

ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship
Training Standard
Log Book

Motive Power
Machinst

410K

2003



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprentice Name: _____

Address: _____

Phone Number: _____

Email Address: _____

Trade: _____

Ministry of Training, Colleges and Universities Registered Training Agreement #:

OCOT Membership #:

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

You must become a member of the College of Trades Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College of Trades website at: www.collegeoftrades.ca

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

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TERMS AND CONDITIONS AS PER REGISTERED TRAINING AGREEMENT**The Apprentice agrees:**

- to inform the Ministry of Training, Colleges and Universities (the 'MTCU') of any change to their 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 training standards for the Trade which is part of the apprenticeship program established by the Ontario College of Trades (the 'College') for the Trade;
- to obtain written verification from the Sponsor and the Trainer(s) that the requirements in the Training Standards for the Trade have been met.

The Sponsor agrees:

- to ensure that the Apprentice is provided with the training required as part of the apprenticeship program established by the College of Trades for this trade;
- to ensure that the trainer(s) verifies, in writing, when each skill identified in the training standard for the Trade has been successfully completed by the Apprentice;
- 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.

RESOURCE	LINK
Red Seal Program	www.red-seal.ca
Ministry of Training, Colleges and Universities	www.tcu.gov.on.ca
Employment Ontario	www.tcu.gov.on.ca
Service Canada	www.servicecanada.gc.ca
Ontario College of Trades and Apprenticeship Act, 2009_	<i><u>Ontario College of Trades and Apprenticeship Act, 2009</u></i>
Ontario Ministry of Labour – Health and Safety Partners	www.labour.gov.on.ca
College of Trades Appointments Counsel	www.cot-appointments.ca
Essential Skills Ontario	www.essentialskillsontario.ca
Exam Preparation Guide	www.collegeoftrades.ca

INTRODUCTION TO THE APPRENTICESHIP TRAINING STANDARD (ATS)

As of April 8th, 2013, the Ontario College of Trades (College) is responsible for the development and maintenance of Apprenticeship Training Standards in the Province of Ontario.

Please refer to the College's website for the most accurate and up-to-date information:
www.collegeoftrades.ca

This Apprenticeship Training Standard (ATS) is intended to be used by the Apprentice and Sponsor as an official record of training. The completion of this document is necessary to complete your apprenticeship and receive your Certification of Apprenticeship (CofA).

The Training Standard identifies skills required for this trade and its related training program. It has been written in statements which describe how you, the Apprentice, must perform each skill in order to become competent in your trade.

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

This on-the-job Apprenticeship Training Standard (ATS) is a document issued to Apprentices who sign a Registered Training Agreement (RTA) in the Province of Ontario. It is designed to record an Apprentice's acquired skills and time worked for the trade to which they are registered. This ATS document is developed by the Ontario College of Trades (the 'College') and used by the Ministry of Training, Colleges and Universities (MTCU).

This Apprenticeship Training Standard for Motive Power Machinist 410K was developed in consultation with representatives from industry and may include members from a related Trade Board/Working Committees.

The information presented in this standard is, to the best of our knowledge, current at time of printing and is intended for general application.

ROLES AND RESPONSIBILITIES

Ontario College of Trades

Under the [*Ontario College of Trades and Apprenticeship Act, 2009 \(OCTAA\)*](#), the College is responsible for:

- Establishing and maintaining qualifications for membership;
- Issuing Certificates of Qualification (C of Q's) and Statements of Membership;
- Maintaining a [Public Register](#) of members;
- Receiving and investigating complaints, and determining disciplinary action;
- Establishing Apprenticeship Programs, Training Standards and Scopes of Practice for each trade;
- Conducting Trade Equivalency Assessments (TEA);
- Determining Journeyperson-to-Apprentice ratios;
- Addressing compliance with legislation (OCTAA) and regulations; and,
- Promoting the skilled trades and conducting research.

For any matters related to your membership in the Apprentices class, you must contact the College directly at: (647) 847-3000 or toll free at: 1(855) 299-0028.

Ministry of Training, Colleges and Universities

MTCU is responsible for:

- Registering Training Agreements;
- Approving which persons may provide apprenticeship training;
- Approving Training Delivery Agents (TDAs);
- Issuing Certificates of Apprenticeship;
- Administering Certificate of Qualification examinations;
- Promoting skilled trades and apprenticeship;
- Conducting policy development, evaluation and research; and,
- Passing regulations.

For any matter related to your RTA or completing your apprenticeship, you must contact your Local Apprenticeship Office at the Ministry of Training, Colleges and Universities.

Roles and Responsibilities of the Apprentice

An Apprentice is an individual who has entered into an RTA with a Sponsor to receive training in a trade as part of an apprenticeship program established by the College.

As an Apprentice, you have certain roles and responsibilities to follow throughout your apprenticeship training:

Steps:

1. You must become a member of the College's Apprentices Class and maintain your membership in good standing while you complete your training. For more information on membership, please visit the College's website at: www.collegeoftrades.ca
2. As an Apprentice, you are responsible for completing skills or skill sets in this ATS and ensuring that they are dated and signed by both you and your Journey person/Supervisor/Trainer.
3. You must also ensure your Skill Set Completion Form is completed and signed by your current Sponsor once you have demonstrated competence in all the mandatory skills in this ATS. Once this is done, we recommend you submit the Training Standard to your local MTCU office.
4. You are responsible for informing the staff at your local MTCU 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.
5. You must present the Apprentice Completion Form (Please refer to Appendix B), once all unshaded skills and skill sets have been completed within this document, along with your authorized Training Standard to your local MTCU office.

Roles and Responsibilities of Sponsors and Trainers

Training Standards identify the on-the-job skills required for a trade and its related training program.

This Training Standard has been written in concise statements which describe how well an Apprentice must perform each skill in order to become competent. Competence means being able to perform to the required standard on request.

By using this Training Standard, Trainers will be able to ensure that the Apprentice is developing skills detailed for the trade.

Trainers and Apprentices are required to sign off and date the skills following each successful acquisition.

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.

The trainer/journeyman must provide their signature based on the journeymen's assessment and professional judgment that the apprentice is competent in the skills described above. The journeyman's signature is not a general warrantee 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.

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, employees and the public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to or cause an accident or injury.

It is generally recognized that a safe attitude contributes to an accident free environment. Everyone will benefit as a result of a healthy attitude towards prevention of accidents.

A tradesperson is possibly exposed to more hazards than any other person in the work force and, therefore, should be familiar with and apply Occupational Health and Safety Act and Regulations dealing with personal safety and the personal safety rules applying to each task.

Legal and Administrative Aspects of Safety:

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer and employee.

Employer's Responsibilities - The employer is responsible for:

- Providing and maintaining safety equipment and protective devices;
- Ensuring proper safe work clothing is worn;
- Enforcing safe working procedures;
- Providing safeguards for machinery, equipment and tools;
- Observing all accident prevention regulations; and,
- Training employees in the safe use and operation of equipment.

Employee's Responsibilities - The employee is responsible for:

- Working in accordance with the safety regulations pertaining to the job environment;
- Working in such a way as not to endanger themselves or fellow employees.

