

YPF 膜片压力表

YPF series diaphragm pressure gauge

用途说明 Application Description

膜片压力表适用于测量有一定腐蚀性、粘稠介质和非结晶或非凝固的各种流体介质的压力或负压。

可根据测量介质对耐腐蚀性能的不同要求而选用不同材料的膜片。

外壳用不锈钢材料的仪表，可在工作环境较恶劣的情况下使用。

This gauge is suited for measuring the pressure of all kinds of liquid with some corrosion, non-solidified or non-crystallized.

The material of diaphragm can be selected when the corrosion of the service medium is concerned.

Outer case is made of stainless steel, and can be used in corrosive environment.

结构原理 Structure

仪表由测量系统(包括接头、法兰、膜片)、传动机构、指示装置和壳组成。

在被测介质的压力作用下，仪表的弹性元件(膜片)产生与压力大小成正比的弹性变形一位移，借助连杆经传动机构放大，由指示装置指示被测压力值。

This gauge is made up of the measuring system (include connector, flange and diaphragm), gear setting, point setting and outer case.

When the service medium pressure act on the flexibility parts (diaphragm), and make it moving, with the stick help, sending and making it bigger, then the pointer point it out on the dial.

主要技术指标 Main Technical Data

◆ 测量范围、承压部尺寸 Scale range, accuracy class and weight

型号 Model	标度范围 Scale range	承压部尺寸 D1 The burden part dimension
YPF-100A	0~0.06, 0~0.1, 0~0.16, 0~0.25, 0~0.4, 0~0.6, 0~1, 0~1.6, 0~2.5, -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, -0.1~2.4MPa	F85
YPF-100B		F115
YPF-100B-F		
YPF-150A		F85
YPF-150B		F115
YPF-150B-F		
YPF-100B	0~1.6, 0~2.5, 0~4, 0~6, 0~10, 0~16, 0~25, 0~40*, -1.6~0, -2.5~0, -4~0, -6~0, -10~0, -16~0, -25~0, -40~0*, -0.8~0.8, -1.2~1.2, -2~2, -3~3, -5~5, -8~8, -12~12, -20~20 KPa	F160
YPF-100B-F		F160
YPF-150B		
YPF-150B-F		

*0~40, -40~0, ±20KPa规格承压部尺寸D1，为Φ85

*0~40, -40~0, ±20KPa the burden part dimension D1, Φ85.

◆ 精确度等级：2.5

◆ 使用环境温度：-40℃~+70℃；

相对湿度不大于90%。

◆ 温度影响：使用温度偏离20±5℃时，其温度附加误差不大于0.04%/℃。

◆ 工作位置：垂直安装。

◆ 防护等级：IP64。

◆ Accuracy class: 2.5.

◆ Environmental condition: -40℃~+70℃, relative humidity is no more than 90%.

◆ Temperature effect: when the environment temperature deviate from 20 ± 5℃, the additional error is no more than 0.04%/℃.

◆ Working position: installed vertically.

◆ Ingress protection: IP64.



YPF-150A

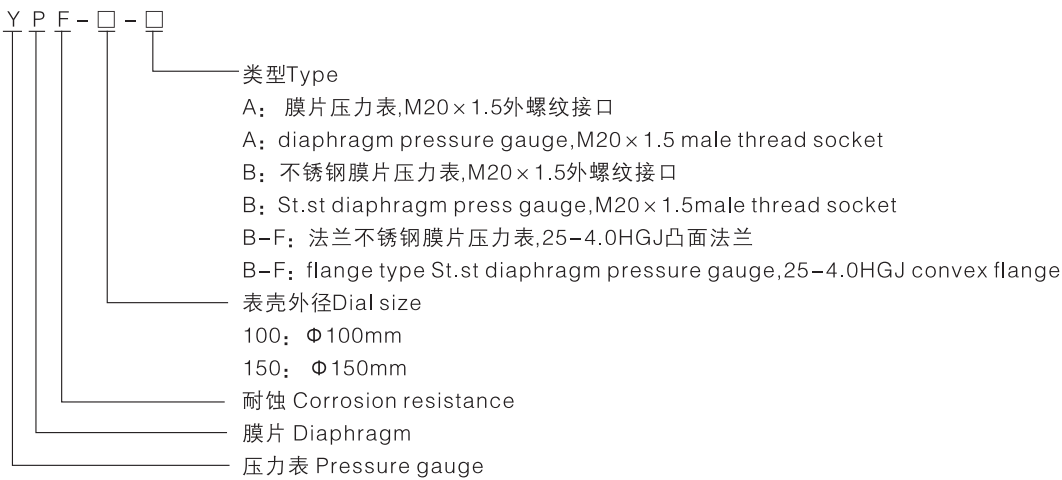


YPF-100B-F



YPF-100B

型号描述
 Model Decsription



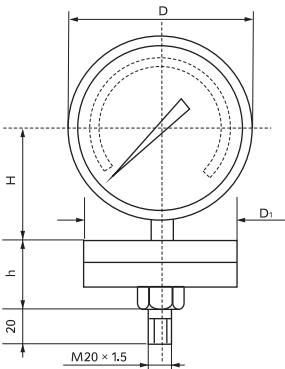
◆ 导压系统及外壳等主要零件材质
 Material of measuring system and main accessories

