

CHAPTER TWO

LUBRICATION, MAINTENANCE, AND TUNE-UP

This chapter deals with the normal maintenance necessary to keep the Mazda running properly. It includes summaries of service intervals and procedures in table form. **Table 1** covers 1971-73 cars; **Table 2** covers 1974's. The recommended service schedules list checks which are easily performed at each stop for gas, and those which are done at specified intervals of miles or time. The last part of the chapter contains a tune-up procedure which simplifies and organizes the process.

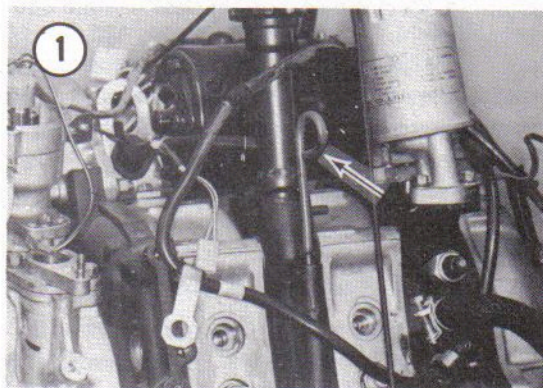
ROUTINE CHECKS

The following should be done at each stop for gas.

1. Check engine oil level on the dipstick (**Figure 1**). Top up to the F mark if necessary, using a grade recommended in **Table 3**.
2. Check coolant level. The radiator should be full and the expansion tank half full.

NOTE: The coolant level should be checked when the engine is cold. If this isn't possible, put a rag over the radiator or expansion tank cap when removing to prevent burns.

3. Check the level of the windshield washer tank. It should be kept full.



4. Check sub-zero starting assist fluid (if so equipped). The tank is located above the steering gear box (**Figure 2**). If necessary, top up with a mixture of 90 per cent ethylene glycol-based anti-freeze and 10 per cent water. Make sure the hose inside the tank is submerged in the fluid.

NOTE: If the tank is allowed to become empty, take the car to a dealer for refilling and pump priming.

The following should be done weekly.

5. Check battery electrolyte level (**Figure 3**). It should be above the separator plates inside the

Table 1 MAINTENANCE SCHEDULE (1971-73)

Interval	Item	Procedure
Fuel stop	Engine oil Coolant Windshield washer fluid Sub-zero starting fluid	Check level Check level Check level Check level
Weekly	Battery electrolyte	Check level
Monthly 4,000 miles or 4 months	Tire pressures Engine oil Idle speed and fuel mixture Air cleaner element Fuel lines Ignition timing Breaker points Spark plugs Fan and air pump belts Idle switch Battery Clutch Brakes Handbrake Steering wheel Tires	Check (or when visibly low) Change Adjust Clean* Inspect Check and adjust Clean and adjust Inspect and clean Inspect, check tension Test Check specific gravity Check fluid level, free-play Check fluid level, free-play Check and adjust Check play Rotate (see text)
8,000 miles or 8 months	Oil filter Disc brake pads	Replace Inspect
12,000 miles or 12 months	Engine compression Carburetor float level	Check Check
	Fuel filter Throttle and choke mechanism Evaporative emission hoses Fuel filler cap Distributor cap, rotor, condenser Ignition coils Spark plugs Spark plug wires Ventilation system hoses Emission controls Thermal reactor Downshift solenoid Coolant hoses, clamps Manual transmission oil Rear axle oil Steering gear oil Rear brake shoes	Replace Inspect, lubricate if needed Inspect Check seal Inspect Clean terminals, check output Replace Inspect Inspect Test components Inspect Test Inspect Change Change Check level Inspect
24,000 miles or 4 months	Air cleaner element Evaporative emission canister Ventilation valve	Replace* Inspect Check
32,000 miles or 24 months	Coolant Front wheel bearings Ball-joints and idler arm	Replace Clean and repack Inspect
Two years Four years	Brake cylinders Brake hoses	Rebuild Replace

* In dusty areas, clean every 1,000 miles and replace every 12,000

Table 2 MAINTENANCE SCHEDULE, 1974

Interval	Item	Procedure
Fuel stop	Engine oil Coolant Windshield washer fluid Sub-zero starting fluid	Check level Check level Check level Check level*
* When system is in use		
4,000 miles or 4 months*	Engine oil Drive belts Oil metering pump Idle speed Air cleaner element Fuel lines Ignition timing Breaker points Spark plugs Idle switch Clutch Automatic transmission Steering wheel	Change Inspect, check tension Test output Adjust Inspect** Inspect Check, adjust if needed Inspect Inspect Check, adjust if needed Check fluid level, free-play Check fluid level Check play
* First service at 2,000, then at 6,000, then every 4,000		
** In dusty areas, clean every 1,000 miles		
8,000 miles or 8 months*	Oil filter Disc brake pads	Replace Inspect
* First service at 6,000, then at 14,000, then every 8,000		
12,000 miles or 12 months*	Idle mixture Float level Control unit Manual transmission Differential	Adjust Check Test Change oil Change oil
* First service at 2,000 miles, then at 14,000, then every 12,000		
12,000 miles or 12 months*	Engine compression Fuel filter Throttle linkage, choke mechanism Evaporative emission control system Distributor cap, rotor, condensers, cam Spark plug wires Ignition coils Ventilation system hoses Emission control air and vacuum hoses Air pump Air control valve Deceleration control valve Thermodetector and thermosensor Thermal reactor Thermal reactor-to-exhaust Pipe nuts Choke switch Downshift solenoid Cooling system hoses and clamps Steering gear oil Rear brake shoes	Check Replace Inspect Inspect Inspect Inspect Inspect Inspect Inspect Inspect Inspect Inspect Inspect Inspect Test Test Inspect Tighten Test Test Inspect Check level Inspect
* First service at 10,000, then at 22,000, then every 12,000		

(continued)

Table 2 MAINTENANCE SCHEDULE, 1974 (continued)

Interval	Item	Procedure
24,000 miles or 24 months*	Evaporative emission control canister	Inspect
	Ventilation valve	Inspect
	Altitude compensator	Inspect
* First service at 22,000, then at 46,000, then every 24,000		
30,000 miles or two years	Front wheel bearings	Clean and repack
	Front suspension ball-joints	Lubricate
Two years	Steering ball-joints and idler arm	Lubricate
	Brake master and wheel cylinders	Overhaul
Four years	Automatic transmission hoses	Replace
	Power brake vacuum hose	Replace

Table 3 RECOMMENDED LUBRICANTS

Engine oil	
0-85°F	SAE 10W-30
0-100°F	SAE 10W-40
15-100°F	SAE 20W-40 or 20W-50
Below 0°F	SAE 5W-20 or 5W-30
Manual transmission	
Above 0°F	SAE 90 E.P.
Below 0°F	SAE 80 E.P.
Automatic transmission	
Through 1973 (3N71B transmission)	Dexron
1974 (R3A transmission)	Type F
Rear axle	
Above 0°F	SAE 90 hypoid
Below 0°F	SAE 80 hypoid
Steering gear	SAE 90 E.P.
Suspension ball-joints	Molybdenum disulphide grease
Front wheel bearings	Multipurpose lithium grease