Workplace Health and Safety's Responsibilities:

- Workplace Health and Safety (Ontario's Ministry of Labour) will conduct periodic inspections of the workplace to ensure that safety regulations for industry are being observed.

TRAINING THE APPRENTICE

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 habits;
- Use your Apprenticeship Training Standard (ATS) as a journal to keep track of the skills you have achieved;
- Listen to the suggestions of your Supervisor/Trainer;
- Discuss your training needs with your Sponsor;
- Review your training plan with your Training Consultant, Trainer, or Sponsor;
- Ask your Supervisor/Trainer questions if you are in any way 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 Supervisor/Trainer sign off the individual skills. Once a 'set of skills' have been signed off, ensure your Sponsor signs off this area as well.

Sponsor

Sponsors are responsible for ensuring all terms are met as per the Registered Training Agreement (RTA). They are named on the RTA as the individual 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.

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.);
- Encourage safe work habits;
- Provide time for the Trainer to demonstrate skills;
- 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;
- Set out clear expectations, and recognize good performance;
- Involve both the Apprentice and Supervisor/Trainer in developing the training plan and observe frequently;
- Provide constructive feedback and conduct regular performance reviews involving the Apprentice and Supervisor/Trainer;

- Use the Apprenticeship Training Standard 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.

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 (C of Q) and be a member of the College's Journeypersons Class.

In voluntary trades, a Trainer is an individual who holds one of the following:

- A valid C of Q (or Provisional C of Q) and is a member of the College's Journeypersons Class; or,
- Holds a Statement of Membership in the College's Tradespersons Class; or,
- Holds a C of Q previously issued by MTCU; or,
- Holds a Certificate of Apprenticeship (C of A) 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 (eligible to apply to College membership in the Journeypersons or Tradespersons Classes) or has the skills outlined in the Training Standard.

Tips for Trainers

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

- Show and model safe work habits;
- Provide opportunities and time for the Apprentice to learn the trade;
- Treat Apprentices fairly and with respect;
- Review the Training Standard with the Apprentice and develop a training plan;
- Set out clear expectations, and recognize good performance;
- Ensure that the Apprentice receives varied on-the-job trade training experience as outlined in this document;
- Encourage and respond to all questions;
- Be patient;
- Explain, show and demonstrate the skill;
- Provide continuous feedback;
- Sign off skills when your Apprentice demonstrates competency, and,
- Use the Training Standard as a guide to evaluate competence in each skill area. By using the Training Standard, Trainers will be able to ensure that the Apprentice is developing skills outlined in this document.

NOTICE OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this Training Standard to the Ministry of Training, Colleges and Universities (MTCU). You will be required to disclose the signed Apprenticeship Completion form to the MTCU in order to complete your program. The MTCU 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 MTCU will disclose information about your program completion and your Certificate of Apprenticeship to the Ontario College of Trades, as it is necessary for the College to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry under the authority of the *Ontario College of Trades and Apprenticeship Act, 2009*.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre
Ministry of Training, Colleges and Universities
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084.

U5800.0 OCCUPATIONAL HEALTH & 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 materials; wearing and maintaining personal protective equipment; complying with workplace-related legislation; interpreting and applying service-related information; practicing good housekeeping in the workplace; complying with Workplace Hazardous Materials Information System (WHMIS) guidelines; according to the Occupational Health and Safety Act, government regulations, company policy and manufacturer’s recommendations.

PERFORMANCE OBJECTIVES

SKILLS

5800.01 **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/or inadequate ventilation); so that the potential for personal injury, damage to equipment, vehicles, and the environment are minimized; according to government regulations and company policy.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5800.02 **Handle, store and dispose of hazardous workplace materials** including: cleaning solvents, new and used lubricants and fluids, coolants, brake fluids, dust, battery acid, refrigerants 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 are followed; according to government regulations, manufacturers recommendations and company policy.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5800.0 COMPLY WITH OCCUPATIONAL HEALTH & SAFETY PROCEDURES - Cont'd

5800.03 **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, manufacturer's recommendations and company policy.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5800.04 **Comply with workplace-related legislation** 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 work estimates and repairing and/or replacing components; according to government regulations.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5800.05 **Interpret and apply service-related information** including: service bulletins, manuals and parts catalogues by: locating and identifying vehicle or engine identification number, accessing microfiche and computerized service information systems, so that service/repair is performed; according to company policy and/or manufacturer's recommendations.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5800.0 COMPLY WITH OCCUPATIONAL HEALTH & SAFETY PROCEDURES - Cont'd

5800.06 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.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5800.07 **Comply with Workplace Hazardous Materials Information System (WHMIS) guidelines** including: reading and interpreting labels and Material Safety Data Sheets (MSDS), ensuring receipt of training in WHMIS regulations and practices; according to the *Occupational Health and Safety Act*.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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SPONSOR SIGN-OFF FOR U5800: OCCUPATIONAL HEALTH & SAFETY PROCEDURES

Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature
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U5801.0 DISASSEMBLE ENGINE

GENERAL PERFORMANCE OBJECTIVE

Disassemble engine by: draining fluids from engine assembly; marking mating parts; removing pans, covers and components; removing cylinder heads and components; removing piston and rod assemblies; removing crankshaft and bearings; removing cylinder liners; removing camshaft and bearings; removing cylinder liners; removing core and oil gallery plugs and components; dismantling cylinder head and components; and cleaning engine and components; according to manufacturer’s recommendations, specifications, company policy and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5801.01 **Drain fluids from engine assembly** by: opening drain plugs; checking for abnormal odours, contamination, discoloration, leaks and/or cracks; using hand and power tools, recycling containers, lifting, rigging and blocking devices; according to company policy, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.02 **Mark mating parts** by: tagging, stamping, recording and listing accessories; using hand tools, tags, recording systems, lifting, rigging and blocking devices; according to company policy, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5801.0 DISASSEMBLE ENGINE - Cont'd

5801.03 **Remove pans, covers and components** including: fasteners; by removing fasteners and gaskets; checking for visible damage; using hand and power tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, company policy and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.04 **Remove cylinder heads and components** including: fasteners, rockers, push rods and valve train components; by removing fasteners, pressing, pulling or driving; visually inspecting for damage; using hand and power tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.05 **Remove piston and rod assemblies and components** including: fasteners, bearings, rings, retainers, and piston pin; marking mating components; by removing fasteners, pressing pulling or driving; using hand, power and specialty tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.06 **Remove crankshaft and bearings** including: end plate, timing cover, timing components, flywheel, dynamic balancer and main bearing caps or cradle; visually inspecting, checking for breaks, end play and discoloration; using hand and power tools, pullers, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5801.0 DISASSEMBLE ENGINE - Cont'd

5801.07 **Remove camshaft and bearings** by: pressing, pulling and pushing; visually inspecting, checking for, wear, and distortion; using pullers, hand and specialized tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.08 **Remove cylinder liners** by: pressing, pulling, boring, and shrinking; using pullers, presses, hand and boring tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.09 **Remove core and oil gallery plugs and components** including: bearings and cooling nozzles by: pressing, drilling, pushing and heating; using hand and power tools, and/
or heating equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5801.0 DISASSEMBLE ENGINE - Cont'd