型号 Model	导压系统 Measuring system			表壳材料 Case
	膜片 Diaphragm	法兰接头 Flange connector	密封垫圈 Gasket	
YPF-100A YPF-150A	Cr 15Ni7Mo (PH15-7Mo) 316L(≤25Kpa)	1Cr18Ni9	丁腈橡胶NBR	铸铝 Cast aluminium
YPF-100B YPF-150B			聚四氟乙烯PTPE	1Cr18Ni9
YPF-100BF YPF-150BF				

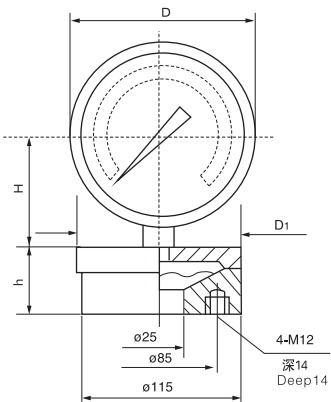
外形尺寸
 Dimension

单位(Unit): mm

◆ YPF- 100
150 A/B



◆ YPF- 100
150 B-F



	YPF-100A	YPF-100B	YPF-100B-F	YPF-150A	YPF-150B	YPF-150B-F
D	f100	f110	f110	f150	f160	f160
H	57	57	57	80	80	80
h	42	42		43	43	

YTP 系列隔膜压力表

YTP series diaphragm-seal pressure gauge

用途说明 Application Description

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。

隔膜表主要用于石油、化工、制药、食品、轻纺等工业部门生产过程中的压力检测。

To enlarge the using range of all kind of the universal pressure gauge, and make it suited for measuring the pressure of the service medium which is high corrosive and easily crystallized, or the medium which has floating solid. And in order to prevent some service medium from entering the universal pressure gauge or to be easy for clear the place where the precipitation is resisted, there must have a diaphragm pressure gauge which is made up of a diaphragm-seal and a universal pressure gauge.

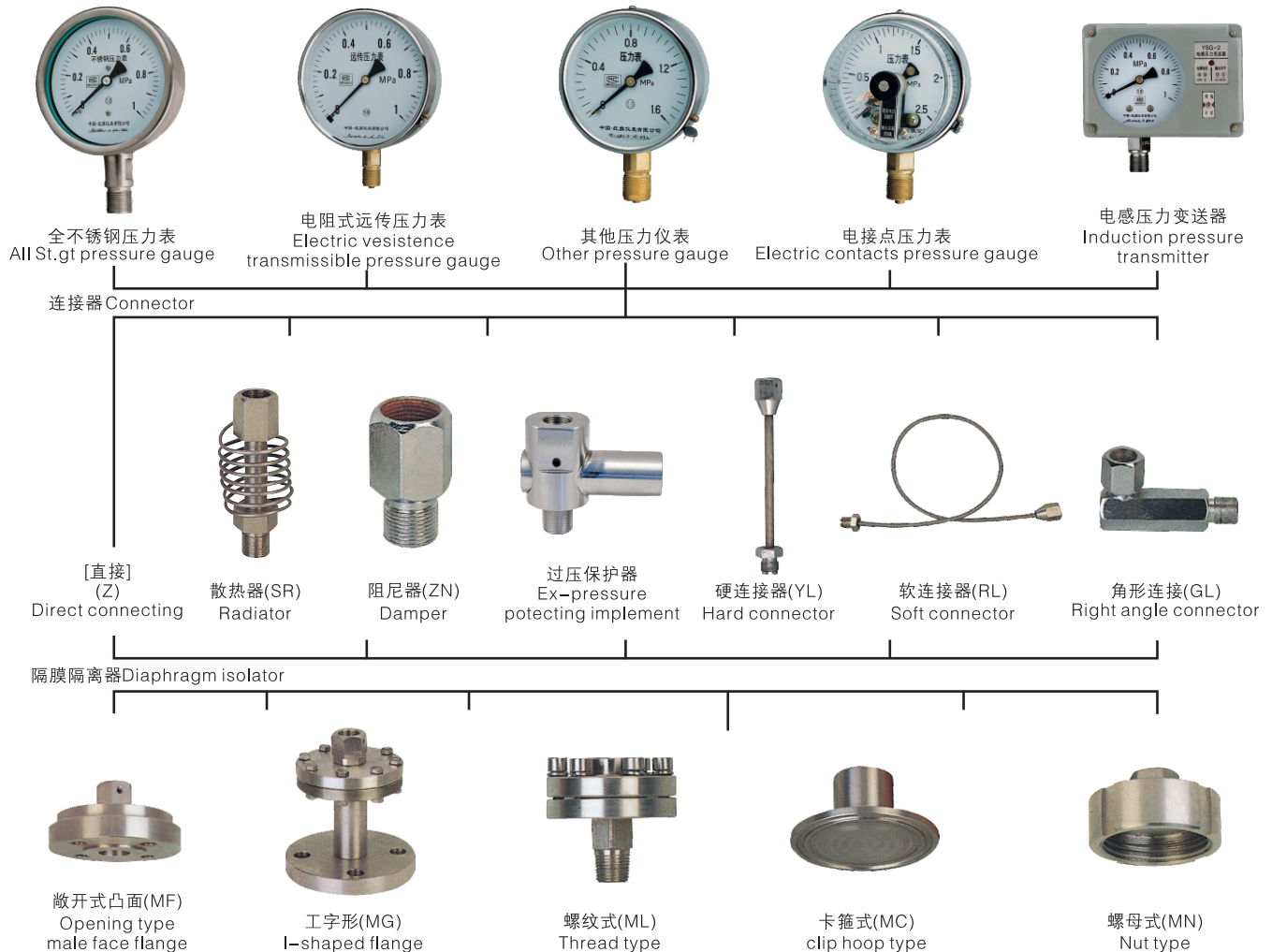
The diaphragm gauge is mainly used in oil industry, chemical industry, pharmacy industry and so on.

