

# Competitors Digital Toolkit

## Automotive Refinishing



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We would like to thank all of our industry leading sponsors that are passionate about finding the top talented apprentices and make this competition possible:



This WorldSkills UK competition is managed by the Institute of the Motor Industry

## Overview:

Automotive Refinishing is a significant sector within the automotive engineering industry, automotive refinishing covers the painting of cars, trucks, or other vehicles, partly or totally, and of single parts of vehicles, often after the completion of body repairs, this includes a wide range of skills, high standards and critical thinking and process applications.

This guide will provide you with a clear path to follow, from the initial registration to the WorldSkills UK Live National finals and beyond.

## Career Pathway:

### What is the job role?

When cars, vans, motorcycles and larger vehicles are damaged in accidents, they are taken to a body repair workshop. Some repairers will complete the process from start to finish and others will have specialised roles and work on one part of the repair process. Paint technicians are responsible for preparing and refinishing vehicles after the damage has been repaired or panels have been replaced. This will include repairing minor scratches to match the rest of the vehicle. As a paint technician you will need to demonstrate: Strong communication skills, The ability to work alone and as part of a team, the ability to maintain quality under pressure, an awareness of safety procedures, the ability to use specialist equipment, the ability to follow written and verbal instructions, good manual skills and a good eye for detail and colour.

### Qualifications

You will need to have a good understanding of vehicle body and repair operations; you will be expected to be trained in body and paint operations in refinishing at level 2 for this work and then progress to body and paint operations in refinishing at Level 3.

There are a range of qualifications such as N/SVQs and VRQs in vehicle body and paint operations in refinishing. You will need to have a good understanding of automotive systems and the specific materials required for the repair process.

### Working hours and salary

You will normally work from 8am to 5pm Monday to Friday; however, you may be able to work overtime in the evenings and at weekends. You will usually work indoors in workshops or body shops and you will be expected to wear safety clothing when using specialised equipment and carrying out certain tasks. As an apprentice or trainee paint technician you may earn between £7,000-£13,000 per year.

Once you are qualified the average Automotive Refinisher/Car Paint Sprayer salary in United Kingdom is £31,000 per year or £15.90 per hour. Entry level positions start at £19,939 per year.

(Average salary's taken from <https://neuvoo.co.uk/salary/?job=Car%20Paint%20Sprayer>)

### Progression to:

Senior Refinishing Technician, Vehicle Estimator/ Senior VDA, Bodyshop Manager.

### For more Automotive career pathway information:

<https://www.autocity.org.uk/>

## Resources and Registration:

For information and resources, including how to register, competition rules, and the steps to competing, Visit:

<https://worldskillsuk.org/champions/national-skills-competitions/tools-and-resources>

## Pre-competition Activity:

Pre-competition competitors should try to familiarise themselves with competition style activities even if you have a fellow student to judge a completed work task during a practical session at college/training provider.

Also familiarise yourself with current industry processes and procedures for completing a range of tasks you may need to complete.

For information and resources, including a detailed Pre-Competition activity pack please click the link below.

<https://www.worldskillsuk.org/?s=automotive+refinishing>

## Competition Structure:

### Registration:

Once you have completed your registration (and accepted All terms and conditions) you will be emailed a link to complete a Passive online test.

### Passive Stage:

When the passive online test has been completed you will be notified to let you know if you have scored high enough to go through to the National Qualifiers (the practical competition rounds). You will be informed which National Qualifier you will need to attend.

### N.B

*This may be a practical competition and all of the relevant venue and hotel details would then be emailed to you, Alternatively the National Qualifier maybe a digital competition again all details would be emailed to you well in advance of any of the competitions.*

### National Qualifiers Stage one:

Ensure you're ready to compete in your National Qualifiers by looking at the project brief below.

This outlines the type of tasks you will be expected to carry out. Ask your lecturer/employer for help in any areas where you feel you could improve and try to gain practical experience in all the task areas of the competition.

### Digital National Qualifier Stage one:

Ensure you're ready to compete in your Digital National Qualifiers by looking at the project brief below.

The Digital National Qualifier consists of the tasks as the practical competition however for the digital competition The practical task has been broken down in to a series of online questions for you to answer.

The tasks outline the type of questions you will be expected to answer. Ask your lecturer/employer for help in any areas where you feel you could improve and try to use your practical experience in all the task areas to think about the different processes etc. that you could be questioned on for competition.

### National Qualifiers Stage two:

Attend and compete in your allocated National Qualifiers.

### Digital National Qualifier Stage two:

Remotely compete in your online/virtual Digital National Qualifier.

