



**Skilled
Trades**
Ontario

**Métiers
spécialisés**
Ontario

Apprenticeship
Training Standard
Logbook

**Agricultural Equipment
Technician**

425A

2014

Apprenticeship Training Standard

The Apprenticeship Training Standard or herein after referred to as “Logbook” is a document issued to Apprentices who sign a Registered Training Agreement in the Province of Ontario as an official record of training. It is to be used by the Apprentice and Sponsor/trainer to guide the process of skills development in a particular trade.

Training As An Apprentice

- ✓ Ensure you, your sponsor, and your witness sign a Training Agreement with the Ministry of Labour, Immigration, Training and Skills Development. Once it is registered, you will receive a copy of the registered Training Agreement for your records.
- ✓ Notify the local Service Delivery Office **immediately** if any changes to contact information or training agreement, especially if you change sponsors.
- ✓ Review the Logbook regularly with your trainer and sponsor to discuss your progress, ask questions, seek feedback and have the trainer **sign-off on competencies**
- ✓ Keep an accurate record of the hours you work.
- ✓ Attend classroom training when it is offered.
- ✓ Apply for the financial incentives for which you are eligible.



Completing Your Logbook

- ✓ **Complete the Sponsor Record Form** – A form must be completed for each Sponsor/Trainer used during your apprenticeship.
- ✓ **Confirm Skill Sign-off is Complete**
 - **You and your trainer** sign-off each required skill to confirm that you have demonstrated competency in that skill.
 - Shaded boxes in your Logbook mean the skills are optional and do not have to be confirmed by your trainer or sponsor. However, you are encouraged to complete them as part of your training.
- ✓ **Confirm Skill Set Sign-off is Complete**
 - After you and your trainer have signed-off all the required skills in a skill set, your sponsor signs the signature box on the form in **Appendix C – “Skill Set Completion for Sponsors”** to confirm your completion of all competencies within each skill set.

This document is the property of the apprentice named inside and represents the official record of your training. For information about completing your apprenticeship, see inside of back cover.



Apprentice Name: _____

Address: _____

Phone Number: _____

Email Address: _____

Trade: _____

Training Agreement # (for Compulsory and Non-Compulsory trades):

STO Account No. (for Compulsory trades only):

This document is the property of the Apprentice named herein and represents the official record of their training.

If you have questions about the use of this Logbook or about your Apprenticeship program, contact your local Service Delivery Office (see Appendix D in this book) or the Employment Ontario hotline at: 1-800-387-5656.

Apprenticeship Pathway to a Certificate of Qualification

Phase 1: Registration

Submit Application for Apprenticeship Training through the on-line portal or to local Service Delivery Office

For on-line portal, please follow instructions for registration. You will need to create a *My Ontario* account to access online services.

Training agreement signed and registered by both apprentice and sponsor

Access your Apprenticeship Training Standard Logbook**
skilledtradesontario.ca/about-trades/trades-information

** This is the official record of your training progress. You are responsible for keeping it up-to-date.

Complete on-the-job training

Demonstrate and receive sign-off on the competencies/skills in your Apprenticeship Training Standard Logbook

Complete in-school training

Attend and complete the in-class training set out in the Curriculum Training Standard

Apprentices eligible to apply for apprenticeship incentive grants (Red Seal trades) and loans.

Review and finalize your logbook with your sponsor

Submit proof of apprenticeship completion via email, in-person or digital portal

Your Apprenticeship Training Standard Logbook details completion requirements. Submit the following:

- completed Apprenticeship Training Standard Logbook with signatures
- proof of hours

Certificate of Apprenticeship is issued

Trades without examination

CofA is the final step of the program

Trades with examination (compulsory and non-compulsory trades)*

Provisional Certificate of Qualification issued for a 12 month term

To prepare for the CofQ examination download the Provincial and/or Red Seal Exam preparation guides.

Make payment for your Certificate of Qualification examination

Call to make a payment (647-847-3000 or 1-855-299-0028)

Schedule a date to write your Examination

To schedule your examination, contact your local Service Delivery Office.

Pass Certificate of Qualification examination

Apprentices eligible to apply for Apprenticeship Completion Grant (Red Seal trades) or Apprentice Completion Bonus (non-Red Seal)

Certificate of Qualification is issued

Upon completion, Sponsors may be eligible for Apprenticeship grants, incentives, bonuses or tax credits

Phase 2: Apprenticeship

Phase 3: Certification

* For a list of trades subject to a certification examination, visit: skilledtradesontario.ca

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Please Note: This Standard has been revised to reflect the visual identity of Skilled Trades Ontario (STO) which replaced the Ontario College of Trades on January 1, 2022. The content of this Standard may refer to the former organization; however, all trade specific information or content remains relevant and accurate based on the original date of publishing.

Please refer to STO's website: skilledtradesontario.ca for the most accurate and up to date information. For information about BOSTA and its regulations, please visit [Building Opportunities in the Skilled Trades Act, 2021 \(BOSTA\)](#).

Any updates to this publication are available on-line; to download this document in PDF format, please follow the link: Skilled Trades Ontario.ca.

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Maintained with transfer to Skilled Trades Ontario 2014 (V100)

Foreword: Purpose, Terms and Conditions of the registered Training Agreement

Purpose:

- Prior to starting official apprenticeship activities, the apprentice, sponsor and a witness are required to sign a Training Agreement.
- The Training Agreement that you have signed is an important legal document that outlines your responsibilities as an apprentice and the responsibilities of your sponsor.
- Once registered, this training agreement (or contract) marks the start of your formal agreement between the apprentice, the sponsor and the Ministry.
- For compulsory trades, the apprenticeship registration document must be accessible when working.

The Apprentice agrees:

- **To inform the local Service Delivery Office of any change to your contact information or change in sponsor within 7 days;**
- To follow the Sponsor's and Trainer's lawful instructions and make every effort to acquire the skills identified in the Logbook for the Trade which is part of the apprenticeship program established by Skilled Trades Ontario for the trade;
- To obtain written verification from the Sponsor and the Trainer(s) that the requirements in the Logbook for the trade have been met.
- When you receive an "Offer of Classroom Training", confirm your attendance by following the instructions in the offer. Failure to do so may result in losing your opportunity to attend school which delays the completion of your apprenticeship.

The Sponsor agrees:

- To ensure that the Apprentice is provided with the training required as part of the apprenticeship program established by Skilled Trades Ontario for this trade;
- To review the progress of training with the Apprentice, and with the Trainer(s) where the Sponsor and the Trainer are not the same party.
- Release your apprentice from work to attend in-school training without penalty to the apprentice.
- To maintain the journeyperson/apprentice ratio for your trade, if applicable.
- To monitor their apprentice(s) progress
- To ensure that the Trainer(s) verifies, in writing, when each skill identified in the Logbook for the trade has been successfully completed by the Apprentice;
- To contact the Ministry should any changes in your capacity to train, your contact information, or your apprentice's status in the program change.

Trade Specific Resources and Links

Trade Specific Resource	Link
Red Seal Program	red-seal.ca
Apprenticeship in Ontario	ontario.ca/page/apprenticeship-ontario
Employment Ontario	employmentontario.ca
Service Canada	servicecanada.gc.ca
<i>Building Opportunities in the Skilled Trades Act, 2021</i>	Building Opportunities in the Skilled Trades Act, 2021, S.O. 2021, c. 28 - Bill 288 (ontario.ca)
Ministry of Labour, Immigration, Training and Skills Development	Ministry of Labour, Immigration, Training and Skills Development ontario.ca
Exam Preparation Guide	Exam Resources – Skilled Trades Ontario
Skills Zone (Ontario Skills Passport)	http://www.skillszone.ca/

**Please note, all website addresses are current at time of printing*

Methodology-Standard Development

A standard is developed with a broad group of trade representatives who form the initial working group. This includes subject matter experts/ tradespeople/ instructors and employers from a cross section of the sector/industry, with varying years of work experience in the field. The working group reviews, develops and recommends revision to the content of the standard. Their role also involves harmonizing and updating other supporting content for the product.

An essential part of the standard development is the validation process. This is the opportunity to have a broader representation of the sector provide feedback on the content of draft standard. This process is conducted in various ways and may include sending out a survey or the draft document (or both) directly to the sector. The comments received are reviewed by the working group and revisions are made as required based on a consensus model.

Introduction to the Logbook

This “on-the job” Logbook is the training standard for Agricultural Equipment Technician 425A and was developed by Skilled Trades Ontario in consultation with representatives from industry. It identifies all the skills associated with and required to learn the trade.

The Logbook is divided into skill sets, which are further divided into skills. These skill sets and skills are written in statements that describe what the Apprentice must perform and to what standard, in order to be considered competent in that skill.

The successful performance of these skills is tracked in the Logbook. Once achieved, this skills’ sign-off, along with the completion of in-school program requirements or equivalent, is how the apprenticeship program is completed and apprentices receive a Certificate of Apprenticeship.

The Sponsor/trainer and Apprentice are required to sign-off and date each skill after the Apprentice has demonstrated proficiency in these skills. However, if a skill is shaded, it is optional and does not need to be signed-off, though it has been defined as a part of the scope of practice for the trade.

All practices described in this standard must be performed by the apprentice according to the specific criteria identified. In general, the standard of performance for this trade is to be performed according to all applicable jurisdictional codes and standards and all health and safety standards must be respected and observed.

All skills within the Apprenticeship Training Standard are to be performed, as applicable, according to and in compliance with the following:

- Occupational Health and Safety Legislation and Regulations;
- Other applicable legislation, regulation, codes and standards;
- Industry best practices;
- Company policies and procedures.

The information presented in this standard is, to the best of our knowledge, current at time of printing and is intended for general application. Please refer to the Skilled Trades Ontario website for the most accurate and up-to-date information: skilledtradesontario.ca

Roles and Responsibilities

Under the [Building Opportunities in the Skilled Trades Act, 2021 \(BOSTA\)](#)

Skilled Trades Ontario (STO) is responsible for:

- Establishing and maintaining qualifications;
- Establishing Apprenticeship Programs and other training programs including training Standards, curriculum standards and certifying examinations;
- Issuing certificates for the purposes of this Act such as Certificates of Qualification;
- Maintaining a Public Registry for compulsory trades skilledtradesontario.ca/public-register/;
- Determining whether the experience and qualifications obtained by applicants for a certificate of qualification who do not complete an apprenticeship are equivalent to those received through completing an apprenticeship (Trade Equivalency Assessments)
- Promoting the skilled trades and conducting research.
- Conducting research and evaluate whether a trade should be prescribed as a trade for the purposes of this Act and to make recommendations on these matters to the Minister.

Ministry of Labour, Immigration, Training and Skills Development (MLITSD)

is responsible for:

- Classifying trades as compulsory trades;
- Prescribing scopes of practice for trades;
- Approving which persons may provide in-class training for apprenticeship programs (TDAs);
- Registering Training Agreements;
- Providing those who successfully complete an apprenticeship program with a certificate of apprenticeship (CofA);
- Administering examinations, including certifying examinations;
- Promoting the skilled trades and conducting research;
- Exercising such other powers and perform such other duties and functions as are provided for in this Act or the regulations.

For any matter related to your registered Training Agreement or completing your apprenticeship, you must contact your local Service Delivery Office.

Roles and Responsibilities of the Apprentice

An Apprentice is an individual who has entered into a registered Training Agreement (refer to Foreword: *“Purpose, Terms and Conditions of TA” page 1*) with a Sponsor to receive training in a trade as part of an apprenticeship program established by Skilled Trades Ontario. As an Apprentice, you have certain roles and responsibilities to follow throughout your apprenticeship training:

1. As an Apprentice, you signed the Training Agreement and have entered into a contract with the Ministry of Labour, Immigration, Training and Skills Development and your Sponsor.
2. If you are registered as an Apprentice in a compulsory trade, your name will automatically appear in the Skilled Trades Ontario Public Register.
3. You are responsible for informing the staff at your local Service Delivery Office regarding changes to the following:
 - Your Sponsor’s address;
 - Your name and address; and/or,
 - Your Sponsor, including starting employment with a new Sponsor
4. As an Apprentice, you are responsible for completing skills or skill sets in this Logbook (as detailed in the *“Eligibility for Apprenticeship Program Completion”* section of this document) and ensuring that they are dated and signed by both you and your Trainer.
5. Once you have demonstrated competency in all the mandatory skills and received a sign off on each skill by your sponsor/trainer, you must have the Skill Set Completion Form completed and signed by your current Sponsor.
6. Submit your Logbook to your local Service Delivery Office.
7. Present your Apprentice Completion Form (Please refer to Appendix B), along with your authorized Logbook to your local Service Delivery Office.

Roles and Responsibilities of Sponsors and Trainers

Sponsors are responsible for ensuring all terms are met as per the registered Training Agreement. They are named on the registered Training Agreement as the entity responsible for ensuring Apprentices receive the training required as part of an apprenticeship program. As a signatory to this agreement, they are designated as the 'Signing Authority' for the Apprentice's Skill Set Completion Form and are required to attest to successful achievement by signing the appropriate box at the completion of each skill set. Some sponsors may also act as the Trainer.

A **Trainer** is an individual who oversees the performance of a task and sets the workplace expectations and practices for the Apprentice.

In compulsory trades, a Trainer must hold a valid Certificate of Qualification and be registered with Skilled Trades Ontario.

In non-compulsory trades, a Trainer is an individual who holds one of the following:

- A Certificate of Qualification;
- A Certificate of Apprenticeship in the trade; or,
- Has completed both the workplace-based training (competencies and/or hours as applicable) and classroom training components of the trade's apprenticeship program; or,
- Has workplace experience equivalent to the apprenticeship program) and has the skills outlined in the Logbook.

