

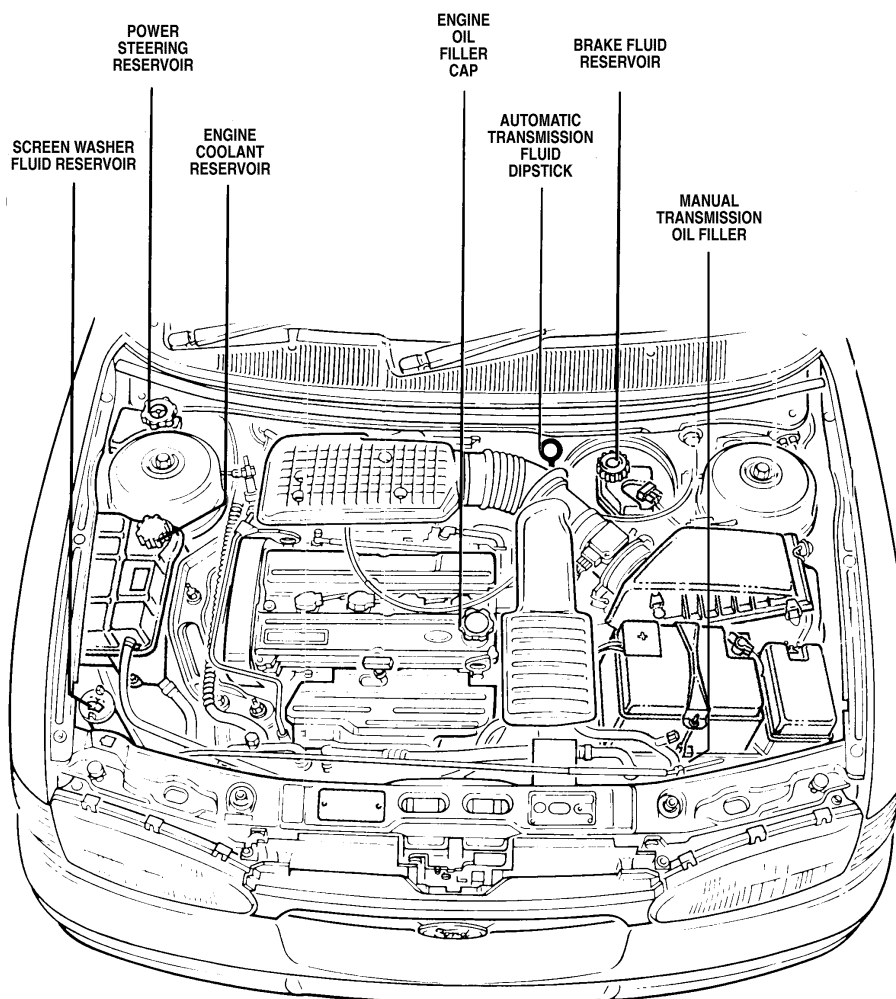
Chapter 1 Routine maintenance and servicing

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Degrees of difficulty

Easy , suitable for novice with little experience		Fairly easy , suitable for beginner with some experience		Fairly difficult , suitable for competent DIY mechanic		Difficult , suitable for experienced DIY mechanic		Very difficult , suitable for expert DIY or professional	
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Lubricants and fluids

Component or system	Lubricant type/specification
Engine	Multigrade engine oil to specification API SG/CD or better, viscosity range 5W/50 to 10W/30
Manual transmission	Gear oil to Ford specification ESD-M2C-186-A
Automatic transmission	Transmission fluid to Ford specification ESP-M2C-166-H
Power steering	Transmission fluid to Ford specification ESP-M2C-166-H
Cooling system	Soft water, and antifreeze (ethylene glycol-based, suitable for use in mixed-metal cooling systems) to Ford specification ESD-M97B-49-A
Braking system	Hydraulic fluid to Ford specification ESD-M6C-57-A, Super DOT 4 or equivalent
Driveshaft joints	Long-life grease to Ford specification SQM-1C 9004-A

Capacities

Engine oil:		Cooling system:	
At oil and filter change	4.25 litres	Manual transmission models	6.6 litres
Dry - at engine overhaul	4.50 litres	Automatic transmission models	7.1 litres
Difference between dipstick minimum and maximum level notches	0.5 to 1.0 litre	Manual transmission	2.6 litres
Fuel tank	61.5 litres	Automatic transmission:	
		Total, including fluid cooler	7.2 litres
		Drain and refill	3.6 litres

Ford Mondeo maintenance schedule

The manufacturer's recommended maintenance schedule for these vehicles is as described below - note that the schedule starts from the vehicle's date of registration. These are the minimum maintenance intervals recommended by the factory for Mondeos driven daily, but subjected only to "normal" use. If you wish to keep your vehicle in peak condition at all times, you may wish to perform some of these procedures even more often. Because frequent maintenance enhances the efficiency, performance and resale value of your vehicle, we encourage you to do so. If your usage is not "normal", shorter intervals are also recommended - the most important examples of these are noted in the schedule. These shorter intervals apply particularly if you drive in dusty areas, tow a caravan or trailer, sit with the engine idling or drive at low speeds for extended periods (ie, in heavy traffic), or drive for short distances (less than four miles) in below-freezing temperatures.

When your vehicle is new, it should be serviced by a Ford dealer service department to protect the factory warranty. In many cases, the initial maintenance check is done at no cost to the owner. Note that this first free service (carried out by the selling dealer 1500 miles or 3 months after delivery), although an important check for a new vehicle, is not part of the regular maintenance schedule, and is therefore not mentioned here.

Weekly checks

- ☐ Check the engine oil level, and top-up if necessary (Section 3)
- ☐ Check the brake fluid level, and top-up if necessary (Section 3). If repeated topping-up is required, check the system for leaks or damage at the earliest possible opportunity (Sections 12 and 22)
- ☐ Check the windscreen/tailgate washer fluid level, and top-up if necessary (Section 3)
- ☐ Check the tyre pressures, including the spare (Section 4)
- ☐ Visually check the tyres for excessive tread wear, or damage (Section 4)
- ☐ Check the operation of all (exterior and interior) lights and the horn, wipers and windscreen/tailgate washer system (Sections 6 and 8). Renew any blown bulbs (Chapter 12), and clean the lenses of all exterior lights

Monthly checks

- ☐ Check the coolant level, and top-up if necessary (Section 3)
- ☐ Check the battery electrolyte level, where applicable (Section 3)
- ☐ Check the power steering fluid level, and top-up if necessary (Section 5)
- ☐ Visually check all reservoirs, hoses and pipes for leakage (Section 12)
- ☐ Check the operation of the air conditioning system (Section 14)
- ☐ Check the operation of the handbrake (Section 23)
- ☐ Check the aim of the windscreen/tailgate/headlight washer jets, correcting them if required (Section 6)
- ☐ Check the condition of the wiper blades, renewing them if worn or no longer effective - note that the manufacturer recommends renewing the blades as a safety precaution, irrespective of their apparent condition, at least once a year (Section 6)

Every 10 000 miles or 12 months, whichever occurs first

Note: If the vehicle is used regularly for very short (less than 10 miles), stop/go journeys, the oil and filter should be renewed between services (ie, every 5000 miles/6 months).

- ☐ Check the electrical system (Section 8)
- ☐ Check the battery (Section 9)
- ☐ Check the seat belts (Section 10)
- ☐ Check the auxiliary drivebelt (Section 11)
- ☐ Check for fluid leaks and hose condition (Section 12)
- ☐ Check the condition of all wiring (Section 13)
- ☐ Check all air conditioning components (Section 14)
- ☐ Change the engine oil and filter (Section 15)
- ☐ Check the manual transmission oil level (Section 16)
- ☐ Check the adjustment of the clutch pedal (Section 17)
- ☐ Lubricate the automatic transmission linkage (Section 18)
- ☐ Check the steering, suspension and wheels (Section 19)
- ☐ Check the driveshaft gaiters and CV joints (Section 20)
- ☐ Check the exhaust system (Section 21)
- ☐ Check the underbody, and all fuel/brake lines (Section 22)
- ☐ Check the brake system (Section 23)
- ☐ Check and lubricate the doors and bonnet (Section 24)
- ☐ Check the security of all roadwheel nuts (Section 25)
- ☐ Road test (Section 26). Check the level of the automatic transmission fluid with the engine still hot, after the road test (Section 7)

Every 20 000 miles or 2 years, whichever occurs first

Carry out all operations listed above, plus the following:

- ☐ Renew the ventilation system pollen filter (Section 27)
- ☐ Renew the coolant (Sections 2 and 28)

Every 30 000 miles or 3 years, whichever occurs first

Carry out all operations listed above, plus the following:

- ☐ Renew the air filter element (Section 29). Note that this task must be carried out at more frequent intervals if the vehicle is used in dusty or polluted conditions
- ☐ Check the Positive Crankcase Ventilation (PCV) system, and clean the filter (Section 30)
- ☐ Renew the spark plugs (Section 31)

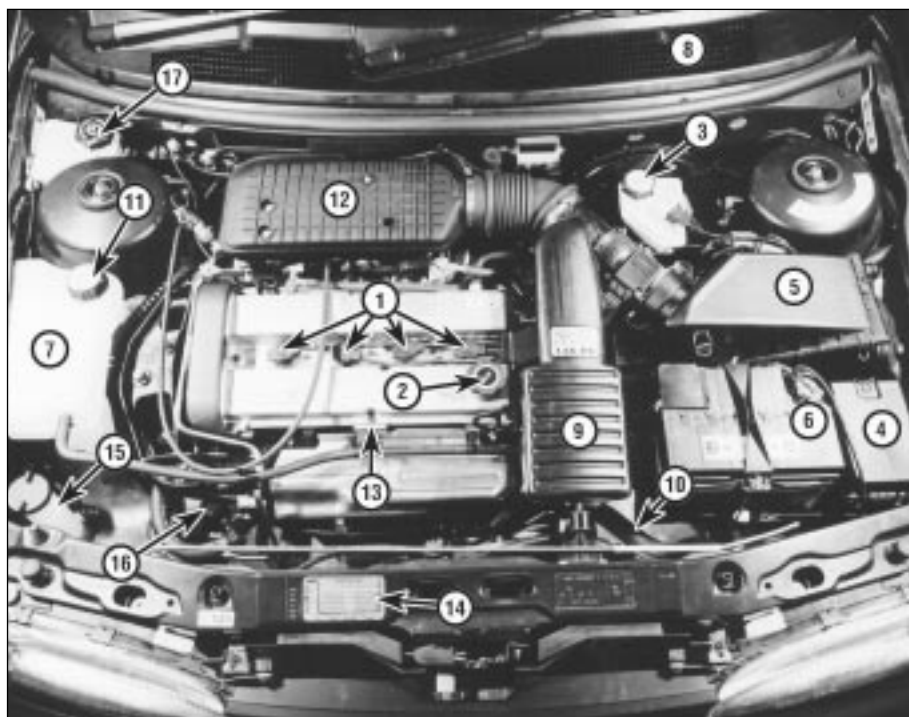
Every 60 000 miles

Carry out all operations listed above, plus the following:

- ☐ Renew the timing belt (Section 32)
- ☐ Renew the fuel filter (Section 33)

Every 3 years (regardless of mileage)

- ☐ Renew the brake fluid (Section 34)

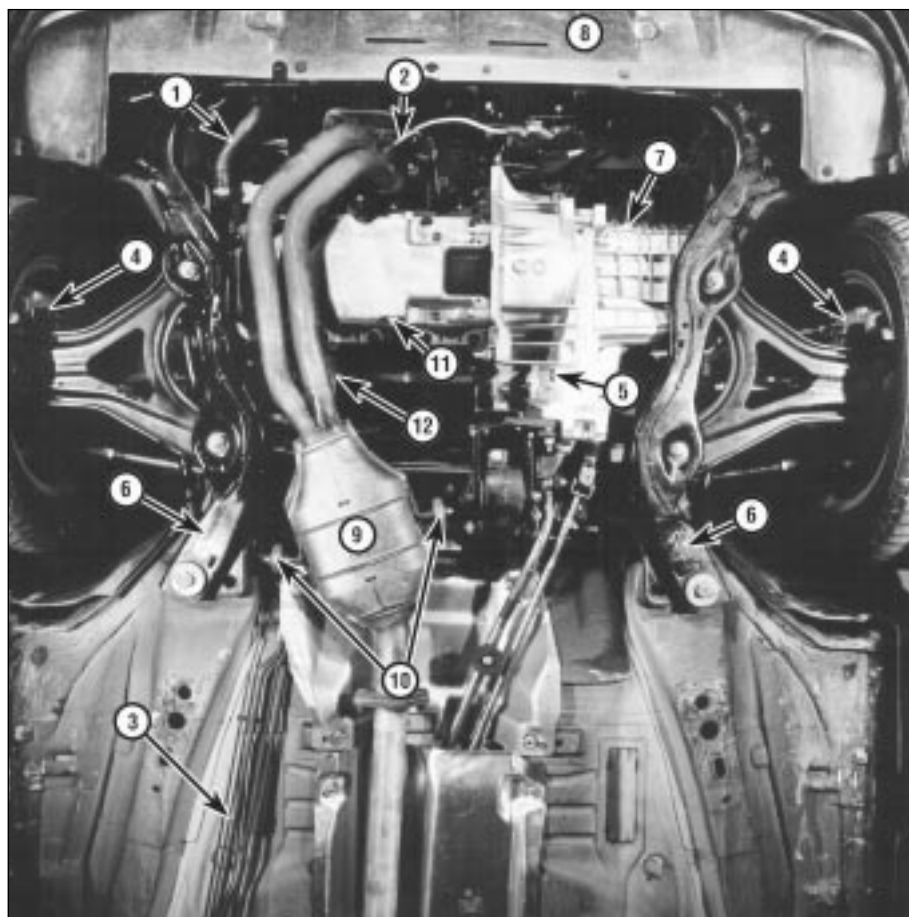


Engine compartment components

- 1 Spark plugs (Section 31)
- 2 Engine oil filler cap (Section 3)
- 3 Brake fluid reservoir (Section 3)
- 4 Auxiliary fusebox (Chapter 12)
- 5 Air cleaner assembly (Section 29)
- 6 Battery (Section 9)
- 7 Cooling system expansion tank (Section 28)
- 8 Ventilation system pollen filter - under cowl grille panel (Section 27)
- 9 Air intake resonator (Chapter 4)
- 10 Radiator top hose (Section 12)
- 11 Cooling system expansion tank filler cap (Section 3)
- 12 Air intake plenum chamber (Chapter 4)
- 13 Engine oil dipstick (Section 3)
- 14 Vehicle Identification Number (VIN) plate
- 15 Windscreen/tailgate washer fluid reservoir (Section 3)
- 16 Auxiliary drivebelt (Section 11)
- 17 Power steering fluid reservoir (Section 5)

