

Profile Projector PV 5100 Series

Bulletin No. 1783



Vertical precision profile projector

Features

The Mitutoyo PV 5100 Series is a vertical precision profile projector that has a large rotatable screen with an effective screen diameter of 20" (508 mm). When the 5x projection lens system is used, the large screen allows projection of complete workpieces with a diameter of up to 3.94" (100mm). In addition, the low screen position enables simple, ergonomic operation and reduces fatigue even when working for long periods. With the large X, Y measuring range, the PV 5100 Series offers high-efficiency measurements, even of large pressed parts, housing frames, etc.



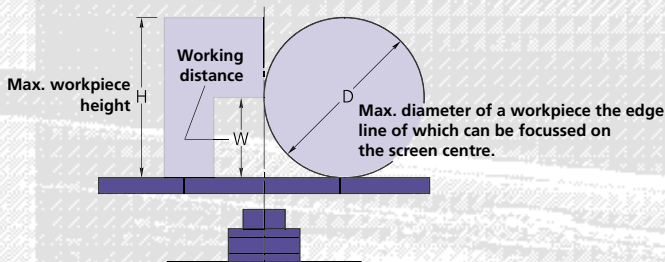
PV-5100
With optional accessories.

- Standard unit with incident lighting/transmitted light illumination
- Digital rotatable screen (including zero position ABS/NC coordinate switching for simple fault-free angle measurement.
- The tilting screen makes it possible to reproduce projected images or to compare them with a template.
- The optional oblique lighting unit (172-419) provides sharp, clear images for simple, effective inspection of non-reflective workpieces such as plastic parts or overprinted materials.

Projection lens systems (optional)



Projection capacity



Unit: Inch (mm)

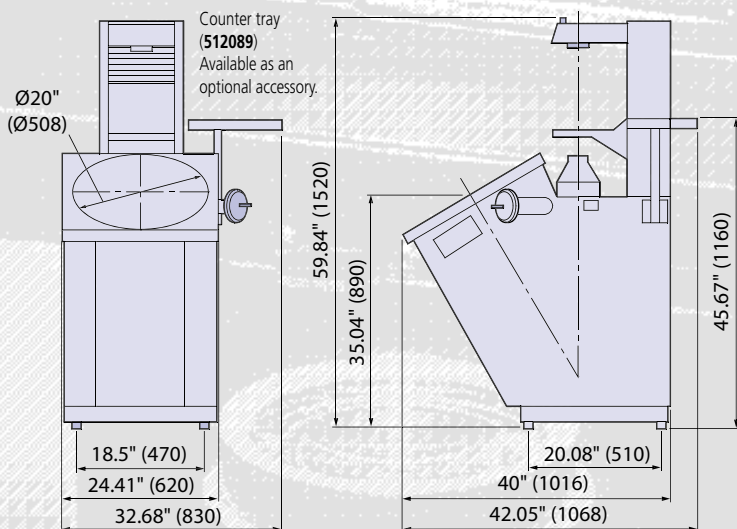
Lighting	Transmitted lighting/incident lighting				
Magnification	5X	10X	20X	50X	100X
Dia. of image field	3.94"(100)	1.97"(50)	.98"(25)	.39"(10)	.20"(5)
B	2.24"[1.26"] (57[32])	2.24"[2.24"] (57[57])	2.24"[2.24"] (57[57])	1.28" (32.4)	.89" (22.5)
H	4.92"(125)	7.13"(181)	8.11"(206)	3.43"(87)	3.43"(87)
T	4.49"(114)	4.49"(114)	4.49"(114)	2.55"(64.8)	1.77"(45)

[]: when working with incident light illumination

At 50x and 100x magnification, incident light illumination is not available.