Competency means being able to perform to the required standard (please refer to *"Introduction to the Logbook"*). Trainers/Sponsors and Apprentices are required to sign-off and date the skills in the Logbook following each successful acquisition. The Logbook forms a record of this achievement.

The Trainer must provide their signature based on their assessment and professional judgment that the apprentice is competent in the skills described above. The Trainer's signature is not a general warranty or guarantee of the apprentice's future conduct.

Sponsors 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.

Health and Safety

Safe working procedures and conditions, accident prevention and the preservation of health are of primary importance for apprenticeship programs in Ontario. These responsibilities are shared and require the joint efforts of government, sponsors, employers, supervisors, workers, apprentices and the public to achieve the goal of making Ontario's workplaces safe and healthy.

The [Occupational Health and Safety Act](#) (OHSA) provides us with the legal framework and the tools to do this. It sets out the rights and duties of all parties in the workplace, placing ultimate responsibility on the employer for the health and safety of workers (in this case apprentices) by ensuring procedures, controls, and training are established for dealing with workplace hazards. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury, illness or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to or cause an accident injury or illness.

A sponsor who is not the employer is reminded that the employer has legal responsibilities respecting health and safety over the apprentice who is their worker. The sponsor should encourage safe work habits and adherence to the employer's occupational health and safety requirements for the workplace.

It is generally recognized that a positive attitude about safety in partnership with health and safety competency contributes to an accident-free environment. Everyone will benefit as a result of a healthy attitude towards the prevention of accidents.

Workers and apprentices can be exposed to a multitude of hazards and, therefore, should be familiar with the Occupational Health and Safety Act and regulations.

The Internal Responsibility System:

One of the primary purposes of the Occupational Health and Safety Act (OHSA) is to facilitate a strong Internal Responsibility System (IRS) in the workplace. To this end, the OHSA lays out the duties of employers, supervisors, workers, apprentices, constructors and workplace owners.

Workplace parties' compliance with their respective statutory duties is essential to the establishment of a strong IRS in the workplace.

Simply put, the IRS means that everyone in the workplace has a role to play in keeping workplaces safe and healthy. Workers and apprentices in the workplace who see a health and safety problem such as a hazard or contravention of the OHSA in the workplace have a statutory duty to report the situation to the employer or a supervisor. Employers and supervisors are, in turn, required to address those situations and acquaint workers with any hazard in the work that they do.

The IRS helps support a safe and healthy workplace. In addition to the workplace parties' compliance with their legal duties, the IRS is further supported by well-defined health and safety policies and programs, including the design, control, monitoring and supervision of the work being performed.

Roles and Responsibilities under the Occupational Health and Safety Act

Employer's Responsibilities include but are not limited to the following:

- Instruct, inform and supervise workers and apprentices to protect their health and safety.
- Appoint competent persons as supervisors.
- Inform a worker, apprentice, or a person in authority, about any hazard in the workplace and train them in the handling, storage, use, disposal and transport of any equipment, substances, tools, material, etc.
- Take every precaution reasonable in the circumstances for the protection of a worker/apprentice.
- In workplaces in which more than five workers are regularly employed, prepare and post a written occupational health and safety policy and set up and maintain a program to implement it.
- Prepare and post policies with respect to workplace violence and workplace harassment and develop programs supporting workplace harassment and workplace violence policies.
- Ensure knowledge of applicable legislative, regulatory, codes and standards so requirements to be followed are clear to all workers/apprentices.

Trainer/Supervisor Responsibilities include but are not limited to the following:

- Ensure that a worker or apprentice works in compliance with the Act and regulations.
- Ensure that any equipment, protective device or clothing required by the employer is used or worn by the worker or apprentice.
- Advise a worker/apprentice of any potential or actual health or safety dangers known by the supervisor.
- Take every precaution reasonable in the circumstances for the protection of workers.

Worker/Apprentice Responsibilities include but are not limited to the following:

- Work in compliance with the Act and regulations.
- Use or wear any equipment, protective devices or clothing required by the employer.
- Report to the employer or supervisor any known missing or defective equipment or protective device that may endanger the worker or another worker.
- Report any hazard or contravention of the Act or regulations to the employer or supervisor.
- Not remove or make ineffective any protective device required by the employer or by the regulations.
- Not use or operate any equipment or work in a way that may endanger any worker.

The Three Rights of Workers/Apprentices

The OHSA gives workers and apprentices three important rights:

1. The right to know about hazards in their work and get information, supervision and instruction to protect their health and safety on the job.
2. The right to participate in identifying and solving workplace health and safety problems either through a health and safety representative or a worker member of a joint health and safety committee.
3. The right to refuse work that they believe is dangerous to their health and safety or that of any other worker in the workplace.

Ministry of Labour, Immigration, Training and Skills Development

The Ministry of Labour, Immigration, Training and Skills Development conducts periodic inspections of workplaces to ensure that safety acts and regulations are being followed. Please direct any questions to the Occupational Health and Safety Contact Centre at 1-877-202-0008.

Apprenticeship Program Summary/Guidelines

Scope of Practice

The Scope of Practice for the trade of Agricultural Equipment Technician is set out in section 5 of Ontario Regulation 875/21 under BOSTA and reads as follows:

5. The scope of practice for the trade of agricultural equipment technician includes inspecting, diagnosing, repairing and verifying the repair of the following for agricultural equipment:

1. Electrical systems.
2. Hydraulic systems.
3. Engine systems.
4. Intake, exhaust and emission control systems.
5. Fuel delivery systems.
6. Engine management systems.
7. Clutches and transmissions.
8. Drive axle and final drive assemblies.
9. Steering systems.
10. Braking systems.
11. Air supply and auxiliary systems.
12. Suspension systems.
13. Tires, wheels, ballasting and undercarriages.
14. Air conditioning, heating and ventilation systems.
15. Body and trim.
16. Tillage and planting equipment.
17. Harvesting equipment.
18. Spraying, irrigation and distribution equipment.
19. Materials handling equipment.
20. Precision farming systems equipment.

*While the Logbook draws on the scope of practice regulation (Section 5 of Ontario Regulation 875/21 under BOSTA). The Logbook does not purport to add to or modify the scope of practice as provided in regulation. *

Program Guidelines

On-the-Job Training Duration

Industry has identified 6280 hours as the benchmark necessary for any Apprentice to become competent in the skills required. There may be circumstances in which the duration varies from this guideline.

In-Class Training Duration

Industry has identified 720 hours of in-school training as the duration necessary for an Apprentice to complete the in-school curriculum for this program.

Total Training Hours

7000 hours

Academic Entry Requirements & Pre-requisites

The minimum academic entry requirement for this program is grade 12.

Journeyman to Apprentice Ratio

Industry Recommended Ratios:

While some of the trades regulated under BOSTA are subject to Journeyman to Apprentice ratios set out in regulation, this trade is not one of them. Instead, **industry has recommended a Journeyman to Apprentice ratio guideline of 1 Journeyman (or individual who is deemed equivalent to a journeyman) to 1 Apprentice** as the ratio necessary for an Apprentice to be properly trained on the job in this program.

Program Requirements

Compulsory and Non-compulsory Classification

Regulations under the *Building Opportunities in the Skilled Trades Act, 2021*, classify each trade as either “compulsory” or non-compulsory.” This trade is non-compulsory.

It is the responsibility of an Apprentice to maintain a training record in the form of a Logbook. The Sponsor and Trainer are required to sign-off when competencies in the trade are achieved.

Skills for Success Summary

Skills for Success are needed in a quickly changing world for work, learning and life. They are foundational for building other skills and important for effective social interaction. Everyone benefits from having these skills as they help individuals get a job, progress at their current job and change jobs. They also help individuals become active members of their community and succeed in learning.

Through extensive research and consultations, the Government of Canada launched the new Skills for Success model renewing the previous Essential Skills framework to better reflect the needs of the current and future labour market.

The occupational specific Essential Skills profiles are available online. These will be updated over time to align with the new Skills for Success model found here: [Skills for Success model](#)

Standard of Performance

In general, the standard of performance for the trade of Agricultural Equipment Technician are to be performed, as applicable, according to and in compliance with the following:

Industry Safety Standards which are based upon:

- Occupational Health and Safety Legislation and Regulations;
- Jurisdictional legislation and regulations, codes and standards (municipal bylaws etc.)
- Company policies and procedures
- All applicable manufacturers specifications and engineering specifications

Training the Apprentice - Tips for Apprentices, Sponsors and Trainers

Tips for Apprentices

Remember, it takes time to learn. The following is a list of additional tips and tools to help make the most of your apprenticeship training:

- Practice safe work procedures early to create good habits;
- Use your Logbook as a journal to keep track of the skills you have achieved;
- Review your training plan with your Training Consultant, Trainer, or Sponsor;
- Discuss your training needs with your Trainer and/or Sponsor;
- Listen to the suggestions of your Trainer;
- Ask your Trainer questions if you are unsure of any skill you need to perform or any tools or equipment you need to use to perform your duties;
- Show enthusiasm and develop good work habits; and,
- Upon demonstration of competency, ensure that you and your Trainer sign-off the individual skills.

To get the most from this mentoring experience, request exposure to the full scope of the trade; meet regularly with your Sponsor/Trainer to discuss your progress, ask questions and seek feedback.

Tips for Sponsors

- Select Trainers with good communication skills and who work well with others;
- Ensure that the Apprentice always works under the direction of or has access to a qualified Trainer;
- Encourage Trainers to take upgrading courses (e.g. Train the Trainer, Mentor, Coach, etc.);
- Set out clear expectations and involve both the Apprentice and Trainer in developing the training plan
- Encourage safe work habits;
- Allow time for the Trainer to train and demonstrate skills to the Apprentice;
- Provide opportunities and time for the Apprentice to learn the trade;
- Ensure that the Apprentice receives the varied on-the-job trade training experience outlined in this document;
- Recognize good performance;
- Observe frequently;
- Provide constructive feedback and conduct regular performance reviews involving the Apprentice and Trainer;
- Use the Logbook as a monitoring tool and a part of regular performance evaluations; and,
- Complete the Skill Set Completion Form once the Apprentice has demonstrated competency in the skills.

- The detailed content listed for each skill is not intended to represent an inclusive list; rather, it is included to illustrate the intended direction for the skill acquisition.

Tips for Trainers

Trainers are responsible for ensuring the Apprentice is developing the skills outlined in this document. Here is a list of tips and tools to help Trainers in their supervision of Apprentices:

- Demonstrate model safe work habits;
- Provide opportunities and time for the Apprentice to learn the trade;
- Treat Apprentices fairly and with respect;
- Review the Logbook with the Apprentice and develop a training plan;
- Set out clear expectations and recognize good performance;
- Expose Apprentices to the full scope of the trade by providing training on the skills outlined in this document;
- Encourage and respond to all questions;
- Be patient;
- Explain, show and demonstrate the skill;
- **Meet regularly with the Apprentice to discuss the apprentice's progress**
- Provide continuous feedback;
- Sign-off skills when your Apprentice demonstrates competency, and,
- Use the Logbook as a guide to evaluate competence in each skill area. By using the Logbook, Trainers will be able to guide the process to and assist Apprentices to develop skills outlined in this document.

The best mentoring experience is when an Apprentice is given as much training/exposure to the full scope of the trade as possible. If this is not possible, help them to determine other ways this may be possible.

Notice of Collection of Personal Information

1. At any time during your apprenticeship training, you may be required to show this Logbook to the local Service Delivery Office. You will be required to submit the signed Apprenticeship Completion form to the Service Delivery Office in order to complete your program. The Service Delivery Office 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 Service Delivery Office will disclose information about your program completion and your Certificate of Apprenticeship to Skilled Trades Ontario, as it is necessary for Skilled Trades Ontario to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry of Labour, Immigration, Training and Skills Development under the authority of the *Building Opportunities in the Skilled Trades Act, 2021 (BOSTA)*.
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 Labour, Immigration, Training and Skills Development
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084

6970.0 Occupational Health and Safety Procedures

General Performance Objective

Comply with occupational health and safety procedures by: identifying and taking corrective action against potential workplace health and safety hazards; handling, storing and disposing of hazardous workplace materials; wearing and maintaining personal protective equipment; complying with workplace-related legislation, relating to highway traffic safety, parts, warranties, occupational health/safety, environmental protection and, business and trade practices; interpreting and applying service-related information; practicing good housekeeping in the workplace; complying with Workplace Hazardous Materials Information System (WHMIS) guidelines; according to Occupational Health and Safety Act, government regulations, company policy and manufacturer's recommendations.

Performance Objectives

Skills

6970.01 Identify and take corrective action against potential workplace health and safety hazards, including: excessive exhaust and/or explosive fumes, dust, sound levels, electrical and mechanical hazards (i.e., damaged or faulty air lines and hoses and/or inadequate ventilation); so that the potential for personal injury, damage to equipment, vehicles and the environment are minimized; according to government regulations, manufacturer's specifications and company policy.

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6970.02 Handle, store and dispose of hazardous workplace materials, including: cleaning solvents, new and used lubricants and fluids, brake dust, battery acid and gases; using personal protective equipment and specified handling and storage equipment; so that individuals are protected from injury, the environment from contamination and safety procedures followed; according to government regulations, manufacturer’s recommendations, specifications and company policy.

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6970.03 Wear and maintain personal protective equipment, including: eye, ear, 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 government regulations, Workplace Joint Health and Safety Committee, manufacturer’s recommendations, specifications and company policy.

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6970.04 **Comply with workplace-related legislation, relating to highway traffic safety, parts, warranties, occupational health/safety, environmental protection and business and trade practices**, including: *Occupational Health and Safety Act, Motive Vehicle Repair Act, Highway Traffic Act* and the *Environmental Protection Act*; by identifying the personal and legal liabilities of technicians and vehicle owners, when performing and/or conducting vehicle safety inspections, emissions tests, work estimates, repairing and/or replacing defective parts; according to government regulations.

