

ULTRASONIC FLOWMETER
S-CLAMP
Sensors installation

SMERI INTERNATIONAL

Product Introduction

- **Main Unit**



Wall mounted type main unit

- **Sensor**



High temperature clamp on sensor



Normal temperature clamp on sensor

Preparation

Note: required tools



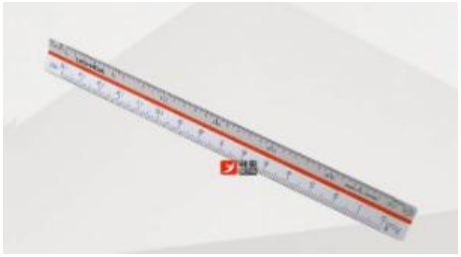
Tape



Oily pen



Angle grinder



Ruler with millimeters scale



Screwdrivers

Installation process

1. Choose installation section
2. Wiring
3. Input parameters
4. Fix installation point
5. Install sensors
6. Finish installation

1. Choose Installation Section

1. Choose Installation Section

- Facts to be considered

Pipe full of medium

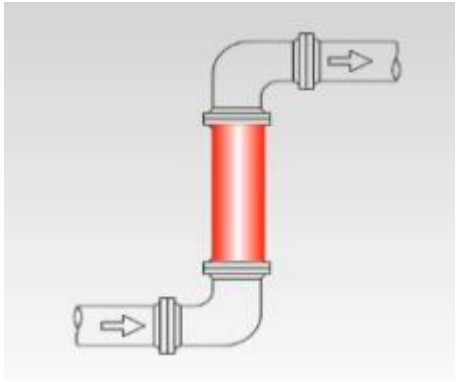
Steady flow

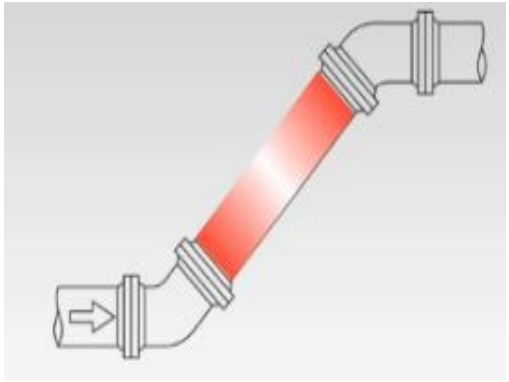
Scaling

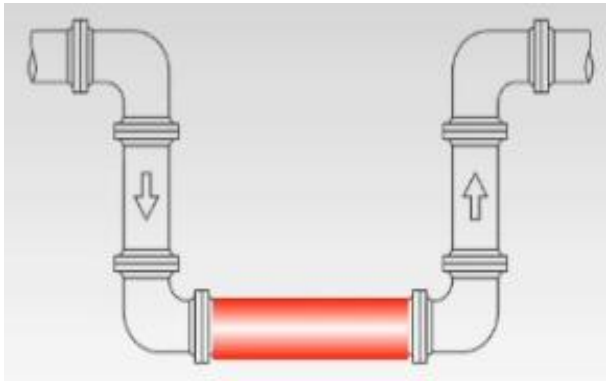
Temperature etc.

