



Handheld Probe Coordinate Measuring Machine

XM Series

User's Manual

Read this manual before use.

After you read this manual, keep it in a safe place for future reference.

1	Getting Started
2	Installing the XM Series
3	Basic Operation
4	Single Measurement Mode
5	3D CAD Import
6	Run
7	Statistics/Analysis
8	Ribbon menu
9	Optional Settings and Security Settings
A	Appendices









Introduction

Read this manual before using the product in order to achieve maximum performance.

Keep this manual in a safe place after reading it so that it can be used at any time.

Symbols

The following symbols alert you to important messages.
Be sure to read these messages carefully.




	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Indicates a situation which, if not avoided, could result in product damage as well as property damage.
	Indicates cautions and limitations that must be followed during operation.
	Indicates additional information on proper operation.
	Indicates tips for better understanding or useful information.
	Indicates the reference pages in this manual or the reference pages in separate manuals.

Cautions



- (1) Unauthorized reproduction of this manual in whole or part is prohibited.
- (2) The contents of this manual may be changed for improvements without prior notice.
- (3) An utmost effort has been made to ensure the contents of this manual are as complete as possible. If there are any mistakes or questions, please contact a KEYENCE office listed in the back of the manual.
- (4) Regardless of item (3), KEYENCE will not be liable for any effect resulting from the use of this unit.
- (5) Any manuals with missing pages or other paging faults will be replaced.

Safety Information for XM Series

General Precautions

	<ul style="list-style-type: none"> • Do not use this product for the purpose of protecting the human body and a part of the human body. • This product is not intended for use as an explosion-proof product. Do not use this product in a hazardous location and/or potentially explosive atmosphere. • Do not use this product in an application that may cause death, serious injury or serious property damage due to a failure with this product should occur, such as nuclear power plants, on aircraft, trains, ships, or vehicles, used within medical equipment, playground equipment, roller coasters and other rides, etc.
	<ul style="list-style-type: none"> • If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. • You must perform a sufficient risk assessment for the machine where this product is to be installed prior to installing this product. Provide appropriate protective fail-safe measures on the machine independent from this product in case a failure with this product should occur.
	<ul style="list-style-type: none"> • You must verify that the XM Series are operating correctly in terms of functionality and performance before the start and the operation of the XM Series.

Handling of rechargeable battery pack (XM-B1)

	<ul style="list-style-type: none"> • Be sure to use the specified battery as there is a risk of fire or explosion when a battery other than the XM-B1 is used.
	<ul style="list-style-type: none"> • Never use the rechargeable battery pack in other devices except the specified one. If the rechargeable battery pack is used in a device with different operating conditions, the battery may be degraded faster or the device may be damaged. • Use an AC power supply cable that conforms to the plug shape used in each country. Use the cord set which is in accordance with the rating of XM Series and complies with the regulations and standards in the country or region in which XM Series is to be used.

● Recycling of rechargeable battery

Disposal methods of lithium ion battery differ among countries and regions. Follow the instructions in your area. When disposing of lithium ion batteries, remaining capacity may cause heat generation, explosion or fire due to contact with other metals. Be sure to cover the positive and negative terminals with adhesive insulation tape.

Precautions on LED products

The risk group of this product is as follows.

Name	Risk group*
Probe	Exempt Group

*LED product is classified as shown below according to IEC 62471.

- Exempt Group Does not pose any photobiological hazard.
- Risk Group 1 (low risk) Does not pose a hazard due to normal behavioral limitations on exposure.
- Risk Group 2 (moderate risk) Does not pose a hazard due to the aversion response to very bright light sources or due to thermal discomfort.
- Risk Group 3 (high risk) May pose a hazard even for momentary or brief exposure.


Trademarks

The company names and product names used in this manual are registered trademarks or the trademarks of their respective companies.


Important Instructions

Observe the following precautions to prevent malfunction of the XM Series and to ensure that it is used properly.

Precautions on use

 WARNING	<ul style="list-style-type: none"> • Be sure the power is turned off before connecting the cable or performing maintenance on it. Failure to do this may cause electric shock. • Do not forcefully bend or place heavy objects on the AC power cord set. This may damage the cable, causing fire or electric shock. Do not use a damaged cord set. • Use a power supply cable that conforms to the plug shape used in each country. Use the cord set which is in accordance with the rating of XM Series and complies with the regulations and standards in the country or region in which XM Series is to be used. • Do not allow foreign objects to fall into the XM Series. This may cause fire, electric shock, malfunctions, or accidents. • Do not attempt to disassemble or remodel the XM Series. Doing so may cause fire or electric shock.
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 CAUTION	<p>Glass is used for the probe. Physical shock may cause product damage and/or injury.</p>
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 NOTICE	<ul style="list-style-type: none"> • Use the XM Series in the correct supply voltage. Failure to do so may cause a product damage. • Do not wipe the XM Series with thinner or organic solvent. Doing so may damage the XM Series. If the XM Series has any dirt on it, wipe it with lens paper or a dry cloth. • Do not place any object on the XM Series package. Failure to do so may cause a product damage. • Before connecting or disconnecting the cable, be sure to turn off the power of the camera unit. Failure to do so may cause a product damage. • The XM Series uses precise optical components, do not apply vibration or shock. Failure to do so may damage the XM Series. • Do not remove the case cover of the XM Series or remodel the XM Series.
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Point


- The XM Series uses a hard disk drive (HDD) to store data. If the HDD fails, the data stored in the HDD may be lost. Make a backup of data in the HDD periodically. We recommend that important data be backed up immediately.
- During measurement, keep the ambient temperature constant.
- After turning on the power, a warm-up time of 60 minutes or more is required before starting measurement.
- When the camera and the marker of the probe has any dirt on it, blow it off with a blower for lenses or gently wipe off dirt with lens paper moistened with commercially available lens cleaner.

Measures to be taken when an error occurs


 WARNING	<p>Remove the power supply cable immediately in the following cases. Using the XM Series in an abnormal condition could cause fire, electric shock, or malfunction. Contact our office for repair.</p> <ul style="list-style-type: none"> • If water or debris enters the XM Series • If the XM Series is dropped or the case is damaged • If abnormal smoke or odor emanates from the XM Series
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Precautions on installation


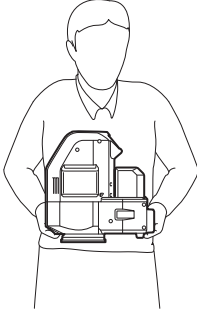
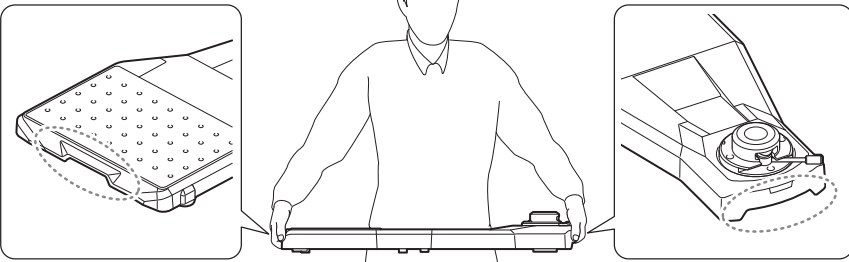