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6970.05 **Interpret and apply service-related information**, including: service bulletins, manuals and parts catalogues; by locating and identifying Vehicle Identification Number (VIN) and computerized service information systems, so that service/repair is performed; according to company policy and/or manufacturer's recommendations and specifications.

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6970.06 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, cleaning up grease, oil spills and/or fluids, ensuring work area is free of obstructions and safely storing tools and shop equipment, to minimize accident or injury to self and others; according to government regulations and company policy.

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6970.07 Comply with Workplace Hazardous Materials Information System (WHMIS) guidelines, including: reading and interpreting labels and Material Safety Data Sheets (MSDS) and ensuring receipt of training in WHMIS regulations and practices; according to *the Occupational Health and Safety Act*.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6971.0 Electrical Systems

General Performance Objective

Diagnose and repair electrical systems, by: performing a visual inspection, diagnosing and troubleshooting batteries; servicing and boosting/charging batteries; diagnosing and troubleshooting, repairing and verifying the repair of starting system and components; charging system and components; electrical, electronic and computer-controlled systems and components; electrical/electronic ignition systems and components hybrid drives and components; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6971.01 Perform visual inspection, identifying system types and applications, by checking for: worn, damaged, corroded, loose or defective components; including starting motors and drive mechanisms, alternating/direct current generators, voltage regulators, distributor components, batteries, fluids, lighting/illumination, boards/blocks, cables, connectors, coils, resistors, ignition modules, high tension wires, spark plugs, circuit protection devices, warning devices, theft-deterrent and electrical accessory devices, switches, solenoids, relays, modules, sensors, wiring harnesses, fasteners and mounting devices; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

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6971.02 **Diagnose and troubleshoot batteries**, by: inspecting, testing and analysing performance and function; checking for wear, damaged, worn, loose and missing components, state of charge, voltage, fluid level, leaks, cracks, opens/shorts/grounds, connections, corrosion, odour, fractures distortion and cleanliness; using specialized, precision and electronic service tools, amperage voltage resistance meter (AVR), load testers, chargers and hydrometers; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.03 **Service and boost/charge batteries**, including: single and multi-battery group; by neutralizing leakage, removing, charging and/or replacing; using hand tools, booster cables, , chargers, electrolyte, approved battery water, pullers, cleaning tools, hydrometers and refractometer according to government regulations, manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6971.04 **Diagnose and troubleshoot starting systems and components**, including: starting motors and drive mechanisms, batteries, cables, connectors, circuit protection devices, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, noise/vibration, odour, distortion, corrosion, fractures and temperature; using load testers, specialized, precision and electronic service tools; according to manufacturer’s recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6971.05 **Repair starting systems and components**, including: starting motors and drive mechanisms, batteries, neutral safety devices, cables, connectors, circuit protection devices, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning or servicing; using hand, power, specialized and electronic service tools; lifting and rigging and blocking devices according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.06 **Verify repair of starting systems and components**, including: starting motors and drive mechanisms, batteries, cables, connectors, circuit protection devices, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.07 Diagnose and troubleshoot charging systems and components, including: alternating/direct current generators, drive mechanisms, batteries, cables, connectors, circuit protection devices, voltage regulators, switches, relays, modules, sensors, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires, system voltage and amperage, vibration/noise, odour, corrosion, distortion, contamination and temperature; using amperage voltage resistance (AVR) testers, specialized, precision and electronic service tools and stethoscopes; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.08 Repair charging systems and components, including: alternating/direct current generators, drive mechanisms, batteries, cables, connectors, circuit protection devices, voltage regulators, warning devices, circuit protection devices, switches, relays, modules, sensors, wiring harnesses and fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.09 **Verify repair of charging systems and components**, including: alternating/direct current generators, drive mechanisms, batteries, cables, connectors, circuit protection devices, voltage regulators, switches, relays, modules, sensors, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.10 **Diagnose and troubleshoot electrical, electronic and computer-controlled systems and components**, including: batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules/electronic control modules, (ECM), warning devices, lighting/illumination, circuit protection, theft-deterrent and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, parasitic draw, diagnostic codes, routing of wires, temperature, corrosion, distortion, vibration/noise, colour and odour; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.11 Repair electrical, electronic and computer-controlled systems and components, including: batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, lighting/illumination, circuit protection, theft-deterrent and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by reprogramming, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.12 Verify repair of electrical, electronic and computer-controlled systems and components, including: batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, lighting/illumination, circuit protection, theft-deterrent and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.13 Diagnose and troubleshoot electrical/electronic ignition systems and components, including: distributor components, coils, resistors, ignition modules, high tension wires, spark plugs, switches, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, diagnostic codes, routing of wires, temperature, colour, system voltage, ignition timing, spark advance, leakage, corrosion and vibration/ noise; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6971.14 Repair electrical/electronic ignition systems and components, including: distributor components, coils, resistors, ignition modules, high tension wires, spark plugs, switches, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specification and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.15 **Verify repair of electrical/electronic ignition systems and components**, including: distributor components, coils, resistors, ignition modules, high tension wires, spark plugs, switches, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6971.16 **Diagnose and troubleshoot hybrid drives and components**, including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming, calibrating; checking for wear, opens/shorts/grounds, parasitic draw, diagnostic codes, routing of wires, temperature, corrosion, distortion, vibration/noise, colour and odour; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.17 Repair hybrid drives and components, including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by reprogramming, calibrating, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6971.18 Verify repair of hybrid drives and components, including: electric generators and motors, batteries, connectors, boards/blocks, cables, display panels, switches, solenoids, relays, sensors, modules, warning devices, circuit protection and electrical accessory devices, wiring harnesses and fasteners and mounting devices; by reprogramming, calibrating, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6972.0 Hydraulic Systems

General Performance Objective

Diagnose and repair hydraulic systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of mechanical-controlled hydraulic systems and components; electrical and electronic-controlled hydraulic systems and components; according to manufacturer’s recommendation, specifications and safety requirements.

Performance Objectives

Skills

6972.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, missing, or defective components, fluid level and condition; including pumps and motors, valves, actuators, cylinders, accumulators, reservoirs, controls, display panels, screens, filters, coolers, drive mechanisms, , lines and hoses, fittings, vents, fluids, seals, gaskets, mechanical controls, warning lights, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

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6972.02 Diagnose and troubleshoot mechanical controlled hydraulic systems and components, including: pumps and motors, valves, actuators, cylinders, accumulators, reservoirs, controls, display panels, screens, filters, coolers, drive mechanisms, lines and hoses, fittings, vents, fluids, seals, gaskets, gauges, mechanical controls, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, routing of lines and hoses, fluid level, leaks, odour, colour, distortion, corrosion, cavitation, aeration, contamination, pressure, flow, temperature and vibration/noise; using hand, power, specialized and precision tools, gauges, flow meters, sight glasses, thermometers and stethoscopes and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6972.03 **Repair mechanical controlled hydraulic systems and components**, including: pumps and motors, valves, actuators, cylinders, accumulators, reservoirs, controls, display panels, screens, filters, coolers, drive mechanisms, lines and hoses, fittings, vents, fluids, seals, gaskets, gauges, mechanical controls, fasteners and mounting devices; by exchanging, reconditioning or servicing; using hand, power, specialized and precision tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6972.04 **Verify repair of mechanical controlled hydraulic systems and components**, including: pumps and motors, valves, actuators, cylinders, accumulators, reservoirs, controls, display panels, screens, filters, coolers, drive mechanisms, lines and hoses, fittings, vents, fluids, seals, gaskets, gauges, mechanical controls, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6972.05 Diagnose and troubleshoot electrical and electronic controlled hydraulic systems and components, including: pumps and motors, actuators, cylinders, accumulators, reservoirs, controls, display panels, screens, , coolers, drive mechanisms, gauges, lines and hoses, fittings, venting devices, fluids, seals, valves, gaskets, switches, solenoids, relays, sensors, modules/electronic control modules (EMC), wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires, lines and hoses, fluid level, leaks, odour, colour, distortion, fractures, corrosion, cavitation, aeration, contamination, pressure, flow, temperature and vibration/noise; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6972.06 Repair electrical and electronic controlled hydraulic systems and components, including: pumps, actuators, motors, cylinders, accumulators, reservoirs, controls, display panels, screens, filters, coolers, drive mechanisms, gauges, lines and hoses, fittings, vents, fluids, seals, valves, gaskets, warning lights, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming, exchanging, reconditioning or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6972.07 **Verify repair of electrical and electronic controlled hydraulic systems and components**, including: pumps and motors, actuators, cylinders, accumulators, reservoirs, controls, screens, filters, coolers, drive mechanisms, gauges, lines and hoses, fittings, vents, fluids, seals, valves, gaskets, switches, solenoids, relays, sensors, modules/ electronic control modules (EMC), wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.0 Engine Systems

General Performance Objective

Diagnose and repair engines by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of cooling systems and components; engine lubricating systems and components; cylinder heads and components; engine blocks and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6973.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, missing, or defective components and leakage, including: radiators and reservoirs, pressure caps, controls, surge tanks, coolant, fans and hubs, coolant pumps, controls and actuators, belts, lines and hoses, fittings, filters, heat exchangers, gaskets, seals, valves, relays, sensors, temperature control devices, drive mechanisms, circuit protection devices, wiring harnesses, fasteners and mounting devices, pumps, housings, fluids, lubrication jets, bypass valves and auxiliary devices, fuel system actuators, pressure monitoring devices, cylinder heads, seats, guides, springs, retainers, rotators, actuating mechanisms, camshafts, injector tubes, gaskets, expansion plugs, engine blocks, piston assemblies, connecting rods, bearings, oil pans, liners, balancers, crankshafts, flywheels, gear trains, camshaft assemblies, pulleys, auxiliary drives; according to manufacturer's recommendations, specifications and safety requirements.

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6973.02 Diagnose and troubleshoot cooling systems and components, including: radiators and reservoirs, pressure caps and controls, surge tanks, coolant, fans and hubs, coolant pumps, controls and actuators, belts, lines and hoses, fittings, filters, heat exchangers, gaskets, seals, valves, relays, sensors, temperature control devices, drive mechanisms, circuit protection devices, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, routing of lines and hoses, leaks, odour, temperature, corrosion, distortion, fractures, contamination, colour, vibration/noise and coolant type; using hand, power, specialized, precision and electronic service tools, coolant analysis kit according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.03 Repair cooling systems and components, including: radiators and reservoirs, pressure caps and controls, surge tanks, coolant, fans and hubs, coolant pumps, controls and actuators, belts, lines and hoses, fittings, filters, heat exchangers, gaskets, seals, valves, relays, sensors, temperature control devices, drive mechanisms, circuit protection devices, wiring harnesses, fasteners and mounting and lifting, rigging and blocking devices; by exchanging, reconditioning, or servicing; using hand, power, electronic service and specialized tools according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.04 **Verify repair of cooling systems and components**, including: radiators and reservoirs, pressure caps and controls, surge tanks, coolant, fans and hubs, coolant pumps, controls and actuators, belts, lines and hoses, fittings, filters, heat (exchangers, gaskets, seals, valves, relays, sensors, temperature control devices, drive mechanisms, circuit protection devices, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.05 **Diagnose and troubleshoot engine lubricating systems and components**, including: pumps, filters and housings, lines and hoses, fittings, seals, fluids, lubrication jets, gaskets, heat exchangers, bypass valves and auxiliary devices, fuel system actuators, sensors, pressure monitoring devices, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, routing of lines and hoses, pressure, fluid level and condition, leaks, temperature, corrosion, distortion, contamination, fractures and vibration/noise; using hand, power, specialized, precision and electronic service tools, oil analysis kit and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.06 Repair engine lubricating systems and components, including: pumps, filters and housings, lines and hoses, fittings, seals, fluids, lubrication jets, gaskets, heat exchangers, bypass valves and auxiliary devices, fuel system actuators, sensors, pressure monitoring devices, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.07 Verify repair of engine lubricating systems and components, including: pumps, filters and housings, lines and hoses, fittings, seals, fluids, lubrication jets, gaskets, heat exchangers, bypass valves and auxiliary devices, fuel system actuators, sensors, pressure monitoring devices, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools, oil analysis kit and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.08 **Diagnose and troubleshoot cylinder heads and components**, including: cylinder heads, seats, guides, seals, springs, retainers, rotators, valves, actuating mechanisms, camshafts, drive mechanisms, injector tubes, gaskets, expansion plugs, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, temperature, colour, corrosion, distortion, contamination, erosion, cracks, vibration/noise, leaks and pressure; using hand, power, specialized and precision service tools, crack tests and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.09 **Repair cylinder heads and components**, including: cylinder heads, seats, guides, seals, springs, retainers, rotators, valves, actuating mechanisms, camshafts, drive mechanisms, injector tubes, gaskets, expansion plugs, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.10 **Verify repair of cylinder heads and components**, including: cylinder heads, seats, guides, seals, springs, retainers, rotators, valves, actuating mechanisms, camshafts, drive mechanisms, injector tubes, gaskets, expansion plugs, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.11 **Diagnose and troubleshoot engine blocks and components**, including: cylinder blocks, piston assemblies, connecting rods, bearings, fluids, seals, oil pans, expansion plugs, liners, balancers, crankshafts, flywheels, gear trains, camshaft assemblies, pulleys, auxiliary drives, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, temperature, colour, pressure, corrosion, distortion, contamination, cavitation, erosion, fractures, vibration/noise, cracks and leaks; using hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.12 **Repair engine blocks and components**, including: engine blocks, piston assemblies, connecting rods, bearings, fluids, seals, oil pans, expansion plugs, liners, balancers, crankshafts, flywheels, gear trains, camshaft assemblies, pulleys, auxiliary drives, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6973.13 **Verify repair of engine blocks and components**, including: engine blocks, piston assemblies, connecting rods, bearings, fluids, seals, oil pans, expansion plugs, liners, balancers, crankshafts, flywheels, gear trains, camshaft assemblies, pulleys, auxiliary drives, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6974.0 Intake, Exhaust, Emission Control and Engine Brake Systems