系统构成示意图 System Structure

通用型压力仪表 Utility pressure gauge



YTP-100MG



结构原理 Structure

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一位移，经指示装置显示压力值。当隔膜的刚度足够小时，则压力仪表指示的压力就近于被测介质的压力值。

The diaphragm pressure gauge is made up of univesal pressure gauge and the different structure diaphragm to be as a airproof system, and the pressurized liquid is filled. When diaphragm the service medium act on the diaphragm and make it move, the pressurized liquid is compessed. And the flexibility parts will be moved caused by the instinctive character of the pressurized liquid and the pointor point it out on the dial. And when the rigidity of the diaphragm is small enough, the pointing measurement is nearly the same as the service medium pressure.

主要技术指标 Main Technical Data

◇ 隔膜表的温度特性

由于隔膜表的系统内填充了密封液作为压力传递的介质，致使隔膜表的温度影响量与密封液体膨胀系数、隔膜刚度及受压部位的温度有关。对于低量程压力仪表的影响尤为明显。一般受压部温度误差规定不大于0.1%/℃，所以隔膜表的温度影响一般是由通用压力仪表温度影响量与隔膜隔离器受压部温度影响量两者之和。

◇ Temperature character of diaphragm pressure gauge.

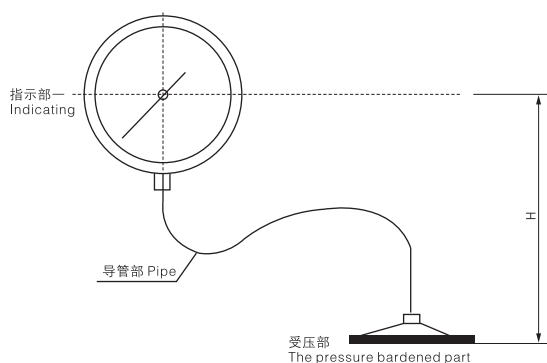
Because the pressurized liquid was filled in the diaphragm pressure gauge as the medium which send the pressure, the temperature influence of the diaphragm pressure gauge is relative with the expansion coefficient of the pressurized liquid, the rigidity of the diaphragm, and the temperature of the pressure burdened part. Especially to the low measuring range the influence is obvious. Usually the pressure burdened part error is no more than 0.1%/℃. So the temperature influence of diaphragm pressure gauge is made up of the universal pressure gauge and temperature influence of the pressure burdened part of the diaphragm.

