



# **Professional Skills Record**

## **Automotive Service Technician**

### **NOC 7321**

## ***ACKNOWLEDGEMENTS***

Materials from the *Trade Essentials Manuals* may be reproduced for individual educational purposes only. No part of this material may be reproduced or used for any commercial purpose or sold by any person other than the owner.

This project is the result of the collaboration of the following dedicated adult educational consultants in Prince Edward Island:

Ruth Rogerson  
Karen Chandler  
Gaelyne MacAulay  
Karen Dempsey.

Our sincere thanks to the *Trade Essentials Advisory Committee* for their suggestions, input and ongoing support.

We also recognize the valuable contribution made by the apprentices and challengers who volunteered to participate in this research project. It is our sincere hope that they have gained as much from their participation as we have. We also hope that their contributions will assist many more tradespeople to reach their goals.

We are grateful to the assessors, tutors and classroom instructors who patiently piloted our materials and who gave back invaluable insights and advice.

All Trade Essentials materials have been validated by teams of tradespeople who hold Certificates of Qualification, Red Seal Endorsement. We gratefully acknowledge the crucial contribution made by the following team members:

Glenn Ellsworth (Automotive Service Technician)  
Cecil Banks (Automotive Service Technician)  
Scott Bagnall (Automotive Service Technician)  
Darcy MacKenzie (Automotive Service Technician)  
Elmer MacDougall (Cabinet Maker)  
Graham Hicken (Cabinet Maker)  
Gerard Lund (Carpenter)  
Leo MacDonald (Carpenter)  
Ryan Rogerson (Carpenter)  
Darren Richards (Construction Electrician)  
Mark Seaman (Construction Electrician)  
Ken Zakem (Cook)  
Rod Lukeman (Cook)

Barry Strongman (Industrial Electrician)  
Gregg Francis (Industrial Electrician)  
Jake Shaw (Machinist)  
Sue LeFort (Machinist)  
John Hebert (Metal Fabricator / Welder)  
Joe Johnson (Metal Fabricator)  
Jim Arsenault (Metal Fabricator)  
Kent Mitchell (Oil Burner Mechanic / Steamfitter-Pipefitter)  
Rod Arsenault (Oil Burner Mechanic / Refrigeration & Air Conditioning Mechanic)  
Kent Mitchell (Plumber)  
Scott Carter (Plumber)  
Charlie Redmond (Refrigeration & Air Conditioning Mechanic)  
Scott Lacey (Steamfitter-Pipefitter)  
Vincent Jenkins (Welder)

Thanks to the Apprenticeship Section of the PEI Department of Innovation and Advanced Learning and to the government of Canada's Pan-Canadian Innovation Initiative for financial assistance and for continuing support to trades and apprentices in Canada.

# Journeyperson's Handbook

## **TABLE OF CONTENTS**

1	WHY DO I NEED THIS HANDBOOK? .....	1
2	BUT WE HAVE LOGBOOKS .....	1
3	WHAT IS A NATIONAL OCCUPATIONAL ANALYSIS (NOA)? .....	2
4	IF THERE IS AN NOA, WHY DO WE NEED A PROFESSIONAL SKILLS RECORD (PSR)?.....	3
5	AM I EXPECTED TO TEACH ALL THE SKILLS IN A PSR? .....	4
6	ARE THERE ANY TIPS ON HOW TO BE A GOOD MENTOR TO MY APPRENTICE? .....	5
6.1	Tips .....	6
7	SO HOW DO I USE A PROFESSIONAL SKILLS RECORD (PSR) WITH MY APPRENTICE? .....	7

This handbook is designed to help skilled trades Journeypersons manage the skills and learning of their Apprentices who are using a Professional Skills Record.

## **1 Why Do I Need this Handbook?**

Eighty percent of all learning in a trade happens on the job. This means the apprentice has the responsibility to learn and you, as their journeyperson, have the responsibility to mentor and teach.

Signing off for the learning an apprentice has completed under your supervision is a huge responsibility. With all the skills needed in a trade, it is important that both you and the apprentice have a tool to help you record and sign off on that learning.

## **2 But We Have Logbooks**

When a tradesperson registers as an apprentice in most provinces or territories in Canada, they are given a Logbook.

A Logbook:

- is issued by the apprenticeship authority within a jurisdiction
- is created from the National Occupational Analysis (NOA) in a trade
- is a list of all the general skill areas (**Blocks and Tasks**) in a trade
- records an apprentice's progress in the general skill areas of a trade
- is signed off by a journeyperson to guarantee that an apprentice is performing these tasks to Industry Standard.

A Logbook lists the Blocks and Tasks from the NOA **but** the Interprovincial Red Seal exam and trades training courses in colleges and trade schools use **all** the information in the NOA. This includes the Blocks, Tasks, **Sub-tasks and the Knowledge and Abilities** listed in the NOA.

Each apprentice needs a tool that lists **all** the skills and learning they need in their trade career. Then, if they have one employer or several employers over their entire term of apprenticeship, both the apprentice and the journeyperson know what learning has been completed:

- the journeyperson knows what skills they are signing off to verify what has been taught; and
- the apprentice knows what they need to learn to be successful in their Red Seal exam.

### **3 What is a National Occupational Analysis (NOA)?**

The Canadian Council of Directors of Apprenticeship, which is made up of managers and directors of apprenticeship from every province and territory in Canada, guides a Human Resources and Skills Development Canada (HRSDC) sponsored program to develop NOAs.

Under this partnership, joint planning committees made up of tradespeople who have a Certificate of Qualification, Red Seal endorsement from each province and territory in Canada, come together in Ottawa every four to five years to review and revise the NOA in all of the 45 skilled trades.

Each NOA is accepted as the national standard in that trade. The NOA is then used to:

- identify and group tasks performed by skilled workers in each trade in every province and territory in Canada
- group these tasks by Blocks, Tasks, Sub-tasks, Knowledge, Skills and Abilities (also called "**competencies**") required in a trade
- give information on the breakdown of questions from all sections of the NOA in the Interprovincial Red Seal exam
- create all the questions for the Red Seal exam
- create curriculum for trade school programs and Block Release/Period/Level\* programs in a trade.

\* *The in-school portion of apprenticeship has several names across Canada. In some provinces and territories it is called Block Release, in others it is called Period Training or Level.*

## **4 If there is an NOA, why do we need a Professional Skills Record (PSR)?**

The NOA is designed to be used for creating curriculum and for developing test questions for the Red Seal exam.

The PSR is designed to be used by an apprentice and a journeyperson in the workplace. The PSR provides a fair and objective assessment tool to record the apprentice's learning and skills.

The PSR has been developed **with** apprentices during a three-year research project on PEI called Trade Essentials. Recommendations made by the apprentices who tested the tool have been built into the document.

The PSR was then validated by teams of tradespeople who have a Certification of Qualification, Red Seal endorsement in each trade who came together and discussed what an apprentice is expected to learn from their journeyperson in the workplace.

The apprentice has the main responsibility for completing the PSR. It is designed as a self-assessment tool so the apprentice can keep track of his/her skills and learning and make plans to fill any technical skills training gaps.

The PSR takes information from the NOA and:

- lays it out in a chart
- lists the percentage and number of questions for the Red Seal exam from each task on every page
- takes the skills from the NOA and describes them in terms of what a tradesperson does on the job, for example:
  - In the **NOA**, the skill says – "knowledge of blueprints and drawings"
  - In the **PSR**, the skill says – "read and interpret blueprints and drawings"
- has a rating chart so the apprentice can judge his/her level of learning and have it all recorded for you to review
- provides you, the journeyperson, with a tool to discuss details of an apprentice's skill areas that are great and areas that may need to improve
- helps the apprentice make a plan so he/she can improve skills
- helps you know what skills you still have to teach the apprentice.



## **5 Am I expected to teach all the skills in a PSR?**

No. A PSR contains **all** the skills and learning a tradesperson has to learn over all their years as an apprentice. You, as their journeyperson, can help make this tool useful by completing the sign-off on the learning and skill you know they have. Some of the ways you can assess the skills your apprentice has are:

- **OBSERVATION** – you watch them use their knowledge, skills and abilities or competencies to perform a task or sub-task

For example, you ask them to select a tool for a specific job, then watch them use that tool to do a task.

- **INTERVIEW** – you have a discussion with your apprentice to find out if they can demonstrate an understanding of what they are doing

For example, you ask them to tell you about any safety precautions that have to be followed before they start a certain task.

- **DOCUMENTATION** – an apprentice may have a document that provides proof of skills they already have. You can use the PSR to sign-off on tasks the document covers. The document or certificate could be from:

- another employer,
- a trade school or college,
- an industry training course,
- another province or territory,
- or even from another country.

For example, you need all your employees to be trained in WHMIS. A new apprentice you just hired shows you a WHMIS certificate he/she have from a job they were working on a couple of months ago in northern Canada.

Apprentices will also tell you, through their self-assessments, the best way they think they can prove the skills they have. This can help guide you, as their mentor, to choose a way to assess your apprentice that works best for both of you.

## 6 Are there any tips on how to be a good mentor to my apprentice?

Mentoring has always been the foundation of apprenticeship. In trades, a mentor is a person who has a great deal of learning and skills from experience in a trade who helps a less experienced person by guiding, teaching and sharing their skills and learning.

Along with having learning and experience in their trade, the most successful mentors are:

- **Patient** - and understand the apprentice needs time to learn and practise their skills to become as good as their mentor.
- **Organized** - and set a schedule to meet regularly with their apprentice to track their learning and make plans for new learning.
- **Positive** – and supportive in helping an apprentice tackle new learning and encourage them to keep working on skills they find difficult to learn.
- **Respectful** – so that other employees in the workplace accept the apprentice and are willing to help and encourage the new apprentice.

As a mentor, you are a role model for your apprentice. To create a successful relationship between you and your apprentice you can:

- **Lead by example.** If you set safety and quality assurance as firsts on your list each and every day, so will your apprentice.
- **Build trust.** If you want your apprentice to trust and respect you, you can show trust in them by assigning them some responsibility as soon as you see an opportunity.
- **Communicate.** Communication is a two-way street. Be willing to listen as you give directions and be available to your apprentice when they need you. Always treat every question seriously. If your apprentice has the confidence to ask, it is important to give a respectful answer.
- **Be reliable.** Your apprentices need to know they can depend on you when they run into a problem. Create supportive relationships with other employees so if you are away from the workplace, your apprentice feels confident in approaching another employee for help.

## 6.1 Tips

- **Give clear instructions.** When assigning a task and giving direction, give step-by-step instructions, then ask your apprentice to repeat the instructions. This gives them the opportunity to ask questions on things that might not be clear to them.

### Checklist for giving instructions:

- ✓ **explain the task**
  - ✓ **show them how it is done**
  - ✓ **answer their questions**
  - ✓ **oversee the work**
  - ✓ **give them time to practise**
  - ✓ **give feedback on how they are doing**
  - ✓ **take time to show them how to do the task better**
- **Give feedback.** Giving feedback often helps your apprentice to have a clear understanding of what you want them to do and how you want them to perform. The PSR helps you to give feedback because each knowledge, skills and ability (competency) statement is clear.

There are three types of feedback that work best in the workplace:

**Positive** feedback means you want your apprentice to continue what they are doing. People are motivated by hearing they are doing a good job. They usually do more and try harder.

**Constructive** feedback means you want your apprentice to change how or what they are doing. Offering support and guidance to your apprentice to make the changes you need usually brings the best results.

**Direct** feedback focuses on what you have seen, not on secondhand information. Focus on how the apprentice is doing and what you have planned for them to do.

- **Give your apprentice experience in many skills.** Sometimes apprentices end up performing the same set of skills over and over again because they are really good at them. They are required to learn the scope of the entire trade during their apprenticeship. If you have the capability, it would be helpful to take advantage of the opportunity to cover a wide range of skills by moving your apprentice from one set of skills to another on a regular basis.
- **Track and Document learning.** Every employer cannot offer an apprentice training in every skill in a trade because each workplace is unique. Some workplaces are specialists in one area of a trade.

As a journeyperson, you have the responsibility to sign off on the skills your apprentice learns under your guidance in your workplace. A PSR can help you identify those skills.

Setting a regular review date once every month or two, and keeping that time just for you and your apprentice, can increase their scope in their trade and increase their knowledge which will be an asset in the workplace.

This meeting time gives you the best opportunity to:

- monitor your apprentice's progress,
- make a plan with him/her to learn more skills, and
- find out if there are any problem areas where he/she may need help.

Regular meeting dates also help your apprentice to be prepared and able to track his/her learning. This can be done by using a Professional Skills Record (PSR).

