METROTEC

DEVICES AND TOOLS FOR SHEAR TEST

Test Fixtures/Devices that are easy to use and applicable to perform **shear tests** on materials (**woods - metals - plastics - adhesives - composites -**

TECHLABSYSTEMS

CONTENT

Shear Testing Fixtures DEC-V series (20-100kN)

Easy-to-use and applicable fixture to perform **shear tests** on **sandwich core materials**.

APPLICABLE STANDARDS

ASTM-C273, ASTM-C394, ISO1922, EN12090, DIN53294, NFT54-605

GENERAL INFORMATION

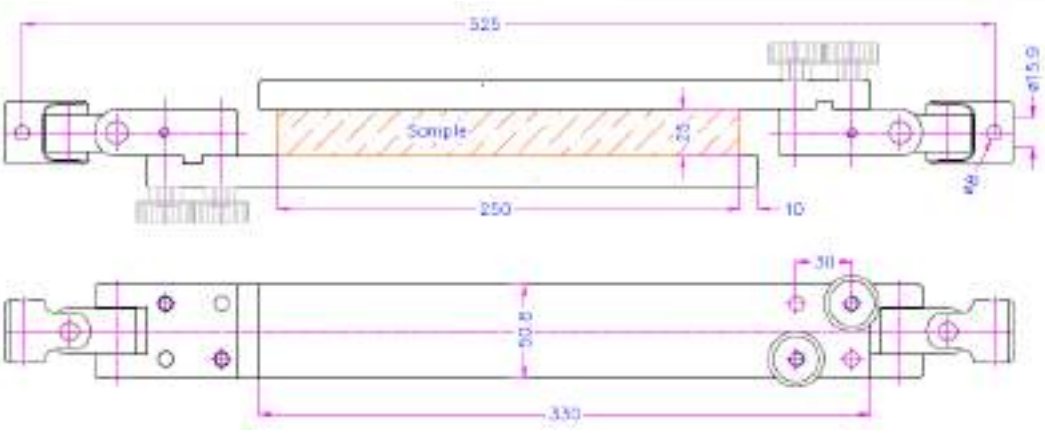
The DEC-V series shear test fixture adapted to a Universal Capacity Testing Machine according to the model, are used to determine the shear strength of rigid cellular plastics. It also allows determination of shear modulus and shear strain.

This test method covers the determination of shear properties of core materials of sandwich construction associated with shear distortion of planes parallel to skins. It covers the determination of shear strength parallel to the plane of the sandwich and the shear modulus associated with strains in a plane normal to the facings. The test can be performed on core materials adhered directly to filler plates or sandwich liners adhered to plates. Allowable core material shapes include those with continuous bonding surfaces (such as balsa wood and foams) as well as those with discontinuous bonding surfaces (such as honeycomb)..

1/ Shear Testing Fixture model DEC-V1

MODEL	DEC-V1 (PARALLEL)
Maximum load:	**20 kN / 35 kN** Coupling of 15,9 / 31.8 mmØ
Applicable Standards:	ISO1922, EN 12090-Fig.1.
Coupling:	15,9 or 31,8 mm Ø
Weight:	6,7 Kg (with 15.9) / 7 Kg (with 31.8)
Body:	nickel plated steel
Temperature range:	0....+70°C Other temperature ranges on request
Scope of supply:	1 Pair of Shearing Jaws

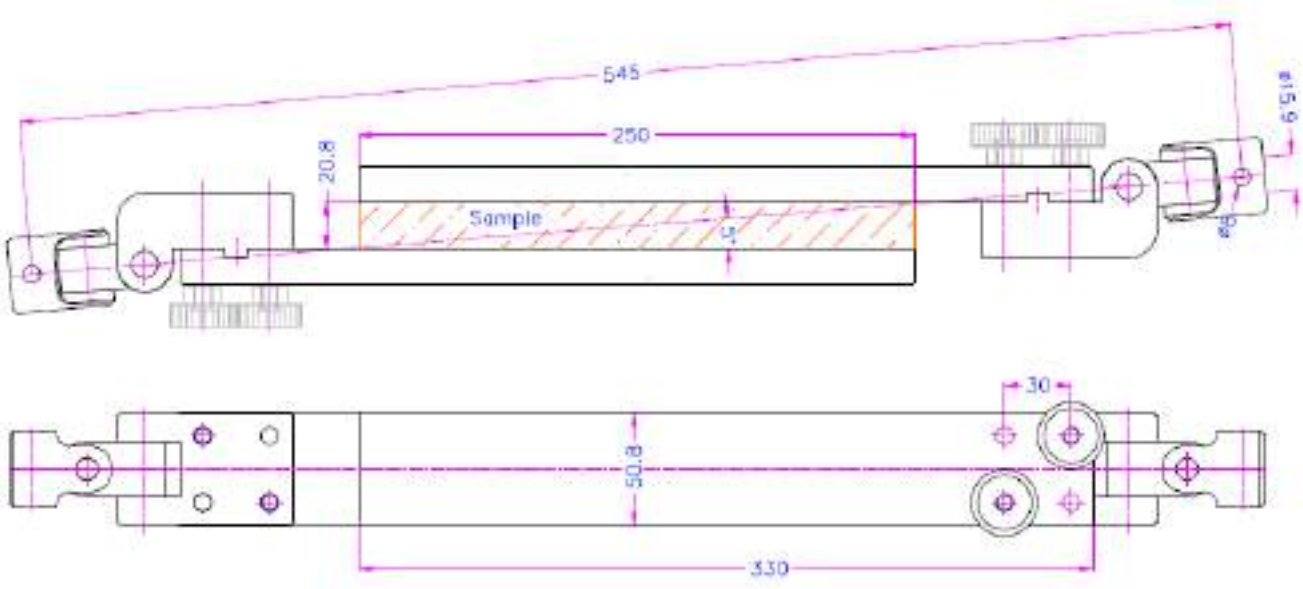
PARALLEL
For parallel tensile test..



2/ Shear Testing Fixture model DEC-V2

MODEL	DEC-V2 (ANGULAR)
Maximum load:	**20 kN / 35 kN** Coupling of 15,9 / 31.8 mm Ø
Applicable Standards:	ASTM C273 – ASTM C394
Coupling:	15,9 or 31,8 mm Ø
Weight:	6,7 Kg (with 15.9) / 7 Kg (with 31.8)
Body:	nickel plated steel
Temperature range:	0....+70°C Other temperature ranges on request
Scope of supply:	1 Pair of Shearing Jaws

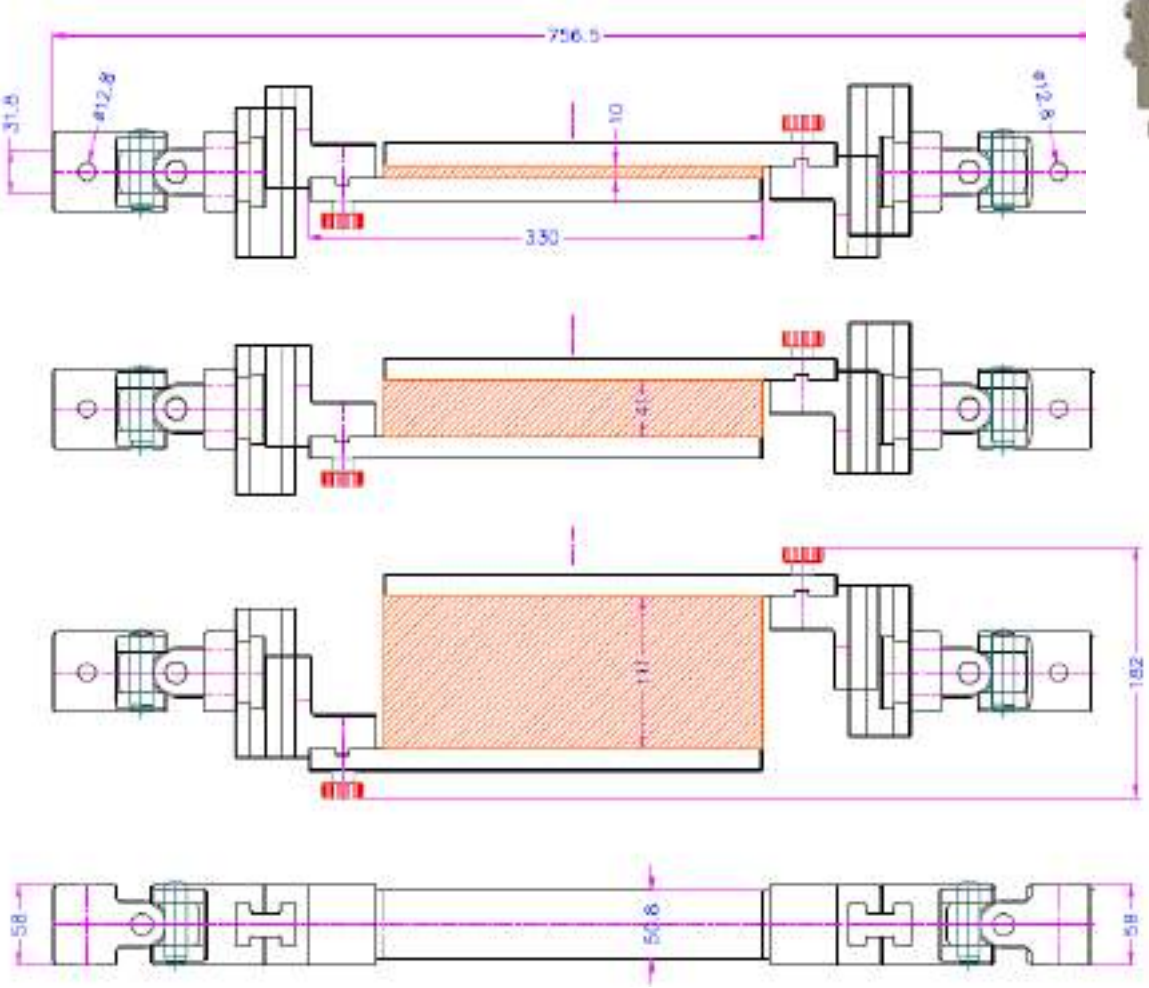
ANGULAR
For oblique tensile test. angle ca. 5°



