



# **Rectangular Gauge Block Accessories for Gauge Blocks over 100 mm**

**BMX-S1**

**User's Manual**

**- Instructions for use -**

Read this User's Manual thoroughly before operating the instrument. After reading, retain it close at hand for future reference.

No. 99MAK600B1

Date of publication: May 1, 2019 (2)



---

## ■ Correspondence of product names and model numbers

Product name	Model number
Rectangular Gauge Block Accessories for Gauge Blocks over 100 mm	BMX-S1

## ■ Notice regarding this document

- Mitutoyo Corporation assumes no responsibilities for any damage to the instrument, caused by its use not conforming to the procedure described in this User's Manual.
- Upon loan or transfer of this product, be sure to attach this User's Manual to the product.
- In the event of loss or damage to this manual, immediately contact a Mitutoyo sales office or your dealer.
- Thoroughly read this manual to comprehend its contents before using this product.
- Particularly, for full understanding of information, carefully read "Safety Precautions" and "Precautions for Use" at the outset of this manual before using the instrument.
- The contents in this document are based on the information current as of May, 2019.
- No part or whole of this manual may be transmitted or reproduced by any means without prior written permission of Mitutoyo Corporation.
- The corporation, organization and product names that appear in this manual are their trademarks or registered trademarks.





© 2018-2019 Mitutoyo Corporation. All rights reserved.

---




## CONVENTIONS USED IN MANUALS

Conventions used in Mitutoyo's User's Manual are roughly divided into three types (safety reminders, prohibited and mandatory actions, and referential information and locations). Moreover, these conventions include general warnings and specific warnings. Specific warning symbols are provided with concrete pictograms inside of them.

### ■ Safety reminder conventions and wording warning against potential hazards

 <b>DANGER</b>	Indicates an immediately hazardous situation which, if not avoided, will result in serious injury or death.
 <b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.
 <b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, may result in minor injury.
<b>NOTICE</b>	Indicates a potentially hazardous situation which, if not avoided, may result in property damage.
	Alerts the user to a specific hazardous situation that means "Caution, risk of electric shock".

### ■ Conventions and wording indicating prohibited and mandatory actions

	Indicates concrete information about prohibited actions.
	Indicates concrete information about mandatory actions.
	Indicates that grounding needs to be implemented.

---

## ■ Conventions and wording indicating referential information or referential locations

**Tips** Indicates referential information such as that for when the operating methods and procedures which are printed in these sentences are to be applied to specific conditions.



Indicates referential locations if there is information that should be referred to in this document or an extraneous manual.

Example: For details about xxx, see  "2 Accessory Applications" (page 3).

## Safety Precautions

Read these "Safety Precautions" thoroughly before operating the system to use it properly.

These safety precautions include such information as to prevent an injury to the operator and other persons or damage to property. Be sure to observe the precautions.

### **WARNING**

This product has sharp ends and other sharp parts that can cause injury or loss of eyesight. It must be carefully handled.

### **NOTICE**

Do not exert external forces to this product. Doing so may cause malfunction or breakage.

---

## Precautions for Use

### ■ Product applications and handling

- This product is an accessory set for rectangular gauge blocks over 100 mm. Do not use it for any purposes other than its prescribed uses such as measuring and precision scribing.
- This product is precision equipment. It must be carefully handled. Be careful not to apply excessive shock or force to any of the parts during storage or use.
- Before use, use a soft cloth soaked in solvent, etc., to wipe off any rust-preventive oil or dirt. Do not use organic solvents such as thinner or benzine.

### ■ Operating environment

Only use this product in the following environments.

- Areas free of dirt and dust
- Areas free of vibrations
- Areas in the recommended temperature of 20 °C or so with minimal temperature change

#### **Tips**

When using this product, be sure to perform sufficient thermal stabilization.

- On the surface plate (recommended)

Avoid using the product in the following environments.

- Areas directly subject to drafts of hot air, cool air, or air conditioning

### ■ Disassembly or modification of the holder and base

#### **CAUTION**

Do not disassemble or modify the holder or the base.  
Doing so may cause an injury.

### ■ Maintenance

After use, wipe dirt off the product with a soft cloth soaked in solvent, etc., and then apply anti-rust oil in a thin layer (for rust prevention). Do not use organic solvents such as thinner or benzine.

#### **Tips**

- Recommended solvent: Normal heptane
- Recommended anti-rust oil: MOLYKOTE SUPERGLISS (Dow Corning Toray Co.,Ltd.)

---

## **Export Control Compliance**

This product falls into the Catch-All-Controlled Goods and/or Catch-All-Controlled Technologies (including Programs) under Category 16 of Appended Table 1 of the Export Trade Control Order or under Category 16 of the Appended Table of Foreign Exchange Control Order, based on the Foreign Exchange and Foreign Trade Act of Japan.

If you intend re-export of the product from a country other than Japan, re-sale of the product in a country other than Japan, or re-provision of the technology (including program), you are obligated to observe the regulations of your country.

Also, if an option is added or modified to add a function to this product, this product may fall under the category of List-Control Goods and/or List-Control Technology (including Programs) under Category 1 - 15 of Appended Table 1 of the Export Trade Control Order or under Category 1 - 15 of the Appended Table of Foreign Exchange Control Order, based on Foreign Exchange and Foreign Trade Act of Japan. In that case, if you intend re-export of the product from a country other than Japan, re-sale of the product in a country other than Japan, or re-provision of the technology (including program), you are obligated to observe the regulations of your country. Please contact Mitutoyo in advance.

## **Notes on Export to EU Member Countries**

When you intend export of this product to any of the EU member countries, you may be required to provide User's Manual(s) in English and EU Declaration of Conformity in English (under certain circumstances, User's Manual(s) in the destination country's official language and EU Declaration of Conformity in the destination country's official language). For detailed information, please contact Mitutoyo in advance.

## **Disposal of Products outside the European Union and Other European Countries**

Please follow the official instruction in each community and country.

---

## Warranty

In the event that this product should prove defective in workmanship or material, within one year from the date of original purchase for use, it will be repaired or replaced, at Mitutoyo's option, free of charge upon its prepaid return to Mitutoyo, without prejudice to the provisions of the Mitutoyo Software End User License Agreement.

If this product fails or is damaged for any of the following reasons, it will be subject to a repair charge, even if it is still under warranty.

- Failure or damage owing to fair wear and tear
- Failure or damage owing to inappropriate handling, maintenance or repair, or to unauthorized modification
- Failure or damage owing to transport, dropping, or relocation of the instrument after purchase
- Failure or damage owing to fire, salt, gas, abnormal voltage, lightning surge, or natural disaster
- Failure or damage owing to use in combination with hardware or software other than those designated or permitted by Mitutoyo
- Failure or damage owing to use in ultra-hazardous activities

This warranty is effective only where the instrument is properly installed and operated in conformance with the instructions in this manual within the original country of the installation.

EXCEPT AS SPECIFIED IN THIS WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES OF ANY NATURE WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OR WARRANTY ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE MAXIMUM EXTENT ALLOWED BY APPLICABLE LAW.

You assume all responsibility for all results arising out of its selection of this product to achieve its intended results.

---

## **Disclaimer**

IN NO EVENT WILL MITUTOYO, ITS AFFILIATED AND RELATED COMPANIES AND SUPPLIERS BE LIABLE FOR ANY LOST REVENUE, PROFIT, OR DATA, OR FOR SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT EVEN IF MITUTOYO OR ITS AFFILIATED AND RELATED COMPANIES AND/OR SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

If, notwithstanding the foregoing, Mitutoyo is found to be liable to you for any damage or loss which arises out of or is in any way connected with use of this product by you, in no event shall Mitutoyo's and/or its affiliated and related companies' and suppliers' liability to you, whether in contract, tort (including negligence), or otherwise, exceed the price paid by you for the product only.

The foregoing limitations shall apply even if the above-stated warranty fails in its essential purpose.

BECAUSE SOME COUNTRIES, STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR THE LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, IN SUCH COUNTRIES, STATES OR JURISDICTIONS, MITUTOYO'S LIABILITY SHALL BE LIMITED TO THE EXTENT PERMITTED BY LAW.



---

## About This Document

### ■ Positioning of this document in document map

In addition to this document, a manual for the gauge blocks is available.

#### ● For accessories

Rectangular Gauge Block Accessories  
for Gauge Blocks over 100 mm  
User's Manual (this document)

#### ● For gauge blocks

Gauge Blocks/CERA Blocks  
User's Manual

### ■ Intended readers and purpose of this document

#### ● Intended readers

This document is intended for those who have experience using gauge blocks. They are also assumed to be able to understand usage methods of general measuring instruments.

#### ● Purpose

The purpose of this document is to help you understand the basic knowledge, basic work procedures, and various functions of the Rectangular Gauge Block Accessories for Gauge Blocks over 100 mm.

## ■ How to read this document

**4 Examples of Typical Usage**

---

■ **Assembly**

**1** Wring one of the plain jaws (or half round jaws) together with one of the end faces of the Long Gauge Block, and the other jaw together with the other end face.

**Tips**

- When using an assembly of gauge blocks, wring them together in advance.
- For details about wringing, see **3.2 Wringing** (page 12).

**2** Connect the assembly with the holder.

**Tips**

- For details about the usage of the holder, see **3.1 Usage of the Holder** (page 7).
- The holes of the Long Gauge Block are not used.

**1** Place one clamping adapter on the outside of each plain jaw (or half round jaw).

**NOTICE**

Place the surface for wringing of the clamping adapter toward the plain jaw (or half round jaw).

**2** Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the clamping adapters, and then tighten the fixing screw to fix its position.

**3** Insert the clamping pins (adjustable, tightening) into the holes of the clamping adapters.

**4** Tighten the clamping screw of the holder to secure the assembly so it does not move.

**Tips**

When tightening the clamping screw, hold the holder and the assembly with your finger so they do not separate.

This completes assembly.

---

**21** No. 99MAK600B

Indicates an operating procedure to be performed or its outline.

Indicates the referential location.

Indicates specific work procedures.

Indicates supplementary information.

## ■ Representation of brackets or marks

The meanings of brackets or marks to be used in this document are as follows.

( ) : Round brackets	Represent a paraphrase of an immediately preceding phrase or a supplementary explanation.
" " : Double quotation marks	Represent a highlighted phrase. They also indicate an index where information to be referenced is described.

