

PV-5110

Equipped with a 500 mm forward-tilted screen. Perfect for comparative measurements with enlarged drawings and tracing of projected images. This model supports improvement in efficiency of mass-produced precision part inspections.



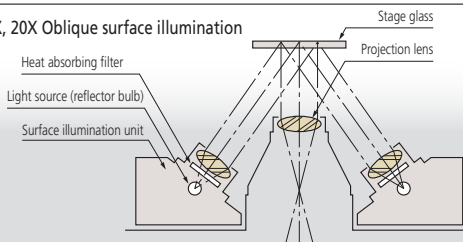
PV-5110
304-919-11A

Technical Data

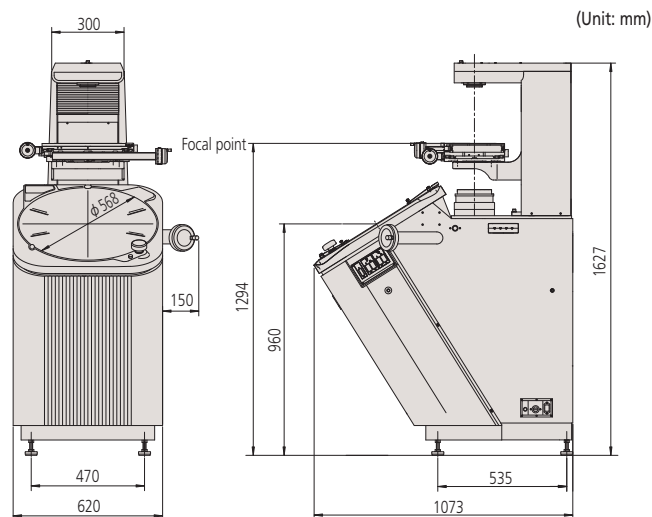
Projected image	Inverted	
Protractor screen	Effective diameter	ø508 mm
	Screen material	Fine-ground glass
	Screen rotation	±360° (The counter displays up to ±370°)
	Angle reading	Digital counter (ABS/INC mode switching), Zero Set
	Resolution	1° or 0.01° (switchable)
	Cross-hairs	90° solid lines
Projection lens	0 Line (Index)	Built-in, With a LED back light
	Magnification	5X, 10X (Standard accessory), 20X, 50X, 100X
Magnification accuracy*	Lens mount	Insert type mount
	Contour illumination	±0.1 % or less of nominal magnification
Maximum workpiece height	Surface illumination	±0.15 % or less of nominal magnification
	Contour illumination	Refer to the projection lenses (L1) (right)
Surface illumination	Surface illumination	24 V, 150 W, 500 h Halogen bulb (512305)
	Contour illumination	Mount switching system
	Surface illumination	Telecentric, Heat-absorbing filter
	Contour illumination	Cooling fan, 2-step (High/Low) brightness switch
Focusing	Surface illumination	Can be used in conjunction with color filter
	Contour illumination	24 V, 150 W, 500 h Halogen bulb (512305)
	Surface illumination	Heat-absorbing filter, Adjustable condenser lens
	Contour illumination	Oblique illumination (for 5X, 10X and 20X)
Power supply	Surface illumination	Cooling fan, 2-step (High/Low) brightness switch
	Contour illumination	Stage part drive
Mass	Surface illumination	Manual
	Contour illumination	100 V, 110 V, 120 V AC (304-919-11)
Power consumption	Surface illumination	220 V, 230 V, 240 V AC (304-919-12)
	Contour illumination	external switching
	Mass	Approx. 210 kg (including X-Y stage)
	Power consumption	Approx. 560 W

* Our magnification accuracy standard only checks contour illumination (that it is ±0.1 % or less).
(If the magnification accuracy under contour illumination is a permissible value, that under surface illumination will also be guaranteed to be within ±0.15 % of our standard.)
Note1: For the stage specification, refer to page 17.

● 5X, 10X, 20X Oblique surface illumination



Dimensions



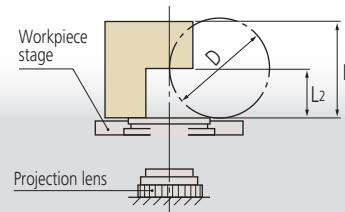
Note: To mount the counter (KA-212) and counter stand, approximately 300 mm space is required on the right-hand side of the main unit.

