FIAT BRAVO & BRAVA

1995 to 2000 (N to W registration) 4-cyl Petrol

Haynes **Service and Repair Manual**

Includes **Roadside Repairs** and **MOT Test Checks**

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The 3-door FIAT Bravo and 5-door Brava models were introduced at the end of 1995, as part of a new range of FIAT models which began with the successful Punto a year earlier. The elegant all-new design won the coveted Car of the Year award in 1996.

The engines are all fuel-injected, in-line, multi-valve four-cylinder units of 1370 cc, 1581 cc or 1747 cc displacement, and all feature a comprehensive engine management system with extensive emission control equipment. In early 1999, the range received a minor facelift, and the 1370 cc 12-valve engine was replaced by the 1242 cc 16-valve engine from the FIAT Punto.

The 3- and 5-door bodyshells are extensively galvanised and particularly rigid, and offer spacious accommodation. The cars have many crash safety measures, such as a driver's airbag, side impact bars, anti-submarine seats, and front seat belt pre-tensioners.

Transmissions are either 5-speed manual, or 4-speed automatic with computer control. The automatic transmission features mode control selection, allowing the driver to alter the transmission characteristics to suit normal, sport or winter driving requirements.

Braking is by discs at the front, and drums at the rear, with the handbrake acting on the rear drums. Anti-lock braking (ABS) is available as an option. The suspension is conventional, with struts and wishbones at the front, and a torsion beam rear axle. Power-assisted rack and pinion steering is standard on all models.

A high level of standard equipment, and a wide range of optional equipment, is available within the range to suit virtually all tastes. All models have a driver's airbag, tinted glass, high-level brake light and central locking, with several featuring electric windows, electric sunroof and alloy wheels.

Provided that regular servicing is carried out in accordance with the manufacturer's recommendations, the FIAT Bravo and Brava will provide reliable and economical family motoring. The engine compartment is relatively spacious, and most of the items requiring frequent attention are easily accessible.

FIAT Bravo 1.4 SX

FIAT Brava 1.8 ELX

The Fiat Bravo/Brava Team

Haynes manuals are produced by dedicated and enthusiastic people working in close co-operation. The team responsible for the creation of this book included:

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Wiring diagrams	**Steve Tanswell**

We hope the book will help you to get the maximum enjoyment from your car. By carrying out routine maintenance as described you will ensure your car's reliability and preserve its resale value.

Your FIAT Bravo/Brava manual

The aim of this manual is to help you get the best value from your vehicle. It can do so in several ways. It can help you decide what work must be done (even should you choose to get it done by a garage). It will also provide information on routine maintenance and servicing, and give a logical course of action and diagnosis when random faults occur. However, it is hoped that you will use the manual by tackling the work yourself. On simpler jobs it may even be quicker than booking the car into a garage and going there twice, to leave and collect it. Perhaps most important, a lot of money can be saved by avoiding the costs a garage must charge to cover its labour and overheads.

The manual has drawings and descriptions to show the function of the various components so that their layout can be understood. Tasks are described and photographed in a clear step-by-step sequence. The illustrations are numbered by the Section number and paragraph number to which they relate - if there is more than one illustration per paragraph, the sequence is denoted alphabetically.

References to the 'left' or 'right' of the vehicle are in the sense of a person in the driver's seat, facing forwards.

Acknowledgements

Thanks are due to Champion Spark Plug, who supplied the illustrations showing spark plug conditions, and to Duckhams Oils, who provided lubrication data. Thanks are also due to Draper Tools Limited, who provided some of the workshop tools, and to all those people at Sparkford who helped in the production of this manual.

We take great pride in the accuracy of information given in this manual, but vehicle manufacturers make alterations and design changes during the production run of a particular vehicle of which they do not inform us. No liability can be accepted by the authors or publishers for loss, damage or injury caused by any errors in, or omissions from the information given.

Working on your car can be dangerous. This page shows just some of the potential risks and hazards, with the aim of creating a safety-conscious attitude.

