

Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems (6187-03)

Candidate performance evidence logbook
600/0900/7



www.cityandguilds.com
February 2012
Version 1.0

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As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. We offer over 500 qualifications across 28 industries through 8500 centres worldwide and award around two million certificates every year. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Land Based Services (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

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Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems (6187-03)

Candidate performance evidence logbook

Qualification title	Number	QAN
Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems	6187-03	600/0900/7

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Contents

1	About your candidate logbook	5
1.1	Contact details	5
1.2	Introduction to the logbook	6
2	The assessment process	7
3	Using your logbook	8
4	Qualification structures	9
5	Overall Unit Sign-off	10
Unit 305	Install and commission halocarbon ‘fluorinated’ air conditioning and heat pump systems	11
	On Site Assessment Plan / Feedback	16
	On Site Observation Report	17
	Supplementary Evidence Sheet	18
	Oral Questioning Supplementary Evidence Sheet	19
	Photographic Supplementary Evidence	20
	Workplace Recorder Details	21
	Assessor Continuation Sheet	22
	Signature Sheet	23
Appendix 1	Summary of City & Guilds assessment policies	24

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1 About your candidate logbook

1.1 Contact details

Candidate name	
Candidate enrolment no	
Centre name	
Centre number	
Programme start date	
Date of registration with City & Guilds	

Keep a record of relevant contact details in the space provided below. You may find it helpful to make a note of phone numbers and e-mail addresses here.

Your Assessor(s)	
Your Internal Verifier	
Quality Assurance Contact	

1 About your candidate logbook

1.2 Introduction to the logbook

This logbook will help you complete the units in City & Guilds **Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems (6187-03)**. It contains forms you can use to record the evidence of what you have done.

About City & Guilds

City & Guilds Limited (Registered Company 16513878) is the Awarding Organisation for City & Guilds qualifications.

Information about City & Guilds and our qualifications is available on our website **www.cityandguilds.com**.

2 The assessment process

The following people at your centre will explain the assessment process and help you achieve your unit(s).

The assessor/tutor

The assessor/tutor is the person you will have the most contact with as you work towards your unit(s). You may have more than one assessor/tutor depending on which unit(s) you take or you may be assessed by a person who is not your tutor.

The internal verifier

The internal verifier maintains the quality of assessment within the centre.

The external verifier

The external verifier works for City & Guilds and helps to ensure that your centre meets the required standards for quality and assessment.

3 Using your logbook

Recording forms

This logbook contains all of the forms you and your assessor will need to plan, review and organise your evidence. Your assessor will be able to help you decide which forms you need to complete and help you fill them in.

Please photocopy these forms as required.

4 Qualification structures

To achieve the **Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems (6187-03)**, learners must achieve **28** credits from the following **4** mandatory units.

Unit accreditation number	City & Guilds unit	Unit title	Credit value
K/602/4998	302/602	Understand and carry out electrical work on RAC systems and components	12
R/602/2498	303	Understand how to organise resources within BSE	3
K/502/8913	304	Understand halocarbon 'fluorinated' air conditioning and heat pump system installation and commissioning techniques	10
J/502/8918	*305	Install and commission halocarbon 'fluorinated' air conditioning and heat pump systems	3

This Logbook includes only those units assessed by performance in the workplace (marked with an *).

5 Overall Unit Sign-off

The following unit is included in the rules of combination for the **Level 3 NVQ Certificate in Installing and Commissioning Air Conditioning and Heat Pump Systems (6187-03)**. Learners must achieve this portfolio unit to contribute towards achievement of the overall qualification.

City & Guilds unit	Unit title	Unit Achieved Yes/No	Assessor Initials	Date
305	Install and commission halocarbon 'fluorinated' air conditioning and heat pump systems			

Declaration

I confirm that the evidence supplied for the above selected unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of the selected unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV Name:	
IV Signature:	
Date:	

Unit 305

Install and commission halocarbon 'fluorinated' air conditioning and heat pump systems

