

USER'S MANUAL

Name : LOW PRESSURE GAUGE

MODEL : P421 / P422 / P430 / P440



WISE[®] (주)와이즈산전
www.wisecontrol.com

Instructions for proper and safe operation

Please read instructions carefully prior to using the instrument for proper and safe operations. Mishandling could cause device malfunctions and result in disastrous injuries or accidents.

WARNING

1. Do not exceed the pressure range allowed.
2. Do not use it to measure the pressure of corrosive fluid.
Damage or rupture of pressure gauge may cause release of fluid which could lead to bodily injury or destroy surrounding area.
3. Do not apply excessive load, vibration or impact.
Damage or rupture of pressure gauge may cause release of fluid which could lead to bodily injury or destroy surrounding area.
4. Please use within the specified temperature ranges.
Exceeding the temperature range may cause disruption in nearby area due to damage to the temperature indicator.
5. Make sure to turn off the valve to prevent the measuring fluid leak when dismounting the gauge. It may lead to harming the surrounding area.
6. Use a pressure gauge with no oil in an environment with hydrocarbon or oxygen.
Oil contained in the gauge may react with oxygen which may be flammable or explosive.
7. Please always follow the mounting instructions in the manual in cases of field installation.
8. Do not make any modifications to the product or to add more functions.
Please consult with us for any repair.
9. Do not cut open the oil filler cap outside. .
Condensation may occur in rainy weather.
※ Always open the oil filler cap and depressurize when checking pressure.

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1. SERVICE INTENDED

Euro Gauges are made of Stainless steel to withstand any corrosive agents being present in User's Manual

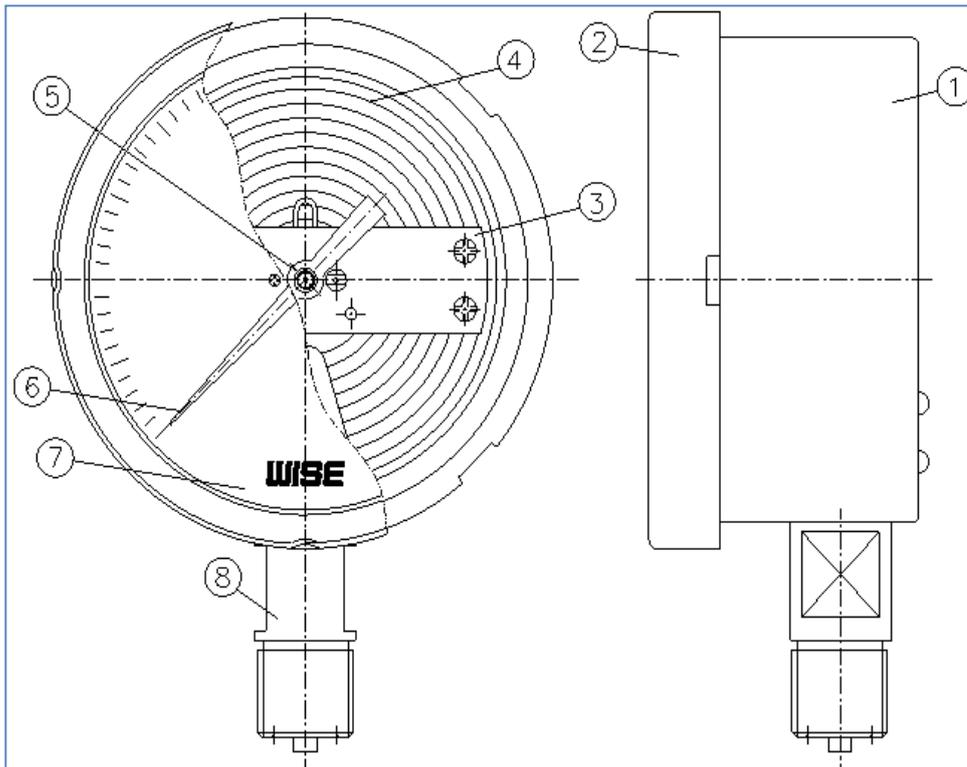
2. CHARACTERISTICS

To protect the gauges from any corrosive agents, these gauges are made of Stainless Steel. Euro Gauges are designed according to EN-837-1, and certified by the certificate authority. Euro Gauges have a high reliability, and contains a safety mechanism to promote safe working environment.

