

# 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.



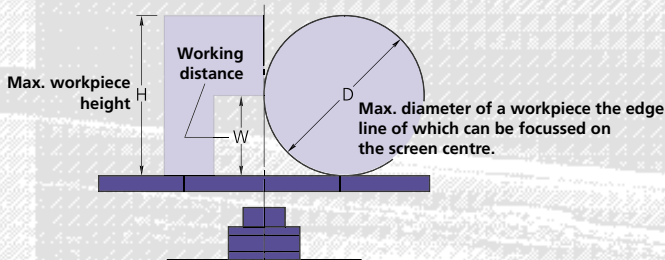
PV-5100  
With optional accessories.

- 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

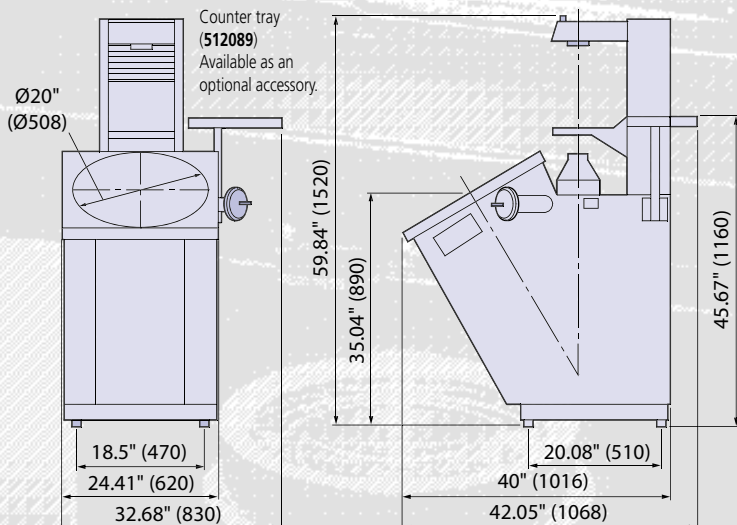
At 50x and 100x magnification, incident light illumination is not available.

## Specifications

Order no.	PV 5100 304-201-1	PV 5110 304-909A
<b>XY measuring table</b>	(Optional)	8"x4" (319-232)
<b>Rotating screen</b>	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)
<b>Projection lens system</b>	(Optional)	10X (172-402)
<b>Magnification uncertainty</b>	Transmitted light illumination: max. ±0.1 % Incident light illumination: max. ±0.15 %	
<b>Transmitted light</b>	Light source	Halogen lamp (24V, 150 W)
	Optical system	Telecentric
	Functions	High-low illumination, cooling fan, thermal protection filter, green filter (optional)
<b>Surface illumination</b>	—	24V, 150 W
<b>Counter Tray</b>	—	included
<b>Power supply</b>	230 V AC, 50/60 Hz	
<b>Weight</b>	397 lbs (180 kg)	
<b>Standard accessories</b>	Halogen lamp, 24 V 150 W (1x), Power cable, protective cover (510189), Operator's manual	

## Dimensions

Unit: Inch (mm)



