

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



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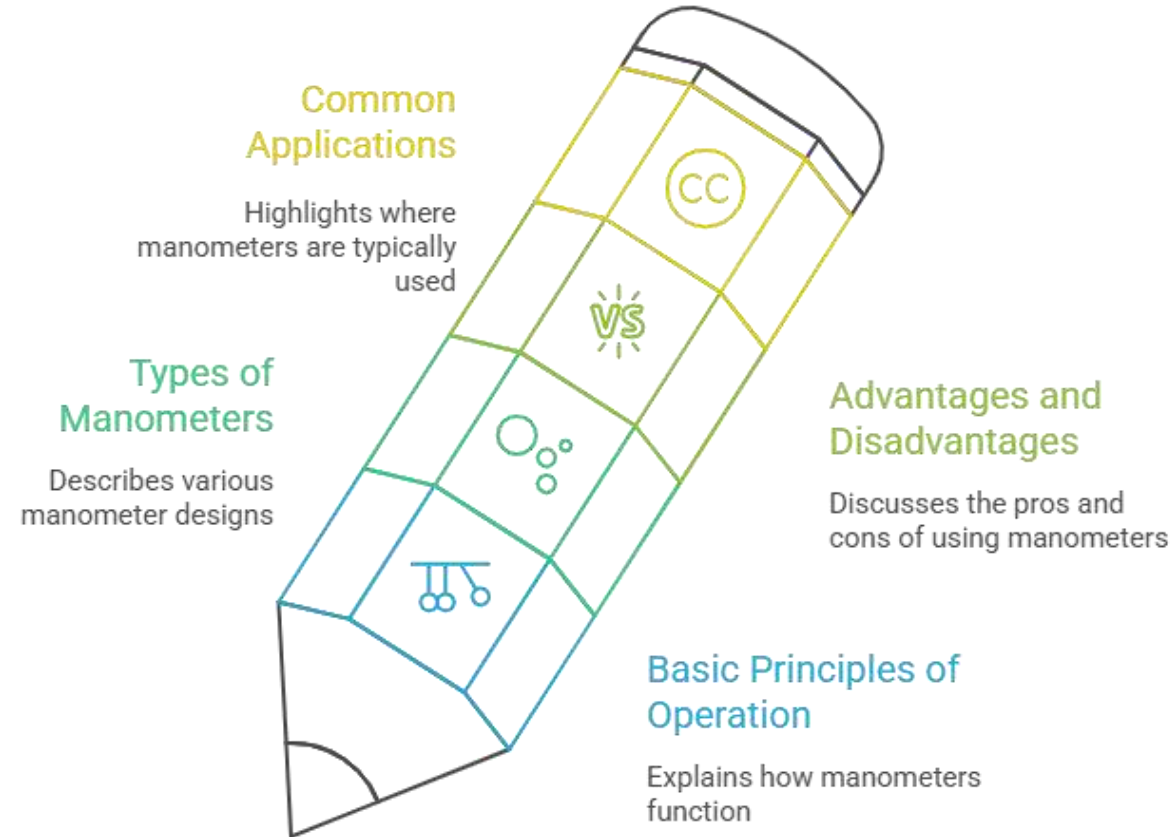
COURSE NAME : PHARMACEUTICAL ENGINEERING (BP404 T)

