Chilton's

Repair and Tune-up Guide

for the

RENAULT

Illustrated

PRODUCED BY THE AUTOMOTIVE BOOK DEPARTMENT

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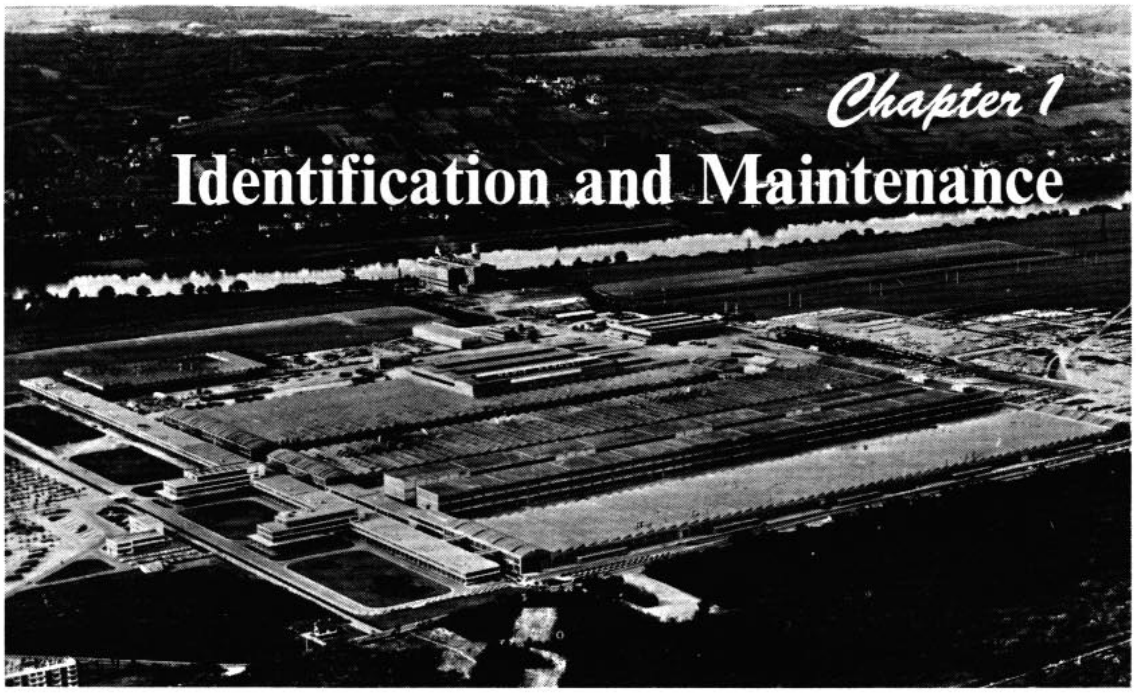
Contents



Chapter 1
Identification and Maintenance

Models Included in This Book

This repair and tune-up guide includes information on the Dauphine 1094 and 1095, and the Renault 8, the Caravelle, the Renault 10, and the Renault 16.

Dauphine models earlier than the 1094 and 1095 differ from the newer models only in details. Those differences are not included.

The Caravelle has the same basic engines used in the Renault 8 and Renault 10. Differences for the Caravelle are minor and are not included.

Transmission overhaul steps for the Renault 16 are similar to those for the R-10 transmissions.

Information on the Renault automatic transmission and the DCS emission control system is specially covered.

Renault Identification

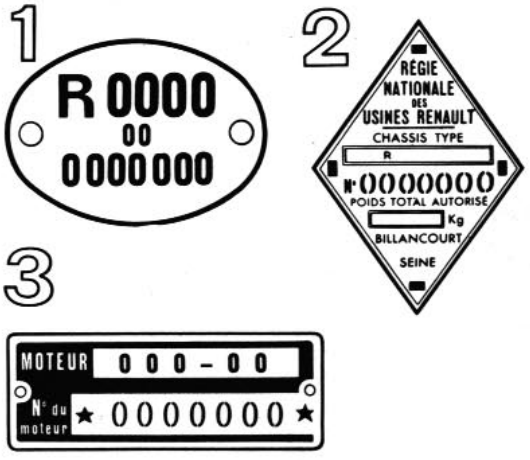
Renault from 1898

Renault, the leading French motor car manufacturer, is one of the oldest firms in the automotive world (the first Renault was designed and built in 1898) and is widely recognized as a major source of automobile technology.

The post-war 4CV is the first economy Renault brought into the United States in quantity. It was imported until 1961.

The Dauphine had ten anniversaries as an import, ending in 1967. Also ending in 1967 was the Caravelle, which had been imported since 1960.