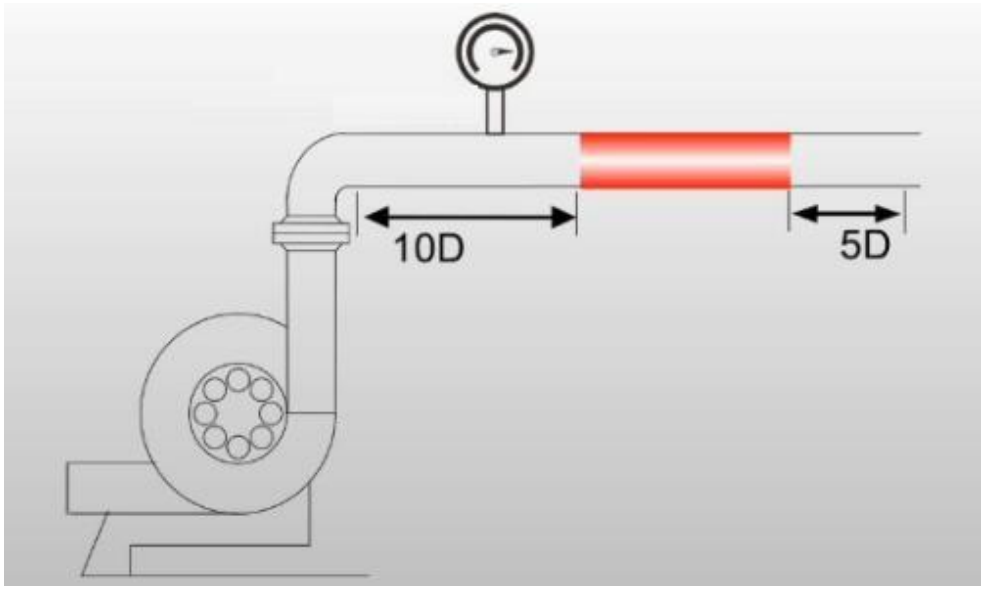
1. Choose Installation Section

- Pipe full of liquid









Sensors should be installed in the red area

1. Choose Installation Section

- Steady flow

- If the pipe is faraway from the pump outlet:
  valve semi-opened.
  Upstream straight run 10D,
  downstream straight run 5D
  (D is the pipe diameter)

- If the pipe is near the pump outlet:
  valve semi-opened, straight runs 30D

1. Choose Installation Section

Scaling

Scaling will make the pipe thicker and the flow value bigger, thus it's better to avoid installing the sensors on the scaling side.

If it is not possible to avoid the scaling side, set the scaling thickness as the liner of the pipe.