III SEM / II YEAR

TOPIC 1 : FLOW OF FLUIDS

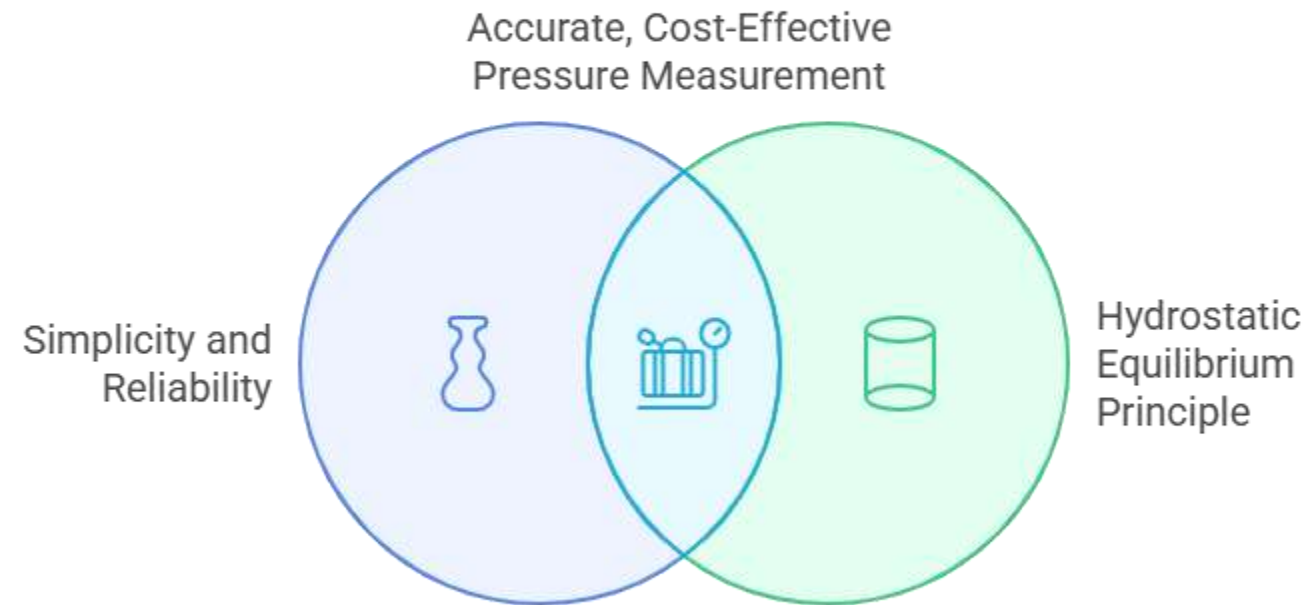
SUBTOPIC: MANOMETER AND THEIR TYPES

INTRODUCTION TO MANOMETERS



Made with  Napkin

The Power of Manometers in Pressure Measurement



Made with  Napkin

PRINCIPLE OF MANOMETERS

Sensitive Laboratory Experiments

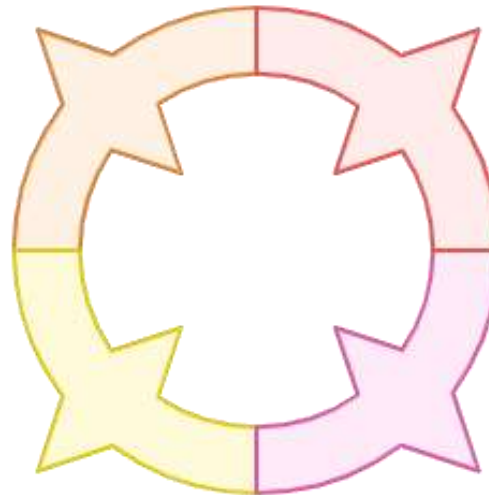
Needs high height difference for precise low-pressure readings.

Low Pressure Difference

Basic Weather Monitoring

Uses minimal height difference for simple pressure observations.

High Height Difference



Low Height Difference

Industrial Pressure Measurement

Requires high height difference to balance significant pressure.