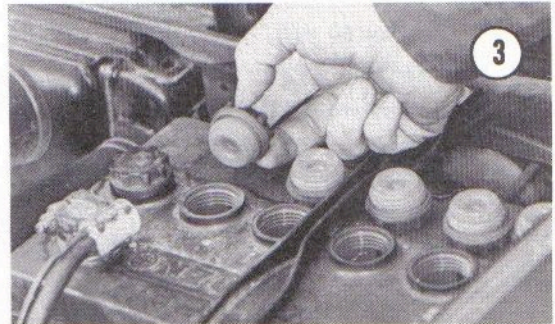
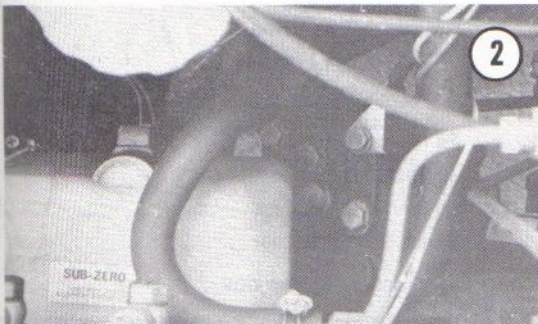
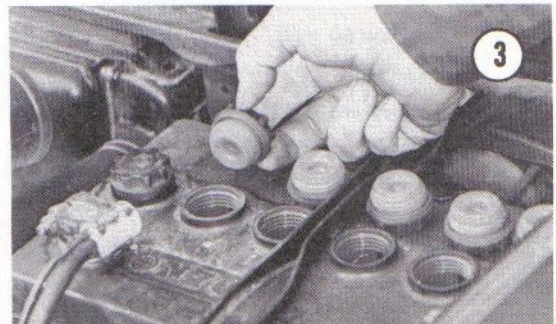
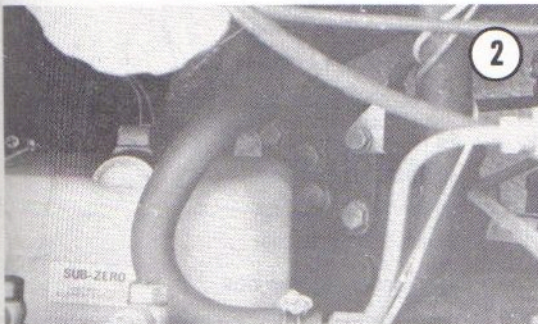


Table 2 MAINTENANCE SCHEDULE, 1974 (continued)

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	Ventilation valve	Inspect
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Manual transmission	
Above 0°F	SAE 90 E.P.
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Automatic transmission	
Through 1973 (3N71B transmission)	Dexron
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Rear axle	
Above 0°F	SAE 90 hypoid
Below 0°F	SAE 80 hypoid
Steering gear	SAE 90 E.P.
Suspension ball-joints	Molybdenum disulphide grease
Front wheel bearings	Multipurpose lithium grease



filler holes. Top up with distilled water unless you're sure local water has a low mineral and alkali content.

The following should be done monthly.

6. Check tire pressures once a month or when visibly low. Compare pressures with **Table 4**. The tires must be cold for accurate pressure readings.

NOTE: Radial tires frequently appear low on air due to their flexible sidewalls. Do not fill tires beyond recommended pressures.

SCHEDULED MAINTENANCE

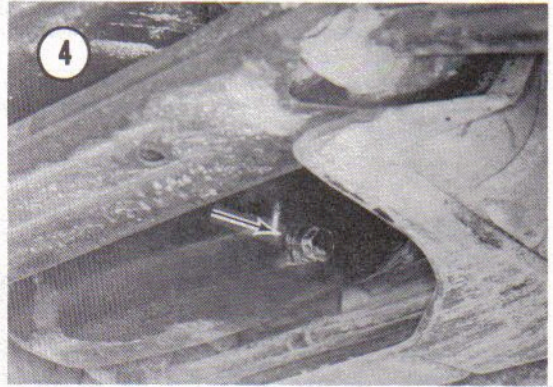
The following procedures should be done at specified intervals of miles or time.

Engine Oil Change

Oil should be changed every 4,000 miles or 4 months under normal driving conditions. Change oil more often if the car is used for frequent stop-and-go driving or in dusty areas.

Use an oil recommended in Table 3. To drain the oil, first drive the car until the engine warms up. This allows the oil to drain freely. Then place a container under the oil pan and remove the drain plug (**Figure 4**).

Let the oil drain completely (10-15 minutes). Then check the drain plug gasket and reinstall the plug. Remove the filler cap on top of the engine and fill with the recommended oil. Capacity is approximately 4½ quarts if the filter is not changed, and 5 quarts if the filter is changed.



Check the dipstick when filling to be sure you use the correct amount.

Oil used must be rated "For Service MS" or one of the newer designations, "For API Service SD or SE."

Air Cleaner Element

The air cleaner element should be cleaned every 1,000 miles if car is driven in dusty areas.

To clean, snap back the clips on the air cleaner cover and lift out the element (**Figure 5**). Knock it on a hard surface to shake the dirt loose. Then reposition element and install air cleaner cover.

Idle Speed and Fuel Mixture

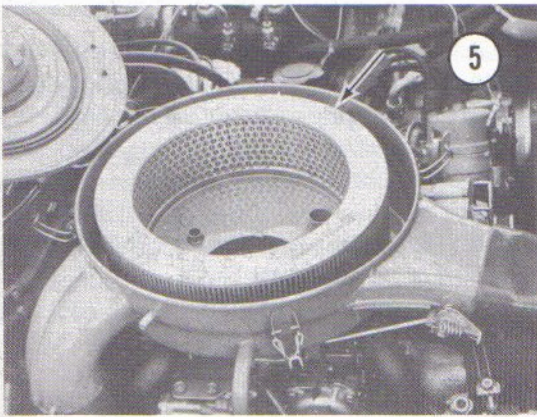
Adjust as described in the tune-up section of this chapter.

Fuel Lines

Examine the fuel lines, starting at the carburetor and working toward the rear of the car.

Table 4 TIRE PRESSURES

1971-73	
RX-2 (standard 165SR-13 tires)	
Less than 60 mph	24 psi front and rear
More than 60 mph	28 psi front and rear
RX-3 (standard 155SR-13 tires)	
Up to two persons, less than 60 mph	24 psi front and rear
Full load, less than 60 mph	28 psi front and rear
Up to two persons, more than 60 mph	28 psi front and rear
Full load, more than 60 mph	32 psi front and rear
1974	See sticker in glove box



Check for cracked or worn rubber hoses, kinked or broken metal tubing, and gasoline leaks. Replace worn or damaged parts.

Ignition Timing

Check as described in the tune-up section of this chapter.

Breaker Points

Check and adjust. See the tune-up section.

