

Product Name :
Educational System For The Study Of The Pumps Didactic
Equipment

Product Code :
LIM-CAT-L0043-00015



Description :

Educational System For The Study Of The Pumps Didactic Equipment

Technical Specification :

Educational System For The Study Of The Pumps - Didactic Equipment

This system is developed to allow the study and the training in maintenance and assembly of four different types of pumps working in the range of 6 L/min to 70 L/min, with power in the range of 350 W.

Designed to perform experiments with different types of three-phase hydraulic pumps, each with an inverter located inside the operator panel. The system allow to raise and to compare the pump curves, the analysis of the hydraulic power through flow and head measurements. and the main consumption experiments through electric energy and hydraulic power calculations.

It has a water and an oil tanks, and a bypass device with relief/safety valve.

It include the following components:

A frame with wheels for the easy movement of the assembly.

A three-phase gear pump of 0.5 hp, with 6 poles, a head of 0 ÷ 40 MCA and a flow rate of 0 ÷ 12 L/min (0 ÷ 0.72 m³/h).

A three-phase submerged pump of 0.5 hp, with 2 poles, a head of 0 ÷ 10 MCA and a flow rate of 0- 166 L/min (0 ÷ 10 m³/h), housed within an acrylic oil tank of 60 L and 10 mm thick.

A three-phase centrifugal pump of 0.5 hp, with 2 poles, a head of 0 ÷ 20 MCA and a flow rate of 0 ÷ 66 L/min (0 ÷ 4 m³/h).

A centrifugal turbine-type pump of 0.5 hp, with 2 poles, a head of 0 ÷ 20 MCA and a flow rate of 0 ÷ 40 L/min (0 ÷ 2.4 m³/h).

A colour touchscreen HMI of 7", to control the whole system, with RS485 data buses and Ethernet port, both with Modbus communication, and a USB port to connect a pen drive for data transfer.

A single-phase and three-phase, bi-directional and four-quadrant electric magnitude multimeter, with inductive and capacitive reactance indication: it measure various types of electrical quantities such as line and phase applied voltage, consumed current, active, reactive, apparent, and demand powers, three-phase, frequency, and THD. The measurement of voltage and current is up to 500Vac and 5A: it is provided with an RS485 communication port for data acquisition to be displayed on an HMI; files can be read to display spreadsheets and graphics.

4 frequency converters, located inside the operator panel, for which each controls a pump regulating, measuring, and adjusting speed and torque independently.

A stainless steel oil storage tank, with a capacity of 50L for the recirculation of the fluid with positive displacement gear pump.

A water storage tank, with a capacity of 190L for the recirculation of the fluid system, with positive displacement centrifugal pump.

An emergency pushbutton.

A flowmeter to measure the oil flow with a pressure gauge.

3 flowmeters for flow measurement expressed in m³/h, each with a measuring scale displaying the relative 3 pointer-type valves and pressure gauges (manometers).

An operation panel allowing the product to be fed, one or more pumps to be activated directly via the HMI, and the individual consumption or even the set of pumps in use to be measured. Each pump could be characterized in terms of voltage and current, as well as power and energy, by checking the power factor (PF) set on the power line.

The system has the following technical specifications:

A water tank of 190L,

An oil tank of 60L,

Dimensions (HxWxD): 2.0x1.8x0.8 m,

Three-phase line power supply.

With this trainer, the final user is able to perform the following experiments:

Characteristic curve of a centrifugal pump with a device for monitoring the phenomenon of cavitation,

Characteristic curve of a peripheral centrifugal pump, Characteristic curve of a gear pump, circulating oil from a dedicated tank of 60L,

Characteristic curve of a submerged pump,

Measuring head, flow, power, and torque,

Regulating flow of fluid.

Educational System For The Study Of The Pumps Didactic Equipment, Educational System For The Study Of The Pumps Didactic Equipment Bulk Suppliers, Educational System For The Study Of The Pumps Didactic Equipment Tools, Educational System For The Study Of The Pumps Didactic Equipment Educational System For The Study Of The Pumps Didactic Equipments, Educational System For The Study Of The Pumps Didactic Equipment Manufacturers, Educational System For The Study Of The Pumps Didactic Equipment Suppliers from India, China, Kenya.



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