The Renault 8 was imported to the United States with an optional automatic transmission from 1963 through 1966. The Renault 10 has replaced the R-8. The Re-



Renault identification plates for body, chassis, and motor numbers.

nault 16 was introduced to the United States in 1968 after three years of successful production at home.

Model and Engine Identification

Renault identification plates are located on the back wall (scuttle) of the trunk and on the right-hand side of the engine block. The oval plate in the trunk (1) has the vehicle type at the top, the version number in the middle, and the manufacturing number at the bottom. The diamond shaped plate in the trunk (2) has the chassis number. The rectangular plate on the engine (3) carries the engine type and manufacturing numbers. Use these numbers in any correspondence with Renault involving your car.

Model	*Year*	*Displacement (cc)*	*HP*	*Transmission Speeds*
4 CV				
R 1062	1957–61	747	28	3
Dauphine				
R 1094	1964–67	845	32+	auto
R 1095	1964–67	845	40+	4
Renault 8				
R 1130	1963–66	956	48	4 or auto
R 1132	1964–66	1108	50	4
R 1134 (Gordini)	1965	1108	95	4
Caravelle S				
R 1131	1963	956	51	3 or 4
R 1133	1964–67	1108	55+	4
Renault 10				
R 1190	1967–	1108	48	4 or auto
Renault 16				
R 1152	1968–	1565	70	4

Model Dimensions and Weights

Model	*Length (overall)*	*Width (overall)*	*Height Overall (empty)*	*Wheelbase*	*Front Track*	*Rear Track*	*Ground Clearance (loaded)*	*Curb Weight*	*Approx. Load*	*Turning Circle*	
	Measurements are in inches, rounded off to common fractions							*Pounds*		*Curb-to-Curb*	*Wall-to-Wall*
R-16	170	64¼	56	104⅓	52⅓	50.4	4.5	2250	880	32′9″	
R-10	167	60¼	55.5	89¼	49	48	5	1825 (A)	770	30′4″	36′
R-8	157	59	55.5	89¼	49	48	5	1675	750	30′4″	36′
Caravelle Coupe	167¾	62⅛	53	89⅜	49½	48¼	5	1815 (B)	680	30′4″	34′5″
1095 1093 1090	155.3	59.8	56.7	89.4	49.2	48⅛	5.9	1465 (A)	850		32′3″
1094 1091	155.3	59.8	54.3	89.4	49.2	48⅛	5.7	1445 (A)	760		32′3″

(A) Early models are lighter.
(B) Convertible = 1800 lbs; Cabriolet = 1720 lbs.

Engine Rating and Performance

Year Model	*Engine*	*Carburetion (Solex)*	*Brake (SAE) (hp)*	*Maximum Torque (lbs)*	*Displacement (cc)*	*Bore Stroke (mm)*	*Compress. Ratio (to one)*
1968 R-16 R 1150	821-02	26/32 DIDSA-3	70 @ 5200	86 @ 2500	1565 cc (95.5 cu in.)	(3.032–3.307 in.)	8.6
1968 R-10 R 1190		26/32 DIDTA-5	48 @ 4600	57 @ 3000	1108 cc (67.6 cu in.)	70–72 mm (2.756–2.835 in.)	8.5
1967–66 R-10 R 1190	688-02	32 DITA-3	46 @ 4600	60 @ 3000	1108 cc	70–72 mm (2.756–2.835 in.)	8.5
1963–64 R-8 R 1130	689-01	32 PDIST or (Zenith 32 IGT)	48 @ 5500	55 @ 2500	956 cc (58.4 cu in.)	65–72 mm (2.559–2.835 in.)	8.5
1965 Dauphine R 1095	670-05	32 PIBT	40 @ 5000	50 @ 3300	845 cc (51.54 cu in.)	58–80 mm (2.284–3.150 in.)	8.0
1964 Dauphine R 1094	670-01	Zenith 28 IFT	32 @ 4500	50 @ 2000	845 cc	58–80 mm	8.0
1963 Dauphine R 1093	670-05 Special	32 PAIA3-301	55 @ 5800	55 @ 4500	845 cc	58–80 mm	9.2
1960–61 Gordini R 1091	670-05 (after #8.848)	32 PIBT	40 @ 5000	50 @ 3300	845 cc	58–80 mm	8.0
Dauphine-Gordini R 1091	670-04 (to #8.848)		38 @ 5000	50 @ 3300	845 cc	58–80 mm	7.7
1961 Dauphine R 1090	670-04	28 IDT	32 @ 4500	50 @ 2000	845 cc	58–80 mm	8.0
1960 Dauphine R 1090	670-01	28 IBT	30 @ 4250	50 @ 2000	845 cc	58–80 mm	7.75
Prior to 1960 Dauphine R 1090			26½ @ 4200	50 @ 2000	845 cc	58–80 mm	7.25

