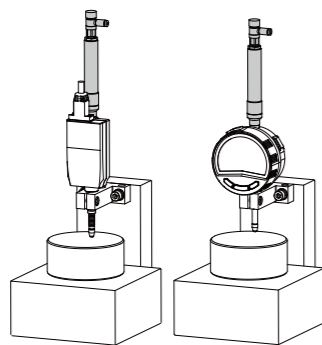


Air Lifter



This product is an auxiliary device for efficiency and automation of measurement work using indicators. Read both this document and the user's manual of the indicator thoroughly before operating this product to use it properly. After reading this manual, keep it close at hand for future reference.

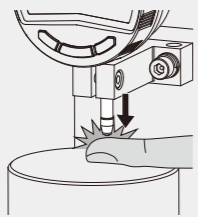


Safety Precautions

When using this product, be sure to observe all precautions regarding indicated specifications, functions and use. Using this product in any other manner may be detrimental to safety. In the event that this product is damaged, take all appropriate measures to avoid accidents and maintain safety.

NOTICE Shows risks that could result in property damage.

- When air is being supplied (when the plunger is lowered), there is a danger of the operator's fingers being caught between the workpiece and the plunger, resulting in injury. Exercise caution, especially when using a sharp contact point.



- Using this product for purposes other than those described in this document (e.g., moving or transporting workpieces) may result in injury or damage to the device. Please be sure to never do this.

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 Export Trade Control Order or under Category 16 of Appended Table of Foreign Exchange Control Order, based on Foreign Exchange and Foreign Trade Act of Japan.

If you intend re-export of this product from a country other than Japan, re-sale of this product in a country other than Japan, or re-providing of the technology (including Programs), you shall 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, List-Control Technology (including Programs) under Category 1 - 15 of Appended Table 1 of Export Trade Control Order or under Category 1 - 15 of 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 this product from a country other than Japan, re-sale of this product in a country other than Japan, or re-providing of the technology (including Programs), you shall observe the regulations of your country. Please contact Mitutoyo prior to such re-export, re-sale or re-providing.

1. Unpacking and Verification of Package Components

Before using this product, verify that the following items are present.

Part name	Quantity	Part name	Quantity
Air Lifter	1	Washer	1
Mounting jig	1	User's Manual (this document)	1
Speed controller (SMC AS1211F-M5-23)	1	Warranty	1

2. Product Overview

Attaching an indicator (Linear Gage or Digimatic Indicator) to this product and incorporating it into your device allows you to automate indicator measurement operations by supplying air.

Linear Gages that can be connected to this product are as follows.

- Linear Gage
 - LGS Series
- Digimatic Indicator
 - ID-S Series
 - ID-C Series (types with a measuring range of 12.7 mm)
 - ID-N Series

Tips

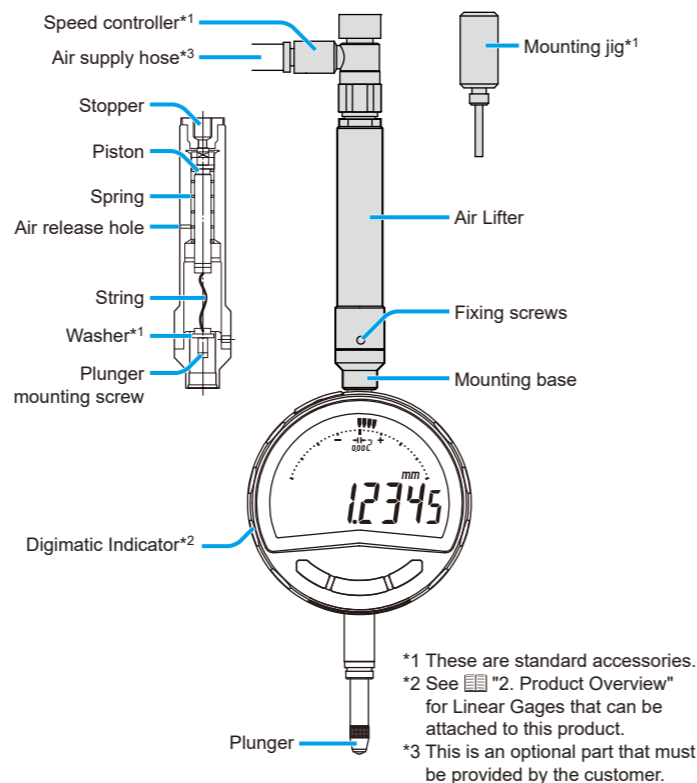
Waterproof and dustproof functions cannot be guaranteed.

