

TRADE OF VEHICLE BODY REPAIR

PHASE 2

Module 6

UNIT: 3

Valeting



Produced by

SOLAS

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Introduction

After repair work has been completed, the vehicle should be presented to the customer in a first class, clean condition. All repaired vehicles should be thoroughly inspected for quality control. The repairs should be guaranteed for a specific mileage or period, as required by the Code of Practice for the Motor Industry and by the VBRA Code. Many Insurance companies now make an allowance for valeting within their agreed repair price and this provides the opportunity for the bodyshop to produce a first class factory finish to both the exterior and interior of the repair.

Unit Objective

Valeting

By the end of this unit each apprentice will be able to:

- Check vehicle levels, tyre pressure, spare wheel, car jack and tools, valet vehicle to a quality standard ready for use.
- Carry out quality control check

Key Learning Points:

- Safety in relation to use of electrical appliances toxic materials
- Oil levels
- Water levels
- Tyre pressures
- Tyre tread and contamination legal requirements
- Steam cleaning and tar removal
- Upholstery cleaning
- Burnishing and polishing
- Window cleaning
- Tyre painting
- Suitable detergents and polishes for use on a motor vehicle
- Seat covers and floor mats
- Tools check
- Quality control check

1.0 Vehicle Levels, Tyre Pressure, Spare Wheel, Car Jack, Tools and Valet Vehicles

1.1 Safety in Relation to use of Electrical Appliances Toxic Materials.

COSHH and the Bodyshop

COSH, The Control of Substances Hazardous to Health Act 1988, carries the principle of protection of the employee, visitors, and the public at large into the next century and either enhances or replaces much of the legislation contained in the Factories Act of 1961 and some of the Health and Safety at Work Act of 1974.

The dictionary definition of a cosh is ‘a bludgeon, a blunt weapon often made of hard rubber’. The new COSHH regulations are not intended to be used in this way. They do, in fact, lay down the essential requirements in a sensible step by step approach for the control of hazardous substances and for the protection of people exposed to them. These new regulations came into force on the 1st October, 1989, and they cover virtually all substance hazardous to health. Only asbestos, lead, materials producing ionizing radiations, and substances below ground in mines are exempt, since they have their own legislation.

COSHH does not place any new general duties on employers or employees, it simply sets out the principles which will allow the duties that should already exist to be complied with:

- Assess the risk to health arising from the work being carried out, and to decide what precautions are needed.
- Introduce appropriate measures to prevent or control the risk to health.
- Inform, instruct and train employees about the risks, and the precautions that need to be taken to combat them.
- Always check material safety data sheets. (M.S.D.S.)
- If MSDS sheets are not available do not use product.
- Cleaning the trim area and servicing the mechanical area hold their own individual hazards, which must be addressed and carefully considered.

There are three ways in which hazardous substances can harm human tissue. First, by inhalation, whether it be dust, fumes, smoke or solid particles, which can be inhaled into the lungs and cause breathing difficulties. Secondly, ingestion, where harmful substances are taken into the body through the mouth due to the contamination of food, or contaminated hands being placed on or around the mouth. Thirdly, absorption, where harmful substances can be absorbed through the skin and via eye contact.

It is essential, therefore, that we should prevent these occurrences from happening when employees are handling dangerous and hazardous substances during the course of their normal work procedures.

