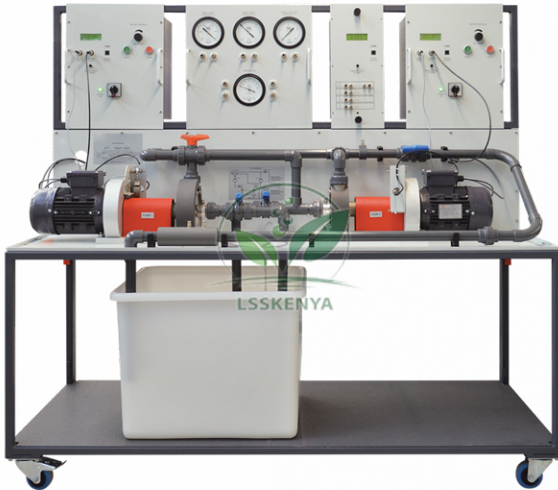


Product Code . LSK-FM-10436

## Two-Stage Series And Parallel Pumps



### Description

Instrument and control modules fit into a frame above and behind the pumps. Each pump has an electronic Motor Drive to control its speed, a load cell to measure torque and a sensor to measure pump speed. A display on each Motor Drive shows speed and torque and automatically calculates and displays true 'shaft' power.

A compact, mobile and fully self-contained centrifugal pump test set, that allows students to find the characteristics of centrifugal pumps working alone or in series or parallel. It also allows students to see (and hear) cavitation and understand the use of a Venturi meter and differential pressure measurement to find flow rate.

Two bearing-mounted motors drive each pump independently. The pumps draw water from the integral reservoir. The water travels through strainers and a series of valves to be delivered to a Venturi meter. The water then returns to the reservoir for re-use, keeping water use to a minimum. The pumps each have a transparent 'window' so students can see the impeller turning and how the water vapour bubbles form in the pump at cavitation. The optional stroboscope makes the effect easier to see.

The differential pressure across the Venturi gives flow rate. Each pump has its own inlet valve. A two-way valve in the system allows the pumps to work alone, in parallel or in series.

Demonstration of cavitation

Operation of centrifugal pumps in series

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Centrifugal pump performance and characteristics, typically head versus flow and efficiency versus flow

Flow measurement using a Venturi tube

Operation of centrifugal pumps in parallel

Non-dimensional performance characteristics