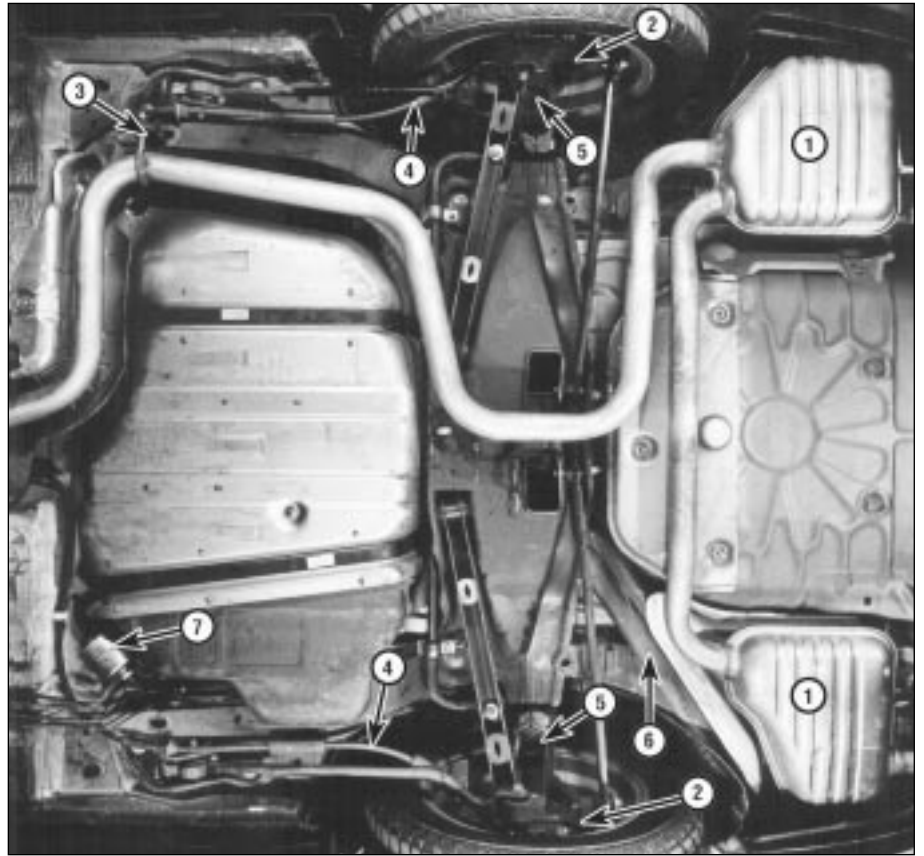
Front underbody view

- 1 Radiator bottom hose (Section 12)
- 2 Exhaust gas oxygen sensor (Chapter 6)
- 3 Braking system, fuel and emission control system lines (Section 22)
- 4 Front disc brake (Section 23)
- 5 Manual transmission drain plug (Chapter 7, Part A)
- 6 Front suspension subframe (Chapter 2, Part B)
- 7 Manual transmission filler/level plug (Section 16)
- 8 Radiator undershield (Section 28)
- 9 Catalytic converter (Section 21)
- 10 Exhaust system rubber mountings (Section 21)
- 11 Engine oil drain plug (Section 15)
- 12 Engine oil filter (Section 15)



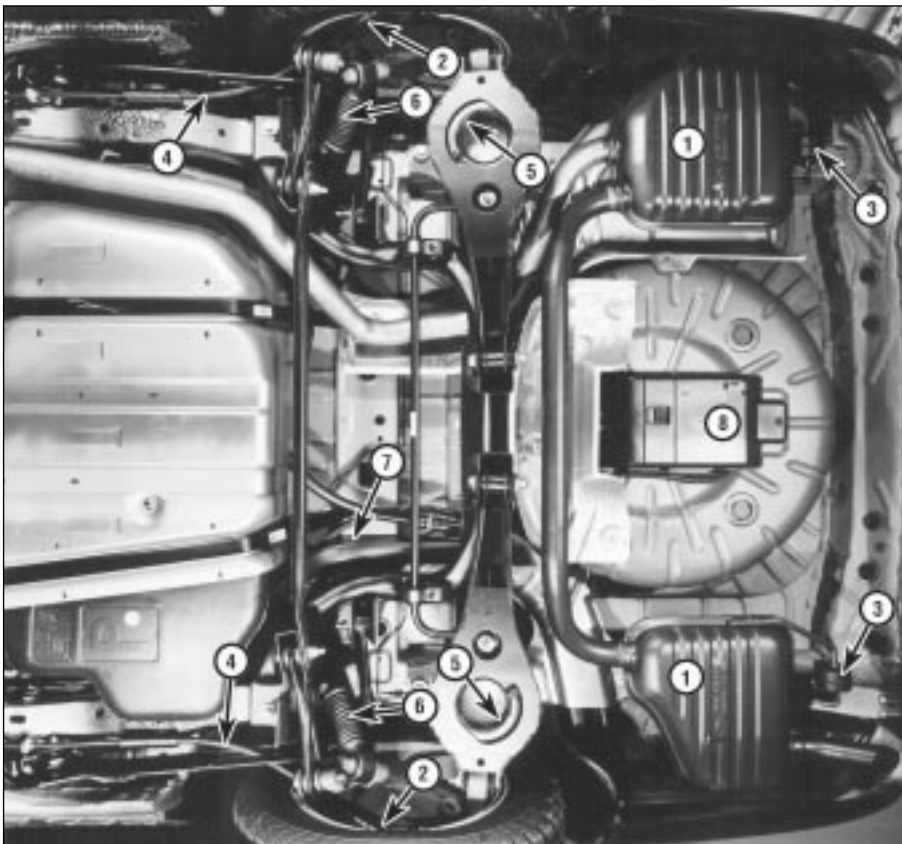
Rear underbody view - Saloon and Hatchback models

- 1 Silencers (Section 21)
- 2 Rear brakes (Section 23)
- 3 Exhaust system rubber mounting (Section 21)
- 4 Handbrake cables (Section 23)
- 5 Suspension struts and springs (Section 19)
- 6 Fuel tank filler neck (Section 22)
- 7 Fuel filter (Section 33)



Rear underbody view - Estate models

- 1 Silencers (Section 21)
- 2 Rear brakes (Section 23)
- 3 Exhaust system rubber mounting (Section 21)
- 4 Handbrake cables (Section 23)
- 5 Suspension springs (Section 19)
- 6 Suspension shock absorbers (Section 19)
- 7 Fuel tank filler neck (Section 22)
- 8 Evaporative emissions control system charcoal canister (Chapter 6)



1 Introduction

This Chapter is designed to help the home mechanic maintain the Ford Mondeo models for peak performance, economy, safety and long life.

On the following pages are Sections dealing specifically with each item on the maintenance schedule. Visual checks, adjustments, component replacement and other helpful items are included. Refer to the accompanying illustrations of the engine compartment and the underside of the vehicle for the location of various components.

Servicing your Mondeo in accordance with the mileage/time maintenance schedule and the following Sections will provide it with a planned maintenance programme, which should result in a long and reliable service life. This is a comprehensive plan, so maintaining some items but not others at the specified service intervals will not produce the same results.

As you service your Mondeo, you will discover that many of the procedures can - and should - be grouped together, because of the nature of the particular procedure you're performing, or because of the close proximity to one another of two otherwise-unrelated components.

For example, if the vehicle is raised for any

reason, you should inspect the exhaust, suspension, steering and fuel systems while you're under the vehicle. When you're checking the tyres, it makes good sense to check the brakes and wheel bearings, especially if the roadwheels have already been removed.

Finally, let's suppose you have to borrow or hire a torque wrench. Even if you only need to tighten the spark plugs, you might as well check the torque of as many critical fasteners as time allows.

The first step of this maintenance programme is to prepare yourself before the actual work begins. Read through all the Sections which are relevant to the procedures you're planning to carry out, then make a list of, and gather together, all the parts and tools you will need to do the job. If it looks as if you might run into problems during a particular segment of some procedure, seek advice from your local parts man or dealer service department.

2 Coolant renewal

Ford state that, where antifreeze to specification ESD-M97B-49-A (the type with which the vehicle's cooling system would have been filled on production at the factory) is used, it will last the lifetime of the vehicle.

This is subject to it being used in the recommended concentration, unmixed with any other type of antifreeze or additive, and topped-up when necessary using only that antifreeze mixed 50/50 with clean water. If any other type of antifreeze is added, the lifetime guarantee no longer applies; to restore the lifetime protection, the system must be drained and thoroughly reverse-flushed before fresh coolant mixture is poured in.

If the vehicle's history (and therefore the quality of the antifreeze in it) is unknown, owners who wish to follow Ford's recommendations are advised to drain and thoroughly reverse-flush the system, as outlined in Section 28, before refilling with fresh coolant mixture. If the appropriate quality of antifreeze is used, the coolant can then be left for the life of the vehicle.

If any antifreeze other than Ford's is to be used, the coolant must be renewed at regular intervals to provide an equivalent degree of protection; the conventional recommendation is to renew the coolant every two years.

The above assumes the use of a mixture (in exactly the specified concentration) of clean, soft water and of antifreeze to Ford's specification or equivalent. It is also assumed that the cooling system is maintained in a scrupulously-clean condition, by ensuring that only clean coolant is added on topping-up, and by thorough reverse-flushing whenever the coolant is drained (Section 28).

Weekly checks

3 Fluid level checks



General

1 Fluids are an essential part of the lubrication, cooling, braking and other systems. Because these fluids gradually become depleted and/or contaminated during normal operation of the vehicle, they must be periodically replenished. See "*Lubricants and fluids and capacities*" at the beginning of this Chapter before adding fluid to any of the following components. **Note:** *The vehicle must be on level ground before fluid levels can be checked.*

Engine oil

2 The engine oil level is checked with a dipstick located at the front of the engine; it can be identified by its yellow/black plastic grip (see **illustration**). The dipstick extends through a metal tube, from which it protrudes down into the sump at the bottom of the engine.

3 The oil level should be checked before the vehicle is driven, or about 5 minutes after the engine has been switched off.

HAYNES HINT *If the level is checked immediately after driving the vehicle, some of the oil will remain in the engine upper components, producing an inaccurate dipstick reading.*

4 Pull the dipstick from the tube, and wipe all the oil from the end with a clean rag or paper towel; note the dipstick's maximum and minimum levels, indicated by notches (see

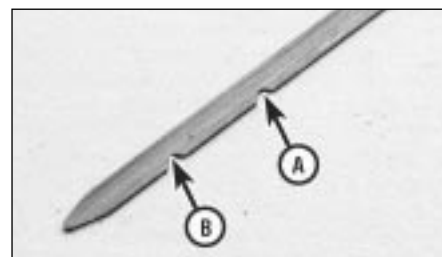


3.2 The engine oil dipstick (arrowed) is located at the front of the engine - note yellow/black plastic grip

illustration). Insert the clean dipstick all the way back into its metal tube, and pull it out again. Observe the oil on the end of the dipstick; its level should be between these two notches.

5 Do not allow the level to drop below the minimum level notch, or oil starvation may cause engine damage. Conversely, overfilling the engine (adding oil above the maximum level notch) may cause oil-fouled spark plugs, oil leaks or oil seal failures.

6 The yellow/black plastic oil filler cap is screwed into the left-hand front end of the



3.4 The oil level should be at or near the maximum level notch (A) - if not, add enough oil to correct the level. It takes approximately 0.5 to 1.0 litre of oil to raise the level from the minimum level notch (B) to the maximum



3.6 The yellow/black oil filler cap is screwed into the cylinder head cover. Always make sure the area around the opening is clean before unscrewing the cap, to prevent dirt from contaminating the engine

cylinder head cover; unscrew it to add oil (see illustration). When topping-up, use only the correct grade and type of oil, as given in the Specifications Section of this Chapter; use a funnel if necessary to prevent spills. It takes approximately 0.5 to 1.0 litre of oil to raise the level from the dipstick's minimum level notch to its maximum level notch. After adding the oil, refit the filler cap hand-tight. Start the engine, and allow it to idle while the oil is redistributed around the engine - while you are waiting, look carefully for any oil leaks, particularly around the oil filter or drain plug. Stop the engine; check the oil level again, after the oil has had enough time to drain from the upper block and cylinder head galleries.

7 Checking the oil level is an important preventive maintenance step. A continually-dropping oil level indicates oil leakage through damaged seals and from loose connections, or oil consumption past worn piston rings or valve guides. If the oil looks milky in colour, or has water droplets in it, the cylinder head gasket may be blown - the engine's compression pressure should be checked immediately (see Chapter 2A). The condition of the oil should also be checked. Each time you check the oil level, slide your thumb and index finger up the dipstick before wiping off the oil. If you see small dirt or metal particles clinging to the dipstick, the oil should be changed (Section 15).

Coolant



Warning: Do not allow antifreeze to come in contact with your skin or painted surfaces of the vehicle. Flush contaminated areas immediately with plenty of water. Don't store new coolant, or leave old coolant lying around, where it's accessible to children or pets - they're attracted by its sweet smell. Ingestion of even a small amount of coolant can be fatal! Wipe up garage-floor and drip-pan spills immediately. Keep antifreeze containers covered, and repair cooling system leaks as soon as they're noticed.



3.10 The cooling system expansion tank is located on the right-hand side of the engine compartment. The coolant level must be between the tank "MAX" and "MIN" level lines (arrowed) when the engine is cold

8 All vehicles covered by this manual are equipped with a sealed, pressurised cooling system. A translucent plastic expansion tank, located on the right-hand side of the engine compartment, is connected by a hose to the thermostat housing. As the coolant heats up during engine operation, surplus coolant passes through the connecting hose into the expansion tank; a connection to the radiator bottom hose union allows coolant to circulate through the tank and back to the water pump, thus purging any air from the system. As the engine cools, the coolant is automatically drawn back into the cooling system's main components, to maintain the correct level.

9 While the coolant level must be checked regularly, remember therefore that it will vary with the temperature of the engine. When the engine is cold, the coolant level should be between the "MAX" and "MIN" level lines on the tank, but once the engine has warmed up, the level may rise to above the "MAX" level line.

10 For an accurate check of the coolant level, the engine must be cold. The level must be between the "MAX" and "MIN" level lines on the tank (see illustration). If it is below the "MIN" level line, the coolant must be topped-up as follows.

11 First prepare a sufficient quantity of coolant mixture, using clean, soft water and antifreeze of the recommended type, in the specified mixture ratio. If you are using antifreeze to Ford's specification or equivalent (see the note at the beginning of Section 2 of this Chapter), mix equal quantities of water and antifreeze to produce the 50/50 mixture ratio specified when topping-up; if using any other type of antifreeze, follow its manufacturer's instructions to achieve the correct ratio. If only a small amount of coolant is required to bring the system up to the proper level, plain water can be used, but repeatedly doing this will dilute the antifreeze/water solution in the system, reducing the protection it should provide against freezing and corrosion. To maintain



3.13 Remove the cap to add coolant only when the engine is cold - top-up to the "MAX" level line using the specified coolant mixture

the specified antifreeze/water ratio, it is essential to top-up the coolant level with the correct mixture, as described here. Use only ethylene/glycol type antifreeze, and *do not* use supplementary inhibitors or additives.



Warning: Never remove the expansion tank filler cap when the engine is running, or has just been switched off, as the cooling system will be hot, and the consequent escaping steam and scalding coolant could cause serious injury.

12 If topping-up is necessary, wait until the system has cooled completely (or at least 10 minutes after switching off the engine, if lack of time means it is absolutely necessary to top-up while the engine may still be warm). Wrap a thick cloth around the expansion tank filler cap, and unscrew it one full turn. If any hissing is heard as steam escapes, wait until the hissing ceases, indicating that pressure is released, then slowly unscrew the filler cap until it can be removed. If more hissing sounds are heard, wait until they have stopped before unscrewing the filler cap completely. At all times, keep your face, hands and other exposed skin well away from the filler opening.

13 When the filler cap has been removed, add coolant to bring the level up to the "MAX" level line (see illustration). Refit the cap, tightening it securely.