General hazards

Scalding

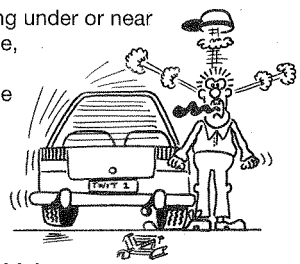
• Don't remove the radiator or expansion tank cap while the engine is hot.
• Engine oil, automatic transmission fluid or power steering fluid may also be dangerously hot if the engine has recently been running.

Burning

• Beware of burns from the exhaust system and from any part of the engine. Brake discs and drums can also be extremely hot immediately after use.

Crushing

• When working under or near a raised vehicle, always supplement the jack with axle stands, or use drive-on ramps. ***Never venture under a car which is only supported by a jack.***



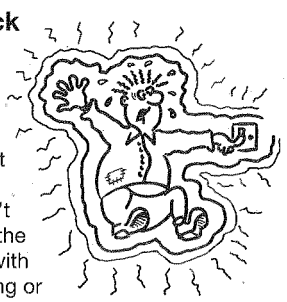
• Take care if loosening or tightening high-torque nuts when the vehicle is on stands. Initial loosening and final tightening should be done with the wheels on the ground.

Fire

• Fuel is highly flammable; fuel vapour is explosive.
• Don't let fuel spill onto a hot engine.
• Do not smoke or allow naked lights (including pilot lights) anywhere near a vehicle being worked on. Also beware of creating sparks (electrically or by use of tools).
• Fuel vapour is heavier than air, so don't work on the fuel system with the vehicle over an inspection pit.
• Another cause of fire is an electrical overload or short-circuit. Take care when repairing or modifying the vehicle wiring.
• Keep a fire extinguisher handy, of a type suitable for use on fuel and electrical fires.

Electric shock

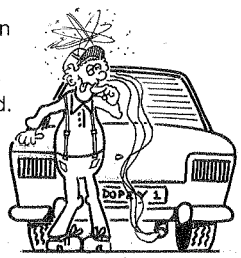
• Ignition HT voltage can be dangerous, especially to people with heart problems or a pacemaker. Don't work on or near the ignition system with the engine running or the ignition switched on.



• Mains voltage is also dangerous. Make sure that any mains-operated equipment is correctly earthed. Mains power points should be protected by a residual current device (RCD) circuit breaker.

Fume or gas intoxication

• Exhaust fumes are poisonous; they often contain carbon monoxide, which is rapidly fatal if inhaled. Never run the engine in a confined space such as a garage with the doors shut.



• Fuel vapour is also poisonous, as are the vapours from some cleaning solvents and paint thinners.

Poisonous or irritant substances

• Avoid skin contact with battery acid and with any fuel, fluid or lubricant, especially antifreeze, brake hydraulic fluid and Diesel fuel. Don't syphon them by mouth. If such a substance is swallowed or gets into the eyes, seek medical advice.
• Prolonged contact with used engine oil can cause skin cancer. Wear gloves or use a barrier cream if necessary. Change out of oil-soaked clothes and do not keep oily rags in your pocket.
• Air conditioning refrigerant forms a poisonous gas if exposed to a naked flame (including a cigarette). It can also cause skin burns on contact.

Asbestos

• Asbestos dust can cause cancer if inhaled or swallowed. Asbestos may be found in gaskets and in brake and clutch linings. When dealing with such components it is safest to assume that they contain asbestos.

Special hazards

Hydrofluoric acid

• This extremely corrosive acid is formed when certain types of synthetic rubber, found in some O-rings, oil seals, fuel hoses etc, are exposed to temperatures above 400°C. The rubber changes into a charred or sticky substance containing the acid. *Once formed, the acid remains dangerous for years. If it gets onto the skin, it may be necessary to amputate the limb concerned.*
• When dealing with a vehicle which has suffered a fire, or with components salvaged from such a vehicle, wear protective gloves and discard them after use.

