

PJ-H30

High-end model of PJ series that realizes the ultimate in bright, sharp projected images.
 High-rigidity main unit equipped with a linear scale for realizing high-accuracy measurements.
 Lineup of 8 models, derived from combinations of 4 stage types (100mm x 100mm / 4" x 4" to 300mm x 170mm / 12" x 6.8") and manual focusing / motor-driven focusing models.
 Adopts a quick-release handle that allows you to switch feed between fine and coarse remotely.
 Realizes smooth measurements, together with a turret structure, for easy lens changing.

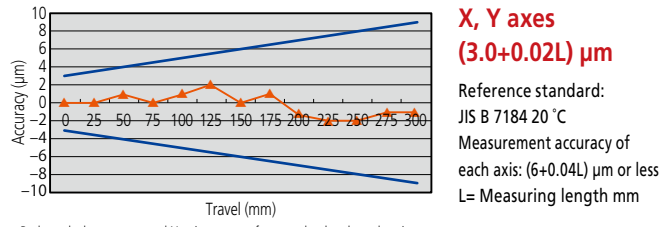
PJ-H30



PJ-H30A2010B
303-713-1A

Features (Measuring accuracy)

Pursuit of measurement accuracy



Red graph shows measured X-axis accuracy for a randomly selected projector.

The profile projector must maintain a high level of performance, not only in terms of optical performance, but also comprehensive measurement accuracy. The PJ-H30 Series, which performs not only contour observation and comparative inspection but also two-dimensional measurement with high accuracy, has achieved the above measurement accuracy in all stage sizes.*

Having achieved both long-stroke measurement and high accuracy, it is helpful in every measurement setting.

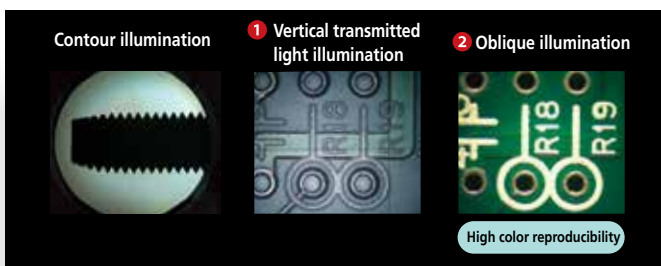
* Compliant with JIS B 7184, measurement method for each of the XY axes

Features (Bright, clear observation)

Also equipped with oblique reflected illumination with good color reproducibility as standard

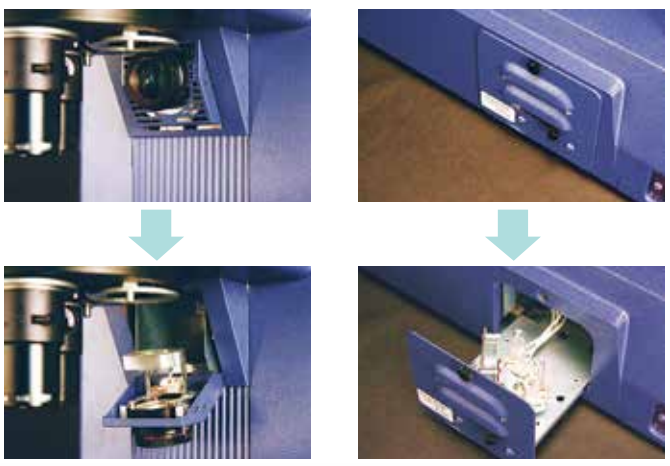


The reflected illumination comprises vertical illumination which goes through the projection lens, and oblique illumination, with changeable angle of illumination emitter as standard. It is effective in three-dimensional observation with enhanced color reproducibility.



Features (Maintainability)

Easy-to-replace lamp housing design



Having a halogen lamp burn out during use causes issues and down time. Immediately after a lamp burns out, it is too hot to be replaced. The PJ-H30 Series has a slide change mechanism, which allows you to change lamps from outside of the machine. Even if the lamp burns out suddenly, you can continue inspection and measurement without issues (for transmitted illumination only). The housing can be pulled out just by loosening the screw, making it very easy to replace the lamp. Furthermore, it is safe to pull out the housing because no electricity is flowing.

Features (Operability)

All models equipped with turrets as standard



The turret of the PJ-H30 Series uses low-friction bearings for smooth and rapid rotary motion and to bring different projection lenses into the light path to change magnification. The turret body uses bayonet mounts to aid quick attachment and detachment of lenses.