Level: 3

Credit value: 3

UAN: J/502/8918

Outcome 1	Be able to plan and prepare for the installation and commissioning of halocarbon (fluorinated) air conditioning and heat pump systems			
Criteria		Candidate initials	Assessor initials	Evidence reference
1	confirm that all information is available prior to planning installation or commissioning activities			
2	confirm that all tools, equipment and materials are available and fit for use prior to commencement of the work			
3	confirm that all persons relevant to the installation or commissioning activity are identified and that lines of communication are established			
4	ensure that all necessary risk assessment and safe working procedure development has been undertaken prior to work commencement			
5	carry out site survey to identify any variations or deviations to planned work or any structural or access issues which need to be resolved prior to work commencement			
6	identify safe storage arrangements for tools, equipment and materials prior to commencement of installation or commissioning activity			
7	plan safe access to work areas and confirm with responsible person on site			
8	complete preparatory work as necessary in relation to:			
	<ul style="list-style-type: none"> • the location, siting and fixing of: <ul style="list-style-type: none"> – outdoor unit/condensers – indoor unit/evaporators – piping for 2 or 3 pipe systems • jointing by brazing or flaring of refnet/pipe splitters/BC boxes • confirming requirements for: <ul style="list-style-type: none"> – cleanliness inside pipes by purging with OFN – insulation – electrical connection – condensate disposal. 			

Outcome 2		Be able to carry out the installation of halocarbon (fluorinated) air conditioning and heat pump systems		
Criteria		Candidate initials	Assessor initials	Evidence reference
1	identify and interpret appropriate sources of information which impact upon the installation of pipework, systems and components, including:			
	<ul style="list-style-type: none"> regulatory documents 			
	<ul style="list-style-type: none"> industry codes of practice 			
	<ul style="list-style-type: none"> manufacturer's instructions 			
	<ul style="list-style-type: none"> installation specification 			
2	assemble system components to meet the requirements of the installation specification			
3	demonstrate appropriate methods for positioning and fixing:			
	<ul style="list-style-type: none"> indoor units 			
	<ul style="list-style-type: none"> outdoor units 			
	<ul style="list-style-type: none"> condensate drains 			
4	demonstrate appropriate methods for interconnecting, fixing and insulating pipework			
5	complete the interconnection and fixing of electrical power and communication components			
6	confirm that installed system components and pipework are correctly installed in accordance with the installation specification			
7	confirm that the worksite has been cleared in preparation for system testing.			

Outcome 3		Be able to carry out the pre-commissioning of halocarbon (fluorinated) air conditioning and heat pump systems		
Criteria		Candidate initials	Assessor initials	Evidence reference
1	revisit risk assessment and safe working procedure to confirm currency and validity prior to commencement of testing			
2	carry out the checks and tests in accordance with industry and safety requirements			
3	demonstrate procedures for replacing the refrigerant type in air conditioning and heat pump systems, including:			
	<ul style="list-style-type: none"> selecting suitable replacement refrigerant types for different systems 			
	<ul style="list-style-type: none"> safely disposing of refrigerant that is to be replaced 			
	<ul style="list-style-type: none"> re-commissioning the system on completion of refrigerant replacement 			

4	carry out the following tests in accordance with appropriate legislation:			
	• strength integrity test			
	• pressure tightness test			
	• leak test			
	• evacuation, dehydration and vacuum rise test			
5	compare pipework length with system factory charge and determine whether extra refrigerant charge is required			
6	add additional refrigerant charge by weight in accordance with manufacturer's instructions			
7	carry out basic electrical tests to confirm that system is safe to switch on:			
	• visual integrity check			
	• continuity			
	• insulation resistance			
	• polarity			
	• resistance to earth			
8	complete checks to confirm system is leak free.			

Outcome 4	Be able to carry out the commissioning of halocarbon (fluorinated) air conditioning and heat pump systems			
Criteria		Candidate initials	Assessor initials	Evidence reference
1	confirm that the system provides cooling and/or heating by measuring air flow temperature difference across indoor and outdoor unit heat exchangers			
2	record temperature differences			
3	remove analysers/gauges from systems without refrigerant loss			
4	replace valve caps and confirm valves are leak free.			

Outcome 5		Be able to handover halocarbon (fluorinated) air conditioning and heat pump systems		
Criteria		Candidate initials	Assessor initials	Evidence reference
1	complete system records for hand over documentation, including those which detail:			
	• strength integrity test			
	• pressure tightness test			
	• evacuation and dehydration			
	• leak test			
	• system refrigerant charge and type			
	• performance testing			
	• electrical testing			
2	demonstrate system operation and operating controls to customer			
3	pass over system documentation and records to customer			
4	report to line manager that installation is complete and fill in appropriate company documentation.			

