National Committee of Project, National Committee of Technology and National Committee of Economy have regarded this product as a key product of 1995. It is now ready for sale.

The first ever created bimetal thermometer together with a RTD (thermocouple) integral thermometer (transmitter) and a gear style core-extractable protective bimetal together with RTD (thermocouple) integral thermometer (transmitter) are all patented products. General purpose and explosion-proof types are optional. It is a kind of instrument with the sheathed thermal resistance (couple) parallel installed in the protective thermowell of bimetal thermometer series. It not only indicates the temperature on site, but also outputs a remote signal to the control room. The platinum resistance (PT100) signal, K & E type thermocouple signal and transferee standard signal of 4-20mA are all available. By using this gauge, you can decrease a hole on the pipe, thus the leakage point decreased. The price of the gauge is less expensive than that of the two gauges (bimetal thermometer and RTD thermometers). So we can say, it is not only practical, but also economical.

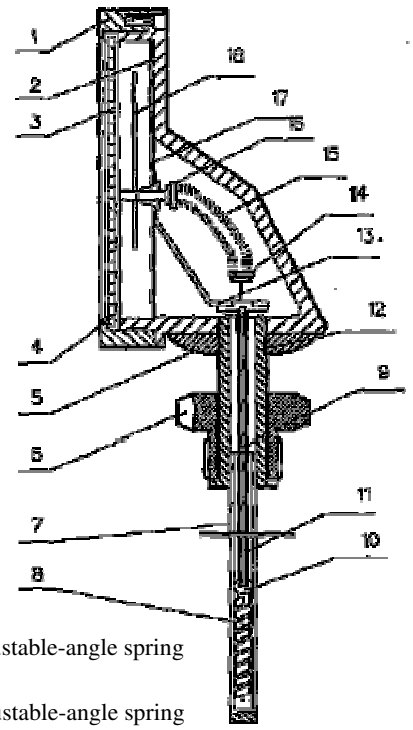
Structure & Operating Principle

The working principle of bimetal thermometer is to utilize two different metals with different thermal linear expansion coefficient. One end is welded on a fixed point; the other end will bend when the temperature changes. This torsion will rotate the pointer to indicate the temperature. Core-extractable style bimetal thermometer means that the sensing element can be replaced by taking it out of the protective thermowell. It is indicating thermometer used in a wide-range area on site. (See DWG-1)

The working principle of the RTD is based on the resistance of metal wire varied by temperature. The working principle of the thermocouple thermometer is to have one end of two different kinds of metal welded in one point, the output voltage of the other end will be varied by the change of temperature. The thermocouple and RTD with remote signal are used in wide-range area.

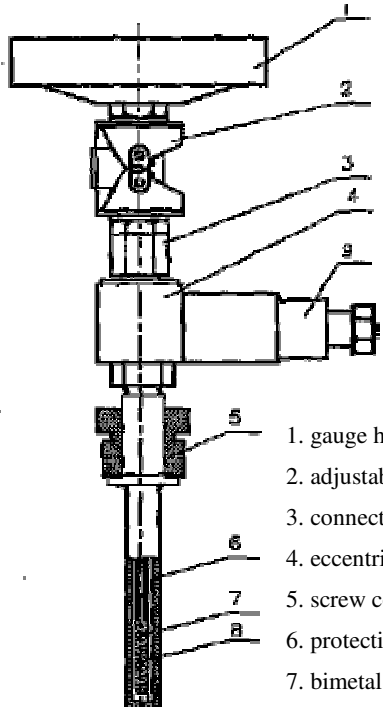
Bimetal together with RTD integral thermometer is to have the sheathed platinum thermal resistance installed in the protective thermowell of bimetal thermometer, it can output a remote platinum resistance signal. For the bimetal, thermal resistance integral temperature transmitter, the sheathed platinum thermal resistance and platinum thermal resistance temperature transfer modules are installed in the protective thermowell of bimetal thermometer, thus it can not only indicate on site, but also output a standard signal of 4-20mA. (See DWG-2) Non-sheathed platinum thermal resistance is also optional.

DWG-1:
Structure diagram of core-extractable bimetal thermometer



1. cover
2. instrument case
3. glass window
4. sealing ring
5. nut
6. male thread connector
7. protective thermowell
8. bimetal sensing element
9. rotating axis
10. lower connector
11. protective sleeve
12. upper fixer
13. stand
14. lower fixed block for adjustable-angle spring
15. adjustable-angle spring
16. upper fixed block for adjustable-angle spring
17. dial
18. pointer

DWG-2: Structure diagram of bimetal together with thermal resistance (thermocouple) integral thermometer & temperature transmitter



1. gauge head
2. adjustable angle type rack
3. connector
4. eccentric connector
5. screw connector with equipment
6. protective thermowell
7. bimetal sensing element
8. thermal resistance (thermocouple)
9. thermal resistance (thermocouple) connector lug