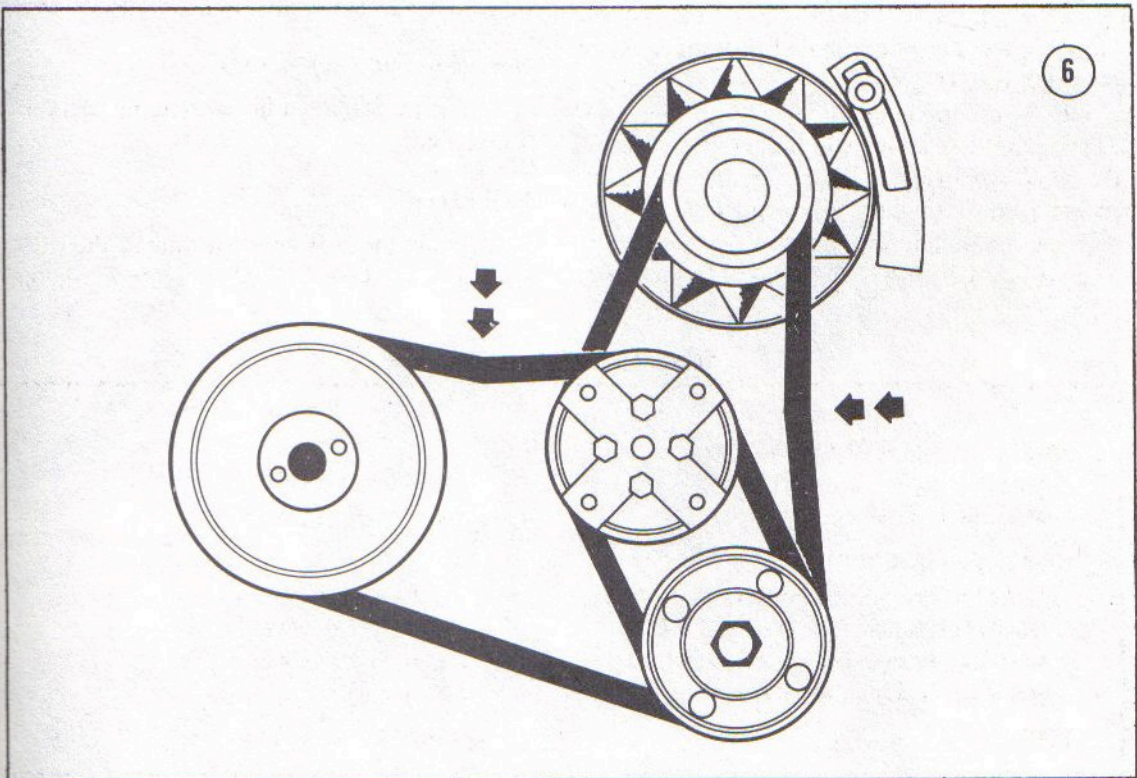
Spark Plugs

Clean and inspect as described in the tune-up section.

Air Pump and Fan Belts

1. Examine the belts. Replace if worn, frayed, or cracked.
2. Press on the fan belt between the alternator and fan pulleys (**Figure 6**). Used fan belts should deflect approximately 0.6-0.7 inch. New belts should deflect 0.5-0.6 inch. To adjust, loosen the alternator mounting and adjusting arm bolts. Pull the alternator away from the engine to tighten the belt, or push it toward the engine to loosen. Tighten alternator bolts after adjustment.
3. Press on the air pump belt between the fan and the water pump pulleys (**Figure 6**). Used belts should deflect approximately 0.35-0.43 inch. New belts should deflect approximately 0.28-0.35 inch. To adjust, loosen the air pump mounting and adjusting arm bolts. Pull the air pump away from the engine to tighten the belt, or push it toward the engine to loosen. Tighten the air pump bolts after adjustment.

2



Idle Switch

Test as described in Chapter Five.

Battery

Check specific gravity of the electrolyte as described in Chapter Seven. Check electrolyte level as described earlier in this chapter.

Clutch Fluid Level, Free-play

1. Check fluid level in the clutch master cylinder reservoir (Figure 7). The reservoir should be at least $\frac{2}{3}$ full. If necessary, top up with brake fluid meeting DOT 3 or DOT 4 specifications.
2. Check clutch pedal free-play as described in Chapter Eight. Adjust if necessary.

Brake Fluid Level, Free-play

1. Check fluid level in the brake master cylinder (Figure 7). The reservoir should be at least $\frac{2}{3}$ full. If necessary, top up with brake fluid meeting DOT 3 or DOT 4 specifications.

Automatic Transmission Fluid

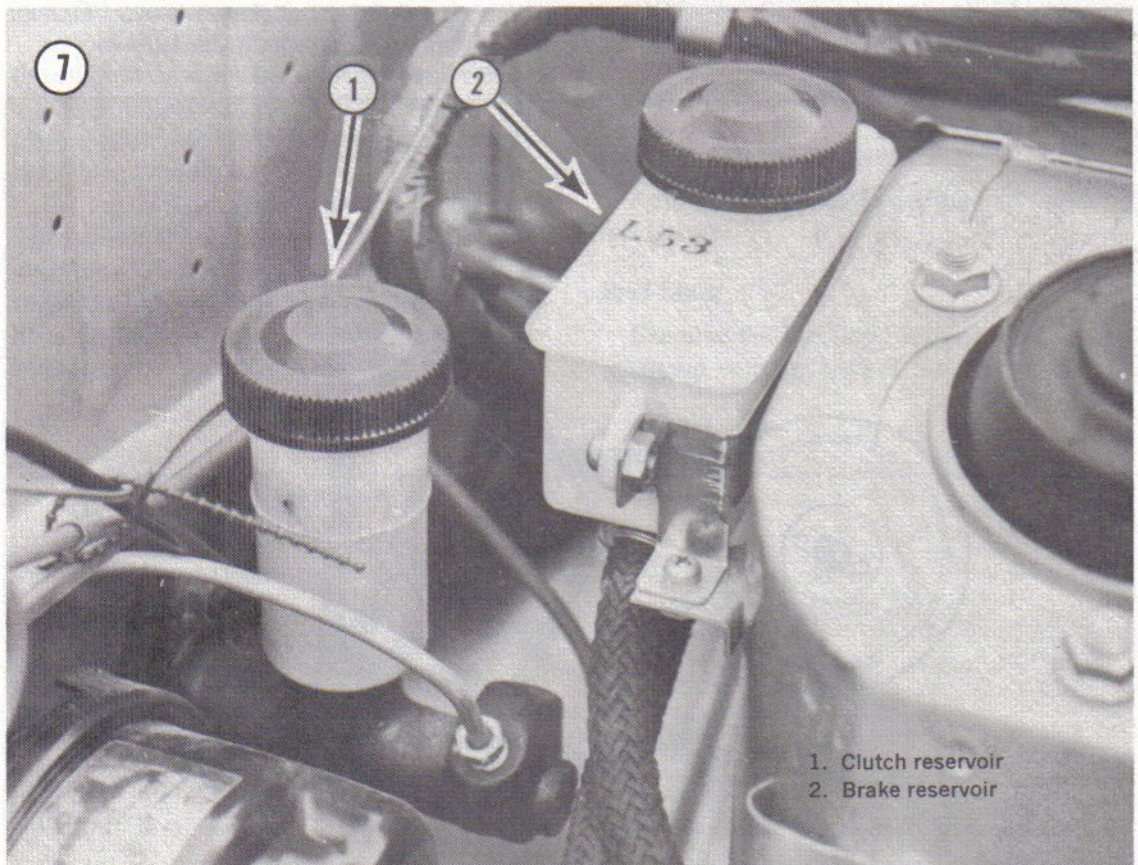
Check automatic transmission fluid level and condition as described under *Automatic Transmission Checking Procedure*, Chapter Nine.

Handbrake

Check handbrake operation as described in Chapter Ten. Adjust if necessary.

Steering Wheel Play

1. Turn the steering wheel to the straight ahead position.
2. With an assistant watching the front wheels, slowly turn the steering wheel. It should move 0.2-0.4 inch (measured at the wheel rim) before the front wheels begin to move. Excessive play can be caused by loose wheel bearings, worn ball-joints, or excessive steering gear backlash.