## **7 So how do I use a Professional Skills Record (PSR) with my apprentice?**

The PSR is laid out in a chart. Each skill your apprentice has to learn has an action word to tell them how they are supposed to perform a skill. It gives you a level you can use to judge whether they are performing that skill properly. **Industry standard** is the term used to describe when your apprentice can complete a task to the level and quality of performance required by industry without assistance or supervision.

When you see the words "demonstrate an understanding of," you may find it easier to ask them questions about the skill to make sure they know what they are doing.

## PROFESSIONAL SKILLS RECORD (PSR) JOURNEYPerson'S HANDBOOK

Your apprentice has the responsibility to complete the "Knowledge, Skills and Abilities – Competencies" section.

When you are sure your apprentice has proven to you they have completed the learning they say they have, you verify it by initialing the sub-task.

<b>Trade Name</b>  IP Exam – 125 Questions  BLOCK A 5% - 6 questions on the IP  <u>Learning Category</u> OCCUPATIONAL SKILLS
<b>Task 1 – A</b> 3 questions on the IP exam  <u>Learning Outcome</u> <b>Uses and maintains tools and equipment</b>
Journeyperson Sign-off Task 1  <div style="display: flex; justify-content: space-between; align-items: center;"> <span>Complete</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <span>Incomplete</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div>



Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 1.01</b>  <u>Learning Objective</u> <b>Uses hand tools</b>  <b>JP Sign-off</b> ____	<b>1.01.01</b> Identify boring tools  <div style="display: flex; justify-content: space-between;"> <span><b>Rating</b> ____</span> <span><b>Complete</b></span> </div> <div style="display: flex; justify-content: space-between;"> <span><b>Proof</b> ____</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div> <div style="display: flex; justify-content: space-between;"> <span><b>Use</b> ____</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div>	<b>1.01.02</b> Identify hand cutting tools  <div style="display: flex; justify-content: space-between;"> <span><b>Rating</b> ____</span> <span><b>Complete</b></span> </div> <div style="display: flex; justify-content: space-between;"> <span><b>Proof</b> ____</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div> <div style="display: flex; justify-content: space-between;"> <span><b>Use</b> ____</span> <input style="width: 30px; height: 20px; border: 1px solid black;" type="checkbox"/> </div>
--	---	---



When your apprentice proves to you that he/she has finished enough sub-tasks to have a good grasp of the task, you verify that learning by initialing "complete".



If your apprentice has not completed enough sub-tasks or you do not agree with the ratings they have given themselves, initial "incomplete".

[illegible]

## Comments

You might

- 

The PSR can help you give a fair assessment of your apprentice's ability to perform each technical skill task. If you are assigned an apprentice from another employer, province, territory or country, you can use the PSR to review his/her skills so you do not waste your valuable time teaching them skills they already know and can do.



# PROFESSIONAL SKILLS RECORD

A tool for recording and recognizing skills and learning of trade apprentices

## Automotive Service Technician

NOC 7321

A project of:  
The Province of PEI  
and  
Human Resources and Skills Development Canada



Human Resources and  
Skills Development Canada

Ressources humaines et  
Développement des compétences Canada





The **Professional Skills Record (PSR)** is a technical skills assessment tool designed to be used in the workplace by an apprentice and a journeyperson. The PSR has taken the content from the National Occupational Analysis (NOA) and arranged it so apprentices can use it to measure their progress in their trade from the time they sign up for apprenticeship through to Red Seal certification.

This PSR has been through a validation process with a team of trade professionals with Certificate of Qualifications, Red Seal endorsement, who reached agreement on the wording of each and every knowledge and skill (*competency*) to make it measurable.

The PSR was originally designed as a tool to help apprentices move through a Recognition for Skills and Learning (RSL) process so they can receive recognition for skills they have, no matter where they learned them. Through completion of a PSR, they can avoid relearning what they already know and can do by entering the apprenticeship Block/Period/Level in-school process at a higher level. For example, move directly into Block/Period/Level three rather than relearning Block/Period/Level One and Two.

Feedback from testing and validation of the PSR has opened many new possibilities for using this tool. The PSR can be used:

- as a tool for valid assessment in a Recognition for Skills and Learning (RSL) process
- as a tool that new Canadians and people planning to emigrate can use, to assess their skills against Canadian standards, receive recognition for skills they already have and, if necessary, make a plan to fill any technical skill gaps they may still have
- in the secondary-school system and in post-secondary trades training so students can know the full scope of the trade they are entering
- as a tool to guide journeypersons while they are mentoring apprentices so they are aware of all the skills apprentices need to learn to be fully competent in their professional trade designation.

#### INFORMATION SITES:

PROJECT SITE  
[www.tradeessentials.ca](http://www.tradeessentials.ca)

CANADIAN RED SEAL SITE  
[www.red-seal.ca](http://www.red-seal.ca)

## TABLE OF CONTENTS

	PAGE
PROFESSIONAL SKILLS RECORD (PSR) Development .....	ii
Where Technical Trade Learning Happens .....	iii
Document Record .....	iv
Prior Learning Assessment and Recognition (PLAR) Recognition for Skills and Learning (RSL) .....	v
Assessment Standards.....	vi
Professional Skills Record (PSR) Components .....	ix
How to Self-assess Skills and Learning Using a PSR .....	xii
How to Record Skills and Learning in a PSR .....	xiii
Professionals Skills Record (PSR) Assessment Chart .....	1
 APPENDIX A – NOA GLOSSARY	
 APPENDIX B – REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES	

## Automotive Service Technician Trade Information

Name: \_\_\_\_\_ Full Address: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Phone: Home \_\_\_\_\_ Work \_\_\_\_\_ Cell \_\_\_\_\_

## Technical Skills Journey person Assessor/s

Name: _____	Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____	Business Address: _____
Email Address: _____	_____
Name: _____	Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____	Business Address: _____
Email Address: _____	_____
Name: _____	Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____	Business Address: _____
Email Address: _____	_____

Apprenticeship Program Start Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_ Red Seal Certification Date: \_\_\_\_\_

Apprenticeship Training Officer:

Provincial/Territorial Apprenticeship Manager:

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Province/Territory: \_\_\_\_\_

## Professional Skills Record (PSR) Development

### Professional Skills Record (PSR)

The Professional Skills Record (PSR) is designed as a tool of assessment. Learning and skills are validated through the PSR when they are signed off by a journeyperson in the trade in which the apprenticeship is being served.

All skills and learning assessed in this PSR are measured against the standards listed in the National Occupational Analysis (NOA). The NOA is recognized by the Canadian Council of Directors of Apprenticeship (CCDA) as the national standard for the occupation of Automotive Service Technician.

### PSR Automotive Service Technician Document Validation

**To conduct a reliable assessment through a formal recognition process, skills and learning statements must be measurable. To assess skills and learning using a PSR in the trades, the Knowledge, Skills and Abilities listed in the NOA have been made into measurable competency statements by adding an “action word.” This action word describes the skill and learning level which must be reached by an apprentice on the job in order to meet industry standards. Each PSR has been validated by a trades team, all of whom hold a Certificate of Qualification with Red Seal endorsement, and who reached consensus on each action word used in every knowledge, skill and ability statement.**

## Where Technical Trade Learning Happens

This Professional Skills Record (PSR) records and recognizes directly related trade technical skills and knowledge learned through:

- **Formal Learning** – structured learning that occurs in formal education and training institutions (for example, high school, trades school, apprenticeship programs, registered union and industry training programs)
- **Non-formal Learning** – learning that happens through planned, structured training or education outside the formal education system (for example, workshops, seminars, community school)
- **Informal/Experiential Learning** – learning that results from experience, occurs outside a structured environment, and is controlled by the learner (for example, experience on-the-job, volunteer work, self-study and life experiences). Informal or experiential learning must be current and essential to the trade.

*Definitions: Adopted and/or interpreted from Work-related Informal Learning: Research and Practice in the Canadian Context, CAPLA 2008*

## Academic Trade Requirement

**Trade Designation: Automotive Service Technician National Occupational Classification (NOC) 7321**

One of the following prerequisites must be met before writing the Interprovincial Red Seal exam: an academic Grade 12 certificate or a General Education Diploma (GED) or successful assessment in the following Essential Skills.

Essential Skills common to all trades are listed in Appendix B of this document. Specific Essential Skills for the Automotive Service Technician trade are listed on the Red Seal website: [www.red-seal.ca](http://www.red-seal.ca). (Once on that site, you will find the Essential Skills Profiles under “National Occupational Analysis.”)

A document can prove valuable learning that is recognized by industry and learning institutions.

**Record and save every document earned in industry, trade school or union.**

[illegible]

## Prior Learning Assessment and Recognition (PLAR). . . Recognition for Skills and Learning (RSL)

PLAR is a formal recognition process in which a variety of tools are used to help people identify, demonstrate and receive recognition for skills and learning they have from the workplace, educational institutions, credentialing organizations or regulatory bodies.

The **Professional Skills Record (PSR)** is a tool designed to assist a trades apprentice to record skills and learning, and then receive recognition for the skills and learning through a PLAR trades process called:

### RECOGNITION FOR SKILLS AND LEARNING (RSL)

Traditionally, 80% of learning in a trade happens in the workplace. Through a **Recognition for Skills and Learning (RSL)** process, an apprentice can advance in a trade when they prove they have the required hours, skills and learning for that trade. Proof of skills and learning is **recorded** by the apprentice in a **PSR** and **verified** when signed-off by a journeyperson in that trade.

Through the completion of a **PSR**, an apprentice can avoid relearning what they already know and can do. Through an **RSL** process, a trade apprentice can submit a PSR for assessment to:

- advance in Block/Period/Level in-school training by not having to complete a Block/Period/Level in which proof is provided that skills and learning have already been achieved for that Block/Period/Level.
- transfer common skills from one trade to another - **Skills and learning must be transferred prior to writing the Interprovincial Red Seal exam. The same skills and learning cannot be recognized toward certification in two trades.**
- compare skills and learning in a trade from another country to Canadian standards (**as stated in the National Occupational Analysis**) and receive recognition for the skills and learning that meets Canadian standards.



The following assessment indicators (Rating, Proof, Use) have been developed to help record and then assess skills and learning in accordance with the standards of the trade outlined in the National Occupational Analysis (NOA).

Assessment Standard ONE		
Rating: Self-assessment performance rating in the workplace		
Workplace Performance	Rating	Examples of Workplace position/s
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to meet or shorten task timelines</li> <li>- beyond the expected level and quality of performance required by industry</li> <li>- can <b>manage, lead and train others</b> to perform this task and series of sub-tasks</li> </ul>	6	<b>Journey person with a Certificate of Qualification, Red Seal endorsement</b> and/or <b>Gold Seal tradesperson</b> who is an expert in their field <ul style="list-style-type: none"> <li>- Project Manager/Foreman</li> <li>- Highly skilled and experienced Manager/Supervisor</li> <li>- Expert who comes from industry to serve as an instructor in a trades training program</li> </ul>
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to meet or shorten task timelines</li> <li>- to the highest level and quality of performance required by industry</li> <li>- take the initiative to <b>respond to unexpected situations when they arise and supervise others</b></li> </ul>	5	<b>Highly skilled and experienced journey person with a Certificate of Qualification, Red Seal endorsement</b> to whom co-workers turn for direction and help
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to meet task timelines</li> <li>- to the <b>highest level and quality required by industry without supervision</b></li> </ul>	4	<b>Experienced, skilled journey person with a Certificate of Qualification, Red Seal endorsement</b>
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to the level and quality required by industry <b>without assistance or supervision</b></li> </ul>	3	<b>Newly certified journey person with a Certificate of Qualification, Red Seal endorsement</b>
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to the required level and quality of performance <b>with direction, some assistance and supervision</b></li> </ul>	2	<b>Apprentice working under the direction of a journey person with a Certificate of Qualification, Red Seal endorsement</b>
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> <li>- to the required level and quality of performance <b>with assistance and constant supervision</b></li> </ul>	1	<b>A helper or new apprentice who must work directly under the constant supervision of a journey person with a Certificate of Qualification, Red Seal endorsement</b>

**Proof: Self-assessment options to prove skills and learning have been achieved**

### Type of Proof – Observation ... Interview ... Documentation

#### **Observation**

When you choose “Observation” to prove that you can perform a task, the person who verifies your work must be Red Seal Certified in the trade in which you are an apprentice.

#### **Interview**

When you choose “Interview” to prove that you can perform the task, the person who verifies your work must be Red Seal Certified in the trade in which you are an apprentice. In the case of a panel, at least one person on the panel must be Red Seal Certified in the trade in which you are an apprentice.

#### **Documentation**

When you choose “Documentation” to prove that you can perform a task, the document must be from a certified training school or from an industry training course. Course content must be part of the requirements of your trade. If the document is from another country, it must be verified as equivalent to Canadian requirements in the trade.