14 With this type of cooling system, the addition of coolant should only be necessary at very infrequent intervals. If topping-up is regularly required, or if the coolant level drops within a short time after replenishment, there may be a leak in the system. Inspect the radiator, hoses, expansion tank filler cap, radiator drain plug and water pump. If no leak is evident, have the filler cap and the entire system pressure-tested by your dealer or suitably-equipped garage; this will usually show up a small leak not otherwise visible. If significant leakage is found at any time, use an antifreeze hydrometer to check the concentration of antifreeze remaining in the coolant.



3.17 Topping-up the windscreen washer reservoir

15 Coolant hydrometers are available at most automotive accessory shops. If the specific gravity of a sample taken from the expansion tank (when the engine is switched off and fully cooled down) is less than that specified, the coolant mixture strength has fallen below the minimum. If this is found, either the coolant strength must be restored by adding neat antifreeze to Ford's specification (if that is what is in the system) or by draining and flushing the system, then refilling it with fresh coolant mixture of the correct ratio (if any other type of antifreeze is being used).

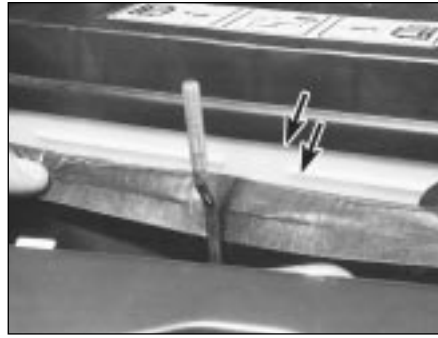
16 When checking the coolant level, always note its condition; it should be relatively clear. If it is brown or rust-coloured, the system should be drained, flushed and refilled. If antifreeze has been used which does not meet Ford's specification, its corrosion inhibitors will lose their effectiveness with time; such coolant must be renewed regularly, even if it appears to be in good condition, usually at the intervals suggested at the beginning of Section 2 of this Chapter.

Windscreen/tailgate and headlight washer fluid

17 Fluid for the windscreen/tailgate washer system (and where applicable the headlight washer system) is stored in a plastic reservoir, which is located at the right front corner of the engine compartment. In milder climates, plain water can be used to top-up the reservoir, but the reservoir should be kept no more than two-thirds full, to allow for expansion should the water freeze. In colder climates, the use of a specially-formulated windscreen washer fluid, available at your dealer or any car accessory shop, will help lower the freezing point of the fluid (see illustration). Do not use regular (engine) antifreeze - it will damage the vehicle's paintwork.

Battery electrolyte

18 On models not equipped with a sealed battery (see Section 9), check the electrolyte level of all six battery cells. The level must be approximately 10 mm above the plates; this may be shown by maximum and minimum level lines marked on the battery's casing (see



3.18 On non-sealed batteries, keep the electrolyte level of all the cells in the battery between the maximum and minimum levels (arrowed) - ie, 10 mm above the plates. Use only distilled water, and never overfill

illustration). If the level is low, use a coin to release the filler/vent cap, and add distilled water. Install and securely retighten the cap.



Caution: Overfilling the cells may cause electrolyte to spill over during periods of heavy charging, causing corrosion or damage.

Refer also to the warning at the beginning of Section 9.

Brake fluid

19 The brake fluid reservoir is located on the top of the brake master cylinder, which is attached to the front of the vacuum servo unit. The "MAX" and "MIN" marks are indicated on the side of the translucent reservoir, and the fluid level should be maintained between these marks at all times (see illustration).

20 The brake fluid inside the reservoir is readily visible. With the vehicle on level ground, the level should normally be on or just below the "MAX" mark.

21 Progressive wear of the brake pads and brake shoe linings causes the level of the brake fluid to gradually fall; however, when the brake pads are renewed, the original level of the fluid is restored. It is not therefore necessary to top-up the level to compensate for this minimal drop, but the level must never be allowed to fall below the minimum mark.

22 If topping-up is necessary, first wipe the area around the filler cap with a clean rag before removing the cap. When adding fluid, pour it carefully into the reservoir, to avoid spilling it on surrounding painted surfaces (see illustration). Be sure to use only the specified hydraulic fluid (see "Lubricants, fluids and capacities" at the start of this Chapter) since mixing different types of fluid can cause damage to the system.



Warning: Brake hydraulic fluid can harm your eyes and damage painted surfaces, so use extreme caution when handling and pouring it. Wash off spills immediately with plenty of water. Do not use fluid that has been standing open for some time, as it absorbs moisture from the air. Excess



3.19 Brake fluid reservoir, showing "MAX" and "MIN" marks



3.22 Topping-up the brake fluid reservoir

moisture can cause corrosion and a dangerous loss of braking effectiveness.

23 When adding fluid, it is a good idea to inspect the reservoir for contamination. The system should be drained and refilled if deposits, dirt particles or contamination are seen in the fluid.

24 After filling the reservoir to the correct level, make sure that the cap is refitted securely, to avoid leaks and the entry of foreign matter.

25 If the reservoir requires repeated replenishing to maintain the correct level, this is an indication of an hydraulic leak somewhere in the system, which should be investigated immediately.

Power steering fluid

26 See Section 5 of this Chapter.

4 Tyre and tyre pressure checks

1 Periodic inspection of the tyres may spare you from the inconvenience of being stranded with a flat tyre. It can also provide you with vital information regarding possible problems in the steering and suspension systems before major damage occurs.

2 The original tyres on this vehicle are equipped with tread wear indicator (TWI) bands, which will appear when the tread depth reaches approximately 1.6 mm. Most tyres have a mark around the tyre at regular intervals to indicate the location of the tread





4.2A The TWI mark on the side of the tyre shows the position of the tread wear indicator bands

wear indicators, the mark being TWI, an arrow, or the tyre manufacturer's symbol (see illustration). Tread wear can also be monitored with a simple inexpensive device known as a tread depth indicator gauge (see illustration).

3 Ensure that tyre pressures are checked regularly and maintained correctly (see the Specifications at the beginning of this Chapter



4.2B A tyre tread depth indicator should be used to monitor tyre wear - they are available at accessory shops and service stations, and cost very little

for pressures). Checking should be carried out with the tyres cold, and *not* immediately after the vehicle has been in use. If the pressures are checked with the tyres hot, an apparently-high reading will be obtained, owing to heat expansion. *Under no circumstances* should an attempt be made to reduce the pressures to the quoted cold reading in this instance, or effective under-inflation will result.

HAYNES
HINT



Most garage forecourts have a pressure line which combines a gauge to check and adjust the tyre pressures, but they may vary in accuracy, due to general misuse and abuse. It therefore pays to carry a good-quality tyre pressure gauge in the vehicle, to make the regular checks required and ensure pressure accuracy.

Tyre Tread Wear Patterns

Shoulder Wear	Centre Wear	Toe Wear	Uneven Wear
Underinflation (wear on both sides) <i>Check and adjust pressures</i>	Overinflation <i>Check and adjust pressures</i>	Incorrect toe setting <i>Adjust front wheel alignment</i>	Incorrect camber or castor <i>Repair or renew suspension parts</i>
Incorrect wheel camber (wear on one side) <i>Repair or renew suspension parts</i>	<i>If you sometimes have to inflate your car's tyres to the higher pressures specified for maximum load or sustained high speed, don't forget to reduce the pressures to normal afterwards.</i>	Note: The feathered edge of the tread which characterises toe wear is best checked by feel.	Malfunctioning suspension <i>Repair or renew suspension parts</i>
Hard cornering <i>Reduce speed!</i>			Unbalanced wheel <i>Balance tyres</i>
			Out-of-round brake disc/drum <i>Machine or renew</i>

4 Note any abnormal tread wear (see illustration). Tread pattern irregularities such as feathering, flat spots, and more wear on one side than the other, are indications of front wheel alignment and/or balance problems. If any of these conditions are noted, they should be rectified as soon as possible.

5 Under-inflation will cause overheating of the tyre, owing to excessive flexing of the casing, and the tread will not sit correctly on the road surface. This will cause a consequent loss of adhesion and excessive wear, not to mention the danger of sudden tyre failure due to heat build-up.

6 Over-inflation will cause rapid wear of the

centre part of the tyre tread, coupled with reduced adhesion, harder ride, and the danger of damage occurring in the tyre casing.

7 Regularly check the tyres for damage in the form of cuts or bulges, especially in the sidewalls. Remove any nails or stones embedded in the tread, before they penetrate



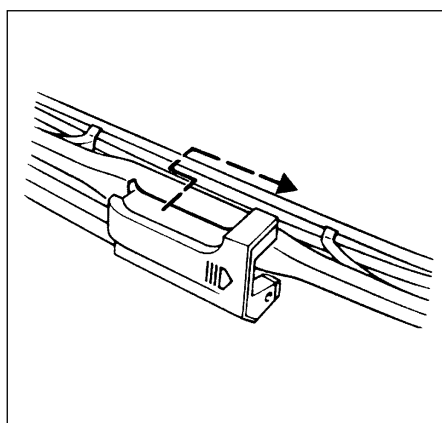
5.4 Power steering fluid reservoir, showing "MAX" and "MIN" marks



5.6 Topping-up the power steering fluid reservoir



6.6 Releasing the catch to remove a windscreen wiper blade



6.7 Tailgate wiper blade removal

the tyre to cause deflation. If removal of a nail reveals that the tyre has been punctured, refit the nail, so that its point of penetration is marked. Then immediately change the wheel, and have the tyre repaired by a tyre dealer. Do not drive on a tyre in such a condition. If in any doubt as to the possible consequences of any damage found, consult your local tyre dealer for advice.

8 General tyre wear is influenced to a large degree by driving style - harsh braking and acceleration, or fast cornering, will all produce more rapid tyre wear. Interchanging of tyres may result in more even wear; however, it is worth bearing in mind that if this is completely effective, the added expense is incurred of replacing simultaneously a complete set of tyres, which may prove financially restrictive for many owners.

9 Front tyres may wear unevenly as a result of wheel misalignment. The front wheels should always be correctly aligned according to the settings specified by the vehicle manufacturer.

10 Don't forget to check the spare tyre for condition and pressure.

11 Legal restrictions apply to many aspects of tyre fitting and usage, and in the UK this information is contained in the Motor Vehicle Construction and Use Regulations. It is suggested that a copy of these regulations is obtained from your local police, if in doubt as to current legal requirements with regard to tyre type and condition, minimum tread depth, etc.

5 Power steering fluid level check

1 The power steering fluid reservoir is located on the right-hand rear corner of the engine compartment.

2 For the fluid level check, the power steering system should be at its normal operating temperature, so it is best to carry out the check after a run.

3 Position the vehicle on level ground, with

the front wheels pointing straight ahead, and switch off the engine.

4 Check that the fluid level is up to the "MAX" mark on the reservoir (see illustration).

5 If topping-up is required, first use a clean rag to wipe the filler cap and the surrounding area, to prevent foreign matter from entering the system. Unscrew and remove the filler cap.

6 Top-up the level to the "MAX" mark, using the grade of fluid specified at the beginning of this Chapter (see illustration). Be careful not to introduce dirt into the system, and do not overfill. The need for frequent topping-up indicates a leak, which should be investigated.

7 Refit the filler cap.

6 Windscreen/tailgate washer system and wiper blade check

1 The windscreen wiper and blade assembly should be inspected at the specified intervals for damage, loose components, and cracked or worn blade elements.

2 Road film can build up on the wiper blades and affect their efficiency, so they should be washed regularly with a mild detergent solution.

3 The action of the wiping mechanism can loosen bolts, nuts and fasteners, so they should be checked and tightened, as necessary, at the same time as the wiper blades are checked.

4 If the wiper blade elements are cracked, worn or warped, or no longer clean adequately, they should be replaced with new ones.

5 Lift the wiper arm and blade away from the glass.

6 To remove the windscreen wiper blade, release the catch on the arm, then turn the blade through 90° and withdraw the blade from the end of the arm (see illustration).

7 To remove the tailgate wiper blade, push the wiper blade forward, and at the same time depress it against the spring pressure, then withdraw it from the end of the arm (see illustration).

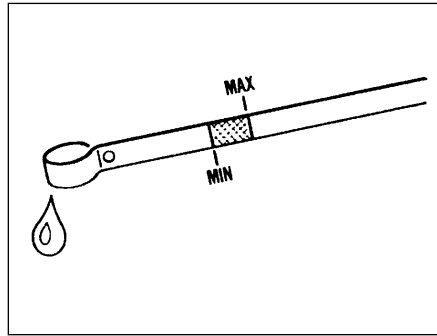
8 If the metal part of the wiper blade is in good condition, it may be possible to renew the rubber insert separately. The insert can be obtained from a car accessory shop and, according to type, it may need to be cut to the correct length before sliding into the clips.

9 Refit the wiper blade assembly using a reversal of the removal procedure, making sure that it fully engages with the spring clip.

10 Check that the washer jets direct the fluid onto the upper part of the windscreen/tailgate/rear window/headlight, and if necessary adjust the small sphere on the jet with a pin.



7.4 Removing the automatic transmission dipstick from its tube



7.6A "MIN" and "MAX" marks on the dipstick



7.6B Adding automatic transmission fluid through the dipstick tube

Every 10 000 miles or 12 months

7 Automatic transmission fluid level check

1 The level of the automatic transmission fluid should be carefully maintained. Low fluid level can lead to slipping or loss of drive, while overfilling can cause foaming, loss of fluid and transmission damage.

2 The transmission fluid level should only be checked when the transmission is hot (at its normal operating temperature). If the vehicle has just been driven over 10 miles (15 miles in a cold climate), and the fluid temperature is 160 to 175°F, the transmission is hot.



Caution: *If the vehicle has just been driven for a long time at high speed or in city traffic in hot weather, or if it has been pulling a trailer, an accurate fluid level reading cannot be obtained. In these circumstances, allow the fluid to cool down for about 30 minutes.*

3 Park the vehicle on level ground, apply the handbrake, and start the engine. While the engine is idling, depress the brake pedal and move the selector lever through all the gear ranges three times, beginning and ending in "P".

4 Allow the engine to idle for one minute, then (with the engine still idling) remove the dipstick from its tube (see illustration). Note the condition and colour of the fluid on the dipstick.

5 Wipe the fluid from the dipstick with a clean rag, and re-insert it into the filler tube until the cap seats.

6 Pull the dipstick out again, and note the fluid level. The level should be between the "MIN" and "MAX" marks. If the level is on the "MIN" mark, stop the engine, and add the specified automatic transmission fluid through the dipstick tube, using a clean funnel if necessary (see illustrations). It is important not to introduce dirt into the transmission when topping-up.

7 Add the fluid a little at a time, and keep checking the level as previously described until it is correct.

8 The need for regular topping-up of the transmission fluid indicates a leak, which should be found and rectified without delay.

9 The condition of the fluid should also be checked along with the level. If the fluid at the end of the dipstick is black or a dark reddish-brown colour, or if it has a burned smell, the fluid should be changed. If you are in doubt about the condition of the fluid, purchase some new fluid, and compare the two for colour and smell.

8 Electrical system check

1 Check the operation of all external lights and indicators (front and rear).

2 Check for satisfactory operation of the instrument panel, its illumination and warning lights, the switches and their function lights.

3 Check the horn(s) for satisfactory operation.

4 Check all other electrical equipment for satisfactory operation.

5 Check all electrical wiring in the engine compartment for correct routing, and for any signs of physical or heat-damage or chafing.

