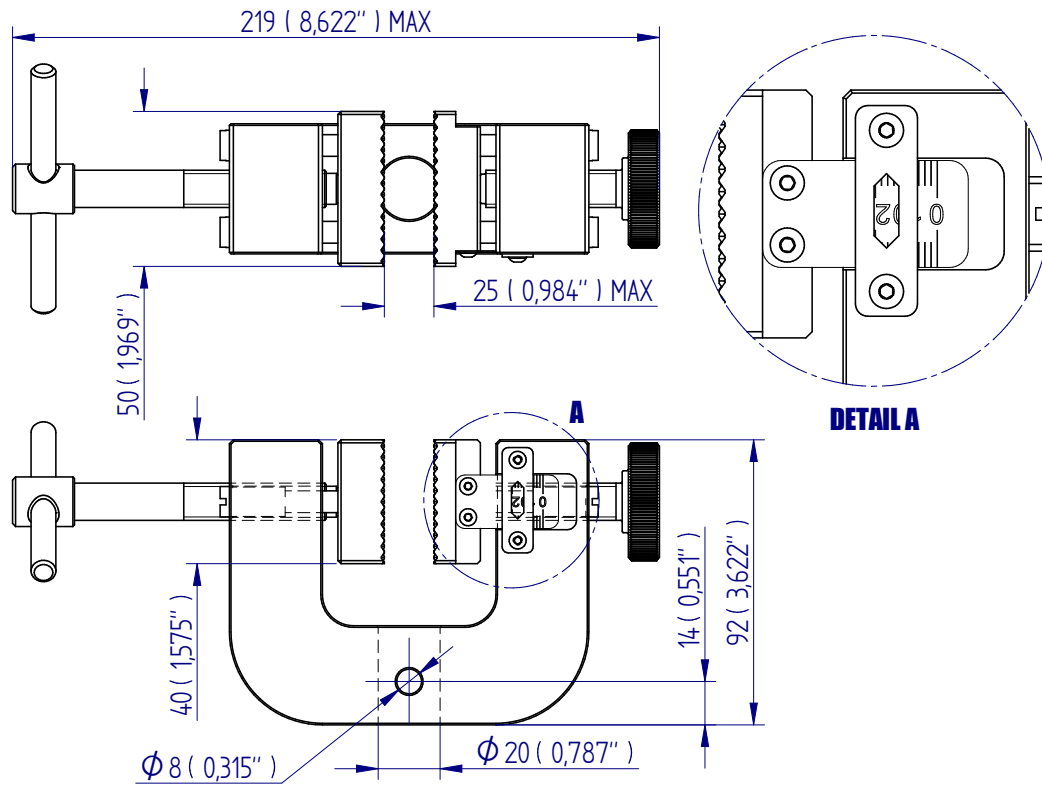
Used for testing of:

- textiles
- leather
- plastics
- paper and cards
- thick films
- thin metal sheets

### Specifications

Part No.	Load Capacity		Post Ø	Jaw Opening		Jaw Width		Height		Weight		
432-433	5 kN	500 kgf	1100 lbf	QC20	25 mm	0.98"	50 mm	1.97"	92 mm	3.62"	2.8 kg	6.2 lb

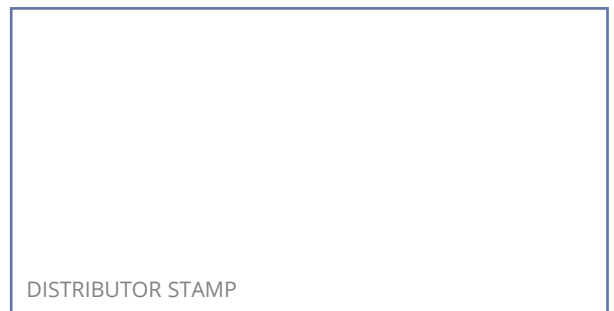
## Dimensions mm



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



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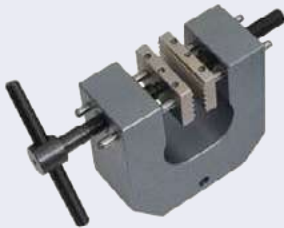
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## U-Form Vice Grip, Double-action, 5 kN - Aluminium, QC fitting

### Mec240g



Shown fitted with a half-set of Mec240g-BW wave jaws

### Mec240g-S50



Shown fitted with a half-set of Mec240g-BG80 rubber jaws

### Mec240g-100



Shown fitted with a half-set of Mec240g-BD80 diamond jaws.

Mechanical Vice Grips apply a clamping force by manually tightening parallel jaw faces directly onto the specimen. Double-action vice grips allow free adjustment of both jaws, allowing them to be aligned around the central axis to accommodate tensile testing of both symmetrical and asymmetrical specimens. The 'U-Form' cut into the aluminium body of these Pneumatic Vice Grips creates the space for an operator to have specimen material below the jaws thereby facilitating loading and removal when testing.

The Mec240g U-form Vice Grips are rated to 5 kN and available in 3 sizes with jaw openings ranging from 0-28 mm, 0-50 mm and 0-106 mm depending on the jaw types selected. An extensive collection of interchangeable, high-performance jaws with differing surface profiles provide excellent gripping characteristics to ensure that a variety of materials and components can be securely held.

Ideal for tension tests on flat strips of metal and plastic, thin sheets and tapes plus non-woven and general fabrics.


Scope of delivery: 1 grip supplied fitted with bore-hole to allow connection to QC-20 fixing post

Item No:	Mec240g	Mec240g-S50	Mec240g-S50
Rated capacity:	5 kN	5 kN	5 kN
Opening (depending on jaws):	0-28 mm	0-50 mm	0 – 106 mm
Weight each grip(without jaws):	1.3 kg	1.4 kg	2.3 kg

**Note:** Jaws (see table below) must be ordered separately


**Jaws for Mec240g:** Scope of delivery 0.5 set = 2 jaws (left and right). Order any combination of 2 half-sets of jaws to fit into a pair of any Mec240g U-form Vice grips (upper and lower)

Item No.	Surface	Clamping surface H x W	Opening Mec240g	Opening Mec240g-S50	Opening Mec240g-S100	Weight per 0.5 set
Mec240g-B	Blank jaws	30x50 mm	0-28 mm	0-50 mm	-	0.22 kg
Mec240g-BG	Rubber jaws	30x50 mm	0-26 mm	0-48 mm	-	0.23 kg
Mec240g-BP	Pyramid jaws	30x50 mm	0-28 mm	0-50 mm	-	0.21 kg
Mec240g-BV2	V-jaws	30x50 mm	Ø 2-28 mm	Ø 2-50 mm	-	0.22 kg
Mec240g-BV5	V-jaws	30x50 mm	Ø 5-28 mm	Ø 5-50 mm	-	0.25 kg
Mec240g-BW	Wave jaws	30x50 mm	0-28 mm	0-50 mm	-	0.20 kg
Mec240g-BD	Diamond jaws	30x50 mm	0-28 mm	0-50 mm	-	0.22 kg
Mec240g-B80	Blank jaws	30x80 mm	0-28 mm	0-50 mm	0-106 mm	0.36 kg
Mec240g-BG80	Rubber jaws	30x80 mm	0-26 mm	0-48 mm	0-104 mm	0.37 kg
Mec240g-BP80	Pyramid jaws	30x80 mm	0-28 mm	0-50 mm	0-106 mm	0.34 kg
Mec240g-BW80	Wave jaws	30x80 mm	0-28 mm	0-50 mm	0-106 mm	0.33 kg
Mec240g-BD80	Diamond jaws	30x80 mm	0-28 mm	0-50 mm	0-106 mm	0.36 kg
Mec240g-B100	Blank jaws	30x100 mm	0-28 mm	0-50 mm	0-106 mm	0.46 kg
Mec240g-BG100	Rubber jaws	30x100 mm	0-26 mm	0-48 mm	0-104 mm	0.46 kg
Mec240g-BP100	Pyramid jaws	30x100 mm	0-28 mm	0-50 mm	0-106 mm	0.43 kg
Mec240g-BW100	Wave jaws	30x100 mm	0-28 mm	0-50 mm	0-106 mm	0.41 kg
Mec240g-BD100	Diamond jaws	30x100 mm	0-28 mm	0-50 mm	0-106 mm	0.46 kg



**Blank jaws**

- Applicable for own further treatments
- Steel-blanks without coating




**Rubber jaws**

- 1mm rubber coating (NBR)
- Nickel plated




**Pyramid jaws**

- Pyramids 1.2x45°
- Hardened steel 58HRC
- Nickel plated



**V-jaws**

- For all kinds of round samples
- Tooth pitch 1.2 mm
- Hardened steel 58HRC
- Nickel plated



**Wave jaws**

- For flexible materials
- Wave 5 mm
- Hardened steel 58HRC
- Nickel plated



**Diamond jaws**

- Clamping surface coated with synthetic diamonds D91 (170/200 mesh)
- Nickel plated



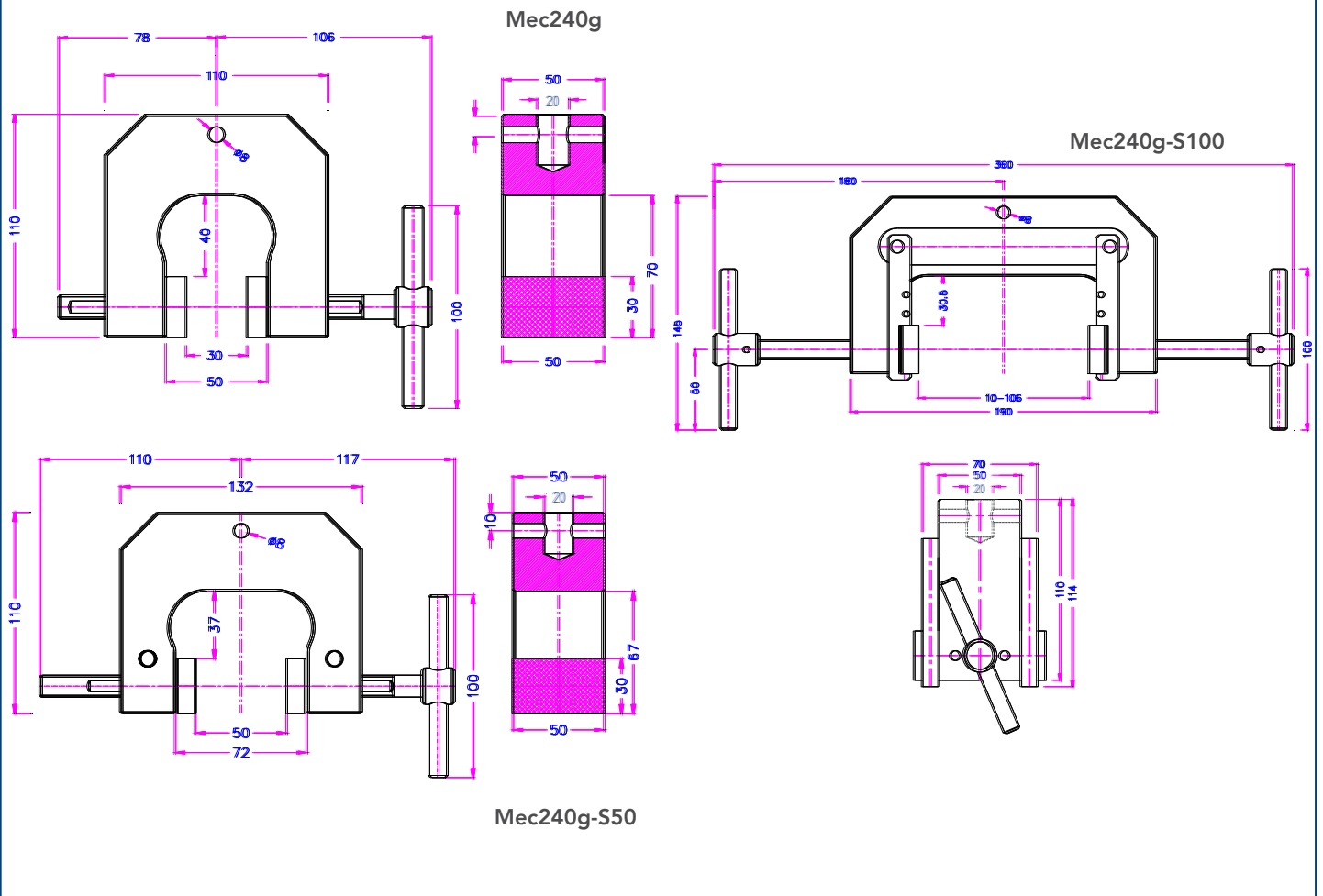
Mec240g-BV2



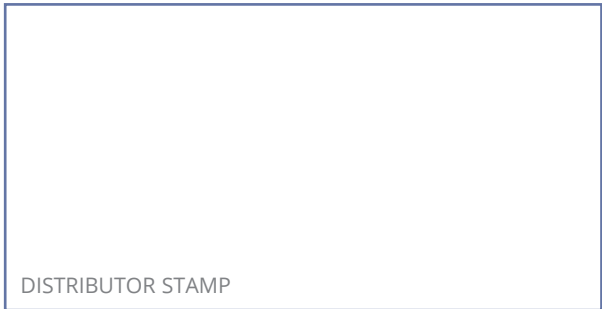
Mec240g-BV3



# Dimensions mm



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



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## Parallel Jaw Grips



### Description

Parallel jaw grips are designed for gripping film, rubber, tape and other materials for general tensile and peel testing up to 500 N. Fitted with individually adjustable serrated interlocking jaws, they grip samples effectively, up to 6 mm (0.24") thick.

Supplied individually.

### Applications

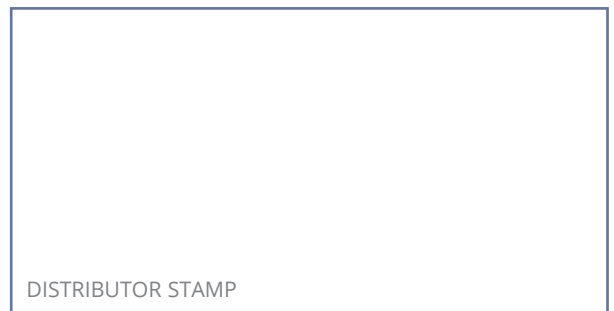
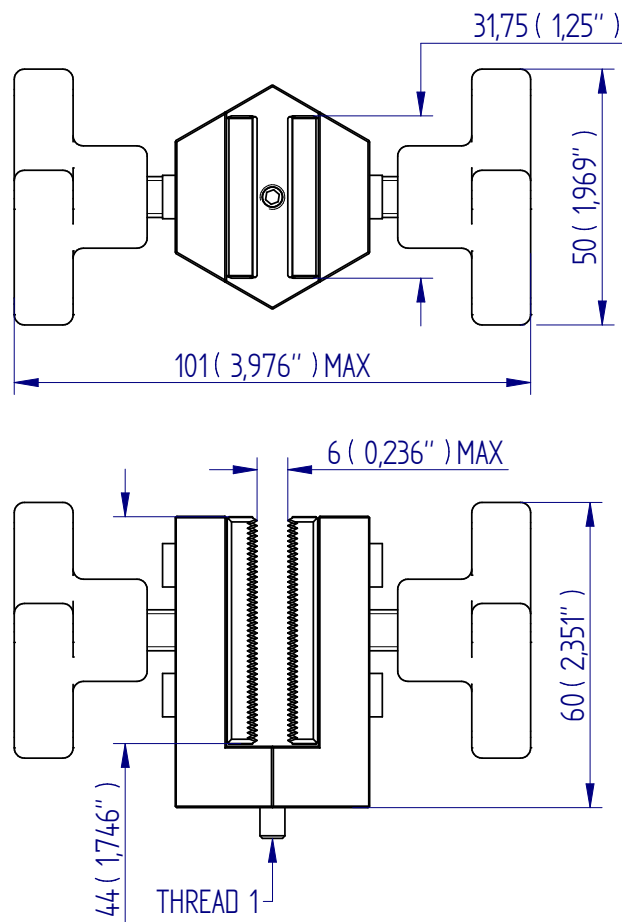
Used for tensile and peel testing of:

- films
- rubber
- flexible sheet materials
- tape
- textiles
- laminates
- woven fabrics
- paper and card

### Specifications

Part No.	Load Capacity		Thread 1	Jaw Dimensions (H x W)		Jaw Opening		Height		Weight		
	N	kgf		mm	in	mm	in	mm	in	g	lb	
432-396	500 N	50 kgf	110 lbf	10/32 UNF	44 x 32 mm	1.73" x 1.26"	6 mm	0.24"	60 mm	2.35"	300 g	0.66 lb

## Dimensions mm



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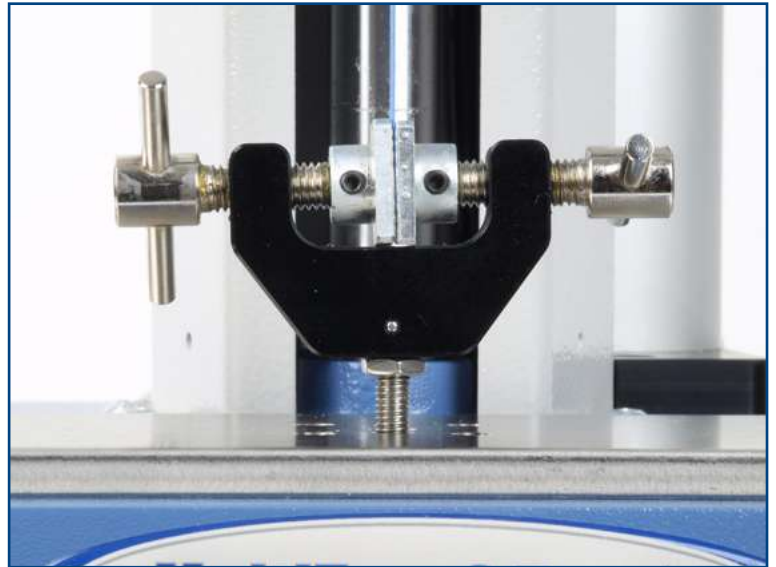
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## Small Parallel Grips



### Description

The small parallel grip has a rigid body with individually controlled serrated jaws. A floating ball screw attachment ensures central loading with correct alignment during tensile testing, and wing screws are used to easily adjust grip faces.

Supplied individually.

### Applications

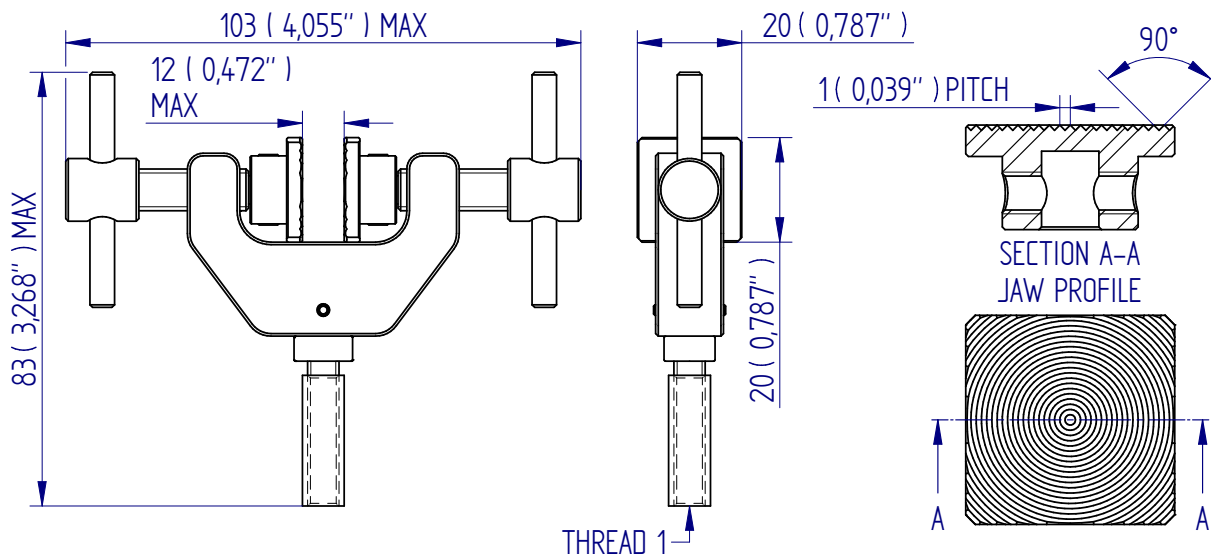
Used for tensile and peel testing of:

- flexible sheet materials
- textiles
- tape
- laminates
- paper

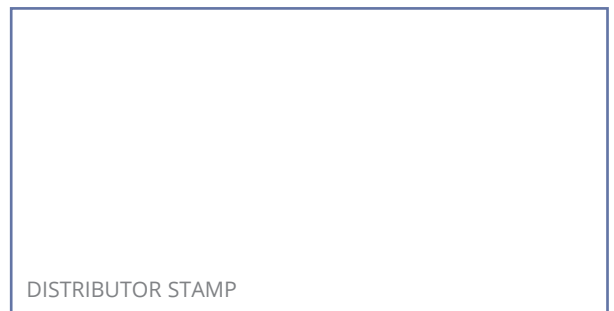
### Specifications

Part No.	Load Capacity			Thread 1	Jaw Dimensions (H x W)		Jaw Opening		Length		Weight	
432-394	500 N	50 kgf	110 lbf	10/32 UNF	20 x 20 mm	0.79" x 0.79"	12 mm	0.47"	70.5 mm	2.78"	126 g	0.28 lb
432-211	500 N	50 kgf	110 lbf	M6	20 x 20 mm	0.79" x 0.79"	12 mm	0.47"	70.5 mm	2.78"	126 g	0.28 lb

## Dimensions mm



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## Lightweight Double-action Vice Grip

### Mec227 Double-action Vice Grip – aluminium

A compact lightweight vice grip suitable for holding thin strips of material (e.g. Paper and plastic films) where the tensile force is less than 100 N. The double-action screw-driven rods allow symmetrical and asymmetrical specimens to be positioned and clamped in place. Its low-profile aluminium design makes it ideal for tensile testing with loadcells of capacity as low as 5 N.

When combined with a flexible chain-link assembly (432-259) it is impeccably suited to low force peel testing applications where the specimen can be inserted separately without risk of overloading the loadcell when tightening the jaws.



Mec227 grip shown with Mec227-BG25 rubber jaws fitted

Scope of delivery: 1 grip fitted with 10/32UNF threaded hole

Item No:	Mec227
Max tensile force:	100 N
Opening (A):	0 - 8 mm (depending on jaws)
Weight:	60 g per grip (without jaws)

### Mec227-S46 Double-action Vice Grip – aluminium

A larger version of the Mec227 vice grip with an opening of 0 - 46 mm (without jaws) suitable for holding specimens which may have a thick substrate with a thin strip of bonded material (e.g. Paper and plastic films) where the tensile force is less than 100 N.



Mec227-S46

Scope of delivery: 1 grip fitted with 10/32UNF threaded hole

Item No:	Mec227-46
Max tensile force:	100 N
Opening (A):	0 - 46 mm (depending on jaws)
Weight:	105 g per grip (without jaws)

**Jaws for Mec227:** Scope of delivery 0.5 set = 2 jaws (left & right)

Item number	Surface	Clamping surface H x W	Opening (A)	Weight / per 0.5 set
Mec227-B25	Blank jaws	10 x 25 mm	0 - 8 mm	18 gram
Mec227-BG25	Rubber jaws	10 x 25 mm	0 - 6 mm	19 gram
Mec227-BP25	Pyramid jaws	10 x 25 mm	0 - 8 mm	17 gram
Mec227-BW25x25	Wave jaws	25 x 25 mm	0 - 6 mm	48 gram
Mec227-BD25	Diamond jaws	10 x 25 mm	0 - 8 mm	18 gram
Mec227-B50	Blank jaws	10 x 50 mm	0 - 6 mm	46 gram
Mec227-BG50	Rubber jaws	10 x 50 mm	0 - 4 mm	48 gram
Mec227-BP50	Pyramid jaws	10 x 50 mm	0 - 6 mm	43 gram
Mec227-BW50x25	Wave jaws	25 x 50 mm	0 - 6 mm	100 gram
Mec227-BD50	Diamond jaws	10 x 50 mm	0 - 6 mm	46 gram
Mec227-B100	Blank jaws	10 x 100 mm	0 - 6 mm	92 gram
Mec227-BG100	Rubber jaws	10 x 100 mm	0 - 4 mm	95 gram
Mec227-BP100	Pyramid jaws	10 x 100 mm	0 - 6 mm	86 gram
Mec227-BD100	Diamond jaws	10 x 100 mm	0 - 6 mm	92 gram

Jaws with other dimensions and surfaces on request

**Blank jaws**

- Suitable for own further treatment

- Steel-blanks without coating

**Rubber jaws**

- 1mm rubber coating (NBR)

**Pyramid jaws**

- Pyramids 0.8x45°  
- Hardened steel 58HRC

**Wave jaws**

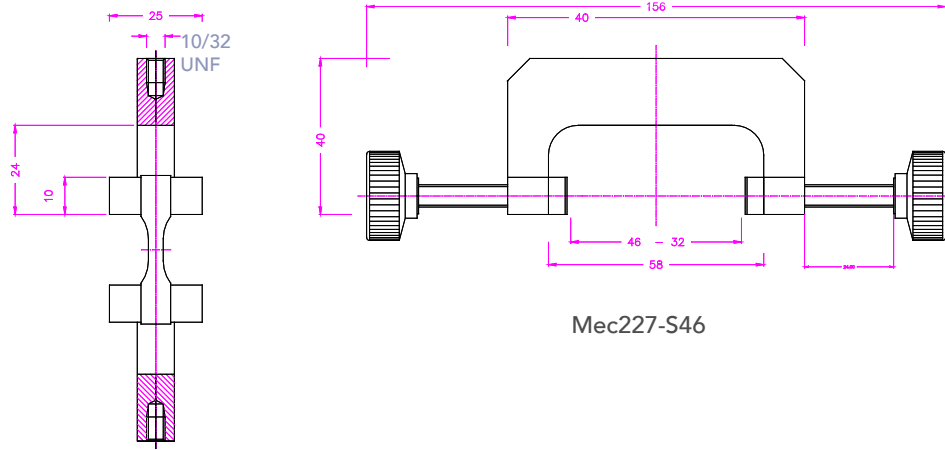
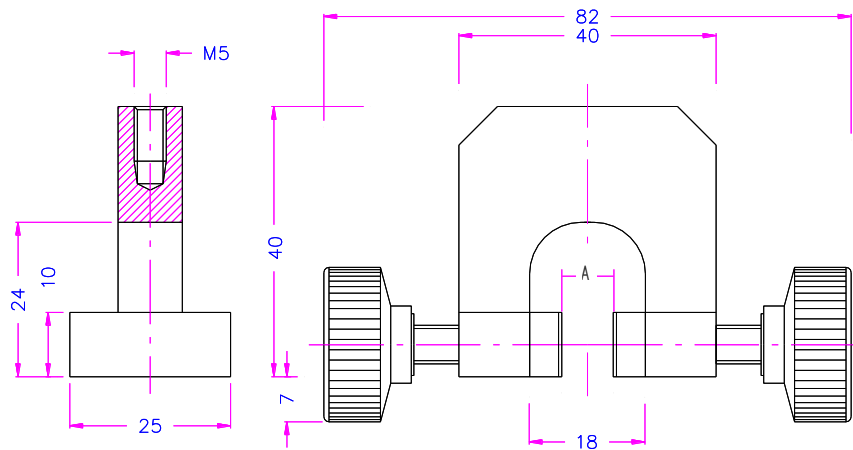
- For flexible materials  
- Wave 5 mm  
- Hardened steel 58 HRC

**Diamond jaws**

- Clamping surface coated with synthetic diamonds



## Dimensions mm

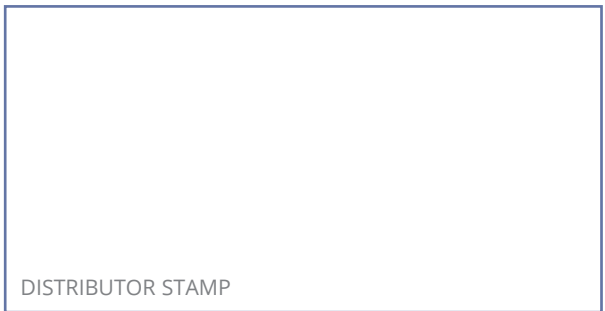


Mec227

Mec227-S46



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## Toggle Clamps



### Description

Toggle clamps are fitted with a lever to allow rapid, easy loading of specimens. They are available fitted with either flat or serrated jaw faces to securely grip most materials.

Supplied individually.

### Applications

Used for testing of:

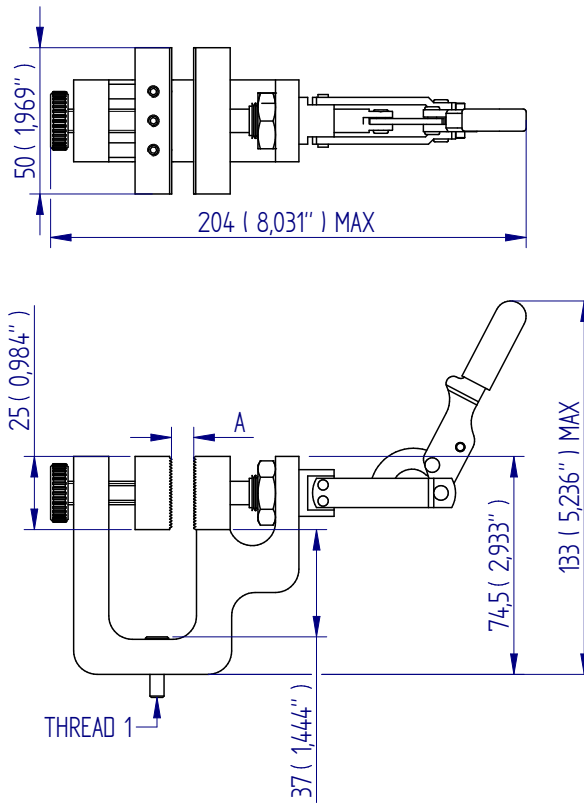
- fabric
- woven fabrics
- tapes
- polymers

### Specifications

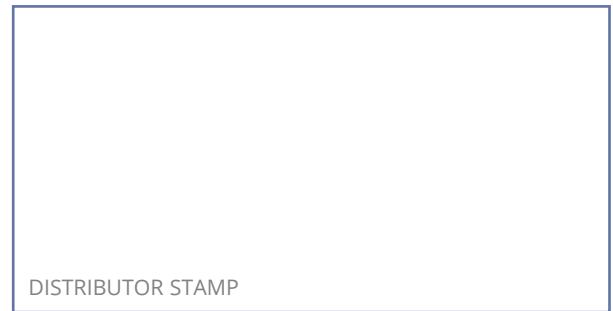
Part No.	Load Capacity			Thread 1	Jaw Type	Jaw Opening		Jaw Width		Height		Weight	
432-177	500 N	50 kgf	110 lbf	10/32 UNF	Flat	6 mm	0.24"	50 mm	1.97"	74 mm	2.19"	400 g	0.88 lb
432-176	500 N	50 kgf	110 lbf	10/32 UNF	Serrated	7 mm	0.28"	50 mm	1.97"	74 mm	2.19"	400 g	0.88 lb



## Dimensions mm



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## 2.5 kN U-Form Pneumatic Vice Grip, single actuator, QC fitting

Mec240g + Ko (single-actuator) – aluminium

Mec240g + 2Ko (dual-actuator) – aluminium

A highly versatile pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant.

- The Mec240g+Ko features an adjustable screw-driven rod allowing symmetrical and asymmetrical specimens to be positioned whilst the single-actuator applies the clamping force on the jaws.
- The Mec240g+2Ko features a dual actuator so the jaws always close symmetrically around the centre line. This removes the need to adjust the jaw position according to the specimen thickness; a great time-saver especially when testing soft specimens.

Adjustment of pneumatic pressure ensures a constant and reproducible clamping force is achieved to avoid 'jaw break' or slippage of specimens. Typically 7 bar pressure provides 2.6 kN clamping force on the specimen.

The 'U-Form' cut into the aluminium body of these Pneumatic Vice Grips creates the space for an operator to have specimen material below the jaws thereby facilitating loading and removal. An extensive collection of interchangeable, high-performance jaws with differing profiles provide excellent holding characteristics when tensile testing a variety of plastic, metal and textile materials.



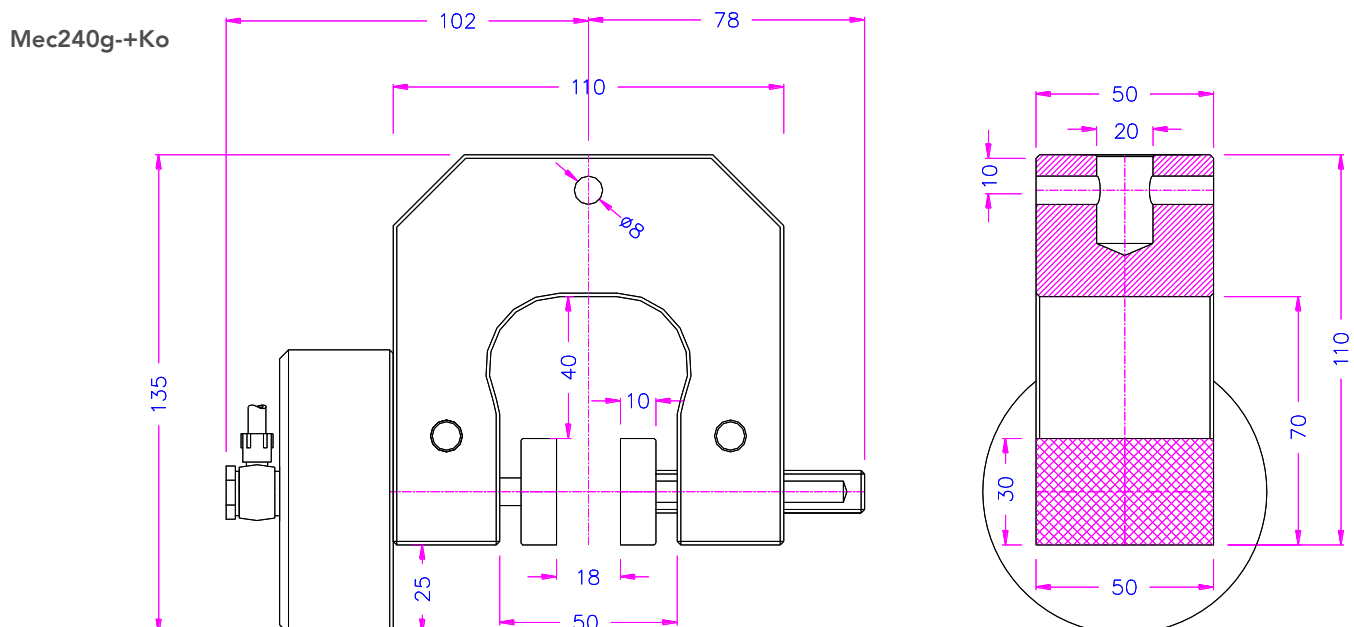
Mec240g + Ko shown fitted with a half-set of Mec240g-BG rubber jaws'

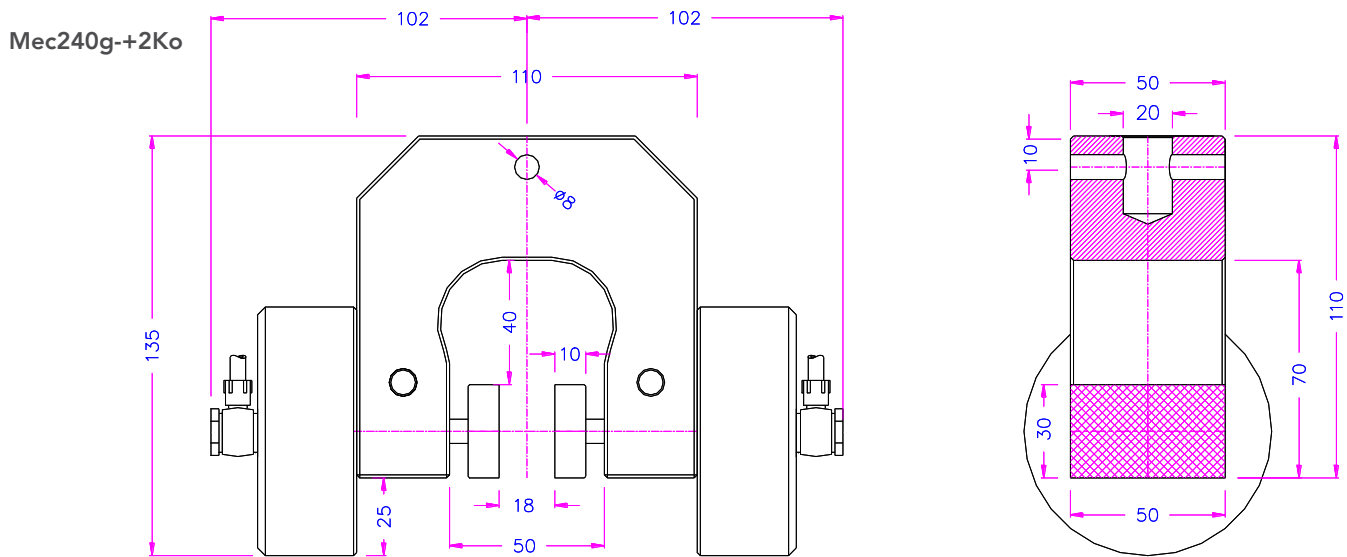


Mec 240g + 2Ko shown fitted with a half-set of Mec240g-BV2 V-jaws

Scope of delivery: 1 pair of grips supplied fitted with bore-hole to allow connection to QC-20 fixing post.

Item No:	Mec240g + Ko	Mec240g + 2Ko
Rated capacity:	2.6 kN / 7 bar	2.6 kN / 7 bar
Opening (depending on jaws):	0-18 mm	0-18 mm
Weight each grip(without jaws):	1.55 kg	1.93 kg
Pneumatic connection:	1/8" – fits to tubes supplied with foot pedals (eg Mec205-1)	





Note: Foot pedals (see overleaf) and jaws (see table below) must be ordered separately.

**Jaws for Mec240g+Ko and Mec240g+2Ko:** Scope of delivery 0.5 set = 2 jaws (left & right).  
Order any combination of 2 half-sets of jaws to fit into a pair of 'Mec240g + Ko' or 'Mec240g + 2Ko' grips (upper & lower)

Item no.	Surface	Clamping surface H x W	Jaw opening with rod L56.5	Jaw opening with rod L51.5*	Weight per 0.5 set
Mec240g-B	Blank jaws	30x50 mm	0 - 18 mm	10 - 28 mm	0.22 kg
Mec240g-BG	Rubber jaws	30x50 mm	0 - 16 mm	8 - 26 mm	0.22 kg
Mec240g-BP	Pyramid jaws	30x50 mm	0 - 18 mm	10 - 28 mm	0.21 kg
Mec240g-BV2	V-jaws	Height 30 mm	Ø 2 - 18 mm	Ø 12 - 28 mm	0.22 kg
Mec240g-BV5	V-jaws	Height 30 mm	Ø 5 - 18 mm	Ø 15 - 28 mm	0.25 kg
Mec240g-BW	Wave jaws	30x50 mm	0 - 18 mm	10 - 28 mm	0.20 kg
Mec240g-BD	Diamond jaws	30x50 mm	0 - 18 mm	10 - 28 mm	0.22 kg
Mec240g-B80	Blank jaws	30x80 mm	0 - 18 mm	10 - 28 mm	0.36 kg
Mec240g-BG80	Rubber jaws	30x80 mm	0 - 16 mm	8 - 26 mm	0.37 kg
Mec240g-BP80	Pyramid jaws	30x80 mm	0 - 18 mm	10 - 28 mm	0.34 kg
Mec240g-BW80	Wave jaws	30x80 mm	0 - 18 mm	10 - 28 mm	0.33 kg
Mec240g-BD80	Diamond jaws	30x80 mm	0 - 18 mm	10 - 28 mm	0.37 kg
Mec240g-B100	Blank jaws	30x100 mm	0 - 20 mm	10 - 28 mm	0.46 kg
Mec240g-BG100	Rubber jaws	30x100 mm	0 - 18 mm	8 - 26 mm	0.47 kg
Mec240g-BP100	Pyramid jaws	30x100 mm	0 - 20 mm	10 - 28 mm	0.44 kg
Mec240g-BW100	Wave jaws	30x100 mm	0 - 20 mm	10 - 28 mm	0.42 kg
Mec240g-BD100	Diamond jaws	30x100 mm	0 - 20 mm	10 - 28 mm	0.46 kg

\* Not supplied as standard. Order L51.5 rod separately.

#### Blank jaws

- Applicable for own further treatments
- Steel blanks without coating



#### Rubber jaws

- 1 mm rubber coating (NBR)
- Nickel-plated



#### Pyramid jaws

- Pyramids 1.2x45°
- Hardened steel 58 HRC
- Nickel-plated



#### V-jaws

- For all kinds of round samples
- Tooth pitch 1 mm (BV5) or 0,8 mm (BV2)
- Hardened steel 58HRC
- Nickel-plated

#### Wave jaws

- For flexible materials
- Wave 5 mm
- Hardened steel 58HRC
- Nickel-plated

#### Diamond jaws

- Clamping surface coated with synthetic diamonds
- Nickel-plated



Mec240g-BV2



Mec240g-BV5

BV5 jaws fit well for samples with larger diameters

## Accessories



### Mec205-1 Foot pedals

Non-locking: The jaws of the grip open by pressing the foot pedal and close after removing the foot from the pedal. Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-2 Foot pedals

With locking function: The jaws of the grip open by pressing the foot pedal and remain opened after removing the foot from the pedal. The jaws close by pressing the pedal one more time. Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-.+PR Pressure regulator

Optional for Mec205-1 or Mec205-2 To adjust air pressure: 1-10 bar or 1-16 bar



### Mec205-3 Hand switches

With locking function: The jaws of the grip close by pulling the handle and remain closed. The jaws open by pushing the handle back. Scope of delivery: 1 unit of hand switches including tubes and fittings.



### Mec216 Compressor for laboratories, oil-lubricated

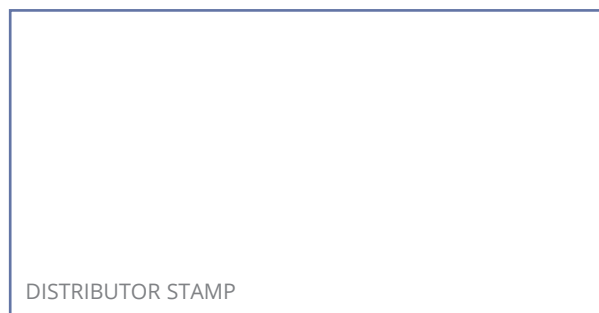
Max pressure 16 bar, 230 V, frequency 50 Hz, noise level: 38 dB (A)/1 m. Displacement 5 l/min, tank size 3.1 l (0.82 gallon) Dimensions: 382x300x334 mm (D x W x H); weight 24 kg Different voltages available on request.