1.2 Safety in relation to use of electrical appliances



Never allow plugs or appliances to get wet. It may cause electrical shock

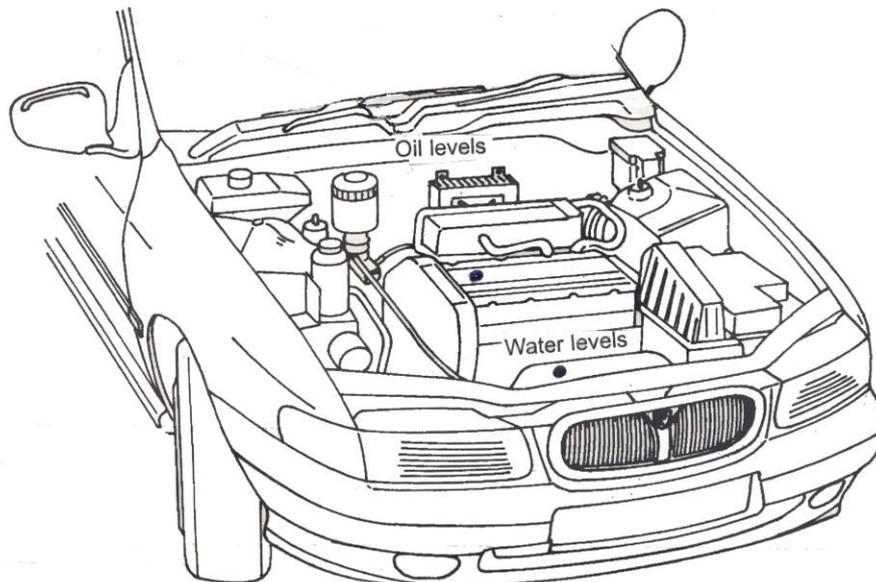


Figure 1: Water and Oil Levels

1.3 Oil Levels

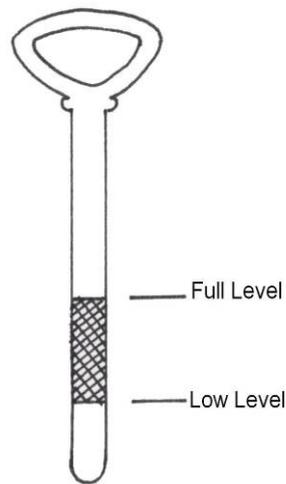


Figure 2: Dip Stick

1.4 Water Levels

Cooling system cap should never be opened when engine is hot. The expansion bottle should be filled to the full level only.



Water filler cap



Hot Liquid Warning Sign



Always check window washer reservoir to make sure it is to the full mark and add detergent to gain a better cleaning power.



Always maintain power steering fluid level at full mark.

1.5 Tyre Pressure

Tyre pressure indication chart is available on the B post of most vehicles. If not, see vehicle manual or contact dealer.



1.6 Tyre Tread and Contamination Legal Requirements

The legal minimum tyre tread is 0.6mm, which is also indicated by a high bump of rubber in the tyre tread track.



Legal Tyre Tread Indication Mark

2.0 Premises, Equipment and Chemicals used in Cleaning and Valeting

When cleaning and valeting a vehicle it is essential to organise a standard method of working to ensure that nothing is inadvertently missed. The ideal premises and equipment should be set out in separate purpose designed working areas.

The cleaning process should be undertaken in a wet bay with effective drainage, good lighting and adequate working space all round the vehicle when its doors are open. Compressed air and high pressure cold and hot water should be available.

Valeting should be carried out in a well lit, dry bay with adequate working space all round the vehicle. Compressed air, electrical power points, warm water, a work bench and storage cupboards should all be available.

Equipment, details are as follows:

2.1 Steam Cleaning and Tar Removal

- High pressure hot and cold washer, 70-100 bar (1000-1500 psi), with chemical throughput facility to ensure that engine cleaners and traffic film removers work quickly and effectively



- Electric/air polisher, 1500-2000rpm, with polythene foam and lamb's-wool polishing heads.



- Fine grade, 100 percent cotton, polishing cloths and chamois.



- Assorted upholstery brushes crevice tools.



- Vacuum cleaner and/or shampoo vacuum cleaner.



2.2 Cleaning Operation Shampoo Vacuum Cleaner

- Release clip



- Unclip vacuum hose and detergent hose



- Lift up top of machine



- Lift out filter housing



- Lift out detergent reservoir







Control Switch



Carpet Tools



Shampoo Vacuum Head

- Hand pumped, pressurised sprays for dispensing engine cleaners and traffic film remover.
- Trigger spray dispensers for interior cleaning, together with wheel, engine and carpet brushes.
- Good quality chamois leather, sponges, polishing cloths (100 per cent cotton, knitted stockinette type), steel wool, spatula, glass scraper, buckets, hot air gun (useful for removing PVC stickers, self adhesive design trims)

2.3 Suitable Detergents and Polishes for use on a Motor Vehicle

There are many manufacturers and suppliers of Valeting and cleaning chemicals. The wide range of Valeting and chemical cleaners available are broadly divided up as follows:

- Exterior detergents and solvents
- Interior detergents and solvents
- Interior/Exterior rubber, PVC, plastic cleaners and conditioners
- Glass cleaners, paints, lacquer and protectorants
- Paintwork polishes and conditioners.



Traffic Film Remover - Corrosive

Always use PPE and full face mask when using these products and products like them. Make sure no contact is made with your skin.