### WorldSkills UK Live Final Stage one:

The 6 highest scoring competitors across each practical or digital National Qualifiers will be invited to compete at the finals - WorldSkills UK Live in November hosted at the NEC in Birmingham.

### WorldSkills UK Live Final Stage two:

Ensure you're ready to compete in your WorldSkills UK Live Final by looking at the project brief below.

This outlines the type of tasks you will be expected to carry out. Ask your lecturer/employer for help in any areas where you feel you could improve and try to gain practical experience in all the task areas of the competition.

Attend Pre final training arranged by IMI Skills Competitions (budget depending) and digital, virtual online training.

### WorldSkills UK Live Final Stage three:

Attend and compete in your allocated WorldSkills UK Live National Final at the NEC.

## Specification of the Practical Tasks:

Tasks will be designed to test the competitors technical ability to:

- Read product data sheets
- Follow correct procedures
- Work efficiently whilst minimising waste (time and materials)
- Prepare surfaces for refinishing
- Efficiently complete masking procedure
- Set up refinishing equipment (checking for any faults) and paint mixing systems
- Apply refinishing materials
- Appropriately cure refinishing materials
- Accurately match paint colours
- Blend pearl finishes and accurately polish for an invisible repair
- Accurately assess any paint fault rectification

## Specification of the Digital Tasks:

Tasks will be designed to test the competitors technical knowledge in:

- Interpreting product data sheets
- The importance of following correct procedures
- How to work efficiently and the importance of minimising waste (time and materials)
- Correct methods and procedures for preparing surfaces for refinishing
- The importance of efficiently masking a vehicle/component
- Correct set up refinishing equipment (how to check for any faults) and paint mixing systems
- How to apply refinishing materials
- Correct methods for curing refinishing materials
- Procedures and methods associated with matching paint colours
- How to blend pearl finishes and accurate methods for efficiently polishing for an invisible repair
- Accurate methods for efficiently polishing/rectifying paint faults

## Task Overview:

### National Qualifiers - Automotive Refinishing

#### Task A – Panel Prep & Paint:

This task requires competitors to prepare and paint a new OEM front wing panel using a wet on wet system with an identified 2 stage mica pearl colour using a Glasurit 90 line water based paints and following industry standard techniques. The panel should be painted as if it is to be fitted to a customer's vehicle and the competitor should use an efficient amount of Primer/Paint to minimise waste.

#### Task B – Paint Fault Rectification:

Competitors will be required to assess the quality of the finish on a pre-painted panel and identifying the type of paint defect and how to rectify it correctly using the materials and tools provided bring the paint finish to a quality standard suitable to allow the panel to be refitted to the vehicle, paying close attention not to break through the clear coat during any rectification process.

#### Task C – Colour Matching:

The competitors will need to match a solid, metallic and a pearl colour without having the manufactures colour code. Using the supplied paint colour cards/Glasurit system the competitors will need to identify the colour name code and shade for each sample provided.

#### Task D – Plastic Panel Scratch Repair:

The competitors are required to use specialist techniques to repair the damage to a plastic bumper and prepare the bumper ready to accept foundation materials.

#### Task E – Spray Equipment:

The competitors are required to inspect the condition of refinishing equipment provided and complete the report sheet.

### Marking and Assessment (Practical National Qualifier):

The WorldSkills UK/IMI Skills competitions provide an opportunity for automotive technicians to demonstrate the technical skills required to be a successful modern day technician.

Competitors are required to work on a selection of panels carrying out various tasks, which will test the skills and abilities of a modern automotive refinishing technician.

The competition consists of 5 tasks lasting between 45 minutes and 2 hours each, designed to reflect the knowledge of vehicle refinishing technicians working towards, or at, a level 3 vocational qualification.

The competition consists mainly of carrying out a practical activity; tasks may be from (but are not limited to) any of the following:

Panel preparation, priming and flattening, painting plastics, colour matching & mixing of paint materials, rectifying paint faults, application of base coat colours and clear coats, measuring and marking out, masking techniques.

Competitors will be expected to demonstrate competence using hand tools, power tools, workshop equipment, measuring instruments, specialist tools and equipment, paint mixing schemes, abrasives and related paint preparation materials.

Judges will also be looking for other skills expected of a successful technician such as time management, planning and problem solving skills.

All IMI Skills Competitions are judged by a panel of experts drawn from industry, colleges and training providers. The judges' decisions will be independently moderated and quality assured before results are confirmed. The judges will be briefed on assessment procedures prior to the competition.