 CAUTION	<p>When mounting the device at a high location using an extension pole etc., carry out the work with a safe posture by using a stool and so on.</p>
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 NOTICE	<ul style="list-style-type: none"> • Install the XM Series on a horizontal surface. • Do not install the XM Series to the landscape orientation. Failure to do so may cause product damage. • Do not block the ventilation slots or the ventilation fans of the XM Series. Blocking the ventilation slots or ventilation fans may cause heat to build up inside the XM Series, resulting in product damage. • To fix the camera unit to the tripod, lock each part. • Avoid installing the XM Series in the following locations. Failure to do so may cause product damage. <ul style="list-style-type: none"> • Locations where a vibration or a mechanical shock is directly applied • Locations where the ambient temperature is out of the range of +10 to 35 degrees Celsius • Locations where the ambient humidity is out of the range of 20% to 80% RH (no condensation) • Locations where sudden temperature change occurs • Locations where the XM Series is directly exposed to wind from an air conditioner, etc. • Locations where volatile flammable material or corrosive gas exists • Locations where a lot of dust, salt, iron, or oil smoke exists • Locations where water, oil, or chemicals are sprayed • Locations where strong magnetic or electric fields are generated • Location where there is a large fluctuation of power supply voltage
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Precautions on storage

 NOTICE	<p>Avoid storing the XM Series in the following locations.</p> <ul style="list-style-type: none"> • Locations where the ambient temperature is out of the range of +10 to 35 degrees Celsius • Locations where the ambient humidity is out of the range of 20% to 80% RH (no condensation) • Locations where sudden temperature change occurs • Locations where the XM Series may be exposed to the sunlight, wind, or rain directly • Near volatile flammable material or corrosive chemicals • Locations where water, oil, or chemicals are sprayed • Unstable locations where the XM Series may fall
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Precautions on transportation

	<ul style="list-style-type: none">• When carrying the camera unit, disconnect the cables and hold the front and back of the camera. Otherwise, injury to the human body may result when the camera unit falls. Holding other sections when carrying may cause product damage.  <ul style="list-style-type: none">• When carrying the head base of the XM-H5000/XM-H5000A, hold the front and back of the base. Otherwise, injury to the human body may result when the XM Series falls. Holding other sections when carrying the head base may cause product damage. 
	<ul style="list-style-type: none">• When disconnecting the cable for transportation, be sure to turn off the power of camera unit.• The XM Series uses precise optical components, do not apply vibration or shock. Failure to do so may damage the XM Series.• During transportation, be sure to use the packing material specified by KEYENCE and to pack the product in the same way as the time of delivery.

Precautions on Regulations and Standards

CE and UKCA Markings

KEYENCE Corporation has confirmed that this product complies with the essential requirements of the applicable EU Directive(s) and UK regulations, based on the following specifications. Be sure to consider the following specifications when using this product in the Member States of European Union and United Kingdom.

● EMC directive *(CE) and Electromagnetic Compatibility Regulations (UKCA)

- Applicable Standards (BS)EN ISO 12100
(BS)EN61010-1
(BS)EN62471
- Overvoltage category I
- Use this product under pollution degree 2.
- Use this product at the altitude of 2000m or less.
- Indoor use only
- Use the specified AC adapter (OP-88369) to supply power.
- Wrap the ferrite core below around the various cables.
Probe cable: 2 turns at a position within 200 mm from the connector
Camera cable: 2 turns at a position within 200 mm from the connector on the camera unit side
Cable connected to external IO: 2 turns at a position within 200 mm from the connector
Type: ZCAT3035-1330 (TDK)

CSA Certificate

This product complies with the following CSA and UL standards and has been certified by CSA.

- Applicable Standard CAN/CSA C22.2 No.61010-1
UL61010-1

Be sure to consider the following specifications when using this product as a product certified by CSA.

- Overvoltage category I
- Use this product under pollution degree 2.
- Use this product at the altitude of 2000m or less.
- Indoor use only
- Use the specified AC adapter (OP-88369) to supply power.

RF exposure:

When using XM-C5000 with XM-WA, please maintain at least 20 cm separation distance from the radiator to all persons and must not be collocated or operating in conjunction with any other antenna or transmitter unless they have been demonstrated to meet with FCC/ISED requirements.

Lors de l'utilisation du XM-C5000 avec le XM-WA, veuillez maintenir une distance de séparation d'au moins 20 cm entre le radiateur et toutes les personnes et ne doit pas être colocalisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, sauf s'il a été démontré qu'il est conforme à la FCC/ISED exigences.

Hardware Key

CE and UKCA Markings

KEYENCE Corporation has confirmed that this product complies with the essential requirements of the applicable EU Directive(s) and UK regulations, based on the following specifications. Be sure to consider the following specifications when using this product in the Member States of European Union and United Kingdom.

● EMC Directive

- Applicable standard EMI : EN 55032 :2015
EMS: EN 55035 :2017

These specifications do not give any guarantee that the end-product incorporated with the hardware key complies with the essential requirements of the EMC Directive. The manufacturer of the end-product is solely responsible for the compliance on the end-product itself according to the EMC Directive.

FCC/ISED

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. This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'exploitation est soumise aux deux conditions suivantes :

1. Cet appareil ne doit pas provoquer d'interférences.
2. Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

This product complies with the following North American regulations.

Applicable regulation FCC Part15 Subpart B, Class A Digital Device ICES-003, Class A Digital Apparatus

Note: 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 instruction 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 CAUTION Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1

Getting Started

This chapter explains the contents of the package and the names and functions of individual parts.

1

Getting Started

Checking the Package	1-2
System Configuration	1-3

Checking the Package

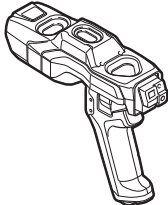
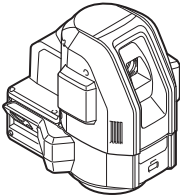
List of packed items

1
Getting Started

Take out the XM Series from the package and check that the following items are included. KEYENCE ships each package with the utmost care and attention. Should there be any missing or damaged items, contact your KEYENCE representative.

