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PROJECTOR OWNER'S MANUAL

Panasonic

PT-EZ580U

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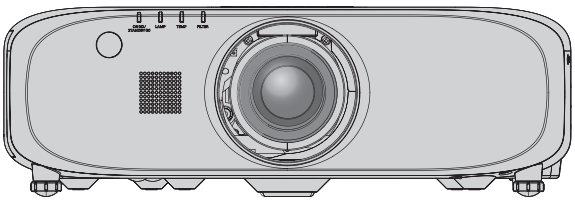
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Panasonic

Operating Instructions
Functional Manual

LCD Projector **Commercial Use**

Model No. PT-EZ580
PT-EW640
PT-EX610
PT-EW540
PT-EX510





Thank you for purchasing this Panasonic product.

- This manual is intended for products manufactured from Jun. 2014 and beyond.
- This manual is common to all the models regardless of suffixes of the Model No.
  - Without L : The standard zoom lens supplied With L : The lens sold separately
- Before operating this product, please read the instructions carefully and save this manual for future use.
- Before using this product, be sure to read “Read this first!” (➡ pages 2 to 11).

ENGLISH
TQBJ0687-1

Read this first!

WARNING: THIS APPARATUS MUST BE EARTHED.

WARNING: To prevent damage which may result in fire or shock hazard, do not expose this appliance to rain or moisture.
This device is not intended for use in the direct field of view at visual display workplaces. To avoid incommoding reflexions at visual display workplaces this device must not be placed in the direct field of view.
The equipment is not intended for used at a video workstation in compliance BildscharbV.

The sound pressure level at the operator position is equal or less than 70 dB (A) according to ISO 7779.

WARNING:
1. Remove the plug from the mains socket when this unit is not in use for a prolonged period of time.
2. To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
3. Do not remove the earthing pin on the mains plug. This apparatus is equipped with a three prong earthingtype mains plug. This plug will only fit an earthing-type mains socket. This is a safety feature. If you are unable to insert the plug into the mains socket, contact an electrician. Do not defeat the purpose of the earthing plug.

WARNING:
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CAUTION: To assure continued compliance, follow the attached installation instructions. This includes using the provided power cord and shielded interface cables when connecting to computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

This is a device to project images onto a screen, etc., and is not intended for use as indoor lighting in a domestic environment.

Directive 2009/125/EC

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.





The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

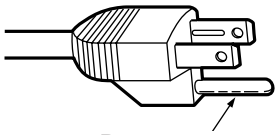
CAUTION (North/Middle/South America)

Power Supply: This Projector is designed to operate on 100 V - 240 V, 50 Hz/60 Hz AC, house current only.

CAUTION: The AC power cord which is supplied with the projector as an accessory can only be used for power supplies up to 125 V. If you need to use higher voltages than this, you will need to obtain a separate 250 V power cord. If you use the accessory cord in such situations, fire may result.

CAUTION (North/Middle/South America)

This equipment is equipped with a three-pin grounding-type power plug. Do not remove the grounding pin on the power plug. This plug will only fit a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician. Do not defeat the purpose of the grounding plug.



WARNING (USA and Canada)

- Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.
- For permanently connected equipment, a readily accessible disconnect device shall be incorporated in the building installation wiring.
- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

NOTIFICATION (Canada)

This class A digital apparatus complies with Canadian ICES-003.

NOTICE USA only:

- This product has a High Intensity Discharge (HID) lamp that contains mercury. Disposal may be regulated in your community due to environmental considerations. For disposal or recycling information, please visit Panasonic website: http://www.panasonic.com/environmental or call 1-888-769-0149.

For USA-California Only

This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material – special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate

FCC Notice (USA)

Verification

Model Number:	PT-EZ580 / PT-EZ580L / PT-EW640 / PT-EW640L / PT-EX610 / PT-EX610L PT-EW540 / PT-EW540L / PT-EX510 / PT-EX510L
Trade Name:	Panasonic
Responsible Party:	Panasonic Corporation of North America
Address:	Two Riverfront Plaza, Newark, NJ 07102-5490
General Contact:	http://www.panasonic.com/contactinfo
Projector Contact:	http://panasonic.net/avc/projector/

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Warning:
To assure continued compliance, follow the attached installation instructions. This includes using the provided power cord and shielded interface cables when connecting to computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user’s authority to operate this device.

Product information (for Turkey only)

EEE Yönetmeliğine Uygundur.
EEE Complies with Directive of Turkey.

IMPORTANT: THE MOULDED PLUG (U.K. only)

FOR YOUR SAFETY, PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 13 amp fuse is fitted in this plug. Should the fuse need to be replaced, please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover, you must ensure that it is refitted when the fuse is replaced. If you lose the fuse cover, the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be purchased from an Authorised Service Center.

If the fitted moulded plug is unsuitable for the mains socket in your home, then the fuse should be removed and the plug cut off and disposed of safely. There is a danger of severe electrical shock if the cut off plug is inserted into any 13 amp socket.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

WARNING: THIS APPLIANCE MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

Green - and - Yellow: Earth
Blue: Neutral
Brown: Live

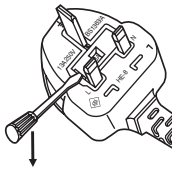
As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured GREEN - AND - YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the Earth symbol ⏚ or coloured GREEN or GREEN - AND - YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

How to replace the fuse: Open the fuse compartment with a screwdriver and replace the fuse.



Importer's name and address within the European Union

Panasonic Marketing Europe GmbH

Panasonic Testing Center

Winsbergring 15, 22525 Hamburg, Germany

WARNING:

■ POWER

The wall outlet or the circuit breaker shall be installed near the equipment and shall be easily accessible when problems occur. If the following problems occur, cut off the power supply immediately.
Continued use of the projector in these conditions will result in fire or electric shock.

- If foreign objects or water get inside the projector, cut off the power supply.
- If the projector is dropped or the cabinet is broken, cut off the power supply.
- If you notice smoke, strange smells or noise coming from the projector, cut off the power supply.

Please contact an Authorized Service Center for repairs, and do not attempt to repair the projector yourself.

During a thunderstorm, do not touch the projector or the cable.
Electric shocks can result.

Do not do anything that might damage the power cord or the power plug.
If the power cord is used while damaged, electric shocks, short-circuits or fire will result.

- Do not damage the power cord, make any modifications to it, place it near any hot objects, bend it excessively, twist it, pull it, place heavy objects on top of it or wrap it into a bundle.

Ask an Authorized Service Center to carry out any repairs to the power cord that might be necessary.

Completely insert the power plug into the wall outlet and the power connector into the projector terminal.
If the plug is not inserted correctly, electric shocks or overheating will result.

- Do not use plugs which are damaged or wall outlets which are coming loose from the wall.

Do not use anything other than the provided power cord.
Failure to observe this will result in electric shocks or fire. Please note that if you do not use the provided power cord to ground the device on the side of the outlet, this may result in electric shocks.

Clean the power plug regularly to prevent it from becoming covered in dust.
Failure to observe this will cause a fire.

- If dust builds up on the power plug, the resulting humidity can damage the insulation.
- If not using the projector for an extended period of time, pull the power plug out from the wall outlet.

Pull the power plug out from the wall outlet and wipe it with a dry cloth regularly.

Do not handle the power plug and power connector with wet hands.
Failure to observe this will result in electric shocks.

Do not overload the wall outlet.
If the power supply is overloaded (ex., by using too many adapters), overheating may occur and fire will result.

■ ON USE/INSTALLATION

Do not place the projector on soft materials such as carpets or sponge mats.
Doing so will cause the projector to overheat, which can cause burns, fire or damage to the projector.

Do not set up the projector in humid or dusty places or in places where the projector may come into contact with oily smoke or steam.
Using the projector under such conditions will result in fire, electric shocks or deterioration of components.
Deterioration of components (such as ceiling mount brackets) may cause the projector which is mounted on the ceiling to fall down.

Do not install this projector in a place which is not strong enough to take the full weight of the projector or on top of a surface which is sloped or unstable.
Failure to observe this will cause projector to fall down or tip over the projector, and severe injury or damage could result.

WARNING:

Do not cover the air intake/exhaust ports.
Doing so will cause the projector to overheat, which can cause fire or damage to the projector.
- Do not place the projector in narrow, badly ventilated places.
- Do not place the projector on cloth or papers, as these materials could be drawn into the air intake port.
- Provide at least 1 m (40") of space between any walls or objects and the exhaust port, and at least 50 cm (20") of space between any walls or objects and the intake port.

Do not place your hands or other objects close to the air exhaust port.
Doing so will cause burns or damage your hands or other objects.
- Heated air comes out of the air exhaust port. Do not place your hands or face, or objects which cannot withstand heat close to this port.

Do not look at or place your skin into the light emitted from the lens while the projector is being used.
Doing so can cause burns or loss of sight.
- Strong light is emitted from the projector's lens. Do not look at or place your hands directly into this light.
- Be especially careful not to let young children look into the lens. In addition, turn off the power and switch off the main power when you are away from the projector.

Never attempt to remodel or disassemble the projector.
High voltages can cause fire or electric shocks.
- For any inspection, adjustment and repair work, please contact an Authorized Service Center.

Do not project an image with the lens cover attached.
Doing so can cause fire.

Do not allow metal objects, flammable objects, or liquids to enter inside of the projector. Do not allow the projector to get wet.
Doing so may cause short circuits or overheating, and result in fire, electric shock, or malfunction of the projector.
- Do not place containers of liquid or metal objects near the projector.
- If liquid enters inside of the projector, consult your dealer.
- Particular attention must be paid to children.

Use the ceiling mount bracket specified by Panasonic.
Using the ceiling mount bracket other than the specified one will result in falling accidents.
- Attach the supplied safety cable to the ceiling mount bracket to prevent the projector from falling down.

Installation work (such as ceiling mount bracket) should only be carried out by a qualified technician.
If installation is not carried out and secured correctly, it can cause injury or accidents, such as electric shocks.
- Be sure to use the wire provided with the ceiling mount bracket as an extra safety measure to prevent the projector from falling down. (Install in a different location to the ceiling mount bracket.)

WARNING:

■ ACCESSORIES

Do not use or handle the batteries improperly, and refer to the following.
Failure to observe this will cause burns, batteries to leak, overheat, explode or catch fire.

- Do not use unspecified batteries.
- Do not use chargeable batteries.
- Do not disassemble dry cell batteries.
- Do not heat the batteries or place them into water or fire.
- Do not allow the + and – terminals of the batteries to come into contact with metallic objects such as necklaces or hairpins.
- Do not store or carry batteries together with metallic objects.
- Store the batteries in a plastic bag and keep them away from metallic objects.
- Make sure the polarities (+ and –) are correct when inserting the batteries.
- Do not use a new battery together with an old battery or mix different types of batteries.
- Do not use batteries with the outer cover peeling away or removed.

If the battery fluid leaks, do not touch it with bare hands, and take the following measures if necessary.

- Battery fluid on your skin or clothing could result in skin inflammation or injury.
  Rinse with clean water and seek medical advice immediately.
- Battery fluid coming in contact with your eyes could result in loss of sight.
  In this case, do not rub your eyes. Rinse with clean water and seek medical advice immediately.

Do not remove unspecified screws during the lamp unit replacement.
Doing so can cause electric shocks, burns, or injury.

Do not disassemble the lamp unit.
If the lamp breaks, it could cause injury.

Lamp replacement
The lamp has high internal pressure. If improperly handled, an explosion and severe injury or accidents will result.

- The lamp can easily explode if struck against hard objects or dropped.
- Before replacing the lamp unit, be sure to turn the power off and to disconnect the power plug from the wall outlet.
  Electric shocks or explosions can result if this is not done.
- When replacing the lamp unit, turn the power off and allow the lamp to cool for at least one hour before handling it otherwise it can cause burns.

Do not use the supplied power cord with devices other than this projector.

- Using the supplied power cord with devices other than this projector may cause short circuits or overheating, and result in electric shock or fire.

Do not allow children to reach the batteries.
Accidentally swallowing them can cause physical harm.

- If swallowed, seek medical advice immediately.

Remove the depleted batteries from the remote control promptly.

- Leaving them in the unit may result in fluid leakage, overheating, or explosion of the batteries.

Be sure to use the standard zoom lens supplied with the projector or the specified Projection Lens (optional).
Failure to observe this will cause overheating, and result in fire, burns, or malfunction of the projector.

CAUTION:

■ POWER

When disconnecting the power cord, be sure to hold the power plug and power connector.
If the power cord itself is pulled, the lead will become damaged, and fire, short-circuits or serious electric shocks will result.

When not using the projector for an extended period of time, disconnect the power plug from the wall outlet.
Failure to do so may result in fire or electric shock.

Disconnect the power plug from the wall outlet before carrying out any cleaning and replacing the unit.
Failure to do so may result in electric shock.

■ ON USE/INSTALLATION

Do not place heavy objects on top of the projector.
Failure to observe this will cause the projector to become unbalanced and fall, which could result in damage or injury. The projector will be damaged or deformed.

Do not put your weight on this projector.
You could fall or the projector could break, and injury will result.
- Be especially careful not to let young children stand or sit on the projector.

Do not place the projector in extremely hot locations.
Doing so will cause the outer casing or internal components to deteriorate, or result in fire.
- Take particular care in locations exposed to direct sunlight or near heaters.

Do not place your hands in the openings beside the optical lens, while shifting the lens.
Failure to observe this could cause injury.

Do not stand in front of the lens while the projector is being used.
Doing so can cause damage and burns to clothing.
- Extremely strong light is emitted from the projector's lens.

Do not place objects in front of the lens while the projector is being used.
Doing so can cause damage to the object and can cause the set to malfunction.
- Extremely strong light is emitted from the projector's lens.

Always disconnect all cables before moving the projector.
Moving the projector with cables still attached can damage the cables, which will cause fire or electric shocks to occur.

When mounting the projector on the ceiling, keep mounting screws and power cord from contact with metal parts inside the ceiling.
Contact with metal parts inside the ceiling can cause electric shocks.

■ ACCESSORIES

Do not use the old lamp unit.
If used it could cause lamp explosion.

If the lamp has broken, ventilate the room immediately. Do not touch or bring your face close to the broken pieces.
Failure to observe this will cause the user to absorb the gas which was released when the lamp broke and which contains nearly the same amount of mercury as fluorescent lamps, and the broken pieces will cause injury.
- If you believe that you have absorbed the gas or that the gas has got into your eyes or mouth, seek medical advice immediately.
- Ask your dealer about replacing the lamp unit and check the inside of the projector.

When not using the projector for an extended period of time, remove the batteries from the remote control.
Failure to observe this will cause the batteries to leak, overheat, catch fire or explode, which may result in fire or contamination of surrounding area.

CAUTION:

■ MAINTENANCE

Do not attach the air filter unit while it is wet.
Doing so may result in electric shock or malfunctions.
- After you clean the air filter units, dry them thoroughly before reattaching them.

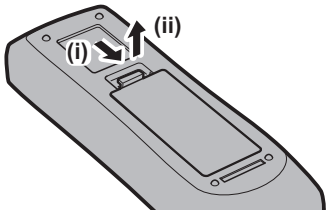
Ask your dealer about cleaning inside the projector once a year.
Continuous use while dust is accumulated inside the projector may result in fire.
- For cleaning fee, ask your dealer.

EU

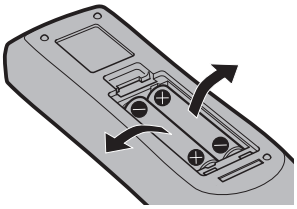
To remove the battery

Remote Control Battery

1. Press the guide and lift the cover.



2. Remove the batteries.



Brazil Only
Brasil Apenas

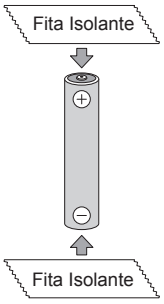
■ Manuseio de baterias usadas



BRASIL
Após o uso, as pilhas e/ou baterias deverão ser entregues ao estabelecimento comercial ou rede de assistência técnica autorizada.

Cobrir os terminais positivo (+) e negativo (-) com uma fita isolante adesiva, antes de depositar numa caixa destinada para o recolhimento. O contato entre partes metálicas pode causar vazamentos, gerar calor, romper a blindagem e produzir fogo. (Fig. 1)

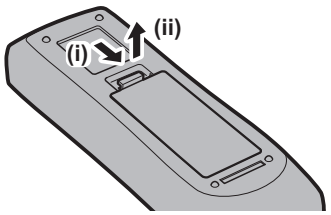
Fig. 1
Como isolar os terminais



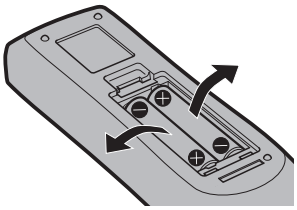
Não desmonte, não remova o invólucro, nem amasse a bateria. O gás liberado pela bateria pode irritar a garganta, danificar o lacre do invólucro ou o vazamento provocar calor, ruptura da blindagem e produzir fogo devido ao curto circuito dos terminais. Não incinere nem aqueça as baterias, elas não podem ficar expostas a temperaturas superiores a 100 °C (212 °F). O gás liberado pela bateria pode irritar a garganta, danificar o lacre do invólucro ou o vazamento provocar calor, ruptura da blindagem e produzir fogo devido ao curto circuito dos terminais provocado internamente.
Evite o contato com o liquido que vazar das baterias. Caso isto ocorra, lave bem a parte afetada com bastante água. Caso haja irritação, consulte um médico.

■ Remoção das baterias

1. Pressione a guia e levante a tampa.



2. Remova as baterias.



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- Some of the fonts used in the on-screen menu are Ricoh bitmap fonts, which are manufactured and sold by Ricoh Company, Ltd.
- All other names, company names, and product names mentioned in this manual are trademarks or registered trademarks of their respective owners.
  Please note that the ® and ™ symbols are not specified in this manual.

■ Illustrations in this manual

- Illustrations of the projector, screen, and other parts may vary from the actual product.
- Pictures shown are illustrations of PT-EZ580 in this manual, other models have their own characteristics and may be different from them.

■ Reference pages

- Reference pages in this manual are indicated as (➡ page 00).

■ Term

- In this manual, the “Wireless/wired remote control unit” accessory is referred to as “Remote control”.

Features of the Projector

High luminance and high contrast

▶ A high luminance*1 and a high contrast*2 (Except for PT-EW540, PT-EX510) are achieved by means of a unique optical system and lamp drive system.

*1 6 200 lm for PT-EX610, 5 800 lm for PT-EW640, 5 400 lm for PT-EZ580, 5 300 lm for PT-EX510 and 5 000 lm for the PT-EW540.
*2 5 000:1 for PT-EZ580, PT-EW640 and PT-EX610, 2 000:1 for PT-EW540 and PT-EX510.

Easy and highly flexible setup

▶ Easy and highly flexible setup is achieved by an electric lens shift function, and a lineup of various optional lenses.

Reduced maintenance costs

▶ Maintenance costs are reduced by use of an extended-life filter and a recommended lamp replacement interval of 4 500 H*1.

*1 When [LAMP POWER] is set to [ECO]
This time is only the target for replacement and not the warranty time.

Energy conservation achieved through the ECO function

▶ Lamp power is optimized according to the input image.*1 Power consumption is also reduced by optimizing the lamp power according to the brightness of the setup installation location, state of the input signals and state of the video mute.*2

*1 When [LAMP POWER] is set to [AUTO]
*2 When [ECO MANAGEMENT] is set to [ON]

Quick Steps

For details, refer to the corresponding pages.

1. **Set up the projector.**
   (➡ page 30)
2. **Attach the Projection Lens.**
   (➡ page 38)
3. **Connect with external devices.**
   (➡ page 39)
4. **Connect the power cord.**
   (➡ page 44)
5. **Switch on the projector.**
   (➡ page 45)
6. **Make initial settings.**
   (➡ page 46)
   - Take this step when you switch on the power for the first time after purchasing the projector.
7. **Select the input signal.**
   (➡ page 49)
8. **Adjust the image.**
   (➡ page 49)

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Be sure to read “Read this first!” from page 2.

Read this first! **2**

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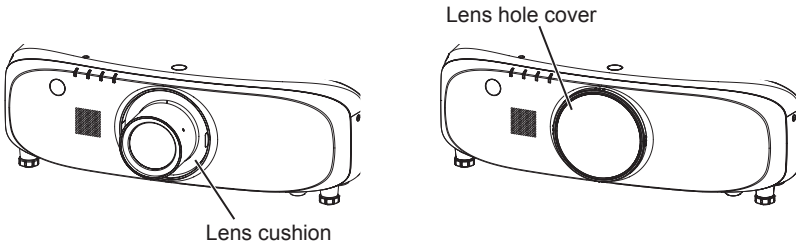
Chapter 1 Preparation

This chapter describes things you need to know or check before using the projector.

Precautions for use

Cautions when transporting

- If you purchased the projector with the standard zoom lens, remove the lens cushion before use, and store it for the future use. When transporting the projector, move the lens to the home position and attach the lens cushion and the lens cover.
  If you purchased the projector with the lens sold separately, remove the lens hole cover before use, and store it for the future use. When transporting the projector, move the projection lens to the home position, remove the Projection Lens, and then attach the lens hole cover.
  For the steps to move the lens to the home position, refer to “Moving the lens to the home position” (➡ page 50).



- When transporting the projector, hold it securely by its bottom and avoid excessive vibration and impacts. They may damage the internal components and result in malfunctions.
- Do not transport the projector with the adjustable feet extended. Doing so may damage the adjustable feet.

Cautions when installing

■ Do not set up the projector outdoors.

The projector is designed for indoor use only.

■ Do not set up the projector in the following locations.

- Places where vibration and impacts occur such as in a car or vehicle: Doing so may cause damage to internal components or malfunction.
- Near the exhaust of an air conditioner: Depending on the conditions of use, the screen may fluctuate in rare cases due to the heated air from the air exhaust port or the hot or cooled air. Make sure that the exhaust from the projector or other equipment, or the air from the air conditioner does not blow toward the front of the projector.
- Places with sharp temperature fluctuations such as near lights (studio lamps): Doing so may shorten the life of the lamp, or result in deformation of the outer case due to heat, which may cause malfunctions.
  The operating environment temperature of the projector should be between 0 °C (32 °F) and 45 °C (113 °F) when using it at elevations lower than 1 400 m (4 593') above sea level, and between 0 °C (32 °F) and 40 °C (104 °F) when using it at high altitudes (between 1 400 m (4 593') and 2 700 m (8 858') above sea level).
- Near high-voltage power lines or near motors: Doing so may interfere with the operation of the projector.

■ Be sure to ask a specialized technician or your dealer when installing the projector on a ceiling.

The optional Ceiling Mount Bracket is required.
Model No.: ET-PKD120H (for High Ceilings), ET-PKD120S (for Low Ceilings), ET-PKE300B (Projector Mount Bracket) *1
or
Model No.: ET-PKE200H (for High Ceilings), ET-PKE200S (for Low Ceilings), ET-PKE200B (Projector Mount Base) *1

*1 Be sure to read “Precautions for Ceiling Mount Bracket” (➡ page 153)

■ Ask a qualified technician or your dealer to install the cable wiring for DIGITAL LINK connection. (Only for PT-EZ580, PT-EW640 and PT-EX610)

Image and sound may be disrupted if cable transmission characteristics cannot be obtained due to inadequate installation.

■ The projector may not work properly due to strong radio wave from the broadcast station or the radio.

If there is any facility or equipment, which outputs strong radio wave, near the installation location, install the projector at a location sufficiently far from the source of the radio wave. Or, wrap the LAN cable connected to the <DIGITAL LINK/LAN> *1 terminal by using a piece of metal foil or a metal pipe, of which is grounded at both ends.

*1 For PT-EZ580, PT-EW640 and PT-EX610; <LAN> terminal is for PT-EW540 and PT-EX510

■ Projection Lens

Be sure to use the standard zoom lens (for high brightness) supplied with the projector or the specified Projection Lens (optional). The standard zoom lens supplied with PT-EZ570 series, PT-EW630 series, PT-EW530 series, PT-EX600 series, PT-EX500 series is different from the lens of this projector. Using it may result in malfunction or damage. Do not use it.
The standard zoom lens supplied with the projector is for high brightness, and "Standard Lens for HighBrightness" is indicated on the lens.

■ Focus adjustment

The projection lens is thermally affected by the light from the light source, making the focus unstable in the period just after switching on the power. Before adjusting the lens focus, wait at least 30 minutes with the image projected.

■ Do not install the projector at elevations of 2 700 m (8 858') or higher above sea level.

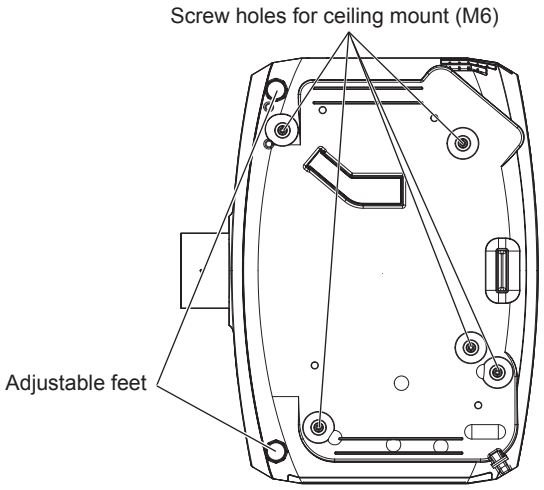
Doing so may shorten the life of the components and result in malfunctions.

■ Do not use the projector tilted to the right or left.

Using the projector at a vertical angle that exceeds 15° may reduce product life or result in malfunction.

■ Cautions when setting up the projector

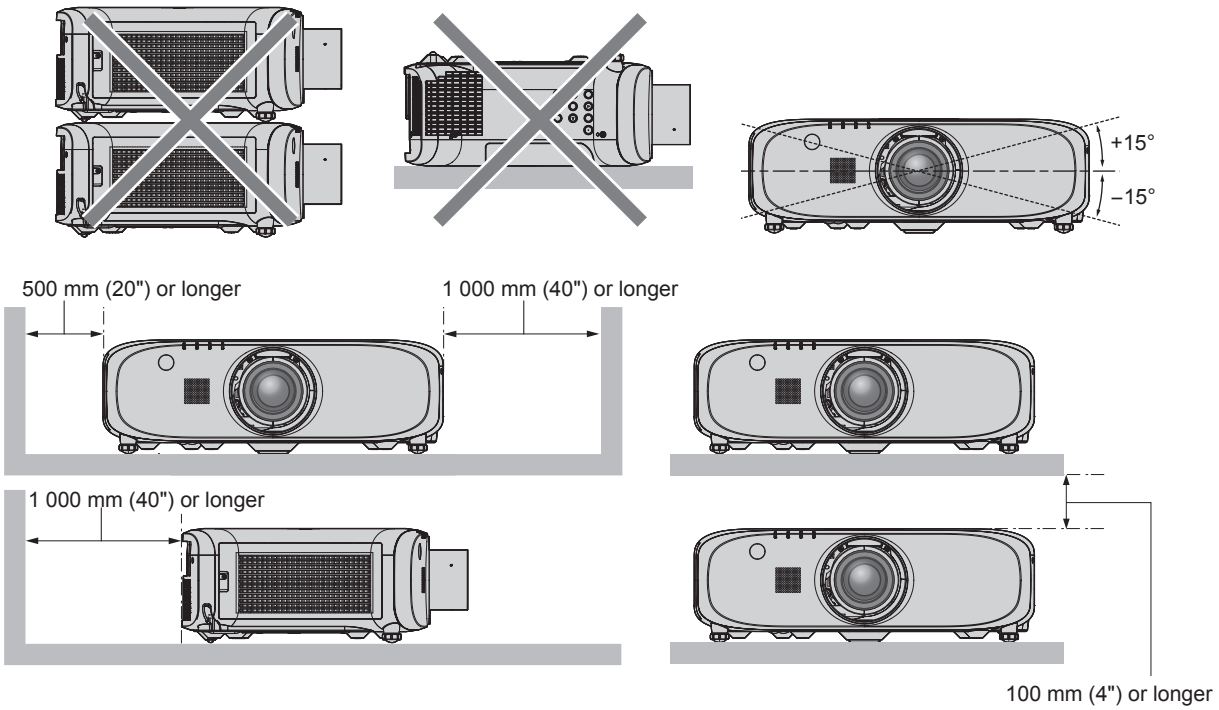
- When installing and using the projector with a method other than the floor standing installation using the adjustable feet, fix the projector using the four holes (the upper left, the upper right, the lower left and one of two lower right holes) for ceiling mount (as shown in the figure).
  (Screw diameter: M6, tapping depth inside the set: 12 mm (15/32"), torque: 4 ± 0.5 N·m)
  Prevent a gap forming between the setting surface and the screw holes for ceiling mount on the projector bottom, for example, by inserting spacers (metallic) between them.



The positions of screw holes for ceiling mount and adjustable feet

- Use the adjustable feet only for the floor standing installation and for adjusting the angle. Using them for other purposes may damage the projector.
- Do not stack projectors on top of each other.
- Do not use the projector supporting it by the top.
- Do not use the projector tilted at an angle that exceeds ±15° from the horizontal plane.
- Do not block the ventilation ports (intake and exhaust) of the projector.

- Prevent hot and cool air from the air conditioning system to blow directly to the ventilation ports (intake and exhaust) of the projector.



- Do not install the projector in a confined space.
  When installing the projector in a confined space, provide air conditioning or ventilation separately. Exhaust heat may accumulate when the ventilation is not enough, triggering the protection circuit of the projector.

Security

When using this product, take safety measures against the following incidents.
- Personal information being leaked via this product
- Unauthorized operation of this product by a malicious third party
- Interfering or stopping of this product by a malicious third party

Take sufficient security measures. (➡ pages 104, 121)
- Make your password difficult to guess as much as possible.
- Change your password periodically.
- Panasonic Corporation or its affiliate companies will never ask for your password directly. Do not divulge your password in case you receive such inquiries.
- The connecting network must be secured by a firewall, etc.
- Set a password for the web control and restrict the users who can log in.

DIGITAL LINK

(Only for PT-EZ580, PT-EW640 and PT-EX610)

“DIGITAL LINK” is a technology that uses a twisted-pair-cable to transmit video, audio, Ethernet, and serial control signals.

The projector supports the optional Digital Interface Box (Model No.: ET-YFB100G) and the “XTP transmitter” of Extron Electronics. For the twisted-pair-cable transmitter of other manufacturers of which the operation has been verified with this projector, refer to Panasonic website (http://panasonic.net/avc/projector/). Note that the verification for devices of other manufacturers has been made for the items set by Panasonic Corporation, and not all the operations have been verified. For operation or performance problems caused by the devices of other manufacturers, contact the respective manufacturers.

Cautions on use

■ To get a good picture quality

- In order to view a beautiful image in higher contrast, prepare an appropriate environment. Draw curtains or blinds over windows and turn off any lights near the screen to prevent outside light or light from indoor lamps from shining onto the screen.

■ Do not touch the surface of the Projection Lens with your bare hands.

If the surface of the Projection Lens becomes dirty from fingerprints or anything else, this will be magnified and projected onto the screen.

Attach the lens cover supplied with the projector or the optional Projection Lens when you do not use the projector.

■ LCD panel

- The LCD panel is precision-made. Note that in rare cases, pixels of high precision could be missing or always lit. Note that such phenomena do not indicate malfunction. If still images are projected for a long time, a residual image may remain on the LCD panel. Note that the residual image may not disappear.

■ Optical parts

When the operating environment temperature is high or in environments where lots of dust, cigarette smoke, etc. is present, the replacement cycle of the LCD panel, polarizing plates and other optical parts may be shorter even if used for less than one year. Consult your dealer for details.

■ Do not move the projector or subject it to vibration or impact while it is operating.

Doing so may shorten the life of the built-in motor.

■ Lamp

The light source of the projector is a high-pressure mercury lamp.

A high-pressure mercury lamp has the following characteristics.

- The luminance of the lamp will decrease by duration of usage.
- The lamp may burst with a loud sound or have its service life shortened because of shock, chipping, or degradation due to cumulative runtime.
- The lamp life varies greatly depending on individual differences and usage conditions. In particular, continuous use for 12 hours or more and frequent off/on switching of the power greatly deteriorate the lamp and affects the lamp life.
- In rare cases, the lamps burst shortly after projection starts.
- The risk of bursting increases when the lamp is used beyond its replacement cycle. Make sure to replace the lamp unit regularly.
  (“When to replace the lamp unit” (➡ page 131), “How to replace the lamp unit” (➡ page 131))
- If the lamp bursts, gas contained inside of the lamp is released in the form of smoke.
- It is recommended that you store the Replacement Lamp Unit as a contingency.

■ Computer and external device connections

- When connecting a computer or an external device, read this manual carefully regarding the use of power cords and shielded cables as well.

Disposal

To dispose of the product, ask your local authorities or dealer for correct methods of disposal.

The lamp contains mercury. When disposing of used lamp units, contact your local authorities or dealer for correct methods of disposal.

Accessories

Make sure that the following accessories are provided with your projector. Numbers enclosed in < > show the number of accessories.

Wireless/wired remote control unit <1>

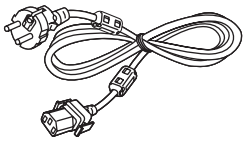
(N2QAYA000063)
For PT-EZ580, PT-EW640 and PT-EX610



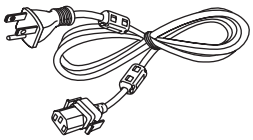
(N2QAYA000081)
For PT-EW540 and PT-EX510



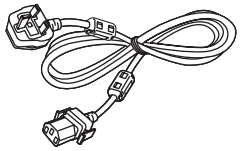
Power cord
(TXFSX01RXQZ)



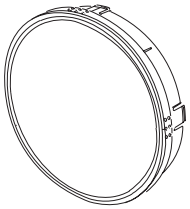
(TXFSX01RWDZ)



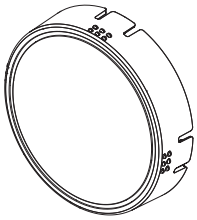
(TXFSX01RXRZ)



Lens hole cover <1>
(Only lens optional models)
(Attached to the projector at the time of purchase)
(6103619194)



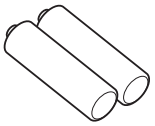
Lens cover <1>
(Only models with lens)
(6103626291)



CD-ROM <1>
(TXFQB02VLR5)



AAA/R03 or AAA/LR03 battery <2>
(For remote control unit)



Attention

- After unpacking the projector, discard the power cord cap and packaging material properly.
- Do not use the supplied power cord for devices other than this projector.
- For missing accessories, consult your dealer.
- Store small parts in an appropriate manner, and keep them away from small children.

Note

- The type and number of the supplied power cords vary depending on the country where you purchased the product.
- The model numbers of accessories are subject to change without prior notice.

Contents of the supplied CD-ROM

The contents of the supplied CD-ROM are as follows.

Instruction/list (PDF)	Operating Instructions – Functional Manual	
	Multi Projector Monitoring & Control Software Operating Instructions	
	Logo Transfer Software Operating Instructions	
	List of Compatible Projector Models	This is a list of projectors that are compatible with the software contained in the CD-ROM and their restrictions.

Software	Multi Projector Monitoring & Control Software (Windows)	This software allows you to monitor and control multiple projectors connected to the LAN.
	Logo Transfer Software (Windows)	This software allows you to transfer original images, such as company logos to be displayed when projection starts, to the projector.

Optional accessories

Optional accessories (product name)	Model No.	
Projection Lens	Zoom lens	ET-ELW20, ET-ELT20, ET-ELT21
	Fixed-focus lens	ET-ELW21
Ceiling Mount Bracket	ET-PKD120H (for High Ceilings), ET-PKD120S (for Low Ceilings), ET-PKE300B (Projector Mount Bracket) *1 or ET-PKE200H (for High Ceilings), ET-PKE200S (for Low Ceilings), ET-PKE200B (Projector Mount Base) *1	
Replacement Lamp Unit	ET-LAE300	
Replacement Filter Unit	ET-RFE300	
Digital Interface Box *2	ET-YFB100G	

*1 Be sure to read “Precautions for Ceiling Mount Bracket” (➡ page 153)
*2 Only for PT-EZ580, PT-EW640, PT-EX610

Note

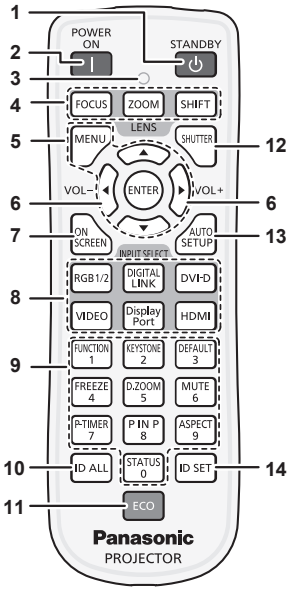
- The model numbers of optional accessories are subject to change without prior notice.

About your projector

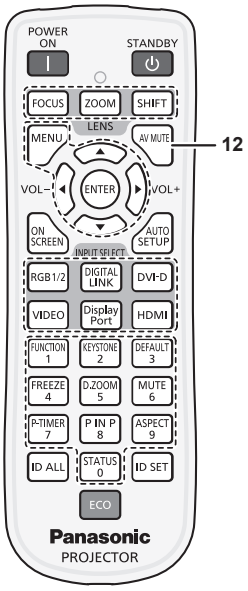
Remote control

Front

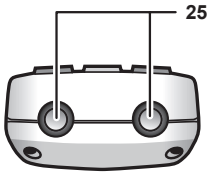
For PT-EZ580, PT-EW640 and PT-EX610

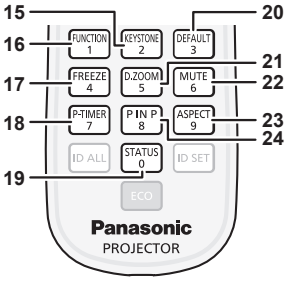


For PT-EW540 and PT-EX510

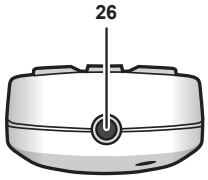


■ **Top**





■ **Bottom**



1 Power standby <⏻> button
Sets the projector to the state where the projector is switched off (standby mode) when the <MAIN POWER> switch on the projector is set to <ON> and in the projection mode.

2 Power on <|> button
Starts projection when the <MAIN POWER> switch on the projector is set to <ON> when the power is switched off (standby mode).

3 Remote control indicator
Flashes if any button in the remote control is pressed.

4 Lens (<FOCUS>, <ZOOM>, <SHIFT>) buttons
Adjusts the Projection Lens. (➡ page 49)

5 <MENU> button/<ENTER> button/▲▼◀▶ button
Used to navigate through the menu screen. (➡ page 57)

6 <VOL–> button/<VOL+> button
Adjusts the volume of the built-in speaker or audio output. (➡ page 52)

7 <ON SCREEN> button
Switches on (display)/off (hide) the on-screen display function. (➡ page 53)

8 Input selection (<RGB1/2>, <DIGITAL LINK> *1, <DVI-D>, <VIDEO>, <DisplayPort> *1, <HDMI>) buttons
Switches the input signal to project. (➡ page 51)
(*1 Only for PT-EZ580, PT-EW640 and PT-EX610)

9 Number (<0> - <9>) buttons
Used when the system uses multiple projectors.
Used to input ID numbers or passwords.

10 <ID ALL> button
Used to simultaneously control all the projectors with a single remote control when using multiple projectors. (➡ page 27)

11 <ECO> button
Displays the setting screen relating to ECO management. (➡ pages 55, 87)

12 <SHUTTER>/<AV MUTE> button
(<SHUTTER> button for PT-EZ580, PT-EW640 and PT-EX610; <AV MUTE> button for PT-EW540 and PT-EX510)
Used when temporarily turning off the image and audio. (➡ page 51)

13 <AUTO SETUP> button
Automatically adjusts the image display position while the image is projected.
[PROGRESS] is displayed on the screen while adjusting automatically. (➡ page 53)

14 <ID SET> button
Sets the ID number of the remote control to use for a system using multiple projectors. (➡ page 27)

15 <KEYSTONE> button
Displays the [KEYSTONE] menu. (➡ pages 54, 70)

16 <FUNCTION> button
Assigns a frequently used operation as a shortcut button. (➡ page 55)

17 <FREEZE> button
Used when pausing the image and turning off the audio. (➡ page 52)

18 <P-TIMER> button
Operates the presentation timer function. (➡ page 53)

19 <STATUS> button
Displays the status of the projector. (➡ pages 55, 94)

20 <DEFAULT> button
Resets the content of the sub-menu to the factory default. (➡ page 58)

21 <D.ZOOM> button
Displays the [DIGITAL ZOOM] menu. (➡ pages 54, 84)

22 <MUTE> button
Used when temporarily turning off the audio. (➡ page 52)

23 <ASPECT> button
Switches the aspect ratio of the image. (➡ page 54)

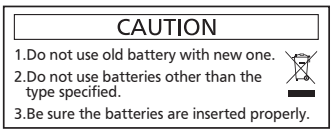
24 <P IN P> button
Switches the [P IN P] setting. (➡ page 55)

25 Remote control signal transmitter

26 Remote control wired terminal
This is the terminal to connect to the projector by a cable when used as a wired remote control. (➡ page 28)

Attention

- Do not drop the remote control.
- Avoid contact with liquids or moisture.
- Do not attempt to modify or disassemble the remote control.
- Please observe the following contents that are described on the back of the remote control unit (see the right picture).
  1. Do not use a new battery together with an old battery.
  2. Do not use unspecified batteries.
  3. Make sure the polarities (+ and -) are correct when inserting the batteries.
- In addition, please read the contents that are related to batteries in the "Read this first!".

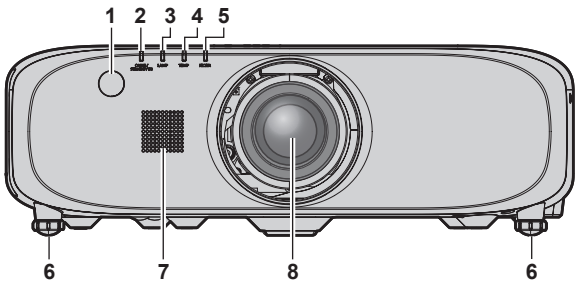


Note

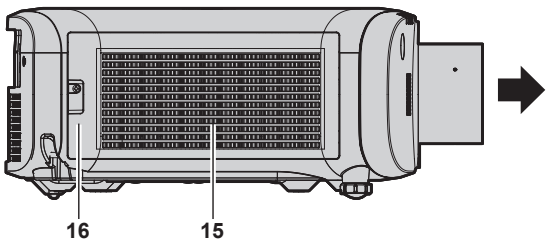
- When operating the remote control by directly pointing the remote control signal receiver of the projector, operate the remote control at a distance approx. 30 m (98'5") or shorter from the remote control signal receiver. The remote control can control at angles of up to ±30° vertically and horizontally, but the effective control range may be reduced.
- If there are any obstacles between the remote control and the remote control signal receiver, the remote control may not operate properly.
- The signal will be reflected off the screen. However, the operating range may be limited from light reflection loss due to the screen material.
- If the remote control signal receiver directly receives strong light, such as fluorescent light, the remote control may not operate properly. Use it in a place distant from the light source.
- The power indicator <ON (G)/STANDBY (R)> will flash if the projector receives a remote control signal.

Projector body

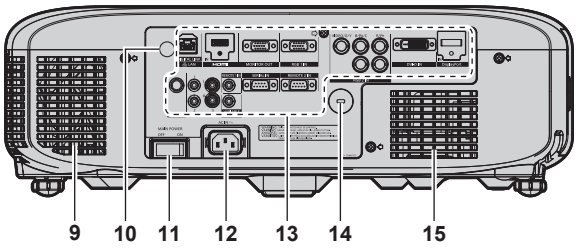
■ Front

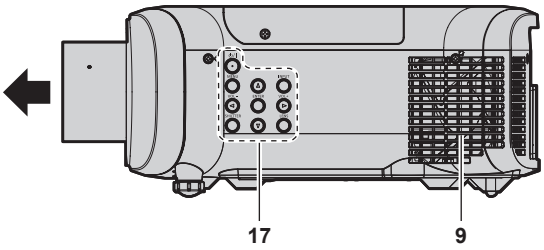


■ Side



■ Rear





: Projection direction

WARNING

Keep your hands and other objects away from the air exhaust port.

- Keep your hands and face away.
- Do not insert your fingers.
- Keep heat-sensitive objects away.

Heated air from the air exhaust port can cause burns, injury, or deformations.

1 Remote control signal receiver (front)

2 Power indicator <ON (G)/STANDBY (R)>
Displays the status of the power.

3 Lamp indicator <LAMP>
You can display the status of the lamp.

4 Temperature indicator <TEMP>
Displays the status of the internal temperature.

5 Filter indicator <FILTER>
Displays the status of the air filter unit.

6 Adjustable feet
Adjusts the projection angle.

7 Speaker

8 Projection Lens
(Only models with lens)

9 Air exhaust port

10 Remote control signal receiver (rear)

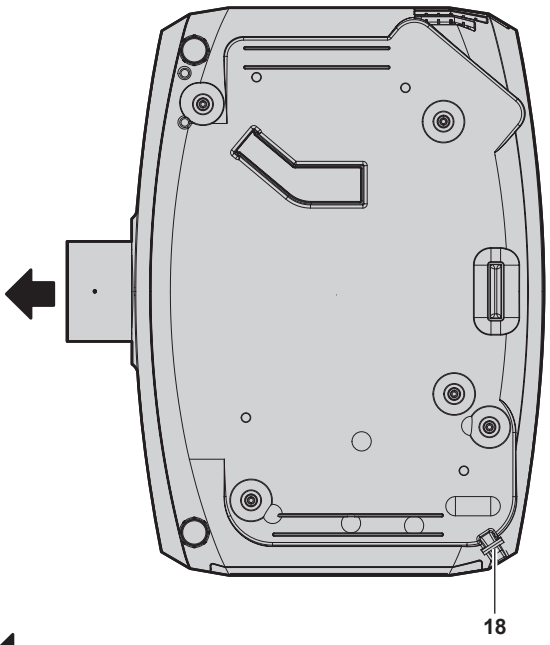
11 <MAIN POWER> switch
Turns off/on the main power.

12 <AC IN> terminal
Connect the supplied power cord.

13 Connecting terminals (➡ page 26)

14 Security slot
This security slot is compatible with the Kensington security cables.

■ Bottom



: Projection direction

18 Burglar hook port
Attaches a burglar prevention cable, etc.

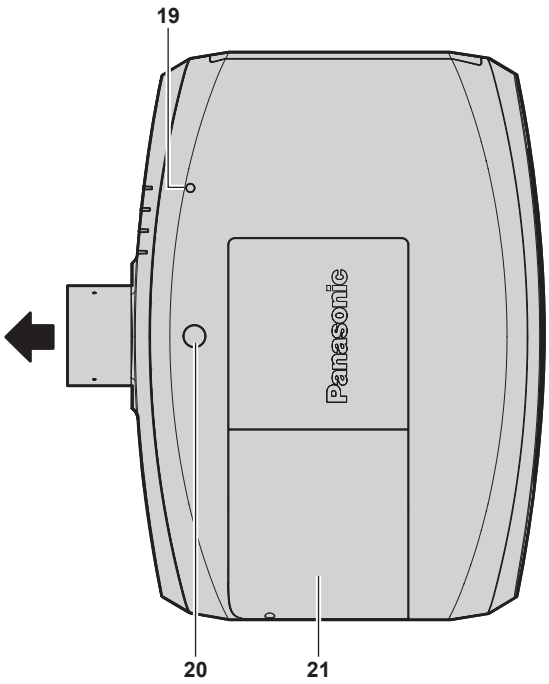
19 Luminance sensor (➡ page 66)

15 Air intake port

16 Air filter cover
The air filter unit is inside.

17 Control panel (➡ page 25)

■ Top



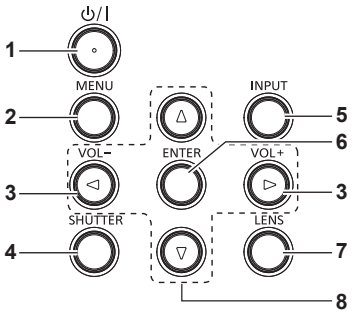
20 Lens release button (➡ page 38)

21 Lamp cover
The lamp unit is inside.

Attention

- Do not block the ventilation ports (intake and exhaust) of the projector.

