



GP Series GP2410

Pressure Gauge OPERATING MANUAL

Introduction

Thank you for purchase of our product.
This manual is the guidebook to provide instructions on how to use your pressure gauge, GP2410, for recreational diving.

We believe this manual is useful in mastering technology of a pressure gauge for people who have learned the right usage of a pressure gauge and obtained a C-card through proper training at a diving instruction organization as well as people who use it at C-card training. Please carefully read and digest the contents of this manual before use. We also suggest that you take this manual with you to refer to before diving.

Keep this manual in a safe place. Should you lose it, contact your original dealer or authorized distributor of our company. A replacement manual will be reissued later.

The main contents consist of the check before use, usage, care after use, storage and a periodic inspection.

This pressure gauge, GP2410, is diving gear to use in combination with regulator for recreational diving. Therefore, the knowledge of the right handling of regulator is also necessary. Please use the operating manual of the regulator which you use as well as this manual for the pressure gauge, GP2410. In addition, depending on the model of regulator, it is considered not being suitable for the use by the combination with this product. We recommend you use the regulator made by Bism.

We are constantly researching and improving our pressure gauge, and so the product you purchased may differ in certain details from the one described in this manual. If you have any queries regarding your pressure gauge or the information contained in this manual, please feel free to contact our company at the address below.

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IMPORTANT INFORMATION

Key to Symbols Used in this Manual

This pressure gauge, GP2410, is diving gear for recreational diving use.

The connection with the regulator allows the use and is a measuring instrument which provides “general display of the air pressure in a tank” at the time of recreational diving.

PRECAUTIONS

In order to use a console gauge safely, the right operation, periodical maintenance and check are indispensable. Carefully read the advice on safety given in this manual before diving.

As the indication in this manual and to the product, in order to use the product safely and correctly, and to prevent the danger and the damage to the property of you or other people beforehand, various marks are used.

The indication and the meaning are as follows.

⚠ Danger “Danger” is used to indicate the presence of a hazard which highly causes severe personal injury and death if the warning is ignored.

⚠ Warning “Warning” is used to indicate the presence of a hazard which can probably cause severe personal injury and death if the warning is ignored.

⚠ Caution “Caution” is used to indicate the presence of a hazard which can possibly cause personal injury and property damage if the caution is ignored.

[Note] Useful Information to know.

⚠ Danger

- Use this product after having obtained a C-card and completing a proper training program at an internationally recognized diving school, and be familiar with diving gears, or under the instruction of the diving school. Otherwise it may cause an accident resulting in injury or death.
- Please be sure not to dive alone by any means, but to respect buddy system. Single diving may lead to a serious accident and is very dangerous.
- Please be sure to recognize all the handling method, the warning and the instructions with this manual before using this product. In addition, please use it in the ocean after understanding how to use.
- Do not use this product for any purpose other than recreational diving.
- If this product starts to function abnormally, stop use immediately and consult with your original dealer or authorized distributor of our company.