■ XM-5000/5000A

- Camera unit (XM-P5000/P5000A)1
- Probe (XM-P5000/P5000A)1



- Extension rod1
- Stylus1
- Transport case1



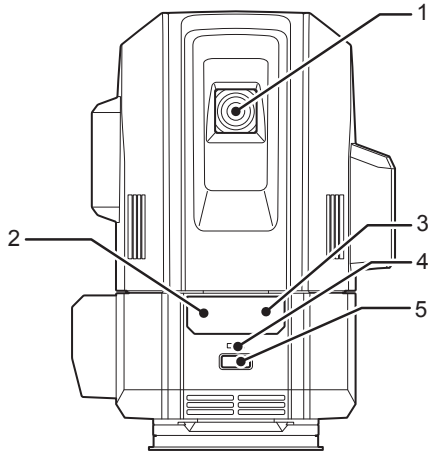
■ Accessories

- | | | |
|---|---|-------------------------------------|
| □ Installation disk1 | □ XM Series User's Manual
(This document)1 | □ AC Power Cord2 |
| □ Measurement target for practice1 | □ Screw1 | □ Stylus calibration JIG1 |
| □ Mouse1 | □ Cross-shaped stylus center1 | □ Hexagon wrench2 |
| □ AC adapter camera unit1 | □ USB camera cable1 | |
| □ Probe cable1 | □ Probe stand1 | |
| □ Hand strap (for fall prevention)1 | □ terminal rack1 | |

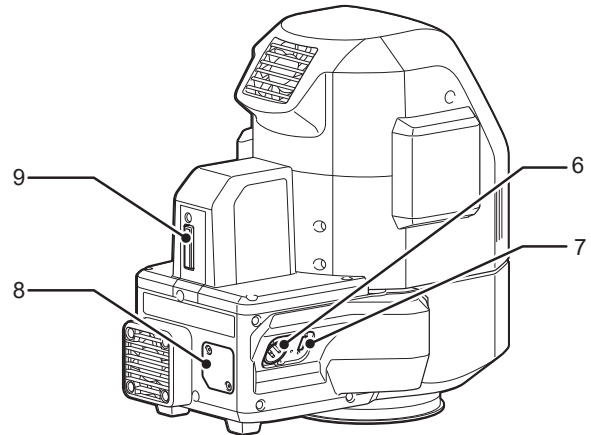
System Configuration

Names of parts

■ Camera unit



- 1 Camera**
Camera for coordinate measurement.
- 2 Probe search camera**
Camera to determine the position of the probe.
- 3 Infrared communication projector**
Infrared communication receiver for probe.
- 4 Power status indicator LED**
Lit in orange when powering up.
Lit in blue when power is on.
- 5 POWER button**
Turns the power supply of the camera unit ON/OFF.



- 6 Power connector**
Connect the AC adapter.
- 7 USB port**
Connect the cable connecting the camera to the PC.
- 8 Installation location of WLAN module (XM-5000 only)**
Install the WLAN module for wireless communication with probe.
- 9 External input/output terminal**
Connect the wiring for the external device input and output.

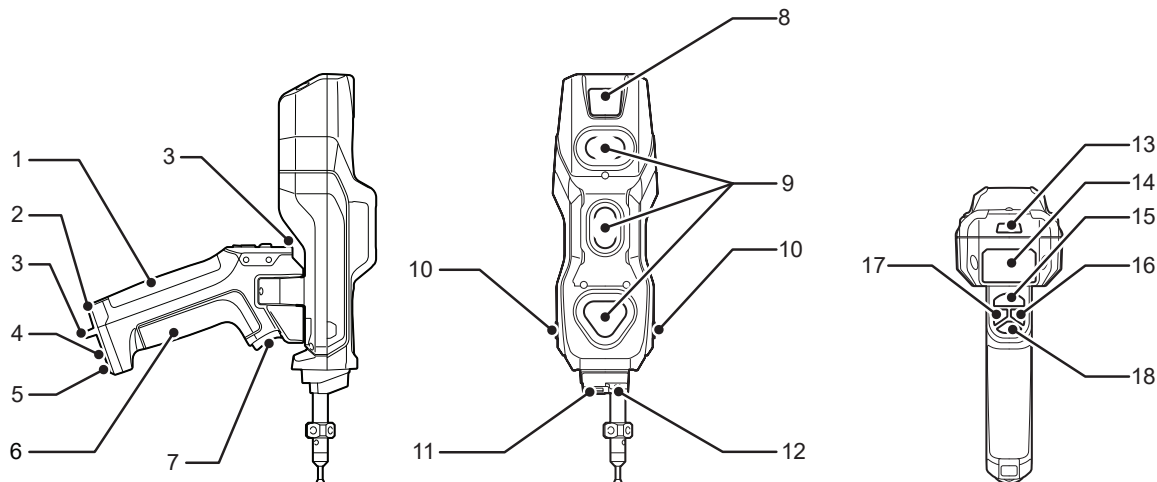
1

Getting Started

■ Probe

1

Getting Started



1 Rechargeable battery cover (XM-P5000 only)
A rechargeable battery is built into the system.

2 Rechargeable battery cover lock (XM-P5000 only)
Unlocks the rechargeable battery cover.

3 Strap hole
Used to attach the strap.

4 USB port
Connect the probe cable to the PC.

5 Charging indicator lamp
Lit when charging via the USB port.

6 Grip
Hold the grip to operate the probe.

7 MEASURE/CAPTURE button
Measures the coordinates of the stylus. Captures the image during camera start-up.

8 Infrared communication receiver
Infrared communication receiver for the camera unit.

9 Marker (x7)
Used to recognize where the marker is to measure where the probe is and its position, and also measure the coordinate of stylus.

10 Status LED (x2)
Lights depending on the probe status.
• Green : measurable
• Red : not measurable
• Yellow : camera capture only
• OFF : Disabled

11 Probe camera
A camera to take navigation images.

12 Stylus insertion area
Insert the stylus.

13 POWER button
Used to turn the probe power ON and OFF.

14 Compact monitor
Displays the device status and other information.

15 MEASURE button
Measures the coordinates of the stylus.

16 OK button
Determine the elements based on the measurement result.

17 CANCEL button
Cancel the previous measurement point.

18 CAMERA button
Switches the camera ON/OFF.

2

Installing the XM Series

This chapter explains the installation, connection, and initial settings of the XM Series.

Before Installation	2-2
Preparation and Connection of XM Series.....	2-3
Mounting the Terminal Rack	2-8
Installing the Input/Output Cables	2-11

2

Installing the XM Series

Before Installation

Installation environment

The installation environment should meet the following conditions.

Temperature	10°C to 35°C / 50°F to 95°F
Humidity	20% to 80% RH (no condensation)

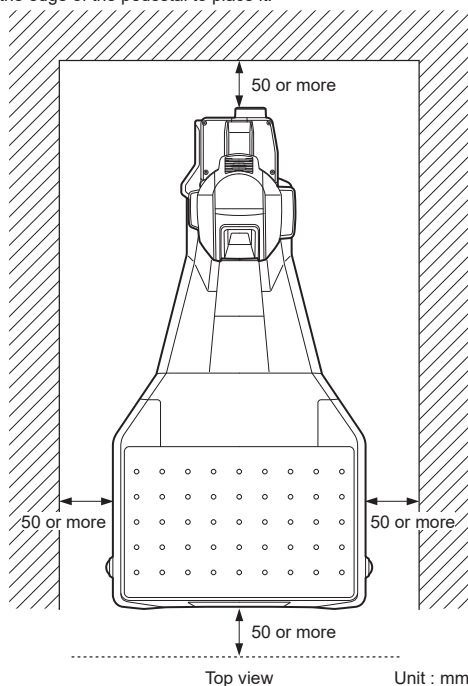
2

Installing the XM Series

■ Installation location of head base (XM-5000/ XM-H5000)

Install the head in a location where the following conditions are met.