You can see what automatic measurement (up and down movement of the plunger) in the video.



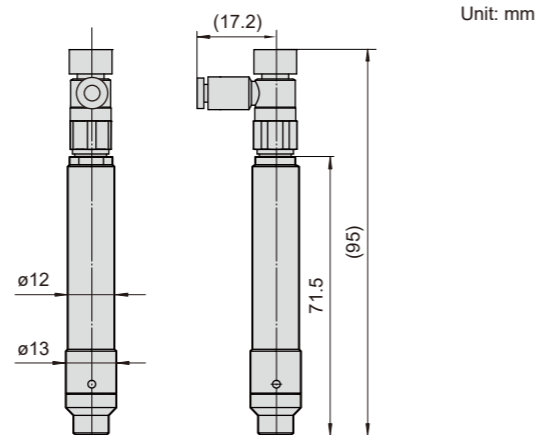
3. Part Names

The illustration below shows attachment to a Digimatic Indicator with standard accessories and optional parts.



4. External Dimensions

The dimensions indicated in the diagram of external dimensions are for reference. When incorporating this product into your device be sure to allow ample space.



5. Attaching This Product

Attach a Linear Gage or Digimatic Indicator to this product. This section explains how to attach the Digimatic Indicator. When attaching a Linear Gage, follow the same procedure as for the Digimatic Indicator.

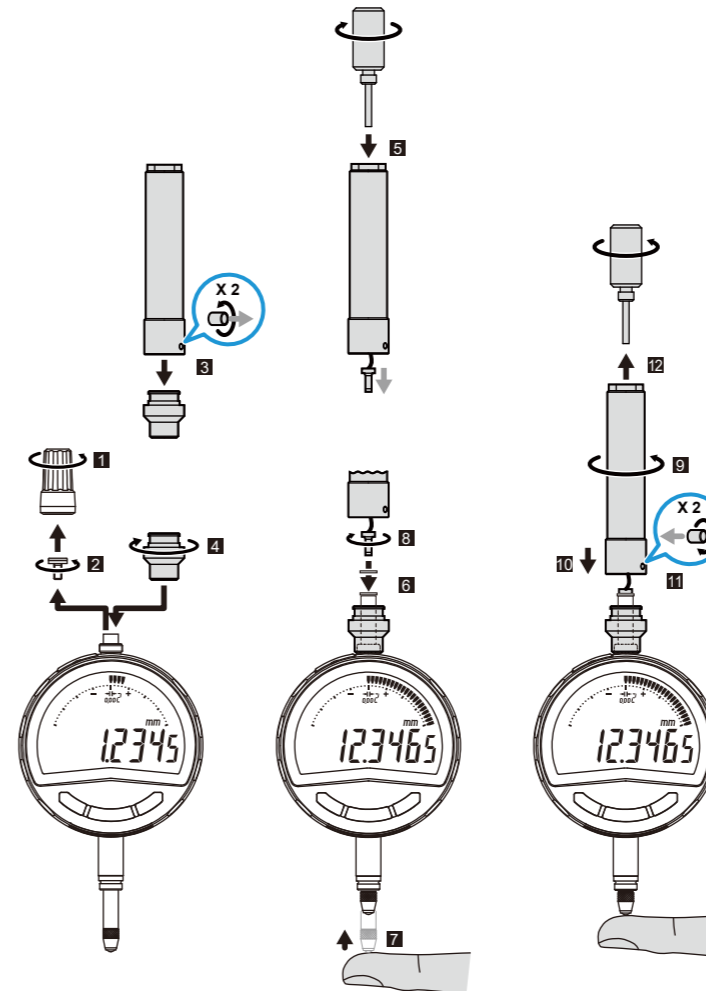
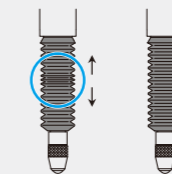
You can check the attaching method of the Air Lifter in the video.