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



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## Large Pneumatic Plane Grip, QC fitting



### Description

Large pneumatic plane grips have pyramidal-faced jaws and use a pneumatically-operated parallel vice action to firmly hold flat samples in place. Designed for fast loading and rapid testing of a large number of specimens. Supplied in pairs complete with 3 m long tube and footswitch for convenient operation. Recommended air pressure 6 bar (maximum 8 bar)

### Applications

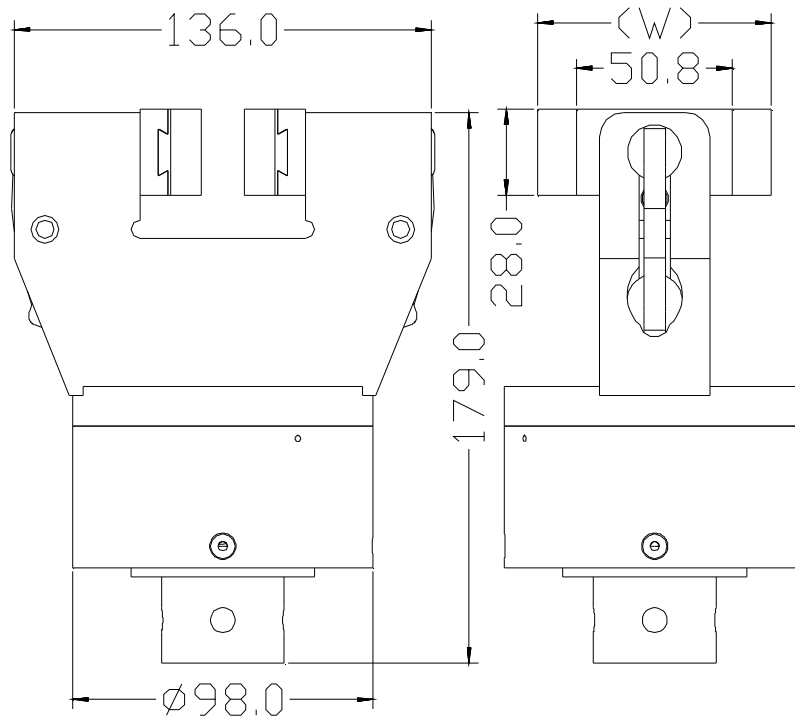
Used for tensile testing of:

- plastics
- textiles
- heavy-duty film
- light metals / alloys
- laminates
- paper and card
- rubber
- insulating materials

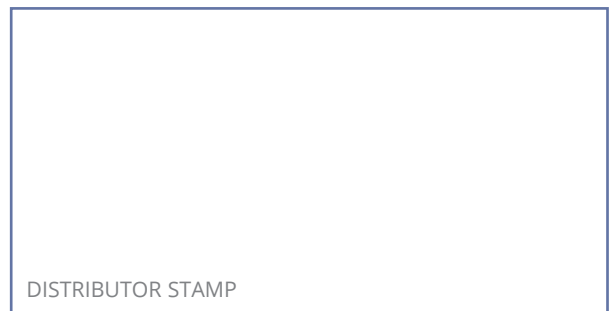
### Specifications

Part No.	Load Capacity		Post Ø	Jaw Opening		Jaw Width		Height		Weight		
432-276	1 kN	100 kgf	225 lbf	QC20	12 mm	0.47"	76.2 mm	3.0"	179 mm	7.05"	3.2 kg	7.1 lb

## Dimensions mm



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



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## 5 kN U-Form Pneumatic Vice Grip, single actuator, QC fitting

### Mec83 (single-actuator) – aluminium

A highly versatile pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant.

- The Mec83 features an adjustable screw-driven rod allowing symmetrical and asymmetrical specimens to be positioned whilst the single-actuator applies the clamping force on the jaws.
- The standard rods allow a jaw opening of 0-10 mm. Additional rods are supplied which, when fitted, allow jaw openings of 10-20 mm and 20-30 mm. This is useful for thicker specimens which do not reduce in thickness by more than 10 mm when pulled.

Adjustment of pneumatic pressure ensures a constant and reproducible clamping force is achieved to avoid 'jaw break' or slippage of specimens. Typically 7 bar pressure provides 3.5 kN clamping force on the specimen.

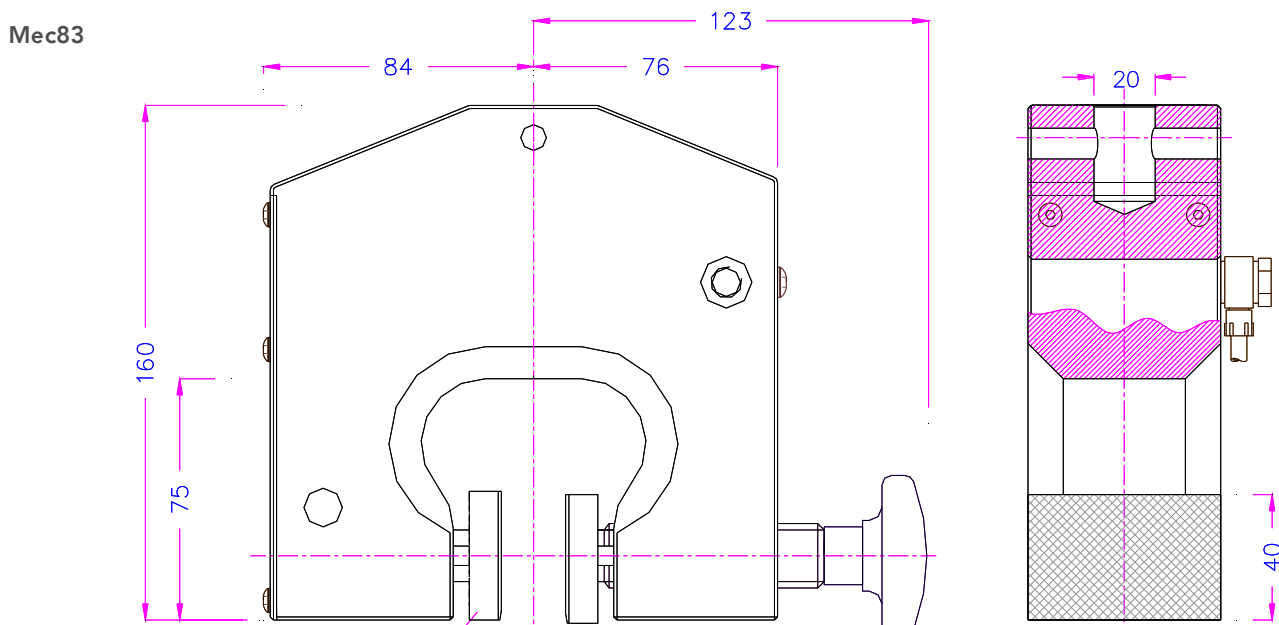
The 'U-Form' cut into the aluminium body of these Pneumatic Vice Grips creates the space for an operator to have specimen material below the jaws thereby facilitating loading and removal. An extensive collection of interchangeable, high-performance jaws with differing profiles provide excellent holding characteristics when tensile testing a variety of plastic, metal and textile materials.



Mec83 shown fitted with a half-set of Mec83 pyramid jaws'

Scope of delivery: 1 pair of grips supplied fitted with bore-hole to allow connection to QC-20 fixing post.

Item No:	Mec83	
Rated capacity:	3.5 kN / 7 bar	max. 16 bar
Opening (depending on jaws):	0-10 mm standard	10-20 mm and 20-30 mm when fitted with alternative rods (also supplied)
Weight each grip(without jaws):	3.2 kg	
Pneumatic connection:	1/8" – fits to tubes supplied with foot pedals (eg Mec205-1)	



Note: Foot pedals (see below) and jaws (see table below) must be ordered separately.

**Jaws for Mec83:** Scope of delivery 0.5 set = 2 jaws (left & right).

Order any combination of 2 half-sets of jaws to fit into a pair of 'Mec83' grips (upper & lower)

Item number	Jaw Surface	Clamping surface H x W	Jaw opening with rod L40*	Jaw opening with rod L35*	Jaw opening with rod L30*	Weight/ 0.5 pair
Mec83-B	Blank jaws	40 x 60 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.35 kg
Mec83-BG	Rubber-coated jaws	40 x 60 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.36 kg
Mec83-BP	Pyramid jaws	40 x 60 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.33 kg
Mec83-BV4	V-jaws	clamping height 40 mm	4 – 10 mm Ø	14 – 20 mm Ø	24 – 30 mm Ø	0.35 kg
Mec83-BV6	V-jaws	clamping height 40 mm	6 – 10 mm Ø	16 – 20 mm Ø	26 – 30 mm Ø	0.34 kg
Mec83-BW	Wave jaws	40 x 60 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.40 kg
Mec83-BD	Diamond-coated jaws	40 x 60 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.35 kg
Mec83-B100	Blank jaws	40 x 100 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.72 kg
Mec83-BG100	Rubber-coated jaws	40 x 100 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.74 kg
Mec83-BP100	Pyramid jaws	40 x 100 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.69 kg
Mec83-BW100	Wave jaws	40 x 100 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.66 kg
Mec83-BD100	Diamond-coated jaws	40 x 100 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	0.72 kg
Mec83-BP200	Pyramid jaws	60 x 200 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	3.00 kg
Mec83-BG200	Rubber-coated jaws	60 x 200 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	3.06 kg
Mec83-BW200	Wave jaws	60 x 200 mm	0 – 10 mm	10 – 20 mm	20 – 30 mm	3.00 kg

\* Rods L30 and L35 for openings 10-20 mm and 20-30 mm are also included

#### Blank jaws

- Applicable for own further treatments
- Steel blanks without coating



#### Rubber jaws

- 1 mm rubber coating (NBR)
- Nickel-plated



#### Pyramid jaws

- Pyramids 1.2x45°
- Hardened steel 58 HRC
- Nickel-plated



#### V-jaws

- For all kinds of round samples
- Tooth pitch 1 mm (BV5) or 0,8 mm (BV2)
- Hardened steel 58HRC
- Nickel-plated



#### Wave jaws

- For flexible materials
- Wave 5 mm
- Hardened steel 58HRC
- Nickel-plated



#### Diamond jaws

- Clamping surface coated with synthetic diamonds
- Nickel-plated



Mec240g-BV2



Mec240g-BV5

BV5 jaws fit well for samples with larger diameters

## Accessories



#### Mec205-1 Foot pedals

Non-locking: The jaws of the grip open by pressing the foot pedal and close after removing the foot from the pedal. Scope of delivery: 1 pair of foot switches including tubes and fittings.



#### Mec205-3 Hand switches

With locking function: The jaws of the grip close by pulling the handle and remain closed. The jaws open by pushing the handle back. Scope of delivery: 1 unit of hand switches including tubes and fittings.



#### Mec205-2 Foot pedals

With locking function: The jaws of the grip open by pressing the foot pedal and remain opened after removing the foot from the pedal. The jaws close by pressing the pedal one more time. Scope of delivery: 1 pair of foot switches including tubes and fittings.



#### Mec216 Compressor for laboratories, oil-lubricated

Max pressure 16 bar, 230 V, frequency 50 Hz, noise level: 38 dB (A)/1 m. Displacement 5 l/min, tank size 3.1 l (0.82 gallon) Dimensions: 382x300x334 mm (D x W x H); weight 24 kg Different voltages available on request.

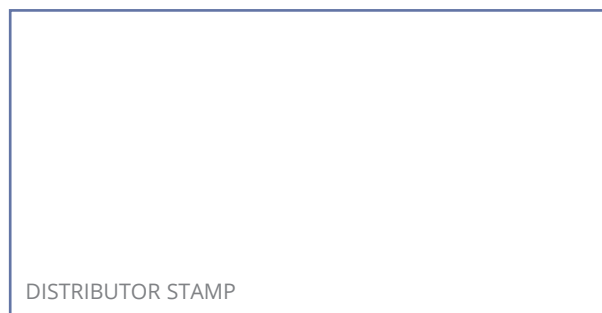


#### Mec205-PR Pressure regulator

Optional for Mec205-1 or Mec205-2 To adjust air pressure: 1-10 bar or 1-16 bar



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



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## Foot Switches & Hand Switches for Pneumatic Grips

### Mec205 range

Pneumatic grips are the ideal choice when performing tensile tests on sensitive materials which have the tendency to slip or break at the point of clamping.

To operate such pneumatic grips there are a number of choices available depending on your preference.

The Mec205-1 (non-locking) and Mec205-2 (locking) are Foot Switches whereby the pedal is pressed to open/close the jaws of the pneumatic grip. Often chosen for convenience to situate beneath the desk and keep both hands free for inserting and removing the specimen from the grips. A pressure regulator is also available for fitting to the Foot Switch so that you can adjust between 1 – 10 bar for fine-tuning the clamping force applied to the specimen via the pneumatic grip.

The Mec205-3 is a Hand Switch for positioning on the table top next to the tester, whereby the lever handles are moved to the open and closed positions to control the jaws of the pneumatic grip.

Scope of delivery: All 3 switch types are supplied with tubes and fittings for connection to your compressed air supply.



Mec205-1 non-locking Foot Switch shown with tubes and fitting



#### Mec205-1 Foot switches

Non-locking: The jaws of the grip open by pressing the foot pedal and close after removing the foot from the pedal. Only for single action rods with spring inside. Max. pressure 10 bar.

Scope of delivery: 1 pair of foot switches including tubes and fittings



#### Mec205-2 Foot switches

Withlocking function: The jaws of the grip open by pressing the foot pedal and remain opened after removing the foot from the pedal. The jaws close by pressing the pedal one more time. Only for single action rods with spring inside. Max. pressure 10 bar.

Scope of delivery: 1 pair of foot switches including tubes and fittings



#### Mec205-PR10bar Pressure regulator

Optional for all versions.

To adjust air pressure:1-10 bar



#### Mec205-3 Hand switches

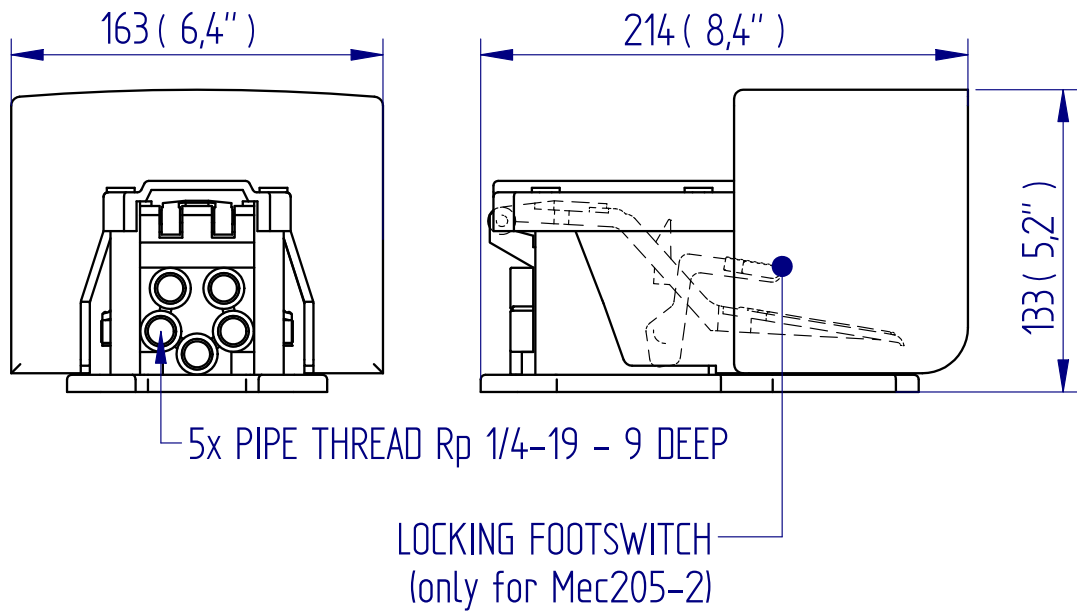
1 unit of pneumatic hand switches, tubes and fittings

With locking function

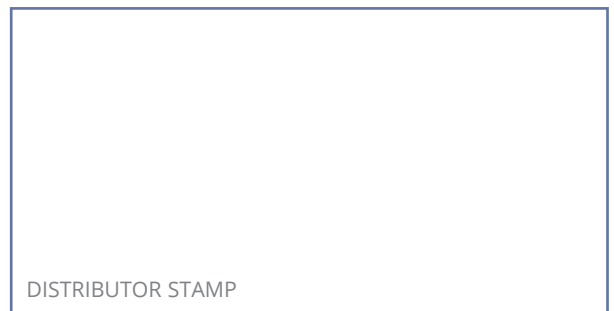
Only for single action rods with spring inside. Max. pressure 16 bar.

Scope of delivery: 1 unit of hand switches including tubes and fittings

## Dimensions mm



Mec205-1  
and Mec205-2



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## Lightweight Pneumatic Plane Grip, Single actuator, QC fitting

### Mec94 – aluminium

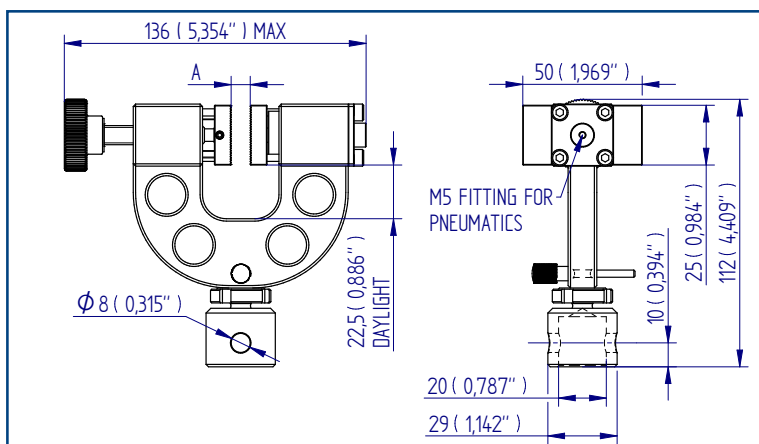
A versatile lightweight pneumatic grip especially suitable for holding a variety of materials where the tensile force may be low but the material is sensitive to damage or slippage when clamped. The adjustable screw-driven rod allows symmetrical and asymmetrical specimens to be positioned whilst the single-actuator applies the clamping force on the jaws. Adjustment of pneumatic pressure ensures a constant and reproducible clamping force is achieved to avoid 'jaw break' or slippage of specimens. Its low-profile aluminium design makes it ideal for tensile testing with loadcells of capacity as low as 10 N.

- Clamping force: 200 N / 7 bar
- Opening: 0-20 mm (depending on jaws)
- Pneumatic connection: M5 suitable for fitting with tubes supplied with additional foot pedal (eg. Mec205-1)
- Weight: 214 gram each grip (without jaws)

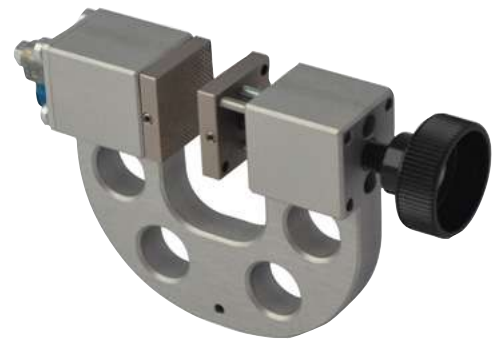
Jaws for Mec94: Scope of delivery 0.5 set = 2 jaws (left & right).  
Order any combination of 2 half-sets of jaws to fit into a pair of Mec94 grips (upper & lower)

Item No.	Surface	Clamping Surface H x W	Opening (A)	Weight per 0.5 set
Mec94-B	Blank jaws	25 x 25 mm	0 - 20 mm	53 gram
Mec94-BG	Rubber jaws	25 x 25 mm	0 - 18 mm	56 gram
Mec94-BP	Pyramid jaws	25 x 25 mm	0 - 20 mm	49 gram
Mec94-BD	Diamond jaws	25 x 25 mm	0 - 20 mm	54 gram
Mec94-B50	Blank jaws	25 x 50 mm	0 - 20 mm	111 gram
Mec94-BG50	Rubber jaws	25 x 50 mm	0 - 18 mm	114 gram
Mec94-BP50	Pyramid jaws	25 x 50 mm	0 - 20 mm	104 gram
Mec94-BW50	Wave jaws	25 x 50 mm	0 - 16 mm	128 gram
Mec94-BD50	Diamond jaws	25 x 50 mm	0 - 20 mm	112 gram

Jaws with other dimensions and surface coatings on request



\*Q = Quick-interchange via 8 mm Ø pin



Mec94 shown with  
Mec94-B jaws fitted

Ordering information Item No.: Mec94

Scope of delivery: 1 pair of grips supplied with adaptors to allow connection to QC-20 fixing posts.

Foot pedals (see overleaf) and jaws (see table below) must be ordered separately.

Item No.:	Mec94
Clamping force:	200N / 7 bar
Opening:	0-20mm (depending on jaws)
Pneumatic connection:	M5 – fits to tubes supplied with foot pedals (eg Mec 205-1)
Weight:	214 g per grip (without jaws)

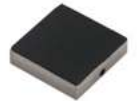
#### Blank jaws

- Steel blanks
- Applicable for own further treatments



#### Rubber jaws

- 1 mm rubber coating



#### Pyramid jaws

- Pyramids 1x45°
- Hardened steel 58 HRC



#### Wave jaws

- Wave 5 mm
- Hardened steel 58 HRC



#### Diamond jaws

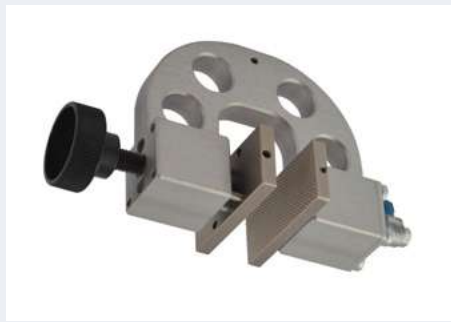
- Coated with synthetic diamonds



Examples for Mec94 with jaws fitted



Mec94 with Mec94-BW50 jaws



Mec94- with Mec94-BP50 jaws



Mec94 with Mec94-B100x25 special blank jaws

## Accessories



### Mec205-1 Foot pedals

Non-locking: The jaws of the grip open by pressing the foot pedal and close after removing the foot from the pedal. Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-2 Foot pedals

With locking function: The jaws of the grip open by pressing the foot pedal and remain opened after removing the foot from the pedal. The jaws close by pressing the pedal one more time. Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-+PR Pressure regulator

Optional for Mec205-1 or Mec205-2 To adjust air pressure: 1-10 bar or 1-16 bar



### Mec205-3 Hand switches

With locking function: The jaws of the grip close by pulling the handle and remain closed. The jaws open by pushing the handle back. Scope of delivery: 1 unit of hand switches including tubes and fittings.



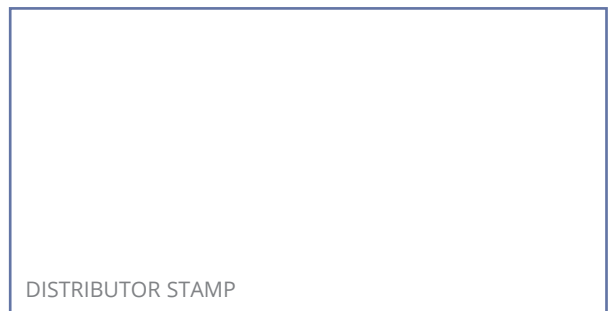
### Mec216 Compressor for laboratories, oil-lubricated

Max pressure 16 bar, 230 V, frequency 50 Hz, noise level: 38 dB (A)/1 m. Displacement 5 l/min, tank size 3.1 l (0.82 gallon) Dimensions: 382x300x334 mm (D x W x H); weight 24 kg Different voltages available on request.

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



FS 58553



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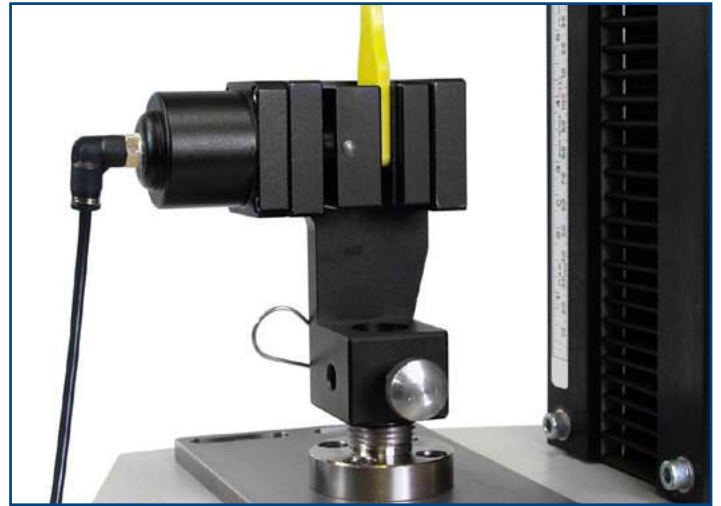
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## Small Pneumatic Plane Grip, Single actuator, QC fitting



### Description

Small pneumatic plane grips are made from aluminium, have rubber-faced jaws and use a pneumatically-operated parallel vice action to firmly hold flat samples in place. Designed for fast loading and rapid testing of a large number of specimens. Supplied in pairs complete with 3 m long tube and footswitch for convenient operation. Recommended air pressure 6 bar (maximum 8 bar).

### Applications

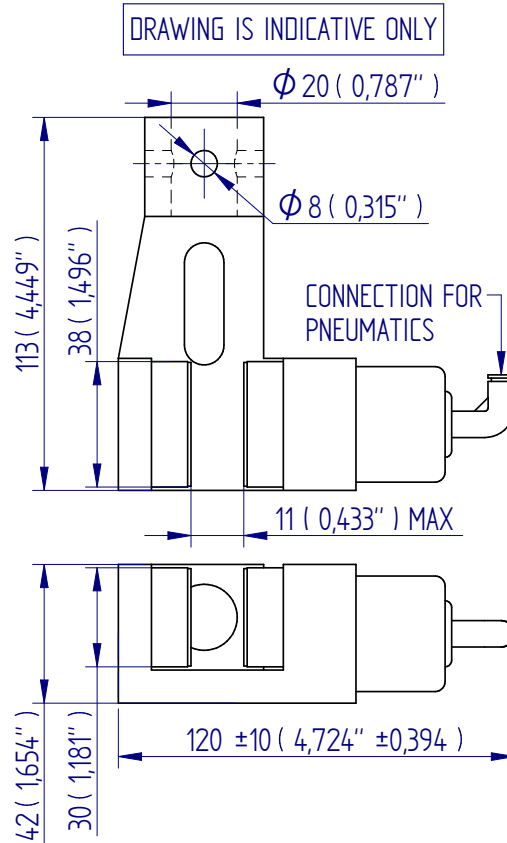
Used for tensile testing of:

- film
- laminates
- plastic sheet
- textiles
- woven fibre strips
- rubber
- elastomers
- paper

### Specifications

Part No.	Load Capacity			Post Ø	Jaw Opening		Jaw Width		Height		Weight	
432-275	200 N	20 kgf	45 lbf	QC20	8 mm	0.31"	25 mm	0.98"	114 mm	4.49"	600 g	1.3 lb

## Dimensions mm



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



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## 'Universal' Pneumatic Vice Grip, Single & dual actuators, QC fitting

**Mec240k + Ko (single-actuator) – aluminium**

**Mec240k + 2Ko (dual-actuator) – aluminium**

The most versatile and flexible model of pneumatic grip for use in applications where material is sensitive to damage or slippage when clamped and the tensile force is significant. The Mec240k range has various options available with differing jaw-openings from 0-10mm through to 0-50mm specifically designed to meet the size of specimen you need to test.

- The Mec240k+Ko models feature an adjustable screw-driven rod allowing symmetrical and asymmetrical specimens to be positioned whilst the single-actuator applies the clamping force on the jaws.
- The Mec240k+2Ko models feature a dual actuator so the jaws always close symmetrically around the centre line. This removes the need to adjust the jaw position according to the specimen thickness; a great time-saver especially when testing soft specimens.

Adjustment of pneumatic pressure ensures a constant and reproducible clamping force is achieved to avoid 'jaw break' or slippage of specimens. Typically 7 bar pressure provides 1.2 kN clamping force on the specimen.

An extensive collection of interchangeable, high-performance jaws with differing profiles provide excellent holding characteristics when tensile testing a variety of plastic, metal and textile materials.



Mec240k + Ko shown fitted with a half-set of Mec240k- BV2 V-jaws

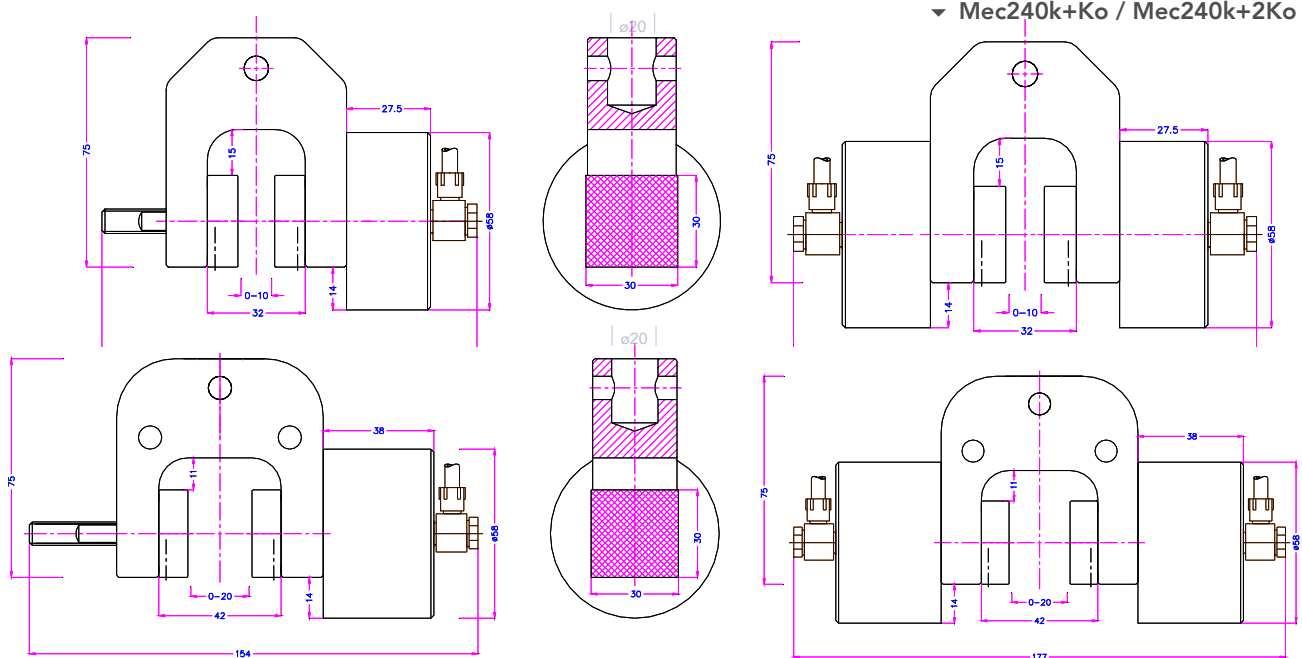


Mec240k-S30 + 2Ko shown fitted with a half set of mec240k-BP50 pyramid jaws

Scope of delivery: 1 pair of grips supplied fitted with bore-hole to allow connection to QC-20 fixing post

Item No:	Mec240k + Ko Mec240k + 2Ko	Mec240k-S20 + Ko Mec240k-S20 + 2Ko	Mec240k-S30 + Ko Mec240k-S30 + 2Ko	Mec240k-S50 + Ko Mec240k-S50 + 2Ko
Clamping force:	1.2kN / 7 bar	1.2kN / 7 bar	1.2kN / 7 bar	1.2kN / 7 bar
Opening (depending on jaws):	0-10 mm	0-20 mm	0-30 mm	0-50 mm
Weight each grip (without jaws):	0.4 kg / 0.6 kg	0.4 kg / 0.6 kg	0.6 kg / 0.8 kg	0.8 kg / 1 kg
Pneumatic connection:	M5 – fits to tubes supplied with foot pedals (eg Mec 205-1)			

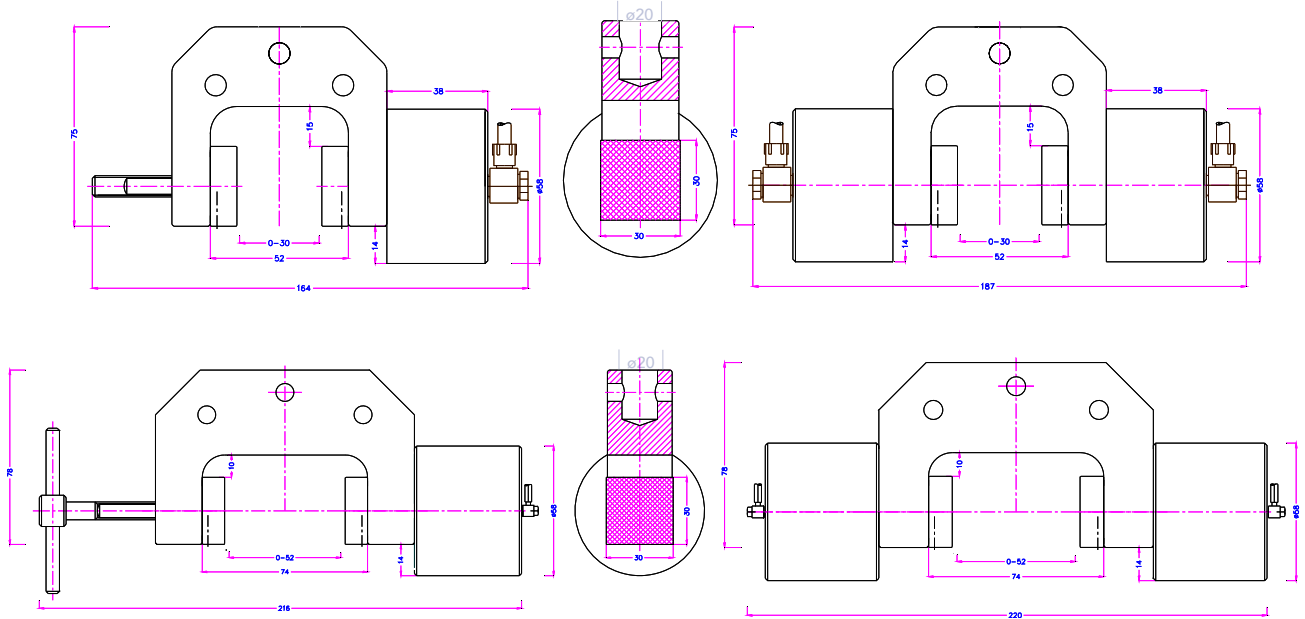
Note: Foot pedals and jaws (overleaf) must be ordered separately.



▲ Mec240k-S20+Ko / Mec240k-S20+2Ko



▼ Mec240k-S30+Ko / Mec240k-S30+2Ko



▲ Mec240k-S50+Ko / Mec240k-S50+2Ko

**Jaws for Mec240k+Ko Series**

Scope of delivery 0.5 set = 2 jaws (left & right).

Order any combination of 2 half-sets of jaws to fit into a pair of 'upper and lower' grips from the 'Mec240k + Ko' or 'Mec240k + 2Ko' range

Item no.	Surface	Clamping surface H x W	Opening for Mec240k	Opening for Mec240k-S20	Opening for Mec240k-S30	Opening for Mec240k-S50	Weight per 0.5 set
Mec240k-B	Blank jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.13 kg
Mec240k-BG	Rubber jaws	30 x 30 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.13 kg
Mec240k-BP	Pyramid jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.12 kg
Mec240k-BV2	V-jaws	30 x 30 mm	Ø 2 – 10 mm	Ø 2- 20 mm	Ø 2- 30 mm	Ø 2 – 52 mm	0.12 kg
Mec240k-BV3	V-jaws	30 x 30 mm	Ø 3 – 10 mm	Ø 3 – 20 mm	Ø 3 – 30 mm	Ø 3 – 52 mm	0.13 kg
Mec240k-BW	Wave jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.12 kg
Mec240k-BD	Diamond jaws	30 x 30 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.13 kg
Mec240k-B50	Blank jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.22 kg
Mec240k-BG50	Rubber jaws	30 x 50 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.23 kg
Mec240k-BP50	Pyramid jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.21 kg
Mec240k-BW50	Wave jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.20 kg
Mec240k-BD50	Diamond jaws	30 x 50 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.22 kg
Mec240k-B80	Blank jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.36 kg
Mec240k-BG80	Rubber jaws	30 x 80 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.37 kg
Mec240k-BP80	Pyramid jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.35 kg
Mec240k-BW80	Wave jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.32 kg
Mec240k-BD80	Diamond jaws	30 x 80 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.36 kg
Mec240k-B100	Blank jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.45 kg
Mec240k-BG100	Rubber jaws	30 x 100 mm	0 – 8 mm	0 - 18 mm	0 – 28 mm	0 – 50 mm	0.46 kg
Mec240k-BP100	Pyramid jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.45 kg
Mec240k-BW100	Wave jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.51 kg
Mec240k-BD100	Diamond jaws	30 x 100 mm	0 – 10 mm	0 - 20 mm	0 – 30 mm	0 – 52 mm	0.45 kg



**Blank jaws**

- Applicable for own further treatments
- Steel-blanks without coating
- Nickel-plated



**Rubber jaws**

- 1 mm rubber coating (NBR)
- Nickel-plated



**Mec240k-BV2 V-jaws**

- For all kinds of round samples
- Tooth pitch 0.8 mm
- Hardened steel 58HRC
- Nickel-plated



**Pyramid jaws**

- Pyramids 1.2x45°
- Hardened steel 58 HRC
- Nickel-plated



**Diamond jaws**

- Clamping surface coated with synthetic diamonds D91 (170/200 mesh)
- Nickel-plated



**Mec240k-BV3 V-jaws**

- For all kinds of round samples
- Tooth pitch 1 mm
- Hardened steel 58HRC
- Nickel-plated



**Wave jaws**

- For flexible materials
- Wave 5 mm
- Hardened steel 58HRC
- Nickel-plated

## Accessories



### Mec205-1 Foot pedals

Non-locking: The jaws of the grip open by pressing the foot pedal and close after removing the foot from the pedal.  
Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-2 Foot pedals

With locking function: The jaws of the grip open by pressing the foot pedal and remain open after removing the foot from the pedal. The jaws close by pressing the pedal one more time. Scope of delivery: 1 pair of foot switches including tubes and fittings.



### Mec205-.+PR Pressure regulator

Optional for Mec205-1 or Mec205-2 To adjust air pressure: 1-10 bar or 1-16 bar



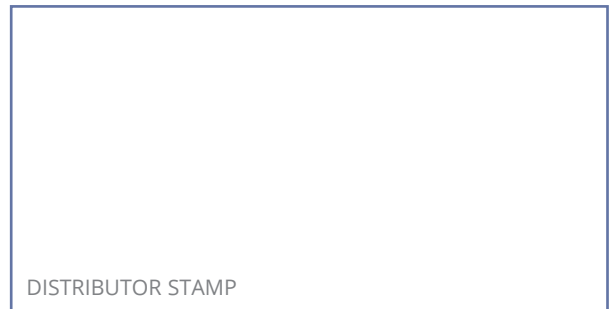
### Mec205-3 Hand switches

With locking function: The jaws of the grip close by pulling the handle and remain closed. The jaws open by pushing the handle back.  
Scope of delivery: 1 unit of hand switches including tubes and fittings.

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



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## Multi-Jaw Grip



### Description

The multi-jaw grip is for grasping round or irregularly shaped items. By rotating the sleeve of the grip, the jaws can be opened and closed to achieve a secure grasp on a sample.

### Applications

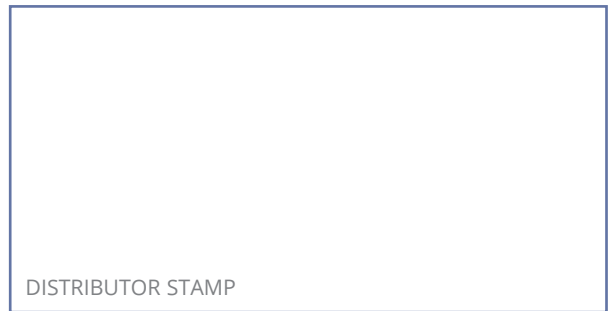
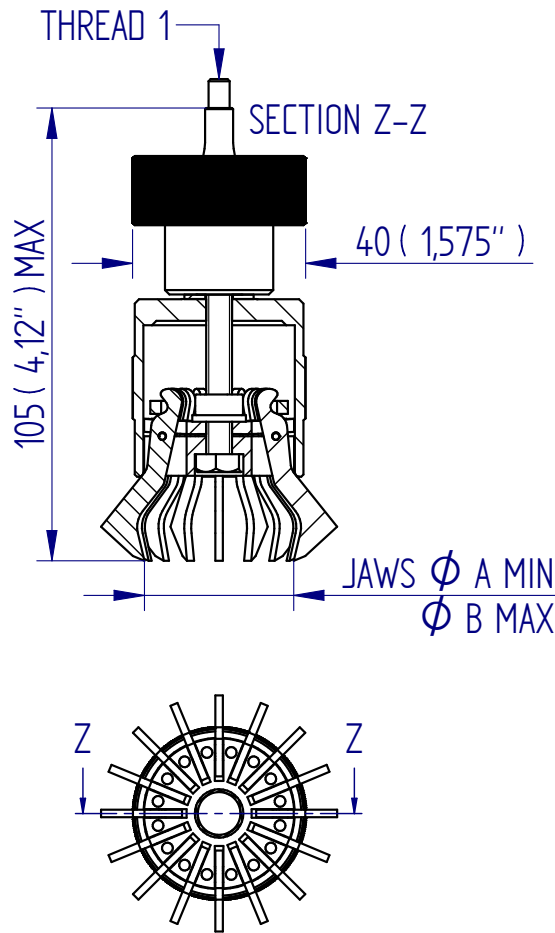
Used for tensile testing of:

- fasteners
- small components
- textiles

### Specifications

Part No.	Load Capacity			Thread 1	Sample Min./Max. Ø		Length		Weight	
432-215	500 N	50 kgf	110 lbf	M6	10 mm - 45 mm	0.39" - 1.77"	105 mm	4.12"	173 g	0.38 lb
432-420	500 N	50 kgf	110 lbf	10/32 UNF	10 mm - 45 mm	0.39" - 1.77"	105 mm	4.12"	173 g	0.38 lb

## Dimensions mm



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## 500 N and 200 N Wedge Grips



### Description

The 200 N / 500 N wedge grip is a small, lightweight grip designed for tensile testing. As load is applied, the wedge action of the jaws increases the grip on the sample. A spring-loaded lever allows the serrated jaws to open and close easily for the fast securing and release of samples. The 200 N grip includes the chain link assembly for ease of loading samples. A slot in the back accommodates samples wider than the jaws.

