

YM系列隔膜压力表

YM Series Diaphragm Pressure Gauge



产品应用 Product Application

隔膜压力表主要应用于石油化工、制碱、化纤、制药、食品等工艺流程中，它是由通用型压力表与连接体和隔膜隔离器组成。在测量介质是强腐蚀、高温、高粘度、易结晶、易凝固、有固体浮游物的情况下使用。

Diaphragm pressure gauges are mainly used in petrochemical, alkali production, chemical fiber, pharmaceutical, food and other process flows. They consist of a general pressure gauge, connector and diaphragm isolator. They are used when measuring media that is highly corrosive, high temperature, high viscosity, easy to crystallize, easy to solidify, or has solid suspended particles.

产品原理 Product Principle

隔膜压力表由各种通用型压力仪表和不同结构的隔膜隔离器组成一个封闭系统，内充密封液。当被测介质的压力作用于隔膜时，则隔膜产生变形，压缩封闭系统中的密封液。由于密封液的固有性质，使压力仪表中的弹性元件产生相应的弹性变形位移，经指示装置显示压力值。

为了扩大各种通用型压力仪表的使用范围，能适用于测量强腐蚀、高温、高粘度、易结晶、易凝固和有固体浮游物介质的压力，以及对某些测量介质不能直接进入通用型压力仪表内和便于清洗防止沉淀物质积聚的场合的压力检测时，必须采用由隔膜隔离器与通用型压力仪表组成一个系统的隔膜表。

The diaphragm pressure gauge consists of various general pressure gauges and diaphragm isolators of different structures, forming a closed system filled with sealing liquid. When the pressure of the measured medium acts on the diaphragm, the diaphragm deforms and compresses the sealing liquid in the closed system. Due to the inherent properties of the sealing liquid, the elastic element in the pressure gauge produces a corresponding elastic deformation displacement, which is displayed by the indicating device as the pressure value.

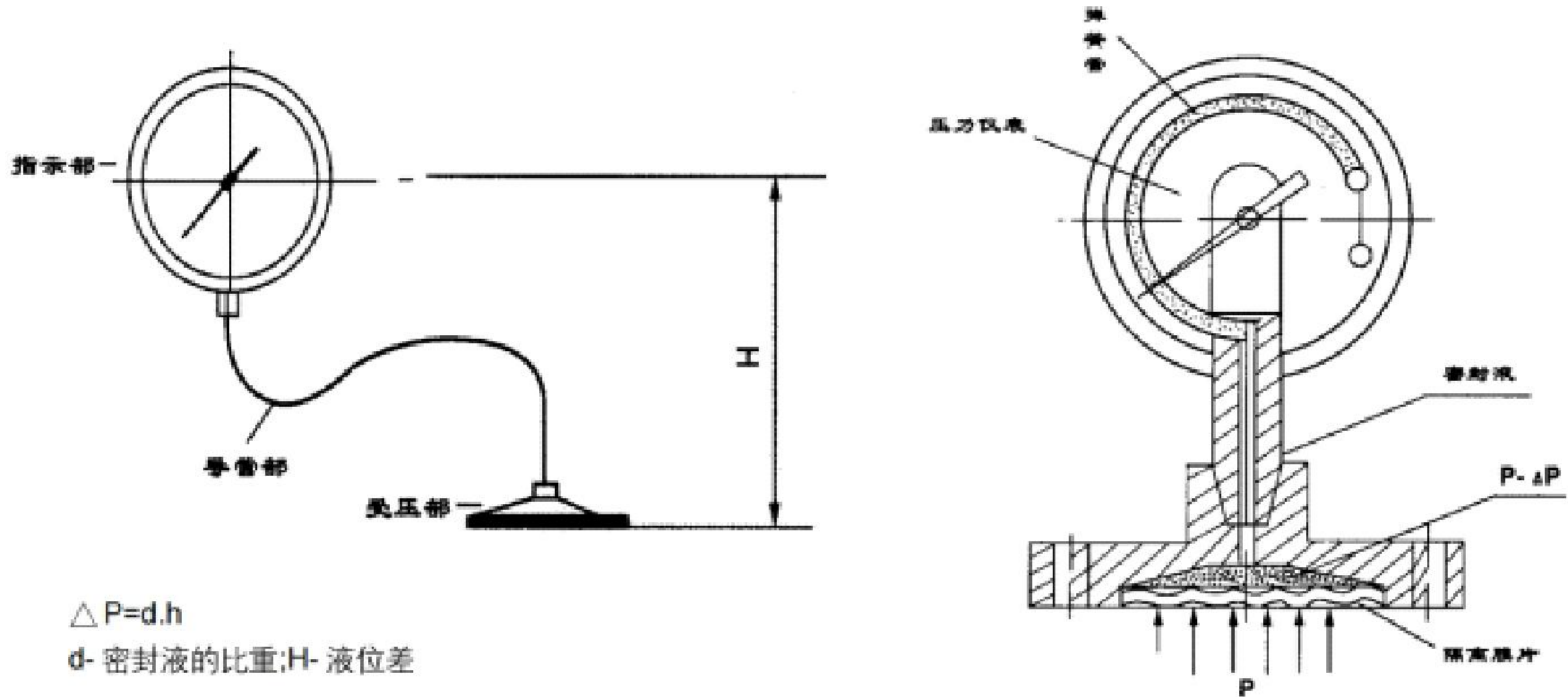
In order to expand the scope of application of various general pressure gauges, and enable them to measure the