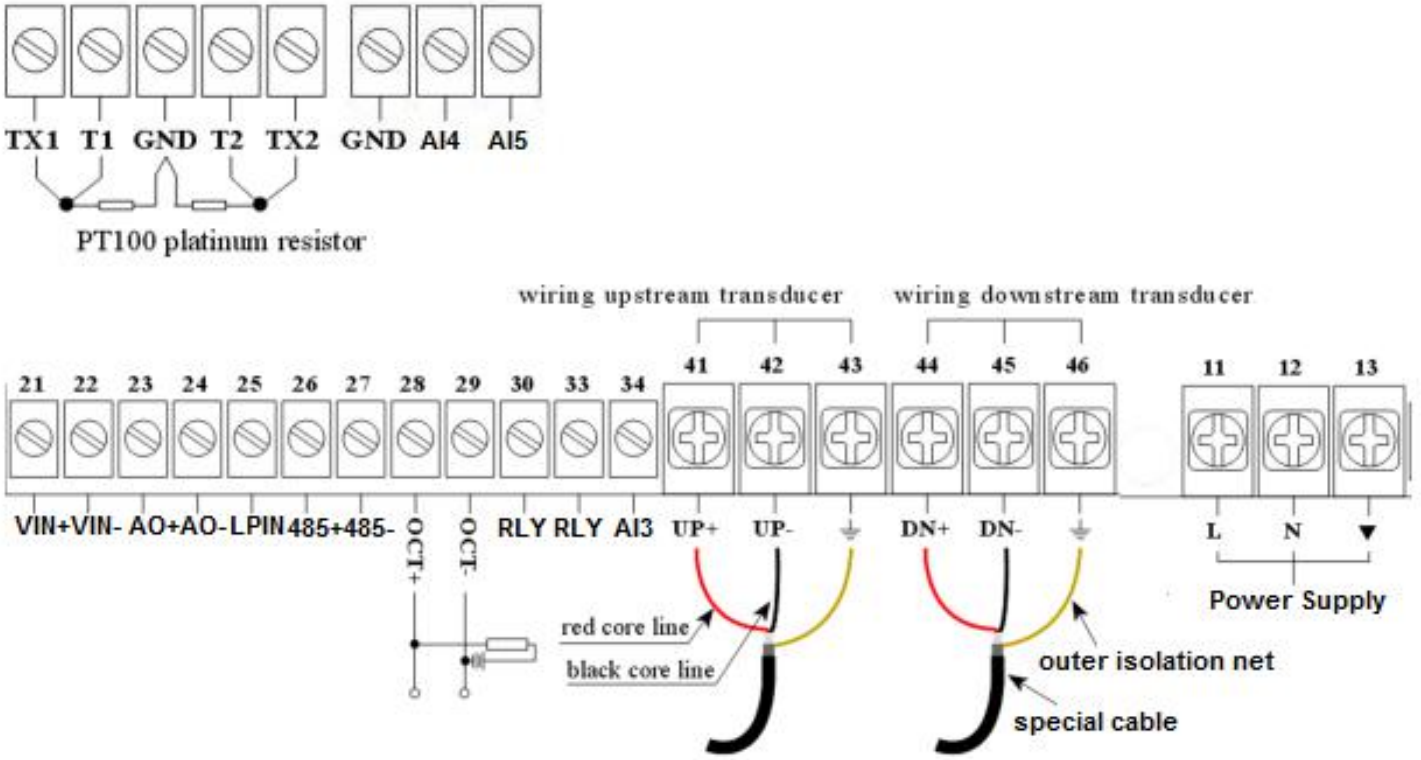
Temperature

Please, refer to our sensor working temperature, and in the same pipe system, it's better to install on the lower temperature side.

