

## FLEXURE/BENDING TEST FIXTURES



**Flexural Bend Test Fixtures Pfb series 3 & 4 Points (2,5- 10 kN)**

**Flexural Bend Test Fixtures PFE.m series 3 y 4 Points (50 kN)**


**Flexural Bend Test Fixtures PFL.m series (3 & 4 Points) (50-100 kN)**


**Flexural Bend Test Fixtures UNE-EN-ISO 7438 (200 kN....)**


**Others Flexural Bend Test Fixtures for Metals high capacity 200-300 kN**


Fixtures designed to perform **flexural/ bending tests** on samples of rigid materials, plastics, ceramics, metals, wood..., these testing tools being incorporated into a Universal Testing Machine


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## **Flexural/Bending Test Fixtures PFb series 3 and 4 Points (2.5-10 kN)**

Tools designed to perform **flexural / bending tests** on small samples of light rigid materials, **plastics, ceramics** ..., these tools being incorporated into a Universal Testing Machine.

### **GENERAL INFORMATION**

Suitable for precise bending tests of small samples

The sample to be tested is placed on the supports in the lower zone of the bending test tool and then the 3 or 4 point bending resistance test is carried out.

- Temperature range -70°C to 180°C

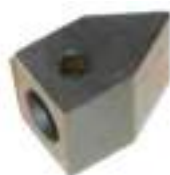
The 3 Point Bending Fixtures are supplied including **1 Set of 3 supports of the chosen radius** (see table below)

The 4 Point Bending Fixtures are supplied including **1 Set of 4 supports of the chosen radius** (see table below)



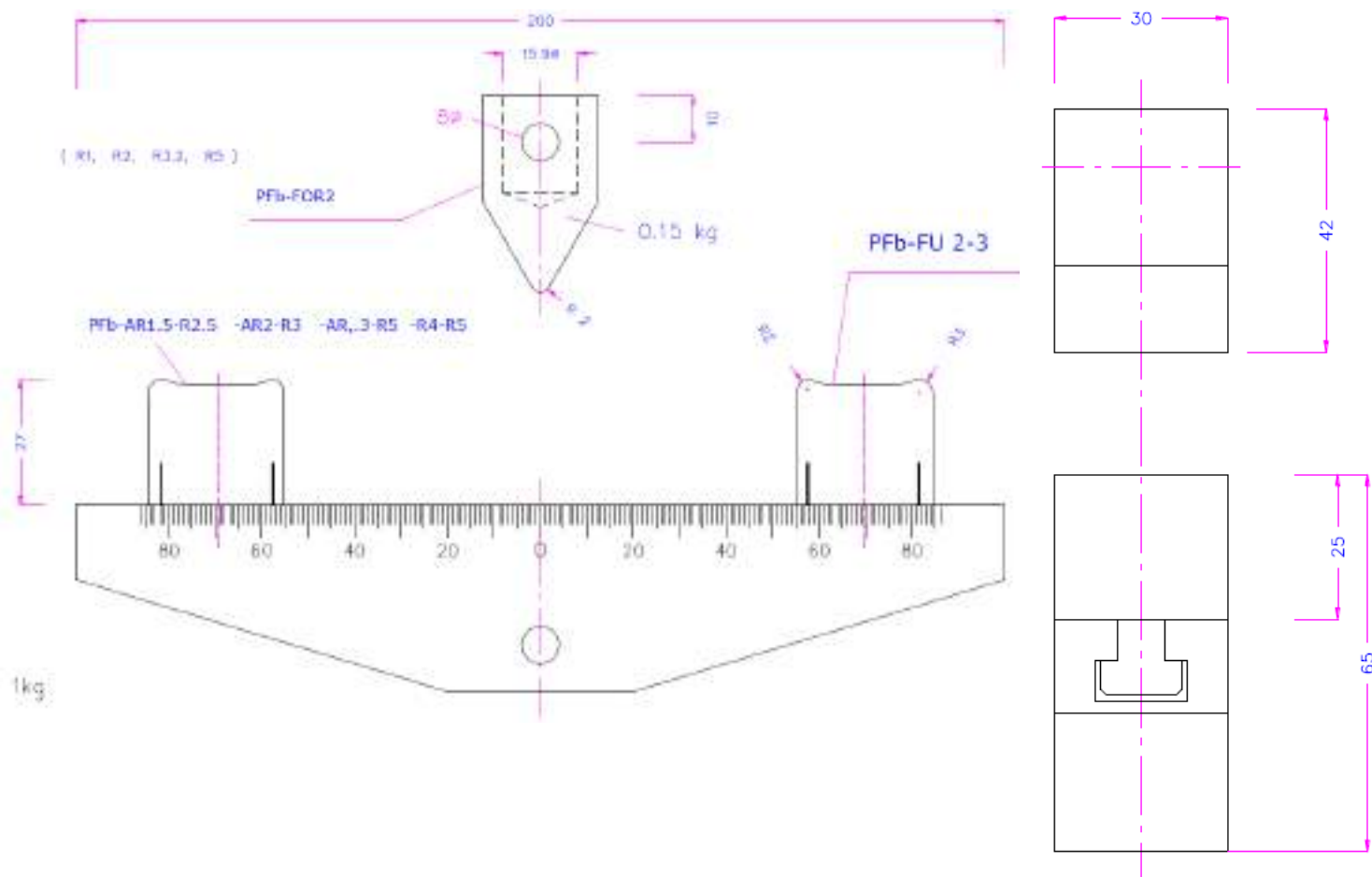
	Model	Body	Capacity	Separation between supports	Radii of the upper supports, mm	Radii of the lower supports, mm
<b>3 Point Bending Fixtures</b>	<b>PFb-3P-150/2.5</b>	Aluminium	2.5 kN	<b>4-150 mm</b>	1 Support from 0.5 -1 - 1.5 - 2 - 3.2 - 5 and 10 mm radius <b>to choose *</b>	Combinations 2 radius per support (R1,5 y R2,5 mm), (R2 y R3 mm) (R2 y R5 mm) (R3,2 y R5 mm) **
	<b>PFb-3P-170/10</b>	Steel	10 kN	<b>4-170 mm</b>		
	<b>PFb-3P-270/10</b>	Steel	10 kN	<b>4-270 mm</b>		
	<b>PFb-3P-400/10</b>	Steel	10 kN	<b>4-400 mm</b>		
<b>4 Point Bending Fixtures</b>	<b>PFb-4P/150/2,5</b>	Aluminium	2.5 kN	<b>4-150 mm</b>		
	<b>PFb-4P/170/10</b>	Steel	10 kN	<b>4-170 mm</b>		
	<b>PFb-4P-270/10</b>	Steel	10 kN	<b>4-270 mm</b>		

\* Top supports have individual radii



\*\* The lower supports have 2 Radius, they are reversible with different support radius on each side





#### **PFb-3p-AR-OR 3 Point Bending Fixture**

Bar 200 mm

Top support PFb-3p -OR.

R0.5, 1, 1.5, 2, 3, 3.2, 4, 5, 10 mm

0.16 kg

Lower part: - 2 supports with double radius. PFb-3p -AR1.5 + R2.5; R2 + R3; R2 + R5; R3.2 + R5; R4 + R5 mm

0.8 kg

**or**

2 Supports with 1 radius PFb-CR0.5, 1, 1.5, 2, 2.5, 3, 3.2, 3.5, 4, 5, 10 mm

#### **PFb-3p-4p-AR-CR 4 Point Bending Fixture**

Lower part like 3-Point version

Upper support available with radius

0.5, R1, R1.5, R2, R2.5, R3, R3.2, R3.5, R4, R5, R10, R15





**PFb-3p+Cx+oX  
+D8x30**

**3-Point Bending Fixture**  
With exchangeable rollers  
Bar 200 mm  
Upper support Type **OX**  
Lower support Type **CX**

**PFb-4p+CW  
+CWX+D5x30**

**4-Point Bending Fixture**  
With exchangeable rollers  
Bar 200 mm  
Upper support Type CWX movable  
Lower support Type CWX movable

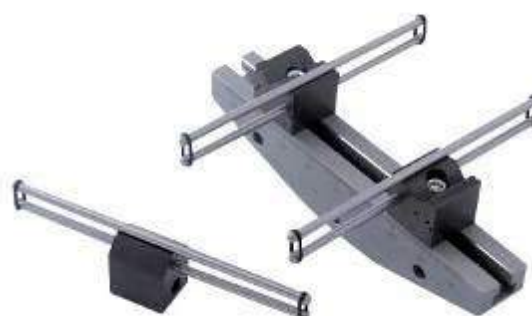


**PFb-4p -...-WDF-CWN5**

Upper part of a 4-P Fixture  
With and extra articulation  
adapter WDF

**PFb-4p +AX+D6x100**

**4-Point Bending Fixture**  
With exchangeable rollers  
Bars of 200 mm  
Rollers: Ø 6 x 100 mm



**PFb-4p -300-B300 +  
CW +CWX +D4x30**


**4-Point Bending Fixture**  
With interchangeable rollers  
300 mm bars  
Movable carrier  
Rollers: 4 mm Ø  
Upper / Lower part: 3.0 kg each