The battery

• Batteries contain sulphuric acid, which attacks clothing, eyes and skin. Take care when topping-up or carrying the battery.
• The hydrogen gas given off by the battery is highly explosive. Never cause a spark or allow a naked light nearby. Be careful when connecting and disconnecting battery chargers or jump leads.

Air bags

• Air bags can cause injury if they go off accidentally. Take care when removing the steering wheel and/or facia. Special storage instructions may apply.

Diesel injection equipment

• Diesel injection pumps supply fuel at very high pressure. Take care when working on the fuel injectors and fuel pipes.

Warning: Never expose the hands, face or any other part of the body to injector spray; the fuel can penetrate the skin with potentially fatal results.

Remember...

DO

• Do use eye protection when using power tools, and when working under the vehicle.
• Do wear gloves or use barrier cream to protect your hands when necessary.
• Do get someone to check periodically that all is well when working alone on the vehicle.
• Do keep loose clothing and long hair well out of the way of moving mechanical parts.
• Do remove rings, wristwatch etc, before working on the vehicle – especially the electrical system.
• Do ensure that any lifting or jacking equipment has a safe working load rating adequate for the job.

DON'T

• Don't attempt to lift a heavy component which may be beyond your capability – get assistance.
• Don't rush to finish a job, or take unverified short cuts.
• Don't use ill-fitting tools which may slip and cause injury.
• Don't leave tools or parts lying around where someone can trip over them. Mop up oil and fuel spills at once.
• Don't allow children or pets to play in or near a vehicle being worked on.

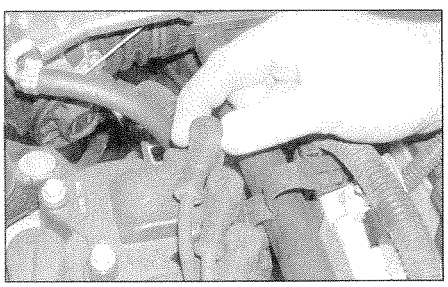
The following pages are intended to help in dealing with common roadside emergencies and breakdowns. You will find more detailed fault finding information at the back of the manual, and repair information in the main chapters.

If your car won't start and the starter motor doesn't turn

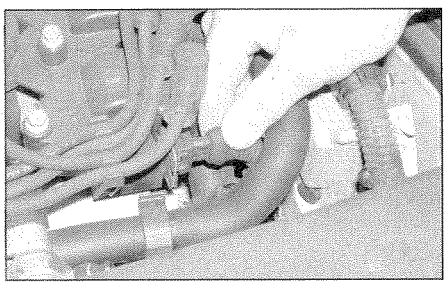
- ☐ If it's a model with automatic transmission, make sure the selector is in P or N.
- ☐ Open the bonnet and make sure that the battery terminals are clean and tight.
- ☐ Switch on the headlights and try to start the engine. If the headlights go very dim when you're trying to start, the battery is probably flat. Get out of trouble by jump starting (see next page) using a friend's car.