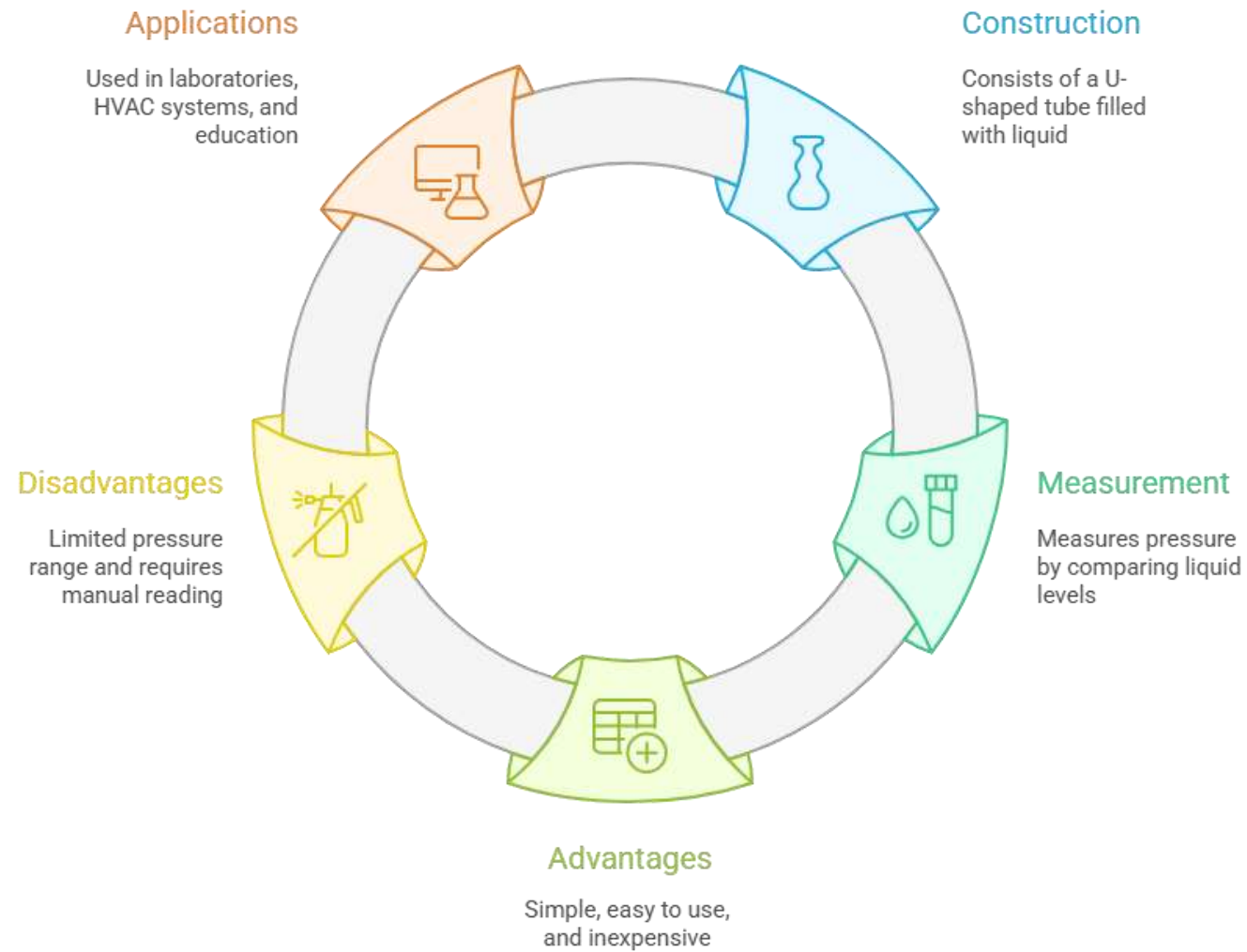
High Pressure Difference

High-Density Fluid Applications

Achieves balance with high pressure and minimal height difference.