1. Clutch reservoir
2. Brake reservoir

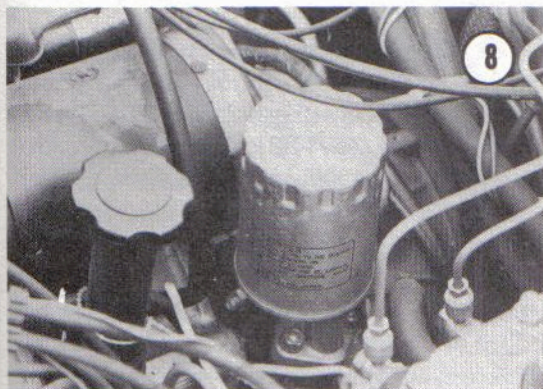
Tire Rotation

While periodic tire rotation improves tire mileage slightly, there are several disadvantages. Unless you rotate the tires yourself, the cost of rotation is greater than the savings in tires. In addition, once a tire has worn to the pattern in one position, it can cause unusual handling problems until it wears to the pattern in the new position. If you wish to rotate the tires, rotate all five according to the following pattern:

1. Spare to left front
2. Left front to right rear
3. Right rear to left rear
4. Left rear to right front
5. Right front to spare

Oil Filter

The oil filter (**Figure 8**) is replaced at alternate oil changes. The filter is a disposable cartridge type, and is replaced as a complete unit.



Before removing the old filter, drive a hole in the top of it with a nail. This helps the filter drain and reduces the amount of oil spilled on the engine. Undo the filter with a filter wrench. Clean the gasket contact surface on the engine with a lint-free cloth. Coat the gasket on the new filter with clean oil and screw it on until it stops. Tighten $\frac{2}{3}$ turn further by hand. Do not over-tighten. Do not use a filter wrench. After installation, run the engine and check for leaks.

Disc Brake Pads

Check the front brake pads for wear as described in Chapter Ten.

Engine Compression

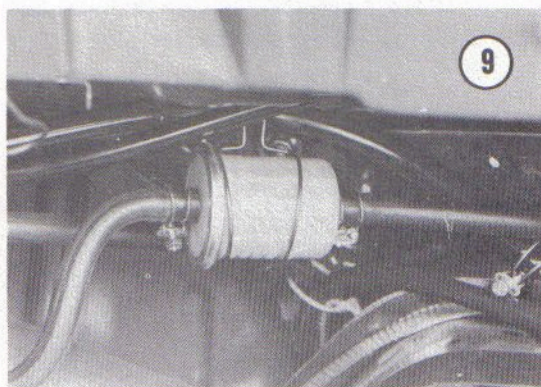
The compression check requires a special tester of the type described in Chapter Three. Take the job to a dealer or mechanic familiar with the rotary engine.

Carburetor Float Level

Float level can be checked by looking in the sight glass on the side of the carburetor while the engine is running. Fuel level should be half-way up the glass. If not, the carburetor must be removed and the float level set correctly. See Chapter Five.

Fuel Filter

The fuel filter is mounted at the rear of the car near the tank. To gain access on RX-2's, remove the service hole cover from the trunk floor. On RX-3 sedans and coupes, remove the trim panel from the front of the trunk. On RX-3 station wagons, remove the trim panel from the left-hand side of the cargo area. **Figure 9** shows the RX-3 sedan and coupe installation.



Detach the lines from the fuel filter and connect a new one in its place. Run the engine and check for leaks before reinstalling the trim panel or cover.

Throttle and Choke Mechanism

Remove the air cleaner as described in Chapter Five. Examine the throttle and choke plates and their linkages. Make sure the plates aren't binding. If necessary, apply a spray lube such as WD-40 to friction points.

Evaporative Emission Hoses

Check rubber hoses for cracks and deterioration. Check metal tubing for cracks, kinks, and wear caused by rubbing against the car. See Chapter Five.

Fuel Filler Cap

The fuel filler cap is a non-vented type designed for use with an evaporative emission control system. Remove the cap and examine the gasket. If it appears worn or deteriorated, replace the cap.

Distributor Cap, Rotor, Condenser

Examine as described in the tune-up section of this chapter.

Ignition Coils

Disconnect the wires and clean the terminals. If test equipment is available, test coil output.

Spark Plugs

Discard the plugs and install new ones. See the tune-up section of this chapter.

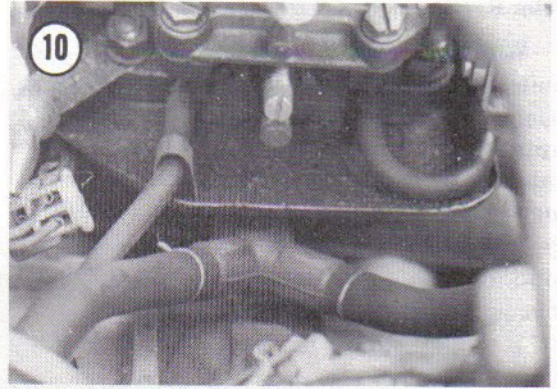
Spark Plug Wires

Check spark plug wires for melted, cracked, or worn insulation. Look for worn or damaged terminals. Replace wires with any of these conditions.

Ventilation System

The ventilation system draws blow-by gases from the space beneath the rotor housings (equivalent to the crankcase in a reciprocating engine). The gases are fed into the intake manifold for combustion. The system consists of 2 hoses and a valve. One hose transmits air from the air cleaner to the top of the engine near the oil filler neck. The other hose (**Figure 10**) carries the gases to the valve, which regulates their passage into the manifold.

Check both hoses for cracks or deterioration. Disconnect the hoses and make sure they aren't plugged. Replace the hoses if they are clogged or visibly defective.



Thermal Reactor

Check the thermal reactor for cracks or other visible damage. Run the engine and listen for hissing from the reactor, indicating an exhaust gas leak. Replace the reactor if defective.

Emission Controls

Test the following parts as described in Chapter Five: air pump, air control valve, air supply valve (1971-72), coasting valve (1971-73), anti-afterburn valve (1971-73), deceleration control valve (1974), and altitude compensator (1974).

Inspect air and vacuum hoses. Figures 18-21, Chapter Five, show the hoses. Replace any that are cracked, worn, or deteriorated.

On 1971-73 cars, test the following as described in Chapter Seven: No. 1 and No. 2 control boxes, distributor vacuum switch, No. 1 and No. 2 thermosensors, thermodetector, choke switch, and leading ignition retard.

On 1974 cars, test the control unit, thermosensor, thermodetector, and choke switch, referring to Chapter Seven.

Check all wiring and connectors for wear, damage, or dirt. Repair or clean as needed.

Downshift Solenoid (Automatic Transmission)

The easiest way to check the solenoid is to drive the car at a steady speed, then floor the accelerator sharply. If transmission downshifts automatically, the solenoid is working properly. If not, test it as described in Chapter Nine.

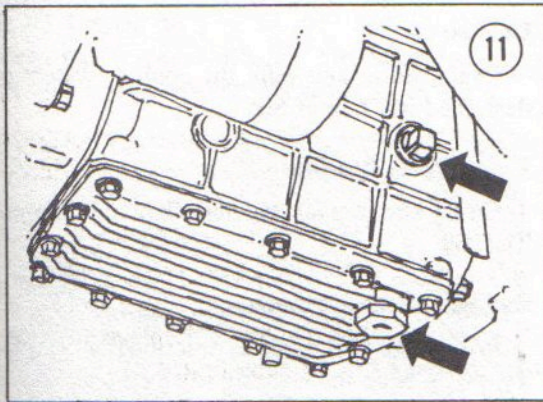
Coolant Hoses and Clamps

Examine radiator and heater hoses. Replace any that are worn, cracked, weathered, or extremely soft. Make sure clamps are tight and in good condition. Coolant residue at connections may indicate a loose or defective clamp. Tighten or replace as needed.