5801.10 **Dismantle cylinder head and components** including: valves, springs, retainers, locks, camshaft, pulley, gears, seals, lifters, fasteners, followers and rockers; by unfastening and removing, visually inspecting, checking for, wear, corrosion and distortion; using pullers hand and specialized tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5801.11 **Clean engine and components** including: engine block, cylinder head, piston assemblies, connecting rods, bearings, liners, counter-balancers, crankshafts, flywheel assemblies, balance shafts, gear trains, camshafts and follower assemblies, harmonic balancers, pulleys, auxiliary drives, oil pans, oil pump and fasteners; by degreasing, blasting and visually inspecting; using cleaning tanks, special solutions, media blasting, pressure washing, steam cleaning and/or thermal cleaning, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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SPONSOR SIGN-OFF FOR U5801: DISASSEMBLE ENGINE

Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature
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U5802.0 RECONDITION FLYWHEEL

GENERAL PERFORMANCE OBJECTIVE

Recondition flywheel by: inspecting the flywheel and ring gear; removing and installing dowel pins; removing and installing ring gear; removing and replacing pilot bushings/bearings; repairing the pilot bearing bore; resurfacing flywheel; resurfacing pressure plate; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5802.01 **Inspect flywheel and ring gear** by: checking for wear, discoloration, distortion, and cracks; using hand and measuring tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5802.02 **Remove and install dowel pins** by: pushing, pulling and drilling; using hand and power tools, presses and pulling devices; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5802.03 **Remove and install ring gear** by: pressing, pulling and grinding; using grinders, presses, hand, heating and cutting tools, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5802.0 RECONDITION FLYWHEEL - Cont'd

5802.04 **Remove and install pilot bushings/bearings** by: pressing and pulling; using hand tools and special drivers, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5802.05 **Repair pilot bearing bore** by: boring, sleeving and metalizing; using hand and precision tools, lathes, metalizing equipment and milling machines; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5802.06 **Resurface flywheel** by: cutting grinding and measuring; using hand tools, cutters, grinders, lathes, milling machines, micrometers, dial indicators and depth gauges, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5802.07 **Resurface pressure plate** by: grinding, cutting and measuring; using hand tools, grinders, milling machines, lathes, dial indicators, depth gauges and micrometers, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5802.0 RECONDITION FLYWHEEL - Cont'd

SPONSOR SIGN-OFF FOR U5802: RECONDITION FLYWHEEL		
Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature

U5803.0 RECONDITION BRAKE COMPONENTS

GENERAL PERFORMANCE OBJECTIVE

Recondition brake components by: inspecting brake drums, rotors and components; repairing housing bore, resurfacing brake drums and rotors; rebuilding calipers, wheel cylinders, master cylinders and components; relining brake shoes and bands; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5803.01 **Inspect brake drums, rotors and components** including: hub; checking for wear, diameter of drum thickness of rotor and condition of bearings, races and seals; using drum and disc micrometers, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5803.02 **Repair housing bore** by: boring, sleeving and metalizing; using hand and boring tools, precision measuring devices and metalizing equipment, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5803.0 RECONDITION BRAKE COMPONENTS - Cont'd

5803.03 **Resurface brake drums and rotors** by: grinding and turning; using brake drum and brake rotor lathes, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5803.04 **Rebuild calipers, wheel cylinders, master cylinders and components** including: seals, pistons and bleeder screws; by disassembling and replacing worn components and honing bores; using hand tools, lubricants, honing machines, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5803.05 **Reline brake shoes and bands** by: riveting, grinding and cleaning; using hand tools, brake riveters, brake shoe burnishers and media blast machines, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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SPONSOR SIGN-OFF FOR U5803: RECONDITION BRAKE COMPONENTS

Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature
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U5804.0 RECONDITION DRIVE TRAIN AND SUSPENSION

GENERAL PERFORMANCE OBJECTIVE

Recondition drive train and suspension by: inspecting drive train and components; repairing spindle and components, repairing front axle eye; repairing axle shaft; removing and replacing axle bearing and front bearing assemblies; repairing constant velocity joints; repairing drive shaft; repairing drive shaft tube; repairing control arms and components; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5804.01 **Inspect drive train and components** including: spindles, axles, universal joints, constant velocity joints, drive shaft, control arm, pump pulley; by degreasing, checking for wear, distortion and cracks; using hand and power tools, precision measuring instruments, crack detection and cleaning equipment, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

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5804.02 **Repair spindle and components** including: bushings and king pins; by removing and replacing, fitting bushings, honing, reaming, and pressing; using hand tools, power tools, hydraulic presses, honing machines, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications and safety requirements.

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U5804.0 RECONDITION DRIVE TRAIN AND SUSPENSION - Cont'd

5804.03 **Repair front axle eye** by: boring, honing, turning, sleeving, straightening, pressing and measuring; using milling machines, radial arm drills, lathes, honing machines and hydraulic presses, precision measuring devices, hand and power tools, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5804.04 **Repair axle shaft** by: metalizing and grinding; using hand and power tools, precision measuring devices, metalizing equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5804.05 **Remove and replace axle bearing and front bearing assemblies** by: disassembling, pressing pulling and driving; using hand and power tools, hydraulic presses, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5804.06 **Repair constant velocity joints** by: disassembling, replacing worn components and reassembling; using hand tools, hydraulic presses, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5804.0 RECONDITION DRIVE TRAIN AND SUSPENSION - Cont'd

5804.07 **Repair drive shaft** by: removing and replacing universal joints; using hand and power tools, hydraulic presses, precision measuring devices, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5804.08 **Repair drive shaft tube** by: shortening, lengthening, straightening, balancing, metalizing, cutting and grinding; using hand and power tools, precision measuring devices, balancing equipment, cutting and welding equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5804.09 **Repair control arms and components** including: bushings; by removing and replacing, pressing or pulling; using hand and power tools, hydraulic presses, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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SPONSOR SIGN-OFF FOR U504: RECONDITION DRIVE TRAIN AND SUSPENSION

Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature
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U5805.0 RECONDITION CRANKSHAFT

GENERAL PERFORMANCE OBJECTIVE

Recondition crankshaft by: inspecting crankshaft; repairing crankshaft journals, thrust faces and seal surfaces; straightening crankshaft; stress relieving crankshaft; repairing keyway; repairing seal surface; chamfering oil hole; finishing crankshaft journals; balancing crankshaft rotating assembly and components; according to manufacturer's recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5805.01 **Inspect crankshaft** by: degreasing, checking for fractures, journal dimensions, thrust and seal surface wear, alignment, hardness and distortion; using precision measuring devices, cleaning and crack detection equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5805.02 **Repair crankshaft journals, thrust faces and seal surfaces** by: metalizing, grinding, stress relieving, straightening and polishing; using hand and power tools, metalizing equipment, crankshaft grinders, precision measuring devices, straightening presses, stress relieving equipment, crankshaft polishers, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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U5805.0 RECONDITION CRANKSHAFT - Cont'd

5805.03 Straighten crankshaft by: preheating, peening and pressing; using hand and peening tools, hydraulic presses, heating equipment, precision measuring devices, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5805.04 **Stress relieve crankshaft** by: sonic processing, peening, media blasting, freezing and heating; using hand and power tools, ultrasonic equipment, media blasters, heating and cooling devices; according to manufacturer's recommendations, specifications and safety requirements.

