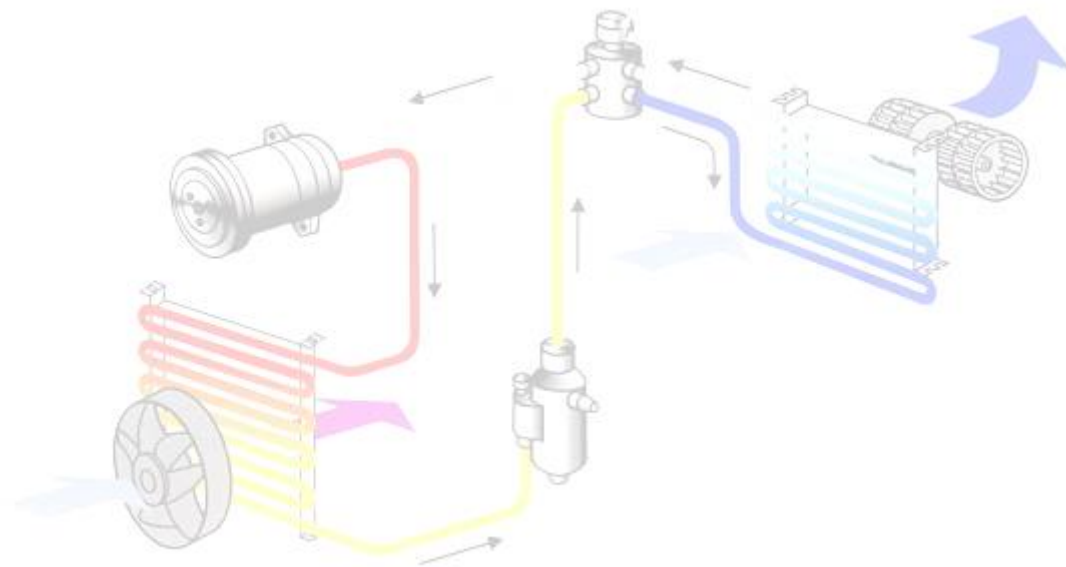


SEG Awards ABC Level 3 Award in Automotive Refrigerant Handling (EC842-2006)

Qualification Guidance

603/5360/0



About Us

At the Skills and Education SEG Awards (ABC)¹ we continually invest in high quality qualifications, assessments and services for our chosen sectors. As a UK leading sector specialist we continue to support employers and skills providers to enable individuals to achieve the skills and knowledge needed to raise professional standards across our sectors.

ABC has an on-line registration system to help customers register learners on its qualifications, units and exams. In addition it provides features to view exam results, invoices, mark sheets and other information about learners already registered.

The system is accessed via a web browser by connecting to our secure website using a username and password: https://secure.ABCawards.co.uk/ors/secure_login.asp

Sources of Additional Information

The ABC website www.ABCawards.co.uk provides access to a wide variety of information.

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Specification Code, Date and Issue Number

The specification code is A6006-03.

For Skills and Education Awards Use Only			
Issue	Date	Details of change	Section/page
1	01/07/19	Original document	n/a

¹ ABC Awards is a brand of the Skills and Education Group Awards, a recognised awarding organisation and part of the Skills and Education Group. Any reference to ABC Awards, its registered address, company or charity number should be deemed to mean the Skills and Education Group Awards.

Contents

About Us	2
Contents	3
Introduction	4
Pre-requisites	4
Qualification Structure	4
Assessment	5
Practice Assessment Material	6
Teaching Strategies and Learning Activities	6
Progression Opportunities	6
Tutor/Assessor Requirements	6
Language	6
Qualification Summary	7
Unit Details	8
Automotive Refrigerant Handling	8
Recognition of Prior Learning (RPL), Exemptions, Credit Transfers and Equivalencies	11

This is a live document and as such will be updated when required. It is the responsibility of the approved centre to ensure the most up-to-date version of the Qualification Guide is in use. Any amendments will be published on our website and centres are encouraged to check this site regularly.

Introduction

This single unit qualification has been developed to provide individuals, working within an automotive repair and servicing environment, with the required skills and knowledge required to meet the European Union fluorinated greenhouse gas (F-gas) regulations (EC 842/2006 and the later Annex EC 307/2008) which came into force on 4th July 2010.

Achievement of this qualification meets the minimum requirements for a Mobile Air Conditioning (MAC) technician to legally recover automotive refrigerant from light vehicles and car derived vans.