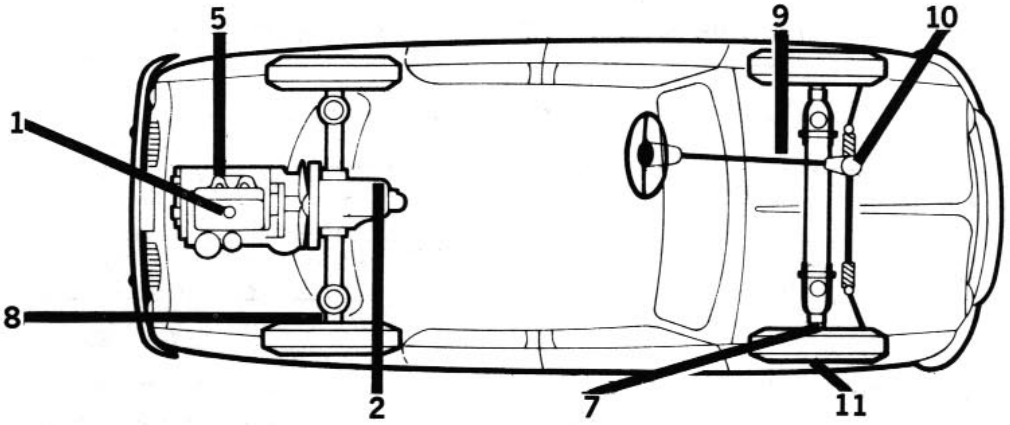
Lubrication and Maintenance

Getting continuous top performance from fine machinery requires periodic maintenance using recommended lubricants and the proper tools. The best preparation for working on the Renault is to have a set of metric-size sockets from 9 mm to 22 mm that fit standard socket wrenches, such as ¼- or ⅜-in. drive posts. Open-end and box-type wrenches are also needed, most often for 10, 14, and 17 mm nuts and bolts.

Engine oil level is accurately shown on the dip stick when the engine is warm but *not* running—preferably after sitting awhile to allow the oil to drain into the sump. If the engine consumes more than two pints in 600 miles there is a serious problem that should be uncovered.

When flushing the crankcase appears advisable, use 10W oil and fast-idle the engine until the oil is hot. Drain the crankcase and filter immediately after stopping the engine. Install new filter and recommended oil.

Replace oil filter cartridge every 6,000



Checkpoints of periodic maintenance. Numbers refer to text.

miles. Also check the condition of the oil fumes emission valve. After new filter is installed look for leaks after starting engine.

Recommended viscosity. Use multiple-viscosity engine oil so that there is proper viscosity when the engine is both hot and cold.

Above 86°F—20W40 SAE
10° to 86°F—10W30 SAE
Below 10°F—5W20 SAE

High detergent (HD) concentrate, available at service stations, is a compound used for retarding excessive gummy deposits, rust, and corrosion. It can be used intermittently between oil changes when environmental conditions are adverse (dusty, extremely cold), or when engine operation is confined to short trips or is infrequent.

Change transmission oil by removing drain plugs from bottom of gearbox and differential housings while oil is hot. Clean drain plugs, reinstall and tighten snugly. Wipe off the fill plug and remove it. Filling transmission, oil should come up to fill-plug hole when car is level. Use SAE 80 EP, unless climate is cold (SAE 75). The automatic transmission requires no heavier than SAE 75 EP.

Lubrication fittings should be greased at least every 6,000 miles or every 3,000 miles in dusty, wet, or cold areas. Fittings are located on the steering-control arms, ball joints, stub-axle carrier (steering knuckle), steering rack, and the foot-pedal shaft. Refer to the illustrations.

Every 300 Miles

Check engine oil level at dipstick.

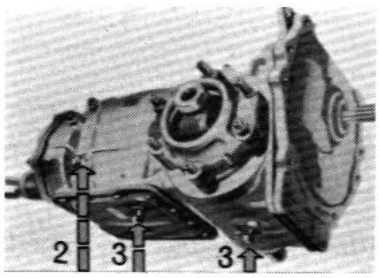
Every 3,000 Miles

1. *Change engine oil.* Use SAE 20W40 for temperatures above 86°F. Change oil filter at every other oil change. Unscrew cover counterclockwise. Lightly oil the seal before refitting cover. At same time check condition of oil vapor emission valve and capsule. Clean the valve, replace the capsule when necessary. Some Caravelle models have a crankcase vent. Clean the vent grill every 6,000 miles, too.

2. *Check gearbox-differential oil level.* Top up the oil level to the fill plug. SAE 80 EP for manual transmission. SAE 75 EP for automatic.

