

Air Lifter 25 (No. 02ADE250) Air Lifter 50 (No. 02ADE270)



Read this document thoroughly before operating the product. After reading, retain it close at hand for future reference.

This English language version of the document contains the original instructions.

This product is used in combination with a Linear Gage. Please also refer to the Linear Gage User's Manual.

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 the product is damaged, take all appropriate measures to avoid accidents and maintain safety.

NOTICE Shows risks that could result in property damage.

- Do not disassemble or modify the product. Doing so will invalidate the warranty.
- Do not apply excessive force to the product, such as by dropping it.
- Be careful to avoid subjecting the plunger of the Linear Gage to lateral or twisting force.
- Since malfunction will result, avoid over-tightening the stem of the Linear Gage.
- For safety's sake, do not use the product for any purpose other than that specified.
- This product is not rated under the IP Code or other certification for protection against intrusion of dust, or water. Avoid use in environments where it may be directly exposed to liquids such as water or oil.

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 the product from a country other than Japan, re-sale of the 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 the product from a country other than Japan, re-sale of the 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 in advance.

1. Unpacking and Verification of Package Components

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

| Air Lifter 25 (No. 02ADE250) | Air Lifter 50 (No. 02ADE270) | Quantity |
|--|---------------------------------|----------|
| Main unit | | 1 |
| Attachment bolt (M5x25) Washer (M5 flat, M5 spring) | | 2 each |
| Guide (No. 02ADE261) | Guide (No. 02ADE284) | 1 |
| Washer, guide fastening (M6 flat) | | 1 |
| O-ring, guide fastening (P4:1.9 mm CS, 3.8 mm ID) | | 1 |
| Extension rod (No. 02ADE285) | | 1 |
| User's Manual (this document), 99MBC046B | | 1 |
| Warranty | | 1 |

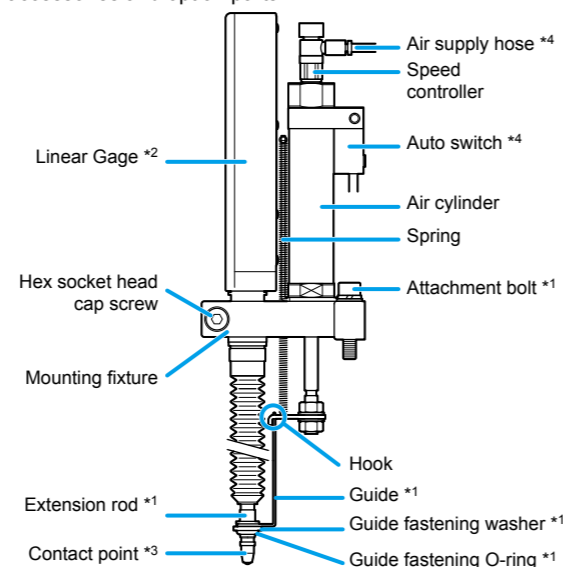
2. Product Overview

By connecting a Linear Gage to this product, incorporating it into your equipment and supplying air, it is possible to automate Linear Gage measurement operation.

- Linear Gages that can be connected to this product are as follows.
- LG100 Series (types with a measurement range of 25 mm or 50 mm)
 - LGF Series (types with a measurement range of 25 mm or 50 mm)
 - LGD Series (types with a measurement range of 25 mm or 50 mm)

3. Part Names

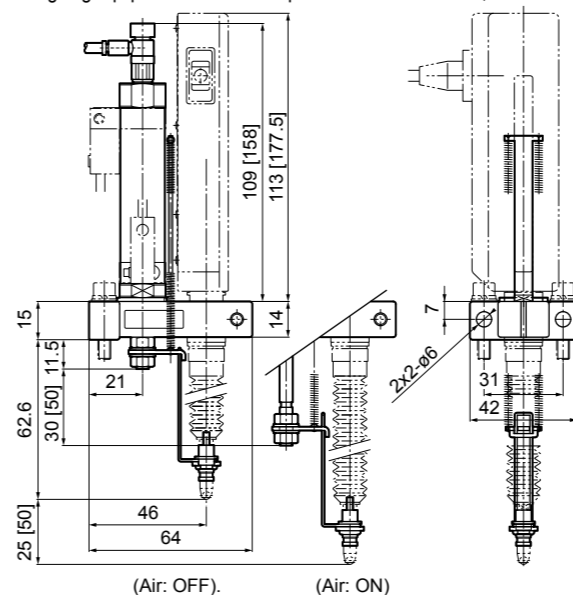
The illustration below shows attachment to a Linear Gage with standard accessories and option parts.



- *1 Standard accessories included with this product
- *2 For details on Linear Gages that can be connected to this product, see "2. Product Overview".
- *3 Standard accessories included with Linear Gage
- *4 Option parts. Option parts must be provided by the customer.

4. Outline Dimensional Drawing

The illustration shows Air Lifter 25. Dimensions shown are for Air Lifter 25 (with dimensions for Air Lifter 50 indicated in square brackets). Dimensions indicated in this outline dimensional drawing are for reference. When designing equipment in which this product is to be included, be sure to allow ample leeway. Unit: mm



5. Attachment Procedure

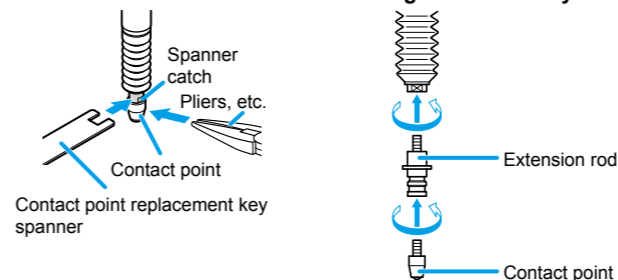
After attaching the extension rod to the Linear Gage, attach the Linear Gage to this product.