Made with  Napkin

U-Tube Manometer Overview



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Understanding Single Column Manometers

Narrow Tube

A thin tube connected to the reservoir

Reservoir

A large container holding the liquid



Pressure Source

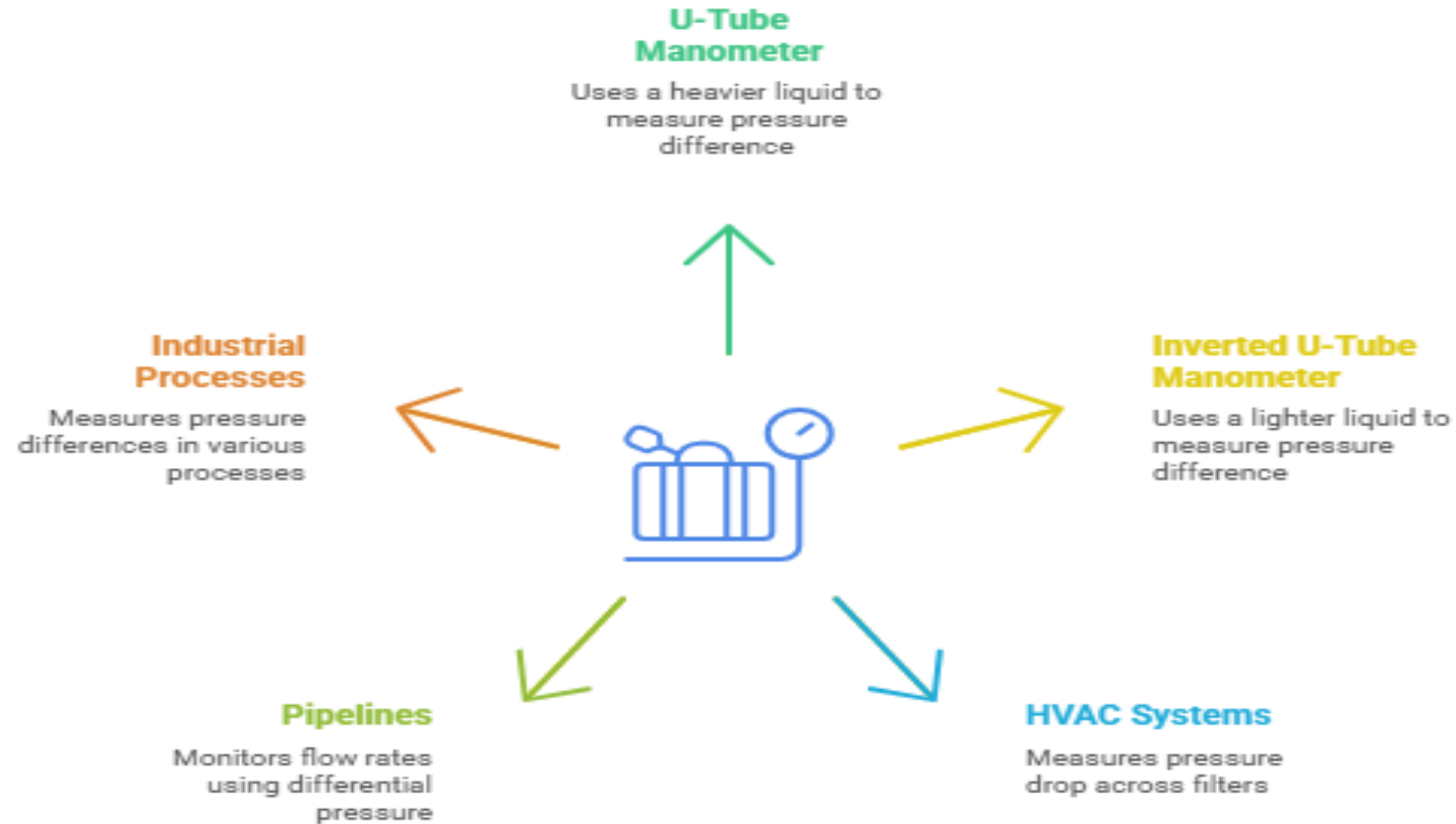
The source of the pressure being measured

