

2.12 31512 HYDRAULICS & PNEUMATICS IN PLASTIC INDUSTRY

UNIT-1

- 1.1 Introduction: Pascal's law & its applications, Bernoulli's Principle & its application,
- 1.2 Comparison between Hydraulics and Pneumatics,
- 1.3 Advantages and Disadvantages of Hydraulics,
- 1.4 Hydraulic Oil-Requirements, Maintenance of Hydraulic oil, Gauges,
- 1.5 Connectors, Packing and Seals, Filters and Strainers,
- 1.6 Reservoirs, Symbols of Hydraulics and Pneumatics.

UNIT-2

- 2.1 Hydraulic Pumps and Motors Pump Specification,
- 2.2 Construction and working of Various Pumps like Gear pump,
- 2.3 Vane pump and radial piston pump. Hydraulic motor specification,
- 2.4 Construction and working of various motors like Gear Motor,
- 2.5 Vane motor and radial piston motor.

UNIT-3

- 3.1 Hydraulic Valves Classification, Direction Control Valve- Types:
- 3.2 Check valve, two way Valve, Four way Valve its Application. Flow Control Valve.
- 3.3 Pressure Control Valve: Relief Valve, Balanced Valve, Piston Type, Unloading Valves,
- 3.4 Sequence Valves, Counter Balance Valve, Pressure Reducing Valves

UNIT-4

- 4.1 Accumulators and Pressure Intensifiers,
- 4.2 Accumulators Types like Weight Loaded, Spring Loaded,
- 4.3 Gas Charged, and Pressure Intensifiers Types single stage and double stage

UNIT-5

- 5.1 Pneumatic System Air Compressor -Single Acting and Double Acting,
- 5.2 Components of Pneumatic System, Intercooler, Lubricator, Filter

UNIT-6

- 6.1 Hydraulic Circuit Clamp control circuit, Injection Control Circuit, Reciprocating Screw Circuit,
- 6.2 Deceleration Circuit, Prefill Circuit, Hydraulic motor circuit,
- 6.3 Hi Low Pump circuit, Pneumatic circuit for Plastic Processing Machine.

Reference Books:

1. Industrial Hydraulic Manual- Vickers
2. Injection Moulding- Irwin I. Rubin