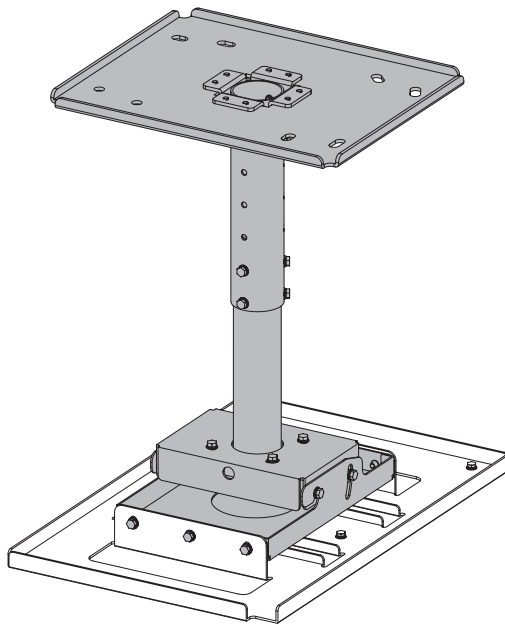


Installation Instructions

Ceiling Mount Bracket (for High Ceilings)

Model No. **ET-PKD520H**



ENGLISH

- * The figure above shows a combination of this product and the separately sold ET-PKD520B projector mount bracket.
- * Unless specified otherwise, the ET-PKD520B is used in the illustrations of the projector mount bracket in these instructions.

Thank you for purchasing this Panasonic product.

■ To customers

The “Installation Instructions” is intended for use by installation personnel. Be sure to employ certified personnel to perform the installation.

After installation, have the installation personnel return these “Installation Instructions” to you, and save it for future use. When moving or removing the projector, give this manual to the certified personnel and have them perform the procedure.

■ To installation personnel

Read the “Installation Instructions” thoroughly and then perform the operation correctly and safely.

Be sure to read through the section entitled “Read this first!” (page 3) before proceeding with the installation.

After installation, return these “Installation Instructions” to the customer.



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WARNING:

Installation work should only be carried out by the certified personnel.

- If this product is not installed correctly, serious accidents may result.
- Follow the instructions specified in “Installation” and “Attaching the wire rope to the ceiling” of this manual, and perform secure installation.

Install the ceiling mount bracket in accordance with the structure and materials of the installation location.

- If a mistake is made in the installation procedure, the ceiling mount bracket may fall down and an injury may result.

Mounting must be carried out by two or more persons.

- When installing the projector in an overhead location, such as on a ceiling, have at least two persons perform the installation.

Make sure that your footing is safe and secure during installation.

- If your footing is not secure, you may trip or fall down, and an injury may result.

Do not loosen or remove the unit screws and bolts unnecessarily.

- The projector may fall down and an injury may result.

Do not install in a location that is not strong enough.

- If the installation location is not strong enough, the unit may fall down and damage to the projector or an injury may result.

Do not install the ceiling mount bracket in humid or dusty locations or in locations where the ceiling mount bracket may be exposed to oily smoke, steam, or excessive heat.

- Failure to obey may result in fire or electric shock. In addition, oil will cause the plastic to deteriorate, which may result in a drop hazard.

Do not allow children to reach the supplied screws and metal fittings.

- These items can cause personal injury if swallowed.
- If swallowed, seek medical help immediately.

Do not disassemble or modify the ceiling mount bracket.

- The projector may be damaged or fall down, and an injury may result.

CAUTION:

This bracket should only be mounted on the specified projector mount bracket.

Install only using the designated method.

- Otherwise, the projector may fall and become damaged, and cause injury.

Do not install the ceiling mount bracket in a place which may impede projector ventilation.

- If this is not observed, fire may result.

Do not hang from or hang objects on the projector or ceiling mount bracket.

- The projector may fall and cause injury.

Always use the supplied parts when performing installation.

- Otherwise, this may cause damaged projector to fall and cause injury.

Install the mounting screws and power cable in such a way that they will not make contact with the inside metals of the ceiling.

- Electric shocks may result from contact with any metal objects inside the ceiling.

■ **Panasonic disclaims all liability for any accidents or any damage caused by the installation of the ceiling mount bracket using methods that are not described in these Installation Instructions or methods that do not use the parts specified in these Instructions.**

■ **If products are no longer being used, they should be dismantled and removed by the certified personnel as soon as possible.**

Product components

This is a ceiling mount bracket for installing projectors.
Use this together with the projector mount bracket (sold separately).

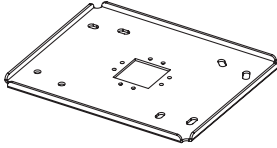
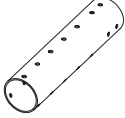
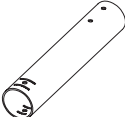
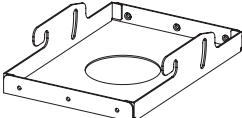

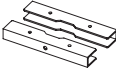
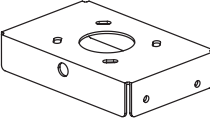






■ Applicable projector mount bracket

ET-PKD520B

* Products other than the above may be supported. Refer to the installation instructions for your projector mount bracket.

