

SUPPLEMENT

1975-1977 SERVICE INFORMATION

The following supplement provides procedures unique to the 1975-1977 Mazdas. All other service procedures are identical to the 1971-1974 models.

The chapter headings in this supplement correspond to those in the main portion of this book. If a chapter is not included in this supplement, there are no changes affecting the 1975-1977 models.

CHAPTER TWO

LUBRICATION, MAINTENANCE,
AND TUNE-UP

PERIODIC MAINTENANCE

Table 1 provides a summary of periodic maintenance required on 1975 and later models.

BREAKER POINTS (1975-1976)

Because 1975-1976 models use three sets of breaker points, procedures differ from earlier models. The 1977 models use only two sets of points, and are checked and adjusted in the same manner as the 1974 models.

1. Spread the points with a screwdriver. If the points are pitted, corroded, or burned, clean them with a point file. If the points cannot be cleaned with a few strokes of the file, replace them.
2. Remove the leading retard points' securing screw (**Figure 1**). Disconnect the wire from the points and lift them off.
3. Remove 4 screws (**Figure 2**). Lift the leading retard points base plate off.
4. Remove the leading advanced points and trailing points securing screws (**Figure 3**). Disconnect the wire from each points set and remove them.
5. Install new points exactly as the old ones were.
6. Turn the engine until a distributor cam lobe opens the points to the maximum gap. Measure gap with a feeler gauge. It should be 0.018 in. (0.45mm). To adjust, loosen the points securing screw and move the fixed point to change the gap. Tighten the screw and check the adjustment. Do this with each set of points.

