

## SECTION : 100-00 General Information

VEHICLE APPLICATION : 2003.0 BA Falcon

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## DESCRIPTION AND OPERATION

### About this Manual

#### Introduction

This manual has been written in a format that is designed to meet the needs of Ford technicians worldwide. The objective is to use common formats and include similar content in each manual worldwide.

This manual provides general descriptions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

#### Replacement Parts

Ford and Motorcraft parts are made to the same exacting standards as the original factory fitted components. For this reason, it is recommended that only genuine Ford or Motorcraft parts are installed during service or repair.

#### Special Tools

The Special Tool(s) Table provided at the beginning of each procedure shows all special tools required to carry out a repair. Where possible, illustrations are provided to assist in identifying the special tool required.

Special tools may be ordered from:


Australia
SPX AUSTRALIA
Tel: +61 (03) 9544 6222
Fax: +61 (03) 9544 5222


#### Important Safety Instructions

Appropriate service methods and correct repair procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual carrying out the work.

This manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Anyone who departs from the instructions provided in this manual must first establish that he compromises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

#### Warnings, Cautions and Notes in This Manual

 **WARNING:** Warnings are used to indicate that failure to follow a procedure correctly may result in personal injury.

 **CAUTION:** Cautions are used to indicate that failure to follow a procedure correctly may result in damage to the vehicle or equipment being used.

**NOTE:** Notes are used to provide additional essential information required to carry out a complete and satisfactory repair.

As you read through this manual, you will come across WARNINGS, CAUTIONS and NOTES.

A warning, caution or note is placed at the beginning of a series of steps if it applies to multiple steps. If the warning, caution or note only applies to one step, it is placed at the beginning of the specific step (after the step number).

#### How to Use This Manual

This manual covers service and repair procedures.

This manual is structured into groups and sections, with specific system sections collected together under their relevant group.

A group covers a specific portion of the vehicle. The manual is divided into five groups, General Information, Chassis, Powertrain, Electrical and Body and Paint. The number of the group is the first number of a section number.

Pages at the start of the manual list all sections available. Each section has a contents list detailing General Specifications, Description and Operation and Service Adjustment and Checks.

If components need to be removed or disassembled in sequence, the sequence will be identified numerically in a graphic and the corresponding text will be numbered accordingly (refer to 'Samples').

All left and right-hand references to the vehicle are taken from a position sitting in the driver seat looking forward.

All left and right-hand references to the engine are taken from a position at the flywheel looking towards the front camshaft pulley.

Where appropriate, instructions will be given for the use of WDS, diagnostic equipment.

Inspection and Verification

Visual Inspection Charts, Symptom Charts and other information charts (such as diagnostic routines), supplement test procedures with technical specifications, or navigate the user to a specific test procedure.

Symptom Chart

The symptom chart indicates symptoms, sources and actions to address a condition.

Pinpoint Tests

For electrical systems, pinpoint test steps are used to identify the source of a concern in a logical, step-by-step manner. Pinpoint tests have two columns: CONDITIONS and DETAILS/RESULTS/ACTIONS.

The CONDITIONS column is used exclusively for graphics and icons (with or without captions) and the DETAILS/RESULTS/ACTIONS column provides

## DESCRIPTION AND OPERATION (Continued)

direction to another test step or specific corrective actions.

The boxed numbers indicate the order in which the described action is to be performed.

### Component Tests

A component test is used when a component is tested in multiple pinpoint tests, or if a procedure is too complicated to be formatted within a single page of the pinpoint test.

### Graphics

Test graphics show the measurement or test to be performed in a test step.

A representative tester graphic is used for voltmeters and ohmmeters.

If multiple measurements are made in a single graphic, the test leads are drawn with a solid line until the test lead splits to indicate the multiple measurements, at which point dashed lines are used.