■ Control panel



1 Power standby <⏻/|> button
Sets the projector to the state where the projector is switched off (standby mode) when the <MAIN POWER> switch on the projector is set to <ON> and in the projection mode. Also starts projection when the power is switched off (standby mode).

2 <MENU> button
Displays or hides the main menu. (➡ page 57)
Returns to the previous menu when a sub-menu is displayed.
If you press the <MENU> button on the control panel for at least three seconds while the on-screen display is off (hidden), the on-screen display is turned on.

3 <VOL–> button/<VOL+> button
Adjusts the volume of audio output. (➡ page 52)

4 <SHUTTER> button/<AV MUTE> button
(<SHUTTER> button for PT-EZ580, PT-EW640 and PT-EX610; <AV MUTE> button for PT-EW540 and PT-EX510.)
Used when temporarily turning off the image and audio. (➡ page 51)

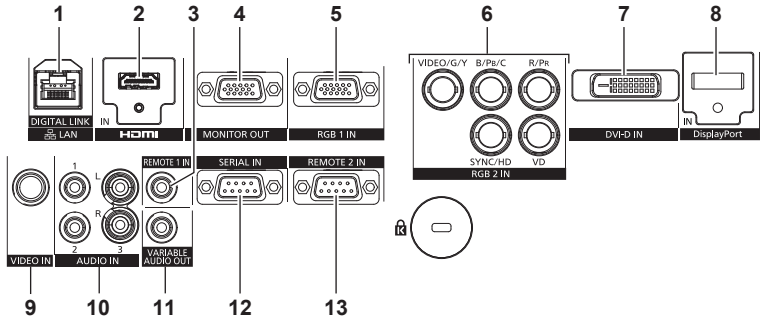
5 <INPUT> button
Switches the input signal to project. (➡ page 51)

6 <ENTER> button
Determines and executes an item in the menu screen.

7 <LENS> button
Adjusts the focus, zoom, and shift (position) of the lens.

8 ▲▼◀▶ buttons
Used to select items in the menu screen, change settings, and adjust levels.
Also used to enter a password in [SECURITY] or enter characters.

■ Connecting terminals



1 <DIGITAL LINK/LAN> terminal/<LAN> terminal
(For PT-EZ580, PT-EW640 and PT-EX610)
This is the LAN terminal to connect to the network. This is also used when connecting a device for transmitting video and audio signals via the LAN terminal.
(For PT-EW540 and PT-EX510)
This is the LAN terminal to connect to the network. The direction of LAN terminal is opposite with the illustration above.

2 <HDMI IN> terminal
This is the terminal to input HDMI signals.

3 <REMOTE 1 IN> terminal
This is the terminal to connect to the remote control by cable when controlling the projector by wired remote control.

4 <MONITOR OUT> terminal
This is the terminal to output analog RGB signals and YC_BC_R/YP_BP_R signals that were input to the <RGB 1 IN> or <RGB 2 IN> terminal to an external device. When the input is switched to RGB1 or RGB2, the corresponding signals are output.

5 <RGB 1 IN> terminal
This is the terminal to input RGB signals or YC_BC_R/YP_BP_R signals.

6 <RGB 2 IN> (<R/P_R>, <VIDEO/G/Y>, <B/P_B/C>, <SYNC/HD>, <VD>) terminal
This is the terminal to input RGB signals or YC_BC_R/YP_BP_R signals, Y/C signals, and video signals.

7 <DVI-D IN> terminal
This is the terminal to input DVI-D signals.

8 <DisplayPort IN> terminal
(Only for PT-EZ580, PT-EW640 and PT-EX610)
This is the terminal to input DisplayPort signals.

9 <VIDEO IN> terminal
This is the terminal to input video signals.

10 <AUDIO IN 1> terminal /<AUDIO IN 2> terminal/<AUDIO IN 3> terminal
This is the terminal to input audio. Left input <L> and right input <R> are provided for the <AUDIO IN 3> terminal.

11 <VARIABLE AUDIO OUT> terminal
This is the terminal to output the input audio signal to the projector.

12 <SERIAL IN> terminal
This is the RS-232C compatible terminal to externally control the projector by connecting a computer.

13 <REMOTE 2 IN> terminal
This is the terminal to remotely control the projector using the external control circuit.

Attention

- When a LAN cable is directly connected to the projector, the network connection must be made indoors.

Using the remote control

Inserting and removing the batteries

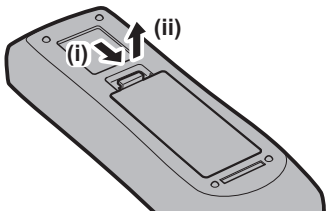


Fig. 1

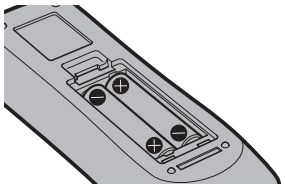


Fig. 2

1) Open the cover. (Fig. 1)

2) Insert the batteries and close the cover (insert the ⊖ side first). (Fig. 2)

- When removing the batteries, perform the steps in reverse order.

Setting the ID number of the remote control

When you use the system with multiple projectors, you can operate all the projectors simultaneously or each projector individually using single remote control, if a unique ID number is assigned to each projector.

After setting the ID number of the projector, set same ID number on the remote control.

The factory default ID number of the projector is set to [ALL]. When using a single projector, press the <ID ALL> button on the remote control. Also, you can control a projector by pressing the <ID ALL> button on the remote control even if you do not know the projector ID.

How to set

1) Press the <ID SET> button on the remote control.

2) Within five seconds, press the two-digit ID number set on the projector using the number (<0> - <9>) buttons.

- If you press the <ID ALL> button, you can control the projectors regardless of the ID number setting of the projector.

Attention

- Since the ID number of the remote control can be set without the projector, do not press the <ID SET> button on the remote control carelessly. If the <ID SET> button is pressed and no number (<0> - <9>) buttons are pressed within five seconds, the ID number returns to its original value before the <ID SET> button was pressed.
- The ID number set on the remote control will be stored unless it is set again. However, it will be erased if the remote control is left with dead batteries. Set the same ID number again when the batteries are replaced.

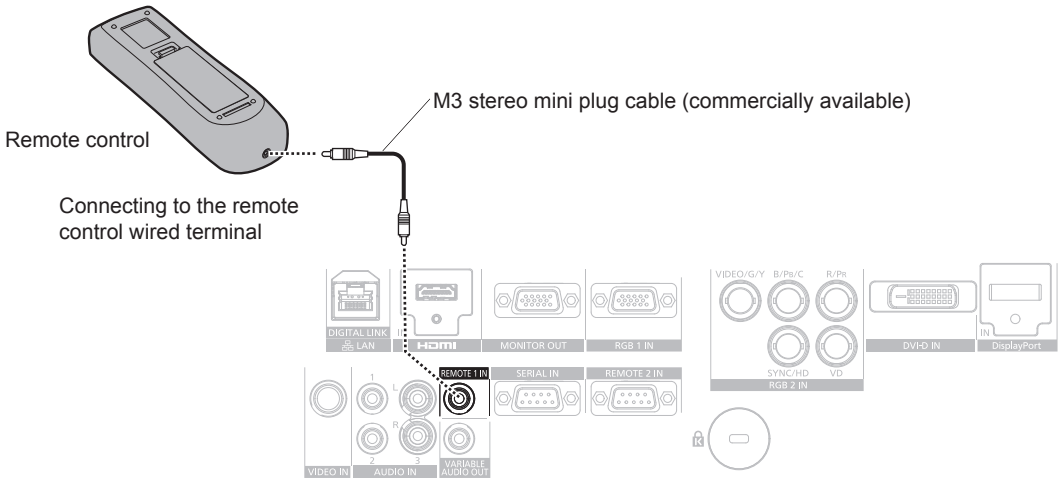
Note

- Set the ID number of the projector from the [PROJECTOR SETUP] menu → [PROJECTOR ID].

Connecting to the projector with a cable

When controlling the projector by wired remote control, connect the <REMOTE 1 IN> terminal on the projector to the remote control wired terminal on the remote control by a commercial M3 stereo mini plug cable.

The remote control is effective even in places where an obstacle stands in the light path or where devices are susceptible to outside light.



Connecting terminals

Attention

- Use a cable that is 15 m (49'3") or shorter, with dual core shielded. The remote control may not operate when the length of the cable exceeds 15 m (49'3") or when the shielding of the cable is inadequate.

Chapter 2 Getting Started

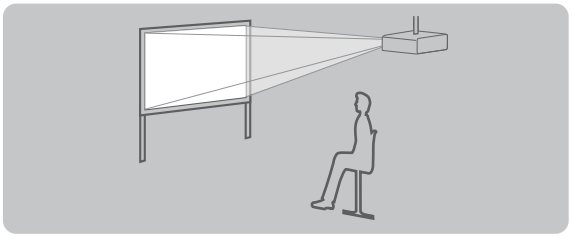
This chapter describes things you need to do before using the projector such as the setup and connections.

Setting up

Installation mode

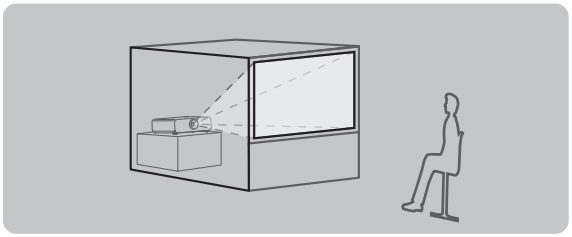
There are four ways to set up the projector. Set the [PROJECTOR SETUP] menu → [PROJECTION METHOD] (➡ page 86) depending on the installation method.

Mounting on the ceiling and projecting forward



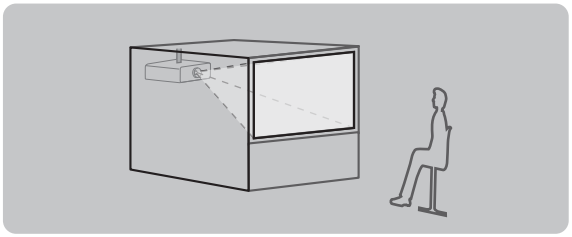
Menu item	Method
[PROJECTION METHOD]	[FRONT/CEILING]

Setting on a desk/floor and projecting from rear
(Using the translucent screen)



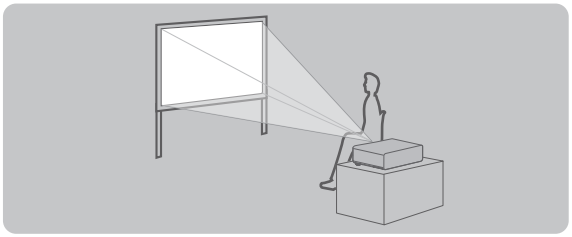
Menu item	Method
[PROJECTION METHOD]	[REAR/FLOOR]

Mounting on the ceiling and projecting from rear
(Using the translucent screen)



Menu item	Method
[PROJECTION METHOD]	[REAR/CEILING]

Setting on a desk/floor and projecting forward



Menu item	Method
[PROJECTION METHOD]	[FRONT/FLOOR]

Parts for ceiling mount (optional)

You can install the projector on the ceiling using the optional Ceiling Mount Bracket (Model No.:ET-PKD120H (for High Ceilings), ET-PKD120S (for Low Ceilings), ET-PKE300B (Projector Mount Bracket) or ET-PKE200H (for High Ceilings), ET-PKE200S (for Low Ceilings), ET-PKE200B (Projector Mount Base). *1

- Be sure to use the Ceiling Mount Bracket specified for this projector.
- Refer to the Installation Instructions supplied with the Ceiling Mount Bracket when installing the projector with the bracket.

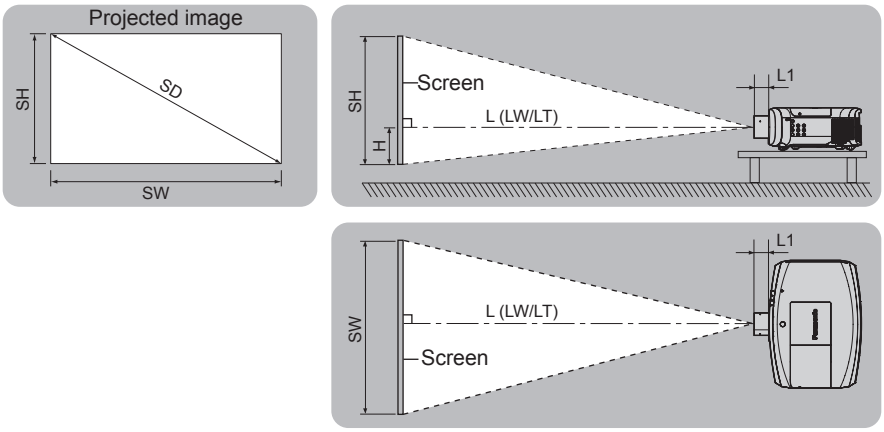
*1 Be sure to read “Precautions for Ceiling Mount Bracket” (➡ page 153)

Attention

- To ensure projector performance and security, installation of the Ceiling Mount Bracket must be carried out by your dealer or a qualified technician.

Projected image size and throw distance

Refer to the projected image size and projection distance shown below to install the projector. The image size and image position can be adjusted in accordance with the screen size and screen position.



Note

- This illustration is prepared on the assumption that the projected image size and position have been aligned to fit full inside the screen.

(Unit: m)

L (LW/LT)*1	Projection distance
L1	Lens protrusion dimension
SH	Image height
SW	Image width
H	Distance from the lens center to the lower edge of the projected image
SD	Projected image size

*1 LW: Minimum projection distance when the Zoom Lens is used
LT: Maximum projection distance when the Zoom Lens is used

(Unit: m)

Projection Lens Model No.	L1 dimension (approximate value)
Standard zoom lens	0.059
ET-ELW21	0.050
ET-ELW20	0.080
ET-ELT20	0.081
ET-ELT21	0.080

Attention

- Before setting up, read “Precautions for use” (➡ page 17).

Projection distance by Projection Lens

A ±5 % error in listed projection distances may occur.
In addition, when [KEYSTONE] is used, distance is corrected to become smaller than the specified screen size.

For PT-EZ580

■ When the screen aspect ratio is 16:10

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.538	0.862	1.36	2.35	0.63	1.02	1.41	2.29	3.81	3.72	6.03	–0.05 - 0.59	0.27
1.27 (50")	0.673	1.077	1.71	2.95	0.80	1.29	1.77	2.89	4.79	4.70	7.59	–0.07 - 0.74	0.34
1.52 (60")	0.808	1.292	2.06	3.55	0.97	1.55	2.14	3.49	5.77	5.68	9.15	–0.08 - 0.89	0.40
1.78 (70")	0.942	1.506	2.42	4.15	1.14	1.82	2.50	4.09	6.75	6.66	10.71	–0.09 - 1.04	0.47
2.03 (80")	1.077	1.723	2.77	4.76	1.32	2.09	2.87	4.69	7.73	7.64	12.27	–0.11 - 1.18	0.54
2.29 (90")	1.212	1.939	3.12	5.36	1.49	2.36	3.23	5.30	8.71	8.63	13.83	–0.12 - 1.33	0.61
2.54 (100")	1.346	2.154	3.48	5.96	1.66	2.63	3.60	5.90	9.69	9.61	15.39	–0.13 - 1.48	0.67
3.05 (120")	1.615	2.585	4.18	7.16	2.00	3.16	4.32	7.10	11.65	11.57	18.51	–0.16 - 1.78	0.81
3.81 (150")	2.019	3.231	5.24	8.96	2.52	3.96	5.42	8.90	14.59	14.52	23.19	–0.20 - 2.22	1.01
5.08 (200")	2.692	4.308	7.01	11.96	3.38	5.31	7.25	11.91	19.49	19.43	30.99	–0.27 - 2.96	1.35
6.35 (250")	3.365	5.385	8.77	14.96	4.24	6.65	9.07	14.91	24.39	24.34	38.79	–0.34 - 3.70	1.68
7.62 (300")	4.039	6.462	10.54	17.97	5.10	7.99	10.9	17.92	29.29	29.25	46.59	–0.40 - 4.44	2.02
8.89 (350")	4.712	7.539	12.30	20.97	5.95	9.33	12.73	20.92	34.19	34.16	54.39	–0.47 - 5.18	2.36
10.16 (400")	5.385	8.616	14.07	23.97	6.81	10.67	14.55	23.93	39.09	39.07	62.19	–0.54 - 5.92	2.69

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

■ When the screen aspect ratio is 16:9

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.498	0.886	1.40	2.42	0.65	1.05	1.45	2.36	3.92	3.83	6.20	–0.05 - 0.55	0.25
1.27 (50")	0.623	1.107	1.76	3.04	0.83	1.32	1.82	2.97	4.92	4.83	7.81	–0.06 - 0.68	0.31
1.52 (60")	0.747	1.328	2.12	3.65	1.00	1.60	2.20	3.59	5.93	5.84	9.41	–0.07 - 0.82	0.37
1.78 (70")	0.872	1.550	2.49	4.27	1.18	1.87	2.57	4.21	6.94	6.85	11.01	–0.09 - 0.96	0.44
2.03 (80")	0.996	1.771	2.85	4.89	1.35	2.15	2.95	4.83	7.95	7.86	12.62	–0.10 - 1.10	0.50
2.29 (90")	1.121	1.992	3.21	5.51	1.53	2.43	3.32	5.45	8.95	8.87	14.22	–0.11 - 1.23	0.56
2.54 (100")	1.245	2.214	3.57	6.12	1.71	2.70	3.70	6.06	9.96	9.88	15.82	–0.12 - 1.37	0.62
3.05 (120")	1.494	2.657	4.30	7.36	2.06	3.25	4.45	7.30	11.97	11.90	19.03	–0.15 - 1.64	0.75
3.81 (150")	1.868	3.321	5.39	9.21	2.59	4.08	5.58	9.15	15.00	14.93	23.84	–0.19 - 2.05	0.93
5.08 (200")	2.491	4.428	7.20	12.29	3.47	5.46	7.45	12.24	20.03	19.98	31.86	–0.25 - 2.74	1.25
6.35 (250")	3.113	5.535	9.02	15.38	4.36	6.83	9.33	15.33	25.07	25.02	39.87	–0.31 - 3.42	1.56
7.62 (300")	3.736	6.641	10.83	18.47	5.24	8.21	11.20	18.42	30.10	30.07	47.89	–0.37 - 4.11	1.87
8.89 (350")	4.358	7.748	12.65	21.55	6.12	9.59	13.08	21.51	35.14	35.12	55.91	–0.44 - 4.79	2.18
10.16 (400")	4.981	8.855	14.46	24.64	7.00	10.97	14.96	24.60	40.18	40.17	63.92	–0.50 - 5.48	2.49

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

■ When the screen aspect ratio is 4:3

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.9-3.3:1		0.9:1	1.5-2.0:1		3.3-5.4:1		5.4-8.6:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.610	0.813	1.54	2.67	0.72	1.16	1.60	2.61	4.33	4.24	6.85	–0.06 - 0.67	0.30
1.27 (50")	0.762	1.016	1.94	3.35	0.91	1.46	2.01	3.29	5.43	5.35	8.62	–0.08 - 0.84	0.38
1.52 (60")	0.914	1.219	2.34	4.03	1.11	1.77	2.43	3.97	6.54	6.46	10.39	–0.09 - 1.01	0.46
1.78 (70")	1.067	1.422	2.74	4.71	1.30	2.07	2.84	4.65	7.65	7.57	12.15	–0.11 - 1.17	0.53
2.03 (80")	1.219	1.626	3.14	5.39	1.50	2.37	3.25	5.33	8.76	8.68	13.92	–0.12 - 1.34	0.61
2.29 (90")	1.372	1.829	3.54	6.07	1.69	2.68	3.67	6.01	9.87	9.79	15.68	–0.14 - 1.51	0.69
2.54 (100")	1.524	2.032	3.94	6.75	1.89	2.98	4.08	6.69	10.98	10.91	17.45	–0.15 - 1.68	0.76
3.05 (120")	1.829	2.438	4.74	8.11	2.28	3.59	4.91	8.05	13.20	13.13	20.98	–0.18 - 2.01	0.91
3.81 (150")	2.286	3.048	5.94	10.15	2.86	4.50	6.15	10.09	16.53	16.47	26.28	–0.23 - 2.51	1.14
5.08 (200")	3.048	4.064	7.94	13.55	3.83	6.02	8.21	13.49	22.08	22.03	35.11	–0.30 - 3.35	1.52
6.35 (250")	3.810	5.080	9.94	16.95	4.81	7.53	10.28	16.90	27.62	27.58	43.94	–0.38 - 4.19	1.91
7.62 (300")	4.572	6.096	11.94	20.34	5.78	9.05	12.35	20.30	33.17	33.14	52.77	–0.46 - 5.03	2.29
8.89 (350")	5.334	7.112	13.93	23.74	6.75	10.57	14.41	23.70	38.72	38.70	61.60	–0.53 - 5.87	2.67
10.16 (400")	6.096	8.128	15.93	27.14	7.72	12.09	16.48	27.10	44.27	44.26	70.43	–0.61 - 6.71	3.05

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

For PT-EW640 and PT-EW540

■ When the screen aspect ratio is 16:10

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.538	0.862	1.38	2.38	0.64	1.03	1.42	2.32	3.85	3.76	6.10	–0.05 - 0.59	0.27
1.27 (50")	0.673	1.077	1.74	2.99	0.81	1.30	1.79	2.93	4.85	4.76	7.68	–0.07 - 0.74	0.34
1.52 (60")	0.808	1.292	2.09	3.60	0.99	1.57	2.16	3.54	5.84	5.75	9.26	–0.08 - 0.89	0.40
1.78 (70")	0.942	1.506	2.45	4.21	1.16	1.85	2.53	4.15	6.83	6.75	10.84	–0.09 - 1.04	0.47
2.03 (80")	1.077	1.723	2.81	4.82	1.33	2.12	2.90	4.75	7.82	7.74	12.42	–0.11 - 1.18	0.54
2.29 (90")	1.212	1.939	3.16	5.42	1.51	2.39	3.27	5.36	8.81	8.73	14.00	–0.12 - 1.33	0.61
2.54 (100")	1.346	2.154	3.52	6.03	1.68	2.66	3.64	5.97	9.80	9.73	15.58	–0.13 - 1.48	0.67
3.05 (120")	1.615	2.585	4.24	7.25	2.03	3.21	4.38	7.19	11.79	11.72	18.73	–0.16 - 1.78	0.81
3.81 (150")	2.019	3.231	5.31	9.07	2.55	4.02	5.48	9.01	14.76	14.70	23.47	–0.20 - 2.22	1.01
5.08 (200")	2.692	4.308	7.09	12.11	3.42	5.38	7.33	12.05	19.72	19.67	31.36	–0.27 - 2.96	1.35
6.35 (250")	3.365	5.385	8.88	15.16	4.29	6.74	9.17	15.10	24.68	24.64	39.26	–0.34 - 3.70	1.68
7.62 (300")	4.039	6.462	10.67	18.20	5.16	8.10	11.02	18.14	29.64	29.61	47.15	–0.40 - 4.44	2.02
8.89 (350")	4.712	7.539	12.45	21.24	6.03	9.46	12.86	21.18	34.59	34.58	55.04	–0.47 - 5.18	2.36
10.16 (400")	5.385	8.616	14.24	24.28	6.89	10.82	14.71	24.22	39.55	39.55	62.94	–0.54 - 5.92	2.69

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

■ When the screen aspect ratio is 16:9

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.498	0.886	1.42	2.45	0.66	1.06	1.46	2.39	3.96	3.87	6.28	–0.05 - 0.55	0.25
1.27 (50")	0.623	1.107	1.79	3.08	0.84	1.34	1.84	3.01	4.98	4.90	7.90	–0.06 - 0.68	0.31
1.52 (60")	0.747	1.328	2.15	3.70	1.01	1.62	2.22	3.64	6.00	5.92	9.52	–0.07 - 0.82	0.37
1.78 (70")	0.872	1.550	2.52	4.33	1.19	1.90	2.60	4.26	7.02	6.94	11.15	–0.09 - 0.96	0.44
2.03 (80")	0.996	1.771	2.89	4.95	1.37	2.18	2.98	4.89	8.04	7.96	12.77	–0.10 - 1.10	0.50
2.29 (90")	1.121	1.992	3.25	5.58	1.55	2.46	3.36	5.51	9.06	8.98	14.39	–0.11 - 1.23	0.56
2.54 (100")	1.245	2.214	3.62	6.20	1.73	2.74	3.74	6.14	10.08	10.00	16.01	–0.12 - 1.37	0.62
3.05 (120")	1.494	2.657	4.35	7.45	2.09	3.30	4.50	7.39	12.12	12.05	19.26	–0.15 - 1.64	0.75
3.81 (150")	1.868	3.321	5.46	9.33	2.62	4.14	5.64	9.27	15.18	15.11	24.13	–0.19 - 2.05	0.93
5.08 (200")	2.491	4.428	7.29	12.45	3.52	5.53	7.53	12.39	20.27	20.22	32.24	–0.25 - 2.74	1.25
6.35 (250")	3.113	5.535	9.13	15.58	4.41	6.93	9.43	15.52	25.37	25.33	40.35	–0.31 - 3.42	1.56
7.62 (300")	3.736	6.641	10.96	18.70	5.30	8.33	11.33	18.64	30.46	30.44	48.47	–0.37 - 4.11	1.87
8.89 (350")	4.358	7.748	12.80	21.83	6.19	9.72	13.22	21.77	35.56	35.55	56.58	–0.44 - 4.79	2.18
10.16 (400")	4.981	8.855	14.63	24.95	7.09	11.12	15.12	24.90	40.66	40.66	64.69	–0.50 - 5.48	2.49

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

■ When the screen aspect ratio is 4:3

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			2.0-3.4:1		0.9:1	1.5-2.0:1		3.3-5.5:1		5.4-8.7:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.610	0.813	1.57	2.70	0.73	1.18	1.62	2.64	4.38	4.29	6.94	0.06 - 0.67	0.30
1.27 (50")	0.762	1.016	1.97	3.39	0.93	1.48	2.04	3.33	5.50	5.41	8.73	0.08 - 0.84	0.38
1.52 (60")	0.914	1.219	2.38	4.08	1.12	1.79	2.45	4.02	6.62	6.54	10.51	0.09 - 1.01	0.46
1.78 (70")	1.067	1.422	2.78	4.77	1.32	2.10	2.87	4.71	7.75	7.67	12.30	0.11 - 1.17	0.53
2.03 (80")	1.219	1.626	3.18	5.46	1.52	2.41	3.29	5.40	8.87	8.79	14.09	0.12 - 1.34	0.61
2.29 (90")	1.372	1.829	3.59	6.15	1.71	2.71	3.71	6.08	9.99	9.92	15.87	0.14 - 1.51	0.69
2.54 (100")	1.524	2.032	3.99	6.84	1.91	3.02	4.12	6.77	11.11	11.04	17.66	0.15 - 1.68	0.76
3.05 (120")	1.829	2.438	4.80	8.21	2.30	3.64	4.96	8.15	13.36	13.29	21.24	0.18 - 2.01	0.91
3.81 (150")	2.286	3.048	6.01	10.28	2.89	4.56	6.21	10.22	16.73	16.67	26.60	0.23 - 2.51	1.14
5.08 (200")	3.048	4.064	8.04	13.72	3.88	6.10	8.30	13.66	22.34	22.30	35.53	0.30 - 3.35	1.52
6.35 (250")	3.810	5.080	10.06	17.16	4.86	7.64	10.39	17.10	27.95	27.92	44.47	0.38 - 4.19	1.91
7.62 (300")	4.572	6.096	12.08	20.61	5.85	9.18	12.48	20.55	33.57	33.55	53.40	0.46 - 5.03	2.29
8.89 (350")	5.334	7.112	14.10	24.05	6.83	10.72	14.57	23.99	39.18	39.18	62.34	0.53 - 5.87	2.67
10.16 (400")	6.096	8.128	16.12	27.49	7.81	12.25	16.66	27.43	44.79	44.80	71.28	0.61 - 6.71	3.05

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

For PT-EX610 and PT-EX510

■ When the screen aspect ratio is 4:3

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.610	0.813	1.30	2.26	0.60	0.97	1.35	2.19	3.65	3.56	5.78	0.00 - 0.61	0.30
1.27 (50")	0.762	1.016	1.64	2.83	0.77	1.23	1.70	2.77	4.59	4.50	7.27	0.00 - 0.76	0.38
1.52 (60")	0.914	1.219	1.98	3.41	0.93	1.49	2.05	3.34	5.53	5.44	8.77	0.00 - 0.91	0.46
1.78 (70")	1.067	1.422	2.32	3.98	1.10	1.74	2.40	3.92	6.47	6.38	10.27	0.00 - 1.07	0.53
2.03 (80")	1.219	1.626	2.66	4.56	1.26	2.00	2.75	4.50	7.41	7.32	11.77	0.00 - 1.22	0.61
2.29 (90")	1.372	1.829	3.00	5.14	1.43	2.26	3.10	5.07	8.35	8.27	13.26	0.00 - 1.37	0.69
2.54 (100")	1.524	2.032	3.33	5.71	1.59	2.51	3.45	5.65	9.29	9.21	14.76	0.00 - 1.52	0.76
3.05 (120")	1.829	2.438	4.01	6.86	1.92	3.03	4.15	6.80	11.17	11.09	17.75	0.00 - 1.83	0.91
3.81 (150")	2.286	3.048	5.03	8.59	2.42	3.80	5.20	8.53	14.00	13.92	22.24	0.00 - 2.29	1.14
5.08 (200")	3.048	4.064	6.72	11.47	3.24	5.08	6.95	11.41	18.70	18.63	29.73	0.00 - 3.05	1.52
6.35 (250")	3.810	5.080	8.42	14.35	4.07	6.37	8.70	14.30	23.40	23.34	37.21	0.00 - 3.81	1.91
7.62 (300")	4.572	6.096	10.11	17.23	4.89	7.65	10.45	17.18	28.11	28.05	44.70	0.00 - 4.57	2.29
8.89 (350")	5.334	7.112	11.81	20.11	5.72	8.94	12.20	20.06	32.81	32.76	52.18	0.00 - 5.33	2.67
10.16 (400")	6.096	8.128	13.50	22.99	6.54	10.22	13.95	22.94	37.51	37.47	59.67	0.00 - 6.10	3.05

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

■ When the screen aspect ratio is 16:9

(Unit: m)

Lens type			Standard zoom lens		Optional lens							Height position (H)*2	
					Fixed-focus lens	Short focus zoom lens		Long focus zoom lens		Ultra long focus zoom lens			
Projection Lens Model No.			—		ET-ELW21	ET-ELW20		ET-ELT20		ET-ELT21		Standard zoom lens/ET-ELW20/ ET-ELT20/ ET-ELT21	ET-ELW21
Throw ratio*1			1.7-2.8:1		0.8:1	1.3-1.7:1		2.8-4.6:1		4.6-7.2:1			
Projected image size			Projection distance (L)										
Diagonal (SD)	Height (SH)	Width (SW)	Min. (LW)	Max. (LT)	Fixed	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)	Min. (LW)	Max. (LT)		
1.02 (40")	0.498	0.886	1.42	2.46	0.66	1.06	1.47	2.40	3.99	3.89	6.31	–0.08 - 0.58	0.25
1.27 (50")	0.623	1.107	1.79	3.09	0.84	1.40	1.85	3.03	5.01	4.92	7.94	–0.10 - 0.73	0.31
1.52 (60")	0.747	1.328	2.16	3.72	1.02	1.68	2.23	3.65	6.04	5.95	9.57	–0.12 - 0.87	0.37
1.78 (70")	0.872	1.550	2.53	4.34	1.20	1.96	2.62	4.28	7.06	6.97	11.21	–0.15 - 1.02	0.44
2.03 (80")	0.996	1.771	2.90	4.97	1.38	2.24	3.00	4.91	8.09	8.00	12.84	–0.17 - 1.16	0.50
2.29 (90")	1.121	1.992	3.27	5.60	1.56	2.52	3.38	5.54	9.11	9.02	14.47	–0.19 - 1.31	0.56
2.54 (100")	1.245	2.214	3.64	6.23	1.74	2.80	3.76	6.17	10.13	10.05	16.10	–0.21 - 1.45	0.62
3.05 (120")	1.494	2.657	4.38	7.48	2.10	3.36	4.52	7.42	12.18	12.1	19.36	–0.25 - 1.74	0.75
3.81 (150")	1.868	3.321	5.48	9.37	2.64	4.20	5.67	9.31	15.26	15.18	24.25	–0.31 - 2.18	0.93
5.08 (200")	2.491	4.428	7.33	12.5	3.54	5.60	7.57	12.45	20.38	20.32	32.41	–0.41 - 2.91	1.25
6.35 (250")	3.113	5.535	9.18	15.64	4.44	7.00	9.48	15.59	25.51	25.45	40.56	–0.52 - 3.63	1.56
7.62 (300")	3.736	6.641	11.02	18.78	5.33	8.40	11.39	18.73	30.63	30.58	48.72	–0.62 - 4.36	1.87
8.89 (350")	4.358	7.748	12.87	21.92	6.23	9.80	13.29	21.87	35.75	35.71	56.87	–0.73 - 5.08	2.18
10.16 (400")	4.981	8.855	14.72	25.05	7.13	11.20	15.20	25.01	40.88	40.84	65.03	–0.83 - 5.81	2.49

*1 The throw ratio is based on the value during projection with the projected image size of 2.03 m (80").
*2 When the fixed-focus lens (Model No.: ET-ELW21) is attached, the lens shift is not possible. The height position (H) becomes SH/2.

Formula to calculate projection distance per Projection Lens

To use a screen size not listed in this manual, check the screen size SD (m) and use the respective formula to calculate projection distance.
The unit of all the formulae is m. (Values obtained by the following calculation formulae contain a slight error.)
If you want to calculate the projection distance with projected image size SD (unit: inch) by substituting, please assign 0.0254 times to the SD value.

For PT-EZ580

Lens type	Projection Lens Model No.	Aspect ratio	Projection distance (L) formula	
Standard zoom lens	—	16:10	Min. (LW)	L = 1.3900 x SD – 0.0549
			Max. (LT)	L = 2.3640 x SD – 0.0482
		16:9	Min. (LW)	L = 1.4286 x SD – 0.0549
			Max. (LT)	L = 2.4297 x SD – 0.0482
		4:3	Min. (LW)	L = 1.5736 x SD – 0.0549
			Max. (LT)	L = 2.6763 x SD – 0.0482
Fixed-focus lens	ET-ELW21	16:10	—	L = 0.6763 x SD – 0.0577
		16:9	—	L = 0.6951 x SD – 0.0577
		4:3	—	L = 0.7656 x SD – 0.0577
Short focus zoom lens	ET-ELW20	16:10	Min. (LW)	L = 1.0557 x SD – 0.0555
			Max. (LT)	L = 1.4374 x SD – 0.0534
		16:9	Min. (LW)	L = 1.0851 x SD – 0.0555
			Max. (LT)	L = 1.4774 x SD – 0.0534
		4:3	Min. (LW)	L = 1.1952 x SD – 0.0555
			Max. (LT)	L = 1.6273 x SD – 0.0534
Long focus zoom lens	ET-ELT20	16:10	Min. (LW)	L = 2.3662 x SD – 0.1140
			Max. (LT)	L = 3.8583 x SD – 0.1129
		16:9	Min. (LW)	L = 2.4320 x SD – 0.1140
			Max. (LT)	L = 3.9656 x SD – 0.1129
		4:3	Min. (LW)	L = 2.6788 x SD – 0.1140
			Max. (LT)	L = 4.3680 x SD – 0.1129
Ultra long focus zoom lens	ET-ELT21	16:10	Min. (LW)	L = 3.8667 x SD – 0.2123
			Max. (LT)	L = 6.1416 x SD – 0.2108
		16:9	Min. (LW)	L = 3.9742 x SD – 0.2123
			Max. (LT)	L = 6.3123 x SD – 0.2108
		4:3	Min. (LW)	L = 4.3775 x SD – 0.2123
			Max. (LT)	L = 6.9529 x SD – 0.2108

For PT-EW640 and PT-EW540

Lens type	Projection Lens Model No.	Aspect ratio	Projection distance (L) formula	
Standard zoom lens	—	16:10	Min. (LW)	L = 1.4062 x SD – 0.0504
			Max. (LT)	L = 2.3944 x SD – 0.0497
		16:9	Min. (LW)	L = 1.4452 x SD – 0.0504
			Max. (LT)	L = 2.4609 x SD – 0.0497
		4:3	Min. (LW)	L = 1.5919 x SD – 0.0504
			Max. (LT)	L = 2.7106 x SD – 0.0497
Fixed-focus lens	ET-ELW21	16:10	—	L = 0.6842 x SD – 0.0572
		16:9	—	L = 0.7032 x SD – 0.0572
		4:3	—	L = 0.7746 x SD – 0.0572
Short focus zoom lens	ET-ELW20	16:10	Min. (LW)	L = 1.0702 x SD – 0.0554
			Max. (LT)	L = 1.4530 x SD – 0.0534
		16:9	Min. (LW)	L = 1.1000 x SD – 0.0554
			Max. (LT)	L = 1.4934 x SD – 0.0534
		4:3	Min. (LW)	L = 1.2116 x SD – 0.0554
			Max. (LT)	L = 1.6449 x SD – 0.0534

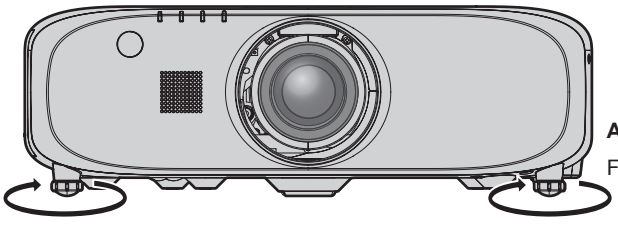
Lens type	Projection Lens Model No.	Aspect ratio	Projection distance (L) formula	
Long focus zoom lens	ET-ELT20	16:10	Min. (LW)	L = 2.3952 x SD – 0.1139
			Max. (LT)	L = 3.9041 x SD – 0.1128
		16:9	Min. (LW)	L = 2.4617 x SD – 0.1139
			Max. (LT)	L = 4.0126 x SD – 0.1128
		4:3	Min. (LW)	L = 2.7115 x SD – 0.1139
			Max. (LT)	L = 4.4197 x SD – 0.1128
Ultra long focus zoom lens	ET-ELT21	16:10	Min. (LW)	L = 3.9138 x SD – 0.2127
			Max. (LT)	L = 6.2152 x SD – 0.2107
		16:9	Min. (LW)	L = 4.0226 x SD – 0.2127
			Max. (LT)	L = 6.3880 x SD – 0.2107
		4:3	Min. (LW)	L = 4.4307 x SD – 0.2127
			Max. (LT)	L = 7.0361 x SD – 0.2107

For PT-EX610 and PT-EX510

Lens type	Projection Lens Model No.	Aspect ratio	Projection distance (L) formula	
Standard zoom lens	—	4:3	Min. (LW)	L = 1.3346 x SD – 0.0553
			Max. (LT)	L = 2.2677 x SD – 0.0480
		16:9	Min. (LW)	L = 1.4541 x SD – 0.0553
			Max. (LT)	L = 2.4707 x SD – 0.0480
Fixed-focus lens	ET-ELW21	4:3	—	L = 0.6496 x SD – 0.0585
		16:9	—	L = 0.7078 x SD – 0.0585
Short focus zoom lens	ET-ELW20	4:3	Min. (LW)	L = 1.0118 x SD – 0.0558
			Max. (LT)	L = 1.3780 x SD – 0.0540
		16:9	Min. (LW)	L = 1.1024 x SD – 0.0558
			Max. (LT)	L = 1.5013 x SD – 0.0540
Long focus zoom lens	ET-ELT20	4:3	Min. (LW)	L = 2.2693 x SD – 0.1142
			Max. (LT)	L = 3.7031 x SD – 0.1129
		16:9	Min. (LW)	L = 2.4724 x SD – 0.1142
			Max. (LT)	L = 4.0346 x SD – 0.1129
Ultra long focus zoom lens	ET-ELT21	4:3	Min. (LW)	L = 3.7091 x SD – 0.2132
			Max. (LT)	L = 5.8937 x SD – 0.2109
		16:9	Min. (LW)	L = 4.0339 x SD – 0.2132
			Max. (LT)	L = 6.4212 x SD – 0.2109

Adjusting adjustable feet

Install the projector on a flat surface so that the front of the projector is parallel to the screen surface and the projected image is rectangular.
If the screen is tilted downward, the projected image can be adjusted to be rectangular by adjusting the front adjustable feet. The adjustable feet can also be used to adjust the projector to be level when it is tilted in the horizontal direction.
Extend the adjustable feet by rotating in the direction shown in the figure and retract by rotating in the opposite direction.



Adjustable amount

Front adjustable feet: Approx. 25 mm (31/32")

Attention

- Heated air is expelled from the air exhaust port while the lamp is lit. Do not touch the air exhaust port directly when adjusting the adjustable feet. (➡ page 24)

Removing/attaching the Projection Lens

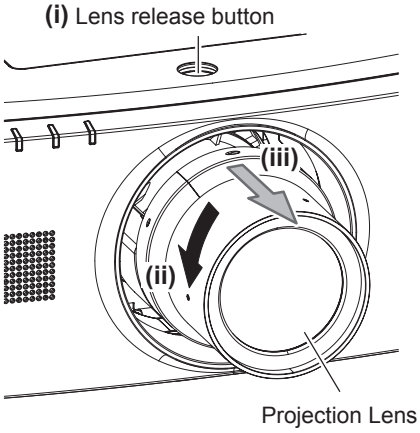
Removing and attaching procedures of the Projection Lens are same for both standard zoom lens and optional lens.
Move the lens to the home position before replacing or removing the Projection Lens. (➡ page 50)

Attention

- Replace the Projection Lens after turning off the power of the projector.
- Do not touch the electrical contact of the Projection Lens. Dust or dirt may cause defective contact.
- Do not touch the surface of the Projection Lens with your bare hands.
- Before attaching the Projection Lens, remove the lens hole cover (only lens options models) and lens cover attached to the Projection Lens.

Removing the Projection Lens

Remove the Projection Lens with the following procedure.



1) With the lens release button held down, turn the Projection Lens counterclockwise to the end and remove the Projection Lens.

Attention

- Store the removed Projection Lens where it will be free from vibration and impact.

Attaching the Projection Lens

Attach the Projection Lens with the following procedure.

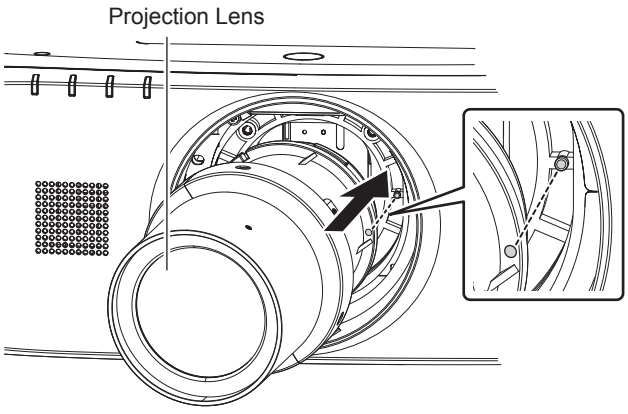


Fig. 1

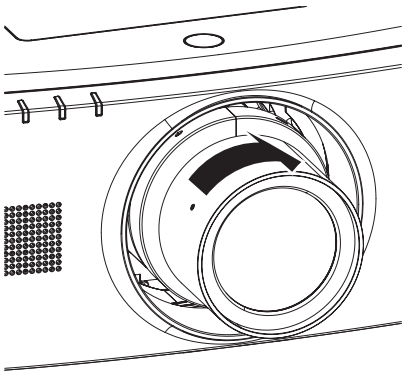


Fig. 2

1) Align the red mark on the Projection Lens with the red mark on the projector, and insert the Projection Lens as far as possible. (Fig. 1)

2) Turn clockwise to the end. (Fig. 2)

Attention

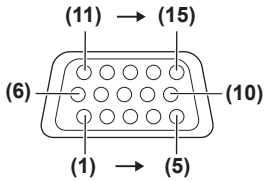
- Turn the Projection Lens counterclockwise to confirm that it does not come out.

Connecting

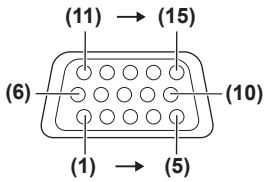
Before connecting

- Before connecting, carefully read the operating instructions for the external device to be connected.
- Turn off the power of all devices before connecting cables.
- Take note of the following points before connecting the cables. Failure to do so may result in malfunctions.
  - When connecting a cable to a device connected to the projector or the projector itself, touch any nearby metallic objects to eliminate static electricity from your body before performing work.
  - Do not use unnecessarily long cables to connect to a device connected to the projector or to the projector body. The longer the cable, the more it is susceptible to noise. Since using a cable while it is wound makes it act like an antenna, it is more susceptible to noise.
  - When connecting cables, connect GND first, then insert the connecting terminal of the connecting device in a straight manner.
- Acquire any connection cable necessary to connect the external device to the system that is neither supplied with the device nor available as an option.
- If video signals from video equipment contain too much jitter, the images on the screen may wobble. In this case, a time base corrector (TBC) must be connected.
- The projector accepts video signals, Y/C signals, YC_BC_R/YP_BP_R signals, analog RGB signals (synchronization signals are TTL level), and digital signals.
- Some computer models or graphics cards are not compatible with the projector.
- Use a cable compensator when you connect devices to the projector using long cables. Otherwise the image may not display properly.
- Refer to “List of compatible signals” (➡ page 146) for the types of video signals that can be used with the projector.