pressure of highly corrosive, high temperature, high viscosity, easy to crystallize, easy to solidify, and media with solid suspended particles, as well as for pressure detection where certain measured media cannot directly enter the general pressure gauge and where easy cleaning is needed to prevent deposition, diaphragm pressure gauges consisting of a diaphragm isolator and general pressure gauge as a system must be used.

技术参数 Main Technical Specifications

测量范围、测量精度
Measurement Range & Accuracy

型号 Item No.	测量范围 MPa Measurement Range	精确度等级 Accuracy Grade
YMF-60、YML-60	-0.1~0、-0.1~0.06、-0.1~0.15、-0.1~0.3、-0.1~0.5、 -0.1~0.9、-0.1~1.5、-0.1~2.4、-0.1~3.9、-0.1~5.9、 0~0.6、0~1、0~1.6、0~2.5、0~4、0~6、0~10、 0~16、0~25、0~40、0~60	1.6, 2.5, 4.0
YMF-100、YMF-100Z、YMF-100ZT YML-100、YML-100Z、YML-100ZT YMF-150、YMF-150Z、YMF-150ZT YML-150、YML-150Z、YML-150ZT	-0.1~0、-0.1~0.06、-0.1~0.15、-0.1~0.3、-0.1~0.5、 -0.1~0.9、-0.1~1.5、-0.1~2.4、-0.1~3.9、-0.1~5.9、0~0.6、 0~1、0~1.6、0~2.5、0~4、0~6、0~10、0~16、0~25、0~40	1.0, 1.6, 2.5



隔膜表的耐蚀性 Corrosion Resistance of Diaphragm Pressure Gauges

隔膜表的耐蚀性可通过合适的选择与测量介质接触部分的隔膜，法兰及密封垫圈的材料来保证。
隔膜材料：0Cr17Ni12Mo2 (316)；蒙乃尔合金 (Cu30Ni70)；哈氏合金 (H276C)；钽 (Ta) 及氟塑料 (F4) 等。
法兰材料：不锈钢0Cr17Ni12Mo2 (316)；不锈钢内衬氟塑料 (316+F4)。
密封垫圈材料：丁腈橡胶，氟橡胶，硅橡胶及氟塑。

The corrosion resistance of diaphragm pressure gauges can be ensured by suitably selecting the materials for the diaphragm, flange, and gasket in contact with the measured medium.
Diaphragm materials: 0Cr17Ni12Mo2 (316); Monel alloy (Cu30Ni70); Hastelloy (H276C); Tantalum (Ta); and fluoroplastics (F4).
Flange materials: Stainless steel 0Cr17Ni12Mo2 (316); Stainless steel lined with fluoroplastics (316+F4).
Gasket materials: Nitrile rubber; Fluorine rubber; Silicone rubber; and Fluoroplastics.

密封液的选择 Selection of Seal Liquid

为保证隔膜表使用可靠性和安全性，应根据不同用途选择合适的密封液。

To ensure the reliability and safety of diaphragm pressure gauges, suitable seal liquids should be selected according to different applications.