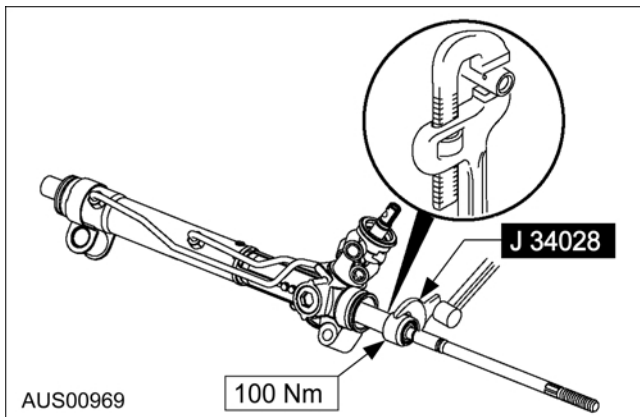
Breakout box-type testers are represented by a double circle test pin. Test pins are labelled with the pin number.

## Samples

### Special Tools and Torque Figures

Any requirement for special tools will picture the tool, showing it in use and with its tool number shown.

Torque settings will be given at the relevant point in the procedure.



## Health and Safety Precautions

### Introduction

Many of the procedures associated with vehicle maintenance and repair involve physical hazards or other risks to health. This subsection lists, alphabetically, some of these hazardous operations and the materials and equipment associated with them. Precautions necessary to avoid these hazards are identified.

The list is not exhaustive and all operations and procedures, and the handling of materials, should be carried out with health and safety in mind.

Before using any product the Materials Safety Data Sheet supplied by the manufacturer or supplier should be consulted.

### Acids and Alkalis

See also Battery Acids.

For example caustic soda, sulphuric acid.

Used in batteries and cleaning materials.

Irritant and corrosive to the skin, eyes, nose and throat. Cause burns. Can destroy ordinary protective clothing.

Avoid splashes to the skin, eyes and clothing. Wear suitable protective impervious apron, gloves and goggles. Do not breath mists.

Make sure access to eye wash bottles, shower and soap are readily available for splashing accidents.

Display Eye Hazard sign.

### Air Bags

See also Fire, Chemical Materials

Highly flammable, explosive – observe No Smoking policy.

Used as a safety restraint system mounted in the steering wheel and passenger side of the instrument panel and side impact Airbags.

The inflator contains a high-energetic propellant which, when ignited, produces a VERY HOT GAS (2500°C).

The gas generant used in air bags is Sodium Azide. This material is hermetically sealed in the module and is completely consumed during deployment. No attempt should be made to open an air bag inflator as this will lead to the risk of exposure to Sodium Azide. If a gas generator is ruptured, full protective clothing should be worn when dealing with the spillage.

After normal deployment, gloves and safety goggles should be worn during the handling process.

Deployed air bags should be disposed of in a plastic bag in accordance with local regulations at an approved chemical waste site.

Following any direct contact with gas generant.

- wash affected areas thoroughly with water.
- seek medical assistance if necessary.

Air Bags - Do's

- do store modules in an upright position.
- do keep modules dry.
- do carry modules with the cover side pointing away from the body.
- do place modules with their cover side upwards.
- do carefully inspect modules for damage.
- do stand to one side when connecting modules.
- do make sure all test equipment is properly calibrated and maintained.
- do wash hands after handling deployed air bags.

## DESCRIPTION AND OPERATION (Continued)

### Air Bags - Do Nots

- do not store highly flammable material together with modules or gas generators.
- do not store gas generators at temperatures exceeding 80°C.
- do not store modules upside down.
- do not attempt to open a gas generator housing.
- do not expose gas generators to open flame or sources of heat.
- do not place anything on top of a module cover.
- do not use damaged modules.
- do not touch a fired module or gas generator for at least 10 minutes.
- do not use any electrical probes on the wiring circuit.

### Air Conditioning Refrigerant

See also Chlorofluorocarbon, Chemical Materials  
Highly flammable, combustible – observe No Smoking policy.

Skin contact may result in frostbite.

Instructions given by the manufacturer must be followed. Avoid naked lights, wear suitable protective gloves and goggles.

If refrigerant comes into contact with the skin or eyes, rinse the affected areas with water immediately. Eyes should also be rinsed with an appropriate irrigation solution and should not be rubbed. SEEK MEDICAL ASSISTANCE IF NECESSARY.