If your car won't start even though the starter motor turns as normal

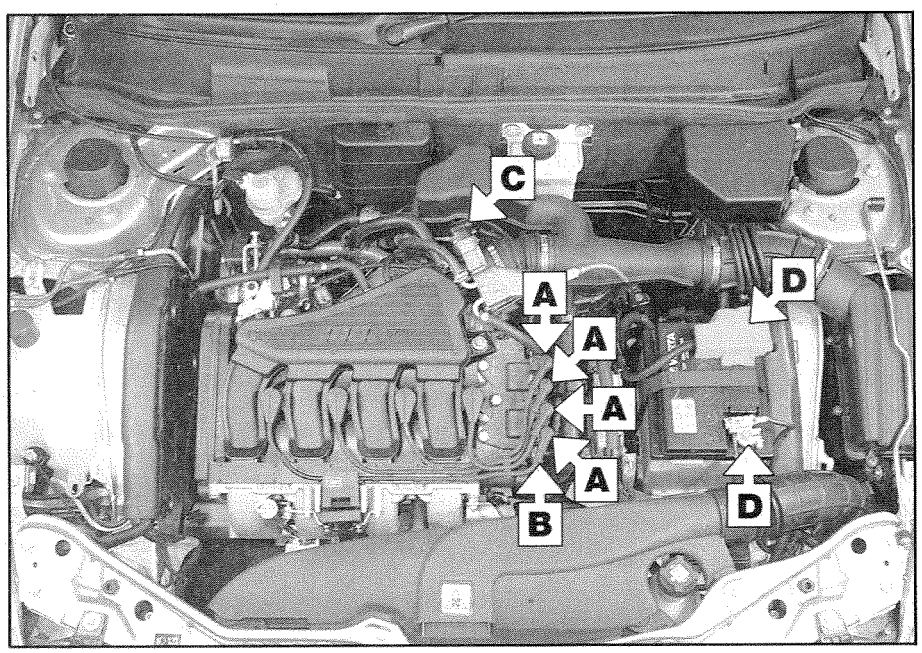
- ☐ Is there fuel in the tank?
- ☐ Is there moisture on electrical components under the bonnet? Switch off the ignition, then wipe off any obvious dampness with a dry cloth. Spray a water-repellent aerosol product (WD-40 or equivalent) on ignition and fuel system electrical connectors like those shown in the photos. Pay special attention to the ignition coil wiring connector and HT leads.



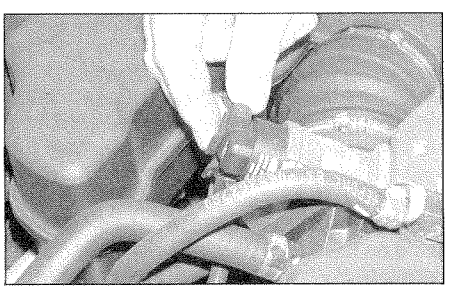
A Check that the HT leads are securely connected to the spark plugs and ignition coil pack, where applicable.
1.8 litre models do not have conventional HT leads.



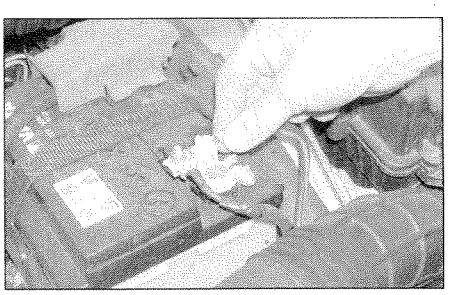
B Check that the LT wiring plug is securely attached to the ignition coil.
On some models, the HT leads and ignition coil are concealed under a plastic cover, secured by a number of screws.



Check that electrical connections are secure (with the ignition switched off) and spray them with a water dispersant spray like WD-40 if you suspect a problem due to damp



C Check the airflow meter and/or inlet air temperature sensor wiring connector for security.



D Check the security and condition of the battery terminals.

HAYNES HiNT

Jump starting will get you out of trouble, but you must correct whatever made the battery go flat in the first place. There are three possibilities:

1 The battery has been drained by repeated attempts to start, or by leaving the lights on.

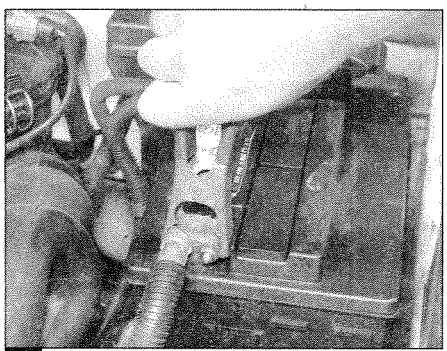
2 The charging system is not working properly (alternator drivebelt slack or broken, alternator wiring fault or alternator itself faulty).