**NOTE: Gather all your documents and keep them with your PSR.**

## Assessment Standard THREE

**Use: Self-assessment rating to help make a plan for additional learning and skill updates needed to be successful in achieving goals in a trade**

Use of Knowledge, Skills and Abilities –	1 Daily	2 Often	3 Seldom	4 Never
--	---------	---------	----------	---------

Show how often you use a skill. This will help you to know:

- ♦ what skills you do well because you do them on a regular basis
- ♦ what skills you have to update if you want to transfer to another employer or move to another province or territory
- ♦ what skills you have to get from a training school, industry program or other employer

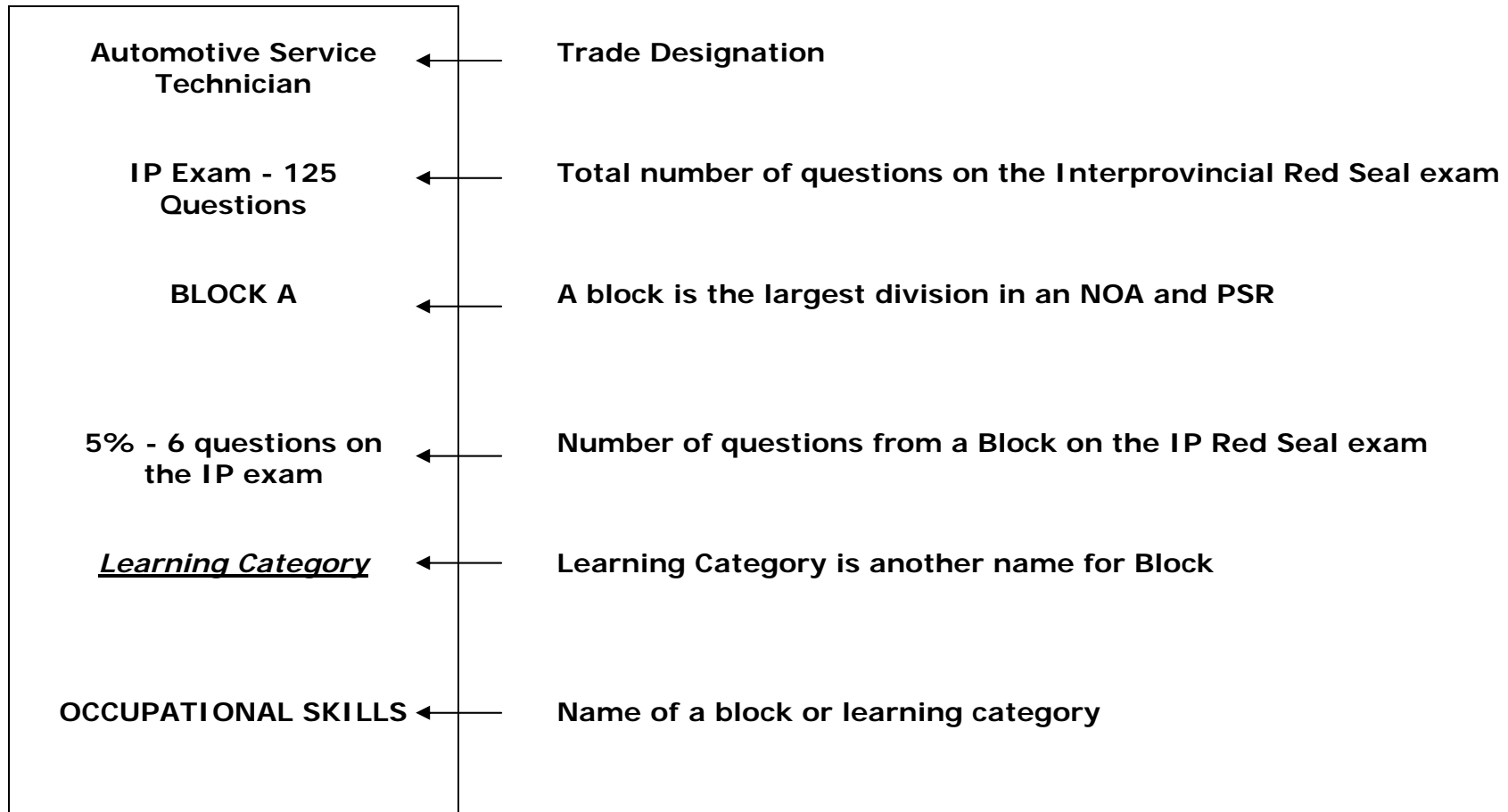
### Completing this PSR can help you:

- ♦ know the full scope of your trade by exploring all the technical skills in your trade
- ♦ highlight the skills you already have
- ♦ identify any gaps that you may have to fill so you can be successful in writing your Interprovincial Red Seal certification exam
- ♦ create a plan you can follow to fill these technical skills gaps

## Professional Skills Record (PSR) Components

Information from the National Occupational Analysis (NOA) is the foundation document for the Professional Skills Record (PSR). The PSR has been designed so that information is easily found to help a trade apprentice take control and direct his/her own individual skills and learning path.

Information in the PSR includes:



## Professional Skills Record (PSR) Components (cont'd)

<b>Task 1 – A</b>	←	Task Number and Block/Category (letter number)
<b>3 questions on the IP exam</b>	←	Number of questions on the IP Red Seal exam from the task
<b><u>Learning Outcome</u></b>	←	Learning Outcome is another name for a task
<b>Uses and maintains tools And equipment</b>	←	Task or learning outcome description

<b>Journey person Sign-off Task 1</b>		
Complete	<input type="checkbox"/>	← Journey person's initials verify that an apprentice can perform the task to industry standards.
Incomplete	<input type="checkbox"/>	← Journey person's initials indicate "incomplete" when the apprentice requires more work because the task is not being performed to industry standards.

## Professional Skills Record (PSR) Set-up (cont'd)

Task 1
Learning Needs
Sub-Tasks
<u><b>Learning Objectives</b></u>
To be completed
Comments

Journeyperson lists any Sub-Tasks (Learning Objectives that an apprentice must improve before they can have their Task (Learning Outcome) signed off).

←  
**When completed, this column becomes a learning plan for the apprentice.**

Sub-Task 1.02
<u><b>Learning Objective</b></u>
Uses hoisting and lifting equipment
JP Sign-off _____

← Sub-Task Number

← Learning Objective is another name for sub-task

← Sub-task or learning objective description

← Journeyperson assesses and signs off when the apprentice can perform a sub-task or learning objective to industry standard

## How to Self-Assess Skills and Learning Using a PSR

For easier use, the self-assessment charts have been shortened into an assessment key which is located at the top of each two-page section in a PSR. The "3" rating is considered "Industry Standard."

### RATING:

- 6 - Expert perform a task beyond expected level and quality of performance, lead and/or teach others
- 5 - Highly skilled perform a task to the highest level and quality of performance, supervise others
- 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision
- 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
- 2 - Complete a task with some assistance and supervision
- 1 - Complete task with assistance and constant supervision

### TYPE OF PROOF:

O - Observation    I - Interview    D - Documentation

### USE:

1 – Daily                      2 – Often                      3 – Seldom                      4 - Never

## How to Record Skills and Learning Using a PSR

**Self-assessment takes place where the learning of skills takes place in each of the Knowledge, Skills and Abilities.** (Knowledge, Skills and Abilities can also be called Competencies).

### 1.02.01

Determine vehicle lifting points and required adapters and extensions in order to balance vehicle on the hoist to prevent damage to the vehicle and to ensure personnel safety

← Skill and Learning that must meet industry standard.

**Rating**        5  

← Choose and insert a number from the RATING key that best describes your level of performance in the workplace.

**Proof**        I  

← Choose and insert a letter from the PROOF key that indicates your best choice to provide proof that you have this knowledge, skill and ability in the trade.

**Use**        2  

← Choose and insert a number from the USE key that indicates how often you use the knowledge, skills and ability (competency).

**Complete**



← Insert a check mark in the box to indicate completion of the competency to industry standard.

Tips to making sure you get recognition for all your skills and learning:

- take your **time** when you are working on your PSR
- do not try to complete **too much** at any one time
- be **fair and honest** with yourself; remember, this is a **self-assessment** tool
- **focus** on each task (*learning outcome*) and sub-task (*learning objective*)



**Automotive Service Technician**  
**IP Exam - 125 Questions**

**BLOCK A**  
**5% - 6 questions on the IP exam**

Learning Category  
**OCCUPATIONAL SKILLS**

**Task 1 - A**  
**3 questions on the IP exam**

Learning Outcome  
**Uses and maintains tools and equipment**

Journeyperson Sign-off

Complete ☐

Incomplete ☐

**Task 1 Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:** O - Observation I - Interview D - Documentation

**Use:** 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 1.01</b>  <u>Learning Objective</u> <b>Maintains tools and equipment</b>  <b>JP Sign-off</b> _____	<b>1.01.01</b> Store and organize tools and equipment  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.01.02</b> Inspect tools and equipment regularly to recognize wear, damage or defects  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.01.03</b> Lubricate tools and equipment  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	
<b>SUB-TASK 1.02</b>  <u>Learning Objective</u> <b>Uses hoisting and lifting equipment</b>  <b>JP Sign-off</b> _____	<b>1.02.01</b> Determine vehicle lifting points and required adapters and extensions in order to balance vehicle on the hoist to prevent damage to the vehicle and to ensure personnel safety  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.02.02</b> Determine equipment capacity in relation to the vehicle or item to be lifted  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.02.03</b> Apply safety practices specific to hoisting and lifting procedures  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.02.04</b> Determine safe working operation and maintenance of hoisting and lifting equipment  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____
<b>SUB-TASK 1.03</b>  <u>Learning Objective</u> <b>Uses PPE and safety equipment</b>  <b>JP Sign-off</b> _____	<b>1.03.01</b> Inspect and maintain PPE and safety equipment  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.03.02</b> Recognize worksite hazards that require the use of PPE and safety equipment  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.03.03</b> Select PPE and safety equipment required for specific tasks  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____	<b>1.03.04</b> Apply local, provincial and national safety regulations such as WHMIS  <b>Rating</b> _____ <b>Complete</b> <b>Proof</b> _____ <input type="checkbox"/> <b>Use</b> _____

**Task 2 - A**  
**3 questions on the IP exam**

Learning Outcome  
**Performs common trade activities**

Journey person  
 Sign-off  
 Task 2

Complete ☐  
 Incomplete ☐

**Task 2**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 2.01</b>  <u>Learning Objective</u> <b>Uses technical information</b>  JP Sign-off _____	<b>2.01.01</b> Utilize industry specific software and computer practices to access technical diagnostic and repair information  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.01.02</b> Locate required information by category and keyword searches  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.01.03</b> Interpret and apply technical information to situation  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.01.04</b> Create documents such as repair orders, estimates and maintenance reports  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
<b>SUB-TASK 2.02</b>  <u>Learning Objective</u> <b>Estimates preliminary job cost</b>  JP Sign-off _____	<b>2.02.01</b> Utilize industry specific and proprietary software to determine labour costs and parts costs  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.02.02</b> Determine amount of time required to complete a job  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.02.03</b> Determine price of parts needed to complete a job  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.02.04</b> Calculate total estimated cost  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.02.05</b> Coordinate with other staff such as partspersons, suppliers, service advisors and cashiers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK 2.03</b>  <u>Learning Objective</u> <b>Maintains safe work environment</b>  JP Sign-off _____	<b>2.03.01</b> Recognize worksite hazards that require the use of PPE and safety equipment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.03.02</b> Recognize potential hazards such as noise level, air quality, and flammable and explosive materials  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.03.03</b> Apply local, provincial and national safety regulations such as WHMIS  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.03.04</b> Clean, handle, remove and dispose of hazardous materials such as air bags, batteries and shocks according to jurisdictional regulations  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>2.03.05</b> Perform visual inspection of vehicles and surrounding work area  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Automotive Service Technician**