■ Structural components

Check that the package contains the following parts. The number enclosed in < > is the quantity.

Attachment plate <1>		The attachment plate is attached to the ceiling via four ceiling mount bolts. Installation methods are different for concrete and wooden ceilings.
Adjustment pole 1 <1>		This is the adjustment pole which is installed in between the attachment plate and the projector mount bracket (sold separately). It also includes a function for adjusting the distance between the ceiling and the projector itself.
Adjustment pole 2 <1>		
Angle adjusting bracket <1>		This is attached to the projector mount bracket (sold separately). This allows vertical tilt adjustment.
Pole brace 1 <1>		This is attached to the attachment plate to secure adjustment pole 1.
Pole brace 2 <2>		This is attached to the adjustment pole 2.
Pole base <1>		This is attached to the pole brace 2. This allows panning adjustment.
Hex head bolt <1> (M6 × 110)		These are used to assemble the bracket.
Spring washer <1> (M6)		
Flat washer <2>		
Nut <1>		
Hex head bolt, captive washer <32> (M6 × 16)		
Hex head bolt, captive washer <4> (M8 × 20)		

Product description (continued)

■ The user must also obtain the following parts. (commercially-available)

Installation work		Required parts	Page
Installing the attachment plate to the ceiling (Bolt diameter: M10 or 3/8")	Installing to a wooden structure	Ceiling mount bolt (× 4), Hex nut (× 16), Flat washer (× 16), Spring washer (× 8)	8
	Installing to a concrete structure	Ceiling mount bolt (× 4), Hex nut (× 12), Flat washer (× 12), Spring washer (× 8), Anchoring nut or curled plug (× 4)	8
Attaching the wire rope to the ceiling (Bolt diameter: M10 or 3/8")	Installing to a wooden structure	Ceiling mount bolt (× 4), Hex nut (× 8), Flat washer (× 8), Spring washer (× 4)	12
	Installing to a concrete structure	Anchoring nut or curled plug (× 4), Hex head bolt (× 4), Spring washer (× 4), Flat washer (× 4)	12

* Use flat washers (commercially available) with an outside diameter (Φ) of at least 22 mm (7/8") and a thickness (t) of at least 1.5 mm (1/16").

- Tightening torque for the screws are M6: 4 ± 0.5 N•m, M8: 10 ± 1 N•m, and M10 (3/8"): 20 ± 1 N•m.
- When tightening up the screws, use a tool such as a torque screwdriver or torque wrench. Do not use electric screwdrivers or impact screwdrivers.

Attention

- Dispose of the packaging materials properly after taking the product out of it.
- Store small parts in an appropriate manner, and keep them away from small children.

Installation

After checking the height, width, and structure of the installation location, determine the appropriate positions for setting up the screen and installing the projector.

- The [GEOMETRY] function cannot be used when projecting images in the simultaneous format with a PT-RQ13K series DLP™ Projector. When installing a PT-RQ13K series projector to a ceiling and projecting images in the simultaneous format, obey the following to prevent distortion in the projected image.
 - Use a flat screen.
 - Install the projector so that the front side of the projector is parallel to the screen.
 - Install the projector so that the image can be projected within the range of shift adjustment by moving the lens position.

Setting up the screen

Set up the screen according to the specified method in a position which takes into account the projection distance and angle and the type of screen being used.

Screws tightening torques

M6 4 ± 0.5 N•m
 M8 10 ± 1 N•m
 M10 and 3/8" 20 ± 1 N•m

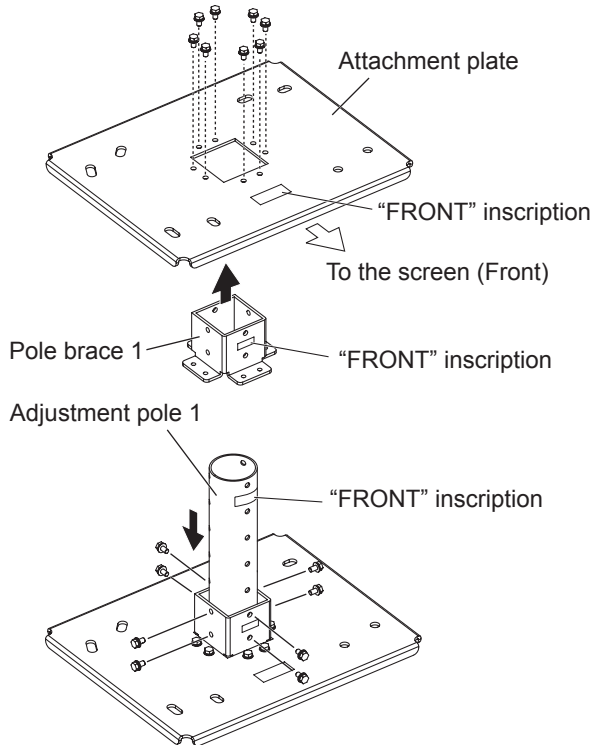
- Use a torque screwdriver or torque wrench to tighten screws and bolts to their specified tightening torques. Do not use electric screwdrivers or impact screwdrivers.