### Air Conditioning Refrigerant - Do Nots

- do not expose refrigerant bottles to sunlight or heat.
- do not stand refrigerant bottles upright; when filling, hold them with the valve downwards.
- do not expose refrigerant bottles to frost.
- do not drop refrigerant bottles.
- do not vent refrigerant to atmosphere under any circumstance.
- do not mix refrigerants, for example R12 (Freon) and R134a.

### Adhesives and Sealers

See also Fire, Chemical Materials

Highly flammable, flammable, combustible – observe No Smoking policy.

Generally should be stored in No Smoking areas. Cleanliness and tidiness in use should be observed, for example disposable paper covering benches; should be dispensed from applicators where possible; containers, including secondary containers, should be labelled appropriately.

### Solvent-based Adhesives/Sealers - See Solvents

Follow manufacturers instructions.

### Water-based Adhesives/Sealers

Those based on polymer emulsions and rubber latexes may contain small amounts of volatile toxic and harmful chemicals. Skin and eye contact should be avoided and adequate ventilation provided during use.

### Hot Melt Adhesives

In the solid state, they are safe. In the molten state they may cause burns and health hazards may arise from the inhalation of toxic fumes.

Use appropriate protective clothing and a thermostatically controlled heater with a thermal cut-out and adequate extraction.

### Resin-based Adhesives/Sealers, for example Epoxide and Formaldehyde Resin-based

Mixing should be carried out in well ventilated areas, as harmful or toxic volatile chemicals may be released.

Skin contact with uncured resins and hardeners can result in irritation, dermatitis, and absorption of toxic or harmful chemicals through the skin. Splashes can damage the eyes.

Provide adequate ventilation and avoid skin and eye contact.

### Anaerobic, Cyanoacrylate (super-glues) and other Acrylic Adhesives

Many are irritant, sensitizing or harmful to the skin and respiratory tract. Some are eye irritants.

Skin and eye contact should be avoided and the manufacturers instructions followed.

Cyanoacrylate adhesives (super-glues) MUST NOT contact the skin or eyes. If skin or eye tissue is bonded, cover with a clean moist pad and SEEK IMMEDIATE MEDICAL ATTENTION. Do not attempt to pull tissue apart. Use in well ventilated areas as vapours can cause irritation to the nose and eyes.

For two-pack systems see Resin-based and Isocyanate Adhesives/Sealers.

### Isocyanate (Polyurethane) Adhesives/Sealers

See also Resin-based Adhesives

Individuals suffering from asthma or respiratory allergies should not work with or near these materials as sensitivity reactions can occur.

Over exposure is irritating to the eyes and respiratory system. Excessive concentrations may produce effects on the nervous system including drowsiness. In extreme cases, loss of consciousness may result. Long term exposure to vapour concentrations may result in adverse health effects.

## DESCRIPTION AND OPERATION (Continued)

Prolonged contact with the skin may have a defatting effect which may lead to skin irritation and in some cases, dermatitis.

Splashes entering the eye will cause discomfort and possible damage.

Any spraying should preferably be carried out in exhaust ventilated booths, removing vapours and spray droplets from the breathing zone.

Wear appropriate gloves, eye and respiratory protection.

### Antifreeze

See also Fire, Solvents.

For example isopropanol, ethylene glycol, methanol.

Highly flammable, flammable, combustible.

Used in vehicle coolant systems, brake air pressure systems, screenwash solutions.

Vapours may be given off from coolant antifreeze (glycol) when heated. Avoid breathing these vapours.

Antifreeze may be absorbed through the skin in toxic or harmful quantities. Antifreeze, if swallowed, can be fatal and MEDICAL ATTENTION SHOULD BE SOUGHT IMMEDIATELY.

These products must not be used in any cooling or industrial water system which is connected or linked to general, food preparation or drinking water supplies.

### Asbestos

See also Warning Symbols on Vehicles at the end of this subsection.

Breathing asbestos dust may cause lung damage or, in some cases, cancer.

Used in brake and clutch linings, transmission brake bands and gaskets. Ford original production and genuine replacement items for this model are asbestos free.