**PFb-4p +CW+CWER2-VS6**



Mobile support 6 mm  
moved from the center  
Radius 2 mm



Elements:	Model	Length	Possible span distances	Weight	Scope supply
	<b>PFb/B200-Al</b>	<b>200 mm</b>	0-144mm 0-150mm 0-196mm	0,4 Kg	<b>1</b>
	<b>PFb/B200-St</b>	<b>200 mm</b>	0-144mm 0-150mm 0-196mm	1,2 Kg	<b>1</b>
	<b>PFb/B300-St</b>	<b>300 mm</b>		2,6 Kg	
	<b>PFb/b350- St</b>	<b>350 mm</b>		2,8 Kg	<b>1</b>
	<b>PFb/b400-St</b>	<b>400 mm</b>		3,2 Kg	<b>1</b>
	<b>PFb/b450-St</b>	<b>450 mm</b>		5,2 Kg	<b>1</b>

Lower support	Model	Lower bar supports for:	Upper bar supports for:	Radius mm	Scope of supply
	<b>PFb/AR...</b>	3 point device 4 point device		Radius combinations (AR - R): 1.5 y 2.5, 2.0 y 3.0 2.0 y 5.0 3.2 y 5.0 4.0 y 5.0	1 pair
	<b>PFb/CR....</b>	3 point testing device 4 point testing device	4-Point Bending Fixture	1 solo radio (AR): 0.5-1-2-3-2-5-10	1 pair
	<b>PFb/AX</b>	Suitable for: 3-Point Bending Fixture 4-Point Bending Fixture		Radius combinations (AR - R): 1.5 y 2.5, 2.0 y 3.0 2.0 y 5.0 3.2 y 5.0 4.0 y 5.0	1 pair
	<b>PFb/CX</b>	Suitable for: 3-Point Bending Fixture 4-Point Bending Fixture	4-Point Bending Fixture	1 radius only (AR): 0.5-1-2-3-2-5-10	1 pair
	<b>PFb/CWX</b>	Articulated rollers	Upper Anvil Only for 3 Point Bending Fixtures	1 radius only (AR): 0.5-1-2-3-2-5-10	1 pair
	<b>PFb/CN</b>	Smooth support for glass tests	Yunque adicional para Puente flexión 3 Puntos	Para rodillos de 1- 3.2mm de Ø	1 pair
	<b>PFb/CWM</b>	Movable plane for glass			1 pair
	<b>PFb/CWN</b>	Plain bearing with rocker shaft and 3mm high stop bracket			1 pair

Superior anvils	Model	For:	Radius mm	Scope supply
	<b>PFb/OR..</b>	Upper Anvil Only for 3 Point Bending Test Fixtures	Combinations Radius (AR - R): 1.5 y 2.5, 2.0 y 3.0 2.0 y 5.0 3.2 y 5.0 4.0 y 5.0	1 pair
	<b>PFb/oX2</b>	Upper Anvil Only for 3 Point Bending Test Fixtures with interchangeable rollers	1 radius only (AR): 0.5-1-2-3-2-5-10	1 pair
	<b>PFb/oX8</b>	Upper Anvil Only for 3 Point Bending Test Fixtures with interchangeable rollers	Combinations Radius (AR - R): 1.5 y 2.5, 2.0 y 3.0 2.0 y 5.0 3.2 y 5.0 4.0 y 5.0	1 pair
	<b>PFb/oWX</b>	Interchangeable Roller Balance Shaft	1 radius only (AR): 0.5-1-2-3-2-5-10	1 pair

Rollers for PFb/x:	Model	Description	Scope supply
	<b>PFb/D...-3P</b>	1 Additional set of 4 rollers with X = 1,2,3,4,5,6, 6.35, 8, 10, 12, 12.7 mm Ø	1 pair
	<b>PFb/D...-4P</b>	1 Additional set of 4 rollers with X = 1,2,3,4,5,6, 6.35, 8, 10, 12, 12.7 mm Ø	1 pair





**PFb/CWxD5**


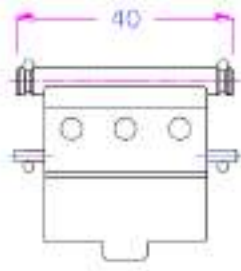
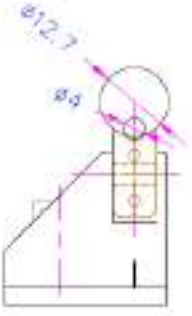
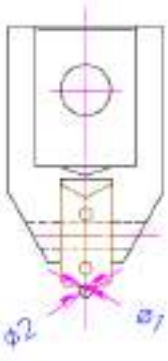
Bending Test Fixture with interchangeable rollers and articulated bearings.

Includes 1 set of rollers in standard supply

Here with 5mm rollers

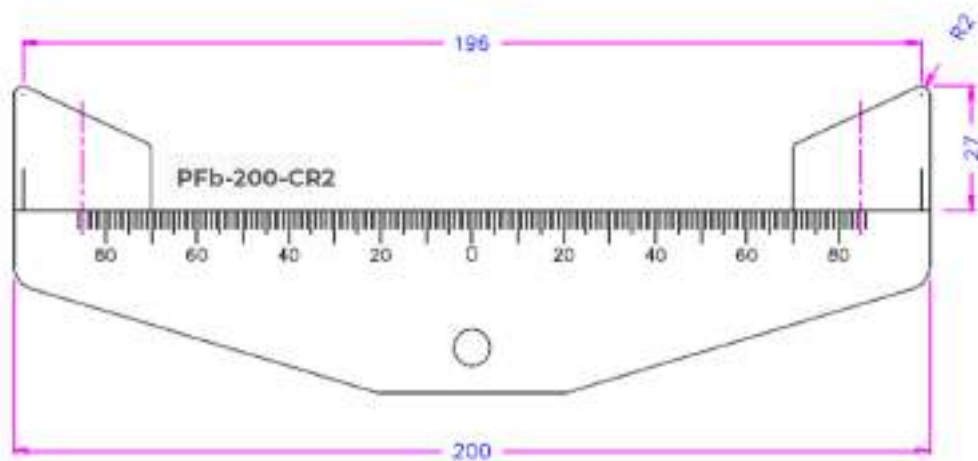
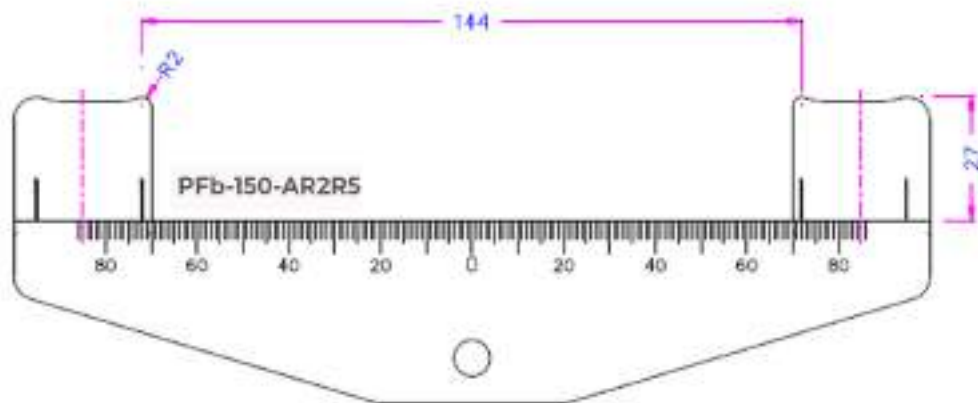
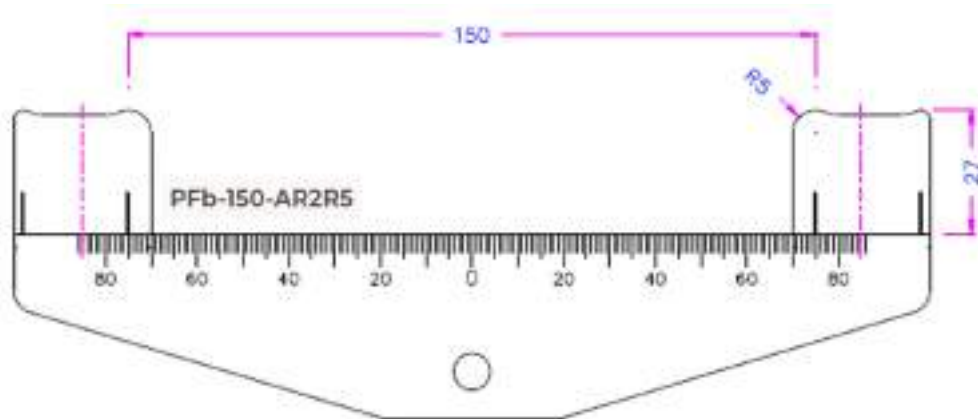
	Model	Body	Capacity	Support points separation	Roller diameters
3-Point Bending Fixture	PFb/XW	Aluminium	2.5 kN	4-150 mm	1, 2, 3, 4, 5, 6, 6.35, 8, 10, 12, 12.7 mm
	PFb/XW-St	Steel	10 kN	4-150 mm	
	PFb/XW-270-St	Steel	10 kN	4-270 mm	
4-Point Bending Fixture	PFb/XW-4P	Aluminium	2.5 kN	4-150 mm	
	PFb/XW-4P-St	Steel	10 kN	4-150 mm	
	PFb/XW-270-4P-St	Steel	10 kN	4-270 mm	