Installation (continued)

Preparing the attachment plate

Before installing the attachment plate on the ceiling, attach the adjustment poles, pole braces, and the pole base to the attachment plate with the following procedures.

■ Attaching the pole brace 1 and the adjustment pole 1 to the attachment plate

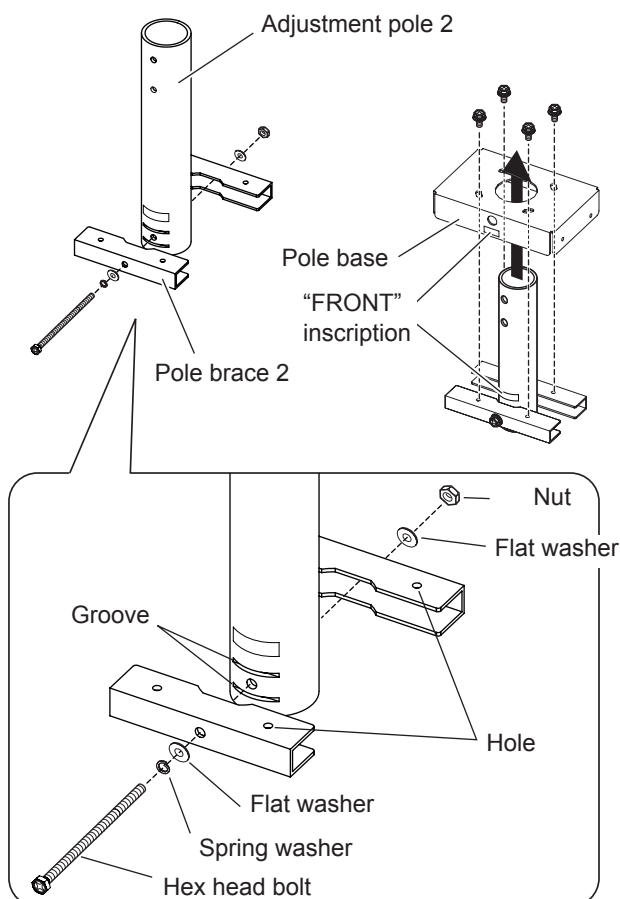


- 1) Insert the pole brace 1 into the center of the attachment plate, and secure the pole brace 1 with the supplied eight captive washer hex head bolts (M6 × 16). (Refer to the figure on the left for the directions of the attachment plate and the pole brace 1.)
- 2) Insert the adjustment pole 1 into the pole brace 1, aligning them so that the "FRONT" inscription faces the front.
- 3) Attach eight of the supplied captive washer hex head bolts (M6×16) to the sides of the pole brace 1, and secure pole brace 1 and adjustment pole 1.

Attention

- Be sure to tighten the screws and bolts to their specified tightening torques. Insufficient tightening torque may cause the projection screen to tilt.

■ Attaching the pole brace 2 and the pole base to the adjustment pole 2



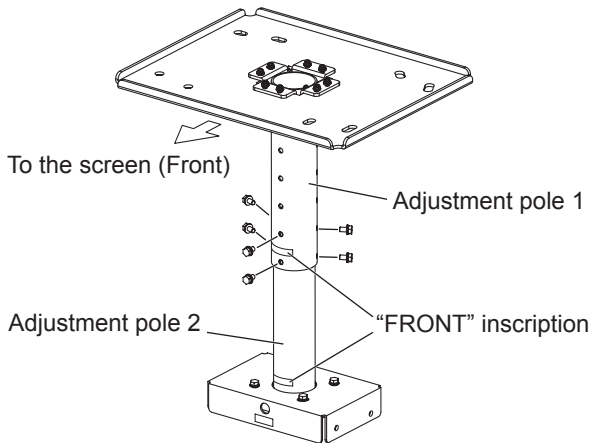
- 1) Fit pole braces 2 into the grooves on adjustment pole 2, and secure them to adjustment pole 2 using the supplied hex head bolt (M6×110), spring washer, flat washers, and nut.
- 2) Insert adjustment pole 2 through the hole in the pole base, and secure it using four of the supplied captive washer hex head bolts (M6×16).

Attention

- Be sure to attach pole braces 2 with their holes facing up as shown in the left.