**BLOCK B**  
18% - 22 questions on the IP exam

Learning Category  
**ENGINE AND ENGINE SUPPORT SYSTEMS**

**Task 3 - B**  
6 questions on the IP exam

Learning Outcome  
**Diagnoses engine systems**

Journey person  
Sign-off  
Task 3

Complete ☐  
Incomplete ☐

**Task 3**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation      I - Interview      D - Documentation

**Use:**

1 - Daily      2 - Often      3 - Seldom      4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 3.01  <u>Learning Objective</u> <b>Diagnoses cooling systems</b>  JP Sign-off _____	3.01.01 Inspect components for wear, damage and defects  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.02 Analyze coolant conditions (concentration, chemistry and contamination) using procedures such as acidity test, visual inspection and freeze point test  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.03 Select and use diagnostic tools and equipment such as pressure testers, coolant strength testers and infrared temperature guns  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.04 Identify restrictions in air and coolant flow  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.05 Check for operation of water pump and thermostat  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	3.01.06 Check electronically-controlled system operation for conditions such as blown fuses, seized motors, broken wires, and sensors out of range or blown  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.07 Check mechanical system operation for conditions such as malfunctioning fan and belt slippage and incorrect routing  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.08 Pressurize cooling and pressure relating devices such as radiator pressure cap in order to test their ability to maintain required operating pressures and to locate leaks in system  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.09 Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 3.02  <u>Learning Objective</u> <b>Diagnoses lubricating systems</b>  JP Sign-off _____	3.02.01 Inspect lubricant for contamination and levels  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.02 Inspect components for leaks, and failed gaskets and seals  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.03 Select and use diagnostic tools and equipment such as pressure gauge, and black light and dye  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.04 Take oil pressure readings at different operating temperatures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.05 Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Task 3 - B  
(cont'd)**

Learning Outcome  
**Diagnoses engine  
systems**

**Task 3  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 3.03</b>  <u>Learning Objective</u> <b>Diagnoses base engine</b>  <b>JP Sign-off</b> _____	<b>3.03.01</b> Select and use diagnostic tools such as scan tool, compression testers and measuring tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>3.03.02</b> Perform tests such as cylinder leak-down, compression and vacuum  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>3.03.03</b> Identify and distinguish sources of noises, vibrations and harshness (NVH) in engine components such as valve train, pistons and crankshaft  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>3.03.04</b> Recognize worn, damaged, and defective components such as worn camshafts, bearings and rings  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>3.03.05</b> Inspect valve timing and adjustment  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>3.03.06</b> Take measurements of base engine components and compare to manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>3.03.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____			

**Task 4 - B**  
**5 questions on the IP exam**  
Learning Outcome  
**Repairs engine systems**

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
 2 - Complete a task with some assistance and supervision  
 1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

**SUB-TASK**  
**4.01**

Learning Objective  
**Repairs cooling systems**

JP Sign-off \_\_\_\_\_

**4.01.01**  
 Select and use repair tools and equipment such as pressure testers and automated refill devices

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.01.02**  
 Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.01.03**  
 Remove and replace cooling system components such as radiators, hoses, gaskets, thermostats and water pumps

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.01.04**  
 Distinguish types and characteristics of coolants in order to avoid mixing incompatible types and to ensure required concentrations

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.01.05**  
 Drain, flush, refill and bleed coolant system

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.01.06**  
 Complete repair by verifying system's function and performance

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**SUB-TASK**  
**4.02**

Learning Objective  
**Repairs lubricating systems**

JP Sign-off \_\_\_\_\_

**4.02.01**  
 Select and use repair tools and equipment such as plastic gauge, oil pressure gauge and measuring tools

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.02**  
 Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.03**  
 Remove, replace, recondition or service components as per manufacturers' procedures and specifications

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.04**  
 Identify and select specified lubricants

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.05**  
 Identify and select specified sealants

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.06**  
 Take final base engine measurements to ensure correct oil pressure

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.07**  
 Perform maintenance procedures such as changing oil and filter

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.08**  
 Perform priming and prelubrication of oil pressure system

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**4.02.09**  
 Complete repair by verifying system's function and performance

Rating \_\_\_\_ Complete  
 Proof \_\_\_\_ ☐  
 Use \_\_\_\_

**Task 4**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

**Task 4 - B**  
**(cont'd)**

Learning Outcome  
**Repairs engine systems**

**Task 4**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 4.03	Learning Objective Repairs base engine				
	4.03.01	4.03.02	4.03.03	4.03.04	4.03.05
	Select and use repair tools and equipment such as hand tools, plastic gauge, straight edge and micrometer Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Remove, disassemble and inspect engine components for conditions such as damage and wear Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Remove, replace, recondition or service components as per manufacturers' procedures and specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Reassemble engine components and perform measurements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
JP Sign-off ____					
	<b>4.03.06</b> Torque components according to sequence and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>4.03.07</b> Perform mechanical engine timing procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>4.03.08</b> Adjust base engine components and parts  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>4.03.09</b> Perform pre-lubrication and priming procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>4.03.10</b> Install engine and engine components  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>4.03.11</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**5 - B**  
**6 questions on the IP exam**  
Learning Outcome  
**Diagnoses engine support systems**

Journeyperson  
 Sign-off  
 Task 5

Complete ☐

Incomplete ☐

**Task 5**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
 2 - Complete a task with some assistance and supervision  
 1 - Complete task with assistance and constant supervision

**Type of Proof:**

- O - Observation                      I - Interview                      D - Documentation

**Use:**

- 1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

**Knowledge, Skills and Abilities - Competencies**

<b>SUB-TASK</b> <b>5.01</b> <u>Learning Objective</u> <b>Diagnoses fuel delivery systems</b>  <b>JP Sign-off</b> ____	<b>5.01.01</b> Select and use tools and equipment such as fuel pressure gauges, scan tool, vacuum gauges and digital voltage ohmmeter (DVOM)  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.01.02</b> Identify type of fuel delivery systems such as sequential and non-sequential fuel systems  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.01.03</b> Inspect and test fuel properties such as quality, colour and odour  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.01.04</b> Perform fuel system tests such as pressure, volume and fuel injector flow  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.01.05</b> Isolate fuel system problems such as engine misfires and lack of power  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>5.01.06</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____				
<b>SUB-TASK</b> <b>5.02</b> <u>Learning Objective</u> <b>Diagnoses ignition systems</b>  <b>JP Sign-off</b> ____	<b>5.02.01</b> Select and use tools and equipment such as meters, scan tool and spark testers  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.02.02</b> Perform ignition measurements such as coil, primary and secondary circuits  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.02.03</b> Inspect ignition system components for wear and damage  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.02.04</b> Perform ignition system tests such as spark duration and timing  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.02.05</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK</b> <b>5.03</b> <u>Learning Objective</u> <b>Diagnoses intake/exhaust systems</b>  <b>JP Sign-off</b> ____	<b>5.03.01</b> Select and use tools and equipment such as scan tool, vacuum gauge and exhaust back pressure gauge  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.03.02</b> Inspect intake and exhaust systems for leaks or blockages  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.03.03</b> Take measurements on turbo superchargers such as end play and boost  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.03.04</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	

**5 - B  
(cont'd)**

Learning Outcome  
**Diagnoses engine support  
systems**

**Task 5  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 5.04</b>  <u>Learning Objective</u> <b>Diagnoses emission systems</b>  <b>JP Sign-off</b> ____	<b>5.04.01</b> Select and use tools and equipment such as scan tool and EVAP leak detectors  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.04.02</b> Determine vehicle's type of emission system and components  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.04.03</b> Inspect emission system to identify condition and functionality of components  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.04.04</b> Test emission control systems such as EGR, EVAP and PCV  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.04.05</b> Access fault codes such as OBD I and OBD II diagnostic codes  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>5.04.06</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____				
	<b>SUB-TASK 5.05</b>  <u>Learning Objective</u> <b>Diagnoses accessory drive systems and mounts</b>  <b>JP Sign-off</b> ____	<b>5.05.01</b> Select and use tools and equipment such as infrared temperature guns, laser tool and straight edge  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.05.02</b> Check accessory drive pulley alignment  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.05.03</b> Identify type of drive pulley system such as double-edged serpentine and V-belt  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.05.04</b> Identify cause of noise and vibration  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>5.05.05</b> Measure belt tension against manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.05.06</b> Inspect mounts for damage and wear  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>5.05.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____		



5 - B  
(cont'd)

Learning Outcome  
Diagnoses engine support  
systems

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation      I - Interview      D - Documentation

Use:

1 - Daily      2 - Often      3 - Seldom      4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 5.06  <u>Learning Objective</u> Diagnoses diesel engine support systems  JP Sign-off _____	5.06.01 Select and use tools and equipment such as fuel pressure gauges, vacuum gauges, scan tool, pyrometer and DVOM	5.06.02 Identify type of diesel fuel delivery systems such as direct injection, indirect (pre-combustion) injection and common rail systems	5.06.03 Follow pressure-handling procedures for testing diesel fuel systems in order to attain a safe pressure according to manufacturers' specifications	5.06.04 Inspect and test diesel fuel properties such as quality, colour and odour	5.06.05 Perform diesel fuel system tests such as pressure, volume and restriction
	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	5.06.06 Check diesel system parameters such as timing and fuel rate  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.06.07 Isolate diesel system problems such as engine misfires and lack of power  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.06.08 Check condition of pre-heating components such as glow plugs, air heaters and fuel heaters  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.06.09 Test diesel particulate filters for conditions such as inlet and outlet temperatures and pressures using a scan tool  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.06.10 Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**6 - B**  
**5 questions on the IP exam**

Learning Outcome  
**Repairs engine support systems**

Journeyperson  
 Sign-off  
 Task 6

Complete ☐

Incomplete ☐

**Task 6**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 6.01</b>  <u>Learning Objective</u> <b>Repairs gasoline delivery systems</b>  JP Sign-off _____	<b>6.01.01</b> Select and use repair tools and equipment such as fuel pressure gauge, fuel pressure relief device, and fuel transfer and storage equipment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.01.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.01.03</b> Remove, clean and replace fuel system components such as fuel filters, injectors and pumps  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.01.04</b> Perform fuel system maintenance procedures such as fuel injector flushes  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.01.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK 6.02</b>  <u>Learning Objective</u> <b>Repairs ignition systems</b>  JP Sign-off _____	<b>6.02.01</b> Select and use tools and equipment such as can tool, hand tools, gauges and spark plug gappers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.02.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.02.03</b> Remove, replace, reconditioning or service components as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.02.04</b> Measure and adjust clearances such as spark plug gap and sensor clearances  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.02.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK 6.03</b>  <u>Learning Objective</u> <b>Repairs intake/ exhaust systems</b>  JP Sign-off _____	<b>6.03.01</b> Select and use tools and equipment such as scan tool, hand tools, torches, MIG welders and pressure relief devices  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.03.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.03.03</b> Remove and replace intake/exhaust systems components such as manifolds, mufflers and intercoolers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.03.04</b> Prime, lubricate and service turbo superchargers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.03.05</b> Maintain intake system such as cleaning throttle valve, servicing mass airflow sensors and replacing air filter  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>6.03.06</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

6 - B  
(cont'd)

Learning Outcome  
Repairs engine support  
systems

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation                      I - Interview                      D - Documentation

Use:

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 6.04</b>  <u>Learning Objective</u> <b>Repairs emission systems</b>  <b>JP Sign-off</b> _____	<b>6.04.01</b> Select and use tools and equipment such as hand tools, scan tool and leak detection equipment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.04.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.04.03</b> Remove and replace emission system components such as sensors, valves and modules  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.04.04</b> Maintain emission system such as cleaning EGR valves/passages and replacing filters  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.04.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>SUB-TASK 6.05</b>  <u>Learning Objective</u> <b>Repairs accessory drive systems and mounts</b>  <b>JP Sign-off</b> _____	<b>6.05.01</b> Select and use tools and equipment such as scan tool, hand tools, tension relief devices, pullers and installers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.05.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.05.03</b> Remove and replace accessory drive system components such as tensioners, belts and pulleys  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>6.05.04</b> Remove and replace mounts  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>6.05.06</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**6 - B  
(cont'd)**

Learning Outcome  
**Repairs engine support  
systems**

**Task 6  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 6.06  <u>Learning Objective</u> Repairs diesel engine support systems  JP Sign-off _____	6.06.01 Select and use repair tools and equipment such as hand tools, specialized pressure gauges and scan tool  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.02 Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.03 Depressurize diesel system in order to remove and disassemble system  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.04 Remove, disassemble and inspect diesel fuel system for conditions such as damage and wear  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.05 Clean and repair diesel fuel system components such as high pressure lines  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.06.06 Fit and replace diesel fuel system components and parts  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.07 Reassemble diesel system components and perform measurements  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.08 Torque components according to sequence and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.09 Pressurize and bleed system  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.10 Perform diesel fuel system timing procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.06.11 Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**Automotive Service Technician**