Outcome 6		Be able to carry out the de-commissioning of halocarbon (fluorinated) air conditioning and heat pump systems		
Criteria		Candidate initials	Assessor initials	Evidence reference
1	produce appropriate risk assessments and method statements to ensure decommissioning activities can be completed safely			
2	demonstrate work sequences for permanently decommissioning:			
	• a complete halocarbon (fluorinated) air conditioning or heat pump system			
	• part of a halocarbon (fluorinated) air conditioning or heat pump system			
3	demonstrate how oil and refrigerant could be safely recovered from a system and disposed of.			

Unit 305

Install and commission halocarbon 'fluorinated' air conditioning and heat pump systems

Declaration

I confirm that the evidence supplied for this unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV Name:	
IV Signature:	
Date:	

On Site Assessment Plan / Feedback



Evidence Reference:	
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Qualification:
Level:

Qualification number:

Candidate name:
Assessor name:

Date:

Candidate prepared for assessment (Provide details below)	Yes / No	Candidate requires support	Yes / No
Candidate briefed on appeals procedure	Yes / No	Support required	

Assessment Location / Address and postcode:

Type of work to be carried out:

Assessor Feedback:
(Use Assessor continuation sheet if required)

Forward Planning:

Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Photographic Supplementary Evidence



Evidence Reference:	
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Scheme / Award:

Scheme Number:

Level:

Candidate Name:

Unit Number:

Brief description of task being carried out in the photograph (to be completed by candidate):

(Attach Photo in this Box)

Location of photograph:

Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Workplace Recorder Details



I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

Appendix 1 Summary of City & Guilds assessment policies

Health and Safety

All centres have to make sure that they provide a safe and healthy environment for learning, including induction and assessment. City & Guilds external verifiers check this when they visit assessment centres.

Equal Opportunities

Your centre will have an equal opportunities policy. Your centre will explain this to you during your induction, and may give you a copy of the policy.

City & Guilds equal opportunities policy is available from our website www.cityandguilds.com, City & Guilds Customer Relations Team or your centre.

Access to assessment

City & Guilds qualifications are open to all candidates, whatever their gender, race, creed, age or special needs. Some candidates may need extra help with their assessment, for example, a person with a visual impairment may need a reader.

If you think you will need alternative assessment arrangements because you have special needs, you should discuss this with your centre during your induction, and record this on your assessment plan. City & Guilds will allow centres to make alternative arrangements for you if you are eligible and if the qualification allows for this. This must be agreed before you start your qualification.

City & Guilds guidance and regulations document *Access to assessment and qualifications* is available on the City & Guilds website www.cityandguilds.com, from the City & Guilds Customer Relations Team or your centre.

Complaints and appeals

Centres must have a policy and procedure to deal with any complaints you may have. You may feel you have not been assessed fairly, or may want to appeal against an assessment decision if you do not agree with your assessor.

These procedures will be explained during induction and you will be provided with information about the Quality Assurance Co-ordinator within your centre who is responsible for this.

Most complaints and appeals can be resolved within the centre, but if you follow the centre procedure and are still not satisfied you can complain to City & Guilds.

Our complaints policy is on our website www.cityandguilds.com or is available from the City & Guilds Customer Relations Team or your centre.

Useful contacts

UK learners

General qualification information

T: +44 (0)844 543 0033

E: learnersupport@cityandguilds.com

International learners

General qualification information

T: +44 (0)844 543 0033

F: +44 (0)20 7294 2413

E: intcg@cityandguilds.com

Centres

Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: centresupport@cityandguilds.com

Single subject qualifications

Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

F: +44 (0)20 7294 2404 (BB forms)

E: singlesubjects@cityandguilds.com

International awards

Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: intops@cityandguilds.com

Walled Garden

Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: walledgarden@cityandguilds.com

Employer

Employer solutions, Mapping, Accreditation, Development Skills, Consultancy

T: +44 (0)121 503 8993

E: business@cityandguilds.com

Publications

Logbooks, Centre documents, Forms, Free literature

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If you have a complaint, or any suggestions for improvement about any of the services that City & Guilds provides, email: feedbackandcomplaints@cityandguilds.com

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City & Guilds is a company registered
in England and Wales (company
number 16513878)

LB-03-6187