**Accessories for PFb-XW:**

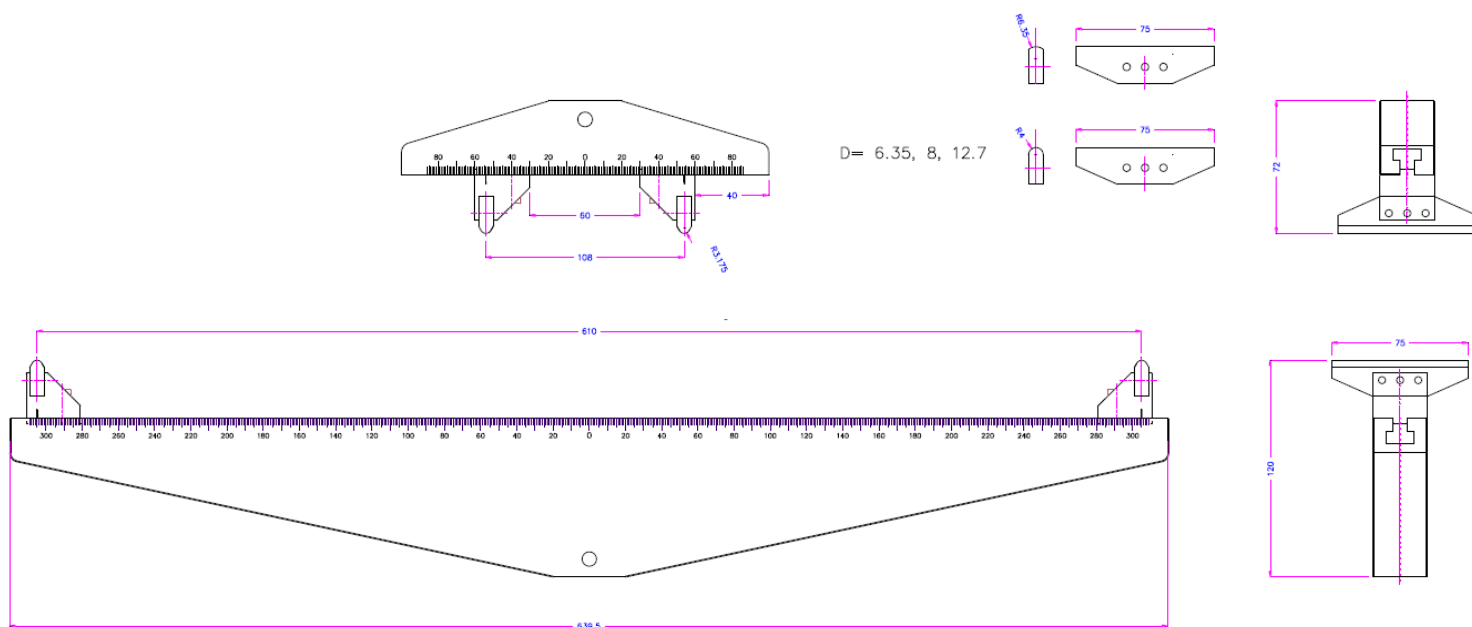
Rollers for PFb/x:	Model	Lower bar support for:	As top bar stands for:	Radius, mm	Scope supply
	PFb-CWX	For: 3-Point Bending Fixture or 4-Point Bending Fixture	4-Point Bending Fixture	For rollers with 1,2,3,4,5,6, 6.35, 8, 10, 12, 12.7 mm Ø	1 pair
					
					
		PFb/CWX			
					
				PFb/FWX	



Possible distances between supports:



**Examples:**



**PFb-4P-B640-B200-CWR635-8-127x75**  
Articulated support with radius R 6.35 mm

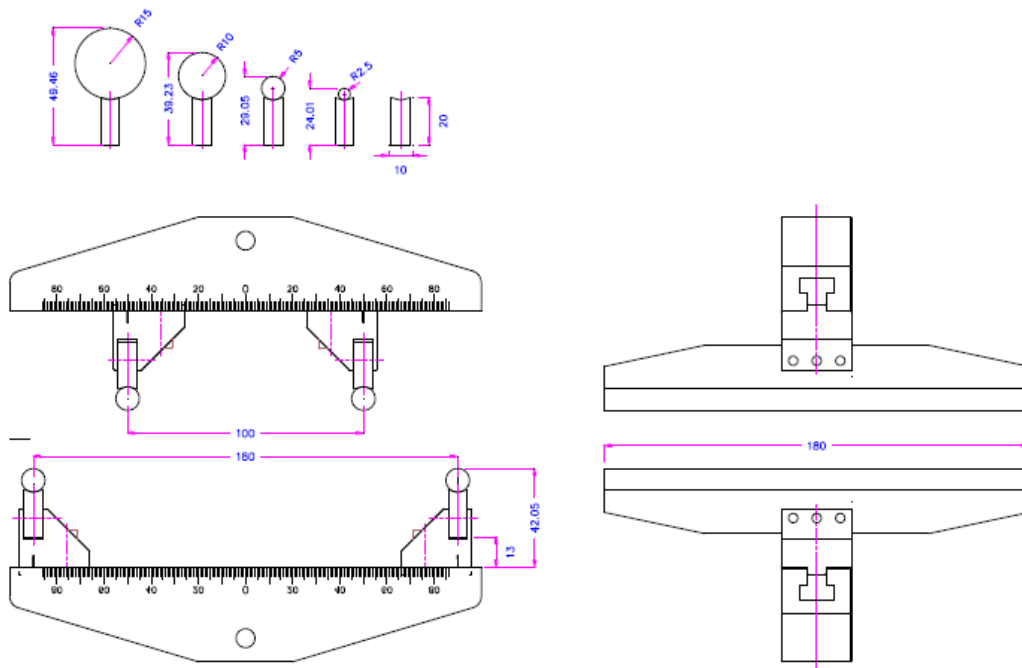
**PFb/DF-AL (Aluminium) PFb/DF-ST (Steel)**

ADDITIONAL - Flex Bar including 2xPFb / AR Converts an existing 3-point flex device to a 4-point flex device. Available in ALUMINUM OR STEEL