***Please note that this qualification does not meet the requirements of a technician working with Cargo Refrigerant.**

Pre-requisites

There are no specific academic or vocational achievement requirements to register on this qualification. However, a basic knowledge of the operation of automotive air conditioning systems and the environmental regulations surrounding fluorinated greenhouse gas refrigerants would be an advantage.

Qualification Structure

This qualification contains one unit which covers the topics which are derived from the European Union F-gas regulations (EC 842/2006 and the later Annex EC 307/2008). This qualification is also mapped to the following National Occupational Standard (NOS):

- IMIMET08 – Handle Automotive Refrigerants

Unit	Unit Number	Level	Credit Value	GLH
Mandatory – Group A				
Automotive Refrigerant Handling	D/617/9080	3	n/a	20

Assessment

In order to successfully achieve this qualification a learner must fully meet all of the learning outcomes. This is done by completing the Skills and Education Group Awards' practical assessment and online multiple choice test.

The practical assessment has been developed to meet all the European Union F-gas regulations for the recovery and handling of automotive refrigerant. For this purpose centre devised alternatives are not permitted.

The multiple choice online test is separated into three areas and contains a total of 25 questions. The maximum time allowed to complete the assessment is **50 minutes** and the questions will assess the knowledge from across the breadth of the criteria in the following way:

Subject	Number of questions
1. Legislative and organisational requirements and procedures	7
2. Selecting and using appropriate tools and equipment	6
3. Operating principles, functions and types of automotive mobile air conditioning (MAC) systems	12

The grade boundaries for the online multiple choice knowledge test are as follows:

- 0 – 59% = **Fail**
- 60 – 79% = **Pass**
- 80 – 100% = **Distinction**

Online Test and Retakes

The online test must be conducted under exam conditions and in line with the SEG Awards document "Instructions for the Conduct of Examinations and Other External Assessment" which is available here:

<https://www.abcawards.co.uk/info-hub/>

There is no limit on the amount of retakes, however there will be a charge for each one taken.

***Please note that only the online multiple choice test is graded. The practical assessment is fail/pass and the highest overall qualification grade is a pass.**

Practice Assessment Material

Skills and Education Group Awards will make paper-based, multiple choice, practice tests available for learners prior to undertaking the online knowledge test. These questions will be of a comparable level and cover the same subject areas as listed above in the 'assessment' section, but they will not be the same questions as those presented during the online knowledge test.

Teaching Strategies and Learning Activities

Centres should adopt a delivery approach which supports the development of all individuals. The aims and aspirations of all the learners, including those with identified special needs or learning difficulties/disabilities, should be considered and appropriate support mechanisms put in place.

Progression Opportunities

Learners who successfully complete the Level 3 Award will be able to continue in further education and training related to this area of expertise or progress into employment as a Mobile Air Conditioning technician.

Centres should be aware that Reasonable Adjustments which may be permitted for assessment may in some instances limit a learner's progression into the sector. Centres must therefore inform learners of any limits their learning difficulty may impose on future progression, if applicable.

Tutor/Assessor Requirements

Skills and Education Group Awards require those involved in the assessment process to be suitably experienced and/or qualified. In general terms, this usually means that the Assessor must be knowledgeable of the subject/occupational area to at least the level they are delivering/assessing at.

Those responsible for Internal Quality Assurance (IQA) must be knowledgeable of the subject/occupational area to a suitable level to carry out accurate quality assurance practices and processes.

Language

These specifications and associated assessment materials are in English only.

Qualification Summary

Qualification	
Level 3 Award in Automotive Refrigerant Handling – 603/5360/0	
Qualification Purpose	Updating and continuing professional competence
Regulation	The above qualification is regulated by: <ul style="list-style-type: none"> • Ofqual
Assessment	<ul style="list-style-type: none"> • Internal assessment • External assessment • Internal and external moderation
Grading	Pass
Operational Start Date	31/01/2020
Review Date	30/06/2022
Operational End Date	
Certification End Date	
Guided Learning	20 hours
Total Qualification Time (TQT)	24 hours
ABC Sector	Automotive
Ofqual SSA Sector	4.3 Transportation Operation and Maintenance
Support from Trade Associations	Retail Motor Industry Federation (RMI)
Administering Office	See ABC web site