9 Battery check, maintenance and charging



Warning: *Certain precautions must be followed when checking and servicing the battery.*

Hydrogen gas, which is highly flammable, is always present in the battery cells, so keep lighted tobacco and all other open flames and sparks away from the battery. The electrolyte inside the battery is actually dilute sulphuric acid, which will cause injury if splashed on your skin or in your eyes. It will also ruin clothes and painted surfaces. When disconnecting the battery, always detach the negative (earth) lead first and connect it last!

Note: *Before disconnecting the battery, refer to Section 1 of Chapter 5.*



9.1 Tools and materials required for battery maintenance

1 **Face shield/safety goggles** - When removing corrosion with a brush, the acidic particles can easily fly up into your eyes

2 **Baking soda** - A solution of baking soda and water can be used to neutralise corrosion

3 **Petroleum jelly** - A layer of this on the battery terminals will help prevent corrosion

4 **Battery terminal/lead cleaner** - This wire brush cleaning tool will remove all traces of corrosion from the battery terminals and lead clamps

5 **Treated felt washers** - Placing one of these on each terminal, directly under the lead clamps, will help prevent corrosion

6 **Puller** - Sometimes the lead clamps are very difficult to pull off the terminals, even after the nut has been completely slackened. This tool pulls the clamp straight up and off the terminal without damage

7 **Battery terminal/lead cleaner** - Here is another cleaning tool which is a slightly different version of number 4 above, but does the same thing

8 **Rubber gloves** - Another safety item to consider when servicing the battery; remember, that's acid inside the battery!



9.6A Battery terminal corrosion usually appears as light, fluffy powder



9.6B Removing a lead from the battery terminal - always remove the earth lead first, and connect it last!



9.7A When cleaning the lead clamps, all corrosion must be removed - the inside of the clamp is tapered to match the terminal, so don't remove too much material

General

1 A routine preventive maintenance programme for the battery in your vehicle is the only way to ensure quick and reliable starts. Before performing any battery maintenance, make sure that you have the proper equipment necessary to work safely around the battery (see illustration).

2 There are also several precautions that should be taken whenever battery maintenance is performed. Before servicing the battery, always turn the engine and all accessories off, and disconnect the lead from the negative terminal of the battery - see Chapter 5, Section 1.

3 The battery produces hydrogen gas, which is both flammable and explosive. Never create a spark, smoke, or light a match around the battery. Always charge the battery in a well-ventilated area.

4 Electrolyte contains poisonous and corrosive sulphuric acid. Do not allow it to get in your eyes, on your skin, or on your clothes. Never ingest it. Wear protective safety glasses when working near the battery. Keep children away from the battery.

5 Note the external condition of the battery. If the positive terminal and lead clamp on your vehicle's battery is equipped with a plastic cover or rubber protector, make sure that it's not torn or damaged. It should completely

cover the terminal. Look for any corroded or loose connections, cracks in the case or cover, or loose hold-down clamps. Also check the entire length of each lead for cracks and frayed conductors.

6 If corrosion, which looks like white, fluffy deposits (see illustration) is evident, particularly around the terminals, the battery should be removed for cleaning. Slacken the lead clamp nuts with a spanner, being careful to remove the negative (earth) lead first, and slide them off the terminals (see illustration). Then unscrew the hold-down clamp nuts, remove the clamp, and lift the battery from the engine compartment.

7 Clean the lead clamps thoroughly, using a soft wire brush or a terminal cleaner, with a solution of warm water and baking soda. Wash the terminals and the top of the battery case with the same solution, but make sure that the solution doesn't get into the battery. When cleaning the leads, terminals and battery top, wear safety goggles and rubber gloves, to prevent any solution from coming in contact with your eyes or hands. Wear old clothes too - even when diluted, sulphuric acid splashed onto clothes will burn holes in them. If the terminals have been extensively corroded, clean them up with a terminal cleaner (see illustrations). Thoroughly wash all cleaned areas with plain water.

8 Make sure that the battery tray is in good condition and the hold-down clamp nuts are tight (see illustration). If the battery is

removed from the tray, make sure no parts remain in the bottom of the tray when the battery is refitted. When refitting the hold-down clamp nuts, do not overtighten them.

9 Information on removing and installing the battery can be found in Chapter 5. Information on jump starting can be found at the front of this manual. For more detailed battery checking procedures, refer to the Haynes *Automobile Electrical and Electronic Systems Manual*.

Cleaning

10 Corrosion on the hold-down components, battery case and surrounding areas can be removed with a solution of water and baking soda. Thoroughly rinse all cleaned areas with plain water.

11 Any metal parts of the vehicle damaged by corrosion should be covered with a zinc-based primer, then painted.

Charging



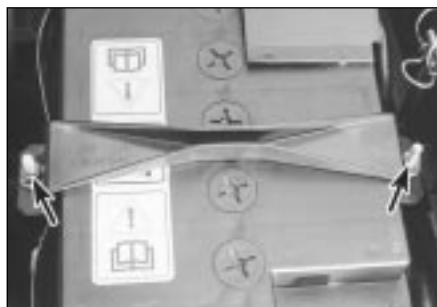
Warning: When batteries are being charged, hydrogen gas, which is very explosive and flammable, is produced. Do not smoke, or allow open flames, near a charging or a recently-charged battery. Wear eye protection when near the battery during charging. Also, make sure the charger is unplugged before connecting or disconnecting the battery from the charger.

12 Slow-rate charging is the best way to restore a battery that's discharged to the point where it will not start the engine. It's also a good way to maintain the battery charge in a vehicle that's only driven a few miles between starts. Maintaining the battery charge is particularly important in winter, when the battery must work harder to start the engine, and electrical accessories that drain the battery are in greater use.

13 It's best to use a one- or two-amp battery charger (sometimes called a "trickle" charger). They are the safest, and put the least strain on the battery. They are also the least expensive. For a faster charge, you can use a higher-



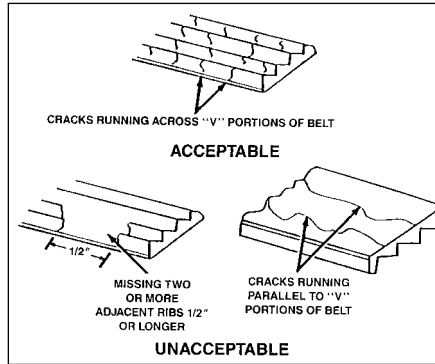
9.7B Regardless of the method used to clean the terminals, a clean, shiny surface should result



9.8 Make sure the battery hold-down nuts (arrowed) are tight



11.3 Removing the auxiliary drivebelt cover - it is secured by a fastener at each end (arrowed) - from inside the right-hand front wheel arch



11.4 Check the auxiliary drivebelt for signs of wear like these. Very small cracks across the drivebelt ribs are acceptable. If the cracks are deep, or if the drivebelt looks worn or damaged in any other way, renew it



11.6 The auxiliary drivebelt is tensioned by an automatic tensioner; Torx screws (arrowed) secure it to alternator mounting bracket

amperage charger, but don't use one rated more than 1/10th the amp/hour rating of the battery (ie no more than 5 amps, typically). Rapid boost charges that claim to restore the power of the battery in one to two hours are hardest on the battery, and can damage batteries not in good condition. This type of charging should only be used in emergency situations.

14 The average time necessary to charge a battery should be listed in the instructions that come with the charger. As a general rule, a trickle charger will charge a battery in 12 to 16 hours.

deteriorate as they get older. They must, therefore, be regularly inspected.

Check

3 With the engine switched off, open and support the bonnet, then locate the auxiliary drivebelt on the right-hand end of the engine, under the engine right-hand mounting bracket. (Be very careful, and wear protective gloves to minimise the risk of burning your hands on hot components, if the engine has recently been running.) For improved access, jack up the front right-hand side of the vehicle, support it securely on an axle stand, remove the roadwheel, then remove the auxiliary drivebelt cover (two fasteners) from inside the wheel arch (see illustration).

4 Using an inspection light or a small electric torch, and rotating the engine when necessary with a spanner applied to the crankshaft pulley bolt, check the whole length of the drivebelt for cracks, separation of the rubber, and torn or worn ribs (see illustration). Also check for fraying and glazing, which gives the drivebelt a shiny appearance. Both sides of the drivebelt should be inspected, which means you will have to twist the drivebelt to check the underside. Use your fingers to feel the drivebelt where you can't see it. If you are in any doubt as to the condition of the drivebelt, renew it (go to paragraph 7).

Drivebelt tension

5 The auxiliary drivebelt is tensioned by an automatic tensioner; regular checks are not required, and manual "adjustment" is not possible.

6 If you suspect that the drivebelt is slipping and/or running slack, or that the tensioner is otherwise faulty, it must be renewed. To do this, remove the drivebelt as described below, then unbolt the tensioner (two Torx-type screws accessible from underneath, via the wheel arch) from the alternator mounting bracket (see illustration). On fitting the new tensioner, ensure it is aligned correctly on its mountings, and tighten the screws to the specified torque wrench setting.



11.9 Rotate the tensioner pulley clockwise to release its pressure on the drivebelt, then slip the drivebelt off the crankshaft pulley

Renewal

7 Open the bonnet. Jack up the front right-hand side of the vehicle and support it securely on an axle stand, remove the roadwheel, then remove the auxiliary drivebelt cover (two fasteners) from inside the wheel arch.

8 If the existing drivebelt is to be refitted, mark it, or note the maker's markings on its flat surface, so that it can be installed the same way round.

9 Reaching up between the body and the engine (above and to the rear of the crankshaft pulley), apply a spanner to the hexagon in the centre of the automatic tensioner's pulley. Rotate the tensioner pulley clockwise to release its pressure on the drivebelt, then slip the drivebelt off the crankshaft pulley, and release the tensioner again (see illustration). Working from the wheel arch or engine compartment as necessary, and noting its routing, slip the drivebelt off the remaining pulleys and withdraw it.

10 Check all the pulleys, ensuring that their grooves are clean, and removing all traces of oil and grease. Check that the tensioner works properly, with strong spring pressure

10 Seat belt check

1 Check the seat belts for satisfactory operation and condition. Inspect the webbing for fraying and cuts. Check that they retract smoothly and without binding into their reels.

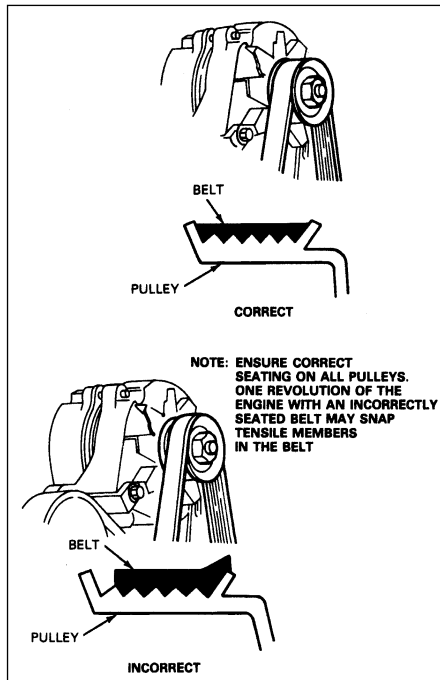
2 Check that the seat belt mounting bolts are tight, and if necessary tighten them to the specified torque wrench setting.

11 Auxiliary drivebelt check and renewal

General

1 The auxiliary drivebelt is of the flat, multi-ribbed (or "polyvee") type, and is located on the right-hand end of the engine. It drives the alternator, water pump, power steering pump and (when fitted) the air conditioning compressor from the engine's crankshaft pulley.

2 The good condition and proper tension of the auxiliary drivebelt is critical to the operation of the engine. Because of their composition and the high stresses to which they are subjected, drivebelts stretch and



11.11A When installing the auxiliary drivebelt, make sure that it is centred - it must not overlap either edge of the grooved pulleys

being felt when its pulley is rotated clockwise, and a smooth return to the limit of its travel when released.

11 If the original drivebelt is being refitted, use the marks or notes made on removal, to ensure that it is installed to run in the same direction as it was previously. To fit the drivebelt, arrange it on the grooved pulleys so that it is centred in their grooves, and not overlapping their raised sides (note that the flat surface of the drivebelt is engaged on the idler, tensioner and water pump pulleys) and routed correctly (see illustrations). Start at the top, and work down to finish at the crankshaft pulley; rotate the tensioner pulley clockwise, slip the drivebelt onto the crankshaft pulley, then release the tensioner again.

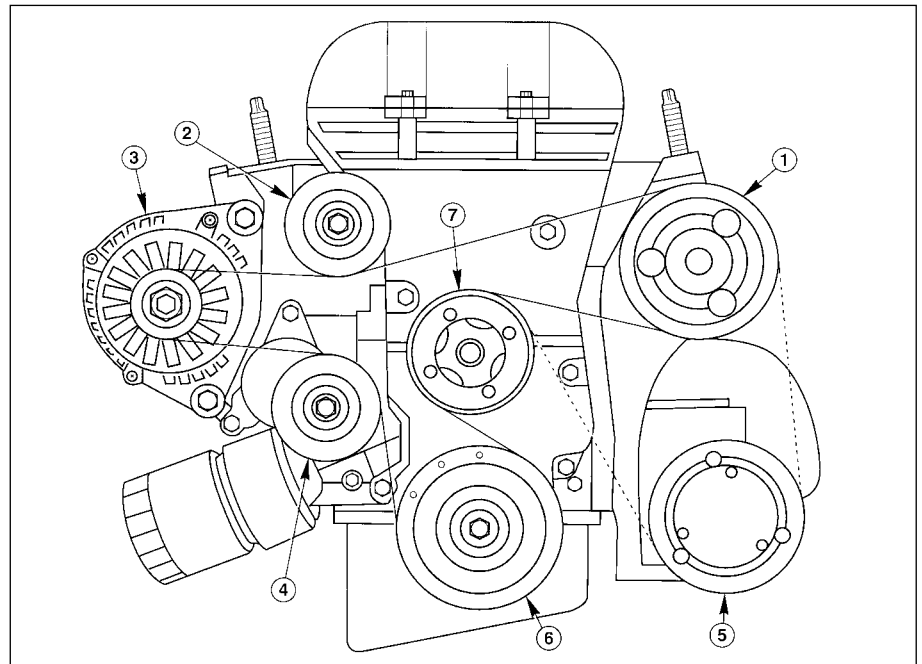
12 Using a spanner applied to the crankshaft pulley bolt, rotate the crankshaft through at least two full turns clockwise to settle the drivebelt on the pulleys, then check that the drivebelt is properly installed.

13 Refit the auxiliary drivebelt cover and roadwheel, then lower the vehicle to the ground.

12 Underbonnet check for fluid leaks and hose condition



Caution: Renewal of air conditioning hoses must be left to a dealer service department or air conditioning specialist who has the equipment to depressurise the system



11.11B Auxiliary drivebelt routing

- 1 Power steering pump
- 2 Idler pulley
- 3 Alternator

- 4 Automatic tensioner
- 5 Air conditioning compressor (when fitted)

- 6 Crankshaft pulley
- 7 Water pump pulley

safely. Never remove air conditioning components or hoses until the system has been depressurised.