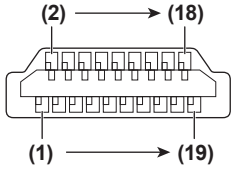
<RGB 1 IN> terminal pin assignments and signal names

Outside view	Pin No.	Signal name	Pin No.	Signal name
	(1)	R/P_R	(9)	—
	(2)	G/Y	(10)	GND
	(3)	B/P_B	(11)	GND
	(4)	—	(12)	DDC data
	(5)	GND	(13)	SYNC/HD
	(6)	GND	(14)	VD
	(7)	GND	(15)	DDC clock
	(8)	GND		

<MONITOR OUT> terminal pin assignments and signal names

Outside view	Pin No.	Signal name	Pin No.	Signal name
	(1)	R/P_R	(9)	—
	(2)	G/Y	(10)	GND
	(3)	B/P_B	(11)	GND
	(4)	—	(12)	—
	(5)	GND	(13)	SYNC/HD
	(6)	GND	(14)	VD
	(7)	GND	(15)	—
	(8)	GND		

<HDMI IN> terminal pin assignments and signal names

Outside view	Pin No.	Signal name	Pin No.	Signal name
Even-numbered pins of **(2)** to **(18)**  Odd-numbered pins of **(1)** to **(19)**	(1)	T.M.D.S data 2+	(11)	T.M.D.S clock shield
	(2)	T.M.D.S data 2 shield	(12)	T.M.D.S clock–
	(3)	T.M.D.S data 2–	(13)	CEC
	(4)	T.M.D.S data 1+	(14)	—
	(5)	T.M.D.S data 1 shield	(15)	SCL
	(6)	T.M.D.S data 1–	(16)	SDA
	(7)	T.M.D.S data 0+	(17)	DDC/CEC GND
	(8)	T.M.D.S data 0 shield	(18)	+5 V
	(9)	T.M.D.S data 0–	(19)	Hot plug detection
	(10)	T.M.D.S clock+		

<DisplayPort IN> terminal pin assignments and signal names

(Only for PT-EZ580, PT-EW640 and PT-EX610)

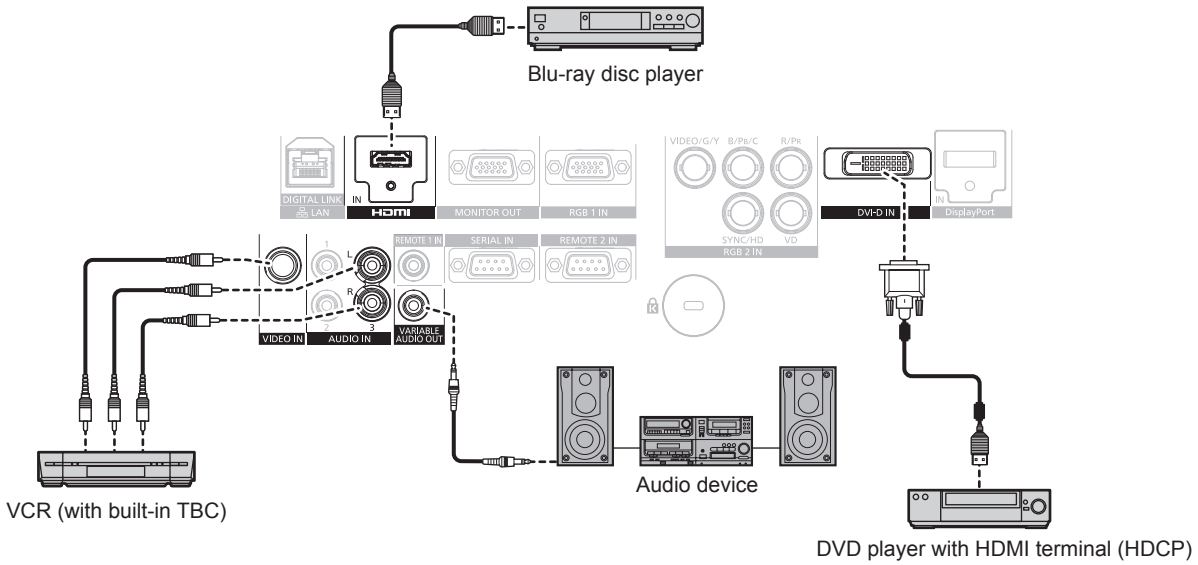
Outside view	Pin No.	Signal name	Pin No.	Signal name
Even-numbered pins of **(2)** to **(20)** **(2)** → **(20)** **(1)** → **(19)** Odd-numbered pins of **(1)** to **(19)**	**(1)**	MainLane−3	**(11)**	GND
	(2)	GND	**(12)**	MainLane+0
	(3)	MainLane+3	**(13)**	GND
	(4)	MainLane−2	**(14)**	GND
	(5)	GND	**(15)**	Aux+
	(6)	MainLane+2	**(16)**	GND
	(7)	MainLane−1	**(17)**	Aux−
	(8)	GND	**(18)**	Hot plug detection
	(9)	MainLane+1	**(19)**	GND
	(10)	MainLane−0	**(20)**	DP_PWR *1

*1 Supplies power of +3.3 V/0.5 A Max. Use at the rated power or less.

<DVI-D IN> terminal pin assignments and signal names

Outside view	Pin No.	Signal name	Pin No.	Signal name
(24) ← **(17)** **(16)** **(9)** **(8)** ← **(1)**	**(1)**	T.M.D.S data 2−	**(13)**	—
	(2)	T.M.D.S data 2+	**(14)**	+5 V
	(3)	T.M.D.S data 2/4 shield	**(15)**	GND
	(4)	—	**(16)**	Hot plug detection
	(5)	—	**(17)**	T.M.D.S data 0−
	(6)	DDC clock	**(18)**	T.M.D.S data 0+
	(7)	DDC data	**(19)**	T.M.D.S data 0/5 shield
	(8)	—	**(20)**	—
	(9)	T.M.D.S data 1−	**(21)**	—
	(10)	T.M.D.S clock1+	**(22)**	T.M.D.S clock shield
	(11)	T.M.D.S data 1/3 shield	**(23)**	T.M.D.S clock+
	(12)	—	**(24)**	T.M.D.S clock−

Connecting example: AV equipment



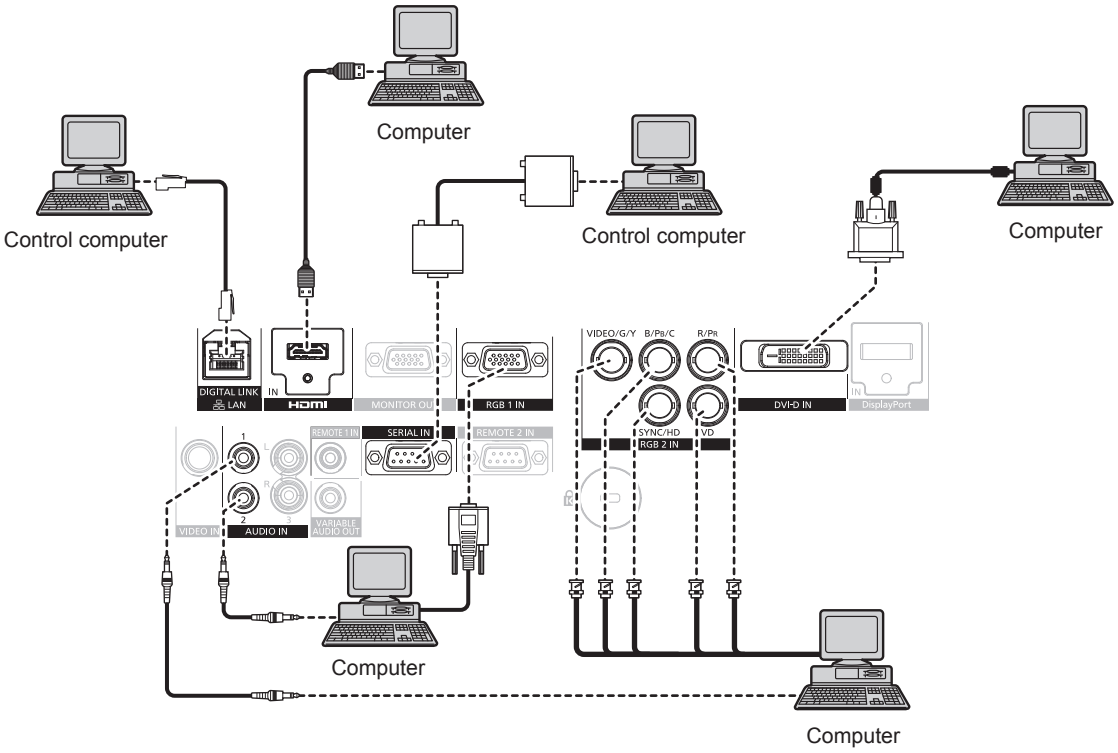
Attention

- Always use one of the following when connecting a VCR.
  - A VCR with built-in time base corrector (TBC)
  - A time base corrector (TBC) between the projector and the VCR
- If nonstandard burst signals are connected, the image may be distorted. In such case, connect the time base corrector (TBC) between the projector and the external devices.

Note

- When entering DVI-D, some external devices to be connected may require switching the setting using the [DISPLAY OPTION] menu → [DVI-D IN] → [EDID].
- The <DVI-D IN> terminal can be connected to HDMI- or DVI-D-compliant devices. However, images may not appear or may not be displayed properly on some devices.
- For an HDMI cable, use an HDMI High Speed cable that conforms to HDMI standards. If a cable that does not conform to HDMI standards is used, images may be interrupted or may not be displayed.
- The <HDMI IN> terminal of the projector can be connected to an external device with a DVI-D terminal by using an HDMI/DVI conversion cable, but some devices may not project the image properly or function properly.
- The projector does not support VIERA Link (HDMI).

Connecting example: Computers



Attention

- When connecting the projector to a computer or an external device, use the power cord supplied with each device and commercially available shielded cables.

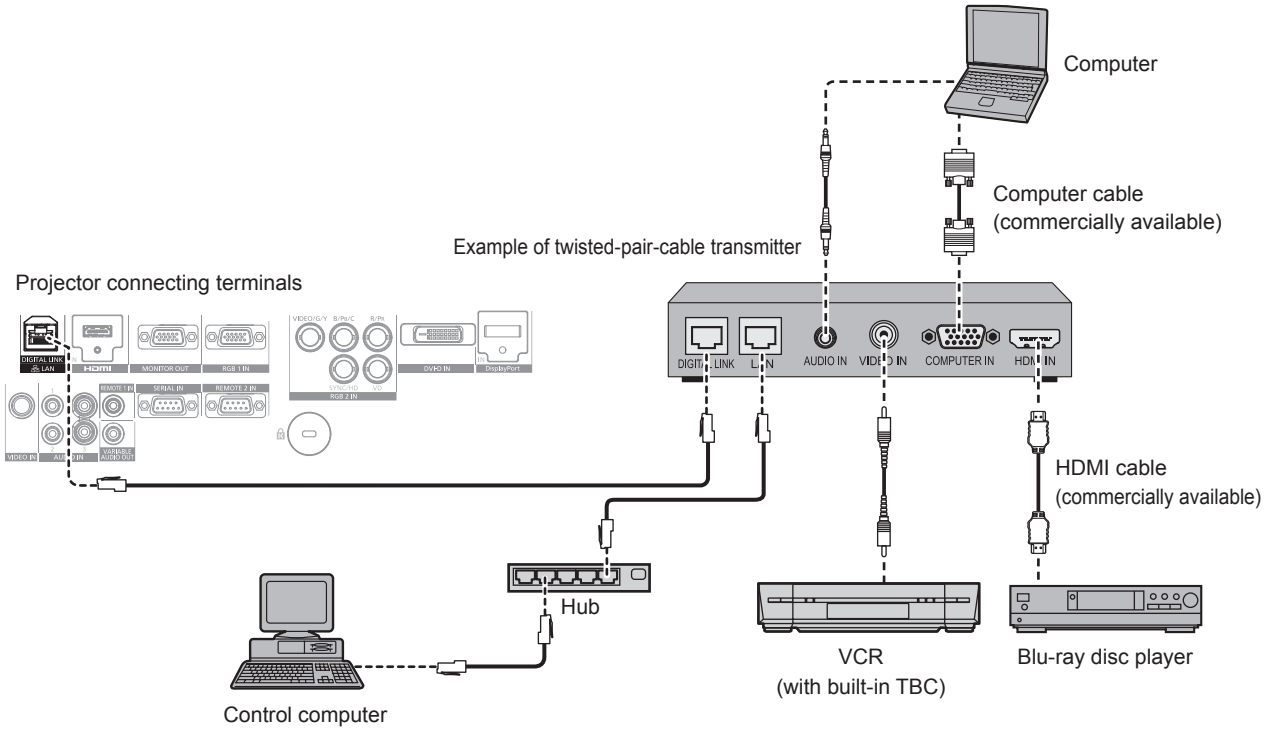
Note

- When entering DVI-D, some external devices to be connected may require switching the setting using the [DISPLAY OPTION] menu → [DVI-D IN] → [EDID].
- For an HDMI cable, use an HDMI High Speed cable that conforms to HDMI standards. If a cable that does not conform to HDMI standards is used, images may be interrupted or may not be displayed.
- The <HDMI IN> terminal of the projector can be connected to an external device with a DVI-D terminal by using an HDMI/DVI conversion cable, but some devices may not project the image properly or function properly.
- The <DVI-D IN> terminal supports single links only.
- For the DisplayPort cable, use a DisplayPort cable that conforms to DisplayPort standards. If a cable that does not conform to DisplayPort standards is used, the image may be interrupted or may not be displayed (Only for PT-EZ580, PT-EW640 and PT-EX610).
- When entering the SYNC ON GREEN signal, do not enter sync signals to the <SYNC/HD> terminal or the <VD> terminal.
- If you operate the projector using the computer with the resume feature (last memory), you may have to reset the resume feature to operate the projector.

Connecting example: Twisted-pair-cable transmitter

(Only for PT-EZ580, PT-EW640 and PT-EX610)

Twisted-pair-cable transmitters such as the optional Digital Interface Box (Model No.: ET-YFB100G) use twisted-pair-cables to transmit input images, audio, Ethernet, and serial control signals, and the projector can input those digital signals to the <DIGITAL LINK/LAN> terminal.



Attention

- Always use one of the following when connecting a VCR.
  - A VCR with built-in time base corrector (TBC)
  - A time base corrector (TBC) between the projector and the VCR
- If nonstandard burst signals are connected, the image may be distorted. In such case, connect the time base corrector (TBC) between the projector and the external devices.
- Ask a qualified technician or your dealer to install the cable wiring for a twisted-pair-cable transmitter and the projector. Image and sound may be disrupted if cable transmission characteristics cannot be obtained due to inadequate installation.
- For the LAN cable between a twisted-pair-cable transmitter and the projector, use a cable that meets the following criteria:
  - Compatible with CAT5e or higher
  - Shielded type (including connectors)
  - Straight-through
  - Single wire
- When laying cables between a twisted-pair-cable transmitter and the projector, check that cable characteristics are compatible with CAT5e or higher using tools such as a cable tester or cable analyzer.
  When using a relay connector midway, include it in the measurement.
- Do not use a hub between a twisted-pair-cable transmitter and the projector.
- When connecting to the projector using a twisted-pair-cable transmitter (receiver) of other manufacturer, do not place another twisted-pair-cable transmitter between the twisted-pair-cable transmitter of other manufacturer and the projector. This may cause image and sound to be disrupted.
- Do not pull cables forcefully. Also, do not bend or fold cables unnecessarily.
- To reduce the effects of noise as much as possible, stretch out the cables between the twisted-pair-cable transmitter and the projector without any loops.
- Lay the cables between a twisted-pair-cable transmitter and the projector away from other cables, particularly power cables.
- When installing multiple cables, run them side by side along the shortest distance possible without bundling them together.
- After laying the cables, confirm that the value of [SIGNAL QUALITY] in the [NETWORK] menu → [DIGITAL LINK STATUS] is displayed in green (indicates normal quality). (➡ page 108)

Note

- For an HDMI cable, use an HDMI High Speed cable that conforms to HDMI standards. If a cable that does not conform to HDMI standards is used, images may be interrupted or may not be displayed.
- The projector does not support VIERA Link (HDMI).
- The maximum transmission distance between the twisted-pair-cable transmitter and the projector is 100 m (328'1"). If this distance is exceeded, image and sound may be disrupted and may cause a malfunction in LAN communication. Please note that we do not support the use of the projector outside the maximum transmission distance.
- For twisted-pair-cable transmitter of other manufacturers of which the operation has been verified with the DIGITAL LINK compatible projector, refer to Panasonic website (http://panasonic.net/avc/projector/). Note that the verification for devices of other manufacturers has been made for the items set by Panasonic Corporation, and not all the operations have been verified. For operation or performance problems caused by the devices of other manufacturers, contact the respective manufacturers.

Chapter 3 Basic Operations

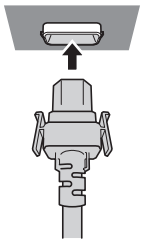
This chapter describes basic operations to start with.

Switching on/off the projector

Connecting the power cord

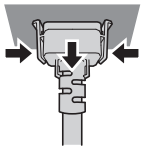
Make sure that the supplied power cord is securely fixed to the projector body to prevent it from being removed easily.
Confirm that the <MAIN POWER> switch is on the <OFF> side before connecting the power cord.
For details of power cord handling, refer to “Read this first!” (➡ page 2).

Attaching the power cord



1) Check the shapes of the <AC IN> terminal on the rear of the projector body and the power cord connector, and insert the plug completely in the correct direction (until you hear the side tabs click in place).

Removing the power cord

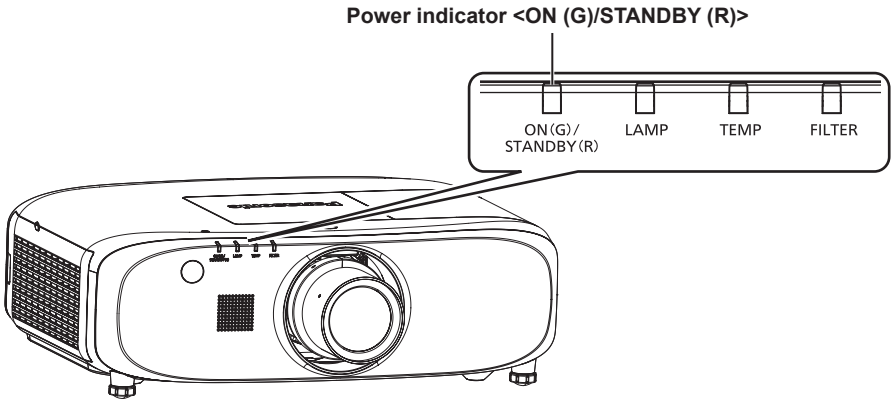


1) Confirm that the <MAIN POWER> switch on the rear of the projector body is on the <OFF> side, and remove the power plug from the outlet.

2) Remove the power cord connector from the <AC IN> terminal of the projector body while pressing the side tabs.

Power indicator

Displays the status of the power. Check the <ON (G)/STANDBY (R)> status of the power indicator before operating the projector.



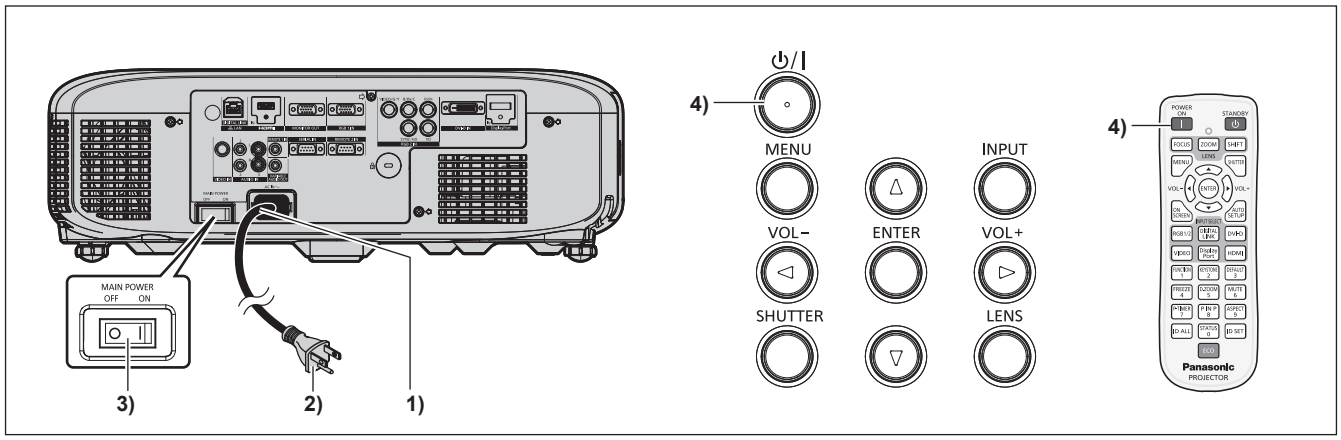
Indicator status		Projector status
Off		The main power is switched off.
Red	Lit	The power is switched off (in standby mode). Projection will start when the power on < | > button is pressed. • The projector may not operate when the lamp indicator <LAMP> or temperature indicator <TEMP> is flashing. (➡ page 127)
Green	Lit	Projecting.
Orange	Lit	The projector is preparing to switch off the projector. The power is switched off after a while. (Changes to the standby mode.)

Note

- While the power indicator <ON (G)/STANDBY (R)> is lit in orange, the fan is running to cool the projector.
- For about 75 seconds after the projector is switched off and the luminous lamp cooling is started, the lamp indicators do not light up even if the power is switched on. After the power indicator <ON (G)/STANDBY (R)> lights in red, turn on the power again.
- The projector consumes power even in standby mode (power indicator <ON (G)/STANDBY (R)> lit in red). Refer to “Power consumption” (➡ page 149) for the power consumption.
- The power indicator <ON (G)/STANDBY (R)> will flash if the projector receives a remote control signal.
- The power indicator <ON (G)/STANDBY (R)> will flash slowly in green while the shutter is closed or AV mute function is used.
- If the power indicator <ON (G)/STANDBY (R)> is flashing in red, consult your dealer.

Switching on the projector

When using the optional Projection Lens, attach the Projection Lens before switching on the projector.
Remove the lens cover first.



1) Connect the power cord to the projector body.

2) Connect the power plug to an outlet.
- (AC 100 V - 240 V, 50 Hz/60 Hz)

3) Press the <ON> side of the <MAIN POWER> switch to turn on the power.
- After a short while, the power indicator <ON (G)/STANDBY (R)> will light in red, and the projector will enter the standby mode.

4) Press the power <⏻/|> button on the control panel or the power on <|> button on the remote control.
- The power indicator <ON (G)/STANDBY (R)> lights in green and the image is soon projected on the screen.

Note

- If the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [STANDBY MODE] is set to [ECO], it may take approx. 10 seconds longer before the projector starts projecting after the power is turned on, compared with when [NORMAL] is set.
- If the <MAIN POWER> switch was set to <OFF> during projection to end the projection using the direct power off function last time, and the <MAIN POWER> switch is set to <ON> with the power plug connected to the outlet, the power indicator <ON (G)/STANDBY (R)> will light in green and the image will soon be projected on the screen.

When the initial setting screen is displayed

When the projector is switched on for the first time after purchase as well as when [ALL USER DATA] in the [PROJECTOR SETUP] menu → [INITIALIZE] is executed, the focus adjustment screen is displayed after projection starts, then the initial setting screen is displayed. Set them in accordance with circumstances.
In other occasions, you can change the settings by menu operations.

Focus adjustment

Adjust the focus to display the menu screen clearly.
You may also need to adjust the zoom and shift.
Refer to “Adjusting the focus, zoom, and shift” (➡ page 49) for details.

1) Press ▲▼◀▶ to adjust the focus.



2) Press the <MENU> button to proceed to the initial setting.

Initial setting (display language)

Select the language to show on the screen.
After completed the initial setting, you can change the display language from the [DISPLAY LANGUAGE] menu.

1) Press ▲▼ to select the display language.

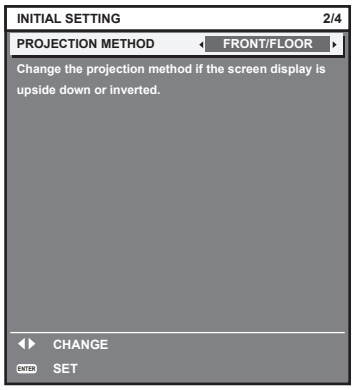


2) Press the <ENTER> button to proceed to the initial setting.

Initial setting (installation setting)

Set [PROJECTION METHOD] depending on the installation mode. Refer to “Installation mode” (➡ page 30) for details.
After completed the initial setting, you can change the setting from the [PROJECTOR SETUP] menu → [PROJECTION METHOD].

1) Press ◀▶ to switch the setting.

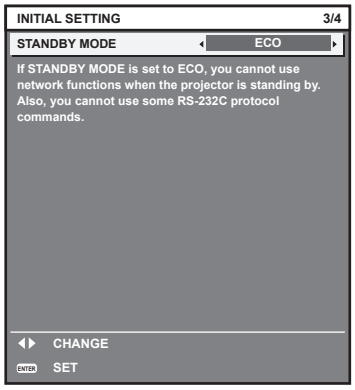


2) Press the <ENTER> button to proceed to the initial setting.

Initial setting (standby mode)

Set the operation mode during standby. The default setting is [ECO] that keeps power consumption low during standby. When the network function is used during standby, set to [NORMAL]. After completed the initial setting, you can change the setting from the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [STANDBY MODE].

1) Press ◀▶ to switch the setting.



2) Press the <ENTER> button to proceed to the initial setting.

Note

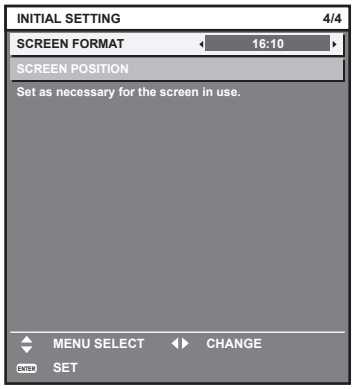
- The above initial setting screen is the one displayed when the projector is switched on for the first time after purchase. When [ALL USER DATA] in the [PROJECTOR SETUP] menu → [INITIALIZE] is executed, the setting of [STANDBY MODE] before execution is displayed.

Initial setting (screen setting)

Set the screen format (aspect ratio) and display position of the image. After completed the initial setting, you can change the settings of each item from the [DISPLAY OPTION] menu → [SCREEN SETTING].

1) Press ▲▼ to select an item.

2) Press ◀▶ to switch the setting.



3) Press the <ENTER> button.

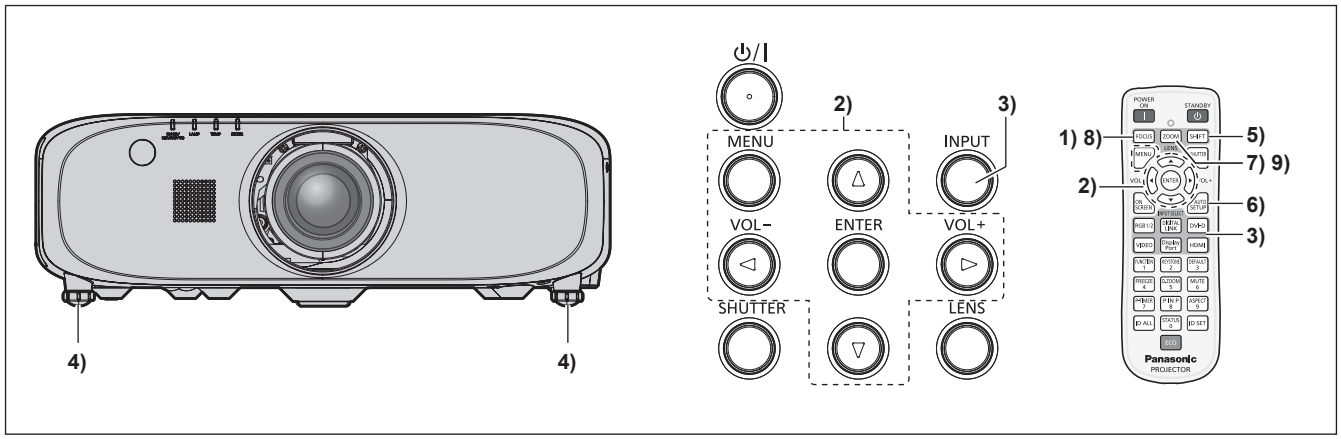
- Confirm the setting value and complete the initial setting.

Note

- If you press the <MENU> button while the initial setting screen is displayed, you can go back to the previous screen.
- By default, the time zone of the projector is set to +09:00 (Japan and Korean Standard Time). Change the setting in the [PROJECTOR SETUP] menu → [DATE AND TIME] → [TIME ZONE] to the time zone of the region where you use the projector.

Making adjustments and selections

It is recommended that images be projected continuously for at least 30 minutes before the focus is adjusted.



1) Press the <FOCUS> button to roughly adjust the focus of the image. (➡ page 49)

2) Change the setting of [PROJECTOR SETUP] menu → [PROJECTION METHOD] depending on the installation mode. (➡ page 30)

- Refer to “Navigating through the menu” (➡ page 57) for the operation of the menu screen.

3) Press the <INPUT> button on the control panel or the input selection (<RGB1/2>, <DIGITAL LINK> *1, <DVI-D>, <VIDEO>, <DisplayPort> *1, <HDMI>) buttons on the remote control to select the input.

(*1 Only for PT-EZ580, PT-EW640 and PT-EX610)

4) Adjust the front, back and sideway tilt of the projector with the adjustable feet. (➡ page 37)

5) Press the <SHIFT> button to adjust the position of the image.

6) If the input signal is an RGB signal, press the <AUTO SETUP> button.

7) Press the <ZOOM> button to adjust the size of the image to match the screen.

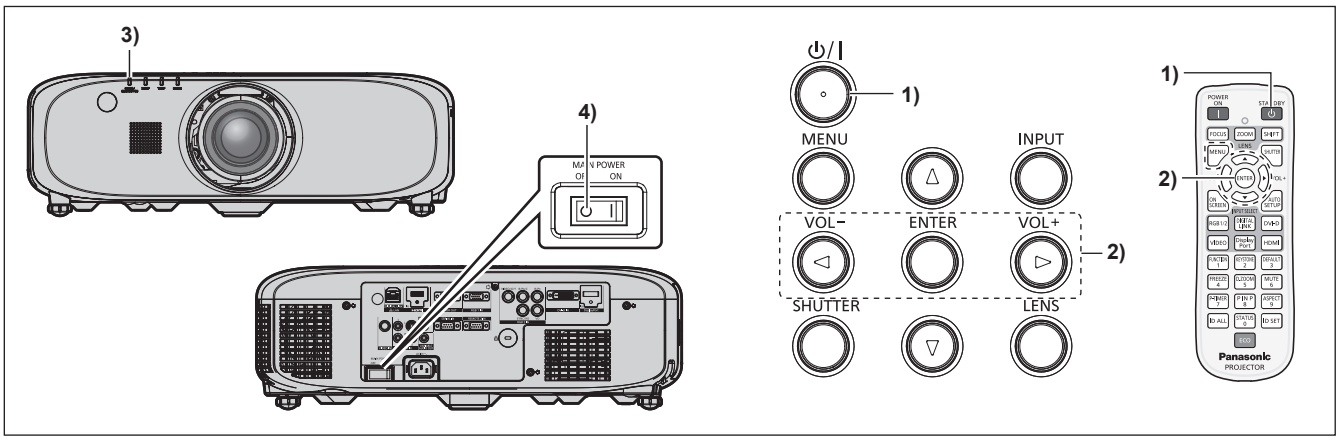
8) Press the <FOCUS> button again to adjust the focus.

9) Press the <ZOOM> button again to adjust the zoom and the size of the image to match the screen.

Note

- When the projector is switched on for the first time after purchase as well as when [ALL USER DATA] in the [PROJECTOR SETUP] menu → [INITIALIZE] is executed, the focus adjustment screen is displayed after projection starts, then the initial setting screen is displayed. Refer to “When the initial setting screen is displayed” (➡ page 45).

Switching off the projector



1) Press the power <⏻/|> button on the control panel or the power standby <⏻> button on the remote control.

- The **[POWER OFF(STANDBY)]** confirmation screen is displayed.

2) Press ◀▶ to select [OK], and press the <ENTER> button.

(Or press the power <⏻/|> button on the control panel or the power standby <⏻> button on the remote control again.)

- Projection of the image will stop, and the power indicator <ON (G)/STANDBY (R)> on the projector body lights in orange. (The fan keeps running.)

3) Wait for about 100 seconds until the power indicator <ON (G)/STANDBY (R)> on the projector body lights in red.

4) Press the <OFF> side of the <MAIN POWER> switch to turn off the power.

Note

- Do not switch on the projector and project images immediately after switching off the projector.
  Turning on the power while the lamp is still hot may shorten the lamp life.
- For about 75 seconds after the projector is switched off and the luminous lamp cooling is started, the lamp indicators will not light up even if the power is switched on. Even after 75 seconds, the lamp may not light up if the projector is switched on. In such a case, after the power indicator <ON (G)/STANDBY (R)> lights in red, switch on the projector again.
- **The projector consumes power even when the power <⏻/|> button on the control panel or the power standby <⏻> button on the remote control is pressed and the projector is switched off if the main power of the projector is on.**
  When the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [STANDBY MODE] is set to [ECO], use of some functions is restricted, but the power consumption during standby can be conserved.

Direct power off function

The projector can be turned off during projection or immediately after the luminous lamp is turned off by setting the <MAIN POWER> switch to <OFF>. Also, when the projector is mounted on the ceiling or installed in an environment where the <MAIN POWER> switch of the projector cannot be easily turned <OFF>, the power can be turned off directly using the circuit breaker. It is also safe in case a power outage occurs or the power cord is pulled out immediately after the projector is switched off.

Note

- If the projector was turned off by turning off the circuit breaker directly during projection last time, then the power indicator <ON (G)/STANDBY (R)> will light in green a while after the circuit breaker is turned on, and then projection of the image will start.
- If the power was turned off directly by turning the <MAIN POWER> switch to <OFF>, or the power was turned off by turning off the circuit breaker directly, projection may take a longer time than usual to start when the projector is switched on the next time.

Projecting

Check the attachment of the Projection Lens (➡ page 38), external device connection (➡ page 39), power cord connection (➡ page 44), and switch on the projector (➡ page 45) to start projecting. Select the image for projection, and adjust appearance of the projected image.

Selecting the input signal

Select an input signal.

1) Press the <INPUT> button on the control panel or the input selection (<RGB1/2>, <DIGITAL LINK> *1, <DVI-D>, <VIDEO>, <DisplayPort> *1, <HDMI>) buttons on the remote control.

- The image of the signal being input in the selected terminal is projected.

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

Attention

- Images may not be projected properly depending on the external device, or the Blu-ray disc or DVD disc, to be played back. Set the [PICTURE] menu → [SYSTEM SELECTOR].
- Confirm the aspect ratio of the projection screen and the image, and switch to an optimum aspect ratio from the [POSITION] menu → [ASPECT].

Adjusting the focus, zoom, and shift

If the projected image or the position is not correct when the positioning of the projector and the screen is correctly installed, adjust the focus, zoom, and shift.

Using the control panel

1) Press the <LENS> button on the control panel.

- Pressing the button changes the adjustment screen in the order of [FOCUS], [ZOOM], and [SHIFT].

2) Select each item and press ▲▼◀▶ to adjust it.

Using the remote control

1) Press the lens (<FOCUS>, <ZOOM>, <SHIFT>) buttons on the remote control.

- <FOCUS> button: Adjusts focus.
- <ZOOM> button: Adjusts zoom.
- <SHIFT> button: Adjusts shift.

2) Select each item and press ▲▼◀▶ to adjust it.

Caution

During the lens shift operation, do not insert your hand in any opening around the lens.
Your hand may be caught and result in injuries.

Note

- When the fixed-focus lens (Model No.: ET-ELW21) is attached, the zoom adjustment screen will be displayed. However, operation is not possible.
- Use the fixed-focus lens (Model No.: ET-ELW21) with the lens position set to the home position. (➡ page 50)
- The adjustment can be performed quickly by pressing and holding ▲▼◀▶ for at least three seconds.
- It is recommended that images be projected continuously for at least 30 minutes before the focus is adjusted.
- Only [FOCUS] is shown in yellow so that the displayed menu item can be recognized by color, even when the projector is not focused and displayed characters are unreadable. (Factory default)
  The display color of [FOCUS] depends on the setting of the [DISPLAY OPTION] menu → [ON-SCREEN DISPLAY] → [OSD DESIGN].

Moving the lens to the home position

To move the lens to the home position, perform the following procedure.

1) While the [SHIFT] adjustment screen is displayed, press the <DEFAULT> button on the remote control.

- The **[HOME POSITION]** screen is displayed.



2) While the [HOME POSITION] screen is displayed (for approximately five seconds), press the <ENTER> button.

- [PROGRESS] is displayed in the **[HOME POSITION]** screen, and the lens returns to the home position.

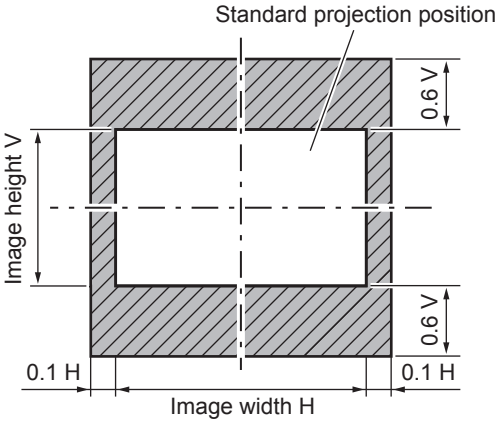
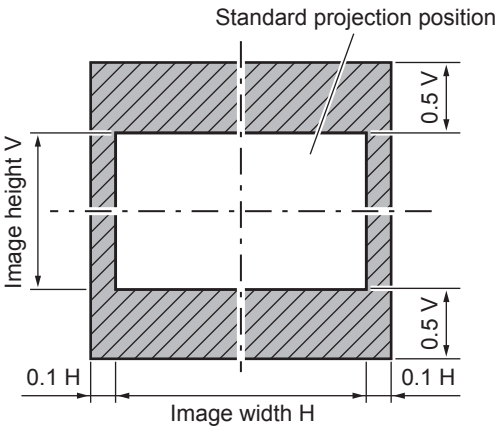
Note

- The home position of the lens is the lens position when the lens is being replaced or when the projector is being stored, and it is not the optical center of the screen.
- You can also display the **[HOME POSITION]** screen by pressing the <LENS> button on the control panel or the <SHIFT> button on the remote control for at least three seconds.

Adjustment range by the lens position shift (optical axis shift)

Perform the lens position shift within the adjustment range.

The focus may change when the lens position is shifted out of the adjustment range. This is because the movement of the lens is restricted to protect the optical parts. Projection position can be adjusted with the optical axis shift based on the standard projection position in the respective range.

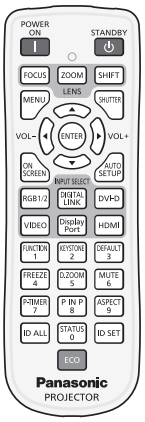
Lens type	Zoom lens
	Standard zoom lens, ET-ELW20, ET-ELT20, ET-ELT21
PT-EZ580 PT-EW640 PT-EW540	
PT-EX610 PT-EX510	

Note

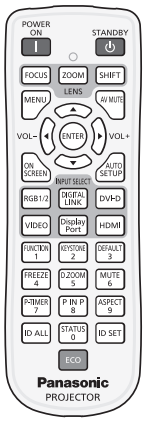
- When the optional fixed-focus lens (Model No.: ET-ELW21) is attached, shift adjustment is not available.

Operating with the remote control

For PT-EZ580, PT-EW640 and PT-EX610

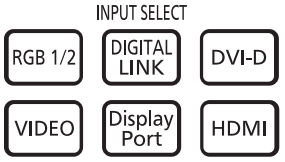


For PT-EW540 and PT-EX510



Switching the input

The input for projection can be switched.



button

1) Press the input selection (<RGB1/2>, <DIGITAL LINK>, <DVI-D>, <VIDEO>, <DisplayPort>, <HDMI>) buttons.

- This operation can be also performed using the <INPUT> button on the control panel.

<RGB1/2>	Switches the input to RGB1 or RGB2. Switches to another input when one input has already been chosen.
<DIGITAL LINK> *1	Switches the input to DIGITAL LINK.
<DVI-D>	Switches the input to DVI-D.
<VIDEO>	Switches the input to VIDEO.
<DisplayPort>*1	Switches the input to DisplayPort.
<HDMI>	Switches the input to HDMI.

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

Note

- When the optional Digital Interface Box (Model No.: ET-YFB100G) is connected to the <DIGITAL LINK/LAN> terminal, the ET-YFB100G input changes with each press of the <DIGITAL LINK> button. The input can also be changed using the control command of RS-232C. For twisted-pair-cable transmitters of other manufacturers, switch the input on the projector to DIGITAL LINK, and then switch the input on the twisted-pair-cable transmitter.

Using the SHUTTER/AV MUTE button

If the projector is not used for a certain period of time during the meeting intermission, for example, it is possible to turn off the image and audio temporarily.

***<SHUTTER> button**

(Only for PT-EZ580, PT-EW640 and PT-EX610)



button

1) Press the <SHUTTER> button.

- The image and audio disappear.
- This operation can be also performed using the <SHUTTER> button on the control panel.

2) Press the <SHUTTER> button again.

- The image and audio reappear.

***<AV MUTE> button**

(Only for PT-EW540 and PT-EX510)



button

1) Press the <AV MUTE> button.

- The image and audio disappear.
- This operation can be also performed using the <AV MUTE> button on the control panel.

2) Press the <AV MUTE> button again.

- The image and audio reappear.

Attention

- When the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [SHUTTER DETECTION] or [AV MUTE DETECTION] is set to [ON], do not switch on /off in a short time.

Note

- The power indicator <ON (G)/STANDBY (R)> will flash slowly in green while the shutter function or AV mute function is in use.

Using the mute function

Audio can be temporarily turned off.



button

1) Press the <MUTE> button.

- The audio disappears.

2) Press the <MUTE> button again.

- The audio reappears.

Adjusting the volume

The volume of the built-in speaker or audio output can be adjusted.



button

1) Press the <VOL–> button/<VOL+> button on the remote control.

- This operation can be also performed using the <VOL-> button/<VOL+> button on the control panel.

<VOL+>	Increases the volume.
<VOL–>	Decreases the volume.

Using the freeze function

The projected image can be paused and audio turned off regardless of the playback of the external device.



button

1) Press the <FREEZE> button.

- The image freezes and audio disappears.

2) Press the <FREEZE> button again.

- Freezing of the image is canceled and audio reappears.

Note

- [FREEZE] is displayed on the screen when video is paused.

Using the on-screen display function

Turn off the on-screen display function (no display) when you do not wish the viewers to see the on-screen display, such as the menu or the input terminal name.



button

1) Press the <ON SCREEN> button.

- The on-screen display disappears.

2) Press the <ON SCREEN> button again.

- The on-screen display appears.

Note

- If you press the <MENU> button on the control panel for at least three seconds while the on-screen display is off (hidden), the on-screen display is turned on.

Using the presentation timer function

The presentation timer function can be operated.
Presentations, etc. can be performed while checking the elapsed time or time remaining in the preset time.



button

1) Press the <P-TIMER> button.

- The count is started.
- The elapsed time or the remaining time is displayed at the bottom right of the projected image.

2) Press the <P-TIMER> button again.

- The count is stopped.

3) Press the <P-TIMER> button again.

- The count is resumed.

Note

- The presentation timer is ended by holding the <P-TIMER> button down for at least three seconds.
- For details such as presentation timer function settings, refer to [DISPLAY OPTION] menu → [P-TIMER] (➡ page 83).

Using the automatic setup function

The automatic setup function can be used to automatically adjust the resolution, clock phase, and image position when analog RGB signals consisting of bitmap images such as computer signals are being input, or to automatically adjust the image position when DVI-D/HDMI signals are input. Supplying images with bright white borders at the edges and high-contrast black and white characters is recommended when the system is in automatic adjustment mode. Avoid supplying images that include halftones or gradation, such as photographs and computer graphics.



button

1) Press the <AUTO SETUP> button.

- [COMPLETE] is displayed when it has completed without any problem.

Note

- The clock phase may shift even if it has completed without any incident. In such cases, adjust the [POSITION] menu → [CLOCK PHASE] (➡ page 70).
- If an image with blurred edges or a dark image is input, [INCOMPLETE] may appear or adjustment may not be performed properly even when [COMPLETE] appears. In this case, adjust the settings in the [ADVANCED MENU] menu → [INPUT RESOLUTION] (➡ page 73), [POSITION] → [CLOCK PHASE] (➡ page 70), and [SHIFT] (➡ page 68).
- Adjust special signals according to the [DISPLAY OPTION] menu → [AUTO SETUP] (➡ page 76).
- Automatic adjustment may not work depending on the model of the computer.
- Automatic adjustment may not work for a synchronization signal of C-SY or SYNC ON GREEN.

- Images may be disrupted for a few seconds during automatic adjustment, but it is not a malfunction.
- Adjustment is required for each input signal.
- Automatic adjustment can be canceled by pressing the <MENU> button during the automatic adjustment operation.
- If the automatic setup function is used while moving images are being input, the adjustment may not be performed properly even for an RGB signal that can use automatic setup. [INCOMPLETE] may appear, or adjustment may not be finished properly even if [COMPLETE] appears.

Using the keystone distortion correction function

The [KEYSTONE] menu can be displayed.
You can correct the keystone distortion that occurs when the projector is installed tilted or when the screen is tilted.

KEYSTONE 2 button

1) Press the <KEYSTONE> button.

- The individual adjustment screen of **[KEYSTONE]** or **[CORNER CORRECTION]** ([UPPER LEFT]) is displayed.

2) Press the <KEYSTONE> button again.

- The other individual adjustment screen is displayed.
  When the **[KEYSTONE]** individual adjustment screen is displayed in Step **1)**, the **[CORNER CORRECTION]** individual adjustment screen ([UPPER LEFT]) is displayed.

Note

- After the individual adjustment screen of [KEYSTONE] or [CORNER CORRECTION] is displayed, press ▲▼◀▶ to adjust the keystone distortion.
- Either setting of [KEYSTONE] or [CORNER CORRECTION] is enabled. If the other item is adjusted after [KEYSTONE] or [CORNER CORRECTION] was adjusted, the previous setting value will be reset.
- If the <ENTER> button is pressed while the [CORNER CORRECTION] individual adjustment screen is displayed, the individual adjustment screen for the next corner is displayed.
- Refer to the [POSITION] menu → [KEYSTONE] (➡ page 70) for details.

Using the digital zoom function

The [DIGITAL ZOOM] menu can be displayed.
You can enlarge images.

D.ZOOM 5 button

1) Press the <D.ZOOM> button.

- The **[DIGITAL ZOOM]** screen is displayed.

2) Press ◀▶ to adjust the magnification.

3) Press the <ENTER> button.

4) Press ▲▼◀▶ to move the zoom position.

Note

- Refer to the [DISPLAY OPTION] menu → [DIGITAL ZOOM] (➡ page 84) for details.

Switching the aspect ratio of the image

You can switch aspect ratios according to the input signal.

ASPECT 9 button

1) Press the <ASPECT> button.

- The setting will change each time you press the button.

Note

- Refer to the [POSITION] menu → [ASPECT] (➡ page 68) for details.

Using the P IN P function

Locate a separate, small sub screen in the main screen to project two images simultaneously.

P IN P 8 button

1) Press the <P IN P> button.

- The setting will change each time you press the button.

Note

- Refer to the menu [P IN P] menu (➡ page 98) for details.

Using the function button

[SUB MEMORY], [SYSTEM SELECTOR], [DAYLIGHT VIEW], or [TEST PATTERN] operations can be assigned to the <FUNCTION> button on the remote control so that it can be used as an easy shortcut button.

FUNCTION 1 button

1) Press the <FUNCTION> button.

Note

- Assignment of the function is performed from the [PROJECTOR SETUP] menu → [FUNCTION BUTTON] (➡ page 92).