---

# Contents

<b>CONVENTIONS USED IN MANUALS</b> .....	<b>i</b>
<b>Safety Precautions</b> .....	<b>ii</b>
<b>Precautions for Use</b> .....	<b>iii</b>
<b>Export Control Compliance</b> .....	<b>iv</b>
<b>Notes on Export to EU Member Countries</b> .....	<b>iv</b>
<b>Disposal of Products outside the European Union and Other European Countries</b> ...	<b>iv</b>
<b>Warranty</b> .....	<b>v</b>
<b>Disclaimer</b> .....	<b>vi</b>
<b>About This Document</b> .....	<b>vii</b>
<b>Contents</b> .....	<b>ix</b>
<b>1 Overview</b> .....	<b>1</b>
<b>2 Accessory Applications</b> .....	<b>3</b>
<b>3 Cautions for Assembly</b> .....	<b>7</b>
3.1 Usage of the Holder .....	7
3.2 Wringing .....	12
<b>4 Examples of Typical Usage</b> .....	<b>15</b>
4.1 Reference Gage for Inside Measurements / Limit Gage for Inside Diameters (Using Half Round Jaws) .....	15
4.2 Precision Scribing (Using the Base and Scriber Point) .....	17
4.3 Limit Gage for Outside Diameters (Using Plain Jaws or Half Round Jaws).....	20
4.4 Reference Gage for Measuring Tools (Using Plain Jaws or Half Round Jaws).....	22
4.5 Other Usage Examples .....	24
4.5.1 Height Reference Gage .....	24
<b>5 Maintenance</b> .....	<b>27</b>
<b>6 Specifications</b> .....	<b>29</b>
<b>SERVICE NETWORK</b> .....	<b>App-1</b>



# 1 Overview

## ■ Overview of Rectangular Gauge Block Accessories for Gauge Blocks over 100 mm

This product is an accessory set to better-effectively use Rectangular Gauge Blocks (nominal size of 125 mm or more, hereafter called Long Gauge Block). Long Gauge Blocks are precisely machined end standards that have a rectangular cross section with "coupling holes". They are provided in different sizes to obtain accurate dimensions directly.

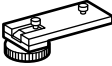
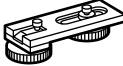
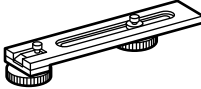

These products can be used with both steel Long Gauge Blocks and ceramic Long Gauge Blocks (CERA Blocks).

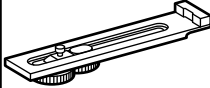
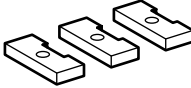
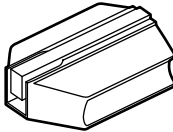
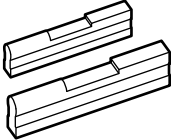
A broad line-up of accessories is available to provide the greatest benefits of Long Gauge Blocks. Accessories may also be purchased individually based on the purpose of usage.

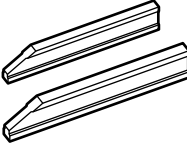

## 1 Overview

### ■ Included items in the set

The following accessories are included in the storage case.


Holder A	Holder B	Holder C	Holder D
			
No. 619031: 1 pc	No. 619032: 1 pc	No. 619033: 1 pc	No. 619034: 1 pc

Holder E	Clamping adapter	Base	Half round jaws
			
No. 619035: 1 pc	No. 619036: 3 pc	No. 619009: 35 mm, 1 pc	No. 619013: 12 mm, 2 pc set

Plain jaws (B type)	Scriber point
	
No. 619018: 2 pc set	No. 619019: 1 pc

## 2 Accessory Applications

This section explains the application of each accessory.

For examples of accessory usage, see  "4 Examples of Typical Usage" (page 15).

### ■ Half round jaws

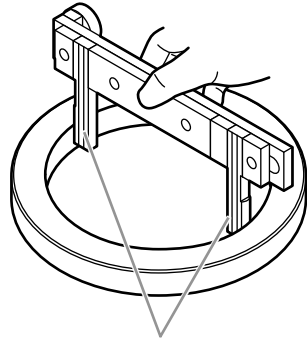
Primary application: Limit gage for inside diameters/Reference gage for inside measurement

The limit gage for inside diameters is made by connecting the half round jaws and gauge block with the holder. It can perform GO/NG judgment for a large number of parts effectively.

Furthermore, the inner surfaces (surfaces for wringing) of the jaws can be used as a reference gage that is used for the zero setting for inside micrometers and bore gages or checking the accuracy of the inside of calipers.

#### Tips

The nominal size of the jaws are marked on them.



Half round jaws (12 mm)

### ■ Plain jaws (B type)

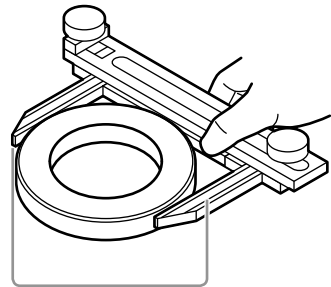
Primary application: Limit gage for outside diameters/Reference gage

The limit gage for outside diameters is made by connecting the plain jaws and gauge block with the holder. It can perform GO/NG judgment for a large number of parts effectively.

Furthermore, the jaws can be used as a reference gage that is used for the zero setting for inside micrometers and bore gages or checking the accuracy of the inside of calipers.

#### Tips

The jaw length of 160 is marked on the sides of the surfaces for wringing.



Plain jaws (B type)

## 2 Accessory Applications

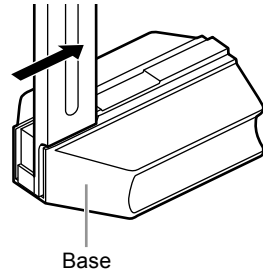
---

### ■ Base

Primary application: Base for using the holder in a vertical orientation

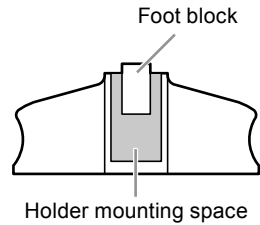
The base is used with the holder D or E inserted vertically.

When removing the holder, take it out in the opposite direction of the arrow in the right figure.



### Tips

- The nominal size of the base is marked on it.
- The gray area in the right figure is the holder mounting space. The holder should be inserted fully into the base to set it in place.
- The holder can be inserted from either side of the foot block.

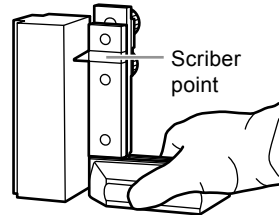


### ■ Scriber point

Primary application: High accuracy scribing

The scriber point and gauge block are connected with the holder to use as the scriber.

The tip position of the scriber point assembled becomes at the same position (height) as the surface for wringing to allow for high accuracy scribing.



### CAUTION

The tip is sharp, so be careful to avoid injury.

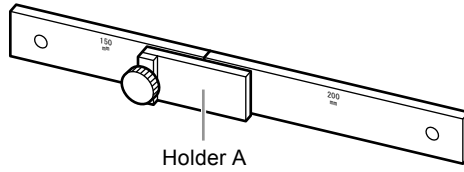


## 2 Accessory Applications

---

### ■ Holder A

Primary application: Connecting two Long Gauge Blocks



### Tips

The length cannot be adjusted by inserting a gauge block between the Long Gauge Blocks.


### ■ Holder B, C

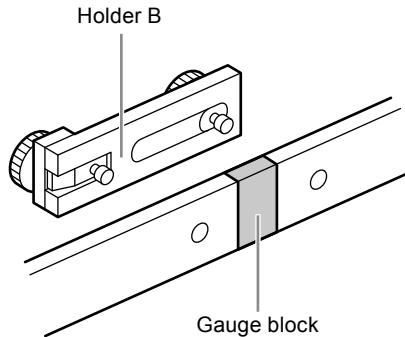
Primary application: Connecting two Long Gauge Blocks with another gauge block (including long-size) inserted between them.

The length can be adjusted by inserting a gauge block between the Long Gauge Blocks.

The clamping adapter can be used to insert half round jaws, etc.

### Tips

For details about the dimensions of the gauge blocks that can be inserted with Holder B or C, see  "6 Specifications" (page 29).



## 2 Accessory Applications

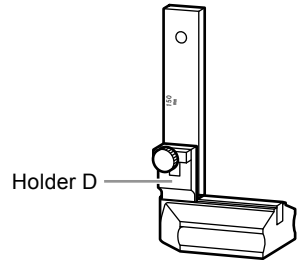
---

### ■ Holder D

Primary application: Connecting a Long Gauge Block to a base

#### **Tips**

The length cannot be adjusted by inserting a gauge block between the Long Gauge Block and base.




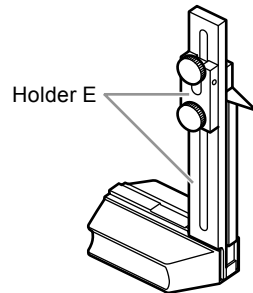
### ■ Holder E

Primary application: Connecting a Long Gauge Block and its combination products to the base

The length can be adjusted by inserting a gauge block between the Long Gauge Block and base. The clamping adapter can be used to insert a scriber point, etc.

#### **Tips**

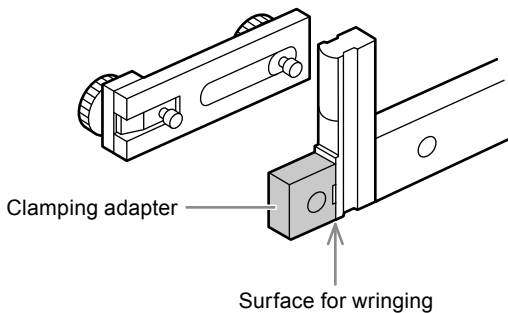
For details about the dimensions of the gauge blocks that can be inserted with the holder E, see  "6 Specifications" (page 29).



### ■ Clamping adapter

Primary application: Attaching a half round jaw, etc., to the end face of a Long Gauge Block

It can be used for the holder B, C, and E.



# 3 Cautions for Assembly

## 3.1 Usage of the Holder

### CAUTION

- Do not disassemble or modify the holder. Doing so may cause an injury.
- Be careful when attaching or removing half round jaws, etc., from the holder so as not to pinch or strike the fingers. Doing so may cause an injury.

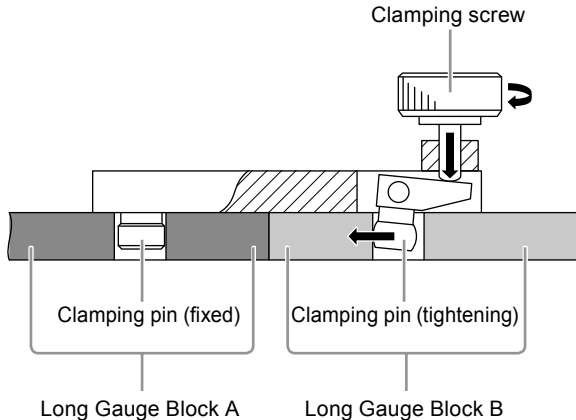
### NOTICE

Do not apply excessive force (such as dropping or impacts) to the holder. Doing so may cause malfunction or breakage.