General

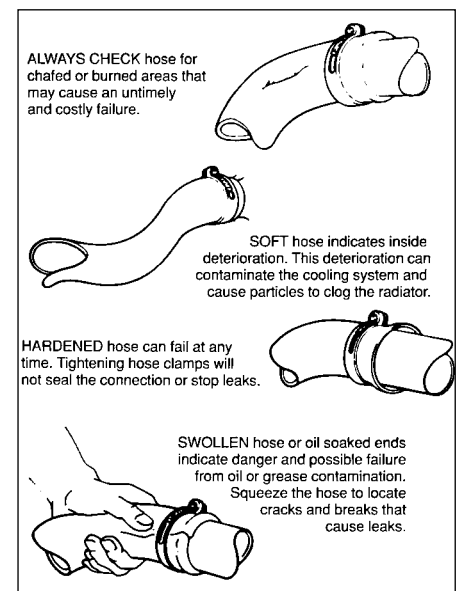
1 High temperatures in the engine compartment can cause the deterioration of the rubber and plastic hoses used for engine, accessory and emission systems operation. Periodic inspection should be made for cracks, loose clamps, material hardening and leaks.

2 Carefully check the large top and bottom radiator hoses, along with the other smaller-diameter cooling system hoses and metal pipes; do not forget the heater hoses/pipes which run from the engine to the bulkhead, and those to the engine oil cooler (where fitted). Inspect each hose along its entire length, replacing any that is cracked, swollen or shows signs of deterioration. Cracks may become more apparent if the hose is squeezed (see illustration). If you are using non-Ford specification antifreeze, and so have to renew the coolant every two years or so, it's a good idea to renew the hoses at that time, regardless of their apparent condition.

3 Make sure that all hose connections are tight. A leak in the cooling system will usually show up as white- or rust-coloured deposits on the areas adjoining the leak; if the spring clamps that are used to secure the hoses in this system appear to be slackening, they should be renewed to prevent the possibility of leaks.

4 Some other hoses are secured to their

fittings with clamps. Where clamps are used, check to be sure they haven't lost their tension, allowing the hose to leak. If clamps aren't used, make sure the hose has not expanded and/or hardened where it slips over the fitting, allowing it to leak.



12.2 Hoses, like drivebelts, have a habit of failing at the worst possible time - to prevent the inconvenience of a blown radiator or heater hose, inspect them carefully as shown here

5 Check all fluid reservoirs, filler caps, drain plugs and fittings etc, looking for any signs of leakage of oil, transmission and/or brake hydraulic fluid, coolant and power steering fluid. If the vehicle is regularly parked in the same place, close inspection of the ground underneath it will soon show any leaks; ignore the puddle of water which will be left if the air conditioning system is in use. As soon as a leak is detected, its source must be traced and rectified. Where oil has been leaking for some time, it is usually necessary to use a steam cleaner, pressure washer or similar, to clean away the accumulated dirt, so that the exact source of the leak can be identified.

Vacuum hoses

6 It's quite common for vacuum hoses, especially those in the emissions system, to be colour-coded, or to be identified by coloured stripes moulded into them. Various systems require hoses with different wall thicknesses, collapse resistance and temperature resistance. When renewing hoses, be sure the new ones are made of the same material.

7 Often the only effective way to check a hose is to remove it completely from the vehicle. If more than one hose is removed, be sure to label the hoses and fittings to ensure correct installation.

8 When checking vacuum hoses, be sure to include any plastic T-fittings in the check. Inspect the fittings for cracks, and check the hose where it fits over the fitting for distortion, which could cause leakage.

9 A small piece of vacuum hose (quarter-inch inside diameter) can be used as a stethoscope to detect vacuum leaks. Hold one end of the hose to your ear, and probe around vacuum hoses and fittings, listening for the "hissing" sound characteristic of a vacuum leak.



Warning: When probing with the vacuum hose stethoscope, be very careful not to come into contact with moving engine components such as the auxiliary drivebelt, radiator electric cooling fan, etc.

Fuel hoses



Warning: There are certain precautions which must be taken when inspecting or servicing fuel system components. Work in a well-ventilated area, and do not allow open flames (cigarettes, appliance pilot lights, etc.) or bare light bulbs near the work area. Mop up any spills immediately, and do not store fuel-soaked rags where they could ignite.

10 Check all fuel hoses for deterioration and chafing. Check especially for cracks in areas where the hose bends, and also just before fittings, such as where a hose attaches to the fuel filter.

11 High-quality fuel line, usually identified by the word "Fluoroelastomer" printed on the

hose, should be used for fuel line renewal. Never, under any circumstances, use unreinforced vacuum line, clear plastic tubing or water hose for fuel lines.

12 Spring-type clamps are commonly used on fuel lines. These clamps often lose their tension over a period of time, and can be "sprung" during removal. Replace all spring-type clamps with screw clamps whenever a hose is replaced.

Metal lines

13 Sections of metal piping are often used for fuel line between the fuel filter and the engine. Check carefully to be sure the piping has not been bent or crimped, and that cracks have not started in the line.

14 If a section of metal fuel line must be renewed, only seamless steel piping should be used, since copper and aluminium piping don't have the strength necessary to withstand normal engine vibration.

15 Check the metal brake lines where they enter the master cylinder and ABS hydraulic unit (if used) for cracks in the lines or loose fittings. Any sign of brake fluid leakage calls for an immediate and thorough inspection of the brake system.

13 Engine compartment wiring check



1 With the vehicle parked on level ground, apply the handbrake firmly and open the bonnet. Using an inspection light or a small electric torch, check all visible wiring within and beneath the engine compartment.

2 What you are looking for is wiring that is obviously damaged by chafing against sharp edges, or against moving suspension/transmission components and/or the auxiliary drivebelt, by being trapped or crushed between carelessly-refitted components, or melted by being forced into contact with the hot engine castings, coolant pipes, etc. In almost all cases, damage of this sort is caused in the first instance by incorrect routing on reassembly after previous work has been carried out.

3 Depending on the extent of the problem, damaged wiring may be repaired by rejoining the break or splicing-in a new length of wire, using solder to ensure a good connection, and remaking the insulation with adhesive insulating tape or heat-shrink tubing, as appropriate. If the damage is extensive, given the implications for the vehicle's future reliability, the best long-term answer may well be to renew that entire section of the loom, however expensive this may appear.

4 When the actual damage has been repaired, ensure that the wiring loom is re-routed correctly, so that it is clear of other components, and not stretched or kinked, and is secured out of harm's way using the plastic clips, guides and ties provided.

5 Check all electrical connectors, ensuring

that they are clean, securely fastened, and that each is locked by its plastic tabs or wire clip, as appropriate. If any connector shows external signs of corrosion (accumulations of white or green deposits, or streaks of "rust"), or if any is thought to be dirty, it must be unplugged and cleaned using electrical contact cleaner. If the connector pins are severely corroded, the connector must be renewed; note that this may mean the renewal of that entire section of the loom - see your local Ford dealer for details.

6 If the cleaner completely removes the corrosion to leave the connector in a satisfactory condition, it would be wise to pack the connector with a suitable material which will exclude dirt and moisture, preventing the corrosion from occurring again; a Ford dealer may be able to recommend a suitable product.

7 Check the condition of the battery connections - remake the connections or renew the leads if a fault is found (see Chapter 5). Use the same techniques to ensure that all earth points in the engine compartment provide good electrical contact through clean, metal-to-metal joints, and that all are securely fastened. (In addition to the earth connection at the engine lifting eye, and that from the transmission to the body/battery, there are one or two earth points behind each headlight assembly, and one below the power steering fluid reservoir.)

8 Refer to Section 31 for details of spark plug (HT) lead checks.

14 Air conditioning system check



Warning: The air conditioning system is under high pressure. Do not loosen any fittings or remove any components until

after the system has been discharged. Air conditioning refrigerant must be properly discharged into an approved type of container, at a dealer service department or an automotive air conditioning repair facility capable of handling R134a refrigerant. Always wear eye protection when disconnecting air conditioning system fittings.

1 The following maintenance checks should be performed on a regular basis, to ensure that the air conditioner continues to operate at peak efficiency:

- Check the auxiliary drivebelt. If it's worn or deteriorated, renew it (see Section 11).
- Check the system hoses. Look for cracks, bubbles, hard spots and deterioration. Inspect the hoses and all fittings for oil bubbles and seepage. If there's any evidence of wear, damage or leaks, renew the hose(s).
- Inspect the condenser fins for leaves, insects and other debris. Use a "fin

comb" or compressed air to clean the condenser.



Warning: Wear eye protection when using compressed air!

- (d) Check that the drain tube from the front of the evaporator is clear - note that it is normal to have clear fluid (water) dripping from this while the system is in operation, to the extent that quite a large puddle can be left under the vehicle when it is parked.
- 2 It's a good idea to operate the system for



15.1 These tools are required when changing the engine oil and filter

- 1 **Drain pan** - It should be fairly shallow in depth, but wide to prevent spills
- 2 **Rubber gloves** - When removing the drain plug and filter, it is inevitable that you will get oil on your hands (the gloves will prevent burns from hot oil)
- 3 **Breaker bar** - Sometimes the oil drain plug is pretty tight, and a long breaker bar is needed to loosen it
- 4 **Socket** - To be used with the breaker bar or a ratchet (must be the correct size to fit the drain plug)
- 5 **Filter wrench** - This is a metal band-type wrench, which requires clearance around the filter to be effective
- 6 **Filter wrench** - This type fits on the bottom of the filter, and can be turned with a ratchet or breaker bar (different size wrenches are available for different types of filters)



Note: It is antisocial and illegal to dump oil down the drain. To find the location of your local oil recycling bank, call this number free.

about 30 minutes at least once a month, particularly during the winter. Long term non-use can cause hardening, and subsequent failure, of the seals.

3 Because of the complexity of the air conditioning system and the special equipment necessary to service it, in-depth fault diagnosis and repairs are not included in this manual. For more complete information on the air conditioning system, refer to the Haynes *Automotive Heating and Air Conditioning Manual*.

4 The most common cause of poor cooling is simply a low system refrigerant charge. If a noticeable drop in cool air output occurs, the following quick check will help you determine if the refrigerant level is low.

5 Warm the engine up to normal operating temperature.

6 Place the air conditioning temperature selector at the coldest setting, and put the blower at the highest setting. Open the doors - to make sure the air conditioning system doesn't cycle off as soon as it cools the passenger compartment.

7 With the compressor engaged - the clutch will make an audible click, and the centre of the clutch will rotate - feel the inlet and outlet pipes at the compressor. One side should be cold, and one hot. If there's no perceptible difference between the two pipes, there's something wrong with the compressor or the system. It might be a low charge - it might be something else. Take the vehicle to a dealer service department or an automotive air conditioning specialist.

15 Engine oil and filter change

HAYNES HINT Frequent oil changes are the best preventive maintenance the home mechanic can give the engine, because ageing oil becomes diluted and contaminated, which leads to premature engine wear.



15.7 Use the correct-size spanner or socket to remove the oil drain plug and avoid rounding it off

1 Make sure that you have all the necessary tools before you begin this procedure (see **illustration**). You should also have plenty of rags or newspapers handy, for mopping up any spills.

2 To avoid any possibility of scalding, and to protect yourself from possible skin irritants and other harmful contaminants in used engine oils, it is advisable to wear gloves when carrying out this work.

3 Access to the underside of the vehicle is greatly improved if the vehicle can be lifted on a hoist, driven onto ramps, or supported by axle stands.



Warning: Do not work under a vehicle which is supported only by an hydraulic or scissors-type jack, or by bricks, blocks of wood, etc.

4 If this is your first oil change, get under the vehicle and familiarise yourself with the position of the engine oil drain plug, which is located at the rear of the sump. The engine and exhaust components will be warm during the actual work, so try to anticipate any potential problems while the engine and accessories are cool.

5 The oil should preferably be changed when the engine is still fully warmed-up to normal operating temperature, just after a run (the needle on the temperature gauge should be in the "Normal" sector of the gauge); warm oil and sludge will flow out more easily. Park the vehicle on firm, level ground, apply the handbrake firmly, then select 1st or reverse gear (manual transmission) or the "P" position (automatic transmission). Open the bonnet and remove the engine oil filler cap from the cylinder head cover, then remove the oil level dipstick from its tube (see Section 3).

6 Raise the front of the vehicle, and support it securely on axle stands. Remove the front right-hand roadwheel to provide access to the oil filter; if the additional working clearance is required, remove also the auxiliary drivebelt cover (two fasteners).



15.9 Since the oil filter is usually on very tight, you'll need a special wrench for removal. DO NOT use the wrench to tighten the new filter. Pack rag under the filter before removal to minimise the mess



15.10 Lubricate the filter's sealing ring with clean engine oil before installing the filter on the engine

Warning: To avoid personal injury, never get beneath the vehicle when it is supported by only by a jack. The jack provided with your vehicle is designed solely for raising the vehicle to remove and refit the roadwheels. Always use axle stands to support the vehicle when it becomes necessary to place your body underneath the vehicle.

7 Being careful not to touch the hot exhaust components, place the drain pan under the drain plug, and unscrew the plug (see illustration). If possible, try to keep the plug pressed into the sump while unscrewing it by hand the last couple of turns. As the plug releases from the threads, move it away sharply, so the stream of oil issuing from the sump runs into the pan, not up your sleeve! Allow the oil to drain into the drain pan, and check the condition of the plug's sealing washer; renew it if worn or damaged.

8 Allow some time for the old oil to drain, noting that it may be necessary to reposition the pan as the oil flow slows to a trickle; when the oil has completely drained, wipe clean the drain plug and its threads in the sump and refit the plug, tightening it to the specified torque wrench setting.

9 Using a suitable filter removal tool, unscrew the oil filter from the right-hand rear of the cylinder block; be prepared for some oil spillage (see illustration). Check the old filter to make sure that the rubber sealing ring hasn't stuck to the engine; if it has, carefully remove it. Withdraw the filter through the wheel arch, taking care to spill as little oil as possible.

10 Using a clean, lint-free rag, wipe clean the cylinder block around the filter mounting. If there are no specific instructions supplied with it, fit a new oil filter as follows. Apply a light coating of clean engine oil to the filter's sealing ring (see illustration). Screw the filter into position on the engine until it seats, then tighten it through a further half- to three-quarters of a turn *only*. Tighten the filter by hand only - do not use any tools.

11 Remove the old oil and all tools from under the vehicle, refit the roadwheel, and lower the vehicle to the ground.



16.2 Topping-up the manual transmission oil

12 Refill the engine with oil, using the correct grade and type of oil, as given in the Specifications Section of this Chapter. Pour in half the specified quantity of oil first, then wait a few minutes for the oil to fall to the sump. Continue adding oil a small quantity at a time, until the level is up to the lower notch on the dipstick. Adding approximately 0.5 to 1.0 litre will raise the level to the dipstick's upper notch.

13 Start the engine. The oil pressure warning light will take a few seconds to go out while the new filter fills with oil; do not race the engine while the light is on. Run the engine for a few minutes, while checking for leaks around the oil filter seal and the drain plug.

14 Switch off the engine, and wait a few minutes for the oil to settle in the sump once more. With the new oil circulated and the filter now completely full, recheck the level on the dipstick, and add more oil as necessary.

15 Dispose of the used engine oil safely, with reference to "General repair procedures" in the reference Sections of this manual.

16 Manual transmission oil level check

1 The manual transmission does not have a dipstick. To check the oil level, raise the vehicle and support it securely on axle stands, making sure that the vehicle is level. On the lower front side of the transmission housing,



19.2A Check the condition of the track rod balljoint dust cover (arrowed)

you will see the filler/level plug. Unscrew and remove it. If the lubricant level is correct, the oil should be up to the lower edge of the hole.

2 If the transmission needs more lubricant (if the oil level is not up to the hole), use a syringe, or a plastic bottle and tube, to add more (see illustration). Stop filling the transmission when the lubricant begins to run out of the hole.