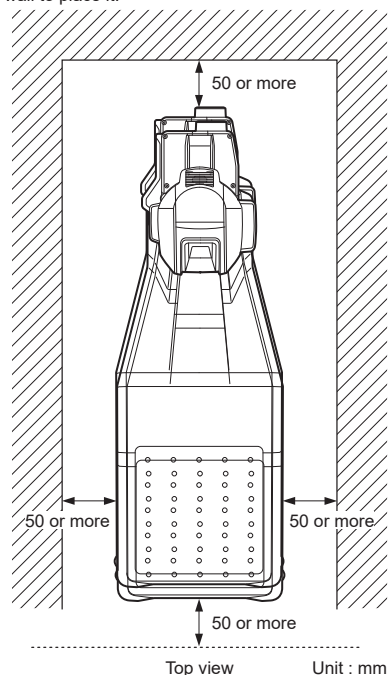
- Level and horizontal surface that is free of vibration.
- Distance of 50 mm or more from the outer wall.
- Keep the front part of the XM Series head 50 mm or more away from the edge of the pedestal to place it.



■ Installation location of head base (XM-5000A/ XM-H5000A)

Install the head in a location where the following conditions are met.

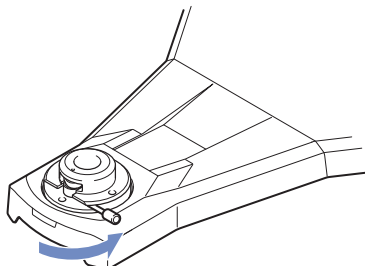
- Level and horizontal surface that is free of vibration.
- Keep the front part of the XM Series head 50 mm or more away from the edge of the pedestal to place it.
- Keep the rear part of the XM Series head 50 mm or more away from the outer wall to place it.
- Keep the sides of the XM Series head 50 mm or more away from the outer wall to place it.



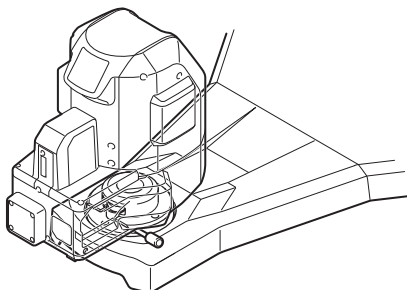
Preparation and Connection of XM Series

Mounting on head base

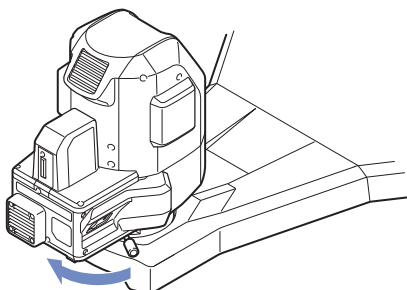
- 1 Set the lock lever of the XM-H5000/XM-H5000A in the direction of the arrow.



- 2 Insert the camera unit vertically.

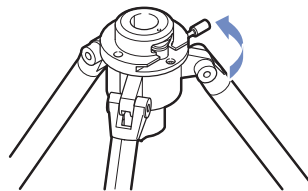


- 3 Fasten the lock lever in the direction of the arrow to secure the camera.

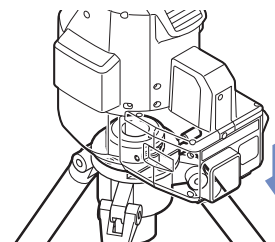


Mounting on the XM-S1 (camera unit tripod)

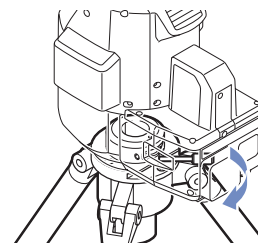
- 1 Set the lock lever of the XM-S1 (camera unit tripod) in the direction of the arrow.



- 2 Insert the camera unit vertically.



- 3 Fasten the lock lever in the direction of the arrow to secure the camera.



2

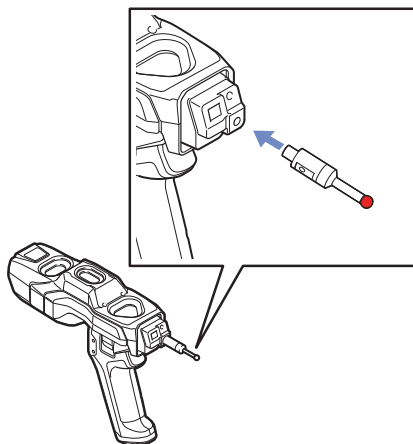
Installing the XM Series

Inserting the Stylus

- 1 Connect the stylus and the stylus rod.



- 2 Insert the stylus into the front of the probe.



NOTICE

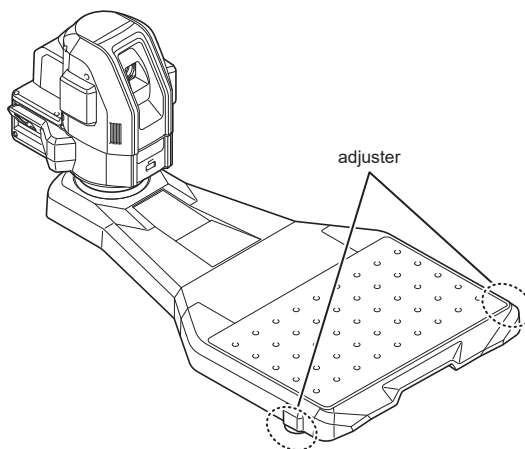
A recommended tightening torque is 1 Nm.

Adjusting the adjuster

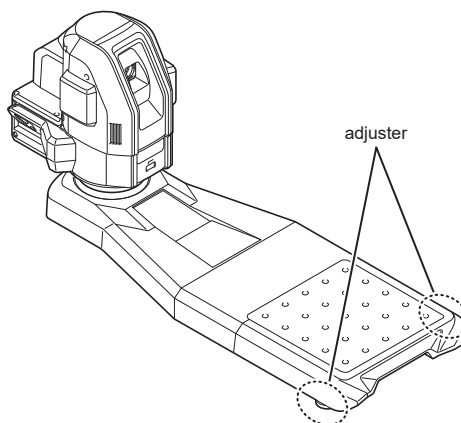
- 1 Adjust the adjuster.

Adjust the height of the adjusters on both left side and right side so there is no looseness in the head base.

● XM-H5000



● XM-H5000A

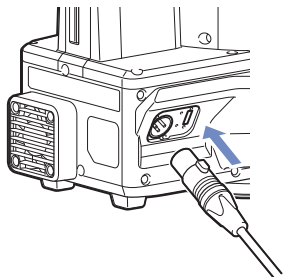


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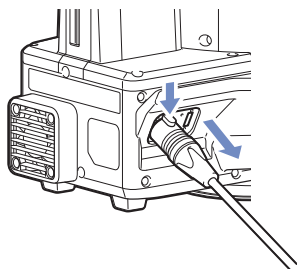
Installing the XM Series

Connecting the AC adapter

- 1 Insert the connector of the AC adapter fully into the power connector of the camera unit until you hear a click sound.