2. Wiring

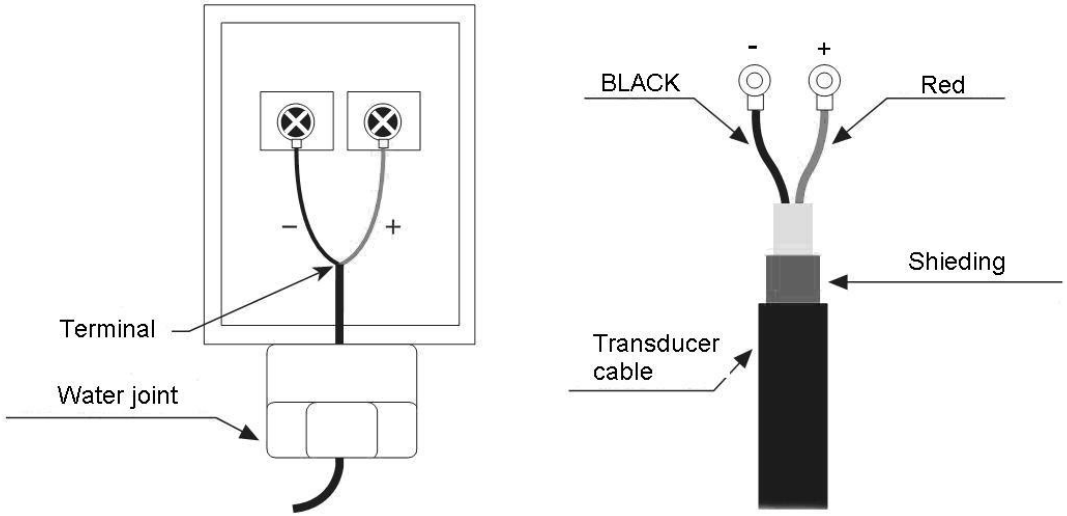
2. Wiring

Main Unit Wiring



2. Wiring

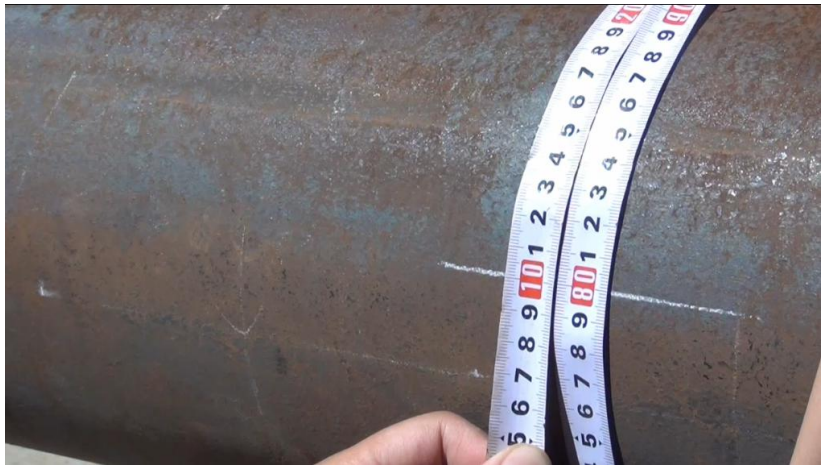
- **Sensor Wiring**



3. Input Parameters

3. Input parameters

Before configuring the parameters, you should know the pipe information (pipe outer perimeter, pipe thickness)



Use tape to measure the outer perimeter of the pipe



Use ultrasonic thickness meter to measure the pipe thickness

3. Input parameters

- M10: input pipe outer diameter in the transmitter.
  It will calculate the outer diameter of the pipe automatically.
- M12: input pipe wall thickness. It will calculate the inner diameter of the pipe automatically.
- M14: choose pipe material
- M16: choose liner material
- M20: choose medium type
- M23: choose sensor type
- M24: choose sensor mounting methods. Then it will calculate the installation distance automatically.

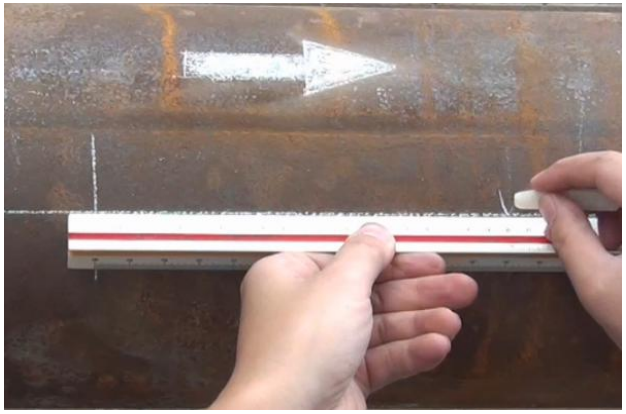
4. Fix Installation Point (V method)

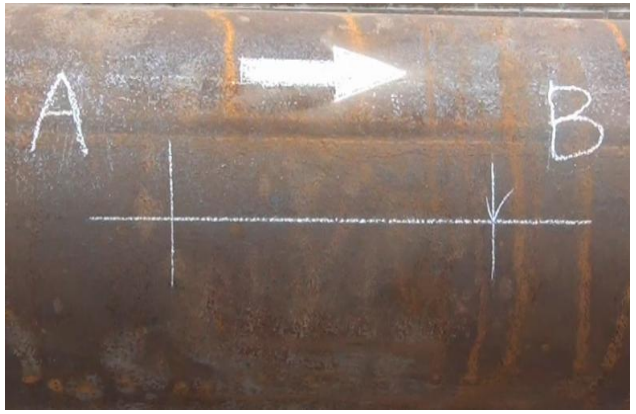
4. Fix Installation Point (V method)

- **V method**
- Fix Flow Direction



- Fix installation point A and B

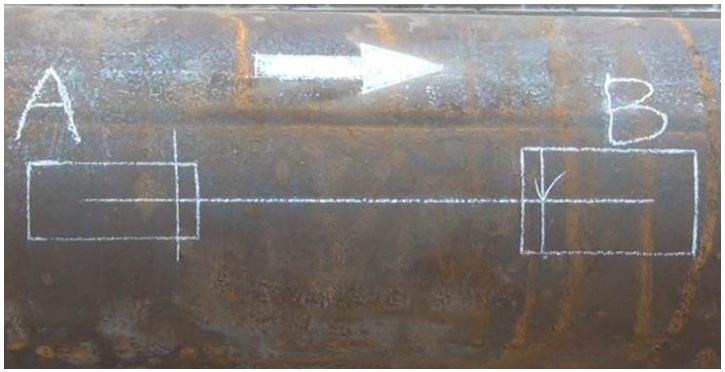




5. Install Sensors (V method)

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- **V method**
- Use an angle grinder to polish the pipe surface of the installation point