Installation (continued)

■ Joining the adjustment poles 1 and 2



Insert the adjustment pole 1 into the adjustment pole 2, align the holes, and secure them with the supplied six captive washer hex head bolts (M6 × 16).

- Align the "FRONT" inscription on the adjustment pole 1 with that on the adjustment pole 2.

Note

- Adjustable screw holes are provided in both adjustment poles 1 and 2 at 40 mm (1-9/16") intervals. Join the poles to each other by aligning the adjustable screw holes based on the position for installing the screen and the adjustment range of the adjustment poles (560 to 680 mm (22-1/16" to 26-25/32")).

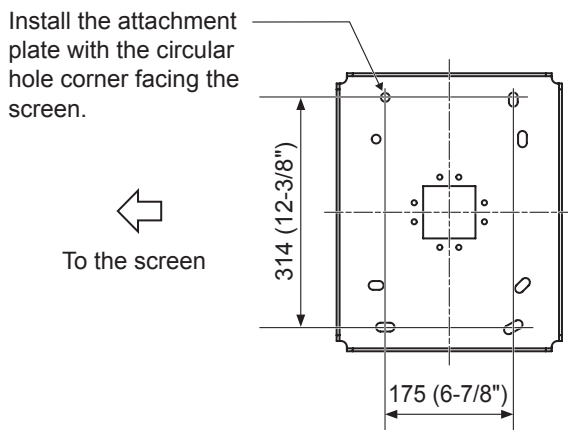
Installing the attachment plate to the ceiling

■ Attachment plate mounting hole sizes and preparation

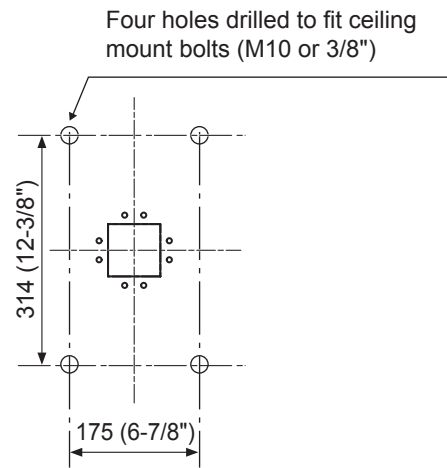
Make mounting holes while referring to the attachment plate diagram.

(Units: mm ("))

<Figure showing the attachment plate>



<Bolt mounting hole size>



Attention

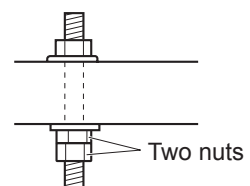
- When installing to a concrete structure, the sizes of the mounting holes you drill for the anchoring nuts or curled plugs should match those specified by their manufacturers.
- Use commercially available ceiling mount bolts, hex nuts, flat washers, spring washers, and anchoring nuts or curled plugs.

■ Installing the attachment plate

Depending on whether it is installed on a concrete or wooden ceiling structure, there are two different installation methods. Carry out by the appropriate installation method which is suited to each ceiling.

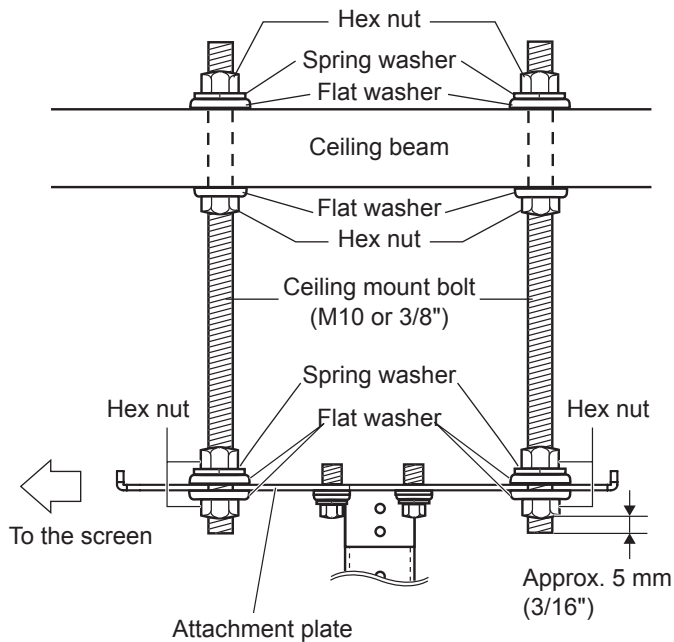
Attention

- Make sure to use the ceiling mount bolts, hex nuts, flat washers, spring washers, anchoring nuts or curled plugs for M10 or 3/8".
- All nuts and bolts should be securely tightened, and sufficient measures such as using two nuts or locking the bolts should be employed as necessary to prevent any loosening.