NOTICE

Shows risks that could result in property damage.

- If the plunger is dropped suddenly while the stop screw is removed or with the washer not having been attached, the internal mechanism of the indicator may become damaged.
 - If the string connected to the mounting screw is pulled forcibly, it may become stretched, thereby shortening the measuring range, or it may break.
 - If the speed controller is not screwed in adequately, it may not operate properly due to air leakage.
 - If a product with a rubber boot* attached to the plunger is left unused for a long time, the rubber boot* may not expand or may remain in a shrunken state even when air is supplied. After supplying air, gently stretch the rubber boot* to confirm that there is no problem with the measurement length.
- * Rubber cap (for Linear Gage)



- Remove the cap from the indicator.
- Remove the stop screw from the top of the plunger.
- Loosen the fixing screws (in two places) and remove the mounting base from the Air Lifter.
- Screw the mounting base into the thread on the top of the indicator to secure it in place.

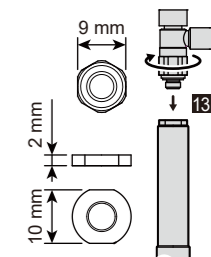
- Screw the mounting jig into the Air Lifter and push out the mounting screw.
- Pass the mounting screw through the washer.
- Lift the plunger.
- Screw the mounting screw into the plunger and tighten it with pliers or some other appropriate tool.

NOTICE

Shows risks that could result in property damage.

Make sure that the pliers do not touch the string and damage it.

- Untwist the string connected to the mounting screw.
- Insert the Air Lifter into the mounting base.
- Secure the mounting base to the Air Lifter with the fixing screws (in two places).
- Remove the mounting jig from the Air Lifter.
- Firmly screw the accessory speed controller into the Air Lifter and secure it tightly.
- Connect the indicator with attached Air Lifter to a device, etc. When doing so, be sure to position the air release hole so that it faces a direction in which it will not be directly exposed to water or oil. If this is difficult to do, install a cover or the like.



6. Adjusting Plunger Operation Speed

While air is being supplied,* adjust the air flow rate (air cylinder operation speed) using this product's speed controller. An air supply hose must be provided by the customer.

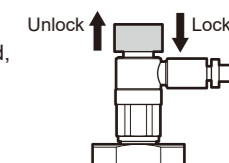
*This adjustment is only effective when air is being supplied.

NOTICE

Shows risks that could result in property damage.

- Excessive operation speed can cause damage to the indicator or the workpiece. Adjust the working air pressure and flow rate.
 - Adjust the working air pressure with a pressure regulator, etc.
 - Adjust the flow rate with the speed controller.
- Use an air circuit capable of both air supply and release. If air cannot be released, the plunger will not return after air is supplied.
- Install an air filter, etc. to ensure use of sufficiently cleaned compressed air.

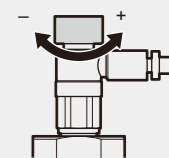
- Lift the speed controller knob to unlock it.
- Turn the knob to adjust the operation speed, and then push the knob down to lock it.



IMPORTANT

To increase operation speed, turn the knob counterclockwise, and to reduce operation speed, turn it clockwise.

+: Increase operation speed
-: Reduce operation speed



7. Specifications

Part No.	903594	903598
Plunger mounting screw	mm-type	inch-type
Size of top screw part	M7.4 × 0.5	
Stroke	10 mm or more	0.4 in
Working air pressure	0.5 Mpa	
Mass	60 g	
Air supply hose	Outer diameter: 3.2 mm	
Plunger operation speed	Adjustable with the speed controller when supplying air	