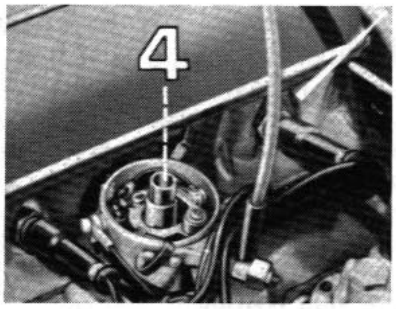
Every 6,000 Miles

3. *Change gearbox-differential oil.* Drain oil when hot. All Dauphines and automatic transmissions have two drain plugs (shown).



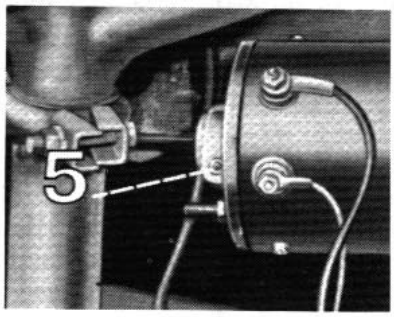
Check and change gearbox-differential oil periodically.

4. *Distributor.* Remove the rotor arm and oil the felt (4 to 5 drops) with engine oil. Smear a little bearing grease on the distributor cams (too much will throw off onto contact points).



Check distributor every 6,000 miles.

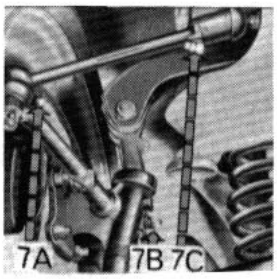
5. *Generator.* If fitted with an oil nipple or orifice (on Dauphine), clean away dirt and lubricate generator with engine oil.



Check generator every 6,000 miles.

6. *Pivot points.* With engine oil or graphited oil, lubricate pivot point of the gearshift lever, lid and door hinges, locks, and windshield wiper shafts.

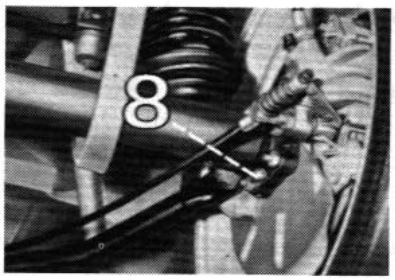
7. *Steering arms and suspension* (Dauphine only). Grease the ball joint (7A), stub-axle carrier (7B), and steering-control arm (7C).



Check steering arms and suspension every 6,000 miles.

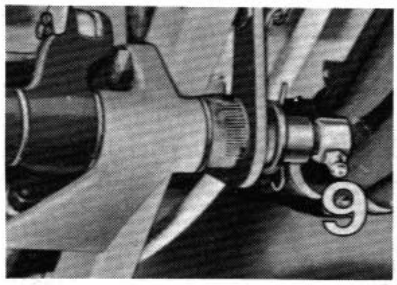
Every 12,000 Miles

8. *Rear wheels.* Grease the nipples moderately on older models every 12,000 miles. Newer models have a plug instead. Every 30,000 miles, remove plug and screw a grease nipple in, greasing moderately. Refit the plug.



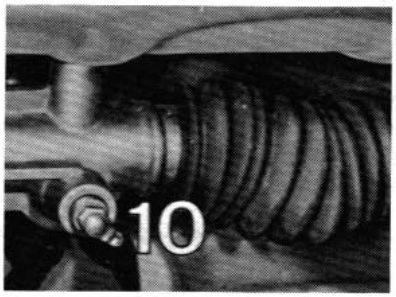
Check rear wheels every 12,000 miles.

9. *Foot pedal shaft.* From under car, remove rubber plug in pan (covering the foot controls) for access to nipple.



Check foot pedal shaft every 12,000 miles.

10. *Steering gear.* Grease nipple on steering gear mechanism of older models only.



Check steering gear every 12,000 miles.

11. *Front wheels.* With the hub cap and wheel off, pry off the hub grease cup (not threaded) and half fill it with bearing grease.

Every Few Months

General

Leaks: Visual check for fuel, oil.

Fluid levels: Transmission, rear axle, master brake cylinder, cooling system.

Filters: Clean fuel, sediment bowl, oil-damp type air cleaner. Replace air filter cartridge, oil filter.

Lubrication: Wheel bearings, suspension parts, carburetor linkage, chassis fittings.

Electrical

Battery: Check condition (See Chapter Two).

Cables and wiring: Inspect and clean.

Generator: Remove band cover to inspect brushes.

Ignition

Spark plugs: Inspect, clean or replace, set electrode gap (Chapter Two).

Distributor: Lubricate cam, inspect and clean or replace points.

Timing: Check timing and reset if necessary.

Carburetor

Fuel flow: Check for proper jetting and atomization of fuel (Chapter Three).