Installation (continued)

● Installing to a wooden structure

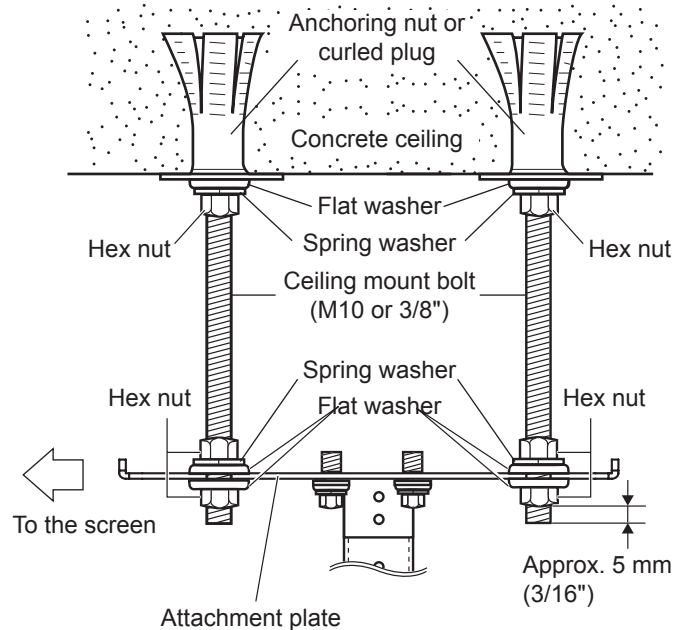


- 1) Drill four penetration holes in the ceiling beam for the ceiling mount bolts.
 - Drill the penetration holes with same size as the ceiling mount bolt mounting holes. (Refer to page 7 for hole locations and dimensions.)
- 2) Securely fix the four ceiling mount bolts to the ceiling beam.
 - Confirm that the location to retain the ceiling mount bolts has enough strength to retain the weight of the projector and the ceiling mount bracket. If there is not enough strength, perform sufficient reinforcement considering the safety factor.
- 3) Secure the attachment plate to the ceiling mount bolts.
 - The threaded end of ceiling mount bolt at the attachment plate side should protrude by approx. 5 mm (3/16") from the hex nut. Be sure to use commercially available flat and spring washers to install the attachment plate.

Note

- The signal cable of the projector can also be run inside the adjustment poles. In such a case, be sure not to damage the cord or the cable. (The inside diameter of the adjustment pole is 47 mm (1-27/32").)

● Installing to a concrete structure



- 1) Attach the anchoring nuts or curled plugs to a concrete ceiling and securely fix the four ceiling mount bolts. (Refer to page 7 for attachment positions.)
 - When installing anchoring nuts or curled plugs, strictly adhere to the installation instructions supplied by the manufacturer of the nuts so that they will not loosen in the concrete structure or be dislodged from the intended positions.
 - Check to make sure that the concrete ceiling structure can easily bear the weight of the projector and the ceiling mount bracket. If it is found to be fragile or degraded, use steel or wooden reinforcements.
- 2) Secure the attachment plate to the ceiling mount bolts.
 - The threaded end of ceiling mount bolt at the attachment plate side should protrude by approx. 5 mm (3/16") from the hex nut. Be sure to use commercially available flat and spring washers to install the attachment plate.

Note

- The signal cable of the projector can also be run inside the adjustment poles. In such a case, be sure not to damage the cord or the cable. (The inside diameter of the adjustment pole is 47 mm (1-27/32").)

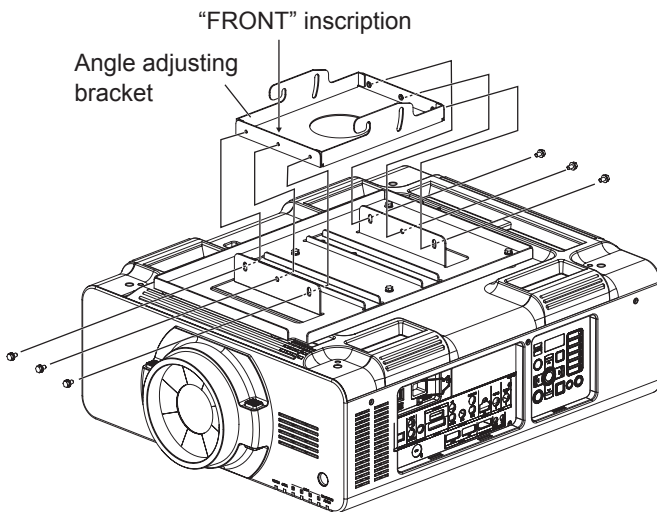
Installation (continued)

Installing the brackets to the projector

Install the angle adjusting bracket to the projector mount bracket (sold separately) that is pre-installed to the projector (sold separately).

Note

- The illustration depicts an ET-PKD520B projector mount bracket as an example. The installation procedure is the same for other projector mount bracket models.