3 The battery itself is at fault (electrolyte low, or battery worn out).

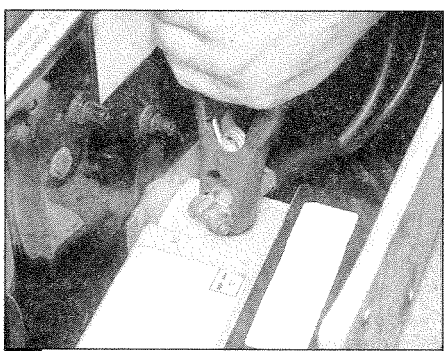
Jump starting

When jump-starting a car using a booster battery, observe the following precautions:

- ✔ Before connecting the booster battery, make sure that the ignition is switched off.
- ✔ Ensure that all electrical equipment (lights, heater, wipers, etc) is switched off.
- ✔ Take note of any special precautions printed on the battery case.
- ✔ Make sure that the booster battery is the same voltage as the discharged one in the vehicle.
- ✔ If the battery is being jump-started from the battery in another vehicle, the two vehicles MUST NOT TOUCH each other.
- ✔ Make sure that the transmission is in neutral (or PARK, in the case of automatic transmission).

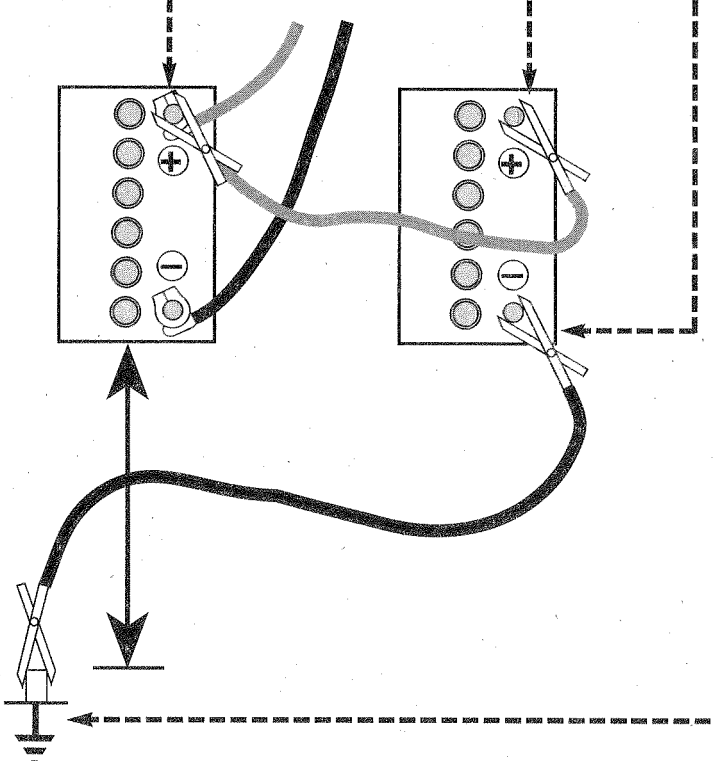


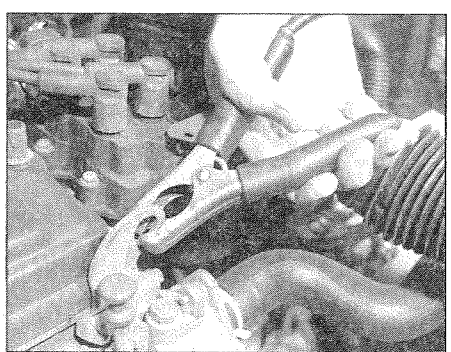
1 Connect one end of the red jump lead to the positive (+) terminal of the flat battery



2 Connect the other end of the red lead to the positive (+) terminal of the booster battery.

3 Connect one end of the black jump lead to the negative (-) terminal of the booster battery





4 Connect the other end of the black jump lead to a bolt or bracket on the engine block, well away from the battery, on the vehicle to be started.

5 Make sure that the jump leads will not come into contact with the fan, drivebelts or other moving parts of the engine.

6 Start the engine using the booster battery and run it at idle speed. Switch on the lights, rear window demister and heater blower motor, then disconnect the jump leads in the reverse order of connection. Turn off the lights etc.