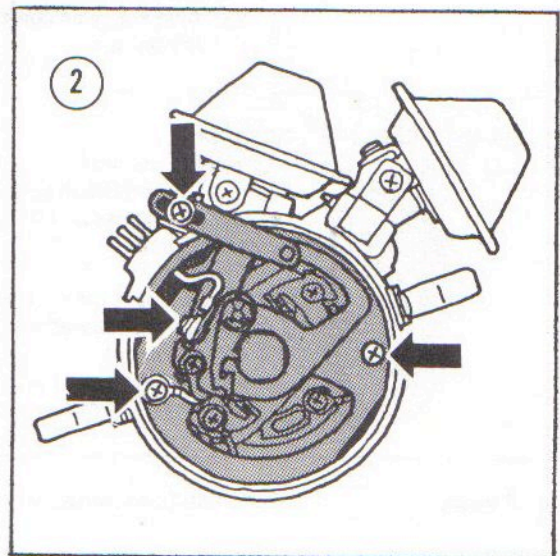
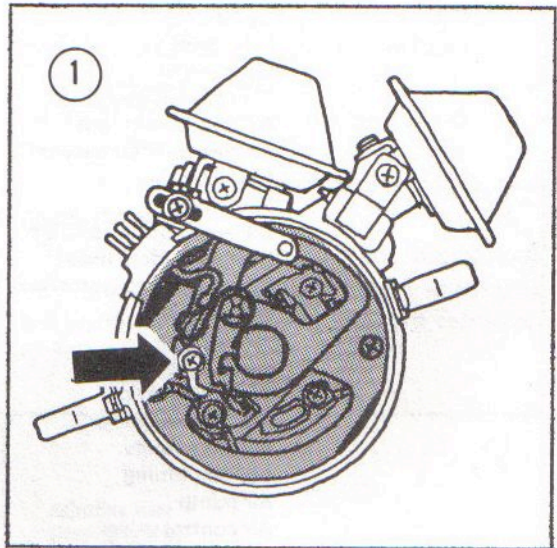
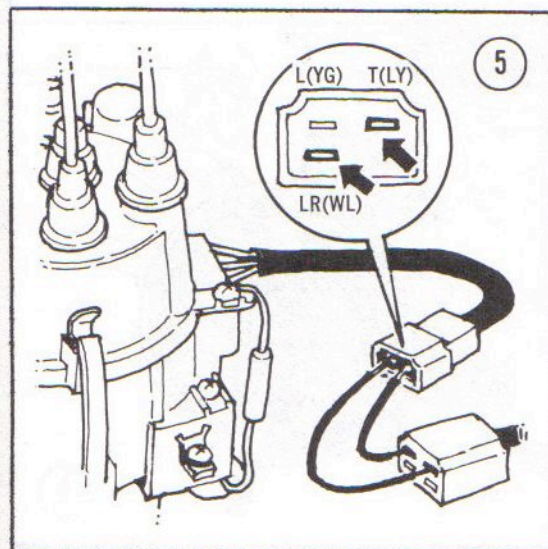
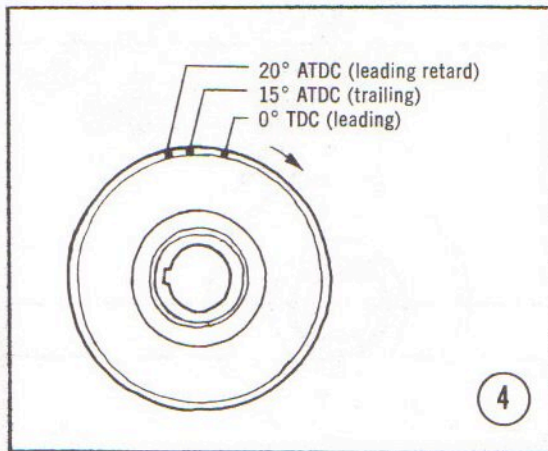
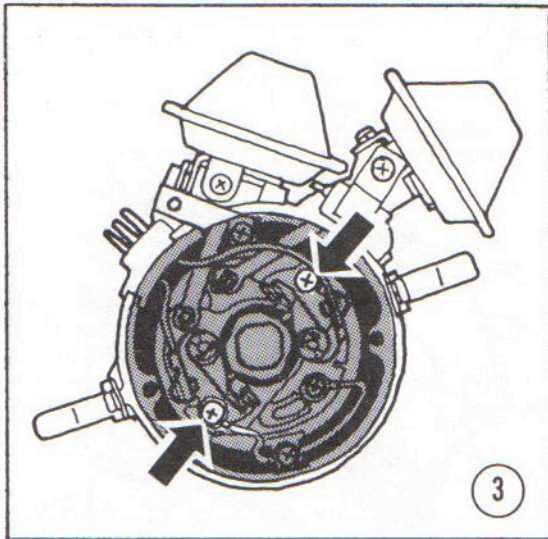


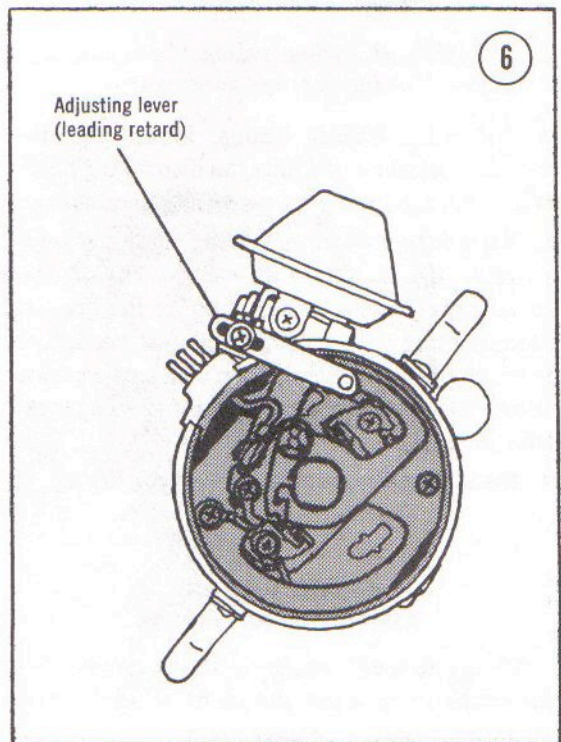
Table 1 MAINTENANCE SCHEDULE — 1975 AND LATER

