

PJ-H30

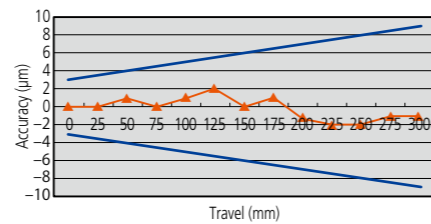
High-end model of PJ series that realizes the ultimate in bright, sharp projected images.
High-rigidity main unit equipped with a linear scale for realizing high-accuracy measurements.



PJ-H30A2010B
303-717-11 (mm)
303-717-13 (mm/inch)

Features (Measuring accuracy)

Pursuit of measurement accuracy



X, Y axes
± (3.0+0.02L) μm

Reference standard:
JIS B 7184 20 °C
Measurement accuracy of
each axis: (6+0.04L) μm or less
L= Measuring length mm

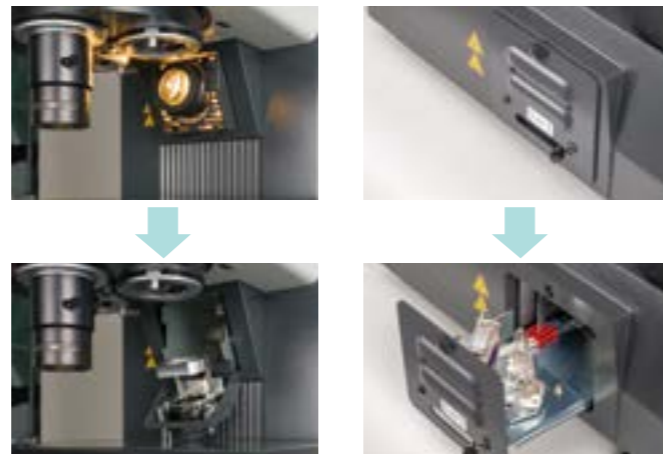
Red graph shows measured X-axis accuracy for a randomly selected projector.

The profile projector has to 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 (Maintainability)

Easy-to-replace lamp housing design



Having a halogen lamp burn out during use can cause a lot of trouble. 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; therefore, even if the lamp burns out suddenly, you can continue inspection and measurement with no worries (for transmitted illumination only). Moreover, the housing can be pulled out just by loosening the screw, so it is 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 that enable smooth and rapid rotary motion for changing magnification by bringing different projection lenses into the light path. The turret body uses bayonet mounts to aid quick attachment and detachment of lenses.

Focusing with high operability



To place a test workpiece on the stage and focus swiftly, an easy-to-grip handle shape and its 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.

Stepless illumination adjustment



Stepless illumination adjustment has been adopted so as 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 inrush 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. Retrofit is possible Profile Projector (PJ-H). 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

| Code No. | 172-500 |
|------------------------|------------------------|
| Camera Projected Image | Inverted |
| Camera Magnification | 0.71X*1 |
| Compatible Sensor Size | Four Thirds 4/3 type*2 |
| Camera Mount | C mount |
| Mountable Mass | 0.9 kg or less |

*1 The magnification accuracy of the camera is not guaranteed.
*2 Vignetting occurs on the four corners of a camera image under the contour illumination.
Note 1: Refer to page 10 for operation distance.
Note 2: The magnification to projection Screen is 10X.

LED Circular Illuminator for PJ-H30 Optional



LED illumination light can emphasize the contrast of projected workpiece images, providing stereoscopic and sharp observation. Projected image can be observed with high color reproducibility, which is never realized by the existing halogen-type surface illumination. Low power consumption: 17.4 W, and long operating life: 30,000 hours.

■ Specifications

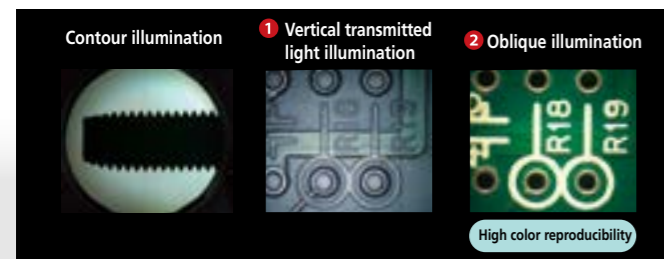
| Code No. | 172-501 |
|----------------------|--|
| Compatible model | PJ-H30 (10X Projection Lens with C mount, Projection lens 10X and 20X) |
| Illumination source | White LED |
| Power consumption | 12 V / 17.4 W |
| LED life (reference) | 30,000 H |

Features (Bright, beautiful observation)

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



The Surface 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 (Operability)