Supplied individually.

### Applications

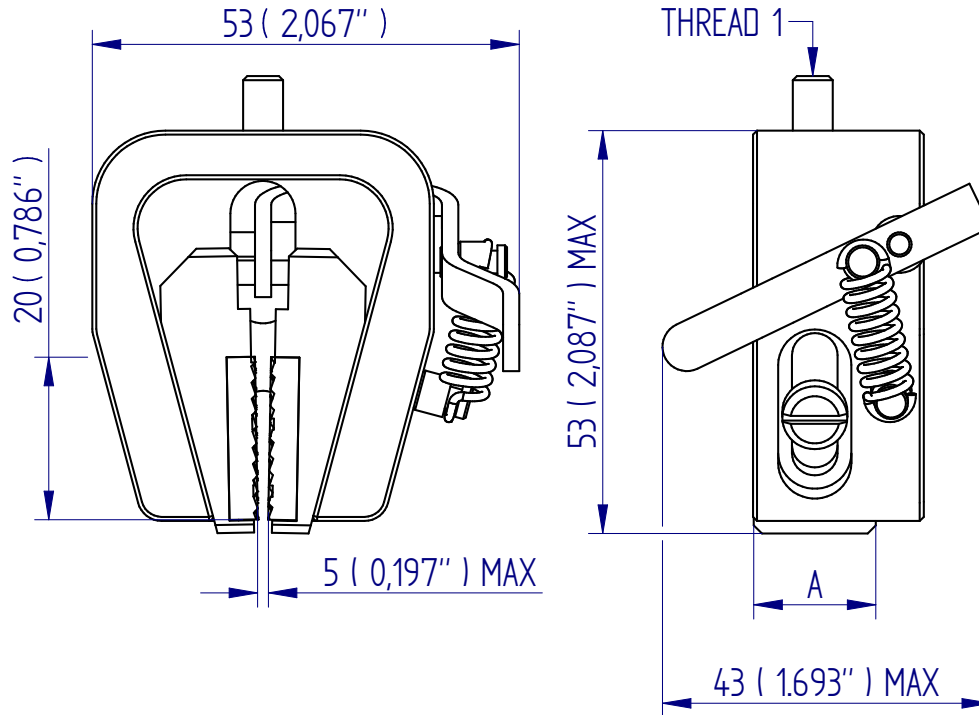
Used for general purpose tensile testing of:

- crimp and welded joints
- laminates
- films
- wires
- flexible sheet materials
- textiles
- many other materials

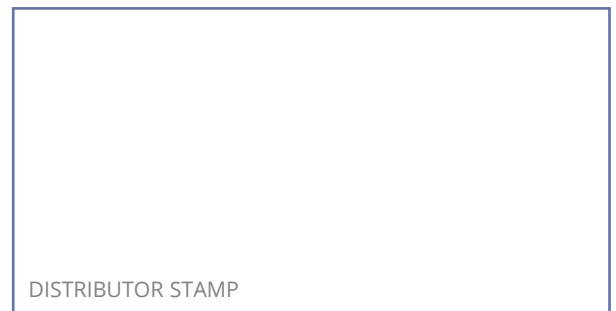
### Specifications

Part No.	Load Capacity			Thread 1	Jaw Width (A)			Jaw Opening		Height		Weight	
	N	kgf	lbf		mm	in	mm	in	mm	in	g	lb	
432-415	200 N	20 kgf	45 lbf	10/32 UNF	25 mm	0.98"	5 mm	0.20"	50 mm	1.97"	132 g	0.29 lb	
432-385	500 N	50 kgf	110 lbf	10/32 UNF	16 mm	0.63"	5 mm	0.20"	50 mm	1.97"	120 g	0.26 lb	

## Dimensions mm



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## 5 kN Wedge Grip



### Description

The 5 kN wedge grip is designed for tensile testing of flat and rigid materials including plastics, rubber and light metals. As load is applied, the wedge action of the jaws increases the grip on the sample. A spring-loaded lever allows the serrated jaws to open and close easily for the fast securing and release of samples.

Supplied individually.

### Applications

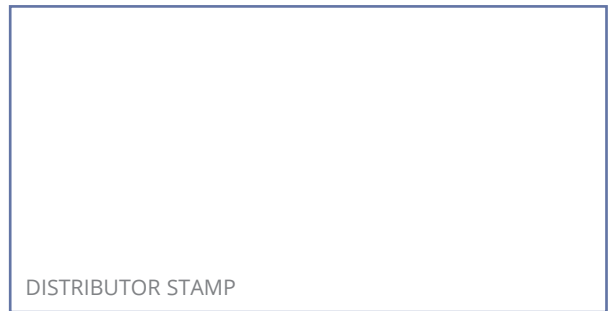
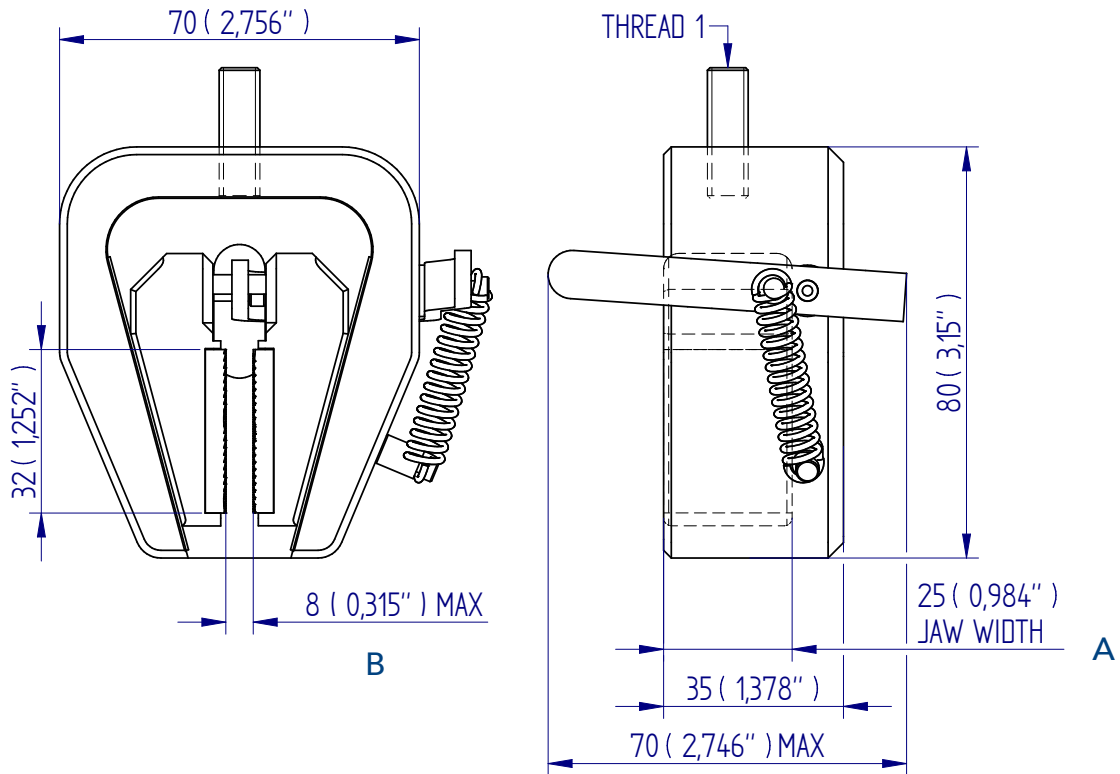
Used for general-purpose tensile testing of:

- adhesive joints
- plastics
- cables
- polymer
- composites
- crimp and welded joints
- wood
- metals
- rubber

### Specifications

Part No.	Load Capacity		Thread 1	Jaw Width		Jaw Opening		Height		Weight		
432-398	5kN	500 kgf	1100 lbf	5/16 UNC	25 mm	.98"	8 mm	0.31"	80 mm	3.15"	550 g	1.21 lb

## Dimensions mm



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## 10 kN Wedge Grip, lever-action, QC fitting

### MecS622 – steel



◀ MecS622 Wedge Grip shown with a half-set of MecS622-BP pyramid jaws fitted

A versatile lever-actuated wedge grip rated to a tensile force of 10 kN. The initial gripping force is provided by pre-tensioned springs which cause the jaws to close together. The teeth of the jaw faces act to make a preliminary hold of the specimen before the main clamping force is applied by the action of the wedges moving as load is applied to the specimen. A front-facing lever makes it ergonomically easy for operators to release specimens after testing. A locking bar holds the jaws open to facilitate removal and loading of specimens.

The body of the MecS622 Wedge Grip features an 'open back' which makes it ideal for wider specimens to be positioned through the body whilst being held within the 34 x 40mm area of the pyramid jaws (MecS622-BP). For round samples of 2-10 mm diameter a set of V-shaped jaws (MecS622-BV) are available for use with the MecS622 wedge grip. Jaws should be ordered separately.

The MecS622 10 kN Wedge Grip is especially suitable for holding a variety of materials such as plastic strips and dumbbells, flat and round metal specimens such as sheet, pipes and dumbbells plus textile straps and belts.

Scope of delivery: 1 grip fitted with bore-hole to allow connection to QC-20 fixing post

Item No:	MecS622
Max tensile rating:	10 kN
Opening (depending on jaws):	0-10 mm
Weight each grip (without jaws):	1.83 kg

#### Jaws for MecS622

Scope of delivery: Scope of delivery 0.5 set = 2 jaws (left & right)

Item no.	Surface	Clamping surface H x W	Opening	Weight per 0.5 set
MecS622-BP	Pyramid jaws	40x34 mm	0-10 mm	0.42 kg
MecS622-BV	V-jaws	Clamping height 40 mm	2-10 mm Ø	0.43 kg

Jaw faces with differing dimensions and surfaces available on request.



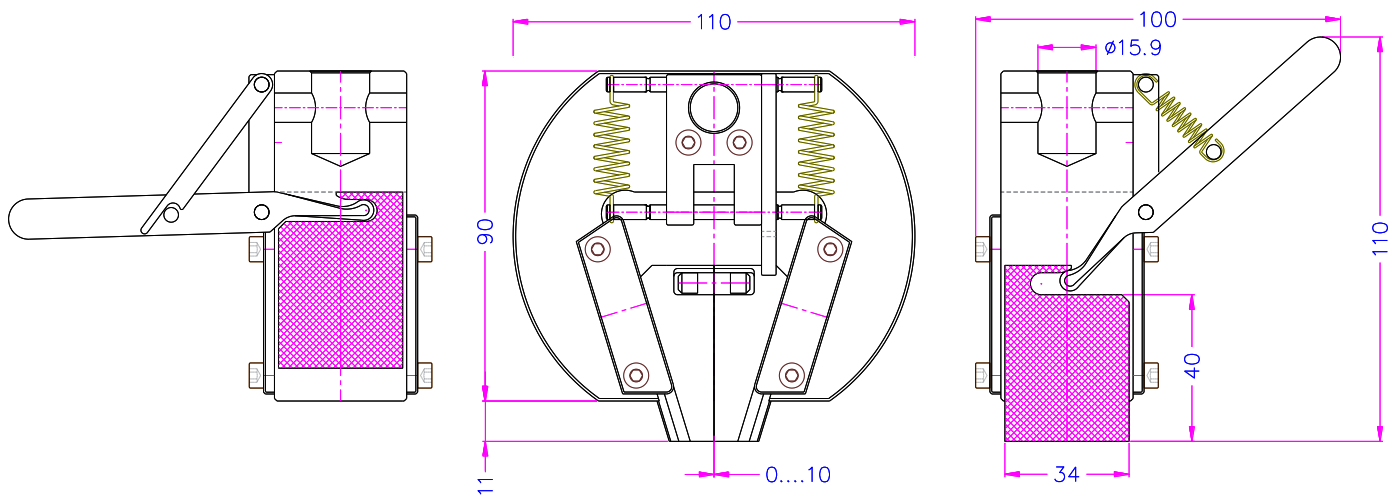
**MecS622-BP:**  
Pyramids 1x45°, hardened steel



**MecS622-BV:**  
Tooth pitch 1.2 mm, hardened steel



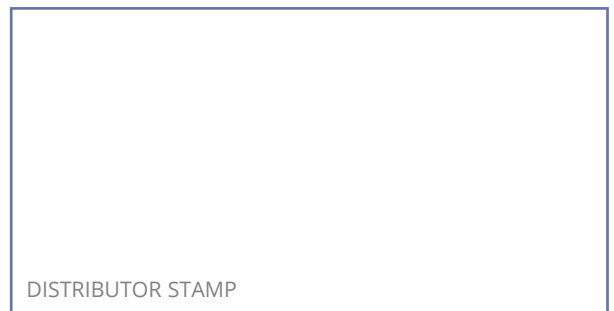
## Dimensions mm



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



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## 20 kN & 50 kN Wedge Grips, lever action, QC fitting

### Mec243-20 and Mec243-50 – steel

A compact lever-actuated wedge grip available rated to a tensile force of either 20 kN or 50 kN. The initial gripping force is provided by pre-tensioned springs which cause the jaws to close together. The teeth of the jaw faces act to make a preliminary hold of the specimen before the main clamping force is applied by the action of the wedges moving as load is applied to the specimen. A side-action lever arm allows operators to quickly and easily load and release specimens when testing.

The Mec243 Wedge Grips feature easy interchangeability of jaws making them an ideal universal choice when faced with tensile testing of a variety of shapes and materials. Pyramid (serrated) jaws (Mec243-BP & -BP16) are optimal for testing flat samples up to 16mm thickness. For round samples up to 16mm diameter a set of V-shaped jaws (Mec243-BV & -BV16) are available for use with the Mec243 Wedge Grips. Jaws should be ordered separately.

Both versions of the Mec243 Wedge Grips are especially suitable for holding a variety of materials such as plastic strips and dumbbells, flat and round metal specimens such as sheet, pipes, rods and dumbbells plus textile straps and belts.



Mec 243-20 shown fitted with a half-set of Mec243-BP pyramid jaws



Mec243-50 Wedge Grip shown fitted with a half-set of Mec243-BV 'V'-jaws

Item No:	Mec243-20	Mec243-50
Rated capacity:	20 kN	50 kN
Opening (depending on jaws):	up to 16 mm	up to 16 mm
Weight each grip( without jaws):	3.8 kg	6.75 kg
Scope of delivery: 1 grip fitted with bore-hole to allow connection to:	QC-20 fixing post	QC-32 fixing post

Jaws for Mec243: scope of delivery 0.5 set = 2 jaws (left & right)

Item No.	Surface	Clamping surface H x W	Opening	Weight per 0.5 set
Mec243-BP	Pyramid (serrated) jaws	50 x 35mm	0 – 13mm	0.48 kg
Mec243-BP16	Pyramid (serrated) jaws	50 x 35mm	4 – 16mm	0.41 kg
Mec243-BV	V-jaws	Clamping height 50mm	3 – 13mm Ø	0.46 kg
Mec243-BV16	V-jaws	Clamping height 50mm	4 – 16mm Ø	0.41 kg
Mec243-BV20	V-jaws	Clamping height 50mm	10 – 20mm Ø	0.35kg

Jaws with other dimensions and surface coatings on request



**Mec243-BP Pyramid jaws**

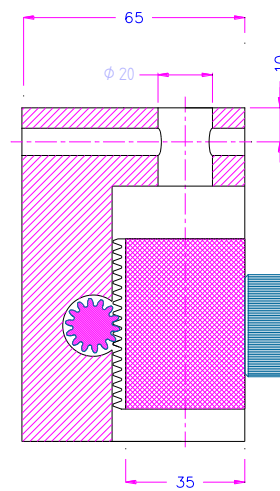
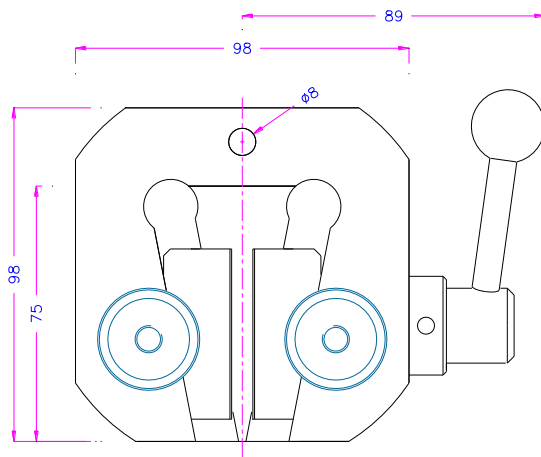
- Hardened steel 58 HRC
- Pyramids 1.2 x 45°



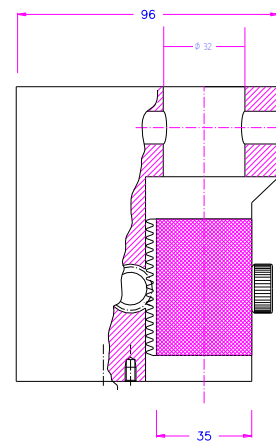
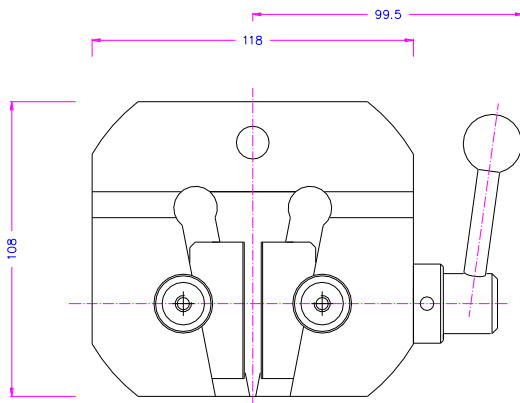
**Mec243-BV -V-jaws**

- For all kinds of round samples
- Hardened steel 58 HRC
- Tooth pitch 1.2 mm

## Dimensions mm



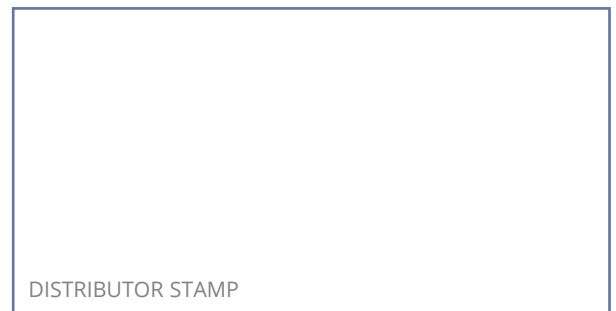
Mec243-20



Mec243-50



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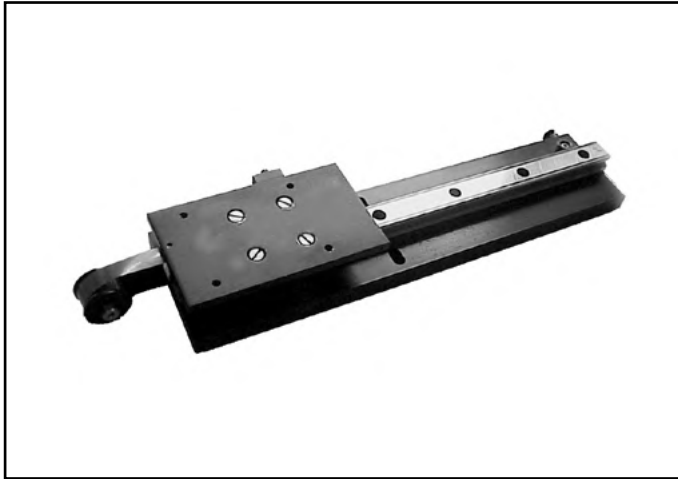
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## Assisted-Pull Peel Table



### Description

The assisted-pull peel table is fixed to the anvil plate and the crosshead of a test stand. The carriage of the peel table is directly driven horizontally by the vertical movement of the test stand crosshead, maintaining a constant 90 degree peel angle for the specimen.

### Applications

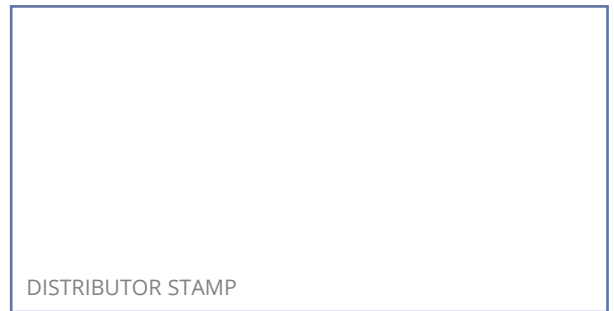
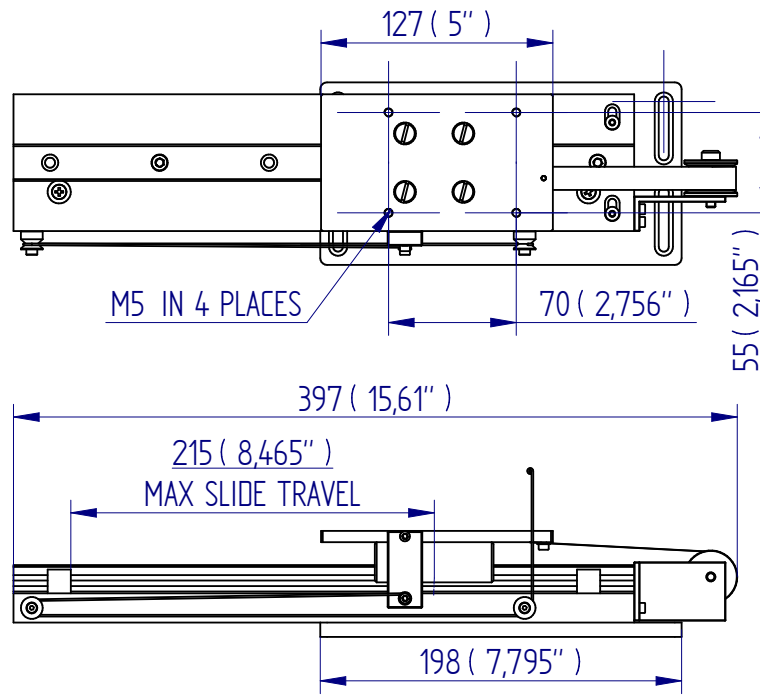
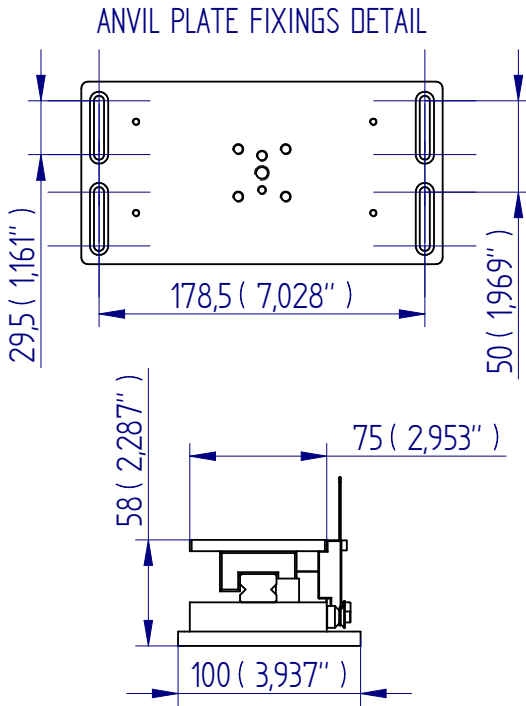
Used for peel testing of:

- adhesive tapes
- packaging
- flexible laminates

### Specifications

Part No.	Load Capacity			Length		Width		Height		Weight	
432-051	500 N	50 kgf	110 lbf	397 mm	15.60"	100 mm	3.94"	58mm	2.28"	3.5 kg	7.7 lb

## Dimensions mm



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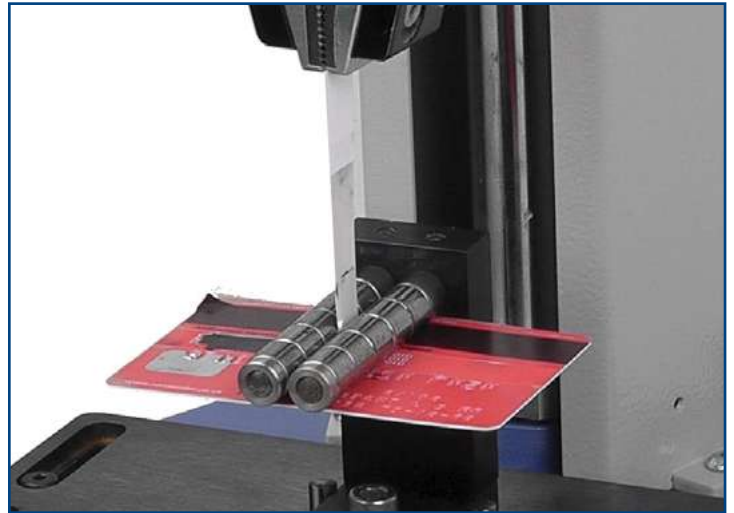
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## Floating Peel Jig



### Description

The floating peel jig is used to test flat samples with a flexible layer and a rigid or semi-rigid substrate, such as credit cards, and enables the card to move smoothly under the rollers while delamination tests are carried out. The fixture maintains a constant 90 degree peel angle for the specimen.

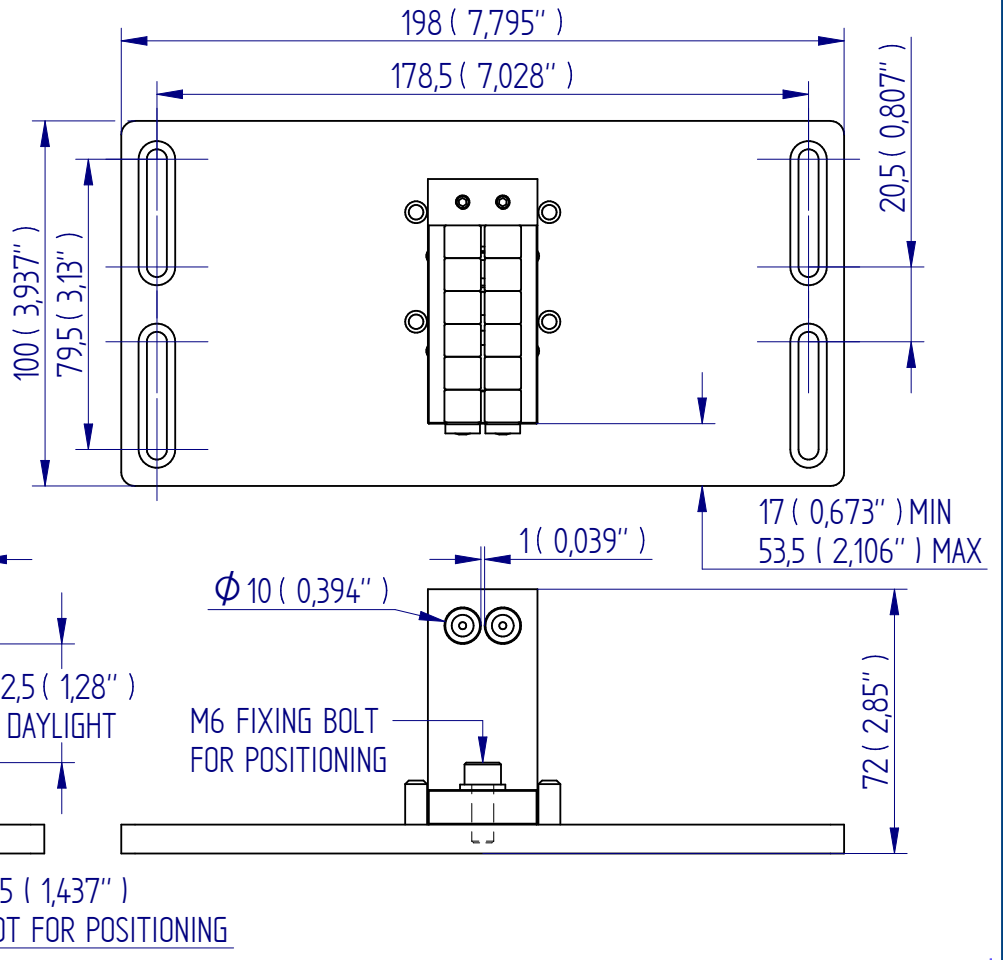
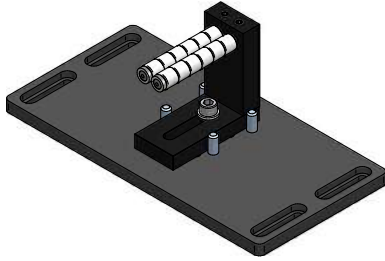
### Applications

- films
- tapes
- laminates
- labels
- decals

### Specifications

Part No.	Load Capacity		Height		
432-413	500 N	50 kgf	110 lbf	72 mm	2.85"

# Dimensions mm



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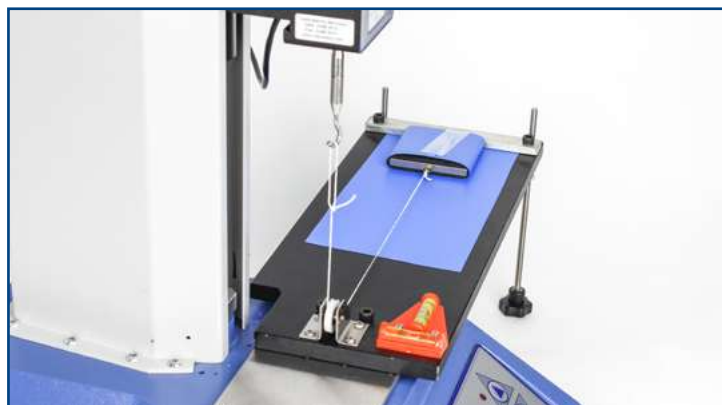
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## Coefficient of Friction Fixture



### Description

The Coefficient of Friction Fixture is designed to measure the coefficient of friction between two pieces of material (usually plastic film) when pulled at a constant speed with a fixed pressure between the surfaces. The fixture consists of a long flat bed and a sled. The bed is mounted to a fixing plate suitable for use with Mecmesin tensile testers. The sled is moved along the bed by the movement of the tensile testing machine. The sled connects to the load cell via a thread passing over a low friction pulley. The sled speed is therefore identical to the speed of the tensile tester with the friction load being measured directly by the loadcell.

The bed has a clamping plate at the rear to hold the specimen material securely in place during the test. For additional stability the specimen material may also be taped to the bed if required. The sled is wrapped in a sponge rubber and designed to give the correct pressure between the two halves of the sample as defined by the relevant standard. Specimen material is fixed to the sled using conventional or double-sided adhesive tape.

A bi-directional spirit level and adjustable feet allow the bed to be levelled thereby ensuring that specimens are tested in a completely horizontal plane.

### Applications

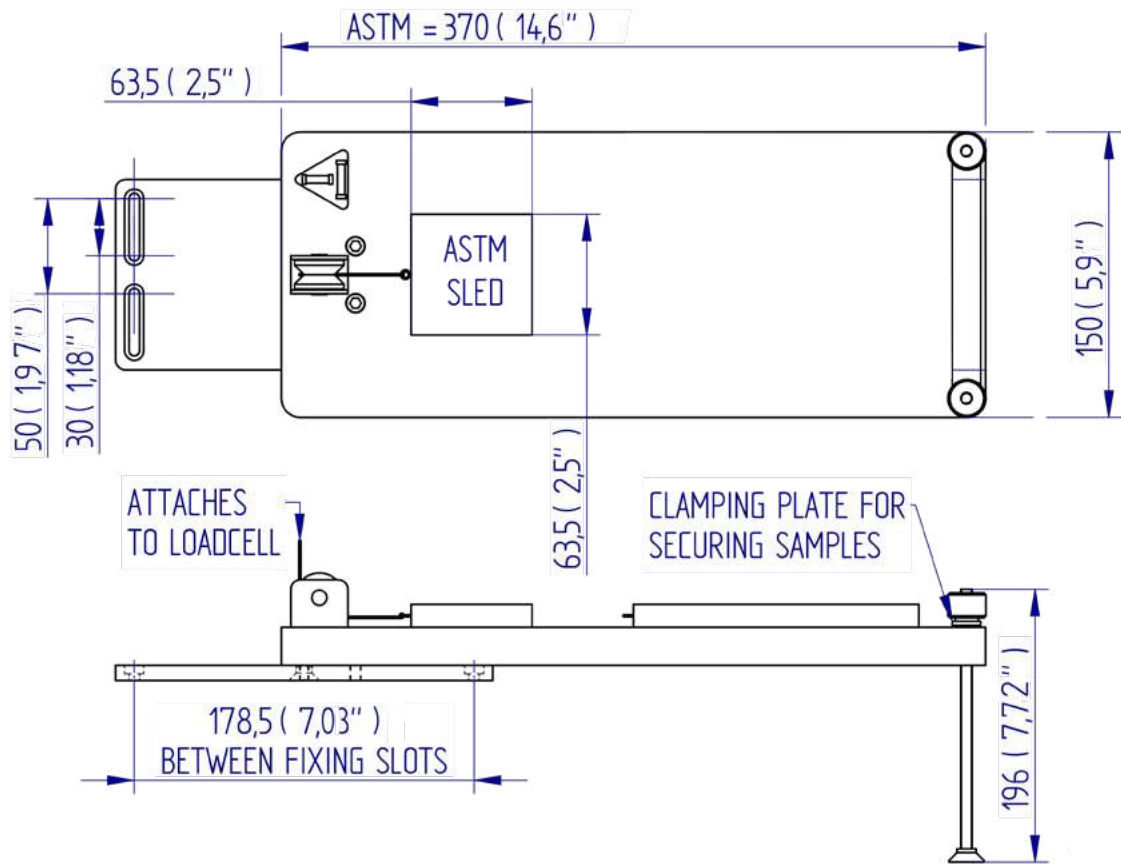
Used for friction testing primarily of plastic films, sheets, foils and paper.

### Specifications

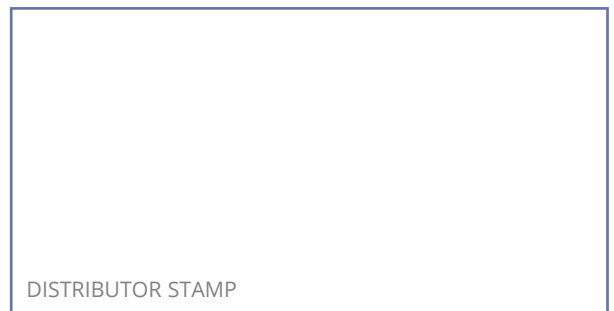
Part No.	Standard	Sled Dimensions		Sled mass	Bed length	
432-144	ASTM D1894	63 x 63 mm	2.5 x 2.5 <sup>□</sup> (nominal)	200g ± 5g	370 mm	14.6 <sup>□</sup>
432-501	ISO 8295	63 x 63 mm	2.5 x 2.5 <sup>□</sup> (nominal)	200g ± 2g	370 mm	14.6 <sup>□</sup>

## Dimensions mm

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## Peel Jigs for test standards (FINAT, ASTM, AFERA, PSTC)

A number of test methods and standards employed by various industry bodies call upon specific peel jigs and associated accessories to be used in conjunction with a tensile tester. Mecmesin has developed a range of peel jigs and accessories to meet the demands of the most commonly used standards.

Part No.	Description	QC connection
PDV13016-C	180 degree Peel Jig - lower (FINAT 1 & FINAT 3)	Yes - QC 20
PDV15031	90 degree Assisted Peel Table incl. rails for fixing Float Glass - lower (FINAT 2)	Yes - QC 20
PSV15030	Float Glass 2" wide x 8" long for use with above Assisted Peel Table	N / A
PSV14155	Standard FINAT Roller - 2kg	N / A
PSV13007	Sample cutter (15 mm and 1 inch wide) + Protective Mat	N / A
PDV13016-A	Tack Test Jig - lower (FINAT 9)	Yes - QC 20



### 180 degree Peel Jig (FINAT 1) – Peel Adhesion

- Remove backing material from 25 mm wide strip
- Affix to test plate (PDV13016-C) and roll twice using standard roller (PSV14155)
- Fit test plate (PDV13016-C) to base of tensile tester
- Fit strip into upper grip (Mec227-BG50) of tensile tester so that test angle is 180 degrees
- Separate the adhesive strip from the test plate at a rate of 300 mm/min
- Record data from the central section of the adhesive strip as it is peeled
- Calculate the average of the peel force and express the value as Newton/25 mm width
- Describe the type of failure (cohesive failure, adhesive transfer, etc.)



Note: tests to be conducted after 20 mins and 24 hours.



- ◀ Test Plate (PDV13016-C) shown with 25 mm strip being held in Upper Grip
- ▼ Test Plate (PDV13016-C) for connection to a QC-20 Fixing Post of test stand



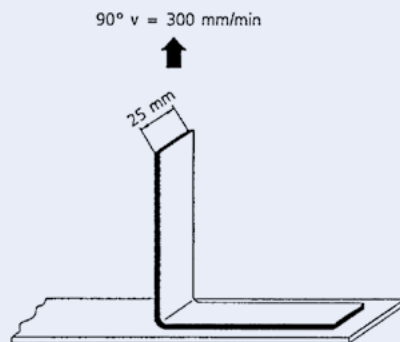
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## 90 degree Peel Jig (FINAT 2) – Peel Adhesion

Typically gives lower values than FINAT 1 and is considered useful when failure mode of materials is 'paper tear'

- Remove backing material from 25 mm wide strip
- Affix strip to float glass (PSV15030) and roll twice using standard roller (PSV14155)
- Fit float glass into horizontal pull-peel table (PDV15031) positioned on base of tensile tester
- Fit strip into upper grip (Mec227-BG50) of tensile tester. Test angle is now maintained at 90 degrees
- Separate the adhesive strip from the test plate at a rate of 300 mm/min
- Record data from the central section of the adhesive strip as it is peeled
- Calculate the average of the peel force and express the value as Newton/25 mm width
- Describe the type of failure (cohesive failure, adhesive transfer, paper tear, etc.)



Note: tests to be conducted after 20 mins and 24 hours.



▲ Pull-Peel Table (PDV15031) shown with 25mm strip being held in Upper Grip (Mec227-BG50)

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## 180 degree Peel Jig (FINAT 3) – Low-speed Release Force to separate release backing

- Affix 50 mm wide strip to test plate (PDV13016-C) using double-sided tape
- Fit test plate (PDV13016-C) to base of tensile tester
- Fit strip into upper grip (Mec227-BG50) of tensile tester so that test angle is 180 degrees
- Separate the adhesive strip from the test plate at a rate of 300 mm/min
- Record data from the central section of the adhesive strip as it is peeled
- Calculate the average of the peel force and express the value as Newton/50 mm width

Note: To ensure good contact between release backing and adhesive the tests are to be conducted 20 hours after strips have been compressed together.





▲ Test Plate (PDV13016-C) shown with 50 mm strip being held in Upper Grip (Mec227-BG50)



▲ Test Plate (PDV13016-C) for connection to a QC-20 Fixing Post of test stand

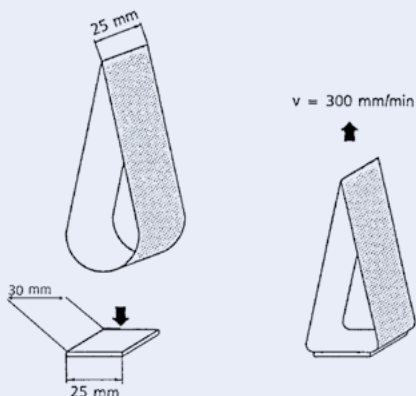
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## Tack Test Jig (FINAT 9) – Loop Tack (aka "Quick-stick") measurement

- Remove backing material from 25 mm wide strip
- Form loop with adhesive surface being outermost
- Fit loop into upper grip (Mec227-BG50) of tensile tester
- Compress the loop to lower Tack Test Jig (PDV13016-A) at 300 mm/min until full contact over float glass plate has been achieved
- Immediately reverse the tester to separate the loop from the glass plate at a tensile rate of 300 mm/min
- Record the maximum separation force

Note: If adhesive transfer or paper tear occurs this should be recorded



◀ Test Plate (PDV13016-A) shown with 25 mm strip being held in Upper Grip (Mec227-BG50)

▼ Test Plate (PDV13016-A) shown with float glass plate fitted



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## Additional Accessories

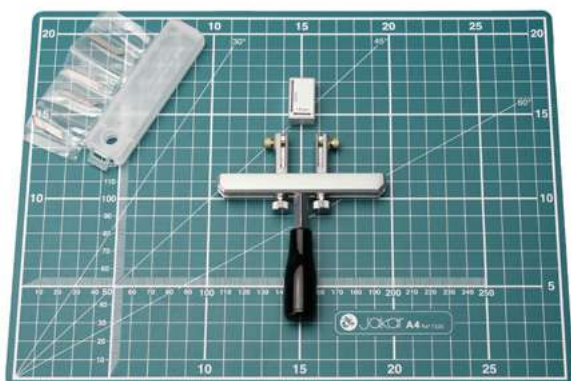
**Standard Roller (FINAT)** - applies a standard pressure to the specimen irrespective of the variation in hand pressure on the handle.



◀ Roller of 85 mm diameter and 50 mm width. Fitted with rubber surface of Shore hardness A 80. Weight is 2kg

Part no: PSV14155

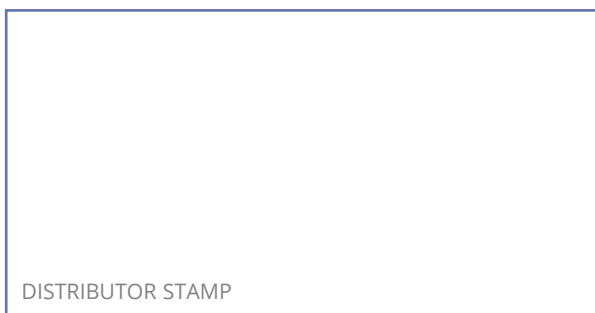
**Sample Cutters** - allows specimen strips to be cut cleanly and straight to the required width. Supplied with protective mat, 15 mm x 1 inch width adjustment block and spare cutter blades.



◀ 115 mm and 1 inch wide cutter. Specimen widths from approximately 15 mm – 70 mm may be cut.

The Width Adjustment Block quickly enables sample widths of 15 mm or 1 inch to be prepared for ASTM F88, JIS Z 0238:1998 and JIS Z 1707:2019.

Part no: PSV13007



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## Pull Peel Wheel Fixture



### Description

The pull peel wheel fixture is designed for mounting to the base of a motorised test stand to test the peel strength of flexible adhesive-backed materials. Samples are wound around the wheel and the free end is clamped in a suitable upper grip connected to a loadcell. The minimal-friction bearing ensures a constant 90° peel angle.