**PFb-DF-AL**  
**PFb-DF-ST**



### Customized special solutions:



**PFb-4P-CWXdx180....**



**PFb/B300--4P-CWR5x170**

**PFb/4P-CWXD8-iTH1-AfDP10s iTH1** Thermal camera adapter tests at different temperatures with inductive sensor



PFb/4P-CWXD15x180



PFb/CWXD4 iTH1 Support piece to install  
an 8mm internal extensometer



**Balancing adapter for placement**  
from LVDT to a Bending Test Device  
according to **ISO 178** ....



PFb/CR01 small radius supports 0.1 mm

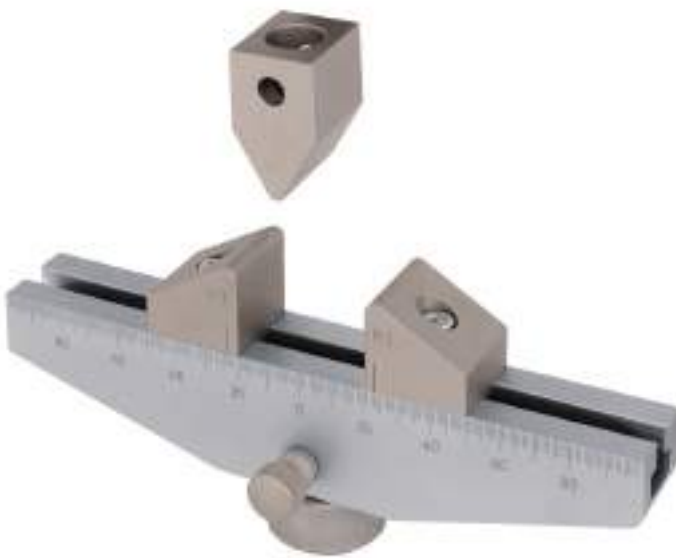


**PFb+CR0.1V90-OR1-St**

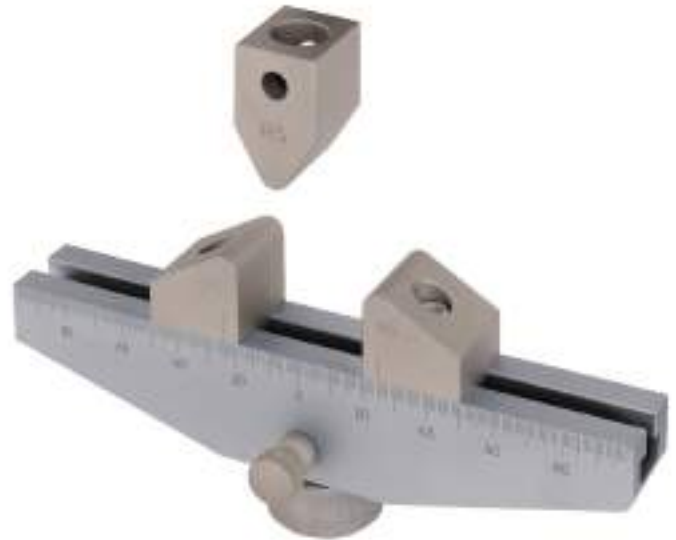
**3-point bending test fixture** for testing needle tubes of stainless steel (**for syringes**) according to DIN EN ISO 9626

Max. load 10 kN,  
coupling 15.9 / 8mm  
Steel, nickel plated  
Incl. 1x lower bar 200 mm long,  
2 bottom brackets with 0.1mm radius  
and 1 upper 3-point anvil with 1mm radius





**PFb-B200+OR3+R3**



**PFb-B200+OR5+R5**



**PFb-B200+OR10+R10**



**PFb-oR5  
Upper support**

nickel-plated hardened  
steel  
Radii available 0.5- 1 -  
1.52,3,3,175,5,10,15



**PFb-AR3.2-AR5**

Support with 2 milled radius:  
Radius 1: 3,2 mm  
Radius 2: 5 mm



## **Flexural/Bending Test Fixtures PFE.m series 3 and 4 Points (50 kN)**

Fixtures designed to perform **Flexure/Bending tests** of samples of rigid materials, **plastics, woods, metals, ceramics** ..., these testing tools being coupled to a Universal Testing Machine.



### **GENERAL INFORMATION**

Suitable for precise bending tests of samples of different medium capacity materials (**50 kN**)

The sample to be tested is placed on the supports in the lower zone of the bending test tool and then the 3 or 4 point bending resistance test is carried out.

- Temperature range -70°C to 180°C

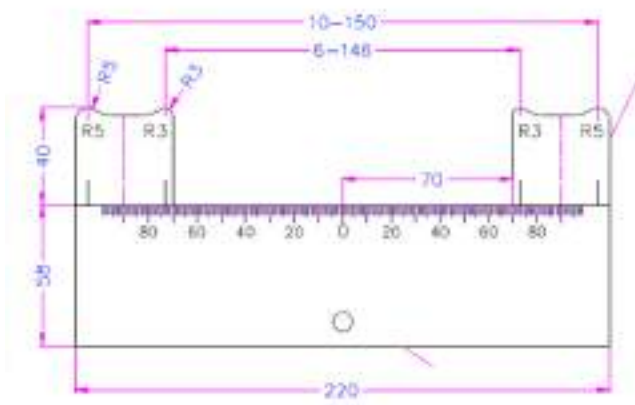
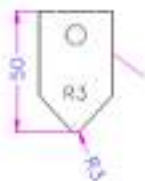
The 3 Point Bending Fixtures are supplied including **1 Set of 3 supports of the chosen radius** (see table below)

The 4 Point Bending Fixtures are supplied including **1 Set of 4 supports of the chosen radius** (see table below)

- Capacity **50 kN**
- Built in Steel
- Support width 50 mm
- Spacing between supports between 10 and 100 mm (standard)
- Temperature range -70°C to 180°C- Capacity 50 kN

### **PFE.m/AR3R55-OR10-Ni**

Support radii R3 and R5  
Top radius R 10mm  
Nickel plated

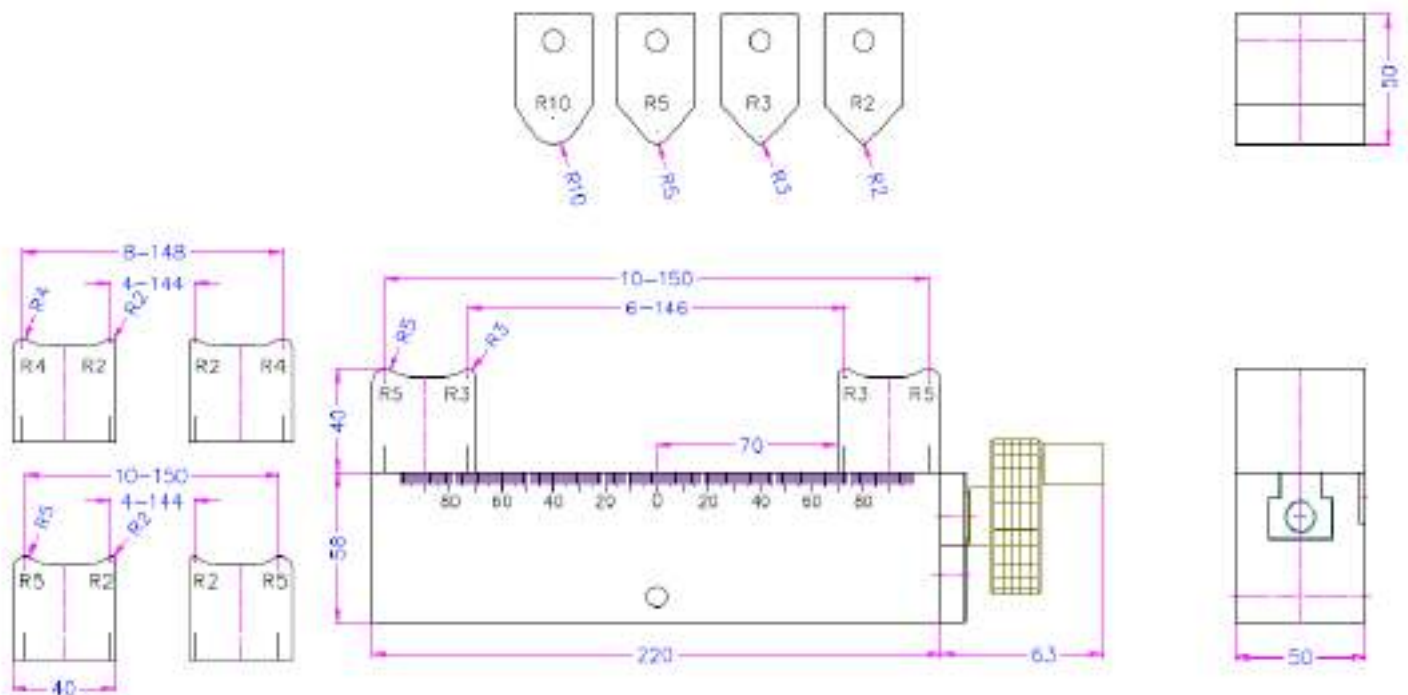
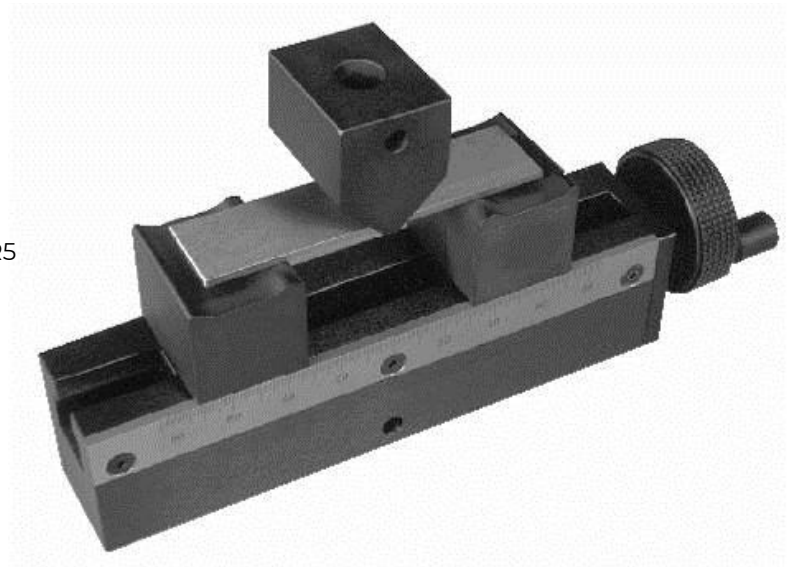