◇ 隔膜表的液位差

尤其对于带软连接管的隔膜表，由于隔膜受压部与通用型压力表安装位置不在同一水平面上，会产生液位差的影响量 Δp 。在精确测量时更应注意。

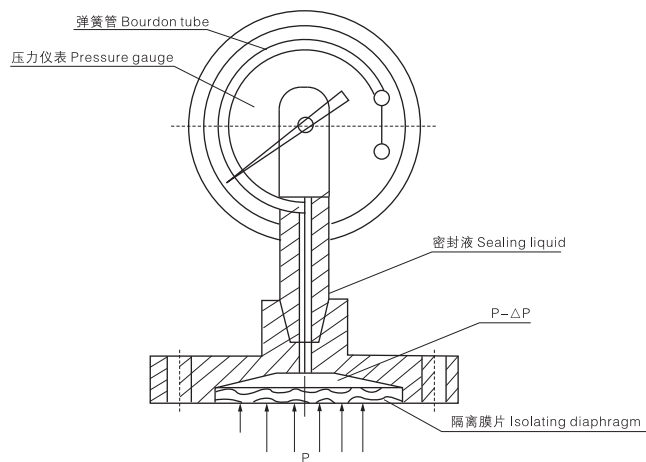
◇ Liquid level of diaphragm pressure gauge

Especially for the diaphragm pressure gauge which attached the soft connector tube, the position of the pressure burdened part of the diaphragm and the universal pressure gauge is not at the same level and will generate the influence of the Δp . Please be attention when accurately measuring.



$$\Delta p = d \cdot H \quad d - \text{密封液的比重} \quad H - \text{液位差}$$

$$\Delta p = d \cdot H \quad d - \text{the proportion of sealing liquid} \quad H - \text{the difference of liquid level}$$



◆ 隔膜表的耐蚀性

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)。

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；硅橡胶及氟塑料。

The anti-corrosive character of the pressure gauge.

The anti-corrosive character of the pressure gauge will be assured by selecting the suitable diaphragm which touch with the service medium, flange and gasket.

◆ 隔膜液的选择

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。

The choice of the pressurized liquid

To make diaphragm pressure gauge reliable and safe, the pressurized liquid should be selected according to different use.

密封液 Sealing liquid	受压部温度范围 Burden part temperature	比重 g/cm ³ Density	体膨胀系数 1/°C Coefficient of volume expand	用途 Use
高粘度硅油 High viscosity silicon oil	-10~200°C	1.07	0.95 × 10 ⁻³	高温用 High temperature industry
低粘度硅油 Low viscosity silicon oil	-30~100°C	0.94	1.08 × 10 ⁻³	一般用 General use
甘油水溶液 Glycerin liquid	-5~100°C	1.27	0.61 × 10 ⁻³	食品用 Food industry
植物油 Vegetable oil	-5~100°C	0.93	1.03 × 10 ⁻³	食品用 Food industry
氟油 Fluovin oil	-30~150°C	1.93	0.75 × 10 ⁻³	氢、氧 Hydrogen、Oxygen

型号描述 Model Description



型号描述 Model Description

标记1: Y-100B/SR/MF(A)/316/4MPa/50-4.0HGJ46

通用仪表为Y-100B不锈钢压力表, 连接形式为SR散热式, 采用敞开式凸面法兰MF, 隔离器(法兰)材料为碳钢, 膜片材料为316不锈钢, 测量范围0~4MPa, 法兰标准50-4.0HGJ46。

标记2: YSG-2/Z/MG(B)/哈/1MPa/20-4.0HGJ47

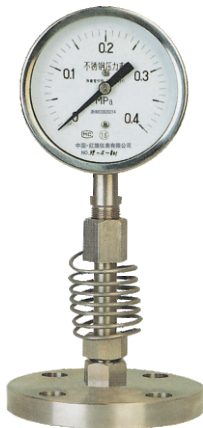
通用仪表为YSG-2电感压力变送器, 连接形式为直接, 采用工字型法兰MG, 隔离器(法兰)材料为1Cr18Ni9, 膜片材料为哈氏合金, 测量范围0~1MPa, 法兰标准为20-4.0HGJ47。

Mark 1: Y-100B/SR/MF(A)/316/4MPa/50-4.0HGJ46

The utility pressure gauge is All st, st pressure gauge connecting type is SR radiator. Adopt opening type male flange, all the material is carbon steel. Diaphragm material is st. st 316, measuring range 0~4MPa, flange standard 50-4.0 HGJ 46.

Mark 2: YSG-2/Z/MG(B)/H276C/1MPa/20-4.0HGJ47

Utility instrument YSG-Z induction pressure transmitter, connecting type is direct, use I shape flange MG, the flange material is 1Cr18Ni9. Diaphragm material is Haste Alloy, measuring range 0~1MPa, flange standard is 20-4.0 HGJ47.