### ■ Construction of the holder

Tightening the clamping screw moves the clamping pin (tightening) in the direction of the arrow. As a result, the Long Gauge Block B is pressed against the Long Gauge Block A, in which the clamping pin (fixed) is inserted, to secure both gauge blocks.

Example: Holder A

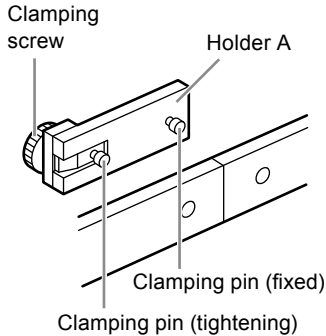


### 3 Cautions for Assembly

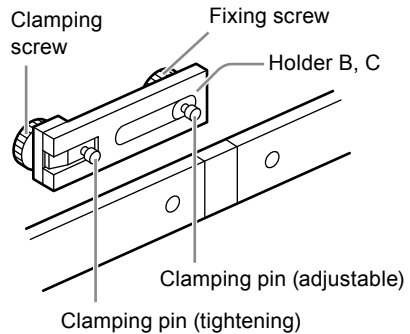
#### ■ Connection method of holders

#### ● Connecting gauge blocks: Holder A, B, and C

When connecting two Long Gauge Blocks directly



When inserting other gauge blocks between Long Gauge Blocks



#### Tips

Loosen the clamping screw before connection.

1 Wipe the surfaces for wringing of the gauge blocks with lens cleaning paper soaked in solvent (such as normal heptane).

2 Wring both gauge blocks.

#### Tips

For details about wringing, see "3.2 Wringing" (page 12).

3 Insert the clamping pins (fixed/adjustable, tightening) into the holes of the Long Gauge Blocks.

#### Tips

- The clamping pin (fixed) cannot be moved because it is fixed to the holder main body.
- For Holder B or C, follow the below items to connect them.
  - Adjust the length by inserting gauge blocks between the Long Gauge Blocks as required.For details about the maximum clampable length, see "6 Specifications" (page 29).
- Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the assembled Long Gauge Blocks, and then tighten the fixing screw to fix its position.

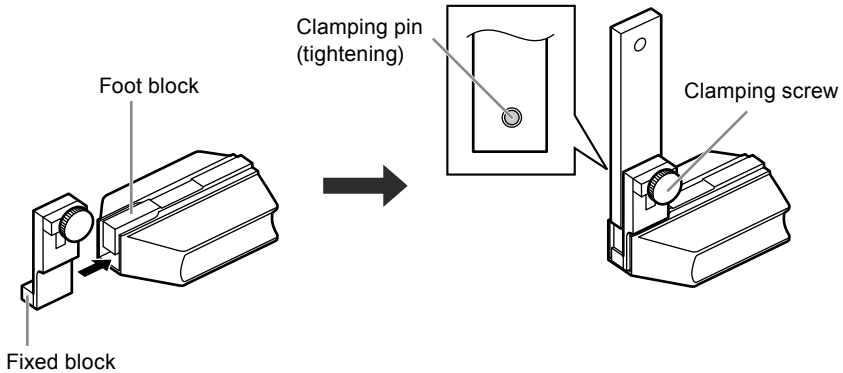
4 Tighten the clamping screw to secure the assembly so it does not move.

### 3 Cautions for Assembly

---

#### ● Connecting a base to a gauge block: Holder D, E

##### When using the holder D



#### Tips


Loosen the clamping screw before connection.

- 1 Insert the fixed block of the holder D below the foot block of the base.

#### NOTICE

Be careful not to let any dust, etc. enter between the base (foot block) and the Long Gauge Block. Wipe the surface for wringing of the base with lens cleaning paper soaked in solvent (such as normal heptane) before insertion.

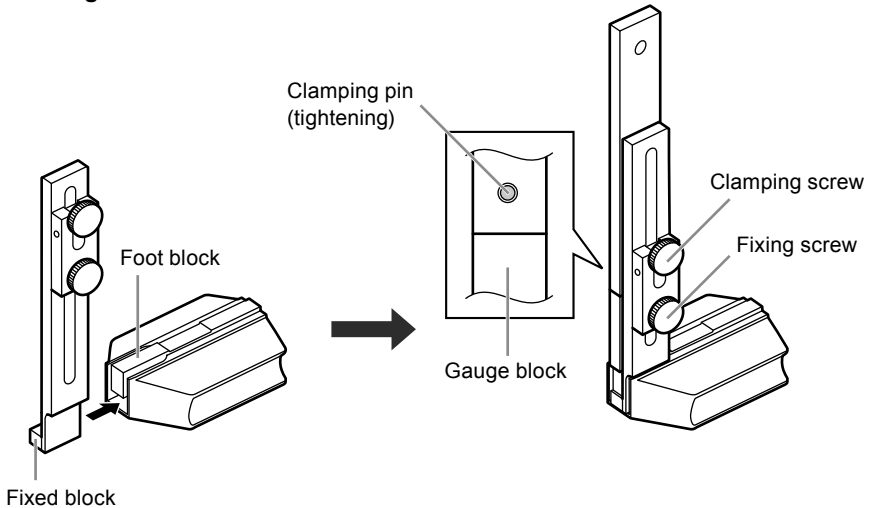
#### Tips

For details about the holder mounting space of the base, see  "■ Base" (page 4).

- 2 Insert the clamping pin (tightening) into the hole of the Long Gauge Block while it is set onto the foot block.
- 3 Tighten the clamping screw to secure the gauge block so it does not move.

### 3 Cautions for Assembly

#### When using holder E



#### Tips


Loosen the clamping screw before connection.

- 1 Insert the fixed block of the holder E below the foot block of the base.

#### NOTICE


Be careful not to let any dust, etc. enter between the base (foot block) and the Long Gauge Block. Wipe the surface for wringing of the base with lens cleaning paper soaked in solvent (such as normal heptane) before insertion.

#### Tips

For details about the holder mounting space of the base, see  "■ Base" (page 4).

- 2 Wring the Long Gauge Block together with the gauge block.
- 3 Adjust the position of the clamping pin (tightening) so that it aligns with the hole of the Long Gauge Block, and then tighten the fixing screw to fix its position.
- 4 Insert the clamping pin (tightening) into the hole of the wrung Long Gauge Block while the assembly is set onto the foot block.
- 5 Tighten the clamping screw to secure the assembly so it does not move.

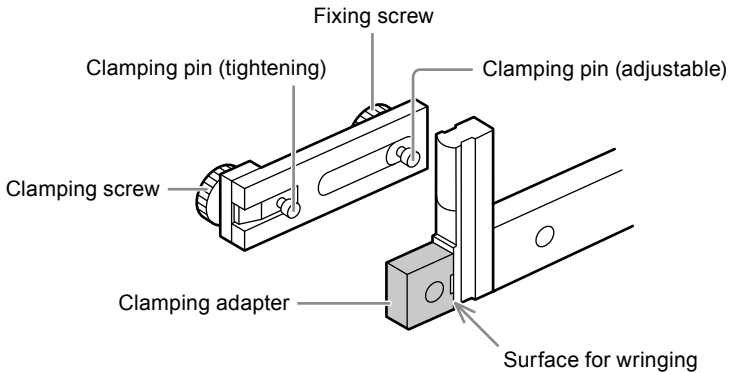
#### Tips

For details about the maximum clampable length of the holder E, see  "6 Specifications" (page 29).

### 3 Cautions for Assembly

---

- Using the clamping adapter to connect: Holder B, C, and E



#### Tips

- Loosen the clamping screw before connection.
- When connecting a Long Gauge Block and two clamping adapters using Holder C, the holes of the Long Gauge Block are not used.
- Holder E does not have a clamping pin (adjustable).


- 1 Set a clamping adapter on the outside of the half round jaw.

#### NOTICE

Place the surface for wringing of the clamping adapter toward the half round jaw.

- 2 Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the Long Gauge Block and the clamping adapter, and then tighten the fixing screw to fix its position.
- 3 Insert the clamping pins (tightening, adjustable) into the holes of the Long Gauge Block and the clamping adapter.
- 4 Tighten the clamping screw to secure the assembly so it does not move.

#### Tips

For details about the maximum clampable length of the holder B, C and E, see  "6 Specifications" (page 29).


## 3.2 Wringing

The process of firmly setting gauge blocks together or firmly setting gauge blocks against half round jaws, etc., is called "wringing". Steel and ceramic gauge blocks can also be wrung together.

### NOTICE

When handling gauge blocks and accessories, wear gloves for precision work. If handled with bare hands, the resulting heat conduction can alter the block's dimensions. For steel gauge blocks and accessories, oils and sweat can cause rusting to occur.

### Tips

- For wringing both Long Gauge Blocks, use the holder.
- For details about the usage of the holder, see  "3.1 Usage of the Holder" (page 7).

- 1 Wipe wringing surfaces with lens cleaning paper soaked in solvent (such as normal heptane), and then finally wipe the surface dry with a dry portion of the paper.

### NOTICE

If small dirt or grease is left on surfaces for wringing, dimensions after wringing may increase, or the gauge blocks or half round jaws, etc., may be scratched.

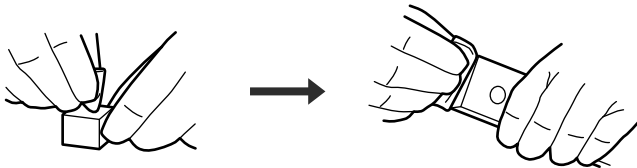
### Tips

For wiping, use lens cleaning paper or other material which does not leave paper fibers.

- 2 Slightly spread Vaseline or grease onto the surfaces for wringing before wiping.

### Tips

Wipe until the oil layer is almost completely gone.

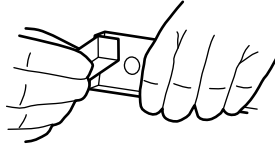




### 3 Cautions for Assembly

---

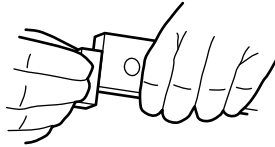
- 3** Cross the gauge blocks at the center of each measurement surface at 90°.