2.4 Cleaning and Valeting Process

Prior to commencing work, check that the vehicle is ready. All body repairs, paintwork and mechanical work should have been completed. Be aware of areas which have been newly painted as they may be chemically or water sensitive. Individual chemical products carry their own instructions, and health and safety procedures must be adhered to at all times.

Autoglym recommend the following step by step procedure for cleaning and valeting.

Cleaning: Wet Bay

- Remove spare wheel, rubber mats and wheel trims if fitted.
- Protect engine air intake and sensitive electrical equipment (distributor cap, fuse box) with plastic sheet.
- Apply degreaser to engine and compartment. Brush heavy soiling. Alternatively use hot pressure washer with appropriate detergent.
- Apply degreaser to door apertures and edges. Brush heavy soiling. Alternatively use hot pressure washer with appropriate detergent.

- Clean wheels, trim, spare wheel with alloy cleaner. Brush brake dust deposits. Treat bright metal and motifs. Rinse all items well.
- Pressure wash engine compartment to remove degreaser. Commence with lower areas. Work methodically upwards.
- Pressure wash door apertures and edges to remove degreaser. Carefully angle water jet away from the vehicle interior.
- Apply traffic film remover to engine compartment. If necessary, sponge or brush to remove grime.
- Pressure wash engine compartment to rinse away traffic film remover.
- Pressure wash wheel arches to remove mud and debris. Plain water is normally adequate.
- Pressure wash and rinse bodywork, grilles, tyres and mud-flaps. Pay particular attention to difficult to polish areas behind bumpers.
- Apply traffic film remover to rubber mats. Clean with high-pressure washer.
- Use air line to dry engine. Remove plastic sheeting. Check engine starting. Use water dispersant if necessary. Run engine to a drying.
- Use air line and chamois leather to remove excess water from bodywork or trim strip which may trap water.

Valeting: Dry Bay

- Finish engine compartment. Lean loose wiring, plastic and paintwork with appropriate dressings.
- Repaint deteriorated black areas. Use fine jet matt black aerosol or small spray gun.
- Clear lacquer engine if required to enhance and preserve appearance. Close bonnet.
- Before interior cleaning, remove all loose carpets, ashtrays and personal items to the bench.
- Use glass scraper to remove all labels from windows. Residual adhesive can be removed with adhesive remover or hot air gun.
- Remove all plastic labels from bodywork using hot air gun. Residual adhesive can be removed with adhesive remover.
- Vacuum clean all interior surfaces. Slide front seats forward. Use brushes with vacuum nozzle to clean crevices and air vents.

- Clean luggage compartment first. Use interior cleaner by spraying and wiping clean with cloth rinsed frequently. Check body channels and rubbers.
- Wash interior. Start with headlining and use interior cleaner. Heavily soiled carpets or seats may require shampoo vacuum treatment.
- Removed carpets should be thoroughly brushed, vacuumed and washed on the bench. Use shampoo vacuum if necessary. Allow to dry.
- Tools and jack should be cleaned, and repainted if necessary. Wash out ashtrays.
- Plastic coated fibreboard may be painted or stained to cover damage or scrape marks. Check body sides for tar and top surfaces for industrial fall out. Use appropriate cleaner before polishing.
- Restore paintwork. Start with roof panel. Use paint renovator with polisher, or appropriate cleaner/polish. Hand polish small areas, corners, edges.
- Apply protective wax coating by hand, ensuring total coverage of all panels. Leave polish applied at this stage.
- Clean all external body rubber and plastic mouldings with appropriate dressings.
- Check all door apertures and rubber seals. Polish door aperture paintwork with clean cloth. Treat rubber seals with appropriate dressing.
- Check all wheels. If required, clean with steel wool and thinners. Protect tyres with dressing or mask. Respray wheels and clean tyres.

Window Cleaning

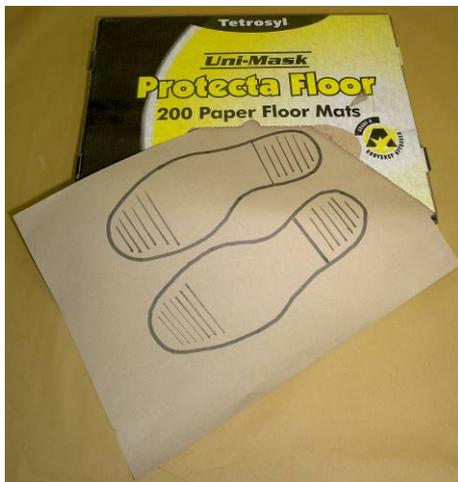
- Glass cleaning. Lower side windows. Clean top edges completely. Close windows. Polish outside first, then inside. Clean surrounding seals and mirrors.
- Interior plastic can be dressed to enhance and protect appearance.