**BLOCK C**  
16% - 20 questions on the IP exam

Learning Category  
**VEHICLE MANAGEMENT SYSTEMS**

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

**Task 7 - C**  
13 questions on the IP exam

Learning Outcome  
**Diagnoses vehicle management systems**

Journey person  
Sign-off  
Task 7

Complete ☐

Incomplete ☐

**Task 7 Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 7.01</b>  <u>Learning Objective</u> <b>Reads diagnostic trouble codes (DTCs)</b>  <b>JP Sign-off</b> _____	<b>7.01.01</b> Distinguish between OBD I and OBD II diagnostic systems to determine tools used, data link connection (DLC) location and system operation Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.01.02</b> Select and use scan tool to read codes such as powertrain control module (PCM) and transmission control module (TCM) Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.01.03</b> Perform functional tests to find on-demand codes Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.01.04</b> Refer to manufacturers' diagnostic sequence for code definition Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK 7.02</b>  <u>Learning Objective</u> <b>Monitors parameters</b>  <b>JP Sign-off</b> _____	<b>7.02.01</b> Select and use scan tool to monitor parameters such as TPS, EGR and intake air temperature (IAT) Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.02.02</b> Use DVOM to monitor parameters Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.02.03</b> Select and organize relevant parameters to compare results Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.02.04</b> Record parameters for playback to aid with diagnosis Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK 7.03</b>  <u>Learning Objective</u> <b>Interprets test results</b>  <b>JP Sign-off</b> _____	<b>7.03.01</b> Interpret relative parameters to compare results with manufacturers' specifications Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.03.02</b> Determine faulty circuitry and components Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.03.03</b> Refer to recorded parameters to assist in diagnosis Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	
<b>SUB-TASK 7.04</b>  <u>Learning Objective</u> <b>Tests system circuitry and components</b>  <b>JP Sign-off</b> _____	<b>7.04.01</b> Select and use tools such as DVOM, jumper wires, circuit tester and break-out box to test system circuitry and components such as wiring, sensors and modules according to manufacturers' specifications Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	<b>7.04.02</b> Determine faulty circuitry and components Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____		

8 - C  
7 questions on the IP  
exam

Learning Outcome  
Repairs vehicle  
management systems

Journey person  
Sign-off  
Task 8

Complete ☐

Incomplete ☐

**Task 8**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<p><b>SUB-TASK</b> <b>8.01</b></p> <p><u>Learning Objective</u> <b>Updates component software</b></p> <p>JP Sign-off _____</p>	<p><b>8.01.01</b> Select and use scan tool to update module software</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.01.01</b> Program modules using manufacturers' specifications and updated documentation such as service bulletins</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.01.03</b> Configure modules according to vehicle requirements and options</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.01.04</b> Verify operation of updated modules</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>
<p><b>SUB-TASK</b> <b>8.02</b></p> <p><u>Learning Objective</u> <b>Replaces components</b></p> <p>JP Sign-off _____</p>	<p><b>8.02.02</b> Select and use tools and equipment such as hand tools, scan tool and specialized tools</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.02.02</b> Follow vehicle-specific cautionary procedures such as using anti-static straps and disabling restraint systems</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.02.03</b> Transfer module-specific data to component</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.02.04</b> identify and install compatible electronic components according to the vehicle specifications</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>
<p><b>SUB-TASK</b> <b>8.03</b></p> <p><u>Learning Objective</u> <b>Verifies vehicle management system repair</b></p> <p>JP Sign-off _____</p>	<p><b>8.03.01</b> Perform road test completing a OBD II drive cycle</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.03.02</b> Perform road test for OBD I vehicles</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>8.03.03</b> Select and use scan tool to verify and confirm system repair</p> <p>Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____</p>	

**Automotive Service Technician**

**BLOCK D**  
14% - 17 questions on the IP exam

Learning Category  
**DRIVE LINE SYSTEMS**

**9 - D**  
9 questions on the IP exam  
Learning Outcome  
**Diagnoses drive line systems**

Journeyperson  
Sign-off  
Task 9

Complete ☐  
Incomplete ☐

**Task 9**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation      I - Interview      D - Documentation

**Use:**

1 - Daily      2 - Often      3 - Seldom      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 9.01</b>  <u>Learning Objective</u> <b>Diagnoses drive shafts and axles</b>  JP Sign-off _____	<b>9.01.01</b> Perform road test to identify drive shaft and axle concerns such as vibrations and noises  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.01.02</b> Select and use diagnostic tools such as sirometer, inclinometer, dial indicator and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.01.03</b> Identify type of drive shaft and axle system such as single or multiple piece drive shaft, constant velocity (CV), full-floating and semi-floating axles  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.01.04</b> Inspect vehicle's drive shaft and axle components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.01.05</b> Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>9.01.06</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
<b>SUB-TASK 9.02</b>  <u>Learning Objective</u> <b>Diagnoses manual transmissions/transaxles</b>  JP Sign-off _____	<b>9.02.01</b> Perform road test to identify manual transmission/transaxle concerns such as vibrations, noises and driveability  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.02.02</b> Select and use diagnostic tools such as sirometer, stethoscope and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.02.03</b> Identify model of manual transmission/transaxle  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.02.04</b> Check fluid level and condition, inspect for leaks or damage  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.02.05</b> Inspect manual transmission/transaxle components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>9.02.06</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

9 - D  
(cont'd)

Learning Outcome  
Diagnoses drive line  
systems

Task 9  
Learning Needs

Sub-Tasks  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 9.03</b>  <u>Learning Objective</u> <b>Diagnoses automatic transmission/ transaxles</b>  <b>JP Sign-off _____</b>	<b>9.03.01</b> Perform road test to identify automatic transmission/ transaxle concerns such as vibrations, noises and driveability  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.02</b> Identify model of automatic transmission/transaxle  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.03</b> Check fluid level and condition and inspect for leaks or damage  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.04</b> Select and use diagnostic tools such as pressure gauge, scan tool and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.05</b> Inspect automatic transmission/ transaxle components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>9.03.06</b> Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.07</b> Inspect and test electrical components such as solenoid, switches and pressure sensors  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.03.08</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
	<b>SUB-TASK 9.04</b>  <u>Learning Objective</u> <b>Diagnoses clutches</b>  <b>JP Sign-off _____</b>	<b>9.04.01</b> Perform road test to identify clutch concerns such as slippage, vibrations, odour and driveability  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.04.02</b> Identify type of clutch control such as manual or hydraulic  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.04.03</b> Check fluid level and condition and inspect for leaks or adjustment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.04.04</b> Inspect clutch components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>SUB-TASK 9.05</b>  <u>Learning Objective</u> <b>Diagnoses transfer cases</b>  <b>JP Sign-off _____</b>	<b>9.05.01</b> Perform road test to identify transfer case concerns such as vibrations, noises and driveability  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.05.02</b> Identify model of transfer case  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.05.03</b> Check fluid level and condition and inspect for leaks or damage  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.05.04</b> Select and use diagnostic tools such as scan tool and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
		<b>9.05.05</b> Inspect transfer case components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
		<b>9.05.06</b> Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>9.05.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		



9 - D  
(cont'd)

Learning Outcome  
Diagnoses drive line  
systems

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation                      I - Interview                      D - Documentation

Use:

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 9.06  <u>Learning Objective</u> Diagnoses final drive assemblies  JP Sign-off _____	9.06.01 Perform road test to identify final drive concerns such as vibrations, noises and driveability  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.06.02 Identify type and model of final drive assembly  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.06.03 Check fluid level and condition, inspect for leaks or damage  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.06.04 Select and use diagnostic tools such as scan tool, chassis ears and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.06.05 Inspect final drive assembly components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	9.06.06 Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.06.07 Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**10 - D**  
**9 questions on the IP exam**

Learning Outcome  
**Repairs drive line systems**

Journey person  
 Sign-off  
 Task 10

Complete ☐

Incomplete ☐

**Task 10**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>10.01</b>  <u>Learning Objective</u> <b>Repairs drive shafts and axles</b>  <b>JP Sign-off</b> ____	<b>10.01.01</b> Determine type of drive shafts and axle systems such as U-joint, CV joint, full-floating and semi-floating  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.01.02</b> Select and use service tools such as measuring tools, presses and hand tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.01.03</b> Select repair parts and materials such as gaskets, seals and lubricants according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.01.04</b> Remove, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.01.05</b> Complete repair by verifying system's function and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK</b> <b>10.02</b>  <u>Learning Objective</u> <b>Repairs manual transmissions/ transaxles</b>  <b>JP Sign-off</b> ____	<b>10.02.01</b> Determine model of manual transmission/ transaxles  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.02.02</b> Select and use service tools such as measuring tools, presses and hand tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.02.03</b> Select repair parts and materials such as gaskets, seals and lubricants according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.02.04</b> Remove, disassemble, reassemble, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.02.05</b> Complete repair by verifying system's function, driveability and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK</b> <b>10.03</b>  <u>Learning Objective</u> <b>Repairs automatic transmissions/ transaxles</b>  <b>JP Sign-off</b> ____	<b>10.03.01</b> Determine type of automatic transmissions/ transaxles such as CVT, electronically and manually controlled  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.03.02</b> Select and use service tools such as scan tool, pressure gauges, measuring tools, presses and hand tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.03.03</b> Select repair parts and materials such as gaskets, seals and lubricants according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.03.04</b> Remove, disassemble, reassemble, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.03.05</b> Complete repair by verifying system's function, driveability and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
<b>SUB-TASK</b> <b>10.04</b>  <u>Learning Objective</u> <b>Repairs clutches</b>  <b>JP Sign-off</b> ____	<b>10.04.01</b> Determine type of clutch such as single and multi-disc systems  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.04.02</b> Select and use service tools such as measuring tools, presses and hand tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.04.03</b> Select repair parts and materials such as fluids, seals and lubricants according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.04.04</b> Remove, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.04.05</b> Complete repair by verifying system's function, driveability and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____

10 - D  
(cont'd)

Learning Outcome  
Repairs drive line systems

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
 2 - Complete a task with some assistance and supervision  
 1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation                      I - Interview                      D - Documentation

Use:

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

**Task 10**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

<b>SUB-TASK</b> <b>10.05</b>  <u>Learning Objective</u> <b>Repairs transfer cases</b>   <b>JP Sign-off</b> ____	<b>10.05.01</b> Determine type of transfer case such as manual and automatic   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.05.02</b> Select and use service tools such as scan tool, measuring tools, presses and hand tools   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.05.03</b> Select repair parts and materials such as gaskets, fluids, seals and lubricants according to repair requirements and manufacturers' specifications   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.05.04</b> Remove, replace, recondition or service components as per manufacturers' procedures and specifications   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.05.05</b> Complete repair by verifying system's function, driveability and performance   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>10.06.01</b> Determine type of final drive assembly such as integral, removable and limited slip   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.06.02</b> Select and use service tools such as scan tool, measuring tools, presses and hand tools   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.06.03</b> Select repair parts and materials such as gaskets, fluids, seals and lubricants according to repair requirements and manufacturers' specifications   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.06.04</b> Remove, replace, recondition or service components as per manufacturer's procedures and specifications   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>10.06.05</b> Complete repair by verifying system's function, driveability and performance   Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____

Knowledge, Skills and Abilities - Competencies

**Automotive Service Technician**

**BLOCK E**  
17% - 21 questions on the IP exam

Learning Category  
**ELECTRICAL AND COMFORT CONTROL SYSTEMS**

**11 - E**  
8 questions on the IP exam

Learning Outcome  
Diagnoses electrical systems and components

Journey person  
Sign-off  
Task 11

Complete ☐

Incomplete ☐

**Task 11 Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

<div>SUB-TASK 11.01</div> <div>Learning Objective</div> <div>Diagnoses starting/charging systems and batteries</div> <div>JP Sign-off _____</div>	<div>11.01.01</div> <div>Inspect components for signs of wear, damage or failure</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.01.02</div> <div>Select and use diagnostic tools and equipment such as AVR meter, DVOM, circuit tester and scan tool</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.01.03</div> <div>Interpret and follow wiring diagrams</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.01.04</div> <div>Perform starting/charging system and battery tests such as AVR, voltage drop and parasitic draw</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.01.05</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>
	<div>11.01.06</div> <div>Remove, replace or recondition drive shaft components</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>				

<div>SUB-TASK 11.02</div> <div>Learning Objective</div> <div>Diagnoses basic wiring and electrical systems</div> <div>JP Sign-off _____</div>	<div>11.02.01</div> <div>Inspect components and wires for signs of wear, damage or failure</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.02.02</div> <div>Inspect connectors and connections for conditions such as corrosion, poor contacts and damaged terminals</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.02.03</div> <div>Select and use diagnostic tools and equipment such as DVOM, scan tool and circuit tester</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.02.04</div> <div>Interpret and follow wiring diagrams</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.02.05</div> <div>Determine and perform tests such as voltage drop and resistance check to pinpoint failure</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>
	<div>11.02.06</div> <div>Interpret viewed values and codes to determine condition of systems and components</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>	<div>11.02.07</div> <div>Interpret and analyze results of functional tests and inspections to determine required repair</div> <div>Rating ____ Complete</div> <div>Proof ____ <div></div></div> <div>Use ____</div>			

11 - E  
(cont'd)

