Apprenticeship Training Standard

Turf Equipment Technician

Trade Code: 421C

Development Date: 2004

This document is the property of the apprentice named inside and represents the official record of his/her training.
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PREFACE

This Schedule of Training was developed by the Ministry of Training, Colleges, and Universities (MTCU), in partnership with the Industry Advisory Committee and in consultation with representatives from the industry. This document is intended to be used by apprentice, supervisor/trainer and sponsor/employer as a "blueprint" for training and as a prerequisite for completion and certification.

This training document becomes the apprentice’s only record of workplace training performance.

Supervisor/trainer and apprentice are required to sign off and date the skill following each successful acquisition, unless a skill is marked shaded (optional).

The care and maintenance of this training document are the joint responsibility of the apprentice and the sponsor/employer. By signing off the skill, the supervisor/trainer and the apprentice are indicating that the apprentice has demonstrated competence of the skill.

This training standard has been developed specifically for documenting the apprentices’ acquisition of skills of the trade.

Please Note:

Apprenticeship Training and Curriculum Standards were developed by the Ministry of Training, Colleges and Universities (MTCU). As of April 8th, 2013, the Ontario College of Trades (College) has become responsible for the development and maintenance of these standards. The College is carrying over existing standards without any changes.

However, because the Apprenticeship Training and Curriculum Standards documents were developed under either the Trades Qualification and Apprenticeship Act (TQAA) or the Apprenticeship and Certification Act, 1998 (ACA), the definitions contained in these documents may no longer be accurate and may not be reflective of the Ontario College of Trades and Apprenticeship Act, 2009 (OCTAA) as the new trades legislation in the province. The College will update these definitions in the future.

Meanwhile, please refer to the College’s website (www.collegeoftrades.ca) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: www.collegeoftrades.ca/about/legislation-and-regulations.
DEFINITIONS

ACA
Apprenticeship and Certification Act, 1998

Certificate of Apprenticeship (C of A)
Certification issued to individuals who have demonstrated that they have completed an apprenticeship in Ontario.

Certificate of Qualification (C of Q)
Certification issued to C of Q applicants who have achieved a passing grade on the certification exam for their trade.

Competence
The ability of an individual to perform a skill repeatedly and without assistance in the workplace to the standard set out in the Training Standard or Schedule of Training.

Competency Analysis Profile
A document that identifies the training needs of an individual trade and details the skills/skill sets that must be demonstrated.

Industry Committee (IC) - under the ACA and Provincial Advisory Committee (PAC) under the TQAA
Under the ACA and TQAA, the Minister may appoint a provincial committee in any trade or group of trades to advise the Minister in matters relating to the establishment and operation of apprenticeship training programs and trades qualifications.

Journeyperson or Equivalent
A person who has acquired the knowledge and skills in a trade, occupation or craft as attested to by a provincial or territorial authority.

Mandatory
Status assigned to unshaded individual skills, skill sets or general performance objective which must be signed off for the apprentice to complete their program.

Optional
Status assigned to shaded individual skills, skills sets or general performance objective for which sign-off is not required for the apprentice to complete the program.

Schedule of Training
An apprenticeship training standard which includes the on-the-job performance objectives and off-the-job learning outcomes

Sign-off
Signature of the sponsor/employer of record or an individual, to whom that sponsor or employer has delegated signing authority, indicating an apprentice’s achievement of competence.
**Skill**
Individual skill described in the Training Standard (note: does not mean the larger skill groups referred to in the Training Standard as Skill Sets, Training Units, or General Performance Objective, but the individual skills that make up those groups).

**Skill Sets**
Group of individual skills found in the Training Standard (may also be called Training Unit or General Performance Objective)

**Skill Set Completion Form (and Learning Outcome Completion Form)**
Lists all skill sets and includes space for sign-off by sponsor/employer of record.

**Sponsor/Employer**
Means a person that has entered into a registered training agreement under which the person is required to ensure that an individual is provided with workplace-based training in a trade, other occupation or skill set as part of an apprenticeship program approved by the Director.