Idle speed: Set idle speed; and set accelerated-idle speed on engines with DCS system.

Engine

Valve clearance: Check against specifications and reset if necessary.

Fan belt: Inspect belt and correct tension if necessary.

Compression: Test for equal compression in all cylinders.

Clutch

Check pedal travel and free-play.

Suspension

Control arm and ball joints: Check for looseness and wear.

Front axles: Check for excessive play.

Wheels

Alignment: Tighten wheel nuts, correct balance, check alignment.

Brakes: Test for functioning, leaks, adjustment (Chapter Seven).

Pads and linings: Remove wheel and inspect. Measure thickness (Chapter Seven).

Tires: Rotate and adjust pressure. Inspect condition.

Lubricate carburetor linkage at all pivot points that are not plastic lined with one or two drops of engine oil while moving throttle controls. Next, oil accelerator pump rod. Disconnect all ball joints, fill cups with high-temperature grease or lubriplate, and reconnect. Move linkage back and forth to check for proper functioning. Carburetor linkage for automatic transmission is extremely sensitive to play. The slightest play will alter the governor adjustment.

Lubricate distributor cam with non-corrosive high-temperature grease. Remove the distributor cap, lift off the rotor, and apply a thin coating to the cam. Do not allow grease or dirt to contaminate breaker points.

Door and lid hinges and locks can be lubricated with heavy oil and then graphite to prevent stiffening and misalignment damage. Stiff hinges should be freed with penetrating oil first. Use stick-type lubricant on toothed door-lock striker located on door jamb.

Alert owners take an additional few minutes when lubricating the doors to clear door and body drain holes so that water cannot be trapped.

Rubber around windows and doors can be preserved with a coating of talc powder and glycerine. CAUTION: *Glycerine can damage paint finish.*

Fan belt adjustment. A tight fan belt will cause rapid wear of the generator bearings; a loose belt will slip and wear excessively, causing engine overheating, fluctuating generator output, and noise.

Adjust the fan belt by sliding the loosened generator out to the point where the belt is difficult to press inward by hand. With pressure, the belt should move in about ½ inch. Remember that a new belt will stretch somewhat after the first few hours of operation.

Flush cooling system of all Renaults every two years. Drain radiator, engine block, heater, and expansion chamber of old solution. Fill system with water and run engine until hot (water is circulating through thermostat). Drain out water while sediment is still moving about. Sealed systems are factory filled with half glycol antifreeze and half distilled water.

Antifreeze is harmful to the oil system of the engine. If the cooling-system fluid has leaked into the engine oil, ethylene-glycol-monobutyl-cellusolve is recommended for flushing the system. Large jobbers normally supply the preparation.

Water condensation in the engine is often caused by limited use of the car rather than

by a cooling system leak. If an engine only runs two or three miles before being shut down, it doesn't maintain its proper operating temperature long enough to evaporate water present in the crankcase. Oil changes should be scheduled every two months and the water thermostat should be checked. It might be desirable to install a slower opening thermostat for hotter engine operation.

Carburetor air cleaner. Replace paper filter element every 18,000 miles under normal driving conditions and more frequently in severe environments. Engines use tons of air even at idle; restriction of air flow drastically affects engine performance.

Oil-bath air filters should be washed in solvent, blown dry, and the top (thin) filter dampened again with oil. Fill filter base with new engine oil to the fill plug or pointed projection. Clean at least every 18,000 miles and twice as often under poor conditions.

Clutch pedal free-play should measure from 2.5 to 3.0 mm (approximately 1/10 to 1/8 in.) at the clutch housing. See Chapter Five for adjustment steps.

Brake check and adjustment. Check condition of drum brakes on R-16 by depressing pedal firmly. If pedal has a spongy feel, brake system needs bleeding. If pedal travels to within two inches of floormat and has a hard feel, brake shoes require adjustment or relining. Brake wear is indicated when there is excessive free-play in the pedal and all brake shoes require individual adjustment. Before adjusting brakes check for play at the front wheel bearing. See Chapter Seven for troubleshooting, adjustment, and overhaul steps.

Disc brakes on all models do not require adjustment. However, the friction pads in the calipers must be checked for wear every 6,000 miles. Pad thickness must be greater than .08 inch.

Pedal sponginess, excessive pedal travel, and overheating of wheels are danger signs. (See Chapter Seven).