Judges are looking for technical competency but are also briefed to look for excellence amongst competitors. Judges will therefore take into account skills such as

- Time Management
- Performance when working under pressure
- Communication skills
- Attitude
- Behaviour

All task marking is objective and based on agreed criteria.

**National Qualifiers**

Preparation and Painting	30%
Paint Fault Rectification	20%
Colour Match	25%
Plastic Repair	15%
Refinishing Equipment	10%

**Marking and Assessment (Digital National Qualifier):**

The WorldSkills UK/IMI Skills competitions provide an opportunity for automotive technicians to demonstrate the technical skills knowledge required to be a successful modern day technician.

Competitors are required to answer questions on a selection of virtual panels carrying out various tasks, which will test the knowledge and abilities of a modern automotive refinishing technician.

The competition consists of 5 areas lasting between 45 minutes and 1 hours each, designed to reflect the knowledge of vehicle refinishing technicians working towards, or at, a level 3 vocational qualification.

The competition consists mainly of answering questions on practical activities; tasks may be from (but are not limited to) any of the following:

Panel preparation, priming and flattening, painting plastics, colour matching & mixing of paint materials, rectifying paint faults, application of base coat colours and clear coats, measuring and marking out, masking techniques.

Competitors will be expected to demonstrate competent knowledge in the using hand tools, power tools, workshop equipment, measuring instruments, specialist tools and equipment, paint mixing schemes, abrasives and related paint preparation materials.



Judges will also be looking for other skills expected of a successful technician such as time management, planning and problem solving skills.

All WorldSkills UK/IMI Skills Competitions are judged by a panel of experts drawn from industry, colleges and training providers. The judges' decisions will be independently moderated and quality assured before results are confirmed. The judges will be briefed on assessment procedures prior to the competition.

All task marking is objective and based on agreed criteria.

### National Qualifiers

Preparation and Painting	30%
Paint Fault Rectification	20%
Colour Match	25%
Plastic Repair	15%
Refinishing Equipment	10%

### National Qualifiers (Practical) What to expect:

The Automotive Refinishing National Qualifiers takes place at the prestigious 3M training centre in Atherstone.

The competitors rotate around the five tasks below over a full day of competition.

Task duration varies according to the complexity of the task, during which time they will be required to apply industry recognised techniques and procedures to paint a new panels rectify paint defects and repair damaged to pre painted plastic panels.

The competitors will need to show knowledge of the processes and equipment used for these operations.

### National Qualifiers (Digital) What to expect:

The Automotive Refinishing Digital National Qualifiers takes place remotely in the form of online/virtual tests.

You will be emailed a link and given a specific time to complete your digital online/virtual competition.

Task duration may vary according to the complexity of the task and the number of areas to be completed.

The competition will need to be accessed via laptop or P.C the digital competition maybe invigilated remotely by IMI staff and technical support will be available during the competition.

The competitors will need to show knowledge of the processes and equipment used for these operations.

## Task Overview:

### National Final- Automotive Refinishing

#### Task A – Panel Prep & Paint:

This task requires competitors to prepare and paint a new bonnet panel using a wet on wet system with an identified metallic colour using Glasurit 90 line water based paints and following industry standard techniques. They will use the latest paint mixing schemes to identify and mix the paint required.

#### Task B – Masking:

Competitors will be required to mask off the identified panel/panels on the vehicle provided in preparation for painting using a variety of masking techniques and 3M masking products.

#### Task C – Blend Repair:

The competitors will firstly need to repair a scratch to the paint finish on a metal front wing panel and prepare it for refinishing. They will have to identify and mix the colour and shade correctly and will carry out a blend repair which requires them to match the paint and blend in the repair to a given area (the blend should be no greater than 40% of the panel) the remainder of the panel can be fully cleared.

#### Task D – Plastic Panel Repair and Spot Blend:

The competitors are required to use specialist techniques to repair the damage to a plastic bumper and prepare it for refinishing. They will have to identify and mix the colour and shade correctly and will carry out a spot repair. Unlike task C, they will be required to polish the new clear coat in the existing finish they are not allowed to clear the complete panel just the repaired area.

#### Task E – Apply a Special Finish:

The competitors are required to paint a panel with a specialist coating. They are required to prepare the panel using a wet on wet system and mix and apply an identified 3 stage pearl colour using Glasurit 90 line water based paints and following industry standard techniques. The panel will be cleared to a satin finish which will need to be matched to a supplied satin finished panel.

#### Task F – Spray Gun Defects:

The competitors will test each of the guns provided and identify the causes of the incorrect operation showing an understanding of the purpose, operation and function of the various component parts of a spray gun.

