

P6180 OIL HYDRAULICS TRAINING RIG

INTRODUCTION

With the rapid development of the use of hydraulic systems within industry the P6180 Oil Hydraulics Training Rig has been developed in conjunction with **Mannesman Rexroth**, leaders in industrial hydraulics. The training rig forms an essential part of any practically based training scheme, since hydraulics training is regarded as being incomplete without hands on experience.

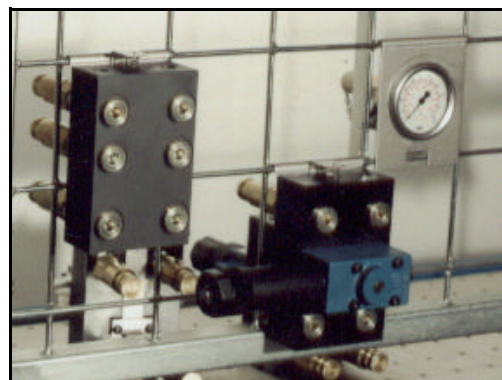
The training rig enables practical points to be demonstrated and the students achieve first hand experience in the design and construction of circuits together with fault finding of typical faults which inevitably occur at this stage.

FEATURES

- ◆ Mobile self contained trolley with integrated pump.
- ◆ Modular design developed using actual industrial components.
- ◆ Suitable for training students at all levels in Colleges, Universities and Industrial Technical Centres.
- ◆ Comprehensive range of training levels covered from basic hydraulics to proportional and servo controlled systems.
- ◆ All electrical controlled units can be programmed from the PLC control rack.

EXPERIMENTAL CAPABILITY

- ◆ To establish the Q/P characteristics of the direct operating vane pump.
- ◆ To establish cracking pressures of direct operating relief valve and pilot operated two stage valve.
- ◆ To compare a simple throttle valve against a pressure compensated flow control valve under variable conditions.
- ◆ To configure a sequence circuit.
- ◆ To investigate the effects of pressure changes on the flow of fluid and speed of a hydraulic motor.
- ◆ To investigate the reverse flow of fluid through a 3 way pressure reducing valve.
- ◆ To investigation pressure intensification using a cylinder - loaded - unloaded.
- ◆ To commission two relief valves and a pressure reducing valve to meet the set specification.
- ◆ To establish the construction of a pressure compensated flow control valve using a simple throttle valve or directional control valve and pressure reducing valve.

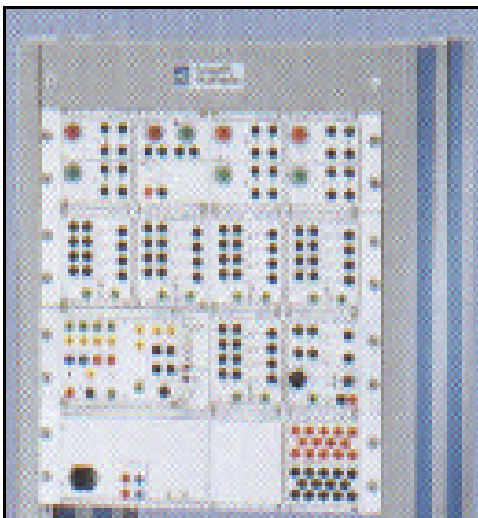


TENDER SPECIFICATION

The P6180 Oil Hydraulics Training Rig comprises an integrated mobile bench trolley incorporating 14.5 litre/min industrial variable vane pump driven by 1.5 kW single phase electric motor - 40 litre oil reservoir, pressure filter with manual clogging filter in the pump output line and hose storage facility. Permanently mounted to the frame are the weight/cylinder unit enclosed within a lockable enclosure - 50 cm³ displacement hydraulic motor - 2.5 litre measuring cylinder with ball discharge valve to the reservoir.

The standard valve kit includes the following industrial equipment:

- 1 4/2 way directional valve, manual
- 2 4/3 way directional valve, manual
- 1 Direct operated pressure relief valve
- 1 Direct operated pressure reducing valve
- 1 Pilot operated pressure relief valve
- 2 Throttle check valve with Male and Female QR couplings
- 1 Check valve with coupling
- 1 2 way directional flow control valve
- 2 Distributor block (Twin Tee) with 3 couplings
- 9 630 mm industrial hose line with QR couplings
- 5 1000 mm industrial hose line with QR couplings
- 4 1000 mm industrial hose line with minimess connection
- 2 Plate mounted pressure gauge with minimess connector. 63 mm dia. Ø - 100 bar.
- 1 Axial piston hydraulic motor
- 1 Instructors manual
- 1 Students manual



P6182 ELECTRICAL KIT

ADDITIONAL EQUIPMENT

- P6181 Extension Kit contains further manually operated directional valves, pressure relief and check valves and hydraulic accumulator and charger permitting a further range of hydraulics tests to be carried out.
- P6182 Electrical Kit contains solenoid directional valves, associated components and floor mounted electrical control cabinet permitting electrical switching control to be taught and tested.
- P6183 Proportional Training Kit contains two proportional valves with amplifiers and an electronic control panel which is stackable with, and used as an extension of P6812 in that it utilises the same basic electrical controls and power supply.
- P6184 PLC Kit, a PLC module for the teaching and practice of the application of PLC's for industrial controls including their association with electro pneumatics. Programming of this unit requires Module P6188 which in turn requires a PC running "Windows"
- P6185 Advanced Control Kit, a powerful rack mounted system which includes amplifier cards and feedback element for the analogue and digital programmable positional control for the cylinder. When combined with the PLC kit, this forms the basis of a complete machine control system.
- P6188 PC Software for use with P6184 and P6185 Comprises a PC based programming module for programming of modules P6184 and P6185. A PC running "Windows" is required.

SERVICE

220/240 volt 50Hz single phase, 16 A

OPTIONAL

110 volt 60Hz single phase, 32 A

380/415 volt 50Hz three phase, 10 A

PHYSICAL DETAILS

Dimensions: 1300 x 950 x 1725 mm

Weight: 370 kg nett (approx.)

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