Gas Safety

Syllabus

For
CNG Vehicle Conversion /Automotive Technician
Certificate of Qualification Examination

Implementation Date: July 1, 2015
1. Prerequisites to obtain CNG Vehicle Conversion/ Automotive Technician certificate of qualification.

15 (1) An applicant for a compressed natural gas vehicle conversion certificate of qualification must

(a) be the holder of a 3 year automotive industry training credential or an equivalent 3 year automotive trade, or

(b) have documented evidence, acceptable to a provincial safety manager, of a minimum of 3 years of automotive *tune-up* experience, and

(c) have successfully completed a course in the conversion of vehicles to compressed natural gas that is acceptable to a provincial safety manager.

*Tune-up refers to documented knowledge of ignition systems and electronic fuel injection

(2) A compressed natural gas vehicle conversion certificate of qualification entitles the holder to maintain, alter, repair and install compressed natural gas vehicle fuel systems under an operating permit.

Note: A Heavy Duty and Commercial transport certificate of qualification (red seal) will be accepted as meeting the requirements of s.15 (b).

2. Scope of a CNG Vehicle Conversion / Automotive Technician

(2) A compressed natural gas vehicle conversion certificate of qualification entitles the holder to maintain, alter, repair and install compressed natural gas vehicle fuel systems under an *operating permit.

*Operating Permit refers to the facility (shop) permit issued by BCSA as required By Gas Safety Regulations section 28 (d).*
Note:

(2.1) Scope of work of certification without endorsement(s) is limited to service, inspection and maintenance only. Installation and or alteration of approved compressed natural gas vehicle fuel systems require an additional endorsement specific to the applicable manufacturer’s fuel system. * Approved training must be acquired on specific system(s) and an appropriate record of successful completion provided to the BCSA. The endorsement will then be attached to the individual’s certification. In some cases multiple endorsements may will be required.

(2.2) Certification does not entitle the holder to work on CNG related systems as part of an LNG equipped vehicle. An LNG endorsement must be acquired for this purpose and attached to the CNG Automotive technician certification.

*Specific manufacturers must apply to the BCSA in advance for approval of training programs prior to delivering programs for the purpose of certification endorsement.

3.0 Subject Areas of Study based on the CAN/CSA B109-14 requirements

Percentage (%) on exam

3.1 General Requirements and Properties of Compressed Natural Gas 10%

3.1.1 Formula
3.1.2 Characteristics
3.1.3 Combustible limits
3.1.4 * Handling / Filling

*Refers to legal filling pressures in BC

3.2 System Requirements 45%

3.2.1 Fuel Containers and assemblies
3.2.2 Prohibited Alterations
3.2.3 Fuel Container isolation and pressure relief device
3.2.4 Fuel container and assembly mounting
3.2.5 Vent lines and ventilation
3.2.6 Fuel system components
3.2.7 Piping and tubing hose and fittings
3.2.8 Fuel supply lines
3.3 Inspection and testing of converted vehicles 30%

3.3.1 Protection from collision and impact
3.3.2 Structural alterations
3.3.3 Relocation of existing components
3.3.4 Quality of work
3.3.5 Leak testing
3.3.6 Pressure measurement
3.3.7 Periodic in-service inspections

3.4 Inspection & Servicing of CNG vehicles 10%

3.6.1 Basic troubleshooting
3.6.2 How to select replacement components
3.6.3 Tools/equipment for diagnosing
3.6.3 Define test methods and points
3.6.4 Technician responsibilities to end user
3.6.5 Vehicle safety / use requirements (indoors)

3.7 Regulatory Requirements 5%

3.7.1 CNG vehicle conversion qualification permissions
3.7.1 CNG vehicle conversion qualification responsibilities
3.7.3 Shop regulatory requirements
3.7.4 Safety Manager / Safety Officer Powers
3.7.5 Additional provincial technical requirements

Total 100%