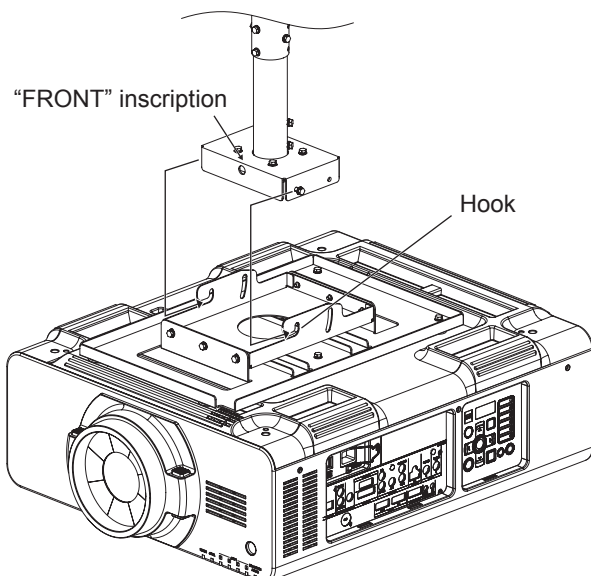
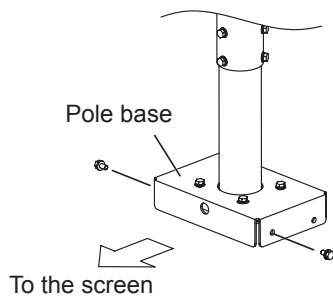


- 1) Secure the angle adjusting bracket to the projector mount bracket using the six supplied captive washer screws (M6 x 16) as illustrated on the left.

Note

- The shape of the screw mounting section may differ depending on the model of the projector mount bracket (sold separately).
- For installing the projector mount bracket (sold separately) to the projector, refer to the installation instructions for the projector mount bracket.

Suspending the projector



- 1) Temporarily secure two of the supplied captive washer hex head bolts (M8×20) to the front screw holes ("FRONT" inscription) on the left and right sides of the pole base.

Attention

- Make sure that the thread ridges of the temporarily fastened captive washer hex head bolts are tightly engaged with the screw holes on the pole base.

- 2) Insert the temporarily fastened captive washer hex head bolts on either side into the hook section of the angle adjusting bracket.

Attention

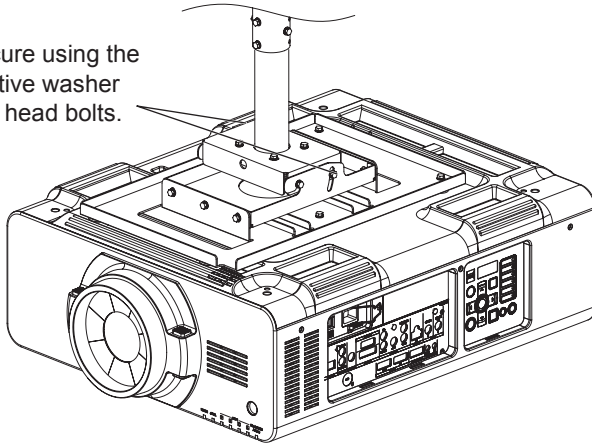
- Hold the projector firmly until the captive washer hex head bolts are securely placed in the hook part of the angle adjusting bracket.

WARNING:

Mounting and installation must be carried out by two or more persons.

Installation (continued)

Secure using the captive washer hex head bolts.



- 3) Tightly secure the two captive washer hex head bolts (M8×20) temporarily secured in step 1).
- 4) Secure the angle adjusting bracket to the pole base using two of the supplied captive washer hex head bolts (M8×20), as shown in the left.

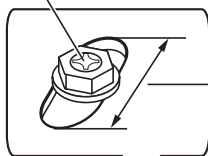
Attention

- After adjusting the installation angle on pages 10 to 11, securely tighten the captive washer hex head bolt of the pole base in four places on right and left.

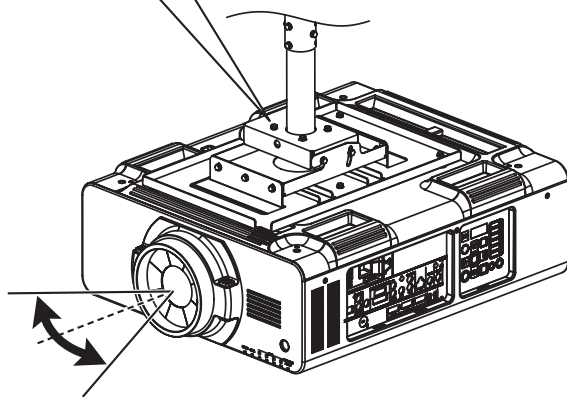
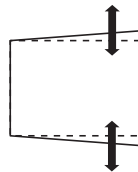
Adjusting the installation angle