**Sponsor/Employer of Record**
Refers to the sponsor or employer documented as the signatory to the current training agreement or contract. In order for an sponsor/employer to be considered for the training of apprentices, they must identify that the workplace has qualified journeypersons or equivalent on site and can identify that the workplace has the tools, equipment, materials, and processes which have been identified by Provincial Advisory Committees (PACs) or Industry Committees (ICs) to be required for the trade.

**Supervisor**
An individual, who oversees the execution of a task, oversees the actions or work of others.

**Trainer**
A qualified trainer in a compulsory trade is a journeyperson with a Certificate of Qualification or in a voluntary trade is an individual who is considered equivalent to a journeyperson with a Certificate of Qualification.

**TQAA**
Trades Qualification and Apprenticeship Act.

**Training Standard**
A document that has been written in concise statements, which describe how well an apprentice must perform each skill in order to become competent. In using the document, trainers will be able to ensure that the apprentice is developing skills detailed for the occupation.
IMPORTANT DIRECTIONS

Apprentice

1. All complete skills or skill sets must be signed and dated by both the apprentice and sponsor/employer when either all terms of the contract have been completed or the apprentice leaves the employ of the employer.

2. It is the responsibility of the apprentice to inform the apprenticeship staff at the local Ministry of Training, Colleges and Universities office regarding the following changes:
   - change of sponsor/employer address;
   - change of apprentice name or address;
   - transfer to a new sponsor/employer.

3. The Skill Set Completion Form and Learning Outcome Completion Form must be completed and signed by the current sponsor/employer and presented to the local Apprenticeship Client Services Office at the fulfillment of all terms of a Training Agreement.

4. The apprentice completion form with the Completed and Authorized Schedule of Training must be presented to the local Apprenticeship Client Services Unit.

Sponsors/Employers and Supervisors/Trainers

The Schedule of Training identifies skills and supporting learning outcomes required for this trade/occupation and its related training program.

This Schedule of Training has been written in concise statements which describe how an apprentice must perform each skill/outcome in order to become competent. Competence means being able to perform the task to the required standard.

In using this training standard, supervisors/trainers will be able to ensure that the apprentice is developing the skills detailed for the trade/occupation.

Supervisors/Trainers and apprentices are required to sign off and date the skills following each successful acquisition.

Sponsors/Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each skill set.
NOTICE/DECLARATION FOR COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this training standard to the Ministry of Training, Colleges and Universities (the Ministry). You will be required to disclose the signed Apprenticeship Completion form to the Ministry in order to complete your program. The Ministry will use your personal information to administer and finance Ontario’s apprenticeship training system, including confirming your completion and issuing your certificate of apprenticeship.

2. The Ministry will disclose information about your program completion and your certificate of apprenticeship to the Ontario College of Trades, as it is necessary for the College to carry out its responsibilities.

3. Your personal information is collected, used and disclosed by the Ministry under the authority of the Ontario College of Trades and Apprenticeship Act, 2009.

4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

   Manager, Employment Ontario Contact Centre
   Ministry of Training, Colleges and Universities
   33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
   Toll-free: 1-800-387-5656; Toronto: 416-326-5656
ROLES & RESPONSIBILITIES OF APPRENTICE, SPONSOR/EMPLOYER AND SUPERVISOR/TRAINER

Apprentice “Apprenticeship is Learning On-the-job”

• Practice safe work habits.
• Use your apprenticeship training standard as a journal to keep track of which skills you have achieved.
• Talk over your training plan with your Training Consultant, Employer, Union, or Sponsor.
• Know what tools are required for your trade and how to use them.
• Ask questions and keep asking.
• Talk to your employer about your training needs.
• Demonstrate enthusiasm and good work habits.
• Ensure that you and your supervisor/trainer sign off skill/skill sets upon demonstration of competency.