The use of drum cleaning units, vacuum cleaning or damp wiping is preferred.

Asbestos dust waste should be dampened, placed in a sealed container and marked for safe disposal. If any cutting or drilling is attempted on materials containing asbestos the item should be dampened and only hand tools or low speed power tools used.

### Battery Acids

See also Acids and Alkalis.

Gases released during charging are explosive. Never use naked flames or allow sparks near charging or recently charged batteries.

Make sure there is adequate ventilation.

### Brake and Clutch Linings and Pads

See Asbestos.

### Brakes Fluids (Polyalkylene Glycols)

See also Fire.

Splashes to the skin and eyes are extremely irritating. Avoid skin and eye contact as far as possible.

Inhalation vapour hazards do not arise at ambient temperatures because of the very low vapour pressure.

### Brazing

See Welding.

### Chemical Materials

See also Legal Aspects.

Chemical materials such as solvents, sealers, adhesives, paints, resin foams, battery acids, antifreeze, brake fluids, fuels, oils and grease should always be used with caution and stored and handled with care. They may be toxic, harmful, corrosive, irritant or highly flammable and give rise to hazardous fumes and dusts.

The effects of excessive exposure to chemicals may be immediate or delayed; briefly experienced or permanent; cumulative; superficial; life threatening; or may reduce life expectancy.

### Chemical Materials - Do's

- Do carefully read and observe hazard and precaution warnings given on material containers (labels) and in any accompanying leaflets, posters or other instructions. Material health and safety data sheets can be obtained from manufacturers.
- Do remove chemical materials from the skin and clothing as soon as practicable after soiling. Change heavily soiled clothing and have it cleaned.
- Do organise work practices and protective clothing to avoid soiling of the skin and eyes; breathing vapours, aerosols, dusts or fumes; inadequate container labelling; fire and explosion hazards.
- Do wash before job breaks, before eating, smoking, drinking or using toilet facilities when handling chemical materials.
- Do keep work areas clean, uncluttered and free of spills.
- Do store chemical materials according to national and local regulations.
- Do keep chemical materials out of the reach of children.

### Chemical Materials - Do Not's

- Do not mix chemical materials except under the manufacturers instructions; some chemicals can form other toxic or harmful chemicals, give off toxic or harmful fumes or become explosive when mixed together.
- Do not spray chemical materials, particularly

## DESCRIPTION AND OPERATION (Continued)

those based on solvents, in confined spaces, for example when people are inside a vehicle.

- Do not apply heat or flame to chemical materials except under the manufacturers instructions. Some are highly flammable and some may release toxic or harmful fumes.
- Do not leave containers open. Fumes given off can build up to toxic, harmful or explosive concentrations. Some fumes are heavier than air and will accumulate in confined areas such as pits.
- Do not transfer chemical materials to unlabelled containers.
- Do not clean hands or clothing with chemicals. Chemicals, particularly solvents and fuels, will dry skin and may cause irritation leading to dermatitis or be absorbed through the skin in toxic or harmful quantities.
- Do not use emptied containers for other materials except when they have been cleaned under supervised conditions.
- Do not sniff or smell chemical materials. Brief exposure to high concentrations of fumes can be toxic or harmful.

### Chlorofluorocarbons (CFC)

There is concern in the scientific community that CFCs and Halons are depleting the upper ozone layer which filters out harmful ultraviolet radiation.

Decreased filtration of ultraviolet radiation may result in increases in skin cancer, cataracts and immune system suppression in humans, as well as decreased productivity of crops and aquatic systems.

CFCs are used primarily as refrigerants in vehicle air conditioning systems and as aerosol propellants.

Halons are used as fire extinguishants.

Ford supports worldwide elimination of CFC usage and it is recommended that Company subsidiaries and affiliates should phase out CFC usage as soon as acceptable substitutes are commercially available.

### Clutch Fluids

See Brake fluids.

### Clutch Linings and Pads

See Asbestos.

### Corrosion Protection Materials

See also Solvents, Fire.

Highly flammable, flammable – observe No Smoking policy.