隔膜装置法兰尺寸 Diaphragm Setting Flange Dimensions

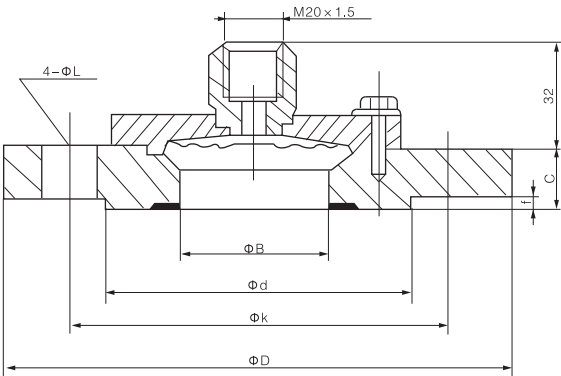
1、敞开式凸面法兰 Opening type convexity flange

单位(Unit): mm

代号 Code	量程上限值P(MPa) The up limit	推荐法兰标准代号 Standard recommend flange	凸面法兰尺寸 The dimension of male face flange(mm)							尺寸图 Dimension figure
			D	K	d	f	L	C	B	
MF1	4	JIS-10/20K 50A	155	120	100	3	19	18	50	图一 Figure 1
	4	50-1.0/4.0HGJ46	160	125	100	3	19	18	50	
	4	ANSI-2B 150lb	152	121	92.1	3	19	18	2"	
	4	ANSI-2B 300/100lb	165	127	92.1	3	19	18	2"	
	6~10	25-10.0 HGJ47	125	89	50.8	7	20	20	25	图二 Figure 2
	6~10	50-10.0HGJ47	165	127	92.1	3.5	20	26	50	
MF	16~25	20-25.0 HGJ53	130	89	43	7	22	20	25	图三 Figure 3
	4	25-4.0 DIN	115	85	65	3	M12	26	25	

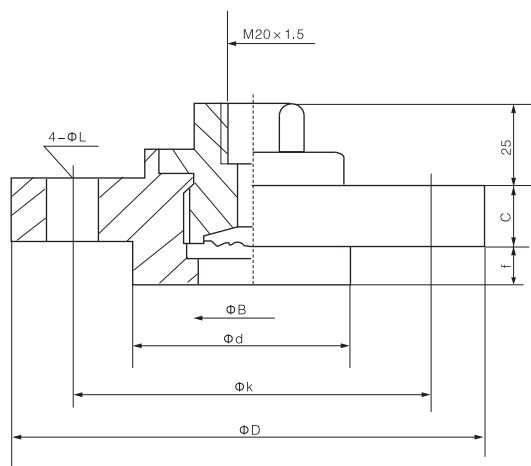
* 均可按用户提供或指定的法兰标准尺寸制造

We could manufacture the flange according to the customer speeial requirement.

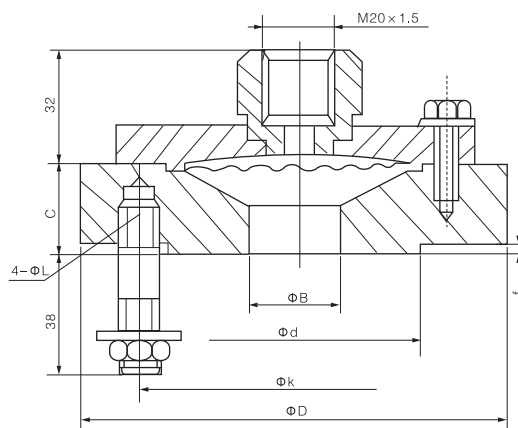


图一($p \leq 4\text{MPa}$) [代号MF1]

Figure 1($p \leq 4\text{MPa}$) [code MF1]



图二($6\text{MPa} \leq p \leq 25\text{MPa}$) [代号MF1]
Figure 2 ($6\text{MPa} \leq p \leq 25\text{MPa}$) [code MF1]



图三($p \leq 4\text{MPa}$) [代号MF]
Figure 3 ($p \leq 4\text{MPa}$) [code Mf]

2、工字形凸面法兰[代号MG]

I-shape convexity flange[code MG]

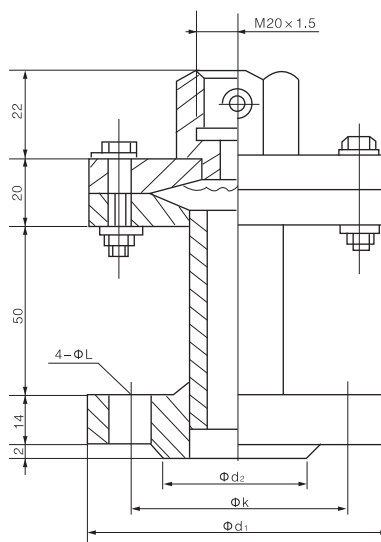
量程上限值 The uplimit : $\leq 4\text{MPa}$

单位(Unit): mm

推荐法兰标准代号 Recommend flange code	尺寸 Dimension				
	DN	D ₁	K	d ₂	L
JSI-10/25K 25A	25	125	90	70	19
JSI-10/20K20A	20	100	75	58	15
JSI-10/20K15A	15	95	70	52	15
ANSI-1B-15lb	1"	108	79.4	50.8	15.7
ANSI-1B-300/600lb	1"	124	88.9	50.8	19.1
20-1.0/4.0HGJ47	20	105	75	56	14