3. SEPCIFICATIONS & STANDARDS

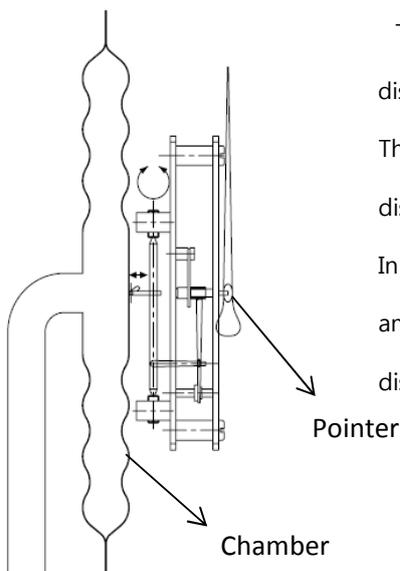
- 1) Model No : P421, P422, P429, P430, P440
- 2) Accuracy : $\pm 1.5\%$ of Full scale range
- 3) Working temperature : Fluid : -20 ~ 65°C
Ambient : -20 ~ 65°C
- 4) Working Pressure Steady 75% of Full Scale
Over Range Protection : 130% of Full Scale
- 5) Element type : Pressure Chamber type
- 6) Element material : P421 - 75, 100 and 150mm - 316LSS
75mm - Phosphor Bronze
P422 - 316SS
P430 - 316LSS
P440 - Phosphor Bronze
- 7) Nominal diameter : P421 - 75mm, 100mm, 150mm
P422 - 80mm, 100mm, 160mm
P430 - 100mm, 150mm
P440 - 63mm, 100mm
- 8) Notes in accordance with Pressure Equipment Directive 97/23/EC
 - The pressure gauges are "Pressure accessories" in accordance with Article 1, Paragraph 2.1.4
 - The volume of the pressure bearing parts of pressure gauges is < 0.1 L
 - The pressure gauges carry CE marking for Fluid Group 1G in accordance with Annex 2, Table 1 when their permissible working pressure exceeds 200 bar
 - pressure gauges that do not carry The CE marking are manufactured in accordance with Article 3, Paragraph 3 "Sound engineering practice".

4. Parts name & It's function



NO	NAME	NO	NAME	NO	NAME
1	CASE	4	Chamber	7	SCALE PLATE
2	COVER	5	POINTER HEAD	8	SOCKET
3	MOVEMENT	6	POINTER		

5. Principles



The chamber changes the pressure to displacements and The amount of displacement is greatly enlarged and changed to rotation by using the movement. The movement consists of a lever and a gear, which receives the linear displacement of the chamber and converts it into rotary motion. In general, the displacement amount is designed to generate a displacement amount of about 3 to 4 mm at the highest graduation pressure, and the displacement amount is rotated by 270 ° to indicate the pressure.

6. Repair and Caution

1) If the fluid contains any corrosive agents, it will directly deliver to the Bourdon Tube, and it could damage the Therefore, it is recommended that the user chose Diaphragm Seal Type pressure gauges.

(Refre to Figure 1)

2) For a remote seal type pressure gauge, a remote seal n be installed on the same line as the pressure gauges is If this is not the case, then Zero adjustment process m performed on the gauge.

3) If the gauge is dealiling with a high temperature fluid, then Syphon tube is required so the adequate temperature can be delievered to the gauge.

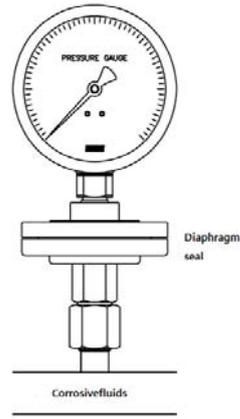


Figure 1

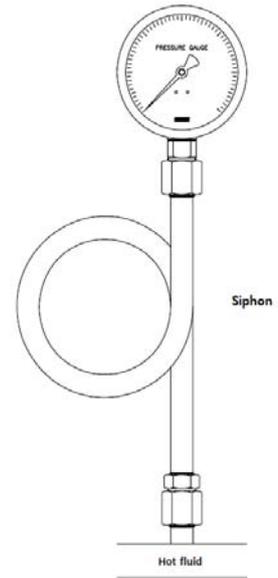


Figure 2

4) Sudden Change of pressure (Over/Under pressure) can cause a malfunction of the gauge.

5) Dampner or Gauge protector is recommened where pulsation or impulsive pressure is present

(Figure 3, 4)

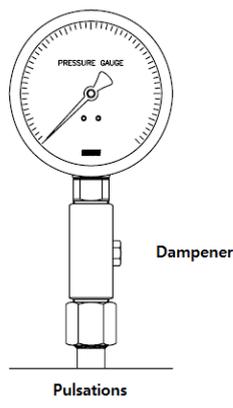


Figure 3

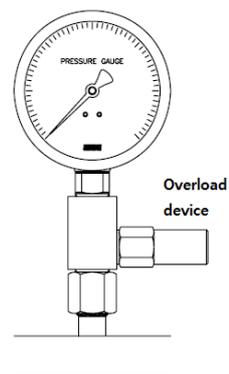


Figure 4

- 6) It is necessary to perform a routine inspection 1 or 2 times a year to check gauge's operating condition.
- 7) Do not cut off the oil cap if the gauge is being used in outdoor because water can flow into the gauge when it rains. It is recommended to release the internal pressure regularly. However, it is required to cut off the oil cap, then just cut off the tip of the oil cap as expressed in Figure 5.