Focusing with high operability



Manual focusing handle of PJ-H30A



PJ-H30D (motor-driven focusing) front panel

To place a test workpiece on the stage and focus swiftly, an easy-to-grip handle and handle position are very important. Therefore, the PJ-H30 Series has an oblique manual focusing handle that lets you operate in a natural position, whether standing or sitting, without awkwardness. Moreover, a high-operability jog shuttle with motor-driven focusing is also available, and its smooth movement contributes to less fatigue in observation and measurement.

Note: PJ-H30D (with motor-driven focusing) does not come with a manual focusing handle.

Stepless illumination adjustment



Stepless illumination adjustment has been adopted to provide moderate illuminance according to the surface texture and color of the workpiece. Illumination strength ranges from weak to strong, and this method is also effective in extending the halogen lamp life, which is enhanced by using a soft start feature to limit input surge current.

Projection Lens 10X with C mount Optional



Example of attaching the Projection Lens 10X with C mount on PJ-H30



The projection lens is equipped with a C mount, therefore a compatible digital camera can be attached. A workpiece can be observed on the large-size projection screen, and simultaneously the color image can be saved on the camera and observed on the monitor.

■ Specifications

Order No.	172-500
Camera Projected Image	Inverted
Compatible Sensor Size	Four Thirds 4/3 type
Camera Mount	C mount
Mountable Mass	0.9 kg or less

The magnification accuracy of the camera is not guaranteed
Vignetting occurs on the four corners of a camera image under contour illumination
Turret can only rotate 120 degrees while mounted
Camera may interfere with turret rotation
Surface illumination will not work with this projection lens, ring light is suggested

LED Circular Illuminator for PJ-H30 Optional



LED illumination can increase the contrast of the projected image and provide sharp on-screen images. The projected image will have higher color reproducibility when compared to halogen illumination. Low power consumption: 17.4 W and longer operating life: 30,000 hours.

■ Specifications

Order No.	172-501
Compatible model	PJ-H30 (10X Projection Lens with C mount, Projection lens 10X and 20X)
Illumination source	White LED
Power consumption	12 V / 17.4 W
LED life (reference)	30,000 H

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Features (Operability)

High visibility digital display



Since the digital counter (XY axes and angle) built into all models as standard uses a high-intensity LED and a large-character display, it secures high visibility unaffected by the environment. In addition to zero-setting and direction change, the data output of each counter value adopts the highly versatile RS-232C.

Resolution: 0.0001 in/0.001 mm*

* 0.5 μm or 0.1 μm readings can also be equipped. Please ask our Techno Service.

