

User's Manual

품 명 : General Service Pressure gauge

MODEL : P110 / P111 / P112 / P140 / P163 / P221 / P330 / P335



WISE[®] WISE Control Inc.
www.wisecontrol.com

Instruction Manual for Correct and Safe Use

To use the product correctly and safely, please read this manual carefully before operating.

Misuse of the product might cause damage and serious injury to the user.

WARNING

1. Do not apply more pressure than given range.
2. Do not use the product with a corrosive fluid. A corrosive fluid can cause the rupture of the measuring elements, and it could lead to injury or destruction.
3. Avoid excessive weight, vibration, and shock on the product.

These could cause the rupture or damage on the product, and leaked fluid can cause injury to the user and destruction of surroundings.

4. Use the product within the given temperature range.

Excess use of given temperature range can cause the damage to the product, and leads to the destruction.

5. When removing the products from its operating line, make sure to close the valve before removing to prevent the fluid or other substances to release; it might cause the destruction of surroundings.

6. Use 'use no oil' pressure gauges for the environment where hydrocarbon or oxygen is present.

General pressure gauges with the left over oil inside can lead to explosion when it touches oxygen or hydrocarbon.

7. When installing the product on site, please follow the instruction manual.

8. Do not modify the product for other purpose. Please consult the manufacturer for repair.

9. Avoid using the product(bourdon tube that welded with brass) on high temperature environment more than 40°C.

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1. SERVICE INTENDED

P110 모델은 일반적인 산업 환경에 적합한 압력계로, 저가형이며 높은 품질로 비부식성의

P110 is suitable for genral industrial environment. It is low-price but has high quality.

환경에서 사용가능하며, AIR, 기름, 가스, 물이 흐르는 배관에 사용하기에 가장 적합한

P110 can be used in noncorrosive fluid such as air, oil, gas or water.

압력계 입니다.

P111 모델은 농사와 관련한 암모니아 장비 고유의 충격, 진동 및 맥동에 잘 견딜수 있도록 설계 되었습니다.

P111 is designed to withstand an impact, vibration and pulsation of ammonia equipment fo

P112 모델은 프레온가스 라인의 충격, 진동 및 맥동에 잘 견딜수 있도록 설계 되었습니다.

P112 model is designed to withstand an impact, vibration and pulsation of Freon gas line.

P140 모델은 일반형 압력계로 석유화학 및 각종 화학공정에서 지속적인 대기 노출에도 사용이 가능하도록 설계 되었습니다.

P140 model is general type pressure gauge that designed to use on environment that consi exposed on the air in petrochemical and other chemical treatment process.

P163 모델은 Heavy Duty Service 환경에서도 충격, 진동 및 맥동에 견딜수 있도록 설계 되었습니다.

P163 model is designed to withstand an impact, vibration and pulsation on heavy duty servi

P221 모델은 부식성 환경, 화학, 석유화학, 정제, 전력, 선박이나 식음료 산업에 적합하며 케이스와 커버 재질이 Stainless Steel로써, 화학적 침식이나 부식 방지에 탁월한 제품입니다.

P221 model is suitable for corrosive environment, chemical, petrochemical, refinement, elect food and beverage industry.

P330 모델은 석유 및 화학처리 산업에 적합하도록 설계 되었습니다.

P330 model is designed for petrochemical and other chemical treatment industry.

2. SPECIFICATION & STANDARD

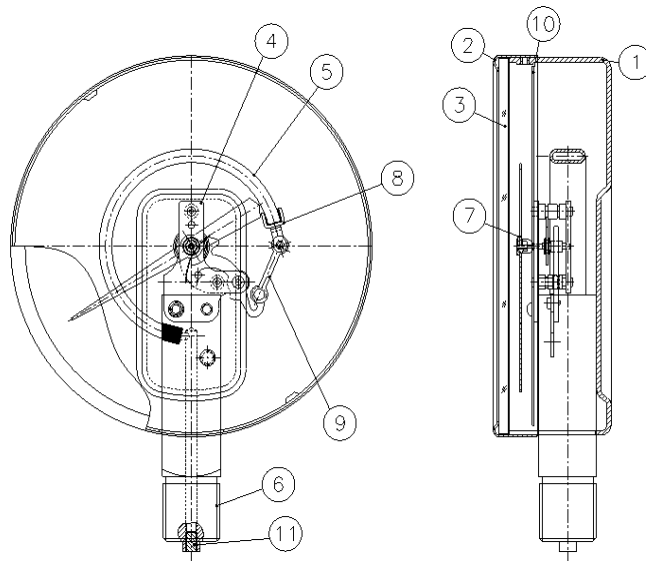
1) 규격 : 40, 50, 60, 75, 100, 150 and 200mm