### Applications

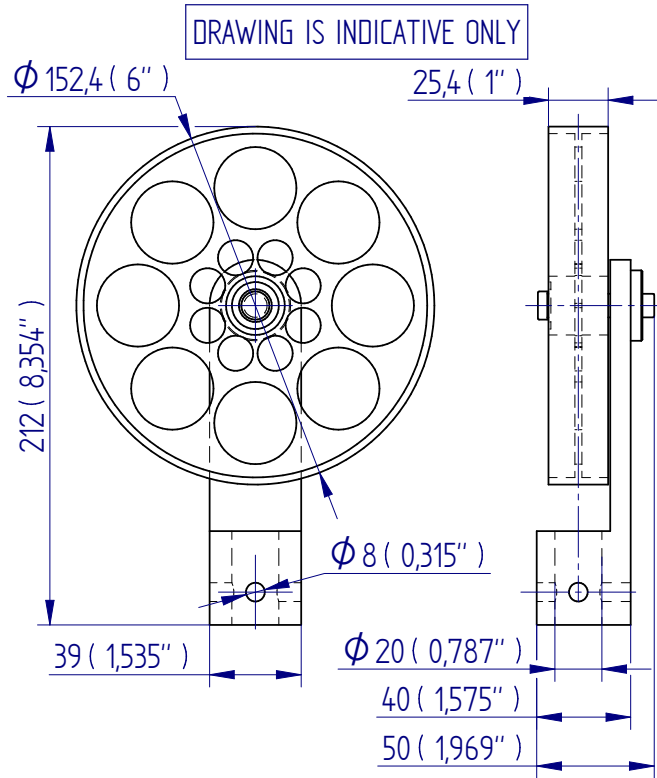
Used for peel testing of:

- laminated coatings
- adhesive-backed tape
- adhesive-backed films and foils

### Specifications

Part No.	Load Capacity			Post Ø	Rim Width		Wheel Diameter Ø		Height		Weight	
	N	kgf	lbf		mm	"	mm	"	mm	"	g	lb
432-265	200 N	20 kgf	44 lbf	QC20	25.4 mm	1.0"	152.4 mm	6.0"	212 mm	8.34"	246 g	0.54 lb

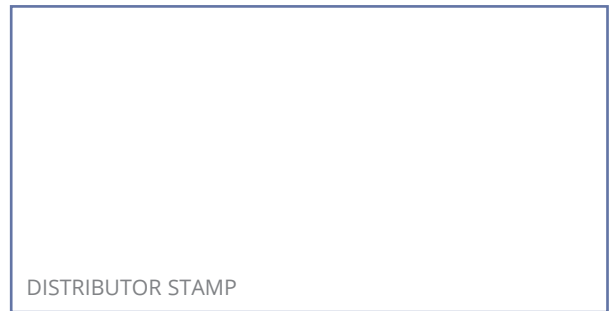
## Dimensions mm



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



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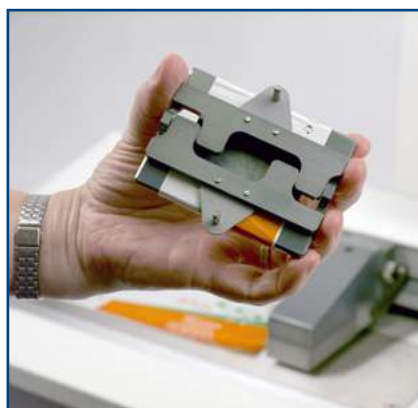
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## FPT-H1 Friction Sleds



▼ 432-628: 800 g sled shown with ISO 15359 friction test kit



▲ 432-638: 200 g foam faced: ASTM D1894, ISO 8295

### Description

The FPT-H1 Coefficient of Friction tester can be fitted with sample sleds of the correct weight, size and facings for a wide variety of international standard test methods. Sleds can be drawn from either end, and have magnetic catches for quickly and cleanly securing film samples.

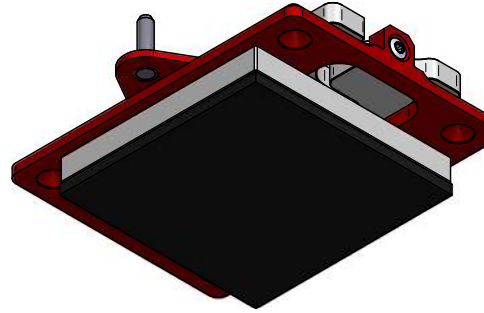
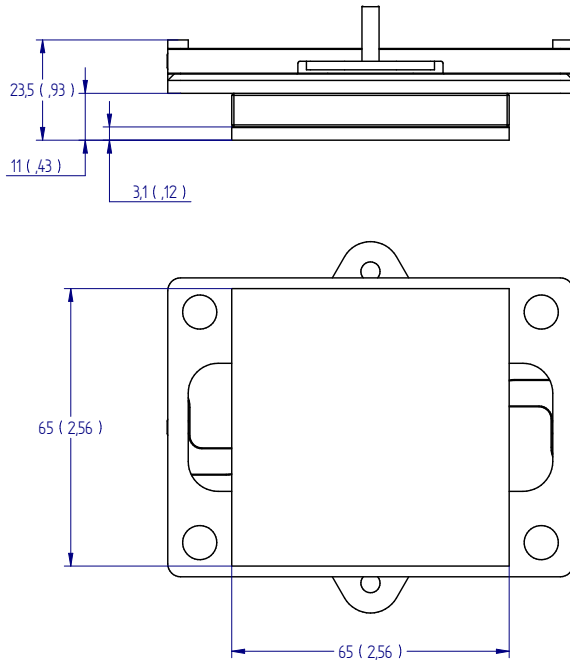
ISO 15359 prescribes mechanical lifting and lowering of the sled, and friction-free guide rails. The kit for this test requires a factory-fitted servo lift, but the rails can be easily removed for any other form of testing. The lift is software-controlled by the installed test program.

Sleds include the recommended linkages for the tests shown, to avoid slip-stick in kinetic friction testing.

### Specification

Part no.	Face Length	Face Width	Mass	Face Material	Suitable for standards
432-633	63.5 mm	63.5 mm	200 g	neoprene	TAPPI T 549
432-638	63.5 mm	63.5 mm	200 g	rubber foam	ASTM D1894, ISO 8295
432-639	63.5 mm	63.5 mm	800 g	neoprene	ISO 15359

## Dimensions mm



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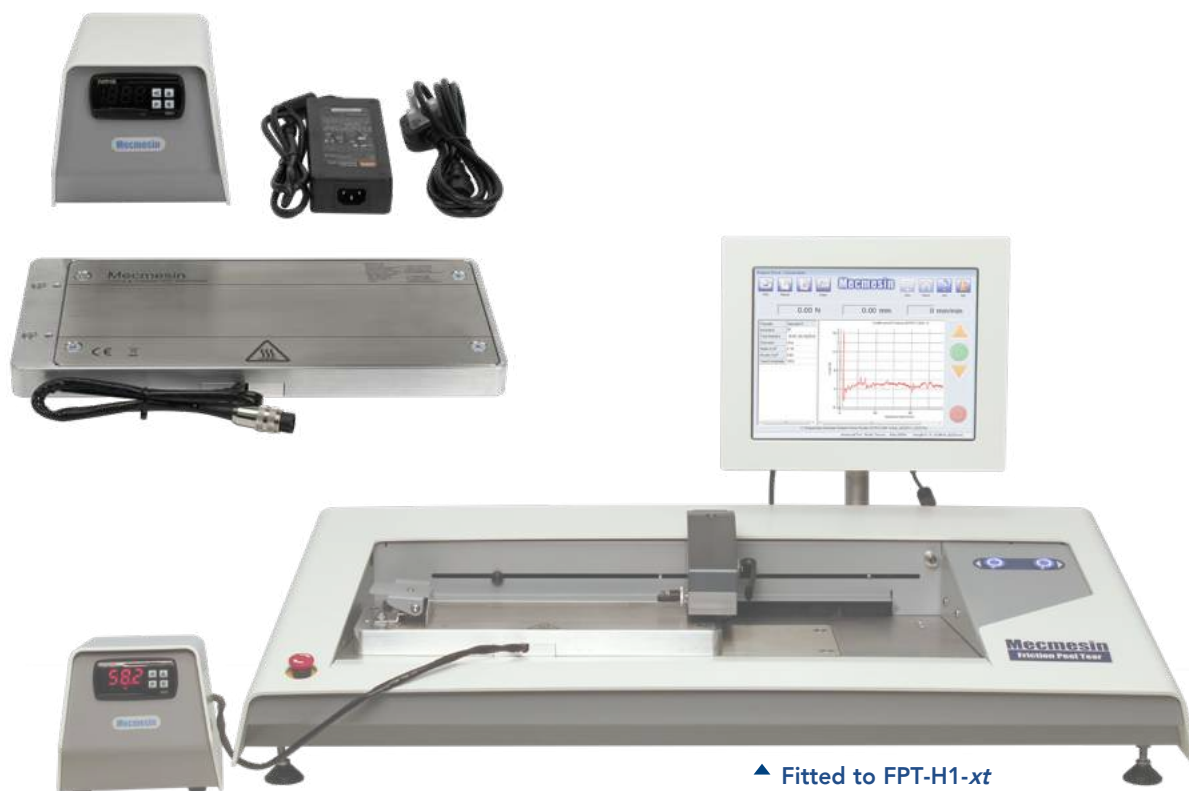
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## FPT-H1 Coefficient of Friction Heated Plane



### Description

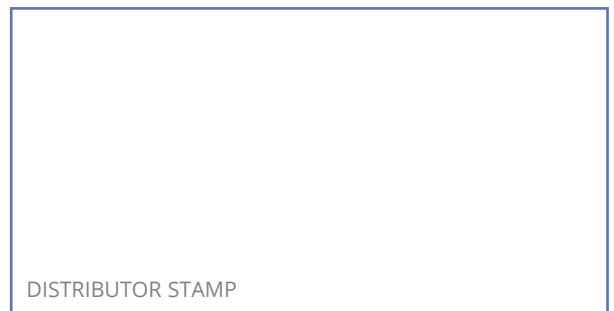
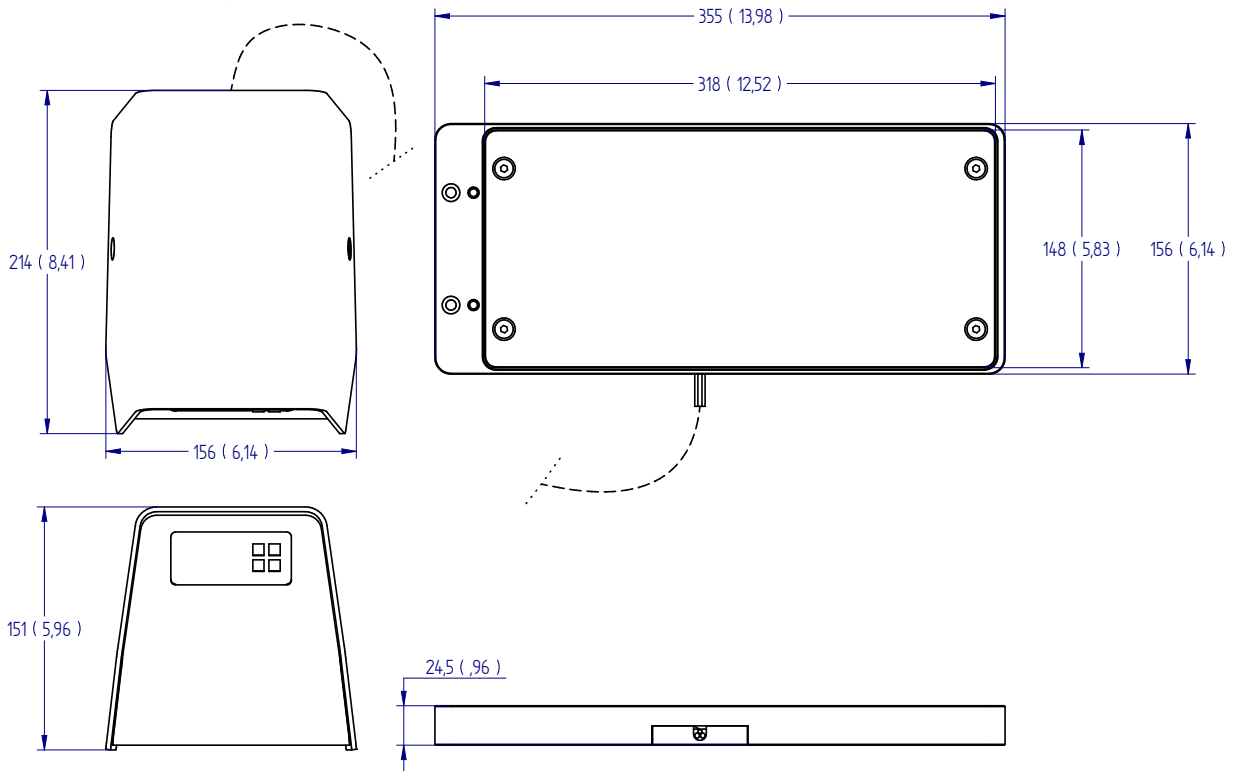
The coefficients of friction of plastic films change with temperature. Testing at elevated temperatures can therefore be useful to establish hot-running machine settings. This heated plane has a control box and attaches to the FPT-H1 for use with its standard friction fixtures. With an operating temperature maintained to within 5°C, this unit will enable repeatability in the testing of plastic films, in accordance with ASTM D1894, or your own requirements.

### Specification

Part no.	Heated area length	Heated area width	Height
432-640	318 mm (12.5 in)	148 mm (5.8 in)	24.5 mm (0.96 in)

Max. temperature	85°C
Warm-up time	30 minutes
Accuracy	5°C
Power supply	24 VDC
Operating temperature	10°C to 40°C (32°F to 122°F)
Humidity	20% to 85% non-condensing
Ingress protection rating	30

## Dimensions mm



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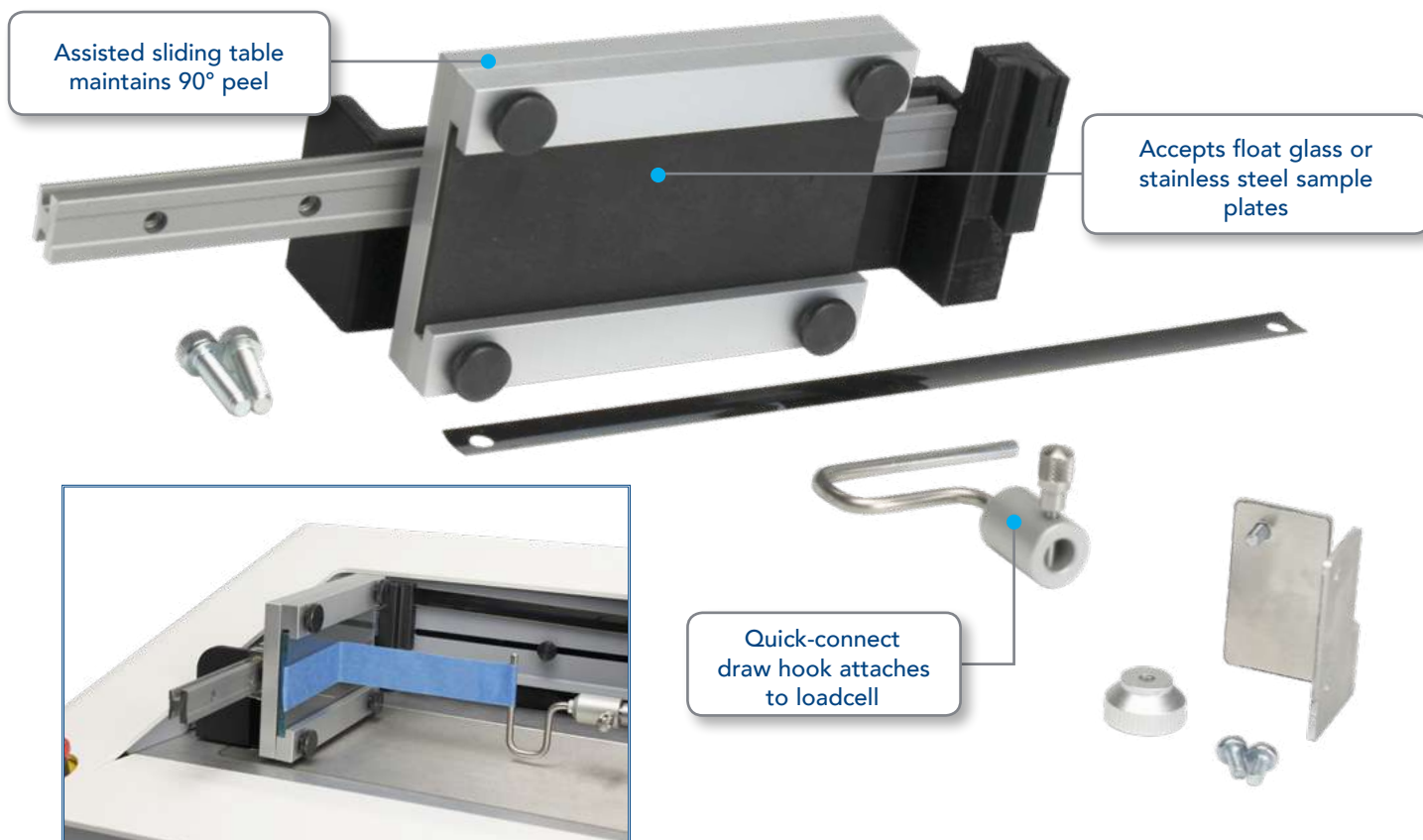
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## FPT-H1 90° Peel Fixture Kit



### Description

The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel test methods. Optional fixtures enable 90°, 180° and T-peel testing, which are especially suitable for pressure sensitive adhesive tapes and labels.

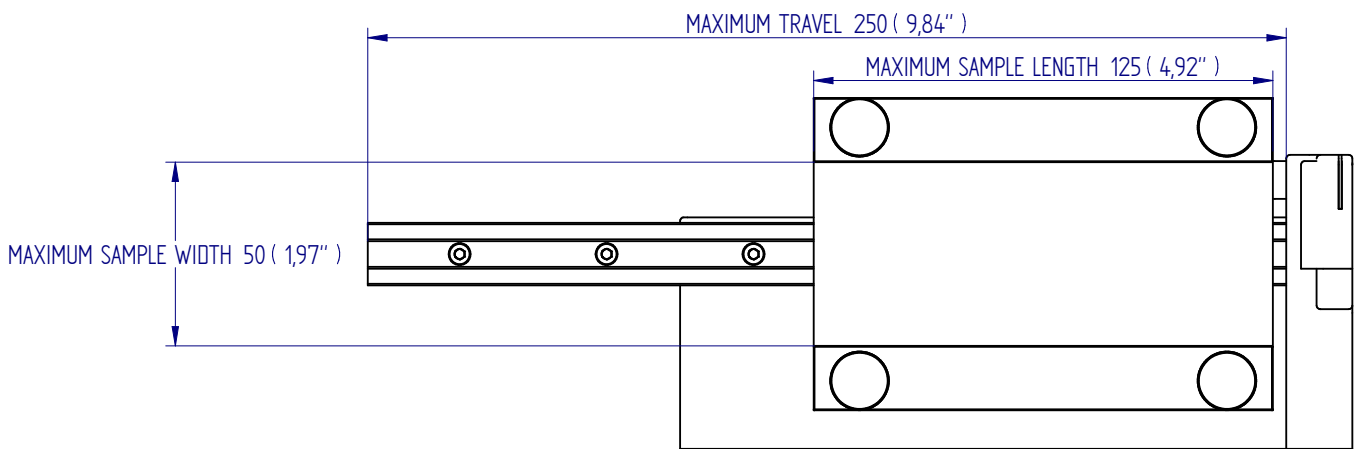
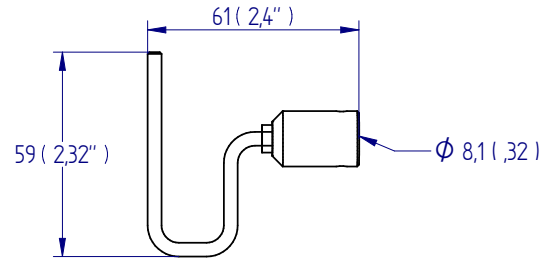
The 90° fixture features an assisted sliding table to ensure constant alignment with the draw hook. The table accepts float glass and stainless steel sample plates, to comply with the requirements of a range of standard test methods, including Afera 5001, ASTM D3330, BS EN 1939, FINAT FTM2 and PSTC 101 Method F.

### Specification

Part no.	Available travel	Max. sample length	Max. sample width
432-670	125 mm	125 mm	50 mm

Part no.	Material
432-651	Float glass
432-652	Stainless steel

## Dimensions mm



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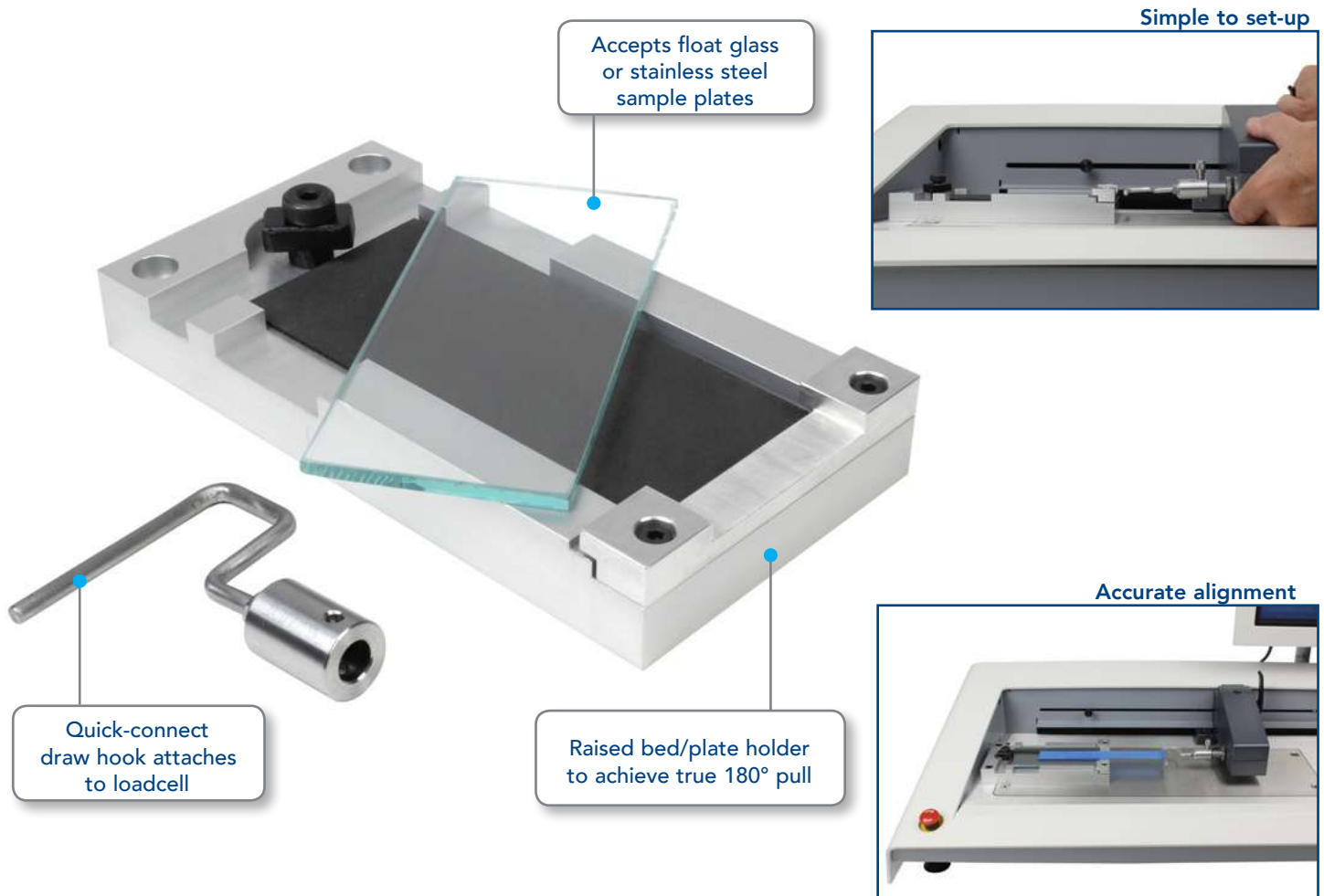
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## FPT-H1 180° Peel Fixture Kit



### Description

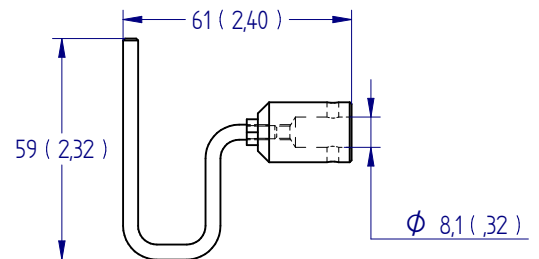
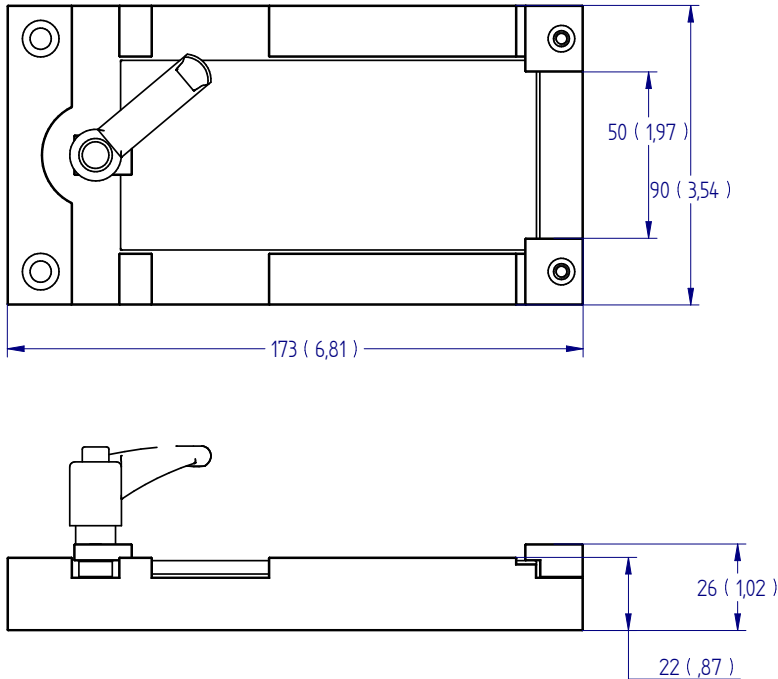
The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel test methods. Optional fixtures enable 90°, 180° and T-peel testing, which are especially suitable for pressure sensitive adhesive tapes and labels.

The 180° fixture features a raised bed to ensure accurate alignment with the draw hook. The bed itself accepts float glass and stainless steel sample plates, to comply with the requirements of a range of standard test methods, including Afera 5001, ASTM D3330, BS EN 1939, FINAT FTM1 and PSTC 101.

### Specification

Part no.	Length	Width	Height	Max. sample width
432-636	173 mm	90 mm	26 mm	50 mm
Part no.	Material			
432-651	Float glass			
432-652	Stainless steel			

## Dimensions mm



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



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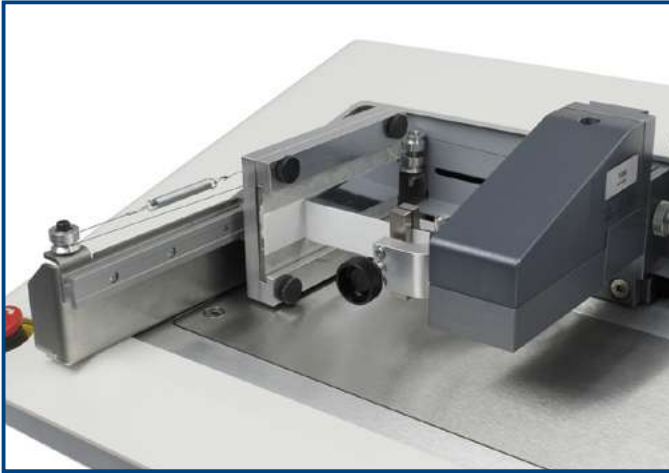
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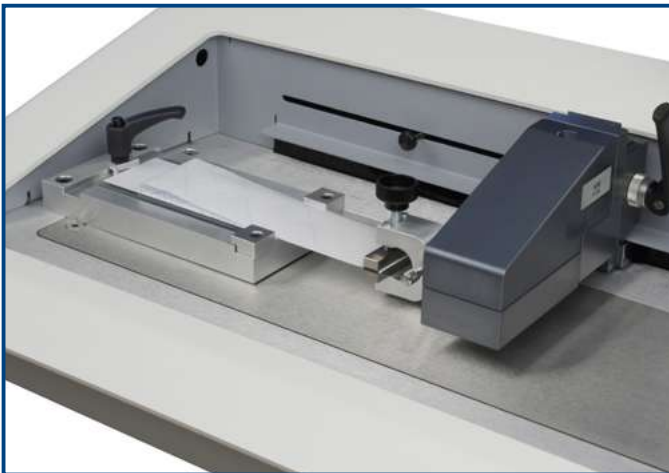
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## FPT-H1 50 mm Peel Grip (FINAT 3), QC fitting



90° peel of laminated card (with part no. 432-620)▲



180° peel of self-adhesive labels (with part no. 432-636) ▲



### Description

The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel and tear test methods. This peel grip can be used in conjunction with the FPT-H1 90 degree fixture kit (part no. 432-620) or the FPT-H1 180 degree peel fixture kit (part no. 432-636) where the drawn part of the sample is non-adhesive, in place of the standard hook fixture.

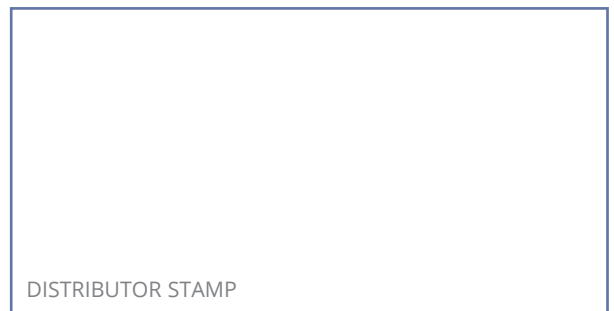
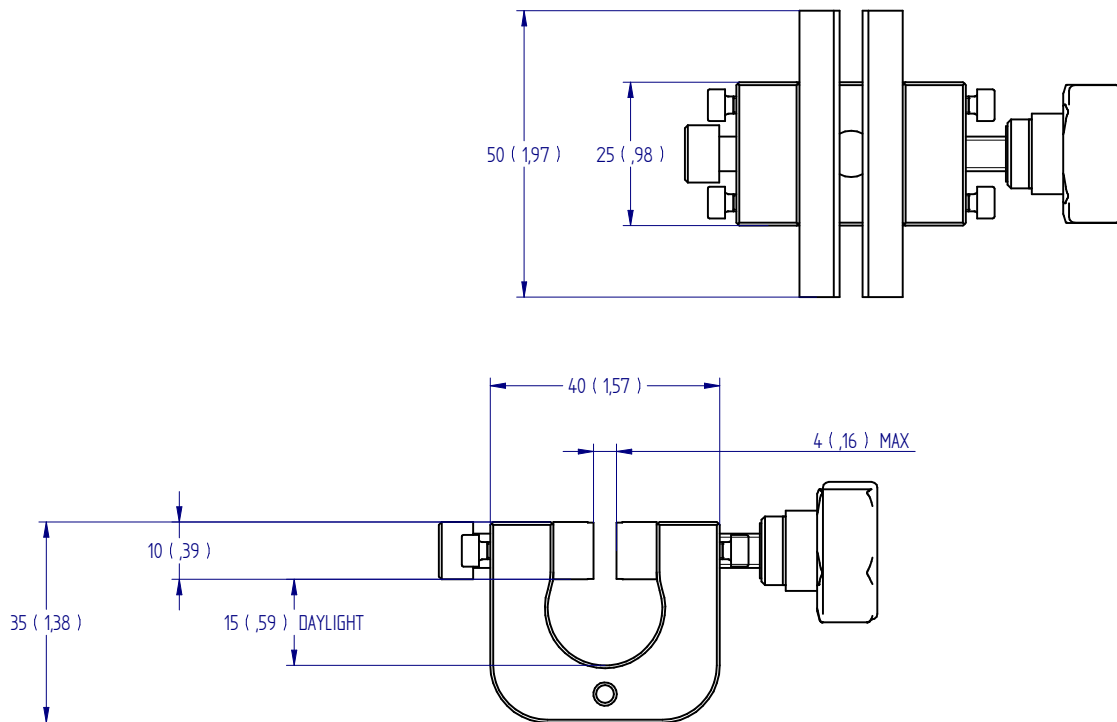
This single-action grip has rubber-faced jaws for securely gripping backing layers, plastic film, paper and card. Supplied as a single grip.

Suitable for test standards FINAT FTM1, 2 & 3; ASTM D3330, D6252, TLMI L-IA1 & 2

### Specification

Part no.	Jaw opening	Jaw width	QC Ø
432-654	4 mm	50 mm	8 mm

## Dimensions mm



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## FPT-H1 T-Peel Jig, QC fitting



### Description

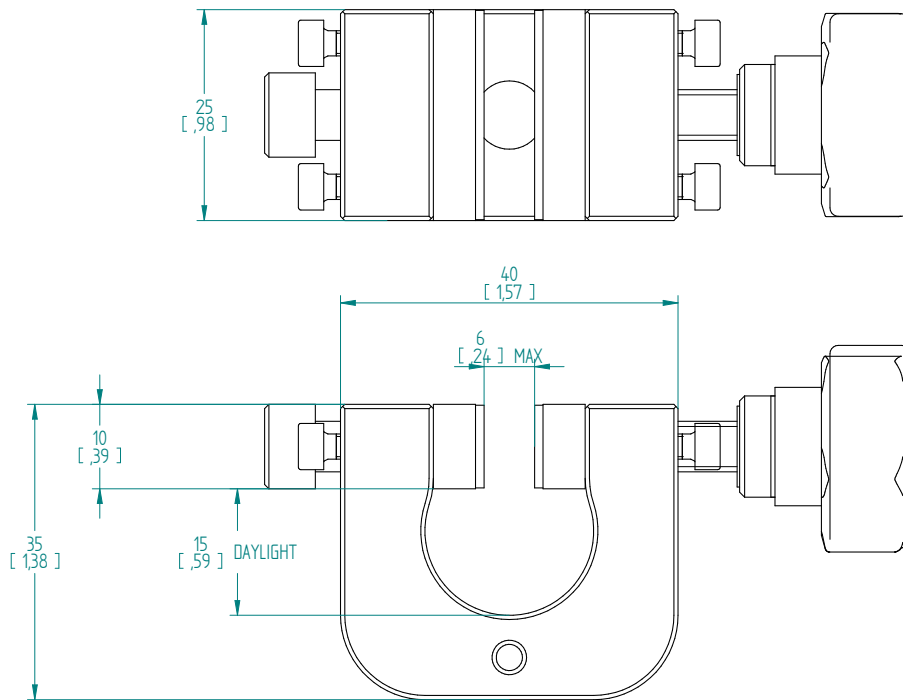
The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel and tear test methods. For T-peel, two 25 mm vice grips are used.

Sold as a pair, these small vice grips have both jaws adjustable, and are rubber-faced for securely gripping plastic films, paper and card.

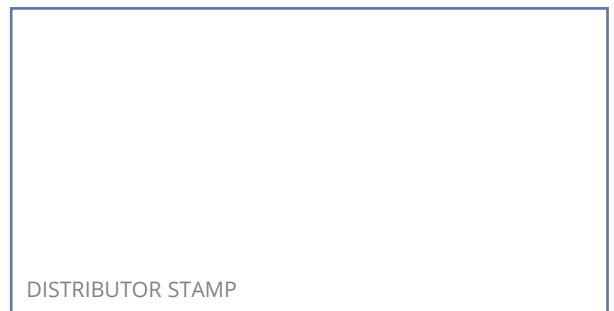
### Specification

Part no.	Jaw opening	Jaw width	QC Ø
432-642	6 mm	25 mm	8 mm

## Dimensions mm



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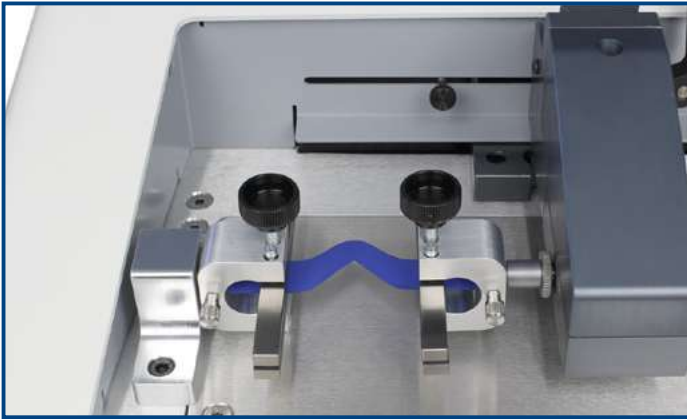
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## FPT-H1 Lightweight Tear Grips, QC fitting

Tear-testing plastic film ▼



Tear-testing perforations ▼



### Description

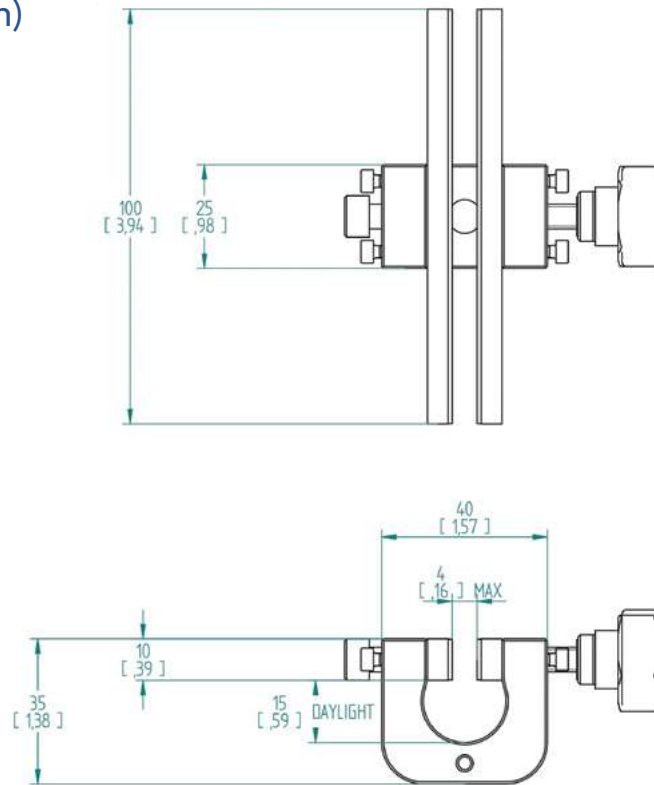
The Mecmesin FPT-H1 horizontal coefficient of friction tester can also be used for specific standard peel and tear test methods. For tear testing, two 100 mm vice grips are used.

Sold as a pair, these small vice grips have both jaws adjustable, and are rubber-faced for securely gripping plastic films, paper and card.

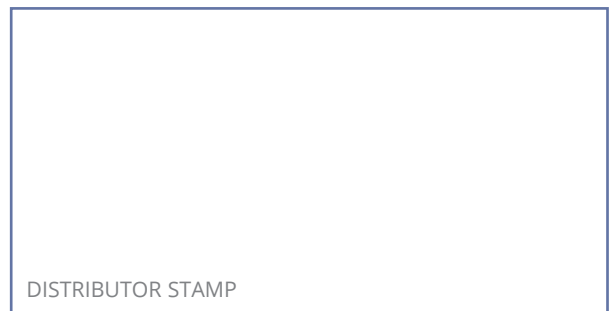
### Specification

Load measurement	
Loadcell range	10 N, 100 N, (2.2 lbf, 22.5 lbf)
Load resolution	1:6500
Load accuracy	±0.1% of full scale output

Dimensions mm (inch)



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## FPT-H1 Loadcell Calibration Check Rig



### Description

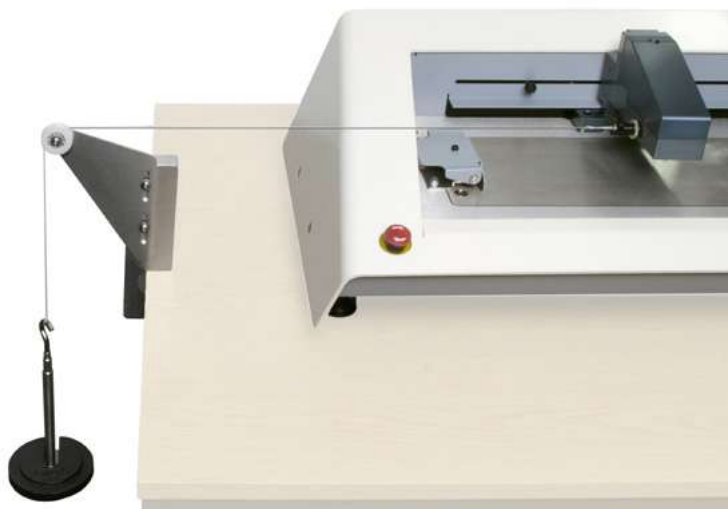
The Loadcell Calibration Check Rig is a bench-top pulley and cord jig which allows the on-site verification of the calibration status of the loadcell of an FPT-H1 Friction Peel Tear tester. Using dead-weight masses suspended on a hanger (ordered separately), the kit allows you to quickly decide whether or not adjustment, recalibration or repair is required. The pulley jig is clamped to the bench-top, the weights are carefully added and the load reading on the console is checked to verify if it is within the manufacturer's specification of +/- 0.1% of the rated capacity of the loadcell.

When a loadcell is beyond its recommended calibration date, this will be indicated when you switch the system on. It should be returned to Mecmesin or your distributor, for recalibration in a controlled laboratory environment. The Calibration Check Rig does not replace the need for regular professional calibration under controlled laboratory conditions by Mecmesin-approved providers.

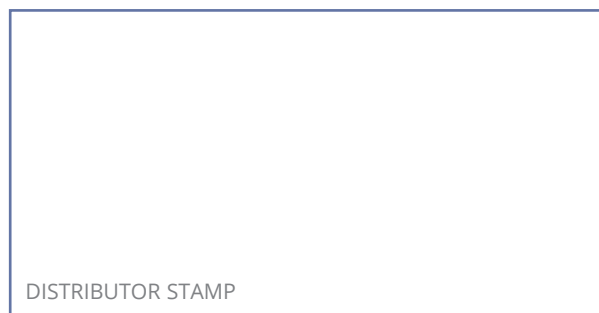
The calibrated slotted masses are available for a 10 N or 100 N loadcell.

### Specifications

Part No.	Description
432-635	FPT Calibration verification pulley-jig (excluding masses)
432-655	Lightweight hanger and 5 N slotted mass for verifying FPT 10 N
432-656	Lightweight hanger and 50 N slotted mass for verifying FPT 100 N



432-635 Pulley jig clamped to bench-top and calibrated weights applied for loadcell accuracy verification



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## Button Pull-off Fixture with 3 Plates



### Description

This fixture engages the button shank in a slot for testing the tensile strength to failure. Three slotted interchangeable plates accommodate different shank diameters. A shatter-protection guard contains broken buttons. Typically used with the 25 mm / 50 mm 'grab test' textile fixture.