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5805.05 **Repair keyway** by: metalizing and milling; using hand and power tools, metalizing equipment, precision measuring devices and milling machines; according to manufacturer's recommendations, specifications and safety requirements.

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5805.06 Repair seal surface by: metalizing, grinding, polishing or installing repair sleeves; using hand and power tools, metalizing equipment, crankshaft grinders, polishers, pressing equipment and precision measuring devices; according to manufacturer's recommendations, specifications and safety requirements.

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U5805.0 RECONDITION CRANKSHAFT - Cont'd

5805.07 **Chamfer oil hole** by: grinding and counter boring; using high speed die grinders and hand tools; according to manufacturer's recommendations, specifications and safety requirements.

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5805.08 **Finish crankshaft journals** by: polishing; using hand and power tools, precision measuring devices and crankshaft polishers; according to manufacturer's recommendations, specifications and safety requirements.

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5805.09 Balance crankshaft rotating assembly and components including: connecting rods, pistons, pins, retainers, piston rings, rod bearings, flywheel, pilot bearing/bushing, crankshaft sprocket/gear, woodruff keys, oil slinger, harmonic balancer, pulleys and fasteners; by weight matching all like components, calculating bob weights and spin balancing the assembly; using hand and power tools, weigh scales, precision measuring equipment, and balancing equipment; according to manufacturer's recommendations, specifications and safety requirements.

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SPONSOR SIGN-OFF FOR U5805: RECONDITION CRANKSHAFT

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U5806.0 RECONDITION CONNECTING ROD

GENERAL PERFORMANCE OBJECTIVE

Recondition connecting rod by: inspecting connecting rod; stress relieving connecting rod; resizing big end of connecting rod; repairing small end of connecting rod; straightening connecting rod; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5806.01 Inspect connecting rod by: degreasing and visually inspecting; checking for alignment, big and small end bore diameters, fractures and center to center distance; using hand and power tools, precision measuring devices and crack detection equipment; according to manufacturer’s recommendations, specifications and safety requirements.

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5806.02 **Stress relieve connecting rod** by: heating, cooling or peening; using hand and power tools, heating or cooling devices and media blasting equipment; according to manufacturer’s recommendations, specifications and safety requirements.

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U5806.0 RECONDITION CONNECTING ROD - Cont'd

5806.03 **Resize big end of connecting rod** by: boring, honing and grinding; using hand and power tools, precision measuring devices, cap grinders, honing or boring machines; according to manufacturer's recommendations, specifications and safety requirements.

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5806.04 **Repair small end of connecting rod** by: rebushing, honing or boring; using hand and power tools, precision measuring devices, presses, honing or boring equipment and burnishing tools; according to manufacturer's recommendations, specifications and safety requirements.

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5806.05 **Straighten connecting rod** by: bending, boring or twisting, ensuring big and small ends are parallel; using hand and power tools, precision measuring equipment, boring equipment, rod alignment fixtures and presses; according to manufacturer's recommendations, specifications and safety requirements.

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SPONSOR SIGN-OFF FOR U5806: RECONDITION CONNECTING ROD

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U5807.0 RECONDITION CYLINDER HEAD

GENERAL PERFORMANCE OBJECTIVE

Recondition cylinder head by: inspecting cylinder head and components; repairing cylinder head crack; straightening cylinder head; repairing camshaft housing; repairing lifter bore; repairing damaged thread; repairing rocker stud; repairing valve guide; replacing valve seats; resurfacing valve seats; resurfacing cylinder head; removing and replacing injector tube; removing and replacing pre-combustion chamber; repair valve; assemble cylinder head and components; according to manufacturer’s recommendation, specification and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5807.01 **Inspect cylinder head and components** including: valves, springs, guides, rockers, valve seats, camshaft, lash adjusters, retainers, locks, spring seats, seals, injector tubes, pre-combustion chambers, core plugs, studs, cross heads, bridges, injectors and fasteners; by dismantling, degreasing, visually inspecting, testing and analysing performance and function to determine component replacement, machining and repairs; checking for wear, cracks, leaks, distortion, discoloration, alignment, corrosion, design improvements, and tolerances; using hand and power tools, precision measuring devices, pressure testers, cleaning and crack detection equipment, lifting, rigging and blocking devices; according to manufacturer’s recommendations, specifications, and safety requirements.

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5807.02 **Repair cylinder head crack** by: stitching, metalizing, and chemically treating to restore the casting to useable condition; using hand and power tools, precision measuring devices, metalizing equipment, crack detection and pressure testing equipment, lifting, rigging and blocking devices; according to company standards and safety requirements.

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U5807.0 RECONDITION CYLINDER HEAD - Cont'd

5807.03 **Straighten cylinder head** by: heating, clamping and pressing; using hand and power tools, precision measuring devices, heating equipment, presses and straightening fixtures, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.04 **Repair camshaft housing** by: metalizing, sleeving, boring and honing; using hand and power tools, metalizing equipment, precision measuring devices, boring and honing equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.05 **Repair lifter bore** by: resizing, sleeving; using hand and power tools, precision measuring devices, reamers, presses, boring and honing equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.06 **Repair damaged thread** by: removing bolts, chasing thread, oversizing, installing thread insert and metalizing; using hand and power tools, precision measuring devices, reamers, drill bits, taps, dies, adhesives, lubricants and metalizing equipment; according to manufacturer's recommendations, specifications and safety requirements.

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U5807.0 RECONDITION CYLINDER HEAD - Cont'd

5807.07 **Repair rocker stud** by: removing stud, inspecting and repairing bore and installing replacement stud; using hand and power tools, precision measuring devices, pullers, thread repair sleeves, reamers, presses, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5807.08 **Repair valve guide** by: knurilizing, reaming, installing guides or liners and machining for positive type valve seals; using hand and power tools, precision measuring devices, heating and cooling devices, reamers, drills, lubricants adhesives, boring fixtures, hones and broaches; according to manufacturer's recommendations, specifications and safety requirements.

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5807.09 **Replace valve seats** by: pulling, pushing, counterboring, cutting, shrinking, heating and chilling; using hand and power tools, precision measuring devices, seat pullers, presses, boring and threading equipment, heating and cooling equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5807.10 **Resurface valve seats** by: grinding, cutting and lapping; using hand and power tools, precision measuring devices, seat grinders, cutting equipment, lapping equipment and lubricants; according to manufacturer's recommendations, specifications and safety requirements.

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U5807.0 RECONDITION CYLINDER HEAD - Cont'd

5807.11 Resurface cylinder head by: measuring, grinding, cutting or sanding to remove distortion from mating surfaces; using hand and power tools, precision measuring devices, belt sanders, grinding and milling equipment, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.12 **Remove and replace injector tube** by: pulling, pushing, threading, cutting, heating and chilling, swedging, reaming and pressure testing; using hand and power tools, precision measuring devices, milling equipment, reamers, honing equipment, pressing devices, lubricants, adhesives, pressure testers, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.13 **Remove and replace pre-combustion chamber** by: pulling, pressing, lapping, threading, counterboring and measuring; using hand and power tools, precision measuring devices, pullers, pressing and counterboring equipment, lubricants, adhesives, surface grinders, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5807.14 **Repair valve** by: measuring for wear, grinding the angular face, tip or stem; using hand and power tools, precision measuring devices, valve refacers, centerless grinders, and lubricants; according to manufacturer's recommendations, specifications and safety requirements.