3/ Shear Testing Fixture model DEC-V4

MODEL	DEC-V4 (ADJUSTABLE)
Maximum load:	**50 kN** for samples between 51 and 110 mm thick **75 kN** for samples between 11 and 50 mm thick **100 kN** for samples between 0 and 10 mm thick
Applicable Standards:	NFT54-605, ISO 1922, ASTM-C273, EN12090-Fig.1.
Coupling:	15,9 or 31,8mm Ø
Weight:	11,3 Kg (with 15.9) / 11,6 Kg (with 31.8)
Body:	nickel plated steel
Temperature range:	0....+70°C Other temperature ranges on request
Scope of supply:	1 Pair of Shearing Jaws

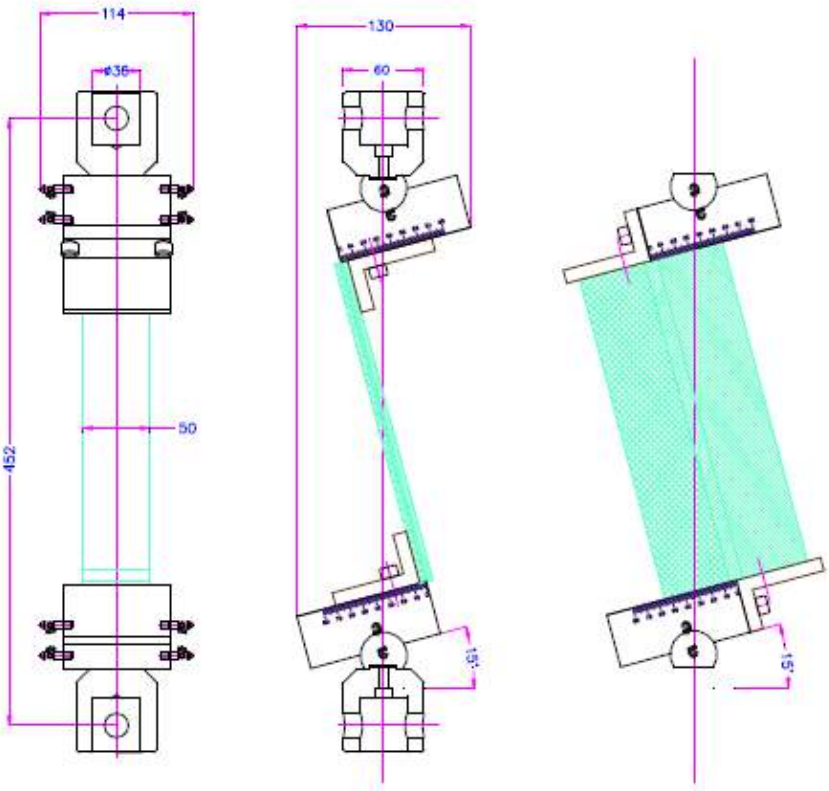
ADJUSTABLE
For PARALLEL and OBLIQUE tensile tests, adjustable distance..



EXAMPLES OF CUSTOMIZED SOLUTIONS:

4/ Shear Testing Fixture model DEC-V5

Compression Shear Testing Fixture with Scale and Stop Adjustable.



5/ Shear Testing Fixture model DEC-V6

Compression Shear Test Fixture, Non-Adjustable

According to ASTM-C273-Fig.3 and DIN 53294

Shear Test Fixture model DE-55 (50 kN)

Easy-to-use and applicable fixture to perform **shear stress tests** and determining the shear strength of **adhesive joints in wood.**

APPLICABLE STANDARDS

ASTM-D905, ASTM-D143, DIN 52187, DIN 52367, EN 392-Fig.1, Fig.2, ISO 6238, UNE 56543:8

GENERAL INFORMATION

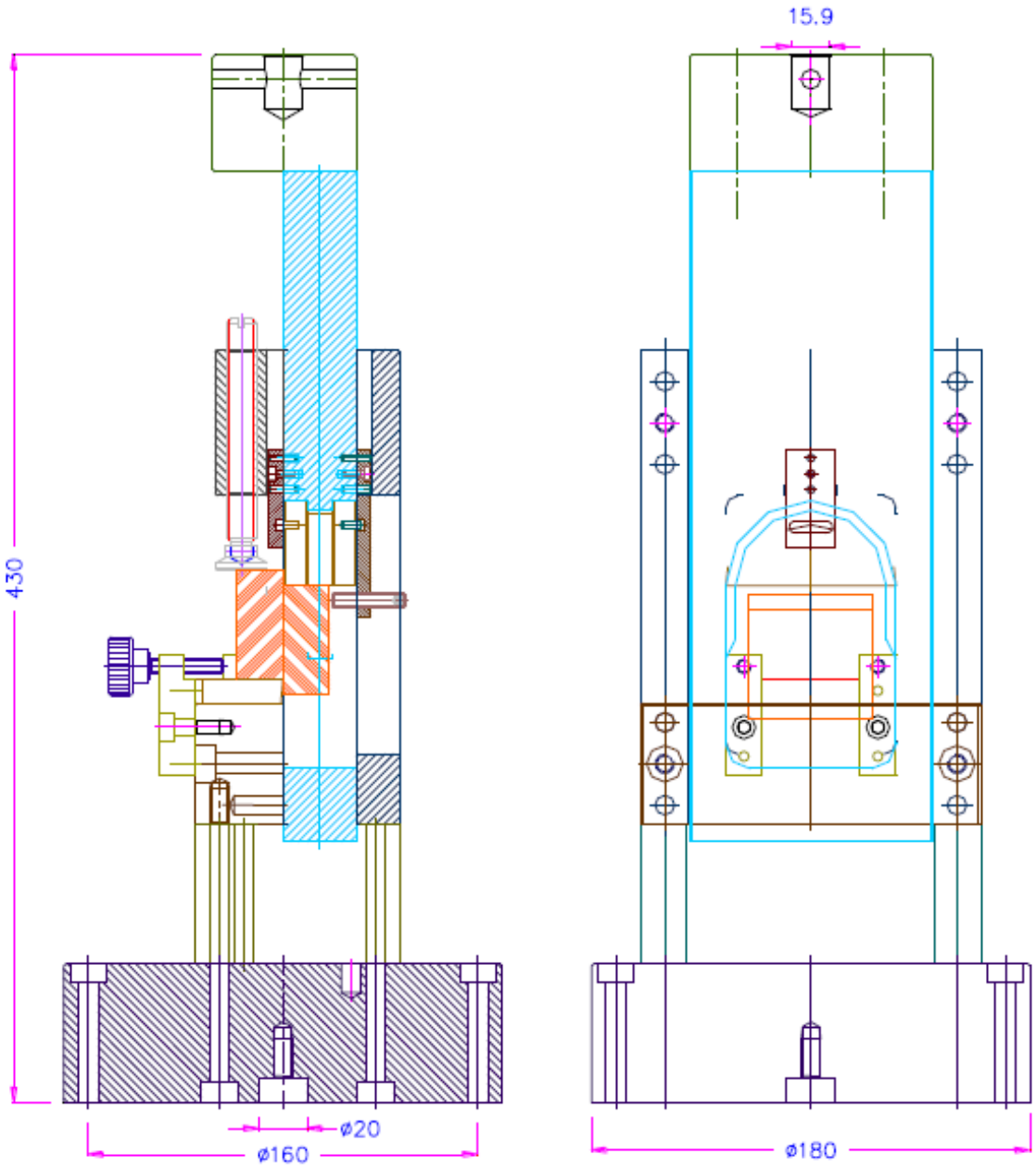
The DE-55 fixture adapted to a Universal Testing Machine with a capacity of up to 50 kN, is used to determine the shear strength of adhesive joints in Wood..