1) Standard : 40,50,60,75,100,150 and 200mm

2) 정밀도 : 40mm $\pm 3.0\%$ of Full Scale

- 50, 60, 75, 100, 150 and 200mm $\pm 1.5\%$ of Full Scale
- 2) Accuracy: 40mm $\pm 3.0\%$ of Full Scale
50, 60, 75, 100, 150 and 200mm $\pm 1.5\%$ of Full Scale
- 3) 사용압력 : Steady 75% of Full Scale
Over Range Protection : 130% of Full Scale
- 3) Working pressure : Steady 75% of Full Scale
Over Range Protection : 130% of Full Scale
- 4) 접액부 재질 : Brass & Stainless Steel
- 4) Element Material: Brass & Stainless Steel
- 5) 접속구 규격 : 40mm : 1/8"PT, NPT & PF
50mm : 1/8", 1/4" PT, NPT & PF
60mm : 1/4" PT, NPT & PF
75mm : 1/4", 3/8" PT, NPT & PF
100, 150 and 200mm : 1/4", 3/8", 1/2" PT, NPT & PF
- 5) Process connection size: 40mm : 1/8"PT, NPT & PF
50mm : 1/8", 1/4" PT, NPT & PF
60mm : 1/4" PT, NPT & PF
75mm : 1/4", 3/8" PT, NPT & PF
100, 150 and 200mm : 1/4", 3/8", 1/2" PT, NPT & PF
- 6) 사용 온도 : 주변환경 : -20~65°C
프로세스 Brass 최대 -5~40°C
프로세스 Stainless Steel 최대 200°C
- 6) Working Temperature: Ambient -20~65°C
Fluid Brass Max -5~40°C
Fluid Stainless Steel Max 200°C

3. Parts Name & Function



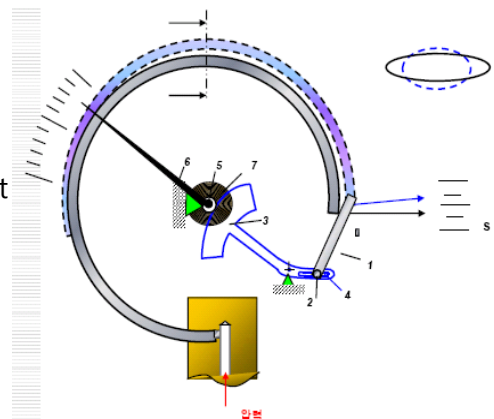
No.	NAME	No.	NAME	No.	NAME
1	CASE	5	BOURDON TUBE	9	ROD
2	COVER	6	SHANK	10	SCALE PLATE
3	SAFETY GLASS	7	POINTER	11	ORIFICE
4	MOVEMENT	8	BOURDON CAP		

4. Operating Principle

When pressure is applied to the Bourdon tube, it extends vertically. This vertical movement of Bourdon tube is delivered to the movement, and the movement changes this vertical movement into a rotating motion. Movement is consist of lever and gear, and its main role is converting vertical movement into a rotation motion.

Generally, the vertical movement of Bourdon Tube ranges from 3~4mm, and its principle is to point currently applied pressure by using a turn angle 270°.

Therefore, Bourdon Tube and movement are the most important, and these parts must be well assembled in the pressure gauge because the precise machining accuracy.