Sponsor/Employer “Training is an Investment”

• Demonstrate safe work habits.
• Attest to successful achievement by signing the skill/skills sets.
• Provide opportunities and time for the apprentice to learn the trade.
• Offer practical trade training experiences that cover all of the skill sets.
• Foster work ethics that support training while minimizing productivity losses.
• Set out clear expectations, then recognize or reward performance excellence.
• Involve both the apprentice and supervisor/trainer in developing the training plan.
• Use the Training Standard as a monitoring tool and part of regular performance evaluations.
• Select supervisors/trainers with good communication skills and who work well with others.
• Encourage supervisors/trainers to take upgrading courses - (e.g. Train the Trainer, Mentor Coach, etc).
• Complete the Skill Set Completion Form once the apprentice has demonstrated competency in the training.
• Ensure that the apprentice always works under the direction of or has access to a qualified supervisor/trainer.
• Vary the apprentice’s exposure to all the skills set out in the training standard.
Supervisor/Trainer

- Demonstrate safe work habits.
- Treat apprentices fairly and with respect.
- Use the Training Standard as a guide to evaluating competence in each skill area. In using the Training Standard, supervisors/trainers will be able to ensure that the apprentice is developing skills detailed for the trade/occupation.
- Review the Training Standard with the apprentice and develop a training plan.
- Respond fully to all questions.
- Be patient. Explain what is to be done then, show how it is done, and then let the apprentice demonstrate the task.
- Provide continuous feedback.
- Sign off individual skills/skill sets once the apprentice demonstrates competence in the skill.

Suggestions for Assessing the Progress of the Apprentice in the Workplace

- Use informal daily observation.
- Provide constructive feedback to build confidence.
- Allow the supervisor/trainer time to teach and demonstrate the skills.
- Take prompt action wherever problems occur.
- Conduct regular performance reviews involving the apprentice, supervisor/trainer and sponsor/employer.
- Use the Training Standard as the reference for establishing the competency of the apprentice.
### SKILL SET COMPLETION FORM

<table>
<thead>
<tr>
<th>SKILLS SETS</th>
<th>TITLE</th>
<th>SIGNING AUTHORITY</th>
</tr>
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<tbody>
<tr>
<td>1.0</td>
<td>PROTECT SELF AND OTHERS</td>
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<tr>
<td>2.0</td>
<td>SET UP AND OPERATE SHOP EQUIPMENT</td>
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<tr>
<td>3.0</td>
<td>SET UP AND OPERATE TOW-BEHIND EQUIPMENT</td>
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<td>4.0</td>
<td>SET UP, SERVICE, AND MAINTAIN MOWING EQUIPMENT</td>
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<td>5.0</td>
<td>SERVICE AND MAINTAIN GOLF CARTS</td>
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<td>6.0</td>
<td>SERVICE AND MAINTAIN SPRAYER EQUIPMENT</td>
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<td>7.0</td>
<td>SERVICE AND MAINTAIN TRACTION UNITS</td>
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<td>8.0</td>
<td>SERVICE AND MAINTAIN SMALL POWERED EQUIPMENT</td>
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**NOTE ON SHADED PERFORMANCE OBJECTIVES AND SKILLS:**

- Shaded performance objectives and skill sets are optional. The shaded skills do not have to be demonstrated or signed-off for completion of the on-the-job component of the apprenticeship.
- The learning outcomes will cover all of the skill sets, both shaded and unshaded.
# APPRENTICE COMPLETION FORM

## APPRENTICE NAME

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<tbody>
<tr>
<td>Signature</td>
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<td>Client ID</td>
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Skill Sets and Learning Outcomes when completed should be signed by the Supervisor/Trainer and presented with this completion form to your local Apprenticeship Client Services Office. Any supporting documentation should also be attached.