3 Refit the filler/level plug, and tighten it to the specified torque wrench setting. Drive the vehicle a short distance, then check for leaks.

4 A need for regular topping-up can only be due to a leak, which should be found and rectified without delay.

17 Clutch pedal adjustment

The procedure is described in Chapter 8, Section 3.

18 Automatic transmission linkage lubrication

1 Apply the handbrake, then jack up the front of the vehicle and support on axle stands. Remove the left-hand front wheel.

2 Apply a little oil to the cable end fitting on the selector lever on the left-hand side of the transmission (refer to Chapter 7, Part B if necessary).

3 Refit the wheel, and lower the vehicle to the ground.

19 Steering, suspension and roadwheel check

Front suspension and steering check

1 Apply the handbrake, then raise the front of the vehicle and support it on axle stands.

2 Visually inspect the balljoint dust covers and the steering gear gaiters for splits, chafing or deterioration (see illustrations). Any wear



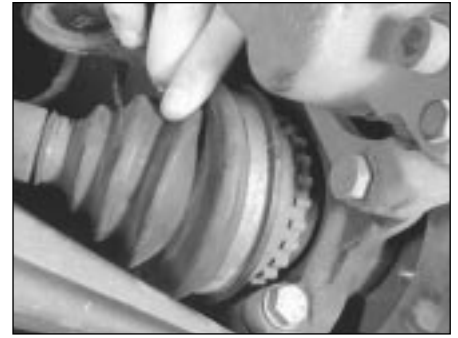
19.2B Check the condition of the lower arm balljoint dust cover (arrowed)



19.2C Check the condition of the steering rack gaiters



19.4 Checking for wear in the front suspension and hub bearings



20.2 Check the driveshaft gaiters by hand for cracks and/or leaking grease

of these components will cause loss of lubricant, together with dirt and water entry, resulting in rapid deterioration of the balljoints or steering gear.

3 Check the power-assisted steering fluid hoses for chafing or deterioration, and the pipe and hose unions for fluid leaks. Also check for signs of fluid leakage under pressure from the steering gear rubber gaiters, which would indicate failed fluid seals within the steering gear.

4 Grasp the roadwheel at the 12 o'clock and 6 o'clock positions, and try to rock it (**see illustration**). Very slight free play may be felt, but if the movement is appreciable, further investigation is necessary to determine the source. Continue rocking the wheel while an assistant depresses the footbrake. If the movement is now eliminated or significantly reduced, it is likely that the hub bearings are at fault. If the free play is still evident with the footbrake depressed, then there is wear in the suspension joints or mountings.

5 Now grasp the wheel at the 9 o'clock and 3 o'clock positions, and try to rock it as before. Any movement felt now may again be caused by wear in the hub bearings or the steering track rod balljoints. If the outer track rod balljoint is worn, the visual movement will be obvious. If the inner joint is suspect, it can be felt by placing a hand over the rack-and-pinion rubber gaiter, and gripping the track rod. If the wheel is now rocked, movement will be felt at the inner joint if wear has taken place.

6 Using a large screwdriver or flat bar, check for wear in the suspension mounting bushes by levering between the relevant suspension component and its attachment point. Some movement is to be expected as the mountings are made of rubber, but excessive wear should be obvious. Also check the condition of any visible rubber bushes, looking for splits, cracks or contamination of the rubber.

7 With the vehicle standing on its wheels, have an assistant turn the steering wheel back-and-forth, about an eighth of a turn each way. There should be very little, if any, lost movement between the steering wheel and roadwheels. If this is not the case, closely observe the joints and mountings previously

described, but in addition, check the steering column universal joints for wear, and also check the rack-and-pinion steering gear itself.

Rear suspension check

8 Chock the front wheels, then raise the rear of the vehicle and support it on axle stands.

9 Check the rear hub bearings for wear, using the method described for the front hub bearings (paragraph 4).

10 Using a large screwdriver or flat bar, check for wear in the suspension mounting bushes by levering between the relevant suspension component and its attachment point. Some movement is to be expected as the mountings are made of rubber, but excessive wear should be obvious.

Roadwheel check and balancing

11 Periodically remove the roadwheels, and clean any dirt or mud from the inside and outside surfaces. Examine the wheel rims for signs of rusting, corrosion or other damage. Light alloy wheels are easily damaged by "kerbing" whilst parking, and similarly, steel wheels may become dented or buckled. Renewal of the wheel is very often the only course of remedial action possible.

12 The balance of each wheel and tyre assembly should be maintained, not only to avoid excessive tyre wear, but also to avoid wear in the steering and suspension components. Wheel imbalance is normally signified by vibration through the vehicle's bodysell, although in many cases it is particularly noticeable through the steering wheel. Conversely, it should be noted that wear or damage in suspension or steering components may cause excessive tyre wear. Out-of-round or out-of-true tyres, damaged wheels and wheel bearing wear/maladjustment also fall into this category. Balancing will not usually cure vibration caused by such wear.

13 Wheel balancing may be carried out with the wheel either on or off the vehicle. If balanced on the vehicle, ensure that the wheel-to-hub relationship is marked in some way prior to subsequent wheel removal, so that it may be refitted in its original position.

20 Driveshaft rubber gaiter and CV joint check

1 The driveshaft rubber gaiters are very important, because they prevent dirt, water and foreign material from entering and damaging the constant velocity (CV) joints. External contamination can cause the gaiter material to deteriorate prematurely, so it's a good idea to wash the gaiters with soap and water occasionally.

2 With the vehicle raised and securely supported on axle stands, turn the steering onto full-lock, then slowly rotate each front wheel in turn. Inspect the condition of the outer constant velocity (CV) joint rubber gaiters, squeezing the gaiters to open out the folds. Check for signs of cracking, splits, or deterioration of the rubber, which may allow the escape of grease, and lead to the ingress of water and grit into the joint (**see illustration**). Also check the security and condition of the retaining clips. Repeat these checks on the inner CV joints. If any damage or deterioration is found, the gaiters should be renewed as described in Chapter 8.

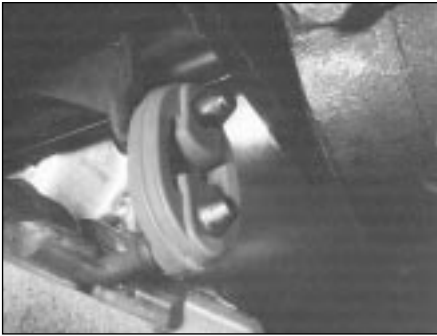
3 At the same time, check the general condition of the outer CV joints themselves, by first holding the driveshaft and attempting to rotate the wheels. Repeat this check on the inner joints, by holding the inner joint yoke and attempting to rotate the driveshaft.

4 Any appreciable movement in the CV joint indicates wear in the joint, wear in the driveshaft splines, or a loose driveshaft retaining nut.

21 Exhaust system check

1 With the engine cold (at least three hours after the vehicle has been driven), check the complete exhaust system, from its starting point at the engine to the end of the tailpipe. Ideally, this should be done on a hoist, where unrestricted access is available; if a hoist is not available, raise and support the vehicle on axle stands.

2 Check the pipes and connections for



21.2 If any of the exhaust system rubber mountings are to be renewed, ensure that the replacements are of the correct type - their colour is a good guide. Those nearest to the catalytic converter are more heat-resistant than the others

evidence of leaks, severe corrosion, or damage. Make sure that all brackets and rubber mountings are in good condition, and tight; if any of the mountings are to be renewed, ensure that the replacements are of the correct type (see illustration). Leakage at any of the joints or in other parts of the system will usually show up as a black sooty stain in the vicinity of the leak. **Note:** Exhaust sealants should not be used on any part of the exhaust system upstream of the catalytic converter - even if the sealant does not contain additives harmful to the converter, pieces of it may break off and foul the element, causing local overheating.

3 At the same time, inspect the underside of the body for holes, corrosion, open seams, etc. which may allow exhaust gases to enter the passenger compartment. Seal all body openings with silicone or body putty.

4 Rattles and other noises can often be traced to the exhaust system, especially the rubber mountings. Try to move the system, silencer(s) and catalytic converter. If any components can touch the body or suspension parts, secure the exhaust system with new mountings.

5 Check the running condition of the engine by inspecting inside the end of the tailpipe; the exhaust deposits here are an indication of the engine's state of tune. The inside of the tailpipe should be dry, and should vary in colour from dark grey to light grey/brown; if it is black and sooty, or coated with white deposits, the engine is in need of a thorough fuel system inspection.

22 Underbody and fuel/brake line check

1 With the vehicle raised and supported on axle stands or over an inspection pit, thoroughly inspect the underbody and wheel arches for signs of damage and corrosion. In particular, examine the bottom of the side sills, and any concealed areas where mud can collect. Where corrosion and rust is evident,



23.10 Checking the condition of a flexible brake hose

press and tap firmly on the panel with a screwdriver, and check for any serious corrosion which would necessitate repairs. If the panel is not seriously corroded, clean away the rust, and apply a new coating of underseal. Refer to Chapter 11 for more details of body repairs.

2 At the same time, inspect the PVC-coated lower body panels for stone damage and general condition.

3 Inspect all of the fuel and brake lines on the underbody for damage, rust, corrosion and leakage. Also make sure that they are correctly supported in their clips. Where applicable, check the PVC coating on the lines for damage.

23 Brake check

Note: For detailed photographs of the brake system, refer to Chapter 9.

1 The work described in this Section should be carried out at the specified intervals, or whenever a defect is suspected in the braking system. Any of the following symptoms could indicate a potential brake system defect:

- (a) The vehicle pulls to one side when the brake pedal is depressed.
- (b) The brakes make scraping or dragging noises when applied.
- (c) Brake pedal travel is excessive.
- (d) The brake fluid requires repeated topping-up.

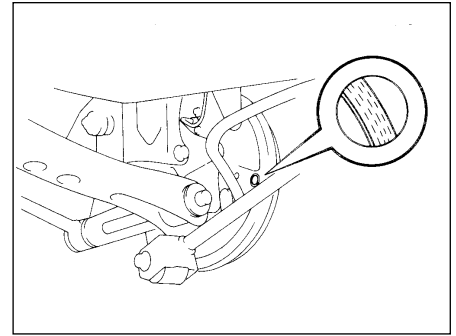
2 A brake pad wear warning light is fitted, and it is illuminated when the thickness of the front (or rear) disc brake pad linings reach the minimum amount. However, a physical check should be made to confirm the thickness of the linings, as follows.

Disc brakes

3 Jack up the front or rear of the vehicle, as applicable, and support it on axle stands. Where rear brake pads are fitted, also jack up the rear of the vehicle and support on axle stands.

4 For better access to the brake calipers, remove the wheels.

5 Look through the inspection window in the



23.13 Prise the rubber plugs from the backplates to inspect the leading brake shoe linings

caliper, and check that the thickness of the friction lining material on each of the pads is not less than the recommended minimum thickness given in the Specifications. **Note:** Bear in mind that the lining material is normally bonded to a metal backing plate.

6 If it is difficult to determine the exact thickness of the pad linings, or if you are at all concerned about the condition of the pads, then remove them from the calipers for further inspection (refer to Chapter 9).

7 Check the remaining brake caliper(s) in the same way.

8 If any one of the brake pads has worn down to, or below, the specified limit, all four pads at that end of the car must be renewed as a set (ie all the front pads or all the rear pads).

9 Measure the thickness of the discs with a micrometer, if available, to make sure that they still have service life remaining. If any disc is thinner than the specified minimum thickness, renew it (refer to Chapter 9). In any case, check the general condition of the discs. Look for excessive scoring and discolouration caused by overheating. If these conditions exist, remove the relevant disc and have it resurfaced or renewed (refer to Chapter 9).

10 Before refitting the wheels, check all brake lines and hoses (refer to Chapter 9). In particular, check the flexible hoses in the vicinity of the calipers, where they are subjected to most movement. Bend them between the fingers (but do not actually bend them double, or the casing may be damaged) and check that this does not reveal previously-hidden cracks, cuts or splits (see illustration).

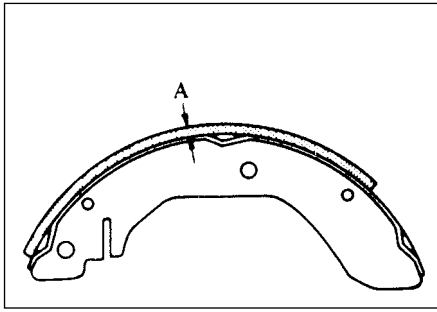
Rear drum brakes

11 Chock the front wheels, then jack up the rear of the vehicle and support on axle stands.

12 For better access, remove the rear wheels.

13 To check the brake shoe lining thickness without removing the brake drums, prise the rubber plugs from the backplates, and use an electric torch to inspect the linings of the leading brake shoes (see illustration). Check that the thickness of the lining material on the

Every 20 000 miles



23.14 If the lining is bonded to the brake shoe, measure the lining thickness from the outer surface to the metal shoe, as shown here; if the lining is riveted to the shoe, measure from the lining outer surface to the rivet head

brake shoes is not less than the recommendation given in the Specifications.

14 If it is difficult to determine the exact thickness of the brake shoe linings, or if you are at all concerned about the condition of the shoes, then remove the rear drums for a more comprehensive inspection (refer to Chapter 9) (see illustration).

15 With the drum removed, check the shoe return and hold-down springs for correct installation, and check the wheel cylinders for leakage of brake fluid. Check the friction surface of the brake drums for scoring and discoloration. If excessive, the drum should be resurfaced or renewed.

16 Before refitting the wheels, check all brake lines and hoses (refer to Chapter 9). On completion, apply the handbrake and check that the rear wheels are locked. The handbrake is self-adjusting, and no manual adjustment is possible.

24 Door and bonnet check and lubrication

1 Check that the doors, bonnet and tailgate/boot lid close securely. Check that the bonnet safety catch operates correctly. Check the operation of the door check straps.
2 Lubricate the hinges, door check straps, the striker plates and the bonnet catch sparingly with a little oil or grease.

25 Roadwheel nut tightness check

- 1** Apply the handbrake.
- 2** Remove the wheel covers, using the flat end of the wheelbrace supplied in the tool kit (on models with the RS trim kit, it will be necessary to unscrew the retaining bolts with the special key).
- 3** Check that the roadwheel nuts are tightened to the specified torque wrench setting.
- 4** Refit the wheel covers.

26 Road test

Check the operation and performance of the braking system

- 1** Make sure that the vehicle does not pull to one side when braking, and that the wheels do not lock prematurely when braking hard.
- 2** Check that there is no vibration through the steering when braking.
- 3** Check that the handbrake operates correctly, without excessive movement of the lever, and that it holds the vehicle stationary on a slope.
- 4** With the engine switched off, test the operation of the brake servo unit as follows. Depress the footbrake four or five times to exhaust the vacuum, then start the engine. As the engine starts, there should be a noticeable "give" in the brake pedal as vacuum builds up. Allow the engine to run for at least two minutes, and then switch it off. If the brake pedal is now depressed again, it should be possible to detect a hiss from the servo as the pedal is depressed. After about four or five applications, no further hissing should be heard, and the pedal should feel considerably harder.

Steering and suspension

- 5** Check for any abnormalities in the steering, suspension, handling or road "feel".
- 6** Drive the vehicle, and check that there are no unusual vibrations or noises.
- 7** Check that the steering feels positive, with no excessive sloppiness or roughness, and

check for any suspension noises when cornering and driving over bumps.

