

PUMP PRINCIPLES



seals

SEARCH

signed, sealed, delivered

TRAINING

TELEPHONE 0113 263 9081

soe IPlantE
engineering success together



William G. Search Ltd. value the need for training. On-site courses and toolbox talks support our products in the field. Residential courses offer focused learning away from the daily demands of maintenance and engineering professionals.

EC CERTIFIED COURSES ON:

Pump Principles

Mechanical Seal Principles

Gland Packing

Static Sealing

ON SITE TRAINING

All EC Certified Courses

Seal Installation

Flange Sealing

Valve Sealing

Live Loading

Toolbox Talks

William G. Search Ltd.
Whitehall Road,
Leeds, LS12 6EP
Registered Office:
Whitehall Road, LS12 6EP
Registered in England:
407145
© William G Search Ltd, 2013



Pump Principles

- Identify and describe pump functions and classifications.
- Identify and describe the parts of a centrifugal pump and their functions.
- Define pressure and fluid terms commonly used in industry.
- Demonstrate ability to perform pressure/head conversions.
- Characterize the effects of temperature on pressure, vapor pressure, viscosity and pump operation.
- Explain the relationship between head, pressure, capacity and fluid velocity.
- Describe the energy conversion within a centrifugal pump to move fluid.
- Define a pump performance curve and its elements.
- Demonstrate how to interpret a pump curve to describe pump operation.
- Identify the effect of operating conditions on the pump curve elements.
- Define a pump's total head as it relates to the suction and discharge sides of a pumping system.
- Determine pump operating point and plot on pump performance curve.
- Demonstrate ability to interpret pump operating point and pump operation during system fluctuations.
- Identify and describe the various loads that can occur within a pump.
- Describe the effect that these loads have on pump reliability.
- Define shaft deflection, and a pump's slenderness ratio, L3/D4.
- Identify and describe pump failures by analyzing rub marks and damage.
- Identify common causes of bearing failure and methods to reduce them.
- Identify and describe effective measures used to eliminate water and solids from entering the bearing housing.
- Calculate NPSHA to eliminate cavitating due to vaporization.
- Identify the other forms of cavitation and methods to eliminate them.
- Describe effects of cavitation in pumps
- Identify pump and system problems and methods to reduce them.