<table>
<thead>
<tr>
<th>In-school Completed (Proof to be provided)</th>
<th>Yes ( )</th>
<th>No ( )</th>
<th>Not applicable ( )</th>
</tr>
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<tbody>
<tr>
<td>Hours completed as Per Contract:</td>
<td>Yes ( )</td>
<td>No ( )</td>
<td>Not applicable ( )</td>
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## SPONSOR/EMPLOYER INFORMATION

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<td>Address</td>
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<tr>
<td>Telephone</td>
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<tr>
<td>E-mail Address</td>
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<tr>
<td>Signature of Signing Authority</td>
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A. DESCRIPTION/DUTIES

A Turf Equipment Technician is employed at golf clubs and course, equipment distributors and dealerships, equipment rental shops provincial parks and sod farms and performs the following:

- Diagnoses, maintains and repairs, Mowing Equipment, Golf Carts, Traction Units, Small Powered Equipment and Tow-Behind Equipment.

A Turf Equipment Technician demonstrates knowledge of:

- Occupational Health and Safety Act
- Workplace Hazardous Materials Information Systems (WHMIS)
- Shop Equipment
- Tools and equipment
- Vehicle protection procedures and equipment
- Documentation preparation
- Inspecting, testing, diagnosing and repairing: Tow-Behind equipment,
- Mowing equipment, Golf Carts, Traction units and Small Powered equipment.
- Industry manuals, catalogues & software regarding parts and procedures
- Customer service
- Inspecting and reporting procedures

BENCHMARK/GUIDELINE TOTAL TRAINING TIMEFRAMES:
(ON-THE-JOB AND OFF-THE-JOB):

5,000 hours
Includes 720 hours of in-school training
B. ON-THE-JOB PERFORMANCE OBJECTIVES

1.0 PROTECT SELF AND OTHERS

1.1 Identify and take preventative action against potential workplace health and safety hazards, including: broken glass, urethanes, dust fumes, excessive exhaust and/or explosive fumes, gas and alternate fuels, lighting, sound levels, electrical and mechanical hazards, (i.e. damaged or faulty air lines and/or inadequate ventilation); so that the potential for personal injury, damage to equipment, vehicles, and the environment are minimized, according to manufacturers’ recommendations, specifications, safety requirements and government regulations.

Date Completed  Apprentice  Supervisor/Trainer

1.2 Handle, store and recycle hazardous workplace materials, including: glass, urethane, epoxy, primers, solvents, automotive fluids; using personal protective equipment, specified handling, storage and recycling procedures; so that individuals are protected from injury and the environment from contamination, according to manufacturers’ recommendations, specifications, safety requirements and government regulations.

Date Completed  Apprentice  Supervisor/Trainer

1.3 Wear and maintain personal protective equipment, including: eye, ear, head, hand, respiratory, body, and foot protection; ensuring that correct fit and optimum protection is provided to the wearer for the specific task performed, according to Workplace Joint Health and Safety Committee, manufacturers’ recommendations, specifications, safety requirements and government regulations.

Date Completed  Apprentice  Supervisor/Trainer
1.4 Comply with first aid and workplace-related legislation relating to Occupational Health and Safety Act and the Environmental Protection Act; by identifying the personal and legal liabilities of technicians and employer when performing and/or conducting vehicle safety and structural inspections, vehicle testing, work estimates, repairing and/or replacing damaged parts, according to manufacturers’ recommendations, specifications, safety requirements, and government regulations.

Date Completed          Apprentice          Supervisor/Trainer

1.5 Practice good housekeeping in the workplace by applying fire hazard prevention methods, including: maintaining a clean and orderly work area; identifying, removing and disposing of potential fire hazards; preventing and cleaning up spills and/or leaks; ensuring work area is free of obstructions; and safely using, storing and maintaining equipment, tools and shop safety equipment, to minimize accident or injury to self and others, according to manufacturers’ recommendations, specifications, safety requirements and government regulations.

Date Completed          Apprentice          Supervisor/Trainer

1.6 Comply with Workplace Hazardous Materials Information System (WHMIS) guidelines, including: reading and interpreting labels and Material Safety Data Sheets (MSDS), ensuring receipt of training in WHMIS regulations and practices, according to the Occupational Health and Safety Act.

Date Completed          Apprentice          Supervisor/Trainer

1.7 Identify and locate safety devices on turf maintenance machinery, including shields, safety and warning decals, interlocks, guards audible warning devices, and roll-over protection systems and check to ensure correct operation for the safety of self and others and to protect the machinery from damage.