General Performance Objective

Diagnose and repair intake, exhaust, emission control and engine brake systems, by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of intake, exhaust and engine brake systems and components; turbocharger/supercharger systems and components; emission control systems and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6974.01 Perform visual inspection, identifying system types and applications, by checking for: leaking, worn, loose, missing, damaged, or defective components, including; heat shields, manifolds, piping, mufflers, air filters and coolers, indicators, turbochargers, superchargers, drive mechanisms, manifold boost control devices, emission control devices, engine brake systems, waste gates, piping, lines and hoses, fittings, actuators, gaskets, seals, lubricants, sensors, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

6974.02 Diagnose and troubleshoot intake, exhaust, engine brake systems and components, including: heat shields, manifolds, piping, mufflers, air filters and coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, odour, contamination, distortion, noise, fractures, pressure, restriction, exhaust colour, temperature, oil level and leaks; using hand, power, specialized and electronic service tools, pyrometers, gauges, manometers/vacuum gauges, infrared heat guns and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6974.03 Repair intake, exhaust and engine brake systems, including: heat shields, manifolds, piping, mufflers, air filters and intake and engine brake systems, coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning or servicing; using hand, power, specialized and electronic service tools, heating, cutting and welding equipment lifting and rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6974.04 Verify intake, exhaust and engine brake systems, including: heat shields, manifolds, piping, mufflers, air filters and coolers, indicators, actuators, gaskets, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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mm/dd/yy	Trainer Print Name	*Trainer Signature
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6974.05 Diagnose and troubleshoot turbocharger/supercharger systems and components, including: turbochargers, supercharger drive mechanisms, waste gates, piping, lines and hoses, fittings, gaskets, seals, manifold boost control devices, lubricants, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; by checking for wear, opens/shorts/grounds, routing of piping and lines and hoses, pressure, restrictions, temperature, distortion, contamination, corrosion, leaks, lubrication and noise/vibration; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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6974.06 Repair turbocharger/ supercharger systems and components, including: turbochargers, supercharger drive mechanisms, waste gates, piping, lines and hoses, fittings, gaskets, seals, manifold boost control devices, lubricants, sensors, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning or servicing; using hand, power, specialized, precision and electronic service tools and gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6974.07 **Verify repair of turbocharger/supercharger systems and components**, including: turbochargers, supercharger drive mechanisms, waste gates, piping, lines and hoses, fittings, gaskets, seals, manifold boost control devices, lubricants, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6974.08 **Diagnose and troubleshoot emission control systems and components**, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), piping, pumps, valves, lines and hoses, fittings, gaskets, seals, manifold boost control devices, electronic control systems, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; by checking for wear, opens/shorts/grounds, routing of piping and lines and hoses, pressure, restrictions, temperature, distortion, contamination, corrosion, leaks and noise/vibration; using hand, power, specialized, precision and electronic service tools and; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6974.09 Repair emission control systems and components, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), piping, pumps, valves, lines and hoses, fittings, gaskets, seals, manifold boost control devices, electronic control systems, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; by checking for wear, opens/shorts/grounds, routing of piping and lines and hoses, pressure, restrictions, temperature, distortion, contamination, corrosion, leaks and noise/vibration; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6974.10 Verify repair of emission control systems and components, including: exhaust gas recirculation (EGR), diesel particulate filter (DPF), diesel oxidation catalyst (DOC), selective catalytic reduction (SCR), diesel exhaust fluid system (DEF), piping, pumps, valves, lines and hoses, fittings, gaskets, seals, manifold boost control devices, electronic control systems, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; by checking for wear, opens/shorts/grounds, routing of piping and lines and hoses, pressure, restrictions, temperature, distortion, contamination, corrosion, leaks and noise/vibration; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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6975.0 Mechanical Controlled Fuel Systems

General Performance Objective

Diagnose and repair fuel delivery systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of gasoline mechanical controlled fuel systems and components; mechanical controlled diesel fuel systems and components; perform diesel fuel systems tune up; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6975.01 Perform visual inspection, identifying system types and applications, by checking for: fuel condition, worn, loose, damaged, missing, or defective components, including gasoline, fuel delivery controls, pressure control mechanisms, carburetors, regulators, mechanical linkages, governors, tanks, pumps, lines and hoses, fittings, vents, filters, separators, heaters, coolers, valves, injectors, aneroids, cables, throttle bodies, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

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6975.02 Diagnose and troubleshoot gasoline mechanical controlled fuel systems and components, including: gasoline, fuel delivery controls, pressure control mechanisms, carburetors, regulators, mechanical linkages, governors, tanks, pumps, lines and hoses, fittings, vents, filters, valves, injectors, throttle bodies, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, diagnostic codes, noise, routing of wires, lines and hoses, exhaust colour and odour, temperature, distortion, corrosion, contamination, fractures, vibration pressure, flow, fuel level and condition; using hand, power, specialized and electronic service tools, vacuum and pressure gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6975.03 Repair gasoline mechanical controlled fuel systems and components, including: gasoline, fuel delivery controls, pressure control mechanisms, carburetors, regulators, mechanical linkages, governors, tanks, pumps, lines and hoses, hoses, fittings, vents, filters, valves, injectors, throttle bodies, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming, exchanging, reconditioning, or servicing; using hand, power, specialized and electronic service tools, vacuum and pressure gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6975.04 **Verify repair of gasoline mechanical controlled fuel systems and components**, including: gasoline, fuel delivery controls, pressure control mechanisms, carburetors, regulators, mechanical linkages, governors, tanks, pumps, lines and hoses, hoses, fittings, vents, filters, valves, injectors, throttle bodies, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; using hand, power, specialized and electronic service tools, vacuum and pressure gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6975.05 **Diagnose and troubleshoot mechanical controlled diesel fuel systems and components**, including: fuel, tanks, lines and hoses, fittings, vents, filters, separators, heaters, coolers, valves, pumps, mechanical linkages, governors, aneroids, cables, air throttles, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, open/shorts/grounds, routing of wires, lines and hoses, odour, contamination, distortion, corrosion, temperature, exhaust colour, fractures, vibration/noise and fuel condition; using hand, power, specialized, precision and electronic service tools, pressure and vacuum gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6975.06 **Repair mechanical controlled diesel fuel systems and components**, including: fuel, tanks, lines and hoses, fittings, vents, filters, separators, heaters, coolers, valves, pumps, mechanical linkages, governors, aneroids, cables, air throttles, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools, pressure and vacuum gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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6975.07 **Verify repair of mechanical-controlled diesel fuel systems and components**, including: fuel, tanks, lines and hoses, fittings, vents, filters, separators, heaters, coolers, valves, pumps, mechanical linkages, governors, aneroids, cables, air throttles, injectors, switches, solenoids, relays, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analyzing performance and function; using hand, power, specialized, precision and electronic service tools, pressure and vacuum gauges and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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6975.08 Perform mechanical diesel engine tune-ups, by: testing fuel, compression and crankcase pressure, checking and/or replacing fuel and air filters, intake system, exhaust systems, manifold boost pressure and controls, valve adjustment, injection pump timing, set-up governors, shut down systems, testing and reconditioning injectors, injection pumps, aneroids, primary fuel supply systems, starting aids; using hand, power, specialized, precision and electronic service tools, dynamometers and manometers; according to manufacturer's recommendations, specifications and safety requirements.

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6976.0 Electronic Controlled Fuel Systems

General Performance Objective

Diagnose and repair electronic controlled fuel systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of electronic-controlled gasoline engine systems and components; electronic- controlled diesel engine systems and components; perform gasoline engine tune- ups, electronic diesel engine tune-ups; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6976.01 Perform visual inspection, identifying system types and applications, by checking for: fuel condition, exhaust colour, worn, loose, damaged, missing or defective components, including air filters, exhaust systems, emission control systems, electronic unit injectors (EUI), high pressure common rail (HPCR), injection pumps, primary fuel supply systems, air/fuel mixture, starting aids, circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

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6976.02 Diagnose and troubleshoot electronic controlled gasoline engine systems and components, including: circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, routing of wires, system voltage, diagnostic codes, temperature, colour, corrosion and vibration/noise; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

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mm/dd/yy	Trainer Print Name	*Trainer Signature
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6976.03 Repair electronic controlled gasoline engine systems and components, including: circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6976.04 Verify repair of electronic controlled gasoline engine systems and components, including: circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; using specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6976.05 Diagnose and troubleshoot electronic controlled diesel engine systems and components, including: pumps, injectors, circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, system voltage, diagnostic codes, routing of wires, temperature, colour, corrosion, fractures and vibration/noise; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6976.06 Repair electronic controlled diesel engine systems and components, including: pump, injectors, circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming, calibrating, exchanging, reconditioning, or servicing; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6976.07 Verify repair of electronic-controlled diesel engine systems and components, including: pumps, injectors, circuit protection devices, drivers, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6976.08 Perform gasoline engine tune-ups, by: testing fuel, compression/vacuum and crankcase pressure; checking and/or replacing spark plugs, air filters and intake systems, exhaust systems, high-tension wires, distributor components, fuel filters, checking and/or adjusting ignition timing, governors, valves, idle speed, air/fuel mixture and emission control devices; using hand, power, specialized, precision and electronic service tools, dynamometers and manometers; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6976.09 Perform electronic diesel engine tune-ups, by: testing fuel, compression and crankcase pressure, checking and/or replacing fuel filters, air filter and intake system, exhaust systems, manifold boost pressure, electrical system, valve adjustment, electronic unit injectors (EUI), high pressure common rail (HPCR), electronic controlled pumps, primary fuel supply systems, starting aids, checking and/or adjusting injection timing, idle speed, shut down systems and emission control devices; using hand, power, specialized, precision and electronic service tools, dynamometers and manometers; according to manufacturer's recommendations, specifications and safety requirements.

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6977.0 Clutches and Transmissions

General Performance Objective

Diagnose and repair clutch and transmissions systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of clutch systems and components; manual transmissions/transfer cases and components; mechanical controlled power shift transmission and components; electrical and electronic-controlled power shift continuously variable transmissions (CVT) and components; hydrostatic transmissions and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6977.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, missing, or defective components, including housings, reservoirs, vents and drains, air/hydraulic cylinders, clutch discs and plates, flywheels, mechanical and electronic controlled mechanisms, gear sets, clutches, synchronisers, power take-off (PTO) units, actuators, coolers, servos, pumps, motors, bearings, springs, cables, gears, shafts, seals, gaskets, lubrication systems, vents, filters, linkages, gauges, valves assemblies, lines and hoses, fittings, fluids, switches, warning devices, control modules, solenoids, sensors, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

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6977.02 **Diagnose and troubleshoot clutch systems and components**, including: housings, reservoirs, vents and drains, air/hydraulic cylinders, clutch discs and plates, flywheels, release and drive mechanisms, shafts, cables, linkages, lines and hoses, fittings, fluids, switches, solenoids, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, routing of lines and hoses, odour, temperature, corrosion, fractures, contamination, vibration/noise, colour, lubrication, pressure, alignment, adjustments, slip, release and drag; using hand, power, electronic service and specialized tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6977.03 **Repair clutch systems and components**, including: housings, reservoirs, vents and drains, air/hydraulic cylinders, clutch discs and plates, flywheels, release and drive mechanisms, bearings, shafts, cables, linkages, lines and hoses, fittings, fluids, switches, solenoids, sensors, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power, electronic service and specialized tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6977.04 **Verify repair of clutch systems and components**, including: housings, reservoirs, vents and drains, air/hydraulic cylinders, clutch discs and plates, flywheels, release and drive mechanisms, bearings, shafts, cables, linkages, lines and hoses, fittings, fluids, switches, solenoids, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, electronic service and specialized tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6977.05 **Diagnose and troubleshoot manual transmissions/transfer cases and components**, including: housings, gears, shafts, synchronizers, shift and park lock mechanisms, power take-off (PTO) units, bearings, seals, gaskets, fluids, lubrication systems, vents, filters, sensors, switches, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, fluid level and condition, leaks, contamination, temperature, corrosion, distortion, fractures, vibration/noise, alignment, tolerances and gear backlash; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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mm/dd/yy	Apprentice Print Name	Apprentice Signature

6977.06 Repair manual transmissions/transfer cases and components, including: housings, gears, shafts, synchronizers, shift and park lock mechanisms, power take-off (PTO) units, bearings, seals, gaskets, fluids, lubrication systems, vents, filters, sensors, switches, modules, wiring harnesses, fasteners and mounting devices; by serving , reconditioning, exchanging or replacing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6977.07 Verify repair of manual transmissions/transfer cases and components, including: housings, gears, shafts, synchronizers, shift and park lock mechanisms, power take-off (PTO) units, bearings, seals, gaskets, fluids, lubrication systems, vents, filters, sensors, switches, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6977.08 Diagnose and troubleshoot mechanical controlled power shift transmissions and components, including: housings, shafts, synchronisers, springs, gears, brake and clutch packs, valve assemblies, shift and park lock mechanisms, actuators, power take-off (PTO) units, bearings, filters, coolers, pumps, fluids, lubrication systems, seals, gaskets, lines and hoses, fittings, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, fluid level and condition, leaks, corrosion, distortion, fractures, temperature, alignment, tolerances and vibration/noise: using hand, power and precision tools, gauges, flow devices and; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6977.09 Repair mechanical controlled power shift transmissions and components, including: housings, shafts, springs, gears, brake and clutch packs, valve assemblies, shift and park lock mechanisms, actuators, power take-off (PTO) units, bearings, filters, coolers, pumps, fluids, lubrication systems, seals, gaskets, lines and hoses, fittings, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, or servicing; using hand, power and precision tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6977.10 **Verify repair of mechanical controlled power shift transmissions and components**, including: housings, shafts, springs, gears, clutch and brake packs, valve assemblies, shift and park lock mechanisms, actuators, power take-off (PTO) units, bearings, filters, coolers, pumps and motors, fluids, lubrication systems, seals, gaskets, lines and hoses, fittings, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using hand, power, and precision tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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6977.11 **Diagnose and troubleshoot electrical and electronic controlled power shift continuously variable transmission (CVT) components**, including: warning devices, controls and actuators, control modules, systems monitoring devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming; checking for wear, opens/shorts/grounds, routing of wires, parameters, diagnostic codes, system voltage and amperage, temperature, colour, corrosion, fractures, distortion, alignment, tolerances and vibration/noise; using hand, power and precision tools; according to manufacturer's recommendations, specifications and safety requirements.