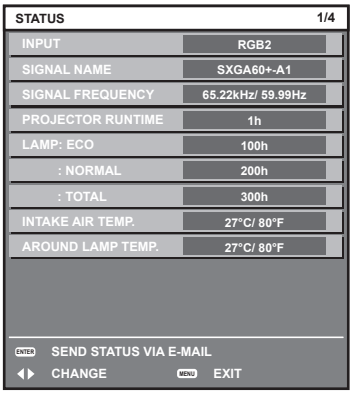
Using the status function

You can display the status of the projector.

STATUS 0 button

1) Press the <STATUS> button.

- The **[STATUS]** screen is displayed.



Note

- This can be displayed from the [PROJECTOR SETUP] menu → [STATUS] (➡ page 94).

Using the ECO management function

You can display the setting screen relating to ECO management.

ECO button

1) Press the <ECO> button on the remote control.

Note

- Refer to the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] (➡ page 87) for details.

Chapter 4 Settings

This chapter describes the settings and adjustments you can make using the on-screen menu.

Menu navigation

The on-screen menu (Menu) is used to perform various settings and adjustments of the projector.

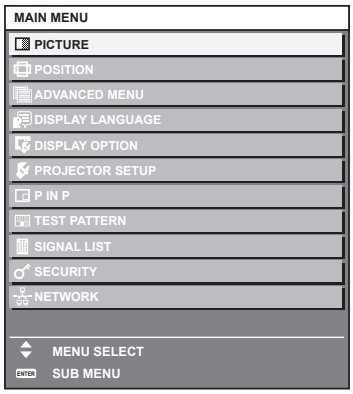
Navigating through the menu

Operating procedure

MENU **button**

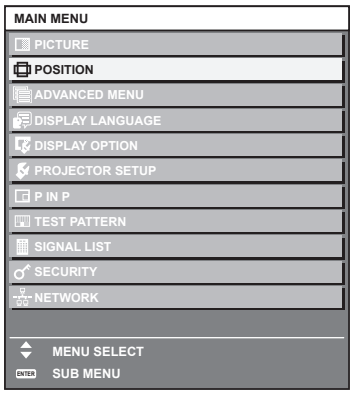
1) Press the <MENU> button on the remote control or control panel.

- The **[MAIN MENU]** screen is displayed.



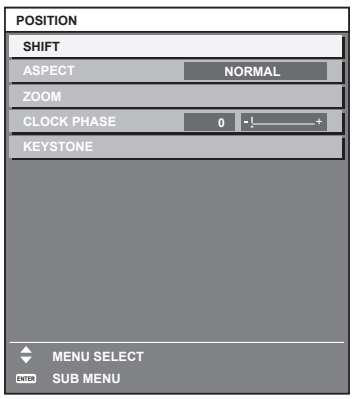
2) Press ▲▼ to select an item from the main menu.

- The selected item is highlighted in yellow.



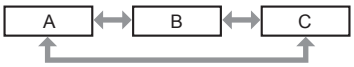
3) Press the <ENTER> button.

- The sub-menu items of the selected main menu are displayed.



4) Press ▲▼ to select a sub-menu, and press ◀▶ or the <ENTER> button to change or adjust settings.

- Some items will switch in order as follows each time you press ◀▶.



- For some items, press ◀▶ to display an individual adjustment screen with a bar scale as shown below.



Note

- Pressing the <MENU> button while the menu screen is displayed returns to the previous menu.
- Some items may not be adjusted or used for certain signal formats to be input to the projector. The menu items that cannot be adjusted or used are shown in black characters, and they cannot be selected. [DIGITAL CINEMA REALITY] may not be displayed depending on the input signal.
- Some items can be adjusted even if signals are not input.
- Individual adjustment screen is cleared automatically if no operation is performed for approximately five seconds.
- For menu items, refer to “Main menu” (➡ page 58) and “Sub-menu” (➡ page 59).
- The cursor color depends on the settings of the [DISPLAY OPTION] menu → [ON-SCREEN DISPLAY] → [OSD DESIGN]. The selected item is displayed with the yellow cursor by the factory default.

Resetting adjustment values to the factory defaults

If the <DEFAULT> button on the remote control is pressed, the values adjusted in the menu items are restored to the factory default settings.

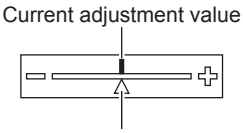
DEFAULT button

1) Press the <DEFAULT> button on the remote control.



Note

- You cannot reset all the settings to the factory default at a time.
- To reset all the settings adjusted in the sub-menu item to the factory default one at a time, execute [PROJECTOR SETUP] menu → [INITIALIZE] (➡ page 96).
- Some items cannot be reset to the factory defaults by pressing the <DEFAULT> button on the remote control. Adjust each item manually.
- The triangular mark under the bar scale in the individual adjustment screen indicates the factory default setting. The position of the triangular mark varies according to the selected input signals.



Main menu

The following items are in the main menu.

When a main menu item is selected, the screen changes to a sub-menu selection screen.

Main menu item		Page
	[PICTURE]	62
	[POSITION]	68
	[ADVANCED MENU]	72
	[DISPLAY LANGUAGE]	74
	[DISPLAY OPTION]	75
	[PROJECTOR SETUP]	86
	[P IN P]	98

Main menu item		Page
	[TEST PATTERN]	100
	[SIGNAL LIST]	101
	[SECURITY]	104
	[NETWORK]	107

Sub-menu

The sub-menu of the selected main menu item is displayed, and you can set and adjust items in the sub-menu.

[PICTURE] 

Sub-menu item	Factory default	Page
[PICTURE MODE]	[STANDARD]	62
[CONTRAST]	[0]	62
[BRIGHTNESS]	[0]	63
[COLOR]	[0]	63
[TINT]	[0]	63
[COLOR TEMPERATURE]	[DEFAULT]	63
[GAMMA]	[0]	65
[SHARPNESS]	[+6]*1	65
[NOISE REDUCTION]	[OFF]	65
[IRIS]*2	[OFF]*1	65
[DAYLIGHT VIEW]	[AUTO]	66
[SYSTEM SELECTOR]	[YP_BP_R]*1	66

*1 Depends on the signal input.
*2 Only for PT-EZ580, PT-EW640 and PT-EX610

Note

- The factory default settings may vary depending on the picture mode.

[POSITION] 

Sub-menu item	Factory default	Page
[SHIFT]	—	68
[ASPECT]	[NORMAL]*1	68
[ZOOM]	—	69
[CLOCK PHASE]	[0]*1	70
[KEYSTONE]	—	70

*1 Depends on the signal input.

[ADVANCED MENU] 

Sub-menu item	Factory default	Page
[DIGITAL CINEMA REALITY]	[AUTO]*1	72
[BLANKING]	—	72
[INPUT RESOLUTION]	—	73
[CLAMP POSITION]	[24]*1	73
[RASTER POSITION]	—	73

*1 Depends on the signal input.

Note

- Sub-menu items and factory default settings vary depending on the selected input terminal.

[DISPLAY LANGUAGE]

Details (➡ page 74)

[DISPLAY OPTION]

Sub-menu item	Factory default	Page
[COLOR ADJUSTMENT]	[OFF]	75
[COLOR CORRECTION]	[OFF]	75
[SCREEN SETTING]	—	76
[AUTO SIGNAL]	[OFF]	76
[AUTO SETUP]	—	76
[RGB IN]	—	77
[DVI-D IN]	—	78
[HDMI IN]	—	78
[DIGITAL LINK IN]*1	—	79
[DisplayPort IN]*1	—	79
[ON-SCREEN DISPLAY]	—	79
[CLOSED CAPTION SETTING]	—	81
[BACK COLOR]	[BLUE]	82
[STARTUP LOGO]	[DEFAULT LOGO]	82
[SHUTTER SETTING]*1	—	82
[P-TIMER]	—	83
[FREEZE]	—	84
[DIGITAL ZOOM]	[1.5]	84

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

[PROJECTOR SETUP]

Sub-menu item	Factory default	Page
[PROJECTOR ID]	[ALL]	86
[PROJECTION METHOD]	[FRONT/FLOOR]	86
[ECO MANAGEMENT]	—	87
[SCHEDULE]	[OFF]	88
[STARTUP INPUT SELECT]	[LAST USED]	90
[RS-232C]	—	90
[REMOTE2 MODE]	[DEFAULT]	92
[FUNCTION BUTTON]	—	92
[AUDIO SETTING]	—	92
[STATUS]	—	94
[DATE AND TIME]	—	95
[SAVE ALL USER DATA]	—	96
[LOAD ALL USER DATA]	—	96
[INITIALIZE]	—	96
[SERVICE PASSWORD]	—	97

[P IN P]

Details (➡ page 98)

[TEST PATTERN]

Details (➡ page 100)

[SIGNAL LIST]

Details (➡ page 101)

[SECURITY]

Sub-menu item	Factory default	Page
[SECURITY PASSWORD]	[OFF]	104
[SECURITY PASSWORD CHANGE]	—	104
[DISPLAY SETTING]	[OFF]	105
[TEXT CHANGE]	—	105
[MENU LOCK]	[OFF]	105
[MENU LOCK PASSWORD]	—	105
[CONTROL DEVICE SETUP]	—	106

[NETWORK]

Sub-menu item	Factory default	Page
[DIGITAL LINK MODE]*1	[AUTO]	107
[DIGITAL LINK SETUP]*1	—	107
[DIGITAL LINK STATUS]*1	—	108
[NETWORK SETUP]	—	108
[NETWORK CONTROL]	—	109
[NETWORK STATUS]	—	109
[DIGITAL INTERFACE BOX]*1	—	109

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

Note

- Some items may not be adjusted or used for certain signal formats to be input to the projector.
  The menu items that cannot be adjusted or used are shown in black characters, and they cannot be selected.
- Sub-menu items and factory default settings vary depending on the selected input terminal.

[PICTURE] menu

On the menu screen, select [PICTURE] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to adjust.



[PICTURE MODE]

You can switch to the desired picture mode suitable for the image source and the environment in which the projector is used.

1) Press ▲▼ to select [PICTURE MODE].

2) Press ◀▶ or the <ENTER> button.

- The **[PICTURE MODE]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[STANDARD]	The image becomes suitable for moving images in general.
[DYNAMIC]	The light output is maximized for use in bright areas.
[DICOM SIM.]	The image becomes similar to that of DICOM Part 14 Grayscale Standard.
[CINEMA]*1	The image becomes suitable for movie contents.
[NATURAL]*2	The image is sRGB compliant.

*1 Only for movie-based input signals
*2 Only for still image input signals

Note

- When [PICTURE MODE] is set to [DICOM SIM.], [LAMP POWER] (➡ page 87) is fixed to [NORMAL].
- DICOM is an abbreviation of "Digital Imaging and COmmunication in Medicine" and is a standard for medical imaging devices. Although the DICOM name is used, the projector is not a medical device, and should not be used for purposes such as diagnosis of display images.

[CONTRAST]

You can adjust the contrast of the colors.

1) Press ▲▼ to select [CONTRAST].

2) Press ◀▶ or the <ENTER> button.

- The **[CONTRAST]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press the ▶ button.	The screen becomes brighter.	–31 - +31
Press the ◀ button.	The screen becomes darker.	

Attention

- Adjust [BRIGHTNESS] first when you need to adjust the black level.

[BRIGHTNESS]

You can adjust the dark (black) part of the projected image.

1) Press ▲▼ to select [BRIGHTNESS].

2) Press ◀▶ or the <ENTER> button.

- The **[BRIGHTNESS]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press the ▶ button.	Increases the brightness of the dark (black) parts of the screen.	–31 - +31
Press the ◀ button.	Reduces the brightness of the dark (black) parts of the screen.	

[COLOR]

You can adjust the color saturation of the projected image.

1) Press ▲▼ to select [COLOR].

2) Press ◀▶ or the <ENTER> button.

- The **[COLOR]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press the ▶ button.	Deepens colors.	–31 - +31
Press the ◀ button.	Weakens colors.	

[TINT]

You can adjust the skin tone in the projected image.

1) Press ▲▼ to select [TINT].

2) Press ◀▶ or the <ENTER> button.

- The **[TINT]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press the ▶ button.	Adjusts skin tone toward greenish color.	–31 - +31
Press the ◀ button.	Adjusts skin tone toward reddish purple.	

[COLOR TEMPERATURE]

You can switch the color temperature if the white areas of the projected image are bluish or reddish.

Adjusting with color temperature

1) Press ▲▼ to select [COLOR TEMPERATURE].

2) Press ◀▶ or the <ENTER> button.

- The **[COLOR TEMPERATURE]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[DEFAULT]	Factory default setting.
[USER]	Adjusts white balance as desired. Refer to “Adjusting desired white balance” (➡ page 64) for details.
[LOW]	Becomes a reddish image. Select this when the white areas of the projected image are bluish.
[HIGH]	Becomes a bluish image. Select this when the white areas of the projected image are reddish.

Note

- When [COLOR ADJUSTMENT] (➡ page 75) is set to other than [OFF], [COLOR TEMPERATURE] is fixed to [USER].

Adjusting desired white balance

1) Press ▲▼ to select [COLOR TEMPERATURE].

2) Press ◀▶ or the <ENTER> button.
- The **[COLOR TEMPERATURE]** individual adjustment screen is displayed.

3) Press ◀▶ button to select [USER].

4) Press the <ENTER> button.
- The **[COLOR TEMPERATURE]** screen is displayed.

5) Press ▲▼ to select [WHITE BALANCE].

6) Press the <ENTER> button.
- The **[WHITE BALANCE]** screen is displayed.

7) Press ▲▼ to select [WHITE BALANCE HIGH] or [WHITE BALANCE LOW].

8) Press the <ENTER> button.
- The **[WHITE BALANCE HIGH]** screen or the **[WHITE BALANCE LOW]** screen is displayed.

9) Press ▲▼ to select [RED], [GREEN], or [BLUE].

10) Press ◀▶ to adjust the level.

Item	Operation	Adjustment	Range of adjustment
[RED]	Press the ▶ button.	Deepens red.	[WHITE BALANCE HIGH]: 0 - +255 (factory default is +255) [WHITE BALANCE LOW]: –127 - +127 (factory default is 0)
	Press the ◀ button.	Weakens red.	
[GREEN]	Press the ▶ button.	Deepens green.	
	Press the ◀ button.	Weakens green.	
[BLUE]	Press the ▶ button.	Deepens blue.	
	Press the ◀ button.	Weakens blue.	

Note

- Adjust [COLOR TEMPERATURE] correctly. All colors will not be displayed properly unless adequate adjustment is made. If the adjustment does not look suitable, you can press the <DEFAULT> button on the remote control to return the setting for the selected item only to the factory default setting.
- When [COLOR ADJUSTMENT] (➡ page 75) is set to other than [OFF], [WHITE BALANCE HIGH] cannot be adjusted.

Changing the [USER] name

1) Press ▲▼ to select [COLOR TEMPERATURE].

2) Press ◀▶ or the <ENTER> button.
- The **[COLOR TEMPERATURE]** individual adjustment screen is displayed.

3) Press ◀▶ to select [USER].

4) Press the <ENTER> button.
- The **[COLOR TEMPERATURE]** screen is displayed.

5) Press ▲▼ to select [COLOR TEMPERATURE NAME CHANGE].

6) Press the <ENTER> button.
- The **[COLOR TEMPERATURE NAME CHANGE]** screen is displayed.

7) Press ▲▼◀▶ to select the text, and press the <ENTER> button to enter the text.

8) Press ▲▼◀▶ to select [OK], and press the <ENTER> button.
- The name set to color temperature is changed.

Note

- When a name is changed, display of [USER] is also changed.

[GAMMA]

You can adjust contrast balance.

1) Press ▲▼ to select [GAMMA].

2) Press ◀▶ or the <ENTER> button.

- The **[GAMMA]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press ▶.	The midtones become brighter.	–8 - +7
Press ◀.	The midtones become darker.	

[SHARPNESS]

You can adjust the sharpness of the projected image.

1) Press ▲▼ to select [SHARPNESS].

2) Press ◀▶ or the <ENTER> button.

- The **[SHARPNESS]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press the ▶ button.	Contours become sharper.	0 - +15
Press the ◀ button.	Contours become softer.	

Note

- If you press ▶ while the adjustment value is [+15], the value will become [0]. If you press ◀ while the adjustment value is [0], the value will become [+15].

[NOISE REDUCTION]

You can reduce noises when the input image is degraded and noise is occurring in the image signal.

1) Press ▲▼ to select [NOISE REDUCTION].

2) Press ◀▶ or the <ENTER> button.

- The **[NOISE REDUCTION]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	No correction.
[1]	Slightly corrects the noise.
[2]	Moderately corrects the noise.
[3]	Strongly corrects the noise.

Attention

- When this is set for an input signal with less noise, the image may look different from what it originally was. In such a case, set it to [OFF].

[IRIS]

(Only for PT-EZ580, PT-EW640 and PT-EX610)
Aperture correction is performed automatically based on the image to result in an image of optimum contrast.

1) Press ▲▼ to select [IRIS].

2) Press ◀▶ or the <ENTER> button.

- The **[IRIS]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	No correction.
[ON]	Automatically corrects the aperture.

[DAYLIGHT VIEW]

You can correct the image to the optimal vividness even if it is projected under a bright light.

1) Press ▲▼ to select [DAYLIGHT VIEW].

2) Press ◀▶ or the <ENTER> button.

- The **[DAYLIGHT VIEW]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[AUTO]	The brightness of the room is detected by the luminance sensor, and the vividness of the image is automatically corrected.
[OFF]	No correction.
[1]	Corrects the image to weaken vividness.
[2]	Corrects the image to medium vividness.
[3]	Corrects the image to high vividness.

Note

- When [PROJECTION METHOD] (➡ page 86) is set to [REAR/FLOOR] or [REAR/CEILING], [AUTO] cannot be selected.
- When objects, etc. are placed on the top of the projector, the [AUTO] mode may not function properly.

[SYSTEM SELECTOR]

The projector will automatically detect the input signal, but you can set the system method manually when an unstable signal is input. Set the system method matching the input signal.

1) Press ▲▼ to select [SYSTEM SELECTOR].

2) Press the <ENTER> button.

3) Press ▲▼ to select a system format.

- Available system formats vary depending on the input signal.

Terminal	System format	
<VIDEO IN> terminal, <VIDEO/G/Y>/<B/P_B/C> terminals	Select [AUTO], [NTSC], [NTSC4.43], [PAL], [PAL-M], [PAL-N], [SECAM], or [PAL60]. Set it to [AUTO] normally. (Setting [AUTO] will automatically select [NTSC], [NTSC4.43], [PAL], [PAL-M], [PAL-N], [SECAM], or [PAL60].) Switch the setting to the signal method for the TV used.	
<RGB 1 IN> terminal, <RGB 2 IN> terminal	**480i, 576i, or 576p signal**	Select [RGB] or [YC_BC_R].
	VGA60 or 480p signal	Select from [VGA60], [480p YC_BC_R], or [480p RGB].
	Other movie-based signals	Select [RGB] or [YP_BP_R].
<DVI-D IN> terminal	**480i, 576i, 480p, or 576p signal**	Select [RGB] or [YC_BC_R].
	Other movie-based signals	Select [RGB] or [YP_BP_R].
<HDMI IN> terminal, <DIGITAL LINK/LAN> *1 terminal, <DisplayPort IN> *2 terminal	**480i, 576i, 480p, or 576p signal**	Select [AUTO], [RGB], or [YC_BC_R].
	Other movie-based signals	Select [AUTO], [RGB], or [YP_BP_R].

*1 For PT-EZ580, PT-EW640 and PT-EX610; <LAN> terminal for PT-EW540 and PT-EX510
*2 Only for PT-EZ580, PT-EW640 and PT-EX610

4) Press the <ENTER> button.

Note

- Refer to “List of compatible signals” (➡ page 146) for the types of video signals that can be used with the projector.
- This may not function properly for some connected external devices.

sRGB-compliant video

sRGB is an international standard (IEC61966-2-1) for color reproduction defined by IEC (International Electrotechnical Commission).
Set according to the following steps to reproduce more faithful, sRGB compliant colors.

1) Set [COLOR ADJUSTMENT] to [OFF].

- Refer to [COLOR ADJUSTMENT] (➡ page 75).

2) Set [COLOR CORRECTION] to [OFF].

- Refer to [COLOR CORRECTION] (➡ page 75).

3) Display the [PICTURE] menu.

- Refer to “[PICTURE] menu” (➡ page 62).

4) Press ▲▼ to select [PICTURE MODE].

5) Press ◀▶ to set [NATURAL].

6) Press ▲▼ to select [COLOR].

7) Press the <DEFAULT> button on the remote control to set the factory default setting.

8) Follow Steps 6) - 7) to set [TINT], [COLOR TEMPERATURE], and [GAMMA] to the factory default settings.

9) Display the [PICTURE] menu.

10) Press ▲▼ to select [DAYLIGHT VIEW].

11) Press ◀▶ button to set [OFF].

Note

- sRGB is available for RGB signal input only.

[POSITION] menu

On the menu screen, select [POSITION] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to adjust.



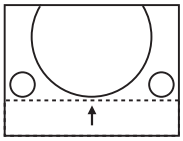
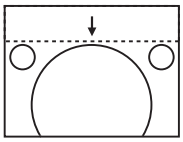
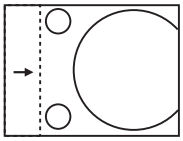
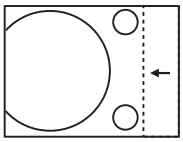
[SHIFT]

Move the image position vertically or horizontally if the image position projected on the screen is shifted even when the relative position of the projector and the screen is installed correctly.

1) Press ▲▼ to select [SHIFT].

2) Press the <ENTER> button.
- The **[SHIFT]** screen is displayed.

3) Press ▲▼◀▶ to adjust the position.

Orientation	Operation	Adjustment	
Vertical (up and down) adjustment	Press the ▲ button.	The image position moves up.	
	Press the ▼ button.	The image position moves down.	
Horizontal (right and left) adjustment	Press the ▶ button.	The image position moves to the right.	
	Press the ◀ button.	The image position moves to the left.	

[ASPECT]

You can switch the aspect ratio of the image.
The aspect ratio is switched within the screen range selected in [SCREEN SETTING]. Set [SCREEN SETTING] first. (➡ page 76)

1) Press ▲▼ to select [ASPECT].

2) Press ◀▶ or the <ENTER> button.
- The **[ASPECT]** individual adjustment screen is displayed.

3) Press ◀▶ to switch the item.
- The items will switch each time you press the button.

[NORMAL]	Displays images without changing the aspect ratio of the input signals.

[VID AUTO][*1]	The projector identifies the video ID (VID) embedded in the video signals and displays the image by automatically switching the screen sizes between 4:3 and 16:9. This function is effective for NTSC signals.
[AUTO][*2]	The projector identifies the video ID (VID) embedded in the video signals and displays the image by automatically switching the screen sizes between 4:3 and 16:9. This function is effective for 480i/480p signals.
[NATIVE]	Displays images without changing the resolution of the input signals.
[WIDE]	Displays images with the aspect ratio converted to 16:9 when standard signals are input[*3]. Display images without changing the aspect ratio when wide-screen signals are input[*4].
[4:3]	Displays images without changing the aspect ratio when standard signals are input[*3]. Displays images without changing the aspect ratio so that the images will fit in the 4:3 screen when wide-screen signals are input[*2].
[H FIT]	Displays images using the entire width of the screen. When signals have the aspect ratio vertically longer than the aspect ratio of the screen selected in [SCREEN FORMAT], the images are displayed with the top and bottom parts cut off.
[V FIT]	Displays images using the entire height of the screen range selected in [SCREEN FORMAT]. When signals have the aspect ratio horizontally longer than the aspect ratio of the screen selected in [SCREEN FORMAT], the images are displayed with the right and left parts cut off.
[FULL]	Displays images in the entire screen range selected in [SCREEN FORMAT]. When the aspect ratio of the input signals differs from that of the screen range, the images are displayed with the aspect ratio converted to that of the screen selected in [SCREEN FORMAT].

*1 For video signals (NTSC) and Y/C signals (NTSC) only

*2 During RGB signal (480i, 480p) input

*3 Standard signals are input signals with an aspect ratio of 4:3 or 5:4.

*4 Wide-screen signals are input signals with an aspect ratio of 16:10, 16:9, 15:9 or 15:10.

Note

- Some size modes are not available for certain types of input signals. [NORMAL] cannot be selected for video signal (NTSC), Y/C signal (NTSC), and RGB signal (480i, 480p).
- If an aspect ratio which is different from the aspect ratio for the input signals is selected, the images will appear differently from the originals. Be careful of this when selecting the aspect ratio.
- If using the projector in places such as cafes or hotels to display programs for a commercial purpose or for public presentation, note that adjusting the aspect ratio or using the zoom function to change the screen images may be an infringement of the rights of the original copyright owner for that program under copyright protection laws. Take care when using a function of the projector such as the aspect ratio adjustment and zoom function.
- If conventional (normal) 4:3 images which are not wide-screen images are displayed on a wide screen, the edges of the images may not be visible or they may become distorted. Such images should be viewed as with an aspect ratio of 4:3 in the original format intended by the creator of the images.

[ZOOM]

You can adjust the image size.

When [ASPECT] is set to other than [NORMAL] and [NATIVE]

1) Press ▲▼ to select [ZOOM].

2) Press the <ENTER> button.

- The **[ZOOM]** screen is displayed.

3) Press ▲▼ to select [INTERLOCKED].

4) Press ◀▶ to switch the item.

[OFF]	Sets the [VERTICAL] and [HORIZONTAL] zoom ratio.
[ON]	Uses [BOTH] to set zoom ratio. Image can be enlarged or reduced vertically and horizontally at the same magnification.

5) Press ▲▼ to select [VERTICAL] or [HORIZONTAL].

- If [ON] is selected, select [BOTH].

6) Press ◀▶ to adjust.

Note

- When [ASPECT] is set to [NATIVE], [ZOOM] cannot be adjusted.

When [ASPECT] is set to [NORMAL]

1) Press ▲▼ to select [ZOOM].

2) Press the <ENTER> button.

- The **[ZOOM]** screen is displayed.

3) Press ▲▼ to select [MODE].

4) Press ◀▶ to switch the item.

[INTERNAL]	Enlarges the size within the aspect range set with [SCREEN FORMAT].
[FULL]	Enlarges or reduces the size using the entire display area set with [SCREEN FORMAT].

5) Press ▲▼ to select [INTERLOCKED].

6) Press ◀▶ to switch the item.

[OFF]	Sets the [VERTICAL] and [HORIZONTAL] zoom ratio.
[ON]	Uses [BOTH] to set zoom ratio. Image can be enlarged or reduced vertically and horizontally at the same magnification.

7) Press ▲▼ to select [VERTICAL] or [HORIZONTAL].

- If [ON] is selected, select [BOTH].

8) Press ◀▶ to adjust.

Note

- When [ASPECT] is not set to [NORMAL], [MODE] is not displayed.

[CLOCK PHASE]

You can adjust to achieve an optimal image when there is a flickering image or smeared outlines.

1) Press ▲▼ to select [CLOCK PHASE].

2) Press ◀▶ or the <ENTER> button.

- The **[CLOCK PHASE]** individual adjustment screen is displayed.

3) Press ◀▶ to adjust.

- Adjustment value will change between [0] and [+31]. Adjust so that the amount of interference is at a minimum.

Note

- Certain signals may not be adjustable.
- Optimal value may not be achieved if the output from the input computer is unstable.
- Optimal value may not be achieved when there is a shift in the total dot numbers.
- [CLOCK PHASE] can be adjusted only when a signal is input to the <RGB 1 IN> terminal or the <RGB 2 IN> terminal.
- [CLOCK PHASE] cannot be adjusted when a digital signal is input.
- If you press ▶ while the adjustment value is [+31], the value will become [0]. If you press ◀ while the adjustment value is [0], the value will become [+31].

[KEYSTONE]

You can correct the keystone distortion that occurs when the projector is installed tilted or when the screen is tilted.

Setting [KEYSTONE]

1) Press ▲▼ to select [KEYSTONE].

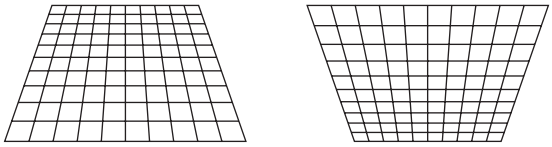
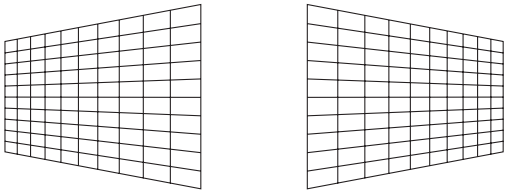
2) Press the <ENTER> button.

3) Press ▲▼ to select [KEYSTONE].

4) Press the <ENTER> button.

- The **[KEYSTONE]** individual adjustment screen is displayed.

5) Press ▲▼◀▶ to adjust.

[KEYSTONE]	
[VERTICAL]	[HORIZONTAL]
	

Setting [CORNER CORRECTION]

1) Press ▲▼ to select [KEYSTONE].

2) Press the <ENTER> button.

3) Press ▲▼ to select [CORNER CORRECTION].

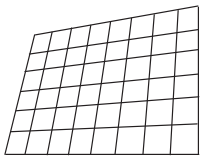
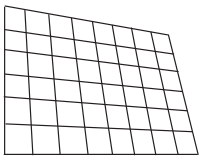
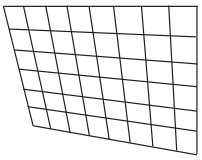
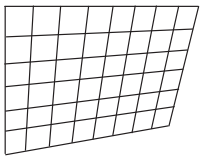
4) Press the <ENTER> button.

- The **[CORNER CORRECTION]** screen is displayed.

5) Press ▲▼ to select the item to adjust, and press the <ENTER> button.

- The **[CORNER CORRECTION]** individual adjustment screen ([UPPER LEFT], [UPPER RIGHT], [LOWER LEFT] or [LOWER RIGHT]) is displayed.

6) Press ▲▼◀▶ to adjust.

[CORNER CORRECTION]			
[UPPER LEFT]	[UPPER RIGHT]	[LOWER LEFT]	[LOWER RIGHT]
			

Note

- Either setting of [KEYSTONE] or [CORNER CORRECTION] is enabled. If the other item is adjusted after [KEYSTONE] or [CORNER CORRECTION] was adjusted, the previous setting value will be reset.
- If the <KEYSTONE> button is pressed on the remote control while the [KEYSTONE] or [CORNER CORRECTION] screen is displayed, the screen will be switched to the other adjustment screen.
- Pressing the <ENTER> button while the [CORNER CORRECTION] individual adjustment screen is displayed will also display the individual adjustment screen for the next corner.
- Correcting up to ±40° for the tilt in the vertical direction (maximum value when adjusting only [VERTICAL]), and up to ±30° for the tilt in the horizontal direction (maximum value when adjusting only [HORIZONTAL]) are available for adjustments with [KEYSTONE]. (Maximum correction amount may be reduced depending on the Projection Lens in use or lens position by shift adjustment.) However, the image quality will degrade and it will get harder to focus with more correction. Install the projector so that the correction will be as small as possible.
- Screen size will also change when [KEYSTONE] is used to perform various adjustments.

[ADVANCED MENU] menu

On the menu screen, select [ADVANCED MENU] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to adjust.



[DIGITAL CINEMA REALITY]

You can increase the vertical resolution and enhance the image quality by performing cinema processing when the PAL (or SECAM) 576i signal, the NTSC 480i signal, and 1080/50i, 1080/60i are input.

1) Press ▲▼ to select [DIGITAL CINEMA REALITY].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[AUTO]	Performs automatic detection and cinema processing. (Factory default)	
[OFF]	Does not perform cinema processing.	
[30p FIXED]	Only during 480i or 1080/60i signal input	Performs forced cinema processing (2:2 pulldown).
[25p FIXED]	Only during 576i or 1080/50i signal input	

Note

- In [DIGITAL CINEMA REALITY], the picture quality will degrade when a signal other than the 2:2 pulldown is set as [25p FIXED] or [30p FIXED]. (Vertical resolution will degrade.)

[BLANKING]

You can adjust the blanking width if there are noises at the edge of the screen or the image is slightly running out from the screen while an image from the VCR or other devices are projected.

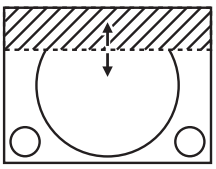
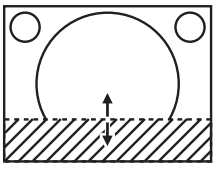
1) Press ▲▼ to select [BLANKING].

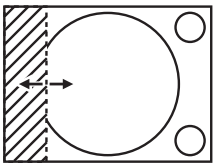
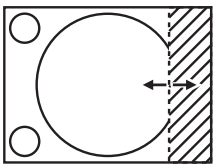
2) Press the <ENTER> button.

- The **[BLANKING]** adjustment screen is displayed.

3) Press ▲▼ to select [UPPER], [LOWER], [LEFT], or [RIGHT].

4) Press ◀▶ to adjust the blanking width.

Blanking correction	Item	Operation	Adjustment		Range of adjustment
Top of the screen	**[UPPER]**	Press the ◀ button.	The blanking zone moves upward.		PT-EZ580: Top to bottom 0 - 599 PT-EW640 PT-EW540: Top to bottom 0 - 399 PT-EX610 PT-EX510: Top to bottom 0 - 383
		Press the ▶ button.	The blanking zone moves downward.		
Bottom of the screen	**[LOWER]**	Press the ▶ button.	The blanking zone moves upward.		
		Press the ◀ button.	The blanking zone moves downward.		

Blanking correction	Item	Operation	Adjustment		Range of adjustment
Left side of the screen	**[LEFT]**	Press the ▶ button.	The blanking zone moves to the right.		PT-EZ580: Left to right 0 - 959 PT-EW640 PT-EW540: Left to right 0 - 639 PT-EX610 PT-EX510: Left to right 0 - 511
		Press the ◀ button.	The blanking zone moves to the left.		
Right side of the screen	**[RIGHT]**	Press the ◀ button.	The blanking zone moves to the right.		
		Press the ▶ button.	The blanking zone moves to the left.		

[INPUT RESOLUTION]

You can adjust to achieve an optimal image when there is a flickering image or smeared outlines.

1) Press ▲▼ to select [INPUT RESOLUTION].

2) Press the <ENTER> button.

- The **[INPUT RESOLUTION]** screen is displayed.

3) Press ▲▼ to select [TOTAL DOTS], [DISPLAY DOTS], [TOTAL LINES], or [DISPLAY LINES], and press ◀▶ to adjust each item.

- Values corresponding to the signal being input are displayed automatically for each item. Increase or decrease the displayed values and adjust to the optimal point viewing the screen when there are vertical stripes or sections are missing from the screen.

Note

- Previously mentioned vertical banding will not occur with all white signal input.
- [INPUT RESOLUTION] can be adjusted only when an RGB signal is input to the <RGB 1 IN> terminal or the <RGB 2 IN> terminal.
- Certain signals may not be adjustable.

[CLAMP POSITION]

You can adjust the optimal point when the black part of the image is blunt or it has turned green.

1) Press ▲▼ to select [CLAMP POSITION].

2) Press ◀▶ to adjust.

Status	Rough guide for optimal value	Range of adjustment
The black part is blunt.	The point where bluntness of the black part improves the most is the optimal value.	1 - 255
The black part is green.	The point where the green part becomes black, and the bluntness has improved is the optimal value.	

Note

- [CLAMP POSITION] can be adjusted only when a signal is input to the <RGB 1 IN> terminal or the <RGB 2 IN> terminal.
- Certain signals may not be adjustable.

[RASTER POSITION]

This will allow the position of the image to move within the display area arbitrarily when the input image is not using the whole display area.

1) Press ▲▼ to select [RASTER POSITION].

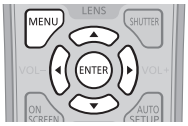
2) Press the <ENTER> button.

- The **[RASTER POSITION]** screen is displayed.

3) Press ▲▼◀▶ to adjust the position.

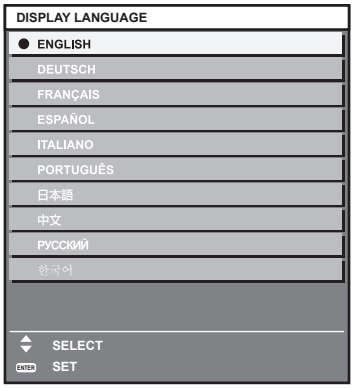
[DISPLAY LANGUAGE] menu

On the menu screen, select [DISPLAY LANGUAGE] from the main menu, and display the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- Press ▲▼ to select a language, and press the <ENTER> button to set.



Changing the display language

You can select the language of the on-screen display.



- Various menus, settings, adjustment screens, control button names, etc., are displayed in the selected language.
- The language can be changed to English, German, French, Spanish, Italian, Portuguese, Japanese, Chinese, Russian, or Korean.

Note

- The on-screen display language of the projector is set to English by default and when [ALL USER DATA] (➡ page 96) in [INITIALIZE] is executed.

[DISPLAY OPTION] menu

On the menu screen, select [DISPLAY OPTION] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to set.



[COLOR ADJUSTMENT]

Correct the color difference between projectors when using multiple projectors simultaneously.

1) Press ▲▼ to select [COLOR ADJUSTMENT].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Color adjustment is not carried out.
[3COLORS]	Adjusts the three colors [RED], [GREEN], or [BLUE].
[7COLORS]	Adjusts the seven colors [RED], [GREEN], [BLUE], [CYAN], [MAGENTA], [YELLOW], or [WHITE].

3) Select [3COLORS] or [7COLORS], and press the <ENTER> button.

- The **[3COLORS]** or **[7COLORS]** screen is displayed.

4) Press ▲▼ to select [RED], [GREEN], or [BLUE] ([RED], [GREEN], [BLUE], [CYAN], [MAGENTA], [YELLOW], or [WHITE] for [7COLORS]).

5) Press the <ENTER> button.

- The **[3COLORS:RED]**, **[3COLORS:GREEN]**, or **[3COLORS:BLUE]** screen is displayed.
  For [7COLORS], the **[7COLORS:RED]**, **[7COLORS:GREEN]**, **[7COLORS:BLUE]**, **[7COLORS:CYAN]**, **[7COLORS:MAGENTA]**, **[7COLORS:YELLOW]**, or **[7COLORS:WHITE]** screen is displayed.
- Set [AUTO TESTPATTERN] to [ON] to display a test pattern of selected colors.

6) Press ▲▼ to select [RED], [GREEN], or [BLUE].

7) Press ◀▶ to adjust.

- The adjustment value changes between 0*1 and 2 048.

*1 The lower limit varies depending on the adjusting color.

Note

- Operation when correcting the adjustment color
  When the correction color same as the adjustment color is changed: The luminance of the adjustment color changes.
  When correction color red is changed: Red is added to or subtracted from the adjustment color.
  When correction color green is changed: Green is added to or subtracted from the adjustment color.
  When correction color blue is changed: Blue is added to or subtracted from the adjustment color.
- This adjustment should be carried out by a person who is familiar with the projector or by a service person because a high level of skill is required to make a successful adjustment.
- Set the [AUTO TESTPATTERN] to [ON] to automatically display a test pattern for use in adjusting the selected adjustment colors.
- Pressing the <DEFAULT> button on the remote control will restore the factory default settings for all items.
- If [COLOR ADJUSTMENT] is set to other than [OFF], [COLOR CORRECTION] is fixed to [OFF], and [COLOR TEMPERATURE] is fixed to [USER]. (However, [WHITE BALANCE HIGH] cannot be adjusted.)

[COLOR CORRECTION]

Colors can be adjusted and registered for each input signal format.

1) Press ▲▼ to select [COLOR CORRECTION].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Standard setting
[USER]	For each of the following four signal formats: VIDEO, Y/C, RGB, and YP_BP_R/YC_BC_R, six colors of red, green, blue, cyan, magenta, and yellow can be adjusted and registered. Press the <ENTER> button to set the details. Adjustment is possible within the range of –31 - +31.

[SCREEN SETTING]

Set the screen size.

Correct to the optimum image position for the set screen when changing the aspect ratio of a projected image. Set as necessary for the screen in use.

1) Press ▲▼ to select [SCREEN SETTING].

2) Press the <ENTER> button.

- The **[SCREEN SETTING]** screen is displayed.

3) Press ◀▶ to switch the [SCREEN FORMAT] item.

- The items will switch each time you press the button.

Model No.	[SCREEN FORMAT]	Range when [SCREEN POSITION] is selected
PT-EZ580	**[16:10]**	Cannot be adjusted.
	[4:3]	Adjusts the horizontal position between –160 and 160.
	[16:9]	Adjusts the vertical position between –60 and 60.
PT-EW640, **PT-EW540**	**[16:10]**	Cannot be adjusted.
	[16:9]	Adjusts the vertical position between –40 and 40.
PT-EX610, **PT-EX510**	**[4:3]**	Cannot be adjusted.
	[16:9]	Adjusts the vertical position between –96 and 96.

4) Press ▲▼ to select [SCREEN POSITION].

- If [SCREEN FORMAT] is set to [16:10] on PT-EZ580, PT-EW640, PT-EW540, or [SCREEN FORMAT] is set to [4:3] on PT-EX610, PT-EX510, then selection and adjustment of [SCREEN POSITION] are not available.

5) Press ◀▶ to adjust [SCREEN POSITION].

[AUTO SIGNAL]

Set whether to execute automatic setup of signals automatically.

The screen display position or signal level can be adjusted automatically without pressing the <AUTO SETUP> button on the remote control on each occasion if you input unregistered signals frequently at meetings, etc.

1) Press ▲▼ to select [AUTO SIGNAL].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Sets the auto signal function to off.
[ON]	Executes automatic setup automatically when images are changed to unregistered signals during projection.

[AUTO SETUP]

Set this when adjusting a special signal or horizontally long (such as 16:9) signal.

Setting with [MODE]

1) Press ▲▼ to select [AUTO SETUP].

2) Press the <ENTER> button.

- The **[AUTO SETUP]** screen is displayed.

3) Press ▲▼ to select [MODE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[DEFAULT]	Standard setting.

[WIDE]	Select when an image aspect ratio is a wide-screen signal, which does not meet the [DEFAULT] settings.
[USER]	Select when receiving a signal with a special horizontal resolution (number of display dots).

- When [DEFAULT] or [WIDE] is selected, proceed to Step **7)**.
- When [USER] is selected, proceed to Step **5)**.

5) Press ▲▼ to select [DISPLAY DOTS], and press ◀▶ to adjust [DISPLAY DOTS] to the horizontal resolution of the signal source.

6) Press ▲▼ to select [MODE].

7) Press the <ENTER> button.

- Automatic adjustment is executed. [PROGRESS] is displayed while automatically adjusting. When complete, the system returns to the **[AUTO SETUP]** screen.

Adjusting position automatically

1) Press ▲▼ to select [AUTO SETUP].

2) Press the <ENTER> button.

- The **[AUTO SETUP]** screen is displayed.

3) Press ▲▼ to select [POSITION ADJUST].

4) Press ◀▶ to switch the item.

[ON]	Adjust the screen position and size when automatic setup is executed.
[OFF]	Does not perform automatic adjustment.

Adjusting signal level automatically

1) Press ▲▼ to select [AUTO SETUP].

2) Press the <ENTER> button.

- The **[AUTO SETUP]** screen is displayed.

3) Press ▲▼ to select [SIGNAL LEVEL ADJUST].

4) Press ◀▶ to switch the item.

[OFF]	Does not perform automatic adjustment.
[ON]	Adjusts black level (on-screen menu [BRIGHTNESS]) and white level (on-screen menu [CONTRAST]) when automatic setup is executed.

Note

- [SIGNAL LEVEL ADJUST] may not function properly unless a still image containing clear blacks and whites is input.

[RGB IN]

Set to match the signal to input to the <RGB 1 IN> terminal and <RGB 2 IN> terminal.

Switching the slice level of an input sync signal

1) Press ▲▼ to select [RGB IN].

2) Press the <ENTER> button.

- The **[RGB IN]** screen is displayed.

3) Press ▲▼ to select [RGB1 SYNC SLICE LEVEL] or [RGB2 SYNC SLICE LEVEL].

4) Press ◀▶ to switch the item.

[LOW]	Sets the slice level to [LOW].
[HIGH]	Sets the slice level to [HIGH].

Setting [RGB2 INPUT SETTING]

1) Press ▲▼ to select [RGB IN].

2) Press the <ENTER> button.

- The **[RGB IN]** screen is displayed.

3) Press ▲▼ to select [RGB2 INPUT SETTING].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[RGB/YP_BP_R]	Select when inputting RGB signals or YC_BC_R/YP_BP_R signals to the <RGB 2 IN> terminal.
[Y/C]	Select when inputting luminance signals and color signals to the <RGB 2 IN> terminal.
[VIDEO]	Select when inputting video signals to the <RGB 2 IN> terminal.

[DVI-D IN]

Switch the setting when the external device is connected to the <DVI-D IN> terminal of the projector and the image is not projected correctly.

1) Press ▲▼ to select [DVI-D IN].

2) Press the <ENTER> button.

- The **[DVI-D IN]** screen is displayed.

3) Press ▲▼ to select [EDID].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[EDID3]	Recognizes movie-based video signals and still image signals automatically.
[EDID1]	Select mainly when an external device that outputs movie-based video signals (such as a Blu-ray disc player) is connected to the <DVI-D IN> terminal.
[EDID2:PC]	Select mainly when an external device that outputs still image video signals (such as a computer) is connected to the <DVI-D IN> terminal.

5) Press ▲▼ to select [SIGNAL LEVEL].

6) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[AUTO]	Automatically sets the signal level.
[0-255:PC]	Select when the DVI-D terminal output of an external device (such as a computer) is connected to the <DVI-D IN> terminal.
[16-235]	Select when the HDMI terminal output of an external device (such as a Blu-ray disc player) is connected to the <DVI-D IN> terminal via a conversion cable or similar cable.

Note

- The optimal setting varies depending on the output setting of the connected external device. Refer to the operating instructions of the external device regarding the output of the external device.
- The data for Plug and play will change when the setting is changed. Refer to “List of compatible signals” (➡ page 146) for a resolution that supports plug and play.

[HDMI IN]

Set the signal level when HDMI input is selected.

1) Press ▲▼ to select [HDMI IN].

2) Press the <ENTER> button.

- The **[HDMI IN]** screen is displayed.

3) Press ◀▶ to switch the [SIGNAL LEVEL] item.

- The items will switch each time you press the button.

[AUTO]	Automatically sets the signal level.

[64-940]	Select when the HDMI terminal output of an external device (such as a Blu-ray disc player) is connected to the <HDMI IN> terminal.
[0-1023]	Select when the DVI-D terminal output of an external device (such as a computer) is connected to the <HDMI IN> terminal via a conversion cable or similar cable. Select also when the HDMI terminal output of a computer or other device is connected to the <HDMI IN> terminal.

Note

- The optimal setting varies depending on the output setting of the connected external device. Refer to the operating instructions of the external device regarding the output of the external device.
- The displayed signal level is assumed when the input is 30 bits.

[DIGITAL LINK IN]

(Only for PT-EZ580, PT-EW640 and PT-EX610)

Set the signal level when DIGITAL LINK input is selected.

1) Press ▲▼ to select [DIGITAL LINK IN].

2) Press the <ENTER> button.

- The **[DIGITAL LINK IN]** screen is displayed.

3) Press ◀▶ to switch [SIGNAL LEVEL].