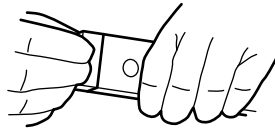
- 4** While slightly applying force, rotate one gauge block 90° until both measurement surfaces are aligned with each other.

#### Tips

It will feel like the blocks are sticking together while you are sliding the blocks.

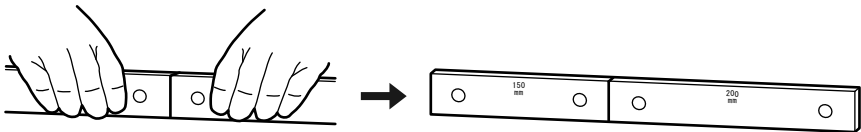


- 5** Align the measurement surfaces with each other.



#### Tips

When Long Gauge Blocks cannot be wrung together as described in steps **3** through **5**, mutually press their measurement surfaces together to adhere them, and then align their edges.



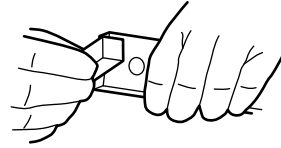
### 3 Cautions for Assembly

---

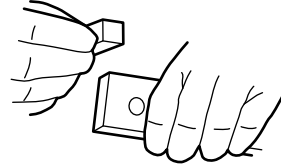
#### ■ Disassembly

##### 1 Disengaging the wringing

- 1 Rotate the wrung gauge blocks until they form a cross shape.




- 2 Slide the gauge blocks to detach them.



##### 2 Wipe any dirt off the gauge blocks.

#### **Tips**

For details about cleaning, see  "■ Cleaning" (page 27).

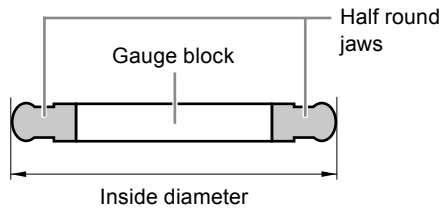
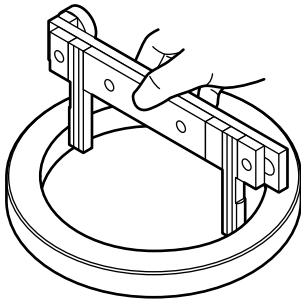
# 4 Examples of Typical Usage

This section explains parts configurations and assembly procedures for examples of typical usage.

## 4.1 Reference Gage for Inside Measurements / Limit Gage for Inside Diameters (Using Half Round Jaws)

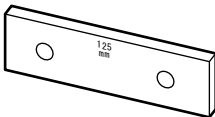
This section explains how to assemble a limit gage for checking of inside diameters.

This limit gage can be used for checking the accuracy of the inside of calipers. As an example, this procedure explains the assembly of a limit gage for checking a 149 mm inside diameter.

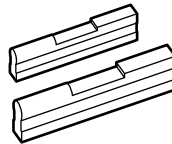


### ■ Preparation

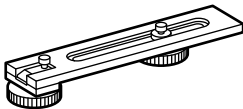
Required Long Gauge Block and accessories



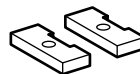
Long Gauge Block 125 mm



Half round jaw 12 mm x 2



Holder C




Clamping adapter x 2

## 4 Examples of Typical Usage

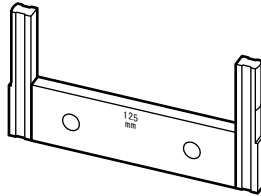
---

### Tips


- Inside diameter = Half round jaw + Long Gauge Block + Half round jaw  
= 12 mm + 125 mm + 12 mm = 149 mm
- When a 125 mm Long Gauge Block is not available, wring together two gauge blocks, such as a 75 mm and a 50 mm Rectangular Gauge Block.
- For details about the maximum clampable length of the holder C, see  "6 Specifications" (page 29).

### ■ Assembly

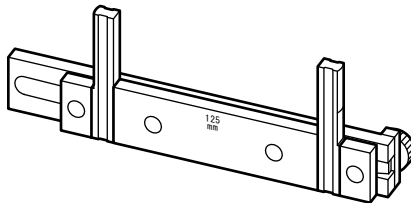
- 1 Wring one of the half round jaws together with one of the end faces of the Long Gauge Block, and the other jaw together with the other end face.




### Tips

- When using an assembly of gauge blocks, wring them together in advance.
- For details about wringing, see  "3.2 Wringing" (page 12).

- 2 Connect the assembly with the holder.



### Tips

- For details about the usage of the holder, see  "3.1 Usage of the Holder" (page 7).
- The holes of the Long Gauge Block are not used.

- 1 Place one clamping adapter on the outside of each half round jaw.

### NOTICE

Place the surface for wringing of the clamping adapter toward the half round jaw.

## 4 Examples of Typical Usage

---

- 2 Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the clamping adapters, and then tighten the fixing screw to fix its position.
- 3 Insert the clamping pins (tightening, adjustable) of the holder into the clamping adapters.
- 4 Tighten the clamping screw of the holder to secure the assembly so it does not move.

### Tips

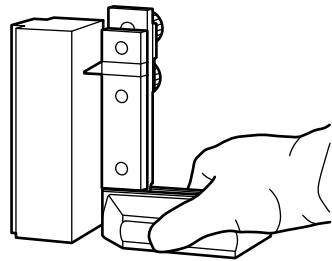
When tightening the clamping screw, hold the holder and the assembly with your finger so they do not separate.

This completes assembly.

## 4.2 Precision Scribing (Using the Base and Scriber Point)

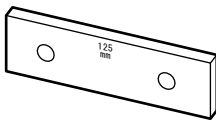
This assembly is for performing precision scribing at a specific height.

This section explains how to perform scribing at a height of 160 mm as an example.



### ■ Preparation

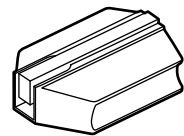
Required Long Gauge Block and accessories



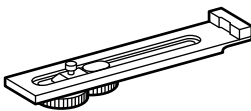
Long Gauge Block  
125 mm



Scriber point



Base  
(height: 35 mm)



Holder E




Clamping adapter

## 4 Examples of Typical Usage

---

### Tips

- Scribing height = Base + Long Gauge Block = 35 mm + 125 mm = 160 mm
- When a 125 mm Long Gauge Block is not available, wring together two gauge blocks, such as a 75 mm and a 50 mm Rectangular Gauge Block.
- For details about the maximum clampable length of the holder E, see  "6 Specifications" (page 29).

## ■ Assembly

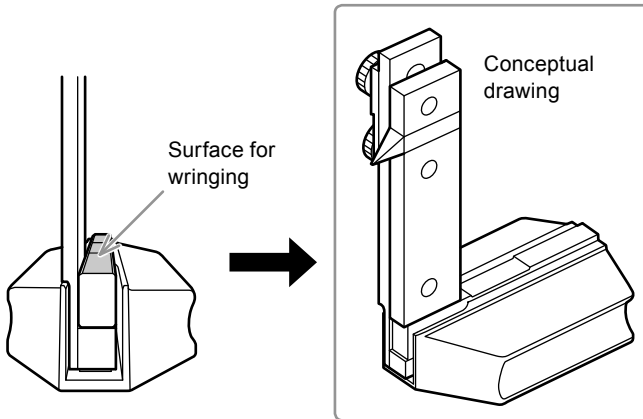
### Tips

Loosen the clamping screw before connection.


- 1 Insert the fixed block of the holder E below the foot block of the base.

### NOTICE

Be careful not to let any dust, etc. enter between the base (foot block) and the Long Gauge Block. Wipe the surface for wringing of the base with lens cleaning paper soaked in solvent (such as normal heptane) before insertion.



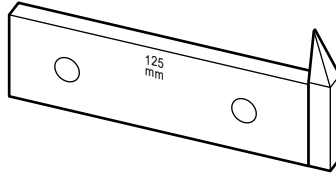
### Tips

For details about the holder mounting space of the base, see  "■ Base" (page 4).

## 4 Examples of Typical Usage

---


- 2 Wring the scriber point and Long Gauge Block together.



### CAUTION

The tip of the scriber point is sharp, so be careful to avoid injury.

### Tips

- When using an assembly of gauge blocks, wring them together in advance.
- For details about wringing, see  "3.2 Wringing" (page 12).

- 3 Set the clamping adapter on top, and then adjust the position of the clamping pin (tightening) so that it aligns with the hole of the clamping adapter, and then tighten the fixing screw to fix its position.

### NOTICE

Place the surface for wringing of the clamping adapter toward the scriber point.

- 4 Insert the clamping pin (tightening) into the hole of the clamping adapter while the assembly is set onto the foot block.
- 5 Tighten the clamping screw of the holder to secure the assembly so it does not move.

### Tips

When tightening the clamping screw, hold the holder and the assembly with your finger so they do not separate.

This completes assembly.

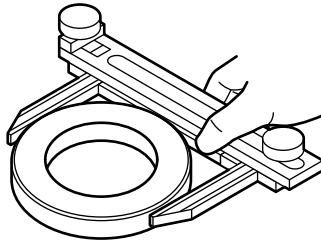
While supporting the base, slide it across the surface plate to perform precision scribing of objects.

## 4.3 Limit Gage for Outside Diameters (Using Plain Jaws or Half Round Jaws)

This section explains how to assemble a limit gage for checking of outside diameters.

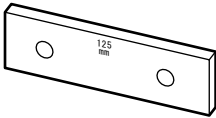
Assembling two limit gages with different sizes, they can be used as GO and NO-GO gages.

As an example, this procedure explains the assembly of a limit gage for checking a 125 mm outside diameter.

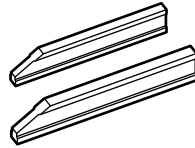


### ■ Preparation

Required Long Gauge Block and accessories

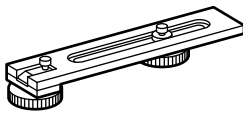


Long Gauge Block 125 mm

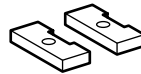


Plain jaw (B type)\* × 2

\* Half round jaws can also be used.




Holder C



Clamping adapter × 2

### Tips

- Outside diameter = Long Gauge Block = 125 mm
- When a 125 mm Long Gauge Block is not available, wring together two gauge blocks, such as a 75 mm and a 50 mm Rectangular Gauge Block.
- For details about the maximum clampable length of the holder C, see  "6 Specifications" (page 29).




## 4 Examples of Typical Usage

---

### ■ Assembly


- 1 Wring one of the plain jaws (or half round jaws) together with one of the end faces of the Long Gauge Block, and the other jaw together with the other end face.