MODEL	DE-55
Maximum load:	50 kN
Coupling:	31,8mm Ø
Weight:	28 Kg
Body:	nickel plated steel
Temperature range:	0...+70°C Other temperature ranges on request
Scope of supply:	1 Shear test fixture

The DE-55 Shear Test Fixture is placed in the base area of the tensile testing machine.

In its upper part it is fixed with a pin adapter.

The guillotine-shaped cutting part is self-aligning to ensure perpendicular force to cut the sample blocks.



Shear Test Fixture model DCMc-10 (25 kN)

Easy to use and applicable testing fixture for determining the **shear bond strength of plywood**.

APPLICABLE STANDARDS

DIN UNE EN 314-1

GENERAL INFORMATION

The DECMc-10 device incorporated in a Universal Testing Machine allows to determine the bonding quality of plywood by shear test.

MODEL	DECMc-10
Maximum load:	25 kN
Coupling:	31,8 mm Ø
Body:	Steel. nickel plated
Temperature range:	0....+70°C Other temperature ranges on request
Scope of supply:	1 Shear Test Fixture (lower compression plate not included)

KEMLL-320 model Lipstick Shear and Texture Test kit

Easy-to-use testing fixtures suitable for performing tests to determine the mechanical **properties and texture of lipsticks** (**shear** breaking strength, **slicing** breaking strength, **bending** breaking strength **tests**)

GENERAL INFORMATION

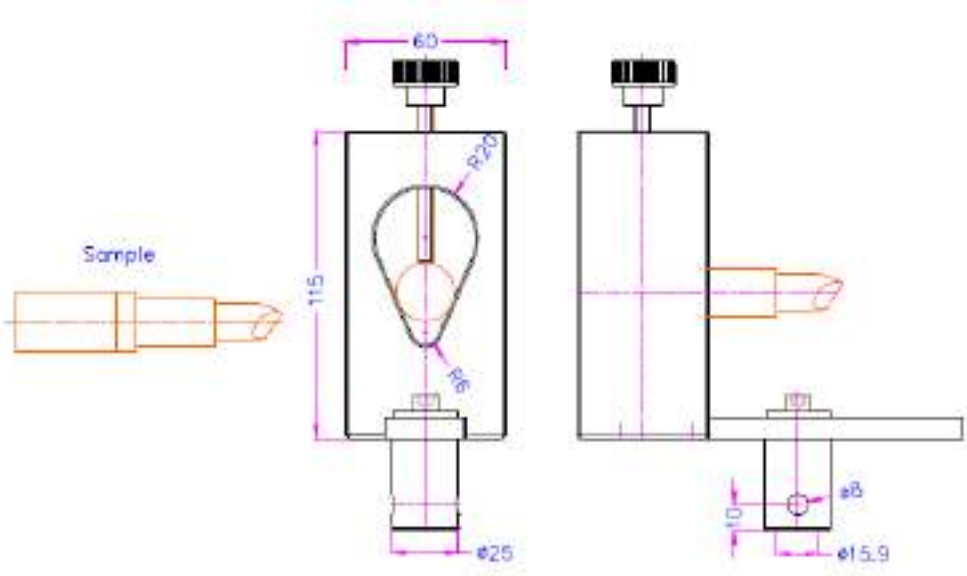
Test kit to determine the mechanical properties and texture of lipsticks, **shear** breaking strength tests, **slicing** breaking strength, **bending** breaking strength. Devices incorporated into a Universal Testing Machine.

The KEMLL-320 test SET consists of 2 holders and 2 punches (4 parts).

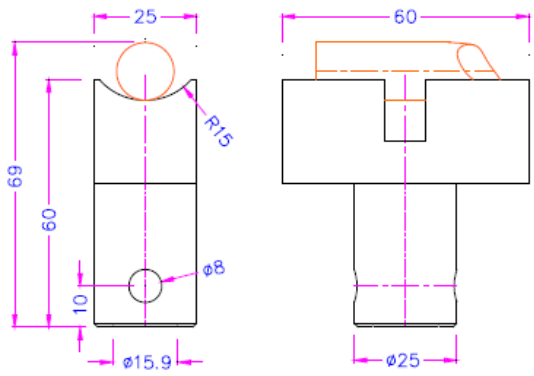
Other supports and punches on request.

SUPPORTS

MODEL	KEMLL-320-A1
sample diameter :	35 mm
Coupling:	15,9 mm Ø
Materials:	Aluminium, Steel, Plastic
Temperature range:	0....+70°C Other temperature ranges on request
Weight:	6,7 Kg (with 15.9) / 7 Kg (with 31.8)
Scope of supply:	1 Support



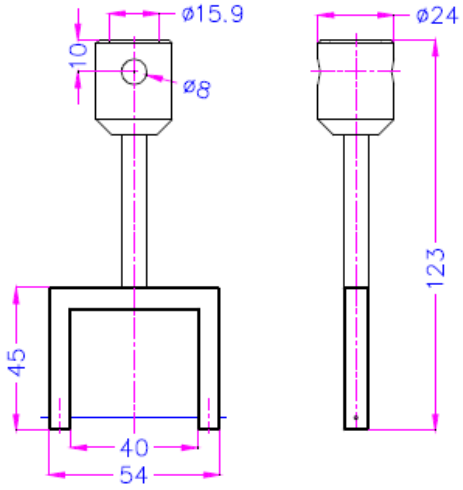
MODEL	KEMLL-320-A2
sample diameter :	35 mm
Coupling:	15,9 mm Ø
Materials:	Aluminium
Temperature range:	-70.+180°C Other temperature ranges on request
Weight:	0,12 Kg (15.9mm Ø adapter included)
Scope of supply:	1 Support



TEST HEADS

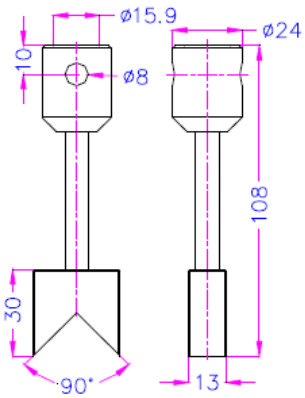
1/ Slicing Breaking Strength Test

MODEL	KEMLL-320-P1
Coupling:	15,9 mm Ø
Materials:	Aluminium, Steel
Temperature range:	-70... .+180°C Other temperature ranges on request
Weight:	0,07 Kg (with adapter of 15.9 mm Ø)
Scope of supply:	1 Upper test head



2/ Shear breaking strength test

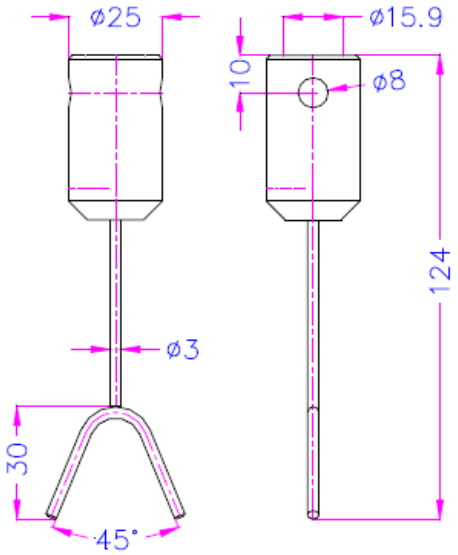
MODEL	KEMLL-320-P2
Coupling:	15,9 mm Ø
Materials:	Aluminium, Steel
Temperature range:	-70... .+180°C Other temperature ranges on request
Weight:	0,07 Kg (with adapter of 15.9 mm Ø)
Scope of supply:	1 Upper test head