Atmospheric Pressure

The pressure of the surrounding air

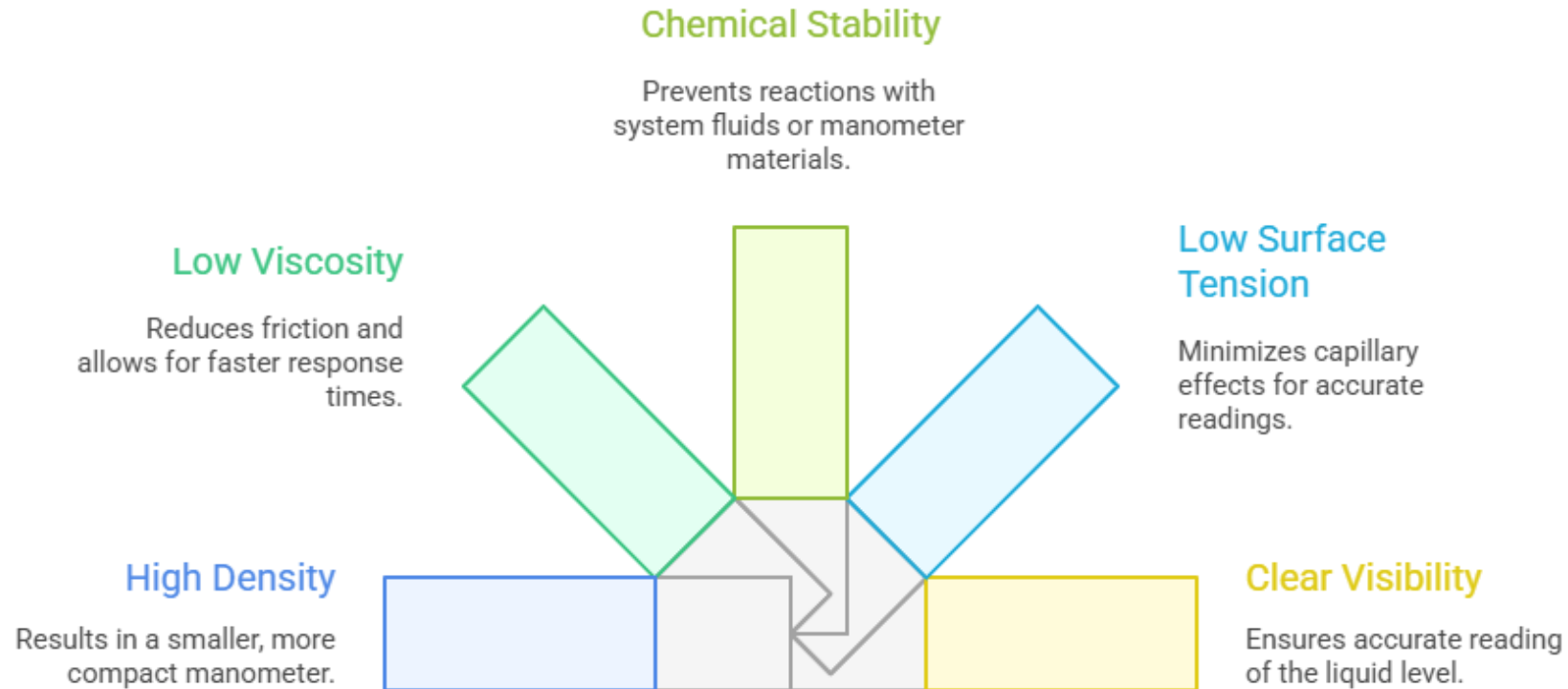
Made with  Napkin

Differential Manometer Types and Applications



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Which manometer fluid should be used?