High visibility digital display

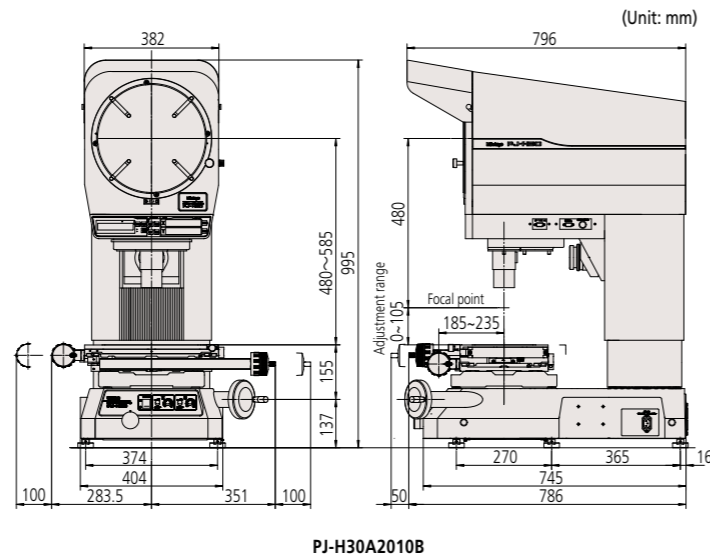


Since the digital counter (XY axes and angle) built into all models as standard uses a high-intensity LED and a large-character display, it secures high visibility unaffected by the environment. In addition to zero-setting and direction change, the data output of each counter value adopts the highly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

Resolution: 0.001 mm or 0.0001 in/0.001 mm*

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

Dimensions



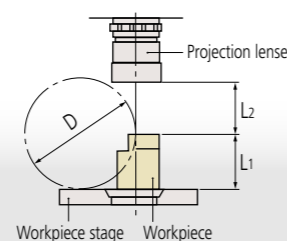
Main unit side panel



Projection lenses (10X is a standard accessory)



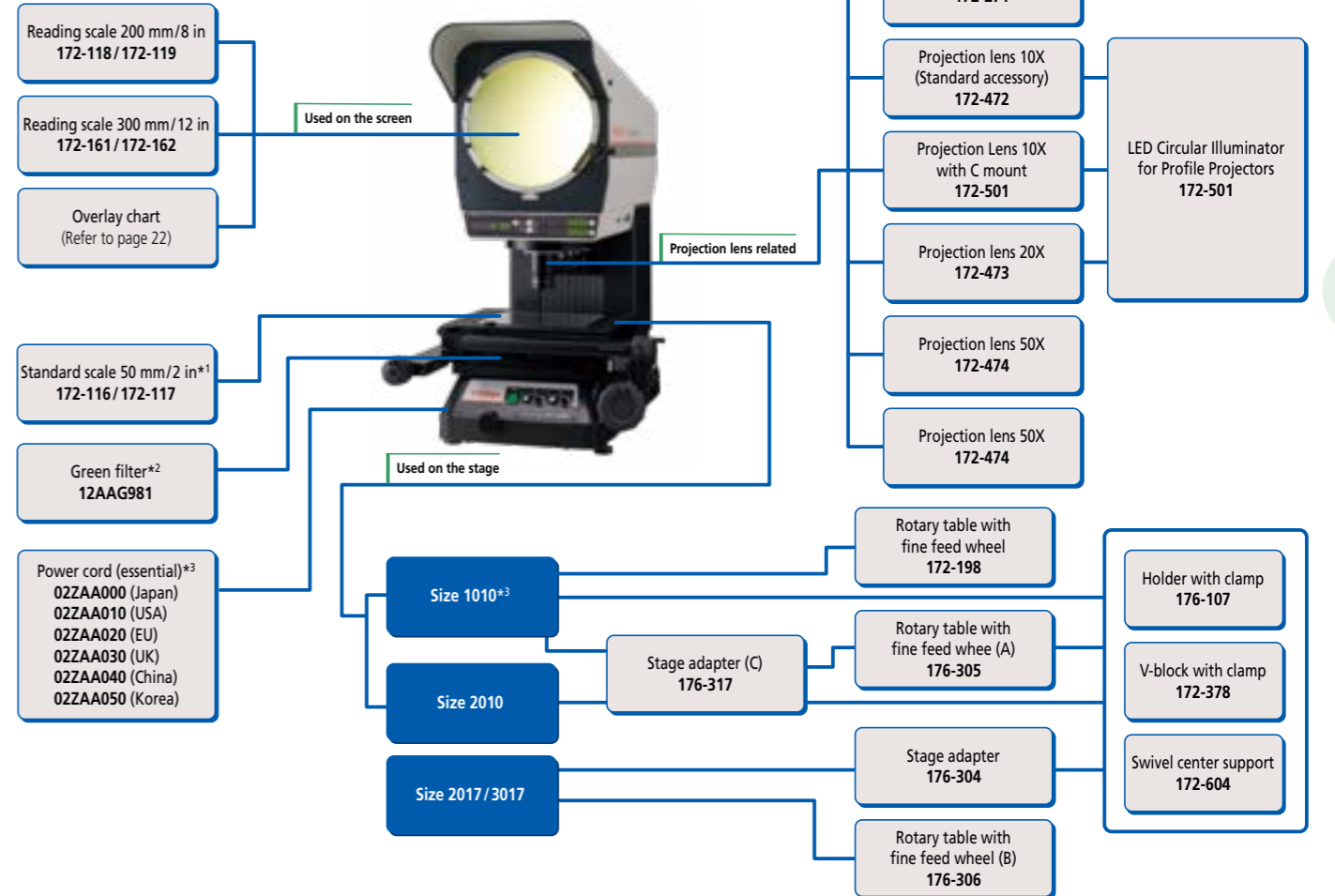
| Code No. | View field (mm) | L1 (mm) | L2 (mm) | D (mm) |
|---|-----------------|---------|---------|--------|
| 5X Lens 172-271 | 61.2 | 105 | 66 | 148 |
| 10X Lens (Standard accessory) 172-472 | 30.6 | 105 | 70.5 | 197 |
| 10X Lens with C mount 172-500 | 30.6 | 105 | 70.5 | 197 |
| 20X Lens 172-473 | 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

