



# Operation Manual

PRODUCT NAME

PRESSURE GAUGE

MODEL/ Series

G 4 3

**SMC Corporation**

# Contents

Safety Instructions	2 to 3
1. Specifications	4
2. Operation principle	5
3. Type marking	5
4. Caution on handling	6 to7
5. Pattern of the dial	8
6. Drawing	8



# Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)<sup>\*)</sup>, and other safety regulations.

\*) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components  
ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components  
IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements  
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots  
etc.



## **Danger**

**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



## **Warning**

**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



## **Caution**

**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

## **Warning**

### **1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

### **2. Only personnel with appropriate training should operate machinery and equipment.**

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

### **3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

### **4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.**

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.



# Safety Instructions

## Caution

**We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.**

**Use in non-manufacturing industries is not covered.**

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

## Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.\*2)  
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.  
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

**\*2) Vacuum pads are excluded from this 1 year warranty.**

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

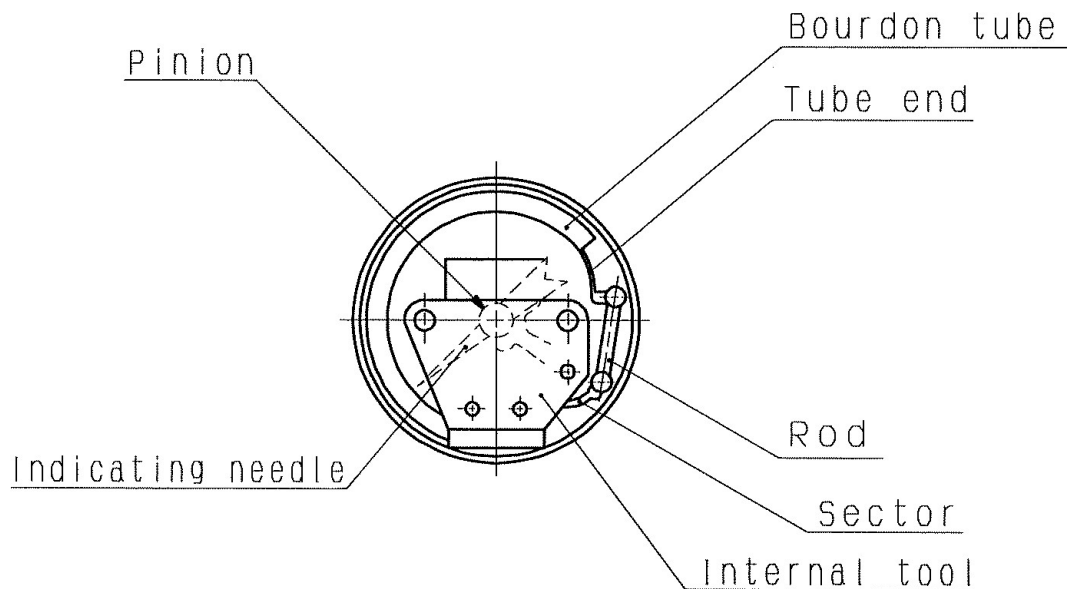
# 1. Specifications

Type	G43					
Connect port	R	1 / 8 , 1 / 4				
Connect port	NPT	1 / 8 , 1 / 4				
Max. operating pressure (MPa)	0.2	0.3	0.4	0.6	0.7	1.0
Pressure range (MPa)	0~0.2	0~0.3	0~0.4	0~0.6	0~0.7	0~1.0
Accuracy	±3%F.S(Full span) ※					
Operating fluid	Air					
Ambient temp. & operating fluid temp.	-5°C~60°C (No freezing)					

※Full span depending on the Max. operating pressure.(ex.G43-2-01:0.2MPa)