Dimensions

Unit: Inch (mm)



Specifications

Order no.		PV 5100 304-201-1	PV 5110 304-909A
XY measuring table		(Optional)	8"x4" (319-232)
Rotating screen	Effective diameter	20" (508 mm)	
	Material	Fine-ground matt glass	
	Reference line	Crosshair and serrated line	
	Display range	±370°	
	Resolution	1' or 0.01° (switchable)	
Projection lens system		(Optional)	10X (172-402)
Magnification uncertainty		Transmitted light illumination: max. ±0.1 % Incident light illumination: max. ±0.15 %	
Transmitted light	Light source	Halogen lamp (24V, 150 W)	
	Optical system	Telecentric	
	Functions	High-low illumination, cooling fan, thermal protection filter, green filter (optional)	
Surface Illumination		—	24V, 150 W
Counter Tray		—	included
Power supply		230 V AC, 50/60 Hz	
Weight		397 lbs (180 kg)	
Standard accessories		Halogen lamp, 24 V 150 W (1x), Power cable, protective cover (510189), Operator's manual	

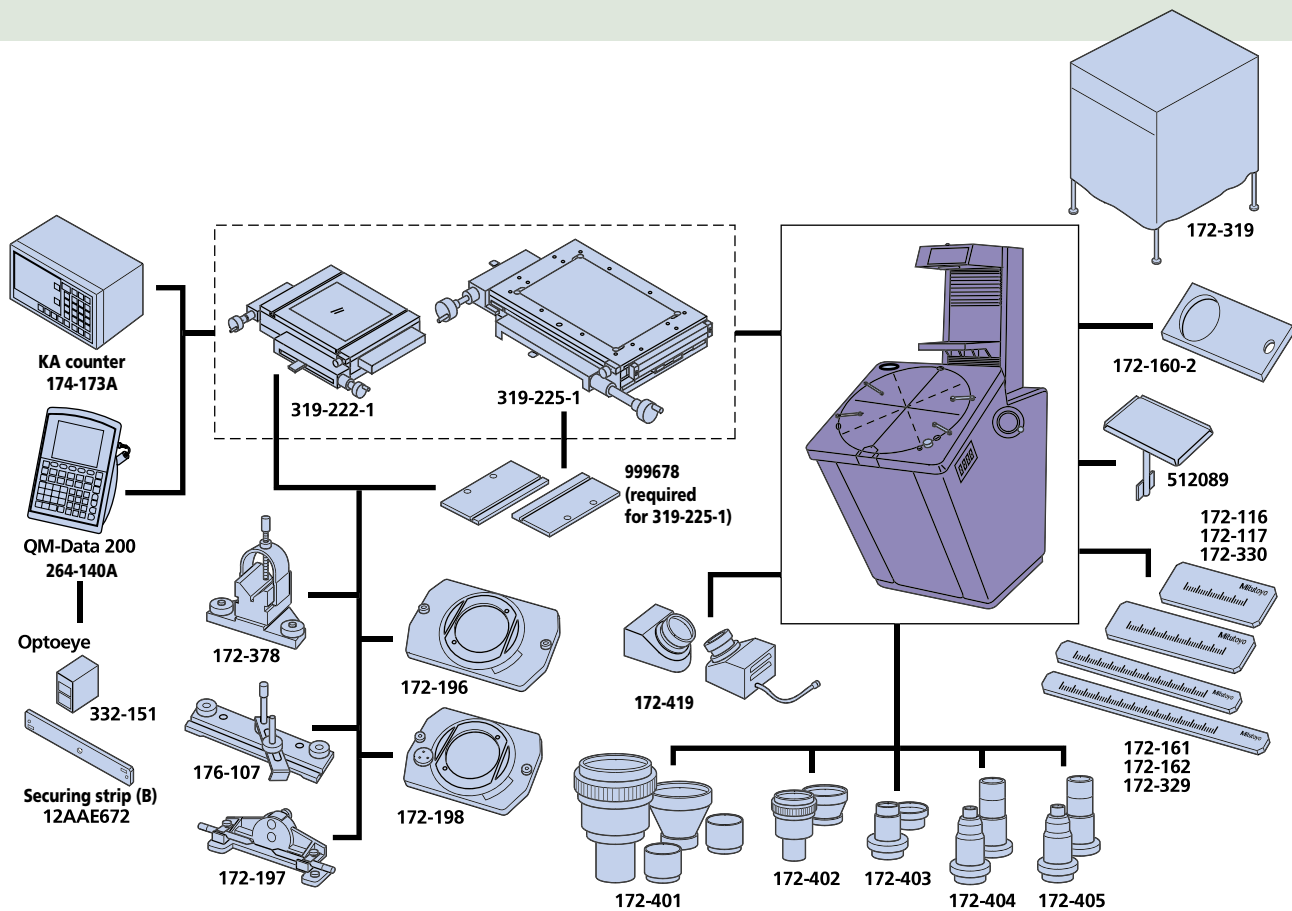
KA Counter – display unit

The basic, economical display unit for linear scales

Order no.	174-173A
Resolution	.0005"/.0002"/.0001"/.00005" (0.0005mm/0.002mm/0.001mm)
Dimension	10.2" (W) x 6.61" (H) x 3.2" (D)



System diagram



QM-Data 200

- The QM data 200 is a 2D data processing unit for optical instruments. It enables powerful 2D coordinate measuring by simple keyboard input.



Edge sensor "OPTOEYE 200"

The Optoeye 200 reduces the human influence during measurement by automatic edge detection. Only in combination with the QM Data 200.



Optional accessories

Rotary table

- Angular readout 2'
- Effective range: 100 mm
- Holder with clamp (176-107) can be mounted.