Drivetrain

- 8** Check the performance of the engine, transmission and driveshafts.
- 9** Check that the engine starts correctly, both when cold and when hot.
- 10** Listen for any unusual noises from the engine and transmission.
- 11** Make sure that the engine runs smoothly when idling, and that there is no hesitation when accelerating.
- 12** On manual transmission models, check that all gears can be engaged smoothly without noise, and that the gear lever action is not abnormally vague or "notchy".
- 13** On automatic transmission models, make sure that all gearchanges occur smoothly without snatching, and without an increase in engine speed between changes. Check that all the gear positions can be selected with the vehicle at rest. If any problems are found, they should be referred to a Ford dealer.
- 14** Listen for a metallic clicking sound from the front of the vehicle as the vehicle is driven slowly in a circle with the steering on full-lock. Carry out this check in both directions. If a clicking noise is heard, this indicates wear in a driveshaft joint, in which case renew the joint if necessary.

Clutch

- 15** Check that the clutch pedal moves smoothly and easily through its full travel, and that the clutch itself functions correctly, with no trace of slip or drag. If the movement is uneven or stiff in places, check that the cable is routed correctly, with no sharp turns.
- 16** Inspect both ends of the clutch inner cable, both at the gearbox end and inside the car, for signs of wear and fraying.
- 17** Check the pedal stroke as described in Chapter 8, Section 3, and adjust if necessary.

Instruments and electrical equipment

- 18** Check the operation of all instruments and electrical equipment.
- 19** Make sure that all instruments read correctly, and switch on all electrical equipment in turn, to check that it functions properly.

Every 20 000 miles or 2 years

27 Ventilation system pollen filter renewal

1 The air entering the vehicle's ventilation system is passed through a very fine pleated-paper air filter element, which removes particles of pollen, dust and other airborne foreign matter. To ensure its continued effectiveness, this filter's element must be renewed at regular intervals.

- 2** Remove the left-hand side windscreen wiper arm (Chapter 12).
- 3** Prise off their trim caps, then unscrew the two screws securing the windscreen edge of the cowl grille panel; open the bonnet and remove the remaining three retaining screws (see illustration).
- 4** Peel back the rubber seal and withdraw the cowl grille panel.
- 5** Releasing the clip at each end, lift out the pollen filter housing, and withdraw the element (see illustrations).

6 Wipe out the ventilation system intake and the filter housing, removing any leaves, dead insects etc.

7 If carrying out a routine service, the element must be renewed regardless of its apparent condition. If you are checking the element for any other reason, inspect its front surface; if it is very dirty, renew the element. If it is only moderately dusty, it can be re-used by blowing it clean from the rear to the front surface with compressed air. Because it is a



27.3 Remove screws (arrowed) to release cowl grille panel . . .



27.5A . . . release clips to lift out pollen filter housing . . .



27.5B . . . then withdraw pollen filter element

pleated-paper type filter, it cannot be washed or re-oiled. If it cannot be cleaned satisfactorily with compressed air, discard and renew it.



Warning: Wear eye protection when using compressed air!

8 Refitting is the reverse of the removal procedure; ensure that the element and housing are securely seated, so that unfiltered air cannot enter the passenger compartment.

28 Coolant renewal



Note: If the antifreeze used is Ford's own, or of similar quality, the coolant need not be renewed for the life of the vehicle. If the vehicle's history is unknown, if antifreeze of lesser quality is known to be in the system, or simply if you prefer to follow conventional servicing intervals, the coolant should be changed periodically (typically, every 2 years) as described here. Refer also to the information in Section 2 of this Chapter.



Warning: Do not allow antifreeze to come in contact with your skin or painted surfaces of the vehicle. Flush contaminated areas immediately with plenty of water. Don't store new coolant, or leave old coolant lying around, where it's accessible to children or pets - they're attracted by its sweet smell. Ingestion of even a small amount of coolant can be fatal! Wipe up garage-floor and drip-pan spills immediately. Keep antifreeze containers covered, and repair cooling system leaks as soon as they're noticed.



Warning: Never remove the expansion tank filler cap when the engine is running, or has just been switched off, as the cooling system will be hot, and the consequent escaping steam and scalding coolant could cause serious injury.

Coolant draining



Warning: Wait until the engine is cold before starting this procedure.

1 To drain the system, first remove the expansion tank filler cap (see Section 3).

2 If the additional working clearance is required, raise the front of the vehicle and support it securely on axle stands.

3 Remove the radiator undershield (eight or nine screws), then place a large drain tray underneath, and unscrew the radiator drain plug; direct as much of the escaping coolant as possible into the tray (see illustrations).

System flushing

4 With time, the cooling system may gradually lose its efficiency, as the radiator core becomes choked with rust, scale deposits from the water, and other sediment (refer also to the information at the start of Section 2). To minimise this, as well as using only good-quality antifreeze and clean soft water, the system should be flushed as follows whenever any part of it is disturbed, and/or when the coolant is renewed.

5 With the coolant drained, refit the drain plug and refill the system with fresh water. Refit the expansion tank filler cap, start the engine and warm it up to normal operating temperature, then stop it and (after allowing it to cool down completely) drain the system again. Repeat as necessary until only clean water can be seen to emerge, then refill finally with the specified coolant mixture.

6 If only clean, soft water and good-quality antifreeze (even if not to Ford's specification) has been used, and the coolant has been renewed at the suggested intervals, the above procedure will be sufficient to keep clean the system for a considerable length of time. If,

however, the system has been neglected, a more thorough operation will be required, as follows.

7 First drain the coolant, then disconnect the radiator top and bottom hoses. Insert a garden hose into the top hose, and allow water to circulate through the radiator until it runs clean from the bottom outlet.

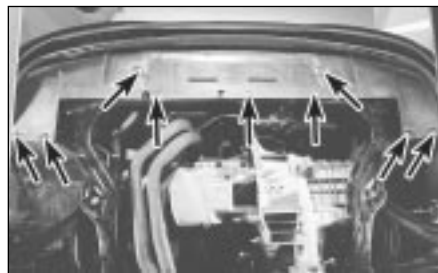
8 To flush the engine, insert the garden hose into the thermostat water outlet, and allow water to circulate until it runs clear from the bottom hose. If, after a reasonable period, the water still does not run clear, the radiator should be flushed with a good proprietary cleaning agent.

9 In severe cases of contamination, reverse-flushing of the radiator may be necessary. To do this, remove the radiator (Chapter 3), invert it, and insert the garden hose into the bottom outlet. Continue flushing until clear water runs from the top hose outlet. A similar procedure can be used to flush the heater matrix.

10 The use of chemical cleaners should be necessary only as a last resort. Normally, regular renewal of the coolant will prevent excessive contamination of the system.

Coolant filling

11 With the cooling system drained and flushed, ensure that all disturbed hose unions



28.3A Remove the screws (arrowed) and withdraw the radiator undershield . . .



28.3B . . . to unscrew the radiator drain plug (arrowed) and empty the cooling system. Try to protect yourself from coolant splashing into your eyes or onto your skin, catching as much of it as possible in the drain tray

Every 30 000 miles



28.11 Ensure radiator undershield is located securely in three clips at front edge (arrowed) when refitting

are correctly secured, and that the radiator drain plug is securely tightened. Refit the radiator undershield, noting that it is located by three clips at its front edge; tighten the retaining screws securely (**see illustration**). If it was raised, lower the vehicle to the ground.

12 Prepare a sufficient quantity of the specified coolant mixture (see below); allow for a surplus, so as to have a reserve supply for topping-up.

13 Slowly fill the system through the expansion tank; since the tank is the highest point in the system, all the air in the system should be displaced into the tank by the rising liquid. Slow pouring reduces the possibility of air being trapped and forming air-locks.

14 Continue filling until the coolant level reaches the expansion tank "MAX" level line, then cover the filler opening to prevent coolant splashing out.

15 Start the engine and run it at idle speed, until it has warmed-up to normal operating temperature and the radiator electric cooling fan has cut in; watch the temperature gauge to check for signs of overheating. If the level in the expansion tank drops significantly, top-up to the "MAX" level line, to minimise the amount of air circulating in the system.

16 Stop the engine, allow it to cool down *completely* (overnight, if possible), then uncover the expansion tank filler opening and top-up the tank to the "MAX" level line. Refit the filler cap, tightening it securely, and wash

off any spilt coolant from the engine compartment and bodywork.

17 After refilling, always check carefully all components of the system (but especially any unions disturbed during draining and flushing) for signs of coolant leaks. Fresh antifreeze has a searching action, which will rapidly expose any weak points in the system.

18 Note: *If, after draining and refilling the system, symptoms of overheating are found which did not occur previously, then the fault is almost certainly due to trapped air at some point in the system, causing an air-lock and restricting the flow of coolant; usually, the air is trapped because the system was refilled too quickly. In some cases, air-locks can be released by tapping or squeezing the various hoses. If the problem persists, stop the engine and allow it to cool down completely, before unscrewing the expansion tank filler cap or disconnecting hoses to bleed out the trapped air.*

Antifreeze mixture

19 If the antifreeze used is not to Ford's specification, it should always be renewed at the suggested intervals. This is necessary not only to maintain the antifreeze properties, but also to prevent the corrosion which would otherwise occur as the corrosion inhibitors become progressively less effective. Always use an ethylene glycol-based antifreeze which is suitable for use in mixed-metal cooling systems.

20 If the antifreeze used is to Ford's specification, the levels of protection it affords are indicated in the Specifications Section of this Chapter. To give the recommended *standard* mixture ratio for this antifreeze, 40% (by volume) of antifreeze must be mixed with 60% of clean, soft water; if you are using any other type of antifreeze, follow its manufacturer's instructions to achieve the correct ratio. It is best to make up slightly more than the system's specified capacity, so that a supply is available for subsequent topping-up.

21 Before adding antifreeze, the cooling system should be completely drained, preferably flushed, and all hoses checked for

condition and security. As noted earlier, fresh antifreeze will rapidly find any weaknesses in the system.

22 After filling with antifreeze, a label should be attached to the expansion tank, stating the type and concentration of antifreeze used, and the date installed. Any subsequent topping-up should be made with the same type and concentration of antifreeze. If topping-up using antifreeze to Ford's specification, note that a 50/50 mixture is permissible, purely for convenience.

23 Do not use engine antifreeze in the windscreen/tailgate washer system, as it will damage the vehicle's paintwork. A screen wash additive should be added to the washer system in its maker's recommended quantities.

General cooling system checks

24 The engine should be cold for the cooling system checks, so perform the following procedure before driving the vehicle, or after it has been shut off for at least three hours.

25 Remove the expansion tank filler cap (see Section 3), and clean it thoroughly inside and out with a rag. Also clean the filler neck on the expansion tank. The presence of rust or corrosion in the filler neck indicates that the coolant should be changed. The coolant inside the expansion tank should be relatively clean and transparent. If it is rust- coloured, drain and flush the system, and refill with a fresh coolant mixture.

26 Carefully check the radiator hoses and heater hoses along their entire length; renew any hose which is cracked, swollen or deteriorated (see Section 12).

27 Inspect all other cooling system components (joint faces, etc.) for leaks. A leak in the cooling system will usually show up as white- or rust-coloured deposits on the area adjoining the leak. Where any problems of this nature are found on system components, renew the component or gasket with reference to Chapter 3.

28 Clean the front of the radiator with a soft brush to remove all insects, leaves, etc, embedded in the radiator fins. Be careful not to damage the radiator fins, or cut your fingers on them.

Every 30 000 miles or 3 years

29 Air filter element renewal



1 The air filter element is located in the air cleaner assembly on the left-hand side of the engine compartment. Release the clips, and lift the air cleaner cover (**see illustrations**). If the additional working clearance is required, unclip the cover from the air mass meter, and withdraw it completely.

2 Lift out the element, and wipe out the

housing (**see illustration**). Check that no foreign matter is visible, either in the air intake or in the air mass meter.

3 If carrying out a routine service, the element must be renewed regardless of its apparent condition; note that the small foam filter in the rear right-hand corner of the air cleaner housing must be cleaned whenever the air filter element is renewed (see Section 30).

4 If you are checking the element for any other reason, inspect its lower surface; if it is oily or very dirty, renew the element. If it is only moderately dusty, it can be re-used by

blowing it clean from the upper to the lower surface with compressed air. Because it is a pleated-paper type filter, it cannot be washed or re-oiled. If it cannot be cleaned satisfactorily with compressed air, discard and renew it.



Warning: *Wear eye protection when using compressed air!*

Caution: *Never drive the vehicle with the air cleaner filter element removed. Excessive engine wear could result, and backfiring could even cause a fire under the bonnet.*



29.1A Release the wire clips to detach the cover from the air cleaner assembly . . .



29.1B . . . noting the long clip normally hidden by the battery . . .



29.2 . . . lift the element out of the housing, and wipe out its interior before fitting the new element

5 Refitting is the reverse of the removal procedure. Ensure that the element and cover are securely seated, so that unfiltered air cannot enter the engine.

30 Positive Crankcase Ventilation (PCV) system check and filter cleaning

1 The Positive Crankcase Ventilation (PCV) system components are located at the front of the engine, underneath the exhaust manifold and air intake resonator. Refer to Chapter 6 for further information.

2 Check that all components of the system are securely fastened, correctly routed (with no kinks or sharp bends to restrict flow) and in sound condition; renew any worn or damaged components.

3 If oil leakage is noted, disconnect the various hoses and pipes, and check that all are clear and unblocked. Remove the air cleaner assembly cover, air mass meter and resonator, then check that the hose from the cylinder head cover to the air cleaner housing is clear and undamaged. Disconnect the rubber T-piece both from the union on the inlet manifold left-hand end, and from the metal crankcase breather pipe under the ignition coil. Connect a spare, clean, length of hose to the breather pipe. Suck on the end of the hose, then blow through it - little or no

restriction to airflow should be felt in either direction. A similar test can be applied to check that the inlet manifold passages are clear - air should be heard hissing out of the plenum chamber mouth as you blow.

4 The PCV valve is designed to allow gases to flow out of the crankcase only, so that a depression is created in the crankcase under most operating conditions, particularly at idle. Therefore, if either the oil separator or the PCV valve are thought to be blocked, they must be renewed (see Chapter 6). In such a case, however, there is nothing to be lost by attempting to flush out the blockage using a suitable solvent. The PCV valve should rattle when shaken.

5 While the air filter element is removed (see Section 29), wipe out the housing, and withdraw the small foam filter from its location in the rear right-hand corner of the housing (see illustration). If the foam is badly clogged with dirt or oil, it must be cleaned by soaking it in a suitable solvent, and allowed to dry before being refitted.

31 Spark plug renewal

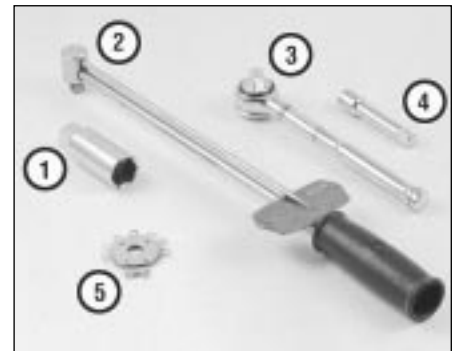
Spark plug check and renewal

1 It is vital for the correct running, full performance and proper economy of the engine that the spark plugs perform with maximum efficiency. The most important factor in ensuring this is that the plugs fitted are appropriate for the engine. The suitable type is given in the Specifications Section at the beginning of this Chapter, on the Vehicle Emissions Control Information (VECI) label located on the underside of the bonnet (only on models sold in some areas) or in the vehicle's Owner's Handbook. If these sources specify different plugs, purchase the spark plug type specified on the VECI label (where appropriate), as that information is provided specifically for your engine. If this type is used and the engine is in good condition, the spark plugs should not need attention between scheduled renewal intervals. Spark plug cleaning is rarely necessary, and should not

be attempted unless specialised equipment is available, as damage can easily be caused to the firing ends.