Capacities and Pressures

	Engine Oil		Gearbox-Differential			Cooling System		
Model	(quarts and filter)	Viscosity (SAE) (A)	(pints)	Viscosity (SAE)	Fuel Tank (gallons)	Total Capacity (quarts)	Expansion Chamber	Tires Front/Rear (lbs)
R-16	3.6 (4)	20W40	3	80 EP	13.2	7		23/29
R-10	2.6 (3)	20W40	4	80 EP	10	7.5		14/26
R-10 Automatic	2.6 (3)	20W40	3	75 EP	10	7.5	2¼ pints	14/26–29
R-8	2.6 (3)	20W40	4	80 EP	10	8	3.2	14/26–29
R-8 Automatic	2.6 (3)	20W40	3	75 EP	10	8	3.2	14/26–29
Caravelle	2.6 (3)	20W40	4	80 EP	10½ (B)	6.1	2¼	14/26–29
R-1095	2.6 (3)	20W40	4	80 EP	7½	5	–	14/23
R-1094 (C)	2.6 (3)	20W40	3.4	80 EP	8	5	–	14/23

(A) Temperatures below 86°, 10W30; below 10°, 5W20.
(B) Cabriolet = 10 gallons.
(C) Prior models have less gearbox capacity and larger gas tanks.

Adjust parking brake when hand lever has too great a travel but only after the rear-wheel brakes have been adjusted (if drum type). Fully release hand lever, check cable freedom and loosen equalizer and adjusting nut. Pull lever up four or five clicks, raise the rear wheels, loosen the lock nut, and tighten the adjusting screw until each wheel is gripped by its brake. Then unscrew the same screw by about two-thirds of a turn to free the wheel. Tighten the lock nut. Check for equal action at both brakes. Lubricate cable.

The fuse block is located under the dash near the driver door and has individual fuses identified in the wiring diagram. A burnt fuse indicates a current overload. Find the cause before replacing fuse. Keeping a spare fuse is good protection against emergencies.

Changing Engine Coolant

Replace radiator coolant every two years in both the Dauphine cooling system and the sealed system of the other models. Use a monoethylene-glycol antifreeze, anti-rust solution.

Though any substance that mixes with water will lower its freezing point, few are harmless enough to metal parts to be used as an antifreeze over a period of time. Even the glycol fluid loses its antifreeze properties, and becomes an irritant to the cooling system after two years.

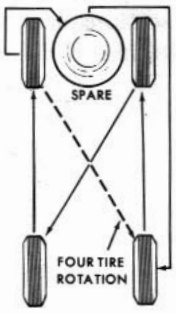
The rust and foam inhibitors used in antifreeze also lose their power with age. Older engines, with greater rust deposits, consume protective agents even faster. Effective cooling-system protection against rust requires at least a 25 percent antifreeze solution (+10°F) through the summer, too. If rust or sediment is noted, drain and flush the system.

If water is used to refill the system instead of the glycol solution, add water-pump lubricant, rust inhibitor, and a heavy-duty cooling system protector. Methanol or alcohol evaporates in the radiator in a short time.

The sealed systems are factory filled with 50 percent antifreeze and the rest distilled water. *Drain and refill the cooling system of each model as explained in Chapter Four.*

Tire Care Suggestions

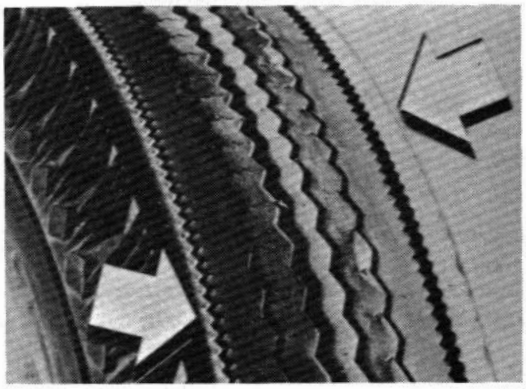
Wheel and tire balance is more critical with respect to tire wear than casual drivers realize. Unbalance is the principal cause of tramp, car shake, pounding, and riding roughness. It often contributes to steering misalignment and damage.



Broken line shows tire rotation when not using the spare.

Original balance of the tire and wheel is gradually lost as the tires wear. Severe acceleration, braking, cornering, and side-slipping upset wheel balance in even less time. Wheels also need balancing after large punctures are repaired.

Check wheel balance each time the tires are rotated—every 6,000 miles—for maximum tire and front-end life.



Excessive wear along tire edges was caused by prolonged under inflation.

Check tire-tread life by placing the top edge of a penny in the tread groove. If the top of Lincoln's head is completely exposed, the tire should be replaced or

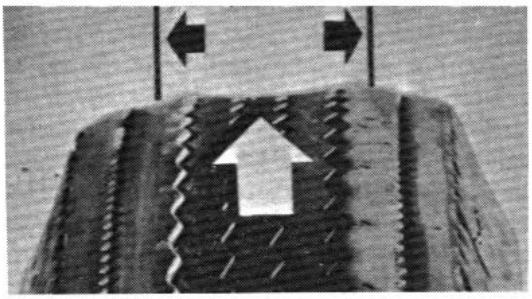
recapped. Ninety percent of tire failure occurs in the last ten percent of tread life.