### Marking and Assessment:

The marking scheme is designed to fairly compare every competitor's work. The marking is split between specific judgement aspects throughout the task, including efficiency, health and safety and technical performance.

The IMI Skills competitions are judged by a panel of industry specialists.

The judges' decisions will be independently moderated and quality assured before being confirmed at the closing ceremony where the results are announced. The judges are briefed on assessment procedures prior to the competition.

Judges are looking for technical competency but are also briefed to look for excellence amongst competitors. Judges will therefore take into account skills such as time management, working under pressure and communication skills. All marking is objective and based on agreed criteria.

The competitors will be required to be competent in the set up and use of spray painting equipment and paint mixing systems, drying and curing equipment, polishers and paint fault rectification tools and colour matching equipment. Judges will also be looking for other skills expected of a successful technician, such as time management, planning and problem solving skills.

Competitors are required to carry out practical activities and apply industry approved paint repair techniques and procedures on body panels. The tasks will include: preparation, priming and flattening, painting plastics, colour matching & mixing, blend repairs, rectifying paint faults, application of base coat colours and clear coats, application of specialist materials, masking panels and identification of spray gun faults.

The tasks at the UK LIVE final follow a similar format to those at the qualifiers but are of a more complex nature requiring an in depth knowledge of repair procedures, techniques, materials and equipment.

You will be required to be competent in the set up and use of spray painting equipment and paint mixing systems, drying and curing equipment, polishers and paint fault rectification tools and colour matching equipment.

Judges will also be looking for other skills expected of a successful technician, such as:-

- Efficiency
- Time Management
- Performance when working under pressure
- Communication skills
- Effective Planning
- Problem Solving

All competitors will receive feedback after the competition on their performance. The allocation of marks is dependent on the tasks chosen and their complexity.

Below is a broad outline of how marks may be distributed:

**National final:**

Prep and Paint panels (basecoats/clearcoats)	20%
Blend Repair	15%
Plastic Panel Spot Repair	15%
Masking Panels	10%
Application of Special Finishes	20%
Colour mixing and matching	15%
Paint gun defect identification	5%

## Judges Top Tips:

- **Preparation and Practice**  
A successful competitor you need to be confident, calm and self-assured when competing. Prepare by practicing your skills and techniques to ensure you get the required standard/results you want without any surprises.
- **Time Management**  
Learn to manage your time effectively when completing tasks by working smart not fast! The tasks have allocated times, so practice working to time and under pressure to perfect your timing. If you run out of time in the competition you will lose marks.
- **Planning**  
Make your own plans for how to complete each task, work methodically and even write it down to help you prepare.
- **Organised**  
Make sure you are organised, make sure all stages of a task are completed. Organise all of your equipment and materials for the task.
- **Health & Safety**  
In any automotive refinishing environment Health & Safety is very important, make sure you use the appropriate PPE for the task and work safely.
- **Clean and Tidy**  
Keep your working area tidy as you can be more efficient in a tidy work area. Make sure that when you present your work to the judges it is clean and ready for final judging.
- **Understanding**  
Read the task brief thoroughly and make sure you understand what you need to do. Do not be afraid to ask questions, remember there is only one silly question.....the one you don't ask!
- **Don't Worry**  
If a part of a task hasn't gone as well as you might have wanted don't worry or dwell on it, just draw a line under that and get on with the next task. Always focus on the marks you can gain not what you might have lost.
- **Enjoy**  
To get to the WorldSkills UK National Qualifiers or the WorldSkills UK Live National Finals is in its self a massive achievement that you should be extremely proud of! Make the most of the whole WorldSkills UK/IMI Skills Competitions process and enjoy it!

## National Final - Automotive Refinishing What to expect:

The competitors rotate around the six tasks above over the two days (Thursday and Friday) of competition.

Task duration varies according to the complexity of the task, during which time they will be required to apply industry recognised techniques and procedures to paint a range of new panels and repair damaged to pre painted panels with a variety of different paint finishes and panel substrates.

The competitors will need to show knowledge of the equipment used in these processes and be able to follow the correct industry recognised process for each task.

The tasks are designed to assess the knowledge and skills of technicians working towards, or at, a level 3 vehicle refinishing vocational qualification as a minimum.

A period of familiarisation and training is scheduled (Wednesday) to allow you to become acquainted with the tools, materials and equipment you will use during the competition and the tasks to be completed. Use this time to ensure you are confident in the use of application of all the equipment you will use.