1. Pull Rod
2. Pull Rod Control Point
3. Toothed Segment
4. Segment Opening
5. Pointer
6. Spiral Spring

5. Repair and Caution

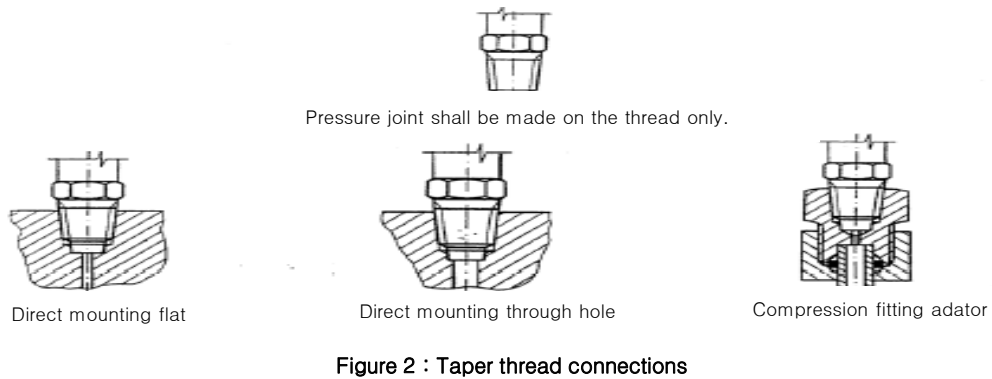
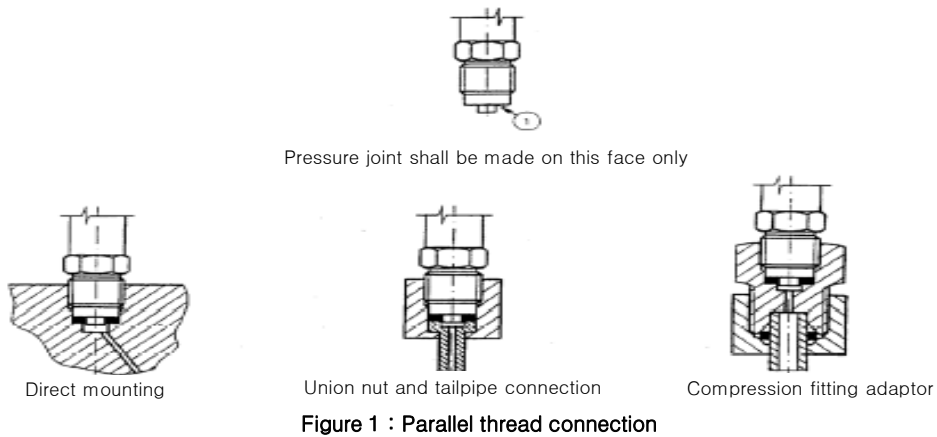
- 1) 유체가 부식성일 경우에는 격막 또는 격측격막을 사용하여야 하며 격막은 부식 방지에 적합한 재질을 선정 하여야 합니다.
- 1) If the fluid contains any corrosive agents, it will directly deliver to the Bourdon Tube, and could damage the tube. Therefore, it is recommended that the user choose "Diaphragm Seal pressure gauge.
- 2) 격측 격막은 막과 게이지가 동일 선상에 설치 되어야 하며 위치가 다른 경우는 설치후 0점 조정을 실시 하여야 합니다.
- 2) For a remote seal type pressure gauge, a remote seal must be installed on the same line pressure gauges is installed. If this is not the case, then Zero adjustment process must be
- 3) 유체가 고온일 경우에는 싸이폰 튜브를 설치하여 인입 온도가 적정온도 이하가 되도록 하십시오.
- 3) If the gauge is dealing with a high temperature fluid, then Syphon tube is required so that adequate temperature can be delivered to the gauge.
- 4) 급격한 가압 또는 감압은 게이지의 고장원인이 될 수 있습니다.
- 4) Sudden pressurized or reduce pressure could cause breakdown.
- 5) 맥동압이나 충격압이 가해질 염려가 있는 경우 댐프너나 게이지 프로텍터 등 과압방지 장치를 취부하여 사용 하십시오.
- 5) In case of pressure pulsation or impulsive pressure is applied to the gauge, please use after install gauge protector.
- 6) 정기 검사는 1년에 1~2회 작동상태 및 시도 등을 확인 하십시오.
- 6) Periodical inspection must perform one or twice a year to check its operation status.
- 7) 부르돈관과 소켓부분이 Brass인 제품은 온도에 약하니 40°C이상되는 고온에는 사용을 피하거나 부득이한 경우에는 Siphon Tube를 설치하여 사용하십시오.
- 7) Bourdon tube and socket that made of brass is fragile high temperature over 40 it the gauge is dealing with high temperature fluid syphon tube is required.

6. How to install

- 1) 습기, 진동, 먼지, 부식성가스 등 적은 장소를 선택하여 설치 하십시오.
- 1) Avoid the place where humidity, vibration, dust and corrosive gas are present.

- 2) 본 취급설명서에서 규정한 주위온도를 초과하는 장소를 피하십시오.
- 2) Avoid the place where the temperature is higher than the recommended ambient temp
- 3) 낙뢰나 증기를 막도록 충분한 대비를 해주십시오.
- 3) Be prepared to protect the gauge from a lightning or a steam.
- 4) 직사광선이 있는 장소는 피하십시오.
- 4) Avoid direct rays of the sun.
- 5) 취부 홈을 사용하여 판넬이나 벽에 설치하는 경우 M5너트를 사용하고 취부 금구를 사용하는 경우는 그것을 견고하게 설치하여 주십시오.
- 5) When installing a gauge on the wall by using an attachment groove, it is recommended and when installing a gauge by using a metal attachment, install firmly.
- 6) 도압관용 배관은 압력계에 무리가 가지않도록 후렉시블 튜브를 사용하십시오.
- 6) When installing a gauge on the pressurized pipe, it is recommended to use a flexible tu
- 7) 배관에 취부할 경우 제품의 케이스를 잡고 돌리지 마시고 반드시 규정된 스패너를 사용하여 주십시오.
- 7) When installing a gauge on the pipe, do not turn the gauge by holding its case; please
- 8) 압력계를 선정하는 방법은 압력계 최대압력의 75%가 운전압력이 되도록 선정한다.
- 8) When you select pressure gauge make sure 75% of full scale must be the operating pre

압력계 설치 방법



7. 사용 방법

- 1) 압력계를 최초 설치시 밸브를 설치하여 취외하기 쉽도록 하십시오.
- 1) First install valve before the first installation of pressure gauge for easy detach.
- 2) 배관 라인의 진동 및 맥동 또는 온도가 있는지를 확인하여 필요시 약세서리를 설치 하십시오.
- 2) check there are vibration or pursation or pulsation of fluid and install suitable accessories.
- 3) 설치 하기전 게이지의 0점이 맞는지 확인 하여 주십시오.
- 3) Check zero point of pressure gauge before installation.
- 4) 설치시 나사에 테프론 테이프나 가스켓을 이용하여 견고하게 설치하여 주십시오.
- 4) install delecately using teflon taple or gasket to screw.
- 5) 설치가 끝나면 밸브를 열어 압력이 정상 지시를 하는지 확인하여 주십시오.
- 5) open the valve and check steady indication of pressure gauge after installation.