SPECIAL TEST HEADS

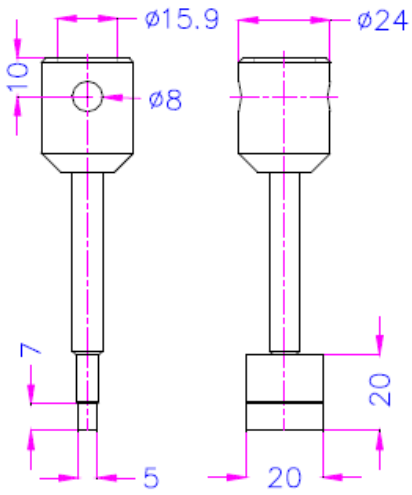
1/ Flexural Break Strength Test

MODEL	KEMLL-320-P3
Coupling:	15,9 mm Ø
Materials:	Steel
Temperature range:	-70... .+180°C Other temperature ranges on request
Scope of supply:	1 Upper test head



2/ Break Resistance Test

MODEL	KEMLL-320-P3
Coupling:	15,9 mm Ø
Materials:	Aluminium, Steel
Temperature range:	-70... .+180°C Other temperature ranges on request
Scope of supply:	1 Upper test head



Shear Test Fixture model DEPCp-20 (20 kN)
Shear Test Fixture model DEPCp-100 (100 kN)

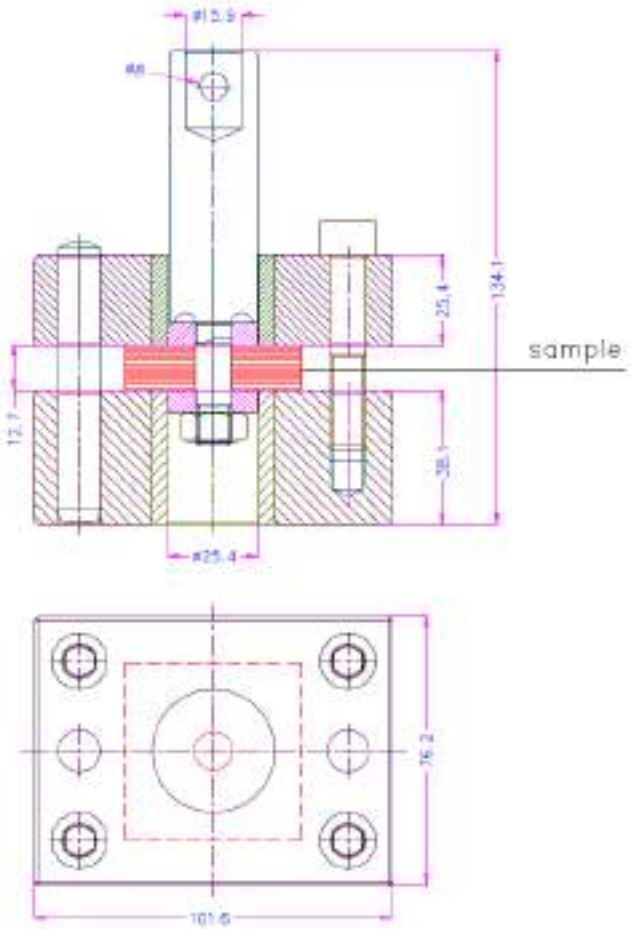
Easy-to-use and applicable testing fixture for determining the **shear strength of plastics** using a puncture tool in accordance with ASTM-D732

APPLICABLE STANDARDS
ASTM D732

GENERAL INFORMATION
The DEPCp fixture adapted to a Universal Testing Machine allows to determine the shear strength of plastics by means of a puncture tool in accordance with ASTM-D732.

The accessory is placed on a compression plate.
The punch tool is pushed through the fixture to cut a 1" (25.4mm) Ø disc from the sample.

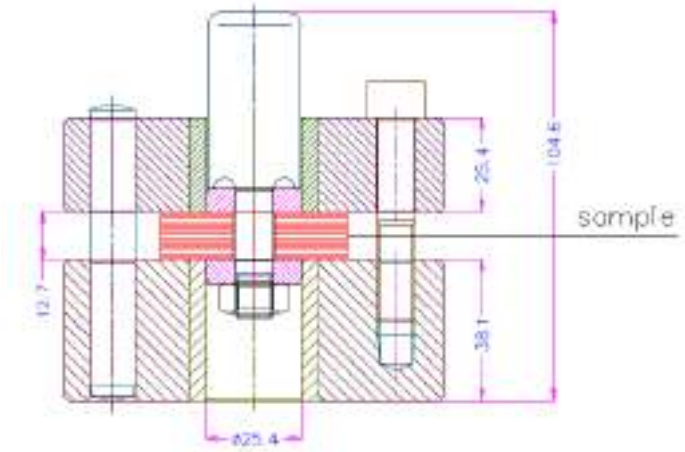
MODEL	DEPCp-20
Maximum load:	**20 kN**
Coupling:	15,9 or 20 mm Ø
Body:	Steel, nickel plated
Temperature range:	0...+70°C Other temperature ranges on request
Weight:	4 Kg
Scope of supply:	1 Shear Test Fixture (lower compression plate not included) Need to order separately

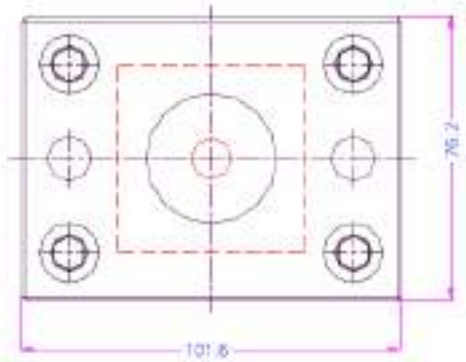


MODEL	DEPCp-100
Maximum load:	**100 kN**
Coupling:	Steel, nickel plated
Body:	0...+70°C Other temperature ranges on request
Temperature range:	4 Kg
Weight:	1 Shear Test Fixture

The DEPCp-100 model is identical to the DEPCp-20 model but the punch does not have a coupling, max. load **100 kN**.

To perform the tests, 2 compression plates are needed (upper and lower) (not included in the price).





We recommend PC.r series compression plates

Shear Test Fixture model DECC-50 (50 kN)

User-friendly and applicable testing fixture for determining the **shear strength** of **composite V-**notch beams.

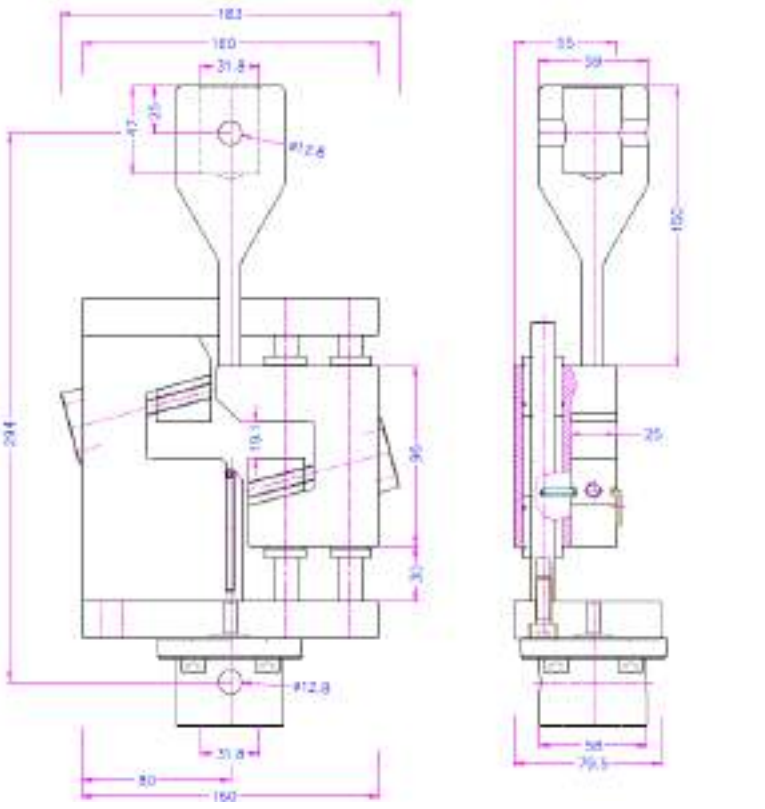
APPLICABLE STANDARDS

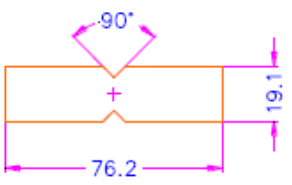
ASTM D5379 (the Iosipescu method)

GENERAL INFORMATION

The DECC-50 testing fixture adapted to a Universal Testing Machine allows to determine the shear strength of Composite Beams with V-notches..

