



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

COMPETENCY BASED CURRICULUM

MECHANIC AGRICULTURAL MACHINERY

(Duration: Two Years)

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL- 5



SECTOR - AUTOMOTIVE



Directorate General of Training

MECHANIC AGRICULTURAL MACHINERY

(Engineering Trade)

(Revised in 2019)

Version: 1.2

CRAFTSMEN TRAINING SCHEME (CTS)

NSQF LEVEL - 5

Developed By

Ministry of Skill Development and Entrepreneurship

Directorate General of Training

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1. COURSE INFORMATION

During the two-year duration of Mechanic Agricultural Machinery trade, a candidate is trained on subjects- Professional Skill, Professional Knowledge, Engineering Drawing, Workshop Science & Calculation and Employability Skills related to job role. In addition to this, a candidate is entrusted to make/do project work and Extra Curricular Activities to build up confidence. The practical skills are imparted in simple to complex manner & simultaneously theory subject is taught in the same fashion to apply cognitive knowledge while executing task.

The content broadly covers fitting of different components by operating different hand tools conventional machines and maintenance of machineries used in agriculture field. The broad components covered under Professional Skill subject are as below:

First Year: – In this year, the contents covered are from safety aspect related to the trade, the learner learns to apply safe working practices complying environment regulations and housekeeping in an automotive workshop; plan and perform precision measurements on the components and compare parameters with specifications used in automotive workshop practices, carryout marking and perform basic fitting operations used in the work shop practices along with inspection of dimensions; produce sheet metal components using bending process & other various sheet metal operations; construct electrical circuits and perform testing of basic electrical parameters by using electrical measuring instruments, construct basic electronic circuits and testing, manufacture components with different types of welding processes in the given job, identify and select the hydraulic and pneumatic components in a vehicle and inspect the auto component using Non-destructive testing methods. The learner learns to overhaul diesel engine of Tractor; service, cooling and lubrication system of Tractor in a workshop; service Exhaust System and Fuel Feed System of Tractor in a workshop; overhaul Clutch, Gearbox, Steering system, differential and PTO unit of Tractor in a workshop; carryout Repair of Wheels and Tyres of Tractor in the Workshop; overhaul Brake system of Tractor in the workshop; overhaul Major Assemblies of Power Tiller and carryout Field Operation; overhaul and troubleshoot for correct functioning of Implements of Tractor; perform battery testing, charging operations and overhaul charging and Starting System of Tractor.

Second Year: – In this year, test and rectify faults in functionality of major components and assemblies of Mould Board Plough, Disc Plough and troubleshoot of tillage and its implements; check, test and troubleshoot faults in functionality of major components and assemblies of Chisel Plough and Rotavator; troubleshoot & test the functionality of major components and assemblies of disc harrows (Off set Type/Double action. and single action) and Power harrows; check and service proper functionality of major components and assemblies of cultivators and soil forming equipments; identify and check functionality of major components and assemblies of Lazar leveler, trencher & post hole digger; dismantle, assemble and troubleshoot seed drills; test and verify functions of major components and assemblies of planters and fertilizer applicators; identify and check functionality of major components and assemblies of volute

type centrifugal pump and submersible pump; service irrigation valves and hydrants; service and trouble shoot power tillers/power weeder; identify and check functionality of grain handling seed treating and drying and troubleshoot major components and assemblies of AC motors; identify and trouble shoot faults in major components and assemblies of sprayers & dusters; detect and troubleshoot major components and assemblies of reaper, reaper winder, straw- reapers; troubleshoot the faults in functionality of major components and assemblies of Thresher, Maize seller, Groundnut decorticator; identify and check functionality of major components and assemblies of combine harvester- cutter bar assembly, feeder unit, threshing unit, separating unit; test and troubleshoot functionality of major components and assemblies of mower, folder harvester, power chaff/silage cutter; detect and rectify functionality of major components and assemblies of rotary harvester, hay bailer; find and troubleshoot major components and assemblies of groundnut digger, potato / onion digger; service and troubleshoot winnower, cleaner & grader; maintain and service rice huller, polisher, feed grinder-cum-mixer, hammer mill; detect and rectify functionality of grain handling seed treating and drying equipment.

5. LEARNING OUTCOMES

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)

First Year

1. Apply safe working practices complying environment regulations and housekeeping in an automotive work shop following safety precautions.
2. Plan and Perform precision measurements on the components and compare parameters with specifications used in automotive work shop practices.
3. Carryout marking and perform basic fitting operations used in the work shop practices along with inspection of dimensions.
4. Produce sheet metal components using bending process & other various sheet metal operations.
5. Construct electrical circuits and perform testing of basic electrical parameters by using electrical measuring instruments.
6. Construct basic electronic circuits and testing.
7. Manufacture components with different types of welding processes in the given job.
8. Identify and select the hydraulic and pneumatic components in a vehicle and inspect the auto component using Non-destructive testing methods.
9. Overhaul Diesel Engine of Tractor.
10. Service, Cooling and Lubrication system of Tractor in a workshop.
11. Service Exhaust System and Fuel Feed System of Tractor in a workshop.
12. Overhaul Clutch, Gearbox, Steering system, differential and PTO unit of Tractor in a workshop.
13. Carryout Repair of Wheels and Tyres of Tractor in the Workshop.
14. Overhaul Brake system of Tractor in the workshop.
15. Overhaul Major Assemblies of Power Tiller and carryout Field Operation.
16. Overhaul and troubleshoot for correct functioning of Implements of Tractor.
17. Perform battery testing, charging operations and overhaul charging and Starting System of Tractor.

Second Year

18. Test and rectify faults in functionality of major components and assemblies of Mould Board Plough, Disc Plough and troubleshoot of tillage and its implements.

19. Check, test and troubleshoot faults in functionality of major components and assemblies of Chisel Plough and Rotavator.
20. Troubleshoot & Test the functionality of major components and assemblies of disc harrows (Off set Type/Double action and single action) and Power harrows.
21. Check and service proper functionality of major components and assemblies of cultivators and soil forming equipments.
22. Identify and check functionality of major components and assemblies of Lazar leveller, trencher & post hole digger.
23. Dismantle, assemble and troubleshoot seed drills.
24. Test and verify functions of major components and assemblies of planters and fertilizer applicators.
25. Identify and check functionality of major components and assemblies of volute type centrifugal pump and submersible pump.
26. Service irrigation valves and hydrants.
27. Service and Trouble shoot power tillers/power weeder.
28. Identify and check functionality of grain handling seed treating and drying and troubleshoot major components and assemblies of AC motors.
29. Identify and trouble shoot faults in major components and assemblies of sprayers & dusters.
30. Detect and troubleshoot major components and assemblies of reaper, reaper winder, straw- reapers.
31. Troubleshoot the faults in functionality of major components and assemblies of Thresher, Maize seller, Groundnut decorticator.
32. Identify and check functionality of major components and assemblies of combine harvester- cutter bar assembly, feeder unit, threshing unit, separating unit.
33. Test and troubleshoot functionality of major components and assemblies of mower, folder harvester, power chaff/silage cutter.
34. Detect and rectify functionality of major components and assemblies of rotary harvester, hay bailer.
35. Find and troubleshoot major components and assemblies of groundnut digger, potato / onion digger.
36. Service and troubleshoot winnower, cleaner & grader.
37. Maintain and service rice huller, polisher, feed grinder-cum-mixer, hammer mill.
38. Detect and rectify functionality of grain handling seed treating and drying equipment.