**PFE.m-B220-AR2R5-OR3-cgr**

Fixture Flexure/Bending Tests of 50kN

- Central adjustment
- Lower supports with 2 spokes R2 and R5
- R3 upper anvil radius
- With spindle for centering more easy
- Adjustment of the lower supports
- 0... +70 ° C





**PFE.m-Ar3r5-or5-Af318**



**PFE.m-CWxD10**



**PFE.m-AXR2-AR3-OR2-OR3-cgr**

- Interchangeable roller D3 + D5
- Upper milled R2 and R3 spokes
- 3-point folding device with center-adjustable bottom brackets with interchangeable roller D3 and D5
- R2 and R3 radius milled stops



**PFE.m-AXR2-AR3-OR2-OR3-cgr**

- Extra long bar 300 mm
- Long milled top wings
- For bending of 160 ° less load 0... +70 ° C



**PFE.m-300-CR5-cgr-Af159**





**PFE.m-CR5-OR30-cgr**



**PFE.m-AX50-SL**



**PFE.m-OT2-L150-R4 R6.25 R12.5**



**PFE.m-ASTM-D2344**

- Rolling table
- 0 to +180°C



**PFE.m- CR3-OR3-GDE**

- 3 point bending jig, 50 kN
- Conforms to ASTM-D6641
- with guide system
- Nickel plated steel



**PFE.m- Bo200-CR5-Am22**

- Upper part
- 2 R5 milled supports
- 22 male adapter
- 0... +350 °C



**PFE.m-cl10-cgr-Af60**

- Lower part
- Rotating rollers



**PFE.m-AR2R5-ITH2-cgr**

- For external extensometers
- 0... +70°C



**Roller folding devices for curves up to 180 °**

**Bending devices for reinforcing steel**

- ASTM-A370 / ASTM-E190 / ASTM-E290 ASTM-E399
- EN 448 EN 12814-1
- GOST 6996 GOST 14019
- ISO 3651 ISO 5173 ISO 7438 ISO 15630

**PFE.m-CL20x50- OR02x80-OR05x80- FV  
-PWT-cgr**

**Bending Test Device**

- DIN EN ISO 7438
- VDA 238
- 0-70 °C





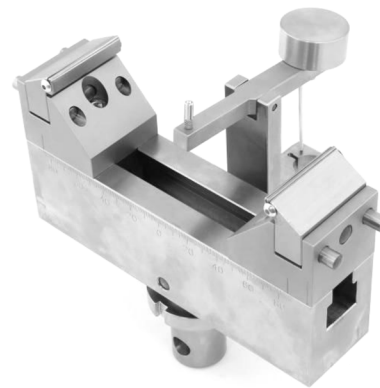
**PFE.m- 200-cwV8x5-HM-Af20**  
- 5mm articulated



**PFE.m- cwXD10**  
- 3-point bending device with prism-fixable articulation brackets for roll diameter 4-16



**PFE.m- 300-cWX3 + oWX3**



**PFE.m-cWXv6d2-ith2**  
- 5mm articulated



**PFE.m-CWN8-ITH2-cgr**  
- For external extensometers  
- Mobile support for ceramics  
- 0... +70 °C



**PFE.m-Bo200-CWN8-WDF**  
- For external extensometers  
- Mobile support for ceramics  
- 0... +70 °C



**PFE.m-L5-T120-ASTM-D6415**

4-Point Fixture Flexure/Bending Tests

**ASTM D6415.** *Standard Test Method for Measuring the Bent Beam Strength of a Fiber Reinforced Polymer-Matrix Composite.*

**PFE.m-CWN8-ITH2-cgr**

- For external extensometers
- Mobile support for ceramics
- 0... +70 °C



**PFE.m-4P-330-CWX10x50-WDF + ITH1**

4-point steel bending device according to DIN EN 1170-4 for testing glass fiber reinforced cement, "simplified bending test" method

Incl. 1 top bending bar, 200 mm

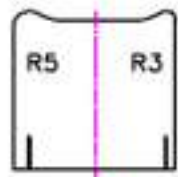
1 lower folding bar, 330 mm

4 anvils with articulated inserts + 4 rollers of 10 mm diameter, 50 mm wide

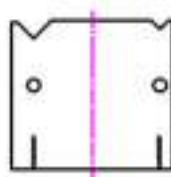
1 articulated top adapter, Af159 coupling



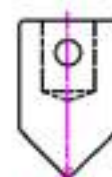




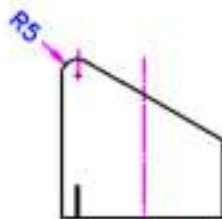
PFE.m-AR5R3  
(2-4,2-5,3-5 )



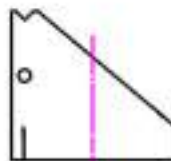
PFE.m-AX



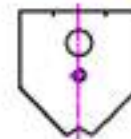
PFE.m-oR2-159  
(A1159: 1,5,2,3,5,10,12,5 )  
(A120: 2 )  
(A1318: 5 )



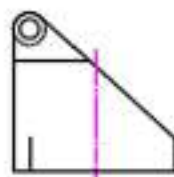
PFE.m-CR6  
(1,5, 2, 4,5, 5 )



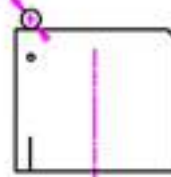
PFE.m-CX



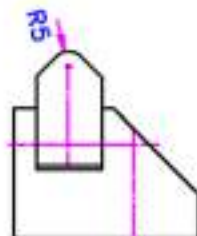
PFE.m-oX-159  
(159, 19,1, 38 )



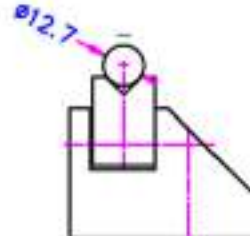
PFE.m-CL10



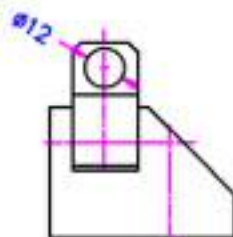
PFE.m-CM6



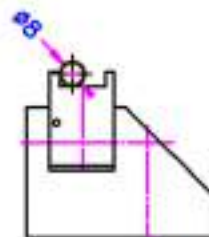
PFE.m-CWR5



PFE.m-CWX127



PFE.m-CWL12



PFE.m-CWN8



PFE.m-D10  
(4, 6, 10)



**Individual parts:**



**PFE.m/B220-Af159 bar**

- 220mm length
- 15.9 adapter



**PFE.m/B220-Af159-cgr**

- Bar with centering system
- Lower basic bar



**PFE.m/BK300-Af159**

- 300mm bar with centering gear



**PFE.m/Bo200-Af159**

- 200mm Top Bar for 4-Point Bending Jig
- 15.9mm female adapter

**Soportes:**



**PFE.m-AR2R4**

- Black hardened lower support



**PFE.m-Cr5**

- Suitable for bending / bending at 4 points r1.5, r2, r5, r10



**PFE.m-AX**

- Prismatic supports
- For rollers 3..15 mm Ø
- Height of 51.5 ..62.9 mm



**PFE.m/D10**

**PFE.m/D6**

**PFE.m/D4**

- Hardened loose rollers
- 60mm standard width



**PFE.m-CL10-Ni**

- Rotating roller
- Diameter 10mm
- Nickel plated



**PFE.m-CWN8**

- 8 mm diameter articulated roller to rotate on a flat surface held with an O-ring or spring
- For ceramic specimens

**PFE.m-o Upper single fin**



**PFE.m-oR2**

- Radius R2
- Hardened milling



**PFE.m-f**

- For interchangeable roller 3-10 mm in diameter

**Especial**



**PFE.m-oR10H80**

- R10 milled
- Height 80 mm
- Hardened steel



**PFE.m-oR02-FV**

- R0.2 for bending at 160 °



**PFE.m- oFR50-W50-Af159**

- Upper part
- Radius R50 mm

**Additional accessories :**



**PFE.m-SL220**

Side bar to bend 180 °



**PFE.m-iTH2**

- Support for external extensometer

**Legend:**

<b>cgr</b>	centric gear
<b>D</b>	roller
<b>Af</b>	Female coupling
<b>X</b>	support with V exchangeable Fins
<b>H80</b>	means height 80mm of support
<b>oR</b>	Top fin milled radius
<b>AR..R ..</b>	support with 2 radii
<b>CR</b>	soporte único
<b>W</b>	moveable wip
<b>CWR</b>	milled movable support
<b>CWX</b>	Prisma moveable

## Flexural/Bending Test Fixtures PFL.m series 3 & 4 Points (50-100 kN)

Fixtures designed to perform **Bending Flexural tests** on samples of rigid materials, **plastics, wood, metals, ceramics...**, these tools being coupled to a Universal Testing Machine.