### Saturday activity: Automotive Refinishing

The Saturday showcase activity gives you a chance to show your creative side without the pressure of the competition. On the Saturday each refinishing finalist will be provided with a pre painted bonnet and 5 hours to create their own individual design.

There are a few rules to this showcase activity but this task is designed to be fun, it's also a chance to show the public the variety of skills associated with vehicle refinishing.

**\*\*\*There will be a prize for the design selected as the best by an independent judge\*\*\***

#### Saturday activity rules:

- Maximum of 5 hours to complete your bonnet
- It must be your own design
- Must have an element of marking out involved, cannot be all pre-cut templates

## Training for the National Finals:

IMI Skills Competitions will invite the finalists to a training event at Glasurit\* and virtual training from 3M and Sata GB. This is an excellent opportunity for all competitors to boost their confidence using the equipment in a safe environment, while replicating the competition tasks and expectations.

The Training will cover:

- Specific product training
- Latest techniques
- Application training
- Process training
- Product do's and don'ts
- Using Glasurit 3 stage pearls
- Equipment training
- How to use the products efficiently

*\*Training events at Glasurit training centre are dependent on funding/budget\**

## Digital Resources:

Useful product information and "How to" guides can be gained at our sponsor suppliers websites.

[https://www.3m.co.uk/3M/en\\_GB/collision-repair-uk/](https://www.3m.co.uk/3M/en_GB/collision-repair-uk/)

<https://www.glasurit.com/uk/products/pc>

<https://www.youtube.com/user/SATAgmbh>

[https://www.sata.com/index.php?id=home&no\\_cache=1&L=15](https://www.sata.com/index.php?id=home&no_cache=1&L=15)

<https://www.youtube.com/channel/UCchW5ILtheWDg9kvXKsVRWA>

<https://www.youtube.com/channel/UCgTdfBy280rjCHOyc-wGHdQ>

[https://www.youtube.com/channel/UCG\\_XcSxpP7DZW4Q3NZ5zT7A](https://www.youtube.com/channel/UCG_XcSxpP7DZW4Q3NZ5zT7A)

<https://www.proworx.eu/body-filler-product/>

<https://www.redashe.com/curing-equipment>  
<https://www.repairandrefinish.co.uk/youtube>  
<https://www.youtube.com/watch?v=AYPi6gMVDpE>  
<https://novaverta.co.uk/>  
<https://www.youtube.com/channel/UCuk0mE5JgoopNKPX5-sfVHg>  
<https://www.youtube.com/watch?v=NxlVXr6-lxw>  
<https://morelli.co.uk/group>  
<https://www.theimi.org.uk/landing/skillauto/>  
<https://tide.theimi.org.uk/>  
<https://student.theimi.org.uk/competitions>

## Competition Rules:

Conduct for competitors during live competitions:

- It is the competitor's responsibility to arrive on time at the event each day, late arrivals may be excluded from the competition.
- The IMI will provide accommodation for you from the Wednesday to the Sunday.
- Competitors will start and finish tasks as instructed by the judges or Competition team.
- Equipment, tools and specific safety equipment will be supplied; however competitors are required to wear the Skill Auto uniforms supplied. Please bring own safety shoes. (Without your safety shoes you may not be able to take part in the competition due to health and safety regulations).
- Any competitor who wishes to leave the area during the competition must seek the permission of the competition organisers or lead judge.
- If there is a power stoppage, breakdown of machinery or accident, the competitors must act according to the instructions of the competition organisers.
- Competitors are expected to comply with the host venue rules and regulations.
- Between tasks competitors will wait in the designated area until directed to their next task by a judge.

## Beyond the National Finals:

The WorldSkills UK/IMI Skills Competitions national finals also form part of the selection process for WorldSkills International competitions and the 2022 finals will be used to identify UK squad members for the world competition in Lyon in 2024.

WorldSkills International training managers will be onsite during the competition, monitoring the performance of those who are age eligible for Lyon and Age-eligible competitors who show the highest skills, passion, and drive to compete could be invited to train for the EuroSkills and WorldSkills international competitions.

Further details of the international competitions including eligibility criteria can be found on the WorldSkills International website [www.worldskills.org](http://www.worldskills.org) You will be notified if you are age eligible.

Those who are not eligible for international competitions may join the Champions programme, which allows continued involvement, including the opportunity to work with WorldSkills UK and visit schools, colleges, and events to inspire the next generations.

Alternatively, if training is of interest to you, you could consider supporting WorldSkills UK with organising and training, and even helping to run the National finals.

Get inspired and become a part of Team UK today!