Manual Transmission Oil Change

Manual transmission oil should be changed every 12,000 miles (1971-73) or every 14,000 miles (1974).

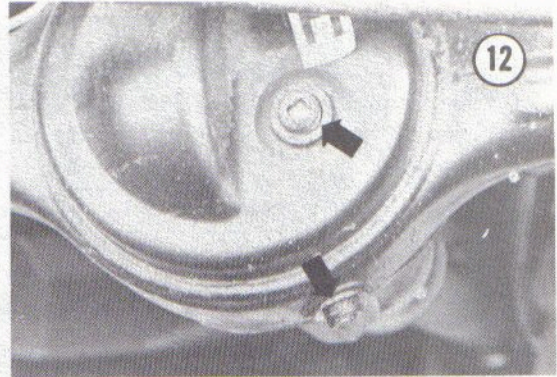
1. Drive the car a short distance to warm the oil.
2. Working beneath the car, remove the drain and filler plugs (**Figure 11**). While the oil is draining, clean the magnetic drain plug. Check for obvious signs of damage such as chunks of metal in the oil or stuck to the plug.



3. After the oil has drained completely, install the drain plug.
4. Fill the transmission to the bottom of the filler hole with an oil recommended in Table 3. Install the filler plug.

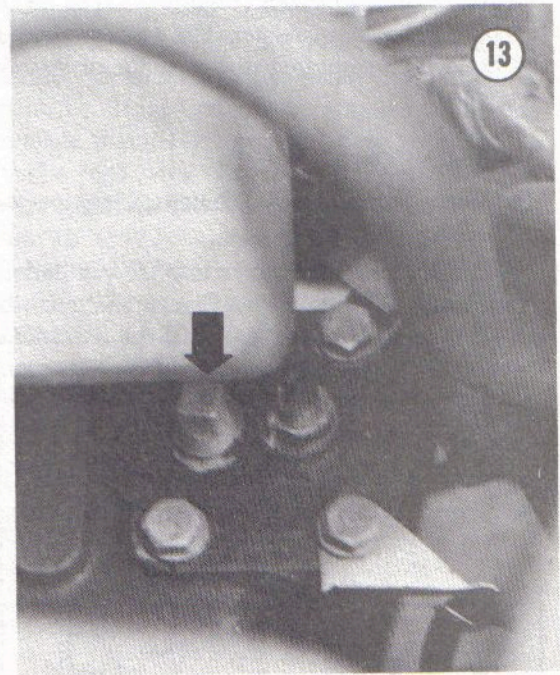
Rear Axle Oil Change

1. Drive the car a short distance to warm the oil.
2. Working beneath the car, remove the drain and filler plugs (**Figure 12**). Check the oil for obvious signs of damage, such as pieces of metal.
3. After the oil has drained completely, install the drain plug.
4. Fill the rear axle to the bottom of the filler plug hole, using an oil recommended in Table 3. Install the filler plug.



Steering Gear Oil

Remove the plug from the steering gear box (**Figure 13**). Check the oil level. If necessary, top up to the bottom of the filler plug hole, using an oil recommended in Table 3.

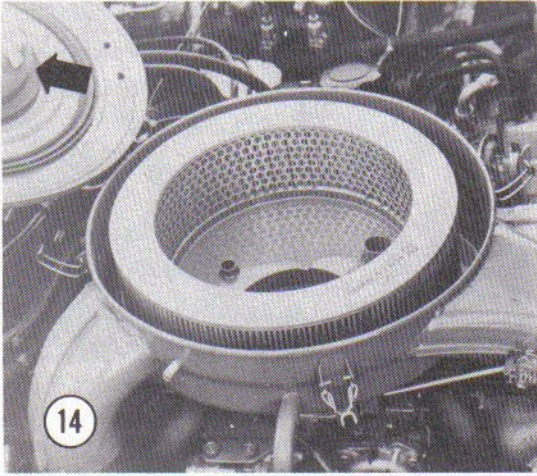


Rear Brake Shoes

Inspect the shoes as described in Chapter Ten.

Air Cleaner Element

Replace the air cleaner element. Snap back the air cleaner cover clips and remove the cover. Lift out the element (**Figure 14**). Install a new element, then reinstall the cover.

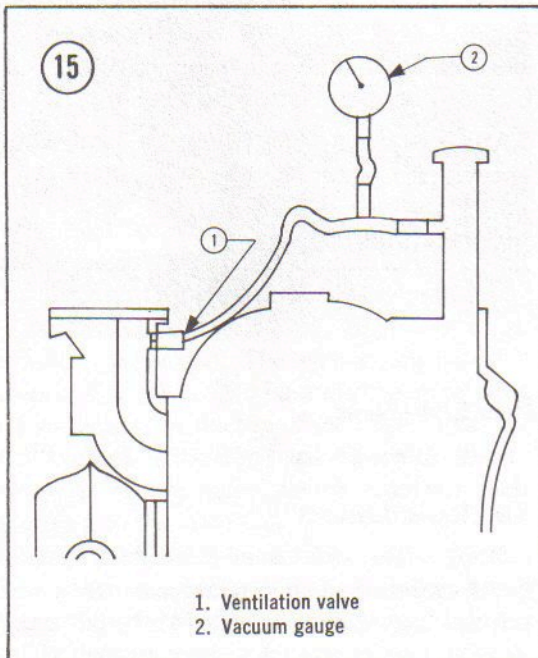


Evaporative Emission Canister

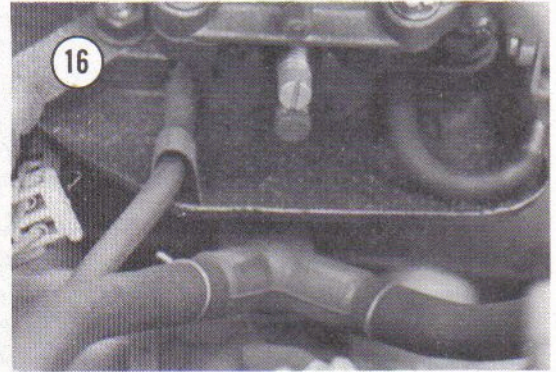
The 1972-74 cars use a canister integral with the top of the air cleaner (Figure 14). The 1971 cars use a separate canister. The canister should be replaced if saturated with gasoline or visibly damaged.

Ventilation Valve

1. Check the air cleaner element. Clean or replace as necessary.
2. Connect a vacuum gauge into the ventilation hose, using a T-fitting. See Figure 15.



3. Run the engine at 2,500-3,000 rpm. Vacuum should be less than 2½ inches. If not, replace the valve. To do this, disconnect the lines from the valve (Figure 16). Unscrew the valve and install a new one.



Coolant

Drain, flush, and refill the cooling system as described in Chapter Six.

Front Wheel Bearings

Clean and repack as described in Chapter Twelve.

Ball-joints and Idler Arm

Inspect the ball-joints as described in Chapter Twelve. Check the steering idler arm for looseness or damage.

Lubricate the ball-joints with molybdenum disulphide grease. Remove the snap rings from the ball-joint dust covers. Remove the plug from the bottom of each ball-joint and install a grease nipple. Inject enough grease to force all old grease out. Reinstall plugs and snap rings.

Brake Cylinders

Rebuild the brake master and wheel cylinders as described in Chapter Ten.

Vacuum Hoses

On automatic transmission models, replace the rubber section of the vacuum tube that connects to the left side of the transmission.

Replace rubber section of the brake booster vacuum line.