* 均可按用户提供或指定的法兰标准尺寸制造

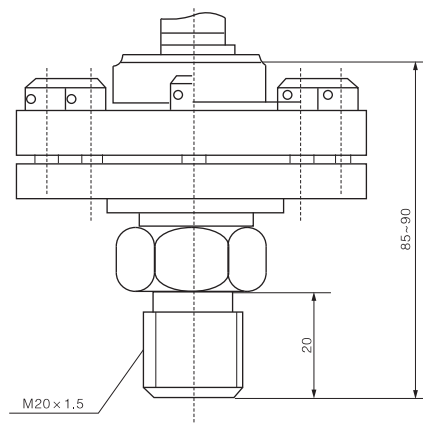
We could manufacture the flange according to the customers special requirement



3、螺纹接头式 [ML]

Screw thread connector type[ML]

量程上限值 Upper limit: $\leq 60\text{MPa}$



4、螺栓式隔膜隔离器[代号MZ]

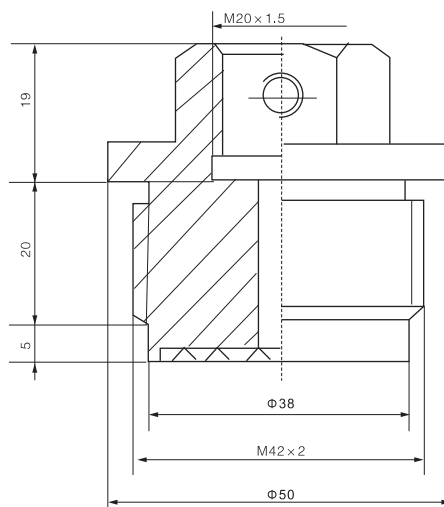
Bolt type diaphragm isolator[code MZ]

测量范围: 1~25MPa

Scale range : 1~25MPa

隔膜和隔膜座材料 : 0Cr17Ni12Mo2[316]

Material of diaphragm and its seat: 0Cr17Ni12Mo2[316]



5、卡箍式隔膜隔离器 [代号MC]

6、螺母式隔膜隔离器 [代号MN]

7、矩形法兰式隔膜隔离器 [代号MH]

5、Compressed type theca diaphragm[code MC]

6、Nut type theca diaphragm[code MN]

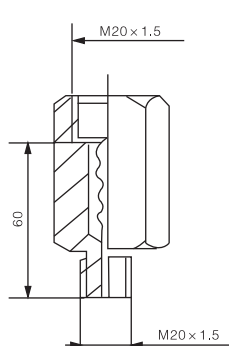
7、Rectangular flange theca diaphragm[code MH]

注: 5、6、7均见卫生型隔膜压力表专页。

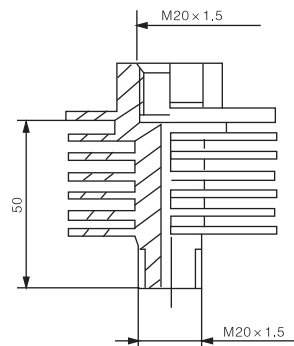
Attention: 5, 6, 7 see the page of the hygienic diaphragm pressure gauge.