MODEL	DECC-50
Maximum load:	50 kN
Jaw opening:	18 – 19,5 mm (max. 23)
Coupling:	31,8 mm Ø
Body:	nickel plated steel
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	10 Kg
Scope of supply:	1 Test fixture with compression probe and jaws





Shear Test Fixture model DECC-60 (50 kN)

Easy to use and applicable test fixture to determine the **shear properties of high modulus fiber reinforced composite materials**.

APPLICABLE STANDARDS

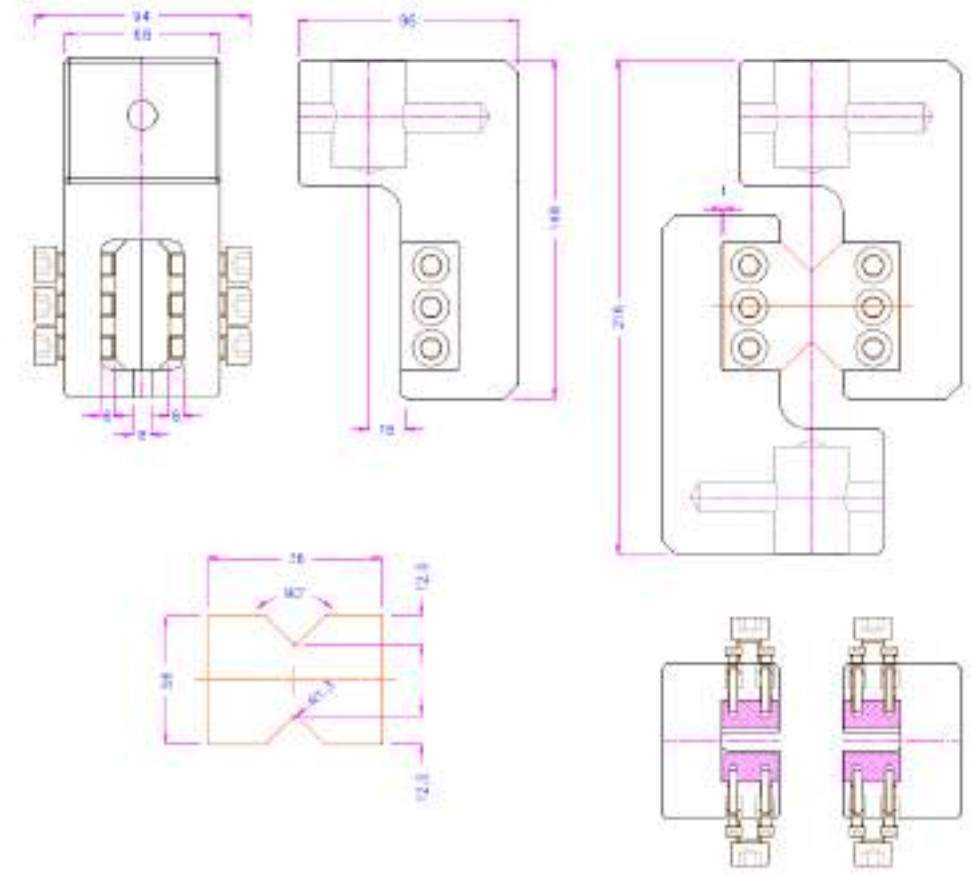
ASTM-D7078

GENERAL INFORMATION

The DECC-60 model Shear Test Fixture adapted to a Universal Testing Machine allows testing fiber-reinforced composites.

This test method covers the determination of the shear properties of high modulus fiber-reinforced composite materials by clamping the ends of a V-notched specimen between two pairs of load-bearing rails.

MODEL	DECC-60
Maximum load:	50 kN
Coupling:	15,9 mm Ø
Cuerpo:	Nickel plated steel
Jaws:	Hardened steel 58 HRC, pyramidal (serrated) clamping surface
Weight per grip:	4 Kg
Scope of supply:	1 Pair of grips (2 nylon test tube positioning tools included)



Pyramidal jaw surface (serrated) Pyramids 1.2x45°

DECC-60 with nylon positioning tools and a sample:

Shear Test Fixture model DECP-10

Easy-to-use and applicable testing fixture for performing **shear stress tests** and determining the shear strength of **metal bolts**.

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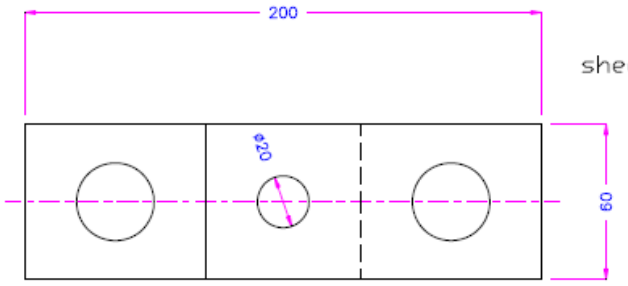
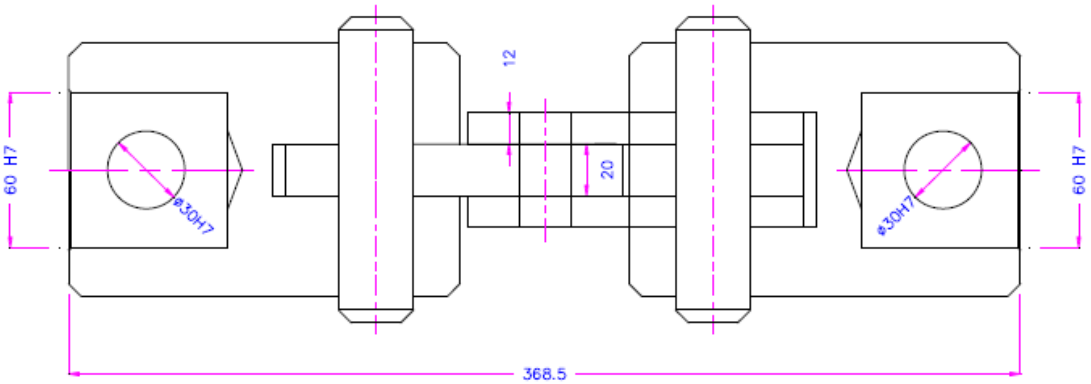
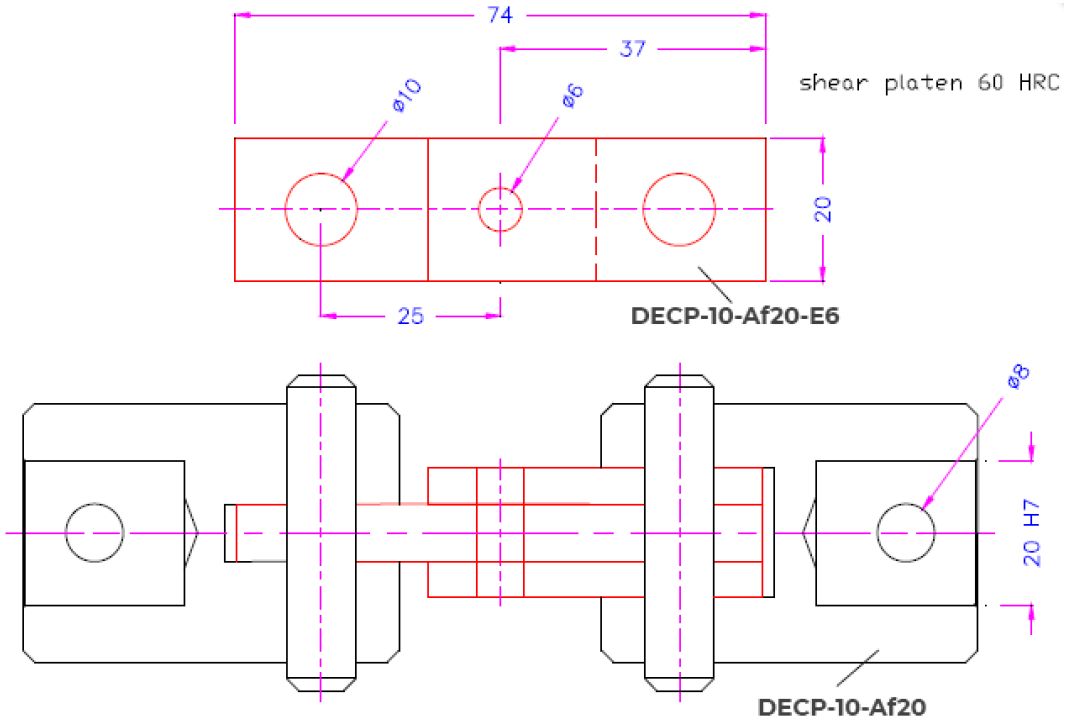




DECP-10-60+SP60-E20



DECP-10-Af20+SP20-E6

Shear Test Fixture model DECM (20-250kN)

Test fixture that is easy to use and applicable to perform **shear tests on metallic samples**, welded steel wires, reinforcing steel, lattice beams, steel for reinforcing and prestressing concrete, electro-welded meshes and basic reinforcement...