- The items will switch each time you press the button.

[AUTO]	Automatically sets the signal level.
[64-940]	Select when the HDMI terminal output of an external device (such as a Blu-ray disc player) is connected to the <DIGITAL LINK/LAN> terminal via a twisted-pair-cable transmitter.
[0-1023]	Select when the DVI-D terminal output or HDMI terminal output of an external device (such as a computer) is connected to the <DIGITAL LINK/LAN> terminal via a twisted-pair-cable transmitter.

Note

- The optimal setting varies depending on the output setting of the connected external device. Refer to the operating instructions of the external device regarding the output of the external device.
- The displayed signal level is assumed when the input is 30 bits.

[DisplayPort IN]

(Only for PT-EZ580, PT-EW640 and PT-EX610)

Set the signal level when DisplayPort input is selected.

1) Press ▲▼ to select [DisplayPort IN].

2) Press the <ENTER> button.

- The **[DisplayPort IN]** screen is displayed.

3) Press ◀▶ to switch [SIGNAL LEVEL].

- The items will switch each time you press the button.

[AUTO]	Automatically sets the signal level.
[64-940]	Select when the dark parts of the screen rise up as black.
[0-1023]	Select when bright parts of the screen are dropped out white and dark parts are filled in as solid black.

Note

- The optimal setting varies depending on the output setting of the connected external device. Refer to the operating instructions of the external device regarding the output of the external device.
- The displayed signal level is assumed when the input is 30 bits.

[ON-SCREEN DISPLAY]

Set the on-screen display.

Setting [OSD POSITION]

Set the position of the menu screen (OSD).

1) Press ▲▼ to select [ON-SCREEN DISPLAY].

2) Press the <ENTER> button.

- The **[ON-SCREEN DISPLAY]** screen is displayed.

3) Press ▲▼ to select [OSD POSITION].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[2]	Sets to the center left of the screen.
[3]	Sets to the bottom left of the screen.
[4]	Sets to the top center of the screen.
[5]	Sets to the center of the screen.
[6]	Sets to the bottom center of the screen.
[7]	Sets to the upper right of the screen.
[8]	Sets to the center right of the screen.
[9]	Sets to the bottom right of the screen.
[1]	Sets to the upper left of the screen.

Setting [OSD DESIGN]

Set the color of the menu screen (OSD).

1) Press ▲▼ to select [ON-SCREEN DISPLAY].

2) Press the <ENTER> button.

- The **[ON-SCREEN DISPLAY]** screen is displayed.

3) Press ▲▼ to select [OSD DESIGN].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[1]	Sets to yellow.
[2]	Sets to blue.
[3]	Sets to white.
[4]	Sets to green.
[5]	Sets to peach.
[6]	Sets to brown.

Setting [OSD MEMORY]

Set hold for the position of the menu screen (OSD) cursor.

1) Press ▲▼ to select [ON-SCREEN DISPLAY].

2) Press the <ENTER> button.

- The **[ON-SCREEN DISPLAY]** screen is displayed.

3) Press ▲▼ to select [OSD MEMORY].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ON]	Holds the cursor position.
[OFF]	Does not hold the cursor position.

Note

- Even if [OSD MEMORY] is set to [ON], the cursor position will not be held when the <MAIN POWER> switch of the projector body is turned <OFF>.

Setting [INPUT GUIDE]

Set whether to display the input guide (input terminal name, signal name, and memory number currently selected) in the position set in the [OSD POSITION].

1) Press ▲▼ to select [ON-SCREEN DISPLAY].

2) Press the <ENTER> button.

- The **[ON-SCREEN DISPLAY]** screen is displayed.

3) Press ▲▼ to select [INPUT GUIDE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ON]	Displays the input guide.
[OFF]	Hides the input guide.

Setting [WARNING MESSAGE]

Set the display/hide of the warning message.

1) Press ▲▼ to select [ON-SCREEN DISPLAY].

2) Press the <ENTER> button.

- The **[ON-SCREEN DISPLAY]** screen is displayed.

3) Press ▲▼ to select [WARNING MESSAGE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ON]	Displays the warning message.
[OFF]	Hides the warning message.

[CLOSED CAPTION SETTING] (NTSC or 480i YC_BC_R signal input only)

Set closed captions.

Selecting the closed caption display

1) Press ▲▼ to select [CLOSED CAPTION SETTING].

2) Press the <ENTER> button.

- The **[CLOSED CAPTION SETTING]** screen is displayed.

3) Press ▲▼ to select [CLOSED CAPTION].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Hides closed captions.
[ON]	Displays closed captions.

- When [ON] is selected, proceed to Step **5)**.

5) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

Setting the closed caption display

1) Press ▲▼ to select [CLOSED CAPTION SETTING].

2) Press the <ENTER> button.

- The **[CLOSED CAPTION SETTING]** screen is displayed.

3) Press ▲▼ to select [MODE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[CC1]	Displays CC1 data.
[CC2]	Displays CC2 data.
[CC3]	Displays CC3 data.
[CC4]	Displays CC4 data.

Note

- Closed caption is a function that displays text information of video signals mainly used in North America. Captions may not be displayed depending on the connected devices or contents being played back.
- [CLOSED CAPTION SETTING] can be selected only if NTSC or 480i YC_BC_R signal is input.
- If [CLOSED CAPTION] is set to [ON], brightness of images may change depending on the external devices compatible with closed caption function to be connected or contents to be used.
- If a closed caption signal of the selected mode is input, the security message set in the [SECURITY] menu → [DISPLAY SETTING] (➡ page 105) is not displayed.
- Closed captions are not displayed when the menu screen is displayed.

[BACK COLOR]

Set the display of the projected screen when there is no signal input.

1) Press ▲▼ to select [BACK COLOR].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[BLUE]	Displays the entire projection area in blue.
[BLACK]	Displays the entire projection area in black.
[DEFAULT LOGO]	Displays the Panasonic logo.
[USER LOGO]	Displays the image registered by the user.

Note

- To create/register the [USER LOGO] image, use “Logo Transfer Software” included in the supplied CD-ROM.

[STARTUP LOGO]

Set the logo display when the power is turned on.

1) Press ▲▼ to select [STARTUP LOGO].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[DEFAULT LOGO]	Displays the Panasonic logo.
[USER LOGO]	Displays the image registered by the user.
[NONE]	Disables the startup logo display.

Note

- The startup logo will disappear in approximately 15 seconds.
- To create/register the [USER LOGO] image, use “Logo Transfer Software” included in the supplied CD-ROM.

[SHUTTER SETTING]

(Only for PT-EZ580, PT-EW640 and PT-EX610)
Set automatic opening and closing of the shutter when the power is turned off/on.

Setting [STARTUP]

1) Press ▲▼ to select [SHUTTER SETTING].

2) Press the <ENTER> button.

- The **[SHUTTER SETTING]** screen is displayed.

3) Press ▲▼ to select [STARTUP].

4) Press ◀▶ to switch the item.

[OPEN]	Projection begins with the shutter open when the power is turned on.
[CLOSE]	Projection begins with the shutter close when the power is turned on.

Setting [SHUT-OFF]

1) Press ▲▼ to select [SHUTTER SETTING].

2) Press the <ENTER> button.

- The **[SHUTTER SETTING]** screen is displayed.

3) Press ▲▼ to select [SHUT-OFF].

4) Press ◀▶ to switch the item.

[KEEP CURRENT STATE]	When the projector is switched off, the projector turns into standby with the shutter status as is.
[OPEN]	When the projector is switched off, the projector turns into standby with the shutter left opened.
[CLOSE]	When the projector is switched off, the projector turns into standby with the shutter left closed.

[P-TIMER]

Set and operate the presentation timer function.

Setting the mode

1) Press ▲▼ to select [P-TIMER].

2) Press the <ENTER> button.

- The **[P-TIMER]** screen is displayed.

3) Press ▲▼ to select [MODE].

4) Press ◀▶ to switch the item.

[COUNT UP]	Displays the elapsed time since the count was started.
[COUNT DOWN]	Displays the remaining time of the time set by [TIMER].

Setting the timer

1) Press ▲▼ to select [P-TIMER].

2) Press the <ENTER> button.

- The **[P-TIMER]** screen is displayed.

3) Press ▲▼ to select [TIMER].

4) Press ◀▶ to set the time.

- The time can be set in 1-minute increments from 1 to 180 minutes.
- The factory default value is 10 minutes.

Note

- [TIMER] is enabled when [MODE] is set to [COUNT DOWN].

Using the presentation timer

1) Press ▲▼ to select [P-TIMER].

2) Press the <ENTER> button.

- The **[P-TIMER]** screen is displayed.

3) Press ▲▼ to select the item, and press the <ENTER> button.

[START]	The count is started.
[STOP]	The count is stopped.
[RESTART]	The count is resumed.
[RESET]	The count is reset.

- When [START] or [RESTART] is selected, the elapsed time or the remaining time is displayed at the bottom right of the projected image.
- When [STOP] is selected, the elapsed time or the remaining time when the count was stopped is displayed at the bottom right of the projected image.
- When [RESET] is selected, proceed to Step **4)**.

4) Press the <MENU> button three times to clear.

- The start time is displayed at the bottom right of the projected image.

Note

- Presentation timer operations are also possible by the <P-TIMER> button on the remote control. (➡ page 53)
- The security message set in the [SECURITY] menu → [DISPLAY SETTING] (➡ page 105) is not displayed when the elapsed time or remaining time is displayed.
- The elapsed time or remaining time are not displayed when the menu screen is displayed.
- The start time becomes “000:00” when [MODE] is set to [COUNT UP].
- When [MODE] is set to [COUNT DOWN], the start time becomes the value set at [TIMER].
- The time gauge turns clockwise when [COUNT UP] is set, and turns counterclockwise when [COUNT DOWN] is set.

Ending the presentation timer

1) Press ▲▼ to select [P-TIMER].

2) Press the <ENTER> button.

- The **[P-TIMER]** screen is displayed.

3) Press ▲▼ to select [EXIT].

4) Press the <ENTER> button.

[FREEZE]

The projected image is paused and audio turned off regardless of the playback of the external device.

1) Press ▲▼ to select [FREEZE].

2) Press the <ENTER> button.

- Press the <MENU> button to release.

Note

- [FREEZE] is displayed on the screen when video is paused.

[DIGITAL ZOOM]

Enlarge images and move the image zoom position.

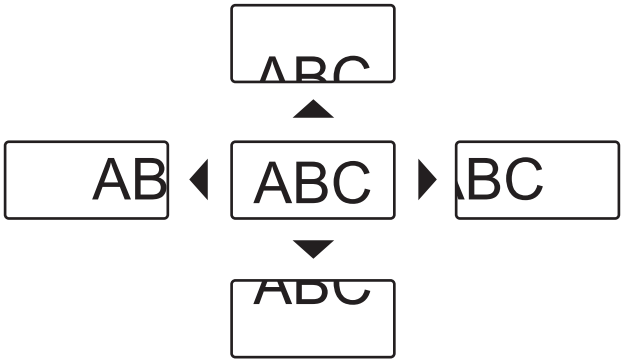


Fig. 1

1) Press ▲▼ to select [DIGITAL ZOOM].

2) Press the <ENTER> button.

- The **[DIGITAL ZOOM]** screen is displayed.

3) Press ◀▶ to adjust the magnification.

Operation	Adjustment	Range of adjustment
Press ▶.	Raises the magnification.	+1.0 - +2.0
Press ◀.	Lowers the magnification.	

4) Press the <ENTER> button.

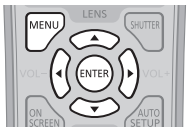
5) Press ▲▼◀▶ to move the zoom position. (Fig. 1)

Note

- The magnification can be adjusted in increments of 0.1 between 1.0x and 2.0x. For some computer signals, the magnification can be adjusted up to 3.0x.
- The digital zoom function is canceled if the <MENU> button is pressed during a digital zoom.
- The digital zoom function is canceled if the input signal changes during a digital zoom.
- During a digital zoom, the freeze function is disabled.

[PROJECTOR SETUP] menu

On the menu screen, select [PROJECTOR SETUP] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to set.





[PROJECTOR ID]

The projector has an ID number setting function that can be used when multiple projectors are used side by side to enable simultaneous control or individual control via a single remote control.

1) Press ▲▼ to select [PROJECTOR ID].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ALL]	Select when controlling projectors without specifying an ID number.
[1] - [64]	Select when specifying an ID number to control individual projector.

Note

- To specify an ID number for individual control, the ID number of a remote control must match the ID number of the projector.
- When the ID number is set to [ALL], the projector will operate regardless of the ID number specified during remote control or computer control.
  If multiple projectors are set up side by side with IDs set to [ALL], they cannot be controlled separately from the projectors with other ID numbers.
- Refer to "Setting the ID number of the remote control" (➡ page 27) for how to set the ID number on the remote control.

[PROJECTION METHOD]

Set the projection method in accordance with the installation status of the projector.
Change the projection method if the screen display is upside down or inverted.

1) Press ▲▼ to select [PROJECTION METHOD].

2) Press the <ENTER> button.

- The **[PROJECTION METHOD]** screen is displayed.

3) Press ▲▼ to select the projection method.

[FRONT/FLOOR]	When installing the projector on the desk, etc., in front of the screen
[FRONT/CEILING]	When installing the projector in front of the screen using the Ceiling Mount Bracket (optional)
[REAR/FLOOR]	When installing the projector on the desk, etc., behind the screen (with a translucent screen)
[REAR/CEILING]	When installing the projector behind the screen (with a translucent screen) using the Ceiling Mount Bracket (optional)

4) Press the <ENTER> button.

Note

- When [FRONT/CEILING] or [REAR/CEILING] is set, the operation direction using ▲▼ on the control panel is reversed.

[ECO MANAGEMENT]

This function optimizes lamp power according to the operating status to reduce power consumption.

Setting [LAMP POWER]

Switch the brightness of the lamp according to the operating environment of the projector or the purpose.

1) Press ▲▼ to select [ECO MANAGEMENT].

2) Press the <ENTER> button.

- The **[ECO MANAGEMENT]** screen is displayed.

3) Press ▲▼ to select [LAMP POWER].

4) Press ◀▶ to switch the item.

[AUTO]	Power is automatically adjusted so that optimum luminance is obtained according to the brightness of input signals.
[NORMAL]	Select when high luminance is required.
[ECO]	Power is lowered by about 15 % on average.

Note

- When [ECO] is set, you can reduce power consumption and operation noise, and extend the life of the lamp.
- When [LAMP POWER] is set to [ECO], [AMBIENT LIGHT DETECTION] cannot be set.
- When [PICTURE MODE] (➡ page 62) is set to [DICOM SIM.], [LAMP POWER] cannot be set. [LAMP POWER] is fixed to [NORMAL].

Setting [AUTO POWER SAVE]

Set whether or not to enable the three functions, [AMBIENT LIGHT DETECTION], [SIGNAL DETECTION] and [SHUTTER DETECTION] *1, [AV MUTE DETECTION] *2.

1) Press ▲▼ to select [ECO MANAGEMENT].

2) Press the <ENTER> button.

- The **[ECO MANAGEMENT]** screen is displayed.

3) Press ▲▼ to select [AUTO POWER SAVE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ON]	Enables the energy conservation setting.
[OFF]	Disables the energy conservation setting.

5) Press ▲▼ to select [AMBIENT LIGHT DETECTION], [SIGNAL DETECTION], [SHUTTER DETECTION] *1, [AV MUTE DETECTION] *2.

[AMBIENT LIGHT DETECTION]	Adjusts the power of the lamp according to the brightness of the installation location.
[SIGNAL DETECTION]	Lowers the power of the lamp when there is no signal.
[SHUTTER DETECTION] *1	Lowers the power of the lamp when the shutter is closed.
[AV MUTE DETECTION] *2	Lowers the power of the lamp when the AV mute function is activated.

*1 For PT-EZ580, PT-EW640 and PT-EX610
*2 For PT-EW540 and PT-EX510

6) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ON]	Enables the setting.
[OFF]	Disables the setting.

Note

- When [AUTO POWER SAVE] is set to [OFF], settings of [AMBIENT LIGHT DETECTION], [SIGNAL DETECTION], [SHUTTER DETECTION] *1 are unavailable.
- When objects, etc. are placed around the luminance sensor on the top of the projector, [AMBIENT LIGHT DETECTION] may not function properly.

Setting [NO SIGNAL SHUT-OFF]

A function that automatically switches the power of the projector to standby if there is no input signal for a certain period of time. The time before switching to standby can be set.

1) Press ▲▼ to select [ECO MANAGEMENT].

2) Press the <ENTER> button.

- The **[ECO MANAGEMENT]** screen is displayed.

3) Press ▲▼ to select [NO SIGNAL SHUT-OFF].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[DISABLE]	Disables the No signal shut-off function.
[10MIN.] - [90MIN.]	Allows you to set in ten minutes intervals.

Setting [STANDBY MODE]

Set the power consumption during the standby.

1) Press ▲▼ to select [ECO MANAGEMENT].

2) Press the <ENTER> button.

- The **[ECO MANAGEMENT]** screen is displayed.

3) Press ▲▼ to select [STANDBY MODE].

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[ECO]	Use this setting to reduce power consumption during standby.
[NORMAL]	Use this setting to use the network function during standby.

Note

- When [ECO] is set, the network function and some RS-232C commands become inoperable during standby. When [NORMAL] is set, the network function becomes operable during standby.
- When set to [ECO], it may take approx. 10 seconds longer before the projector starts projecting after the power is turned on, compared with when [NORMAL] is set.
- The [STANDBY MODE] settings are not reset to their factory defaults when [ALL USER DATA] in [PROJECTOR SETUP] menu → [INITIALIZE] (➡ page 96) is executed.

[SCHEDULE]

Set the command execution schedule for each day of the week.

Enabling/disabling the schedule function

1) Press ▲▼ to select [SCHEDULE].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Disables the schedule function.
[ON]	Enables the schedule function. Refer to “How to assign a program” (➡ page 88) or “How to set a program” (➡ page 89) for how to set the schedule.

Note

- When [SCHEDULE] is set to [ON], the [STANDBY MODE] setting is forcibly switched to [NORMAL], and the setting cannot be changed. Even if [SCHEDULE] is then set to [OFF] when in this state, the setting of [STANDBY MODE] remains at [NORMAL].

How to assign a program

1) Press ▲▼ to select [SCHEDULE].

2) Press ◀▶ to select [ON], and press the <ENTER> button.

- The **[SCHEDULE]** screen is displayed.

3) Select and assign program to each day of week.

- Press ▲▼ to select the day of week, and press ◀▶ to select a program number.
- You can set the program from No.1 to No.7. "- - -" indicates that the program number has not been set.

How to set a program

Set up to 16 commands to each program.

1) Press ▲▼ to select [SCHEDULE].

2) Press ◀▶ to select [ON], and press the <ENTER> button.

- The **[SCHEDULE]** screen is displayed.

3) Press ▲▼ to select [PROGRAM EDIT].

4) Press ◀▶ to select a program number, and press the <ENTER> button.

5) Press ▲▼ to select a command number, and press the <ENTER> button.

- You can change the page using ◀▶.

6) Press ▲▼◀▶ to select [TIME], and press the <ENTER> button.

7) Press ◀▶ to select "hour" or "minute", and press ▲▼ or the number (<0> - <9>) buttons to set a time, and then press the <ENTER> button.

8) Press ▲▼◀▶ to select [COMMAND].

9) Press the <ENTER> button.

- The **[COMMAND]** detailed screen is displayed.

10) Press ▲▼ to select a [COMMAND].

- For [COMMAND] which requires detailed settings, the items of the detailed settings will switch each time you press ◀▶.
- When [INPUT] is selected, press the <ENTER> button, and then press ▲▼◀▶ to select the input to set.

[COMMAND]	Detailed settings of [COMMAND]	Description
[POWER ON]	—	Switches on the projector.
[STANDBY]	—	Enters standby.
[SHUTTER] *1	**[OPEN]**	Opens the shutter.
	[CLOSE]	Closes the shutter.
[INPUT]	**[VIDEO]**	Switches the input to VIDEO.
	[RGB1]	Switches the input to RGB1.
	[RGB2]	Switches the input to RGB2.
	[DVI-D]	Switches the input to DVI-D.
	[HDMI]	Switches the input to HDMI.
	[DIGITAL LINK] *2	Switches the input to DIGITAL LINK.
	[DisplayPort] *2	Switches the input to DisplayPort.
	[INPUT1] - [INPUT10] *2*3	Switches the input to DIGITAL LINK, and switch the input of the Panasonic twisted-pair-cable transmitter to the specified input.
[LAMP POWER]	**[AUTO]**	Sets [LAMP POWER] to [AUTO].
	[NORMAL]	Sets [LAMP POWER] to [NORMAL].
	[ECO]	Sets [LAMP POWER] to [ECO].
[P IN P]	**[OFF]**	P IN P function is not used.
	[USER1]	Lays out the sub-screen with the settings of [USER1].
	[USER2]	Lays out the sub-screen with the settings of [USER2].
	[USER3]	Lays out the sub-screen with the settings of [USER3].
[IN STANDBY MODE(AUDIO)]	**[OFF]**	Audio output is stopped during standby.
	[ON]	Audio is output during standby.
[VOLUME]	**[0] - [63]**	Sets the volume.

*1 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE] for PT-EW540 and PT-EX510

*2 Only for PT-EZ580, PT-EW640 and PT-EX610

*3 When the Panasonic twisted-pair-cable transmitter (such as the optional Digital Interface Box (Model No.: ET-YFB100G)) is connected to the projector, its input name is reflected from [INPUT1] to [INPUT10] automatically. If an item where the input name is not reflected is selected, it is disabled.

11) Press the <ENTER> button.

- The command is fixed and ● is displayed at the left of the selected command.
- After the command is fixed, press the <MENU> button to close the detailed setting screen.

12) Press ▲▼◀▶ to select [STORE], and press the <ENTER> button.

Note

- If you attempt to register the setting that would make the lamp turn on for a short time during the same day, an error message will be displayed on the screen. Set the time and command again. If you set a schedule that would make the lamp turn on for a short time across two or more days, an error message will not be displayed. When executing a command for turning the projector on, provide an interval of at least four minutes between the [STANDBY] and the [POWER ON] command. When executing a command for setting the projector to standby, provide an interval of at least 31 minutes between the [POWER ON] command and the [STANDBY] command.
- To delete a command already set, press the <DEFAULT> button on the remote control at the screen in Step **5)**, or select [DELETE] at the screen in Step **6)** and press the <ENTER> button.
- If multiple commands have been set for the same time, they are executed in chronological order starting from the smallest command number.
- The operating time will be the local time. (➡ page 95)
- If an operation is executed with the remote control or control panel of the projector or with a control command before the command set in [SCHEDULE] is executed, the command set with this function may not be executed.

[STARTUP INPUT SELECT]

Set the input when the projector is switched on to start projection.

1) Press ▲▼ to select [STARTUP INPUT SELECT].

2) Press the <ENTER> button.

- The **[STARTUP INPUT SELECT]** screen is displayed.

3) Press ▲▼◀▶ to select an input.

- The items will switch each time you press the button.

[LAST USED]	Keeps the input selected last.
[VIDEO]	Sets the input to VIDEO.
[RGB1]	Sets the input to RGB1.
[RGB2]	Sets the input to RGB2.
[DVI-D]	Sets the input to DVI-D.
[HDMI]	Sets the input to HDMI.
[DIGITAL LINK] *1	Sets the input to DIGITAL LINK.
[DisplayPort] *1	Sets the input to DisplayPort.
[INPUT1] - [INPUT10] *1*2	Sets the input to DIGITAL LINK, and switch the input of Panasonic twisted-pair-cable transmitter to the specified input.

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

*2 When the Panasonic twisted-pair-cable transmitter (such as the optional Digital Interface Box (Model No.: ET-YFB100G)) is connected to the projector, its input name is reflected from [INPUT1] to [INPUT10] automatically. If an item where the input name is not reflected is selected, it is disabled.

4) Press the <ENTER> button.

[RS-232C]

Set the communication conditions of the <SERIAL IN> terminal.

Setting the communication condition of the <SERIAL IN> terminal

1) Press ▲▼ to select [RS-232C].

2) Press the <ENTER> button.

- The **[RS-232C]** screen is displayed.

3) Press ▲▼ to select [INPUT SELECT].

- Only for PT-EZ580, PT-EW640 and PT-EX610. PT-EW540 and PT-EX510 are from step 5).

4) Press ◀▶ to switch the item.

[PROJECTOR]	Use the <SERIAL IN> terminal of the projector to execute RS-232C communication.
[DIGITAL INTERFACE BOX]	Executes RS-232C communication via the optional Digital Interface Box (Model No.: ET-YFB100G) and the <DIGITAL LINK/LAN> terminal.

5) Press ▲▼ to select [BAUDRATE].

6) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[9600]	Select the proper speed.
[19200]	
[38400]	

7) Press ▲▼ to select [PARITY].

8) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[NONE]	Select the parity condition.
[EVEN]	
[ODD]	

Setting the control commands of an existing projector

When controlling the projector on a computer, set use of control commands on a previously purchased Panasonic projector. This allows the control software for an existing Panasonic projector to be inherited and used.

1) Press ▲▼ to select [RS-232C].

2) Press the <ENTER> button.

- The **[RS-232C]** screen is displayed.

3) Press ▲▼ to select [EMULATE].

4) Press the <ENTER> button.

5) Press ▲▼ to select an item.

[DEFAULT]	EZ580 series, EW640 series, EX610 series, EW540 series, EX510 series, VW345N series, VX415N series, VW340Z, VX410Z, VX42Z, VX406EA, VX46EA, EZ770 series, EW730 series, EX800 series, RZ475 series, RZ470 series, RW430 series, RZ370 series, RW330 series
[D3500]	D3500 series
[D4000]	D4000 series
[D/W5k SERIES]	D5700 series, DW5100 series, D5600 series, DW5000 series, D5500 series
[D/W/Z6k SERIES]	DZ770 series, DW740 series, DX810 series, DZ680 series, DW640 series, DX610 series, DW730 series, DX800 series, DZ6710 series, DZ6700 series, DW6300 series, D6000 series, D5000 series, DZ570 series, DW530 series, DX500 series
[L730 SERIES]	L730 series, L720 series, L520 series
[L780 SERIES]	L780 series, L750 series
[L735 SERIES]	L735 series
[L785 SERIES]	L785 series
[F/W SERIES]	FW430 series, FX400 series, FW300 series, F300 series, F200 series, FW100 series, F100 series
[LZ370]	LZ370 series
[LB/W SERIES]	LB3 series, LB2 series, LB1 series, ST10 series, LB90 series, LW80NT series, LB80 series, LB78 series, LB75 series
[VX500 SERIES]	VW435N series, VW440 series, VW430 series, VX505N series, VX510 series, VX501U, VX405KEA, VX45KEA, VX500 series, VW330 series, VX400NT series, VX400 series, VX41 series
[EZ570 SERIES]	EZ570 series, EW630 series, EW530 series, EX600 series, EX500 series
[VW431D]	VW431D series

6) Press the <ENTER> button.

7) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

Note

(Only for PT-EZ580, PT-EW640 and PT-EX610)

- When [INPUT SELECT] is set to [DIGITAL INTERFACE BOX], communication using that serial terminal is available only when the corresponding device (such as the optional Digital Interface Box (Model No.: ET-YFB100G)) is connected to the <DIGITAL LINK/LAN> terminal.
- When transferring logos via the optional Digital Interface Box (Model No.: ET-YFB100G), “NO SIGNAL SLEEP” of ET-YFB100G must be set to “OFF” to avoid cutting off communication.
- When [INPUT SELECT] is set to [DIGITAL INTERFACE BOX], communication speed is fixed to 9 600 bps.

[REMOTE2 MODE]

Set the <REMOTE 2 IN> terminal.

1) Press ▲▼ to select [REMOTE2 MODE].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[DEFAULT]	The pin assignment of the <REMOTE 2 IN> terminal is used by the factory default setting of the projector.
[USER]	Used to change the setting of the <REMOTE 2 IN> terminal.
[F/W SERIES]	The setting of the <REMOTE 2 IN> terminal is used for the F/W series compatibility.

- When [USER] is selected, proceed to Step **3)**.

3) Press the <ENTER> button.

4) Press ▲▼ to select one from [PIN2] to [PIN8], and press ◀▶ to switch the setting.

[FUNCTION BUTTON]

Set the functions of the <FUNCTION> button on the remote control.

1) Press ▲▼ to select [FUNCTION BUTTON].

2) Press the <ENTER> button.

- The **[FUNCTION BUTTON]** screen is displayed.

3) Press ▲▼ to select a function.

[DISABLE]	Disables the <FUNCTION> button.
[SUB MEMORY]	Displays the sub memory list. (➡ page 103)
[SYSTEM SELECTOR]	Switches the [SYSTEM SELECTOR] setting. (➡ page 66)
[DAYLIGHT VIEW]	Switches the [DAYLIGHT VIEW] setting. (➡ page 66)
[TEST PATTERN]	Displays the test pattern built-in to the projector. (➡ page 100)

4) Press the <ENTER> button.

[AUDIO SETTING]

Set audio functions in detail.

Adjusting the volume

1) Press ▲▼ to select [AUDIO SETTING].

2) Press the <ENTER> button.

- The **[AUDIO SETTING]** screen is displayed.

3) Press ▲▼ to select [VOLUME].

4) Press ◀▶ to adjust the level.

Operation	Adjustment	Range of adjustment
Press ▶.	Increases the volume.	0 - 63
Press ◀.	Decreases the volume.	

Adjusting the left to right audio balance

1) **Press ▲▼ to select [AUDIO SETTING].**

2) **Press the <ENTER> button.**
   - The **[AUDIO SETTING]** screen is displayed.

3) **Press ▲▼ to select [BALANCE].**

4) **Press ◀▶ to adjust the level.**

Operation	Adjustment	Range of adjustment
Press ▶.	Increases the volume on the right.	L16 - R16
Press ◀.	Increases the volume on the left.	

Setting audio output of the built-in speaker

1) **Press ▲▼ to select [AUDIO SETTING].**

2) **Press the <ENTER> button.**
   - The **[AUDIO SETTING]** screen is displayed.

3) **Press ▲▼ to select [BUILT-IN SP].**

4) **Press ◀▶ to switch the item.**
   - The items will switch each time you press the button.

[ON]	Audio is output from the built-in speaker.
[OFF]	Audio is not output from the built-in speaker.

Note

- Audio is output from the built-in speaker even if the cable is connected to the <VARIABLE AUDIO OUT> terminal. To output audio from external audio devices connected to the <VARIABLE AUDIO OUT> terminal and not from the built-in speaker, set [BUILT-IN SP] to [OFF].

Setting audio output in the standby mode

1) **Press ▲▼ to select [AUDIO SETTING].**

2) **Press the <ENTER> button.**
   - The **[AUDIO SETTING]** screen is displayed.

3) **Press ▲▼ to select [IN STANDBY MODE].**

4) **Press ◀▶ to switch the item.**
   - The items will switch each time you press the button.

[OFF]	Audio is not output during standby.
[ON]	Audio is output during standby.

Note

- When [STANDBY MODE] (➡ page 88) in [PROJECTOR SETUP] menu → [ECO MANAGEMENT] is set to [ECO], audio cannot be output during standby.

Setting to mute mode

1) **Press ▲▼ to select [AUDIO SETTING].**

2) **Press the <ENTER> button.**
   - The **[AUDIO SETTING]** screen is displayed.

3) **Press ▲▼ to select [MUTE].**

4) **Press ◀▶ to switch the item.**
   - The items will switch each time you press the button.

[OFF]	Audio is not output.
[ON]	Audio is output.

Setting audio input from a connected device

1) Press ▲▼ to select [AUDIO SETTING].

2) Press the <ENTER> button.

- The **[AUDIO SETTING]** screen is displayed.

3) Press ▲▼ to select the audio input.

4) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[AUDIO IN 1]	Audio connected to the <AUDIO IN 1> terminal is output at projection of images from a preset input terminal.
[AUDIO IN 2]	Audio connected to the <AUDIO IN 2> terminal is output at projection of images from a preset input terminal.
[AUDIO IN 3]	Audio connected to the <AUDIO IN 3> terminal is output at projection of images from a preset input terminal.
[HDMI AUDIO IN]*1	HDMI audio is output.
[DIGITAL LINK AUDIO IN]*2	DIGITAL LINK audio is output.
[DisplayPort AUDIO IN]*3	DisplayPort audio is output.

*1 Only when the input is HDMI

*2 Only for PT-EZ580, PT-EW640 and PT-EX610
Only when the input is DIGITAL LINK

*3 Only for PT-EZ580, PT-EW640 and PT-EX610
Only when the input is DisplayPort

[STATUS]

Display the status of the projector.

1) Press ▲▼ to select [STATUS].

2) Press the <ENTER> button.

- The **[STATUS]** screen is displayed.

3) Press ◀▶ to switch the pages.

- The page will change each time you press the button.

[INPUT]		Displays the input terminal currently selected.
[SIGNAL NAME]		Displays the input signal name.
[SIGNAL FREQUENCY]		Displays the frequency of the input signal.
[PROJECTOR RUNTIME]		Displays the operation times of the projector.
[LAMP : ECO]		Displays the lamp runtime when [LAMP POWER] is set to [ECO] by actual time.
[LAMP : NORMAL]		Displays the lamp runtime when [LAMP POWER] is set to [AUTO] and [NORMAL] by actual time.
[LAMP : TOTAL] *1		Converts the cumulative lamp runtime into the runtime when set to [NORMAL], and displays the converted runtime.
[INTAKE AIR TEMP.]		Displays the status of the air intake temperature of the projector.
[AROUND LAMP TEMP.]		Displays the status of the temperature around the lamp of the projector.
[PROJECTOR TYPE]		Displays the type of the projector.
[SERIAL NUMBER]		Displays the serial number of the projector.
[LAMP UNIT MODEL NO.]		Displays the model no. of the lamp unit.
[LAMP SERIAL NUMBER]		Displays the serial number of the lamp.
[MAIN VERSION]		Displays the main version of the firmware of the projector.
[SUB VERSION]		Displays the sub version of the firmware of the projector.
[NETWORK VERSION]		Displays the network version of the projector.
[EMULATE]		Displays the [EMULATE] settings.
[ON COUNT]	**[POWER ON TIMES]**	Displays the number of times the power is turned on.
	[LAMP ON]	Displays the number of times the lamp is turned on.
	[SHUTTER] *2	Displays the number of times the shutter is closed.

[NUMBER OF REGISTERED SIGNAL]	Displays the number of registered signals.	
[REMOTE2 STATUS]	Displays the control status of the REMOTE2.	
[SIGNAL INFORMATION]	**[MEMORY NO.]**	Displays the memory number of the input signal.
	[INPUT]	Displays the input terminal currently selected.
	[SIGNAL NAME]	Displays the input signal name.
	[SIGNAL FREQUENCY]	Displays the frequency of the input signal.
	[SYNC.STATE]	Displays the synch polarity of the input signal.
	[V.SYNC WIDTH]	Displays the vertical sync signal pulse width of the input signal.
	[SCAN TYPE]	Displays the scan type of the input signal.
	[TOTAL DOTS]	Displays the total dot count of the input signal.
	[DISPLAY DOTS]	Displays the number of input signal display dots.
	[TOTAL LINES]	Displays the total line count of the input signal.
	[DISPLAY LINES]	Displays the number of input signal display lines.
	[SAMPLING]	Displays the sampling information of the input signal.
	[SIGNAL LEVEL]	Displays the signal level of the input signal.

*1 The lamp runtime displayed is calculated internally by the following conversions.

Formula for lamp replacement time (rough estimate)	
Lamp runtime displayed in [LAMP : TOTAL]	(**A** x 9 + **B** x 8) ÷ 9 • **A**: Runtime when [LAMP POWER] is set to [AUTO] and [NORMAL] • **B**: Runtime when [LAMP POWER] is set to [ECO]

*2 Only for PT-EZ580, PT-EW640 and PT-EX610

Note

- The content of status can be sent via E-mail by pressing the <ENTER> button while displaying the **[STATUS]** screen.
- Some items in [SIGNAL INFORMATION] may be displayed and others not displayed, depending on the signal being input.

[DATE AND TIME]

Set the time zone, date, and time of the built-in clock of the projector.

Setting the time zone

1) Press ▲▼ to select [DATE AND TIME].

2) Press the <ENTER> button.
- The **[DATE AND TIME]** screen is displayed.

3) Press ▲▼ to select [TIME ZONE].

4) Press ◀▶ to switch [TIME ZONE].

Setting the date and time manually

1) Press ▲▼ to select [DATE AND TIME].

2) Press the <ENTER> button.
- The **[DATE AND TIME]** screen is displayed.

3) Press ▲▼ to select [ADJUST CLOCK].

4) Press the <ENTER> button.
- The **[ADJUST CLOCK]** screen is displayed.

5) Press ▲▼ to select an item, and press ◀▶ to set the local date and time.

6) Press ▲▼ to select [APPLY], and press the <ENTER> button.
- The setting of the date and time will be completed.

Setting the date and time automatically

1) Press ▲▼ to select [DATE AND TIME].

2) Press the <ENTER> button.
- The **[DATE AND TIME]** screen is displayed.

3) Press ▲▼ to select [ADJUST CLOCK].

4) Press the <ENTER> button.
- The **[ADJUST CLOCK]** screen is displayed.

5) Press ▲▼ to select [NTP SYNCHRONIZATION], and press ◀▶ to change the setting to [ON].

6) Press ▲▼ to select [APPLY], and press the <ENTER> button.
- The setting of the date and time will be completed.

Note

- To set the date and time automatically, the projector must be connected to the network.
- If synchronization with the NTP server fails just after [NTP SYNCHRONIZATION] is turned [ON], or if [NTP SYNCHRONIZATION] is turned [ON] while the NTP server is not set, [NTP SYNCHRONIZATION] will return to [OFF].
- Access the projector via a web browser to set the NTP server. Refer to “[Adjust clock] page” (➡ page 117) for details.

[SAVE ALL USER DATA]

Save the various setting values as a backup in the built-in memory of the projector.

1) Press ▲▼ to select [SAVE ALL USER DATA].

2) Press the <ENTER> button.
- The **[SECURITY PASSWORD]** screen is displayed.

3) Enter a security password and press the <ENTER> button.

4) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.
- [PROGRESS] is displayed while saving data.

Note

- Data set from the computer application is not included in [ALL USER DATA].

[LOAD ALL USER DATA]

Load the various setting values saved as a backup in the built-in memory of the projector.

1) Press ▲▼ to select [LOAD ALL USER DATA].

2) Press the <ENTER> button.
- The **[SECURITY PASSWORD]** screen is displayed.

3) Enter a security password and press the <ENTER> button.

4) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

Note

- The projector will go into the standby mode to reflect the setting values when [LOAD ALL USER DATA] is executed.
- Data registered from a computer is not included in [ALL USER DATA].

[INITIALIZE]

Return various setting values to their factory default settings.

1) Press ▲▼ to select [INITIALIZE].

2) Press the <ENTER> button.
- The **[SECURITY PASSWORD]** screen is displayed.

3) Enter a security password and press the <ENTER> button.
- The **[INITIALIZE]** screen is displayed.

4) Press ▲▼ to select an item to initialize.

[ALL USER DATA]	Returns all setting items including [REGISTERED SIGNAL], [NETWORK SETUP], [E-mail set up], and [USER LOGO] to the factory default settings. The projector will go into the standby status to reflect the setting values.

[REGISTERED SIGNAL]	Deletes all the setting values saved for each input signal. To delete only a part of a registered signal, perform the procedure described in “Deleting the registered signal” (➡ page 102).
[NETWORK/E-MAIL]	Returns [NETWORK SETUP] and [E-mail set up] to factory default settings.
[LOGO IMAGE]	Deletes the image registered in [USER LOGO].

5) Press the <ENTER> button.

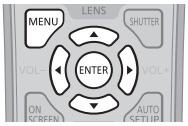
6) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

[SERVICE PASSWORD]

This function is used by a service person.

[P IN P] menu

On the menu screen, select [P IN P] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to set.



Using P IN P function

Locate a separate, small sub screen in the main screen to project two images simultaneously.

1) Press ▲▼ to select [P IN P MODE].

2) Press the <ENTER> button.
- The **[P IN P MODE]** screen is displayed.

3) Press ▲▼ to select a function.

[OFF]	P IN P function is not used.
[USER1]	The items set in "Setting P IN P function" (➡ page 98) are used in P IN P function.
[USER2]	
[USER3]	

4) Press the <ENTER> button.

Setting P IN P function

P IN P function settings can be saved to [USER1], [USER2], and [USER3].

1) Press ▲▼ to select [P IN P MODE].

2) Press the <ENTER> button.
- The **[P IN P MODE]** screen is displayed.

3) Press ▲▼ to select the desired mode from [USER1], [USER2], and [USER3], and press the <ENTER> button.

4) Press the <MENU> button.

5) Press ▲▼ to select [MAIN WINDOW] or [SUB WINDOW], and press the <ENTER> button.

6) Press ▲▼ to select the input terminal to be displayed in the window, and press the <ENTER> button.

7) Press the <MENU> button.

8) Press ▲▼ to select an item.

[SIZE]	Set the window display size between 10 % and 100 %.
[POSITION]	Set the display position of the window within the screen.
[CLOCK PHASE]	When the sub window is input from the <RGB 1 IN> terminal or the <RGB 2 IN> terminal and a flickering image or smeared outline appears, set between 0 and +31.

9) If [SIZE] is selected in Step 8), press the <ENTER> button.
- The sub-menu is displayed.

10) Press ▲▼ to select an item.

11) Press ◀▶ to make adjustment, and press the <MENU> button.

12) If [POSITION] is selected in Step 8), press the <ENTER> button.

13) Press ▲▼◀▶ to adjust the position, and press the <MENU> button.

14) If [CLOCK PHASE] is selected in Step 8), press ◀▶ to make adjustment.

15) Press ▲▼ to select [FRAME LOCK].

16) Press ◀▶ to switch the item.

[MAIN WINDOW]	Set frame lock to the input signal set in the main window.
[SUB WINDOW]	Set frame lock to the input signal set in the sub window.

17) Press ▲▼ to select [TYPE].

18) Press ◀▶ to switch the item.

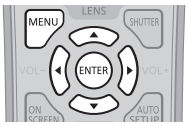
[MAIN WINDOW]	The main window has display priority.
[SUB WINDOW]	The sub window has display priority.

Note

- The P IN P function may not be available for some signals being input or terminals being selected. Refer to “Two-window display combination list” (➡ page 144) for details.
- The main window setting values are applied to image adjustment values such as [PICTURE MODE], [GAMMA], and [COLOR TEMPERATURE].
- On the normal screen (when no menu is displayed), press ▲▼ to switch the size and position of the main window and sub window while P IN P is operating.
- If the signals from the <RGB 1 IN> or <RGB 2 IN> terminal are input to either the main window or the sub window, and those input signals are analog RGB or YC_BC_R/YP_BP_R signals, the signals are output from the <MONITOR OUT> terminal. If input combination of the main window and sub window is RGB1 and RGB2, the signals of the main window take priority for output.

[TEST PATTERN] menu

On the menu screen, select [TEST PATTERN] from the main menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- Press ◀▶ to switch.



[TEST PATTERN]

Display the test pattern built-in to the projector.
Settings of position, size, and other factors will not be reflected in test patterns. Make sure to display the input signal before performing various adjustments.

1) Press ◀▶ to switch the [TEST PATTERN] item.

- The items will switch each time you press the button.

Menu screen + Color bar (vertical)	Displays test patterns with the menu screen. Select a test pattern so that it is easy to make various adjustments.
Menu screen + Color bar (horizontal)	
Menu screen + 16 gradations (vertical 1)	
Menu screen + 16 gradations (vertical 2)	
Menu screen + 16 gradations (horizontal 1)	
Menu screen + 16 gradations (horizontal 2)	
Menu screen + Cross hatch	
Menu screen + Aspect frame	
Menu screen + All white	
Menu screen + All black	
Menu screen + Entry screen	Displays the menu screen and input signal. Built-in test patterns are not displayed.

Note

- Press the <ON SCREEN> button on the remote control while the test pattern is displayed to hide the menu screen.

[SIGNAL LIST] menu

On the menu screen, select [SIGNAL LIST] from the main menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.



■ Registered signal details

Memory number: A1 (1-2)

Sub memory number

When the address number (A1, A2, ... L7, L8) signal is registered

- A name can be set for each sub memory (➡ page 103).

Registering new signals

After a new signal is input and the <MENU> button on the remote control or the control panel is pressed, the registration is completed and the **[MAIN MENU]** screen is displayed.

Note

- Up to 96 signals, including sub memories, can be registered to the projector.
- There are 12 pages (eight memories of A through L, with eight memories possible on each page) for memory numbers, and the signal is registered to the lowest number that is available. If there is no available memory number it will be overwritten from the oldest signal.
- The names to be registered are automatically determined by the input signals and memory numbers.
- If a menu is being displayed, the new signals will be registered at the instant they are input.

Renaming the registered signal

Registered signals can be renamed.

1) Press ▲▼◀▶ to select the signal of which name is to be changed.

2) Press the <ENTER> button.
- The **[REGISTERED SIGNAL STATUS]** screen is displayed.
- The memory number, input terminal, input signal name, frequency, synch polarity, etc., are displayed.
- Press the <MENU> button to return to the **[SIGNAL LIST]** screen.

3) Press the <ENTER> button.
- The **[REGISTERED SIGNAL SETUP]** screen is displayed.

4) Press ▲▼ to select [SIGNAL NAME CHANGE].

5) Press the <ENTER> button.
- The **[SIGNAL NAME CHANGE]** screen is displayed.

6) Press ▲▼◀▶ to select the text, and press the <ENTER> button to enter the text.

7) After the name is changed, press ▲▼◀▶ to select [OK], and press the <ENTER> button.
- The registration is completed and the **[REGISTERED SIGNAL SETUP]** screen returns.
- When pressing ▲▼◀▶ to select [CANCEL] and pressing the <ENTER> button, the changed signal name will not be registered and an automatically registered signal name will be used.

Expanding signal lock-in range

1) Press ▲▼◀▶ to select the signal to set.

2) Press the <ENTER> button.
- The **[REGISTERED SIGNAL STATUS]** screen is displayed.

3) Press the <ENTER> button.

- The **[REGISTERED SIGNAL SETUP]** screen is displayed.

4) Press ▲▼ to select [LOCK-IN RANGE].

5) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[NARROW]	Select in most cases.
[WIDE]	Widens the lock-in range.

Note

- Switch the range that determines that a signal to be input is the same signal that is already registered.
- To prioritize the determination that it is the same signal that is already registered, set to the [WIDE] setting.
- Use in cases such as when the synchronizing frequency of a signal to be input has changed slightly, or multiple signal lists are registered.
- Can only be used when a signal is input from the <RGB 1 IN> terminal, <RGB 2 IN> terminal, <DVI-D IN> terminal, <HDMI IN> terminal, <DIGITAL LINK/LAN> terminal, and <DisplayPort IN> terminal (<DIGITAL LINK> and <DisplayPort IN> terminals are only for PT-EZ580, PT-EW640 and PT-EX610).
- When [WIDE] is set, the image may appear distorted because a signal is determined to be the same signal even if a synchronizing frequency changes slightly.
- When a signal to be input corresponds to multiple signals set in [WIDE], a registered signal with a high memory number receives priority. Example: a signal to be input that corresponds to memory numbers A2, A4, and B1 will be determined to be B1.
- When a registration signal is deleted, the settings are also deleted.
- In an environment where multiple types of signals are input to the same terminal, signals are sometimes not determined correctly when the setting is set to [WIDE].

