



GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
DIRECTORATE GENERAL OF TRAINING

COMPETENCY BASED CURRICULUM

PUMP OPERATOR CUM MECHANIC

(Duration: One Year)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL- 4



SECTOR –AUTOMOTIVE



Directorate General of Training

PUMP OPERATOR CUM MECHANIC

(Engineering Trade)

(Revised in 2019)

Version: 1.2

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL - 4

Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

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1. COURSE INFORMATION

During one-year duration of “Pump Operator cum Mechanic” trade, a candidate is trained on professional skills & knowledge, Engineering Drawing, Workshop Calculation & Science and Employability Skill related to job role. In addition to this, a candidate is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence. The broad components covered under Professional skill subject are as below: -

The trainee learns to apply safe working practices in a work shop; make choices to carry out marking out the components for basic fitting operations in the work shop; use different types of tools and work shop equipment in workshop; perform precision measurements on the components and compare parameters with specifications used in work shop practices. He/ she is able to use different type of fastening and locking devices in a Diesel Engine; cutting tools in the work shop following safety precautions while grinding; perform basic fitting operations used in the work shop practices and inspection of dimensions; produce sheet metal components using various sheet metal operations; perform basic electrical testing in a Diesel Engine; perform battery testing and charging operations; construct basic electronic circuits and testing; manufacture components with different types of welding processes in the given job and inspect component using Nondestructive testing methods.

During the later phase the trainee is familiarized with the identification of hydraulic and pneumatic components in a Diesel Engine Pump. He/she is able to identify and check functionality of stationary Diesel Engine - components, & engine performance on load and engine speed; diagnose and troubleshoot Diesel Engines for mechanical & electrical causes; servicing of plain/journal bearings, anti-friction bearings; identify and check functionality of major components and assemblies of reciprocating pumps, rotary pumps. They are trained to ascertain and select measuring instrument and measure dimension of components and evaluate for accuracy; use different types of conventional and special tools, hardware, fasteners and work shop equipment in the workshop; trouble shooting of pumps; identify and check functionality of major components and assemblies of centrifugal pumps; identify and check functionality of major components and assemblies of submersible pumps; carry out repairs in the fuel feed system; apply safe working practices and environment regulation in an workshop; construct electrical circuits and test its parameters by using electrical measuring instruments etc.

5. LEARNING OUTCOME

Learning outcomes are a reflection of total competencies of a trainee and assessment will be carried out as per the assessment criteria.

5.1 LEARNING OUTCOMES (TRADE SPECIFIC)

1. Comply with environment regulations and housekeeping in the workshop following safety precautions.
2. Make choices to carry out marking out the components for basic fitting operations in the workshop.
3. Use different types of tools and workshop equipment in the workshop.
4. Perform precision measurements on the components and compare parameters with specifications used in workshop practices.
5. Use of different type of fastening and locking devices.
6. Use cutting tools in the workshop, following safety precautions while grinding.
7. Perform basic fitting operations used in the workshop practices and inspection of dimensions.
8. Produce sheet metal components using various sheet metal operations.
9. Perform basic electrical testing in Diesel Engine.
10. Perform battery testing and charging operations.
11. Construct basic electronic circuits and testing.
12. Manufacture components with different types of welding processes in the given job.
13. Inspect the component using Non-destructive testing methods.
14. Identify the hydraulic and pneumatic components
15. Identify and check functionality of stationary Diesel Engine - components, & engine performance on load and engine speed.
16. Diagnose and Troubleshoot Diesel Engines for Mechanical & Electrical causes.
17. Servicing of plain/journal bearings, anti-friction bearings.
18. Identify and check functionality of major components and assemblies of reciprocating pumps.
19. Identify and check functionality of major components and assemblies of rotary pumps.
20. Ascertain and select measuring instrument and measure dimension of components and evaluate for accuracy.
21. Use different types of conventional and special tools, hardware, fasteners and workshop equipment in the workshop.
22. Trouble shooting of pumps.
23. Identify and check functionality of major components and assemblies of centrifugal pumps.
24. Identify and check functionality of major components and assemblies of submersible pumps.
25. Carryout repairs in the fuel feed system.

26. Construct electrical circuits and test its parameters by using electrical measuring instruments.
27. Identify and check functionality of major components and assemblies of A.C motors.
28. Identify different type of keyways, preparing keys to fit into keyways.
29. Identify, select, and use different types of knots.
30. Identify, select, use of different types of lifting tackles.
31. Identify and check functionality of major components and assemblies of bushes, bearing sand couplings.