#### **Tips**

- When using an assembly of gauge blocks, wring them together in advance.
- For details about wringing, see  "3.2 Wringing" (page 12).

- 2 Connect the assembly with the holder.

#### **Tips**

- For details about the usage of the holder, see  "3.1 Usage of the Holder" (page 7).
- The holes of the Long Gauge Block are not used.

- 1 Place one clamping adapter on the outside of each plain jaw (or half round jaw).

**NOTICE**

Place the surface for wringing of the clamping adapter toward the plain jaw (or half round jaw).

- 2 Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the clamping adapters, and then tighten the fixing screw to fix its position.
- 3 Insert the clamping pins (adjustable, tightening) into the holes of the clamping adapters.
- 4 Tighten the clamping screw of the holder to secure the assembly so it does not move.

#### **Tips**

When tightening the clamping screw, hold the holder and the assembly with your finger so they do not separate.

This completes assembly.

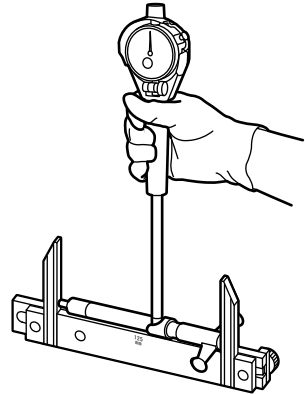
## 4.4 Reference Gage for Measuring Tools (Using Plain Jaws or Half Round Jaws)

This section explains how to assemble a reference gage for measuring tools.

As an example, this procedure explains the assembly of a 125 mm length reference gage for bore gages.

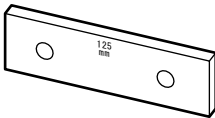
### Tips

Select appropriate plain jaws or half round jaws for the bore gage being used.

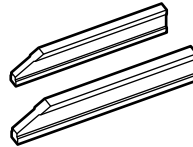


### ■ Preparation

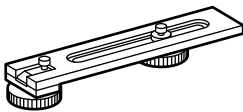
Required Long Gauge Block and accessories



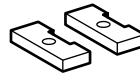
Long Gauge Block 125 mm



Plain jaw (B type)\* × 2  
\* Half round jaws can also be used.



Holder C



Clamping adapter × 2

### Tips

- Length of reference gage = Long Gauge Block = 125 mm
- When a 125 mm Long Gauge Block is not available, wring together two gauge blocks, such as a 75 mm and a 50 mm Rectangular Gauge Block.
- For details about the maximum clampable length of the holder C, see "6 Specifications" (page 29).


## 4 Examples of Typical Usage

---

### ■ Assembly


- 1 Wring one of the plain jaws (or half round jaws) together with one of the end faces of the Long Gauge Block, and the other jaw together with the other end face.

#### **Tips**

- When using an assembly of gauge blocks, wring them together in advance.
- For details about wringing, see  "3.2 Wringing" (page 12).

- 2 Connect the assembly with the holder.

#### **Tips**

- For details about the usage of the holder, see  "3.1 Usage of the Holder" (page 7).
- The holes of the Long Gauge Block are not used.

- 1 Place one clamping adapter on the outside of each plain jaw (or half round jaw).

**NOTICE**

Place the surface for wringing of the clamping adapter toward the plain jaw (or half round jaw).

- 2 Adjust the position of the clamping pin (adjustable) so that the clamping pins align with the holes of the clamping adapters, and then tighten the fixing screw to fix its position.
- 3 Insert the clamping pins (adjustable, tightening) into the holes of the clamping adapters.
- 4 Tighten the clamping screw of the holder to secure the assembly so it does not move.

#### **Tips**

When tightening the clamping screw, hold the holder and the assembly with your finger so they do not separate.

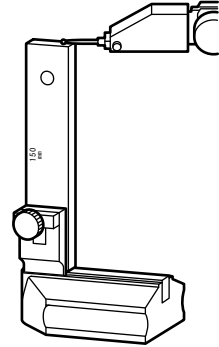
This completes assembly.

## 4.5 Other Usage Examples

### 4.5.1 Height Reference Gage

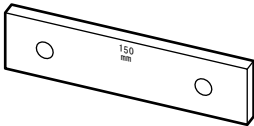
This section explains how to assemble the height reference gage as a reference for comparative measurement that uses indicators such as electric micrometers and test indicators.

As an example, this procedure explains the assembly of a 185 mm height reference gage.

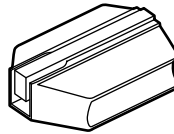


#### ■ Preparation

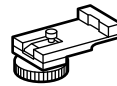
Required Long Gauge Block and accessories



Long Gauge Block  
150 mm



Base  
(height: 35 mm)




Holder D

#### Tips

- Height reference = Base + Long Gauge Block = 35 mm + 150 mm = 185 mm
- When a 150 mm Long Gauge Block is not available, wring together two gauge blocks, such as a 125 mm Long Gauge Block and a 25 mm Rectangular Gauge Block.

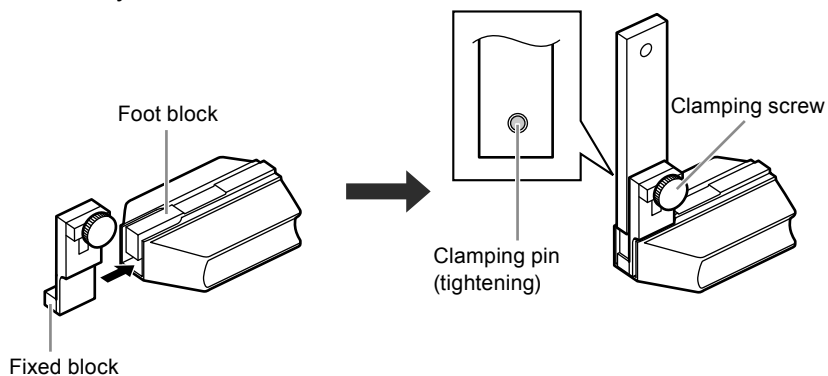
When using a Rectangular Gauge Block, use the holder E and the clamping adapter instead of the holder D.

- For details about the maximum clampable length of the holder E, see  "6 Specifications" (page 29).

## 4 Examples of Typical Usage

---

### ■ Assembly



### Tips


Loosen the clamping screw before connection.

- 1 Insert the fixed block of the holder D below the foot block of the base.

### NOTICE

Be careful not to let any dust, etc. enter between the base (foot block) and the Long Gauge Block. Wipe the surface for wringing of the base with lens cleaning paper soaked in solvent (such as normal heptane) before insertion.

### Tips

For details about the holder mounting space of the base, see  "■ Base" (page 4).

- 2 Insert the clamping pin (tightening) into the hole of the Long Gauge Block while it is set onto the foot block.
- 3 Tighten the clamping screw of the holder to secure the gauge block so it does not move.

**MEMO**

# 5 Maintenance

This section explains the regular inspection and cleaning of this product.

In order to use this product with sufficient performance safely and for a long period, follow the below items to perform maintenance and inspection.

## ■ Regular inspection

Check the appearance for dirt/dust, scratches, wear, or reduction.

To check for surface for wringing wear, use a tool such as an optical flat to check for interference fringes.

If there are any burrs or nicks, use a Ceraston\* as with gauge blocks to remove them.

To maintain the quality of the accessories, we recommend periodically using the calibration/inspection service provided by Mitutoyo.

\* Ceraston: Part No. 601644 or No. 601645

## ■ Cleaning

After use, wipe dirt off the product with a soft cloth soaked in solvent, etc., and then apply anti-rust oil in a thin layer before housing and storing it in a safe place (for rust prevention). Do not use organic solvents such as thinner or benzene.

### **Tips**

- Recommended solvent: Normal heptane
- Recommended anti-rust oil: MOLYKOTE SUPERGLISS (Dow Corning Toray Co.,Ltd.)
- Placing evaporative anti-rust paper into the storage case provides more effective storage.

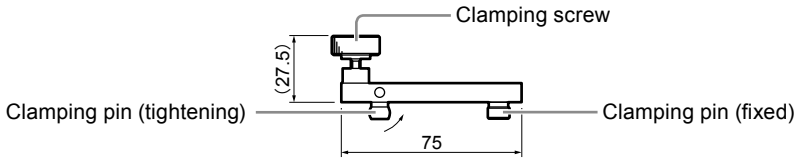
**MEMO**



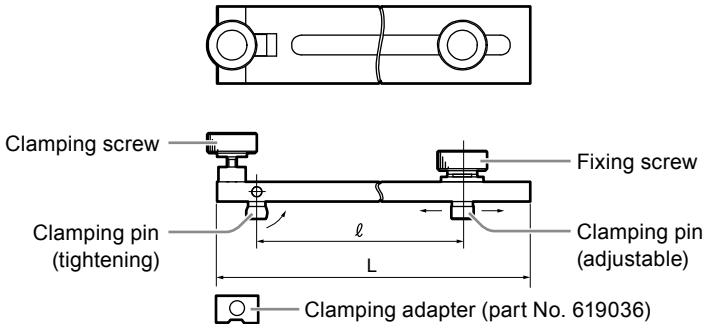
# 6 Specifications

## ■ Specifications

- Rectangular Gauge Block Accessories for Gauge Blocks over 100 mm (Code No. 516-605)
- Holder A (Part No. 619031): Connecting Long Gauge Blocks



- Holder B, C: Connecting Long Gauge Blocks



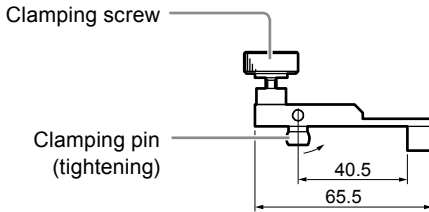
	Part No.	$l$ (mm)	L (mm)	Maximum clampable length (mm)		
				Not using clamping adapters	Using one clamping adapter <sup>*2</sup>	Using two clamping adapters <sup>*2</sup>
Holder B	619032	Maximum 90	126	40	50	65
Holder C	619033	Maximum 200	236	150 <sup>*1</sup>	155	170

\*1 Gauge blocks within 100 mm with no holes and various jaws can be connected. For a detailed description of usage, see "■ Holder B, C" (page 5).

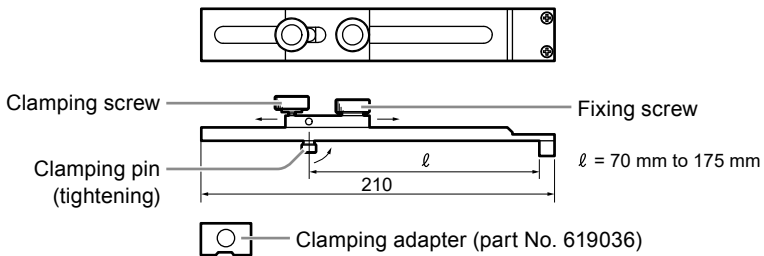
\*2 Various jaws can be attached to both ends of a Long Gauge Block by using two clamping adapters. For a detailed description of usage, see "■ Clamping adapter" (page 6).