Protecting the registered signal

1) Press ▲▼◀▶ to select the signal to protect.

2) Press the <ENTER> button.

- The **[REGISTERED SIGNAL STATUS]** screen is displayed.

3) Press the <ENTER> button.

- The **[REGISTERED SIGNAL SETUP]** screen is displayed.

4) Press ▲▼ to select [LOCK].

5) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	The signal is not protected.
[ON]	The signal is protected.

Note

- When [LOCK] is set to [ON], signal deletion, image adjustment, and automatic setup are not available. To perform these operations, set [LOCK] to [OFF].
- A signal can be registered to the sub memory even if it is protected.
- Even a protected signal will be deleted if [INITIALIZE] is executed.

Deleting the registered signal

Registered signals can be deleted.

1) Press ▲▼◀▶ to select the signal to delete.

2) Press the <DEFAULT> button on the remote control.

- The **[REGISTERED SIGNAL DELETE]** screen is displayed.
- To cancel the deletion, press the <MENU> button to return to the **[REGISTERED SIGNAL LIST]** screen.

3) Press the <ENTER> button.

- The selected signal will be deleted.

Note

- A registered signal can also be deleted from [REGISTERED SIGNAL DELETE] on the **[REGISTERED SIGNAL SETUP]** screen.

Sub memory

The projector has a sub memory function that can register the multiple image adjustment data, even if it is recognized as the same signal by the frequency or format of the synchronization signal source.

Use this function when you need to adjust the picture quality such as switching of the aspect ratio or white balance by the same synchronization signal source. The sub memory includes all the data that can be adjusted for each signal, such as the screen aspect ratio and data adjusted in the [PICTURE] item ([CONTRAST], [BRIGHTNESS], etc.).

Registering to the sub memory

1) Press ▲▼ on the normal screen (when the menu is not displayed).

- The sub memory registration screen is displayed if the sub memory is not registered. Proceed to Step **3)**.
- A list of sub memories registered to the signal currently input is displayed.
- By selecting [SUB MEMORY] in the [PROJECTOR SETUP] menu → [FUNCTION BUTTON], the <FUNCTION> button on the remote control can be used instead of ◀▶.

2) Press ▲▼◀▶ to select the sub memory number to register in [SUB MEMORY LIST].

3) Press the <ENTER> button.

- The **[SIGNAL NAME CHANGE]** screen is displayed.

4) Press ▲▼◀▶ to select [OK], and press the <ENTER> button.

- To rename the registered signal, follow the procedure in Steps **6)** and **7)** in “Renaming the registered signal” (➡ page 101).

Switching to the sub memory

1) Press ▲▼ on the normal screen (when the menu is not displayed).

- A list of sub memories registered to the signal currently input is displayed.

2) Press ▲▼◀▶ to select the signal to switch in [SUB MEMORY LIST].

3) Press the <ENTER> button.

- This switches to the signal selected in Step **2)**.

Deleting the sub memory

1) Press ▲▼ on the normal screen (when the menu is not displayed).

- The **[SUB MEMORY LIST]** screen is displayed.

2) Press ▲▼◀▶ to select the sub memory to delete, and press the <DEFAULT> button on the remote control.

- The **[REGISTERED SIGNAL DELETE]** screen is displayed.
- To cancel the deletion, press the <MENU> button to return to the **[SUB MEMORY LIST]** screen.

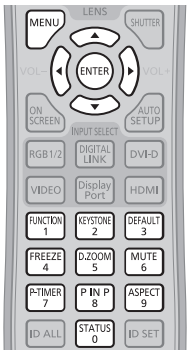
3) Press the <ENTER> button.

- The selected sub memory will be deleted.

[SECURITY] menu

On the menu screen, select [SECURITY] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.

- When the projector is used for the first time
  Initial password: Press ▲▶▼◀▲▶▼◀ in order, and press the <ENTER> button.
- After selecting the item, press ▲▼◀▶ to set.



Attention

- When you select the [SECURITY] menu and press the <ENTER> button, entering a password is required. Enter the preset password and then continue operations of the [SECURITY] menu.
- When the password has been changed previously, enter the changed password, and press the <ENTER> button.

Note

- The entered password is displayed with*marks on the screen.
- An error message is displayed on the screen when the entered password is incorrect. Re-enter the correct password.

[SECURITY PASSWORD]

The **[SECURITY PASSWORD]** screen is displayed when turning the <MAIN POWER> switch to <OFF> and turning on the power. When the entered password is incorrect, the operation will be restricted to the power <⏻/❙> button on the control panel and the power standby <⏻> button, <SHUTTER> button *1, and <LENS> (<FOCUS>, <ZOOM>, and <SHIFT>) buttons on the remote control.

*1 For PT-EZ580, PT-EW640 and PT-EX610
<AV MUTE> button for PT-EW540 and PT-EX510

1) Press ▲▼ to select [SECURITY PASSWORD].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Disables the security password entry.
[ON]	Enables the security password entry.

Note

- In the factory default setting of after [ALL USER DATA] in [INITIALIZE] (➡ page 96) is executed, the [SECURITY PASSWORD] setting is set to [OFF].
- Change the password periodically that is hard to guess.
- The security password is enabled after setting [SECURITY PASSWORD] to [ON] and turning the <MAIN POWER> switch to <OFF>.

[SECURITY PASSWORD CHANGE]

Change the security password.

1) Press ▲▼ to select [SECURITY PASSWORD CHANGE].

2) Press the <ENTER> button.

- The **[SECURITY PASSWORD CHANGE]** screen is displayed.

3) Press ▲▼◀▶ and the number (<0> - <9>) buttons to set the password.

- Up to eight button operations can be set.

4) Press the <ENTER> button.

5) Re-enter the password for the confirmation.

6) Press the <ENTER> button.

Note

- The entered password is displayed with*marks on the screen.
- If numbers have been used for the security password, the security password will need to be initialized again if the remote control is lost. Consult your dealer for the initialization method.

[DISPLAY SETTING]

Overlap the security message (text or image) over the projecting image.

1) Press ▲▼ to select [DISPLAY SETTING].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	The text display is disabled.
[TEXT]	The text display is enabled.
[USER LOGO]	Displays the image registered by the user.

Note

- To create/register the [USER LOGO] image, use “Logo Transfer Software” included in the supplied CD-ROM.

[TEXT CHANGE]

Change the text displayed when the text display is enabled by selecting [TEXT] in [DISPLAY SETTING].

1) Press ▲▼ to select [TEXT CHANGE].

2) Press the <ENTER> button.

- The **[TEXT CHANGE]** screen is displayed.

3) Press ▲▼◀▶ to select the text, and press the <ENTER> button to enter the text.

4) Press ▲▼◀▶ to select [OK], and press the <ENTER> button.

- The text is changed.

[MENU LOCK]

Display the menu by the <MENU> button and set whether or not to enable menu operations.

1) Press ▲▼ to select [MENU LOCK].

2) Press ◀▶ to switch the item.

- The items will switch each time you press the button.

[OFF]	Unlocks menu operations.
[ON]	Locks menu operations.

Note

- When the entered password is incorrect after setting [MENU LOCK] to [ON], the <MENU> button cannot be operated.
- [MENU LOCK] is set to [OFF] at the time of purchase or when [ALL USER DATA] in [INITIALIZE] (➡ page 96) is executed.
- When [MENU LOCK] is set to [ON], after entering the password to release the lock, the unlock state is held until the projector enters the standby mode.

[MENU LOCK PASSWORD]

The menu lock password can be changed.

1) Press ▲▼ to select [MENU LOCK PASSWORD].

2) Press the <ENTER> button.

- The **[MENU LOCK PASSWORD]** screen is displayed.

3) Press ▲▼◀▶ to select the text, and press the <ENTER> button to enter the text.

4) Press ▲▼◀▶ to select [OK], and press the <ENTER> button.

- To cancel, select [CANCEL].

Attention

- The initial password is “AAAA” by the factory default or when [ALL USER DATA] in [INITIALIZE] (➡ page 96) is executed.
- Change the password periodically that is hard to guess.

[CONTROL DEVICE SETUP]

Enable/disable the button operations on the control panel and the remote control.

1) Press ▲▼ to select [CONTROL DEVICE SETUP].

2) Press the <ENTER> button.

- The **[CONTROL DEVICE SETUP]** screen is displayed.

3) Press ▲▼ to select [CONTROL PANEL] or [REMOTE CONTROL].

[CONTROL PANEL]	You can set the limitation on the control from the control panel.
[REMOTE CONTROL]	You can set the limitation on the control from the remote control.

4) Press the <ENTER> button.

- The **[CONTROL PANEL]** screen or the **[REMOTE CONTROL]** screen is displayed.

5) Press ▲▼ to select [ENABLE] or [DISABLE].

- You can set the operation restriction from the control panel or the remote control.

[ENABLE]	Enables all button operations.
[DISABLE]	Disables all button operations.

6) Press the <ENTER> button.

- The confirmation screen is displayed.

7) Press ◀▶ to select [OK], and press the <ENTER> button.

Note

- When a button operation is performed on the device set to [DISABLE], the **[MENU LOCK PASSWORD]** screen is displayed. Enter the menu lock password.
- The **[MENU LOCK PASSWORD]** screen will disappear when there is no operation for approx. 10 seconds.
- If the operations of both [CONTROL PANEL] and [REMOTE CONTROL] are set to [DISABLE], the projector cannot be turned off (cannot enter standby).
- When the setting has completed, the menu screen will disappear. To operate continuously, press the <MENU> button to display the main menu.
- Even when you set button operations on the remote control to be disabled, operations of the <ID ALL> and <ID SET> buttons on the remote control are enabled.

[NETWORK] menu

On the menu screen, select [NETWORK] from the main menu, and select an item from the sub-menu.
Refer to "Navigating through the menu" (➡ page 57) for the operation of the menu screen.
- After selecting the item, press ▲▼◀▶ to set.



[DIGITAL LINK MODE]

(Only for PT-EZ580, PT-EW640 and PT-EX610)
Switch the communication method of the <DIGITAL LINK/LAN> terminal of the projector.

1) Press ▲▼ to select [DIGITAL LINK MODE].

2) Press ◀▶ to switch the item.
- The items will switch each time you press the button.

[AUTO]	Switches the communication method automatically to DIGITAL LINK or Ethernet.
[DIGITAL LINK]	Fixes the communication method to DIGITAL LINK.
[ETHERNET]	Fixes the communication method to Ethernet.

Possible communication modes

Setting		Communication possible		
		Image transmission	Ethernet	RS-232C
[AUTO]	For DIGITAL LINK	✓	✓	✓
	For Ethernet	—	✓	—
[DIGITAL LINK]		✓	✓	✓
[ETHERNET]		—	✓	—

✓: Communication possible
—: Communication not possible

[DIGITAL LINK SETUP]

(Only for PT-EZ580, PT-EW640 and PT-EX610)
Set the communication method of DIGITAL LINK or Ethernet.

When the projector is connected directly via Ethernet

1) Press ▲▼ to select [DIGITAL LINK SETUP].

2) Press the <ENTER> button.
- The **[DIGITAL LINK SETUP]** screen is displayed.

3) Press ▲▼ to select [DUPLEX(ETHERNET)].

4) Press ◀▶ to switch the communication method.
- The items will switch each time you press the button.

[AUTONEGOTIATION]	The communication method is set automatically.
[100BaseTX-Full]	Full-duplex communication method is set.
[100BaseTX-Half]	Half-duplex communication method is set.

5) Press ▲▼ to select [STORE].

6) Press the <ENTER> button.

7) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

Note

- The projector does not support 10BaseT Full/Half.

When the projector is connected to a twisted-pair-cable transmitter

1) Press ▲▼ to select [DIGITAL LINK SETUP].

2) Press the <ENTER> button.
- The **[DIGITAL LINK SETUP]** screen is displayed.

3) Press ▲▼ to select [DUPLEX(DIGITAL LINK)].

4) Press ◀▶ to switch the communication method.
- The items will switch each time you press the button.

[100BaseTX-Full]	Full-duplex communication method is set.
[100BaseTX-Half]	Half-duplex communication method is set.
[AUTONEGOTIATION]	The communication method is set automatically.

5) Press ▲▼ to select [STORE].

6) Press the <ENTER> button.

7) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

[DIGITAL LINK STATUS]

(Only for PT-EZ580, PT-EW640 and PT-EX610)
Display DIGITAL LINK connection environment.

1) Press ▲▼ to select [DIGITAL LINK STATUS].

2) Press the <ENTER> button.
- The **[DIGITAL LINK STATUS]** screen is displayed.

[LINK STATUS]	Either [NO LINK], [DIGITAL LINK], or [ETHERNET] is displayed.
[HDCP STATUS]	Either [NO SIGNAL], [OFF], or [ON] is displayed.
[SIGNAL QUALITY]	[SIGNAL QUALITY] is a numerical value of the amount of error, and the display color changes to green, yellow, or red depending on that value. Check the signal quality level while receiving a signal from the twisted-pair-cable transmitter. • MAX/MIN: Maximum/minimum value of the amount of error. • Green (−12 dB or lower) → Normal signal quality level. • Yellow (−11 to −8 dB) → Warning level where there is the possibility of noise introduced on the screen. • Red (−7 dB or higher) → Abnormal level where synchronization may be interrupted or a signal may not be received.

[NETWORK SETUP]

Perform the initial setting of the network before using the network function.

1) Press ▲▼ to select [NETWORK SETUP].

2) Press the <ENTER> button.
- The **[NETWORK SETUP]** screen is displayed.

3) Press ▲▼ to select an item, and change the settings according to the operation instructions of the menu.

[PROJECTOR NAME]	Change the setting when using a DHCP server.
[DHCP]	Set to [ON] when obtaining an IP address automatically using a DHCP server. Set to [OFF] when not using a DHCP server.
[IP ADDRESS]	Enter the IP address when not using a DHCP server.

[SUBNET MASK]	Enter the subnet mask when not using a DHCP server.
[DEFAULT GATEWAY]	Enter the default gateway address when not using a DHCP server.
[STORE]	Save the current network settings.

4) Press ▲▼ to select [STORE], and press the <ENTER> button.

5) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

Note

- When using a DHCP server, confirm that the DHCP server is running.
- Consult your network administrator regarding the IP address, subnet mask, and default gateway.

[NETWORK CONTROL]

Set up the control method of the network.

1) Press ▲▼ to select [NETWORK CONTROL].

2) Press the <ENTER> button.

- The **[NETWORK CONTROL]** screen is displayed.

3) Press ▲▼ to select an item, and press ◀▶ to change the setting.

[WEB CONTROL]	Set to [ON] to control with the web browser.
[PJLink CONTROL]	Set to [ON] to control with the PJLink protocol.
[COMMAND CONTROL]	Set to [ON] to control with the <SERIAL IN> terminal control command format (➡ page 142). Refer to “Control commands via LAN” (➡ page 138).
[COMMAND PORT]	Set the port number used for command control.
[Crestron Connected(TM)]	Set to [ON] to control with Crestron Connected™ of Crestron Electronics, Inc.
[AMX D.D.]	Set to [ON] to control with the controller of AMX Corporation. Setting this function to [ON] enables detection through “AMX Device Discovery”. For details, refer to the website of AMX Corporation. URL http://www.amx.com/
[EXTRON XTP] *1	Set to [ON] when connecting the “XTP transmitter” of Extron Electronics to the <DIGITAL LINK/LAN> terminal. The [EXTRON XTP] setting must be set to [OFF] when connecting the optional Digital Interface Box (Model No.: ET-YFB100G). For details of the “XTP transmitter”, refer to the website of Extron Electronics. URL http://www.extron.com/
[STORE]	Save the current network control settings.

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

4) Press ▲▼ to select [STORE], and press the <ENTER> button.

5) When the confirmation screen is displayed, press ◀▶ to select [OK], and press the <ENTER> button.

[NETWORK STATUS]

Display the status of the projector network.

1) Press ▲▼ to select [NETWORK STATUS].

2) Press the <ENTER> button.

- The **[NETWORK STATUS]** screen is displayed.

[DIGITAL INTERFACE BOX]

(Only for PT-EZ580, PT-EW640 and PT-EX610)

When the optional Digital Interface Box (Model No.: ET-YFB100G) is connected to the <DIGITAL LINK/LAN> terminal, the main menu of ET-YFB100G is displayed. Refer to the Operating Instructions of ET-YFB100G for details.

Note

- When [EXTRON XTP] is set to [ON], [DIGITAL INTERFACE BOX] cannot be selected.
- The operation guidance for the “RETURN” button is displayed on the menu screen of the Digital Interface Box. The projector does not have the “RETURN” button, but same operation is available with the <MENU> button.

Network connections

The projector has a network function, and the following operations are available from the computer using the web control.

- Setting and adjustment of the projector
- Display of the projector status
- Sending of E-mail messages when there is a problem with the projector

The projector supports “Crestron Connected™”, and the following application software of Crestron Electronics, Inc. can be used.

- RoomView Express
- Fusion RV
- RoomView Server Edition

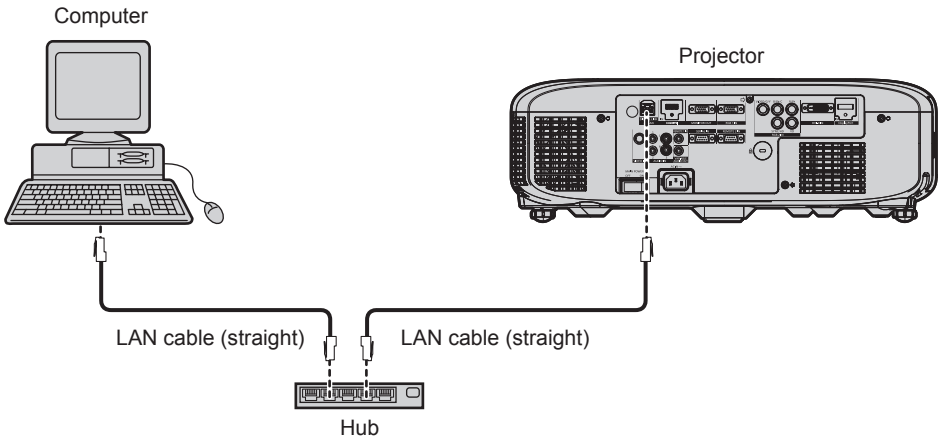
Attention

- When a LAN cable is directly connected to the projector, the network connection must be made indoors.

Note

- “Crestron Connected™” is a system of Crestron Electronics, Inc. that collectively manages and controls devices on multiple systems connected to a network using a computer.
- For details of “Crestron Connected™”, refer to the website of Crestron Electronics, Inc. (English only)
  URL http://www.crestron.com
  To download “RoomView Express”, go to the following website of Crestron Electronics, Inc. (English only)
  URL http://www.crestron.com/getroomview
- A LAN cable is required to use the network function.

■ Example of a normal network connection



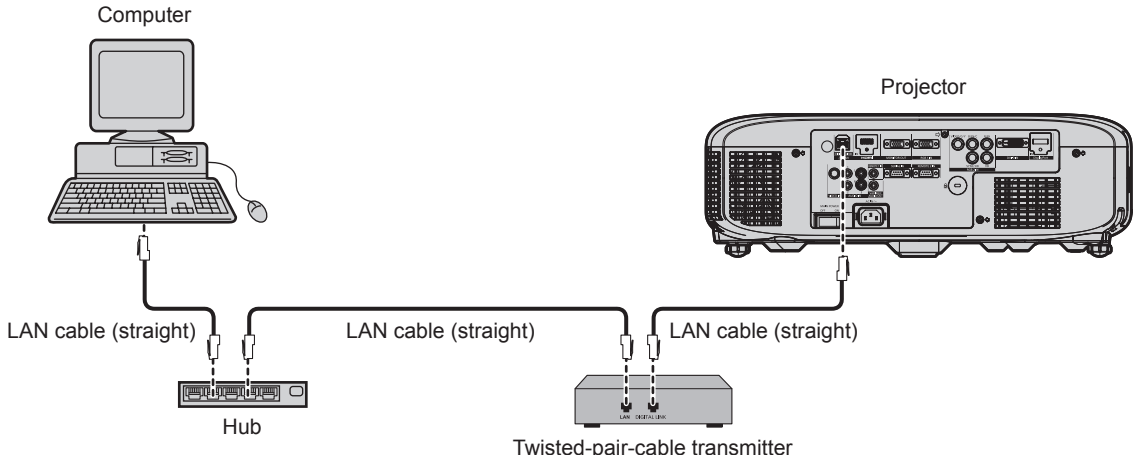
- A web browser is required to use this function. Confirm that the web browser can be used beforehand.
  Compatible browser: Internet Explorer 7.0/8.0/9.0/10.0/11.0, Safari 4.0/5.0/6.0/7.0 (Mac OS)
- Communication with an E-mail server is required to use the E-mail function. Confirm that the E-mail can be used beforehand.
- Use a LAN cable that is compatible with category 5 or higher.
- Use a LAN cable of 100 m (328'1") or shorter.

Connecting to a twisted-pair-cable transmitter

(Only for PT-EZ580, PT-EW640 and PT-EX610)

The projector has a function that can receive Ethernet signals from a twisted-pair-cable transmitter together with video and audio signals via a LAN cable. Connect a LAN cable to the <DIGITAL LINK/LAN> terminal of the projector. (➡ pages 19, 26)

■ Example of network connections via a twisted-pair-cable transmitter



- For the LAN cable between a twisted-pair-cable transmitter and the projector, use a cable that meets the following criteria:
  - Compatible with CAT5e or higher
  - Shielded type (including connectors)
  - Straight-through
  - Single wire
- The maximum transmission distance between the twisted-pair-cable transmitter and the projector is 100 m (328'1"). If this distance is exceeded, image and sound may be disrupted and may cause a malfunction in LAN communication.
- When laying cables between a twisted-pair-cable transmitter and the projector, check that cable characteristics are compatible with CAT5e or higher using tools such as a cable tester or cable analyzer.
  When using a relay connector midway, include it in the measurement.
- Do not use a hub between a twisted-pair-cable transmitter and the projector.
- Do not pull cables forcefully. Also, do not bend or fold cables unnecessarily.
- To reduce the effects of noise as much as possible, stretch out the cables between the twisted-pair-cable transmitter and the projector without any loops.
- Lay the cables between a twisted-pair-cable transmitter and the projector away from other cables, particularly power cables.
- When installing multiple cables, run them side by side along the shortest distance possible without bundling them together.
- After laying the cables, confirm that the value of [SIGNAL QUALITY] in the [NETWORK] menu → [DIGITAL LINK STATUS] is displayed in green (indicates normal quality). (➡ page 108)
- For twisted-pair-cable transmitter of other manufacturers of which the operation has been verified with the DIGITAL LINK compatible projector, refer to Panasonic website (http://panasonic.net/avc/projector/). Note that the verification for devices of other manufacturers has been made for the items set by Panasonic Corporation, and not all the operations have been verified. For operation or performance problems caused by the devices of other manufacturers, contact the respective manufacturers.

Accessing from the web browser

1) Start up the web browser on the computer.

2) Enter the IP address set on the projector into the URL entry field of the web browser.

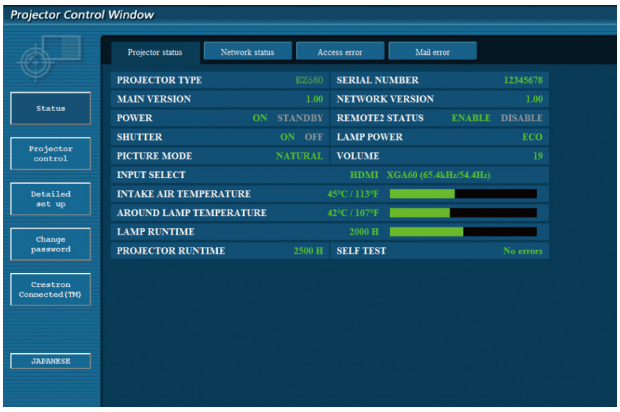
3) Enter the user name and the password.

- The factory default setting of the user name is user1 (user rights)/admin1 (administrator rights) and the password is panasonic (lower case).



4) Click OK.

- The [Projector status] page is displayed.

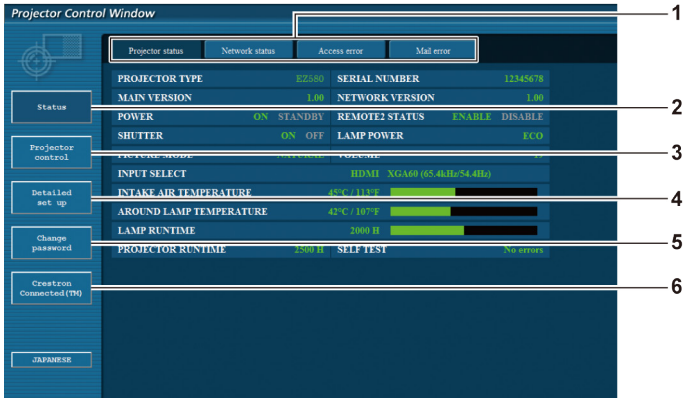


Note

- If you use a web browser to control the projector, set [WEB CONTROL] to [ON] in [NETWORK CONTROL] (➡ page 109).

- Do not perform setting or control simultaneously by starting up multiple web browsers. Do not set or control the projector from multiple computers.
- Change the password first. (➡ page 121)
- The administrator rights allow use of all functions. The user rights allow use of only the following functions: [Projector status] (➡ page 112), viewing of the error information page (➡ page 113), [Network status] (➡ page 114), [Access error] (➡ page 114), [Mail error] (➡ page 114), [Basic control] (➡ page 115), [Advanced control] (➡ page 115), [Change password] (➡ page 121)
- Access will be locked for few minutes when an incorrect password is entered three times consecutively.
- Some items on the projector setting page use the Javascript function of the web browser. The projector may not be able to be controlled properly if it is set with a browser that does not have this function enabled.
- If the screen for the web control is not displayed, consult your network administrator.
- While updating the screen for the web control, the screen may become white for a moment, but it is not a malfunction.
- The subsequent web control screens show examples for PT-EZ580. Screen content may differ from that for the model you are using.

Descriptions of items



1 Page tab
Pages are switched by clicking this item.

2 [Status]
The status of the projector is displayed by clicking this item.

3 [Projector control]
The [Projector control] page is displayed by clicking this item.

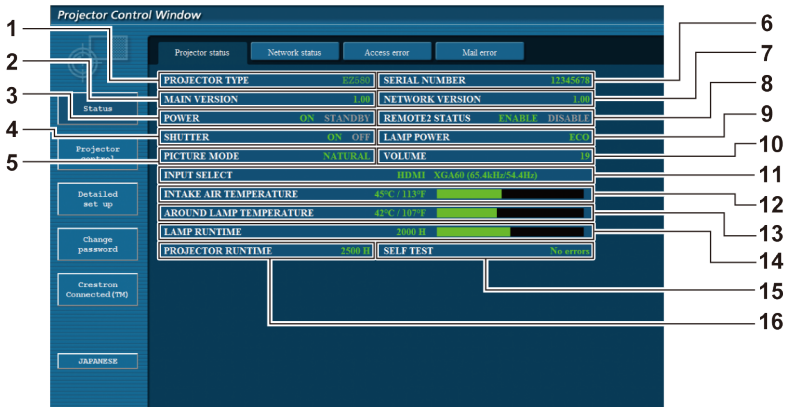
4 [Detailed set up]
The [Detailed set up] page is displayed by clicking this item.

5 [Change password]
The [Change password] page is displayed by clicking this item.

6 [Crestron Connected(TM)]
The control page of Crestron Connected™ is displayed by clicking this item.

[Projector status] page

Click [Status] → [Projector status].
Display the status of the projector for the following items.



1 [PROJECTOR TYPE]
Displays the type of the projector.

2 [MAIN VERSION]
Displays the firmware version of the projector.

3 [POWER]
Displays the status of the power.

4 [SHUTTER] *1
Displays the status of the shutter (ON: closed, OFF: open).

5 [PICTURE MODE]
Displays the setting status of [PICTURE MODE].

6 [SERIAL NUMBER]
Displays the serial number of the projector.

7 [NETWORK VERSION]
Displays the version of the firmware of the network.

8 [REMOTE2 STATUS]
Displays the control status of the <REMOTE 2 IN> terminal.

9 [LAMP POWER]
Displays the setting status of [LAMP POWER] (➡ page 87).

10 [VOLUME]
Display the volume status.

11 [INPUT SELECT]
Displays the status of the selected input.

12 [INTAKE AIR TEMPERATURE]
Displays the status of the air intake temperature of the projector.

*1 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE] for PT-EW540 and PT-EX510
Displays the status of AV mute function.

13 [AROUND LAMP TEMPERATURE]
Displays the status of the temperature around the lamp of the projector.

14 [LAMP RUNTIME]
Displays the runtime of the lamps (converted value).

15 [SELF TEST]
Displays the self-diagnosis information.

16 [PROJECTOR RUNTIME]
Displays the runtime of the projector.

Error information page

When [Error (Detail)] or [Warning (Detail)] is displayed in the self-diagnosis display of the **[Projector status]** screen, click it to display the error/warning details.

- The projector may go into the standby status to protect the projector depending on the contents of the error.



1 Self-diagnosis result display
Displays the item check results.
[OK]:
Indicates that operation is normal.
[FAILED]:
Indicates that there is a problem.

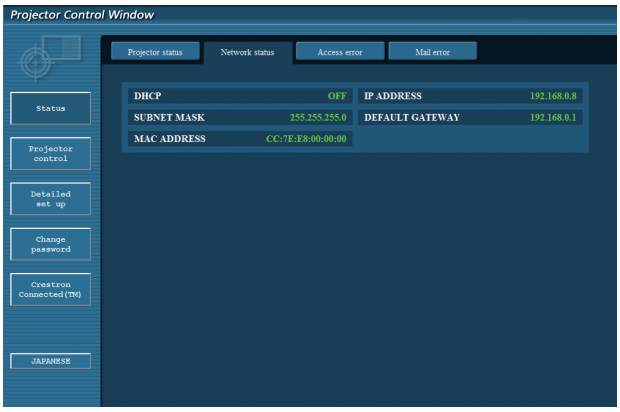
■ [FAILED] items

Item	Description
[MAIN CPU BUS]	There is a problem with the microcomputer circuitry. Consult your dealer.
[FAN]	There is a problem with the fan or the fan drive circuit. Consult your dealer.
[INTAKE AIR TEMPERATURE]	The air intake temperature is too high. The projector may be used in an environment where the temperature is high, such as near a heating appliance.
[AROUND LAMP TEMPERATURE]	The temperature around the lamp is high. The air exhaust port may be blocked.
[LAMP REMAIN TIME]	The runtime of the lamp has exceeded the specified time, and it is time to replace the lamp.
[LAMP STATUS]	The lamp has failed to turn on. Wait a while until the luminous lamp cools off, and then turn on the power.
[APERTURE(CONTRAST-SHUTTER)]*1	There is a problem in the contrast shutter circuit for iris. Consult your dealer.
[SHUTTER(MUTE-SHUTTER)]*1	There is a problem with the shutter circuitry. Consult your dealer.
[INTAKE AIR TEMP.SENSOR]	There is a problem with the sensor used to detect intake temperature. Consult your dealer.
[AROUND LAMP TEMP.SENSOR]	There is a problem with the sensor used to detect exhaust air temperature. Consult your dealer.
[BATTERY]	Battery replacement is required. Consult your dealer.
[AIRFLOW SENSOR]	There is a problem with the airflow sensor. Consult your dealer.
[LENS MOUNTER]	There is a problem in the lens mounter. Consult your dealer.
[COVER OPEN]	Installation of the lamp cover is incomplete. Check the installation of the lamp cover. (➡ page 131)
[PRESSURE SENSOR]	There is a problem with the sensor that detects air pressure. Consult your dealer.
[ANGLE SENSOR]	There is a problem with the sensor that detects angle. Consult your dealer.
[FILTER UNIT]	The air filter unit is not attached. Check the installation of the air filter unit. (➡ page 130)
[AIR FILTER]	There is too much dust accumulated in the air filter unit. Turn the <MAIN POWER> switch to <OFF> (➡ page 48), and clean the air filter. (➡ page 130)

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

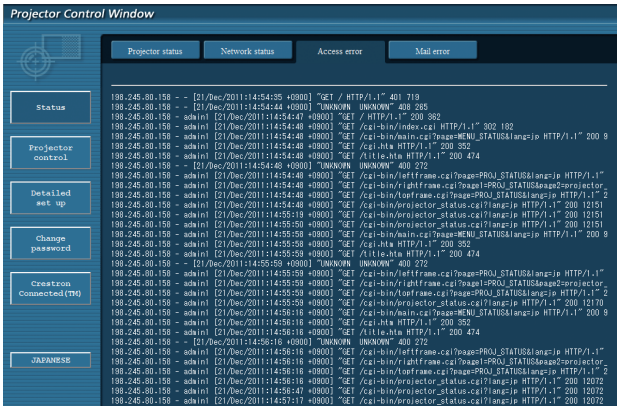
[Network status] page

Click [Status] → [Network status].
The current network setting status is displayed.



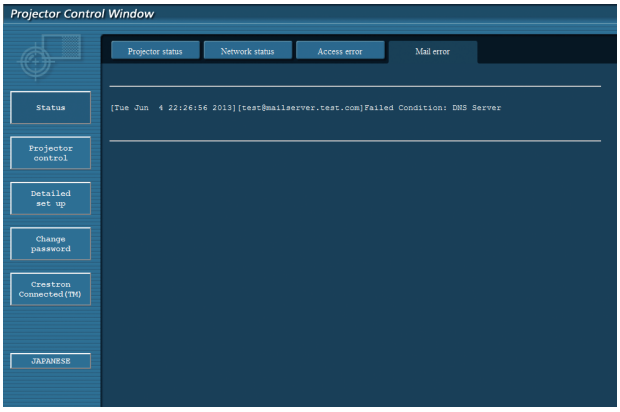
[Access error] page

Click [Status] → [Access error].
The error log on the web server is displayed such as access to the pages that do not exist or access with unauthorized user names or passwords.



[Mail error] page

Click [Status] → [Mail error].
Display E-mail error information if failed to send periodic E-mails.

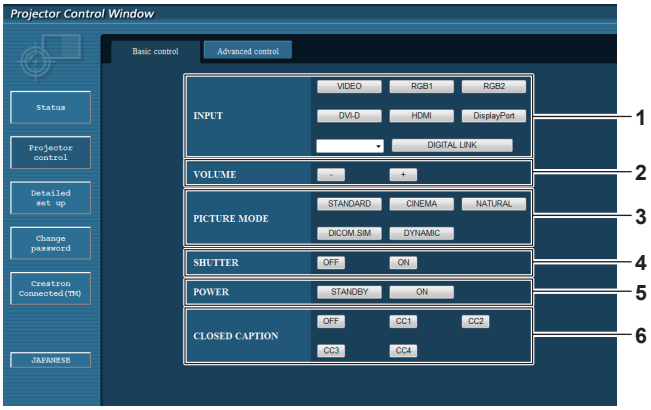


Note

- [Access error] and [Mail error] display the recent few hundred accesses/requests. All information may not be displayed when many accesses/requests are made at a time.
- When information in [Access error] and [Mail error] exceeds a certain amount, older information is erased.
- Check [Access error] and [Mail error] periodically.

[Basic control] page

Click [Projector control] → [Basic control].



1 [INPUT] *1
Switches the input signal.

2 [VOLUME]
Adjusts the volume.

3 [PICTURE MODE]
Switches the picture mode.

4 [SHUTTER] *2
Switches the setting whether to use the shutter function (closing/opening of the shutter).

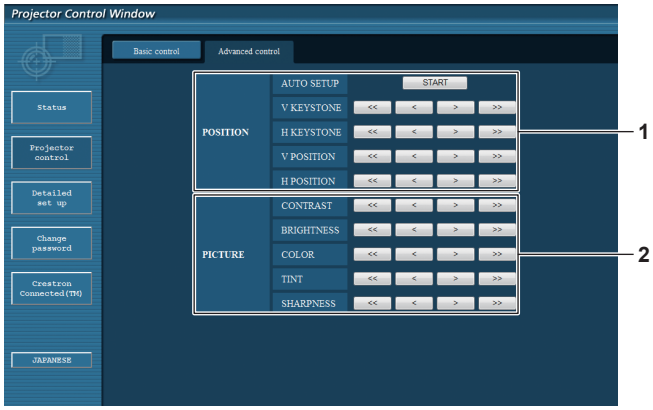
5 [POWER]
Turns on/off the power.

6 [CLOSED CAPTION]
Switches the closed caption setting.

*1 [DisplayPort] and [DIGITAL LINK] are only for PT-EZ580, PT-EW640 and PT-EX610)
*2 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE] for PT-EW540 and PT-EX510
Switches the AV mute function on/off.

[Advanced control] page

Click [Projector control] → [Advanced control].



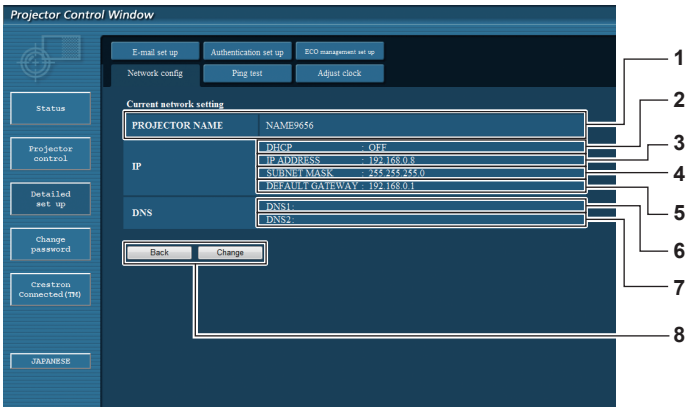
1 [POSITION]
Operates field angle-related settings.

2 [PICTURE]
Operates picture quality settings.

[Network config] page

Click [Detailed set up] → [Network config].

- Click [Network config] to display the **[CAUTION!]** screen.
- Click the [Next] button to display the current settings.
- Click the [Change] button to display the setting change screen.



1 [PROJECTOR NAME]
Enter the name of the projector. Enter the host name if it is required when using a DHCP server etc.

2 [DHCP ON], [DHCP OFF]
To enable the DHCP client function, set to [DHCP ON].

3 [IP ADDRESS]
Enter the IP address when not using a DHCP server.

4 [SUBNET MASK]
Enter the subnet mask when not using a DHCP server.

5 [DEFAULT GATEWAY]
Enter the default gateway address when not using a DHCP server.

6 [DNS1]
Enter the DNS1 server address.
Permissible characters for the entry of DNS1 server address (primary):
Numbers (0 - 9), period (.)
(Example: 192.168.0.253)

7 [DNS2]
Enter the DNS2 server address.
Available characters for the entry of DNS2 server address (secondary):
Numbers (0 - 9), period (.)
(Example: 192.168.0.254)

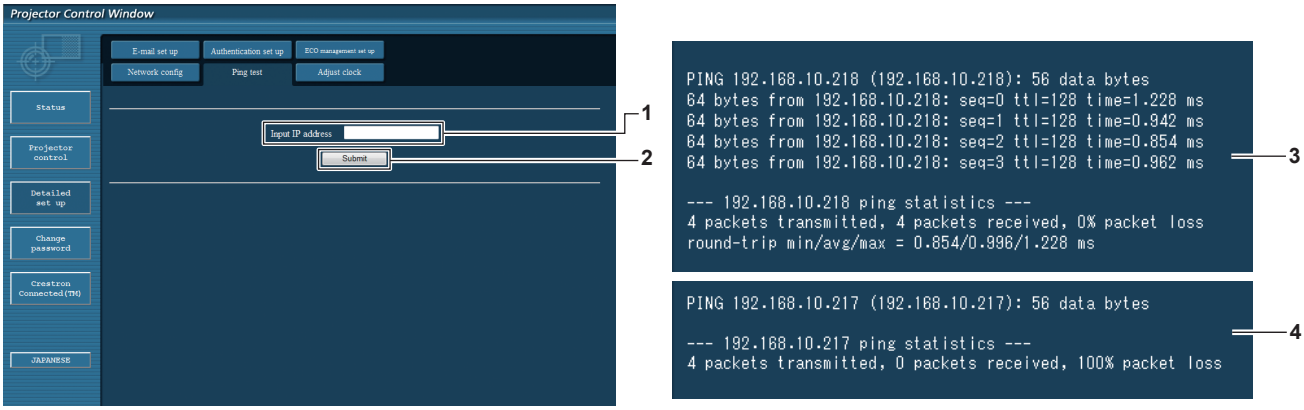
8 [Back], [Change]
Click the [Back] button to return to the original screen. The screen for confirming the current settings is displayed by clicking the [Change] button. Click the [Submit] button to update the settings.

Note

- When you use the “Forward” and “Back” functions of your browser, a warning message “Page has Expired” may appear. In that case, click [Network config] again since the following operation will not be guaranteed.
- Changing LAN settings while connected to the LAN may cause the connection to cut out.

[Ping test] page

Check whether the network is connected to the E-mail server, POP server, DNS server, etc.
Click [Detailed set up] → [Ping test].



1 [Input IP address]
Enter the IP address of the server to be tested.

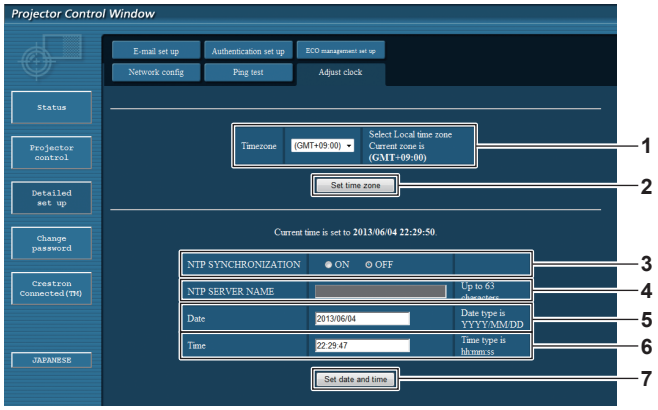
2 [Submit]
Executes the connection test.

3 Example of display when the connection has succeeded

4 Example of display when the connection has failed

[Adjust clock] page

Click [Detailed set up] → [Adjust clock].



1 [Timezone]
Selects the time zone.

2 [Set time zone]
Updates the time zone setting.

3 [NTP SYNCHRONIZATION]
Sets to [ON] to adjust the date and time automatically.

4 [NTP SERVER NAME]
Enter the IP address or server name of the NTP server when you set to adjust the date and time manually.
(To enter the server name, the DNS server needs to be set up.)

5 [Date]
Enter the date to be changed.

6 [Time]
Enter the time to be changed.

7 [Set date and time]
Updates the date and time settings.

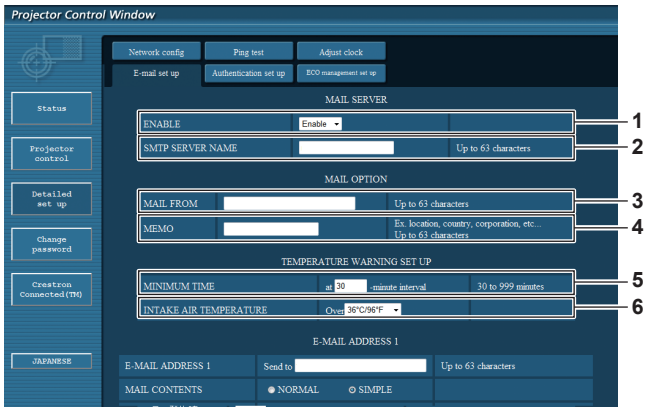
Note

- The replacement of the battery inside the projector is required when the time goes out of alignment right after correcting the time. Consult your dealer.

[E-mail set up] page

When there is a problem or the runtime of a lamp reaches a set value, an E-mail can be sent to preset E-mail addresses (up to two addresses).

Click [Detailed set up] → [E-mail set up].



1 [ENABLE]
Select [Enable] to use the E-mail function.

2 [SMTP SERVER NAME]
Enter the IP address or the server name of the E-mail server (SMTP). To enter the server name, the DNS server needs to be set up.

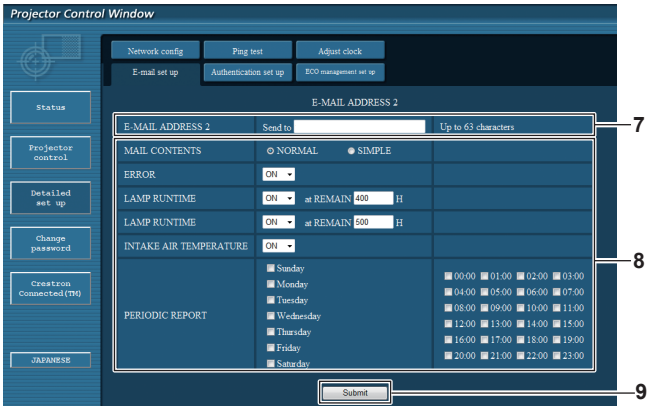
3 [MAIL FROM]
Enter the E-mail address of the projector. (Up to 63 characters in single byte)

4 [MEMO]
Enter information such as the location of the projector that notifies the sender of the E-mail. (Up to 63 characters in single byte)

5 [MINIMUM TIME]
Change the minimum interval for the temperature warning E-mail. The default value is 60 minutes. In this case, another E-mail will not be sent for 60 minutes after sending the temperature warning E-mail even if it reaches the warning temperature.

6 [INTAKE AIR TEMPERATURE]
Change the temperature setting for the temperature warning mail. A temperature warning E-mail is sent when the temperature exceeds this value.





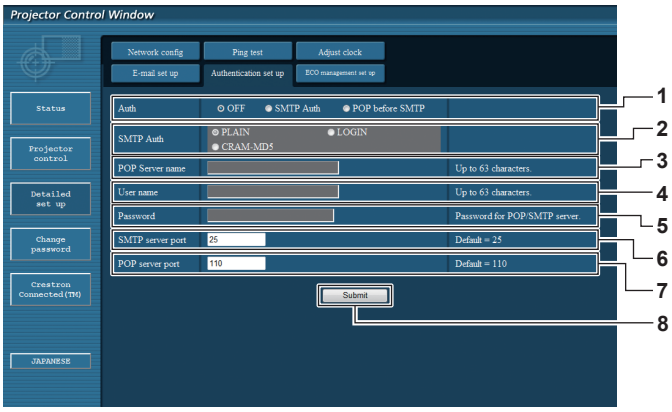
7 [E-MAIL ADDRESS 1], [E-MAIL ADDRESS 2]
Enter the E-mail address to be sent. Leave [E-MAIL ADDRESS 2] blank when two E-mail addresses are not to be used.

8 Settings of the conditions to send E-mail
Selects the conditions to send E-mail.
[MAIL CONTENTS]:
Selects either [NORMAL] or [SIMPLE].
[ERROR]:
Sends an E-mail when an error occurred in the self-diagnosis.
[LAMP RUNTIME]:
Sends an E-mail when the remaining time for the lamp has reached the value set at the right field.
[INTAKE AIR TEMPERATURE]:
Sends an E-mail when the air intake temperature has reached the value set at the above field.
[PERIODIC REPORT]:
Places a check mark on this to send an E-mail periodically. It will be sent on the days and time with the check mark.

9 [Submit]
Updates the settings.