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U5807.0 RECONDITION CYLINDER HEAD - Cont'd

5807.15 **Assemble cylinder head and components** including: valves, springs, retainers, locks, bearings, seals, shims, lash adjusters, camshafts, valve lifters, core plugs, followers, rockers, bridges and cross heads, prechambers and fasteners; by cleaning components, adjusting valve height, adjusting spring tension, adjusting valve lash, adjusting valve recession or protrusion; analysing performance and function; using hand and power tools, precision measuring devices, vacuum testers, cleaning solutions and equipment, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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SPONSOR SIGN-OFF FOR U5807: RECONDITION CYLINDER HEAD		
Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature

U5808.0 RECONDITION VALVE TRAIN

GENERAL PERFORMANCE OBJECTIVE

Recondition valve train by: inspecting valve train and components; repairing camshaft lobe or journal; repairing rocker arm; repairing rocker arm shaft; reconditioning camshaft follower; according to manufacturer's recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5808.01 **Inspect valve train and components** including: camshaft, followers, rockers, rocker shafts, valve lifters, lash adjusters, bridges and crossheads, timing gears, fasteners, seals, push rods, chain guide and tensioners; by degreasing, media blasting; visually inspecting and analysing performance; checking for wear, fractures, distortion, alignment and contamination; using hand and power tools, precision measuring devices and cleaning equipment; according to manufacturer's recommendations, specifications and safety requirements.

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5808.02 **Repair camshaft lobe or journal** by: grinding, metalizing, parkorizing and polishing; checking for wear and distortion; using hand and power tools, precision measuring devices, crack detection and metalizing equipment, polishers, camshaft grinders, presses, lubricants and parkorizing equipment; according to manufacturer's recommendations, specifications and safety requirements.

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U5808.0 RECONDITION VALVE TRAIN - Cont'd

5808.03 Repair rocker arm by: grinding, boring, metalizing, rebushing, burnishing, honing and reaming; using hand and power tools, precision measuring devices, grinders, metalizing equipment, honing and boring equipment, reamers, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5808.04 **Repair rocker arm shaft** by: metalizing, grinding, polishing and measuring; using hand and power tools, precision measuring devices, grinders, metalizing equipment, polisher, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5808.05 **Recondition camshaft follower** by: grinding, polishing, lapping, removing and replacing rollers, resizing and measuring; using hand and power tools, precision measuring devices, grinders, polishers, lathe, presses, reamers, lapping and honing equipment; according to manufacturer's recommendations, specifications and safety requirements.

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SPONSOR SIGN-OFF FOR U5808: RECONDITION VALVE TRAIN

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U5809.0 RECONDITION ENGINE BLOCK

GENERAL PERFORMANCE OBJECTIVE

Recondition engine block by: inspecting engine block and components; repairing engine block crack; repairing lifter bore; repairing bearing housings; repairing cylinder bore; repairing cylinder block deck surface; repairing lower seal surface; repairing counterbore; installing camshaft bearings; resizing semi-finished bearings; installing core and oil gallery plugs; according to manufacturer's recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5809.01 **Inspect engine block and components** including: cylinders and fasteners; by degreasing, visually inspecting, testing and analysing performance and function; checking for wear, cracks, fractures, distortion, discoloration, alignment, missing components, thread condition and porosity; using hand and power tools, precision measuring devices, crack detection equipment, pressure testing and cleaning equipment; according to manufacturer's recommendations, specifications and safety requirements

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5809.02 **Repair engine block crack** by: metalizing, sleeving and stitching; using hand and power tools, precision measuring devices, resurfacing equipment, metalizing equipment, lubricants, adhesives, boring equipment, lifting, rigging and blocking equipment; according to company policy, specifications and safety requirements

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U5809.0 RECONDITION ENGINE BLOCK - Cont'd

5809.03 **Repair lifter bore** by: resizing and sleeving; using hand and power tools, precision measuring devices, reamers, presses, honing and boring equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5809.04 **Repair bearing housings** by: metalizing, honing, boring or sleeving; using hand and power tools, precision measuring devices, alignment-honing equipment, alignment-boring equipment, lathes, metalizing and milling equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5809.05 **Repair cylinder bore** by: sleeving, boring, honing or ridge reaming; using hand and power tools, precision measuring devices, boring and honing equipment, lathes, heating and cooling equipment, hydraulic presses, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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U5809.0 RECONDITION ENGINE BLOCK - Cont'd

5809.06 **Repair cylinder block deck surface** by: measuring, grinding, milling, metalizing and stitching; using hand and power tools, precision measuring devices, resurfacing equipment, metalizing and pressure testing equipment, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5809.07 **Repair lower seal surface** by: boring, sleeving, metalizing and honing; using hand and power tools, precision measuring devices, boring or honing equipment, metalizing equipment, lathes, hydraulic presses, heating and cooling equipment, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5809.08 **Repair counterbore** by: boring, sleeving and metalizing; using hand and power tools, precision measuring devices, boring equipment, hydraulic presses, heating and cooling equipment, metalizing equipment, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5809.09 **Install camshaft bearings** by: pushing and pulling; using hand and power tools, precision measuring devices, bearing installation tools, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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U5809.0 RECONDITION ENGINE BLOCK - Cont'd

5809.10 **Resize semi-finished bearings** by: boring; using hand and power tools, precision measuring devices, boring equipment, lifting rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

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5809.11 **Install core and oil gallery plugs** by: pressing and threading; using hand and power tools, precision measuring devices, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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SPONSOR SIGN-OFF FOR U5809: RECONDITION ENGINE BLOCK

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U5810.0 RECONDITION ENGINE RELATED COMPONENTS

GENERAL PERFORMANCE OBJECTIVE

Recondition engine related components by: removing and replacing pump pullies; inspecting oil pump; reconditioning oil pump; inspecting balance shaft assemblies and components; reconditioning balance shaft assemblies and components; inspecting water pump; reconditioning water pump; inspecting piston assembly and components; reconditioning piston and components; inspecting gear assemblies; reconditioning gears and components; inspecting manifold; repairing manifold; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5810.01 **Remove and replace pump pullies** by: pressing or pulling; using hand tools and hydraulic presses; according to manufacturer's recommendations, specifications and safety requirements.

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5810.02 **Inspect oil pump** by: cleaning, visually inspecting and measuring; checking for wear, distortion, contamination and porosity; using hand and power tools, precision measuring devices and cleaning equipment; according to manufacturer’s recommendations, specifications and safety requirements.