### GENERAL INFORMATION

Suitable for precise bending tests of samples of different medium-high capacity materials (**50-100 kN**)

The sample to be tested is placed on the supports in the lower zone of the bending test tool and then the 3 or 4 point bending resistance test is carried out.

- Temperature range -70°C to 180°C

The 3 Point Bending Fixtures are supplied including **1 Set of 3 supports of the chosen radius** (see table below)

The 4 Point Bending Fixtures are supplied including **1 Set of 4 supports of the chosen radius** (see table below)

### CHARACTERISTICS COMMON TO STEEL MODELS

- **Maximum load:** **100 kN**
- **Support cylinders Interchangeable :** 3 Complete sets of 10 - 20 and 30 mm Ø (total 9 units)
- **Bars construction :** Steel
- **Scope of supply :** 1 Lower bar (chosen length) with symmetric scale 0 in the center  
+ 1 Upper support block  
+ 3 Sets of interchangeable cylinders 10 - 20 and 30 mm

### Models of bending test fixtures with support bars made of ALUMINIUM

Model	Lower bar length bending support
PFL.m/St-360	360 mm
PFL.m/St-500	500 mm
PFL.m/St-600	600 mm
PFL.m/St-700	700 mm
PFL.m/St-800	800 mm
PFL.m/St-900	900 mm
PFL.m/St-1000	1000 mm
PFL.m/St-1100	1100 mm
PFL.m/St-1200	1200 mm



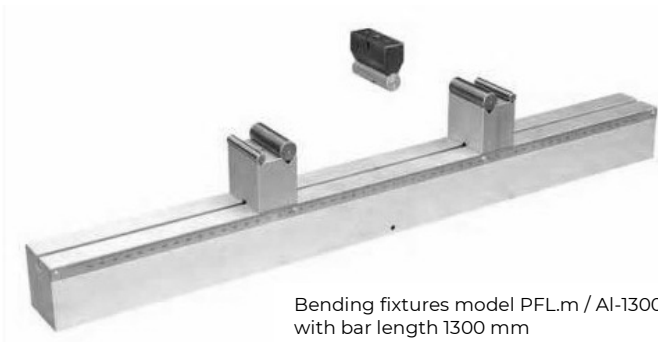
Lower support block with 3 cylinders of Ø 10-20-30 mm



Upper support block with a 20 mm Ø cylinder



Bending fixtures model PFL.m / AI-600  
with bar length 600 mm



Bending fixtures model PFL.m / AI-1300  
with bar length 1300 mm

**CHARACTERISTICS COMMON TO STEEL MODELS**

- **Maximum load:** 100 kN
- **Support cylinders Interchangeable :** 3 Complete sets of 10 - 20 and 30 mm Ø (total 9 units)
- **Bars construction :** Steel
- **Scope of supply :** 1 Lower bar (chosen length) with symmetric scale 0 in the center  
+ 1 Upper support block  
+ 3 Sets of interchangeable cylinders 10 - 20 and 30 mm

**Models of bending test fixtures with support bars made of STEEL**

Model	Lower bar length bending support
PFL.m/St-360	360 mm
PFL.m/St-500	500 mm
PFL.m/St-600	600 mm
PFL.m/St-700	700 mm
PFL.m/St-800	800 mm
PFL.m/St-900	900 mm
PFL.m/St-1000	1000 mm
PFL.m/St-1100	1100 mm
PFL.m/St-1200	1200 mm



Model PFL.m / St-360 bending fixture with 360 mm bar length  
according to **ASTM E399** to test the linear-elastic plane strain  
fracture toughness K<sub>IC</sub> of metallic materials



Bending fixture model PFL.m / St-500  
with bar length 500 mm



Bending fixture model PFL.m / St-800  
with 800 mm long bar

## Conversion KIT for bending fixtures from 3 to 4 Points

By acquiring these upper heads with 2 supports, the 3 Point bending fixtures become 4 Point bending fixtures:

### **PFL.m / AI-DF240 (50 kN) (ALUMINUM frame)**

- Distance between roller supports between **35 and 205 mm**
- Total length of upper bar: **240 mm**

### **PFL.m / AI-DF500 (50 kN) (ALUMINUM frame)**

- Distance between roller supports between **35 and 465 mm**
- Total length of upper bar: **500 mm**

### **PFL.m / St-DF205 (100 kN) (STEEL frame)**

- Distance between roller supports between **35 and 205 mm**
- Total length of upper bar: **240 mm**

### **PFL.m / St-DF325 (100 kN) (STEEL frame)**

- Distance between roller supports between **35 and 325 mm**
- Total length of upper bar: **360 mm**



Conversion top head into  
PFL.m / AI-DF240 4-Point Bending Fixture



### **PFL.m-1200-CWL20x400-Af36**

- Aluminium 50 kN
- 1200mm symmetric scale
- Coupling Af36



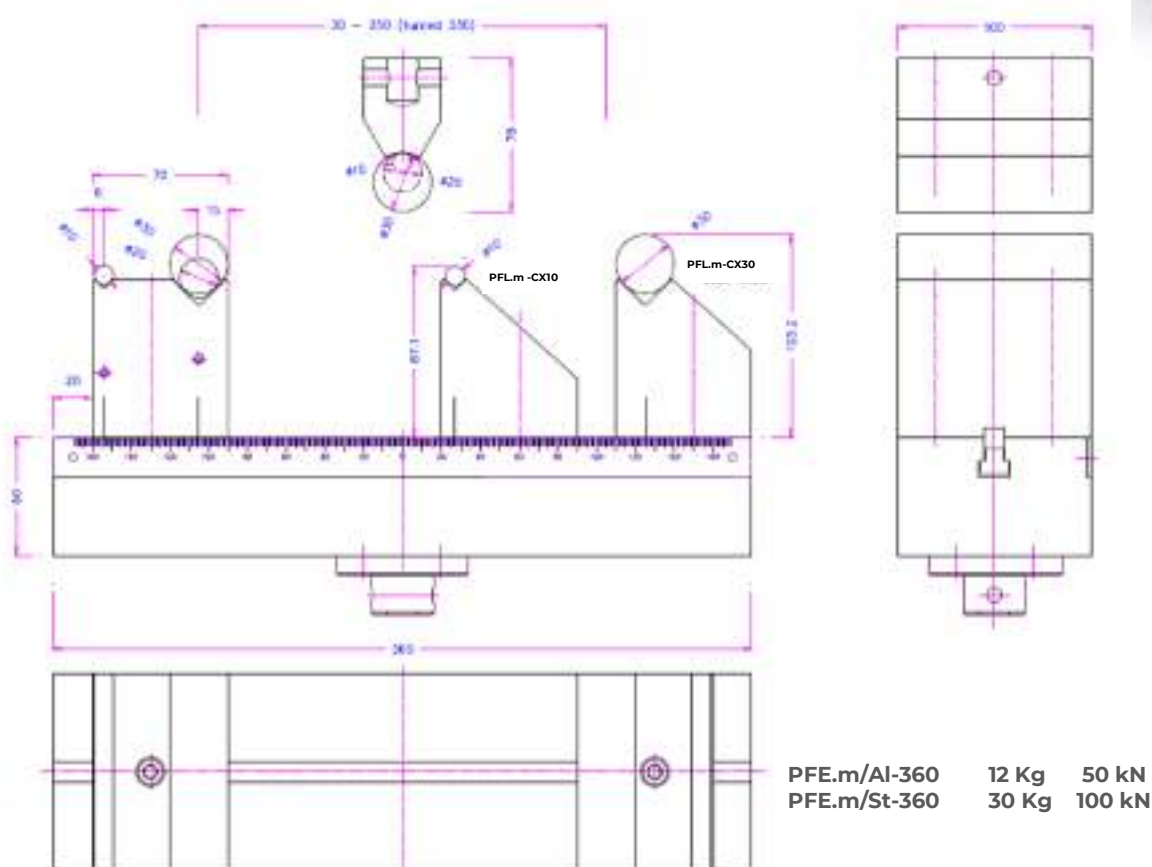
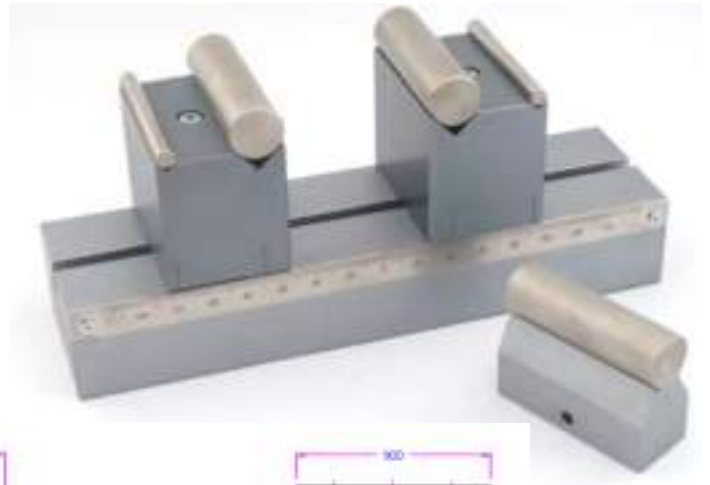