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6977.12 Repair electrical and electronic controlled power shift/ continuously variable transmission (CVT) components, including: warning devices, controls and actuators, control modules, systems monitoring devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, or servicing; using hand, power, specialized, and precision tools; according to manufacturer’s recommendations, specifications and safety requirements.

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6977.13 Verify repair of electrical and electronic controlled power shift/ continuously variable transmission (CVT) components, including: warning devices, controls and actuators, control modules, systems monitoring devices, switches, solenoids, relays, sensors, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating using hand, power, specialized and precision tools; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
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6977.14 Diagnose and troubleshoot hydrostatic transmissions and components, including: housings, drive mechanisms, pumps and motors, gears, bearings, seals, gaskets, coolers, heaters, control valves, filters, lines and hoses, fittings, reservoirs, fluids, vents, linkages, servos, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating ; checking for wear, opens/shorts/grounds, diagnostic codes, routing of wires and lines and hoses, fluid levels and condition, leaks, temperature, vibration/noise, corrosion, contamination, distortion, fractures, alignment, tolerances and pressure; using hand, power, specialized, precision and electronic service tools and lifting,; according to manufacturer’s recommendations, specifications and safety requirements.

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6977.15 Repair hydrostatic transmissions and components, including: housings, drive mechanisms, pumps and motors, gears, bearings, seals, gaskets, coolers, heaters, control valves, filters, lines and hoses, fittings, reservoirs, fluids, vents, linkages, servos, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, reprogramming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

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6977.16 **Verify repair of hydrostatic transmissions and components**, including: housings, drive mechanisms, pumps and motors, gears, bearings, seals, gaskets, coolers, heaters, control valves, filters, lines and hoses, fittings, reservoirs, fluids, vents, linkages, servos, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

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6978.0 Drive Axle and Final Drive Assemblies

General Performance Objective

Diagnose and repair drive shafts, differentials, final drives, axles and components by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of drive shafts, axles, differentials, final drives, and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6978.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, missing, or defective components, including drive shafts, universal joints, flanges, yokes, housings, vents, lines and hoses, fittings, carriers, shafts, gear sets, clutch packs, bearings, seals, gaskets, lubricants, actuators, wheel end assemblies, switches, solenoids, sensors, modules, warning devices, wiring harnesses, fasteners and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

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6978.02 Diagnose and troubleshoot drive shafts, axles, differentials, final drives and components, including: drive shafts, universal joints, flanges, yokes, housings, vents, lines and hoses, fittings, carriers, axles, gear sets, clutch packs, bearings, seals, gaskets, lubricants, actuators, wheel end assemblies, switches, solenoids, sensors, modules, warning devices, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, routing of wires, diagnostic codes, temperature, colour, leaks, alignment, tolerances, vibration/noise, corrosion, distortion, contamination, fractures, erosion and phasing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

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6978.03 Repair drive shafts, axles, differentials, final drives and components, including: drive shafts, universal joints, flanges, yokes, housings, vents, lines and hoses, fittings, carriers, axle shaft, gear sets, clutch packs, bearings, seals, gaskets, lubricants, actuators, wheel end assemblies, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by serving, reconditioning, exchanging, reprogramming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6978.04 Verify repair of drive shafts, axles, differentials, final drives and components, including: drive shafts, universal joints, flanges, yokes, housings, vents, lines and hoses, fittings, carriers, axle shafts, gear sets, clutch packs, bearings, seals, gaskets, lubricants, actuators, wheel end assemblies, switches, solenoids, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6979.0 Steering Systems

General Performance Objective

Diagnose and repair steering systems by: performing a visual inspection, diagnosing and troubleshooting; repairing and verifying the repair of steering systems and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6979.01 Perform visual inspection, identifying system types and applications, checking for: worn, loose, damaged, or defective components, including pumps and motors, drive mechanisms, housings, electric and hydraulic actuators, reservoirs, valves, controls, lines and hoses, fittings, fluids, lubricants, steering boxes, linkages, columns, ball joints, kingpins, steering and articulating stops, universal and articulating joints, accumulators, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

6979.02 Diagnose and troubleshoot steering systems and components, including: pumps and motors, drive mechanisms, housings, electric and hydraulic actuators, reservoirs, valves, lines and hoses, fittings, fluids, lubricants, steering boxes, linkages, columns, ball joints, kingpins, steering and articulating stops, universal and articulating joints, accumulators, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, temperature, lubrication, fluid level, leaks, contamination, pressure, flow, colour, alignment, tolerances, vibration/noise, stability, corrosion, erosion, fractures and distortion; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6979.03 **Repair steering systems and components**, including: pumps and motors, drive mechanisms, housings, electric and hydraulic actuators, reservoirs, valves, lines and hoses, fittings, fluids, lubricants, steering boxes, linkages, columns, ball joints, kingpins, steering and articulating stops, universal and articulating joints, accumulators, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by: exchanging, reconditioning, aligning, reprogramming and calibrating, or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6979.04 **Verify repair of steering systems and components**, including: pumps and motors, drive mechanisms, housings, electric and hydraulic actuators, reservoirs, valves, lines and hoses, fittings, fluids, lubricants, steering boxes, linkages, columns, ball joints, kingpins, steering and articulating stops, universal and articulating joints, accumulators, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6980.0 Braking Systems

General Performance Objective

Diagnose and repair braking systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of braking systems and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6980.01 Perform visual inspection, identifying system types and applications, checking for: worn, loose, damaged, defective, or missing components; including drums, friction materials, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, shields, lines and hoses, fittings, accumulators, reservoirs, fluids, lubricants, actuators, screens, traction control, systems monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6980.02 Diagnose and troubleshoot braking systems and components, including: drums, friction materials, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, shields, lines and hoses, fittings, accumulators, reservoirs, fluids, actuators, screens, traction control, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming, checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, temperature, fluid level and condition, lubrication, leaks, contamination, pressure, flow, vibration/noise, alignment, tolerances, stability, corrosion, erosion, distortion and fractures; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6980.03 Repair braking systems and components, including: drums, friction materials, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, shields, lines and hoses, fittings, accumulators, fluids, reservoirs, actuators, screens, traction control, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, adjusting, reprogramming or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6980.04 **Verify repair of braking systems and components**, including: drums, friction materials, calipers, discs, rotors, bands, backing plates, springs, adjusting mechanisms, linkages, shields, lines and hoses, fittings, accumulators, fluids, reservoirs, actuators, screens, traction control, system monitoring devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance function and programming; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6981.0 Air Supply and Auxiliary Air Systems

General Performance Objective

Diagnose and repair air supply and auxiliary air systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of air supply and auxiliary air systems and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6981.01 Perform visual inspection, identifying system types and applications, checking for: worn, loose, damaged, missing, restricted, or defective components; including compressors, fans, drive mechanisms, governors, cooling and lubrication systems, filters, manifolds, reservoirs, lines and hoses, fittings, seals, gaskets, valves, actuators, gauges, system monitoring and warning devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses and fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

6981.02 Diagnose and troubleshoot air supply and auxiliary air systems and components, including: compressors, fans, drive mechanisms, governors, cooling and lubrication systems, filters, manifolds, reservoirs, lines and hoses, fittings, seals, gaskets, valves, actuators, gauges, systems monitoring and warning devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses and fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, temperature, colour, fluid level, lubrication, leaks, contamination, pressure, flow/velocity, tolerances, vibration/noise, corrosion, distortion, erosion and fractures; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6981.03 **Repair air supply and auxiliary air systems and components**, including: compressors, fans, drive mechanisms, governors, cooling and lubrication systems, filters, manifolds, reservoirs, lines and hoses, fittings, seals, gaskets, valves, actuators, gauges, system monitoring and warning devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by exchanging, reconditioning, servicing, reprogramming and calibrating; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6981.04 **Verify repair of air supply and auxiliary air systems and components**, including: compressors, fans, drive mechanisms, governors, cooling and lubrication systems, filters, manifolds, reservoirs, lines and hoses, fittings, seals, gaskets, valves, actuators, gauges, system monitoring and warning devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming and calibrating ; using hand, power, specialized, precision and electronic service tools; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6982.0 Suspension Systems

General Performance Objective

Diagnose and repair suspension systems, by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of suspension systems and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6982.01 Perform visual inspection, identifying system types and applications, checking for: leaks worn, loose, damaged, missing, or defective components; including: shock absorbers, cylinders, springs (rubber block, leaf and air), shackles, bushings, equalizing beams, struts, hangers, lines and hoses, fittings, lubricants, gauges, valves, controls, system monitoring and warning devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6982.02 Diagnose and troubleshoot suspension systems and components, including: shock absorbers, cylinders, springs (rubber block, leaf and air), shackles, bushings, equalizing beams , struts, hangers, lines and hoses, fittings, lubricants, gauges, valves, controls, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, routing of lines and hoses, temperature, lubrication, leaks, pressure, vibration/noise, alignment, stability, corrosion, erosion, distortion, fractures, system monitoring, warning devices and circuit protection devices, by visually inspecting testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6982.03 Repair suspension system and components, including: shock absorbers, cylinders, springs (rubber block, leaf and air), shackles, bushings, equalizing beams, struts, hangers, lines and hoses, fittings, lubricants, gauges, valves, controls, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; by exchanging, reconditioning, aligning, or servicing system monitoring, warning devices and circuit protection devices, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6982.04 **Verify repair of suspension system and components**, including: shock absorbers, cylinders, springs (rubber block, leaf and air), shackles, bushings, equalizing beams, struts, hangers, lines and hoses, fittings, lubricants, gauges, valves, controls, fasteners and mounting devices servicing system monitoring, warning devices and circuit protection devices, by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.0 Tires, Wheels, Ballasting, Undercarriages and Tracks

General Performance Objective

Diagnose and replace tires, wheels and ballasting by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of tires, wheels, ballasting and components; undercarriages, tracks (rubber and steel) and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6983.01 Perform inspection, identifying system types and applications, checking for: worn, loose, damaged, missing, overheated, or defective components and leaks, including rims, hubs, valves, caps, locking channels, spacers, tire ballast, sprockets, idlers, tracks, (rubber and steel) frames, adjusters, rollers, rock guards, hubs, bearings, seals, gaskets, lubricants, pads, links, pins, bushings, guides, springs, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6983.02 Diagnose and troubleshoot tires, wheels, ballasting and components, including: rims, hubs, valves, caps, locking channels, spacers, tire ballast, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, tire matching and condition, mounting arrangement, alignment, corrosion, , wheel installation, gaps in split ring pressure, leaks, temperature, noise/vibration, distortion and lubrication; using ballast programs, hand, power, specialized and precision service tools, lubricants, lifting, rigging and blocking devices and safety cages; according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.03 **Replace tires, wheels, ballasting and components**, including: rims, hubs, valves, caps, locking channels, spacers, tire ballast, fasteners and mounting devices; by exchanging, reconditioning, servicing, or calibrating; using ballast programs, hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.04 **Verify repair of tires, wheels, ballasting and components**, including: rims, hubs, valves, caps, locking channels, spacers, tire ballast, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using ballast programs, hand, power, specialized and precision service tools, lifting, rigging and blocking devices and safety cages; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.05 Diagnose and troubleshoot undercarriages and components, including: sprockets, idlers, tracks (steel & rubber), frames, adjusters, rollers, rock guards, hubs, bearings, seals, gaskets, lubricants, pads, links, pins, bushings, guides, springs, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, corrosion, distortion, odour, colour, lubrication, contamination, pressure, temperature, noise/vibration, alignment and tolerances; using ballast programs, hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.06 Repair undercarriages and components, including: sprockets, idlers, tracks, frames, adjusters, rollers, rock guards, hubs, bearings, seals, gaskets, lubricants, pads, links, pins, bushings, guides, springs, fasteners and mounting devices; by tracks (steel & rubber), visually inspecting, testing and analysing performance and function; by exchanging, reconditioning, servicing, or adjusting; using ballast programs, hand, power, specialized and precision service tools, lifting, rigging and blocking devices and safety cages; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6983.07 **Verify repair of undercarriages and components**, including: sprockets, idlers, tracks (steel & rubber), frames, adjusters, rollers, rock guards, hubs, bearings, seals, gaskets, lubricants, pads, links, pins, bushings, guides, springs, fasteners and mounting devices; by visually inspecting, testing and analysing performance and function; using ballast programs, hand, power, specialized and precision service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.0 Climate Control Systems