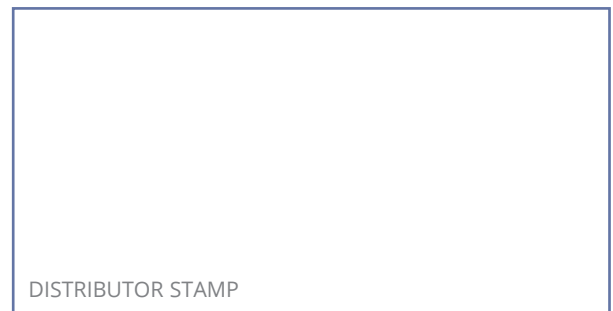
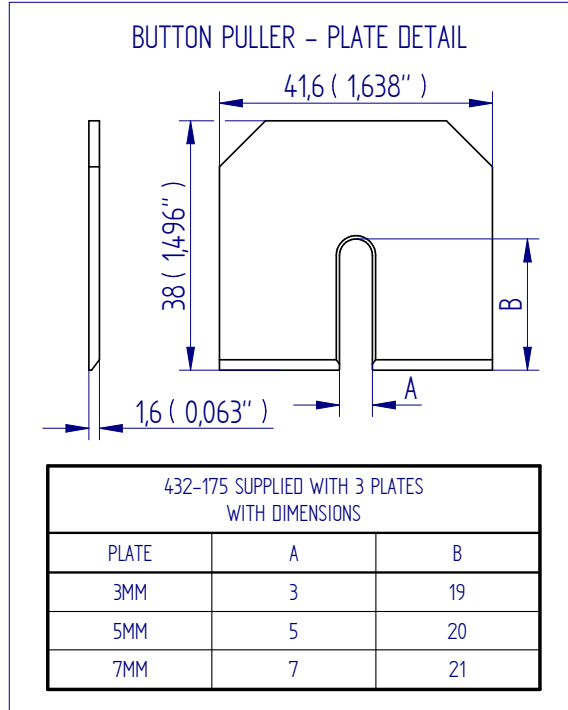
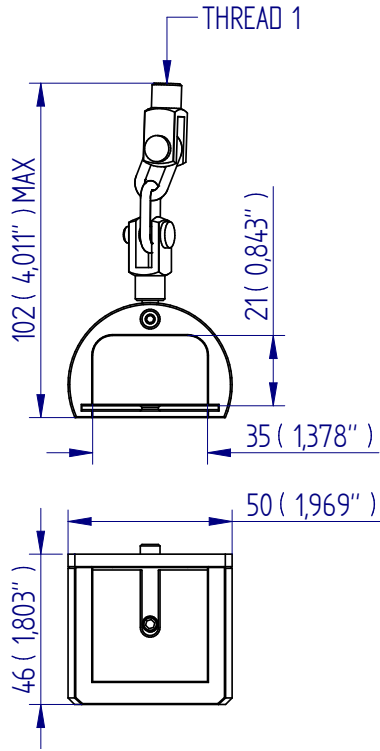
### Applications

- buttons

### Specifications

Part No.	Load Capacity	Thread 1	Slot Widths	Max Button Ø	Length
432-175	500 N / 50 kgf / 110 lbf	10/32 UNF	3 mm / 5 mm / 7 mm (0.12" / 0.2" / 0.28")	35 mm (1.38")	102 mm (4.01")

# Dimensions mm



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## Sequin Pull-off Fixture



### Description

This fixture holds the sequin in the serrated jaw of a pair of clamping forceps hooked over a stainless steel test hook. The 10/32 UNF thread of the hook attaches directly to the loadcell or force gauge.

The sample fabric is held in a suitable lower fixture mounted to the anvil plate - typically the 25 mm / 50 mm 'Grab Test' textile fixture.

### Applications

Used for pull-off testing of:

- clothing decoration

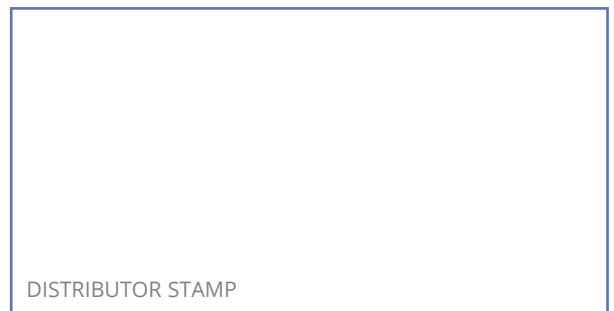
### Specifications

Part No.		Load Capacity		Thread	Length		Weight	
432-291	50 N	5 kgf	11 lbf	10/32 UNF	157 mm	6.18"	20 g	0.04 lb

**NO DRAWING AVAILABLE**



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## 25 mm/50 mm 'Grab Test' Textile Fixture



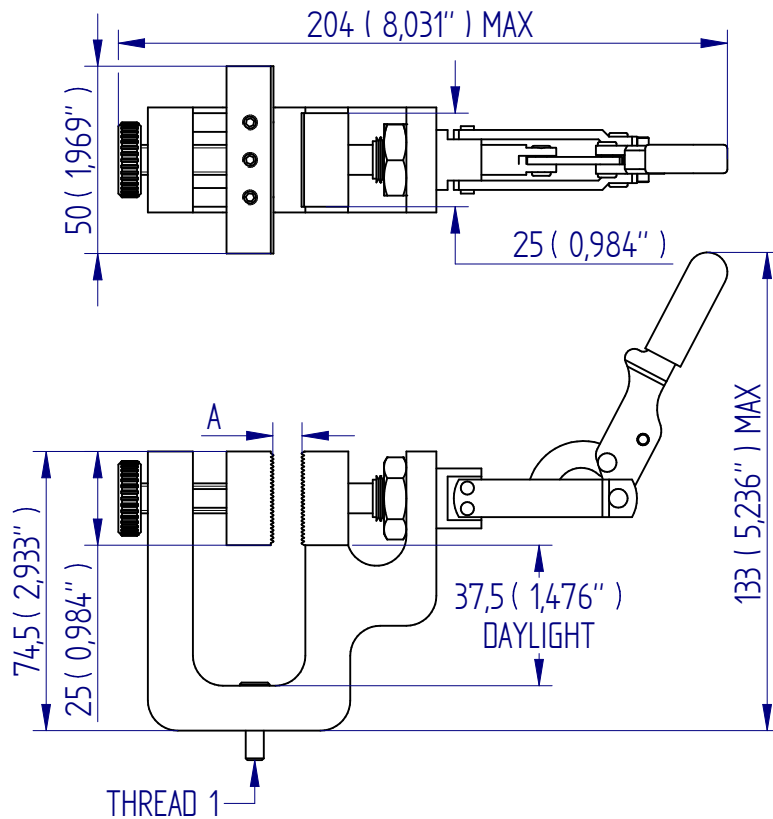
### Description

The 25 mm/50 mm 'grab test' textile fixture has two different-sized jaws to comply with standard methods for textile strength and elongation.

### Specifications

Part No.	Load Capacity			Thread 1	Jaw Opening		Jaw Width		Height		Weight	
432-323	500 N	50 kgf	110 lbf	10/32 UNF	6.5 mm	0.26"	25 mm	0.98"	74 mm	2.91"	400 g	0.88 lb

## Dimensions mm (inch)



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## Modified Large Wedge Grip



### Description

The modified large wedge grip has a shorter body with longer jaws to be able to securely hold S-spring poppers for tensile test-to-failure. As load is applied, the wedge action of the jaws increases the grip on sample.

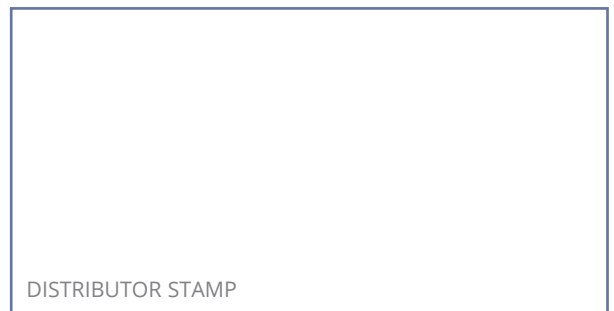
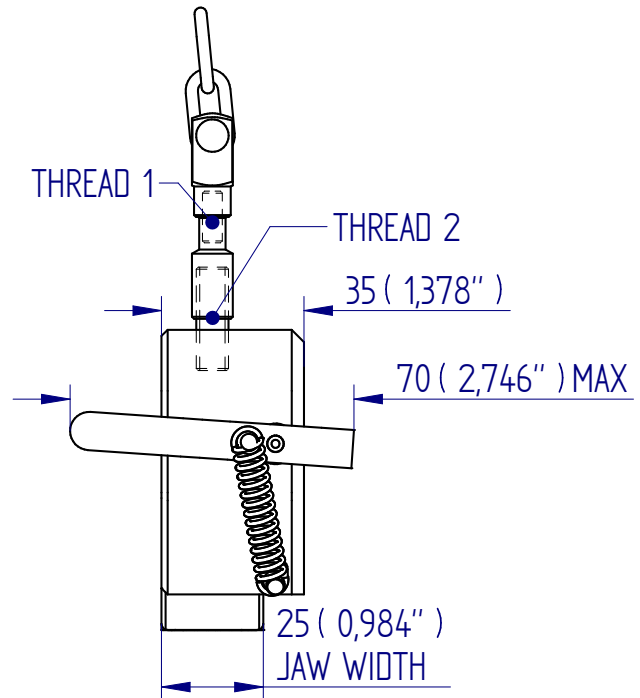
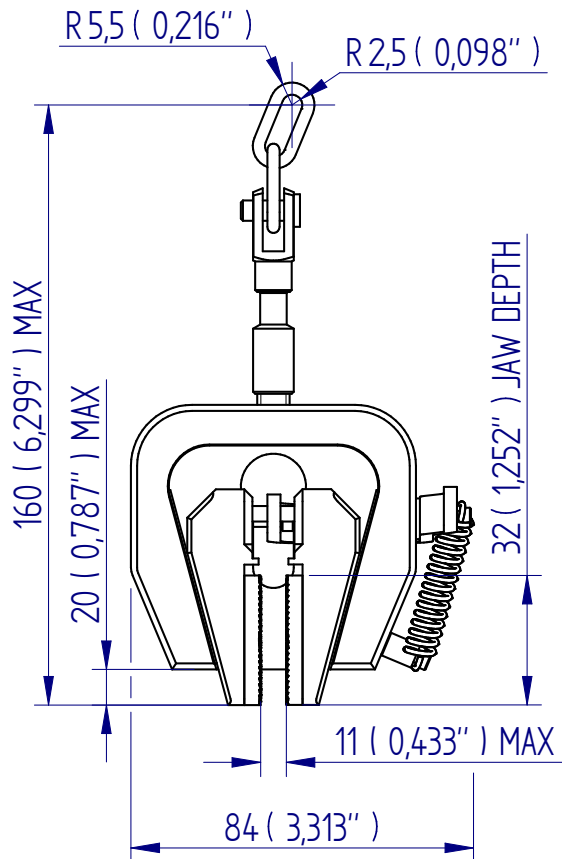
### Applications

- poppers
- press studs

### Specifications

Part No.	Load Capacity	Thread 1	Jaw Opening	Jaw Width	Length	Weight
432-212	1 kN / 100 kgf / 225 lbf	10-32 UNF	11 mm (0.43")	25 mm (0.98")	160 mm (6.30")	166 g (0.37 lb)

## Dimensions mm (inch)



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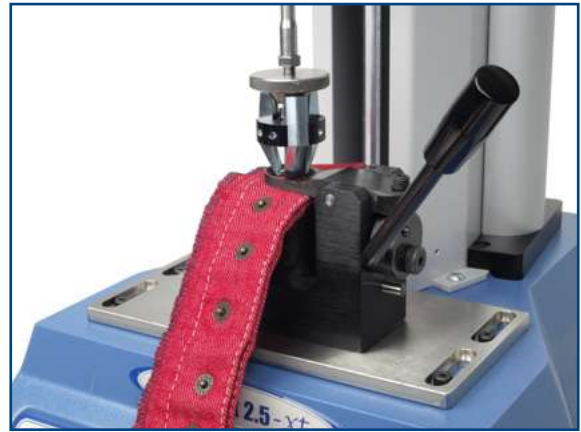
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## 3-Jaw Popper Pull-off Fixture



### Description

This fixture has 3 jaws and a swivelling action to securely hold 13-15 ligne poppers for tensile test to failure.

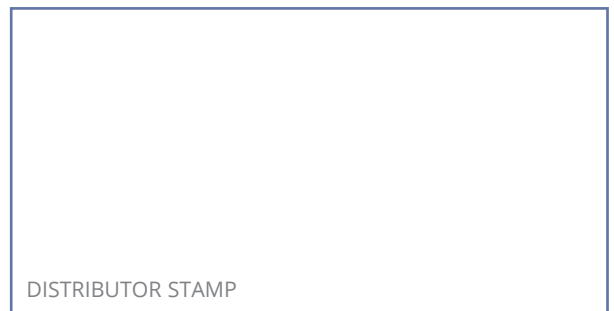
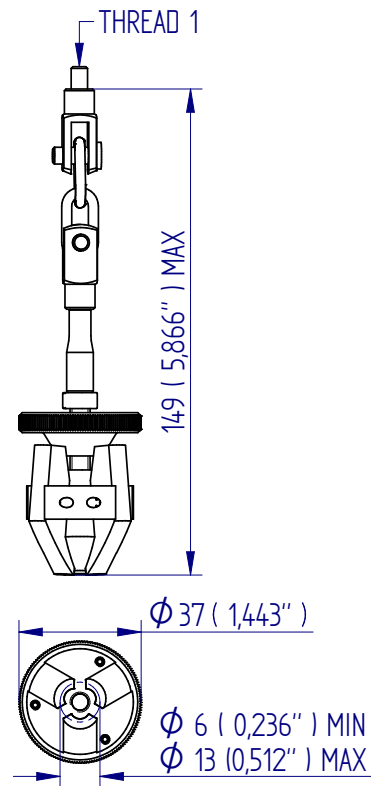
### Applications

- poppers
- press studs

### Specifications

Part No.	Load Capacity			Thread 1	Sample Min/Max Ø		Popper Size	Length		Weight	
432-409	500 N	50 kgf	110 lbf	M5	6 mm / 13 mm	0.24" / 0.51"	13 - 15 ligne	144 mm	5.67"	166 g	0.37 lb

## Dimensions mm (inch)



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## Popper Cam Base



### Description

The popper cam base is secured to the base of a test stand to test the strength of poppers and press studs. The popper is fed through the retaining hole and positioned over the retaining post. The lever of the cam mechanism is locked down to raise the popper with the fabric so that it can easily be gripped typically the 3-jaw popper pull-off fixture is used.

### Applications

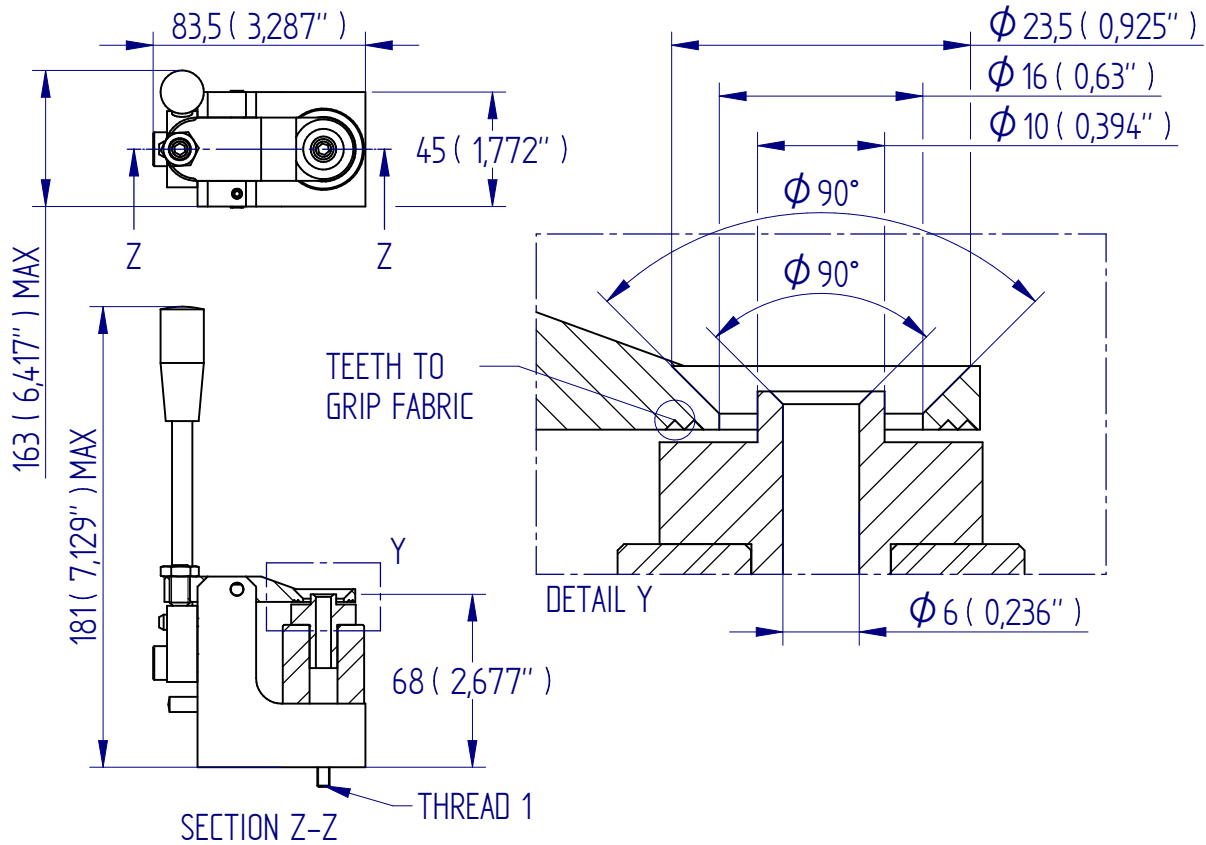
Used by clothing manufacturers for test-to-failure testing for compliance with BS 7907:2007 on

- poppers and press studs

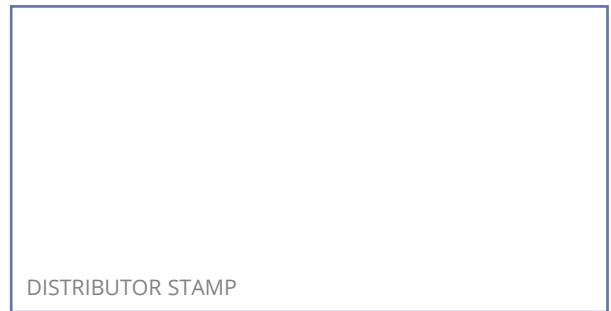
### Specifications

Part No.	Load Capacity		Thread	Popper Size	Length		Weight		
432-179	1 kN	100 kgf	225 lbf	10-32 UNF	13 - 15 ligne	68 mm	2.68"	760 g	1.7 lb

## Dimensions mm (inch)



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## Container Holders for Tensile Testing



▲ 432-677 V-jaw vice clamp, three jaws shown with quick lock and release lever



▲ 432-493 Small 4-peg container holder

### Description

Mecmesin offers several lower fixture solutions for the gripping of containers during tensile testing. All provide adjustability to securely hold different sample shapes and sizes.

### Applications

Used for tensile testing of:

- Plastic container closures; pull-off, disassembly resistance
- Opening force of pull-up, sports style or flip-cap closures
- General product or packaging pull tests

### V-jaw Vice Clamps, QC fitting

Two versions are available, each with opposing V-shaped, serrated rubber-faced jaws. These securely grip samples made of smooth or low-friction materials, such as plastics.

432-678 features 4 jaws which are adjusted using a knob to position them equidistantly around the central axis.

432-677 features 3 jaws where the single jaw features a quick lock/release lever to speed up testing of batches of the same sized container.

Axial alignment is achieved by lateral adjustment of the clamping component in the dovetail support, locked with a thumbwheel.

Both versions feature a bore hole for connection to a QC-20 fixing post.



▲ 432-677 Pull-up force to open the spout of a closure

V-jaw vice clamp, three jaws with quick lock and release lever

432-677 has three jaws, two vertically spaced on one side, clamping with a single jaw at mid-height. The double jaw is precisely adjusted with a screw-action handle and the single jaw is locked and unlocked into place with a toggle-action lever. This allows quick loading and release of the test sample.

V-jaw vice clamp, four jaws with precision screw-action adjuster

432-678 has four jaws, for increased stability, with two jaws being vertically spaced on either side, clamping at alternate heights. Both jaws are precisely adjusted around the central axis with a screw-action handle.

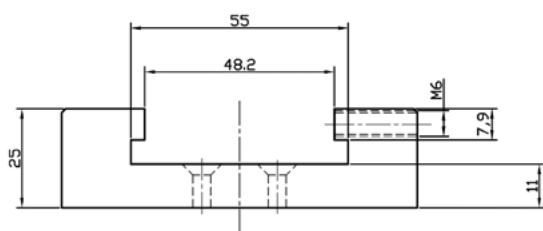


▲ 432-677 clamping and support components, open and closed condition

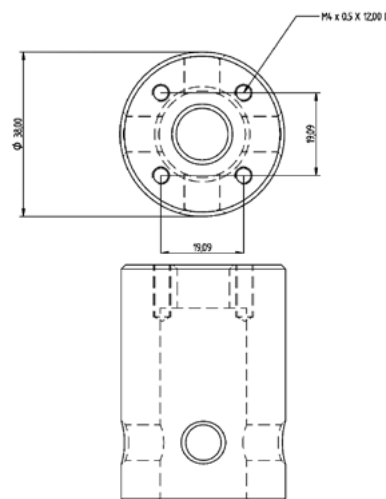


▲ 432-678 clamping and support components, open condition

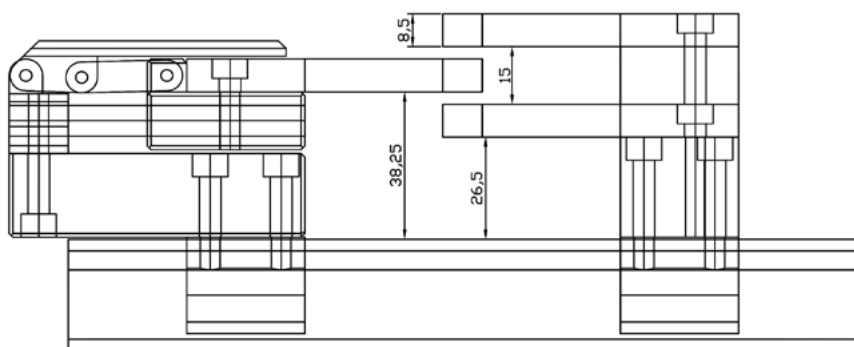
Part No.	Load Capacity			Post Ø	Opening Range		Lateral Adjustment		Height	
432-677	500 N	51 kgf	112 lbf	20 mm	10 - 80 mm	0.4 - 3.15 <sup>2</sup>	±60 mm	±2.36 <sup>2</sup>	110 mm	4.33 <sup>2</sup>
432-678										
432-679	Repair kit including replacement rubber jaw faces for regular high-load usage									



▲ Support component



▲ QC-20 fitting



▲ 432-677 Clamping component side view

## Container Holder (4-peg adjustable)

The 4-peg container holder is designed to securely hold different shapes and sizes of containers during tensile testing. Gripping pegs are screwed into the appropriate holes on each of the two fixing rails. The rails are then adjusted by turning the knob to clamp the sample. The pegs are rubber-coated to provide enough friction to grip the container without damaging its surface. Available in two sizes both of which connect directly to the base of a motorised test stand.

Part No.	Load Capacity			Thread 1	Opening Range		Height	
432-411	100 N	10 kgf	22 lbf	4 x M5	10 mm / 190 mm	0.39" - 7.48"	102 mm	4.00"
432-493	100 N	10 kgf	22 lbf	4 x M5	10 mm / 78 mm	0.39" - 3.07"	103 mm	4.04"



▲ 432-411 Large 4-peg container holder, plastic bottle application

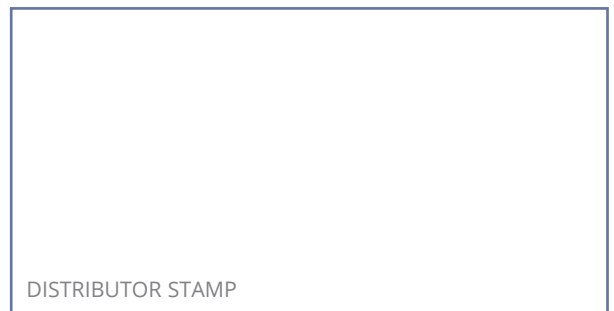
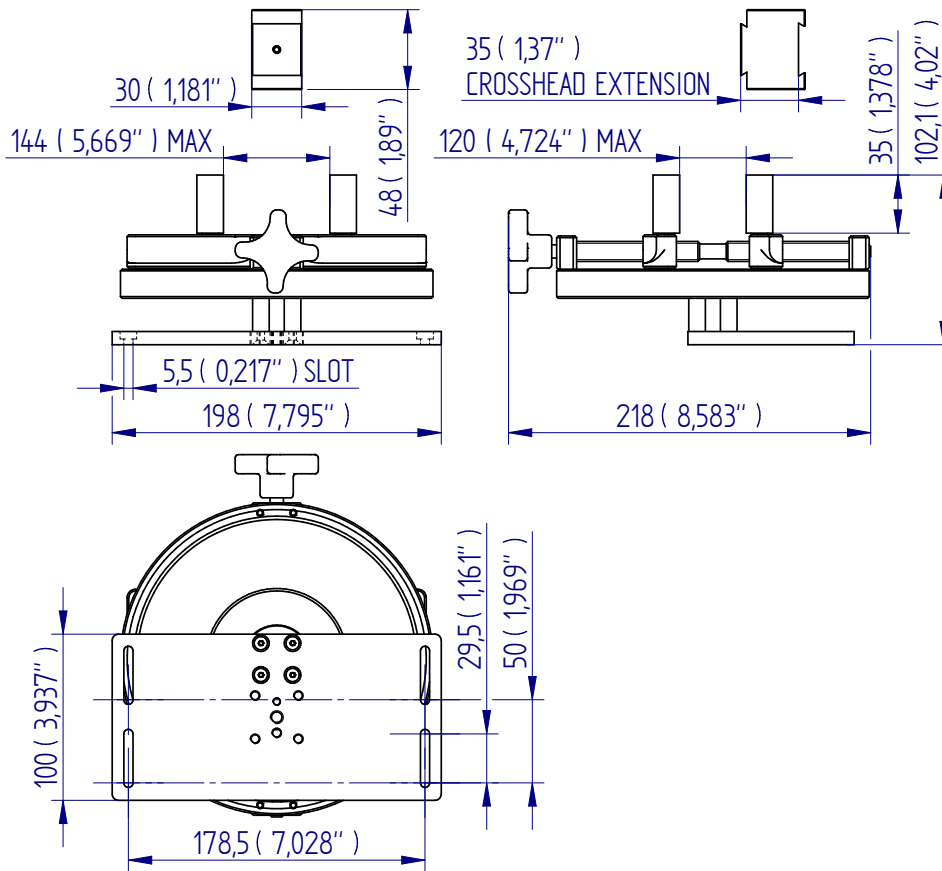


▲ 432-493 Small 4-peg container holder, cosmetics applicator pull-off test



▲ 432-411 Large 4-peg container holder, plastic bottle application

## Dimensions mm (inch)



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## Cork Extraction Test Rig



### Description

The cork extraction test rig is used to test the extraction force of bottle stoppers. It has a bottle cradle with an antislip surface and is easily adjusted to accommodate different bottle heights, e.g. 200 ml to 750 ml. It is used in conjunction with corkscrew test accessories suitable for testing natural and synthetic corks.

### Applications

Used for extraction testing of:

- corks
- stoppers

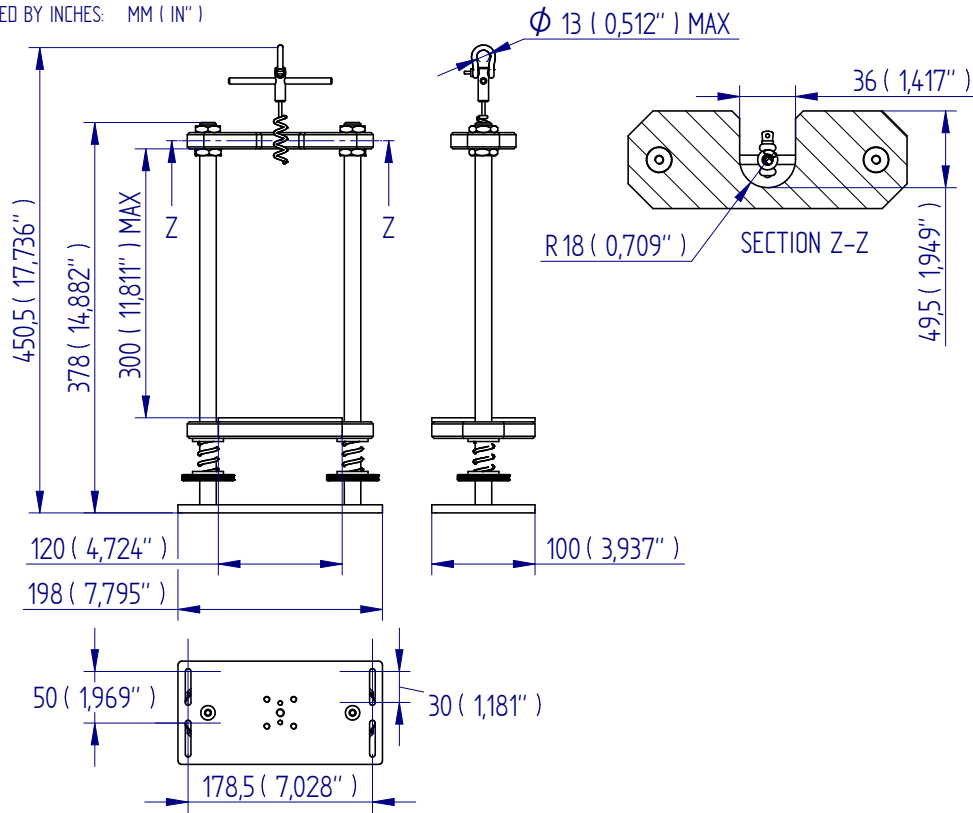


### Specifications

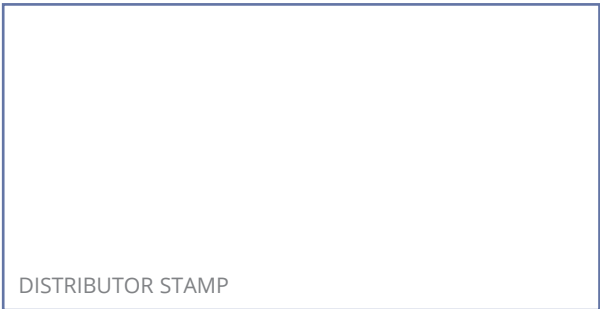
Part No.	Load Capacity		Thread 1	Loop Diameter Ø		Length		
PDV11086	1 kN	100 kgf	225 lbf	4x M5	13 mm	0.51"	450.5 mm	17.74"

# Dimensions mm (inch)

ALL DIMENSIONS ARE IN MILLIMETRES  
FOLLOWED BY INCHES: MM ( IN" )



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## Pin Chucks



### Description

Pin chucks are specifically designed for gripping circular or rod-type specimens, or needles for sharpness testing.

### Applications

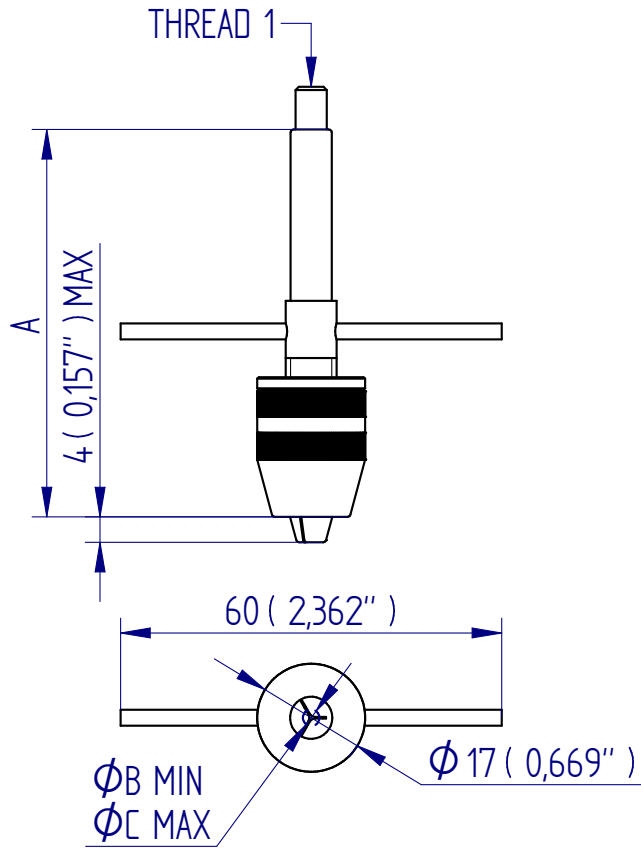
Used for tensile testing of:

- Pin or rod components

### Specifications

Part No.	Load Capacity			Thread 1	Capacity Min./Max. Ø		Length		Weight	
432-382	100 N	10 kgf	22 lbf	10-32 UNF	0.5 mm - 3.5 mm	0.02" - 0.14"	61 mm	2.40"	36 g	0.08 lb
432-214	100 N	10 kgf	22 lbf	M6	0.5 mm - 3.5 mm	0.02" - 0.14"	86 mm	3.39"	36 g	0.08 lb

## Dimensions mm (inch)



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## Force Gauge Gripping Cradle



### Description

This cradle allows Mecmesin gauges to be used more easily as hand-held instruments. The dual-handle design allows the comfortable application of push/pull loads, with increased stability. Attachment screws supplied.

### Applications

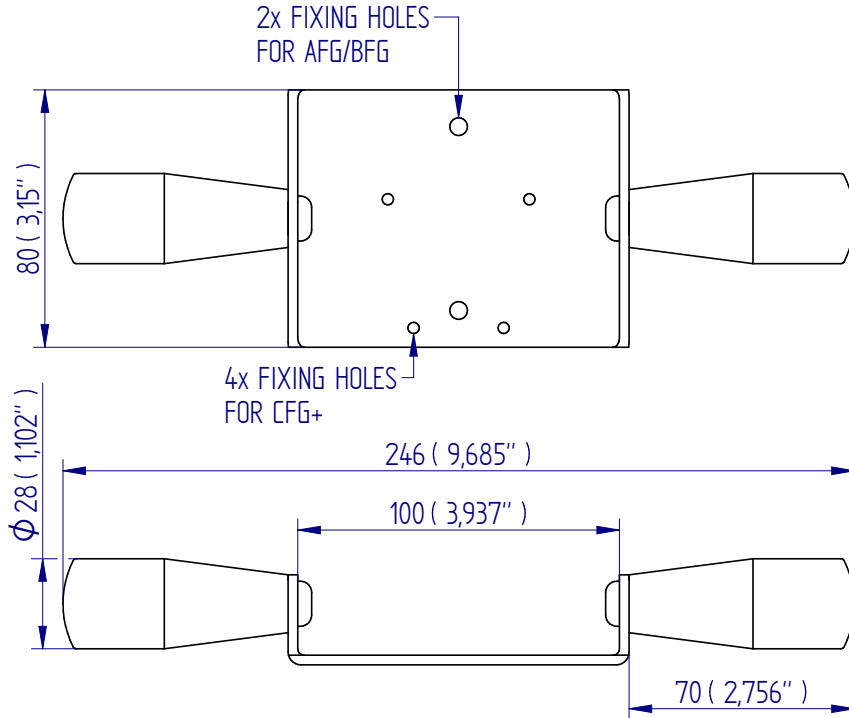
Used to evaluate the ergonomics and force application characteristics of:

- doors
- filing cabinets
- emergency push bars
- handles and controls

### Specifications

Part No.	Load Capacity	Handle Diameter (Ø)	Handle Length	Width
432-388	2.5 kN / 250 kgf / 550 lbf	28 mm (1.1")	70 mm (2.76")	246 mm (9.69")

## Dimensions mm (inch)



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## Pistol Grip



### Description

The pistol grip is attached to a Mecmesin force gauge to add comfort and stability in applications where only single-handed operation is possible.

### Applications

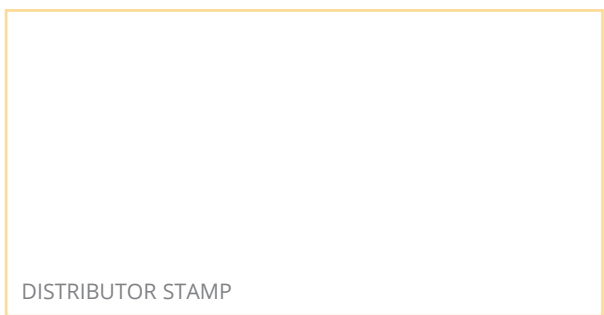
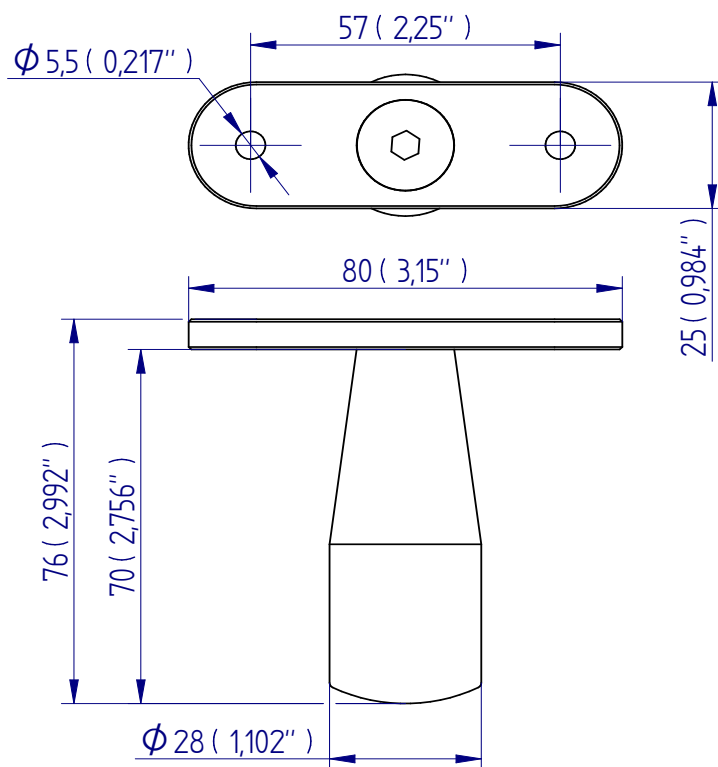
Used to evaluate the ergonomics and force application characteristics of:

- doors
- filing cabinets
- emergency push bars
- handles and controls with restricted access

### Specifications

Part No.	Load Capacity			Handle Diameter (Ø)		Handle Length		Width	
432-389	500 N	50 kgf	110 lbf	28 mm	1.1"	70 mm	2.76"	246 mm	9.69"

## Dimensions mm (inch)



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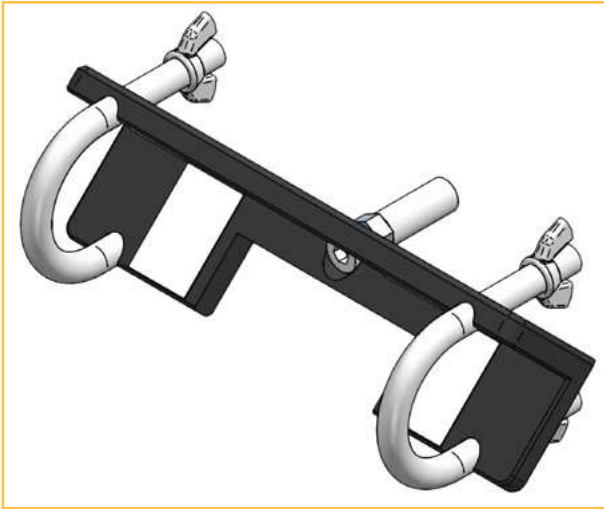
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## Trolley Pushing Fixture



### Description

The trolley-pushing fixture has been designed to attach to trolleys, carts and wheelie bins so that manual handling measurements can be made more easily. Typically used with a force gauge fitted to the force gauge gripping cradle or pistol grip (order separately).

### Applications

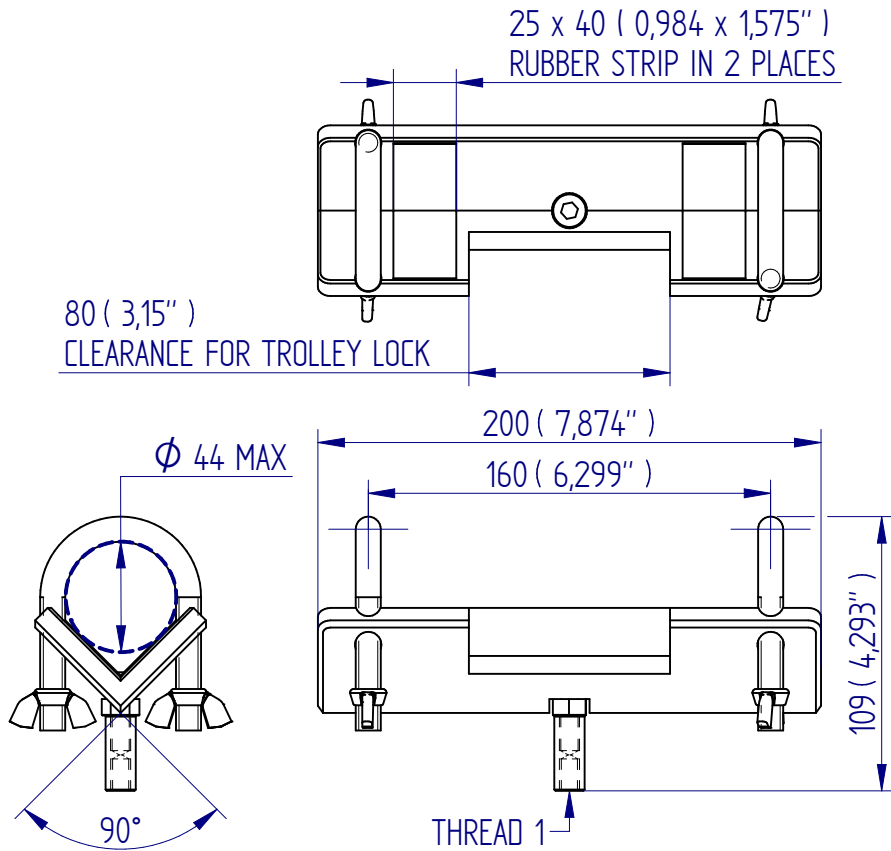
Used to evaluate the ergonomics and force application characteristics of:

- trolleys
- carts
- wheelie bins

### Specifications

Part No.	Load Capacity			Gripping Diameter (Ø)		Width		Width between Fixings	
	1 kN	100 kgf	225 lbf	44 mm	1.73"	200 mm	7.87"	160 mm	6.3"
432-405									

## Dimensions mm (inch)



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## Rubber-Faced Compression Plates



### Description

The rubber-faced compression plate has a rubber layer which helps to prevent damage to the sample that would occur from metal contact during a compression test. Also increases grip at the point of force application on low friction or curved specimens.