Check the tread pattern periodically for uneven or premature wear because the tread affects acceleration, speed, cornering, braking, and heat dissipation.

Storage tips. To avoid shortening service life, tires must be properly stored while they are not used. The tips below will help keep stored tires in good condition.

1. Check the tires for road damage. Remove stones and other objects that may be trapped in the tread grooves. Have any necessary repairs made.

2. Store the tires in a clean, dry, cool, closed, and dark room.



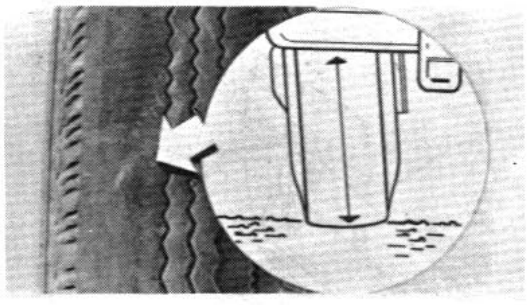
Excessive wear along center of tire was caused by prolonged over inflation.

3. Keep the tires away from water, electric motors, heat sources, and petroleum products such as gasoline and oil.

4. Place the tires on their sidewalls on a flat surface. Permanent flat-spotting can result if the tires are stored standing on their treads.

5. Inflation pressure should be reduced to 12 to 16 pounds if tires are to be stored mounted on wheels.

6. White sidewall tires should be placed whitewall to whitewall, one on top of the other, to protect the white rubber from scuffs and dirt.



Improper camber caused tire to wear on one side.

Troubleshooting Checks

Engine Will Not Start

When the cause of engine failure is uncertain, pinpoint the no-start problem into one of four basic areas: engine-cranking, ignition, fuel, or compression. Follow the simple sequence below.

1. First try to crank the engine with the starter. Slow engine cranking, or none at all, can be caused by the battery, cables, switches, or starter. Detailed testing of the engine-cranking system to find the specific trouble is explained in Chapter Two.

2. If the starter cranks the engine normally, disconnect a wire from a spark plug, hold it (avoid shock by wearing glove) about ¼ to ½ in. from the plug terminal, and have the engine cranked over with the ignition switched on. Check for strong, bright, evenly timed arcs. If there is no spark or if the arc pulse is irregular or weak, the problem is in the ignition system. Special testing for ignition trouble is described in Chapter Two.

3. If the starter cranks and there is good spark at the plugs, remove the air cleaner from the carburetor. Work the throttle linkage back and forth, and a stream of fuel should spurt into the carburetor throat from the accelerator jet. If no fuel ejects into the carburetor throat after repeated throttle pumping, there is trouble in the fuel system. A less common problem is continuous flooding of the carburetor. If the carb throat is soaked with gasoline and fumes are profuse, have the motor cranked and check for fuel streaming from the main jets into the intake manifold. Complete testing and repair steps are in Chapter Three.

4. The last no-start troubleshooting check is for an infrequent, yet sometimes elusive problem—no compression. In most cases, compression failures show up in one or two cylinders and are normally not severe enough to prevent starting. However, having no compression in all cylinders will prevent starting. Complete compression failure can be caused by a jumped timing chain, stripped timing gear, a broken camshaft, or possibly, the improper mating of timing gears in a newly rebuilt engine. Check for compression by removing a spark plug, sealing the piston chamber with a

thumb, cork, or other object, and having the engine cranked over. Good compression will gently pop the thumb from the opening. Compression troubles are analyzed in Chapter Four.

Hard Starting, Stalling, Poor Performance

Those who have the attitude "If it works, don't fool with it" find out later that when they have car trouble, it is major and expensive. A smarter approach that assures economical performance is to keep an alert eye and ear on the car's daily operation. In addition, a semi-annual engine tune-up (spring, autumn) is important. A thorough tune-up includes a close inspection of the major mechanical parts and lubricating system of the engine as well as the normal electrical and fuel system service.

Troubleshooting procedures for isolating major mechanical problems are presented in Chapter Four. Included are checks for compression, oil consumption, ring friction, valve clearance, and unusual engine noises.

After cleaning the carburetors, fuel filters and, if necessary, lines and tank, a tune-up to eliminate poor performance can be made.

Tune-up checks for each system—electrical, fuel, mechanical troubles—are presented at the beginning of each chapter so that problems can be quickly uncovered. If the engine is difficult to start and misfires when running, the problem might be electrical or carburetion. An engine that stalls or accelerates poorly normally has carburetor trouble. See the easy troubleshooting steps in Chapters Two, Three, and Four.