5. Install Sensors (V method)

- **Couplant**
- Put the couplant evenly on the sensor



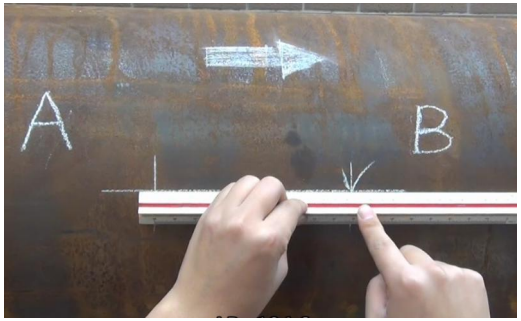
- Install the sensors on the pipe and use steel fasteners to fix the sensors



4. Fix Installation Point (Z method)

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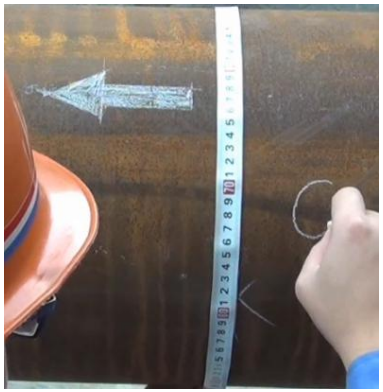
- **Z method**
- Fix flow direction
- Fix Installation point



- Take A as the base point, and use the tape to make a circle around the pipe



- On the other side of pipe, mark 1/2 of outer perimeter as C



- Take B as base point, and use the tape to make a circle around the pipe and on the other side of pipe, mark 1/2 of outer perimeter as D

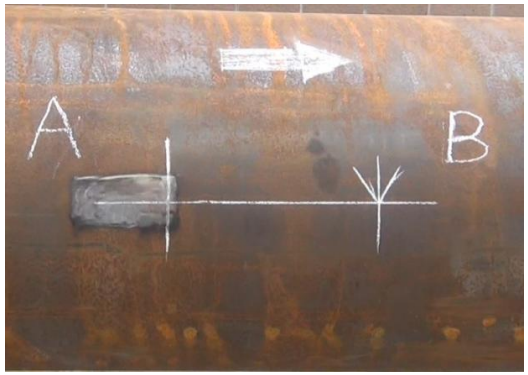


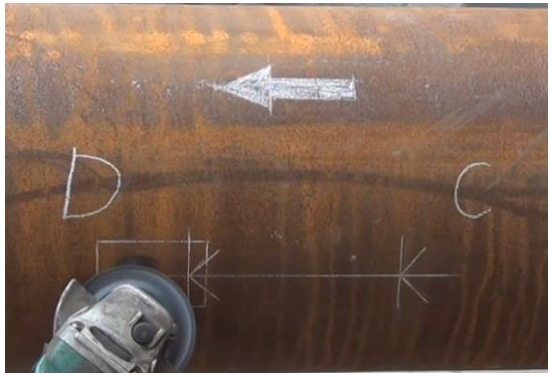
5. Install Sensors (Z method)

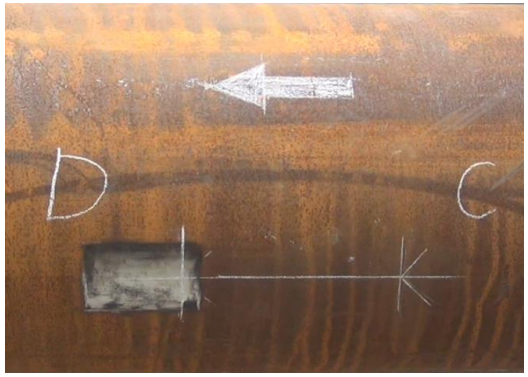
5. Install Sensors (Z method)

- **Z method**
- Use an angle grinder to polish the pipe surface of the installation









5. Install Sensors (Z method)

- **Couplant**
- Put the couplant evenly on the sensor



- Install the sensors on the pipe and use steel fasteners to fix the sensors





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