[Authentication set up] page

Set the authentication items when POP authentication or SMTP authentication is necessary to send an E-mail.
Click [Detailed set up] → [Authentication set up].



1 [Auth]
Selects the authentication method specified by your Internet service provider.

2 [SMTP Auth]
Set when the SMTP authentication is selected.

3 [POP Server name]
Enter the POP server name.
Allowed characters:
Alphanumerics (A - Z, a - z, 0 - 9)
Minus sign (-) and period (.)

4 [User name]
Enter the user name for the POP server or the SMTP server.

5 [Password]
Enter the password for the POP server or the SMTP server.

6 [SMTP server port]
Enter the port number of the SMTP server.
(Normally 25)

7 [POP server port]
Enter the port number of the POP server.
(Normally 110)

8 [Submit]
Updates the settings.

[ECO management set up] page

Settings related to the ECO management function of the projector can be made.
Click [Detailed set up] → [ECO management set up].



1 [LAMP POWER]
Selects the [LAMP POWER] setting.

2 [AUTO POWER SAVE]
Set to [ON] when setting [AMBIENT LIGHT DETECTION], [SIGNAL DETECTION] and [SHUTTER DETECTION] *1

3 [AMBIENT LIGHT DETECTION]
Selects enable ([ON])/disable ([OFF]) of the environmental luminance interlock function.

4 [SIGNAL DETECTION]
Selects enable ([ON])/disable ([OFF]) of the no signal interlock function.

5 [SHUTTER DETECTION] *1
Selects enable ([ON])/disable ([OFF]) of the shutter interlock function.

6 [NO SIGNAL SHUT-OFF]
When the No signal shut-off function is used, select the time until the standby mode is entered.

7 [Submit]
Updates the settings.

*1 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE DETECTION] for PT-EW540 and PT-EX510

Note

- For details of each setting item, refer to the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] (➡ page 87) on the projector.

Contents of E-mail sent

Example of E-mail sent when E-mail is set

The following E-mail is sent when the E-mail settings have been established.

```
=== Panasonic projector report(CONFIGURE) ===
Projector Type          : EZ580
Serial No               : SN9250024

-----  E-mail setup data -----
TEMPERATURE WARNING SETUP
MINIMUM TIME                  at [ 30] minutes interval
INTAKE AIR TEMPERATURE    Over [ 36 degC /  96 degF ]

ERROR                         [ ON ]
LAMP RUNTIME                  [ ON ]   at REMAIN [ 400] H
LAMP RUNTIME                  [ ON ]   at REMAIN [ 500] H
INTAKE AIR TEMPERATURE    [ ON ]

PERIODIC REPORT
Sunday    [ OFF ]  Monday  [ OFF ]  Tuesday   [ OFF ]  Wednesday [ OFF ]
Thursday  [ OFF ]  Friday    [ OFF ]  Saturday  [ OFF ]
00:00  [ OFF ]    01:00  [ OFF ]    02:00  [ OFF ]    03:00  [ OFF ]
04:00  [ OFF ]    05:00  [ OFF ]    06:00  [ OFF ]    07:00  [ OFF ]
08:00  [ OFF ]    09:00  [ OFF ]    10:00  [ OFF ]    11:00  [ OFF ]
12:00  [ OFF ]    13:00  [ OFF ]    14:00  [ OFF ]    15:00  [ OFF ]
16:00  [ OFF ]    17:00  [ OFF ]    18:00  [ OFF ]    19:00  [ OFF ]
20:00  [ OFF ]    21:00  [ OFF ]    22:00  [ OFF ]    23:00  [ OFF ]

-----  check system -----
MAIN CPU BUS                          [   OK   ]
FAN                                   [   OK   ]
INTAKE AIR TEMPERATURE                [   OK   ]
AROUND LAMP TEMPERATURE               [   OK   ]
LAMP REMAIN TIME                      [   OK   ]
LAMP STATUS                           [   OK   ]
APERTURE(CONTRAST-SHUTTER)            [   OK   ]
SHUTTER(MUTE-SHUTTER)                 [   OK   ]
INTAKE AIR TEMP.SENSOR                [   OK   ]
AROUND LAMP TEMP.SENSOR               [   OK   ]
BATTERY                               [   OK   ]
AIRFLOW SENSOR                        [   OK   ]
LENS MOUNTER                          [   OK   ]
COVER OPEN                            [   OK   ]
PRESSURE SENSOR                       [   OK   ]
ANGLE SENSOR                          [   OK   ]
FILTER UNIT                           [   OK   ]
AIR FILTER                            [   OK   ]
(Error code00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00)

Intake air temperature                :  45 degC / 113 degF
Around lamp temperature               :  42 degC / 107 degF
PROJECTOR RUNTIME          2500 H
LAMP ECO                    100 H
LAMP NORMAL                 200 H
LAMP REMAIN                1900 H

--------  Current status --------
MAIN VERSION               1.00
NETWORK VERSION            1.00
SUB VERSION                1.00
LAMP STATUS                LAMP=ON
INPUT SIGNAL               HDMI
SIGNAL NAME                XGA60
SIGNAL FREQUENCY           65.4kHz / 54.4Hz
REMOTE2 STATUS             ENABLE

----- Wired Network configuration -----
DHCP Client     OFF
IP address      192.168.0.8
MAC address     cc:7e:e8:00:00:00

Tue Jun 04 22:30:14:2013

----- Memo -----
```

Note

- APERTURE(CONTRAST-SHUTTER) and SHUTTER(MUTE-SHUTTER) are only for PT-EZ580, PT-EW640 and PT-EX610.

Example of the E-mail sent for an error

The following E-mail is sent when an error has occurred.

```
=== Panasonic projector report(ERROR) ===
Projector Type        : EZ580
Serial No             : SN9250024

-----  check system -----
MAIN CPU BUS                          [  OK  ]
FAN                                   [  OK  ]
INTAKE AIR TEMPERATURE                [  OK  ]
AROUND LAMP TEMPERATURE               [  OK  ]
LAMP REMAIN TIME                      [  OK  ]
LAMP STATUS                           [  OK  ]
APERTURE(CONTRAST-SHUTTER)            [  OK  ]
SHUTTER(MUTE-SHUTTER)                 [  OK  ]
INTAKE AIR TEMP.SENSOR                [  OK  ]
AROUND LAMP TEMP.SENSOR               [  OK  ]
BATTERY                               [  OK  ]
AIRFLOW SENSOR                        [  OK  ]
LENS MOUNTER                          [  OK  ]
COVER OPEN                            [FAILED]
PRESSURE SENSOR                       [  OK  ]
ANGLE SENSOR                          [  OK  ]
FILTER UNIT                           [  OK  ]
AIR FILTER                            [  OK  ]
(Error code00 00 00 00 00 00 00 00 00 00 00 00 20 00 00 00)

Intake air temperature                :  45 degC / 113 degF
Around lamp temperature               :  42 degC / 107 degF
PROJECTOR RUNTIME          2500 H
LAMP ECO                    100 H
LAMP NORMAL                 200 H
LAMP REMAIN                1900 H

--------  Current status --------
MAIN VERSION               1.00
NETWORK VERSION            1.00
SUB VERSION                1.00
LAMP STATUS                LAMP=ON
INPUT SIGNAL               HDMI
SIGNAL NAME                XGA60
SIGNAL FREQUENCY           65.4kHz / 54.4Hz
REMOTE2 STATUS             ENABLE

----- Wired Network configuration -----
DHCP Client    OFF
IP address     192.168.0.8
MAC address    cc:7e:e8:00:00:00

Tue Jun 04 22:29:33:2013

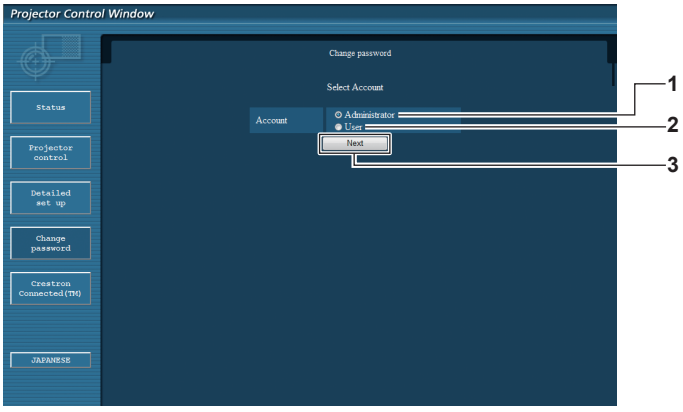
----- Memo -----
```

Note

- APERTURE(CONTRAST-SHUTTER) and SHUTTER(MUTE-SHUTTER) are only for PT-EZ580, PT-EW640 and PT-EX610.

[Change password] page

Click [Change password].

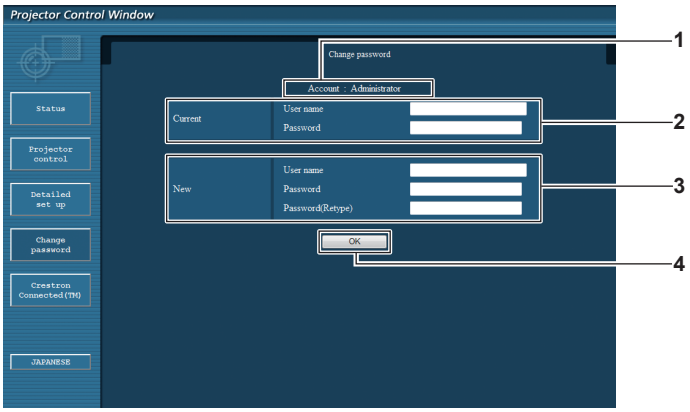


1 [Administrator]
Used to change the setting of the [Administrator].

2 [User]
Used to change the setting of the [User].

3 [Next]
Used to display the screen for changing the password.

[Administrator] account



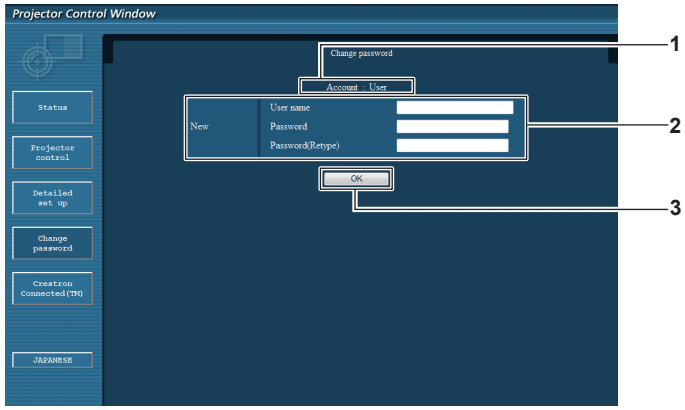
1 [Account]
Displays the account to change.

2 [Current]
[User name]:
Enter the user name before the change.
[Password]:
Enter the current password.

3 [New]
[User name]:
Enter the desired new user name. (Up to 16 characters in single byte)
[Password]:
Enter the desired new password. (Up to 16 characters in single byte)
[Password(Retype)]:
Enter the desired new password again.

4 [OK]
Determines the change of password.

[User] account



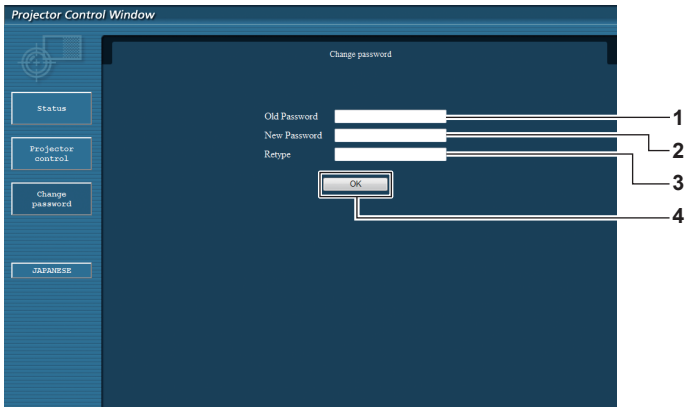
1 [Account]
Displays the account to change.

2 [New]
[User name]:
Enter the desired new user name. (Up to 16 characters in single byte)
[Password]:
Enter the desired new password. (Up to 16 characters in single byte)
[Password(Retype)]:
Enter the desired new password again.

3 [OK]
Determines the change of password.

[Change password] (For user rights)

Only the change of password is enabled under the user rights.



1 [Old Password]
Enter the current password.

2 [New Password]
Enter the desired new password. (Up to 16 characters in single byte)

3 [Retype]
Enter the desired new password again.

4 [OK]
Determines the change of password.

Note

- To change the account of the administrator, you must enter the [User name] and [Password] in [Current].

[Crestron Connected(TM)] page

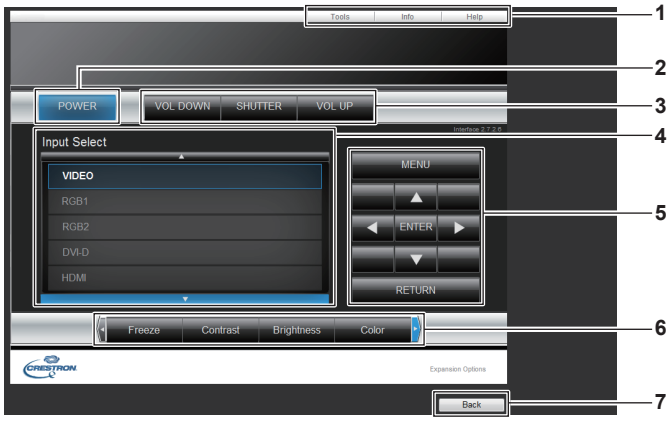
The projector can be monitored/controlled with Crestron Connected™.

To start the control page of Crestron Connected™ from the web control screen, you need to access with the administrator rights. (For user rights, the [Crestron Connected(TM)] button is not displayed on the web control screen.)

The control page of Crestron Connected™ is displayed by clicking [Crestron Connected(TM)].

It is not displayed if Adobe® Flash® Player is not installed on the computer used, or the browser used does not support Flash. In that case, click [Back] on the control page to go back to the previous page.

Control page



1 [Tools], [Info], [Help]
Tabs for selecting the setting, information, or help page of the projector.

2 [POWER]
Turns off/on the power.

3 [VOL DOWN], [VOL UP]
Adjusts the volume.
[SHUTTER] *1
Switches the setting whether to use the shutter function (closing/opening of the shutter).

*1 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE] for PT-EW540 and PT-EX510
Switches the AV mute function on/off.

4 [Input Select]
Controls input selection.
Not available when the power of the projector is turned off.

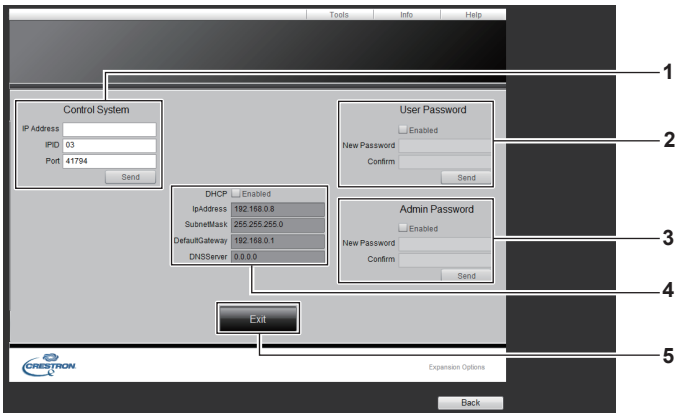
5 Menu screen control buttons
Navigates the menu screen.

6 Freeze/image quality adjustment
Controls items related to freeze/image quality.

7 [Back]
Performs return to the previous page.

[Tools] page

Click [Tools] on the control page.



1 [Control System]
Set the information required for communicating with the controller to be connected with the projector.

2 [User Password]
Set the user rights password for the Crestron Connected™ control page.

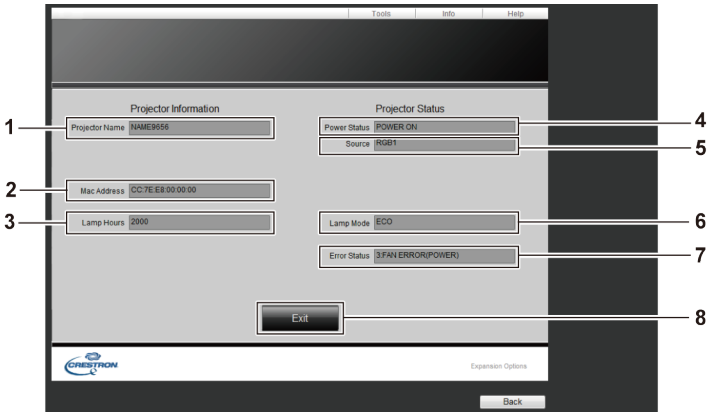
3 [Admin Password]
Set the administrator rights password for the Crestron Connected™ control page.

4 Network status
Displays the settings of wired LAN.
[DHCP]
Displays the current setting.
[IpAddress]
Displays the current setting.
[SubnetMask]
Displays the current setting.
[DefaultGateway]
Displays the current setting.
[DNSServer]
Displays the current setting.

5 [Exit]
Returns to the control page.

[Info] page

Click [Info] on the control page.



1 [Projector Name]
Displays the projector name.

2 [Mac Address]
Displays the MAC address.

3 [Lamp Hours]
Displays the runtime of the lamps (converted value).

4 [Power Status]
Displays the status of the power.

5 [Source]
Displays the selected input.

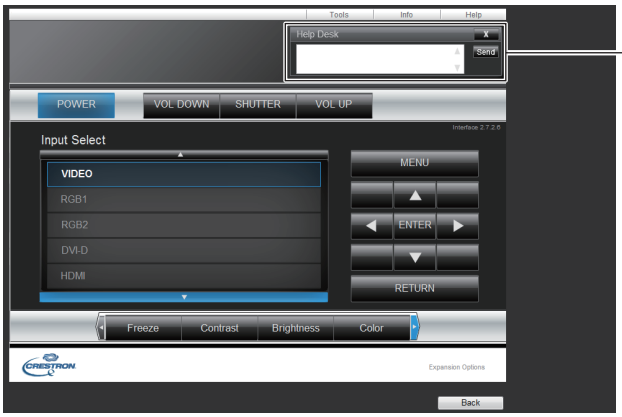
6 [Lamp Mode]
Displays the setting status of [LAMP POWER] (➡ page 87).

7 [Error Status]
Displays the error status.

8 [Exit]
Returns to the control page.

[Help] page

Click [Help] on the control page.
The [Help Desk] window is displayed.



1 [Help Desk]
Send/receive messages to/from an administrator who uses Crestron Connected™.

Chapter 5 Maintenance

This chapter describes methods of inspection when there are problems, maintenance, and replacement of the units.

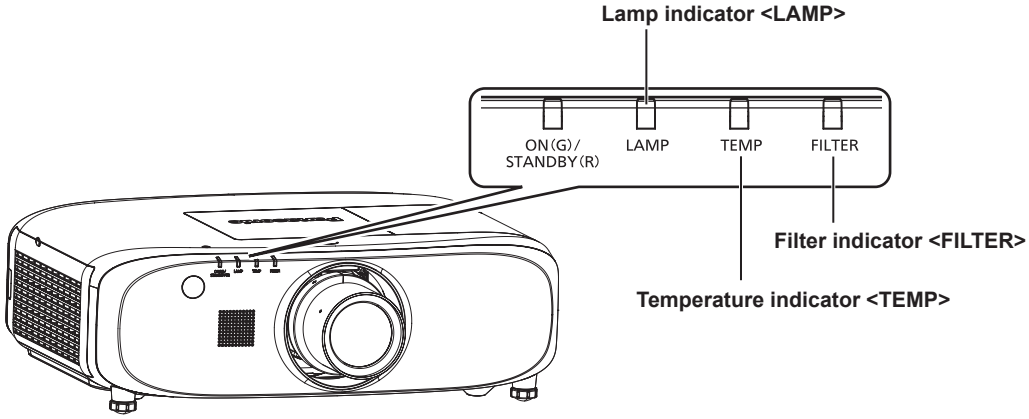
Lamp/temperature/filter indicators

When an indicator lights up

If a problem should occur inside the projector, the lamp indicator <LAMP>, the temperature indicator <TEMP>, and the filter indicator <FILTER> will inform you by lighting or flashing. Check the status of the indicators and remedy the indicated problems as follows.

Attention

- When switching off the projector to deal with problems, make sure to follow the procedure in “Switching off the projector” (➡ page 48).



Lamp indicator <LAMP>

Indicator status	Lighting in red	Flashing in red (1 time)	Flashing in red (3 times)	
Status	Time to replace the lamp unit. (➡ page 131)	The lamp unit is not installed.	A problem is detected in the lamp or the power supply for the lamp.	
Cause	• Was [REPLACE LAMP] displayed when you turned on the power? • The indicator lights up when the runtime of the lamp unit reaches 3 800 hours (when [LAMP POWER] is set to [NORMAL]).	• Is the lamp unit attached?	• Have you turned on the power again immediately after turning it off?	• Some error has occurred in the lamp circuit. Check for fluctuation (or drop) in the source voltage.
Solution	• Replace the lamp unit.	• Install the lamp unit if it is not installed. • If the indicator is still flashing in red even when having installed the lamp unit, consult your dealer.	• Wait a while until the luminous lamp cools off, and then turn on the power.	• Turn the <MAIN POWER> switch to <OFF> (➡ page 48), and consult your dealer.

Note

- If the lamp indicator <LAMP> is still lit or flashing after taking the preceding measures, ask your dealer for repair.

Temperature indicator <TEMP>

Indicator status	Lighting in red	Flashing in red (2 times)	Flashing in red (3 times)
Status	Internal temperature is high (warning).	Internal temperature is high (standby status).	The cooling fan has stopped.
Cause	• Is the air intake/exhaust port blocked? • Is the room temperature high? • Is the filter indicator <FILTER> lit?		—
Solution	• Remove any objects that are blocking the air intake/exhaust port. • Install the projector in a location with the operating environment temperature between 0 °C (32 °F) and 45 °C (113 °F)*1. • Do not install the projector at high altitudes of 2 700 m (8 858') or higher above sea level. • Clean or replace the air filter unit. (➡ page 129)		• Turn the <MAIN POWER> switch to <OFF> (➡ page 48), and consult your dealer.

*1 When using the projector at high altitudes (between 1 400 m (4 593') and 2 700 m (8 858') above sea level), the operating environment temperature should be between 0 °C (32 °F) and 40 °C (104 °F).

Note

- If the temperature indicator <TEMP> is still lit or flashing after taking the preceding measures, ask your dealer for repair.
- If you use the projector with the following function set, [LAMP POWER] may be set to [ECO] forcibly to protect the projector when the operating environment temperature becomes 40 °C (104 °F) or higher (35 °C (95 °F) or higher when using the projector at high altitudes).
  − When [LAMP POWER] is set to [AUTO] or [NORMAL] from the menu

Filter indicator <FILTER>

Indicator status	Lighting in red		Flashing in red
Status	The filter is clogged. The temperature inside or outside the projector is abnormally high.		The air filter unit is not attached.
Cause	• Is the air filter unit dirty?	• Is the air intake/exhaust port blocked?	• Is the air filter unit attached?
Solution	• Clean or replace the air filter unit. (➡ page 129)	• Remove any objects that are blocking the air intake/exhaust port.	• Attach the air filter unit.

Note

- If the filter indicator <FILTER> is still lit or flashing after taking the preceding measures, ask your dealer for repair.

Maintenance/replacement

Before performing maintenance/replacement

- Make sure to turn off the power before maintaining the projector or replacing the unit. (➡ pages 44, 48)
- When switching off the projector, make sure to follow the procedures in “Switching off the projector” (➡ page 48).

Maintenance

Outer case

Wipe off dirt and dust with a soft, dry cloth.

- If the dirt is persistent, soak the cloth with water and wring it thoroughly before wiping. Dry off the projector with a dry cloth.
- Do not use benzene, thinner, or rubbing alcohol, other solvents, or household cleaners. Doing so may deteriorate the outer case.
- When using chemically treated dust cloths, follow the instructions written on its packaging.

Lens front surface

Wipe off dirt and dust from the front surface of the lens with a soft clean cloth.

- Do not use a cloth that is fluffy, dusty, or soaked with oil/water.
- Since the lens is fragile, do not use excessive force when wiping the lens.

Attention

- The lens is made of glass. Impacts or excessive force when wiping may scratch its surface. Handle with care.

Air filter unit

Perform maintenance of the air filter in the following case.

- The air filter is clogged with dust, causing the filter replacement message to appear on the screen and the filter indicator <FILTER> to light in red.

Attention

- Make sure to turn off the power before performing maintenance on the air filter unit.
- Make sure that the projector is stable, and perform the maintenance in a safe place where the unit will not be damaged even if you drop the air filter unit.

Removing the air filter unit

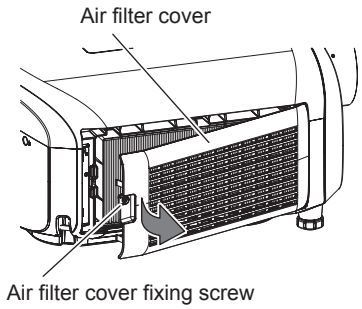


Fig. 1

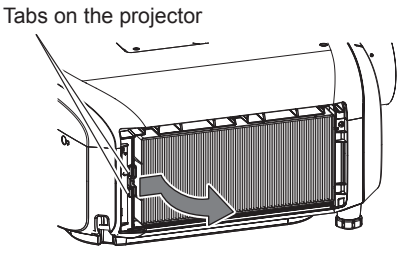


Fig. 2

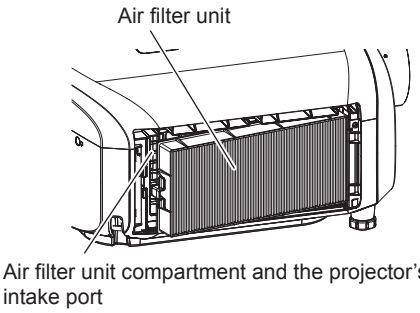


Fig. 3

1) Remove the air filter cover. (Fig. 1)

- Use a Phillips screwdriver to turn the air filter cover fixing screw (x1) counterclockwise until it turns freely, and gently pull open in the direction of the arrow with your finger placed on the indent of the air filter cover and remove the cover.
- When pulling open the air filter cover, be sure to firmly hold the air filter cover with your hand. Opening the air filter cover quickly may result in the cover falling.

2) Remove the air filter unit.

- Pull out the air filter unit from the tabs of the projector while slightly pressing the tab at the center of the frame at the connecting terminal side (rear side) inward as shown by the arrow, and remove the air filter unit. (Fig. 2)
- After pulling out the air filter unit, remove foreign objects and dust from the air filter unit compartment and the projector’s air intake port if there are any. (Fig. 3)

Cleaning the air filter unit

Remove the air filter unit beforehand according to the previously described procedure in “Removing the air filter unit”.

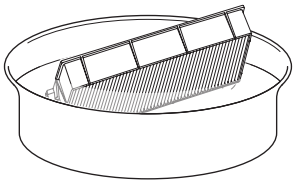


Fig. 1

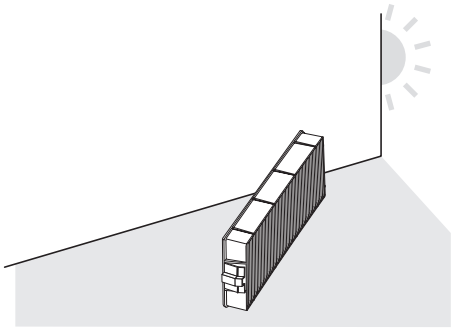


Fig. 2

1) Wash the air filter unit. (Fig. 1)

i) Soak the air filter unit in cold or warm water and then lightly rinse it.
- Do not use cleaning tools such as brushes.
- When rinsing, hold the frame of the air filter unit without putting strong pressure on the filter.

ii) Rinse the air filter unit two to three times using fresh water each time.
- Insufficient rinsing may result in odors.

2) Dry the air filter unit. (Fig. 2)

- Let the air filter unit naturally dry off in a well-ventilated place where there is little dust and is not exposed to direct sunlight.
- Do not dry using drying devices such as dryers.
- After the air filter unit is dried, proceed to “Attaching the air filter unit” (➡ page 130).

Attaching the air filter unit

1) Attach the air filter unit to the projector.

- Perform Step **2)** in “Removing the air filter unit” in the reverse order.
- Push in the air filter unit securely until it clicks into place.

2) Attach the air filter cover.

- Perform Step **1)** in “Removing the air filter unit” in the reverse order to close the air filter cover, and push in the air filter cover securely until it clicks into place.
- Use a Phillips screwdriver to firmly tighten the air filter cover fixing screw (x1).

Attention

- After washing the air filter unit, dry it thoroughly before attaching it back to the projector. Attaching a wet unit will cause an electric shock or malfunction.
- Do not disassemble the air filter unit.
- Make sure that the air filter unit is properly attached before using the projector. If it is not attached, the projector will suck in dirt and dust causing a malfunction.

Note

- If you use the projector without attaching the air filter unit, the filter indicator <FILTER> flashes in red and the message appears on the projected image for approximately 30 seconds.
- Replace the air filter unit with the new optional Replacement Filter Unit (Model No.: ET-RFE300) if it is damaged or if the dirt does not come off even after washing.
- Air filter replacement is recommended after cleaning the unit two times.
- The dust-proof properties may be reduced after each cleaning.

Replacing the unit

Lamp unit

The lamp unit is a consumable component. Refer to “When to replace the lamp unit” (➡ page 131) for details about the replacement cycle.
When purchasing the optional Replacement Lamp Unit (Model No.: ET-LAE300), consult your dealer.
It is recommended that you request a qualified technician to replace the lamp unit. Consult your dealer.

Warning

Replace the lamp unit after the lamp has cooled (after waiting at least one hour).
The high temperature inside the cover will cause burns.

Notes on the replacement of the lamp unit

- A Phillips screwdriver is necessary when replacing the lamp unit.
- Since the luminous lamp is made of glass, it may burst if dropped or hit with a hard object. Handle with care.
- Do not disassemble or modify the lamp unit.
- When replacing the lamp unit, be sure to hold it by the handle because its surface is pointed and its shape is protruded.
- The lamp may rapture. Replace the lamp unit carefully so the glass fragments of the lamp do not scatter. While attaching the projector to the ceiling, do not work right under the lamp unit or do not conduct work while your face is near the lamp unit.
- The lamp contains mercury. When disposing of used lamp units, contact your local authorities or dealer for correct methods of disposal.

Attention

- Panasonic takes no responsibility for any damage or malfunction of the product resulting from use of lamp units which are not manufactured by Panasonic. Use only specified lamp units.

Note

- The model numbers of accessories and optional accessories are subject to change without prior notice.

When to replace the lamp unit

The lamp unit is a consumable component. Since its brightness gradually decreases over time, it is necessary to replace the lamp unit regularly. The estimated duration before replacement is 4 000 hours, but the lamp may go off before reaching to 4 000 hours, depending on the characteristics of the individual lamp, usage conditions, and the installation environment. It is recommended that the Replacement Lamp Unit be prepared earlier.

If you continue to use the lamp unit after 4 000 hours has elapsed, the lamp turns off automatically after approximately 10 minutes, as it may cause malfunction of the projector.

	On-screen display REPLACE LAMP	**Lamp indicator**  LAMP
Over 3 800 hours	The message is displayed for 30 seconds. Pressing any button on the control panel or remote control within 30 seconds will clear the message.	The indicator lights in red even during the standby mode.
Over 4 000 hours	The message remains displayed until you press any button.	

Note

- To predict when to replace the lamp, check the lamp runtime displayed at [LAMP : TOTAL] in [STATUS] (➡ page 94).
- 4 000 hours is only the target for replacement and not the warranty time.

How to replace the lamp unit

Attention

- While attaching the projector to the ceiling, do not work right under the lamp unit or do not conduct work while your face is near the lamp unit.
- Do not remove or loosen the screws other than specified ones when replacing the lamp unit.
- Make sure to attach the lamp unit and the lamp cover securely.

- If the lamp unit is not installed properly, remove it and then push it in slowly. Pushing it in quickly or forcibly may break the connector.

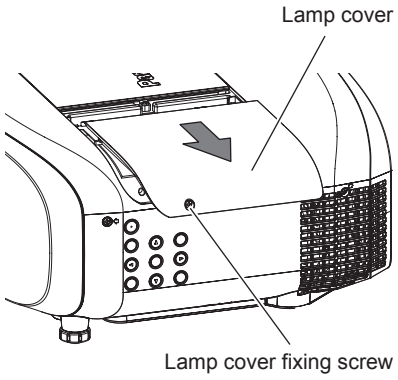


Fig. 1

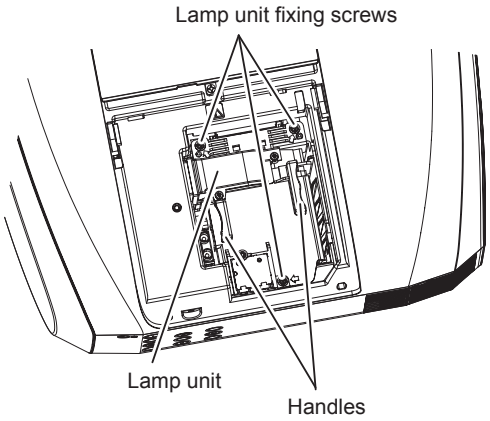


Fig. 2

1) Set the <MAIN POWER> switch to <OFF> and disconnect the power plug from the power outlet.

- Wait at least one hour and check if the lamp unit has cooled down.

2) Remove the lamp cover. (Fig. 1)

- Use a Phillips screwdriver to turn the lamp cover fixing screw (x1) counterclockwise until it turns freely, and slide the lamp cover slowly in the direction of the arrow to remove it.
- Opening the lamp cover quickly may result in falling.

3) Remove the lamp unit. (Fig. 2)

- Use a Phillips screwdriver to turn the lamp unit fixing screws (x3) counterclockwise until they turn freely, and remove the lamp unit.
- Hold the handles of the lamp unit and remove it straight.

4) Push in the new lamp unit while paying attention to the insertion position.

- If the lamp unit is not installed properly, remove it and then push it in slowly. Pushing it in quickly or forcibly may break the connector.

5) Use a Phillips screwdriver to firmly tighten the lamp unit fixing screws (x3).

- Make sure to attach the lamp unit securely.

6) Attach the lamp cover.

i) Perform Step **2)** in the reverse order to attach the lamp cover.

ii) Use a Phillips screwdriver to firmly tighten the lamp cover fixing screw (x1).

- Make sure to attach the lamp cover slowly and securely.

Note

- When you replace the lamp unit with new one, the projector resets the runtime of the lamp unit automatically.

Air filter unit

When the dust remains after cleaning, the filter replacement timing has come.
The Replacement Filter Unit (Model No.: ET-RFE300) is an optional accessory. To purchase the product, consult your dealer.

How to replace the air filter unit

Attention

- Make sure to turn off the power before replacing the air filter unit.
- Make sure that the projector is stable, and perform the replacement in a safe place where the unit will not be damaged even if you drop the air filter unit.

1) Remove the air filter unit.

- Refer to “Removing the air filter unit” (➡ page 129).

2) Attach the optional Replacement Filter Unit (Model No.: ET-RFE300) to the projector.

- Refer to “Attaching the air filter unit” (➡ page 130).

Attention

- When using the projector, be sure to attach the air filter unit. If it is not attached, the projector will suck in dirt and dust causing a malfunction.

Note

- If you use the projector without attaching the air filter unit, the filter indicator <FILTER> flashes in red and the message appears on the projected image for approximately 30 seconds.

Troubleshooting

Review the following points. For details, see the corresponding pages.

Problems	Points to be checked	Page
Power does not turn on.	• Is the power plug firmly inserted into the outlet?	—
	• Is the <MAIN POWER> switch set to <OFF>?	48
	• Is the wall outlet supplying electricity?	—
	• Have the circuit breakers tripped?	—
	• Is the lamp indicator <LAMP> or the temperature indicator <TEMP> lit or flashing?	127
	• Is the lamp cover attached securely?	131
No image appears.	• Are connections to external devices correctly performed?	39
	• Is the input selection setting correct?	51
	• Is the [BRIGHTNESS] adjustment setting at a minimum?	63
	• Is the external device that is connected to the projector working properly?	—
	• Is the shutter function in use?	51
	• If the power indicator <ON (G)/STANDBY (R)> is flashing in red, consult your dealer.	—
	• Is the lens cover still attached to the lens?	45
Image is fuzzy.	• Is the lens focus set correctly?	49
	• Is the projection distance appropriate?	31
	• Is the lens dirty?	19
	• Is the projector installed perpendicular to the screen?	—
Color is pale or grayish.	• Is [COLOR] or [TINT] adjusted correctly?	63
	• Is the external device connected to the projector adjusted correctly?	39
	• Is the RGB cable damaged?	—
Audio is not output.	• Is the external device connected correctly to the audio input terminal?	26
	• Is [MUTE] in [AUDIO SETTING] set to [ON]?	93
	• Is the audio input selection in [AUDIO SETTING] set correctly?	94
Audio is not output from the built-in speaker.	• Is [BUILT-IN SP] in [AUDIO SETTING] set to [OFF]?	93
	• Is the audio input selection in [AUDIO SETTING] set correctly?	94
Remote control does not respond.	• Are the batteries depleted?	—
	• Is the polarity of the batteries set correctly?	27
	• Are there any obstructions between the remote control and the remote control signal receiver of the projector?	24
	• Is the remote control being used beyond its effective operation range?	24
	• Are other forms of light, such as fluorescent light, affecting the projection?	24
	• Is the [REMOTE CONTROL] setting in [CONTROL DEVICE SETUP] set to [DISABLE]?	106
	• Is the <REMOTE 2 IN> terminal used for contact control?	143
	• Is the ID number setting operation correct?	27
	• Is the cable that is connected to the <REMOTE 1 IN> terminal connected to the remote control wired terminal?	28
Menu screen does not appear.	• Is the on-screen display function turned off (hidden)?	53
Buttons on the control panel do not operate.	• Is the [CONTROL PANEL] setting in [CONTROL DEVICE SETUP] set to [DISABLE]?	106
	• Is the <REMOTE 2 IN> terminal used for contact control?	143
Image does not display correctly.	• Is the [SYSTEM SELECTOR] selection set correctly?	66
	• Is there a problem with the video tape or other image sources?	—
	• Is a signal which is not compatible with the projector being input?	146
Image from a computer does not appear.	• Is the cable too long? (For D-Sub cables, the cable length should be 10 m (32'10") or shorter.)	—
	• Is the external video output on the laptop computer set correctly? (Ex.: The external output settings may be switched by pressing “Fn” + “F3” or “Fn” + “F10” simultaneously. Since the method varies depending on the computer type, refer to the user manual provided with your computer.)	—
Image output from DVI-D of the computer does not appear.	• Is the [DVI-D IN] setting [EDID3] or [EDID2:PC]?	78
	• The graphics accelerator driver of the computer may need to be updated to the latest version.	—
	• The computer may need to be restarted after performing the [DVI-D IN] setting.	78

Problems	Points to be checked	Page
Video from HDMI compatible device does not appear or it appears jumbled.	• Is the HDMI cable connected securely?	39
	• Turn off and on the power of the projector and the external device.	—
	• Is a signal which is not compatible with the projector being input?	146
Image output from DisplayPort of the computer does not appear. *1	• If connecting the projector to a computer that uses an early-type chipset or graphics card compatible with DisplayPort, the projector or computer may not be operated properly.	148
	• The graphics accelerator driver of the computer may need to be updated to the latest version.	—
	• Turn off and on the power of the projector and the external device.	—
	• Is a signal which is not compatible with the projector being input?	146
The DIGITAL LINK input image or sound is not output. *1	• Are the connections between the twisted-pair-cable transmitter and the projector or an external device correctly done?	—
	• Is [DIGITAL LINK MODE] set to [AUTO] or [DIGITAL LINK]? Is it set to [ETHERNET]?	107
	• Is a signal which is not compatible with a twisted-pair-cable transmitter being input?	—

*1 Only for PT-EZ580, PT-EW640 and PT-EX610

Attention

- If problems persist even after checking the preceding points, consult your dealer.

Chapter 6 Appendix

This chapter describes specifications for the projector.

Technical information

PJLink protocol

The network function of this projector supports the PJLink class 1, and the PJLink protocol can be used to perform projector setting and projector status query operations from a computer.

Control commands

The following table lists the PJLink protocol commands that can be used to control the projector.

- x characters in tables are non-specific characters.

Command	Control details	Parameter/return string	Remark		
POWR	Power supply control	0 1	Standby Power on		
POWR?	Power supply status query	0 1 2 3	Standby Power on Preparing for switching off the projector Warm-up		
INPT	Input selection	11 12 21 31 32 33 34	RGB1 RGB2 VIDEO DVI-D HDMI DIGITAL LINK *1 DisplayPort *1		
INPT?	Input selection query				
AVMT	Shutter control *2*4 /AV mute control *3*4	30	Shutter function off (shutter open) / AV mute function off		
AVMT?	Shutter status query *2 / AV mute status query *3	31	Shutter function on (shutter closed) / AV mute function on		
ERST?	Error status query	xxxxxx	1st byte	Indicates fan errors, and returns 0 - 2.	• 0 = No error is detected • 1 = Warning • 2 = Error
			2nd byte	Indicates lamp errors, and returns 0 - 2.	
			3rd byte	Indicates temperature errors, and returns 0 - 2.	
			4th byte	Indicates cover open errors, and returns 0 or 2.	
			5th byte	Indicates filter errors, and returns 0 - 2.	
			6th byte	Indicates other errors, and returns 0 - 2.	
LAMP?	Lamp status query	xxxxxx	1st digit (1 - 5 digits): Lamp runtime 2nd digit: 0 = Lamp off, 1 = Lamp on		
INST?	Input selection list query	(EZ580/EW640/EX610) 11 12 21 31 32 33 34 (EW540/EX510) 11 12 21 31 32			
NAME?	Projector name query	xxxxx	Returns the name set in [PROJECTOR NAME] of [NETWORK SETUP].		
INF1?	Manufacturer name query	Panasonic	Returns manufacturer name.		
INF2?	Model name query	EZ580 EW640, EW540 EX610, EX510	Returns model name.		
INF0?	Other information queries	xxxxx	Returns information such as version number.		
CLSS?	Class information query	1	Returns class for PJLink.		

*1 Only for PT-EZ580, PT-EW640 and PT-EX610
*2 For PT-EZ580, PT-EW640 and PT-EX610
*3 For PT-EW540 and PT-EX510
*4 When the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [SHUTTER DETECTION] or [AV MUTE DETECTION] is set to [ON], do not switch on/off in a short time.

PJLink security authentication

The password used for PJLink is the same as that of the password set for web control.
When using the projector without security authentication, do not set a password for web control.

- For specifications related to PJLink, refer to the website of Japan Business Machine and Information System Industries Association.
  URL http://pjlink.jbmia.or.jp/english/

Control commands via LAN

When web control administrator rights password is set (Protect mode)

Connecting

1) Obtain the IP address and port number (Initial set value = 1024) of the projector and request for a connection to the projector.

- You can obtain both the IP address and the port number from the menu screen of the projector.

IP address	Obtain from the main menu → [NETWORK] → [NETWORK STATUS]
Port number	Obtain from the main menu → [NETWORK] → [NETWORK CONTROL] → [COMMAND PORT]

2) Check the response from the projector.

	Data section	Blank	Mode	Blank	Random number section	Termination symbol
Command example	“NTCONTROL” (ASCII string)	‘ ’ 0x20	‘1’ 0x31	‘ ’ 0x20	“zzzzzzzz” (ASCII code hex number)	(CR) 0x0d
Data length	9 bytes	1 byte	1 byte	1 byte	8 bytes	1 byte

- Mode: 1 = Protect mode

3) Generate a 32-byte hash value from the following data using MD5 algorithm.

- “xxxxxx:yyyyy:zzzzzzzz”

xxxxxx	Administrator rights user name for the web control (default user name is “admin1”)
yyyyy	Password of above administrator rights user (default password is “panasonic”)
zzzzzzzz	8-byte random number obtained in Step **2)**

Command transmission method

Transmit using the following command formats.

■ Transmitted data

	Header			Data section	Termination symbol
Command example	Hash value (Refer to “Connecting” above)	‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)	(CR) 0x0d
Data length	32 bytes	1 byte	1 byte	Undefined length	1 byte

■ Received data

	Header		Data section	Termination symbol
Command example	‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)	(CR) 0x0d
Data length	1 byte	1 byte	Undefined length	1 byte

■ Error response

	String	Details	Termination symbol
Message	“ERR1”	Undefined control command	(CR) 0x0d
	“ERR2”	Out of parameter range	
	“ERR3”	Busy state or no-acceptable period	
	“ERR4”	Timeout or no-acceptable period	
	“ERR5”	Wrong data length	
	“ERRA”	Password mismatch	
Data length	4 bytes	—	1 byte

When web control administrator rights password is not set (Non-protect mode)

Connecting

1) Obtain the IP address and port number (Initial set value = 1024) of the projector and request for a connection to the projector.

- You can obtain both the IP address and the port number from the menu screen of the projector.

IP address	Obtain from the main menu → [NETWORK] → [NETWORK STATUS]
Port number	Obtain from the main menu → [NETWORK] → [NETWORK CONTROL] → [COMMAND PORT]

2) Check the response from the projector.

	Data section	Blank	Mode	Termination symbol
Command example	“NTCONTROL” (ASCII string)	‘ ’ 0x20	‘0’ 0x30	(CR) 0x0d
Data length	9 bytes	1 byte	1 byte	1 byte

- Mode: 0 = Non-protect mode

Command transmission method

Transmit using the following command formats.

■ Transmitted data

	Header		Data section	Termination symbol
Command example	‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)	(CR) 0x0d
Data length	1 byte	1 byte	Undefined length	1 byte

■ Received data

	Header		Data section	Termination symbol
Command example	‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)	(CR) 0x0d
Data length	1 byte	1 byte	Undefined length	1 byte

■ Error response

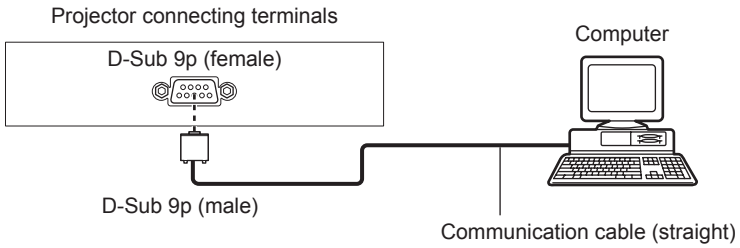
	String	Details	Termination symbol
Message	“ERR1”	Undefined control command	(CR) 0x0d
	“ERR2”	Out of parameter range	
	“ERR3”	Busy state or no-acceptable period	
	“ERR4”	Timeout or no-acceptable period	
	“ERR5”	Wrong data length	
	“ERRA”	Password mismatch	
Data length	4 bytes	—	1 byte

<SERIAL IN> terminal

The <SERIAL IN> terminal of the projector conforms with RS-232C so that the projector can be connected to and controlled from a computer.