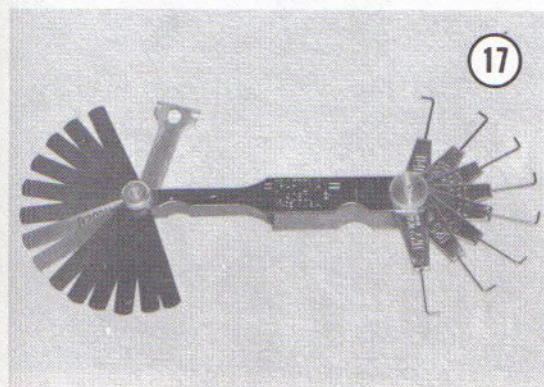
TUNE-UP

Under normal conditions, most of the steps in this section are performed at 4,000-mile intervals. Some are required less often, but can easily be done as part of a 4,000-mile tune-up. More frequent tune-ups may be required if the car is often used for stop-and-go driving. Tune-up specifications are given in **Table 5**.

Since different systems in an engine interact, the ignition system must be worked on before the carburetor is adjusted.

Spark Plugs

1. Examine the spark plugs. Remove any deposits with a wire brush. Replace plugs if badly burned, corroded, or if the porcelain is cracked.
2. Measure spark plug gap with a wire gauge (**Figure 17**). Standard gap is 0.024 in. (0.6mm). Replace spark plugs if gap is greater than 0.043 in. (1.1mm). Be sure to use double-electrode plugs made specifically for the Mazda rotary. **DO NOT** use conventional plugs.



3. Install the spark plugs and tighten to 15 ft.-lb.

CAUTION

Coat the spark plug threads with molybdenum disulphide anti-seize compound before installing. If you don't, you may never get the plugs out again.

Distributor Cap(s) and Rotor(s)

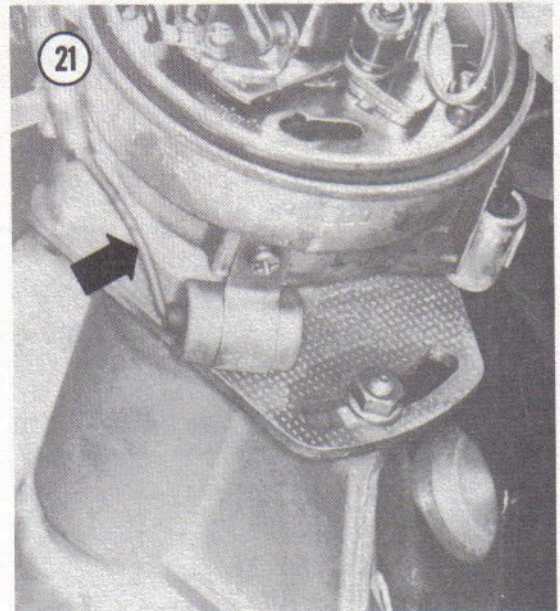
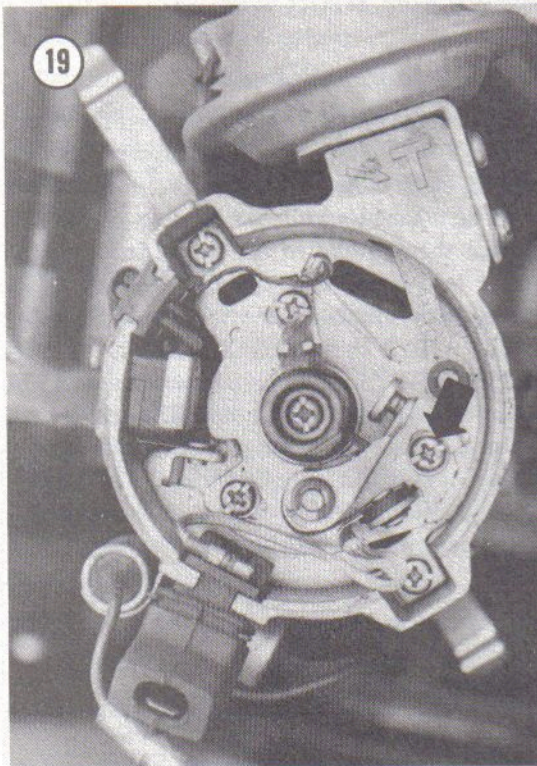
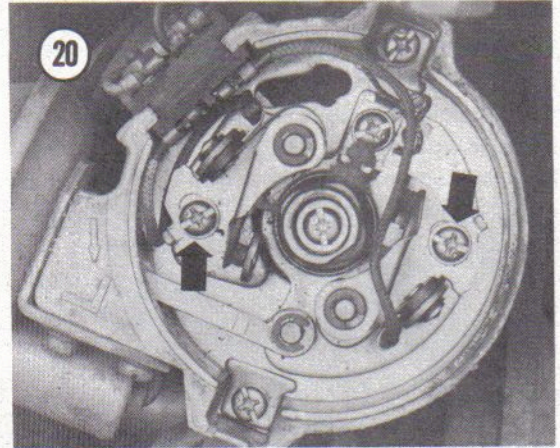
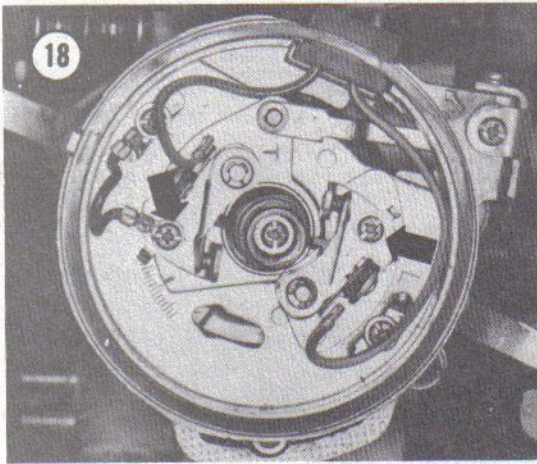
1. Remove the distributor cap(s) and rotor(s). Check for factory marks on the wires, indicating rotor number and whether the wire is leading or trailing. Make your own marks if they aren't visible.
2. Wipe any dirt or corrosion from the cap and rotor. If the cap and rotor are damaged or excessively worn, replace them.

Breaker Points and Condenser

1. Spread the breaker points apart with a screwdriver. If the points are pitted, corroded, or burned, clean them with a point file. If the points can't be cleaned with a few strokes of the file, replace them. Remove the screw securing the points lead wire. Then remove the points securing screws and lift the points out. See **Figure 18** (1972-73 leading distributor) or **Figure 19** (1972-73 trailing distributor). The 1971 distributors are similar to the 1972-73 version. However, the 1971 leading distributor has only one set of points. **Figure 20** shows 1974 version. Note carefully how the points were installed and install new points in exactly the same way.
2. As a general practice, replace the condenser whenever the points are replaced. Disconnect

Table 5 TUNE-UP SPECIFICATIONS

Breaker point gap	0.018 in. (0.45mm)
Dwell angle	55-61°
Ignition timing	
1971-73 leading	TDC
1971-73 trailing	10° ATDC
1974 leading	5° ATDC
1974 trailing	10° ATDC
Spark plugs	
Gap, standard	0.024 in.
Gap, maximum	0.043 in.



the condenser lead (Figure 21), then remove the condenser and install the new one.