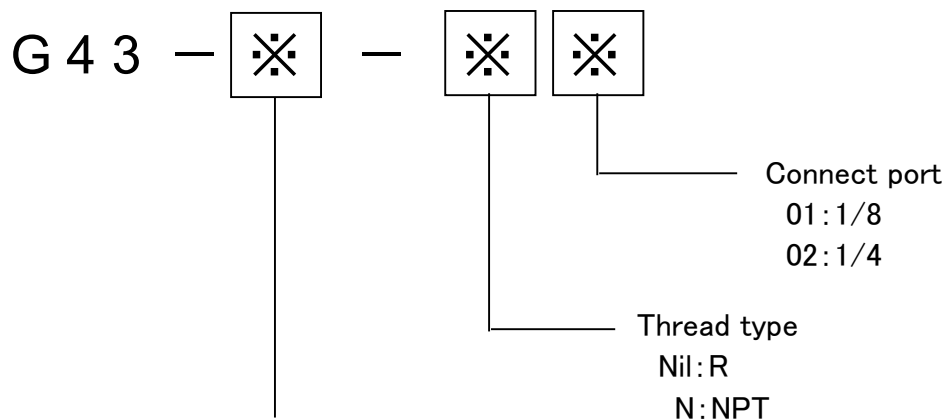
## 2. Operation principle

Deviation due to pressure difference between in/outside of bourdon tube is transmitted to the sector through the rod to rotate the pinion engaging the sector. The indicating needle and scale display the pressure value.



## 3. Type marking

How to Order



Symbol of the MAX. Pressure

- 2 : 0.2MPa
- 3 : 0.3MPa
- 4 : 0.4MPa
- 6 : 0.6MPa
- 7 : 0.7MPa
- 10 : 1.0MPa

## 4. Caution on Handling



### **Warning**

#### **Operation**

---

- (1) Do not give the pressure more than max. (indicated by max. scale). Otherwise, displacement of zero point of needle and deformation of Bourdon tube may be caused. Select the gauge in accordance with max. operating pressure.
- (2) Do not use the fluid which may corrode the material of contact part to liquid and gas. Otherwise, pressure element is broken or burst and released to outside, and finally, that damage human body and peripheral equipment.
- (3) Please provide the space by 10mm or more of the glass of the pressure gauge in surroundings.  
The glass is damaged if the glass doesn't operate normally and it is very dangerous.
- (4) Use within operating temperature range. Otherwise, the gauge breaks and damages human body and peripheral equipment.



### **Warning**

#### **Handling**

---

- (1) Do not use for oxygen.
- (2) Do not give any modification to the product and its function.
- (3) Before installation and removal, shut off supply pressure completely and exhaust residual pressure in tubing and other pressure line.



## **Caution**

### **Environment**

---

- (1) Do not mount the product in a location where it is subject to strong vibrations and/or shock.
- (2) Avoid to expose the gauge to direct sunlight because it can make ambient temperature increase quickly and also prevent the air from freezing during cold season.



## **Caution**

### **Piping**

---

- (1) Before piping  
Make sure that all debris, cutting oil, dust, etc. are removed from the piping.
- (2) Sealant tape  
When installing piping or fitting into a port, ensure that sealant material does not clog up the pressure port. When using sealant tape, leave the first 2 thread turns exposed at the end of pipe/fitting.



## **Caution**

### **Operation**

---

If the gauge is dropped and given impact, its performance may lower.



## **Caution**

### **How to store**

---

- (1) Preserve under the environment with low humidity and no vibration and dust.
- (2) If multiple gauges should be piled up, avoid deformation due to their weight, and drop.



## **Caution**

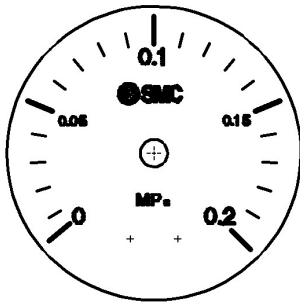
### **Handling**

---

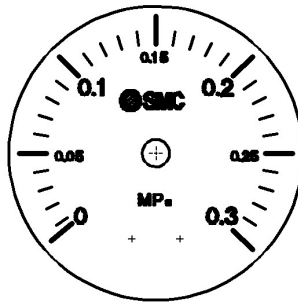
For installation and removal, be sure to use spanner and do not hold the body.