These materials are varied and the manufacturers instructions should be followed. They may contain solvents, resins or petroleum products. Skin and eye contact should be avoided. They should only be sprayed in conditions of adequate ventilation and not in confined spaces.

### Cutting

See Welding.

### Dewaxing

See Solvents and Fuels (Kerosene).

### Dusts

Powder, dusts or clouds may be irritant, harmful or toxic. Avoid breathing dusts from powdery chemical materials or those arising from dry abrasion operations. Wear respiratory protection if ventilation is inadequate.

Fine dusts of combustible material can present an explosion hazard. Avoid explosive limits and sources of ignition.

### Electric Shock

Electric shock can result from the use of faulty electrical equipment or from the misuse of equipment in good condition.

Make sure that electrical equipment is maintained in good condition and frequently tested. Faulty equipment should be labelled and preferably removed from the work station.

Make sure that flexes, cables, plugs and sockets are not frayed, kinked, cut, cracked or otherwise damaged.

Make sure that electrical equipment and flexes do not come into contact with water.

Make sure that electrical equipment is protected by the correct rated fuse.

Never misuse electrical equipment and never use equipment which is in any way faulty. The results could be fatal.

Make sure that the cables of mobile electrical equipment cannot get trapped and damaged, such as in a vehicle hoist.

Make sure that the designated electrical workers are trained in basic First Aid.

In cases of electrocution:

- switch off the power supply before approaching the victim.
- if this is not possible push or drag the victim from the source of electricity using dry non-conductive material.
- commence resuscitation if trained to do so.
- SUMMON MEDICAL ASSISTANCE.

### Engine Oils

See Lubricants and Grease.

### Exhaust Fumes

These contain asphyxiating, harmful and toxic chemicals and particles such as carbon oxides, nitrogen oxides, aldehydes, lead and aromatic

## DESCRIPTION AND OPERATION (Continued)

hydrocarbons. Engines should be run only under conditions of adequate exhaust extraction or general ventilation and not in confined spaces.

### Gasolene (petrol) engine

There may not be adequate warning of odour or of irritation before toxic or harmful effects arise. These may be immediate or delayed.

### Diesel engine

Soot, discomfort and irritation usually give adequate warning of hazardous fume concentrations.

### Fibre Insulation

See also Dusts.

Used in noise and sound insulation.

The fibrous nature of surfaces and cut edges can cause skin irritation. This is usually a physical and not a chemical effect.

Precautions should be taken to avoid excessive skin contact through careful organization of work practices and the use of gloves.

### Fire

See also Welding, Foams, Legal Aspects.

Many of the materials found on or associated with the repair of vehicles are highly flammable. Some give off toxic or harmful fumes if burnt.

Observe strict fire safety when storing and handling flammable materials or solvents, particularly near electrical equipment or welding processes.

Make sure, before using electrical or welding equipment, that there is no fire hazard present.

Have a suitable fire extinguisher available when using welding or heating equipment.

### First Aid

Apart from meeting any legal requirements it is desirable for someone in the workshop to be trained in First Aid procedures.

Splashes in the eye should be flushed carefully with clean water for at least ten minutes.

Soiled skin should be washed with soap and water.

In case of cold burns, from alternative fuels, place affected area in cool to cold water.

Individuals affected by inhalation of gases and fumes should be removed to fresh air immediately. If effects persist, consult a doctor.

If liquids are swallowed inadvertently, consult a doctor giving him the information on the container or label. Do not induce vomiting unless this action is indicated on the label.

### Fluoroelastomer

See Viton.

### Foams - Polyurethane

See also Fire.

Used in sound and noise insulation. Cured foams used in seat and trim cushioning.

Follow manufacturers instructions.

Unreacted components are irritating and may be harmful to the skin and eyes. Wear gloves and goggles.

Individuals with chronic respiratory diseases, asthma, bronchial medical problems, or histories of allergic diseases should not work in or near uncured materials.

The components, vapours or spray mists can cause direct irritation, sensitivity reactions and may be toxic or harmful.

Vapours and spray mists must not be inhaled. These materials must be applied with adequate ventilation and respiratory protection. Do not remove the respirator immediately after spraying, wait until the vapour/mists have cleared.