## 6 Specifications


### ● Holder D (Part No. 619034): Connecting the base



### ● Holder E (Part No. 619035): Connecting the base

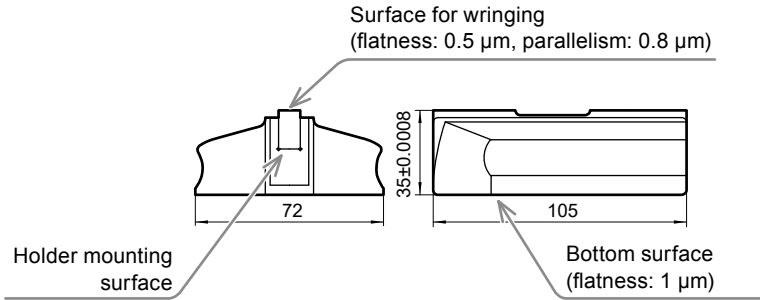


	Part No.	$l$ (mm)	Maximum clampable length (mm)	
			Not using clamping adapters	Using one clamping adapter*
Holder E	619035	67 to 155	110	125

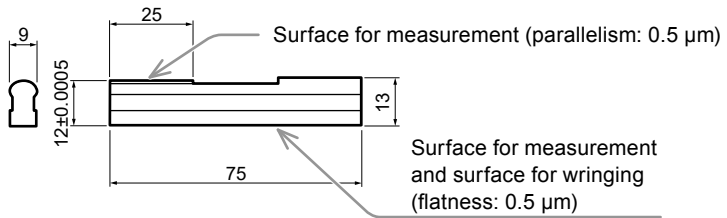
\* Various jaws can be attached to the end of a Long Gauge Block by using a clamping adapter. For a detailed description of usage, see  "■ Clamping adapter" (page 6).

## 6 Specifications

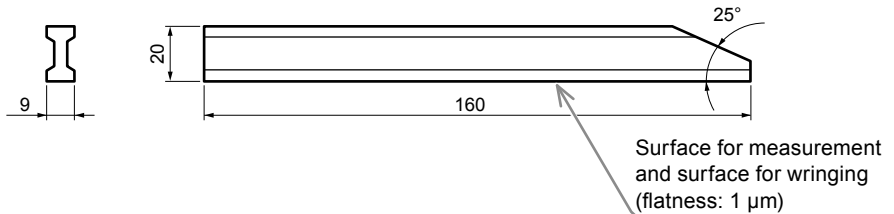
### ● Base (Part No. 619009)



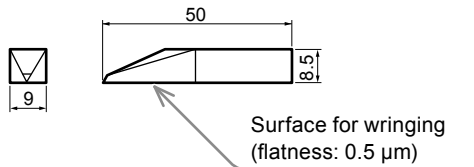
### ● Half round jaw (Part No. 619013)



### ● Plain jaw (B type) (Part No. 619018)



### ● Scriber point (Part No. 619019)



## 6 Specifications

### ■ Number of accessories required for assembly

When inspecting an inside and outside measurement from 300 mm through 1000 mm (every 100 mm), select the Rectangular Gauge Blocks and the combination of accessories in the table below.

Product name		Part No.	300 mm		400 mm		500 mm		600 mm	
			Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement
Rectangular Gauge Blocks (nominal size)	200 mm	611682							1	1
	300 mm	611683	1	1						
	400 mm	611684			1	1			1	1
	500 mm	611685					1	1		
Accessory	Holder A	619031							1	1
	Holder B	619032	2		2		2		2	
	Half round jaws (2 pc set)	619013	2		2		2		2	
	Clamping adapter	619036	2		2		2		2	

Product name		Part No.	700 mm		800 mm		900 mm		1000 mm	
			Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement	Inside mea- surement	Outside mea- surement
Rectangular Gauge Blocks (nominal size)	200 mm	611682								
	300 mm	611683	1	1	1	1				
	400 mm	611684	1	1			1	1		
	500 mm	611685			1	1	1	1	2	2
Accessory	Holder A	619031	1	1	1	1	1	1	1	1
	Holder B	619032	2		2		2		2	
	Half round jaws (2 pc set)	619013	2*		2*		2*		2*	
	Clamping adapter	619036	2		2		2		2	

\* Shows the individual numbers to use. Note that part no. 619013 is a two-piece set.

---

# SERVICE NETWORK

\*As of January 2019

## Europe

### **Mitutoyo Europe GmbH**

Borsigstrasse 8-10, 41469 Neuss, GERMANY  
TEL: 49 (0)2137 102-0 FAX: 49 (0)2137 102-351

### **Mitutoyo CTL Germany GmbH**

Von-Gunzert-Strasse 17, 78727 Oberndorf, GERMANY  
TEL: 49 (0)7423 8776-0 FAX: 49 (0)7423 8776-99

### **KOMEG Industrielle Messtechnik GmbH**

Zum Wasserwerk 3, 66333 Völklingen, GERMANY  
TEL: 49 (0)6898 91110 FAX: 49 (0)6898 911100

## Germany

### **Mitutoyo Deutschland GmbH**

Borsigstrasse 8-10, 41469 Neuss, GERMANY  
TEL: 49 (0)2137 102-0 FAX: 49 (0)2137 86 85

### **M3 Solution Center Hamburg**

Tempowerkring 9-im HIT-Technologiepark 21079  
Hamburg, GERMANY  
TEL: 49 (0)40 791894-0 FAX: 49 (0)40 791894-50

### **M3 Solution Center Berlin**

Carl-Scheele-Straße 16, 12489 Berlin, GERMANY  
TEL: 49 (0)30 2611 267

### **M3 Solution Center Eisenach**

Heinrich-Ehrhardt-Platz 1, 99817 Eisenach, GERMANY  
TEL: 49 (0)3691 88909-0 FAX: 49 (0)3691 88909-9

### **M3 Solution Center Ingolstadt**

Marie-Curie-Strasse 1a, 85055 Ingolstadt, GERMANY  
TEL: 49 (0)841 954920 FAX: 49 (0)841 9549250

### **M3 Solution Center Leonberg**

Steinbeisstrasse 2, 71229 Leonberg, GERMANY  
TEL: 49 (0)7152 6080-0 FAX: 49 (0)7152 608060

### **Mitutoyo-Messgeräte Leonberg GmbH**

Heidenheimer Strasse 14, 71229 Leonberg, GERMANY  
TEL: 49 (0)7152 9237-0 FAX: 49 (0)7152 9237-29

## U.K.

### **Mitutoyo (UK) Ltd.**

Joule Road, West Point Business Park, Andover,  
Hampshire SP10 3UX, UNITED KINGDOM  
TEL: 44 (0)1264 353 123 FAX: 44 (0)1264 354883

### **M3 Solution Center Coventry**

Unit6, Banner Park, Wickmans Drive, Coventry,  
Warwickshire CV4 9XA, UNITED KINGDOM  
TEL: 44 (0)2476 426300 FAX: 44 (0)2476 426339

### **M3 Solution Center Halifax**

Lowfields Business Park, Navigation Close, Elland,  
West Yorkshire HX5 9HB, UNITED KINGDOM  
TEL: 44 (0)1422 375566 FAX: 44 (0)1422 328025

### **M3 Solution Center East Kilbride**

The Baird Building, Rankine Avenue, Scottish  
Enterprise Technology Park, East Kilbride G75  
0QF, UNITED KINGDOM  
TEL: 44 (0)1355 581170 FAX: 44 (0)1355 581171

## France

### **Mitutoyo France**

Paris Nord 2-123 rue de la Belle Etoile, BP 59267  
ROISSY EN FRANCE 95957 ROISSY CDG  
CEDEX, FRANCE  
TEL: 33 (0)149 38 35 00

### **M3 Solution Center LYON**

Parc Mail 523, cours du 3ème millénaire, 69791  
Saint-Priest, FRANCE  
TEL: 33 (0)149 38 35 70

### **M3 Solution Center STRASBOURG**

Parc de la porte Sud, Rue du pont du péage,  
67118 Geispolsheim, FRANCE  
TEL: 33 (0)149 38 35 80

### **M3 Solution Center CLUSES**

Espace Scionzier 480 Avenue des Lacs, 74950  
Scionzier, FRANCE  
TEL: 33 (0)1 49 38 35 90

### **M3 Solution Center TOULOUSE**

Aeroparc Saint Martin Cellule B08 ZAC de Saint Martin  
du Touch 12 rue de Caulet, 31300 Toulouse, FRANCE  
TEL: 33 (0)1 49 38 42 90

### **M3 Solution Center RENNES**

ZAC Mivoie  
Le Vallon  
35230 Noyal-Châtillon sur Seiche, FRANCE  
TEL: 33 (0)1 49 38 42 10

---

## Italy

### **MITUTOYO ITALIANA S.r.l.**

Corso Europa, 7 - 20020 Lainate (MI), ITALY  
TEL: 39 02 935781 FAX: 39 02 9373290-93578255

### **M3 Solution Center BOLOGNA**

Via dei Carpini1/A - 40011 Anzola Emilia (BO), ITALY  
TEL: 39 02 93578215 FAX: 39 02 93578255

### **M3 Solution Center CHIETI**

Contrada Santa Calcagna - 66020 Rocca S. Giovanni (CH), ITALY  
TEL: 39 02 93578280 FAX: 39 02 93578255

### **M3 Solution Center PADOVA**

Via G. Galilei 21/F - 35035 Mestrino (PD), ITALY  
TEL: 39 02 93578268 FAX: 39 02 93578255

## Belgium / Netherlands

### **Mitutoyo BeNeLux**

#### **Mitutoyo Belgium N.V.**

Hogenakkerhoekstraat 8, 9150 Kruibeke, BELGIUM  
TEL: 32 (0)3-2540444 FAX: 32(0)3-2540445

#### **Mitutoyo Nederland B.V.**

Wiltonstraat 25, 3905 KW Veenendaal,  
THE NETHERLANDS  
TEL: 31(0)318-534911

## Sweden

### **Mitutoyo Scandinavia AB**

Slåntvägen 6, 194 61 Upplands Väsby, SWEDEN  
TEL: 46 (0)8 594 109 50 FAX: 46 (0)8 590 924 10