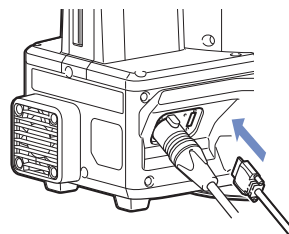


To remove the adapter, pull it out while pressing on the button at the top.



Connecting the camera unit and PC

- 1 Connect the camera cable to the USB port of the camera unit.



- 2 Connect the camera cable to the USB port of the PC.

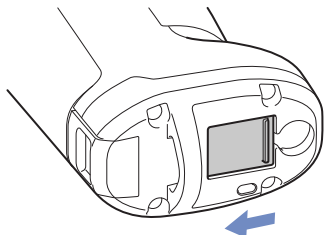
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Installing the XM Series

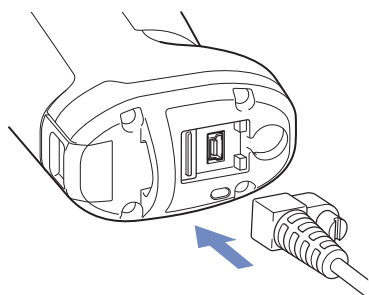
Connecting the probe and PC

Connect the probe and PC of the XM-5000A with a USB cable. XM-5000 can be connected by wireless communication or USB communication.

- 1 Open the cover of the probe connector.



- 2 Connect the probe cable to the USB port of the probe.

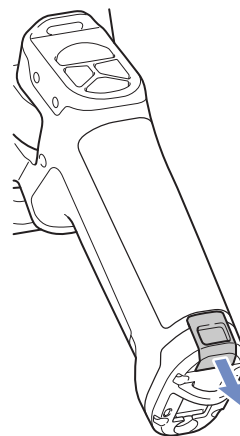
**NOTICE**

A recommended tightening torque is 0.2 Nm.

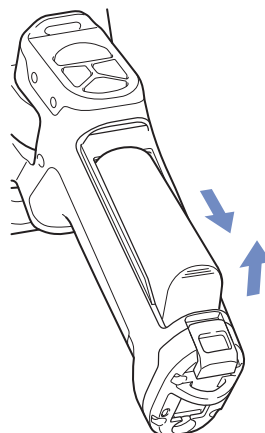
- 3 Connect the probe cable to the USB port of the PC.

Replacing the rechargeable battery (XM-B1) (XM-P5000 only)

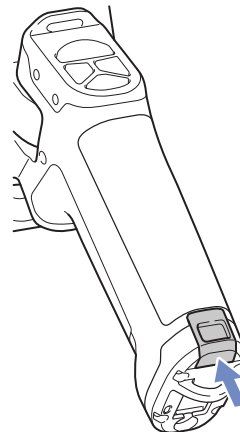
- 1 Pull the rechargeable battery cover lock and remove the rechargeable battery cover.



- 2 Replace the rechargeable battery.



- 3 Attach the rechargeable battery cover.



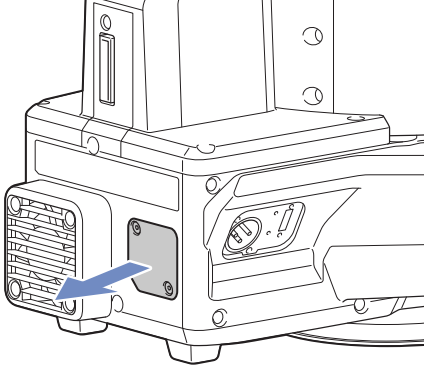
2

Installing the XM Series

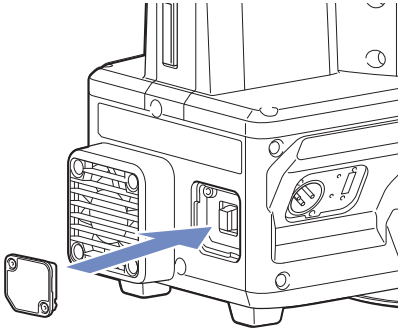
Installation of WLAN module (XM-5000 only)

■ Mounting on camera unit

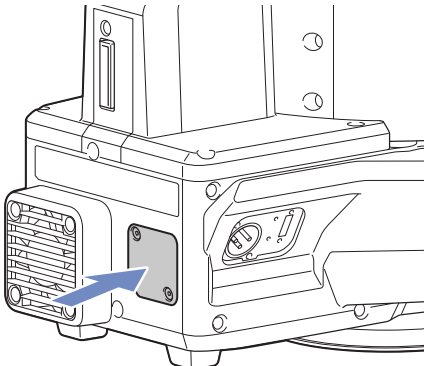
1 Remove the WLAN module cover.



2 Insert the WLAN module.



3 Attach the WLAN module cover.

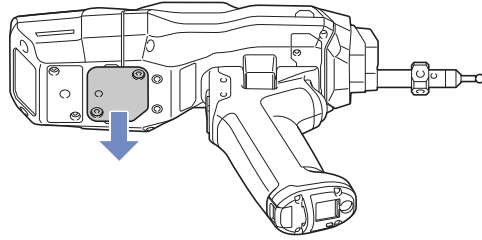


NOTICE

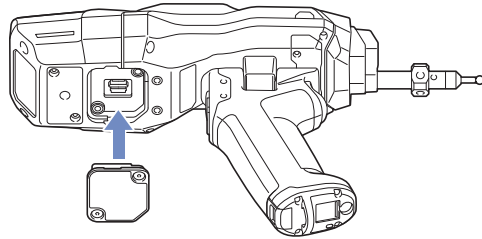
A recommended tightening torque is 0.3 Nm.

■ Mounting on probe

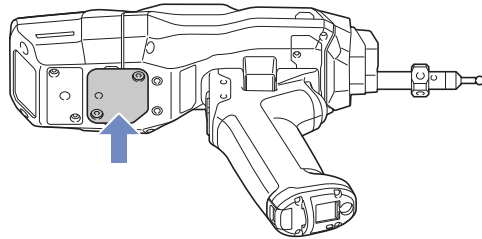
1 Remove the cover.



2 Insert the WLAN module.



3 Attach the WLAN module cover.



NOTICE

A recommended tightening torque is 0.3 Nm.

Two WLAN modules are same and both one can be used in camera unit and probe.

2

Installing the XM Series

Mounting the Terminal Rack

How to use the terminal rack

An explanation on how to use the terminal rack is given here.