⚠ Warning

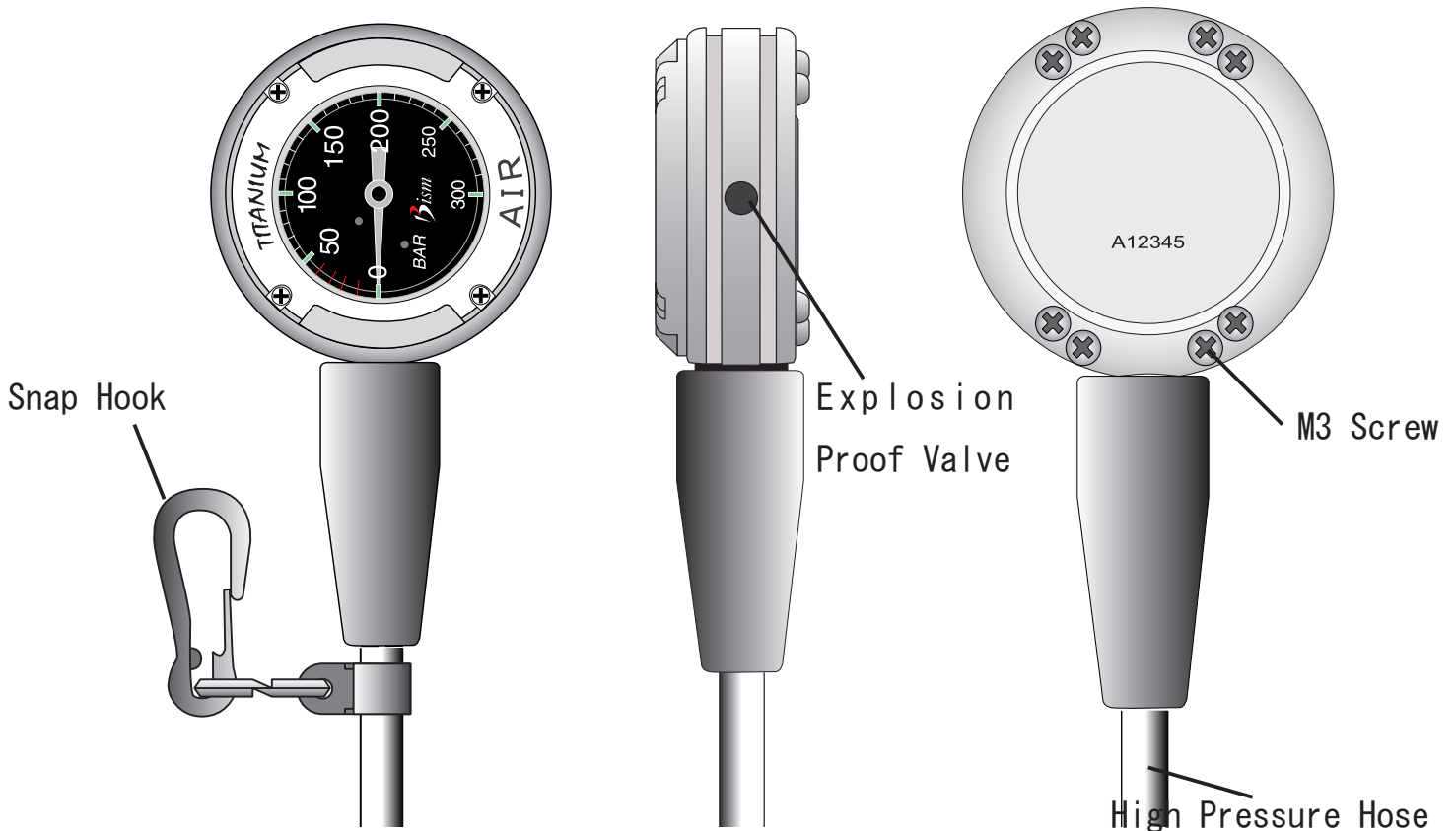
- When you perform scuba diving, please carry out by good health condition. When you feel uneasy in condition, please do not push yourself and stop diving.
- Before performing scuba diving, please avoid to take alcohol and medicine, and the one who is in bad physical condition or with a chronic disease should see a doctor for diagnosis in advance.
- This product is designed on the basis of a general healthy person who has average physical strength. Divers need to plan and execute a safe diving which suited for them, respectively.
- Please do not fold or pull a hose. It not only breaks, but it may cause an accident resulting in injury or death.