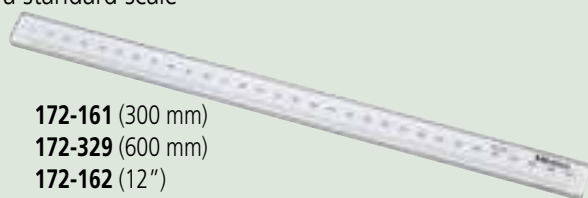
172-196



172-198

Glass scale

For checking the magnified image of a standard scale



172-161 (300 mm)

172-329 (600 mm)

172-162 (12")

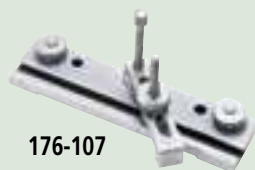
Adapter for securing accessories
For securing accessories such as rotary table and tilting centring support, to the measuring table surface (319-225-).



999678

Holder with clamp

Workpiece height:
max. 35 mm



176-107

Standard scale

For checking of magnification
uncertainty



172-116 (50 mm)

172-330 (80 mm)



Order no.	319-225-1
XY measuring distance	200 x 100 mm
Effective range	266 x 170 mm
Table dimensions	380 x 250 mm
Measurement unit	Integrated linear scale (option)
Tilting range	$\pm 3^\circ$
Max. workpiece weight	18,5 kg
Comments	Floating movement (X and y axis)

Horizontal V block with clamp

Workpiece diameter
max. 25 mm

172-378



Green filter

Increases the representation sharpness of an image with incident light illumination.

Tilting centring support

- Workpiece diameter: max. 80 mm
- Angular offset: $\pm 10^\circ$
- Suitable for clamping cylinders, recirculating ball screws etc.



172-197

Incident light illumination unit

- Oblique lighting with double halogen lamps
- Light source: halogen lamp (24V, 150W)
- Magnification: 5x, 10x, 20x



172-419

Coordinate Measuring Machines	_____
Vision Measuring Systems	_____
Surface, Form and Contour Measurement	_____
Optical Measuring	_____
Sensor Systems	_____
Hardness Measuring	_____
Digital Scale and DRO Systems	_____
Small Tool Instruments and Data Management	_____

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