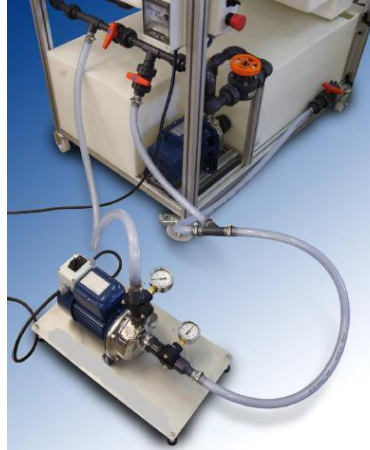




# FLUID MECHANICS



## SERIES-PARALLEL PUMP



**DL DKB031**

Pumps are generally used in a pipe system to convert mechanical energy into hydraulic energy, this additional energy allows a fluid to move from one place to another when gravity is not enough, to displace a fluid at a certain height above the pump or recycle it in a closed system.

In general, the main purpose of a pump in a system is to increase the total energy “ $H$ ”. The efficiency of a pumping system basically depends on the pump configuration in series or in parallel as required by the system.

In addition, the flow control valve can manage the pump operating mode, so it is possible to obtain experimental operating curves. These curves can be compared with those supplied by the manufacturer, as well as those obtained by mathematical calculation.

With this equipment, students can perform many operations as: commissioning, functioning and regulations necessary in a pump installation; students will have also the possibility to study the characteristics of a pump working individually and in group. Flow measurements are made using volumetric hydraulic reservoir bank (required and not included in this item), that allows also the study of the relationship between pressure drop and fluid velocity.

### PERFORMABLE EXPERIMENTS

- Analysis of individual pumps:
  - Determine the characteristic curves of a pump.
    - Height – flow volume (H-Q)
- Pumps analysis running in the same group:
  - Characteristic curves in-series operation
    - Height – flow volume (H-Q)
  - Characteristic curves in-parallel operation
    - Height – flow volume (H-Q)



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## TECHNICAL DATA

Pump characteristics:

- Maximum manometric head: 23 T.M.H
- Flow volume: 20/180l/min
- H: 31 / 16 T.M.H.
- Max. power: 950W
- Max. speed: 3,450 RPM

Pressure gauges:

- Bourdon manometer 0-65 T.H.M.
- Bourdon vacuum pressure gauge (-10) – 45 T.H.M.

Tank:

- Capacity: 250 liters

### Requirements:

Hydraulic bench DL DKL014, not included in this item.

Single Phase Power Supply