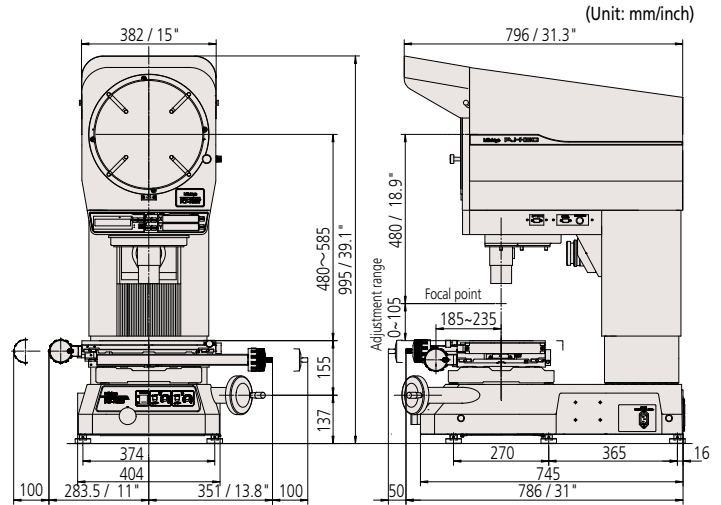
Technical Data

Projected image	Erect	
Protractor screen	Effective diameter	306mm / 12.04"
	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)
Projection lens	Cross-hairs	Solid lines
	Magnification	10X (Standard accessory), 5X, 20X, 50X, 100X Parfocal lens Half-reflecting mirror for surface illumination
	Lens mount	Bayonet mount (registered utility model), 3-mount turret
Magnification accuracy ^{*1}	Contour illumination	±0.1 % or less of nominal magnification
	Surface illumination	±0.15 % or less of nominal magnification
Maximum workpiece height	105mm / 4.1" ^{*2}	
Contour illumination	24 V, 150 W 50 h Halogen bulb (515530) Zoom Telecentric, Heat-absorbing filter Cooling fan, Non-stepped brightness adjustment Soft lighting function (reduced inrush current) Lamp mount switching system	
Surface illumination	24 V, 150 W, 50h Halogen bulb (515530) Vertical/oblique illumination with an adjustable condenser lens Heat-absorbing filter, Cooling fan, Non-stepped brightness adjustment, Soft lighting function (reduced inrush current)	
Focusing	Projection screen head driving PJ-H30A (manual), PJ-H30D (power drive)	
Resolution for X/Y counter	0.0001 in/0.001 mm* * You can specify 0.5 μm or 0.1 μm resolution. (Available on request.)	
Power supply	ON/OFF switch, 100 to 240 V AC (unnecessary switching voltage), GND terminal, 50/60 Hz, Power cord (2 m)	
Mass	167 kg / 387.2 lbs to 212 kg / 466.4 lbs	
Power consumption	Approx. 420 W	

*1 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.)

*2 For the stage specification, refer to page 16.

Dimensions



PJ-H30A2010B

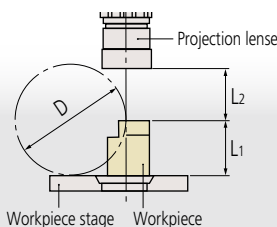
Main unit side panel



Projection lenses (10X is a standard accessory)



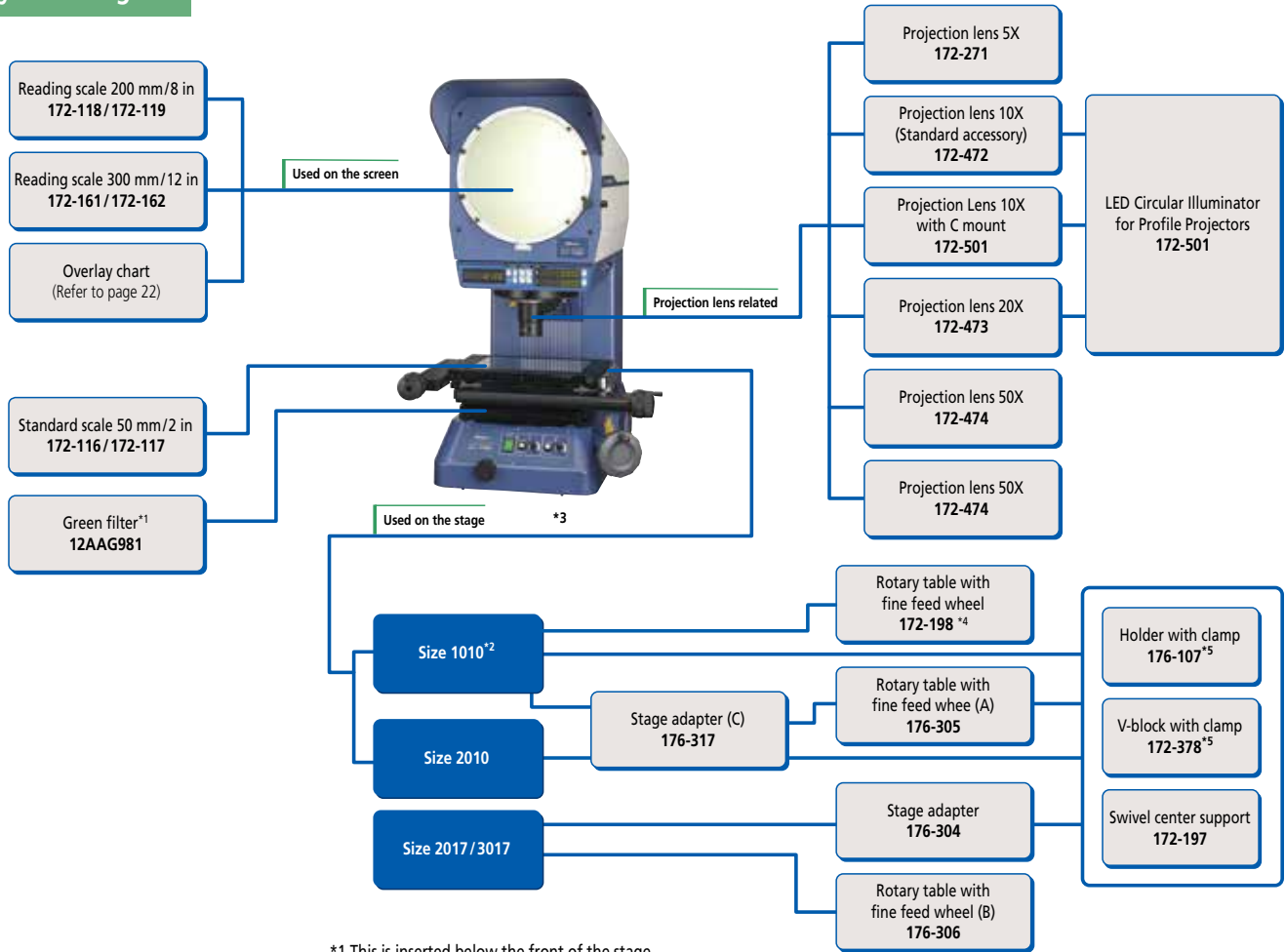
Order No.	View field (mm)	L ¹ (mm)	L ² (mm)	D (mm)
5X Lens 172-271	61.2	105	66	148
10X Lens (Standard accessory) 172-472	30.6	105	70.5	197
20X Lens 172-473	15.3	105	56.5	137
50X Lens 172-474	6.12	105	50	114
100X Lens 172-475	3.06	105	50	114