APPLICABLE STANDARDS

ASTM A185, ASTM A497, ASTM A974, ASTM C1452, DIN 488-5, DIN EN 10223-8 DIN EN ISO 15630-2, DIN EN 10223-8, GOST 10922-12 (Fig.4),

GENERAL INFORMATION

The DECM-.... testing fixture, adapted to a Universal Testing Machine with capacity corresponding to the model, is used to determine shear strength.

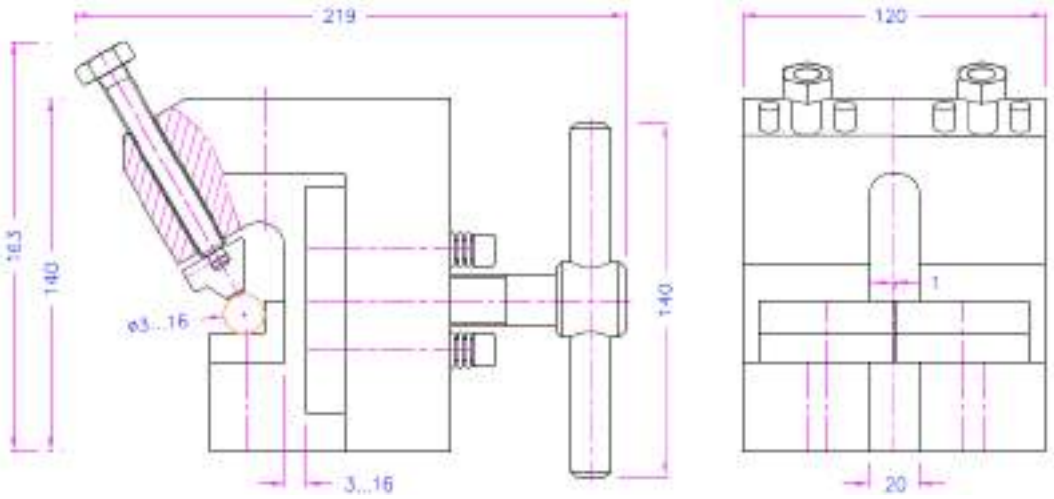
An additional lower grip is required to perform the test (see page 9).

The lower grip is not included in the scope of supply and must be ordered separately.

1/ Shear Test Fixture DECM-1-3-16

According to DIN 488 - Reinforcing steels - Lattice beams. Shear test. Part 2.
According to ASTM C1452 - Standard Specification for Autoclaved Reinforced Aerated Concrete Members.

MODEL	DECM-1-3-16
Sample size:	3-16 mm of Ø
Maximum load:	50 kN
Coupling:	Flange adapter or threaded rod.
Body:	Nickel plated steel
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per grip without adapter
Scope of supply:	1 Shear Test Fixture



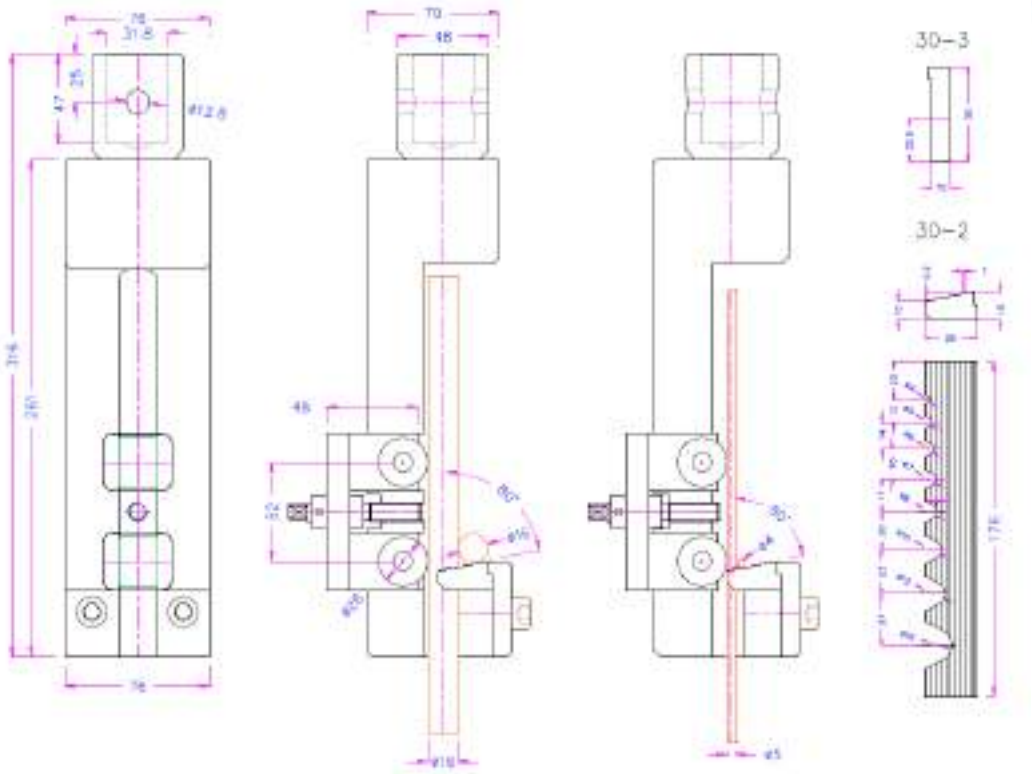
With threaded rod

With flange adapter

2/ Shear Test Fixture DECM-30

According to DIN EN ISO 15630-2 - Steel for reinforcing and prestressing concrete. Test methods. Part 2: Welded fabric.

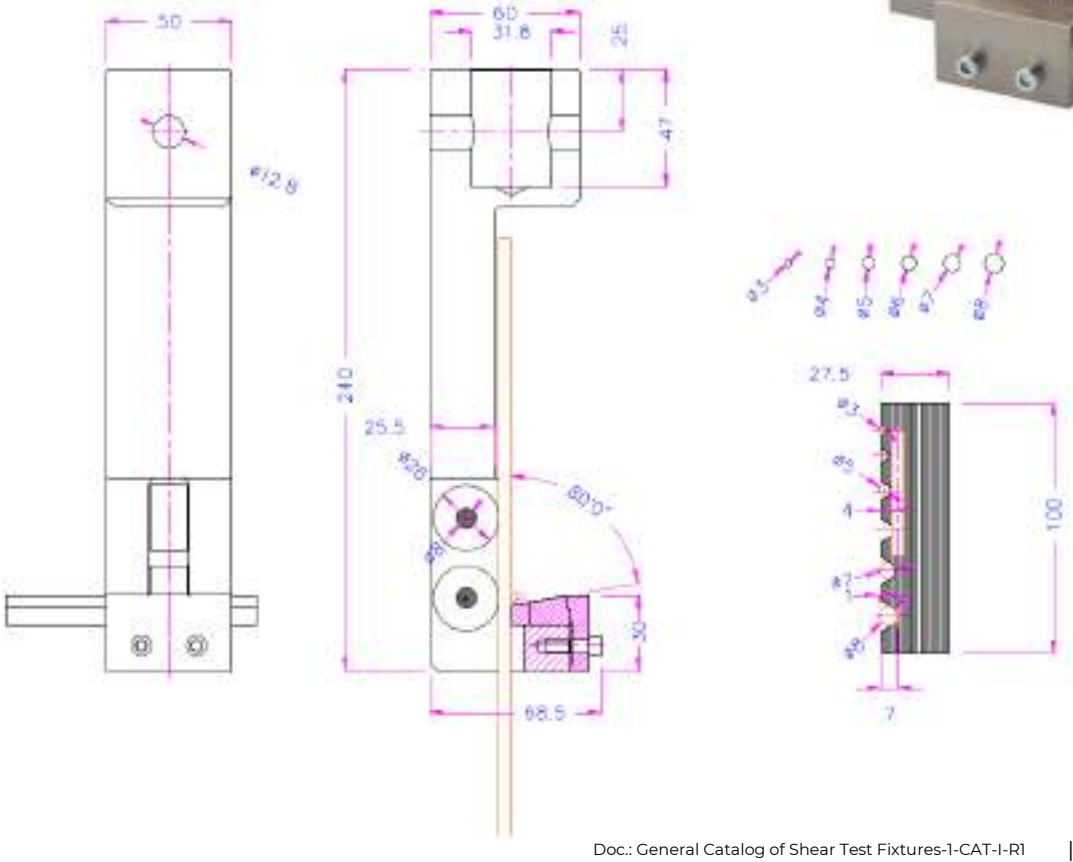
MODELO	DECM-30
Sample size:	4-16 mm Ø
Maximum load:	50 kN
Coupling:	Coupling 31.8 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture



