

# Centrifugal Pump

## Overview

The centrifugal pump is a bench top trainer which is designed to illustrate the behavior of centrifugal pumps that are used to move liquids through a piping system, the unit also demonstrates the components and the characteristic curve of the centrifugal pump allowing also the study of pump efficiency and power.



## Specifications

- The educational unit is designed to study the centrifugal pump and its characteristics curves.
- The Centrifugal pump unit includes a self-priming centrifugal pump.
- The unit contains a gate valve that is used for adjusting the head and comes also with 2 manometers at the inlet and outlet sides.
- The unit contains a frequency converter to adjust the speed.
- The experimental unit is positioned easily and securely on the work surface of the Main Hydraulic Unit that works like the supply of water to the unit and is used also for measuring the flow rate.

## Experiments

- Demonstrating the operation of a centrifugal pump
- Characteristic curves of centrifugal pump at constant pump speed Pressure difference and flow rate ch/c curve  
Hydraulic power and flow rate ch/c curve  
Efficiency and flow rate ch/c curve

Power and flow rate ch/c curve

- Pump characteristic curves at different speeds
- Power and efficiency curve
- Measuring electrical power
- Determining flow rate and hydraulic power to calculating efficiency of the centrifugal pump

## Technical Data

### Self-priming Centrifugal pump

- » Flow rate: 45 L/m
- » Head: 36 meter
- » Nominal power: 750 w

### Manometers

- » 2x glycerin manometer 2.5 inch on the inlet and the outlet

### Measuring Ranges

- » Inlet pressure: -1 ... 1.5 bar

- » Outlet pressure: 0 ...6 bar
- » Speed: 0 ... 3000 rpm
- » Digital display
- » Four digits power meter
- » Speed digital display

### Valves

- » Ball valve

## Components



|   |                          |
|---|--------------------------|
| 1 | Centrifugal pump         |
| 2 | Manometers               |
| 3 | Gate valve               |
| 4 | Main trainer ON/OFF      |
| 5 | Pump power digital meter |
| 6 | Pump ON/OFF              |
| 7 | Pump speed digital meter |
| 8 | Pump speed control       |

## Scope of Delivery

- Centrifugal Pump (FM104)
- Hard copy user manual

## Required of Operation

- Main Hydraulic Bench (FM100)

## Options

- Digital Content (BI01)