### PFL.m/AI-360

#### Flex fixture for universal use

10mm, 20mm and 30mm diameter specimen holders are supplied serial.

100x360 mm Aluminum **50kN**



**Bar lengths available:**

**Aluminium:** 240, 360, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300 mm (50 kN)

**Steel:** 240, 360, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300 mm (100 kN)



**PFE.m/St-360-Af40**

Steel version **100kN**

- 100 kN steel bending device
- Distance between supports 30-250 mm,
- Rollers 10, 20 and 30 mm
- 40 mm adapter (only top)
- 100x360 mm
- Nickel plated



**PFE.m/St-360-Af60**

Steel version **250kN**

- Steel bending device 250 kN
- Distance between supports 30-250 mm,
- Rollers 10, 20 and 30 mm
- 60 mm adapter
- 100x360 mm
- Nickel plated



**PFE.m/St-275-CR2-OR5-5P-Ni**

- 5 point flex fixture
- Nickel plated steel milled spokes
- For camera use
- 100x275mm



**PFL.m/St-500-Af31.8**

- 3 Point bending device of 100 kN
- Rollers: Ø 10, 20, 30 mm
- 31.8 / 12.7 (10/8 ") adapter
- 500 mm steel bending beam



**PFL.m/Al-600+D30x160**

- 3-point bending device 50 kN Including rollers: 10, 20, 30 mm Ø
- 600mm aluminum bending beam



**PFL.m/Al-360-CWR15 Aluminium**



**PFL.m/St-360-CWX30 Steel**

- Mobile 100kN
- 30x100mm interchangeable roller



**PFL.m/Al-800-CXOD15x350-CXUD15x350**

- Lower diameter of rollers 15 mm
- Roller top diameter 30 mm
- Width of the 3 rollers 350 mm



**PFL.m/AI-500-CWR5x420-Alu**

- Radius 3 supports 5mm
- Width 420mm



**PFL.m/AI-900-CND30-OWR20XSA30 Alu**

- Moving rollers 20x100 mm
- Upper part joint support



**PFL.m/AI-1000-4P-CXH200 Aluminio**

- 4 point flex fixture
- 200mm special support height



**PFL.m/AI-1200-4P-Am30 Aluminium**

- Bending device 4 points 50 kN
- Rollers of 10, 20 and 30 mm of Ø
- Beam length 1200 mm (aluminum)



**PFL\_m/1200-CWLD20x400-Af36** Aluminio

The rollers articulate on 2 axes They are nested in half cut bearings for free rotation

- 4 point bending device 50 kN
- 2 axis rotation option
- With rollers mounted in needle bearing semi-housings, 20 mm Ø, 400 mm wide, beam length 1200 mm aluminum



**PFL\_m/1310** Aluminio

- Long bending fixture 100x1310mm with support
- Rollers 10,20,30



**PFL\_m/St-1310**

Heavy steel version

3-point bending device 150 kN  
Rollers Ø: 10, 20, 30 mm 100x1310 mm steel



**PFL\_m/St-500-B350-D40-AroB-Ni**

- Heavy folding fixture for banded folding tests 350 mm wide sides
- Base plates 500x350mm
- 40mm roller with roll bar
- Side bars to prevent tipping
- Nickel plated

## Accessories:



PFL\_m -CX30

## Supports:

### PFL\_m-CR2-Ni

Single bracket, radius R2,  
hardened steel, nickel  
plated

Support with hardened nickel steel  
Radius milled R2, R2, R3 R5

### PFL\_m-OCR5-Ni

Support with Radius R5 milled  
for instep

Bar on a bending jig 4  
Hardened nickel steel

**PFL\_m-AX** Aluminum or Steel  
Support for Interchangeable  
Rollers 8 to 35 mm Ø for lower bar

### PFL\_m-D30

30x100 mm nickel-plated hardened  
roller for type X supports  
Ø 8,9,11,12,13. 50 1 set = 3 reels

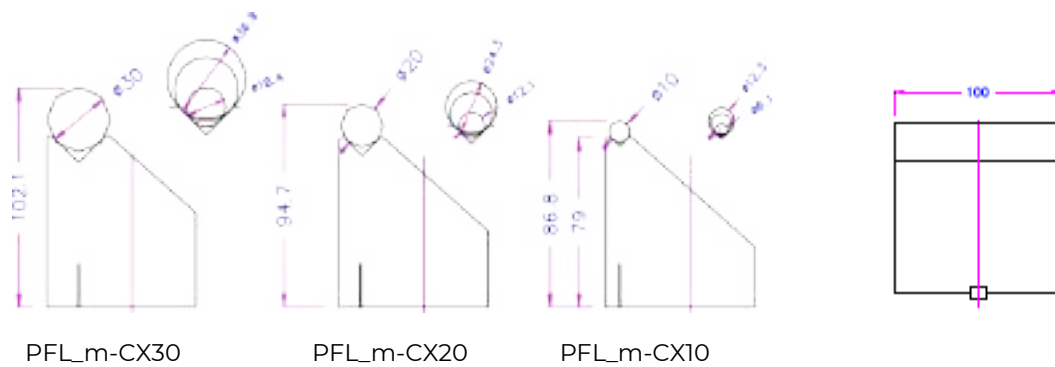
### PFL\_m -AX-Alu

Interchangeable Roller  
Support for Lower  
Bending Bar  
with 10, 20 and 30 mm rollers

### PFL\_m -CX

CX Supports for  
interchangeable rollers

The support for a CX30  
interchangeable roller allows to  
fix the roller from D18 to D36 mm



#### **PFL\_m -CX10-H150**

C Support special height  
150mm, roller 10mm



#### **PFL\_m -CXD50**

Support with a 50 mm diameter  
roller.