Unit Details

Automotive Refrigerant Handling

Unit Reference	D/617/9080
Level	3
Guided Learning	20 hours
Unit Summary	This unit meets the European Union Regulations (EC 842/2006 and the later Annex EC 307/2008) for those individuals working on automotive Mobile Air Conditioning (MAC) systems and recovering or handling refrigerant
Learning Outcomes (1 to 5) <i>The learner will</i>	Assessment Criteria (1.1 to 5.6) <i>The learner can</i>
1. Understand the legislative and organisational requirements and procedures relating to refrigerant handling	<p>1.1 Understand the health, safety and environmental regulations relating to the handling of F-gas refrigerants within automotive mobile air conditioning (MAC) systems</p> <p>1.2 Understand how the vehicle is powered and the associated health and safety risks</p> <p>1.3 Understand the legal requirement to maintain and process appropriate F-gas records</p> <p>1.4 Understand your workplace procedures for:</p> <p>1.4.1 the referral of problems related to refrigerant handling</p> <p>1.4.2 completion of work record</p> <p>1.5 Understand the importance of selecting, using and maintaining the appropriate Personal Protective Equipment (PPE) when handling F-gas refrigerants</p>

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<p>2. Recognise and describe the function of appropriate tools and equipment for refrigerant recovery, flushing and recharging</p>	<p>2.1 Recognise tools and equipment required to recover automotive refrigerant from a vehicle</p> <p>2.2 Describe tools and equipment required to flush an automotive air conditioning system</p> <p>2.3 Recognise tools and equipment required to recharge an automotive air conditioning system</p> <p>2.4 Explain how use equipment to identify the type of refrigerant removed</p>
<p>3. Know and understand operating principles, functions and types of automotive mobile air conditioning systems</p>	<p>3.1 Explain the operating principles and functions of automotive mobile air conditioning (MAC) and climate control systems containing F-gas refrigerants</p> <p>3.2 State the types of refrigerants used in automotive systems and their properties and characteristics</p> <p>3.3 Identify the component parts of an automotive air conditioning system</p> <p>3.4 Describe the impact of F-gas emissions on the environment in relation to their global warming potential and climate change</p> <p>3.5 Explain the procedures for the safe handling of F-gas refrigerants when recovering, flushing and recharging automotive MAC units</p> <p>3.6 Explain how to work in a way that minimises the risk of any refrigerant emissions</p> <p>3.7 Describe how to check air conditioning systems for refrigerant leaks and methods of rectification</p> <p>3.8 Explain how to handle refrigerant cylinders</p> <p>3.9 Describe the methods of storing removed mobile air conditioning (MAC) parts and the importance of storing them correctly</p>

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<p>4. Be able to demonstrate safe working practices when working on mobile air conditioning systems</p>	<p>4.1 Demonstrate the use of appropriate Personal Protective Equipment (PPE) when handling F-gas refrigerants</p> <p>4.2 Demonstrate that the tools and equipment required are calibrated and in a safe working condition, which meets manufacturer’s and legal requirements</p> <p>4.3 Work in a way which reduces the risk of any refrigerant emissions</p> <p>4.4 Collect and transfer waste materials to comply with current legislation and workplace policies</p>
<p>5. Be able to carry out the recovery, flushing and recharging of a mobile air conditioning (MAC) system</p>	<p>5.1 Select and use the correct tools and equipment to identify refrigerant type and capacities</p> <p>5.2 Select and use the correct tools and equipment for recovery, flushing and recharging of refrigerants</p> <p>5.3 Support your removal and replacement activities by referring to:</p> <p style="margin-left: 20px;">5.3.1 vehicle and gas related technical data</p> <p style="margin-left: 20px;">5.3.2 manufacturer’s guidance</p> <p style="margin-left: 20px;">5.3.3 removal and replacement procedures</p> <p style="margin-left: 20px;">5.3.4 health, safety and legal requirements</p> <p>5.4 Carry out all refrigerant recovery, flushing and recharging activities following:</p> <p style="margin-left: 20px;">5.4.1 recognised safe working methods</p> <p style="margin-left: 20px;">5.4.2 manufacturers’ instructions</p> <p style="margin-left: 20px;">5.4.3 your workplace procedures</p> <p style="margin-left: 20px;">5.4.4 health, safety and legal requirements</p> <p>5.5 Carry out suitable checks and any necessary rectification activities to ensure the system is free from leaks prior to recharging</p> <p>5.6 Accurate complete work records, in the format required, and pass them to the relevant person(s) promptly</p>