Tools Check

- Replace all carpets, mats, spare wheel, ashtray, tools, wheel trims.

Seat Covers and Floor Mats

- Check interior for remaining imperfections. Check under all seats, glove box, door pockets. Finally vacuum clean. Place protective paper on floor mats, and seat covers if seats are slightly wet.



Burnishing and Polishing

- Remove polish. Methodically check all edges, valances, glasses, lights, grilles. Cavities and motifs may be lightly brushed to remove polish.

Tyre Painting

Paint tyres with tyre paint to give new look.

Checklist

- Check exterior mirrors, all glass and surrounding seals. Check reverse of interior mirror.
- Check polish smears, wheel arch edges, front and rear lower pillars, side sills, door handles, grilles. Touch in stone chips.
- Check windscreen wiper arms and blades, air grilles.

- Check all light lenses, motifs, number plates and spot lights.
- Check door edges and apertures, engine and luggage compartment, body channels and seals.
- Check control pedals and foot wells, especially under front seats.
- Check instrument glasses, switches, control levers, interior air vents.

2.5 Information for Wet and Dry Use/Spray Extraction Vacuum Cleaners

Caution

Read the instruction manual before using the appliance.

Warning

As with all electrical equipment, care and attention must be exercised at all times during use, in addition to ensuring that routine and preventative maintenance is carried out periodically to ensure safe operation. Failure to carry out maintenance as necessary, including the replacement of parts to the correct standard could render this equipment unsafe and the manufacturer can accept no responsibility in this respect.

Caution

This machine is not suitable for picking up hazardous or explosive dust. You should contact your local distributor if you require a machine capable of performing these tasks. Ensure that the filtration system fitted to the machine is suitable for the material being collected.

Note

This machine is also suitable for commercial use, for example in hotels, schools, hospitals, factories, shops and offices other than normal housekeeping purposes.

Do

- Use filter at all times when using 'dry'.
- Keep your machine clean.
- Keep your filters clean.

- Regularly clean the water level limiting float safety valve and examine for signs of damage and correct operation.
- Keep hoses and tubes clear.
- Replace any worn or damaged parts immediately.
- Regularly examine the power cord for damage, such as cracking or ageing. If damage is found, replace the cord before further use.
- Only replace the power cord with the correct Numatic approved replacement part.
- Empty dust container frequently.
- Keep diffuser filter (where fitted) clean.
- When using the power outlet use only Numatic approved accessories.
- The accessory plug must be removed from the socket outlet before cleaning or maintaining the appliance.

Spray Extraction Machines Only....

- Use only approved cleaning preparations.
- Use defoamer if necessary.

Don't

- Use steam cleaners or pressure washers to clean the machine or use in the rain.
- Immerse in water for cleaning.
- Attempt machine maintenance or cleaning unless the power supply plug has been removed from the supply outlet.
- Allow any inexperienced repairs. Call the experts.
- Use wet if float valve is not functioning or fitted.
- Use to suck up hot ashes or lighted cigarette ends.
- Suck up liquid before emptying dirt from the container.
- Suck up dirt before emptying liquid from the container.
- Run the machine over the power cable during operation as a hazard may occur.
- Try to un-reel the cable with one pull or pull on the cable to unplug the machine from the power supply.

Spray Extraction Machines Only...

- Over-wet carpet, upholstery or fabrics.
- Walk on clean carpets until dry.
- Spray onto people or animals.

Caution

If foam/liquid comes out, switch off immediately. Allow the accumulated liquid to drain out through the discharge grille, check the float assembly to ensure correct operation, reassemble the machine. Immediately upon start up there will be a certain amount of liquid issuing from the discharge grille which will be the residue of liquid still within the power head. This will be quickly discharged after which the machine should function normally.

Liquid ejected from the machine could be hazardous as a result of its temperature, pressure or chemical content.