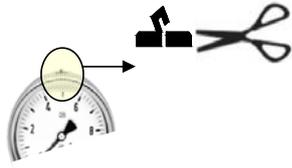
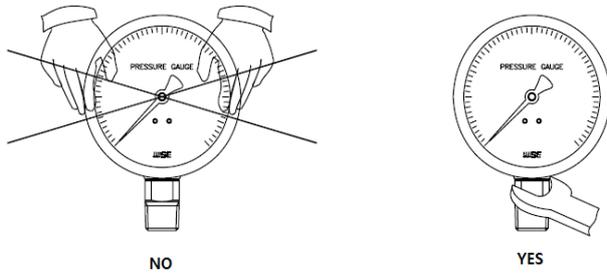


Figure 5

7. How to install

- 1) Avoid the place where humidity, vibration, dust and corrosive gas are present.
- 2) Avoid the place where the temperature is higher than the recommended ambient temperature indicated in this manual.
- 3) Be prepared to protect the gauge from a lightning or a steam.
- 4) Avoid direct rays of the sun.
- 5) When installing a gauge on the wall by using an attachment groove, it is recommended to use M5 nut and when installing a gauge by using a metal attachment, install firmly.
- 6) When installing a gauge on the pressurized pipe, it is recommended to use a flexible tube.
- 7) When installing a gauge on the pipe, do not turn the gauge by holding its case; please use proper spanner. (Figure 6)

Figure 6



- 8) Because a gauge will be calibrated in a vertical position, a gauge must be installed vertically. (figure 7)

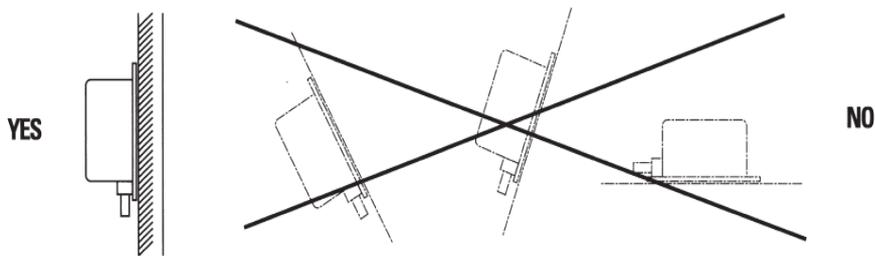


figure 7

9) When installing a gauge for the first time, it is recommended to use the valve so it can be removed or controlled easily.

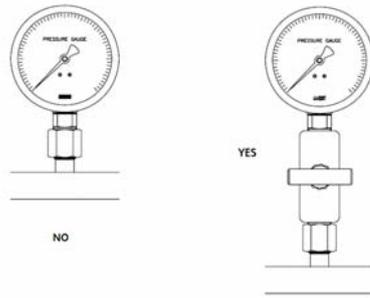


figure 8

8. Operating Instructions

- 1) It is required to find out followings before using the gauge.
 - . Pulsation exist? If yes, then use Dampener
 - . Vibration exist? If yes, then filled the gauge with oil or use oil filled gauge.
 - . Is ambient temperature high? If yes, then use capillary type gauge.
- 2) Before using the gauge, make sure zero point is properly adjusted.
- 3) On the connection screw, use teflon tape or gasket to install the gauge firmly.
- 4) When installation is finished, slowly open the valve to find out the pointer is correctly indicating current pressure.
- 5) When checking the current pressure, make sure the gauge is installed on the same height of observer's eye level (Figure 10)

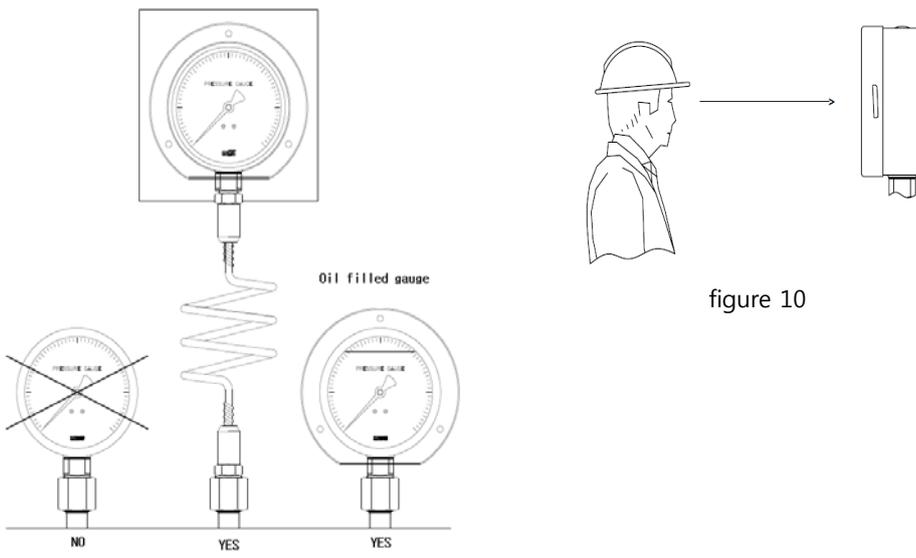


figure 9

figure 10

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