#### **PFL\_m -CXD30-H200**

Special support height 200mm  
with 30mm roller



## Articulating CW



### **PFL\_m -CW**

Support for articulated inserts  
Fixable 50kN Aluminum



### **PFL\_m -OW-Af159**

Fin support with adapter  
15.9mm swingarm function



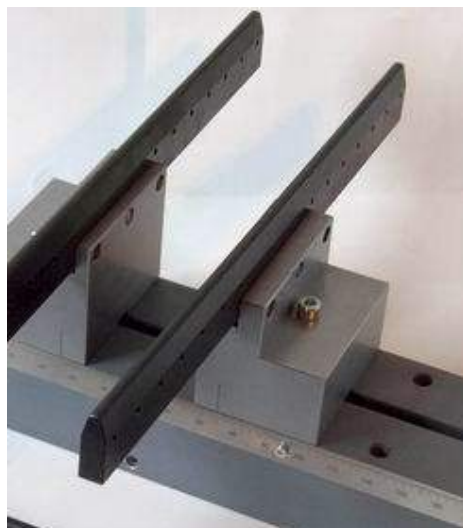
### **PFL\_m -WFR5**

Radius insert of the fin R5x100mm  
(in stock R2, 5,10,15, 20)



### **PFL\_m-OW+WFR5** mounted

fin mount with tilt function,  
15.9mm adapter with R5 fin



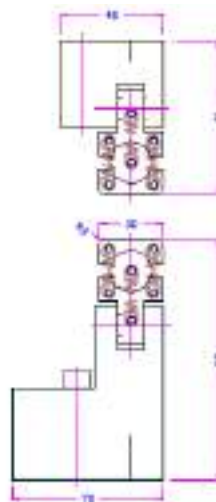
### **PFL\_m -CWR5x420**

Rolling function radius  
R5mm width 420



**PFL\_m -AX**

Aluminum or Steel Support for Interchangeable Rollers 8 to 35 mm Ø for the lower bar of the bending fixture



**PFL\_m-D30**

30x100 mm nickel-plated hardened  
roller for type X supports  
Ø 8,9,11,12,13. 50 1 set = 3 reels



**PFL\_m -AX-Alu**

### Interchangeable Roller Bracket for Lower Bending Beam with 10, 20 and 30mm Rollers

## **Flexural/Bending Test Fixtures acc. UNE-EN-ISO 7438 (200 kN)**

Fixtures designed to perform Bending Flexural tests on metal samples, these tools being coupled to a 200 kN capacity Universal Testing Machine.

### **APPLICABLE STANDARDS**

ASTM A 370 – UNE EN ISO 7438 - ASTM E 290 - ASTM E190...

### **GENERAL INFORMATION**

Suitable for precise bending tests of small metal samples.

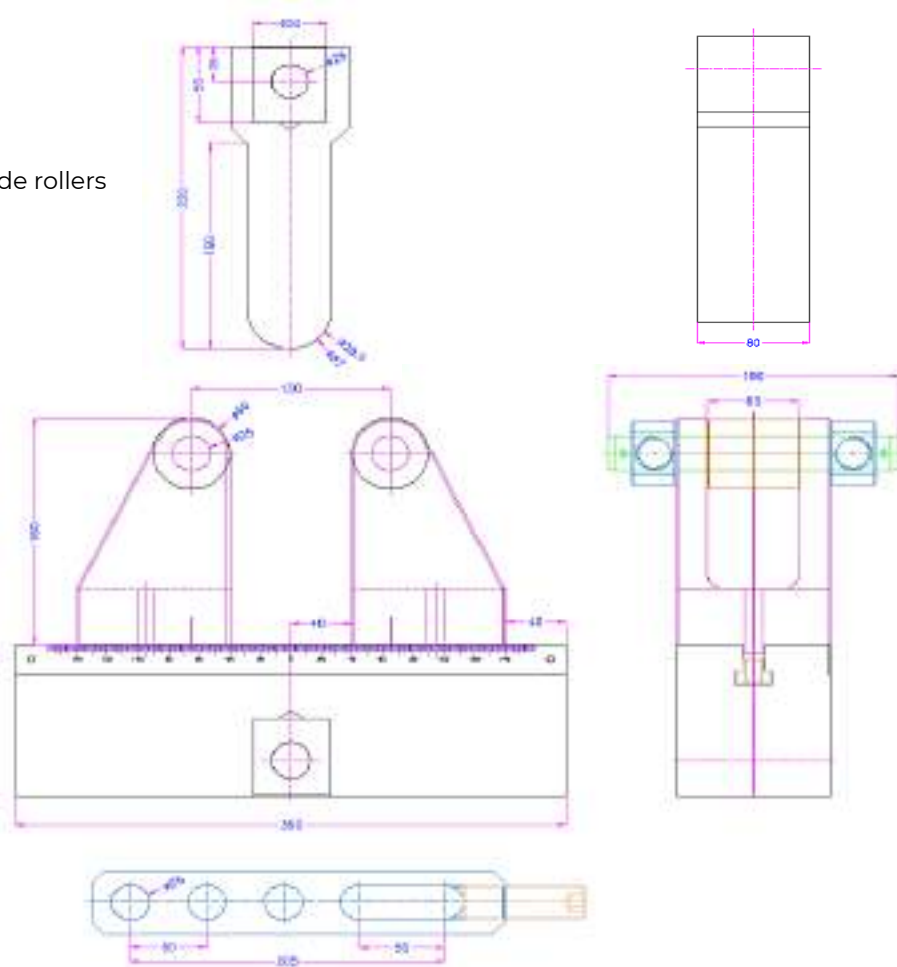
The test sample is placed on the supports of the lower zone of the bending fixture and then the 3-point bending / bending resistance test is performed.



### **U-shaped lower tool in steel**

#### **- 200 kN load capacity**

- ✓ 1x 360mm Bottom Bar
- ✓ 2x Supports
- ✓ 2 span bar
- ✓ 2x 50mm Ø x 60mm wide rollers
- ✓ 1 top adapter



ISO 7438 Standard Schematics:

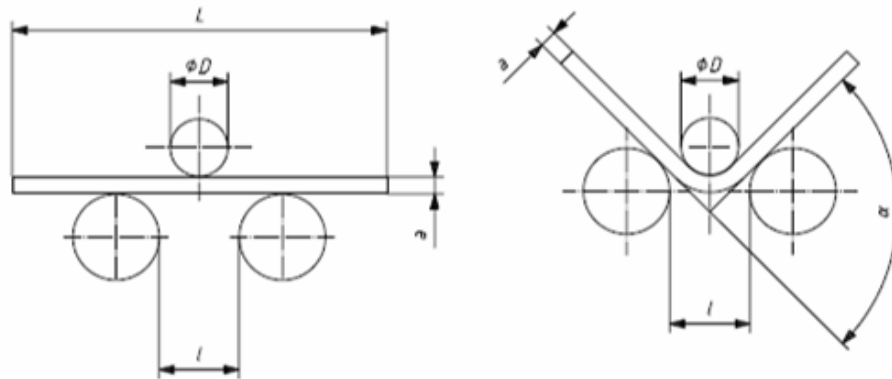
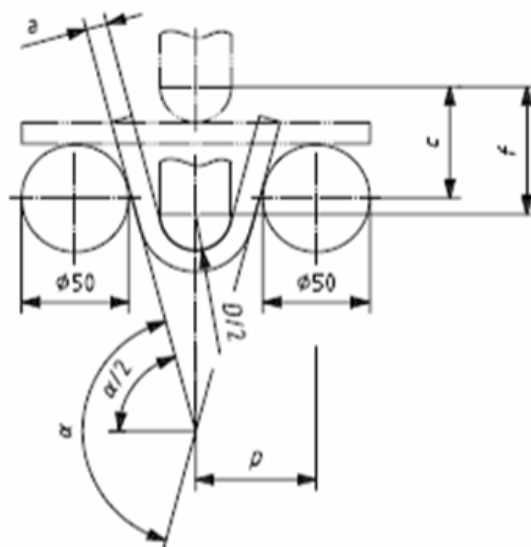
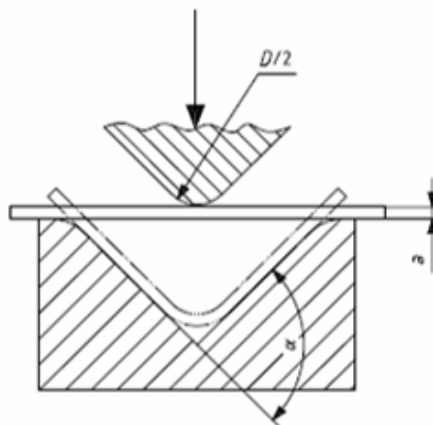


Figure 1



## **High capacity 200-300 kN Metal Bending/Flexing Fixtures:**



**Bending / Bending fixture, with roller up to 180°**  
bending tests of rebar

According ASTM A370 – ASTM E190 – ASTM E290 –  
ASTM E399 - BS 4449 - EN 448 - EN12814-1 – GOST 6996  
– GOST 14019 – ISO 3651 – ISO 5173 – ISO 7438 – ISO1  
5630 - JIS-G575

Capacity **300 kN**



**Bending / Bending fixture, with roller up to 180 °**

according to DIN- EN 448

Capacity: **250 kN**



**Bending / Bending fixture, with roller up to 180 °**

Capacity: **200 kN**

**Heavy Bending / Bending Fixture**

115x550 mm

R12.5, 15, 20, 22.5, 25, 30



**Recommended Testing Machines:**



**MTE-5 (to 5 kN)**



**MTE-25 (to 25 kN)**



**MTE-50 (to 50 kN)**



**MTE-100 (to 100 kN)**



**MTE-400 (to 400 kN)**



**MTE-300 (to 300 kN)**