密封液 Seal Liquid	受压部温度范围 Pressurized part temperature range	比重 g/cm ³ Specific gravity g/cm ³	体膨胀系数 1 /°C Coefficient of volume expansion 1/°C	用途 Application
高粘度硅油 High viscosity silicone oil	-10~200°C	1.07	0.95×10 ⁻³	高温用 High temperature use
低粘度硅油 Low viscosity silicone oil	-30~100°C	0.94	1.08×10 ⁻³	一般用 General use
甘油水溶液 Glycerol aqueous solution	-5~100°C	1.27	0.61×10 ⁻³	食品用 Food use
植物油 Vegetable oil	-5~100°C	0.93	1.03×10 ⁻³	食品用 Food use
氟油 Fluorine oil	-30~150°C	1.93	0.75×10 ⁻³	氢、氧 Hydrogen, oxygen

隔离膜片材质 Isolating Diaphragm Materials

类型 Type	材质 Materials
隔离膜片 Isolating diaphragm	316LSS、316LSS+PTFE, 哈氏合金HC-276, 钽Ta, 钛Ti, 蒙乃尔Monel400等 316LSS, 316LSS+PTFE, Hastelloy HC-276, Tantalum Ta, Titanium Ti, Monel 400, etc.

关于隔离体膜片部分耐腐蚀材料的选择

Selection of Corrosion Resistant Materials for Isolating Diaphragm

腐蚀介质 Corrosive Medium	腐蚀材料 Corrosion Resistant Materials				
	316L SS	PTFE	Hastelloy.c-276	Ta	Monel 400
硫酸 Sulfuric Acid	▲	■	■	★	■
硝酸 Nitric Acid	■	■	■	★	×
盐酸 Hydrochloric Acid	×	■	■	★	×
磷酸 Phosphoric Acid	■	■	■	★	■
醋酸 Acetic Acid	■	■	★	★	■
烧碱 Caustic Soda	★	■	★	▲	★
纯碱 Pure Alkali	★	■	■	★	★

小苏打 Baking Soda	★	■	★	★	★
氯气 Chlorine	干: ■ 湿: ✕ Dry Wet	■	■	★	干: ■ 湿: ✕ Dry Wet
溴 Bromine	干: ✕ 湿: ▲ Dry Wet	■	★	★	干: ✕ 湿: ▲ Dry Wet
氨水 Ammonia	■	■	★	★	✕
海水 Seawater	■	■	★	★	★

符号说明：★最佳，▲有条件使用，■可以使用，✕不可以使用
Legend:★ Best, ▲ Conditional Use, ■ Usable, ✕ Not Usable

选型指南 Selection Handbook

压力表YM- Pressure Gauge YM-										
耐震功能 Seismic Function 不耐震 无（可省略）None（Omittable） Non-seismic 耐震 N Seismic										
隔膜形式 Diaphragm Type 隔膜法兰 F Diaphragm flange 隔膜螺纹 L Diaphragm threaded										
连接符号 Connection Symbol	-									
表盘直径 Dial diameter Φ60 60 Φ100 100 Φ150 150										
与隔膜体安装方式 Diaphragm Body Installation Method 径向直接安装 Direct radial mounting 径向带后边凸装 T Radial back mounting with flange 径向带前边嵌装 Q Radial front mounting with flange 轴向直接安装 Z Direct axial mounting 轴向带后边凸装 ZT Axial back mounting with flange 轴向带前边嵌装 ZQ Axial front mounting with flange										

过程连接 Process Connection 法兰连接 Flange connection 螺纹连接 Threaded connection		文字说明 Specify in text 文字说明 Specify in text	
膜片材质 Diaphragm Material 316L SS H.C合金 Ta Ti蒙乃尔 其他 Others		H.C alloy Ti Monel	
精度等级 Accuracy Class 1.0 1.6 2.5			
表壳填充液 Case shell Fill Fluid 硅油（低粘度） Silicone oil (low viscosity) 硅油（高粘度） Silicone oil (high viscosity) 甘油 Glycerol		H I J	
附件可选 Available Accessories 阻尼器 Damping Device 散热器 Heat Dissipater 过压保护器 Overpressure Protector 其它 Other		ZN SR OP 文字说明 Specify in text	