General Performance Objective

Diagnose and repair climate control systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of heating and ventilation systems and components, air-conditioning systems and components; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6984.01 Perform visual inspection, identifying system types and applications, checking for: worn, loose, damaged, missing, leaking, or defective components, fluid types, fluid levels and condition; including controls, actuators, drive mechanisms, fans, motors, pumps, compressors, accumulators, condensers, evaporators, heat exchangers, auxiliary heaters/coolers, receiver/dryers, ducting, lines and hoses, fittings, cables, gaskets, fluids, lubricants, seals, valves, filters, warning devices, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to, manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

6984.02 Diagnose and troubleshoot heating and ventilation systems and components, including: controls, actuators, drive mechanisms, pumps and motors, fluids, filters, heat exchangers, heater core auxiliary heaters/coolers, ducting, lines and hoses, fittings, cables, valves, warning devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance function, programming and calibrating; checking for wear, opens/shorts/grounds, diagnostic codes, routing of wires, lines and hoses, odour, colour, corrosion, distortion, fractures, temperature, vibration/noise, contamination, fluid levels, pressure and leaks; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.03 Repair heating and ventilation systems and components, including: controls, actuators, drive mechanisms, motors, pumps, fluids, filters, heat exchangers, auxiliary heaters/coolers, ducting, lines and hoses, fittings, cables, valves, warning devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by servicing, reconditioning, reprogramming, calibrating or exchanging ; using hand, power, specialized, precision and electronic service tools; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.04 **Verify repair of heating and ventilation systems and components**, including: controls, actuators, drive mechanisms, motors, pumps, fluids, filters, heat exchangers, auxiliary heaters/coolers, ducting, lines and hoses, fittings, cables, valves, warning devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and ; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.05 **Diagnose and troubleshoot air conditioning systems and components**, including: compressors, condensers, evaporators, receiver/dryers, accumulators, actuators, valves, drive mechanisms, fans, motors, ducting, filters, lines and hoses, fittings, gaskets, fluids, lubricants, gaskets, seals, controls, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming and calibrating by; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, odour, corrosion, distortion, fractures, temperature, contamination, vibration/noise, pressure and leaks; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to government regulations, manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.06 **Repair air conditioning systems and components**, including: compressors, condensers, evaporators, receiver/dryers, accumulators, actuators, valves, drive mechanisms, fans, motors, ducting, filters, lines and hoses, fittings, gaskets, fluids, lubricants, gaskets, seals, controls, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, recharging or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6984.07 **Verify repair of air conditioning systems and components**, including: compressors, condensers, evaporators, receiver, dryers, accumulators, actuators, valves, drive mechanisms, fans, motors, ducting, filters, lines and hoses, fittings, gaskets, fluids, gaskets, seals, controls, circuit protection devices, switches, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6985.0 Structural Components and Accessories

General Performance Objective

Diagnose and repair structural components and accessories by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of structural components and accessories; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6985.01 Perform visual inspection, identifying system types and components, by checking for: worn, loose, damaged, or missing components including roll-over protection structure (ROPS), exterior body panels and trim, doors, catwalks, ramps, rails, ladders, steps, reflective materials, weather-stripping, locks, hinges, latches, hood supports, hitches, anchoring devices, glass, lenses, housings, mirrors, antennae, roof hatches, adhesives, interior trim, flooring, panels, roof lining, doors, reinforced bars, seats, upholstery, occupant restraints, fastening and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6985.02 Diagnose and troubleshoot structural components and accessories, including: roll-over protective structure (ROPS), exterior body panels and trim, doors, catwalks, ramps, rails, ladders, steps, reflective materials, weather-stripping, locks, hinges, latches, hood supports, hitches, anchoring devices, glass, lenses, housings, mirrors, antennae, roof hatches, adhesives, interior trim, flooring, panels, roof lining, , reinforced bars, seats, upholstery, occupant restraints, fastening and mounting devices; by visually inspecting, testing and analysing performance and function; checking for wear, vibration/ noise, corrosion, distortion, alignment, fractures and leaks; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6985.03 Repair structural components and accessories, including: roll over protective structure (ROPS), exterior body panels and trim, doors, catwalks, ramps, rails, ladders, steps, reflective materials, weather-stripping, locks, hinges, latches, hood supports, hitches, anchoring devices, glass, lenses, housings, mirrors, antennae, roof hatches, adhesives, interior trim, flooring, panels, roof lining, doors, reinforced bars, seats, upholstery, occupant restraints, fastening and mounting devices; by exchanging, replacing, or servicing; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6985.04 **Verify repair of structural components and accessories** including: roll over protective structure (ROPS), exterior body panels and trim, doors, catwalks, ramps, rails, ladders, steps, reflective materials, weather-stripping, locks, hinges, latches, hood supports, hitches, anchoring devices, glass, lenses, housings, mirrors, antennae, roof hatches, adhesives, interior trim, flooring, panels, roof lining, doors, reinforced bars, seats, upholstery, occupant restraints, fastening and mounting devices; by testing and analysing performance and function; using hand, power, specialized, precision and electronic service tools and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6986.0 Agricultural Implements – Tillage and Planting

General Performance Objective

Diagnose and repair tillage and planting implements by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of tillage and planting equipment and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6986.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, defective, or missing components, including ground engaging components, frames, depth control systems, product delivery systems, product metering devices, hitching and coupling devices, lines and hoses, fittings, shanks, springs, lubricants, systems monitors, locking devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6986.02 Diagnose and troubleshoot tillage, planting equipment and components, including: ground engaging components, frames, depth control systems, product delivery systems, product metering devices, hitching and coupling devices, lines and hoses, fittings, shanks, springs, lubricants, system monitors, locking devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, corrosion, erosion, distortion, alignment, fractures, contamination, odour, pressure, colour, temperature, leaks, noise/vibration, tolerances and lubrication; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6986.03 Repair tillage, planting equipment and components, including: ground engaging components, frames, depth control systems, product delivery systems, product metering devices, hitching and coupling devices, lines and hoses, fittings, shanks, springs, lubricants, system monitors, locking devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6986.04 **Verify repair of tillage, planting equipment and components**, including: ground engaging components, frames, depth control systems, product delivery systems, product metering devices, hitching and coupling devices, lines and hoses, fittings, shanks, springs, lubricants, system monitors, locking devices, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6987.0 Agricultural Implements – Harvesting

General Performance Objective

Diagnose and repair harvesting equipment by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of harvesting equipment and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6987.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, defective, or missing components, including cutting, feeding, separating, cleaning, compacting and delivery devices, depth control systems, hitching and coupling devices, locking devices, belts, pulleys, chains, sprockets, frames, springs, lines and hoses, fittings, lubricants, system monitors and circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6987.02 Diagnose and troubleshoot harvesting equipment and components, including: cutting, feeding, separating, cleaning, compacting and delivery devices, depth control systems, hitching and coupling devices, locking devices, belts, pulleys, chains, sprockets, frames, springs, lines and hoses, fittings, lubricants, systems monitors, interfaces and circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, corrosion, erosion, distortion, alignment, tolerances, lubrication, leaks, odour, contamination, pressure, colour, temperature, noise/vibration and fractures; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6987.03 Repair harvesting equipment and components, including: cutting, feeding, separating, cleaning, compacting and delivery devices, depth control systems, hitching and coupling devices, locking devices, belts, pulleys, chains, sprockets, frames, springs, lines and hoses, fittings, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6987.04 **Verify repair of harvesting equipment and components**, including: cutting, feeding, separating, cleaning, compacting and delivery devices, depth control systems, hitching and coupling devices, locking devices, belts, pulleys, chains, sprockets, frames, springs, lines and hoses, fittings, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function and programming and calibrating; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6988.0 Agricultural Implements – Spraying, Irrigation and Distribution Equipment

General Performance Objective

Diagnose and repair spraying, irrigation and distribution equipment by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of spraying, irrigation and distribution equipment and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6988.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, defective, or missing components, including: product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, lines and hoses, fittings, seals, gauges, fluids, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6988.02 Diagnose and troubleshoot spraying, irrigation, distribution equipment and components, including: product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, lines and hoses, fittings, seals, gauges, fluids, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing, performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, corrosion, erosion, distortion, alignment, tolerances, contamination, fractures, flow pressure, colour, temperature, noise/vibration, lubrication and leaks; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6988.03 Repair spraying, irrigation, distribution equipment and components, including: product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, lines and hoses, fittings, seals, gauges, fluids, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6988.04 **Verify repair of spraying, irrigation, distribution equipment and components**, including: product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, lines and hoses, fittings, seals, gauges, fluids, lubricants, system monitors, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6989.0 Agricultural Implements – Material Handling Equipment

General Performance Objective

Diagnose and repair material handling equipment by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of material handling equipment and components; according to manufacturer’s recommendations, specifications and safety requirements.

Performance Objectives

Skills

6989.01 Perform visual inspection, identifying system types and applications, by checking for: worn, loose, damaged, defective, or missing components, including: augers, conveyors, hoppers, spreaders, tanks, platforms, loaders and attachments, blades, blowers, cutters, product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, cylinders, lines and hoses, fittings, seals, fluids, lubricants, system monitoring devices, shielding, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer’s recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice’s Sponsor.**

6989.02 Diagnose and troubleshoot material handling equipment and components, including: augers, conveyors, hoppers, spreaders, tanks, platforms, loaders and attachments, blades, superchargers, cutters, product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, cylinders, lines and hoses, fittings, seals, fluids, lubricants, system monitoring devices, shielding, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires and lines and hoses, corrosion, erosion, distortion, fractures, contamination, pressure, flow, colour, temperature, noise/vibration, alignment, tolerances, leaks and lubrication; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6989.03 Repair material handling equipment and components, including: augers, conveyors, hoppers, spreaders, tanks, platforms, loaders and attachments, blades, blowers, cutters, product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, cylinders, lines and hoses, fittings, seals, fluids, lubricants, system monitoring devices, shielding, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6989.04 **Verify repair of material handling equipment and components,** including: augers, hoppers, spreaders, tanks, platforms, loaders and attachments, blades, superchargers, cutters, product delivery devices, frames, application control systems, hitching and coupling devices, locking devices, springs, cylinders, lines and hoses, fittings, seals, fluids, lubricants, system monitoring devices, shielding, circuit protection devices, switches, solenoids, relays, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools, personal protective and environmental control equipment and lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirement.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6990.0 Precision Agricultural Systems

General Performance Objective

Diagnose and repair precision agricultural systems by: performing a visual inspection, diagnosing and troubleshooting, repairing and verifying the repair of precision agricultural systems and components; according to manufacturer's recommendations, specifications and safety requirements.

Performance Objectives

Skills

6990.01 Perform visual inspection, identifying system types and applications, checking for: worn, loose, damaged, defective, or missing components, including system monitoring devices, circuit protection devices, position and differential receivers, data collection devices, sensors, modules, wiring harnesses, fasteners and mounting devices; according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

*** A Trainer may be a Supervisor or the competent employee designated by the Apprentice's Sponsor.**

6990.02 Diagnose and troubleshoot precision agricultural systems and components, including: system monitoring devices, circuit protection devices, position and differential receivers, data collection devices, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; checking for wear, opens/shorts/grounds, routing of wires, distortion, fractures, temperature, noise/vibration alignment and tolerances; using hand, power, specialized, precision and electronic service tools, according to manufacturer's recommendations, specifications and safety requirements.

Agricultural Equipment Technician

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6990.03 **Repair precision agricultural systems and components**, including: system monitoring devices, circuit protection devices, position and differential receivers, data collection devices, sensors, modules, wiring harnesses, fasteners and mounting devices; by reprogramming and calibrating, exchanging, reconditioning, servicing, or adjusting; using hand, power, specialized, precision and electronic service tools, according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

6990.04 **Verify repair of precision agricultural systems and components**, including: system monitoring devices, circuit protection devices, position and differential receivers, data collection devices, sensors, modules, wiring harnesses, fasteners and mounting devices; by visually inspecting, testing and analysing performance, function, programming and calibrating; using hand, power, specialized, precision and electronic service tools, according to manufacturer's recommendations, specifications and safety requirements.

mm/dd/yy	Trainer Print Name	*Trainer Signature
mm/dd/yy	Apprentice Print Name	Apprentice Signature

Definitions

Apprentice

- An individual who, pursuant to a registered Training Agreement, is receiving or is to receive training in a trade that is required as part of an apprenticeship program
- Holds a Training Agreement in either a compulsory or non-compulsory trade;
- Are subject to any ratios that have been set out in regulation and or recommended by industry for their trade(s);
- Remain as an Apprentice until they receive their Certificate of Apprenticeship

BOSTA

Building Opportunities in the Skilled Trades Act, 2021 (BOSTA)

Certificate of Apprenticeship (C of A)

A certificate issued to individuals who have demonstrated that they have completed an apprenticeship program in Ontario.

Certificate of Qualification (C of Q)

A certificate issued to an individual who has completed an apprenticeship or equivalent AND passed the Certificate of Qualification examination.

Competence

The ability of an individual to perform a skill, consistently without assistance, in the workplace as set out in the Logbook.

Competency Analysis Profile (CAP Chart)

A chart that identifies the training needs of an individual trade and details the skills/skill sets that must be demonstrated during an apprenticeship program.

Journeyman

Journeyman means an individual who holds a certificate of qualification (in a compulsory or non-compulsory trade) and/or an individual who practices as a journeyman in a non-compulsory trade who does not hold a certificate of qualification and has equivalent experience in that trade.

Mandatory Skill

Status assigned to unshaded individual skills, skill sets or general performance objectives which must be signed-off for the Apprentice to complete their program.