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U5810.0 RECONDITION ENGINE RELATED COMPONENTS - Cont'd

5810.03 **Recondition oil pump** by: resurfacing body and cover, replacing bushings, pressing, pulling, honing, reaming, assembling and testing; using replacement parts, hand and power tools, precision measuring devices, resurfacing, pressing, reaming, honing and pressure testing equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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5810.04 **Inspect balance shaft assemblies and components** including: shafts, bearings, gears, bushings and fasteners; by degreasing, visually inspecting, testing and measuring performance; checking for wear, distortion, fractures and function; using hand and power tools, precision measuring devices and crack detection and cleaning equipment; according to manufacturer's recommendations, specifications and safety requirements.

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5810.05 **Recondition balance shaft assemblies and components** including: shafts, bearings, gears, bushings and fasteners; by resizing shafts, removing, replacing and sizing bushings and assembling components; using hand and power tools, precision measuring devices, metalizing equipment, grinding, polishing, boring and honing equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

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U5810.0 RECONDITION ENGINE RELATED COMPONENTS - Cont'd

5810.06 **Inspect water pump** by: cleaning and visually inspecting; checking for wear, distortion, porosity and function; using hand and power tools, precision measuring devices, press equipment and cleaning equipment; according to manufacturer's recommendations, specifications and safety requirements.

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5810.07 Recondition water pump by: pushing, pressing, heating and cooling, machining, lubricating, assembling and testing the water pump; using hand and power tools, precision measuring devices, pressing equipment, heating and cooling equipment, lubricants, coated abrasives, adhesives and vacuum tester; according to manufacturer's recommendations, specifications and safety requirements.

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5810.08 **Inspect piston assembly and components** including: pin and retainers; by cleaning, visually inspecting and measuring; checking for wear, distortion and fractures; using hand and power tools, precision measuring devices and cleaning equipment; according to manufacturer's recommendations, specifications and safety requirements.

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5810.09 **Recondition piston and components** including: ring grooves and piston pin boss; by machining, honing or bushing and knurlizing; using hand and power tools, precision measuring devices, ring groove cutters, lathes, honing and boring equipment, lubricants and piston knurilers; according to manufacturer's recommendations, specifications and safety requirements.

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U5810.0 RECONDITION ENGINE RELATED COMPONENTS - Cont'd

5810.10 **Inspect gear assemblies and components** including: pins and bushings; by degreasing, visually inspecting, analysing performance and function; checking for wear, fractures and distortion; using hand and power tools, precision measuring devices, cleaning equipment and crack detecting equipment; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5810.11 **Recondition gears and components** including bushings: by installing and sizing new bushing; using hand and power tools, precision measuring devices, pressing, honing and boring equipment, reamers, polishers, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5810.12 **Inspect manifold** by: degreasing or media blasting, visually inspecting and analysing performance; checking for distortion, fractures, corrosion and porosity; using hand and power tools, precision measuring devices, cleaning equipment, pressure testing and crack detection equipment; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5810.13 **Repair manifold** by: metalizing, resurfacing and stitching; using hand and power tools, precision measuring devices, metalizing equipment, milling and grinding equipment, belt sanders and pressure testing equipment; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5810.0 RECONDITION ENGINE RELATED COMPONENTS - Cont'd

SPONSOR SIGN-OFF FOR U5810: RECONDITION ENGINE RELATED COMPONENTS		
Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature

U5811.0 ASSEMBLE ENGINE

GENERAL PERFORMANCE OBJECTIVE

Assemble engine by: preparing engine block and components for assembly; installing liners and seals; installing crankshaft, camshaft and components; assembling connecting rod, piston, pin and rings; installing piston and rod in engine block; installing timing components; installing oil pump and components; installing cylinder head and components; installing valve train and components, installing pans, covers and components; testing engine assembly; according to manufacturer’s recommendations, specifications and safety requirements.

PERFORMANCE OBJECTIVES

SKILLS

5811.01 **Prepare engine block and components for assembly** by: final washing; using cylinder and soft bristle brushes, wipers, pressure washers, detergents and rust inhibitors, lifting, rigging and blocking devices; according to company policy and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.02 **Install liners and seals** by: pressing or pulling; using hand and power tools, precision measuring devices, presses, heating and cooling equipment, lubricants and adhesives; according to manufacturer’s recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5811.0 ASSEMBLE ENGINE - Cont'd

5811.03 **Install crankshaft, camshaft and components** including: main bearings, crankshaft seals and fasteners; by inserting and fastening and checking clearances; using hand and power tools, precision measuring devices, lubricants, adhesives, torque wrenches, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.04 **Assemble connecting rod, piston, pin and rings** by: pressing, pushing, heating, fastening and expanding; using hand and power tools, precision measuring devices, presses with special drivers, heating equipment, ring expanders and lubricants; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.05 **Install piston and rod assembly in engine block** by: inserting bearings, lubricating, compressing rings, pushing assembly into cylinder, installing bearing cap, torquing fasteners and checking clearances; using hand and power tools, precision measuring devices, torque wrenches, ring compressors, lubricants, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5811.0 ASSEMBLE ENGINE - Cont'd

5811.06 **Install timing components** by: bolting, pressing, lubricating, heating and cooling; using hand and power tools, precision measuring devices, presses, heating and cooling equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.07 **Install oil pump and components** including: oil pump, pick-up screen, oil pump drive, drive retainer, gaskets and fasteners; by pre-lubricating, attaching pick-up screen, oil pump and drive to the block; using hand and power tools, precision measuring devices, welding equipment, lubricants and adhesives; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.08 **Install cylinder head and components** including: alignment dowels, head gasket and fasteners; by aligning, pressing and torquing fasteners in sequence; using hand and power tools, precision measuring devices, torque wrenches, lubricants, adhesives, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.09 **Install valve train and components** including: valve lifters, push rods, rockers, pivots, bridges and fasteners; by torquing, lubricating and adjusting clearance; using hand and power tools, precision measuring devices, torque wrenches, lubricants, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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U5811.0 ASSEMBLE ENGINE - Cont'd

5811.10 **Install pans, covers and components** including: gaskets, seals, adhesives and fasteners; by inserting fasteners and gaskets and checking torques; using hand and power tools, precision measuring devices, sealants, lifting, rigging and blocking devices; according to manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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5811.11 **Test engine assembly** by: spin testing, vacuum or pressure testing and dynamometer testing; using engine run-in stand, dynamometers, vacuum or pressure testers, hand and power tools, precision measuring devices, lubricants, lifting, rigging and blocking devices; according to government regulations, manufacturer's recommendations, specifications and safety requirements.

Date Completed (mm/dd/yy)	Apprentice Signature	Supervisor/Trainer Signature
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SPONSOR SIGN-OFF FOR U5811: ASSEMBLE ENGINE

Date Completed (mm/dd/yy)	Sponsor Name (Print)	Sponsor Signature
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DEFINITIONS

Apprentices Class

Individuals in this class:

- Hold one or more valid Registered Training Agreements (RTAs) with the Ministry of Training, Colleges and Universities in either compulsory or voluntary trades;
- Hold a valid statement of membership with the Ontario College of Trades in the Apprenticeship class;
- Are subject to any ratios or wage rates that have been set out in regulation for their trade(s);
- Can remain in this class until they receive their Certificate of Apprenticeship;
- Can hold themselves out as Apprentices.