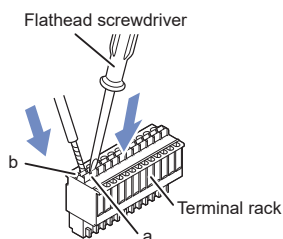
► Important

- Use electric wire of AWG20 - AWG26.
- Treat approx. 8 mm at the end of the wire.
- Do not solder (preliminary soldering, final soldering) the treated end of the wire.
- Insert the wire all the way into the terminal rack before use.
- Do not use a crimped terminal etc. and connect the wire directly to the terminal rack.

2

Installing the XM Series

- 1 Plug the wire into Part b while pushing in Part a of the terminal rack with a screwdriver.

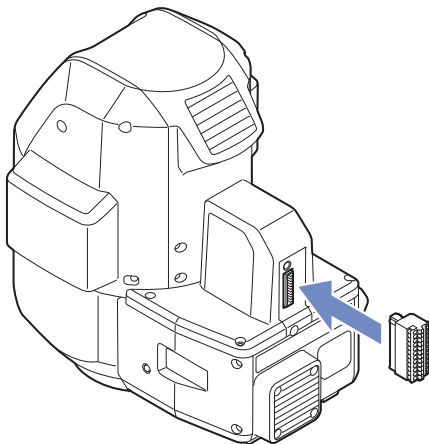


- 2 Remove the screwdriver once it is plugged in all the way to the rear.

⚠ Point

Pull the wire lightly to make sure it is secured.

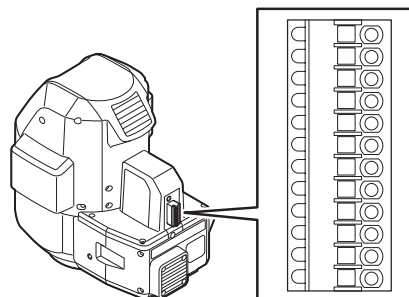
- 3 Attach the terminal rack to the rear of the camera unit.



NOTICE

Connect the terminal rack with the power supply of the camera unit turned off.

Input/output

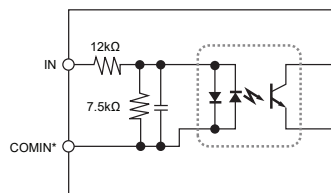


Pin number	Pin	Allocation*1	N.O./N.C.	Contents
1	Input 1	Measure	N.O.	Measurement input
2	Input 2	OK	N.O.	Confirmation input
3	COMI	-	-	Common input
4	Output 1	OK	N.O.	"OK" judgement output
5	Output 2	NG	N.O.	"NG" judgement output
6	Output 3	FAIL	N.O.	"FAIL" judgement output
7	Output 4	MEASURE	N.O.	"Measuring" output
8	Output 5	TOUCH	N.O.	"TOUCH" output
9	Output 6	READY	N.O.	"READY" output
10	COMO	-	-	Common output
11	Output 7	Error	N.C.	System error output
12	COMO	-	-	Common output

* 1 Default value. Can be changed by the settings.

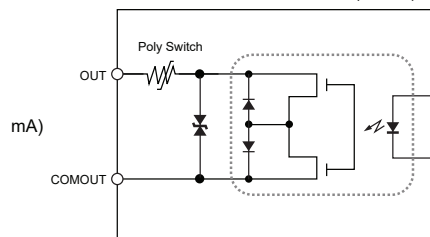
Input circuit

- Maximum voltage applied :26.4V
- ON voltage :19 V or more
- OFF current : 0.1 mA or less



Output circuit

- Maximum voltage applied :30V
- Maximum sink current :50mA
- Leakage current :0.1 mA or less
- Residual voltage :1.4 V or less (50 mA)
1.0 V or less (20 mA)



⚠ Point

This device uses a photo MOSFET as an output element so it can be connected to either a NPN input of PNP input.

3

Basic Operation

This chapter explains the basic usage of the XM Series and its operation flow.

Powering Up and Shutting Down the System.....	3-2
How to Use the Probe	3-4
Stylus registration.....	3-5
Basic Operation of the XM Series	3-7
Measurement Mode and Operation Flow	3-14

3

Basic Operation

Powering Up and Shutting Down the System

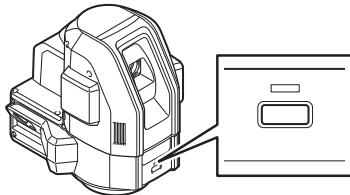
Powering up the system

Important

Before powering up the system, check that the camera unit and PC are connected properly.

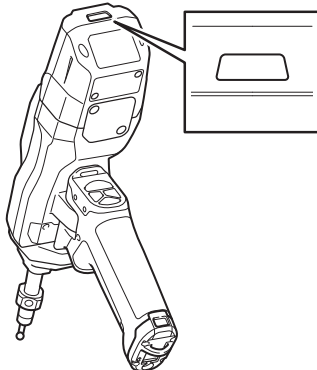
■ "Preparation and Connection of XM Series" (Page 2-3)

1 Press POWER of the camera unit.



The power supply status indicator on top of POWER will be lit in blue.

2 Press POWER on the probe.



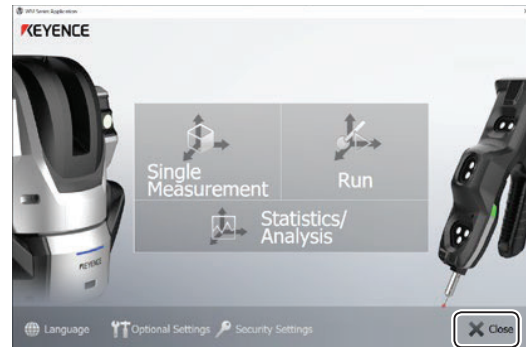
3 Start the PC and double click the [XM Series Application] icon on the desktop.

The main window of the [XM Measurement Settings Application] will appear.



Shutting Down the System

1 Click [Close] of the [XM Series Application].

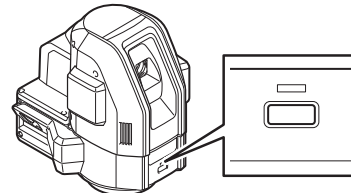


[Close]

Reference

You can also end by clicking [Close] at the top right of each screen.

2 Press POWER of the camera unit.



The power supply status indicator on top of POWER will be lit in orange.

3 Press POWER on the probe.

The power supply of the probe will turn off.