⚠ Caution

- If various solvents such as gasoline, spray liquid and cleaner such as cosmetics, and acid and alkali adhere, deterioration may be occurred. Please be careful enough so that these do not attach to the body and a hose.
- Please use the hose length which suited your body type. When hose length does not suit your body type very much, various trouble, such as being hard to use, or dragging, throwing and breaking on the ground, can be considered. Please use the hose length which suited your body type.
- Though the product can withstand the shock in the usual use, drops and hard knocks may damage it.
- If you use this product near what has strong influence to geomagnetism, error of the compass for direction reading may become large. Please do not use this product at a place with magnetism as listed below.
Permanent magnet (Wrist compass, Magnetic necklace etc.)
Metal (Steel door, Metal locker etc.)
High-voltage line, Overhead wires and Electrical home appliances (TV, Personal computer, Washing machine, Refrigerator etc.)
Accurate measurement cannot be performed in the vehicles such as Automobile, Train, Ship and Airplane
Accurate measurement cannot be performed in a room, especially in the building of reinforced concrete construction.
- Since it may become a safety problem, please do not modify the product. Responsibility cannot be taken about the trouble after modification.

NAMES OF PARTS

Body



Specifications

Body

Weight	290 g (Including Hose)
Pressure Measuring Range	0 ~ 300 bars
Pressure Measuring Precision	±5 N·m
Working Temperature Range	-5 ~ +50 °C
Pressure Gauge	Bourdon Tube Method
Material of Pressure Gauge Cover	Unalloyed Titanium

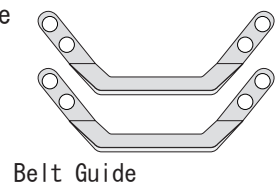
Hose Portion

Hose Length	750 mm
Outer Diameter	8 mm
Material of Inner Tube	Nylon
Material of Outer Cover	Polyurethane
Nominal Size of H. P. Hose Coupling Threads	7/16-20UNF
Hose Working Pressure	250 N·m
Minimum Bending Radius (Inside of Hose)	15 mm
Hose Guard	Regular Equipment for First Stage End
Material of Hose Guard	Synthetic Rubber

Attachments

Please check the attachments before start use of this product. Please refer to the pages in () for detailed information.

- Gauge Cover (1 piece) (Page 5)
- Belt Guide (2 pieces) (Page 4)
- Operating Manual (1 copy)



Belt Guide

Explosion Prevention Equipment

■ Explosion Proof Valve

When excessive pressure is accidentally applied to a pressure gauge by some kind of troubles, in order to prevent explosion, it has the structure that a valve opens full and air leaks.

When the explosion proof valve operates, do not use the product. Please consult with your original dealer or authorized distributor of our company.

FEATURES

The Features of the Product

GP2410 incorporates various functions so that you can use it safely and pleasantly.

■ Tank Pressure Measuring Function.

GP2410 displays tank pressure in general on land and during diving in analog.

PREPARATIONS BEFORE USE

Install the Gauge Cover

- 1 Put the first stage side coupling of high pressure hose through a gauge cover side hole "large".
- 3 Put the gauge cover so that the gauge cover side hole "small" and the explosion proof valve may suit.

- 2 Draw the gauge cover to the end of a gauge body.



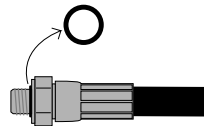
【Note】

○ After purchase, we recommend you to put the gauge cover before the first use.

Install High Pressure Hoses to a Regulator

⚠ Warning

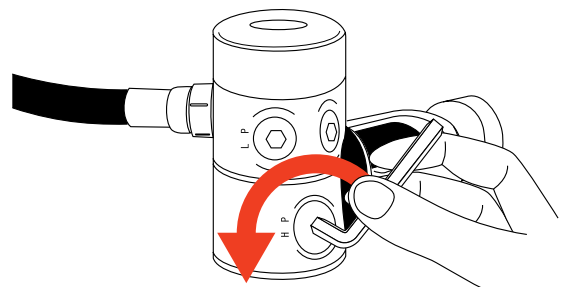
- Please attach a hose in the state that the first stage of a regulator is not connected to a tank. If the first stage is pressurized during work, a plug in the port flies and it is dangerous.
- Please install the high pressure hose to an "H.P." port, and only the thread size of 7/16-20UNF of high pressure hose couplings should be connected. Otherwise, not only it causes the damage of equipment, but also a hose comes off and it may cause an accident resulting in injury or death.
- Please put O-rings to the threads portion of each hose. When there are no O-rings, it causes the air leakage.