Optional Skill

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

Provisional Certificates of Qualification

- A Provisional Certificate of Qualification is issued to an individual who has obtained a Certificate of Apprenticeship (in both compulsory and non-compulsory trades) in a program that has a Certificate of Qualification examination, to which the individual has not yet passed the Certificate of Qualification examination.
- A Provisional Certificate of Qualification shall have the prescribed term or, if no term is prescribed, a term of one year.
- In a compulsory trade, the Provisional Certificate of Qualification allows a person to continue working legally in the trade for up to 12 months while they work to pass the certifying exam.
- Individuals with a Provisional Certificate of Qualification are subject to any ratios that have been set out for their trade(s).

Ratios

For the purpose of an Apprenticeship program, a ratio is the maximum number of Journeypersons to Apprentices. The purpose of ratios is to provide consistent supervision, training and continuity of work.

Red Seal Program

The Interprovincial Standards Red Seal Program (also known as the Red Seal Program) was established more than 50 years ago to provide greater mobility across Canada for skilled workers and represents a standard of excellence for industry. Through the program, individuals are able to obtain a Red Seal endorsement on their provincial/territorial certificates by achieving 70% or higher on an interprovincial Red Seal examination.

The Interprovincial Standards Red Seal Program acknowledges their competence and ensures recognition of their certification throughout Canada without further examination. There are currently over 50 Red Seal designated trades. **The Red Seal Program is recognized as the interprovincial *standard of excellence* in the skilled trades.** The Interprovincial Standards Red Seal Program is a partnership between the Government of Canada, the Provinces, the Territories and various stakeholders.

Sign-off

Signature of the Sponsor of record, or an individual to whom that Sponsor has delegated signing authority, (e.g. Trainer) indicating an Apprentice's demonstration of competence.

Skill

Individual competency/task described in the Logbook.

Skill Sets

Group or selection of individual skills found in the Logbook.

Skill Set Completion for Sponsors

Listing for all skill sets and includes space for sign-off by Sponsor of record.

Sponsor

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 as part of an apprenticeship program.

Sponsor of Record

Refers to the Sponsor documented as being signatory to the registered Training Agreement or Contract of Apprenticeship. In order for a Sponsor to be considered for the training of Apprentices, they must identify that the workplace has qualified persons or the equivalent on site, and can identify that the workplace has the tools, equipment, materials, and processes which have been identified by the Industry representatives for the trade.

Trainer

An individual who oversees the performance of a task and sets the workplace expectations and practices for the Apprentice. For a compulsory trade, a qualified Trainer is an individual who holds a Certificate of Qualification. In a non-compulsory trade, a Trainer is an individual who either holds a CofQ, CofA, or is considered equivalent.

Ready to Write Your Exam?

Many of the skilled trades in Ontario have a final certification examination that you must pass to become certified in your trade. Passing the examination gives you the right to hold yourself out as a Journeyman and receive a Certificate of Qualification in your trade.

There are two types of trade certification examinations in Ontario:

1. Provincial (Ontario) examinations - which lead to a Certificate of Qualification.
2. Red Seal examinations – which lead to a Certificate of Qualification with an Interprovincial Red Seal endorsement.

If a trade is designated as Red Seal in Ontario, you will be writing the Red Seal examination. To access the Red Seal preparation guide please visit: red-seal.ca

Ontario's Exam Preparation Guide

[Exam Resources – Skilled Trades Ontario](#)

Basic Examination Details for You to Know

- You will have **up to four hours to write your examination.**
- Accommodations must be requested and approved prior to scheduling your examination.
- You can leave the examination centre if you complete the examination in less than four hours.
- Exam questions are multiple choice with four options from which you must choose the correct answer. Your examination may have between 90 and 150 multiple choice questions.
- You need a mark of 70% to pass.

Scheduling Your Examination

The examination scheduling process is currently outlined in detail on the Skilled Trades Ontario website: [Exam Scheduling – Skilled Trades Ontario](#)

Remember these 3 basic steps:

1. Confirm your eligibility to write the examination with Skilled Trades Ontario.
2. Contact Client Services at Skilled Trades Ontario to pay your examination fee.
3. Contact the local Service Delivery Office to schedule your examination in their examination centre: <https://www.ontario.ca/page/employment-ontario-apprenticeship-offices>

Instructions for Recording a Change in Sponsor

1. Record your first sponsor's information in Sponsor Record #1 – this would be the sponsor who has signed your initial apprenticeship Training Agreement for this trade.
2. If you do change sponsors prior to completing this apprenticeship, please contact your local Service Delivery Office immediately to update your sponsor record.
3. Please make sure you record all the information regarding any additional sponsors of record towards your apprenticeship using the Sponsor Records on the following pages (if applicable).

You must fill out a Change of Sponsor Record each time you change your sponsor.

Sponsor Record #1

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #2

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #3

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Change of Sponsor Record #4

Sponsor Information		
Apprentice Name		
Training Agreement #		Date (mm/dd/yy)
Sponsor Name		
Address		
Telephone		
E-mail Address		

Summary of Training	
Employment Start Date	
Employment End Date	
Total hours of training & instruction between dates of employment.	
Skill Sets Completed	

As the Sponsor, I hereby confirm that the above information is true and accurate to the best of my knowledge.

Signature: _____ Date: (mm/dd/yy) _____

The Sponsor is required to sign-off and date the skills after the Apprentice has proven competence in those skills. However, if a skill is shaded, it is optional and does not need to be signed-off.

***If you need additional copies of the Sponsor Record, visit SkilledTradesOntario.ca and search Sponsor Record Form.**

Appendix A — Instructions for Apprenticeship Program Completion

Once an Apprentice has completed all the classroom training and benchmark on-the-job hours specified for the trade and has acquired all the mandatory skills included in this Logbook.

The Apprentice and the Sponsor complete the Apprentice Completion Form and the Skill Set Completion for Sponsors Form located on the following pages.

1. They sign the forms and submit them to their local Service Delivery Office. To find the closest office, check the contact information at ontario.ca/page/employment-ontario-apprenticeship-offices or call the Employment Ontario toll free number at (1-800-387-5656).
2. For All Trades: All mandatory skills (or the combination indicated in the completion requirements for the trade) in the Logbook must be signed-off. The recommended hours are a benchmark. If the Sponsor is completing the Apprentice before the industry recommended training hours are done, staff may request further information regarding the Apprentice's on-the-job training. An example of a request would be a letter from the Sponsor confirming the Apprentice worked for some time in the trade before the initial Training Agreement was registered, thereby acquiring some skills beforehand.

If Apprentices are submitting the completion request form and supporting documentation to their local Service Delivery Office by mail, fax, or email (as a scanned document), they should not include their Logbook; if they are presenting this form in person at the local Service Delivery Office, they should bring their Logbook with them.

After staff verifies all the information in the completion request, they may contact either the Apprentice or the Sponsor for further information or documentation. Once the completion has been confirmed, the local Service Delivery Office will issue a Certificate of Apprenticeship to the Apprentice.

Skilled Trades Ontario will receive notification of this completion.

- If the Apprentice has completed a program in a **compulsory trade**, Skilled Trades Ontario will automatically register the Apprentice for a Provisional Certificate of Qualification to continue to work legally for one year while preparing for the certification examination.
- If an Apprentice completes their apprenticeship in a **non-compulsory trade** and there is a Certificate of Qualification exam, they must write and pass the exam to receive a Certificate of Qualification from Skilled Trades Ontario.

For permission to schedule an exam once completion is confirmed, the individual must first contact the Skilled Trades Ontario Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification examination fee. Once you have paid your exam fee with Skilled Trades Ontario, book your exam by contacting your nearest Employment Ontario local Service Delivery Office.

Appendix B — Apprentice Completion Form

Please fill out both sides of this form, including the Skill Set Completion for Sponsors (see back of form). Once both sides are completed, submit the form to your local Service Delivery Office (find contact information at ontario.ca/page/employment-ontario-apprenticeship-offices or by calling Employment Ontario at (1-800-387-5656).

Apprentice Information	
Name (print)	
Client ID # Issued by Ministry	
Telephone Number(s)	

Sponsor Information	
Legal Name	
Address	
Telephone Number(s)	
Sponsor's Signing Authority <i>(print name)</i>	
E-mail Address	

Program Information	
Trade Name	
Number of hours required as per Training Agreement <i>(hours-based trades only)</i>	
Hours completed? <i>(documentation attached)</i>	Yes () No () Not applicable ()
Classroom training completed or exempt?	Yes () No () Not applicable ()

I hereby confirm that the information submitted on both sides of this form is true and accurate.

X _____
Apprentice's Signature Date

X _____
Signature of Sponsor's Signing Authority Date

Appendix C — Skill Set Completion for Sponsors

You will find the skill set numbers and titles in the Logbook's Table of Contents. By signing off each skill set in the table below, you are providing final confirmation, as the Apprentice's Sponsor, that the Apprentice has demonstrated competency in all the mandatory skills included in the skill set.

Skill Set #	Skill Set Title	Signing Authority Signature
U6970.0	Occupational Health and Safety Procedures	
U6971.0	Electrical Systems	
U6972.0	Hydraulic Systems	
U6973.0	Engine Systems	
U6974.0	Intake, Exhaust, Emission Control Systems and Engine Brake Systems	
U6975.0	Mechanical Controlled Fuel Systems	
U6976.0	Electronic Controlled Fuel Systems	
U6977.0	Clutches and Transmissions	
U6978.0	Drive Axle and Final Drive Assemblies	
U6979.0	Steering Systems	
U6980.0	Braking Systems	
U6981.0	Air Supply and Auxiliary Air Systems	
U6982.0	Suspension Systems	
U6983.0	Tires, Wheels, Ballasting, Undercarriages and Tracks	
U6984.0	Climate Control Systems	
U6985.0	Structural Components and Accessories	
U6986.0	Agricultural Implements – Tillage and Planting	
U6987.0	Agricultural Implements – Harvesting	
U6988.0	Agricultural Implements – Spraying, Irrigation and Distribution Equipment	
U6989.0	Agricultural Implements – Material Handling Equipment	
U6990.0	Precision Agricultural Systems	

Ministry of Labour, Immigration, Training and Skills Development use only:

Sponsor verified as most recent sponsor of record: Yes () No ()

Documentation to support completion of hours attached: Yes () No ()

Completion of classroom training verified: Yes () No ()

Staff Name _____ Signature _____

Date _____

Appendix D — Local Service Delivery Offices in Ontario

For current office listings visit: ontario.ca/page/employment-Ontario-apprenticeship-offices

Location	Contact	Location	Contact
Barrie 705-737-1431	55 Cedar Pointe Dr Unit 609, Barrie, ON L4N 5R7	Marathon 807-346-1550	52 Peninsula Road, Suite 103 Marathon, Ontario, P0T 2E0
Belleville 613-968-5558 1-800-953-6885	135 North Front St, Belleville, ON K8P 3B5	Markham 905-513-2695	140 Allstate Parkway, Suite 505, Markham, Ontario L3R 5Y8
Brantford 519-756-5197	505 Park Rd North Suite 201, Brantford, ON N3R 7K8	North Bay 705-495-8515 1-800-236-0744	200 First Ave West, North Bay, ON P1B 3B9
Chatham 519-354-2766 1-800-214-8284	870 Richmond St West 1st Floor, Chatham, ON N7M 5J5	Ottawa 613-731-7100 1-877-221-1220	Preston Square, 347 Preston Street, Suite 310, Ottawa, ON K1S 3H8
Cornwall 613-938-9702 1-877-668-6604	132 Second St East Ste 202, Cornwall, ON K6H 1Y4	Owen Sound 519-376-5790 1-800-838-9468	1450 1st Ave West, Suite 100, Owen Sound, ON N4K 6W2
Dryden 807-456-2665 1-800-734-9572	Provincial Government Building, 479 Government St, Dryden, ON P8N 3K9	Peel 905-279-7333 1-800-736-5520	The Emerald Centre, 10 Kingsbridge Garden Circle, Suite 404, Mississauga, ON L5R 3K6
Durham 905-433-0595 1-800-461-4608	78 Richmond Street West, Oshawa, ON L1G 1E1	Pembroke 613-735-3911 1-800-807-0227	615 Pembroke St East, Pembroke, ON K8A 3L7
Elliot Lake 1-800-236-8817	50 Hillside Dr North, Elliot Lake, ON P5A 1X4	Peterborough 705-745-1918 1-877-433-6555	901 Lansdowne St West, Peterborough, ON K9J 1Z5
Fort Frances 807-274-8634	922 Scott St 2nd Flr, Fort Frances, ON P9A 1J4	Sarnia 519-542-7705 1-800-363-8453	Bayside Mall, 150 Christina St North, Sarnia, ON N7T 7W5
Geraldton 807-854-1966	208 Beamish Avenue West Geraldton, Ontario P0T 1M0	Sault Ste. Marie 705-945-6815 1-800-236-8817	477 Queen St East 4th Flr, Sault Ste Marie, ON P6A 1Z5
Halton 905-842-5105 1-844-901-5105	700 Dorval Dr., Suite 201, Oakville, ON L6K 3V3	St Catharines 905-704-2991 1-800-263-4475	Garden City Tower, 301 St Paul St East, 10th Flr, St Catharines, ON L2R 7R4
Hamilton 905-521-7764 1-800-668-4479	Ellen Fairclough Bldg, 119 King St West 8th Flr, Hamilton, ON L8P 4Y7	Sudbury 705-564-3030 1-800-603-5999	159 Cedar St Ste 506, Sudbury, ON P3E 6A5
Kapuskasing 705-465-5785 705-235-1950	Ontario Government Complex, 122 Government Rd West, Kapuskasing, ON P5N 2X8	Thunder Bay 807-346-1550 1-800-439-5493	189 Red River Rd Suite 103, Thunder Bay, ON P7B 1A2
Kenora 807-468-2879 1-800-734-9572	227 1/2 Second St South, Kenora, ON P9N 1G4	Timmins 705-235-1950 1-877-275-5139	Ontario Government Complex, 5520 Highway 101 East Wing B, South Porcupine, ON P0N 1H0
Kingston 613-548-1151 1-866-973-4043	Alliance Business Centre, 299 Concession St Ste 201, Kingston, ON K7K 2B9	Toronto Centre 416-927-7366 1-800-387-5656	2 St Clair West, 11 th floor Toronto, ON M4A 1L5
Kitchener 519-653-5758 1-866-877-0099	4275 King St East, Kitchener, ON N2P 2E9	Toronto South 416-326-5800	625 Church St 1st Fl, Toronto, ON M7A 2B5
London 519-675-7788 1-800-265-1050	1200 Commissioners Rd E, Unit 72, London, ON N5Z 4R3	Windsor 519-973-1441	Roundhouse Centre, 3155 Howard Ave 2nd Fl, Suite 200, Windsor, ON N8X 4Y8

