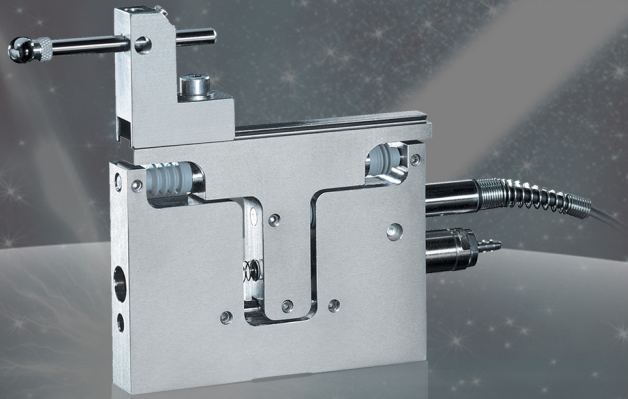
Solartron Metrology

Block Gauge



User Manual

AMETEK®
ULTRA PRECISION TECHNOLOGIES

1.0 Index

Section	Title	Page
1.0	Index	2
2.0	Safety Summary	3
3.0	Mechanical Installation	4
3.1	Tool Holder Installation/Adjustment . .	4
3.2	Spring Installation/Adjustment	6
3.3	Pneumatic Actuator Installation	7
4.0	Specifications	8
	Return of Goods	
	Solartron Sales Offices	

2.0: Safety Summary

Terms in this Handbook

WARNING statements identify conditions or practices that could result in personal injury or loss of life.

CAUTION statements identify conditions or practices that could result in damage to the equipment or other property.

Symbols in this manual

This symbol indicates where applicable cautionary or other information is to be found.

WARNINGS:

Do not operate in an explosive atmosphere
To avoid explosion, do not operate this equipment in an explosive atmosphere.

Pneumatic Application
Under no circumstances should a maximum overpressure of 7 bar be exceeded. The maximum operational pressure for the Block Gauge is 3 bar.

NOTES:

This equipment contains no user serviceable parts
This equipment must be returned to your original supplier for all servicing and repair.

Low Voltage
This equipment operates at below the SELV and is therefore outside the scope of the Low Voltage Directive.

3.0: Mechanical Installation

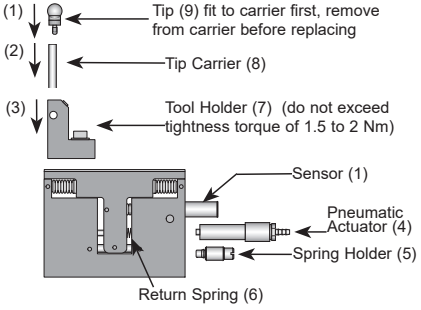
First establish the orientation in which the Block Gauge will be used. The choice of return spring (6) and its position depends on the orientation of the gauge and should be made after the tool holder (7) and contact tip (9) have been fitted. A set of return springs (for different measurement forces) are included with each gauge.

It may be easier to set contact tip forces as close as possible to operating forces before the Block Gauge is installed onto a machine or fixture. Final adjustments may then be made after installation. Final adjustment of the spring force is made by winding the spring holder (5) in or out.

When fitting a pneumatic actuator (4), ensure that the threads in the Block Gauge and the actuator are clean. In order to avoid damage to the actuator or the Block Gauge, it is important not to exceed the specified air pressure.

When mounting the Block Gauge in a fixture, care must be taken not to drop the gauge or apply excessive shocks which may degrade performance.

It should be secured to a flat surface by using the fixing screws at the base of the Block Gauge. The fixing screws are M6. The thread depth in the body is 8 mm.



CAUTION
The pneumatic Block Gauge works at a higher air pressure than pneumatic Gauging Probes. In order to avoid damage to Gauging Probes when used in conjunction with Block Gauges, it is important that separate regulators are used for each product.

3.0: Mechanical Installation (continued)

3.1: Tool Holder Installation/Adjustment
The tool holder is infinitely adjustable along the industry standard dovetail fitting on the Block Gauge frame. This dovetail fitting ensures that the gauge is rigid yet easy to install and adjust.

Tool Holder Adjustment

1. Loosen the caphead screw (11) located on the tool holder (7) using a 3 mm Allen key.

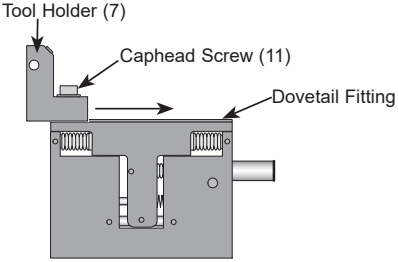
2. Slide the tool holder to the required position.

3. Tighten the screw.

CAUTION
In order to avoid damage to the linear bearings, it is important not to exceed the specification for the torque setting (1.5 to 2 Nm) of the fixing screw when adjusting the tool holder.

Tool Holder Installation
To remove the tool holder (7), loosen the caphead screw (11) located on the tool holder using a 3 mm Allen key. Slide the tool holder off the dovetail.

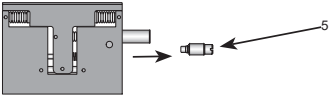
To re-install the tool holder, simply slide it over the dovetail joint to the required position and then tighten the caphead screw.



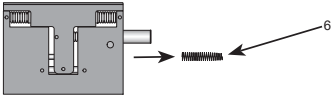
3.0: Mechanical Installation (continued)

3.2: Spring Installation/Adjustment
The choice of spring return and its position depends on the orientation of the gauge and should be made after the tool holder and contact tip have been fitted. A set of four return springs are included with each gauge.

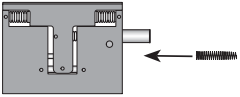
1. Unscrew and remove the spring holder (5).



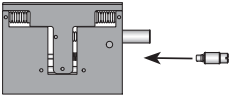
2. Remove the spring (6) if installed.



3. Select an appropriate spring, and insert this into the frame.



4. Insert the screw holder back into the Block Gauge frame and screw in.

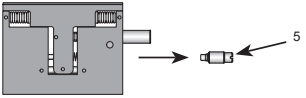


5. Final adjustment to the spring force is made by winding the spring holder in or out using a flat blade screwdriver.

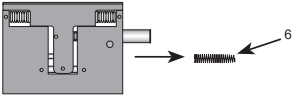
3.0: Mechanical Installation (continued)

3.3: Pneumatic Actuator Installation

1. Unscrew and remove the spring holder (5).

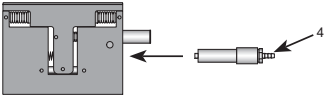


2. Remove the spring (6) if it is installed.



3. Install a spring and spring holder opposite to where the pneumatic actuator is to be installed

4. Insert the pneumatic actuator (4) and screw until tight. Do not overtighten.



To maximise the working life of the Block Gauge, the air supply should be both clean and dry for continual reliable operation. The air should have a maximum relative humidity of 60% RH and be filtered to better than 5 µm particle size.

When fitting a pneumatic actuator, ensure that threads in the Block Gauge and the actuator are clean. In order to avoid damage to the actuator or the Block Gauge, it is important not to exceed the specification for air pressure.

CAUTION
The pneumatic Block Gauge works at a higher air pressure than pneumatic gauging probes. In order to avoid damage to gauging probes when used in conjunction with Block Gauges, it is important that separate air pressure regulators are used for each product type.

4.0: Specification - See Orbit3 Catalogue

For instruction on using Orbit3 see the Orbit3 System Manual at www.solartronmetrology.com

See Data Sheet 502624 for Block Gauge Performance, all data sheets and manuals are avilable at: www.solartronmetrology.com