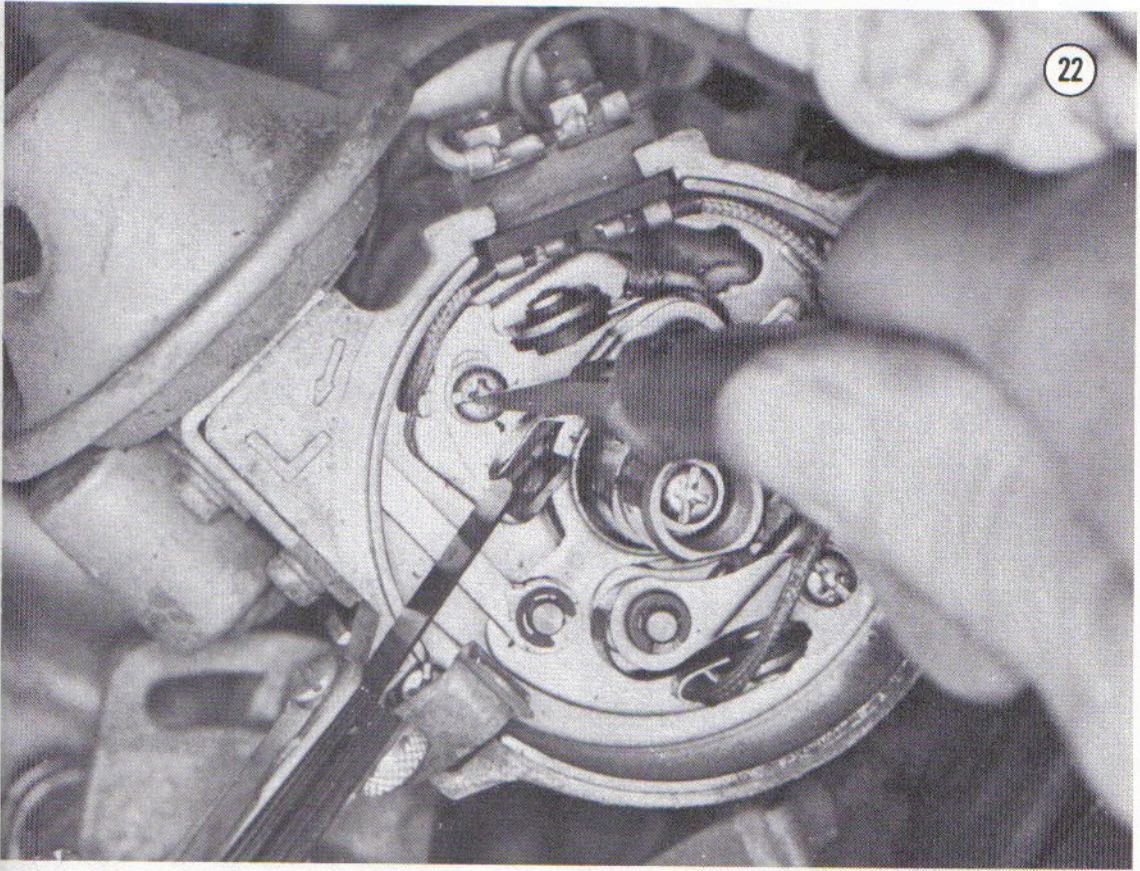
NOTE: The ignition condenser is mounted horizontally. The vertically mounted condenser serves to suppress radio noise. Be sure you replace the right ones.

3. Turn the engine over until a distributor cam lobe opens the points to the maximum gap.

Measure the gap with a feeler gauge. It should be 0.018 in. (0.45mm). If the gap is incorrect, loosen the points retaining screws slightly. Insert a screwdriver in the points adjusting slot (Figure 22). Twist the screwdriver to increase or reduce the gap. Do the same for the other set(s) of points.

Ignition Timing (1971-73)

1. Connect a timing light to the leading distributor's No. 1 spark plug wire. This is the thick wire running from the leading distributor to the front rotor housing. Follow the manufacturer's instructions to connect the timing light.

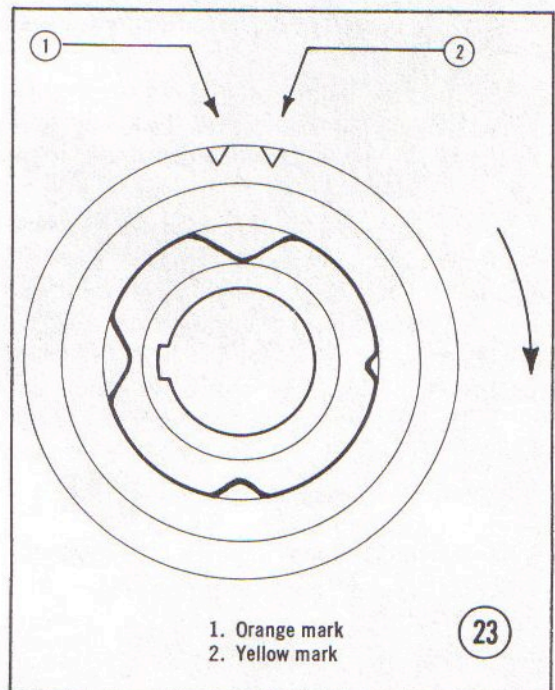


NOTE: The 1971-73 leading distributor and its wires are labeled "L." The trailing distributor and its wires are labeled "T."

2. Connect an accurate tune-up tachometer to the engine, following manufacturer's instructions. The Mazda engine uses the same rpm scale as 4-cylinder piston engines.
3. Locate the timing marks on the eccentric shaft pulley. See **Figure 23**. Wipe the pulley clean. Look for yellow paint on the leading timing mark, and orange paint on the trailing mark. If necessary, paint the marks yourself.

NOTE: Use different colors for leading and trailing timing marks.

4. Warm the engine to normal operating temperature. Run it at 900 rpm in NEUTRAL (manual transmission) or 750 rpm in DRIVE (automatic). Point the timing light at the timing pointer on



the engine front cover. The leading timing mark should line up with the pointer when the light flashes. If it doesn't, loosen the leading distributor fixing nut (**Figure 24**). Slowly rotate the distributor until the timing mark and pointer line up. Tighten the fixing bolt and shut off the engine.



5. Connect the timing light to the trailing distributor's No. 1 spark plug wire. This is the thick wire running from the trailing distributor to the front rotor housing.

6. Run the engine at 900 rpm in NEUTRAL (manual transmission) or 750 rpm in DRIVE (automatic). Point the timing light at the timing pointer. The pointer should line up with the trailing timing mark when the light flashes. If not, loosen the trailing distributor fixing nut. Carefully rotate the distributor until the marks line up. Tighten the distributor fixing nut and shut off the engine.

Ignition Timing (1974)

1. Connect an accurate tune-up tachometer to the engine. Use the 4-cylinder piston engine rpm scale.
2. Disconnect and plug distributor vacuum line.

3. Connect a timing light to No. 1 leading spark plug wire. This is the wire running to the lower front plug.

4. Find the 5° and 10° ATDC timing marks on the eccentric shaft pulley (**Figure 25**). Apply light colored paint or chalk to the marks so they will be easy to see. Use different colors for leading and trailing marks.

5. Start the engine. Make sure it idles at 900 rpm in NEUTRAL (manual transmission) or 750 rpm in DRIVE (automatic).

6. Point the timing light at the marks. The leading mark should be lined up with the timing pointer when the light flashes.

7. If timing is incorrect, stop the engine and loosen the distributor locknut. Start the engine. Slowly rotate the distributor by hand to change timing. When it is correct, turn off the engine and tighten the locknut.