### Applications

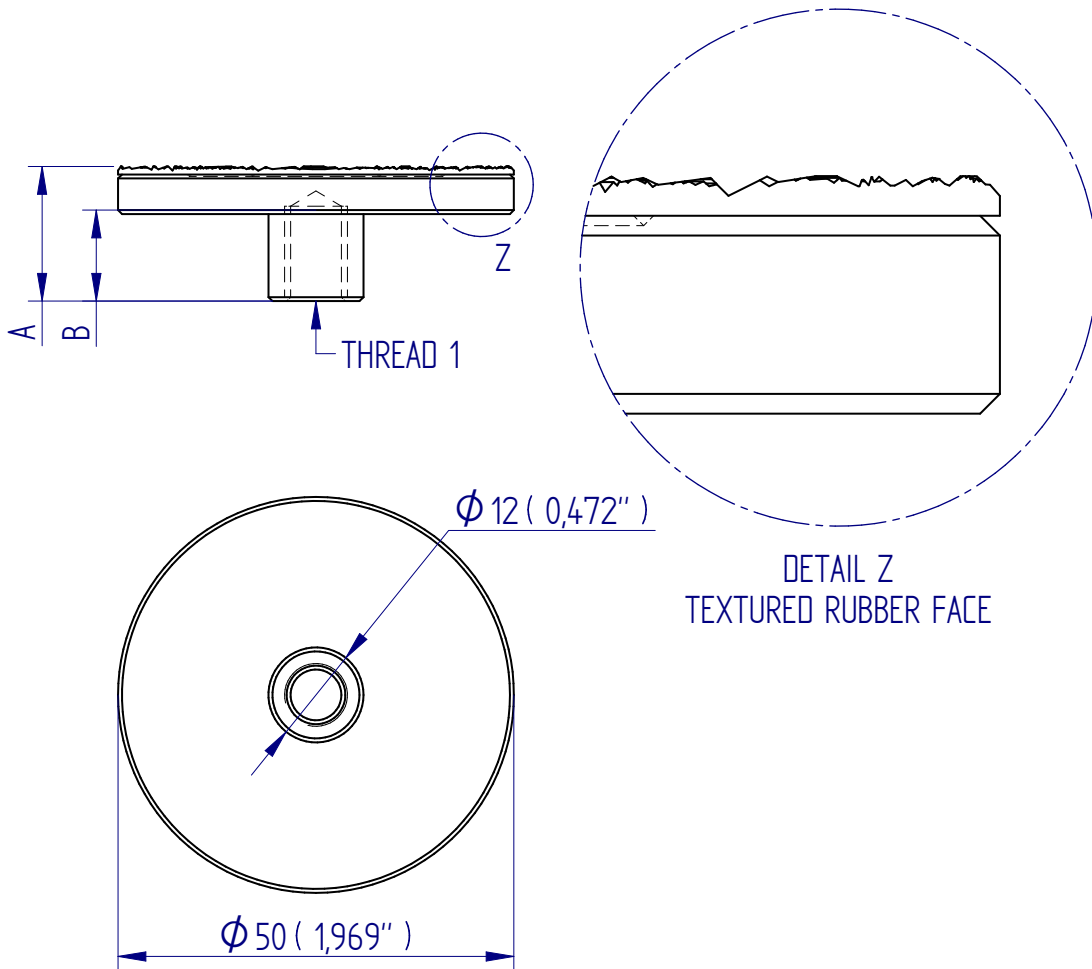
Used for compression testing of components:

- metals
- glass
- slippery or curved samples

### Specifications

Part No.	Load Capacity			Thread 1	Diameter Ø		Height (A)		Height (B)		Weight	
	kN	kgf	lbf		mm	in	mm	in	g	lb		
432-219	2.5	250	550	5/16 UNC	50	1.97"	17	0.67"	17	0.67"	84	0.19
432-220	500	50	110	10-32 UNF	50	1.97"	13	0.52"	13	0.51"	—	—

## Dimensions mm (inch)



## Chain Link and Hook Assembly



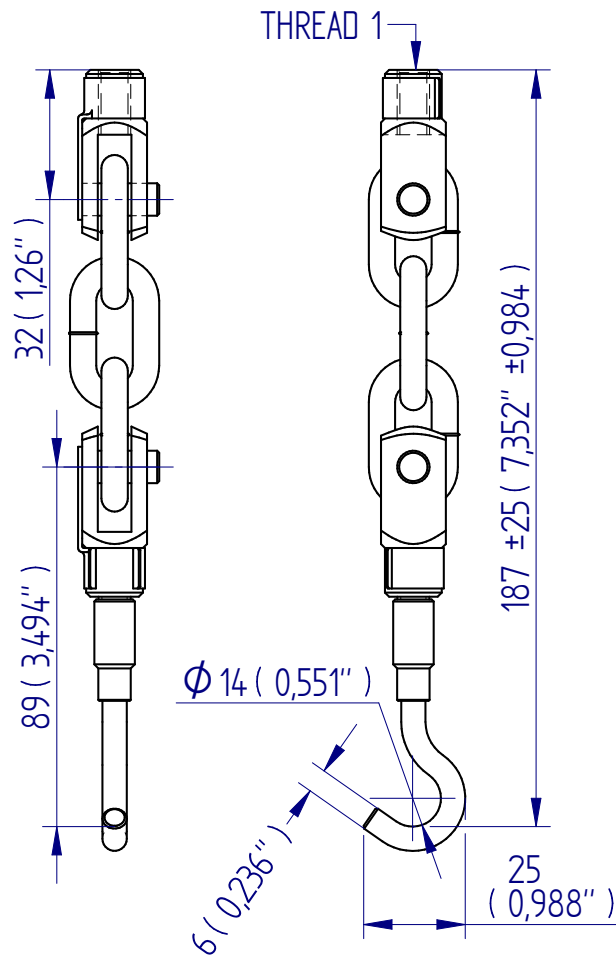
### Description

The chain link and hook assembly is used to attach to a variety of objects, which are otherwise difficult to hold. The chain is 1 m long and is supplied with a clevis fastener at each end.

### Specifications

Part No.	Load Capacity			Thread 1	Max. Sample Diameter		Length	
432-410	2.5 kN	250 kgf	550 lbf	5/16 UNC	14 mm	0.55"	187 ±25 mm	7.352" ±0.98"

## Dimensions mm (inch)



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## Padded Radiused Probe



### Description

The padded radiused probe is specially designed for use against limbs for rehabilitation and physical therapy assessment. Use with a short extension rod.

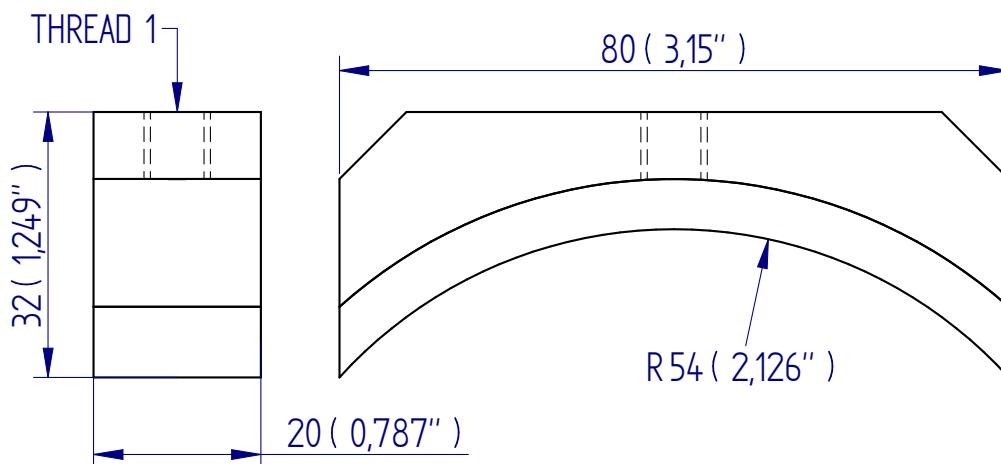
### Applications

- physical therapy assessments
- leg extension tests

### Specifications

Part No.	Load Capacity			Thread 1	Radius		Height		Width	
432-414	500 N	50 kgf	110 lbf	5/16 UNC	54 mm	2.13"	32 mm	1.249"	80 mm	3.15"

## Dimensions mm (inch)



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## Transit Case for Manual Handling / Ergonomic Kit



### Description

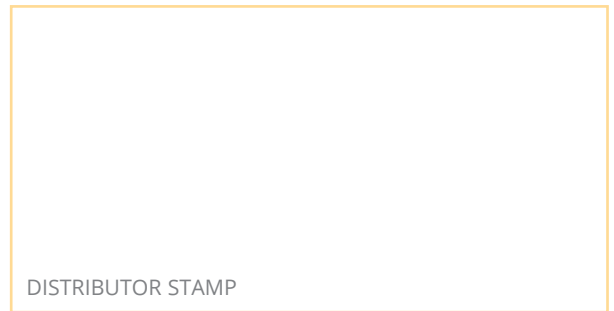
A foam-lined rugged metal case for the components of the advanced or basic manual handling kit. Supplied as standard with the kit, has space for: a force gauge including rechargeable batteries, mains adaptor / battery charger, gripping cradle, chain link assembly, 50 mm rubber-faced compression plate and test hook.

### Specifications

Part No.	Weight
416-007	2.61 kg (5.76 lb)



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## Adaptor / Charger for use with AFG / AFTI / CFG / BFG



304-005, UK, 230 V, 3-pin Square



304-004, Europe, 230 V, 2-pin Round



304-006, USA, 110 V / 115 V, 2-pin Flat

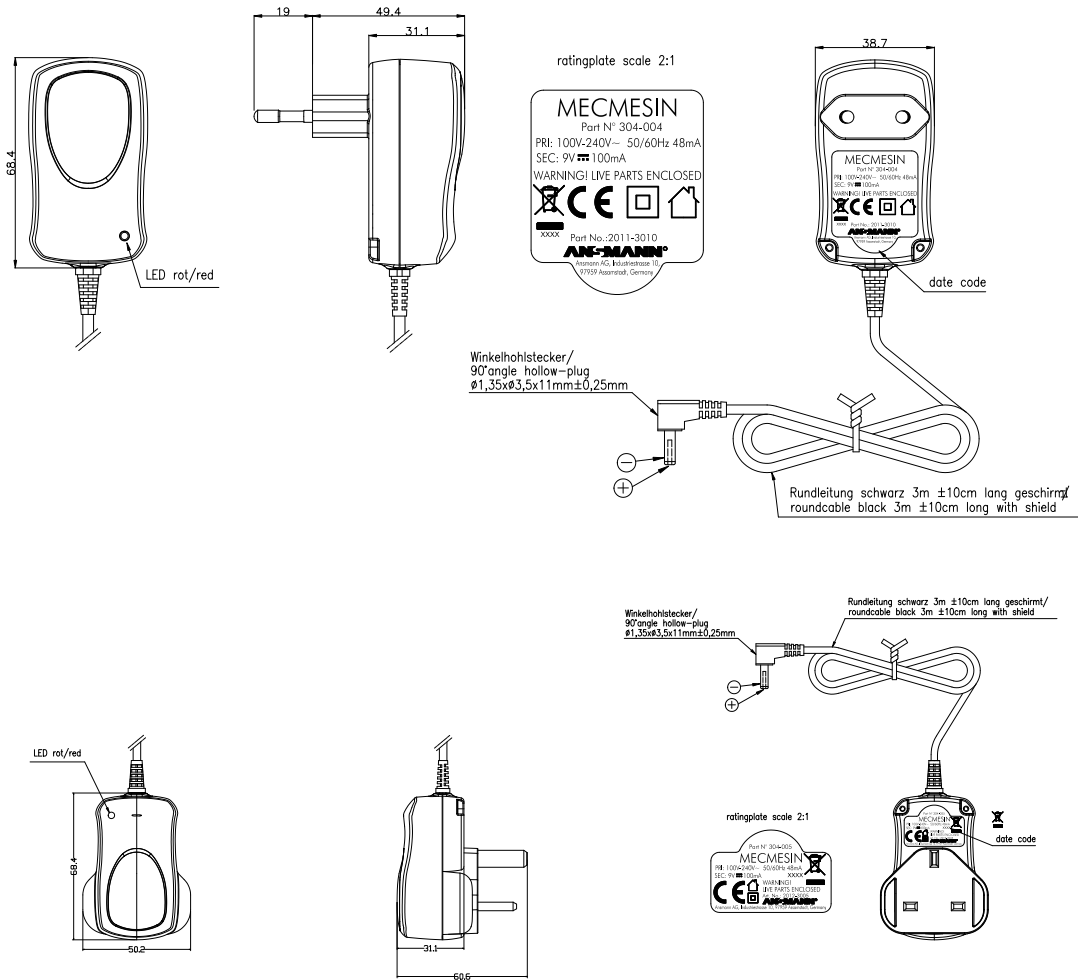
### Description

For use with Mecmesin AFG / BFG / CFG digital gauges and the AFTI universal display. Versions for specific geographical locations are available.

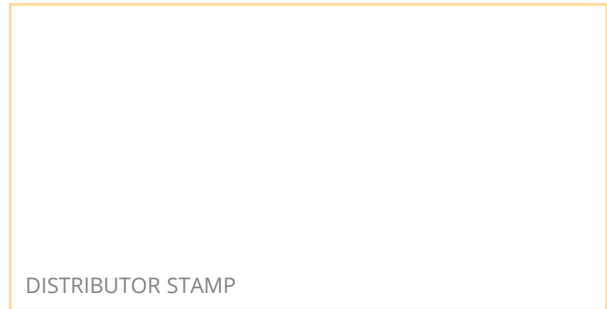
### Specifications

Part No.	Region	Voltage	Pins	Type
304-004	Europe	230 V	2-pin	Round
304-005	UK	230 V	3-pin	Square
304-006	USA	110 V	2-pin	Flat

# Dimensions mm



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## Universal Expansion Module



### Description

Where a gauge or instrument requires output to a MultiTest-d or -dV test stand (e.g. for reverse or stop control) but also simultaneously to a RS232 printer, analogue output or other peripheral device, this expansion module can be used.

One input channel (RS232 15-pin, F) and four output channels (RS232 15-pin, M).

For use with: AFG Mk 4, AFTI Mk 4, Orbis Mk 2, Tornado Mk 2

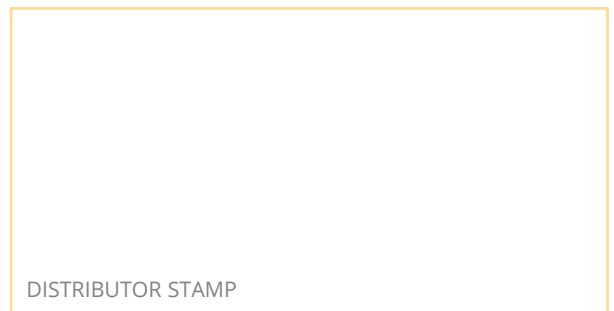
### Specification

Part no.	Description
432-127	Universal expansion module



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## Digital I/O Loop-back Plug



### Description

Mecmesin's -i and -xt test stands have the facility for six digital inputs and six digital outputs that can be used to integrate the test stand with programmable logic controllers (PLCs) or other equipment.

The 25-pin Digital I/O Loop-back Plug is inserted into the I/O port of any Mecmesin -i or -xt test stand using Emperor™ control software. By virtue of directly routing digital outputs to inputs, it allows the system user to create test programs with an added layer of sophistication.

This is particularly useful for:

- Tests involving many cycles, where only selective data are required. By using 'stop acquisition' and 'start acquisition' commands within Emperor™ programs, it easily permits a long-duration test to be performed but data only to be logged for the pertinent cycles you wish to see.
- Conducting a test routine repeatedly on the same specimen without having to be physically present to press the 'start' button to launch each separate test. Data is collected and presented as separate samples allowing the user to clearly view and report on specimen performance over time.

### Specification

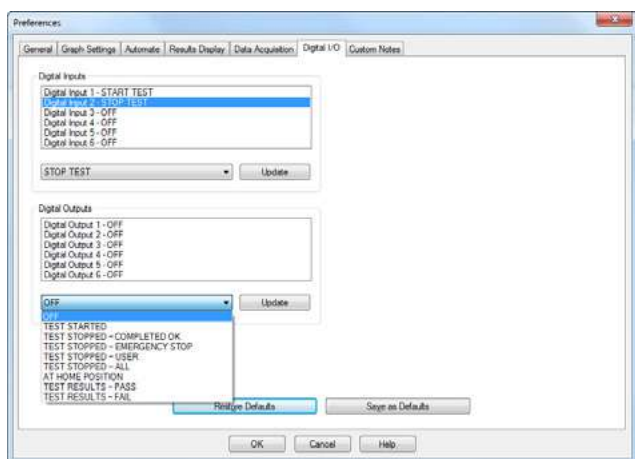
Part no.	Description
432-663	Digital I/O Loop-back plug (allows multi-function programming in Emperor™ software)



Digital I/O port on the rear panel of a test stand



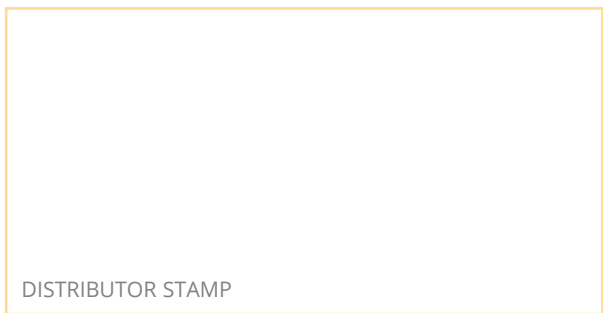
Rear panel with Digital I/O Loop-back Plug inserted



Digital Inputs, Outputs and Action assignment in Emperor™



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## Interface Cables



RS232 Mini-DIN ▲



RS232 D connector (M) ▲



RS232 D connector (F) ▲



2.5 mm jack ▲



USB-B ▲



USB-A ▲



DigiCon-X ▲



RJ11 and USB-B sockets ▲



6-pin and 12-pin connectors ▲

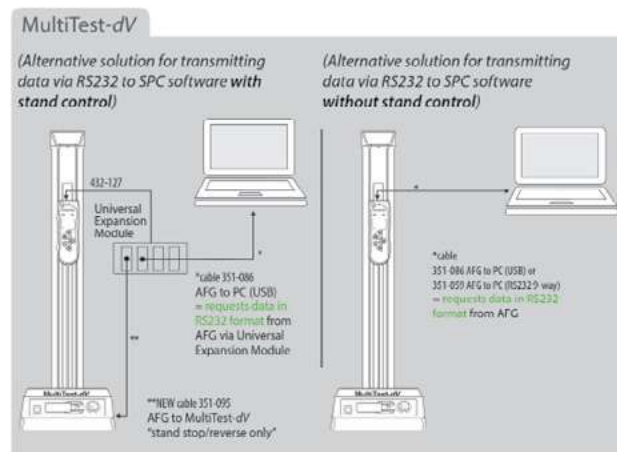
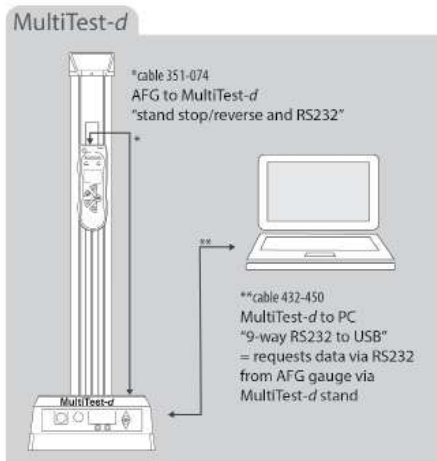
	Connect from	Date of manufacture	Connector A
	CAPTEST	2014-	RS232 (M) mini DIN
	CFG+	2010-	2.5 mm jack (M)
	BFG-HS/BFG/Orbis Mk 1	2003-2007 (BFG 2008-)	15-pin RS232 (M) D connector
	BFG-HS/BFG/Orbis Mk 1	2003-2007 (BFG 2008-)	15-pin RS232 (M) D connector
	BFG-HS/BFG/Orbis Mk 1	2003-2007 (BFG 2008-)	15-pin RS232 (M) D connector
	BFG-HS/BFG/Orbis Mk 1	2003-2007 (BFG 2008-)	15-pin RS232 (M) D connector
	BFG	2008-	15-pin RS232 (M) D connector
	AFG/AFTI/Orbis/Tornado	2008-	15-pin RS232 (F) D connector
	AFG/AFTI/Orbis/Tornado	2008-	15-pin RS232 (F) D connector
	AFG/AFTI/Orbis/Tornado	2008-	15-pin RS232 (F) D connector
	AFG/AFTI/Orbis/Tornado	2008-	15-pin RS232 (F) D connector
	Universal Expansion Module	2008-	15-pin RS232 (F) D connector
	AFG	2008-	15-pin RS232 (F) D connector
	AFTI	2008-	15-pin RS232 (F) D connector
	AFG/AFTI	2008-	15-pin RS232 (F) D connector
	AFG/AFTI	2008-	15-pin RS232 (F) D connector
	MultiTest-d/Vortex-d		9 pin RS232 (M) D connector
	MultiTest-dV/Vortex-dV		USB-B
	RS232 to USB converter		9-pin RS232 (M) D connector
	ELS range of loadcells	2019-	6-pin connector

Connect to	Connector B	Function	Part no.
Serial printer (e.g. Mettler Toledo)	9-pin RS232 (F) D connector	Data transfer (bi-directional)	351-090
PC with Emperor Lite or VectorPro Lite	9-pin RS232 (F) D connector	Data transfer (uni-directional)	351-077
Mitutoyo printer/DigiCon-X interface	DigiCon-X	Data transfer (bi-directional)	351-055
PC with Emperor Lite or VectorPro Lite	9-pin RS232 (F) D connector*	Data transfer (bi-directional)	351-054
PC with Emperor Lite or VectorPro Lite	USB-A	Data transfer (bi-directional)	351-087
Analog	2 banana plugs	Data transfer (bi-directional)	351-057
MultiTest-d	25-pin RS232 (M) D connector	Data transfer only (no stand control)	351-076
Mitutoyo Printer/DigiCon-X interface	DigiCon-X	Data transfer (bi-directional)	351-058
PC with Emperor Lite or VectorPro Lite	9-pin RS232 (F) D connector*	Data transfer (bi-directional)	351-059
PC with Emperor Lite or VectorPro Lite	USB-A	Data transfer (bi-directional)	351-086
Analog	3 banana plugs	Data transfer (uni-directional)	351-060
Multiple peripheral devices	4 x 15-pin RS232 (M) D connectors	Data transfer and stand control	432-127
MultiTest-d	25-pin RS232 (M) D connector	Gauge to stand (reverse/stop) & data transfer to stand	351-074
Vortex-d	25-pin RS232 (M) D connector	Gauge to stand (stop only) & data transfer to stand	351-074
MultiTest-dV/Vortex-dV	RJ11	Gauge to stand (data transfer only)	351-092
MultiTest-dV/Vortex-dV	RJ11	Gauge to stand (reverse/stop) & data transfer to stand	351-095
PC with Emperor Lite or VectorPro	9-pin RS232 (F) D connector	Data transfer (bi-directional)	351-051
PC with VectorPro Lite	USB-A	Data transfer (bi-directional)	351-093
PC	USB-A	Convert RS232 to USB	432-450
MultiTest-dV	12-pin connector	Data transfer (loadcell to stand)	352-275 2.5 kN 352-275-V01 0.5 & 1 kN

## Interface options for the family of '-i' and '-xt' Systems

	Part No.	Description
	 351-081	USB to USB RS232 cable (2m long) for transmitting via COMMS port of 'xt' console to a PC
	 351-080	Event-input cable for MultiTest/Vortex/Helixa-i and 'xt' stands
	 PDV14081	Footswitch to simulate 'Start' on MultiTest-i and 'xt' stands

### Communicating with PC via RS232, e.g. to SPC software



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## Digital Gauge to PC Input Tool



### Description

The PC input tool allows for individual gauge readings from AFG, AFTI, Tornado, BFG or Orbis to be sent directly to an open PC application such as Excel. After each test with the gauge, press the blue button to send the displayed numerical value to the PC.

Requires the appropriate gauge interface cable:

- for AFG/AFTI/Tornado use cable 351-058
- for BFG/Orbis use cable 351-055.

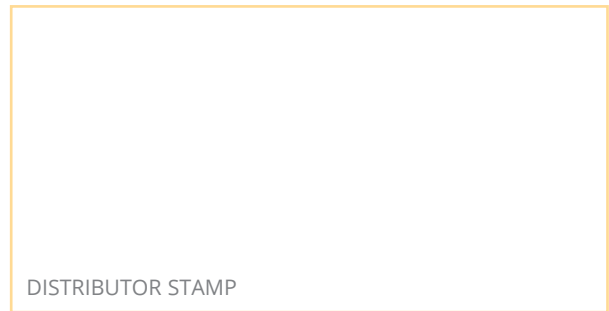
### Specification

Power supply	+5V from PC via USB 'A' connector
Supported operating systems	Windows 2000 and above
Main unit dimensions	W 38 mm × D 64 mm × H 21 mm
Cable length	1 m
Input connector	Digimatic (Mitutoyo)
Weight	55 g
Operating temperature	0°C to 40°C
Storage temperature	-10°C to 60°C
Applicable standards	USB standard (USB 2.0 certificate, communication speed 12 Mbps)



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## Safety Guards

### Introduction

Health and safety are of paramount concern when using machinery with moving parts and motorised test equipment is no exception. Safety guards prevent access by the operator to the testing area whilst the test is in progress, acting as a barrier from moving parts where there exists a risk of hands and arms getting caught.

### Standard guards

Mecmesin test systems can be supplied with a standard safety guard. These have a rigid metal frame with integrated polycarbonate panels to allow the operator to view the test area from outside. Hinged doors are fitted with switch-activated interlock mechanisms that prevent system operation when open.

Guards for **single-column test stands** are provided on a solid metal platform, with location holes available for securing to a workbench, to ensure complete stability.

Guards for **twin-column test stands** are supplied with new equipment and are pre-fitted to the tester at our factory, all ready for use when unpacked and installed.

Mecmesin's standard safety guards are supplied with CE marking and a Declaration of Conformity in accordance with the following harmonised standards of the Machinery Directive 2006/42/EC:

- BS EN ISO 12100:2010 Safety of machinery — General principles for design — Risk assessment and risk reduction
- BS EN ISO 14120:2015 Safety of Machinery — Guards — General requirements for the design and construction of fixed and movable guards
- BS EN ISO 14119:2013 Safety of machinery. Interlocking devices associated with guards. Principles for design and selection
- BS EN ISO 13855:2010 Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body
- BS EN ISO 13857:2008 Safety of Machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs
- BS EN ISO 13849-1:2015 Safety of Machinery. Safety related parts of control systems. General principles of design.\*
- BS EN ISO 13849-2:2012 Safety of Machinery. Safety related parts of control systems. Validation\*

If however, during the risk assessment for your application, you decide that protection from egress is also required, our application engineers can offer a custom design to meet your needs.

\* when integrated with the control circuit of the Mecmesin test stands



Standard guard -  
single column test stands ▲



Standard guard -  
twin-column test stands ▲



Custom guard fitted with wire-mesh protection for door and side-panels ◀



Custom guard with sliding front protective panel and counter-balance for ease of use ▲

## Custom-design guards

Due to individual requirements for accommodating different-sized grips and test specimens, safety guards are often made to a custom design. Please contact us with your requirements, and tell us the stand model for which it is intended.

Shown below are a selection of custom-built guards designed and manufactured by Mecmesin for customers using our range of force and torque test systems.



Custom guard with double door for use with torque test system ▲

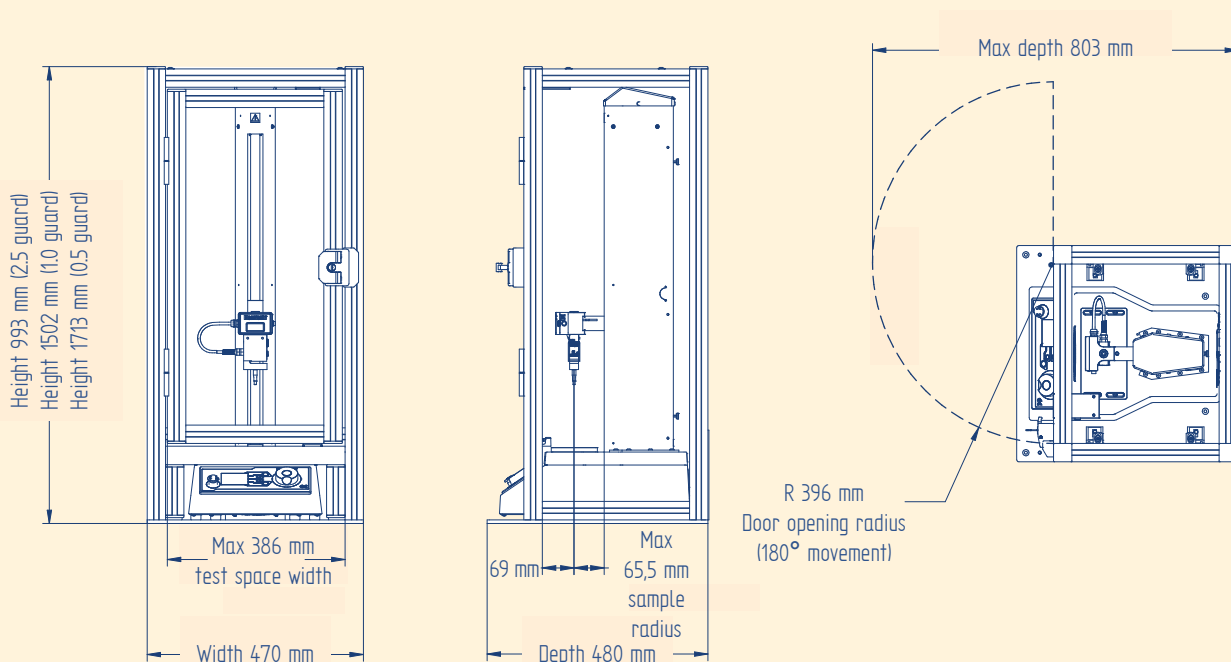
# Specification Table - Single Column Systems

Machine Guarding	0.5	1.0	2.5	5.0
Guard part number	432-680	432-681	432-682	432-684
Compatible Mecmesin Test Systems	MultiTest 0.5-i	MultiTest 1-i	MultiTest 2.5-i	OmniTest 5
	MultiTest 0.5-xt	MultiTest 1-xt	MultiTest 2.5-xt	OmniTest 7.5
	MultiTest 0.5-dV	MultiTest 1-dV	MultiTest 2.5-dV	
<b>Dimensions</b>				
Height+	1713 mm	1502 mm	993 mm	1163 mm
Width	470 mm	470 mm	470 mm	500 mm
Depth (door closed)	480 mm	480 mm	480 mm	652 mm
Max Depth (door open)	803 mm	803 mm	803 mm	1015 mm
Weight (guard only)	42 kg	39 kg	30 kg	40 kg
<b>Sample/ Accessory Space</b>				
Max Width	386 mm	386 mm	387 mm	420 mm
Max Diameter++	131 mm	131 mm	131 mm	180 mm (OmniTest 5) 134 mm (OmniTest 7.5)
<b>Interlocking Device</b>				
Type	Tongue-actuated position switch			
<b>Environment specification</b>				
Operating temperature	10 °C to 35 °C			
Operating relative humidity	30% - 80 % (non-condensing)			

+Excluding guard feet

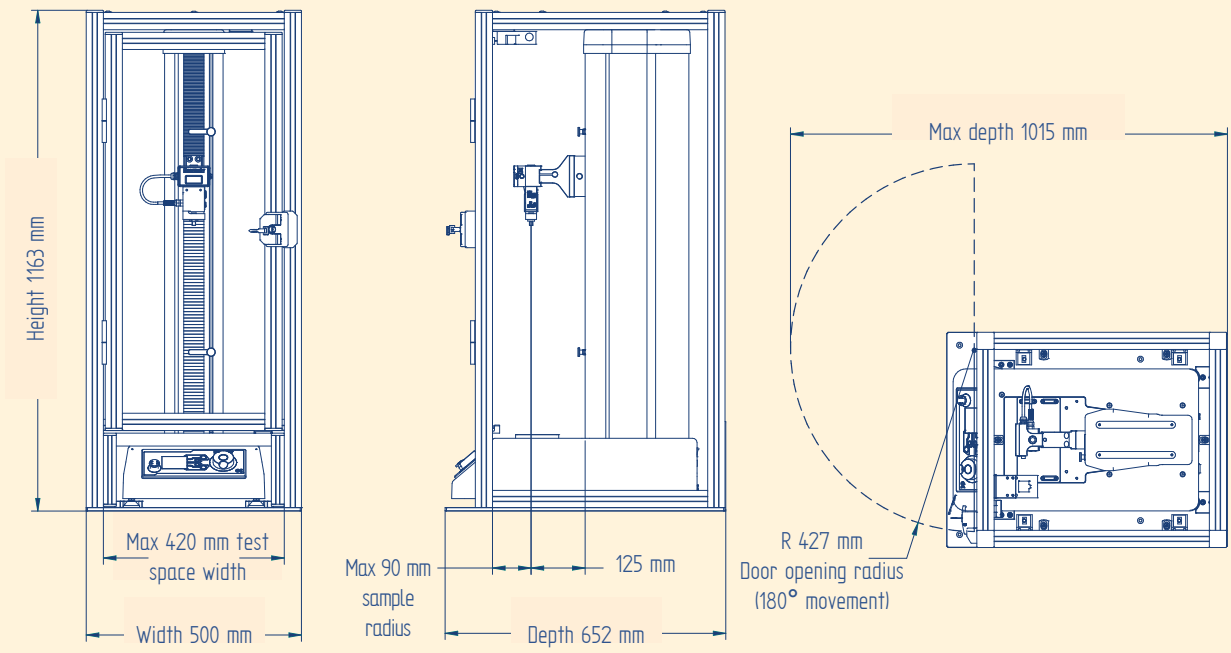
++ Measured from centre of load cell

## Dimensioned drawings (in millimetres)

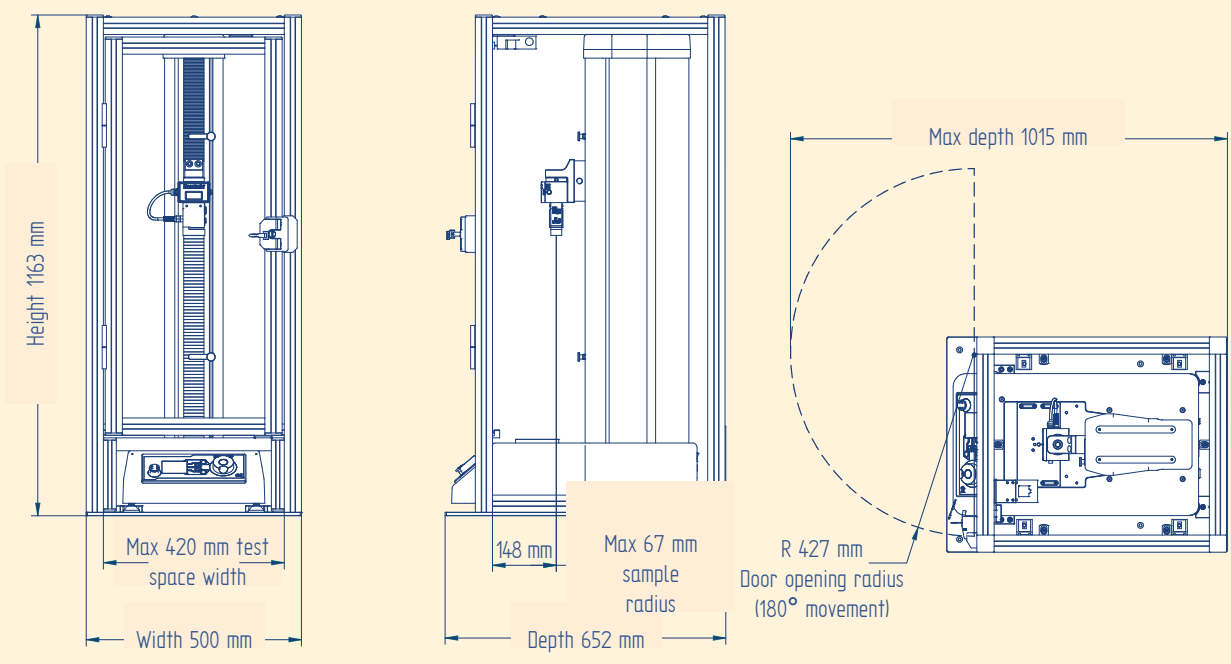


MultiTest 0.5, 1 and 2.5





OmniTest 5.0



OmniTest 7.5

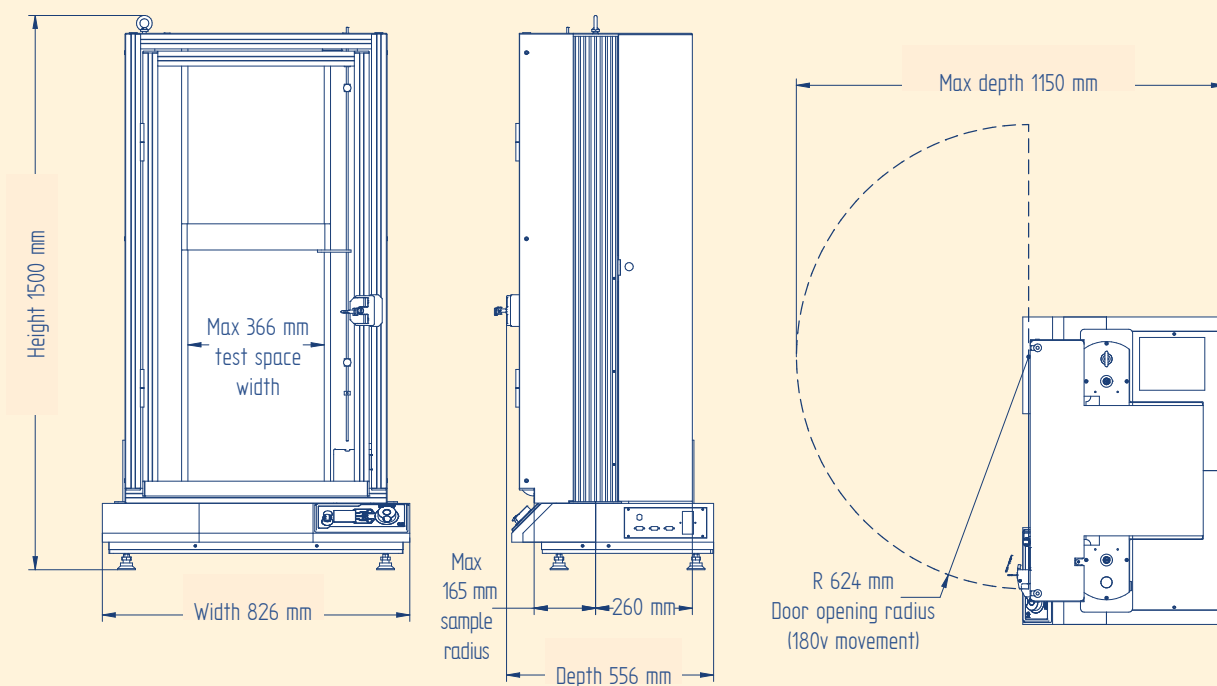
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## Specification Table - Twin Column Systems

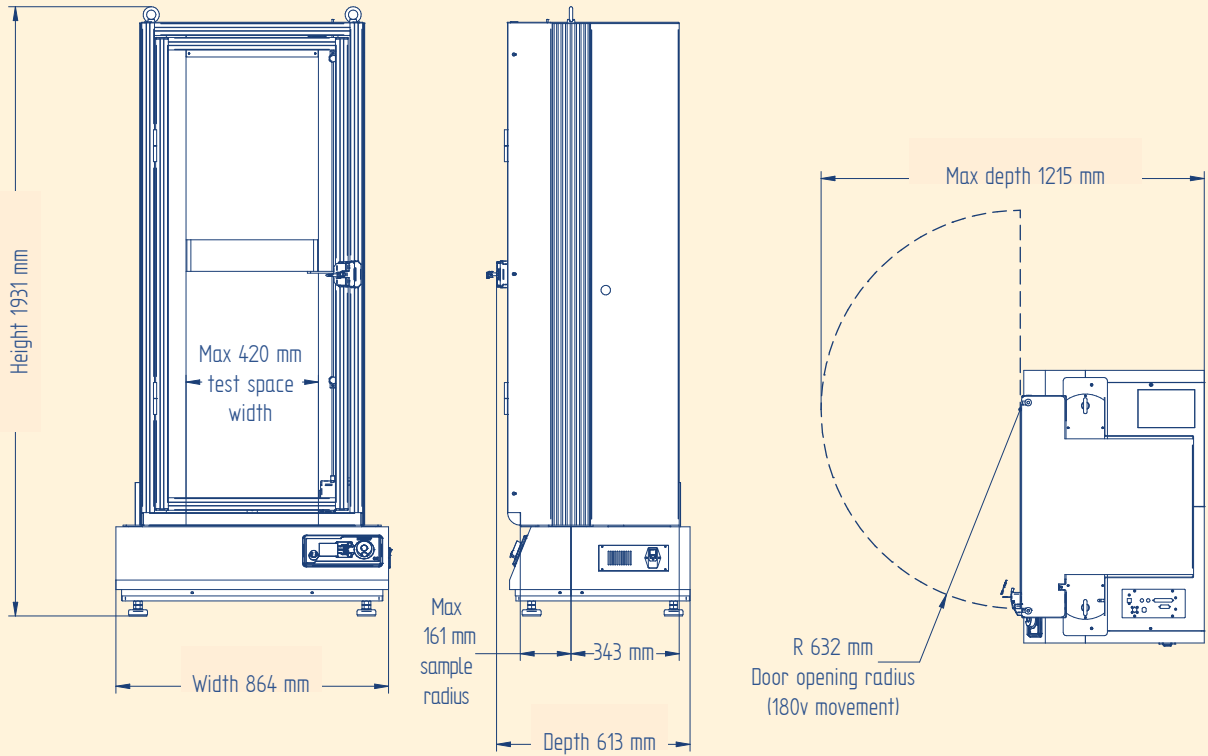
Machine Guarding	10	25	50
Compatible Mecmesin Test Systems - guards supplied fitted to tester. Part number of complete test system shown in brackets	MultiTest 10-i (805-017+G)	MultiTest 25-i (805-016+G)	MultiTest 50-i (805-023+G)
	MultiTest 10-xt (815-004+G)	MultiTest 25-xt (815-005+G)	MultiTest 50-xt (815-006+G)
	OmniTest 10 (820-010+G)	OmniTest 25 (820-025+G)	OmniTest 50 (820-050+G)
Dimensions			
Height	1500 mm	1500 mm	1931 mm
Width (excl key)	826 mm	826 mm	864 mm
Depth (door closed)	556 mm	556 mm	613 mm
Max Depth (door open)	1150 mm	1150 mm	1215 mm
Weight (system)*	192 kg	192 kg	354 kg
Sample/ Accessory Space			
Max Width	366 mm	366 mm	420 mm
Max Diameter++	330 mm	330 mm	322 mm
Interlocking Device			
Type	Tongue-actuated position switch		
Environment specification			
Operating temperature	10 °C to 35 °C		
Operating relative humidity	30% - 80 % (non-condensing)		

\*Excluding accessories such as attached consoles ++ Measured from centre of load cell

### Dimensioned drawings (in millimetres)



MultiTest and OmniTest 10 and 25



MultiTest and OmniTest 50

## CE marking and certification

All Mecmesin standard guards are supplied with a CE mark and declaration of conformity together with fitting instructions where appropriate.