Competency Analysis Profile (CAP) Chart

**6970.0
Occupational
Health and Safety
Procedures**

6970.01
Identify and take corrective action against potential workplace health and safety hazards

6970.02
Handle, store and dispose of hazardous workplace materials

6970.03
Wear and maintain personal protective equipment

6970.04
Comply with workplace- related legislation, relating to highway traffic safety, parts, warranties, occupational health/safety, environmental protection and business and trade practices

6970.05
Interpret and apply service-related information

6970.06
Practice good housekeeping in the workplace

6970.07
Comply with Workplace Hazardous Materials Information System (WHMIS)

**6971.0
Electrical
Systems**

6971.01
Perform visual inspection, identifying system types and applications

6971.02
Diagnose and troubleshoot batteries

6971.03
Service and boost/charge batteries

6971.04
Diagnose and troubleshoot starting system and components

6971.05
Repair starting systems and components

6971.06
Verify repair of starting systems and components

6971.07
Diagnose and troubleshoot charging systems and components

6971.08
Repair charging systems and components

6971.09
Verify repair of starting systems and components

6971.10
Diagnose and troubleshoot electrical, electronic and computer-controlled systems and components

Competency Analysis Profile: Agricultural Equipment Technician 425A (all unshaded skill sets must be completed)

6971.0
Electrical
Systems
(continued)

6971.11
Repair electrical, electronic and computer-controlled systems and components

6971.12
Verify repair of electrical, electronic and computer-controlled systems and components

6971.13
Diagnose and troubleshoot electrical/electronic ignition systems and components

6971.14
Repair electrical/electronic ignition systems and components

6971.15
Verify repair of electrical/electronic ignition systems and components

6971.16
Diagnose and troubleshoot hybrid drives and components

6971.17
Repair hybrid Drives and components

6971.18
Verify repair of hybrid drives and components

6972.0
Hydraulic
Systems

6972.01
Perform visual inspection, identifying system types and applications

6972.02
Diagnose and troubleshoot mechanical controlled hydraulic systems and components

6972.03
Repair mechanical controlled hydraulic systems and components

6972.04
Verify repair of mechanical controlled hydraulic systems and components

6972.05
Diagnose and troubleshoot electrical and electronic-controlled hydraulic systems and components

6972.06
Repair electrical and electronic-controlled hydraulic systems and components

6972.07
Verify repair of electrical and electronic-controlled hydraulic systems and components

6973.0
Engine Systems

6973.01
Perform visual inspection, identifying system types and applications

6973.02
Diagnose and troubleshoot cooling systems and components

6973.03
Repair cooling systems and components

6973.04
Verify repair of cooling systems and components

6973.05
Diagnose and troubleshoot engine lubricating systems and components

6973.06
Repair engine lubricating systems and components

6973.07
Verify repair of engine lubricating systems and components

6973.08
Diagnose and troubleshoot cylinder heads and components

6973.09
Repair cylinder heads and components

6973.10
Verify repair of cylinder heads and components

6973.11
Diagnose and troubleshoot engine blocks and components

6973.12
Repair engine blocks and components

6973.13
Verify repair of engine blocks and components

Competency Analysis Profile: Agricultural Equipment Technician 425A *(all unshaded skill sets must be completed)*

6974.0 Intake, Exhaust, Emission Control and Engine Brake Systems	6974.01 Perform visual inspection, identifying system types and applications	6974.02 Diagnose and troubleshoot intake, exhaust, engine brake systems and components	6974.03 Repair intake, exhaust and engine brake systems	6974.04 Verify intake, exhaust and engine brake systems	6974.05 Diagnose and troubleshoot turbocharger/supercharger systems and components
	6974.06 Repair turbocharger/supercharger systems and components	6974.07 Verify repair of turbocharger/supercharger systems and components	6974.08 Diagnose and troubleshoot emission control systems and components	6974.09 Repair emission control systems and components	6974.10 Verify repair of emission control systems and components
6975.0 Mechanical Controlled Fuel Systems	6975.01 Perform visual inspection, identifying system types and applications	6975.02 Diagnose and troubleshoot gasoline mechanical controlled fuel systems and components	6975.03 Repair gasoline mechanical controlled fuel systems and components	6975.04 Verify repair of gasoline mechanical controlled fuel systems and components	6975.05 Diagnose and troubleshoot mechanical controlled diesel fuel systems and components
	6975.06 Repair mechanical controlled diesel fuel systems and components	6975.07 Verify repair of mechanical controlled diesel fuel systems and components	6975.08 Perform mechanical diesel engine tune-ups		

Competency Analysis Profile: Agricultural Equipment Technician 425A *(all unshaded skill sets must be completed)*

<p>6976.0 Electronic Controlled Fuel Systems</p>	<p>6976.01 Perform visual inspection, identifying system types and applications</p>	<p>6976.02 Diagnose and troubleshoot electronic controlled gasoline engine systems and components</p>	<p>6976.03 Repair electronic controlled gasoline engine systems and components</p>	<p>6976.04 Verify repair of electronic controlled gasoline engine systems and components</p>	<p>6976.05 Diagnose and troubleshoot electronic controlled diesel engine systems and components</p>	
	<p>6976.06 Repair electronic controlled diesel engine systems and components</p>	<p>6976.07 Verify repair of electronic controlled diesel engine systems and components</p>	<p>6976.08 Perform gasoline engine tune-ups</p>	<p>6976.09 Perform electronic diesel engine tune-ups</p>		
	<p>6977.0 Clutches and Transmissions</p>	<p>6977.01 Perform visual inspection, identifying system types and applications</p>	<p>6977.02 Diagnose and troubleshoot clutch systems and components</p>	<p>6977.03 Repair clutch systems and components</p>	<p>6977.04 Verify repair of clutch systems and components</p>	<p>6977.05 Diagnose and troubleshoot manual transmissions/ transfer cases and components</p>
	<p>6977.06 Repair manual transmissions/ transfer cases and components</p>	<p>6977.07 Verify repair of manual transmissions/ transfer cases and components</p>	<p>6977.08 Diagnose and troubleshoot mechanical controlled power shift transmissions and components</p>	<p>6977.09 Repair mechanical controlled power shift transmissions and components</p>	<p>6977.10 Verify repair of mechanical controlled power shift transmissions and components</p>	

Competency Analysis Profile: Agricultural Equipment Technician 425A (all unshaded skill sets must be completed)

6977.0 Clutches and Transmissions (continued)	6977.11 Diagnose and troubleshoot electrical and electronic controlled power shift continuously variable (CVT) transmissions components	6977.12 Repair electrical and electronic controlled power shift continuously variable (CVT) transmissions components	6977.13 Verify repair of electrical and electronic controlled power shift continuously variable (CVT) transmissions components	6977.14 Diagnose and troubleshoot hydrostatic transmissions and components	6977.15 Repair hydrostatic transmissions and components
	6977.16 Verify repair of hydrostatic transmissions and components				
6978.0 Drive Axle and Final Drive Assemblies	6978.01 Perform visual inspection, identifying system types and applications	6978.02 Diagnose and troubleshoot drive shafts, axles, differentials, final drives and components	6978.03 Repair drive shafts, axles, differentials, final drives and components	6978.04 Verify repair of drive shafts, axles, differentials, final drives and components	
6979.0 Steering Systems	6979.01 Perform visual inspection, identifying system types and applications	6979.02 Diagnose and troubleshoot steering systems and components	6979.03 Repair steering systems and components	6979.04 Verify repair of steering systems and components	

Competency Analysis Profile: Agricultural Equipment Technician 425A *(all unshaded skill sets must be completed)*

<p>6980.0 Braking Systems</p>	<p>6980.01 Perform visual inspection, identifying system types and applications</p>	<p>6980.02 Diagnose and troubleshoot braking systems and components</p>	<p>6980.03 Repair braking systems and components</p>	<p>6980.04 Verify repair of braking systems and components</p>	
<p>6981.0 Air Supply and Auxiliary Air Systems</p>	<p>6981.01 Perform visual inspection, identifying system types and applications</p>	<p>6981.02 Diagnose and troubleshoot air supply and auxiliary air systems and components</p>	<p>6981.03 Repair air supply and auxiliary air systems and components</p>	<p>6981.04 Verify repair of air supply and auxiliary air systems and components</p>	
<p>6982.0 Suspension Systems</p>	<p>6982.01 Perform visual inspection, identifying system types and applications</p>	<p>6982.02 Diagnose and troubleshoot suspension systems and components</p>	<p>6982.03 Repair suspension system and components</p>	<p>6982.04 Verify repair of suspension system and components</p>	
<p>6983.0 Tires, Wheels, Ballasting, Undercarriages and Tracks</p>	<p>6983.01 Perform visual inspection, identifying system types and applications</p>	<p>6983.02 Diagnose and troubleshoot tires, wheels, ballasting and components</p>	<p>6983.03 Replace tires, wheels, ballasting and components</p>	<p>6983.04 Verify repair of tires, wheels, ballasting and components</p>	<p>6983.05 Diagnose and troubleshoot undercarriages and components</p>
	<p>6983.06 Repair undercarriages and components</p>	<p>6983.07 Verify repair of undercarriages and components</p>			

Competency Analysis Profile: Agricultural Equipment Technician 425A *(all unshaded skill sets must be completed)*

6984.0 Climate Control Systems	6984.01 Perform visual inspection, identifying system types and applications	6984.02 Diagnose and troubleshoot heating and ventilation systems and components	6984.03 Repair heating and ventilation systems and components	6984.04 Verify repair of heating and ventilation systems and components	6984.05 Diagnose and troubleshoot air conditioning systems and components	
	6984.06 Repair air conditioning systems and components	6984.07 Verify repair of air conditioning systems and components				
	6985.0 Structural Components and Accessories	6985.01 Perform visual inspection, identifying system types and components	6985.02 Diagnose and troubleshoot structural components and accessories	6985.03 Repair structural components and accessories	6985.04 Verify repair of structural components and accessories	
		6986.01 Perform visual inspection, identifying system types and applications	6986.02 Diagnose and troubleshoot tillage, planting equipment and components	6986.03 Repair tillage, planting equipment and components	6986.04 Verify repair of tillage, planting equipment and components	

Competency Analysis Profile: Agricultural Equipment Technician 425A *(all unshaded skill sets must be completed)*

<p>6987.0 Agricultural Implements – Harvesting</p>	<p>6987.01 Perform visual inspection, identifying system types and applications</p>	<p>6987.02 Diagnose and troubleshoot harvesting equipment and components</p>	<p>6987.03 Repair harvesting equipment and components</p>	<p>6987.04 Verify repair of harvesting equipment and components</p>
<p>6988.0 Agricultural Implements – Spraying, Irrigation and Distribution Equipment</p>	<p>6988.01 Perform visual inspection, identifying system types and applications</p>	<p>6988.02 Diagnose and troubleshoot spraying, irrigation, distribution equipment and components</p>	<p>6988.03 Repair spraying, irrigation, distribution equipment and components</p>	<p>6988.04 Verify repair of spraying, irrigation, distribution equipment and components</p>
<p>6989.0 Agricultural Implements – Material Handling Equipment</p>	<p>6989.01 Perform visual inspection, identifying system types and applications</p>	<p>6989.02 Diagnose and troubleshoot material handling equipment and components</p>	<p>6989.03 Repair material handling equipment and components</p>	<p>6989.04 Verify repair of material handling equipment and components</p>
<p>6990.0 Precision Agricultural Systems</p>	<p>6990.01 Perform visual inspection, identifying system types and applications</p>	<p>6990.02 Diagnose and troubleshoot precision agricultural systems and components</p>	<p>6990.03 Repair precision agricultural systems and components</p>	<p>6990.04 Verify repair of precision agricultural systems and components</p>

Completing Your Apprenticeship Program

Once your sponsor agrees you are competent in the required skills, your hours are complete and you have completed all the levels of classroom training required for your trade:

- ✓ Follow the completion instructions on the Completion Form (Appendix A) in the Logbook.
- ✓ Answer any questions that MLITSD staff may have and provide any additional completion documentation that may be required.
- ✓ Once completion is confirmed, MLITSD will issue you a Certificate of Apprenticeship and notify Skilled Trades Ontario.

After Your Apprenticeship

If you are in a trade with a certification exam, Skilled Trades Ontario will receive notice of your completion.

For compulsory trades, you will be issued a Provisional Certificate of Qualification which will allow you to work legally for up to 12 months until you write and pass your examination.

For a non-compulsory trade, once you pass your examination, you will be issued a Certificate of Qualification for your trade.

Preparing For Your Exam

- **To pay for a Certificate of Qualification examination, contact Skilled Trades Ontario** Client Services Department at: 647-847-3000 or toll free at 1-855-299-0028
- **To schedule your exam:** Once you have paid, contact your local Service Delivery Office to book your exam.
- **Download Skilled Trades Ontario exam preparation guide at:** [Exam Resources – Skilled Trades Ontario](#) and/or view the exam preparation guide for Red Seal trades at: red-seal.ca



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