- The ceiling mount bracket allows panning adjustment and vertical and horizontal tilt adjustment. Adjustments should be carried out in order to make the center of the projector lens perpendicularly to the surface of the projection screen.
- While referring to the operating instructions for the projector, project a picture onto the screen and then adjust the picture size and focus. After making these adjustments, adjust the ceiling mount bracket angle.
- **If the top and bottom edges of the picture are not parallel (panning adjustment)**

Hex head bolt, captive washer



Adjustable span

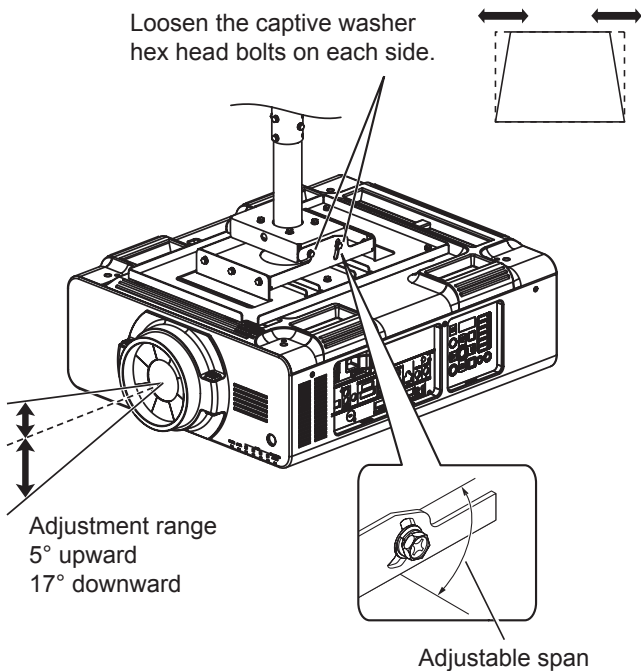


Adjustment range $\pm 1.2^\circ$

- Loosen the four captive washer hex head bolts of the pole base and then swivel the projector head horizontally until the picture is centered on the screen.
- Once the picture position has been set, be sure to retighten the four captive washer hex head bolts securely.

Adjusting the installation angle (continued)

■ If the right and left edges of the picture are not parallel (vertical tilt adjustment)

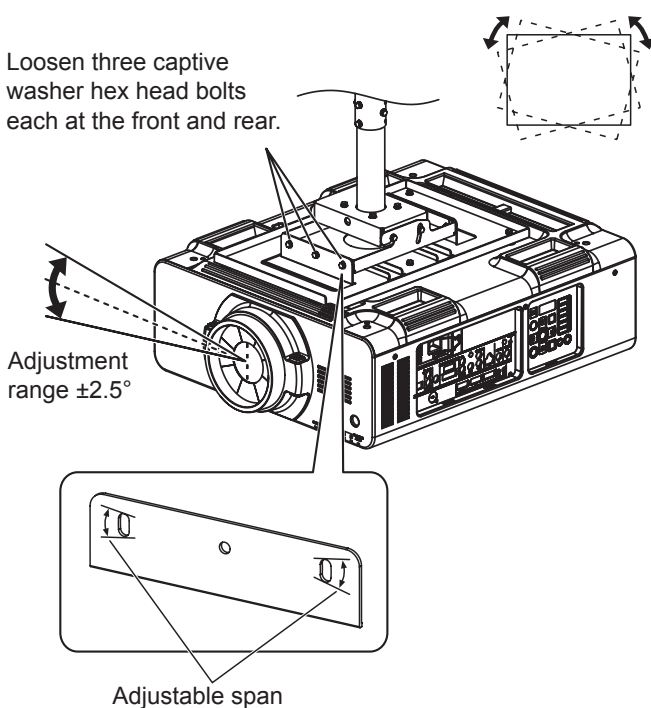


- Loosen the captive washer hex head bolts (two on each side) that attach the angle adjusting bracket to the pole base, then tilt the back of the projector vertically until the picture is centered on the screen.
- Once the picture position has been set, be sure to retighten the bolts securely.

Attention

- Do not over-loosen the captive washer hex head bolts, which are used to secure the angle adjusting bracket to the pole base. Otherwise, the projector may fall off.

■ If the picture is tilted to the right or left (horizontal tilt adjustment)



- Adjust to the position where the picture is not tilted by loosening the captive washer hex bolts fixing the projector mount bracket and the angle adjusting bracket (three locations in front and rear), and rotating the projector.
- Once the picture position has been set, be sure to retighten the bolts securely.

Attention

- Do not over-loosen the captive washer hex head bolts, which are used to secure the angle adjusting bracket to the projector mount bracket. Otherwise, the projector may fall off.

Attention

- After checking the position adjustments, check that the screws have been tightened to the torques specified on page 5.

Note

- If there is a keystone effect in the image even after adjusting the installation angle in the [POSITION] menu of the projector without applying keystone correction, the positional relationship between the screen and the projector is out of alignment. Check that the screen and projector are aligned opposite each other. Alternatively, perform the keystone correction at the projector.
- The wire rope is not shown in the illustration.