3.0 Carry out Quality Control Check

3.1 Quality Control Check

External

- De-Taring
- Wheels
- Hub Caps
- Tyres
- Bumpers
- Trims
- Handles
- Mirror Heads
- Mud Flaps
- Wheel Arches
- Polish

Internal

- Dash
- Fascia



- Console
 - Pedals
 - Vinyl, plastic
 - Door Steps
 - Door Seals
 - Door Jams
 - Seats
 - Carpet
- Glass
- Inside
 - Outside
- Mirrors
- Inside
 - Outside
- Engine
- Washed
 - Conditioned
- Boot
- Carpet



Spare Wheel

Tool Kit

Windscreen wash bottle (filled)

Paper floor mats

Disposable seat covers (if wet)

Tow hitch

Summary

On completion of a Valeting job, it should be presented to the customer in a first class, clean condition. All repaired vehicles should be thoroughly inspected for quality control.

This ensures that when the customer sees the vehicle for the first time it should make an impression on them. This in turn will give the business a good name and reputation.

Self Assessment

Questions – Module 6. Unit 3

1. What is the first step with regards to personal belongings when valeting?

2. What do you do if engine oil is low?

3. What is the best method of removing stubborn stickers from body work?

4. What needs to be protected when power washing engine bay?

5. Electrical equipment for valeting should never get?

6. Do you need to cover your skin when using detergents/chemicals?

7. When is it safe to check cooling system levels?

8. Why are disposable seat covers fitted after valeting?

9. What is a quality control check?

10. What is the last and final check before returning vehicle to customer?

Answers to Questions 1-10. Module 6. Unit 3

1.

Collect, itemise and store safely?

2.

Report to instructor and top up

3.

Hot air gun

4.

Air intake and sensitive electrical equipment

5.

Wet

6.

Yes

7.

When you are sure its cold

8.

To keep clean

9.

It is a check to see if all work carried out is up to standard

10.

The last and final check is make sure all belongings are returned to the vehicle

Suggested Exercise

1. Check vehicle fluid levels
2. Check tyre pressure including spare, valet vehicle to a quality control check on vehicle before hand-over to the customer.
3. Make out and record list of personal items in vehicle (book supplied). Do this check with at least one other member of Valeting team.

List such items as spare wheel, jack, wheel brace, mats etc. This makes sure all items are returned to the proper vehicle, leave these items on a bench close to where Valeting is to be done.

Check:

- Engine oil level, if low, notify the instructor.
- When engine is cold, coolant, top up to min. level only.
- Windscreen washer level, top up as necessary.
- Jet spray, clean nozzles if blocked and adjust direction of spray.
- Top up if below min. level only.
- Check all lights, report any malfunctions.

Finally, when valet and check is complete, go through (check list) when satisfied with work done, valet team return personal items to vehicle, ticking off all items against original list taken.

Training Resources

- Classroom/workshop
- Motor vehicle
- Cleaning materials
- Thread gauge
- Tyre pressure gauge
- Check list
- Technical data

Glossary of Terms

A pillar

The first pillar supporting the roof adjacent to the windscreen.

Abrasive

A substance used for wearing away a surface by rubbing.

Accelerator

A constituent of synthetic resin mix which hastens a reaction.

Acetone

(CH₃COCH₃) A liquid hydro-carbon capable of dissolving twenty-five times its own volume of acetylene gas at atmospheric pressure.

Activator/Hardener

A chemical which will cause a curing process, the highly toxic ingredient of two-pack paints.

Active Safety

Features that help to prevent an accident happening.

Adhesion

Joining together of two components, as of paint to a substrate or one component to another.

Air-fed mask

Painter's breathing equipment with an independent air supply.

All-metal construction

Generally this applies to those body shells of both private cars and light commercial vehicles in which the construction is in the form of steel pressings assembled by welding, thus forming a fabricated unit.

Alloy

A mixture of two or metals with, or without, other metallic or non-metallic elements.

Anti-corrosion

A treatment or construction that prevents or delays the formation of rust on ferrous metal.

Arc eye

The effect of an arc welding flash on the eye.

Automated

An action that is carried out by machinery without human intervention.

B pillar

The second pillar back from the screen.

Backfire

A term that can be defined as a momentary return of gases indicated in the blowpipe by a pop or loud bang, the flame immediately recovering and burning normally at the blowpipe.

Backhand welding

Sometimes classified as ‘rightward welding’ and applies to a technique in which the flame is directed backwards against the completed part of the weld.

Back light

A central window in the rear panel of the driving cab, or the rear window of a saloon body.

Billet

An oblong piece of metal having a square section.