Certificate of Apprenticeship (C of A)

A certificate issued by the Minister of Training, Colleges and Universities to individuals who have demonstrated that they have completed an apprenticeship program in Ontario.

Certificate of Qualification (C of Q)

A certificate issued by the Registrar on behalf of the College to a Journeyperson. A C of Q will serve as proof of having met any testing/program requirements and membership in the College's Journeypersons Class.

Competence

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

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.

Competent Person

A competent person is defined by the *Occupational Health and Safety Act* as being a person who:

- is qualified because of their knowledge, training and experience to organize the work and its performance;
- is familiar with the *Occupational Health and Safety Act* and its regulations that apply to the work; and has knowledge of any potential or actual danger to health or safety in the workplace.

Competent Worker

A competent worker is defined by the *Occupational Health and Safety Act* as being a person who:

- is qualified because of knowledge, training and experience to perform the work;
- is familiar with the *Occupational Health and Safety Act* and with the provisions of the regulations that apply to the work; and
- has knowledge of all potential or actual danger to health or safety in the work.

Sponsor

Means a person that has entered into a Registered Training Agreement (RTA) 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 approved established by the College.

Sponsor of Record

Refers to the Sponsor documented as being signatory to the current training agreement or contract. In order for a Sponsor to be considered for the training of Apprentices, they must identify that the workplace has qualified Journeypersons 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.

Incompetence

According to the *Ontario College of Trades and Apprenticeship Act, 2009*, a member of the College may be found to be incompetent by the College's Discipline Committee if the Committee feels that the member has displayed a lack of knowledge, skill or disregard for another person's welfare while practising their trade. If this happens, the individual may be found unfit to practise their trade and their Statement of Membership/Certificate of Qualification may be revoked, suspended, or be subject to terms, conditions or limitations.

Journeyperson

Compulsory Trades Journeyperson:

- Someone who holds a valid Certificate of Qualification (C of Q) in the trade and who is a member in good standing of the College's Journeypersons Class for the same trade; or
- Someone who holds a valid Provisional C of Q in the trade and who is a member in good standing of the College's Journeypersons Class for the same trade.

Voluntary Trades Journeyperson:

- Someone who holds a valid C of Q in the trade and who is a member in good standing of the College's Journeypersons Class for the same trade; or
- Someone who holds a C of Q in the trade that was issued by the Ministry of Training, Colleges and Universities (MTCU) prior to April 8, 2013 (membership in the College is not required in this scenario).

Journeyperson Candidates Class (JPC)

An individual who has completed an Ontario apprenticeship program (Certificate of Apprenticeship) in a voluntary or compulsory trade that has a Certificate of Qualification examination, but has not passed the Certificate of Qualification examination for their trade. There is a maximum time limit of one year to remain in the Journeyperson Candidates Class.

Are subject to any ratios and/or wage rates that have been set out for their trade(s), if they practise a compulsory trade.

Can continue to work legally in their trade if they are in a compulsory trade, as they prepare to write their examination (individuals in voluntary trades do not have to be members of the College to work legally); and can hold themselves out as Journeyperson Candidates (they are neither Apprentices nor Journeypersons).

Can remain in this class for a maximum of one year or until they pass the Certificate of Qualification exam and become members of the Journeypersons class. However, they can only remain in this class for a maximum of one year. After one year they can move into the Tradespersons Class if they are in a voluntary trade. If they are in a compulsory trade and have been in the Journeyperson Candidates Class for one year, they can no longer work legally in that trade until they pass the Certificate of Qualification examination.

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.

OCTAA

Ontario College of Trades and Apprenticeship Act, 2009

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.

Ratios

For up to date information regarding Journeyperson to Apprentice ratios, please visit: www.collegeoftrades.ca

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 successfully completing 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 skill described in the Training Standard (note: does not mean the larger skill groups referred to in the Training Standard as Skill Sets, Training Units, or General Performance Objectives, but the individual skills that make up those groups).

Skill Sets

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

Skill Set Completion for Sponsors

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

Supervisor

An individual who oversees the performance of a task and oversees the actions or work of others.

Trade Board

Under the *Ontario College of Trades and Apprenticeship Act, 2009*, the [College of Trades Appointments Council](#) (COTAC) may appoint a Trade Board for each designated trade, composed of Employee and Employer representatives from the industry. Trade Boards are responsible for advising and making recommendations to the College's Divisional Boards on issues relating to their trade. When there is no appointed trade board for a trade, the respective sector divisional board will act as the default trade board for the trade.

Tradespersons Class

A Class of Membership for individuals who practise in a voluntary trade which may or may not have a Certificate of Qualification examination.

Individuals in this class:

Have been members of the Journeyperson Candidates Class or are not eligible for Journeyperson Candidates Class and have been assessed to have experience and/or qualifications that are equivalent to a Certificate of Apprenticeship in that trade

- Are preparing to write/have no plans to write/have not passed the available Certificate of Qualification exam for their trade(s);
- Can remain in this class indefinitely or until they pass the available Certificate of Qualification exam for their trade(s); and
- can hold themselves out as tradespersons (they are neither apprentices nor journeypersons).

Note: Individuals in the Tradespersons Class are considered Journeypersons for the purpose of determining ratios for that trade.

Trainer

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

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 join the Journeypersons' class of members at the Ontario College of Trades 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 (CofQ).
2. Red Seal examinations – which lead to a Certificate of Qualification (CofQ) 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: www.red-seal.ca

You will write an Ontario-only examination when your trade is not designated as Red Seal trade in Ontario.

Ontario's Exam Preparation Guide

www.collegeoftrades.ca

Basic Examination Details for You to Know

You will have **up to four hours to write your examination**. If you need more time, you must ask for it when you schedule the examination, not on the day of your examination. You can leave the examination centre if you complete the examination in less than four hours.

You need a mark of 70% to pass.

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.

Scheduling Your Examination

The examination scheduling process is currently outlined in detail on the College of Trades website: www.collegeoftrades.ca

Remember these 3 basic steps:

1. Confirm your eligibility to write the examination with the College of Trades.
2. Contact Client Services at the College of Trades to pay your examination fee.
3. Contact the local Ministry apprenticeship office to schedule your examination in their examination centre: www.services.findhelp.ca/eo/tcu/appoff

APPRENTICE RECORD #1

SPONSOR INFORMATION	
Registered Training Agreement #	
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 I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Trainer and Apprentice are 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.

APPRENTICE RECORD #2

SPONSOR INFORMATION	
Registered Training Agreement #	
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 I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Trainer and Apprentice are 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.

APPRENTICE RECORD #3

SPONSOR INFORMATION	
Registered Training Agreement #	
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 I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Trainer and Apprentice are 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.