Burning of the uncured components and the cured foams can generate toxic and harmful fumes.

Smoking, naked flames or the use of electrical equipment during foaming operations and until vapours/mists have cleared should not be allowed.

Any heat cutting of cured foams or partially cured foams should be conducted with extraction ventilation. See also the vehicle Body Repair Manual.

### Freon

See Air Conditioning Refrigerant.

### Fuels

See also, Fire, Legal Aspects, Chemicals and Solvents.

Avoid skin contact with fuel where possible. Should contact occur, wash the affected skin with soap and water.

### Gasoline (Petrol)

Highly flammable - observe No Smoking policy.

Swallowing can result in mouth and throat irritation and absorption from the stomach can result in drowsiness and unconsciousness. Small amounts can be fatal to children. Aspiration of liquid into the lungs, through vomiting, is a very serious hazard.

Gasolene dries the skin and can cause irritation and dermatitis on prolonged or repeated contact. Liquid in the eye causes severe smarting.

Motor gasolene may contain appreciable quantities of benzene, which is toxic upon inhalation, and the concentration of gasolene vapours must be kept very low. High concentrations will cause eye, nose and throat irritation, nausea, headache, depression and symptoms of drunkenness. Very high concentrations will result in rapid loss of consciousness.



## DESCRIPTION AND OPERATION (Continued)

Make sure there is adequate ventilation when handling and using gasoline. Great care must be taken to avoid the serious consequences of inhalation in the event of vapour build up arising from spillages in confined spaces.

Special precautions apply to cleaning and maintenance operations on gasoline storage tanks.

Gasoline should not be used as a cleaning agent. It must not be siphoned by mouth. See First Aid.

### Gas-oil (Diesel Fuel)

Combustible.

Gross or prolonged skin contact with high boiling point gas oils may also cause serious skin disorders including skin cancer.

### Kerosene (Paraffin)

Used also as heating fuel, solvent and cleaning agent.

Flammable - observe No Smoking policy.

Irritation of the mouth and throat may result from swallowing. The main hazard from swallowing arises if liquid aspiration into the lungs occurs.

Liquid contact dries the skin and can cause irritation or dermatitis. Splashes in the eye may be slightly irritating.

In normal circumstances the low volatility does not give rise to harmful vapours. Exposure to mists and vapours from kerosene at elevated temperature should be avoided (mists may arise in dewaxing). Avoid skin and eye contact and make sure there is adequate ventilation.

### Alternative Fuel

Highly flammable. Observe "NO SMOKING" signs.

Make sure there is adequate ventilation when working on alternative fuelled vehicles. Great care must be taken to avoid the serious consequences of inhalation in the event of vapour build up in confined spaces.

Inhalation in high concentrations may cause dizziness, headache, nausea and loss of co-ordination. Very high concentrations may result in loss of consciousness.

Contact with liquidified petroleum gas (LPG) or compressed natural gas (CNG) to skin may cause cold burns and may cause frost bite.

Long sleeved cotton overalls, steel toe capped safety boots and rubber neoprene gloves should be worn during removal and installation of LPG/CNG fuel system components.

LPG/CNG fuel leaks could cause a fire and be a hazard to health that can lead to personal injury, illness or even death.

If a leak is detected, under no circumstances attempt to seal the leak by tightening the union/connection until the fuel in the system or component is depressurised. Once tightened the system should be

checked for integrity following the specified procedures.

If the fuel tank is to be removed for service or repair the fuel must be evacuated using dedicated equipment and following the specified procedures.

### Gas Cylinders

See also Fire.

Gases such as oxygen, acetylene, argon and propane are normally stored in cylinders at pressures of up to 138 bar (2000 psi) and great care should be taken in handling these cylinders to avoid mechanical damage to them or to the valve gear attached. The contents of each cylinder should be clearly identified by appropriate markings.

Cylinders should be stored in well ventilated enclosures, and protected from ice and snow, or direct sunlight. Fuel gases, for example acetylene and propane, should not be stored in close proximity to oxygen cylinders.