Date Completed          Apprentice          Supervisor/Trainer
1.8 Demonstrate required care when working on or around power take-off systems by ensuring that traction unit is shut down, protective shielding is in place and functional, all locking devices are operational, and PTO shaft is in correct alignment and free from any interference to prevent injury to self and others and to protect traction unit and driven implement from damage.

________________________   _______________  __________________
Date Completed   Apprentice       Supervisor/Trainer

1.9 Conduct inspection by using vision and sense of smell to locate leaks in hydraulic, fuel, coolant, and exhaust systems, using flow meters and pressure gauges, ensuring proper use of meters and gauges and disposal procedures using recommended tools, replacement parts, and components to protect self and others and to restore operational performance of turf equipment to manufacturers' specifications.

________________________   _______________  __________________
Date Completed   Apprentice       Supervisor/Trainer

1.10 Locate, service, and maintain batteries and electrical connections by removing corrosion from terminals, maintaining correct electrolyte levels, and by conducting charging operations in a well-ventilated area following equipment manufacturers' recommended procedures to prevent damage to battery and electrical system and to prevent injury to self and others and damage to property.

________________________   _______________  __________________
Date Completed   Apprentice       Supervisor/Trainer

1.11 Set up and operate grinding equipment and related accessories demonstrating required care by following equipment manufacturers instructions and wearing all required eye, ear, and respiratory safety equipment.

1.12 Demonstrate required care when operating or servicing hand-held power cutting devices, including cut-off saws, chain saws, hedge trimmers, grinders, drills, line trimmers, and brush cutters, by following manufacturers' operating manuals for the protection of self and others.

________________________   _______________  __________________
Date Completed   Apprentice       Supervisor/Trainer
1.13 **Check equipment protective devices** including back-up alarms, safety switches and warning instrumentation by sight, sound, feel and odor and to protect the operator from injury and to ensure effective operation of the equipment.

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1.14 **Drive, move, park, and operate heavy equipment** to load and unload materials and equipment safely and effectively within the equipment capacities and limitations, by following company safety procedures and the Occupational, Health and Safety Act (OHSA) to ensure the protection of self, others and property.

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1.15 **Use and maintain emergency safety equipment** including fire extinguishers, blankets to perform work in a safe and effective manner in accordance with the OHSA for the protection self, others and property.

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1.16 **Demonstrate knowledge of safety features and accessories** on equipment and communicate to operators and customers.

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2.0 SET UP AND OPERATE SHOP EQUIPMENT

2.1 Set up and operate reel, bed knife, and rotary blade grinders by preparing the reel for grinding and following correct mounting procedures to perform single blade and/or spin grinding, correct mounting procedures to perform bed knife sharpening, to perform rotary blade sharpening and balancing using recommended coolants, where required, to restore their optimum cutting performance according to manufacturer’s specifications and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer

2.2 Demonstrate basic (PC terminal) computer skills by selecting programs and applications, inputting data, retrieving and Interpreting data for purposes of inventory control, budgeting, maintenance scheduling and reporting and irrigation control, and by ensuring the accuracy of the information.

Date Completed  Apprentice  Supervisor/Trainer

2.3 Operate and maintain lift equipment including hoists, front end loaders, fork lift, skid steer, flor jacks and stands according to manufacturer’s specs, maintenance schedules and government regulations.

Date Completed  Apprentice  Supervisor/Trainer

2.4 Set up and operate pressure washer according to manufacturer’s specifications

Date Completed  Apprentice  Supervisor/Trainer
2.5 **Read and interpret blueprints, schematics and drawings** in hardcopy and electronic format according to manufacturer’s specifications.

Date Completed  Apprentice  Supervisor/Trainer

2.6 **Maintain and interpret a parts inventory** using a computerized or manual system to determine asset evaluation.