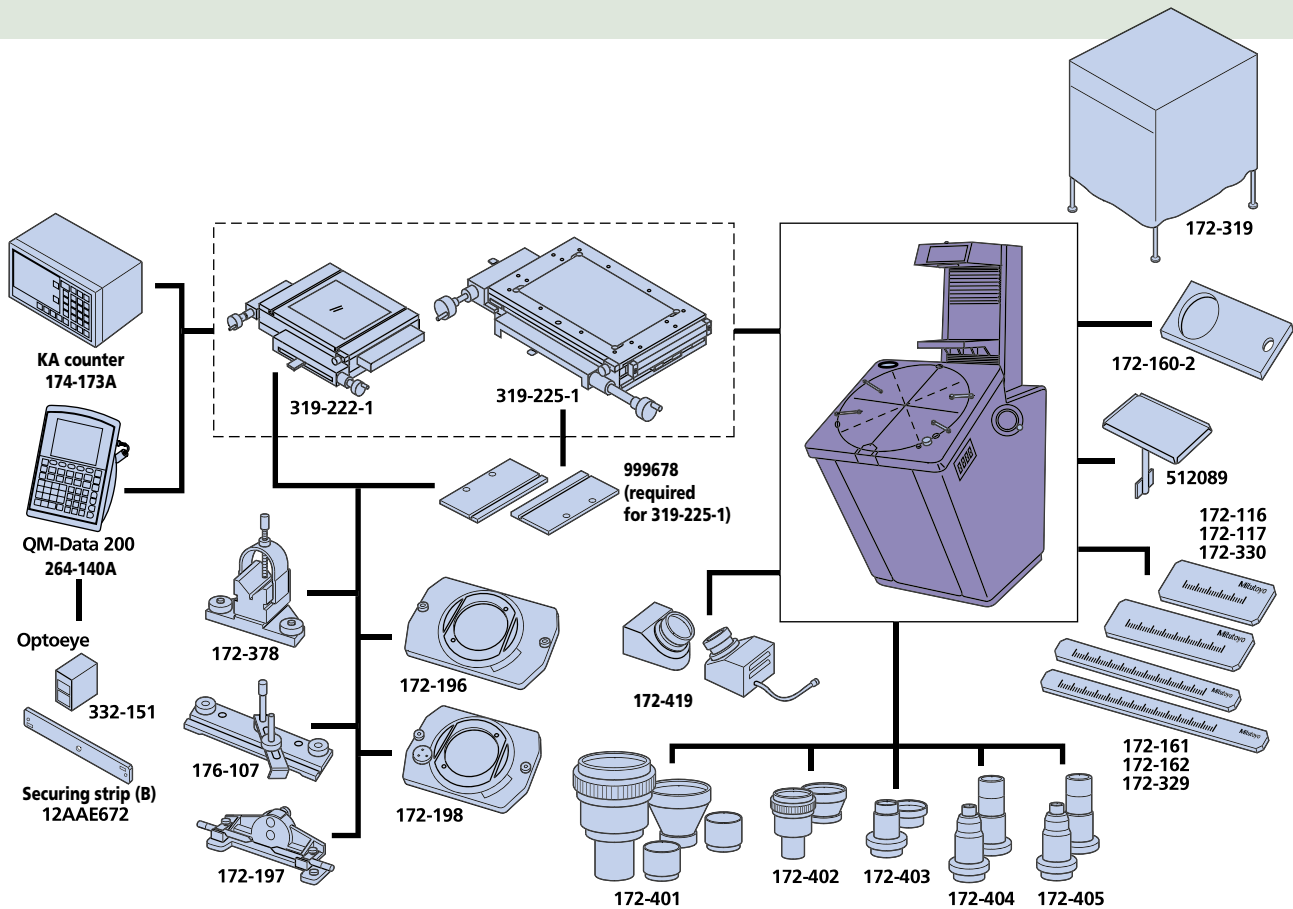
## KA Counter – display unit

The basic, economical display unit for linear scales

Order no.	174-173A
<b>Resolution</b>	.0005"/.0002"/.0001"/.00005" (0.0005mm/0.002mm/0.001mm)
<b>Dimension</b>	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.



264-141D Ausführung  
Version with stand



264-140A Version with stand

## 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.



12AAE672

332-151

# Optional accessories

## Rotary table

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



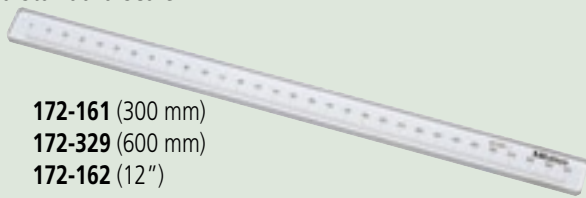
172-196



172-198

## Glass scale

For checking the magnified image of a standard scale



172-161 (300 mm)

172-329 (600 mm)

172-162 (12")

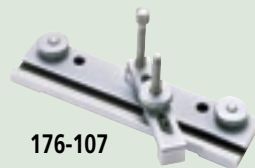
Adapter for securing accessories  
For securing accessories such as rotary table and tilting centring support, to the measuring table surface (319-225-).



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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# Mitutoyo

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