Care should be exercised to prevent leaks from gas cylinders and lines, and to avoid sources of ignition.

Only trained personnel should undertake work involving gas cylinders.

### Gases

See Gas Cylinders.

### Gaskets (Fluoroelastomer)

See Viton.

### General Workshop Tools and Equipment

It is essential that all tools and equipment are maintained in good condition and the correct safety equipment is used where required.

Never use tools or equipment for any purpose other than that for which they were designed. Never overload equipment such as hoists, jacks, axle and chassis stands or lifting slings. Damage caused by overloading is not always immediately apparent and may result in a fatal failure the next time that the equipment is used.

Do not use damaged or defective tools or equipment, particularly high speed equipment such as grinding wheels. A damaged grinding wheel can disintegrate without warning and cause serious injury.

Wear suitable eye protection when using grinding, chiselling or sand blasting equipment.

Wear a suitable breathing mask when using abrasive blasting equipment, working with asbestos-based materials or using spraying equipment.

Make sure there is adequate ventilation to control dusts, mists and fumes.

## DESCRIPTION AND OPERATION (Continued)

### High Pressure Air, Lubrication and Oil Test Equipment

See also Lubricants and Greases.

Always keep high pressure equipment in good condition, and regularly maintained, particularly at joints and unions.

Never direct a high pressure nozzle, for example diesel injector, at the skin as the fluid may penetrate to the underlying tissue, and cause serious injury.

### Halon

See CFCs.

### Legal Aspects

There are many laws and regulations relating to health and safety in the use and disposal of materials and equipment in a workshop.

For a safe working environment and to avoid environmental pollution, workshops should be familiar, in detail, with the many health and safety laws and regulations within their country, published by both national and local authorities.

### Lubricants and Greases

Avoid all prolonged and repeated contact with mineral oils. All lubricants and greases may be irritating to the eyes and skin.

### Used Engine Oil

Prolonged and repeated contact with mineral oil will result in the removal of natural fats from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer. Adequate means of skin protection and washing facilities must be provided.

Do not employ used engine oils as lubricants or for any application where appreciable skin contact is likely to occur.

### Health Protection Precautions

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Do not put oily rags into pockets.
- Avoid contaminating clothes, particularly underpants, with oil.
- Heavily soiled clothing and oil-impregnated footwear should not be worn. Overalls must be cleaned regularly.
- First Aid treatment should be obtained immediately for open cuts and wounds.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin.

- Wash with soap and water to make sure all oil is removed (skin cleansers and nail brushes will help). Preparations containing lanoline replace the natural skin oils which have been removed.
- Do not use gasoline (petrol), kerosene (paraffin), diesel fuel (gas oil), thinners or solvents for cleaning skin.
- If skin disorders develop, obtain medical advice without delay.
- Where practicable, degrease components prior to handling.
- Where there is a risk of eye contact, eye protection should be worn, for example chemical goggles or face shields; in addition an eye wash facility should be provided.

### Environmental Precautions

Burning used engine oil in small space heaters or boilers can be recommended only for units of approved design. If in doubt check with the appropriate local authority and manufacturer of approved appliances.

Dispose of used oil and used oil filters through authorized waste disposal contractors or licensed waste disposal sites, or to the waste oil reclamation trade. If in doubt, contact the relevant local authority for advice on disposal facilities.

It is illegal to pour used oil on to the ground, down sewers or drains, or into water courses.

### Noise

Some operations may produce high noise levels which could, in time, damage hearing. In these cases, suitable ear protection must be worn.

### Noise Insulation Materials

See Foams, Fibre Insulation.

### O-Rings (Fluoroelastomer)

See Viton.

### Paints

See also Solvents, Chemical Materials.

Highly flammable, flammable - observe No Smoking policy

### One Pack

Can contain harmful or toxic pigments, driers and other components as well as solvents. Spraying should be carried out only with adequate ventilation.

### Two Pack

Can also contain harmful and toxic unreacted resins and resin hardening agents. The manufacturers instructions should be followed. See also Resin-based Adhesives and Isocyanate Adhesives and Sealers under Adhesives and Sealers.