3/ Shear Test Fixture DECM-20

In accordance with ASTM A185 - Standard Specification for Plain Welded Steel Wire Reinforcement for Concrete.
ASTM A497 - Standard Specification for Deformed Welded Steel Wire Reinforcement for Concrete.
ASTM A974 - Welded Wire Cloth Gabions and Gabion Mattresses (Metal Coated or Polyvinyl Chloride (PVC) Coated).

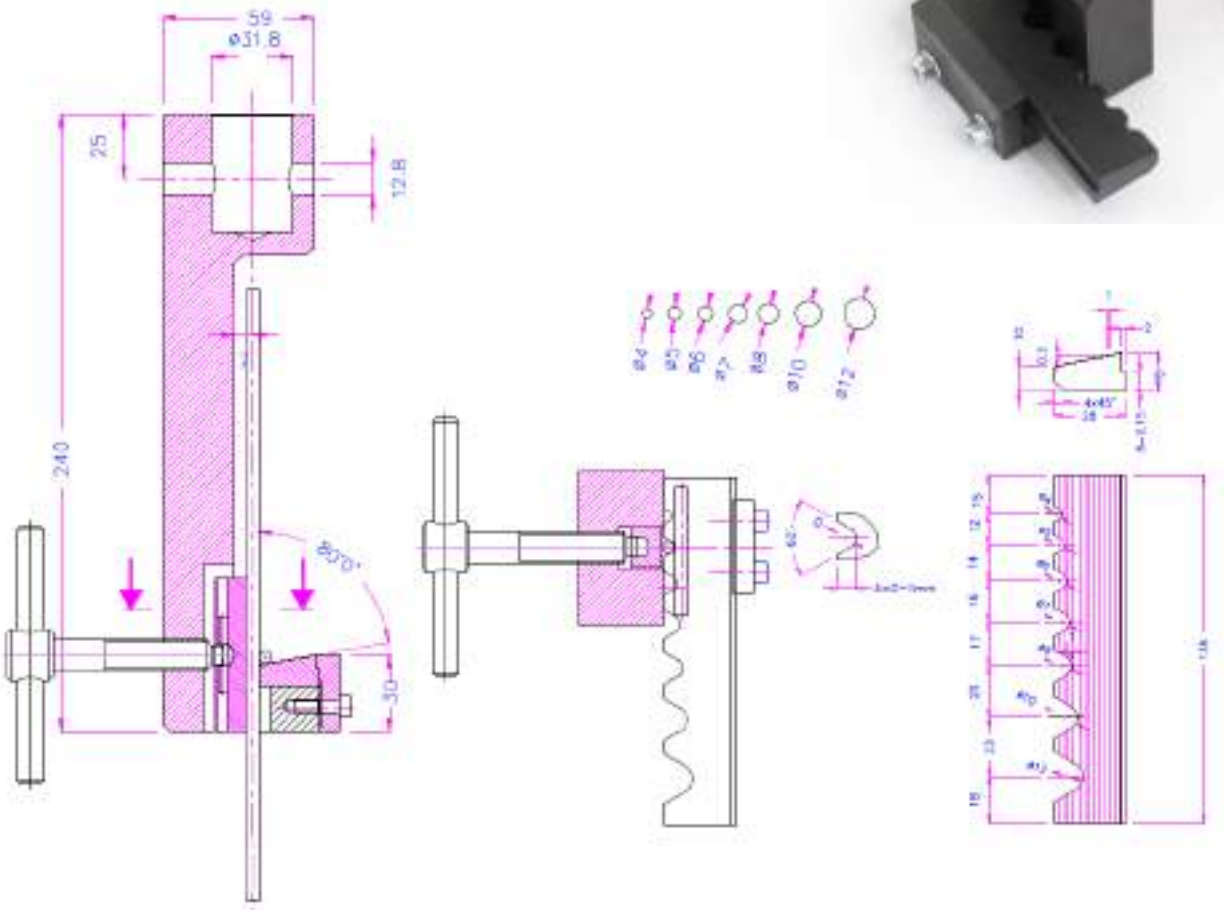
MODEL	DECM-20
Sample size:	3-8 mm Ø
Maximum load:	50 kN
Coupling:	31.8 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture



4/ Shear Test Fixture DECM-21

According to EN ISO 15630-2 (BS 44483) - Steels for reinforcing and prestressing concrete - Test methods - Part 2: Welded fabric.

MODELO	DECM-21
Sample size:	De 4-12 mm de Ø
Maximum load:	50 kN
Coupling:	31.8 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture

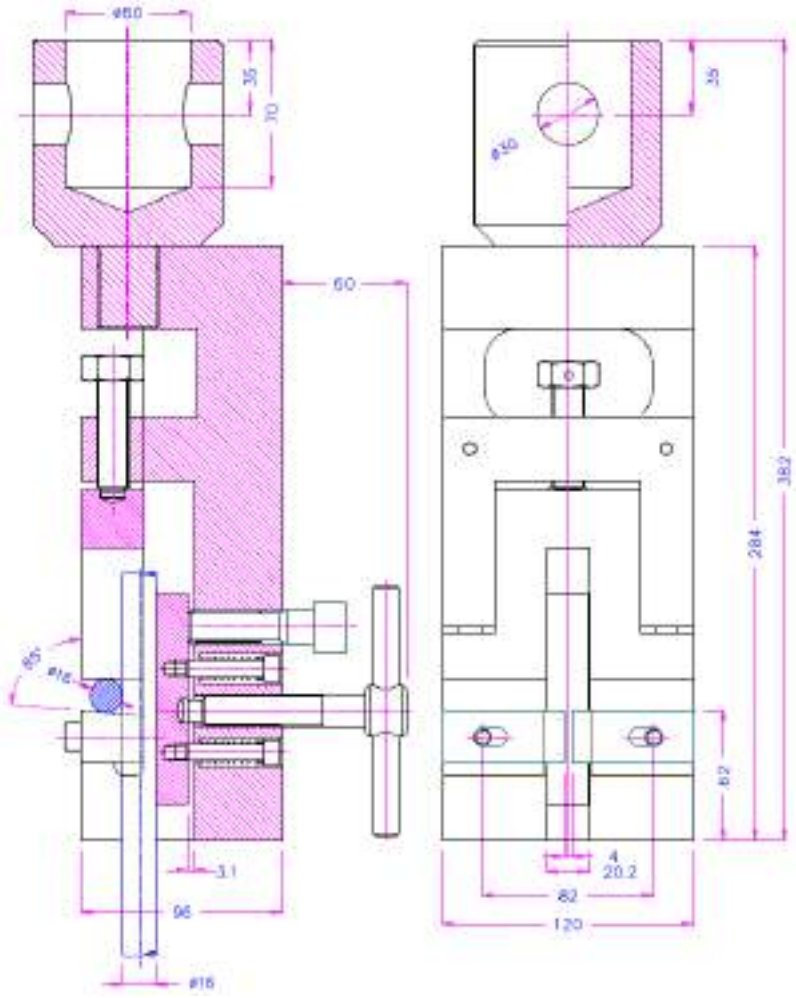


5/ Shear Test Fixture DECM-10

According to ASTM C1452 - Standard Specification for Reinforced Autoclaved Aerated Concrete Members.

According to DIN EN ISO 15630-2 - Steel for reinforcing and prestressing concrete. Test methods. Part 2: Welded fabric.