Binder

A resin or cementing constituent of a compound.

Blending-out

A spraying action where newly applied paint is encouraged to blend with the original finish.

Blowpipe

A tool used for welding, known as a welding torch.

Body sill

The panel directly below the bottom of the doors.

Bonnet

The metal cover over the engine compartment.

Boot

This is a compartment provided in the car body which takes the luggage and often spare wheel and fuel tank. It may be at the front or rear of the body depending upon the location of the engine.

Booth

An enclosed room with filtered air flow in which a car can be spray painted, usually now has heating when it's called a booth/oven.

Boot lid

Shaped door panel for enclosing luggage boot.

Bottom side

The frame member of the base of the body extending along the full length of the main portion of the body.

BS

British Standard.

Bulkhead

A transverse support in a body structure.

Bumping

Reshaping metal with a hammer and dolly.

Burnishing

Polishing, generally using a gentle abrasive compound.

Cant panel

The curved section of the roof top running between the comparatively flat top and the rain drip or gutter.

Cant rail

The longitudinal framing of the roof at the joint.

Carbon Dioxide (CO₂) A heavy colourless and incombustible gas which results from the perfect combustion of carbon.

Carbonising flame

An oxy-acetylene flame adjustment created by an excess of acetylene over oxygen, resulting in an excess of carbon in the flame.

Case hardening

This is the process of hardening the outer case or shell of steel articles, which is accomplished by including additional carbon into the case of the steel by a variety of methods.

Catalyst

A chemical substance which brings about a chemical change to produce a different substance.

Centre Pillar

The centre vertical support of a four door saloon.

Cellulose

Sometimes called nitrocellulose, it's a highly flammable quick drying paint.

Clinching

Joining materials by pressing two or more layers together into a locking shape.

Cohesion

The force by which particles in a substance are held together.

Colour library

Painter's record of bodyshop formulated colours.

Consumables

Materials which are consumer, lost or destroyed by being used, e.g. sanding disks, masking tape, etc.

Contamination

The inclusion of unwanted substances in or under a paint film.

Contour

Shape or outline.

Copper acetylide

($\text{Cu}_2\text{C}_2, \text{H}_2\text{O}$) A spontaneously explosive and inflammable substance which forms when acetylene is passed through a copper tube.

COSSH

Control of Substances Hazardous to Health Regulations 1988.

Curing

The change of a binder from soluble fusion state to insoluble infusible state by chemical action.

Daylight lighting

Artificial lighting that is compensated to produce the same effect as daylight.

De-mineralised Water

Water from which mineral particles of all but the smallest size has been removed.

De-nibbing

The action of removing small dirt inclusions or other imperfections on a coat of paint.

Deposited metal

Filler metal from a welding rod or electrode which has been melted by a welding process and applied in the form of a joint or built up.

Dinging

Straightening damaged metal with spoons, hammers or dollies. In the early days ‘dingman’ was the name of a tradesman who worked on completed bodies removing minor imperfections without injury to the high gloss lacquer or varnish.

Dinging hammer

A special hammer used for dinging or removal of dents.

Dirt Inclusions.

Small particles of dust or fluff that have become embedded in the surface during painting.

Door skins.

Formed metal panels covering the outside of the doors.

Door trim.

The interior lining of a door.

Drip moulding.

A roof trough to direct water from door openings.

Dry sanding.

Literally, sanding bodywork without using water.

Dust extraction.

The removal of dust from a sanding tool by means of vacuum, often from a central extraction unit.

Edge-to-edge finish

Painting a panel or panels up to gaps, joins or trim so that no blending is necessary.

Electrode.

The usual term for the filler rod which is deposited when using the electric arc welding process.

Electromagnetic spectrum.

The radiation given off by the sun; the wavelengths range from Gamma rays (about a billionth of a millimetre long) to radio waves (which can be a kilometre long).

Electrophoresis

Also described as cataphoresis, particles of paint are attracted to a submerged car body by a flow of electric current.

Electrostatic process

The attraction of paint particles to an electrically charged car body.

EN

Standards that are being adopted in all parts of the European Union.

EPA

Environmental Protection Act.

Etching

An acidic action that cuts into the surface to improve adhesion.

Expansion.

The increase in the dimensions of metals due to heat.

Extrude.

To draw into lengths.

Fender.

American term for wing.

Feathering

Relating to paint preparation, it means sanding away all edges to provide a smooth, even surface.