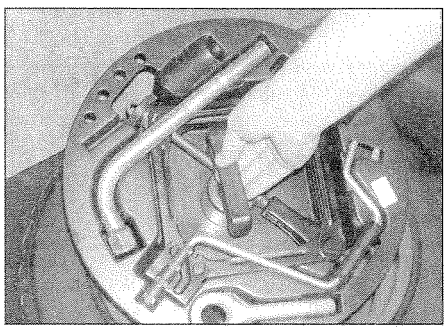
Wheel changing

Warning: Do not change a wheel in a situation where you risk being hit by another vehicle. On busy roads, try to stop in a lay-by or a gateway. Be wary of passing traffic while changing the wheel - it is easy to become distracted by the job in hand.

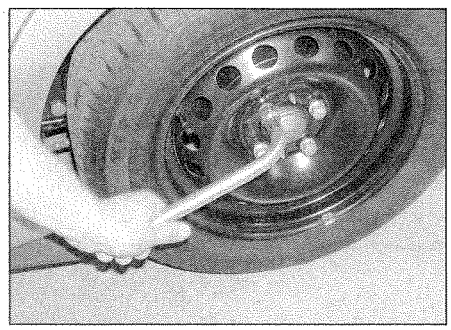
Preparation

- ☐ When a puncture occurs, stop as soon as it is safe to do so.
- ☐ Park on firm level ground, if possible, and well out of the way of other traffic.
- ☐ Use hazard warning lights if necessary.
- ☐ If you have one, use a warning triangle to alert other drivers of your presence.
- ☐ Apply the handbrake and engage first or reverse gear (or Park on models with automatic transmission).
- ☐ Chock the wheel diagonally opposite the one being removed – a couple of large stones will do for this.
- ☐ If the ground is soft, use a flat piece of wood to spread the load under the jack.

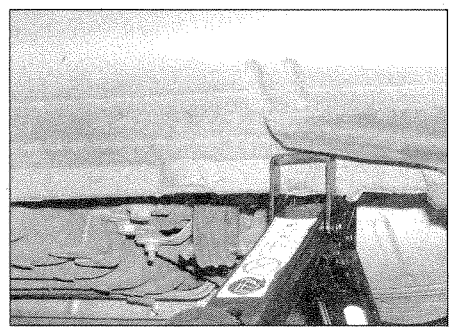
Changing the wheel



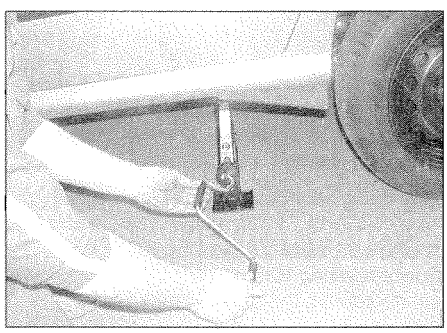
1 The spare wheel and tools are stored in the luggage compartment under the carpet. Unscrew the handle and lift out the tool tray, then take out the jack and spare wheel.



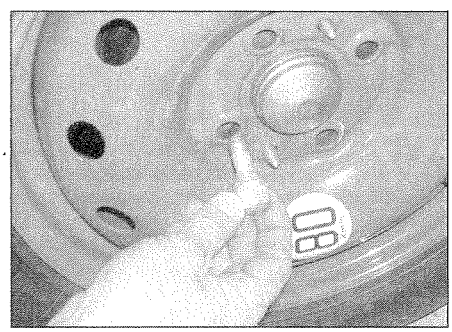
2 Remove the wheel trim (where fitted) by prising up the edges and pulling it straight off. Slacken each wheel bolt by a half turn, using the wheelbrace. If the bolts are too tight, DON'T stand on the wheelbrace to undo them - call for assistance.