Recognition of Prior Learning (RPL), Exemptions, Credit Transfers and Equivalencies

Skills and Education Group Awards policy enables learners to avoid duplication of learning and assessment in a number of ways:

- Recognition of Prior Learning (RPL) – a method of assessment that considers whether a learner can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and do not need to develop through a course of learning.
- Exemption - Exemption applies to any certificated achievement which is deemed to be of equivalent value to a unit within Skills and Education Group Awards qualification but which does not necessarily share the exact learning outcomes and assessment criteria. It is the assessor's responsibility, in conjunction with the Internal Moderator, to map this previous achievement against the assessment requirements of the Skills and Education Group Awards qualification to be achieved in order to determine its equivalence.
- Any queries about the relevance of any certificated evidence, should be referred in the first instance to your centre's internal moderator and then to Skills and Education Group Awards.

It is important to note that there may be restrictions upon a learner's ability to claim exemption or credit transfer which will be dependent upon the currency of the unit/qualification and a learner's existing levels of skill or knowledge.

Where past certification only provides evidence that could be considered for exemption of part of a unit, learners must be able to offer additional evidence of previous or recent learning to supplement their evidence of achievement.

- Credit Transfer – Skills and Education Group Awards may attach credit to a qualification, a unit or a component. Credit transfer is the process of using certificated credits achieved in one qualification and transferring that achievement as a valid contribution to the award of another qualification. Units/Components transferred must share the same learning outcomes and assessment criteria along with the same unit number. Assessors must ensure that they review and verify the evidence through sight of:
 - Original certificates OR
 - Copies of certificates that have been signed and dated by the internal moderator confirming the photocopy is a real copy and make these available for scrutiny by the External Moderator.
- Equivalencies – opportunities to count credits from the unit(s) from other qualifications or from unit(s) submitted by other recognised organisations towards the place of mandatory or optional unit(s) specified in the rule of combination. The unit must have the same credit value or greater than the unit(s) in question and be at the same level or higher.

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Skills and Education Group Awards encourages its centres to recognise the previous achievements of learners through Recognition of Prior Learning (RPL), Exemption, Credit Transfer and Equivalencies. Prior achievements may have resulted from past or present employment, previous study or voluntary activities. Centres should provide advice and guidance to the learner on what is appropriate evidence and present that evidence to the external moderator in the usual way.

Further guidance can be found in 'Delivering and Assessing ABC Awards Qualifications' which can be downloaded from <http://www.abcawards.co.uk/centres-grid-page-move/policies-procedures/>

Certification

Learners will be certificated for all units and qualifications that are achieved and claimed.

Skills and Education Group Awards' policies and procedures are available on the ABC web site.

Exemptions

There are no identified exemptions for this qualifications.

Glossary of Terms

GLH (Guided Learning Hours)

GLH is where the learner participates in education or training under the immediate guidance or supervision of a tutor (or other appropriate provider of education or training). It may be helpful to think – ‘Would I need to plan for a member of staff to be present to give guidance or supervision?’

GLH is calculated at qualification level and not unit/component level.

Examples of Guided Learning include:

- Face-to-face meeting with a tutor
- Telephone conversation with a tutor
- Instant messaging with a tutor
- Taking part in a live webinar
- Classroom-based instruction
- Supervised work
- Taking part in a supervised or invigilated formative assessment
- The learner is being observed as part of a formative assessment.

TQT (Total Qualification Time)

‘The number of notional hours which represents an estimate of the total amount of time that could reasonably be expected to be required, in order for a learner to achieve and demonstrate the achievement of the level of attainment necessary for the award of a qualification.’ The size of a qualification is determined by the TQT.

TQT is made up of the Guided Learning Hours (GLH) plus all other time taken in preparation, study or any other form of participation in education or training but not under the direct supervision of a lecturer, supervisor or tutor.

TQT is calculated at qualification level and not unit/component level.

Examples of unsupervised activities that could contribute to TQT include:

- Researching a topic and writing a report
- Watching an instructional online video at home/e-learning
- Watching a recorded webinar
- Compiling a portfolio in preparation for assessment
- Completing an unsupervised practical activity or work
- Rehearsing a presentation away from the classroom
- Practising skills unsupervised
- Requesting guidance via email – will not guarantee an immediate response.