Dash Warning Light On

Generator charge light. If the generator warning light goes on while driving, the problem normally is not immediately critical, and the car might be driven for a reasonable time on battery power. However, an alert owner will service the generator before expensive damage develops. See Chapter Two for servicing steps.

Oil pressure light. If the oil pressure light goes on while driving, stop immediately to check the oil level in the crankcase. If the level is far below the minimum dipstick mark, let the car cool and then drive slowly to a service center.

Coolant temperature light or gauge. If the temperature light or gauge reads red while driving, stop immediately to prevent engine damage.

Some models have a combination warning light for both oil pressure and coolant temperature. In this case, check the oil level first. Also, detach the temperature switch wire at the sensor (near the exhaust manifold). Overheating is the trouble if the light goes out.

First check the tension of the fan belt, which should be difficult to depress by hand.

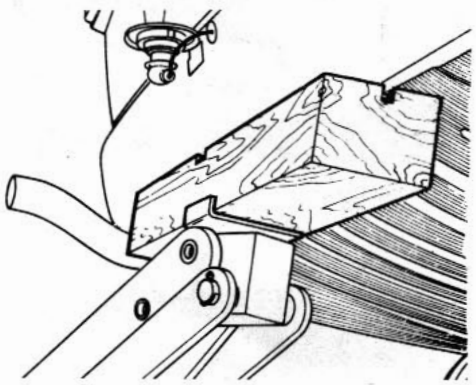
Second, check the level of coolant in the expansion chamber. If the chamber is metal, carefully touch its side from top to bottom noting the area where the metal is much hotter. Wait until the engine has cooled before adding water to the chamber or to the radiator. The hot water spouts out violently; added cold water will crack the radiator.

Overheating could possibly be caused by a loose fan belt, a low coolant level, retarded ignition timing, improperly adjusted valves, engine oil of too light viscosity, or carburetor fuel mixture that is too lean. Many of these problems would give poor performance symptoms as well. Refer to the next three chapters for diagnosing performance failures.

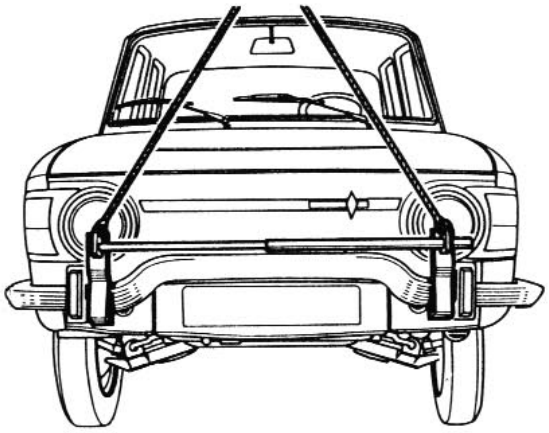
Brake system warning light. If the brake warning light switches on when the brakes are applied, there is a leak or other malfunction in a brake circuit. Sponginess of the pedal pressure indicates air in the brake line. See Chapter Seven.

Body Lifting Points

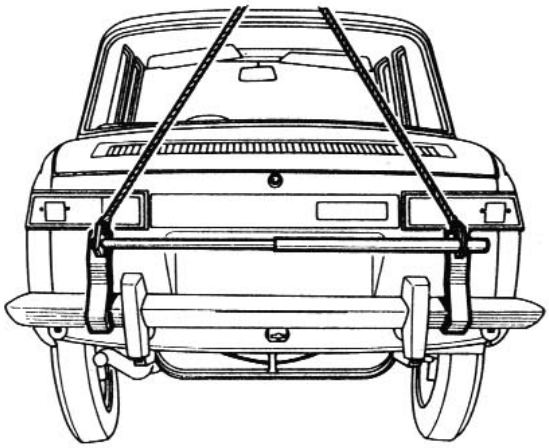
With movable (trolley) jack, the front end can be lifted if the load is placed at the center of the front suspension cross



Lifting rear of R-16 with jack.



A spacer bar is used when lifting with spring.



Use trestles under engine mounts and chassis.

member. At the rear, place the load on both half-axle tubes. At rear of R-16, place the load on a 2-foot 2 x 4 wood chock.

With sling from above, lift the body at the front or rear bumpers (except Dauphine) where they are attached to the chassis. A spacer bar is needed between the sling ends so there is no angular tension. Lift Dauphine with sling only from the rear chassis tubes where the engine is mounted and from the front chassis tubes where the first rib crosses. Only the rear of the R-16 can be lifted with a sling having no spacer bar.

With car lift having hinged arms, place support under chassis tubes behind front wheels and ahead of rear wheels as close as possible to the axles.

Support body with trestles under rear chassis where the engine mounts and under chassis tubes of floor section behind front wheels.