Appendices

Installing and uninstalling the application..... A-2

Specifications A-4

External dimension drawing..... A-6

Index A-7

A

Specifications

■ Camera unit

Item		XM-5000	XM-5000A
Maximum measurement length	W×D×H	2000×1000×1000 mm	300×300×300 mm
Pointing error accuracy		$\pm (7+5L/1000) \mu\text{m}^{*2}$	$\pm (7+5L/1000) \mu\text{m}^{*1}$
Repeat accuracy		$\pm 3 \mu\text{m}$	
Minimum display unit	Distance	0.001mm	
	Angle	0.0001°	
Camera unit rotation angle	Theta rotation	$\pm 40^\circ$	$\pm 25^\circ$
	Tilt rotation	$\pm 25^\circ$	$\pm 20^\circ$
Weight		Approx. 8 kg	
External input	2 Input	Maximum voltage applied: 26.4 V ON voltage: 19 V or more OFF current: 0.1 mA or less	
External output	7 Output (OK/NG/FAIL/MEASURE/ ERROR/TOUCH/STROBE)	Maximum voltage applied: 30 V Maximum sink current: 50 mA Leakage current: 0.1 mA or less Residual voltage: 1.4 V or less (50 mA) 1.0 V or less (20 mA)	
Probe	Number that can be connected	1	
Communication unit	WLAN communication	IEEE802.11b/g/n	-
	USB communication	USB3.0	
	Infrared communication	945nm	
Power supply		Supplied from special AC adapter	
Rating	Rated voltage	DC24V	
	Consumption current	1.7A	
Environment	Ambient temperature	+10 to 35 °C	
	Relative humidity	20 to 80% RH (no condensation)	

* 1 Refer to ISO10360-2, L can be any measured length (unit: mm) when the size is within a range of 200 × 200 × 150 mm and the ambient temperature range is 23°C ± 1°C

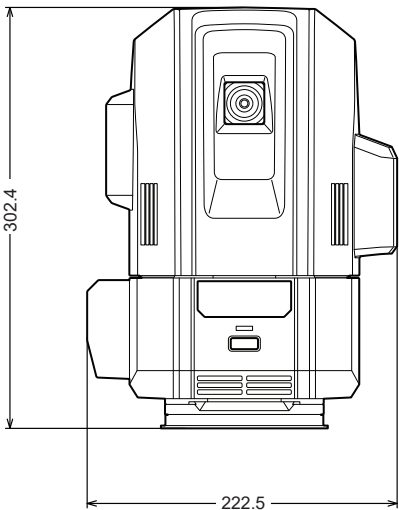
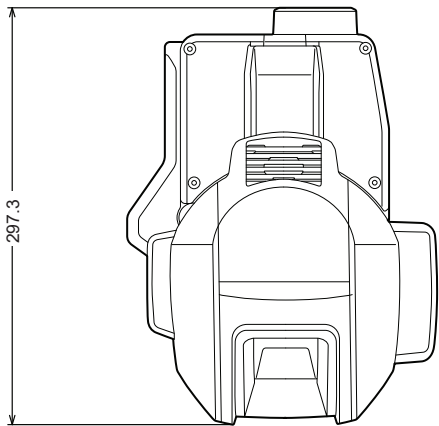
* 2 Refer to ISO10360-2, L can be any measured length (unit: mm) when the size is within a range of 800 × 400 × 500 mm and the ambient temperature range is 23°C ± 1°C

■ Probe

Item		XM-5000	XM-5000A
Marker	Marker number	7	
Light source		870nm	
Corresponding stylus		M5	
Display area	Display method	OLED	
	Resolution	96×39pixel	
Hard key		Measure, confirm, cancel, camera, trigger, power supply	
Communication unit	WLAN communication	IEEE802.11b/g/n	-
	USB communication	USB2.0	
	Infrared communication	945nm	
Power supply	Battery	Special lithium ion battery pack	-
	Capacity	3250mAh	-
	Charging time	Approx. 6 hours	-
	Continuous operating time	Approx. 8 hours	-
Rating	USB connected	Rated voltage	DC5V
		Consumption current	1A
	When running on batteries	Rated voltage	DC3.63V +10%/-1%
		Consumption current	1.25A
Environment	Ambient temperature	+10 to 35 °C	
	Relative humidity	20 to 80% RH (no condensation)	
Weight		Approx. 570 g	

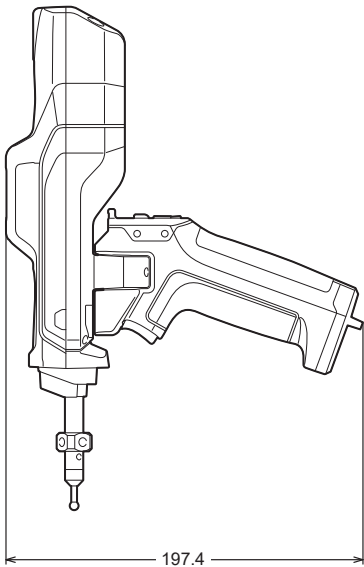
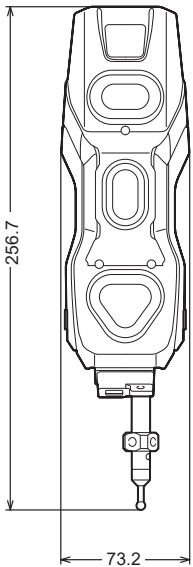
External dimension drawing