### **M3 Solution Center Alingsås**

Ängsvaktaregatan 3A, 441 38 Alingsås, SWEDEN  
TEL: 46 (0)8 594 109 50 FAX:46 (0)322 63 31 62

### **M3 Solution Center Värnamo**

Storgatsbacken 1, 331 30 Värnamo, SWEDEN  
TEL: 46 (0)8 594 109 50 FAX: 46 (0)370 463 34

## Switzerland

### **Mitutoyo (Schweiz) AG**

Steinackerstrasse 35, 8902 Urdorf, SWITZERLAND  
TEL: 41 (0)447361150 FAX: 41(0)447361151

### **Mitutoyo (Suisse) SA**

Rue Galilée 4, 1400 Yverdon-les Bains,  
SWITZERLAND  
TEL: 41 (0)244259422 FAX: 41 (0)447361151

## Poland

### **Mitutoyo Polska Sp.z o.o.**

Ul.Graniczna 8A, 54-610 Wroclaw, POLAND  
TEL: 48 (0)71354 83 50 FAX: 48 (0)71354 83 55

## Czech Republic

### **Mitutoyo Česko s.r.o.**

Dubská 1626, 415 01 Teplice, CZECH REPUBLIC  
TEL: 420 417-514-011 FAX: 420 417-579-867

### **Mitutoyo Česko s.r.o. M3 Solution Center Ivančice**

Ke Karlovu 62/10, 664 91 Ivančice, CZECH REPUBLIC  
TEL: 420 417-514-011 FAX: 420 417-579-867

### **Mitutoyo Česko s.r.o. M3 Solution Center Ostrava Mošnov**

Mošnov 314, 742 51 Mošnov, CZECH REPUBLIC  
TEL: 420 417-514-050 FAX:420 417-579-867

### **Mitutoyo Česko s.r.o. Slovakia Branch**

Hviezdoslavova 124, 017 01 Povážská Bystrica,  
SLOVAKIA  
TEL: 421 948-595-590

## Hungary

### **Mitutoyo Hungária Kft.**

Záhony utca 7, D-épület / fsz, 1031 Budapest,  
HUNGARY  
TEL: 36 (0)1 2141447 FAX: 36 (0)1 2141448

## Romania

### **Mitutoyo Romania SRL**

1A Drumul Garii Odai Street, showroom, Ground  
Floor, 075100 OTOPENI-ILFOV, ROMANIA  
TEL: 40 (0)311012088 FAX: +40 (0)311012089

### **Showroom in Brasov**

Strada Ionescu Crum Nr.1, Brasov Business Park  
Turnul 1, Mezanin, 500446 Brasov-Judetul Brasov,  
ROMANIA  
TEL/FAX: 40 (0)371020017

## Russian Federation

### **Mitutoyo RUS LLC**

13 Sharikopodshipnikovskaya, bld.2, 115088  
Moscow, RUSSIAN FEDERATION  
TEL: 7 495 7450 752

## Finland

### **Mitutoyo Scandinavia AB Finnish Branch**

Viherkiitäjä 2A, 33960, Pirkkala, FINLAND  
TEL: 358 (0)40 355 8498

---

## Austria

### Mitutoyo Austria GmbH

Johann Roithner Straße 131 A-4050 Traun, AUSTRIA  
TEL: 43 (0)7229 23850 FAX: 43 (0)7229 23850-90

### Götzis Regional Showroom

Lasten Straße 48A 6840, AUSTRIA

## Singapore

### Mitutoyo Asia Pacific Pte. Ltd.

#### Head office / M3 Solution Center

24 Kallang Avenue, Mitutoyo Building,  
SINGAPORE 339415  
TEL:(65)62942211 FAX:(65)62996666

## Malaysia

### Mitutoyo (Malaysia) Sdn. Bhd.

#### Kuala Lumpur Head Office / M3 Solution Center

Mah Sing Integrated Industrial Park, 4, Jalan Utarid  
U5/14, Section U5, 40150 Shah Alam, Selangor,  
MALAYSIA

TEL:(60)3-78459318 FAX:(60)3-78459346

#### Penang Branch office / M3 Solution Center

No.30, Persiaran Mahsuri 1/2, Sunway Tunas,  
11900 Bayan Lepas, Penang, MALAYSIA  
TEL:(60)4-6411998 FAX:(60)4-6412998

#### Johor Branch office / M3 Solution Center

No. 70, Jalan Molek 1/28, Taman Molek, 81100  
Johor Bahru, Johor, MALAYSIA  
TEL:(60)7-3521626 FAX:(60)7-3521628

## Thailand

### Mitutoyo(Thailand)Co., Ltd.

#### Bangkok Head Office / M3 Solution Center

76/3-5, Chaengwattana Road, Kwaeng Anusaowaree,  
Khet Bangkaen, Bangkok 10220, THAILAND  
TEL:(66)2-080-3500 FAX:(66)2-521-6136

#### Chonburi Branch / M3 Solution Center

7/1, Moo 3, Tambon Bowin, Amphur Sriracha,  
Chonburi 20230, THAILAND  
TEL:(66)2-080-3563 FAX:(66)3-834-5788

#### Amata Nakorn Branch / M3 Solution Center

700/199, Moo 1, Tambon Bankao, Amphur  
Phanthong, Chonburi 20160, THAILAND  
TEL:(66)2-080-3565 FAX:(66)3-846-8978

## Indonesia

### PT. Mitutoyo Indonesia

#### Head Office / M3 Solution Center

Jalan Sriwijaya No.26 Desa cibatu Kec. Cikarang  
Selatan Kab. Bekasi 17530, INDONESIA  
TEL: (62)21-2962 8600  
FAX: (62)21-2962 8604

## Vietnam

### Mitutoyo Vietnam Co., Ltd

#### Hanoi Head Office / M3 Solution Center

No. 07-TT4, My Dinh - Me Tri Urban Zone, My Dinh 1  
Ward, Nam Tu Liem District, Hanoi, VIETNAM  
TEL:(84)24-3768-8963 FAX:(84)24-3768-8960

#### Ho Chi Minh City Branch Office / M3 Solution Center

123 Dien Bien Phu Street, Ward 15, Binh Thanh  
District, Ho Chi Minh City, VIETNAM  
TEL:(84)28-3840-3489 FAX:(84)28-3840-3498

## Mitutoyo Philippines, Inc.

### Head Office / M3 Solution Center

Unit 2103, Bldg 2 GMV Building 2, 107 North Main  
Avenue, Laguna Technopark, Binan, Laguna 4024,  
Philippines  
TEL:(63)49 544 0272 FAX:(63)49 544 0272

## India

### Mitutoyo South Asia Pvt. Ltd.

#### Head Office / M3 Solution Center

C-122, Okhla Industrial Area, Phase-I, New  
Delhi-110 020, INDIA  
TEL:91(11)2637-2090 FAX:91(11)2637-2636

#### MSA Gurgaon technical center

Plot No. 65, Phase-IV, Udyog Vihar, Gurgaon – 122016  
TEL : 91 (0124) – 2340294

#### Mumbai Region Head office

303, Sentinel Hiranandani Business Park  
Powai, Mumbai-400 076, INDIA  
TEL:91(22)2570-0684, 837, 839 FAX:91(22)2570-0685

#### Pune Office / M3 Solution Center

G2/G3, Pride Kumar Senate, F.P. No. 402 Off.  
Senapati Bapat Road, Pune-411 016, INDIA  
TEL:91(20)6603-3643, 45, 46 FAX:91(20)6603-3644

#### Bengaluru Region Head office / M3 Solution Center

No. 5, 100 Ft. Road, 17th Main, Koramangala,  
4th Block, Bengaluru-560 034, INDIA  
TEL:91(80)2563-0946, 47, 48 FAX:91(80)2563-0949

---

**Chennai Office / M3 Solution Center**

No. 624, Anna Salai Teynampet, Chennai-600 018, INDIA

TEL:91(44)2432-8823, 24, 27, 28 FAX:91(44)2432-8825

**Kolkata Office**

Unit No. 1208,Om Tower, 32,J.L..Nehru Road, Kolkata-700 071, INDIA

Tel: 91 33-22267088/40060635 Fax: (91) 33-22266817

**Ahmedabad Office/M3 Solution Center (Ahmedabad)**

A-104 & A-105, First Floor, Solitaire Corporate Park, Near Divya Bhaskar Press, S.G. Road, Ahmedabad - 380 015, INDIA

TEL: (91) 079 - 29704902/903

**Coimbatore Office (Coimbatore)**

Regus, Srivari Srimath, 3rd Floor, Door No:1045, Avinashi Road, Coimbatore - 641 018,INDIA

TEL: (91) 9345005663

**Taiwan****Mitutoyo Taiwan Co., Ltd. / M3 Solution Center Taipei**

4F., No.71, Zhouzi St., Neihu Dist., Taipei City 114, TAIWAN (R.O.C.)

TEL:886(2)5573-5900 FAX:886(2)8752-3267

**Taichung Branch / M3 Solution Center Taichung**

1F., No.758, Zhongming S. Rd., South Dist., Taichung City 402, TAIWAN(R.O.C.)

TEL:886(4)2262-9188 FAX:886(4) 2262-9166

**Kaohsiung Branch / M3 Solution Center Kaohsiung**

1F., No.31-1, Haibian Rd., Lingya Dist., Kaohsiung City 802, TAIWAN (R.O.C.)