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Weighing Manometer Pros and Cons



Simple and robust construction



Limited pressure range



High static accuracy



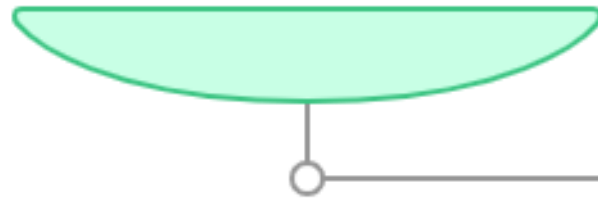
Manual reading required



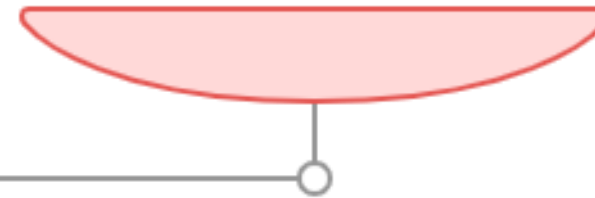
No external power



Bulky and not dynamic

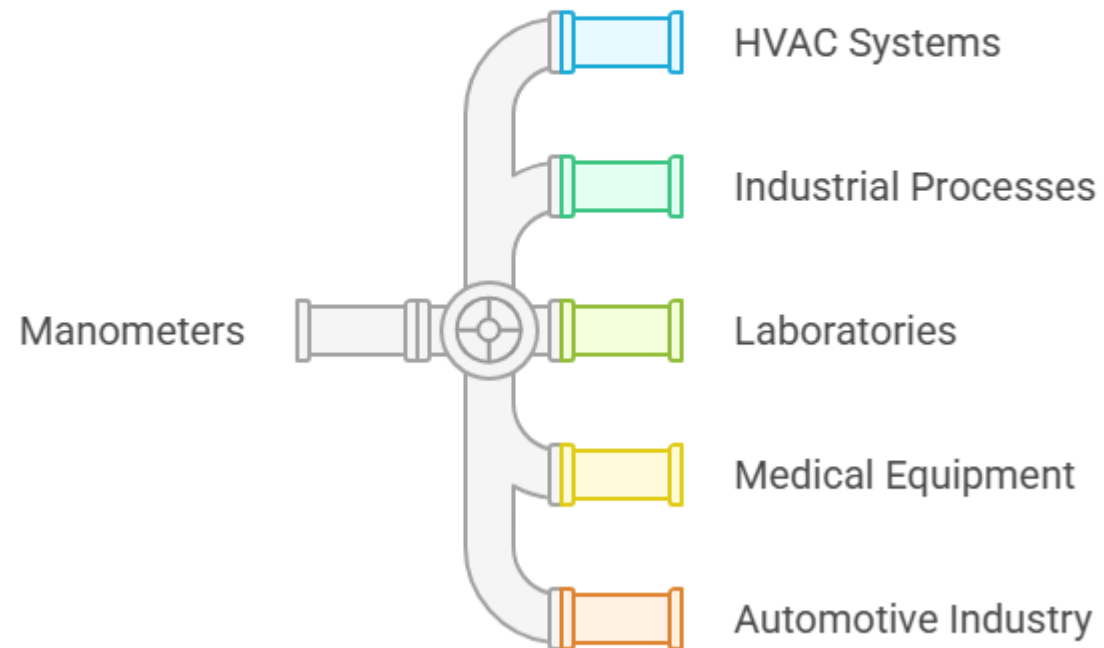


Advantages



Disadvantages

Exploring the Diverse Applications of Manometers



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1. Which type of manometer consists of a U-shaped tube filled with liquid