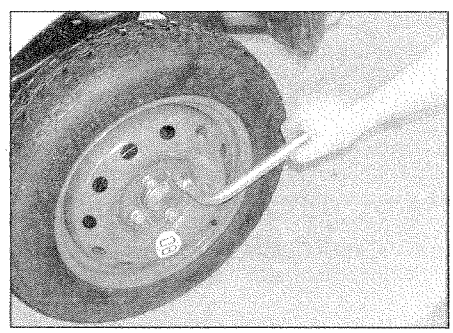
3 The jack head engages with the bottom lip on the side sills. If a front wheel is being changed, position the jack head approximately 30 cm back from the front wheel arch. If a rear wheel is being changed, the jack head should be 20 cm forward of the rear wheel arch. Don't jack the vehicle at any other point of the sill.



4 Turn the handle clockwise until the wheel is raised clear of the ground. Unscrew the wheel bolts and remove the wheel.



5 Fit the spare wheel, noting that there are two locating pegs on the wheel hub, which must fit through the holes in the spare wheel. Fit and screw in the bolts.



6 Lightly tighten the bolts with the wheelbrace, then lower the vehicle to the ground. Securely tighten the wheel bolts. Note that the wheel trim will not fit the spare wheel. The wheel bolts should be slackened and retightened to the specified torque at the earliest possible opportunity.

Note: *Some models are supplied with a special lightweight 'space-saver' spare wheel, the tyre being narrower than standard. The space-saver spare wheel is intended only for temporary use, and* ***must*** *be replaced with a standard wheel as soon as possible. Drive with particular care with this wheel fitted, especially through corners and when braking - FIAT recommend a maximum speed of 50 mph (80 km/h) when the special spare wheel is in use. The temporary spare also has a maximum recommended life of 1800 miles.*

Finally...

- ☐ Remove the wheel chocks.
- ☐ Stow the punctured wheel and tools in the correct locations in the car.
- ☐ Check the tyre pressure on the tyre just fitted. If it is low, or if you don't have a pressure gauge with you, drive slowly to the next garage and inflate the tyre to the correct pressure. Particularly in the case of the narrow space-saver spare wheel, this pressure is much higher than for a normal tyre.
- ☐ Have the punctured wheel repaired as soon as possible, or another puncture will leave you stranded.

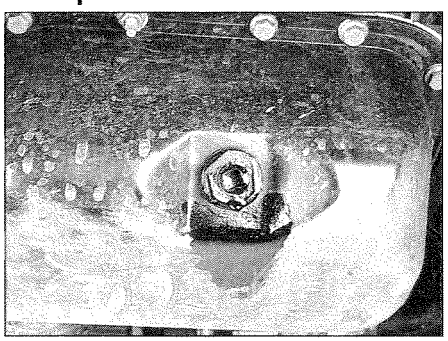
Identifying leaks

Puddles on the garage floor or drive, or obvious wetness under the bonnet or underneath the car, suggest a leak that needs investigating. It can sometimes be difficult to decide where the leak is coming from, especially if the engine bay is very dirty already. Leaking oil or fluid can also be blown rearwards by the passage of air under the car, giving a false impression of where the problem lies.

Warning: Most automotive oils and fluids are poisonous. Wash them off skin, and change out of contaminated clothing, without delay.

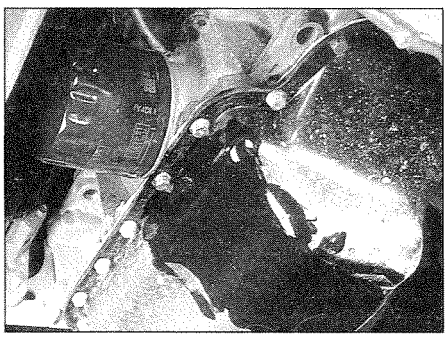
HAYNES HiNT *The smell of a fluid leaking from the car may provide a clue to what's leaking. Some fluids are distinctively coloured. It may help to clean the car carefully and to park it over some clean paper overnight as an aid to locating the source of the leak.*
Remember that some leaks may only occur while the engine is running.