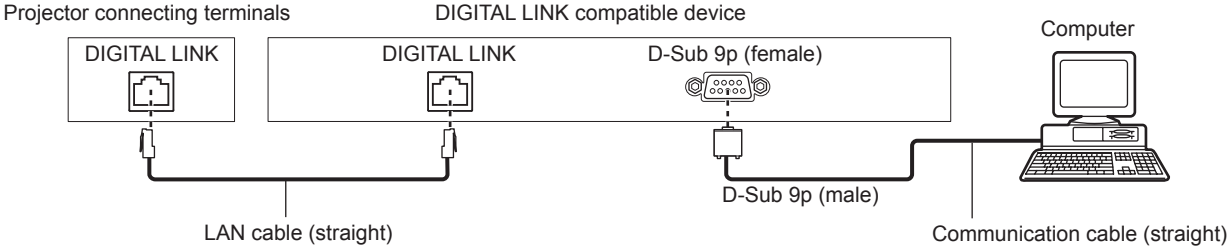
Connection

● When connecting directly



● When connecting with DIGITAL LINK compatible devices

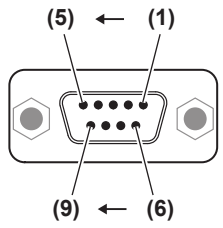
(Only for PT-EZ580, PT-EW640 and PT-EX610)



Note

- The destination of [RS-232C] (➡ page 90) must be set according to the connection method.
- When connecting by a DIGITAL LINK compatible device, set the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [STANDBY MODE] (➡ page 88) to [NORMAL] to control the projector in standby mode.
  When [STANDBY MODE] is set to [ECO], the projector cannot be control during standby.

Pin assignments and signal names

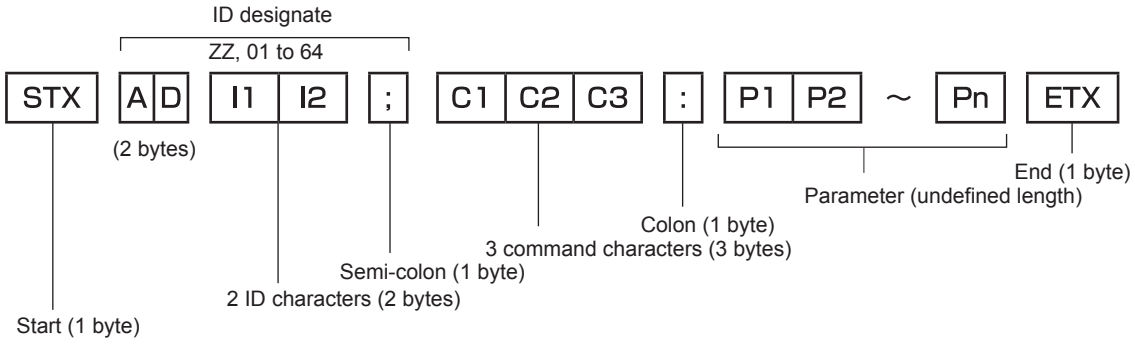
D-Sub 9-pin (female) Outside view	Pin No.	Signal name	Details
	(1)	—	NC
	(2)	TXD	Transmitted data
	(3)	RXD	Received data
	(4)	—	NC
	(5)	GND	Earth
	(6)	—	NC
	(7)	CTS	Connected internally
	(8)	RTS	
	(9)	—	NC

Communication conditions (Factory default)

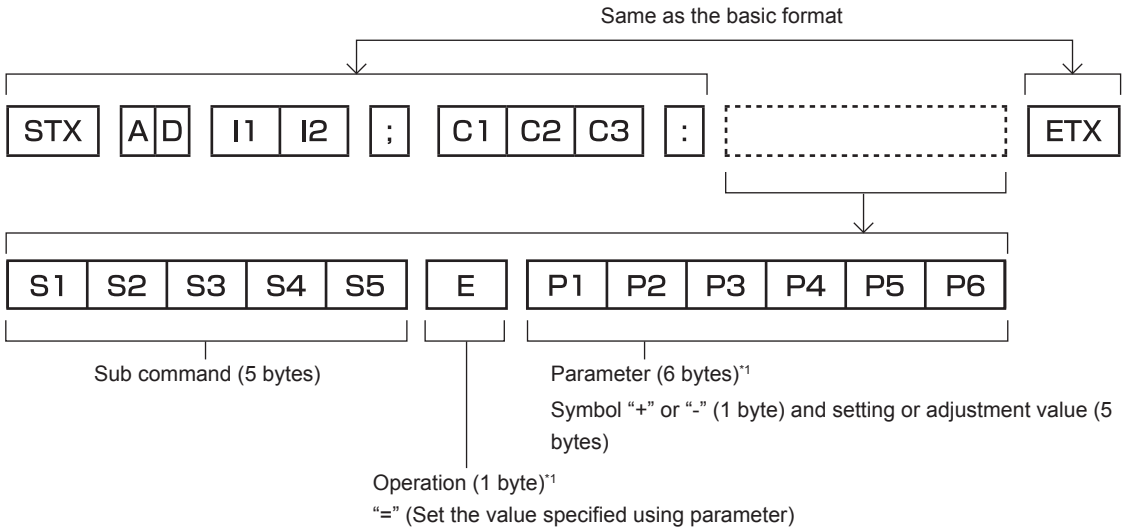
Signal level	RS-232C-compliant
Sync. method	Asynchronous
Baud rate	9 600 bps
Parity	None
Character length	8 bits
Stop bit	1 bit
X parameter	None
S parameter	None

Basic format

Transmission from the computer starts with STX, then the ID, command, parameter, and ETX are sent in this order. Add parameters according to the details of control.



Basic format (has subcommands)



*1 When transmitting a command which does not need a parameter, an operation (E) and parameter are not necessary.

Attention

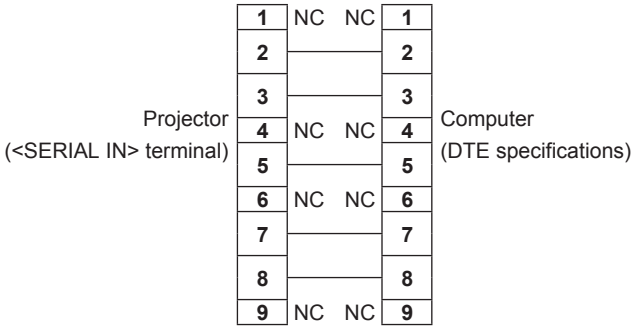
- If a command is transmitted after the lamp starts illuminating, there may be a delay in response or the command may not be executed. Try sending or receiving any command after 60 seconds.
- When transmitting multiple commands, be sure to wait until 0.5 seconds has elapsed after receiving the response from the projector before sending the next command. When transmitting a command which does not need a parameter, a colon (:) is not necessary.

Note

- If a command cannot be executed, the "ER401" response is sent from the projector to the computer.
- If an invalid parameter is sent, the "ER402" response is sent from the projector to the computer.
- ID transmission in RS-232C supports ZZ (ALL) and 01 to 64.
- If a command is sent with a specified ID, a response will be sent to the computer only in the following cases.
  - It matches the projector ID
  - When [PROJECTOR ID] (➡ page 86) on the projector is [ALL]
- STX and ETX are character codes. STX shown in hexadecimal is 02, and ETX shown in hexadecimal is 03.

Cable specification

When connected to a computer



Control command

The following table lists the commands that can be used to control the projector using a computer.

■ Projector control command

Command	Details	Parameter/return string	Remark (parameter)
PON	Power on	—	To check if the power is on, use the “Power query” command.
POF	Power standby		
QPW	Power query	000 001	STANDBY Power on
IIS	Switching the input signal	VID RG1 RG2 DVI HD1 DL1 DP1	VIDEO RGB1 RGB2 DVI-D HDMI DIGITAL LINK *1 DisplayPort *1
Q$L	Lamp cumulative runtime query	1	Returned with 0000 to 9999
OSH	Shutter control *2*4 /AV mute control *3*4	0	Shutter function off (shutter open) / AV mute function off
QSH	Shutter status query *2 / AV mute status query *3	1	Shutter function on (shutter closed) / AV mute function on
VSE	Aspect ratio switch	0 1 2 5	NORMAL/VID AUTO/AUTO 4:3 WIDE NATIVE
QSE	Aspect ratio settings query	6 9 10	FULL H FIT V FIT
OPP	P IN P execution	0 1 2 3	OFF USER1 USER2 USER3
QPP	P IN P setting query		
OCS	Sub memory switch	01 - 96	Sub memory number
QSB	Sub memory status query		

*1 Only for PT-EZ580, PT-EW640 and PT-EX610
*2 For PT-EZ580, PT-EW640 and PT-EX610
*3 For PT-EW540 and PT-EX510
*4 When the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [SHUTTER DETECTION] or [AV MUTE DETECTION] is set to [ON], do not switch on/off in a short time.

■ Projector control command (with sub command)

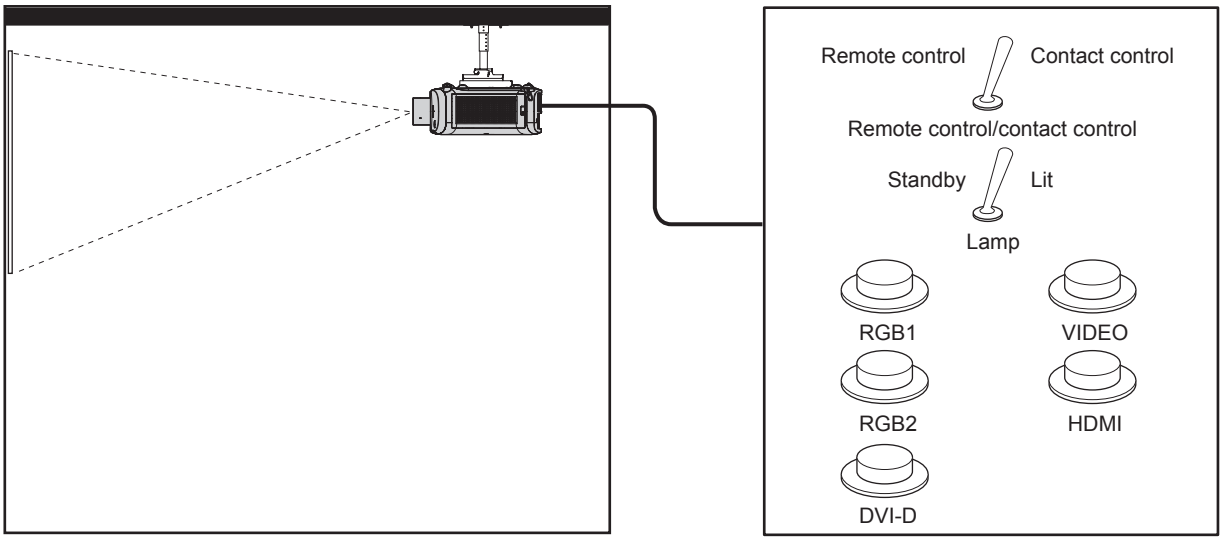
Command	Sub command	Details	Remark
VXX	LPWI1	Lamp power selection	+00001=NORMAL,+00000=ECO, +00030=AUTO
VXX	RYCI2	RGB2 input setting	+00000=RGB/YP_BP_R, +00001=Y/C, +00002=VIDEO

■ Lens control command

Command	Sub command	Details	Remark
VXX	LNSI2	Lens H shift	+00000=Fine adjustment 1+, +00001=Fine adjustment 1–, +00100=Fine adjustment 2+, +00101=Fine adjustment 2–, +00200=Coarse adjustment+, +00201=Coarse adjustment–
VXX	LNSI3	Lens V shift	
VXX	LNSI4	Lens focus	
VXX	LNSI5	Lens zoom	

<REMOTE 2 IN> terminal

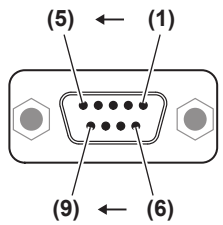
It is possible to control the projector remotely (by external contact) from a control panel located away from the projector where remote control signals cannot reach.
Use the <REMOTE 2 IN> terminal on the connecting terminals of the projector to connect to the control panel.



Installation locations in meeting rooms, etc.

Remote control board in another location

Pin assignments and signal names

D-Sub 9-pin Outside view	Pin No.	Signal name	Open (H)	Short (L)
	**(1)**	GND	—	GND
	(2)	POWER	OFF	ON
	(3)	RGB1	Other	RGB1
	(4)	RGB2	Other	RGB2
	(5)	VIDEO	Other	VIDEO
	(6)	HDMI	Other	HDMI
	(7)	DVI-D	Other	DVI-D
	(8)	SHUTTER *1	OFF	ON
	(9)	RST/SET	Controlled by remote control	Controlled by external contact

*1 For PT-EZ580, PT-EW640 and PT-EX610
[AV MUTE] for PT-EW540 and PT-EX510

Attention

- When controlling, make sure to short-circuit pins (1) and (9).
- When pins (1) and (9) are short-circuited, the following buttons on the control panel and the remote control are disabled. Commands for RS-232C and network functions corresponding to these functions are also disabled.
  - Power <⏻/❙> button on the control panel or the power on <❙> button, power standby <⏻> button, and <SHUTTER> button and <AV MUTE> button on the remote control
- When pins (1) and (9) are short-circuited, and then any pins from (3) to (7) and the pin (1) are short-circuited, the following buttons on the control panel and the remote control are disabled. Commands for RS-232C and network functions corresponding to these functions are also disabled.

– Power <⏻/❙> button on the control panel or the power on <❙> button, power standby <⏻> button, <RGB1/2> button, <DVI-D> button, <VIDEO> button, <HDMI> button, <DIGITAL LINK> button, <DisplayPort> button, <SHUTTER> button and <AV MUTE> button on the remote control.

Note

- For pin (2) to pin (8) settings, you can make changes if you set [REMOTE2 MODE] to [USER]. (➡ page 92)

Two-window display combination list

		Sub window						
		RGB1		RGB2				VIDEO
Main window		Still image	Movie*1	Still image	Movie*1	Y/C	Video	
RGB1 input	Still image signal	—	—	✓	✓	✓	✓	✓
	Movie-based signal*1	—	—	✓	▲	▲	▲	▲
RGB2 input	Still image signal	✓	✓	—	—	—	—	✓
	Movie-based signal*1	✓	▲	—	—	—	—	▲
	Y/C signal	✓	—	—	—	—	—	—
	Video signal	✓	—	—	—	—	—	—
VIDEO input		✓	▲	✓	▲	—	—	—
DVI-D input	Still image signal*2	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*3	✓	▲	✓	▲	▲	▲	▲
HDMI input	Still image signal*2	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*3	✓	▲	✓	▲	▲	▲	▲
DIGITAL LINK input *4	Still image signal*2	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*3	✓	▲	✓	▲	▲	▲	▲
DisplayPort input *4	Still image signal*2	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*3	✓	▲	✓	▲	▲	▲	▲

		Sub window							
		DVI-D		HDMI		DIGITAL LINK *4		DisplayPort *4	
Main window		Still image*2	Movie*3	Still image*2	Movie*3	Still image*2	Movie*3	Still image*2	Movie*3
RGB1 input	Still image signal	✓	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*1	✓	▲	✓	▲	✓	▲	✓	▲
RGB2 input	Still image signal	✓	✓	✓	✓	✓	✓	✓	✓
	Movie-based signal*1	✓	▲	✓	▲	✓	▲	✓	▲
	Y/C signal	✓	▲	✓	▲	✓	▲	✓	▲
	Video signal	✓	▲	✓	▲	✓	▲	✓	▲
VIDEO input		✓	▲	✓	▲	✓	▲	✓	▲
DVI-D input	Still image signal*2	—	—	✓	✓	✓	✓	—	—
	Movie-based signal*3	—	—	✓	▲	✓	▲	—	—
HDMI input	Still image signal*2	✓	✓	—	—	—	—	✓	✓
	Movie-based signal*3	✓	▲	—	—	—	—	✓	▲
DIGITAL LINK input *4	Still image signal*2	✓	✓	—	—	—	—	✓	✓
	Movie-based signal*3	✓	▲	—	—	—	—	✓	▲

		Sub window							
		DVI-D		HDMI		DIGITAL LINK *4		DisplayPort *4	
Main window		Still image*2	Movie*3	Still image*2	Movie*3	Still image*2	Movie*3	Still image*2	Movie*3
DisplayPort input *4	Still image signal*2	—	—	✓	✓	✓	✓	—	—
	Movie-based signal*3	—	—	✓	▲	✓	▲	—	—

✓: P IN P (picture in picture) combination is possible

▲: P IN P combination is possible on the following conditions. (Image on a sub window may be disrupted.)

- The P IN P signals have the same vertical scanning frequency.
- P IN P combination has signals other than the combination of Interlace signals by Interlace signals.

—: P IN P (picture in picture) combination is not possible

*1 480i, 480p, 576i, 576p, 720/60p, 720/50p, 1080/60i, 1080/50i, 1080/24sF, 1080/24p, 1080/25p, 1080/30p, 1080/50p, 1080/60p

*2 VGA (640 x 480) - WUXGA (1 920 x 1 200)
Non-interlace signal, dot clock frequency: 25 MHz to 162 MHz (The WUXGA signal is only compatible with VESA CVT RB (Reduced Blanking) signals.)

*3 Only supports 480p, 576p, 720/60p, 720/50p, 1080/60i, 1080/50i, 1080/24sF, 1080/24p, 1080/25p, 1080/30p, 1080/50p, and 1080/60p

*4 Only for PT-EZ580, PT-EW540 and PT-EX610

[MENU LOCK PASSWORD] operations

To initialize your password, consult your distributor.

List of compatible signals

The following table specifies the video signals compatible with the projector.

- Symbols that indicate formats are as follows.
  - V: VIDEO, Y/C
  - R: RGB
  - Y: YC_BC_R/YP_BP_R
  - D: DVI-D
  - H: HDMI
  - DP: DisplayPort (Only for PT-EZ580, PT-EW640 and PT-EX610)

Mode	Resolution (Dots)	Scanning freq.		Dot clock freq. (MHz)	Format	Plug and play*1					
		Horizontal (kHz)	Vertical (Hz)			RGB1	DVI-D			HDMI	DP
							EDID1	EDID2	EDID3		
NTSC/NTSC4.43/ PAL-M/PAL60	720 x 480i	15.7	59.9	—	V	—	—	—	—	—	—
PAL/PAL-N/SECAM	720 x 576i	15.6	50.0	—	V	—	—	—	—	—	—
525i (480i)	720 x 480i	15.7	59.9	13.5	R/Y	—	—	—	—	—	—
625i (576i)	720 x 576i	15.6	50.0	13.5	R/Y	—	—	—	—	—	—
525i (480i)	720 (1440) x 480i*2	15.7	59.9	27.0	D/H	—	—	—	—	—	—
625i (576i)	720 (1440) x 576i*2	15.6	50.0	27.0	D/H	—	—	—	—	—	—
525p (480p)	720 x 483	31.5	59.9	27.0	R/Y/D/H/DP	—	✓	—	✓	✓	✓
625p (576p)	720 x 576	31.3	50.0	27.0	R/Y/D/H/DP	—	✓	—	✓	✓	✓
750 (720)/60p	1 280 x 720	45.0	60.0	74.3	R/Y/D/H/DP	—	✓	—	✓	✓	✓
750 (720)/50p	1 280 x 720	37.5	50.0	74.3	R/Y/D/H/DP	—	✓	—	✓	✓	✓
1125 (1080)/60i*3	1 920 x 1 080i	33.8	60.0	74.3	R/Y/D/H/DP	—	✓	—	✓	✓	✓
1125 (1080)/50i	1 920 x 1 080i	28.1	50.0	74.3	R/Y/D/H/DP	—	✓	—	✓	✓	✓
1125 (1080)/24p	1 920 x 1 080	27.0	24.0	74.3	R/Y/D/H/DP	—	✓	—	✓	✓	✓
1125 (1080)/24sF	1 920 x 1 080i	27.0	48.0	74.3	R/Y/D/H/DP	—	—	—	—	—	—
1125 (1080)/25p	1 920 x 1 080	28.1	25.0	74.3	R/Y/D/H/DP	—	✓	—	✓	—	—
1125 (1080)/30p	1 920 x 1 080	33.8	30.0	74.3	R/Y/D/H/DP	—	—	—	—	—	—
1125 (1080)/60p	1 920 x 1 080	67.5	60.0	148.5	R/Y/D/H/DP	—	✓	—	✓	✓	✓
1125 (1080)/50p	1 920 x 1 080	56.3	50.0	148.5	R/Y/D/H/DP	—	✓	—	✓	✓	✓
VESA400	640 x 400	37.9	85.1	31.5	R/D/H/DP	—	—	—	—	—	—
VGA	640 x 400	31.5	70.1	25.2	R/D/H/DP	—	—	—	—	—	—
	640 x 480	31.5	59.9	25.2	R/D/H/DP	✓	✓	✓	✓	✓	✓
	640 x 480	35.0	66.7	30.2	R/D/H/DP	—	—	—	—	—	—
	640 x 480	37.9	72.8	31.5	R/D/H/DP	✓	—	✓	✓	✓	✓
	640 x 480	37.5	75.0	31.5	R/D/H/DP	✓	—	✓	✓	✓	✓
	640 x 480	43.3	85.0	36.0	R/D/H/DP	—	—	—	—	—	—
SVGA	800 x 600	35.2	56.3	36.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	800 x 600	37.9	60.3	40.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	800 x 600	48.1	72.2	50.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	800 x 600	46.9	75.0	49.5	R/D/H/DP	✓	—	✓	✓	✓	✓
	800 x 600	53.7	85.1	56.3	R/D/H/DP	—	—	—	—	—	—
MAC16	832 x 624	49.7	74.6	57.3	R/D/H/DP	✓	—	✓	✓	✓	✓
XGA	1 024 x 768	39.6	50.0	51.9	R/D/H/DP	—	—	—	—	—	—
	1 024 x 768	48.4	60.0	65.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	1 024 x 768	56.5	70.1	75.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	1 024 x 768	60.0	75.0	78.8	R/D/H/DP	✓	—	✓	✓	✓	✓
	1 024 x 768	65.5	81.6	86.0	R/D/H/DP	—	—	—	—	—	—
	1 024 x 768	68.7	85.0	94.5	R/D/H/DP	—	—	—	—	—	—
	1 024 x 768	81.4	100.0	113.3	R/D/H/DP	—	—	—	—	—	—
	1 024 x 768	98.8	120.0	139.1	R/D/H/DP	✓	—	✓	✓	✓	✓
MXGA	1 152 x 864	53.7	60.0	81.6	R/D/H/DP	—	—	—	—	—	—
	1 152 x 864	64.0	70.0	94.2	R/D/H/DP	—	—	—	—	—	—
	1 152 x 864	67.5	74.9	108.0	R/D/H/DP	—	—	—	—	—	—
	1 152 x 864	77.1	85.0	119.7	R/D/H/DP	—	—	—	—	—	—
MAC21	1 152 x 870	68.7	75.1	100.0	R/D/H/DP	✓	—	✓	✓	✓	✓

Mode	Resolution (Dots)	Scanning freq.		Dot clock freq. (MHz)	Format	Plug and play*1					
		Horizontal (kHz)	Vertical (Hz)			RGB1	DVI-D			HDMI	DP
							EDID1	EDID2	EDID3		
1280 x 720	1 280 x 720	37.1	49.8	60.5	R/D/H/DP	—	—	—	—	—	—
	1 280 x 720	44.8	59.9	74.5	R/D/H/DP	—	—	—	—	—	—
	1 280 x 720	76.3	100.0	131.8	R/D/H/DP	—	—	—	—	—	—
	1 280 x 720	92.6	120.0	161.6	R/D/H/DP	—	—	—	—	—	—
1280 x 768	1 280 x 768	39.6	49.9	65.3	R/D/H/DP	—	—	—	—	—	—
	1 280 x 768	47.8	59.9	79.5	R/D/H/DP	—	—	—	—	—	—
	1 280 x 768*4	47.4	60.0	68.3	R/D/H/DP	—	—	—	—	—	—
	1 280 x 768	60.3	74.9	102.3	R/D/H/DP	—	—	—	—	—	—
	1 280 x 768	68.6	84.8	117.5	R/D/H/DP	—	—	—	—	—	—
1280 x 800	1 280 x 800	41.3	50.0	68.0	R/D/H/DP	—	—	—	—	—	—
	1 280 x 800	49.7	59.8	83.5	R/D/H/DP	✓*5	—	✓*5	✓*5	✓*5	✓*5
	1 280 x 800*4	49.3	59.9	71.0	R/D/H/DP	—	—	—	—	—	—
	1 280 x 800	62.8	74.9	106.5	R/D/H/DP	—	—	—	—	—	—
	1 280 x 800	71.6	84.9	122.5	R/D/H/DP	—	—	—	—	—	—
MSXGA	1 280 x 960	60.0	60.0	108.0	R/D/H/DP	—	—	—	—	—	—
SXGA	1 280 x 1 024	52.4	50.0	88.0	R/D/H/DP	—	—	—	—	—	—
	1 280 x 1 024	64.0	60.0	108.0	R/D/H/DP	—	—	—	—	—	—
	1 280 x 1 024	72.3	66.3	125.0	R/D/H/DP	—	—	—	—	—	—
	1 280 x 1 024	78.2	72.0	135.1	R/D/H/DP	—	—	—	—	—	—
	1 280 x 1 024	80.0	75.0	135.0	R/D/H/DP	✓	—	✓	✓	✓	✓
	1 280 x 1 024	91.1	85.0	157.5	R/D/H/DP	—	—	—	—	—	—
1366 x 768	1 366 x 768	39.6	49.9	69.0	R/D/H/DP	—	—	—	—	—	—
	1 366 x 768	47.7	59.8	85.5	R/D/H/DP	—	—	—	—	—	—
SXGA+	1 400 x 1 050	54.1	50.0	99.9	R/D/H/DP	—	—	—	—	—	—
	1 400 x 1 050	64.0	60.0	108.0	R/D/H/DP	—	—	—	—	—	—
	1 400 x 1 050	65.2	60.0	122.6	R/D/H/DP	✓	—	✓	✓	✓	✓
	1 400 x 1 050	65.3	60.0	121.8	R/D/H/DP	—	—	—	—	—	—
	1 400 x 1 050	78.8	72.0	149.3	R/D/H/DP	—	—	—	—	—	—
	1 400 x 1 050	82.2	75.0	155.9	R/D/H/DP	—	—	—	—	—	—
WXGA+	1 440 x 900	55.9	60.0	106.5	R/D/H/DP	—	—	—	—	—	—
1600 x 900	1 600 x 900	46.3	50.0	97.0	R/D/H/DP	—	—	—	—	—	—
	1 600 x 900	55.9	60.0	119.0	R/D/H/DP	✓	—	✓	✓	✓	✓
UXGA60	1 600 x 1 200	75.0	60.0	162.0	R/D/H/DP	✓	—	✓	✓	✓	✓
WSXGA+	1 680 x 1 050	54.1	50.0	119.5	R/D/H/DP	—	—	—	—	—	—
	1 680 x 1 050	65.3	60.0	146.3	R/D/H/DP	—	—	—	—	—	—
1920 x 1080	1 920 x 1 080	55.6	49.9	141.5	R/D/H/DP	—	—	—	—	—	—
	1 920 x 1 080*4	66.6	59.9	138.5	R/D/H/DP	—	—	—	—	—	—
	1 920 x 1 080*6	67.2	60.0	173.0	R	—	—	—	—	—	—
WUXGA	1 920 x 1 200	61.8	49.9	158.3	R/D/H/DP	—	—	—	—	—	—
	1 920 x 1 200*4	74.0	60.0	154.0	R/D/H/DP	✓	—	✓	✓*7	✓*7	✓*7
	1 920 x 1 200*6	74.6	59.9	193.3	R	—	—	—	—	—	—

*1 Signals with ✓ in the Plug and play columns are signals described in EDID (extended display identification data) of the projector. A signal, which has no ✓ in the Plug and play columns but has an entry in the Format column, can be input. For signals without ✓ in the Plug and play columns, resolution may not be selected in the computer even though the projector supports them.
*2 Pixel-Repetition signal (dot clock frequency 27.0 MHz) only
*3 When a 1125 (1035)/60i signal was input, it is displayed as a 1125 (1080)/60i signal.
*4 VESA CVT-RB (Reduced Blanking)-compliant
*5 Only for PT-EW640 and PT-EW540
*6 Samples the pixels in the image processing circuit and displays the image.
*7 Only for PT-EZ580

Note

- The number of display dots for PT-EZ580 is 1 920 x 1 200. The number of display dots for PT-EW640 and PT-EW540 is 1 280 x 800. The number of display dots for PT-EX610 and PT-EX510 is 1 024 x 768. A signal with a different resolution is converted to the number of display dots.
- The “i” at the end of the resolution indicates an interlaced signal.
- When interlaced signals are connected, flickering may occur on the projected image.
- DIGITAL LINK input compatible signal is the same as HDMI input compatible signal. (Only for PT-EZ580, PT-EW640 and PT-EX610)

- If connecting the projector to a computer that uses an early-type chipset or graphics card compatible with DisplayPort, the projector or computer may not be operated properly when the signal output from DisplayPort on the computer is input to the projector. In such a case, switch off the projector or computer and then switch it on.
  If the signal output from DisplayPort is input to the projector, use of the computer equipped with the latest chipset or graphics card is recommended.
  (Only for PT-EZ580, PT-EW640 and PT-EX610)

Specifications

The specifications of the projector are as follows.

Power supply		AC 100 V - 240 V, 50 Hz/60 Hz	
Power consumption		**PT-EZ580**	510 W (5.9 A - 2.3 A) or less
		PT-EW640, PT-EX610	495 W (5.7 A - 2.2 A) or less
		PT-EW540, PT-EX510	485 W (5.6 A - 2.1 A) or less
		PT-EZ580, PT-EW640, PT-EX610	0.3 W when [STANDBY MODE] is set to [ECO] 10 W when [STANDBY MODE] is set to [NORMAL] 37 W when [IN STANDBY MODE] in [AUDIO SETTING] is set to [ON]
		PT-EW540, PT-EX510	0.3 W when [STANDBY MODE] is set to [ECO] 4 W when [STANDBY MODE] is set to [NORMAL] 34 W when [IN STANDBY MODE] in [AUDIO SETTING] is set to [ON]
LCD panel	**Size**	**PT-EZ580**	1.9 cm (0.76") (aspect ratio 16:10)
		PT-EW640, PT-EW540	1.9 cm (0.76") (aspect ratio 16:10)
		PT-EX610, PT-EX510	2.0 cm (0.79") (aspect ratio 4:3)
	Display system	Translucent screen LCD panel 3 panels, 3 primary color system	
	Drive system	Active matrix	
	Number of pixels	**PT-EZ580**	2 304 000 pixels (1 920 x 1 200 dots) x 3 panels
		PT-EW640, PT-EW540	1 024 000 pixels (1 280 x 800 dots) x 3 panels
		PT-EX610, PT-EX510	786 432 pixels (1 024 x 768 dots) x 3 panels
Lens[*1]	**Electric zoom**	1.7 - 2.8:1	
	Electric focus	F = 1.7 - 2.3 f = 26.9 mm - 45.4 mm	
Luminous lamp		335 W, UHM lamp	
Light output[*2][*3]		**PT-EZ580**	5 400 lm
		PT-EW640	5 800 lm
		PT-EX610	6 200 lm
		PT-EW540	5 000 lm
		PT-EX510	5 300 lm
Contrast ratio[*3]		**PT-EZ580, PT-EW640** **PT-EX610**	5 000:1 (when [IRIS] is set to [ON], [LAMP POWER] is set to [AUTO] and [PICTURE MODE] is set to [DYNAMIC])
		PT-EW540, PT-EX510	2 000:1 ([LAMP POWER] is set to [AUTO] and [PICTURE MODE] is set to [DYNAMIC])
Color system		7 standards (NTSC/NTSC4.43/PAL/PAL-N/PAL-M/SECAM/PAL60)	
Projected image size		1.02 m (40") - 10.16 m (400")	
Screen aspect ratio		**PT-EZ580**	16:10
		PT-EW640, PT-EW540	
		PT-EX610, PT-EX510	4:3
Projection method		[FRONT/CEILING], [FRONT/FLOOR], [REAR/CEILING], [REAR/FLOOR]	
Speaker		3.7 cm, round, x 1	
Max. effective audio output		10 W (monaural)	
Power cord length		3.0 m (118-1/8")	
Outer case		Molded plastic	
Dimensions	**Width**	530 mm (20-7/8")	
	Height	177 mm (6-31/32") (with legs at shortest position)	
	Depth	**PT-EZ580** **PT-EW640, PT-EW540** **PT-EX610, PT-EX510**	445 mm (17-17/32") (including standard zoom lens)
		PT-EZ580L **PT-EW640L, PT-EW540L** **PT-EX610L, PT-EX510L**	385 mm (15-5/32") (excluding optional lens)
Weight		Approx. 10.6 kg (23.4 lbs.)[*4] (including standard zoom lens)	
		Approx. 9.8 kg (21.6 lbs.)[*4] (excluding optional lens)	
Noise level[*3]		35 dB when [LAMP POWER] is set to [NORMAL] 29 dB when [LAMP POWER] is set to [ECO]	

*1 For PT-EZ580L, PT-EW640L, PT-EX610L, PT-EW540L, PT-EX510L, the lens is sold separately.
*2 Value is for the supplied standard zoom lens. The value varies depending on the lens.
*3 Measurement, measuring conditions and method of notation all comply with ISO21118 international standards.
*4 Average value. Weight varies for each product.

Operating environment	**Operating environment temperature*1**	0 °C (32 °F) - 45 °C (113 °F)
	Operating environment humidity	10 % - 80 % (No condensation)
Remote control	**Power supply**	DC 3 V (AAA/R03/LR03 battery x 2)
	Operating range	Within approx. 30 m (98'5") (when operated directly in front of signal receiver)
	Weight	102 g (3.6 ozs.) (including batteries)
	Dimensions	Width: 48 mm (1-7/8"), Height: 145 mm (5-23/32"), Depth: 27 mm (1-1/16")

*1 When using the projector at high altitudes (between 1 400 m (4 593') and 2 700 m (8 858') above sea level), the operating environment temperature should be between 0 °C (32 °F) and 40 °C (104 °F).
If the [PROJECTOR SETUP] menu → [ECO MANAGEMENT] → [LAMP POWER] is set to [AUTO] or [NORMAL], [LAMP POWER] may be set to [ECO] forcibly to protect the projector when the operating environment temperature becomes 40 °C (104 °F) or higher (35 °C (95 °F) or higher when using the projector at high altitudes).

■ Applicable scanning frequency

Refer to “List of compatible signals” (➡ page 146) for the types of video signals that can be used with the projector.

For video signal	Horizontal: 15.75 kHz/15.63 kHz, Vertical: 50 Hz/60 Hz
For Y/C signal	Horizontal: 15.75 kHz/15.63 kHz, Vertical: 50 Hz/60 Hz
For RGB signal	Horizontal: 15 kHz - 100 kHz, Vertical: 24 Hz - 120 Hz PIAS (Panasonic Intelligent Auto Scanning) system
	• Dot clock frequency: 162 MHz or less
For YC_BC_R/YP_BP_R signal	• 525i (480i) Horizontal: 15.75 kHz, Vertical: 60 Hz • 525p (480p) Horizontal: 31.5 kHz, Vertical: 60 Hz • 750 (720)/60p Horizontal: 45 kHz, Vertical: 60 Hz • 1125 (1080)/50i Horizontal: 28.13 kHz, Vertical: 50 Hz • 1125 (1080)/24sF Horizontal: 27 kHz, Vertical: 48 Hz • 1125 (1080)/30p Horizontal: 33.75 kHz, Vertical: 30 Hz • 1125 (1080)/50p Horizontal: 56.25 kHz, Vertical: 50 Hz • 625i (576i) Horizontal: 15.63 kHz, Vertical: 50 Hz • 625p (576p) Horizontal: 31.25 kHz, Vertical: 50 Hz • 750 (720)/50p Horizontal: 37.5 kHz, Vertical: 50 Hz • 1125 (1080)/60i Horizontal: 33.75 kHz, Vertical: 60 Hz • 1125 (1080)/24p Horizontal: 27 kHz, Vertical: 24 Hz • 1125 (1080)/25p Horizontal: 28.13 kHz, Vertical: 25 Hz • 1125 (1080)/60p Horizontal: 67.5 kHz, Vertical: 60 Hz • The SYNC/HD and VD terminals do not support 3 value SYNC.
For DVI-D signal	525i (480i)*1, 625i (576i)*1, 525p (480p), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1125 (1080)/60i, 1125 (1080)/50i, 1125 (1080)/24p, 1125 (1080)/24sF, 1125 (1080)/25p, 1125 (1080)/30p, 1125 (1080)/60p, 1125 (1080)/50p
	• Displayable resolution: VGA - WUXGA (non-interlaced) • Dot clock frequency: 25 MHz - 162 MHz
For HDMI signal	525i (480i)*1, 625i (576i)*1, 525p (480p), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1125 (1080)/60i, 1125 (1080)/50i, 1125 (1080)/24p, 1125 (1080)/24sF, 1125 (1080)/25p, 1125 (1080)/30p, 1125 (1080)/60p, 1125 (1080)/50p
	• Displayable resolution: VGA - WUXGA (non-interlaced) • Dot clock frequency: 25 MHz - 162 MHz
For DisplayPort signal *2	525p (480p), 625p (576p), 750 (720)/60p, 750 (720)/50p, 1125 (1080)/60i, 1125 (1080)/50i, 1125 (1080)/24p, 1125 (1080)/24sF, 1125 (1080)/25p, 1125 (1080)/30p, 1125 (1080)/60p, 1125 (1080)/50p
	• Displayable resolution: VGA - WUXGA (non-interlaced) • Dot clock frequency: 25 MHz - 162 MHz

*1 Pixel-Repetition signal (dot clock frequency 27.0 MHz) only
*2 Only for PT-EZ580, PT-EW640 and PT-EX610

Note

- DIGITAL LINK input compatible signal is the same as HDMI input compatible signal.
  (Only for PT-EZ580, PT-EW640 and PT-EX610)

■ Terminal

<RGB 1 IN> terminal	1 set, high-density D-Sub 15 p (female)		
	RGB signal	0.7 V [p-p] 75 Ω (SYNC ON GREEN: 1.0 V [p-p] 75 Ω)	
		SYNC/HD	TTL high impedance, automatic positive/negative polarity compatible
		VD	TTL high impedance, automatic positive/negative polarity compatible
	YP_BP_R signal	Y: 1.0 V [p-p] including synchronization signal, P_BP_R: 0.7 V [p-p] 75 Ω	
<RGB 2 IN> terminal	1 set (BNC x 5 (RGB/YP_BP_R/YC_BC_R/YC/VIDEO x 1))		
	RGB signal	0.7 V [p-p] 75 Ω (SYNC ON GREEN: 1.0 V [p-p] 75 Ω)	
		SYNC/HD	TTL high impedance, automatic positive/negative polarity compatible
		VD	TTL high impedance, automatic positive/negative polarity compatible
	YP_BP_R signal	Y: 1.0 V [p-p] including synchronization signal, P_BP_R: 0.7 V [p-p] 75 Ω	
	Y/C signal	Y: 1.0 V [p-p], C: 0.286 V [p-p] 75 Ω	
	Video signal	Y: 1.0 V [p-p] 75 Ω	
<MONITOR OUT> terminal	1 set, high-density D-Sub 15 p (female)		
	RGB signal	0.7 V [p-p] 75 Ω (SYNC ON GREEN: 1.0 V [p-p] 75 Ω)	
		SYNC/HD	TTL high impedance, positive/negative polarity
		VD	TTL high impedance, positive/negative polarity
	YP_BP_R signal	Y: 1.0 V [p-p] including synchronization signal, P_BP_R: 0.7 V [p-p] 75 Ω	
<DVI-D IN> terminal	1 set, DVI-D 24 p, single link, DVI 1.0 compliant, HDCP compatible		
<HDMI IN> terminal	1 set, HDMI 19 pin, HDCP compatible, Deep Color compatible		
	Audio signal	Linear PCM (Sampling frequency: 48 kHz/44.1 kHz/32 kHz)	
<VIDEO IN> terminal	1 set, pin jack 1.0 V [p-p] 75 Ω		
<DisplayPort IN> terminal *1	1 set, DisplayPort 20 pin, HDCP compatible		
	Audio signal	Linear PCM (Sampling frequency: 48 kHz/44.1 kHz/32 kHz)	
<AUDIO IN 1>/<AUDIO IN 2> terminals	1 set each, M3 stereo mini jack 0.5 V [rms], input impedance 22 kΩ or more		
<AUDIO IN 3> terminal	1 set, pin jack x 2 (L-R) 0.5 V [rms], input impedance 22 kΩ or more		
<VARIABLE AUDIO OUT> terminal	1 set, M3 stereo mini jack (monitor output, stereo compatible) 0 V [rms] to 2.0 V [rms] (variable), output impedance 2.2 kΩ or less		
<SERIAL IN> terminal	D-Sub 9 p, 1 set, RS-232C compliant, for computer control		
<REMOTE 1 IN> terminal	M3 stereo mini jack cable, 1 set, for remote control (wired)		
<REMOTE 2 IN> terminal	1 set, D-Sub 9 p, for external control		
<DIGITAL LINK/LAN> terminal *1	1 set, RJ-45, for network, DIGITAL LINK connection, PJLink compatible, 100Base-TX		
<LAN> terminal *2	1 set, RJ-45, for network connection, PJLink compatible, 10Base-T/100Base-TX		

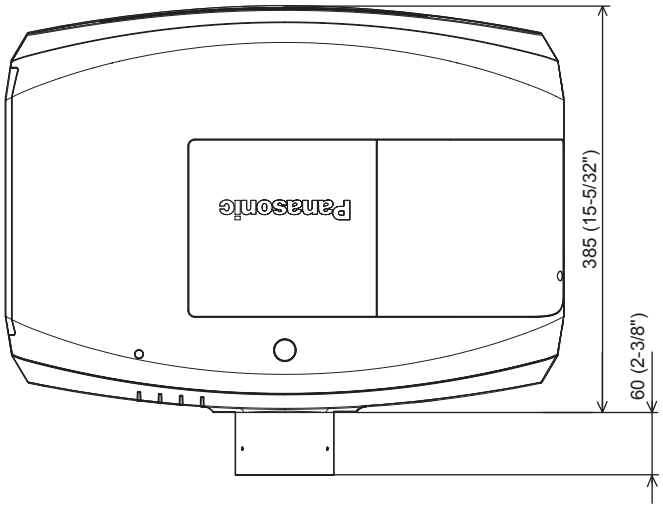
*1 Only for PT-EZ580, PT-EW640 and PT-EX610
*2 Only for PT-EW540 and PT-EX510

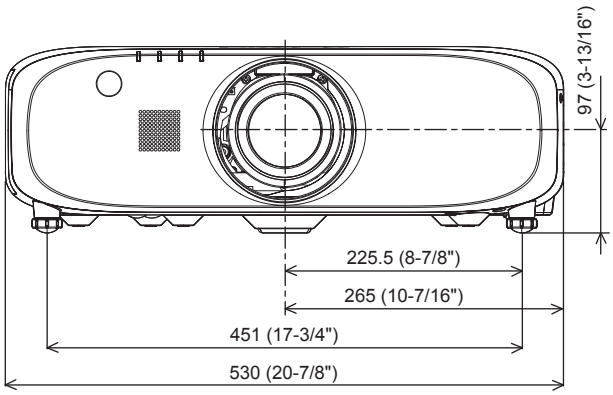
Note

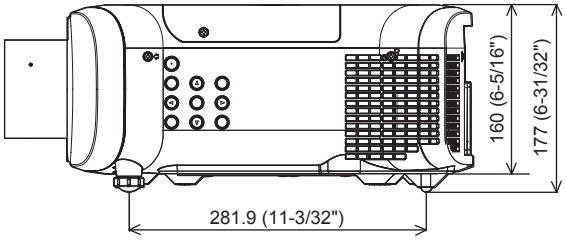
- The model numbers of accessories and optional accessories are subject to change without prior notice.

Dimensions

Unit: mm





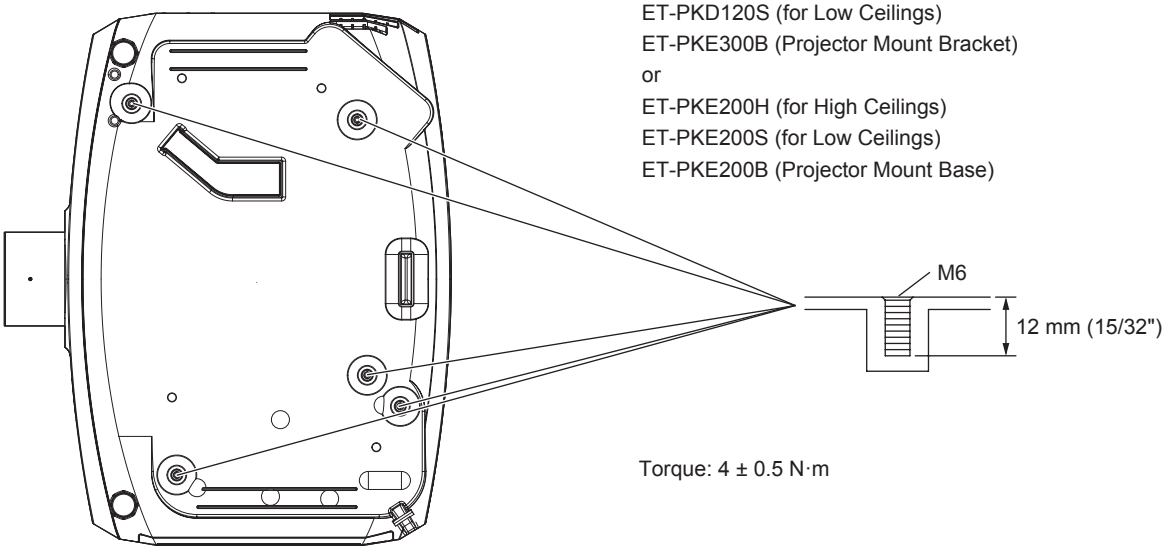


* The above dimensions are obtained when the standard zoom lens is attached.
* Dimensions vary for each product.

Precautions for Ceiling Mount Bracket

- When installing the projector to a ceiling, be sure to use the specified optional Ceiling Mount Bracket as the following combinations:
  ① ET-PKD120H (for High Ceilings) and ET-PKE300B (Projector Mount Bracket)
  ② ET-PKD120S (for Low Ceilings) and ET-PKE300B (Projector Mount Bracket)
  ③ ET-PKE200H (for High Ceilings) and ET-PKE200B (Projector Mount Base)
  ④ ET-PKE200S (for Low Ceilings) and ET-PKE200B (Projector Mount Base)
  Other combination is not available.
- When installing the projector, attach the drop-prevention wire supplied with the Ceiling Mount Bracket.
- Ask a qualified technician to do the installation work such as mounting the projector on the ceiling.
- Panasonic takes no responsibility for any accident, damage, damages to the projector resulting from use of a ceiling mount bracket not manufactured by Panasonic, optional Ceiling Mount Bracket combinations not specified , installation method not described in installation manual, optional accessories not specified or the inappropriate choice of location for installation, even if the warranty period of the projector has not expired.
- Unused products must be removed promptly by a qualified technician.
- Use a torque screwdriver or Allen torque wrench to tighten bolts to their specified tightening torques. Do not use electric screwdrivers or impact screwdrivers.
- Read the Installation Instructions for the Ceiling Mount Bracket for details.
- The model numbers of accessories and optional accessories are subject to change without prior notice.

Bottom view



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Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.



For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



For business users in the European Union
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union
These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

Note for the battery symbol (bottom two symbol examples):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

Panasonic Corporation

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