2 Spark plug removal and refitting requires a spark plug socket, with an extension which can be turned by a ratchet handle or similar. This socket is lined with a rubber sleeve, to protect the porcelain insulator of the spark plug, and to hold the plug while you insert it into the spark plug hole. You will also need a wire-type feeler gauge, to check and adjust the spark plug electrode gap, and a torque wrench to tighten the new plugs to the specified torque (see illustration).

3 To remove the spark plugs, first open the bonnet; the plugs are easily reached at the top of the engine. Note how the spark plug (HT) leads are routed and secured by clips along the channel in the cylinder head cover.



31.2 Tools required for changing spark plugs

1 **Spark plug socket** - This will have special padding inside, to protect the spark plug porcelain insulator

2 **Torque wrench** - Although not essential, use of this tool is the best way to ensure that the plugs are tightened properly

3 **Ratchet** - Standard hand tool to fit the plug socket

4 **Extension** - Depending on the other tools available, you may need an extension to reach the plugs

5 **Spark plug gap gauge** - This gauge for checking the gap comes in a variety of styles. Make sure the gap for your engine is included



30.5 The Positive Crankcase Ventilation (PCV) system filter in the air cleaner assembly must be cleaned whenever the air filter element is renewed

To prevent the possibility of mixing up spark plug (HT) leads, it is a good idea to try to work on one spark plug at a time.

4 If the marks on the original-equipment spark plug (HT) leads cannot be seen, mark the leads 1 to 4, to correspond to the cylinder the lead serves (No 1 cylinder is at the timing belt end of the engine). Pull the leads from the plugs by gripping the rubber boot sealing the

cylinder head cover opening, not the lead, otherwise the lead connection may be fractured.

5 It is advisable to soak up any water in the spark plug recesses with a rag, and to remove any dirt from them using a clean brush, vacuum cleaner or compressed air before removing the plugs, to prevent any dirt or water from dropping into the cylinders.



Warning: Wear eye protection when using compressed air!

6 Unscrew the spark plugs, ensuring that the socket is kept in alignment with each plug - if the socket is forcibly moved to either side, the porcelain top of the plug may be broken off. If any undue difficulty is encountered when unscrewing any of the spark plugs, carefully

Specifications

Engine

Direction of crankshaft rotation	Clockwise (seen from right-hand side of vehicle)
Oil filter	Champion C148

Cooling system

Coolant protection at 40% antifreeze/water mixture ratio:

Slush point	-25°C (-13°F)
Solidifying point	-30°C (-22°F)

Coolant specific gravity at 40% antifreeze/water mixture ratio and 15°C/59°F - with no other additives in coolant	1.061
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Fuel system

Idle speed - nominal	830 ± 50 rpm*
Air filter element	Champion U618
Fuel filter	Champion L218

* **Note:** Given for reference only - not adjustable.

Ignition system

Firing order	1-3-4-2 (No 1 cylinder at timing belt end of engine)
Spark plugs:	
Type	Champion RE7YCC
Electrode gap	1.0 mm
Spark plug (HT) leads:	
Type	Champion type not available
Maximum resistance per lead	30 000 ohms

* Information on spark plug types and electrode gaps is as recommended by Champion Spark Plug. Where alternative types are used, refer to their manufacturer's recommendations

Braking system

Note: No minimum lining thicknesses are given by Ford - the following is given as a general recommendation. If the pad wear warning light comes on before the front brake pad linings reach the minimum thickness, the pads should nevertheless be renewed immediately.

Minimum front or rear brake pad lining thickness	1.5 mm
Minimum rear brake shoe lining thickness	1.0 mm

Suspension and steering

Tyre pressures (cold):	Front	Rear
Normally laden*	2.1 bars (31 psi)	2.1 bars (31 psi)
Fully laden*	2.4 bars (35 psi)	2.8 bars (41 psi)

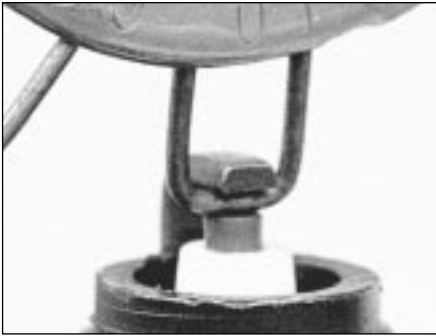
Note: Normally laden means up to 3 persons. For sustained high speeds above 100 mph (160 km/h), increased pressures are necessary. Consult the driver's handbook supplied with the vehicle.

Wiper blades

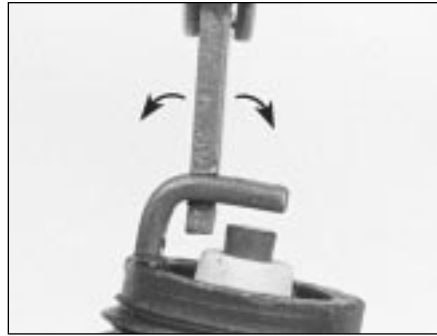
Windscreen:	
Driver's side	Champion X 5303 (and SP 01 spoiler)
Passenger's side	Champion X 5103
Tailgate:	
Hatchback	Champion X 5103
Estate	Champion type not available

Torque wrench settings

	Nm	lbf ft
Auxiliary drivebelt cover fasteners	5 to 10	4 to 7
Auxiliary drivebelt automatic tensioner Torx screws	23	17
Engine oil drain plug	25	18
Manual transmission filler/level plug	35	26
Radiator undershield screws	7	5
Spark plugs	15	11



31.12 Spark plug manufacturers recommend using a wire-type gauge when checking the gap - if the wire does not slide between the electrodes with a slight drag, adjustment is required



31.13 To change the gap, bend the outer electrode only, as indicated by the arrows, and be very careful not to crack or chip the porcelain insulator surrounding the centre electrode



31.16 Spark plugs have tapered seats - do not overtighten them on refitting, or you will not be able to get them out again without risking damage to the plugs and cylinder head

check the cylinder head threads and tapered sealing surfaces for signs of wear, excessive corrosion or damage; if any of these conditions is found, seek the advice of a Ford dealer as to the best method of repair.

7 As each plug is removed, examine it as follows - this will give a good indication of the condition of the engine. If the insulator nose of the spark plug is clean and white, with no deposits, this is indicative of a weak mixture.

8 If the tip and insulator nose are covered with hard black-looking deposits, then this is indicative that the mixture is too rich. Should the plug be black and oily, then it is likely that the engine is fairly worn, as well as the mixture being too rich.

9 If the insulator nose is covered with light tan to greyish-brown deposits, then the mixture is correct, and it is likely that the engine is in good condition.

10 If you are renewing the spark plugs, purchase the new plugs, then check each of them first for faults such as cracked insulators or damaged threads. Note also that, whenever the spark plugs are renewed as a routine service operation, the spark plug (HT) leads should be checked as described below.

11 The spark plug electrode gap is of considerable importance as, if it is too large or too small, the size of the spark and its efficiency will be seriously impaired. The gap should be set to the value given in the Specifications Section of this Chapter. New plugs will not necessarily be set to the correct gap, so they should always be checked before fitting.

12 Special spark plug electrode gap adjusting tools are available from most motor accessory shops (see illustration).

13 To set the electrode gap, measure the gap with a feeler gauge, and then bend open, or closed, the outer plug electrode until the correct gap is achieved (see illustration). The centre electrode should never be bent, as this may crack the insulation and cause plug failure, if nothing worse. If the outer electrode is not exactly over the centre electrode, bend it gently to align them.

14 Before fitting the spark plugs, check that the threaded connector

sleeves at the top of the plugs are tight, and that the plug exterior surfaces and threads are clean. Brown staining on the porcelain, immediately above the metal body, is quite normal, and does not necessarily indicate a leak between the body and insulator.

15 On installing the spark plugs, first check that the cylinder head thread and sealing surface are as clean as possible; use a clean rag wrapped around a paintbrush to wipe clean the sealing surface. Apply a smear of copper-based grease or anti-seize compound to the threads of each plug, and screw them in by hand where possible. Take extra care to enter the plug threads correctly, as the cylinder head is of aluminium alloy - it's often difficult to insert spark plugs into their holes without cross-threading them.



To avoid the possibility of cross-threading a spark plug, fit a short piece of rubber hose over the end of the plug. The flexible hose acts as a universal joint, to help align the plug with the plug hole. Should the plug begin to cross-thread, the hose will slip on the spark plug, preventing thread damage.

16 When each spark plug is started correctly on its threads, screw it down until it just seats lightly, then tighten it to the specified torque

wrench setting (see illustration). If a torque wrench is not available - and this is one case where the use of a torque wrench is strongly recommended - tighten each spark plug through *no more than* 1/16 of a turn. *Do not* exceed the specified torque setting, and *NEVER* overtighten these spark plugs - their tapered seats mean they are almost impossible to remove if abused.

17 Reconnect the spark plug (HT) leads in their correct order, using a twisting motion on the boot until it is firmly seated on the end of the spark plug and on the cylinder head cover.

Spark plug (HT) lead check

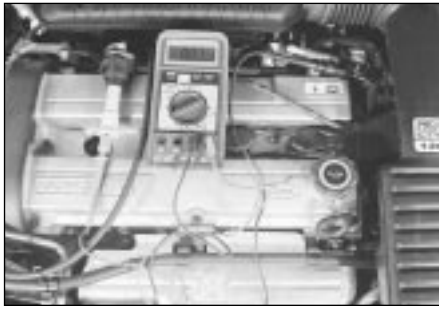
18 The spark plug (HT) leads should be checked whenever the plugs themselves are renewed. Start by making a visual check of the leads while the engine is running. In a darkened garage (make sure there is ventilation) start the engine and observe each lead. Be careful not to come into contact with any moving engine parts. If there is a break in the lead, you will see arcing or a small spark at the damaged area.

19 The spark plug (HT) leads should be inspected one at a time, to prevent mixing up the firing order, which is essential for proper engine operation. Each original lead should be numbered to identify its cylinder. If the number is illegible, a piece of tape can be marked with the correct number, and wrapped around the lead (the leads should be numbered 1 to 4, with No 1 lead nearest the timing belt end of the engine). The lead can then be disconnected.

20 Check inside the boot for corrosion, which will look like a white crusty powder. Clean this off as much as possible; if it is excessive, or if cleaning leaves the metal connector too badly corroded to be fit for further use, the lead must be renewed. Push the lead and boot back onto the end of the spark plug. The boot should fit tightly onto the end of the plug - if it doesn't, remove the lead and use pliers carefully to crimp the metal connector inside the boot until the fit is snug.

21 Using a clean rag, wipe the entire length of

Every 60 000 miles



31.22 Measure the resistance of the spark plug leads - if any exceeds the specified maximum value, renew all the leads

the lead to remove built-up dirt and grease. Once the lead is clean, check for burns, cracks and other damage. Do not bend the lead sharply, because the conductor might break.

22 Disconnect the lead from the ignition coil by pressing together the plastic retaining catches and pulling the end fitting off the coil terminal. Check for corrosion and for a tight fit. If a meter with the correct measuring range is available, measure the resistance of the disconnected lead from its coil connector to its spark plug connector (see *illustration*). If the resistance recorded for any of the leads exceeds the value specified, all the leads



33.5 Squeeze together fuel filter pipe union locking lugs, then pull pipes off filter stubs - ensure pipes are correctly reconnected

should be renewed as a set. Refit the lead to the coil, noting that each coil terminal is marked with its respective cylinder number, so that there is no risk of mixing up the leads and upsetting the firing order.

23 Inspect the remaining plug leads, ensuring that each is securely fastened both ends when the check is complete. If any sign of arcing, severe connector corrosion, burns, cracks or other damage is noticed, obtain new spark plug (HT) leads, renewing them as a set. If new spark plug leads are to be fitted, remove and refit them one at a time, to avoid mix-ups in the firing order.



33.7A When installing the new filter, ensure the arrow showing direction of fuel flow points towards the engine . . .



33.7B . . . secure pipe unions as described - do not overtighten clamp screw (arrowed)

Every 60 000 miles

32 Timing belt renewal

Refer to Chapter 2, Part A.

33 Fuel filter renewal



Warning: Petrol is extremely flammable, so extra precautions must be taken when working on any part of the fuel system. Do not smoke, or allow open flames or bare light bulbs, near the work area. Also, do not work in a garage if a gas appliance with a pilot light is present. While performing any work on the fuel system, wear safety glasses, and have a suitable (Class B) fire extinguisher on hand. If you spill any fuel on your skin, rinse it off immediately with soap and water.

1 The fuel filter is located at the front right-hand corner of the fuel tank, just forward of the vehicle's right-hand rear jacking point. The filter performs a vital role in keeping dirt and other foreign matter out of the fuel system, and so must be renewed at regular intervals,

or whenever you have reason to suspect that it may be clogged. It is always unpleasant working under a vehicle - pressure-washing or hosing clean the underbody in the filter's vicinity will make working conditions more tolerable, and will reduce the risk of getting dirt into the fuel system.

2 Relieve any residual pressure in the system by removing the fuel pump fuse (No 14) and starting the engine; allow the engine to idle until it dies. Turn the engine over once or twice on the starter, to ensure that all pressure is released, then switch off the ignition.



Warning: This procedure will merely relieve the pressure necessary for the engine to run - remember that fuel will still be present in the system components, and take precautions before disconnecting them.

3 Noting the comments made in Section 1 of Chapter 5, disconnect the battery earth terminal.

4 Jack up the rear right-hand side of the vehicle, and support it securely on an axle stand.

5 Using rag to soak up any spilt fuel, release the fuel feed and outlet pipe unions from the filter, by squeezing together the protruding locking lugs on each union, and carefully pulling the union off the filter stub (see

illustration). Where the unions are colour-coded, the feed and outlet pipes cannot be confused; where both unions are the same colour, note carefully which pipe is connected to which filter stub, and ensure that they are correctly reconnected on refitting.

6 Noting the arrows and/or other markings on the filter showing the direction of fuel flow (towards the engine), slacken the filter clamp screw and withdraw the filter. Note that the filter will still contain fuel; care should be taken, to avoid spillage and to minimise the risk of fire.

7 On installation, slide the filter into its clamp so that the arrow marked on it faces the correct way, then slide each pipe union on to its (correct) respective filter stub, and press it down until the locking lugs click into their groove (see *illustrations*). Tighten the clamp screw carefully, until the filter is just prevented from moving; do not overtighten the clamp screw, or the filter casing may be crushed.

8 Refit the fuel pump fuse and reconnect the battery earth terminal, then switch the ignition on and off five times, to pressurise the system. Check for any sign of fuel leakage around the filter unions before lowering the vehicle to the ground and starting the engine.

Every 3 years

34 Brake fluid renewal

The procedure is similar to that for the bleeding of the hydraulic system as described in Chapter 9, except that the brake fluid reservoir should be emptied by syphoning,

and allowance should be made for the old fluid to be removed from the circuit when bleeding a section of the circuit.