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

Workpiece stage Workpiece
Note: When rotary table is not mounted.

System Diagram



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*1 This is inserted below the front of the stage.

*2 For the 1010 size, it is also possible to directly attach the "holder with clamp (176-107)," "V-block with clamp (172-378)," and "swivel center support (172-197)", bypassing the "stage adapter C (176-317)."

*3 Machine Stand is part number 172-269

*4 172-198 requires 176-317 to connect to -2010 stage and it requires adapter 176-304 to connect to -2017/-3017 stage.

*5 176-107 and 172-378 can mount on 172-198

Note: If an optional unit is installed on the stage, the H (Max. workpiece height) length is reduced by the optional unit height.

Data Processing System Diagram

◆Lamp replacement◆

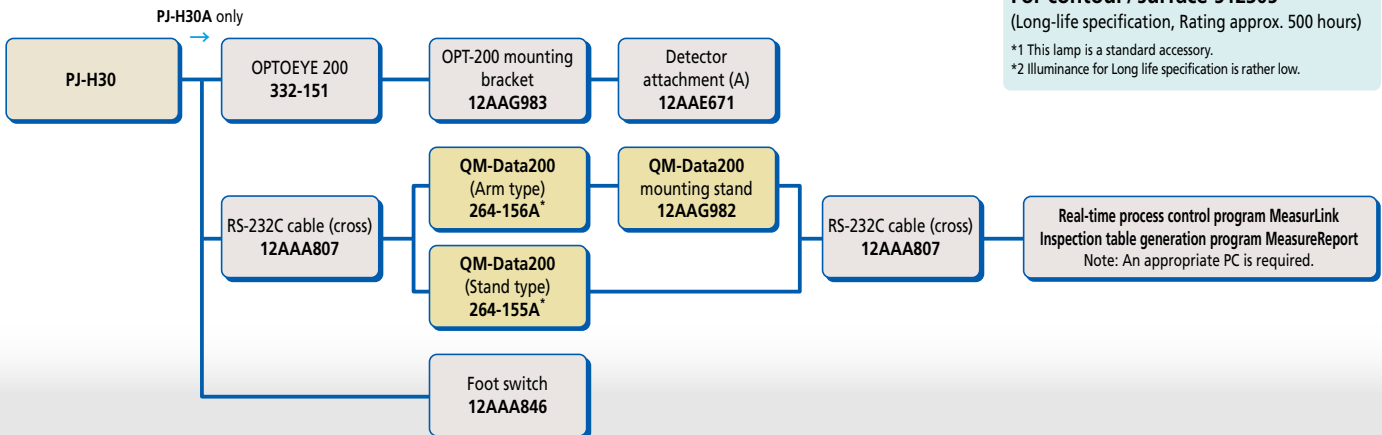
For contour / surface 515530*¹

For contour / surface 512305*²

(Long-life specification, Rating approx. 500 hours)

*¹ This lamp is a standard accessory.

*² Illuminance for Long life specification is rather low.



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

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC, C and No suffix are required for PSE.

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