APPRENTICE RECORD #4

SPONSOR INFORMATION	
Registered Training Agreement #	
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 I.D. # (e.g. UXXXX)	SPONSOR NAME	SPONSOR SIGNATURE	DATE: (mm/dd/yy)

The Trainer and Apprentice are 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 Apprentice Record Form, please photocopy as needed or visit www.collegeoftrades.ca and search Apprentice Record Form.***

INSTRUCTIONS FOR APPRENTICESHIP PROGRAM COMPLETION (Appendix A)

Once an Apprentice has completed all the classroom training and hours specified for the trade, and have acquired all the mandatory skills included in this training standard:

1. The Apprentice and the Sponsor complete the Apprentice Completion Form and the Skill Set Completion for Sponsors Form located on the following pages.
2. They sign the forms and submit them to their local Ministry of Training, Colleges and Universities apprenticeship office. (To find the closest office, check the contact information at <http://services.findhelp.ca/eo/tcu/appoff> or call the Employment Ontario toll free number at (1-800-387-5656).
3. Since this trade is competency based, all mandatory skills in the training standard must be signed off. If the Sponsor is completing the Apprentice before the industry recommended training hours are done, Ministry 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 Ministry of Training, Colleges and Universities apprenticeship office by mail, fax, or email (as a scanned document), they should not include their training standard; if they are presenting this form in person at the local apprenticeship office, they should bring their training standard with them.

After Ministry 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 Ministry will issue a Certificate of Apprenticeship to the Apprentice.

The Ontario College of Trades will receive notification of this completion, and complete the individual's membership in the Apprentices class for the trade. If the Apprentice has completed a program in a compulsory trade, the College will automatically register the Apprentice as a member of the Journeyman Candidates class so the Apprentice can continue to work legally for one year while preparing for the certification examination. If completion is in a voluntary trade, the Apprentice can apply for membership in the Journeyman Candidates class.

For permission to schedule an exam once completion is confirmed by the Ministry, the individual must first contact the College's Client Services Department at 647-847-3000 or toll free at 1-855-299-0028 to pay the certification examination fee.

APPRENTICE COMPLETION FORM (Appendix B)

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 Ministry of Training, Colleges and Universities apprenticeship office (find contact information at <http://services.findhelp.ca/eo/tcu/appoff> 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>for hours-based trades only</i>)	
Hours completed? (<i>documentation attached</i>)	Yes (<input type="checkbox"/>) No (<input type="checkbox"/>) Not applicable (<input type="checkbox"/>)
Classroom training completed or exempt?	Yes (<input type="checkbox"/>) No (<input type="checkbox"/>) Not applicable (<input type="checkbox"/>)

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

SKILL SET COMPLETION FOR SPONSORS (Appendix C)

You will find the skill set numbers and titles in the Training Standard'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.

SPECIAL INSTRUCTIONS

NOTE ON SHADED PERFORMANCE OBJECTIVES AND SKILLS:

Shaded performance objectives and skills are optional, that is, they do not have to be completed or signed off for the apprentice to complete his or her apprenticeship.

SKILL SET #	SKILL SET TITLE	SIGNING AUTHORITY SIGNATURE
U5800.0	Occupational Health and Safety Procedures	
U5801.0	Disassemble Engine	
U5802.0	Recondition Flywheel	
U5803.0	Recondition Brake Components	
U5804.0	Recondition Drive Train and Suspension	
U5805.0	Recondition Crankshaft	
U5806.0	Recondition Connecting Rod	
U5807.0	Recondition Cylinder Head	
U5808.0	Recondition Valve Train	
U5809.0	Recondition Engine Block	
U5810.0	Recondition Miscellaneous Engine Components	
U5811.0	Assemble Engine	

MTCU USE ONLY:

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

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

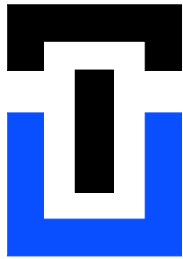
Completion of classroom training verified: Yes () No ()

Staff Name _____ Signature _____ Date _____

MTCU APPRENTICESHIP OFFICES IN ONTARIO (Appendix D)

Location	Contact	Location	Contact
Barrie 705-737-1431	55 Cedar Pointe Dr Unit 609, Barrie, ON L4N 5R7	Mississauga (City of) 905-279-7333	The Emerald Centre, 10 Kingsbridge Garden Cir Ste 404, Mississauga, ON L5R 3K6
Belleville 613-968-5558	135 North Front St, Belleville, ON K8P 3B5	North Bay 705-495-8515	200 First Ave West, North Bay, ON P1B 3B9
Brantford 519-756-5197	505 Park Rd North Suite 201, Brantford, ON N3R 7K8	Ottawa 613-731-7100	Preston Square, 347 Preston St 3rd Flr, Ottawa, ON K1S 3H8
Chatham 519-354-2766	870 Richmond St West 1st Floor, Chatham, ON N7M 5J5	Owen Sound 519-376-5790	1450 1st Ave West Suite 100, Owen Sound, ON N4K 6W2
Cornwall 613-938-9702	132 Second St East Ste 202, Cornwall, ON K6H 1Y4	Pembroke 613-735-3911	615 Pembroke St East, Pembroke, ON K8A 3L7
Dryden 807-223-4632	Provincial Government Building, 479 Government St, Dryden, ON P8N 3K9	Peterborough 705-745-1918	901 Lansdowne St West, Peterborough, ON K9J 1Z5
Elliot Lake 705-848-4661	50 Hillside Dr North, Elliot Lake, ON P5A 1X4	Pickering (City of) 905-837-7721	1420 Bayly St Unit 1, Pickering, ON L1W 3R4
Fort Frances 807-274-8634	922 Scott St 2nd Flr, Fort Frances, ON P9A 1J4	Sarnia 519-542-7705	Bayside Mall, 150 Christina St North, Sarnia, ON N7T 7W5
Hamilton Central 905-521-7764	Ellen Fairclough Bldg, 119 King St West 8th Flr, Hamilton, ON L8P 4Y7	Sault Ste. Marie 705-945-6815	477 Queen St East 4th Flr, Sault Ste Marie, ON P6A 1Z5
Kapuskasing 705-337-4381	Ontario Government Complex, 122 Government Rd West, Kapuskasing, ON P5N 2X8	St Catharines 905-704-2991	Garden City Tower, 301 St Paul St 10th Flr, St Catharines, ON L2R 7R4
Kenora 807-468-2879	227 1/2 Second St South, Kenora, ON P9N 1G4	Sudbury 705-564-3030	159 Cedar St Ste 506, Sudbury, ON P3E 6A5
Kingston 613-548-1151	Cornell Corporate Centre, 299 Concession St Ste 201, Kingston, ON K7K 2B9	Thunder Bay 807-346-1550	189 Red River Rd Suite 103, Thunder Bay, ON P7B 1A2
Kingston 613-545-2455	308 Wellington St Unit 101, Side Entrance (at Rideau Terrace), Kingston, ON K7K 7A8	Timmins 705-235-1950	Ontario Government Complex, 5520 Highway 101 East Wing B, South Porcupine, ON P0N 1H0
Kitchener 519- 653-5758	4275 King St East Ste 200, Kitchener, ON N2P 2E9	Toronto Central 416-326-5800	625 Church St 1st Fl, Toronto, ON M7A 2B5
London 519-675-7788	1200 Commissioners Rd E Unit 72, London, ON N5Z 4R3	Windsor Central 519-973-1441	Roundhouse Centre, 3155 Howard Ave 2nd Fl, Ste 200, Windsor, ON N8X 4Y8

For current office listings, please visit: <http://services.findhelp.ca/eo/tcu/appoff>



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

www.collegeoftrades.ca