Manometer Types



Bourdon gauge

Digital manometer

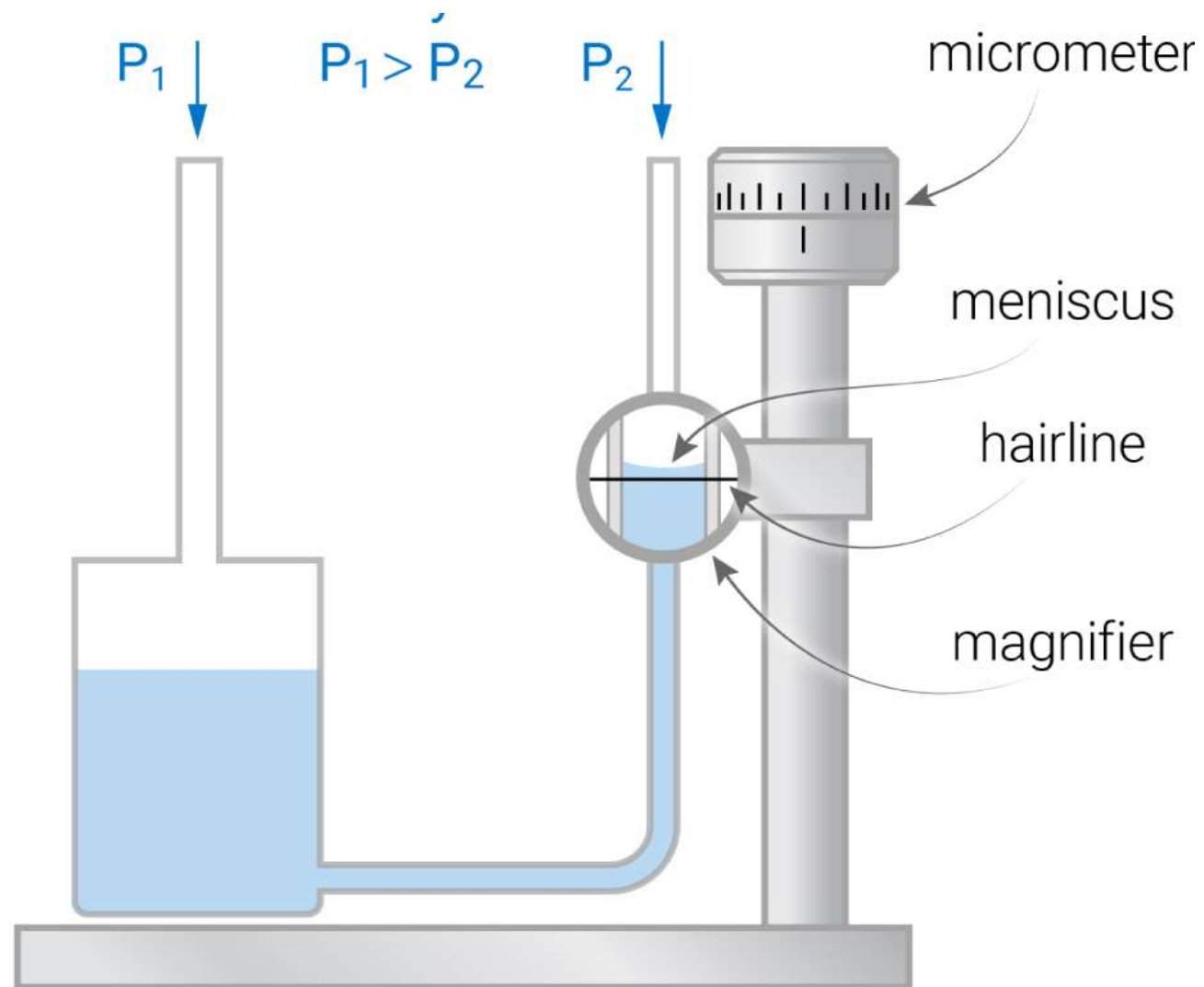
Inclined manometer

U-tube manometer

Made with  Napkin

2. Which manometer is designed to measure very small pressure differences accurately





3. A manometer used to measure pressure differences in ventilation and air flow systems is usually:



- A) Differential manometer
- B) Barometer
- C) Thermometer
- D) Hygrometer

REFERENCES

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THANK YOU