外形尺寸 Dimension

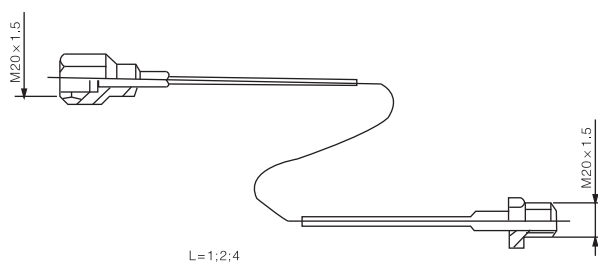
单位(Unit): mm



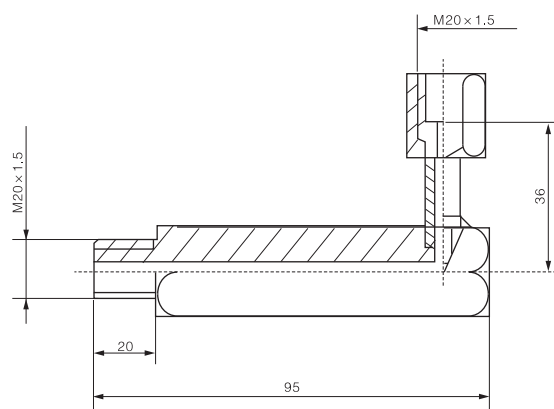
阻尼器 [ZN] 1Cr18Ni9
Damper [ZN] 1Cr18Ni9



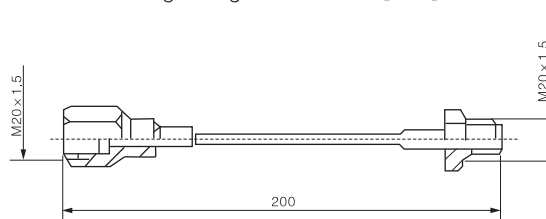
散热器 [SR] 铜镀镍
Radiator [SR] copper with nickle plated



软管接管 [RL] 1Cr18Ni9
Soft pipe connector [RL] 1Cr18Ni9



角形接管 [GL]
Right angle connector [GL]



硬管接管 [YL]
Hard pipe connector [YL]

YTP 系列卫生型隔膜压力表

YTP series hygienic diaphragm pressure gauge

用途说明 Application Description

卫生型隔膜压力表是由通用型压力仪表与隔膜隔离器组成一个系统的隔膜压力表。具有在工艺现场装卸快捷方便、不易污染、容易清洗、安全可靠等优点。能满足药品生产质量规范(GMP)的要求。在制药、食品、饮料、水处理等行业对仪表有卫生要求的工艺流程中得到广泛应用。

This kind of gauge is the systemic diaphragm pressure gauge, with is made up of the universal pressure gauge and the isolator. Convenient to install and dismantle on the spot , it's easier to clear up and unpollute , in duding safe and reliable for use, and also it can meet the request of the GMP in the pharomic manufacture it's widely used in the medicine industry, which have the request to the hygiene in the technical processing.

主要技术指标 Main Technical Data

◇ 测量范围及型号标示 Scale range and model description

型号 Model		形式 Type		量程上限值(MPa) The up limit(MPa)
配抗振压力表 With glycerin filled pressure gauge	配不锈钢压力表 Match with St.st pressure gauge			
YTN-60/MC	Y-60B/Z/MC	MC	卡箍式 Clip hoop type	0.6~2.5(法兰1 1/2") 0.6~2.5(flange 1 1/2")
YTN-100/MC	Y-100B/Z/MC			0.4~2.5(法兰2") 0.4~2.5(flange 2")
YTN-100/MN	Y-100B/Z/MN	MN	螺母式 Nut type	0.4~2.5
YTN-100/MH	Y-100B/Z/MH	MH	矩形法兰式(均质机用) Retangular flange type	10~60

注：1、用户也可选用其它通用型压力表，订购时同本公司协商。

2、压力表同隔膜装置连接方式也可选用其它形式，订货时同本公司协商。

Attention:

- 1、consumer can select other type universal pressuere gauge,please consult with us when order it.
- 2、The connection type of the pressure gauge and the diaphragm setting also can be selected. Please consult with us when order it.

◇ 隔膜表的耐蚀性

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、法兰及密封圈的材料来保证。

隔膜材料：316，316L

法兰材料：316，316L

密封圈材料：硅橡胶、聚四氟乙烯

◇ 密封液的选择

为了保证卫生型隔膜表使用的可靠性和安全性，根据不同用途、选择合适的密封液。

◇ The corrosive-proof characteristic of diaphragm pressure gauge

It is guaranteed by diaphragm and flange which are suitable chosen and measured in the part of the touching area , and by the material of the gasket.

Diaphragm material: 316, 316L

Flange material: 316, 316L

Gasket material: silicon rubber, PVC

◇ Sealed liquid:

Just for safty and reliability , we can choose suitable sealed liquid according to different using ways.



卡箍式[MC]



螺母式[MN]

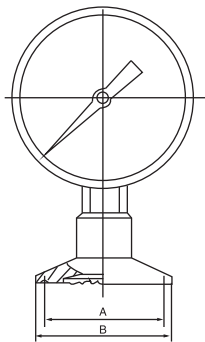


矩形法兰式[MH]

隔膜装置法兰尺寸 Flange size of diaphragm

1、卡箍式隔膜隔离器 [代号 MC] Clip hoop type diaphragm isolator [code MC]

单位(Unit): mm



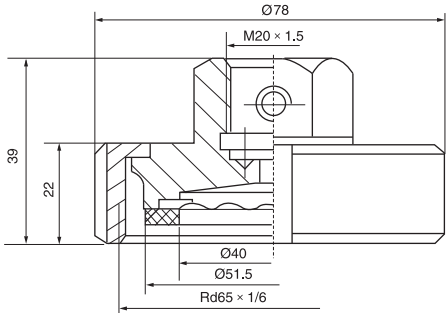
法兰尺寸 Flang size	A	B
1 1/2"	43.5	50.5
2"	56.5	64.0