FEPA

Federation of European Producers of Abrasives.

Filler.

Inorganic types used to extend low pressure resins, usually polyesters.

Fillet weld.

A weld in which two surfaces at right angles to one another are welded together.

Firewall.

Front bulkhead which separates the engine and components from the passenger carrying compartment.

Flange.

A reinforcement on the edge of a panel formed at approximately right angles to the panel.

Flashback.

Occurs when the flame disappears from the end of the welding tip and the gases burn in the torch.

Flashing off

The partial drying of paint to the point where it loses its wet gloss and looks matt.

Flat.

A panel is said to be 'flat' when insufficient shaping has caused uneven contours and so flat areas are obvious.

Flatted

Taking away the gloss finish of a paint with an abrasive.

Formulation

The 'recipe' which gives the mix of bases and tinters for making up a paint colour.

Four-door.

Denotes the type of saloon body having four doors.

Galvanised

Metal, usually steel, that is coated with a thin layer of zinc by either a hot dip or electrolytic process.

GRP

Glass Reinforced Plastic.

Guidecoat

A contrasting colour applied to primer filler to show material removal during sanding.

Hardener.

A chemical curing or hardening agent.

Hardening.

Heating to a critical temperature followed by a relatively rapid rate of cooling.

Headlining.

The cloth or other material used to cover the inner surface of the car roof.

Heelboard.

The vertical board or panel under the rear seat which forms the support for the seat cushion.

Hinge pillar.

A pillar on which the door is swung.

Hood.

American term for bonnet.

HSS

High Strength Steel.

HVLP

High Volume, Low pressure.

Immersed

Lowered beneath the surface, such as a car body in a tank of paint.

Impregnated.

The particles of one substance infused into that of another.

Infra-Red

A type of heater used to cure paints and fillers.

Ingestion

Taking in substances through the mouth.

Isocyanates

A highly toxic ingredient of the activator for two-pack (2K) paints.

Key

The removal of gloss from a surface using a fine abrasive so that other coatings can adhere to it.

Lacquer/Clear coat

A clear paint applied over the colour coat to give gloss and durability.

Laminates.

A material composed of a number of layers.

Lay-up.

Layers of glass fibres are laid on top of wet resin and then pressed down into the liquid resin.

Leftward welding. This is known as ‘forehand welding’.

MAGS

Metal Arc Gas Shielded welding.

Metallic and pearlescent

Basecoats which contain particles to give special effects, basecoats uminium for metallic and mica for pearlescent.

Metallic finishes

Paints containing aluminium particles that reflect light.

Metamerism

The name used to describe the phenomenon where colour changes shade under different lighting, e.g. sodium vapour street lights.

Microfiche

Transparent film on which is printed minute lettering or illustrations which can be read under a viewer.

Micron

A millionth of a metre or one thousandth of a millimetre.

MIG/MAG

Metal Inert Gas/Metal Active Gas arc welding.

MIRRC

Motor Insurance Repair Research Centre (Thatcham)

Mixing Scheme

A motorised rack that holds cans of paint and stirs them.

Moulding

The resulting shape of a plastic material when it is removed from its mould.

Mule skinner

Rotary wire brush which has its wires embedded in resin.

Nearside

Viewed from the driver's seat, this is the left hand side of the vehicle.

Neutral flame

A balanced flame, indicating perfect combustion of both gases oxygen and acetylene.

Non-ferrous metals

Metals which do not contain any ferrite or iron.

Normalizing

Heating to a high temperature to produce a refinement of the grain structure of a metal or alloy.

OE

Original equipment (of a car, fitted or applied at the factory)

Offside.

Viewed from the driver's seat, this is the right-hand side of the vehicle.

Original finish.

The paint applied at the factory by the vehicle manufacturer.

Oven

A heated painting booth.

Overbaked

Relating to car production lines, this happens when the moving conveyor slows down or stops and the car body spends too long in the oven, resulting in excessively hard paint.

Oxidization.

Chemical reaction between oxygen and some other element resulting in oxides.

Oxidizing flame

A gas welding flame which has an excess of oxygen while burning.

PA

Polyamide.

Paddle.

A wooden shaped tool for spreading body solder.

Paint Booth

An enclosed and vented cubicle in which paint can be sprayed without contaminating the rest of the work area.

Passive Safety

Those measures that minimise the consequences of an accident.

PBT

Polybutylene terephthalate (linear Polyester).

PC

Polycarbonate.