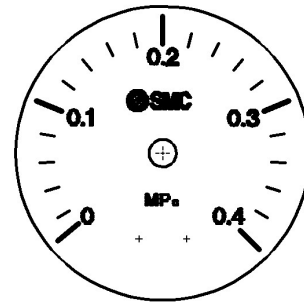
## 5. Pattern of the dial



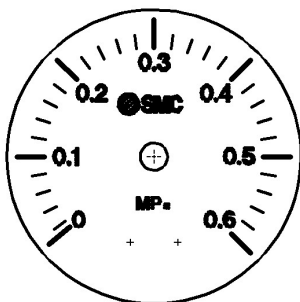
G43-2-\*\*\*



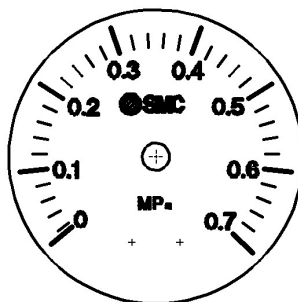
G43-3-\*\*\*



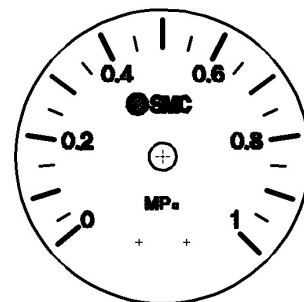
G43-4-\*\*\*



G43-6-\*\*\*

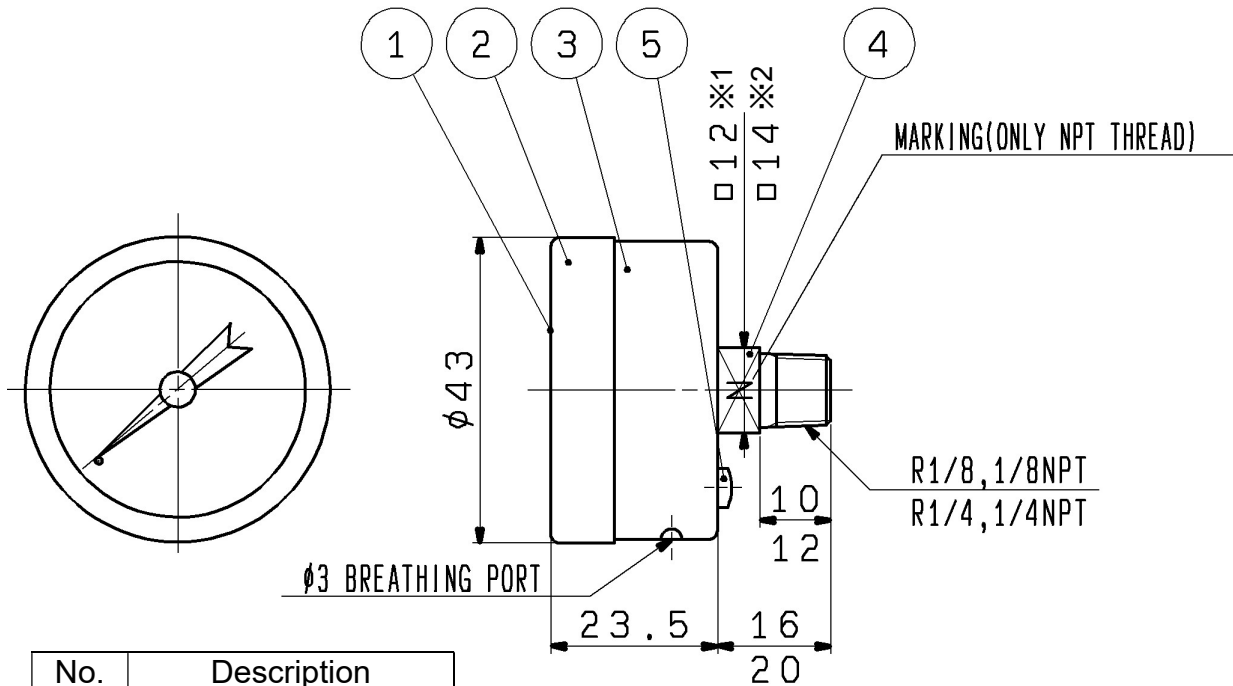


G43-7-\*\*\*



G43-10-\*\*\*

## 6. Drawing



No.	Description
1	Glass
2	Cover
3	Cover
4	Socket
5	Self-Binding Screw

Note) \*1 shows R thread, \*2 shows NPT thread.

Revision
A "Safety Instructions" is updated.
B Note addition of metrology
C Safety Instructions revised



# SMC Corporation

Tel: + 81 3 5207 8249 Fax: +81 3 5298 5362  
URL <https://www.smcworld.com>

---

Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.  
© SMC Corporation All Rights Reserved