Learning Outcome  
Diagnoses electrical  
systems and components

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 11.03</b>  <u>Learning Objective</u> <b>Diagnoses lighting and wiper systems</b>  <b>JP Sign-off</b> ____	<b>11.03.01</b> Inspect components and wires for signs of wear, damage or failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.03.02</b> Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.03.03</b> Select and use diagnostic tools and equipment such as DVOM, scan tool and circuit tester  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.03.04</b> Interpret and follow wiring diagrams  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.03.05</b> Interpret viewed values and codes to determine condition of systems and components  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>11.03.06</b> Determine and perform tests such as voltage drop and resistance check to pinpoint failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.03.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
<b>SUB-TASK 11.04</b>  <u>Learning Objective</u> <b>Diagnoses entertainment systems</b>  <b>JP Sign-off</b> ____	<b>11.04.01</b> Inspect components and wires for signs of wear, damage or failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.02</b> Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.03</b> Select and use diagnostic tools and equipment such as DVOM, scan tool and circuit tester  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.04</b> Interpret and follow wiring diagrams  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.05</b> Interpret viewed values and codes to determine condition of systems and components  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>11.04.06</b> Determine and perform tests such as voltage drop and resistance check to pinpoint failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.07</b> Identify presence of aftermarket devices and ensure correct operation  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.08</b> Activate system self-diagnosis function to retrieve trouble codes  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.04.09</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

11 - E  
(cont'd)

Learning Outcome  
Diagnoses electrical  
systems and components

Task 11  
Learning Needs

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> 11.05  <u>Learning Objective</u> Diagnoses electrical options  JP Sign-off ____	<b>11.05.01</b> Inspect components and wires for signs of wear, damage or failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.05.02</b> Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.05.03</b> Select and use diagnostic tools and equipment such as DVOM, scan tool and circuit tester  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.05.04</b> Interpret and follow wiring diagrams  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.05.05</b> Interpret viewed values and codes to determine condition of systems and components  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>11.05.06</b> Determine and perform tests such as voltage drop and resistance check to pinpoint failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.05.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
<b>SUB-TASK</b> 11.06  <u>Learning Objective</u> Diagnoses instrumentation and information displays  JP Sign-off ____	<b>11.06.01</b> Inspect components and wires for signs of wear, damage or failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.02</b> Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.03</b> Select and use diagnostic tools and equipment such as DVOM, scan tool and circuit tester  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.04</b> Interpret and follow wiring diagrams  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.05</b> Interpret viewed values and codes to determine condition of systems and components  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>11.06.06</b> Determine and perform tests such as voltage drop and resistance check to pinpoint failure  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.07</b> Verify that all vehicle warning indicators such as tire pressure monitoring system (TPMS), seatbelt monitoring system and airbag monitoring system are functioning as intended (self-test and by observation)  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.08</b> Verify that the display is functioning as intended  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.09</b> Identify presence of aftermarket devices and ensure correct operation  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>11.06.10</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**12 - E**  
**5 questions on the IP exam**

Learning Outcome  
**Repairs electrical systems and components**

Journeyperson  
 Sign-off  
 Task 12

Complete ☐

Incomplete ☐

**Task 12**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
 2 - Complete a task with some assistance and supervision  
 1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>12.01</b> <u>Learning Objective</u> <b>Repairs starting/ charging systems and batteries</b>  <b>JP Sign-off</b> ____	<b>12.01.01</b> Select and use tools and equipment such as scan tool, hand tools, DVOM and specialized tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.01.02</b> Select repair parts and materials such as lubricants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.01.03</b> Remove components to access defective parts such as alternators, starters and batteries  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.01.04</b> Replace or repair components according to manufacturers' specifications and recommendations  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.01.05</b> Determine component serviceability according to parts availability and cost effectiveness  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>12.01.06</b> Complete repair by verifying system's function and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____				
<b>SUB-TASK</b> <b>12.02</b> <u>Learning Objective</u> <b>Repairs basic wiring and electrical systems</b>  <b>JP Sign-off</b> ____	<b>12.02.01</b> Select and use tools and equipment such as hand tools and soldering equipment  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.02.02</b> Select repair parts and materials such as terminals, insulators and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.02.03</b> Remove components to access defective parts such as wiring harnesses, connectors, relays and fusible links  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.02.04</b> Replace or repair components according to manufacturers' specifications and recommendations  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.02.05</b> Determine component serviceability according to parts availability and cost effectiveness  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>12.02.06</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>12.02.07</b> Complete repair by verifying system's function and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____			

12 - E  
(cont'd)

Learning Outcome  
Repairs electrical systems  
and components

Task 12  
Learning Needs

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<p><b>SUB-TASK</b> <b>12.03</b></p> <p><u>Learning Objective</u> Repairs lighting and wiper systems</p> <p>JP Sign-off _____</p>	<p><b>12.03.01</b> Select and use tools and equipment such as hand tools, specialized tools and DVOM</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.03.02</b> Select repair parts and materials such as gaskets, insulators and fastening devices according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.03.03</b> Replace or repair components according to manufacturers' specifications and recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.03.04</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.03.05</b> Adjust and replace wiper components such as linkages and controls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p><b>12.03.06</b> Adjust and aim headlights</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.03.07</b> Complete repair by verifying system's function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
	<p><b>SUB-TASK</b> <b>12.04</b></p> <p><u>Learning Objective</u> Repairs entertainment systems</p> <p>JP Sign-off _____</p>	<p><b>12.04.01</b> Select and use tools and equipment such as scan tool and specialized tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.04.02</b> Select repair parts and materials according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.04.03</b> Replace or repair components according to manufacturers' specifications and recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.04.04</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.04.05</b> Complete repair by verifying system's function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p><b>SUB-TASK</b> <b>12.05</b></p> <p><u>Learning Objective</u> Repairs electrical options</p> <p>JP Sign-off _____</p>	<p><b>12.05.01</b> Select and use tools and equipment such as specialized tools and DVOM</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.05.02</b> Select repair parts and materials according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.05.03</b> Replace, repair and program components according to manufacturers' specifications and recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.05.04</b> Adjust components such as sunroof, power mirrors, power windows, power seats, and heated mirrors and seats</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.05.05</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
		<p><b>12.05.06</b> Adjust sensors such as park aids and back-up cameras</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>12.05.07</b> Complete repair by verifying system's function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			



12 - E  
(cont'd)

Learning Outcome  
Repairs electrical systems  
and components

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation      I - Interview      D - Documentation

Use:

1 - Daily      2 - Often      3 - Seldom      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 12.06</b>  <u>Learning Objective</u> <b>Repairs electrical accessories</b>  JP Sign-off _____	<b>12.06.01</b> Select and use tools and equipment such as hand tools, specialized tools and DVOM  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.06.02</b> Select repair parts and materials according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.06.03</b> Replace, repair and program components according to manufacturers' specifications and recommendations  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.06.04</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.06.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	<b>SUB-TASK 12.07</b>  <u>Learning Objective</u> <b>Installs electrical accessories</b>  JP Sign-off _____	<b>12.07.01</b> Select and use tools and equipment such as hand tools, specialized tools and DVOM  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.07.02</b> Determine compatibility of component with vehicle  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.07.03</b> Select parts and materials such as according to installation requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.07.04</b> Reconfigure vehicle control module to allow operation of accessories  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.07.05</b> Verify installed components' operation  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
		<b>12.07.06</b> Complete installation by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

12 - E  
(cont'd)

Learning Outcome  
Repairs electrical systems  
and components

Task 12  
Learning Needs

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 12.08	Knowledge, Skills and Abilities - <u>Competencies</u>				
	<u>Learning Objective</u> Repairs instrumentation and information displays  JP Sign-off _____				
	<b>12.08.01</b> Select and use tools and equipment such as scan tool, hand tools and DVOM  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.08.02</b> Select repair parts and materials according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.08.03</b> Replace or repair components according to manufacturers' specifications and recommendations  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.08.04</b> Repair wiring using methods such as splicing, terminal replacement, soldering and crimping  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.08.05</b> Program modules to vehicle's calibration  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>12.08.06</b> Recalibrate compass  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>12.08.07</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**13 - E**  
**5 questions on the IP exam**  
Learning Outcome  
**Diagnoses HVAC and comfort control systems**

**Rating:**

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
 2 - Complete a task with some assistance and supervision  
 1 - Complete task with assistance and constant supervision

**Type of Proof:** O - Observation I - Interview D - Documentation

**Use:** 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<div>SUB-TASK</div> <div>13.01</div> <div><u>Learning Objective</u></div> <div>Diagnoses air flow control systems</div> <div>JP Sign-off _____</div>	<div>13.01.01</div> <div>Inspect components for wear, damage and defects</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.02</div> <div>Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.03</div> <div>Select and use diagnostic tools and equipment such as DVOM, scan tool, circuit tester and vacuum pumps</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.04</div> <div>Interpret and follow wiring diagrams and vacuum and air flow schematics</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.05</div> <div>Interpret viewed values and codes to determine condition of systems and components</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>
	<div>13.01.06</div> <div>Activate system self-diagnosis function to retrieve trouble codes</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.07</div> <div>Check electronically-controlled system operation for conditions such as blown fuses, seized motors and broken wires</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.08</div> <div>Determine and perform tests such as voltage drop and resistance check to pinpoint failure</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.09</div> <div>Inspect air flow circulation to identify problems such as partially open/closed doors, restricted cabin filters and dead animals</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>	<div>13.01.10</div> <div>Verify full range of fan operation</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>
	<div>13.01.11</div> <div>Interpret and analyze results of functional tests and inspections to determine required repair</div> <div>Rating _____ Complete</div> <div>Proof _____ <input type="checkbox"/></div> <div>Use _____</div>				

Journeyperson  
 Sign-off  
 Task 13

Complete ☐

Incomplete ☐

**Task 13**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

13 - E  
(cont'd)

Learning Outcome  
Diagnoses HVAC and  
comfort control systems

Task 13  
Learning Needs

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>13.02</b>  <u>Learning Objective</u> <b>Diagnoses refrigerant systems</b>  <b>JP Sign-off</b> ____	<b>13.02.01</b> Inspect components for wear, damage and defects  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.02</b> Select and use diagnostic tools and equipment such as Freon leak detector, DVOM, circuit tester, AC machine and black lights  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.03</b> Interpret pressure gauge readings  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.04</b> Inspect connectors for conditions such as corrosion, poor contacts and damaged terminals  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.05</b> Interpret and follow wiring diagrams  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>13.02.06</b> Check electronically-controlled system operation for conditions such as blown fuses and broken wires  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.07</b> Determine and perform tests such as voltage drop and resistance check to pinpoint failure  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.08</b> Perform Freon leak detection and determine source of leakage  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.09</b> Identify compatibility of refrigerant with systems and tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.02.10</b> Pressurize systems with nitrogen to locate leaks  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>13.02.11</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____				
<b>SUB-TASK</b> <b>13.03</b>  <u>Learning Objective</u> <b>Diagnoses heating systems</b>  <b>JP Sign-off</b> ____	<b>13.03.01</b> Verify customer complaint such as no heat, erratic idling and odours to guide the diagnostic process  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.03.02</b> Determine diagnostic sequence as per manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.03.03</b> Depressurize cooling system before removing radiator cap to avoid personal injury  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.03.04</b> Determine and perform diagnostic tests such as checking coolant level, pressure, flow and temperature  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>13.03.05</b> Identify faulty system such as base engine or HVAC  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>13.03.06</b> Interpret and analyze findings of tests such as low coolant level, inoperative blend doors and insufficient air flow to identify defective components and determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____				

14 - E  
3 questions on the IP  
exam  
  
Learning Outcome  
Repairs HVAC and  
comfort control systems

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

Type of Proof:

O - Observation                      I - Interview                      D - Documentation

Use:

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>14.01</b> <u>Learning Objective</u> <b>Repairs air flow control systems</b>  <b>JP Sign-off</b> _____	<b>14.01.01</b> Select and use tools and equipment such as hand tools, scan tool, and specialized tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.03</b> Follow repair sequence as per manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.04</b> Recover refrigerant and evacuate air conditioning system according to jurisdictional regulations  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.05</b> Access faulty components such as blend doors, blower motors and cabin filters  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>14.01.06</b> Remove, repair and replace faulty components such as control units, connectors, blend door motors and blower motor resistors  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.07</b> Clean and deodorize air flow systems with materials such as compressed air and pressurized deodorizers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.01.08</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
<b>SUB-TASK</b> <b>14.02</b> <u>Learning Objective</u> <b>Repairs refrigerant systems</b>  <b>JP Sign-off</b> _____	<b>14.02.01</b> Select and use tools and equipment to evacuate and recharge system and to identify types of refrigerant  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.03</b> Follow repair sequence as per manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.04</b> Recover refrigerant and evacuate air conditioning system according to jurisdictional regulations  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.05</b> Remove and replace faulty components such as switches, hoses and expansion valves  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>14.02.06</b> Recharge system to recommended amounts of refrigerant oils and refrigerants  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.07</b> Clean and deodorize air flow systems with materials such as compressed air and pressurized deodorizers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.08</b> Convert systems to run on other refrigerants as per manufacturers' requirements by performing tasks such as replacing fittings and adding refrigerant oil  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>14.02.09</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