■ Camera unit

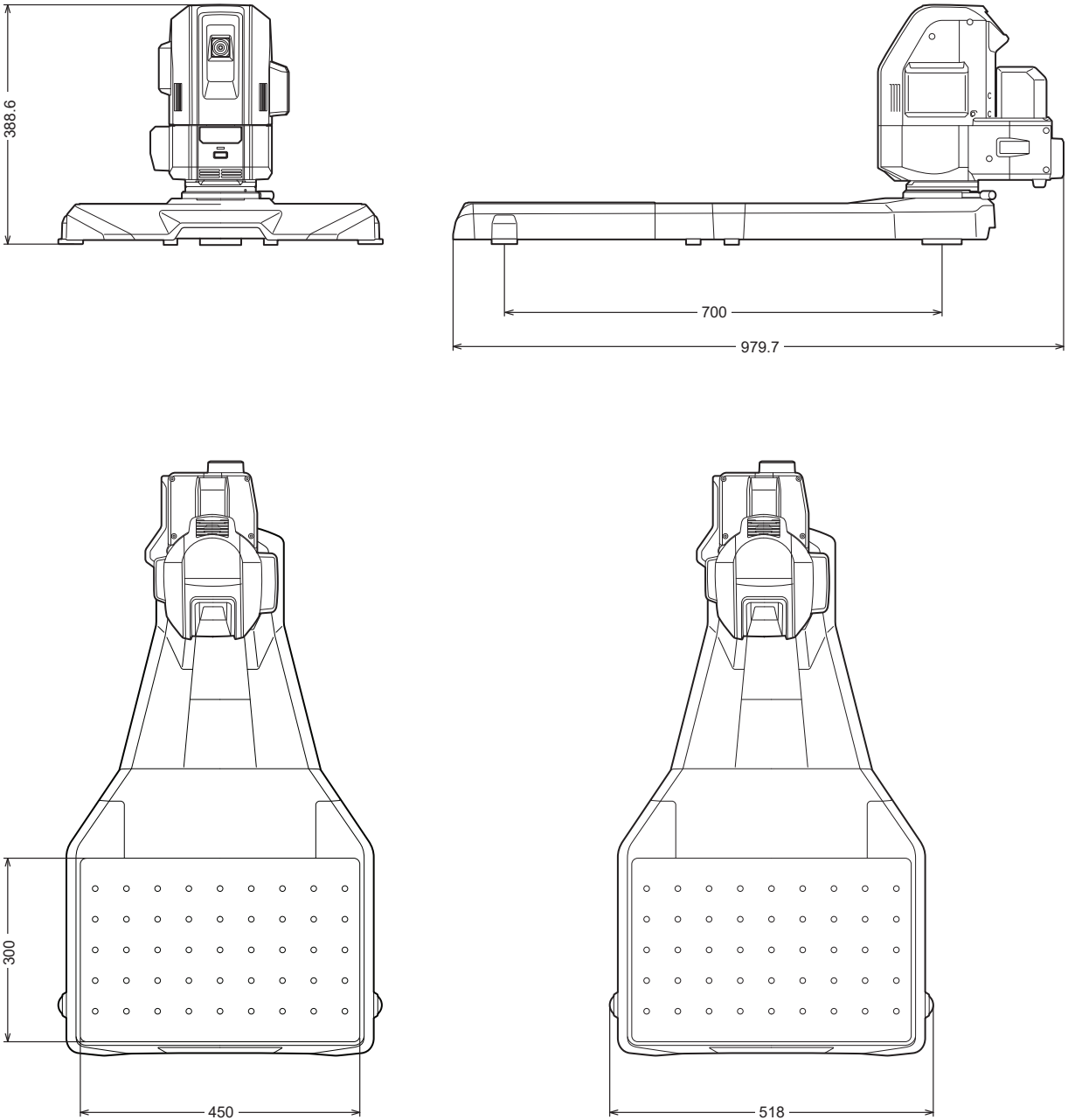


A

■ Probe

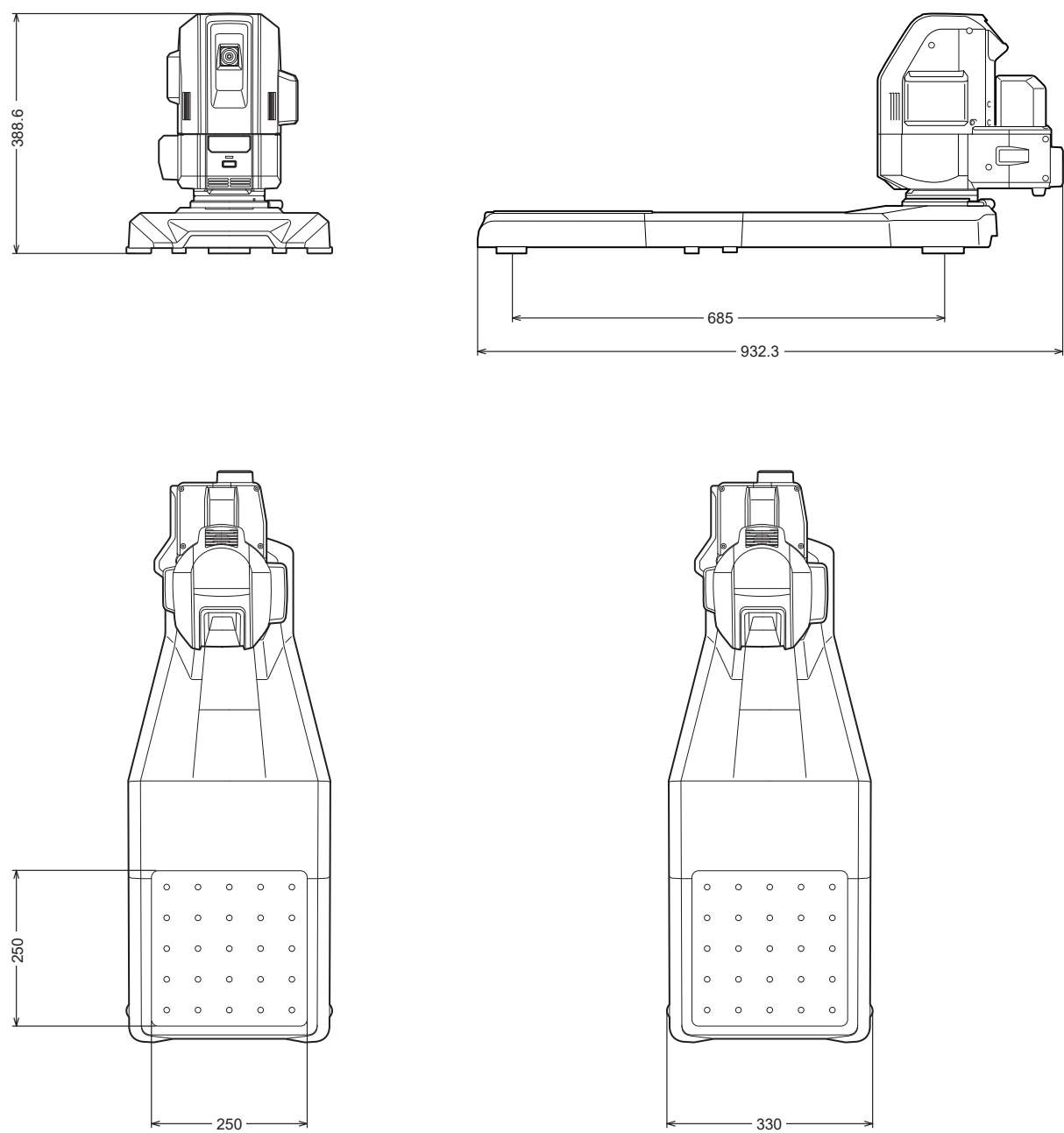


■ Head base (XM-5000/XM-H5000)



A

■ Head base (XM-5000A/XM-H5000A)



A

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KEYENCE CORPORATION

1-3-14, Higashi-Nakajima, Higashi-Yodogawa-ku, Osaka, 533-8555, Japan PHONE: +81-6-6379-2211

www.keyence.com/glb

AUSTRIA

Phone: +43 (0)2236 378266 0

BELGIUM

Phone: +32 (0)15 281 222

BRAZIL

Phone: +55-11-3045-4011

CANADA

Phone: +1-905-366-7655

CHINA

Phone: +86-21-3357-1001

CZECH REPUBLIC

Phone: +420 220 184 700

FRANCE

Phone: +33 1 56 37 78 00

GERMANY

Phone: +49-6102-3689-0

HONG KONG

Phone: +852-3104-1010

HUNGARY

Phone: +36 1 802 7360

INDIA

Phone: +91-44-4963-0900

INDONESIA

Phone: +62-21-2966-0120

ITALY

Phone: +39-02-6688220

KOREA

Phone: +82-31-789-4300

MALAYSIA

Phone: +60-3-7883-2211

MEXICO

Phone: +52-55-8850-0100

NETHERLANDS

Phone: +31 (0)40 206 6100

PHILIPPINES

Phone: +63-(0)2-8981-5000

POLAND

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Phone: +40 (0)269 232 808

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Phone: +66-2-369-2777

UK & IRELAND

Phone: +44 (0)1908-696-900

USA

Phone: +1-201-930-0100

VIETNAM

Phone: +84-24-3772-5555