PE

Polyethylene.

Penetration.

Depth of fusion or weld penetration.

Peroxide Bleaching

A stain which passes through the topcoat from beneath, caused by poor measuring or mixing of two-pack fillers.

PES

Polyethersulphone.

PET

Polyethylene Terephthalate.

PF

Phenol-formaldehyde resin.

Phosphate

A paint containing zinc particles in sufficient quantity to delay or prevent rust formation.

Pickle.

To soak metal in an acid solution in order to free the surface of rust or scale.

Pillar.

A vertical support of a body frame.

Pillar face.

The front of a pillar visible when the door is opened.

Plasticizer

An additive that gives a paint film the flexibility of plastic.

PMMA

Clear Acrylic or Poly (methyl methacrylate).

POM

Polyoxymethylene; polyformaldehyde .

Pot-Life

The time during which mixed adhesive, filler and paint can be used.

PP

Polypropylene.

PPE

Personal Protective Equipment.

PPO

Modified polyphenylene oxide.

PPS

Polyphenylene Sulphide.

Primary Colours

Those of light are red, blue and green which together make white, pigments are magenta (a red), cyan (a blue) and yellow which, when mixed together, make black.

Prototype

An original model.

PTFE

Polytetraflouroethylene.

Puddle

The small body of molten metal created by the flame of a welding torch.

PUR

Polyurethane.

PVC

Polyvinyl Chloride.

Quarter light

The window directly above the quarter panel.

Quarter panel

The side panel extending from the door to the rear end of the body (including rear wing).

Random Orbital

Sanders so described have a plate or disc which moves in a constantly varying orbit, those with a round head also rotate and are known as dual action or DA sanders.

Reinforcement

Filler material added to plastics (resin) in order to strengthen the finished product.

Return sweep

Reverse curve.

Roll-edge masking

Masking which presents a gradually diminishing gap to paint spray which can help in avoiding sharp edges.

Saloon.

An enclosed body not having a partition between the front and rear seats.

Scuttle panel

The panel between the bonnet and the windscreen.

Sensitised

Heightened sensitivity – in the case of Isocyanates the slightest trace can provoke a reaction.

SMA

Styrene maleic anhydride.

Sodium Azide

A highly toxic constituent of airbag gas cartridges.

Solid colours

Paints which rely only on coloured pigments for effect.

Solvent

A liquid capable of dissolving a material.

Spray-out card

A special card that is painted with the mixed paint for comparison or a permanent record.

Squab

The rear seat-back construction.

Stearate powder

A dry lubricant applied by the makers to dry sanding abrasive.

Stopper

Usually a one-pack material that cures by evaporation.

Sub-frame.

Chassis-frame sections, usually situated at the front of a vehicle, which carry the engine and suspension components.

Substrate

The material that is painted.

Subtractive mixing

The mixing of pigment colours.

Suspension

Relating to paints, it refers to particles mixed in the paint and how well they are mixed.

Swage.

A raised form of moulding pressed into a piece of metal in order to stiffen it.

Sweating.

Uniting two or more metal surfaces by the use of heat and soft solder.

Synthetic.

A substance produced artificially.

Synthetic paints

Paints which contain a resin.

Tacking off

Wiping dust from a surface to be painted with a dust attracting cloth.

TAGS

Tungsten Arc Gas Shielded welding.

Template.

A form or pattern made so that other parts can be formed to exactly the same shape.

Tensile strength.

The resistance to breaking which metal offers when subject to a pulling stress.

Thinner

A solvent that reduces the viscosity of paint so that it may be sprayed and evaporates as the paint dries.

TIG

Tungsten Inert Gas arc welding.

Topcoat

The outer finishing coat; basecoat and clear finish may also be considered as topcoat.

TPUR

Thermoplastic polyurethane.

Translucent coating

A cloudy coat that permits some light rays to pass through the layer below.

Transparent coating

A clear coat that permits light rays to pass through to the layer below.

Tunnel.

A raised floor panel section for driveshaft clearance.

Turret.

American term for roof.

Two-pack acrylic

A resin based paint that hardens chemically with the addition of a hardener, usually written 2K and called a 2-pack.

Viscosity cup

A cup of measured size which also has a hole of measured size in the base to check paint viscosity by time.

VOCs

Volatile Organic Substances.

Volatile

Capable of readily evaporating.

Wheel-arch

Panel assembly for covering the rear wheels.

SOLAS

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