8. Start the engine and recheck timing.

9. Move the timing light from the No. 1 leading wire to the No. 1 trailing wire. The timing pointer should line up with the trailing timing mark when the light flashes.

NOTE: Steps 10-15 are not necessary if trailing timing is correct.

10. If trailing timing is not correct, loosen the distributor locknut and adjust it.

11. Check leading timing. Note how far off it is.

12. Remove the distributor cap and rotor. Loosen 2 screws securing the breaker base (**Figure 26**). Loosen the screws ½ turn to 2 turns.

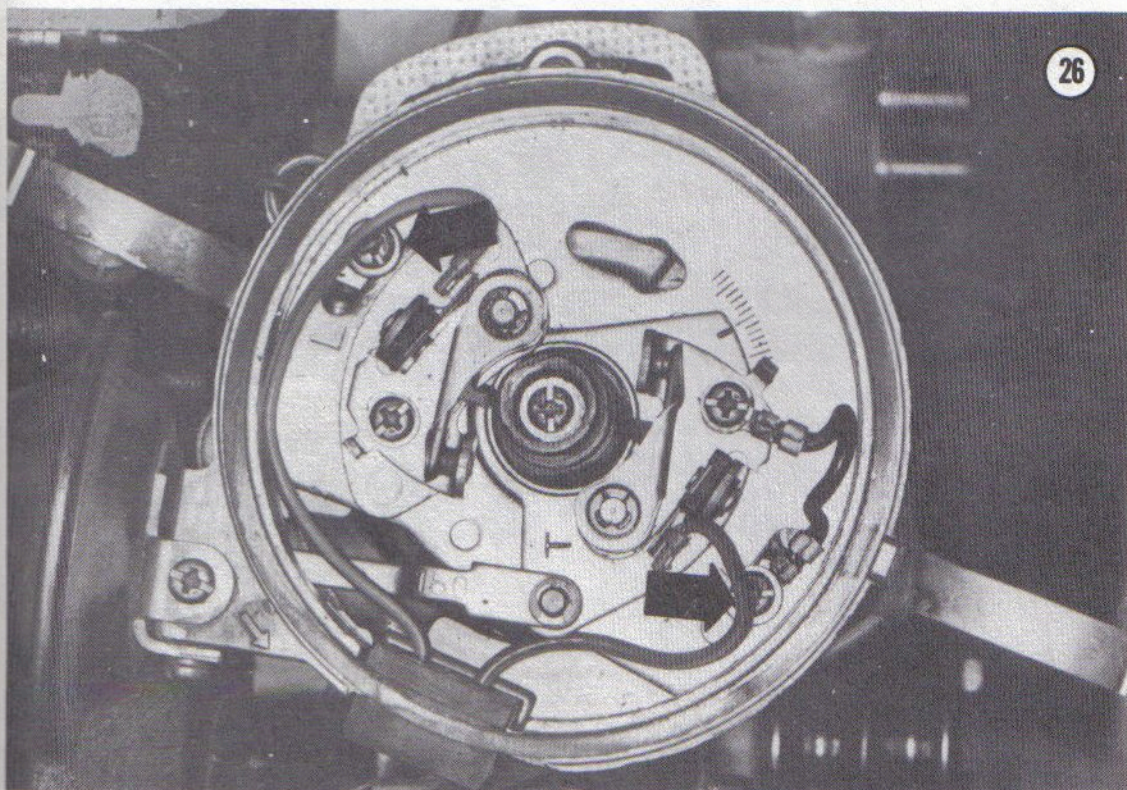
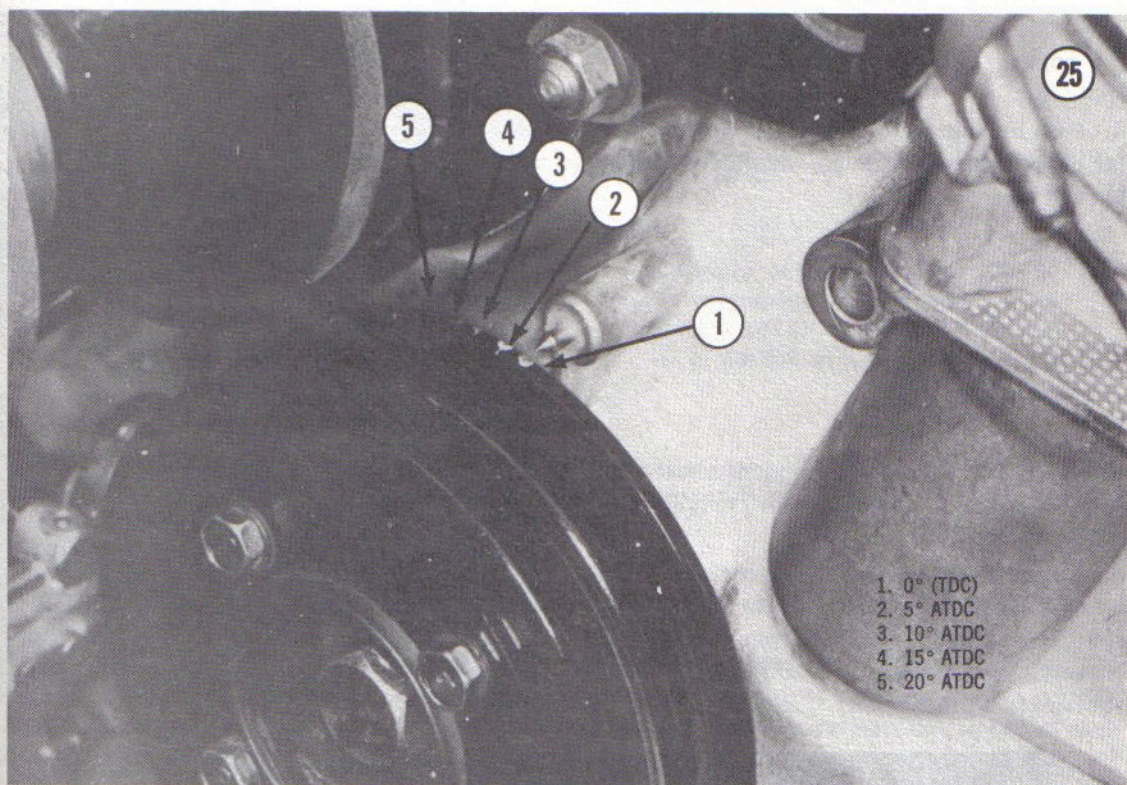
13. Rotate the breaker base to change leading timing. Each of the marks shown in **Figure 26** indicates a 4° change in timing. Turn the breaker base counterclockwise to advance timing; turn clockwise to retard.

14. Tighten the breaker base screws. Reinstall the cap and rotor.

15. Recheck leading timing. If timing is still not correct, repeat the breaker base adjustment until it is.

Carburetor

1. Warm the engine to operating temperature.
2. Remove the air cleaner (Chapter Five).



3. Connect an accurate tune-up tachometer to the engine. Use the 4-cylinder piston engine rpm scale.
4. Turn the idle mixture screw (**Figure 27A**) as far clockwise as it will go without causing an uneven idle.

NOTE: Do not attempt to adjust the screw below the idle mixture screw (idle limiter, **Figure 27A**) This is set at the factory and will be difficult to re-adjust if turned.

5. If the idle mixture adjustment caused idle speed to change, adjust it with the idle speed screw (**Figure 27B**).
6. If necessary, continue alternately adjusting the idle speed and mixture screws until the engine idle smoothly at 900 rpm in NEUTRAL (manual transmission) or 750 rpm in DRIVE (automatic transmission).