Projection lenses (10X is a standard accessory)



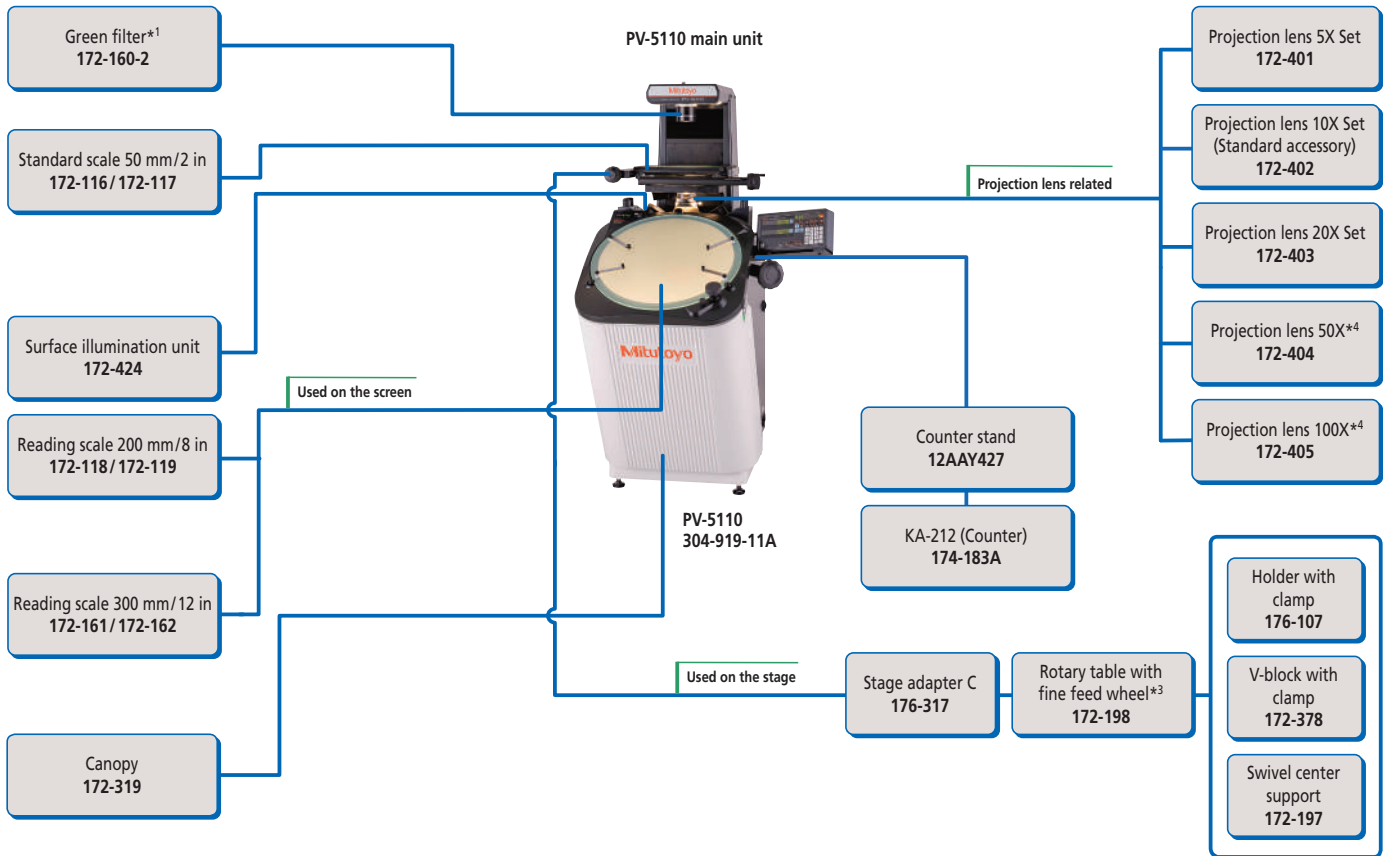
Code No.	View field (mm)	L1 (mm)	L2 (mm)	D (mm)
5X Lens Set 172-401	101.6	125	60 (27)	120
10X Lens Set (Standard accessory) 172-402	50.8	181	60	120
20X Lens Set 172-403	25.4	206	60	120
50X Lens Set 172-404	10.16	87	32.4	64.8
100X Lens Set 172-405	5.08	87	22.5	45

Note 1: () : When using surface illumination
Note 2: Each lens set contains the condenser lenses for illumination.
Note 3: D is for the case of contour illumination.



L1: Max. height where focusing is available
L2: Max. step where focusing is available (working distance)
D: Max. diameter when a cylinder generatrix is projected on the center line of the screen

