

Course: **A Practical Approach to Pump Repairs**

Contact Hours: **18**

Pre-requisite: **None**

Abstract

This course will provide individuals with the technical and practical knowledge required to diagnose common problems associated with domestic water pumps and to carry out basic repairs.

Some of the areas covered include understanding how water pumps work, how to properly install a water pump and identifying common problems which results in pump failures / reduced efficiency.

In order to ensure that the learner fully understand the concepts relating to electrical installation, the course content was structured to maximize the contact hours allocated for practical training.

Target Audience

This course is ideally suited for anyone who wants to learn the basics of pump operation and installation and to develop the technical skills required to undertake basic maintenance of their home water pumps.

Learning outcomes

1. Understand the operation of Centrifugal pumps
2. Understand electrical and mechanical safety precautions
3. Installation of water pumps
4. Troubleshoot and repair water pumps

Course Content

1. Understand the operation of Centrifugal pumps

Note the essential parts of the water pump and their functions. Observe various impeller and construction designs and their applications.

2. Understand electrical and mechanical safety precautions when working with pumps

Learn to take various safety precautions to protect the technician and machine in order to work safely on both the electrical and mechanical sides of the water pump.

3. Installation of water pump

Install the water pump using typical plumbing fittings; observe the expected operations of the pump; make pump pressure adjustments; and note/observe electrical faults that can typically occur.

4. Troubleshoot and repair common problems with the water pump.

Repair the water pump, using associated parts and installation techniques.

Assessment Criteria

In order to achieve Learning Outcome...	The Learner must...
1. Understand the operation of centrifugal pumps	1.1 Water pump installations & applications 1.2 Types of centrifugal pumps. 1.3 Essential components of centrifugal pumps. 1.4 Various impeller designs. 1.5 Types of seals.
2. Understand Electrical and Mechanical safety precautions when working with pumps.	2.1 Mechanical safety practices. 2.2 Electrical safety practices. 2.3 Installations safety precautions. 2.4 Tool selection.
3. Installation of water pump.	3.1 Observe various plumbing fittings & their applications used when installing water pumps. 3.2 Install water pump (w/pressure tank & smart head). 3.3 Observe typical operating conditions. 3.4 Adjust pressure settings.
4. Troubleshoot and repair water pumps.	4.1 Diagnose problems occurring with pump. 4.2 Replace/service mechanical components (seals, bearings, etc.). 4.3 Replace and test electrical components. 4.4 Reinstall and adjust pump.

Essential Learning Resources:

Learners will have access to a fully equipped plumbing workshop to carry out the various maintenance tasks.