自选件(符合ISO-2852标准)

- ① 卡箍1 1/2、2"
 - ② 管接头1 1/2、2"
 - ③ 密封圈(材料为硅橡胶、聚四氟乙烯)
- Option (accond with standard ISO-2852)
- ① Clip hoop1 1/2、2"
 - ② Pipe connector1 1/2、2"
 - ③ Sealing gasket (material:silicon rubber PTFE)

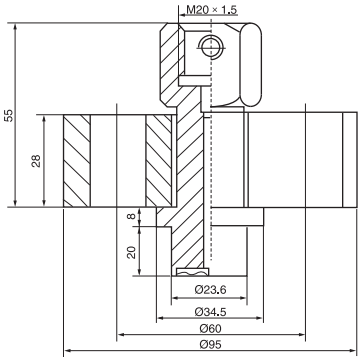
2、螺母式隔膜隔离器[代号 MN]

Nut type [code MN]
隔膜和隔膜座材料
The material of the diaphragm and its seat: 0Cr17Ni12Mo2 [code 316]



3、矩形法兰式隔膜隔离器 [代号 MH]

Rectangular flange type diaphragm isolator[code MH]
隔膜和隔膜座材料
Material of diaphragm and its seat : 0Cr17Ni12Mo2 [code 316]



YTP-75S/100S系列全塑隔膜压力表

YTP-75S/100S series full plastic diaphragm pressure gauge

产品概述 Product Overview

全塑隔膜压力表是由通用的塑壳压力表与一个全塑材料的隔膜体配合连接而成的。隔膜体型号有标准型和工字型这两种。

全塑隔膜压力表主要部件均采用塑料部件制作，隔离膜片采用PTFE材质，具有极好的防强腐蚀性能。此仪表适用于化工行业测量氯气、盐酸、硝酸等具有强腐蚀作用的液体或气体的压力。

This gauge is made up of plastic pressure gauge for common use and diaphragm body of full-plastic material. Diaphragm body type includes standard mode and I shape mode.

The major components of full-plastic diaphragm pressure gauge are all made from plastic, the material of diaphragm is PTFE, which is excellently anti-corrosive. This gauge is suitable for chemical industry measuring the pressure of those strongly corrosive liquids or gas, including chlorine, hydrochloric acid, nitric acid and so on.



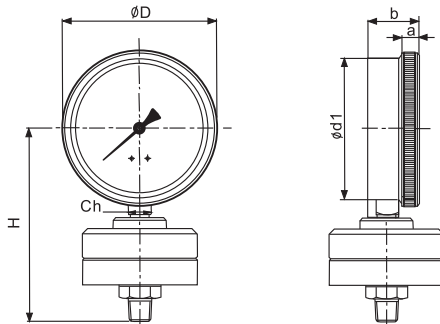
YTP-100S

技术参数 Technical parameters

- ◇ 仪表外径：φ 75mm、φ 100mm
- ◇ 精度等级：1.6%
- ◇ 测量范围：0-1MPa
- ◇ 防护等级：IP54
- ◇ 工作环境温度：-20~70℃
- ◇ 仪表接头：铜合金
- ◇ 隔膜体材质：PVC/PTFE
- ◇ 工字型法兰连接(参见法兰标准)
- ◇ 隔膜连接：标准型螺纹连接 M20×1.5
- ◇ 仪表充液：内部填充工作液硅油
- ◇ 工作压力：静负荷，用至测量上限值的3/4
- ◇ 交变负荷：用至测量上限值的2/3
- ◇ 瞬时压力：用至满量程
- ◇ Diameter: φ 75mm、φ 100mm
- ◇ Accuracy class: 1.6%
- ◇ Scale range: 0-1MPa
- ◇ Ingress protection: IP54
- ◇ Working temperature: -20 ~ 70℃
- ◇ Connector: copper alloy
- ◇ Diaphragm material: PVC/PTFE
- ◇ I-shaped flange connection(refer to flange standard)
- ◇ Diaphragm connection: standard connecting thread M20*1.5
- ◇ Gauge liquid filling: filled with working-use silicone oil
- ◇ Working pressure: static, 3/4 full scale range
- ◇ Alternate load: 2/3 full scale range
- ◇ Instant pressure: full scale range



外形尺寸 Dimension(mm)



型号 Model	尺寸 Size					
	D	d1	Ch	a	b	H
YTP-75S	90	79	17	13	37.5	137
YTP-100S	116	105	17	13	37.5	150