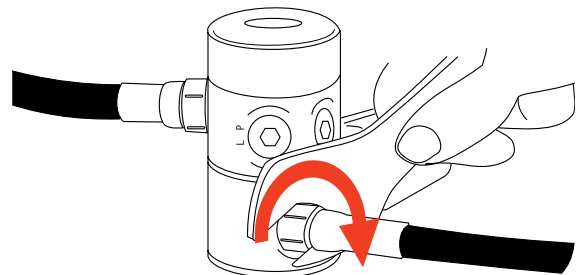
⚠ Caution

- When you tighten high pressure hose couplings with a spanner, please keep the tightening torque of 9.8N·m (100kgf·cm). Otherwise it may cause to damage the threads portion.
- Please do not attach the hose guard made in other company.

- 1 Please remove the plug from the H.P. (high pressure) port of the first stage of a regulator.



- 2 Please screw in the coupling of a high pressure hose to H.P. port and turn it clockwise with a spanner to tighten it. Tightening torque is 9.8 N·m (100kgf·cm).



【Note】

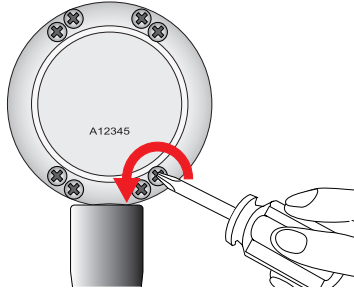
○ Those who are not familiar with the hose installation work, please ask your original dealer or authorized distributor of our company for installation.

PREPARATIONS BEFORE USE

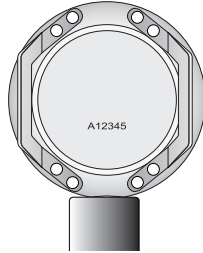
Install Belt Guide

You can attach a belt guide to the back of the body for preference.

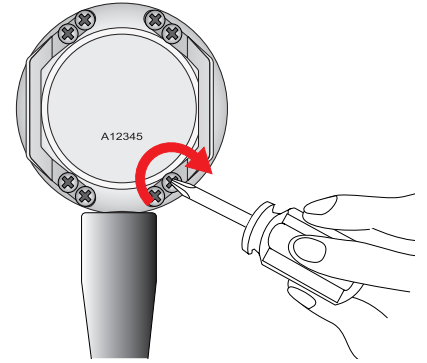
- 1 Take off M3 screws at the back of the body.



- 2 Match the hole of the belt guide with the screw hole.



- 3 Tighten M3 screws to fix the belt guide.



CHECK BEFORE USE & SETTING

⚠ Warning

- If you find an abnormality in your gauge by following various checks, you must not use it.
- When there is an abnormality, contact your original dealer or authorized distributor of our company. Use of the gauge which is not normal may cause an accident resulting in injury or death.

- 1 Check of the high pressure hose.

Check whether the hose is damaged or has broken.

- 2 Check of "0" display on the pressure gauge.

Check if the indicator of the pressure gauge indicates "0".

READING AND USAGE

Pressure Gauge Reading

⚠ Caution

- At the end of a diving, please be sure to leave 30bars or more of air in a tank. If water goes into a tank, there is a possibility that water may go into the inside of pressure gauge at the next time of use.

The scale which indicator pointed out is a rough indication of the pressure of the air in a tank.

In addition, as for the air in a tank, it is the condition that the air of 30bars or more remains. Therefore, less than 30 bars do not have a scale.

[Note]
○ Those who are not familiar with the hose installation work, please ask your original dealer or authorized distributor of our company for installation.

- 3 Setting to a tank.

⚠ Warning

- When you open a tank valve, keep away the disc face of a gauge from a person and your face, and open the valve slowly. When it goes off accidentally by a certain reason, it may cause an accident resulting in injury or death.