Date Completed  Apprentice  Supervisor/Trainer
3.0 SET UP AND OPERATE TOW-BEHIND EQUIPMENT

3.1 Attach tow-behind implements to drive unit by securing trailer hitches, three-point hitches, chains, draw bars, pins, and electrical or hydraulic connections following manufacturers' directions to ensure safe and effective operation within equipment limitations and capacities.

Date Completed  Apprentice  Supervisor/Trainer

3.2 Service, maintain, set up and attach power take-off (PTO) assemblies, ensuring positive connection between coupler and input/output shafts, correct alignment, required shielding and safety devices, matching PTO to engine rpm according to manufacturers' specifications and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer

3.3 Service and maintain trailer hitches, including ball, pintle, fifth wheel, and drop pin types, inspect and repair suspension components, bolts, bushings, springs, shock absorbers, and tires, using required tools, grease guns, lubricants, and required lifting equipment to ensure safe and effective operation of off-road equipment in accordance with manufacturers' recommendations and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer

3.4 Service and maintain brake systems, including electric brake and hydraulic types, by removal and inspection of components, by replacing worn or damaged parts using calipers, brake tool pliers, electrical testing instruments, hand tools, and lifting devices to restore operational performance of off-road equipment to manufacturers' specifications and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer
4.0 SET UP, SERVICE, AND MAINTAIN MOWING EQUIPMENT

4.1 Service and maintain and clean driving systems for rotary and reel type mowers, including belt, hydraulic, electric, chain, and ground types, by inspecting, aligning, repairing, adjusting, testing, welding and lubricating bushings, bearings, pulleys, sprockets, belts, and couplings using tension gauges, puller's, chain breakers, electrical and hydraulic testing equipment, and grease guns to restore operational performance to manufacturers' specifications and maintenance schedules.

Date Completed ___________________ Apprentice ___________________ Supervisor/Trainer ___________________

4.2 Service, maintain, clean and set up reel-type cutting units by inspecting, adjusting, repairing, testing, welding and replacing cutting edges, bearings, rollers for run-out, bed-bar and knife, fasteners, bearing pre-load, shield, deflectors, and height of cut by using grinders, back-lapping machines, dial indicators, torque wrench, feeler gauges, grease gun, and recommended hand tools to ensure safe and optimum cutting quality according to manufacturer’s specifications and maintenance schedules.

Date Completed ___________________ Apprentice ___________________ Supervisor/Trainer ___________________

4.3 Service and maintain and clean rotary, sickle, and flail type mower by inspecting, adjusting, testing, welding, repairing, and replacing wheels, cutting edges, bushings, bearings, belts and chains, fasteners, shields, deflectors, and height of cut by utilizing balancer's, torque wrenches, feeler gauges, grinders, and grease guns to ensure safe cutting performance.

Date Completed ___________________ Apprentice ___________________ Supervisor/Trainer ___________________
5.0 SERVICE AND MAINTAIN GOLF CARTS

5.1 Service and maintain deep cycle batteries, chargers and charging systems by inspecting, testing, repairing, and replacing defective parts using electrical test equipment, distilled water, hydrometers, and hand tools, wearing required safety clothing and equipment and performing work in a well-ventilated area to restore operational performance to manufacturers' specifications and maintenance schedules.

Date Completed Apprentice Supervisor/Trainer

5.2 Service and test speed directional control systems on electric golf carts by conducting electrical checks on system components and connections, by replacing defective or worn parts, and by running operational checks according to manufacturer’s specifications and maintenance schedules.

Date Completed Apprentice Supervisor/Trainer

5.3 Service and maintain belts, clutches, air and fuel filters and drive line components on gasoline and electric powered carts by inspecting belt condition, clutch faces, bushings, cables, oil levels, seals and tire pressure replacing worn or defective parts using micrometers, dial indicators, spring compressors, pulling devices, lifting equipment, grease guns, and recommended hand tools to restore operational performance to manufacturers' specifications and maintenance schedules.

