



# TRAINING



## TRAINING COURSES

### BASIC HYDRAULIC PRINCIPLES

The training course is an introduction to the basic hydraulic principles of fluid power systems. It is designed to provide an understanding of hydraulic components, hydraulic system functionality and the importance of hydraulic safety practices.

#### WHO WOULD BENEFIT FROM THE TRAINING?

The course is suited for all individuals involved in the hydraulic industry seeking to gain further knowledge in hydraulics.

- ✓ New starters entering the hydraulics industry
- ✓ A refresher for individuals currently working in the hydraulics industry
- ✓ Individuals working in warehousing, sales, service or administrative roles in industries which utilise hydraulics.

#### THE COURSE COVERS

- ✓ Basic hydraulic systems
- ✓ Hydraulic components and their functions
- ✓ The extreme flexibility of hydraulic elements and associated problems
- ✓ Oil contaminations and the importance of filtration
- ✓ Why fluids must be confined in hydraulic systems
- ✓ Understanding of schematics and implementing safe work practices
- ✓ A certificate of achievement for successful attendees



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**SOUTH COTT**  
Hydraulics & Control Systems

# BASIC HYDRAULIC PRINCIPLES

## COURSE OVERVIEW



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### 1. HYDRAULIC PRINCIPLES

- Definition of Hydraulics
- Advantages and Disadvantages
- Physical Properties of Liquids
- Hydraulic Oil
- Pascal's Law



### 2. HYDRAULIC SYSTEM - COMPONENTS

#### RESERVOIR

- Principles and Features

#### PUMPS

- Hydraulic Pump Classifications
- Hydraulic Pump Design
- Hydraulic Pump Controllers
- Hydraulic Pump Types
- Gear/Vane/Piston Pumps

#### CONTROL VALVES:

##### Directional Control Valves (DCV)

- Spool DCV
- Ball Valves
- Check Valves
- Solenoid DCV
- Counter Balance Valves
- DCV Spool Configuration/Symbols

##### Flow Control Valves (FCV)

- Needle Valves
- Throttle Flow Controls
- FCV Symbols

##### Pressure Control Valves

- Relief Valves
- Unloader Valves
- Sequence Valves
- Pressure Control Valve Symbols
- Pressure Reducer Valves

#### ACTUATORS:

##### Linear Actuators

- Cylinders

##### Rotary Actuators

- Geroler
- Piston
- Vane
- Gear
- Geroter
- Rotary Actuator

#### FILTRATION:

- Contamination
- Filtration Types
- Filters Elements Media
- Filtration Accessories



### 3. ACCUMULATORS

- Accumulator Function
- Accumulator Types

### 4. OIL COOLERS

- Oil Cooler Function
- Oil Cooler Types

#### DURATION AND COST

Course duration and cost may vary depending on class numbers, student knowledge, accessibility to equipment, facilities and courses or multiple course selection.

CALL YOUR LOCAL SOUTHCOTT REPRESENTATIVE OR  
SOUTHCOTT BRANCH TO DISCUSS YOUR COURSE REQUIREMENTS