MODEL	DECM-10
Sample size:	3-16 mm Ø
Maximum load:	100 kN (with adapter 40 mm Ø) 250 kN (with adapter 60 mm Ø)
Coupling:	40 o 60 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture o

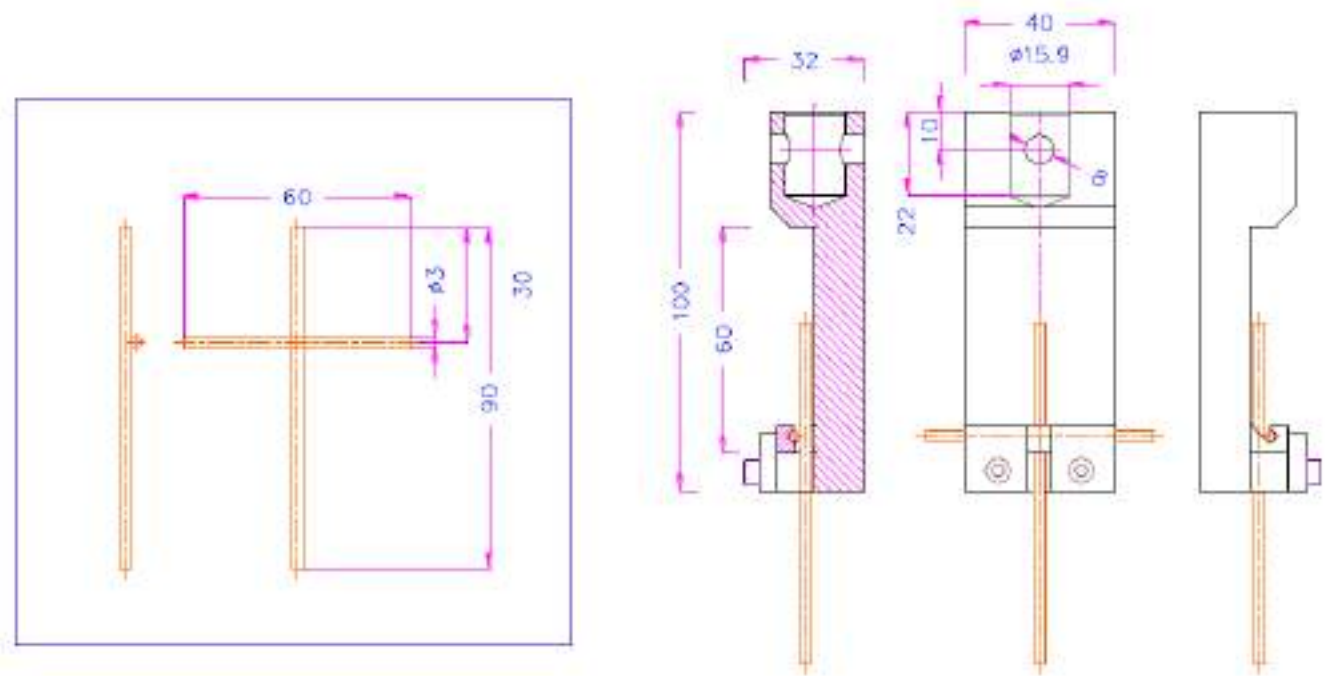


6/ Shear Test Fixture DECM-40

According to DIN EN 10223-8 - Steel wire and wire products for fences and nets - Part 8: Welded mesh gabion products.

According to DIN EN ISO 15630-2 - Steels for reinforcing and prestressing concrete - Test methods - Part 2: Welded fabric.

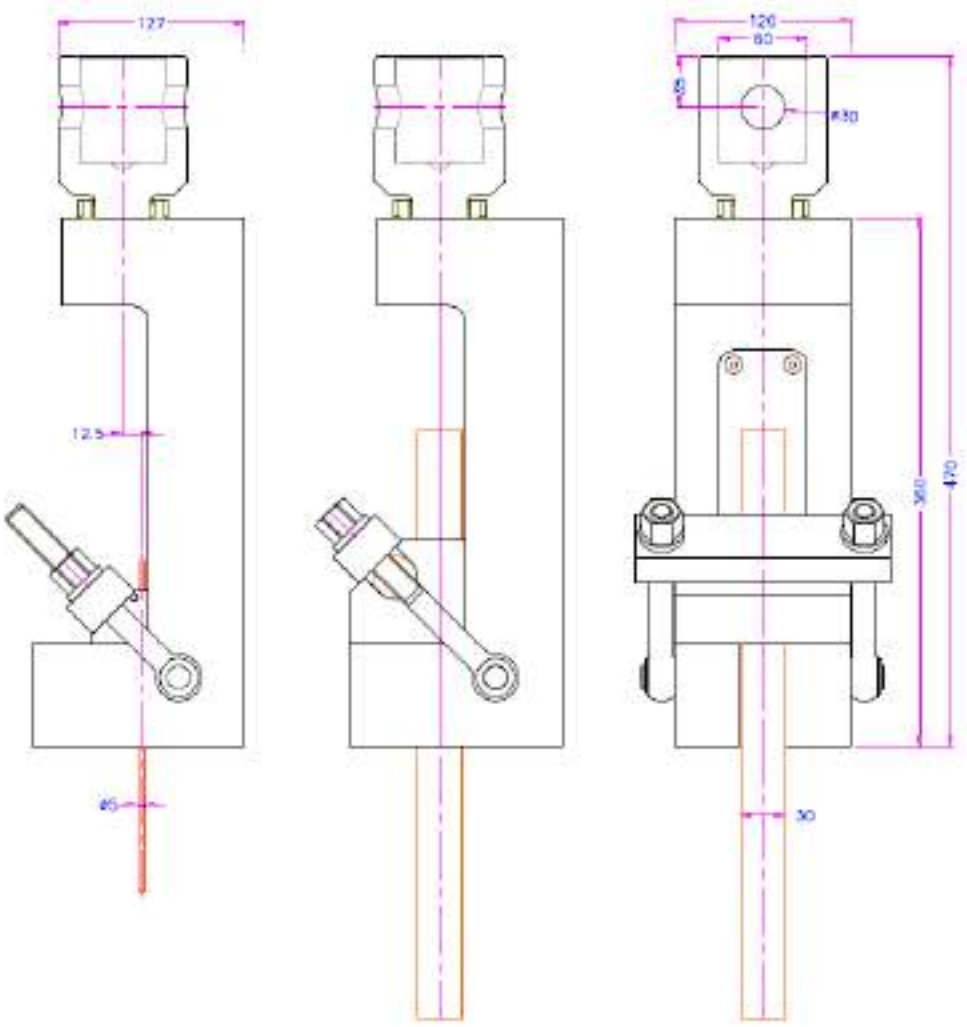
MODEL	DECM-40
Sample size:	3 mm Ø
Maximum load:	20 kN
Coupling:	15.9 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture



7/ Shear Test Fixture DECM-41

According to GOST 10922-12 (Fig.4) - Welded reinforcing products and inserts, welded, lapped and mechanical joints for reinforced concrete structures. General specifications.

MODEL	DECM-41
Sample size:	3 – 30 mm Ø
Maximum load:	250 kN
Coupling:	60 mm Ø
Body:	Steel, nickel plated
Temperature Range:	0....+70°C Other temperature ranges on request
Weight:	12,9 Kg per Fixture without adapter
Scope of supply:	1 Shear Test Fixture



Recommendations for lower grip:

For 50 kN max. load we recommend the MC-mf_50 wedge grips.

Grips for higher loads on request

Shear Test Fixture model DECCr-10 (15 kN)

User-friendly and applicable test fixture for determining the **shear strength of fiber-reinforced ceramics** at room temperature.

APPLICABLE STANDARDS

ASTM-C1292-Fig. 1

GENERAL INFORMATION

The DECCr-10 model Shear Testing Fixture adapted to a Universal Testing Machine allows testing fiber-reinforced ceramics at room temperature.

MODEL	DECCr-10
Maximum load:	15 kN
Sample thickness :	0 – 10 mm
Coupling:	15,9 mm Ø
Body:	Nickel plated steel
Temperature range:	0....+70°C Other temperature ranges on request
Scope of supply:	1 test fixture including probe and lower compression plate)

Recommended Testing Machines:

MTE-25 (to 25 kN)

MTE-50 (to 50 kN)

MTE-100 (to 100 kN)

MTE-200 (to 200 kN)

MTE-300 (to 300 kN)