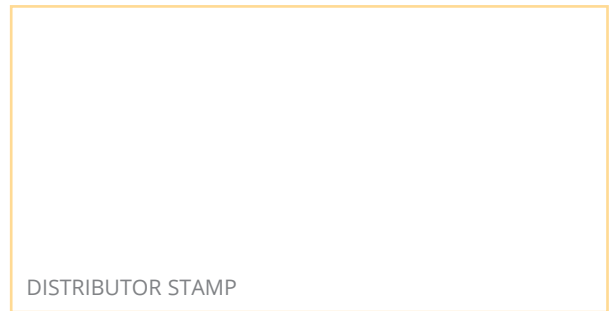


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## Protective Covers for Force & Torque Stands

### Protect your Investment!

The covers offer protection to all types of Mecmesin motorised test stand in dusty and dirty environments. They are durable and easy to clean, and feature quick-acting velcro fastening strips for simple fitting and removal. Dust covers are available for single-column 2.5 kN force stands and the Vortex range of torque testers.

### Force

Available for 2.5 kN stands only

- MultiTest motorised force testing stand (d, dV)
- MultiTest-xt touch screen force testing stand
- MultiTest-i computer-controlled force testing stand



### Torque

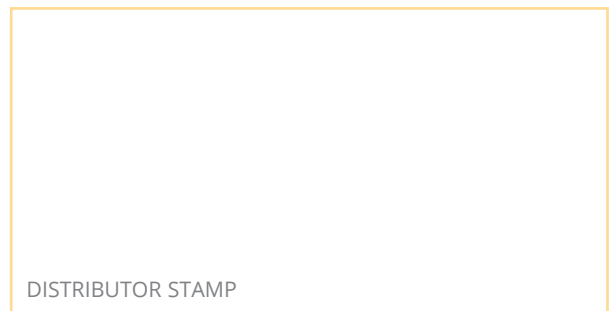
- Vortex motorised torque testers (d, dV)
- Vortex-xt touch screen torque tester
- Vortex-i computer-controlled torque tester



Protective Cover for Stands Listed	Part No.
MultiTest 2.5-dV	432-483
MultiTest 2.5-xt	432-484
MultiTest 2.5-i	432-483
Vortex-dV	432-481
Vortex-xt	432-482
Vortex-i	432-481



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## Bellows and Horizontal Feet Kits for Single Column Test Stands



Protective Bellows Kit



PDV11065, PDV10105: Horizontal Feet Kit for single-column test stands

### Description

#### Bellows Kits

Protective bellows fit into the crosshead aperture in the test stand to guard against sample ingress and dust or liquid splash getting inside the column and damaging internal components. Kits are available for the single-column range of stands, the length being appropriate for the particular column dimension.

NOTE: Fitment of the bellows reduces the throat depth by 18 mm.

#### Feet Kits

The Horizontal Feet Kits enable a single column test stand to be mounted horizontally, aligning the front panel either on its side or facing upwards. This meets the requirements where the test procedure dictates that the specimen must be tested horizontally.

### Specifications

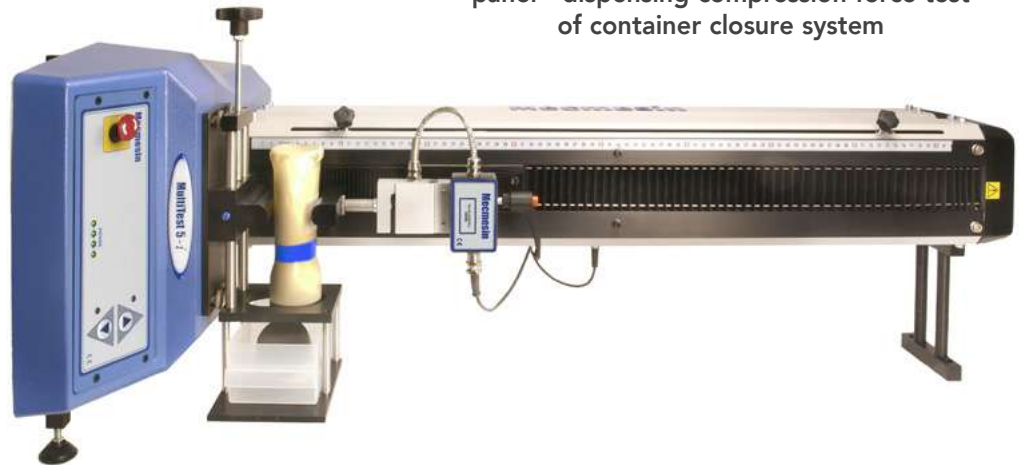
Part No.	Description
432-471	Bellows kit for fitting to MultiTest 2.5 stand (500mm)
432-472	Bellows kit for fitting to MultiTest 1 stand (1000mm)
432-473	Bellows kit for fitting to MultiTest 0.5 stand (1200mm)
PDV11065	Feet kit; allows front-panel to be mounted horizontally on its side
PDV10105	Feet kit; allows front-panel to be mounted horizontally facing upwards

Feet available for other test stands or configurations on request.

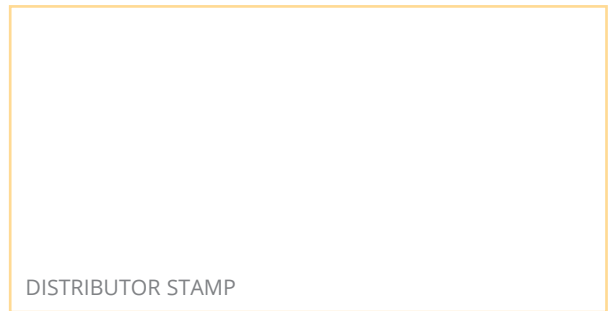
PDV10105: Upwards-facing front panel



PDV11065: Example application, side-facing front panel—dispensing compression force test of container closure system



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## MDD Horizontal Feet Kit



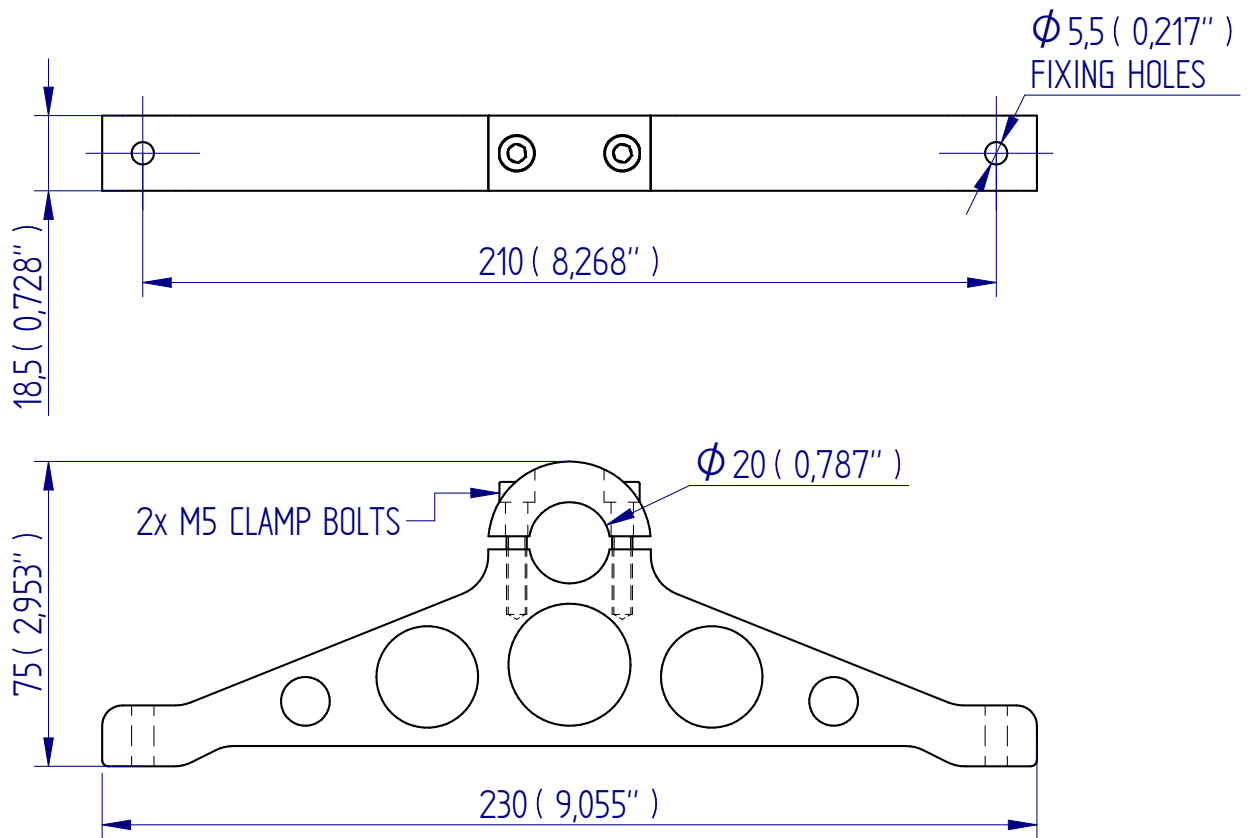
### Description

The MDD horizontal feet kit allows for the horizontal operation of the MDD manual test stand

### Specifications

Part No.	Width		Height		Depth	
432-126	230 mm	9.06"	75 mm	2.95"	18.5 mm	0.73"

## Dimensions mm (inch)



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## Thread Adapters



### Description

Our range of adapters provide interchangeability between grips and fixtures and our range of force testing instruments and test systems. Adapters are usually threaded into the accessory.

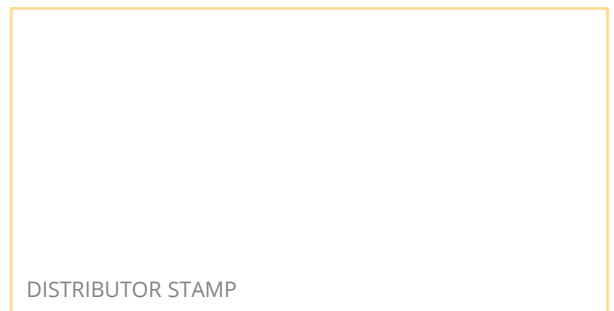
### Specifications

Part No.	Load Capacity			Thread	Length		Weight	
432-193	1 kN	100 kgf	225 lbf	10/32 M to M6 F	25 mm	0.98"	6 g	0.01 lb
432-293	5 kN	500 kgf	1100 lbf	5/16 F to 5/16 F	35 mm	1.38"	19 g	0.04 lb
432-328	1 kN	100 kgf	225 lbf	10/32 F to 10/32 F	30 mm	1.18"	4 g	0.01 lb
432-329	1 kN	100 kgf	225 lbf	10/32 F to 5/16 F	25 mm	0.98"	8 g	0.02 lb
432-330	5 kN	500 kgf	1100 lbf	5/16 F to M6 F	25 mm	0.98"	6 g	0.01 lb
432-331	5 kN	500 kgf	1100 lbf	5/16 M to M12 M	29 mm	1.14"	21 g	0.05 lb
432-332	5 kN	500 kgf	1100 lbf	5/16 M to M12 F	34 mm	1.34"	21 g	0.05 lb
432-333	5 kN	500 kgf	1100 lbf	5/16 M to M10 M	29 mm	1.14"	21 g	0.05 lb
432-334	1 kN	100 kgf	225 lbf	M6 F to M6 F	25 mm	0.98"	5 g	0.01 lb
432-335	10 kN	1000 kgf	2200 lbf	M10 M to M12 M	29 mm	1.14"	21 g	0.05 lb
432-364	1 kN	100 kgf	225 lbf	10/32 M to M10 M	29 mm	1.14"	14 g	0.03 lb
432-417	1 kN	100 kgf	225 lbf	10/32 F to M6 F	25 mm	0.98"	5 g	0.01 lb



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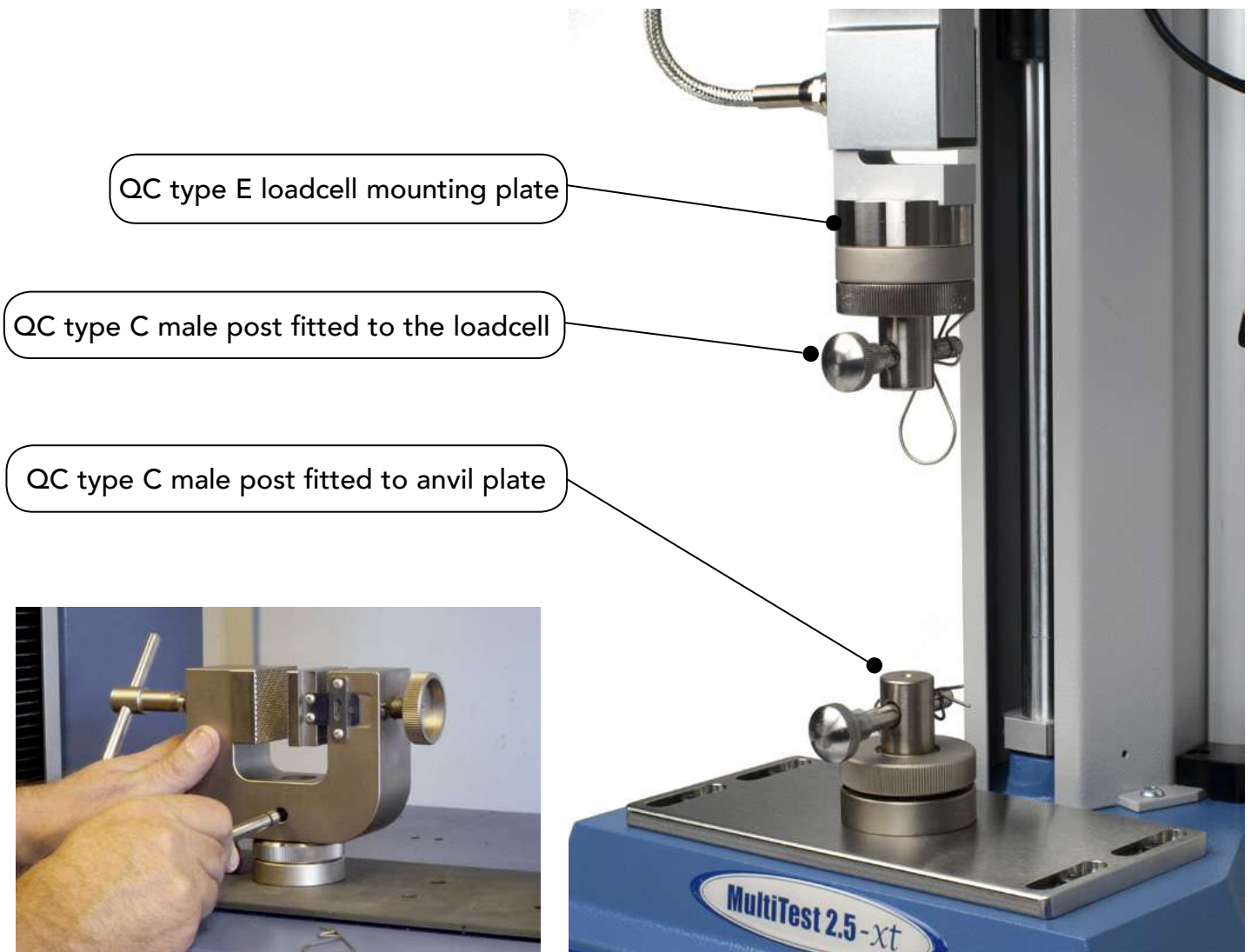
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## Adapters for QC range of grips

### Description

The Mecmesin QC (Quick-Change) adapters allow grips to be attached to test frames and loadcells quickly and easily without the need for tools. A standard diameter post fits into the bore hole of the QC-type grip and is held in place by an 8 mm diameter lateral pin. Grips are thus securely fixed, but can be exchanged in a matter of seconds.

The QC adapter can be fitted to the anvil plate of the test frame or to the bottom of the loadcell. See the tables for compatibility.

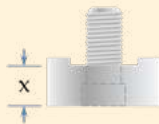



## QC adapters for use with grips having 20mm Ø fittings

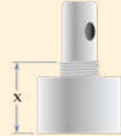

Description	Part No.	
<p>QC Type C - 20 mm Ø Male Post c/w pin &amp; fixing screws</p> <p>-fit to Anvil Plate supplied with Test Frame -fit to Loadcell Mounting Plate</p>  <p>x-height added: 24 mm</p>	432-284	 
<p>QC mounting plate for 50 kN systems</p> <p>-fit to 50 kN anvil plate, or pancake loadcell, as a base for 432-284. Enables 20 mm QC fixtures to be used on a 50 kN test stand.</p> <p>x-height added: 15 mm</p>	432-622	 
<p>QC Adapter, converts Type L (F) to C (M)</p> <p>-fits onto a Type L (32 mm) post, for fitting 20 mm QC fixtures.</p> <p>x-height added: 58 mm</p>	432-623	 
<p>QC Type J - Light-weight Male 20 mm Ø adapter (10/32 UNF hole) c/w pin **</p> <p>-fit to force gauges or loadcells with 10/32 UNF threaded connection</p> <p>x-height added: 32 mm</p>	432-418	 
<p>Type A Adapter with Pin QC Type A - Male 20 mm Ø adapter (5-16 UNC hole) c/w pin **</p> <p>-fit to force gauges or loadcells with 5-16 UNF threaded connection</p> <p>x-height added: 32 mm</p>	432-282	 
<p>QC Type K - Female Sleeve 20 mm Ø c/w pin &amp; fixing bolt (5-16 UNC)</p> <p>-convert a non QC-type grip to QC-type by attaching sleeve to the grip</p> <p>x-height added: 55 mm</p>	432-429	 
<p>QC Type B - Female Sleeve 20 mm Ø c/w pin &amp; fixing bolt (M12)</p> <p>-convert a non QC-type grip to QC-type by attaching sleeve to the grip</p> <p>x-height added: 55 mm</p>	432-283	  <p style="text-align: right;"><b>e.g. QC Type K Female sleeve with wedge grip</b></p>

\* N.B. Great care should be taken when selecting grips for use with low-capacity loadcells due to risk of overload  
 \*\* N.B. Secured with a single screw fitting, so the orientation of the locking-pin hole is not guaranteed


**QC-adapters for use with grips having 20mm Ø fitting.**

Description - Loadcell Mounting Plates	Part No.	
QC Type M - Loadcell Mounting Plate - 13 mm wide slot c/w M6 bolt for 100 N & 200 N S-beam loadcells x-height added: 14 mm	432-452	  <p align="center"><b>Fitting Loadcell Mounting Plate to ILC-S</b></p>
QC Type D - Loadcell Mounting Plate - 19 mm wide slot c/w M6 bolt for 500 N S-beam loadcells x-height added: 14 mm	432-285	
QC Type E - Loadcell Mounting Plate - 19 mm wide slot c/w M10 bolt for 1000 N S-beam loadcell x-height added: 14 mm	432-286	
QC Type F - Loadcell Mounting Plate - 25 mm wide slot c/w M12 bolt for 2500 N, 5000 N & 10 kN S-beam loadcells x-height added: 25 mm	432-287	
QC Type G - Loadcell Mounting Plate - 25 mm wide slot c/w M16 bolt for 25 kN S-beam loadcell x-height added: 25 mm	432-288	

**QC adapters for use with grips having with 32 mm Ø fitting**

QC Type L - 32 mm Male Post c/w pin & fixing screws for connection to 20 kN and 50 kN Pancake loadcells and anvil plate of 50 kN Test Frame. Uses a 12 mm diameter pin.  x-height added: 30 mm	432-451	 
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## Test Frame

Anvil plate	QC Adapter
Single column - MultiTest 0.5, 1, 2.5, 5  	QC Type C 20 mm Male Post c/w pin & fixing screws Use 4 x M6 screws supplied (432-284) or QC Type J 10-32 UNF lightweight adapter with pin ** Use with 10-32 UNF grubscrew in anvil plate (432-418) or QC Type A 5/16 UNC Adapter with pin ** Use with 5/16 UNC grubscrew in anvil plate (432-282)
Twin column - MultiTest 10, 25	QC Type C adapter post c/w pin and fixing screws Use 4 x M6 screws supplied (432-284)
Twin column - MultiTest 50	QC Type L - 32 mm Male Post c/w pin & fixing screws Use 6 x M6 screws supplied (432-451)

## Loadcells

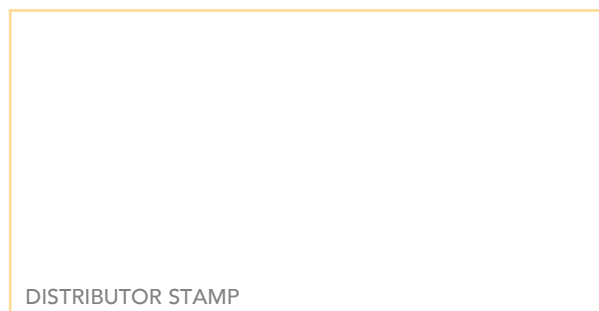
Loadcell	QC Adapter Where 2 part no.s are listed, both are required
ILC 2*, 5*, 10*, 25*, 50, 100, 250, 500 N (internal type) Fitting: 10-32 UNF male thread	QC Type J 10-32 UNF lightweight adapter with pin** (432-418)
ILC-S 100, 200, 500 N (S-beam type) Fitting: M6 female threaded hole	QC Type C adapter post c/w pin and fixing screws (432-284) QC Type D loadcell mounting plate M6 with bolt (432-285)
ILS-S 1000 N (S-beam type) Fitting: M10 female threaded hole	QC Type C adapter post c/w and fixing screws (432-284) QC Type E loadcell mounting plate M10 with bolt (432-286)
ILS-S 2500, 5000 N (S-beam type) Fitting: M12 female threaded hole	QC Type C adapter post c/w pin and fixing screws (432-284) QC Type F loadcell mounting plate M12 with bolt (432-287)
ILC-T 10 kN (S-beam type) Fitting: M12 female threaded hole	QC Type C adapter post c/w pin and fixing screws (432-284) QC Type F loadcell mounting plate M12 with bolt (432-287)
ILC-T 25 kN (S-beam type) Fitting: M16 female threaded hole	QC Type C adapter post c/w pin and fixing screws (432-284) QC Type G loadcell mounting plate M16 with bolt (432-288)
ILC-P 20, 50 kN (Pancake type) Fitting: M6 female thread holes x 6	QC Type L - 32 mm Male Post c/w pin & fixing screws (for 50 kN systems only) (432-451)

\* N.B. Great care should be taken when selecting grips for use with low-capacity loadcells due to risk of overload

\*\* N.B. Secured with a single screw fitting, so the orientation of the locking-pin hole is not guaranteed



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## Extension Rods

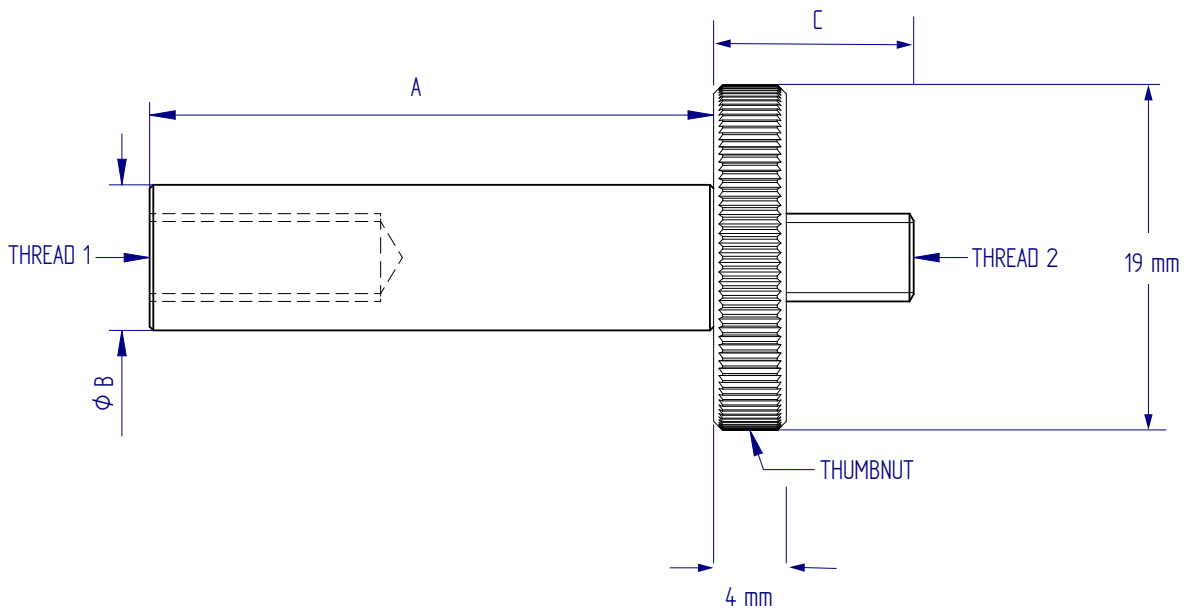


### Description

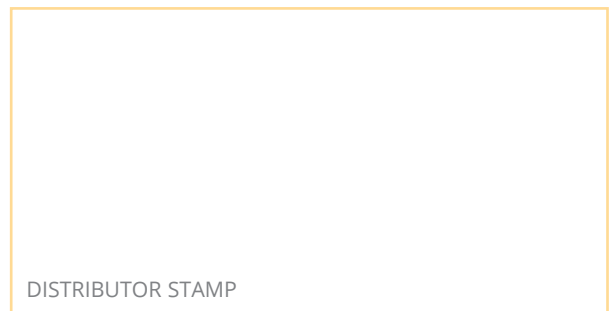
Extension rods are used to add length to a fixture often to prevent the specimen making contact with the gauge/loadcell e.g., when compressing a plunger into a cylinder. They are also used to connect a force gauge or loadcell to a grip or fixture e.g. a wedge grip or test hook. The thumbwheel or locking nut are used to secure the grip in the correct orientation - care should be taken not to overtighten when using with low capacity gauges and loadcells.

### Specifications

Part No.	Load Capacity	Securing	Thread 1	Thread 2	Length (A)	Diameter (B)	Length (C)	Weight	
432-006	500 N	thumbwheel	10-32 UNF F	10-32 UNF M	30 mm	8 mm	11 mm	20 g	0.04 lb
432-116	500 N	nut	10-32 UNF F	10-32 UNF M	30 mm	6 mm	10 mm	7 g	0.02 lb
432-167	500 N	nut	10-32 UNF F	10-32 UNF M	130 mm	6 mm	10 mm	28 g	0.06 lb
432-007	500 N	thumbwheel	10-32 UNF F	M6 M	30 mm	8 mm	12 mm	20 g	0.04 lb
432-186	500 N	thumbwheel	M6 F	M6 M	25 mm	8 mm	12 mm	20 g	0.04 lb
432-187	500 N	thumbwheel	M6 F	M6 M	130 mm	8 mm	12 mm	32 g	0.07 lb
432-008	2.5 kN	thumbwheel	5/16 UNC F	5/16 UNC M	30 mm	12 mm	14 mm	32 g	0.07 lb
432-123	2.5 kN	—	5/16 UNC F	5/16 UNC M	130 mm	12 mm	10 mm	111 g	0.24 lb



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## Crosshead Extensions and Elevated Base Plate



▲ Crosshead Extension and Elevated Base Plate

### Description

The 38 mm crosshead extension and elevated base plate are supplied together as a kit under part number 432-406. They are used for fitting larger samples up to 200 mm diameter to a single-column MultiTest system. The baseplate replaces the standard 8 mm height anvil plate. When fitted, the cantilever effect of such an extension serves to reduce the maximum rating to 1.6 kN.

The 38 mm and 16 mm crosshead extensions are available to order separately for applications requiring increased space. Suitable for both tension and compression.

### Specifications

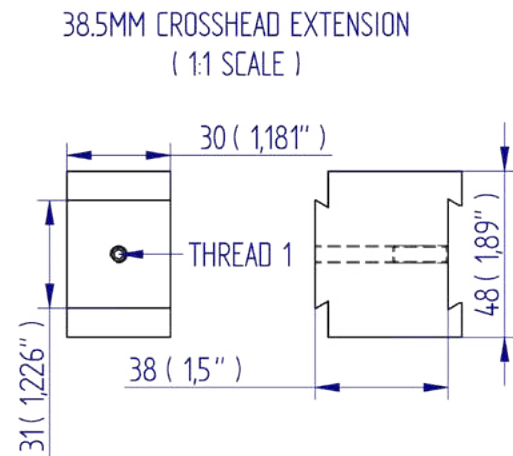
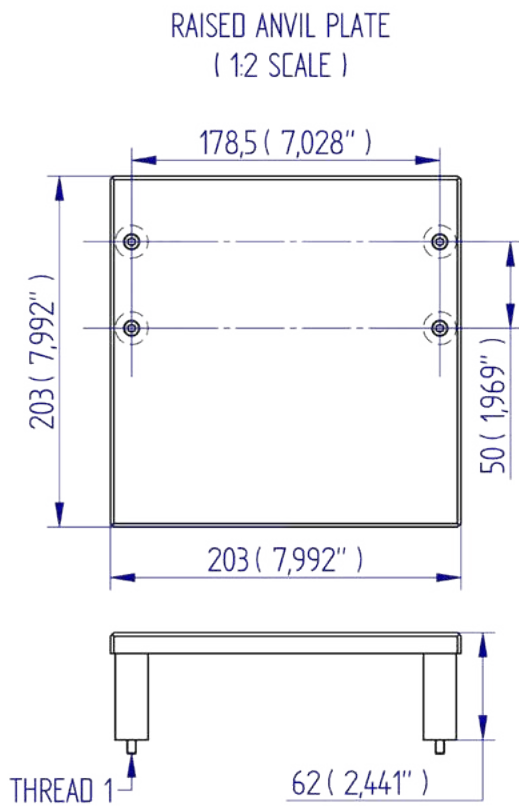
#### Crosshead Extension and Elevated Base Plate

Part No.	Load Capacity			Thread 1	Width		Depth		Height	
432-406	1.6 kN	160 kgf	350 lbf	M5	203 mm	7.99 <sup>②</sup>	203 mm	7.99 <sup>②</sup>	62 mm	2.44"

#### Crosshead Extensions

Part No.	Load Capacity	Thread 1	Depth (A)
432-307	2 kN	M5	16 mm
432-508	1.6 kN	M5	38 mm

## Dimensions mm (inch)



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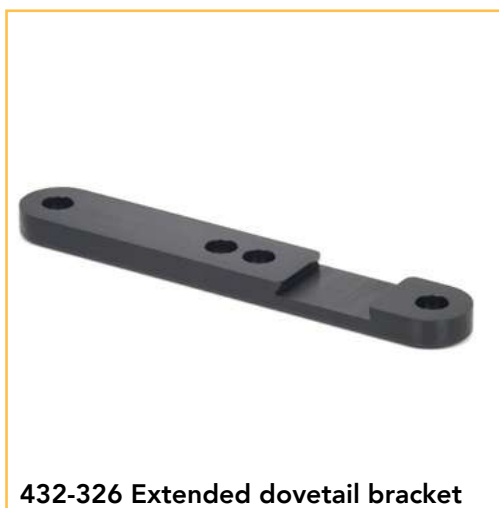
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## Dovetail Brackets and Mounting Plates



432-427 Dovetail bracket



432-326 Extended dovetail bracket



432-131 CFG<sup>+</sup> Mounting plate

### Description

The dovetail bracket is used for mounting a Mecmesin Advanced Force Gauge (AFG) or Basic Force Gauge (BFG) to the crosshead of manual and motorised test stands, to allow precise lateral alignment of the gauge. Supplied with socket-head fixing screws M5 x 12 mm.

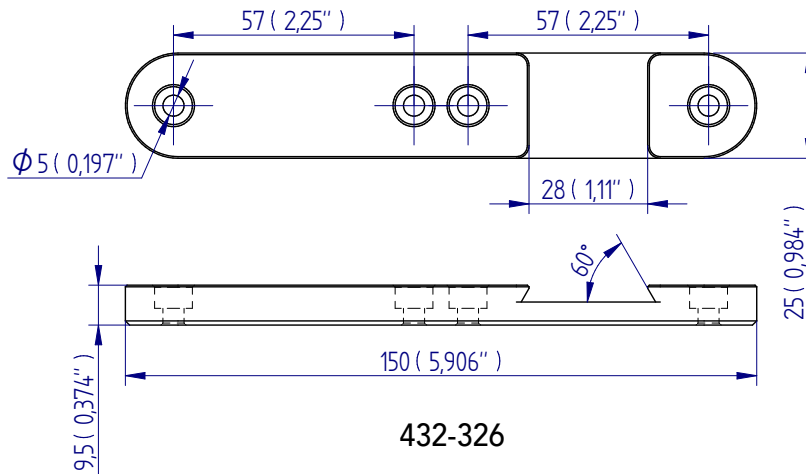
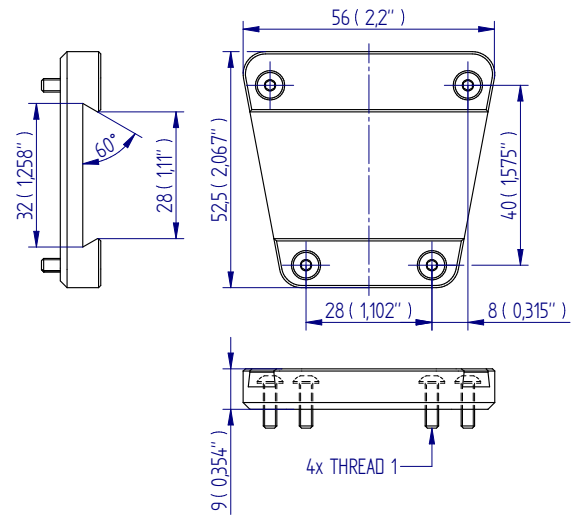
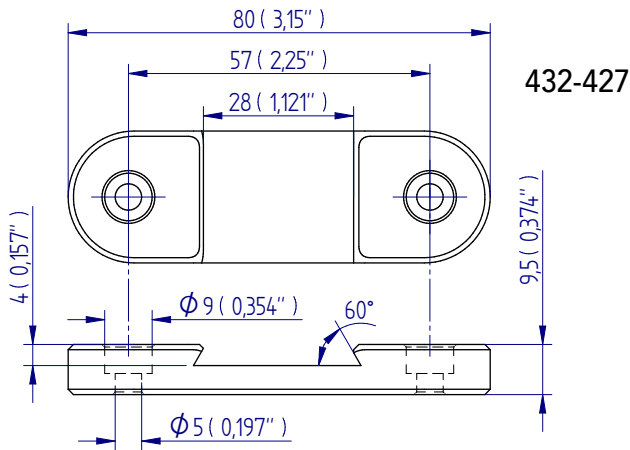
The extended dovetail bracket is used for mounting a Mecmesin Advanced Force Gauge (AFG) or Basic Force Gauge (BFG) to the crosshead of manual and motorised test stands, to allow precise lateral alignment of the gauge. The extended length provides 70 mm (2.76") of extra daylight. Supplied socket-head fixing screws M5x10 mm.

This mounting plate allows a Mecmesin Compact Force Gauge+ (CFG+) to be mounted onto the crosshead of a test stand. Supplied with 4 x M3 fixing screws.

### Specifications

Part No.	Height		Width	
	mm	in	mm	in
432-326	150	5.91"	25	0.98"
432-427	80	3.15"	25	0.98"
432-131	52.5	2.07"	56	2.2"

## Dimensions mm (inch)



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## Mini V-block



### Description

The mini V-block is a precision-engineered mounting block which allows smaller samples to be securely held in a centrally-aligned position, without excessive clamping force.

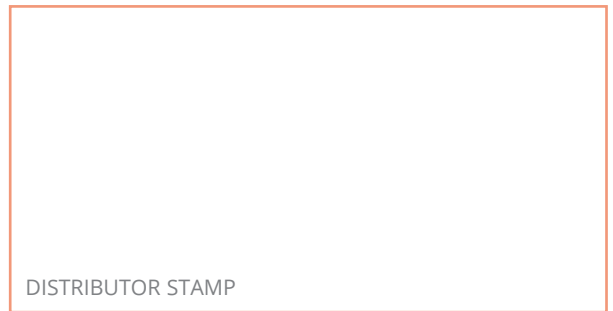
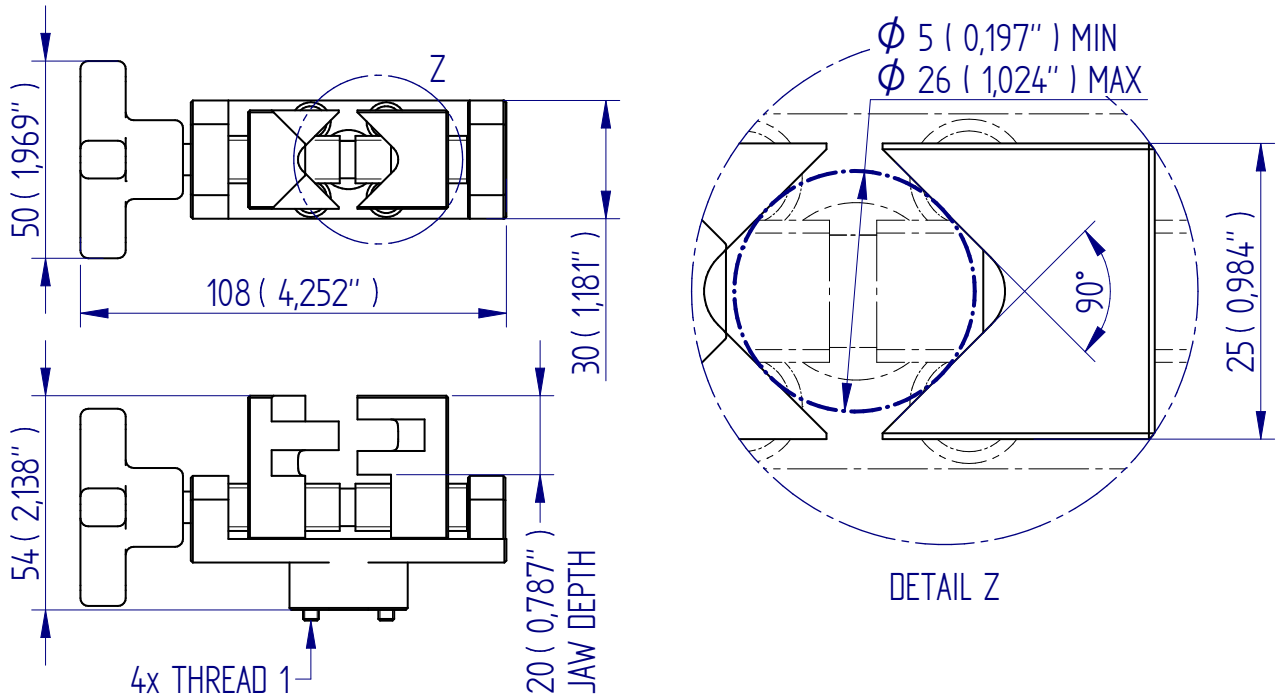
V-block Fixtures to hold 'irregular shaped' samples

Alternative V-block fixtures can be designed and manufactured for specific requirements. Contact Mecmesin for details.

### Specifications

Part No.	Thread 1	Jaw Opening		Height	
432-423	4 x M4	5 - 26 mm	0.2" - 1.02"	54 mm	2.13"

## Dimensions mm



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## 3-jaw and 4-jaw Torque Chucks

When seeking to hold small components or assemblies for torque testing it is often possible to utilise the flexibility provided by a standard machine-chuck. Mecmesin has taken off-the-shelf chucks and adapted them to fit to our Vortex and Helixa Torque Testing Systems and 'TS' Torque screwdrivers to create a simple and affordable gripping solution.

### Vortex 4-jaw Torque Chucks

3 models in the range. Each 4-jaw chuck is delivered with 3 sets of interchangeable jaws which can quickly and easily be fitted using the fixing screws supplied.

- **Upper 'key-operated' 4-jaw Chuck (small)** fitted with a square-drive adapter for connection to Vortex torque sensors. Supplied with dedicated chuck-key. Recommended for use only with 6 N.m and 10 N.m sensors. Part no: 432-444

Max opening of chuck = 50 mm  
Weight including jaws: 490 g

- **Lower 'key-operated' 4-jaw Chuck (small)** fitted with a round shaft for connection to the motor spindle of Vortex torque stands. Part no: 432-496

Max opening of chuck = 50 mm  
Weight including jaws: 490 g

- **Lower 'keyless' 4-jaw Chuck (large)** fitted with a round shaft for connection to the motor spindle of Vortex torque stands. Jaws may be tightened by hand or using the levers provided. Part no: 432-445

Max opening of chuck = 80 mm  
Weight including jaws: 1400 g



▲ Upper 'key-operated' 4-jaw Chuck shown with jaws fitted



▲ Upper 'key-operated' 4-jaw chuck shown with key fitted and specimen held in mini-jaws

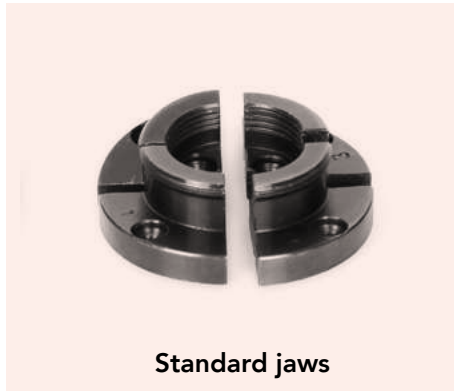


▲ Lower 'keyless' 4-jaw Chuck shown with tightening levers

## Interchangeable Jaws



Mini jaws



Standard jaws



Long jaws

### Jaw openings for upper and lower key-operated chucks (432-444 and 432-496)

Mini jaws	min 1 mm - max 16 mm	Contact height: 28 mm
Standard jaws	min 22 mm - max 34 mm	Contact height: 10 mm
Long jaws	min 6 mm - max 22 mm	Contact height: 29 mm

### Jaw openings for lower keyless chuck (432-445)

Mini jaws	min 1 mm - max 37 mm	Contact height: 31 mm
Standard jaws	min 37 mm - max 72 mm	Contact height: 14 mm
Long jaws	min 10 mm - max 42 mm	Contact height: 32 mm

## Helixa 3-jaw Torque Chucks

5 models in the range. Each 3-jaw chuck is delivered fitted to an adapter specifically to suit the Helixa Precision Torque Tester.