5.1. Extension Rod Attachment

NOTICE Shows risks that could result in property damage.

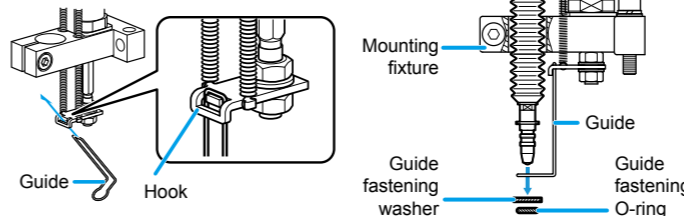
To avoid malfunction or damage to the Linear Gage, be sure to use the contact point replacement key spanner that is provided with the Linear Gage when replacing the Linear Gage contact point. See the Linear Gage User's Manual for details.

- 1 Fit the provided contact point replacement key spanner to the spanner catches (two sides) at the tip of the plunger and hold the spanner to prevent the plunger from turning.
- 2 To prevent damage to the contact point, cover it with soft cloth and grip with pliers to remove it.
- 3 Insert the threaded end of the extension rod into the hole that formerly held the contact point and turn the extension rod to affix it.
- 4 Reversing the procedure used to remove the contact point, screw it into the end of the extension rod and tighten it securely.



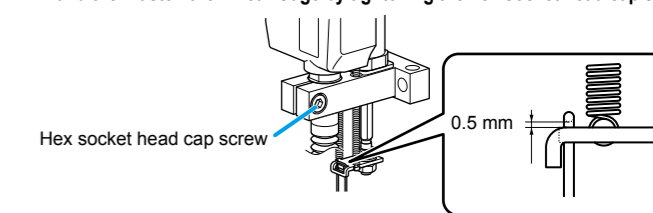
5.2. Linear Gage Attachment

- 1 Hang the provided guide on the product's guide hook.
- 2 Set the Linear Gage into the hole in the mounting fixture of this product, pass the contact point through the round hole in the guide, and then attach the guide fastening washer and the guide O-ring fastener in that order.



- 3 Press the Linear Gage into position, then tighten the hex socket head cap screw in the mounting fixture to temporarily immobilize the stem of the Linear Gage.

- 4 With the contact point pushed in (to its upper limit), adjust the position of the Linear Gage so that there is a gap (about 0.5 mm) between the guide and the hook (to prevent any load from being applied to the Linear Gage when the air cylinder rises), and then fasten the Linear Gage by tightening the hex socket head cap screw.



- 5 Verify plunger movement as described in "6. Operation Speed Adjustment".

Tips

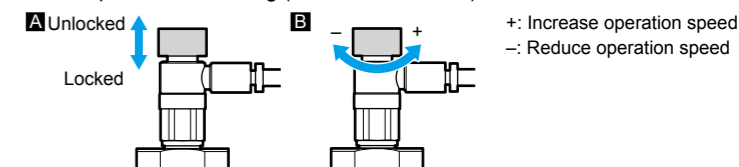
Over-tightening the hex socket head cap screw will impair movement of the Linear Gage plunger.

6. Operation Speed Adjustment

NOTICE Shows risks that could result in property damage.

Over-speed errors will occur if operation speed is too fast. Excessive speed can also harm Linear Gage or workpiece.

After attaching the air supply hose, modify the air flow volume with the product's speed controller to adjust operation speed of the air cylinder. Lift the speed controller to unlock it (Figure A). Turn the knob to adjust operation speed, and then re-lock the speed controller. To increase operation speed, turn the knob counterclockwise, or to reduce operation speed, turn it clockwise (Figure B). Speed controller adjustment is only possible with the contact point is descending (when air flow is ON).



Tips

- An air supply hose must be provided by the customer.
- If overspeed errors occur, adjust the air pressure using a pressure regulator or adjust the flow rate with the speed controller.

7. Auto Switch Attachment

An auto switch can be attached to this product. The supported auto switch is the SMC auto switch CDJ2 Series with an inner tube diameter of 16 mm with a band attachment.

Tips

The auto switch must be provided by the customer.

8. Specifications

| Part No. | 02ADE250 | 02ADE270 |
|--------------------------------------|---|---------------|
| Product name | Air Lifter 25 | Air Lifter 50 |
| Stroke | 25 mm or more | 50 mm or more |
| Utility air pressure | 0.2–0.4 Mpa (when using a Linear Gage with resolution of 0.1 μm, use 0.2 Mpa)*1 | |
| Air supply hose | 4 mm OD/2.5 mm ID *2 | |
| Contact point direction of operation | Air OFF: Contact point retracted (up) Air ON: Contact point extended (down) | |
| Operation speed | Can be adjusted with the speed controller *3 | |

*1 Depending on use environment and other conditions, overspeed errors may occur. If errors occur, adjust the air pressure using a pressure regulator or adjust the flow rate with the speed controller.

*2 An air supply hose must be provided by the customer.

*3 Adjustable only when air is ON. Speed adjustment is not possible while air is OFF.