



### Features:

- Visualization of cavitation effects in a transparent pump
- Continuously adjustable pump speed
- Closed water circuit

One of the most common causes of cavitation effects is fast-moving objects in the water, such as the impellers of a centrifugal pump. If cavitation occurs on the impeller, the high mechanical stress sometimes results in the separation or deformation of particles from the surface. In addition to the impeller geometry, intake pressure and temperature are also relevant for the occurrence of cavitation.

Tesca Cavitation in Pumps Apparatus is used to demonstrate cavitation effects on impellers of centrifugal pumps. The pump housing and the pipe at the inlet side of the pump are made of transparent plastic in order to visualize the cavitation processes. It is possible to capture excellent images of the vapor bubbles by taking photographs with short exposure times (flash). In order to influence the flow velocity at the impeller blades, the speed can be changed within a wide range via a frequency converter. Valves at the inlet and outlet of the pump enable the flow rate and pressures to be adjusted accordingly.

Pressures on the inlet and outlet side are displayed on two manometers. Also displayed is the water temperature in the tank, flow rate, and pump speed. The water temperature can be

controlled and the tank is fitted with a heater. The water is cooled via the water supply.

### Specifications:

1. Visualization of cavitation in centrifugal pumps
2. Open impeller to observe the blades during operation
3. Continuously adjustable pump speed via frequency converter
4. Temperature control via heater and external cooling via the water supply
5. Flow measurement using a rotameter
6. Display of the pressures at inlet and outlet side of the pump via manometers
7. Digital display of speed, water temperature in the return, and flow rate
8. Closed water circuit with tank and temperature display

### Technical Specifications:

Centrifugal pump with drive motor

- Power consumption: 0,37kW
- Speed: 500...3300min<sup>-1</sup>
- Max. flow rate: 70L/min
- Max. head: 13m

Tank: 20L

Measuring ranges

- Pressure (inlet): -1...0bar
- Pressure (outlet): 0...1,5bar
- Temperature: 0...100°C
- Flow rate: 10...140L/min

### Experiments:

- Cavitation formation
- Observation of cavitation effect
- Effects of speed, inlet pressure, flow rate, and temperature affect cavitation

### Requirements:

- Water connection 300L/h, drain
- Mains Power 220 – 240V @ 50Hz, 1Ph

Note: Specifications are subject to change.

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