- **Upper 'key-operated' 3-jaw Chuck** fitted with a square-drive adapter for connection to Helixa torque sensors. Recommended for use only with 3 N.m and 6 N.m sensors:

□ 3/8" version.

Max opening of chuck = 9.5 mm

Weight: 200 g

Part no: 432-615

□ 1/2" version.

Max opening of chuck = 12.7 mm

Weight: 300 g

Part no: 432-617

- **Lower 'key-operated' 3-jaw Chuck** fitted with a round shaft for connection to the 'quick-change' adapter on the motor spindle of Helixa torque stands:

□ 3/8" version.

Max opening of chuck = 9.5 mm

Part no: 432-614

□ 1/2" version.

Max opening of chuck = 12.7 mm

Part no: 432-616



▲ Upper and lower 'key-operated' 3-jaw Chucks shown fitted to Helixa

- Lower 'keyless' 3-jaw Pin Chuck fitted to the adapter on the motor spindle of Helixa torque stands:

Max opening of chuck = 3.2 mm  
Part no: 432-509

## 'TS' Torque Screwdriver 3-jaw Chuck

A 3-jaw chuck is available for use with Mecmesin 'TS' Torque screwdrivers. It has a 3/8" opening and is being connected to the 'TS' screwdriver via a square drive spindle.

The 3/8" chuck is supplied as standard with every new 'TS' Torque Screwdriver.



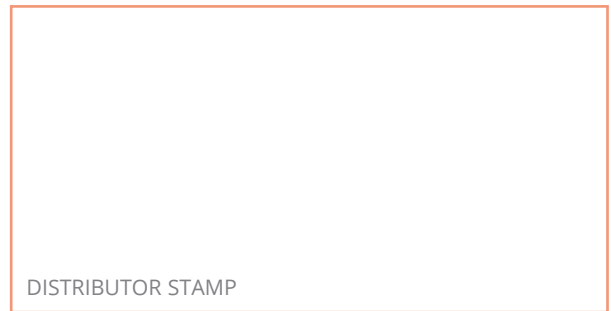
▲ Lower 'keyless' 3-jaw pin chuck shown fitted to adapter

## Specifications

Part No.	Jaw Opening		Weight	
432-233	9.5 mm	3/8"	170 g	0.37 lb



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## Closure Mandrels

The challenge posed to hold an ever-increasing variety of shapes and sizes of closures and containers is significant. Mecmesin has over 25 years of experience in working with a diverse group of customers to develop gripping solutions for torque testing. Whilst many closures and containers can be held by 'standard' grips it is frequently the case that 'customised' grips are required to secure the more unusual and odd-shaped specimens - these can be designed and made by Mecmesin engineers to suit your exact requirements.

### Fixing Table

A common 'standard' gripping solution features a Fixing Table with 4 rubber-coated pegs. These can be positioned within the table to accommodate closures between 10-78mm in diameter. The pegs are tightened manually around the closure by the operator — although this provides a versatile method of tightening a wide span of closures it should be noted that it is not a perfect solution. It is not suitable for testing large batches as it takes time to load/unload the samples with consequential operator fatigue to the wrist. In addition, overtightening of the pegs can cause distortion to closures which may affect the repeatability of results.

It is often preferable to use a customised mandrel which has been specifically tailored to meet the size and form of your unique closure.

### Mandrels

There are two versions of mandrels available to grip closures for torque testing.

a) 'Split Mandrel' – this comprises 2 mandrel halves which have been machined to suit a narrow span of closure diameters and profiles. The jaws of the mandrel have either a rubber coating or a serrated finish depending on the application requirements. The closure is located between the mandrel halves and is gripped by lightly tightening the mandrels using either a leadscrew or a pneumatic chuck.



◀ Fixing Table with rubber pegs – part no: 432-32



◀ Split mandrel with leadscrew to tighten jaws



▲ Split mandrel with serrated jaws designed for champagne corks

▼ Split mandrel with pneumatic chuck to tighten serrated jaws



▲ Split mandrels to suit differing closure sizes

b) 'Single-form mandrel' – machined specifically as an exact, dedicated, fit to match the profile of a single closure type and recommended for optimal repeatability of testing. The gently-tapered mandrel is placed upon the closure and the mandrel is then 'driven' by a Mandrel Peg Drive to apply the required torque. The mandrel can then move vertically which is essential for testing screw-type closures. Single-form mandrels are made to the user's specific design requirement.



▲ Single-form mandrels to suit closure size and knurl pattern



▲ Selection of single-form mandrels to suit various closure types and forms.



▲ Single-form mandrel with Peg Drive PDV15094-A to test TE bridge torque

The choice of mandrel is determined by the size and shape of the closure, its knurl pattern and the maximum torque expected. If you are not sure which mandrel is best suited to your application simply send some sample closures to our engineers for evaluation and receive a free quotation.

Suitable for various closure types (e.g. CT, ROPP, CR) when testing:

- Application Torque
- Removal Torque
- Incremental Torque
- Tamper Evidence
- Bridge Torque
- Strip Torque
- Re-application Torque

## CRC (Child-Resistant Closures)

To actuate the CR mechanism of a closure it is often required to apply an axial load when testing. The Vortex range of Motorised Torque Testers are equipped with a 'top load' tray into which masses can be placed to simulate the axial load. To make this process easy for the operator a Pneumatic Lift Mechanism is available for use with the Vortex range. It only needs the control lever to be turned to apply or release the masses thereby saving time and eliminating fatigue for the operator.

The Vortex Pneumatic Lift can be used in combination with split or single-form mandrels.

**Contact Mecmesin for advice on the most suitable gripping solution for your closures and containers.**

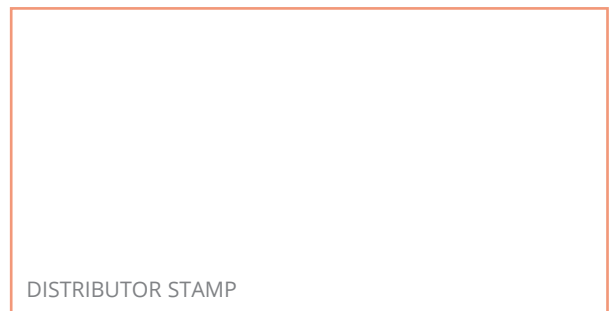
- ▶ Pneumatic lift attached to Vortex for applying and removing masses to CRC closures – shown with selection of single-form mandrels.





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## Static Torque Sensor Bench Mounting Stands



432-401:  
Bench Mounting Stand for 'mid & hi-torque' ST Torque sensors



432-402:  
Bench Mounting Stand for 'TS' Torque Screwdrivers

### Description

Bench Mounting Stands are equipped with fixing holes to enable secure and stable support for Mecmesin Static Torque Sensors when in use on a table or work-bench.

Two versions are available; Bench Mounting Stand for 'mid & hi-torque' ST Torque sensors and Bench-Mounting Stand for 'TS' Torque Screwdrivers.

The sensors are positioned inside the Mounting Stands and secured by the appropriate fixing screws. This allows the operator to attach the test specimen to the sensor and then apply torque directly to the specimen by hand as required.

Two sizes of 3-jaw chuck are available for use with Mecmesin 'TS' Torque screwdrivers;  $\frac{1}{2}$ " opening and  $\frac{3}{8}$ " opening each being connected to the 'TS' screwdriver via a square drive spindle. The  $\frac{3}{8}$ " chuck is supplied as standard with every new 'TS' Torque Screwdriver, whereas the  $\frac{1}{2}$ " chuck can be purchased as optional accessory.



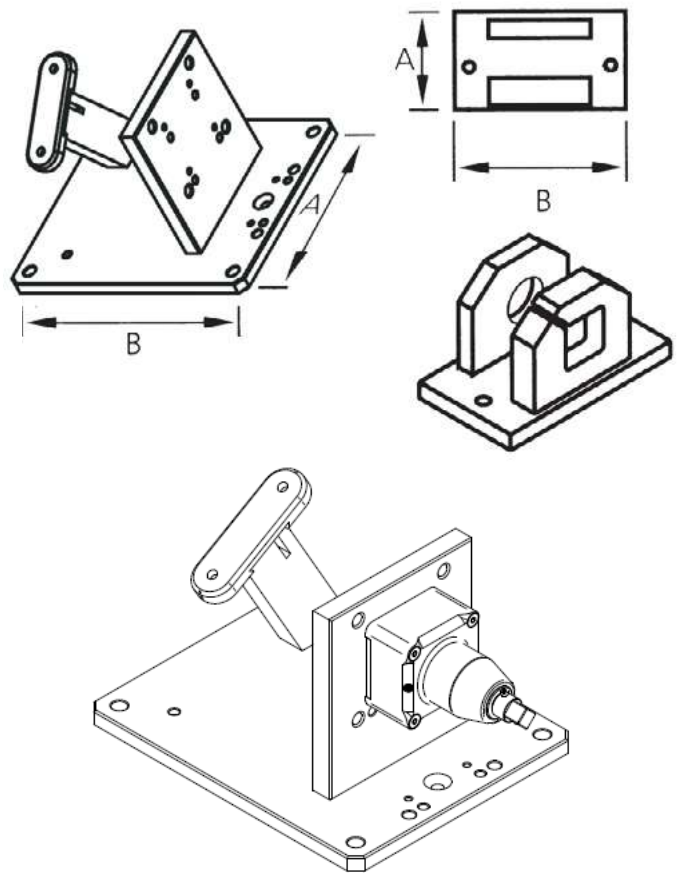
432-401 shown with AFTI mounted and sensor in vertical and horizontal orientation

### Specifications

Part No.	Type	Depth (A)		Width (B)	
432-401	Mid & hi-torque 'ST' Torque	155 mm	$\frac{1}{2}$ "	190 mm	6.10"
432-402	'TS' Torque Screwdrivers	76 mm	$\frac{3}{8}$ "	170 mm	6.10"



432-401 Front View

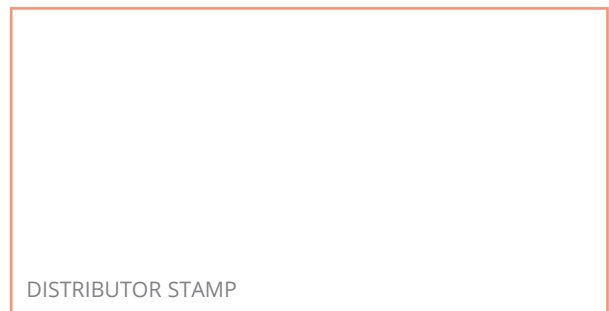


432-401 Shown with sensor mounted



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## Fixing Tables, Clamps and Mandrels for Torque Testing

Mecmesin offers a selection of fixturing solutions for use with all of our torque testers, each designed to provide the adjustability to securely hold different sample shapes and sizes.

Our manual torque testers (Orbis, Tornado and CAPTEST) are supplied as standard with a Torque Fixing Table and a set of 4 rubber-coated, threaded fixing pegs of 35 mm height for gripping samples. Optional longer Fixing Pegs or V-jaw Clamps are available to fit onto the Fixing Table to grip more awkwardly-shaped samples.

Torque Fixing Tables have also been developed as optional accessories specifically to fit to the motorised Vortex or Helixa range of torque testers. Rubber-coated pegs and V-jaw Clamps are available to fit onto these Torque Fixing Tables to securely grip the sample.



432-321 Upper Fixing Table (Vortex) shown with 35 mm high standard Pegs



432-600 Precision Lower Fixing Table (Helixa) shown with 432-602 V-jaws fitted



PSV18155 V-Jaw with Toggle Clamp (Tornado/Orbis/Vortex)

### Description

#### Fixing Tables

Fixing Tables are a useful general-purpose grip offering highly versatile clamping of specimens, since they are fully adjustable to accommodate a variety of forms.

For the Helixa and Vortex motorised torque testing systems; **Upper Fixing Tables** connect directly to the respective torque sensor and **Lower Fixing Tables** connect to the motor spindle.

Upper and Lower Fixing Tables can be used in combination with each other. Alternatively, they can be used individually to hold one end of a sample, whilst the other end is held in a different torque grip or a custom-built fixture.

Fixing Tables feature a stainless-steel leadscrew with adjustable running-plates that have threaded holes. These holes accept Fixing Pegs and V-jaw Clamps within which specimens are held.

Note: To avoid the risk of damaging the torque sensor by excessive tightening of the handle; it is recommended that the Upper Fixing Table only be used with sensors of 6 N.m and above.

#### Saddle Plates

To provide extra support for containers which may not have a flat base, the Saddle Plate is a popular option. It easily connects to the Lower Fixing Table and is available in 2 sizes to suit the Vortex / Orbis / Tornado 6 & 10 N.m (432-424) and the Tornado 1.5 & 3 N.m (432-407).

See separate datasheet for more details.



432-321 Upper Fixing Table and 432-447 Pegs gripping a thermostatic radiator valve control



432-424 Large and 432-407 Small saddle plate

## Fixing Pegs

Four rubber-coated pegs for 35 mm height support are supplied as standard with the Upper and Lower Fixing Tables (432-321 and 432-320) for the Vortex. They are screwed into appropriate threaded holes to suit your specimen dimensions. The pegs are then tightened using the handle and leadscrew to secure the specimen in place. Longer fixing pegs of 100 mm are available for securing taller specimens.

See separate datasheet for more details.



432-424 Large Saddle Plate and 432-250 Extended length (height) Pegs gripping a tall petaloid base plastic bottle

## V-Jaw Clamps

Rubber-faced V-jaw clamps are available as an alternative solution to standard fixing pegs. They may be more appropriate for gripping specimens which require a greater area of surface contact to avoid slipping. Particularly useful for testing of smooth or low-friction materials.

### V-jaw Clamps for Helixa (432-602)

Features V-shaped rubber faces with an angle of both 90 and 120 degrees to suit various specimen geometries. The jaws can be easily removed and reversed by means of the fixing screws. Stable clamping is achieved by two vertically-spaced jaws on one side, stacked above and below the single opposing jaw. This accessory fits to the Helixa's Precision Lower Fixing Table (432-600) and is ideal for gripping small and/or low-friction surfaces of specimens.



432-600 Precision Lower Fixing Table and 432-602 V-jaws

### V-jaw Clamps for Vortex/Orbis/Tornado

PSV18155 (with toggle clamp for quick release) and PSV18221 (screw adjustment) are designed to fit onto the Vortex Lower Fixing Table (432-320) or the table supplied as standard with the Orbis and Tornado manual torque testers. Stable clamping is achieved by two vertically-spaced jaws on one side, stacked above and below the single opposing jaw. The serrated rubber jaw faces make these accessories ideal for gripping low-friction specimen surfaces such as hard plastic or glass bottles.

Note: In situations where torque is significant, or specimens have an awkward shape or a smooth finish, it may be preferable to develop a custom gripping solution. If you are in any doubt please consult Mecmesin's experienced application engineers for advice.



PSV18155 V-jaw (toggle clamp)



PSV18221 V-jaw (screw-action clamp)

## Dedicated mandrels for closures

Lower Fixing Tables (432-320 and 432-600) are often well-suited to holding containers. However, in situations where a thin-walled plastic closure is connected to a container, the closure can be deformed slightly when tightened within the jaws of an Upper Fixing Table. Such deformation can significantly influence the repeatability of torque measurement values.

A practical solution to this problem is to use a dedicated mandrel designed to fit uniformly and snugly around the closure without deforming it. The mandrel is designed to suit the exact form and profile of the closure thereby providing maximum contact area to optimise gripping.

Dedicated mandrels can be 'single-form' to suit one diameter, or 'split' to accommodate a limited range of diameters. Single-form mandrels are placed by hand onto the closure and are rotated by a 'Mandrel Peg Drive', which is connected to the torque sensor and applies tightening and release torque.

Split mandrels typically fit to an Upper Fixing Table and are gently tightened around the closure form to grip securely.

## Single-form mandrels

These can be produced in metal by CNC machining or spark-eroding and are suitable for higher torque applications. Becoming increasingly common, as a lower cost alternative where torque values are not so high, are mandrels produced from a durable resin material by 3D printers.

Mecmesin offers both the metal and 3D resin types of single-form mandrel. Simply send us a sample or drawing of your closure to receive a quotation for the most appropriate mandrel.

Requires Mandrel Peg Drive.



Dedicated single-form mandrels for cork, plastic and metal closures

## Mandrel Peg Drive (PDV15094-A)

This fixture is connected to the torque sensor of the Vortex or Helixa. It has 4 metal pegs with an internal opening of 54mm into which the single-form mandrel can be positioned. The pegs drive the mandrel and thereby apply the tightening and release torque.

Other sizes of Mandrel Peg Drive also available.



PDV15094-A Peg Drive fitted to Vortex



Dedicated split mandrels for cork and plastic cosmetics jar closures

## Split mandrels

These mandrels are designed to provide as much contact area around the closure as possible and are often rubber-coated to increase friction and grip securely. They are particularly suited to hard-plastic closures, such as those found on cosmetic jars, or other slippery surfaces e.g. cork. Each half-round mandrel is fitted to the running plate of an Upper Fixing Table and is gently tightened around the diameter of the closure.

Split mandrels can often be produced with a 'stepped' half-round design so you have a single fixture to suit closures of varying diameters.

To receive a quotation for the most appropriate mandrel simply send us a sample or drawing of your closure.

See separate datasheet for more details.

## Specifications

### Vortex

Part no:	Type	Thread 1	Max & Min opening diameter	Plate diameter (A)	Height	Weight	Fixing pegs (35mm high)
432-320	Lower Fixing Table	4 x M4	10 - 190 mm	188 mm	35 mm	950 g	included
432-321	Upper Fixing Table	4 x M4	10 - 78 mm	100 mm	35 mm	475 g	included

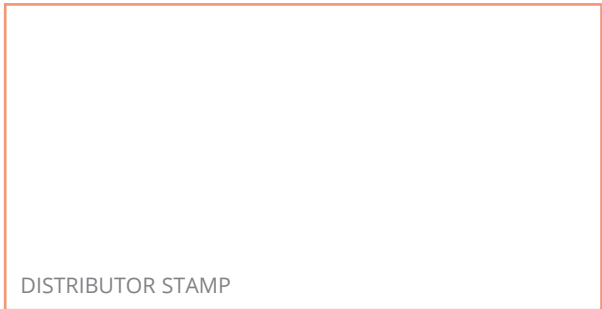
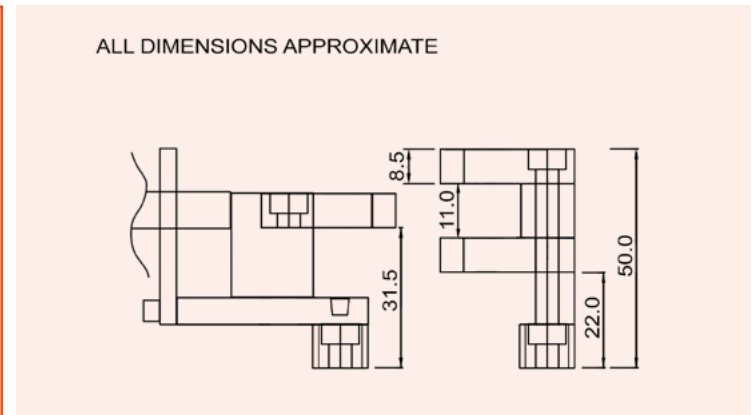
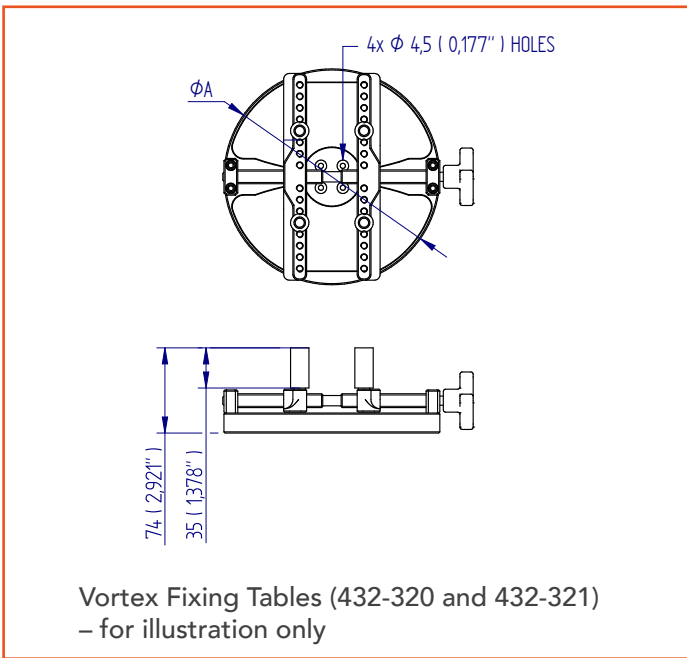
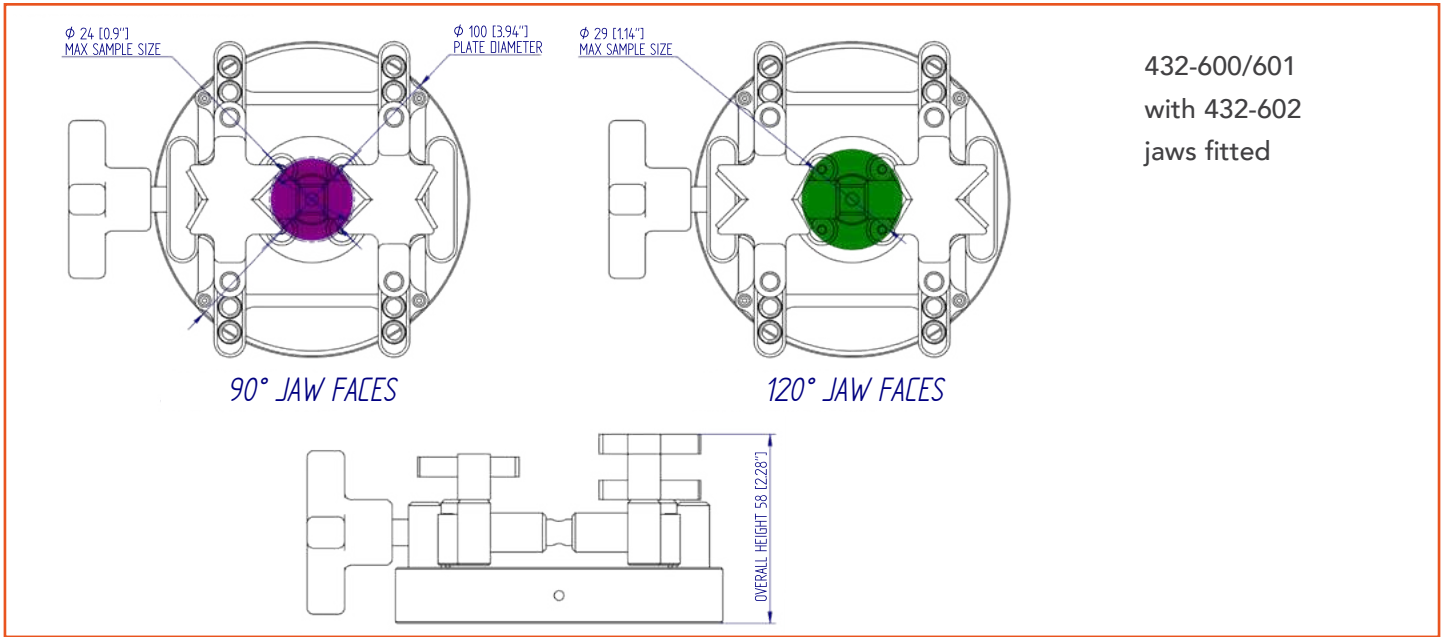
### Helixa

Part no:	Type	Thread 1	Max & Min opening diameter	Plate diameter (A)	Height	Weight	Fixing pegs (35mm high)
432-600	Precision Lower Fixing Table	4 x M4	20 - 100 mm	100 mm	40 mm	335 g	order separately
432-601	Precision Upper Fixing Table	4 x M4	20 - 100 mm	100 mm	40 mm	335 g	order separately
432-602	V-shape rubber jaws for precision tables - reversible	4 x M6	120° jaws : 1 - 30 mm 90° jaws: 1 - 25 mm	-	20 mm	50 g	-
432-447	Fixing pegs (rubber-coated), standard length (height)	4 x M6	-	-	30 mm	126 g	-
432-250	Fixing pegs (rubber-coated), long	4 x M6	-	-	100 mm	312 g	-

### Orbis/Tornado/Vortex

Part no:	Type	Thread 1	Max & Min opening diameter	Lateral Adjustment	Height
PSV18155	V-jaw Clamp with Toggle	4 x M6	N/A Determined by saddle plate	±60 mm	50 mm
PSV18221	V-Jaw Clamp	4 x M6	N/A Determined by saddle plate	±60 mm	50 mm

Dimensions mm (inch)



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## Set of 4 pegs; standard and extended lengths



### Description

These pegs attach to the upper and lower fixing tables to keep samples secure during torque testing. The extended length pegs are to keep taller samples vertically aligned.

### Applications

Used for closure torque testing of:

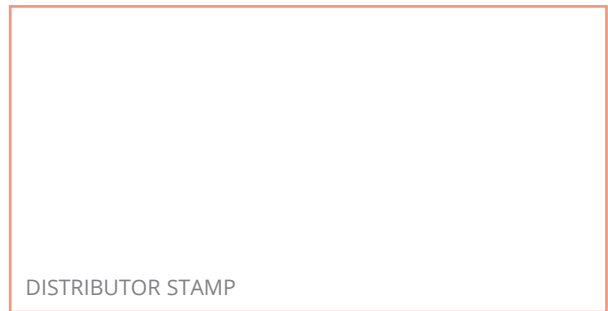
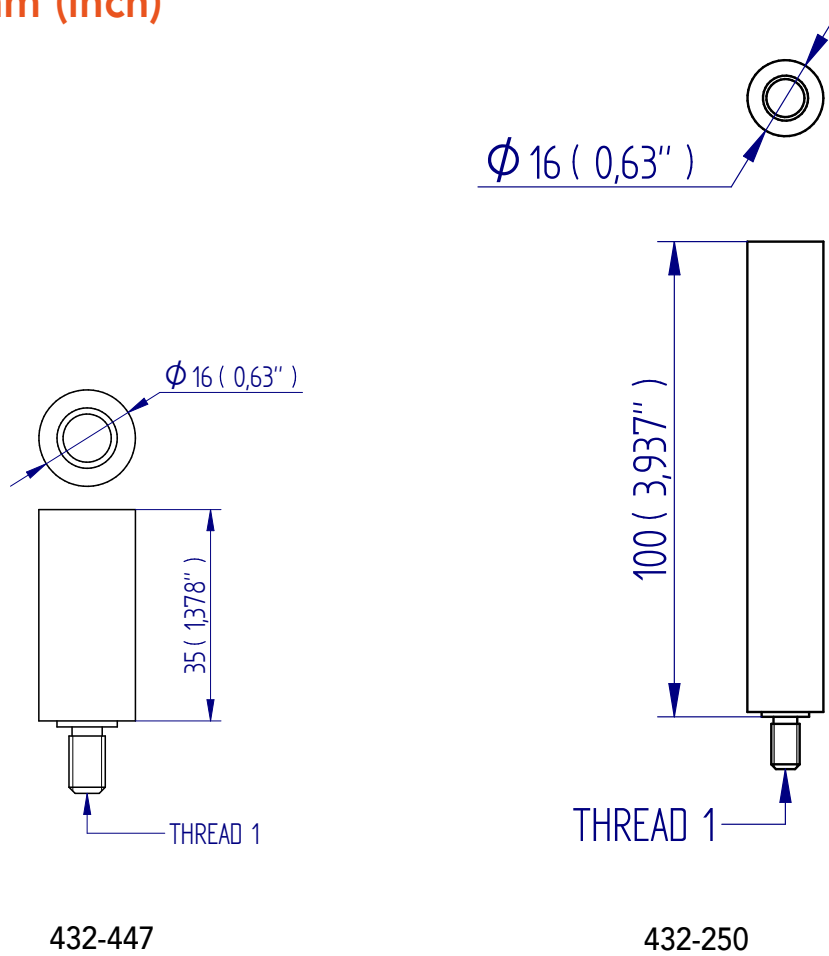
- Bottles
- Jars



### Specifications

Part No.	Thread 1	Diameter Ø		Length	
432-447	M6	16 mm	0.63"	35 mm	1.38"
432-250	M6	16 mm	0.63"	100 mm	3.94"

## Dimensions mm (inch)



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## Saddle Plates for use with Lower Fixing Table



Large Saddle Table (432-424)



Small Saddle Plate (432-407) shown fitted to the small Lower Fixing Table of the Tornado 1.5 N.m



Large Saddle Plate (432-424) shown fitted to the Vortex

### Description

Saddle plates provide a flat stable base on which to mount awkwardly shaped bottles and containers. Particularly suitable for plastic bottles with an uneven base design e.g. the 'petaloid' base of carbonated soft drink bottles. They are used in conjunction with a Lower Fixing Table.

Once the saddle plate is affixed to the Lower Fixing Table the bottles or containers are held in place by standard (35 mm high) or extended (100 mm high) rubber-coated fixing pegs. Fixing Pegs are supplied as standard with all Lower Fixing Tables.

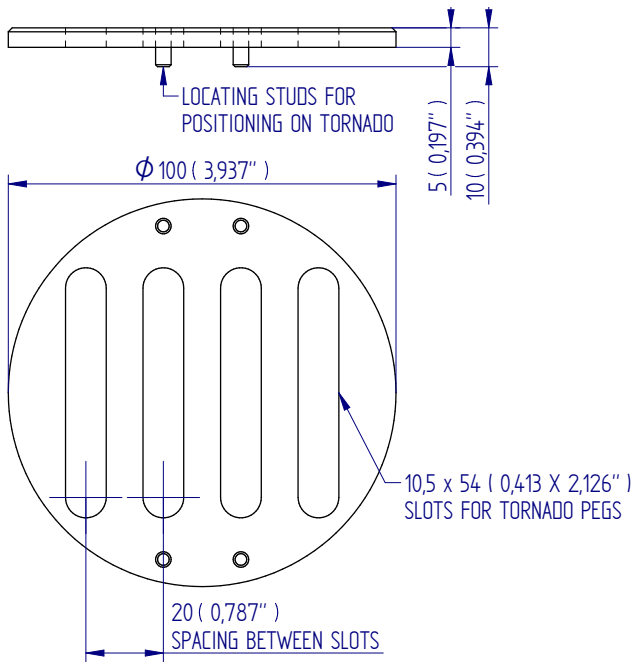
The small Saddle Plate (432-407) is designed for use with the small Lower Fixing Table supplied with the Tornado 1.5 N.m and 3 N.m.

The large Saddle Plate (432-424) is designed for use with the large Lower Fixing Table supplied with the Orbis and the Tornado 6 N.m and 10 N.m. It is also compatible with the Vortex Lower Fixing Table (432-320).

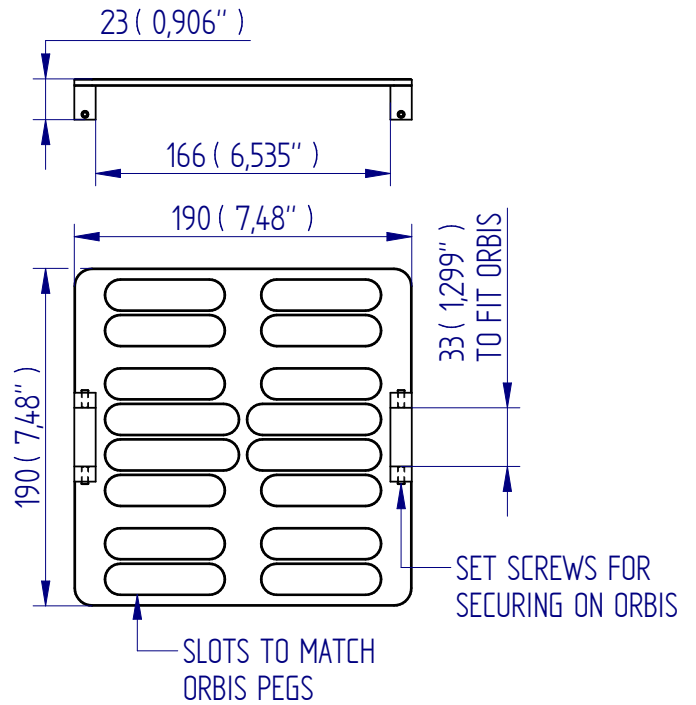
### Specifications

Part No.	Description
432-424 Large Saddle Plate	For Lower Fixing Tables of Orbis, Tornado 6 & 10 N.m, Vortex
432-407 Small Saddle Plate	For Lower Fixing Table of Tornado 1.5 & 3 N.m

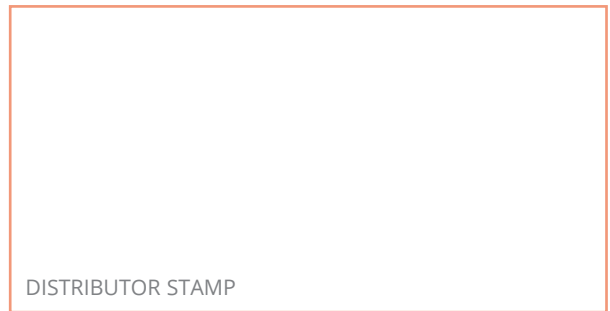
## Dimensions mm (inch)



432-407



432-424



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## Orbis and Tornado Mk II, and Vortex Torque Cell Check Calibration Rig



Checks gauge torque cells



Checks Vortex torque sensors



Mass Kit



Check rig components

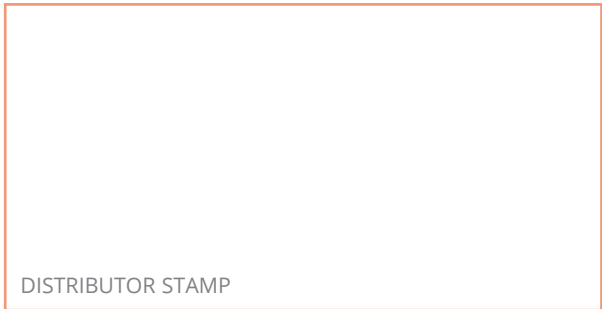
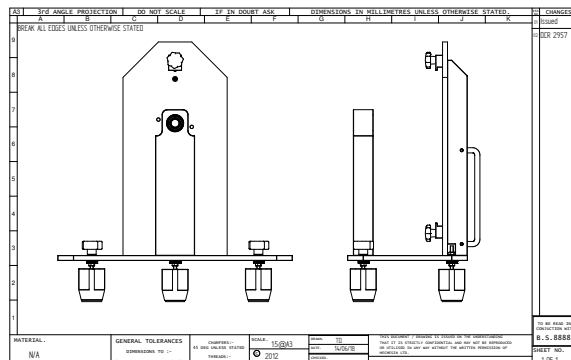
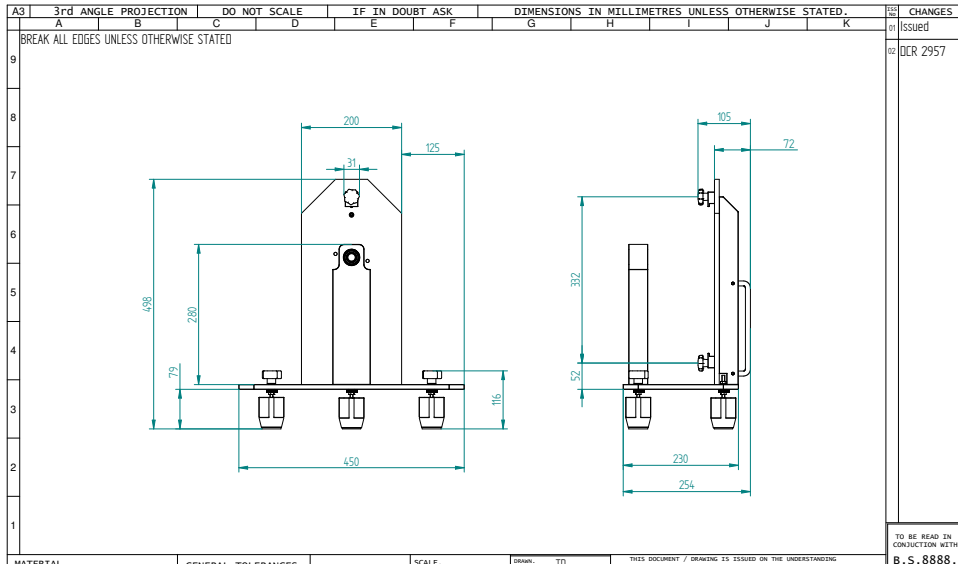
### Description

The check calibration rig is a bench-top unit which allows the on-site verification of the calibration status of Orbis MkII, Tornado MkII testers, and static torque sensors rated from 1.5 N.m to 10 N.m. Using dead-weight masses, the kit allows you to quickly decide whether or not adjustment, recalibration or repair is required. The kit does not replace the need for regular professional calibration.

### Specifications

Part No.
432-621

# Dimensions mm (inch)



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## Torque Reference Bottle



432-662-1.5



PDV12106



432-662-1.5 mounted on Vortex

### Description

The Torque Reference Bottle (also known as 'Gold Bottle') provides a means of quickly verifying the calibration of motorised torque measuring systems Helixa and Vortex. Its magnetic clutch repeatedly slips at a factory-set, specified torque value. The Torque Reference Bottle is available in three nominal torque values—the part number-suffix indicates the value in N.m.

### Specification

Part No.	Available torque range		Overall length	Diameter
	N.m	lbf.in		
432-662-0.5	0.5	4.4	163 mm (6.4 $\bar{1}$ )	93 mm (3.6 $\bar{6}$ )
432-662-1.0	1.0	8.9		
432-662-1.5	1.5	13.3		
PDV12106	Drive adapter for Torque Reference Bottle			

The above settings are indicative only, values may vary slightly on the bottle provided.

Note: Reference Bottles with lower and higher torque values are also available – price on request.

### Application

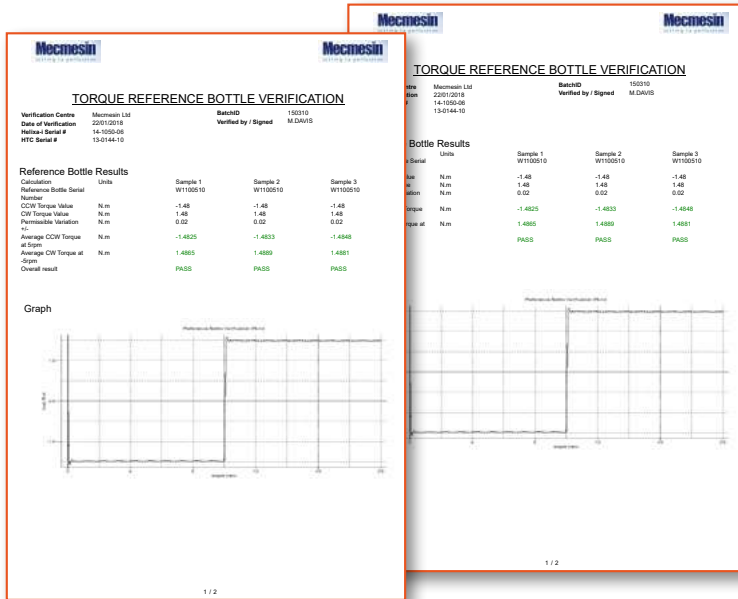
To use the Torque Reference Bottle, a separate drive adapter (part no PDV12106) can be ordered. This fits loosely between the pegs of an Upper Fixing Table and, when driven against the pegs by the motorised stand, it will apply torque to the magnetic clutch of the Reference Bottle causing it to slip at the pre-set value. The torque value displayed by the Vortex/Helixa sensor can then be compared to the calibrated pre-set value of the Reference Bottle.

The body of the Torque Reference Bottle can be held within the 4 pegs of a Lower Fixing Table.

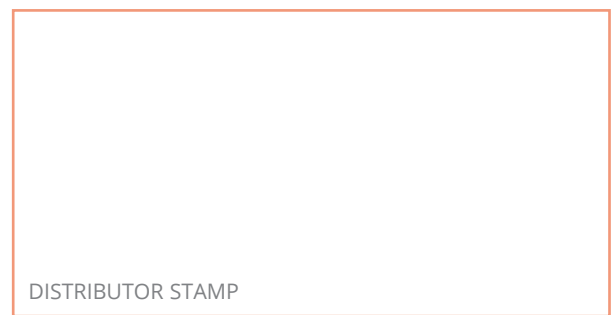
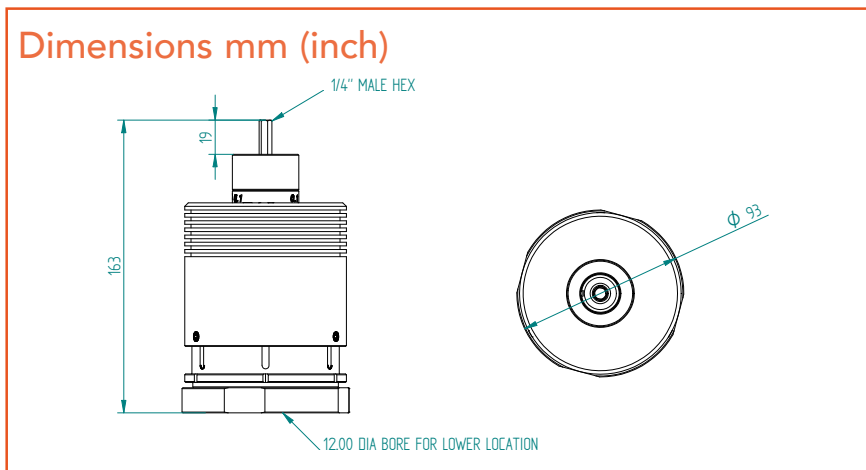
Two verification certificates are provided as standard by Mecmesin for each Reference Bottle; one in N.m, the other in lbf.in units.



Torque value check on Helixa



◀ Reference Bottle Verification Reports; metric and imperial units



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