Sump oil



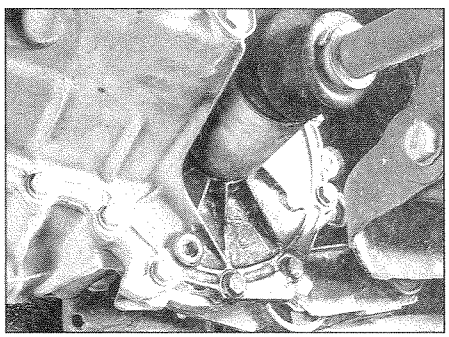
Engine oil may leak from the drain plug...

Oil from filter



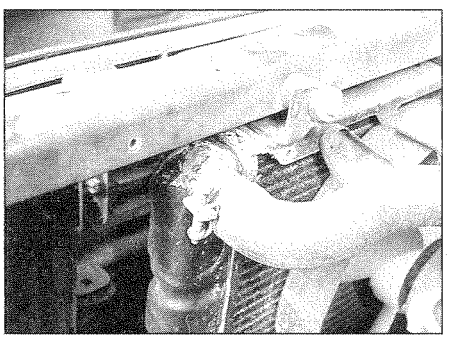
...or from the base of the oil filter.

Gearbox oil



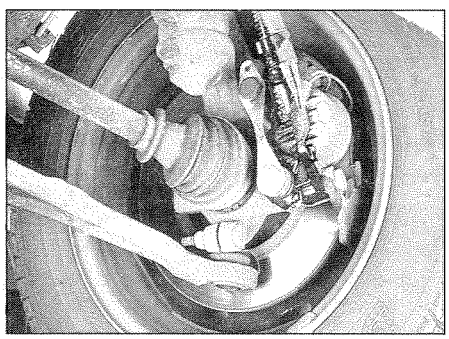
Gearbox oil can leak from the seals at the inboard ends of the driveshafts.

Antifreeze



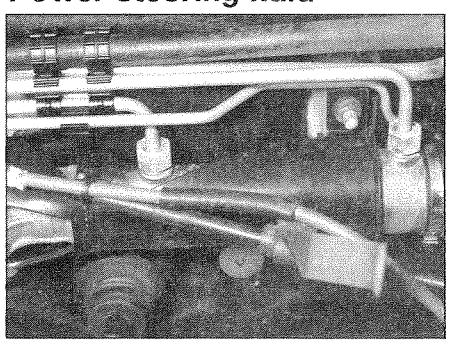
Leaking antifreeze often leaves a crystalline deposit like this.

Brake fluid



A leak occurring at a wheel is almost certainly brake fluid.

Power steering fluid



Power steering fluid may leak from the pipe connectors on the steering rack.

Towing

When all else fails, you may find yourself having to get a tow home – or of course you may be helping somebody else. Long-distance recovery should only be done by a garage or breakdown service. For shorter distances, DIY towing using another car is easy enough, but observe the following points:

☐ Use a proper tow-rope – they are not expensive. The vehicle being towed must display an ON TOW sign in its rear window.
☐ Always turn the ignition key to the 'on' position when the vehicle is being towed, so that the steering lock is released, and that the direction indicator and brake lights will work.
☐ The screw-in towing eye is provided with the wheel changing tools in the boot. The towing eye is screwed into the threaded hole in the front bumper, below the right-hand headlight, or into the right-hand side of the rear bumper after prising out the trim cover.
☐ Before being towed, release the handbrake and select neutral on the transmission.
☐ Note that greater-than-usual pedal pressure will be required to operate the brakes, since the vacuum servo unit is only operational with the engine running.
☐ On models with power steering, greater-than-usual steering effort will also be required.
☐ The driver of the car being towed must keep the tow-rope taut at all times to avoid snatching.
☐ Make sure that both drivers know the route before setting off.
☐ Only drive at moderate speeds and keep the distance towed to a minimum. Drive smoothly and allow plenty of time for slowing down at junctions.
☐ On models with automatic transmission, the car must not be towed (with the front wheels on the ground) further than 12 miles (20 km), or faster than 18 mph (30 km/h). If in doubt, do not tow with the driven wheels on the ground, or transmission damage may result.