TEL:886(7)334-6168 FAX:886(7)334-6160

**South Korea****Mitutoyo Korea Corporation****Head Office / M3 Solution Center**

(Sanbon-Dong, Geumjeong High View Build.), 6F, 153-8, Ls-Ro, Gunpo-Si, Gyeonggi-Do, 15808 KOREA

TEL:82(31)361-4200 FAX:82(31)361-4202

**Busan Office / M3 Solution Center**

(3150-3, Daejeo 2-dong) 8, Yutongdanji 1-ro 49beon-gil, Gangseo-gu, Busan, 46721 KOREA

TEL:82(51)718-2140 FAX:82(51)324-0104

**Daegu Office / M3 Solution Center**

(Galsan-dong, Daegu Business Center), 301-Ho, 217, Seongseogongdan-ro, Dalseo-gu, Daegu 42704 KOREA

TEL:82(53)593-5602 FAX:82(53)593-5603

**China****Mitutoyo Measuring Instruments (Shanghai) Co., Ltd.**

12F, Nextage Business Center, No.1111 Pudong South Road, Pudong New District, Shanghai 200120, CHINA

TEL:86(21)5836-0718 FAX:86(21)5836-0717

**Suzhou Office / M3 Solution Center (Suzhou)**

No. 46 Baiyu Road, Suzhou 215021, CHINA

TEL:86(512)6522-1790 FAX:86(512)6251-3420

**Wuhan Office**

Room 1701, Wuhan Wanda Center, No. 96, Linjiang Road, Wuchang District, Wuhan Hubei 430060, CHINA

TEL:86(27)8544-8631 FAX:86(27)8544-6227

**Chengdu Office**

1-701, New Angle Plaza, 668# Jindong Road, Jinjiang District, Chengdu, Sichuan 610066, CHINA

TEL:86(28)8671-8936 FAX:86(28)8671-9086

**Hangzhou Office**

Room 804, Eastern International Business Center Building 1, No.600 Jinsha Road

Hangzhou Economic and Technological Development Zone, 310018, CHINA

TEL: 86(571)8288-0319 FAX: 86(571)8288-0320

**Tianjin Office / M3 Solution Center Tianjin**

Room D 12/F, TEDA Building, No.256 Jie-fang Nan Road Hexi District, Tianjin 300042, CHINA

TEL:86(22)5888-1700 FAX:86(22)5888-1701

**Changchun Office**

Room 815, 8F, Building A1, Upper East International No.3000 Dongsheng Street, Erdao District, Changchun, Jilin, 130031, CHINA

TEL:86(431)8192-6998 FAX:86(431)8192-6998

**Chongqing Office**

Room 1312, Building 3, Zhongyu Plaza, No.86, Hongjin Avenue, Longxi Street, Yubei District, Chongqing, 400000, CHINA

TEL:86(23)6595-9950 FAX:86(23)6595-9950

**Qingdao Office**

Room 638, 6F, No.192 Zhengyang Road, Chengyang District, Qingdao, Shandong, 266109, CHINA

TEL:86(532)8096-1936 FAX:86(532)8096-1937

**Xi'an Office**

Room 805, Xi'an International Trade Center, No. 196 Xiaozhai East Road, Xi'an, 710061, CHINA

TEL:86(29)8538-1380 FAX:86(29)8538-1381



---

**Dalian Office / M3 Solution Center Dalian**

Room 1008, Grand Central IFC, No.128 Jin ma Road, Economic Development Zone, Dalian 116600, CHINA

TEL:86(411)8718 1212 FAX:86(411)8754-7587

**Zhengzhou Office**

Room1801,18/F,Unit1,Building No.23, Shangwu Inner Ring Road, Zhengdong New District,Zhengzhou City, Henan Province, 450018,CHINA

TEL:86(371)6097-6436 FAX:86(371)6097-6981

**Mitutoyo Leeport Metrology (Hong Kong) Limited**

Room 818, 8/F, Vanta Industrial Centre, No.21-33, Tai Lin Pai Road, Kwai Chung, NT, Hong Kong

TEL:86(852)2992-2088 FAX:86(852)2670-2488

**Mitutoyo Leeport Metrology (Dongguan) Limited / M3 Solution Center Dongguan**

No.26, Guan Chang Road, Chong Tou Zone, Chang An Town, Dong Guan, 523855 CHINA

TEL:86(769)8541 7715 FAX:86(769)-8541 7745

**Mitutoyo Leeport Metrology (Dongguan) Limited****- Fuzhou office**

Room 2104, City Commercial Centre, No.129 Wu Yi Road N., Fuzhou City, Fujian Province, CHINA

TEL 86 591 8761 8095 FAX 86 591 8761 8096

**Mitutoyo Leeport Metrology (Dongguan) Limited****- Changsha office**

Room 2207, Shiner International Plaza, No. 88, Kaiyuan Middle Road, Changsha City, Hunan, China

TEL 86 731 8401 9276 FAX 86 731 8401 9376

**Mitutoyo Measuring Instruments (Suzhou) Co., Ltd.**

No. 46 Baiyu Road, Suzhou 215021, CHINA

TEL:86(512)6252-2660 FAX:86(512)6252-2580

**U.S.A.****Mitutoyo America Corporation**

965 Corporate Boulevard, Aurora, IL 60502, U.S.A.

TEL:1-(630)820-9666

Toll Free No. 1-(888)648-8869

FAX:1-(630)978-3501

**M3 Solution Center-Illinois**

965 Corporate Boulevard, Aurora, IL 60502, U.S.A.

TEL:1-(888)648-8869 FAX:1-(630)978-3501

**M3 Solution Center-Ohio**

6220 Hi-Tek Court, Mason, OH 45040, U.S.A.

TEL:1-(888)648-8869 FAX:1-(513)754-0718

**M3 Solution Center-Michigan**

46850 Magellan Drive, Suite 100, Novi, MI 48377, U.S.A.

TEL:1-(888)648-8869 FAX: 1-(248)926-0928

**M3 Solution Center-California**

16925 E. Gale Avenue, City of Industry, CA 91745, U.S.A.

TEL:1-(888)648-8869 FAX:1-(626)369-3352

**M3 Solution Center-North Carolina**

11515 Vanstory Drive, Suite 140, Huntersville, NC 28078, U.S.A.

TEL:1-(888)648-8869 FAX:1-(704)875-9273

**M3 Solution Center-Alabama**

2100 Riverchase Center, Suite 106, Hoover, AL 35244, U.S.A.

TEL:1-(888)648-8869 FAX:1-(205)988-3423

**M3 Solution Center-Washington**

1000 SW 34th Street Suite G, Renton, WA 98057 U.S.A.

TEL:1-(888)648-8869

**M3 Solution Center-Texas**

4560 Kendrick Plaza Drive, Suite 120, Houston, TX 77032, U.S.A.

TEL:1-(888)648-8869 FAX:1-(281)227-0937

**M3 Solution Center-Massachusetts**

753 Forest Street, Suite 110, Marlborough, MA 01752, U.S.A.

TEL:1-(888)648-8869 FAX:1-(508)485-0782

**Mitutoyo America Corporation Calibration Lab**

965 Corporate Boulevard, Aurora, IL 60502, U.S.A.

TEL:1-(888)648-8869 FAX:1-(630)978-6477

**Micro Encoder, Inc.**

11533 NE 118th Street, Kirkland, WA 98034-7111, U.S.A.

TEL: 1-(425)821-3906 FAX: 1-(425)821-3228

**Micro Encoder Los Angeles, Inc.**

16925 E. Gale Avenue, City of Industry, CA 91745-1806 U.S.A.

TEL: 1-626-961-9661 FAX:1-626-333-8019

**Canada****Mitutoyo Canada Inc.**

2121 Meadowvale Blvd., Mississauga, Ont. L5N 5N1., CANADA

TEL:1-(905)821-1261 FAX:1-(905)821-4968

**Montreal Office**

7075 Place Robert-Joncas Suite 129, Montreal, Quebec H4M 2Z2, CANADA

TEL:1-(514)337-5994 FAX:1-(514)337-4498

---

## **Brazil**

### **Mitutoyo Sul Americana Ltda.**

#### **Head office / M3 Solution Center / Factory**

Rodovia Índio Tibiríça 1555, Bairro Raffo, CEP  
08655-000 Suzano – SP, Brasil  
TEL:55 (11)5643-0040

## **Argentina**

### **Mitutoyo Sul Americana Ltda.**

#### **Argentina Branch / M3 Solution Center**

Av. B. Mitre 891/899 – C.P. (B1603CQI)  
Vicente López –Pcia. Buenos Aires – Argentina  
TEL:54(11)4730-1433 FAX:54(11)4730-1411

#### **Sucursal Cordoba / M3 Solution Center**

Av. Amadeo Sabattini, 1296, esq. Madrid B°  
Crisol Sur – CP 5000, Cordoba, ARGENTINA  
TEL/FAX:54 (351) 456-6251

## **Mexico**

### **Mitutoyo Mexicana, S.A. de C.V.**

Prolongación Industria Eléctrica No. 15 Parque  
Industrial Naucalpan  
Naucalpan de Juárez, Estado de México C.P.  
53370, MÉXICO  
TEL: 52 (01-55) 5312-5612

#### **Monterrey Office / M3 Solution Center Monterrey**

Blv. Interamericana No. 103, Parque Industrial  
FINSA, C.P. 66636 Apodaca, N.L., MÉXICO  
TEL: 52(01-81) 8398-8227/8228/8242/8244  
FAX: 52(01-81) 8398-8226

#### **Tijuana Office / M3 Solution Center Tijuana**

Calle José María Velazco 10501-C, Col. Cd.  
Industrial Nueva Tijuana, C.P. 22500 Tijuana, B.C.,  
MÉXICO  
TEL: 52 (01-664) 647-5024

#### **Querétaro Office / M3 Solution Center Querétaro**

Av. Cerro Blanco No.500-1, Colonia Centro Sur,  
Querétaro, Querétaro, C.P. 76090,  
MÉXICO  
TEL: 52 (01-442) 340-8018, 340-8019 and 340-  
8020  
FAX: 52 (01-442) 340-8017

#### **Mitutoyo Mexicana, S.A. de C.V. Querétaro Calibration Laboratory**

Av. Cerro Blanco 500 30 Centro Sur,  
Querétaro, Querétaro, C.P. 76090, MÉXICO  
TEL: 52 (01-442) 340-8018, 340-8019 and 340-8020  
FAX: 52 (01-442) 340-8017

### **Aguascalientes Office / M3 Solution Center**

Av. Aguascalientes No. 622, Local 15 Centro  
Comercial El Cilindro Fracc. Pulgas Pandas  
Norte, C.P. 20138, Aguascalientes, Ags. MÉXICO  
TEL: 52 (01-449) 174-4140 and 174-4143

### **Irapuato Office / M3 Solution Center**

Boulevard a Villas de Irapuato No. 1460 L.1 Col. Ejido  
Irapuato C.P. 36643  
Irapuato, Gto., MÉXICO  
TEL: 52 (01-462) 144-1200 and 144-1400

---

## Revision History

Date of publication	No. of revisions	Revision details
March 1, 2018	First edition	Printed
May 1, 2019	Revised first edition	Revised in accordance with changes to modification of product specification

# Mitutoyo Corporation

---

20-1, Sakado 1-Chome, Takatsu-ku, Kawasaki-shi, Kanagawa 213-8533, Japan

Tel: +81 (0)44 813-8230 Fax: +81 (0)44 813-8231

Home page: <http://www.mitutoyo.co.jp/global.html>

For the EU Directive, Authorized representative and importer in the EU:

Mitutoyo Europe GmbH

Borsigstrasse 8-10, 41469 Neuss, Germany

Printed in Japan

No. 99MAK600B