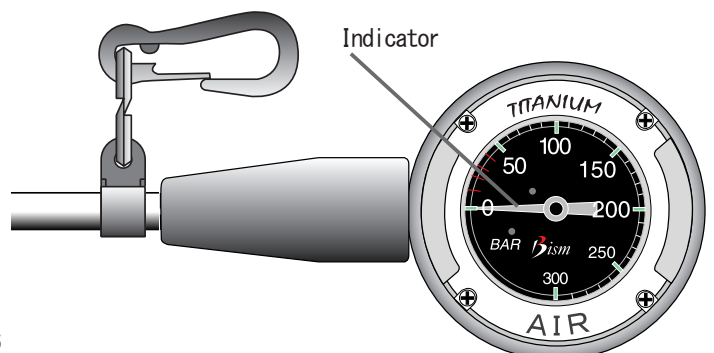
According to the operating manuals for a regulator and a tank for scuba diving, install a regulator first stage to a tank valve, and open the tank valve.

- 4 Check of the air leakage.

⚠ Warning

- When abnormality is found in check, please stop use and remove a regulator from a tank.

Check whether air is leaked at the connecting portion of a regulator first stage, a gauge and a hose.



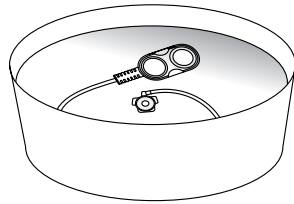
CARE AFTER USE

Wash.

⚠ Caution

- Equipment may be damaged if soaked in hot water of 50°C or more.
- Please do not wash a pressure gauge with water in the state that it is not connected with a regulator. Water comes in a hose and a gauge, and may cause the trouble.
- Please be sure to put the dust cap of the regulator first stage firmly. Otherwise water comes in the hose and the gauge, and it causes failure.

Soak the whole equipment to fresh water for about 15 minutes in the state of being set with the regulator. Then, rinse the whole in water to wash the salt away.



Drying-Out

■ Avoid direct rays, dry a pressure gauge fully in the shade with the dry, cool and sufficient ventilation.

The Way of Storage

⚠ Caution

- Please keep the high pressure hose in a natural form. Forced bending causes kinking of a hose and shorten a hose life remarkably.
- Please do not leave a pressure gauge in the state of high temperature, such as in a car or on a beach.



■ Wash and dry a pressure gauge fully.

■ Avoid direct rays, and store a pressure gauge in the state being set with a regulator in the place with the dry, cool and sufficient ventilation.

PERIODIC INSPECTION - SERVICE AFTER THE SALES

Periodic Inspection

⚠ Warning

- Regardless whether or not you use it, a pressure gauge may not function normally when you ignore a periodic inspection.
- Also when it passes with unused condition more than one year, please use it after taking out to a periodic inspection.

【Note】

● Some parts carry out natural deterioration. Exchange of such parts is also performed by periodic check.

■ Regardless of frequency and the number of times in use, please ask your original dealer or authorized distributor of our company for a periodic inspection per once in a year. (Pay Service)

Service after the Sales

When your pressure gauge is out of condition, check it first.

Please refer to the clause of "Troubleshooting" and check whether it is failure.

When it is still out of order;

Please contact your original dealer or authorized distributor of our company.

Reserving period of parts.

Our company reserves the performance parts (the parts required to maintain the function of the product) for repairing a pressure gauge for at least 8 years after the production is discontinued. Since repair may be possible depending on a problem even after this reserving period passes, please consult with your original dealer or authorized distributor of our company.

TROUBLESHOOTING

Please check it once again before sending it to repair. When still not operating normally, please consult with your original dealer or authorized distributor of our company for repair.

Trouble	Major Cause	Measure	Page
A pressure gauge does not operate.	<input type="radio"/> A tank is empty.	<input type="radio"/> Change to the tank with full of air.	5
	<input type="radio"/> A tank valve is closed.	<input type="radio"/> Open the tank valve.	
Air leaks from the connecting portion of a first stage.	<input type="radio"/> Connecting portion of the first stage loosen.	<input type="radio"/> Tighten the connecting portion with a spanner.	4