Date Completed Apprentice Supervisor/Trainer

5.4 Maintain and repair car bodies, including metal, fiberglass, plastics, and flexible body parts, by refinishing damaged areas using filling and repairing compounds, materials, and primers recommended by the manufacturer, and by replacing damaged panels or flexible parts to restore the condition and appearance of the golf cart body.

Date Completed Apprentice Supervisor/Trainer
5.5 **Maintain and repair brakes** by adjusting, inspecting and replacing parts, including cables, hydraulic components, linkages, shoes, pedals, pads, drums, parking brake and floor mats using hand and electric power tools and measuring devices according to manufacturers specifications and maintenance schedules.

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<th>Date Completed</th>
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5.6 **Store golf carts for winter by complete washing of the cart, cleaning batteries and terminals**, checking electrolyte levels, lubricating cables, king pins, wheel bearings, clutches, and differentials, and by periodic checks of the battery voltage levels, recharging when required to protect the condition and performance life of the batteries.

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<th>Date Completed</th>
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6.0 SERVICE AND MAINTAIN SPRAYER EQUIPMENT

6.1 Service and maintain pumps and couplers by inspecting, aligning, measuring, testing, and replacing components by using flow meter, stop watch, dial indicators, calibrated container, distance measuring device, pressure gauge, recommended hand tools, oil, and grease to maintain pumping efficiency according to recommended manufacturers' specifications and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer

6.2 Service and maintain hoses, fittings, agitators, tanks, lids and filters by inspecting, cleaning, and replacing damaged or defective parts following a visual assessment of their condition to maintain sprayer dependability and for the protection of self and others in compliance with the Occupational Health and Safety Act.

Date Completed  Apprentice  Supervisor/Trainer

6.3 Service and calibrate speed control systems, including speedometer sensor, radar, and magnetic wheel sensor, by using electrical testing equipment, distance (linear) measuring device, and a stop watch to identify and replace defective component(s) and to confirm that the system is operating accurately according to manufacturers' specifications.

Date Completed  Apprentice  Supervisor/Trainer

6.4 Prepare sprayer for winter storage by cleaning machine, draining systems of water, adding glycol-based antifreeze, operating system to prevent freeze-up, and removing and storing components sensitive to low temperature to protect the performance life of sprayer.

Date Completed  Apprentice  Supervisor/Trainer
7.0 SERVICE AND MAINTAIN TRACTION UNITS

7.1 Conduct visual inspection of fuel system checking for leaks, damage, restriction in supply, gaskets, routing of lines and hoses, using recommended tools replace worn or damaged components and perform a running check to ensure performance adheres to manufacturers' specifications.

Date Completed  Apprentice  Supervisor/Trainer

7.2 Repair and maintain fuel injection systems on diesel and gasoline engines by using hand tools, specific tools, feeler gauges, dial indicators, timing devices, pressure gauges, injector testing equipment, and torque wrenches to identify worn or defective parts and replace and repair following manufacturers' specifications to ensure maximum performance and efficiency.

Date Completed  Apprentice  Supervisor/Trainer

7.3 Repair and perform preventative maintenance on diesel and gasoline engines by using filter wrenches, torque wrenches, feeler gauges, recommended hand tools, coolant tester, hydrometer, compression tester, electric testing equipment, and fluid collection system to inspect and/or adjust valves, cooling systems, belt alignment and tension, linkages, timing to manufacturers' specifications and to replace filters and fluids, at recommended intervals to ensure maximum performance and reliability.

Date Completed  Apprentice  Supervisor/Trainer

7.4 Repair and maintain electric and electronic components and instrumentation by using electric testing equipment, service manuals, computer, hand tools, connectors, and sealants to inspect, diagnose, and repair components to ensure operation within manufacturers' specifications and maintenance schedules.

Date Completed  Apprentice  Supervisor/Trainer
7.5 Repair and maintain hydraulic system by visual inspection and by using pressure gauges, flow meters, thermometers, hand tools, torque wrenches, and feeler gauges to identify leaks, worn or defective parts and check and repair hoses, sheathing, pumps, cylinders, motors, valves, and reservoirs to ensure hydraulic system is operating safely and within the system's design specifications.