Note: When rotary table is not mounted.

System Diagram



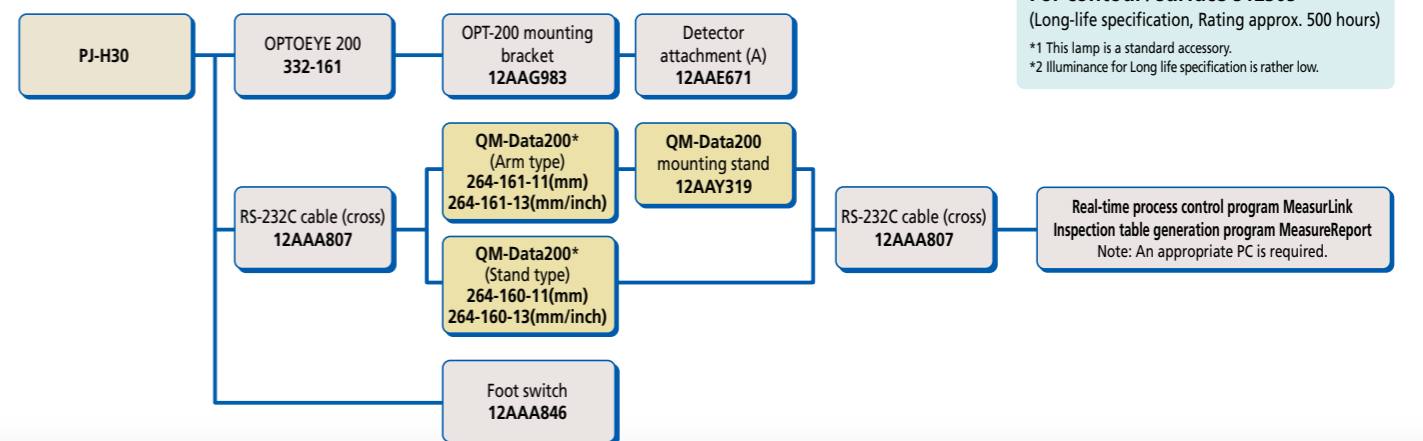
*1 Used on the stage. It is projected onto the screen to check the magnification accuracy with a reading scale.
 *2 This is inserted beside the stage adapter during use.
 *3 Not provided with the product. Please order it separately.
 *4 For the 1010 size, it is also possible to directly attach the "holder with clamp (176-107)," "V-block with clamp (172-378)," and "swivel center support (172-604)", bypassing the "stage adapter C (176-317)."
 Note: If an optional unit is installed on the stage, the H (Max. workpiece height) length is reduced by the optional unit height.

Technical Data

| | | |
|----------------------------|--|---|
| Projected image | Erect | |
| Protractor screen | Effective diameter | φ306 mm |
| | 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 |
| Magnification accuracy*1 | Lens mount | Bayonet mount (registered utility model), 3-mount turret |
| | Contour illumination | ±0.1 % or less of nominal magnification |
| Maximum workpiece height | Surface illumination | ±0.15 % or less of nominal magnification |
| | Refer to the projection lenses L1 right | |
| 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) | |
| Surface illumination | Lamp mount switching system | |
| | 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 | |
| Resolution for X/Y counter | 0.001 mm or 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 | |
| Mass | 176 to 212 kg | |
| 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.)
 Note: The AC cord is not provided with the product. Please order it separately (02ZAA000 (Japan), 02ZAA010 (USA), 02ZAA020 (EU), 02ZAA030 (UK), 02ZAA040 (China), 02ZAA050 (Korea)).

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.
 * The AC cord is not provided with the product. Please order it separately (02ZAA000 (Japan), 02ZAA010 (USA), 02ZAA020 (EU), 02ZAA030 (UK), 02ZAA040 (China), 02ZAA050 (Korea)).

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