

SMALL GAS ENGINE & EQUIPMENT MECHANIC

APPENDIX A

O*NET CODE 49-3053.00

This training outline is a minimum standard for Work Processes and Related Instruction. Changes in technology and regulations may result in the need for additional on-the-job or classroom training.

WORK PROCESSES

Approximate Hours

- | | |
|---|--------------|
| A. Tools, Equipment and Work Aide | 100 |
| 1. Using hand tools such as wrenches, screwdrivers, sockets, hammers, bolts, pliers. | |
| 2. Safe operation of such power tools as pneumatic wrench, air blower, die grinder, power saw and power work bench. | |
| 3. Using such work aides as electrical and masking tapes, nuts, bolts, screws, goggles, flashlights, and Bend-o-Wand. | |
| 4. Safe operation of such manufacturer's speciality tools as spark testers. Understanding and using references as manufacturer's technical manuals. | |
| B. Diagnosing and Troubleshooting Machinery | 700 |
| 1. Questioning customers to locating the source of mechanical difficulty such as amount of time machine time. | |
| 2. Reading customer work order to find source of mechanical difficulty. | |
| 3. Operating machinery and listening for mechanical difficulty to diagnose performance of machine. | |
| 4. Removing engine cover and examining parts for defects. | |
| C. Adjusting, Repairing and/or Replacing Machinery Parts | 1,000 |
| 1. Diagnosing machinery by checking vital signs such as spark compression and fuel. | |
| 2. Inspecting and continuity testing of safety wires and connector wires to ensure that they are properly connecting. | |
| 3. Disconnecting wires to examine electrical system. | |
| 4. Replacing damaged connector wires and leads. | |

5. Insulating worn leads with electrical tape, shrink sleeves, etc.
6. Examining ground for wear or damage. Sanding down rusted ground using die grinder.
7. Inspecting and/or replacing damaged belts.
8. Disassembling console panel and examining and/or replacing ignition switch.
9. Replacing worn primer buttons on machines.
10. Repairing clutches and pulleys, cables.
11. Replacing worn primer buttons on machines.
12. Repairing clutches and pulleys.
13. Replacing and/or rebuilding worn carburetors.
14. Rebuilding generators and starters. (Optional)

D. Servicing Machinery

800

1. Servicing and tuning up such two and four cycle gasoline engines as push mowers, commercial mowers, garden tractors, leaf blowers, snow blowers, chain saws, string trimmers.
2. Examining fuels in gas and oil tanks. Checking for proper levels and color. Draining of old fuels and disposing waste into designated containers. Replacing with new fuels.
3. Checking and/or replacing air fuel lines and oil filters.
4. Inspecting and sharpening dull rotary blades; balancing rotary blades.
5. Cleaning carburetors by soaking in cleaning solution.
6. Lubricating machine parts.
7. Inspecting generators; replacing generator brushes.
8. Air blowing dirt and debris found under machine's cover and/or replacing key and points.
9. Adjusting time.
10. Receting valves.

E. Overhauling Engines (Optional)

800

1. Disassembling and repairing two and four cycle gasoline engines, replacing parts such as valves, pistons, bearings.
2. Reassembling of engine.
3. Rebuilding entire engine; grinding valves reboring engine block and head.

F. Testing Machine Repairs **100**

1. Testing Compression.
2. Operating machinery outdoors to test and observe repairs made on machine.

G. Specialty Equipment **500**

1. Making repairs on such specialty equipment as:
 - a. Tamps
 - b. Mini Bikes
 - c. String Trimmers

Approximate Total Hours **4,000**

Apprenticeship work processes are applicable only to training curricula for apprentices in approved programs. Apprenticeship work processes have no impact on classification determinations under Article 8 or 9 of the Labor Law. For guidance regarding classification for purposes of Article 8 or 9 of the Labor Law, please refer to <https://dol.ny.gov/public-work-and-prevailing-wage>

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APPENDIX B

RELATED INSTRUCTION

Safety

1. Fundamentals – Human Factors, Mechanical Factors
2. Trade Safety
3. First Aid (minimum 6.5 hours every 3 years)
4. Sexual Harassment Prevention Training – must comply with section 201-g of the Labor Law

Blueprint Reading

1. Fundamentals
2. Assembly Drawings – Exploded, Detail
3. Parts Lists – Reading, Requisitioning
4. Schematic Circuits

Mathematics

1. Electrical
2. Power
3. Estimating

Industrial and Labor Relations

1. History and Background
2. Current Laws and Practices, Rules and Regulations

Trade Theory and Science

1. Tools, Machines, and Instruments

Operations, Care and Maintenance

1. Construction and Terminology
2. Troubleshooting Procedures
3. Electrical Theory

Trade Science

1. Principles of:
 - a. Internal Combustion Engines – 2 and 3 Cycle
 - b. Electrical Generation – Magnetos, Generators

- c. Ignition
- d. Power Transmission
- e. Friction
- f. Properties of Gasoline
- g. Electrical Theory

References

1. Use and Source of Printed Material
 - a. Manuals
 - b. Handbooks
 - c. Parts Lists

Other Related Courses as Necessary

144 Hours of Related Instruction are Required for Each Apprentice for Each Year.

Appendix B topics are approved by New York State Education Department.