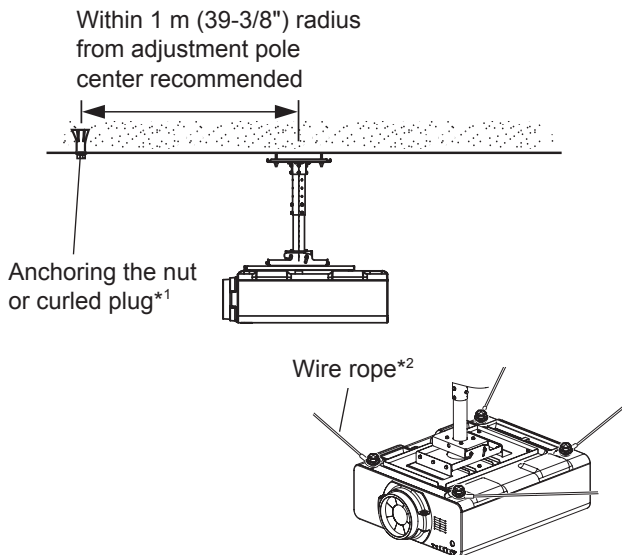
Attaching the wire rope to the ceiling

Attach the other end of the wire rope attached to the projector to the ceiling.

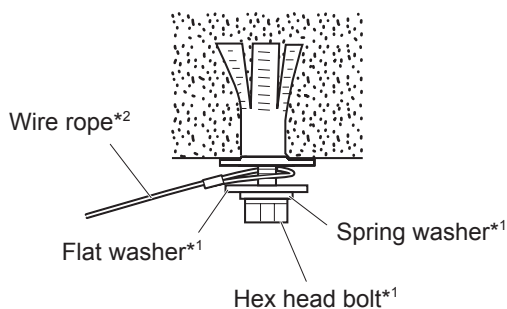
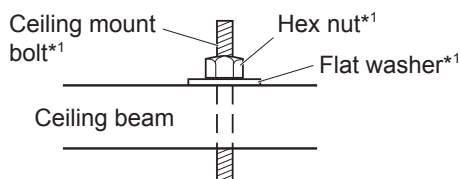
* These instructions assume installation on a concrete ceiling.

Note

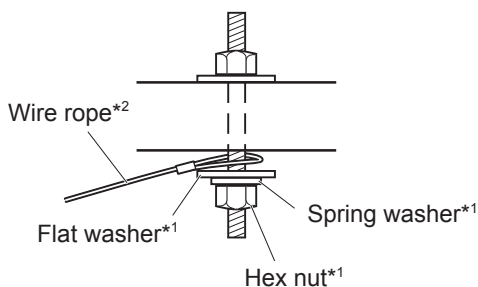
- For attaching the wire rope to the projector, refer to the installation instructions for the separately sold projector mount bracket.



● Installing to a wooden structure



● Installing to a wooden structure



*1: Commercially available product

*2: Supplied with the optional projector mount bracket

- 1) Mount the anchoring nuts or curled plugs (M10 or 3/8") in the concrete ceiling (at four points within the area shown in the diagram on the left).

- When installing to a wooden structure, drill four penetration holes in the ceiling beam for the ceiling mount bolts, and secure the ceiling mount bolts using the flat washers (M10 or 3/8") and a commercially available hex head bolts (M10 or 3/8").

Attention

- When mounting the anchoring nut or curled plug (M10 or 3/8") to the ceiling, be careful that there is no slack in the wire rope between the projector and the ceiling.

- 2) Tighten the commercially available hex head bolt (M10 or 3/8") to the anchor, passing it through the commercially available spring washer (M10 or 3/8"), the flat washer (M10 or 3/8"), and the ring of the end of the wire rope.

- When installing to a wooden structure, pass the ceiling mount bolt through the ring at the end of the wire rope as shown to the left, and secure it firmly to the ceiling beam.

Attention

- Purchase the commercially available anchoring nut or curled plug, hex head bolt, spring washer, flat washer, ceiling mount bolt, and hex nut.

Specifications

Range of adjustment	Vertical slide range	Up to 120 mm (4-23/32")
	Panning range	±1.2°
	Vertical tilt range	5° upward, 17° downward
	Horizontal tilt range	±2.5°
External dimensions		Width: 380 mm (14-31/32") Height: 397 mm - 517 mm (15-5/8" - 20-11/32") Depth: 308 mm (12-1/8")
Weight		Approx. 10.1 kg (22.3 lbs.)

* The vertical slide can be adjusted in 40-mm (1-9/16") increments within the range.

* The height dimensions include the thickness of the attachment plate.

Panasonic Corporation

Web Site : <http://panasonic.net/avc/projector/>
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