14 - E  
(cont'd)

Learning Outcome  
Diagnoses HVAC and  
comfort control

**Task 14**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 14.03  <u>Learning Objective</u> Repairs heating systems  JP Sign-off _____	14.03.01 Select and use tools and equipment such as hand tools, scan tool and DVOM  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.02 Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.03 Follow repair sequence as per manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.04 Depressurize cooling system before removing radiator cap to avoid personal injury  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.05 Fill and bleed cooling system using vacuum fill equipment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	14.03.06 Remove and replace faulty components such as blend doors and control valves  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.07 Clean and deodorize air flow systems with materials such as compressed air and pressurized deodorizers  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	14.03.08 Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

**Automotive Service Technician**

**BLOCK F**  
7% - 9 questions on the IP exam

Learning Category  
STEERING AND SUSPENSION,  
BRAKING, CONTROL SYSTEMS,  
TIRES, HUBS AND WHEEL  
BEARINGS

**15 - F**  
5 questions on the IP exam

Learning Outcome  
Diagnoses steering and suspension, braking, control systems, tires, wheels, hubs and wheel bearings

Journey person  
Sign-off  
Task 15

Complete ☐  
Incomplete ☐

**Task 15**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 15.01  <u>Learning Objective</u> <b>Diagnoses steering, suspension and control systems</b>  JP Sign-off _____	15.01.01	15.01.02	15.01.03	15.01.04	15.01.05
	Perform road test to identify steering or suspension concerns such as pull, vibrations and extent of assist  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Determine type of steering and control system such as rack-and-pinion, recirculating ball, hydraulic, electric and four-wheel steer  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Determine type of suspension and control system such as MacPherson strut, leaf spring, standard and active  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Select and use diagnostic tools such as scan tool, pressure gauge and measuring tools  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Inspect vehicle's steering, suspension and control components in accordance with manufacturers' specifications and inspection procedures  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____
	15.01.06	15.01.07			
	Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 15.02  <u>Learning Objective</u> <b>Diagnoses braking and control systems</b>  JP Sign-off _____	15.02.01	15.02.02	15.02.03	15.02.04	15.02.05
	Perform road test to identify braking concerns such as vibrations, noises and lack of brake assist  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Determine type of braking and control system such as hydro-boost, vacuum assist, ABS/TCS, self-regulating and regenerating (hybrid)  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Identify ABS, TCS and stability control system components and relate the operation of those system components to the vehicle and other systems  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Select and use diagnostic tools such as measuring tools, scan tool and pressure gauge  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Inspect vehicle's braking and control components and fluids in accordance with manufacturers' specifications and inspect procedures  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____
	15.02.06	15.02.07			
	Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____	Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete ____ Proof ____ <input type="checkbox"/> Use ____			

**15 - F**  
**5 questions on the IP exam**

Learning Outcome  
 Diagnoses steering and suspension, braking, control systems, tires, wheels, hubs and wheel bearings

**Task 15**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
 to be completed  
 Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>15.03</b>  <u>Learning Objective</u> <b>Diagnoses tires, wheels, hubs and wheel bearings</b>  <b>JP Sign-off</b> _____	<b>15.03.01</b> Perform road test to identify tire, wheel, hubs or wheel bearings concerns such as vibrations, noises and pulls  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>15.03.02</b> Select and use diagnostic tools such as measuring tools, pressure gauge, chassis ears and stethoscope  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>15.03.03</b> Inspect tires, wheels and hubs for damage, defects, irregular wear, and correct application and size  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>15.03.04</b> Listen for abnormal noises such as growl, rumble or whine and interpret source and cause of these noises  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>15.03.05</b> Inspect hubs or wheel bearings for excessive play or noise  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>15.03.06</b> Perform functional tests as per manufacturers' procedures and specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>15.03.07</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____			



**16 - F**  
**10 questions on the IP exam**

Learning Outcome

Repairs steering and suspension, braking, control systems, tires, wheels, hubs and wheel bearings

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Journeyperson  
Sign-off  
Task 16

Complete ☐  
Incomplete ☐

**Task 16  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Knowledge, Skills and Abilities - Competencies**

<b>SUB-TASK 16.01</b>  <u>Learning Objective</u> <b>Repairs steering, suspension and control systems</b>  JP Sign-off ____	<b>16.01.01</b> Select and use service tools such as scan tool, pullers, presses and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.01.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.01.03</b> Remove, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.01.04</b> Perform adjustments such as wheel alignment, tire pressure and ride height adjustment  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.01.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	<b>SUB-TASK 16.02</b>  <u>Learning Objective</u> <b>Repairs braking and control systems</b>  JP Sign-off ____	<b>16.02.01</b> Determine type of braking and control system such as hydro-boost, vacuum assist, ABS/TCS, self-regulating and regenerating (hybrid)  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.02.02</b> Select and use service tools such as scan tool, pressure gauges, measuring tools and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.02.03</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.02.04</b> Remove, replace, recondition or service components as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.02.05</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>SUB-TASK 16.03</b>  <u>Learning Objective</u> <b>Repairs tires, wheels, hubs and wheel bearings</b>  JP Sign-off ____	<b>16.03.01</b> Select and use service tools such as scan tool, wheel balancers, tire changing machines and tire pressure monitoring tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.03.02</b> Inspect and perform manufacturer-approved procedures such as dismantling and patching  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.03.03</b> Reset, reprogram and calibrate tire pressure monitor systems  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.03.04</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>16.03.05</b> Remove, replace and service wheels, hubs and wheel bearings as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>16.03.06</b> Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____					

**Automotive Service Technician**

**BLOCK G**

**7% - 9 questions on the IP exam**

Learning Category

**BODY COMPONENTS, TRIM AND RESTRAINT SYSTEMS**

**17 - G**

**5 questions on the IP exam**

Learning Outcome

**Diagnoses body components, trim and restraint systems**

Journey person  
Sign-off  
Task 17

Complete ☐

Incomplete ☐

**Task 17 Learning Needs**

**Sub-Tasks**

Learning Objectives  
to be completed

Comments

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 17.01</b>  <u>Learning Objective</u> <b>Diagnoses restraint systems</b>  JP Sign-off _____	<b>17.01.01</b> Follow manufacturer's stated safety precautions and protocols  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.02</b> Identify type of occupant restraint systems such as seatbelts (passive or active) and single or multiple airbag systems  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.03</b> Inspect vehicle's restraint monitoring and warning systems  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.04</b> Inspect vehicle's restraint systems for defects such as tears, frays and improper modifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.05</b> Inspect vehicle's restraint systems for impediments to airbag systems such as seat covers and incorrect accessory placement  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>17.01.06</b> Select and use diagnostic tools such as scan tool, hand tools and simulators  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.07</b> Perform functional tests as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.01.08</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

<b>SUB-TASK 17.02</b>  <u>Learning Objective</u> <b>Diagnoses wind noise, rattles and water leaks</b>  JP Sign-off _____	<b>17.02.01</b> Perform road test to identify and locate wind noise or rattles  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.02.02</b> Select and use diagnostic tools such as smoke machine, chassis ears and water hose  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.02.03</b> Perform tests such as smoke test, interior pressure test or water test to isolate or locate cause of concern  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.02.04</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

<b>SUB-TASK 17.03</b>  <u>Learning Objective</u> <b>Diagnoses interior and exterior components and trim</b>  JP Sign-off _____	<b>17.03.01</b> Inspect interior and exterior components for flaws in areas such as fit, finish and function  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.03.02</b> Interpret and analyze results of inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

<b>SUB-TASK 17.04</b>  <u>Learning Objective</u> <b>Diagnoses latches, locks and movable glass</b>  JP Sign-off _____	<b>17.04.01</b> Inspect latches, locks and movable glass for form, fit and function  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.04.02</b> Select and use diagnostic tools such as scan tool, DVOM, trim panel tools and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.04.03</b> Perform electrical functional tests  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>17.04.04</b> Interpret and analyze results of inspections and functional tests to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**18 - G**  
**4 questions on the IP**  
**exam**

Learning Outcome  
Repairs body components,  
trim, restraint systems and  
installed accessories

Journeyperson  
Sign-off  
Task 18

Complete ☐  
Incomplete ☐

**Task 18**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK</b> <b>18.01</b> <u>Learning Objective</u> <b>Repairs restraint systems</b>  JP Sign-off ____	<b>18.01.01</b> Follow manufacturers' stated safety precautions and protocols  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.01.02</b> Identify type of occupant restraint systems such as seatbelts (passive or active) and single or multiple airbag systems  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.01.03</b> Select and use tools such as scan tool and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.01.04</b> Select repair parts and materials such as connectors and fasteners according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.01.05</b> Remove and replace components as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>18.01.06</b> Complete repair by verifying system self-test  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
<b>SUB-TASK</b> <b>18.02</b> <u>Learning Objective</u> <b>Repairs problems with wind noise, rattles and water leaks</b>  JP Sign-off ____	<b>18.02.01</b> Follow manufacturers' stated safety precautions and protocols  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.02.02</b> Select repair parts and materials such as lubricants, sealants, adhesives and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.02.03</b> Select and use tools such as scan tool and hand tools  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.02.04</b> Remove, replace or adjust components as per manufacturers' procedures and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>18.02.05</b> Complete repair by verifying fit, function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**18 - G  
(cont'd)**

Learning Outcome  
Repairs body components,  
trim, restraint systems and  
installed accessories

**Task 18  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

<p><b>SUB-TASK 18.03</b></p> <p><u>Learning Objective</u> <b>Repairs interior and exterior components and trim</b></p> <p>JP Sign-off _____</p>	<p><b>18.03.01</b> Follow manufacturers' stated safety precautions and protocols</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.03.02</b> Select repair parts and materials such as adhesives, gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.03.03</b> Select and use tools such as trim tools and hand tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.03.04</b> Remove, replace or adjust components as per manufacturers' procedures and specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.03.05</b> Complete repair by verifying fit, function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
<p><b>SUB-TASK 18.04</b></p> <p><u>Learning Objective</u> <b>Repairs latches, locks and movable glass</b></p> <p>JP Sign-off _____</p>	<p><b>18.04.01</b> Follow manufacturers' stated safety precautions and protocols</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.04.02</b> Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.04.03</b> Select and use tools such as trim tools and hand tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.04.04</b> Remove, replace or adjust components as per manufacturers' procedures and specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.04.05</b> Complete repair by verifying fit, function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
<p><b>SUB-TASK 18.05</b></p> <p><u>Learning Objective</u> <b>Installs interior and exterior accessories</b></p> <p>JP Sign-off _____</p>	<p><b>18.05.01</b> Follow manufacturers' stated safety precautions and protocols</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.05.02</b> Select installation parts and materials such as adhesives, sealants and fastening devices according to repair requirements and manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.05.03</b> Select and use tools such as power tools, trim tools and hand tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.05.04</b> Remove, replace or adjust components as per manufacturers' procedures and specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p><b>18.05.05</b> Complete installation by verifying fit, function and performance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Automotive Service Technician**

**BLOCK H**  
4% - 5 questions on the IP exam

Learning Category  
**HYBRID AND ALTERNATE FUEL SYSTEMS**

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation      I - Interview      D - Documentation

**Use:**

1 - Daily      2 - Often      3 - Seldom      4 - Never

Knowledge, Skills and Abilities - Competencies

**19 - H**  
3 questions on the IP exam  
Learning Outcome  
Diagnoses hybrid and alternate fuel systems

SUB-TASK 19.01	19.01.01 Prepare vehicle for service of system by isolating high voltage system according to manufacturers' directions	19.01.02 Select and use PPE and safety equipment specific to hybrid systems such as insulated gloves, pylons and high voltage retractor pole	19.01.03 Select and use tools and equipment required to complete safety preparation	19.01.04 Recognize safety hazards specific to working on hybrid vehicles such as wet floors and high voltages	19.01.05 Restrict access to work area using pylons
Learning Objective Implements hybrid safety protocols  JP Sign-off _____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Journeyperson  
Sign-off  
Task 19  
  
Complete ☐  
  
Incomplete ☐

SUB-TASK 19.02	19.02.01 Identify type of hybrid system	19.02.02 Select and use diagnostic tools and equipment such as scan tool, specialized voltmeter and laptop	19.02.03 Visually inspect hybrid system components for wear, damage and defects	19.02.04 Retrieve diagnostic trouble codes	19.02.05 Ensure that safety protocols have been implemented
Learning Objective Diagnoses hybrid systems  JP Sign-off _____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	19.02.06 Isolate problem as per manufacturers' instructions  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.02.07 Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**Task 19**  
**Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**19 - H  
(cont'd)**