Date Completed
Apprentice
Supervisor/Trainer

7.6 Repair and maintain hydrostatic, hydraulic and mechanical drive train systems including: valves banks, pumps, clutches, transmissions, drive shaft, differentials, universal joints, identifying worn or defective components using hand and power tools according to manufacturers’ specifications and maintenance schedules.

Date Completed
Apprentice
Supervisor/Trainer

7.7 Inspect wheels, tires and mounting hardware and remove, repair or replace damaged or defective parts using the prescribed tools, materials and equipment and re-install carefully following manufacturers instructions and the OHSA to avoid tire and wheel damage and to prevent injury to self and others.

Date Completed
Apprentice
Supervisor/Trainer

7.8 Inspect brake systems on off-road vehicles including band, drum, disc and parking brake, electric brake, manual brake and hydraulic brake types, removing damaged or worn out components: using special tools and attachments and prescribed replacement parts and materials, adjust brake system, re-assemble the brake system following manufacturers directions, bleeding and replenishing the brake fluid when required ;and, perform pre-operation checks to ensure safe and effective performance in accordance with manufacturers specifications and maintenance schedules.

Date Completed
Apprentice
Supervisor/Trainer
7.9 **Inspect steering systems on off-road vehicles** including power and manual types, removing damaged or worn out components: using special tools and attachments and prescribed replacement parts, re-assemble the steering system following manufacturers’ directions and, perform pre-operation checks to ensure safe and effective performance in accordance with manufacturers specifications and maintenance schedules.

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7.10 **Inspect suspension systems on off-road vehicles** including power and manual types, removing damaged or worn out components: using special tools and attachments and prescribed replacement parts, re-assemble the steering system following manufacturers’ directions and, perform pre-operation checks to ensure safe and effective performance in accordance with manufacturers specifications and maintenance schedules

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8.0 SERVICE AND MAINTAIN SMALL POWERED EQUIPMENT

8.1 Follow maintenance schedules recommended by the manufacturer by completing scheduled checks of equipment and components, recording maintenance performed, noting non-conformance to required maintenance schedule, recording conditions which may require additional servicing to ensure continued reliability of the equipment.

Date Completed   Apprentice   Supervisor/Trainer

8.2 Lubricates equipment using the manufacturers recommended oils, filters and grease and arrange for oil analysis tests as required to determine the condition of oils and engine components after periods of use to ensure the integrity of the lubricants used and to determine the periods of use and replacement.

Date Completed   Apprentice   Supervisor/Trainer

8.3 Inspect electrical components including wiring harnesses, heat shield, mechanical guards and battery condition to ensure effective operation; perform adjustments to mechanical attachments were required, secure loose wiring to prevent heat or friction damage and replace defective parts to ensure equipment performance according to manufacturers specifications.

Date Completed   Apprentice   Supervisor/Trainer

8.4 Conduct engine performance checks by testing and by observing and analyzing exhaust emissions and power output, performing adjustments to governors, fuel rack settings, valves and timing when required to restore operational performance to manufacturers’ specifications.

Date Completed   Apprentice   Supervisor/Trainer
8.5 **Tune two cycle engines** by performing a compression test; inspecting ignition components, fuel filters, air filters and flame arresters, battery connections, replacing parts where required and by setting engine systems to manufacturers specifications.

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8.6 **Tune four cycle engines** by performing a leak down test; inspecting ignition components, fuel filters, air filters and flame arresters, battery connections, replacing parts where required and by setting engine systems to manufacturers specifications.

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8.7 **Assemble new small powered equipment and related components**, using prescribed tools and following manufacturers directions, making adjustments to controls and attachments where required; and, run a performance check to ensure effective operation in accordance with manufacturers specifications.

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**APPRENTICE RECORD**

You will be required to disclose this signed form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry will use your personal information to administer and finance Ontario’s apprenticeship training system.

For further information please see the notice/declaration for collection of personal information that is referenced in the table of contents of this training standard.

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