System Diagram

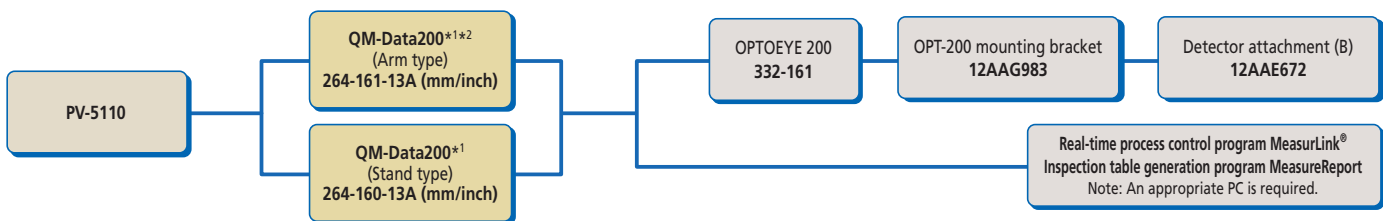


◆Lamp replacement◆
For contour / surface 512305

- *1 This is inserted in the contour light source section during use.
 - *2 Used on the stage. It is projected onto the screen to check the magnification accuracy with a reading scale or working standard scale.
 - *3 Since the rotary stage section is small, if it is used for a large stage, some restrictions may be imposed on the measuring range.
 - *4 When using a 50X or a 100X projection lens, you need to remove the stage glass in order to prevent a collision between the stage glass for the X/Y stage and the projection lens.
 - *5 Not provided with the product. Please order it separately.
- Note: If an optional unit is installed on the stage, the H (Max. workpiece height) length is reduced by the optional unit height.

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Data Processing System Diagram





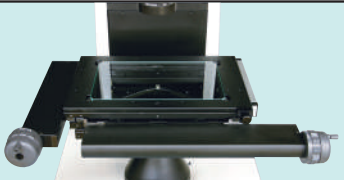
MeasurLink®

For details, refer to the QM-Data200 and Vision Unit brochure.





*1 Fully kitted PV-5110 and QM-Data 200 (Arm type) machine packages are available 304-919-11A-QM and 304-919-11A-QM-OPT (Optoeye 200 Included)
*2 The arm type cannot be used concurrently with a counter stand.

Stages

PJ-PLUS			
XY range		100×100 mm	200×100 mm
PJ-PLUS main unit	Model	PJ-P1010A	PJ-P2010A
	Code No.	302-801-10A	302-802-10A
Unit system for the counter unit		mm/in	mm/in
Measuring unit		Digital scale	
Quick-release mechanism		X and Y axes	
Stage size (WxD)		250×250 mm	350×280 mm
Effective size of stage glass (WxD)		142×142 mm	240×140 mm
Stage glass thickness		5 mm	8 mm
Stage glass		12BAE041	12BAD760
Swivel adjustment range		—	—
Maximum loading		10 kg	8 kg

PV-5110		
XY range		200×100 mm (164×68 mm)*
PV-5110 main unit		304-919-11A
Measuring unit		Digital scale
Quick-release mechanism		X and Y axes
Stage size (WxD)		380×250 mm
Effective size of stage glass (WxD)		266×170 mm
Stage glass thickness		6 mm
Stage glass		382762
Swivel adjustment range		±3°
Maximum loading		8 kg

* () The range where no shading is observed using a 5X projection lens.

PJ-H30					
XY range		100×100 mm	200×100 mm	200×170 mm	300×170 mm
PJ-H30 main unit	Model	PJ-H30A1010B	PJ-H30A2010B	PJ-H30A2017B	PJ-H30A3017B
	Code No.	303-716-13A	303-717-13A	303-718-13A	303-719-13A
Unit system for the counter unit		mm/in	mm/in	mm/in	mm/in
Measuring unit		High-accuracy digital scale			
Quick-release mechanism		X and Y axes standard			
Stage size (WxD)		300×240 mm	350×280 mm	410×342 mm	510×342 mm
Effective size of stage glass (WxD)		180×150 mm	250×150 mm	270×240 mm	370×240 mm
Stage glass thickness		6 mm	6 mm	8 mm	8 mm
Stage glass		380412	382762	12BAD363	12BAD330
Swivel adjustment range		±3° (right)		±5° (left)	
Maximum loading		10 kg		20 kg	
Measuring accuracy		± (3+0.02L) μm L: Measured length (mm) Note: The measurement method conforms to JIS B 7184.			

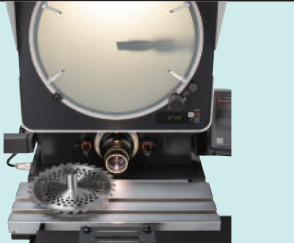
PH-3515F		
Model No.		PH-3515F
XY range		254×152.4 mm
PH-3515F main unit		172-868-11A
Measuring unit		Digital scale
Quick-release mechanism		Only X-axis
Stage size		450×146 mm
Dovetail groove		Two (Pitch = 43 mm)
Minimum swivel angle reading		30°
Maximum measuring diameter (horizontally fixed)*		ø340 mm
Swivel adjustment range		±10°
Maximum loading		45 kg

Photo: Cutter (Outside diameter of 175 mm max.) is mounted on the tipped-saw support fixture (172-001).

* When using the projection lens 10X (Standard accessory).

Green filter

These filters are for adjusting image contrast and are inserted in the transmitted illumination section during use.



Code No.	172-160-3	12AAG981	172-160-2	172-286
Applicable models	PJ-PLUS	PJ-H30	PV-5110	PH-3515F
External dimensions (WxD) mm	50×110	195×260	50×167	58×120