Learning Outcome  
Repairs body components, trim, restraint systems and installed accessories

**Task 19  
Learning Needs**

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 19.03	Learning Objective Diagnoses alternate fuel systems				
	JP Sign-off _____				
	<b>19.03.01</b> Select and use tools and equipment such as fuel pressure gauges, vacuum gauges, scan tool, DVOM and laptops  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.02</b> Identify type of alternate fuel delivery systems such as injection and feedback, and external mixer systems  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.03</b> Check for leaks in system using methods such as soap and water, odour and gas detecting meter  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.04</b> Perform alternate fuel system pressure and restriction tests  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.05</b> Check alternate fuel system parameters such as timing and fuel rate  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	<b>19.03.06</b> Isolate alternate fuel system problems such as engine misfires and lack of power  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.07</b> Inspect alternate fuel system storage vessel mounts and ventilation  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.08</b> Follow pressure-handling procedures for testing alternate fuel systems in order to attain a safe pressure according to manufacturers' specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	<b>19.03.09</b> Interpret and analyze results of functional tests and inspections to determine required repair  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

20 - H  
2 questions on the IP  
exam

Learning Outcome  
Repairs hybrid and  
alternate fuel systems

Journeyperson  
Sign-off  
Task 20

Complete ☐

Incomplete ☐

Task 20  
Learning Needs

**Sub-Tasks**  
Learning Objectives  
to be completed  
Comments

**Rating:**

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others  
5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others  
4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision  
**3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**  
2 - Complete a task with some assistance and supervision  
1 - Complete task with assistance and constant supervision

**Type of Proof:**

O - Observation                      I - Interview                      D - Documentation

**Use:**

1 - Daily                      2 - Often                      3 - Seldom                      4 - Never

Knowledge, Skills and Abilities - Competencies

<b>SUB-TASK 20.01</b>  <u>Learning Objective</u> <b>Repairs hybrid systems</b>  <b>JP Sign-off</b> _____	<b>20.01.01</b> Select and use tools and equipment such as safety devices, specialized voltmeter, scan tool and hand tools  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>20.01.02</b> Determine manufacturers' specifications and repair procedures for specific storage and control system  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>20.01.03</b> Deactivate electrical system according to manufacturers' specifications and procedures  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>20.01.04</b> Select repair parts and materials such as wiring, fuses and fastening devices according to repair requirements and manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>20.01.05</b> Remove and inspect hybrid system components such as modules and inverters  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____
	<b>20.01.06</b> Replace components according to manufacturers' specifications  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____	<b>20.01.07</b> Complete repair by verifying system's function and performance  Rating ____ <b>Complete</b> Proof ____ <input type="checkbox"/> Use ____			

20 - H  
(cont'd)

Learning Outcome  
Repairs hybrid and  
alternate fuel systems

Task 20  
Learning Needs

Sub-Tasks  
Learning Objectives  
to be completed  
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 20.02  <u>Learning Objective</u> Repairs alternate fuel systems  JP Sign-off _____	20.02.01 Select and use tools and equipment such as hand tools, specialized pressure gauges, scan tool and laptop	20.02.02 Select repair parts and materials such as gaskets, sealants and fastening devices according to repair requirements and manufacturers' specifications	20.02.03 Depressurize alternate fuel system in order to remove and disassemble system	20.02.04 Remove, disassemble and inspect alternate fuel systems for conditions such as damage and wear	20.02.05 Clean and repair alternate fuel system components and parts
	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	20.02.06 Fit and replace alternate fuel system components and parts  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.07 Reassemble alternate fuel system components and perform measurements  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.08 Torque components according to sequence and specifications  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.09 Pressurize, bleed and purge system  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.10 Perform alternate fuel system timing procedures  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	20.02.11 Complete repair by verifying system's function and performance  Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				



## APPENDIX A

### AUTOMOTIVE SERVICE TECHNICIAN NATIONAL OCCUPATIONAL ANALYSIS GLOSSARY OF TERMS

<b>Ammeter</b>	Instrument used to measure electrical current flow in a circuit
<b>AVR</b>	Alternator voltage regulator; refers to a device that is used to test generators/ alternators for electrical output, voltage and amperage
<b>CAN</b>	A protocol for communication between electronic/computer modules
<b>CANBUS</b>	Controller-area network is a vehicle bus standard designed to allow microcontrollers and devices to communicate with each other within a vehicle without a host computer
<b>Condenser (A/C)</b>	Device used in an air conditioning system to allow the dissipation of heat
<b>Condenser (electrical)</b>	Electrical device that acts to store an electrical charge preventing voltage surges
<b>DVOM</b>	Meter for measuring voltage, amperage, resistance (ohms) and is digital in its operation
<b>Gerotor</b>	A positive displacement pump which utilizes a drive shaft with an inner and outer rotor
<b>Inclinometer</b>	Device used to measure the incline of an object, measured in degrees
<b>Jounce</b>	The motion of a wheel that compresses its suspension. Full jounce refers to a wheel that is at the upper limits of its travel. Jounce is the opposite of rebound
<b>Manometer</b>	A graduated tube containing water which measures pressure/vacuum in units of water column

<b>Micrometer</b>	A precision measuring device for small distances
<b>O<sub>2</sub>Sensor</b>	Device used to measure oxygen content of exhaust gases
<b>OBD I and OBD II</b>	On board diagnostics are part of a vehicle's engine management software used to monitor system performance. OBD II is a second generation program that performs as dictated by standards established by the Society of Automotive Engineers
<b>Ohm's Law</b>	The relationship between current, resistance and voltage in any electrical circuit. Voltage in circuit is equal to the current (in amperes) multiply by the resistance (in ohms).
<b>Pneumatic</b>	Operated by compressed air
<b>Pyrometer</b>	Instrument used to measure temperatures
<b>Refractor</b>	Test instrument used to measure the strength of antifreeze or specific gravity of electrolyte in a cell of a lead/acid battery
<b>Sirometer</b>	Test instrument used to measure RPM or an engine or frequency of a vibration with great accuracy
<b>UART</b>	A protocol for communicate between computer modules

## AST National Occupational Analysis

### ACRONYMS

<b>ABS</b>	antilock braking systems	<b>ISO</b>	International Standards Organization
<b>A/C</b>	air conditioning	<b>LED</b>	light emitting diode
<b>AVR</b>	alternator voltage regulator	<b>NO<sub>x</sub></b>	oxides of nitrogen
<b>CAN</b>	controller area network	<b>NVH</b>	noise, vibration, harshness
<b>CO</b>	carbon monoxide	<b>OBD I</b>	On board diagnostics (first generation)
<b>CO<sub>2</sub></b>	carbon dioxide	<b>OBD II</b>	On board diagnostics (second generation)
<b>CSA</b>	Canadian Standards Association	<b>PCM</b>	power train control module
<b>CV</b>	constant velocity	<b>PCV</b>	positive crankcase ventilation
<b>CVT</b>	continuously variable transmission	<b>PPE</b>	personal protective equipment
<b>DLC</b>	Data link connection	<b>RPM</b>	revolutions per minute
<b>DSC</b>	dynamic stability control	<b>SAE</b>	Society of Automotive Engineers
<b>DTC</b>	diagnostic trouble code	<b>TCM</b>	transmission control module
<b>DVOM</b>	digital voltage ohmmeter	<b>TCS</b>	traction control system
<b>EGR</b>	exhaust gas recirculation	<b>TPMS</b>	tire pressure monitoring system
<b>EVAP</b>	evaporative emission control systems	<b>TPS</b>	throttle position sensor
<b>GMAW</b>	gas metal arc welding	<b>TSB</b>	technical service bulletins
<b>GTAW</b>	gas tungsten arc welding	<b>UART</b>	universal asynchronous receive transmit
<b>HC</b>	hydrocarbons	<b>VIN</b>	vehicle identification number
<b>HID</b>	high intensity discharge	<b>VSS</b>	vehicle speed sensor
<b>HS</b>	high speed	<b>WHMIS</b>	Workplace Hazardous Materials Information System
<b>HVAC</b>	heating, ventilation and air conditioning		

## APPENDIX B

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
<b>Technical Reading</b>	<ul style="list-style-type: none"> <li>➤ Find and use information from one source - i.e., a book, Internet, and work order</li> <li>➤ Find and use information from many parts of a single source - i.e., a code book</li> <li>➤ Recognize what is important from several sources of information</li> <li>➤ Interpret information using more than one source</li> <li>➤ Apply information to the task</li> </ul>
<b>Document Use</b>	<ul style="list-style-type: none"> <li>➤ Use large or difficult documents which are organized into units, headings chapters or sub-headings -i.e., a code book</li> <li>➤ Find information in large or very specialized documents which may have many smaller documents - i.e., operations manuals, safety manuals</li> <li>➤ Find information from many sources - i.e., code books, blueprints, work manuals</li> <li>➤ Enter information into pre-set documents and forms - i.e., accident report forms, order forms</li> <li>➤ Combine information from several sources and use it – i.e., alter a work order using information from code books, manuals and blueprints</li> <li>➤ Create new documents using information from a variety of sources – i.e., create work orders, material lists, time log sheets</li> </ul>

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
<b>Writing</b>	<ul style="list-style-type: none"> <li>➤ Write information into a pre-set form – i.e., contract, lease, building permit</li> <li>➤ Write short messages, explanations, requests or directions – i.e., write a work order, memo, written message for a foreman, supervisor or client</li> <li>➤ Write longer messages, explanations, requests or directions – i.e., write an accident report, a detailed message to a foreman, supervisor or client</li> <li>➤ Write a longer article which may need to be organized into headings with a table of contents, i.e., work report, section of a work manual</li> <li>➤ Write detailed, non-routine articles – i.e., make recommendations, use technical language to give directions to or ask for information from other tradespeople</li> </ul>
<b>Math</b>	<ul style="list-style-type: none"> <li>➤ Perform math calculations using formulas, fractions, decimals and percent</li> <li>➤ Combine one or more math operations to solve a problem</li> <li>➤ Estimate numbers</li> <li>➤ Convert between imperial and metric measurement systems</li> <li>➤ Solve equations</li> <li>➤ Use trigonometry to solve problems (not a requirement in every trade)</li> </ul>

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
<b>Computer Use</b>	<ul style="list-style-type: none"> <li>➤ Perform basic computer operations needed to produce a document – i.e., a letter</li> <li>➤ Find information on the Internet</li> <li>➤ Find information in workplace databases</li> <li>➤ Send and receive e-mail</li> <li>➤ Enter data into a set format – i.e., form, spreadsheet, chart</li> <li>➤ Manage electronic information – i.e., save files</li> <li>➤ Choose and use the best software program for the task</li> </ul>
<b>Oral Communication</b>	<ul style="list-style-type: none"> <li>➤ Take directions from a supervisor or co-workers on work-related projects</li> <li>➤ Give directions to co-workers on work-related projects</li> <li>➤ Exchange information using trade terminology</li> <li>➤ Provide details on facts</li> <li>➤ Provide opinions on work-related projects</li> <li>➤ Organize, present and interpret ideas in a logical manner</li> <li>➤ Communicate one-on-one or in a group about complex work-related matters</li> </ul>
<b>Thinking Skills</b>	<ul style="list-style-type: none"> <li>➤ Identify problems</li> <li>➤ Apply learning from previous experiences to identify possible solutions to a problem</li> <li>➤ Find, evaluate and choose appropriate information to solve a problem</li> <li>➤ Evaluate the best possible solution to a problem</li> <li>➤ Make decisions</li> <li>➤ Plan and organize job tasks to set time-lines</li> <li>➤ Ensure quality control standards are met</li> </ul>

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
<b>Working with Others</b>	<ul style="list-style-type: none"> <li>➤ Complete tasks to industry standard under supervision</li> <li>➤ Complete tasks to industry standard without supervision</li> <li>➤ Complete assigned tasks to meet time-lines that meet project deadlines</li> <li>➤ Accept feedback</li> <li>➤ Give feedback</li> <li>➤ Evaluate and apply recommendations from co-workers</li> <li>➤ Resolve conflict</li> <li>➤ Mentor an apprentice</li> </ul>
<b>Continuous Learning</b>	<ul style="list-style-type: none"> <li>➤ Identify work/career strengths and areas for improvement</li> <li>➤ Develop a work/career learning plan</li> <li>➤ Set goals</li> <li>➤ Participate in learning opportunities to meet workplace goals</li> <li>➤ Apply new learning in the workplace environment</li> <li>➤ Revisit, reflect and revise the learning plan regularly</li> <li>➤ Engage in learning opportunities to keep skills current and meet career goals</li> </ul>