Interval	Item	Procedure
6,250 miles (6 months)	Engine oil	Change
	Battery	Check
	Transmission	Check oil or fluid level
	Differential	Check oil level
	Steering wheel	Check free play
	Handbrake	Check
	Disc brake pads	Inspect
12,500 miles (12 months)	Oil filter	Replace
	Drive belts	Inspect, check tension
	Oil metering pump	Test output
	Carburetor	Adjust
	Float level	Check
	Idle switch	Test
	Throttle linkage, choke	Inspect
	Air cleaner element	Inspect
	Air cleaner intake valve	Test
	Fuel lines	Inspect
	Fuel filter	Replace
	Oil level warning system	Check
	Cooling system hoses	Inspect
	Distributor cap, rotor, condenser	Inspect
	Ignition coils	Inspect
	Spark plugs	Replace
	Spark plug wires	Inspect
	Steering gear oil	Check
	Rear brake linings	Inspect
	Breaker points	Inspect
	Ignition timing	Check, adjust
	Air pump	Test
	Air control valve	Inspect
	Air injection hoses	Inspect
Idle compensator	Test	
Evaporative emission control system	Inspect	
Ventilation system	Inspect	
25,000 miles (24 months)	Coolant	Drain, flush, refill
	Air cleaner element	Replace
	Evaporative emission canister	Inspect
	Manual transmission oil	Replace
	Differential oil	Replace
	Brake fluid	Replace
	Master cylinder, calipers, wheel cylinders	Overhaul
	Ball-joints and idler arm	Inspect, lubricate
	Power brake unit	Inspect
	Brake lines	Inspect
	Front wheel bearings	Clean and repack
4 years	Automatic transmission and power brake hoses	Replace



IGNITION TIMING (1975-1976)

1. Warm the engine to normal operating temperature. Connect a tachometer (on 4-cylinder piston engine setting). Connect a timing light to the front rotor's leading (lower) spark plug wire.
2. Run the engine at idle speed.
3. Point the timing light at the eccentric shaft pulley. The timing pointer should line up with the 0° (top dead center) mark. See **Figure 4**.
4. If the pointer does not line up correctly, loosen the distributor locknut and turn the distributor body to change timing.
5. Detach the distributor wiring connector. Install jumper wires as shown in **Figure 5**.
6. Check timing. It should now be at 20° ATDC (Figure 4). If not, loosen the securing screw on the leading retard adjusting lever (**Figure 6**). Move the lever as needed to change timing, then tighten the screw.
7. Turn off the engine. Move the timing light to the front rotor's trailing (upper) spark plug wire. Remove the jumper wires and reconnect the distributor wiring connector.



8. Start the engine and check timing. It should be at the 15° ATDC mark. If not, adjust with the trailing timing adjusting lever (Figure 7).

IGNITION TIMING (1977)

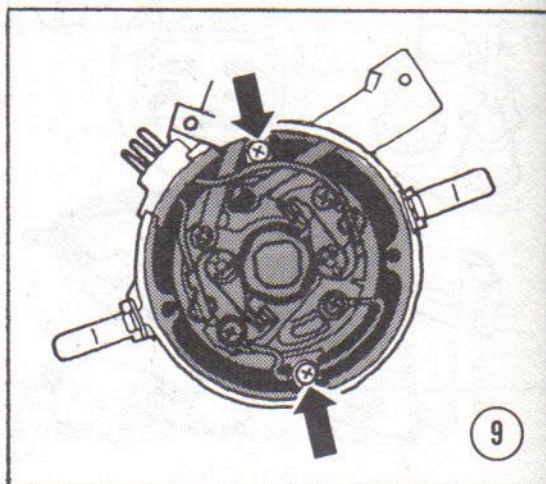
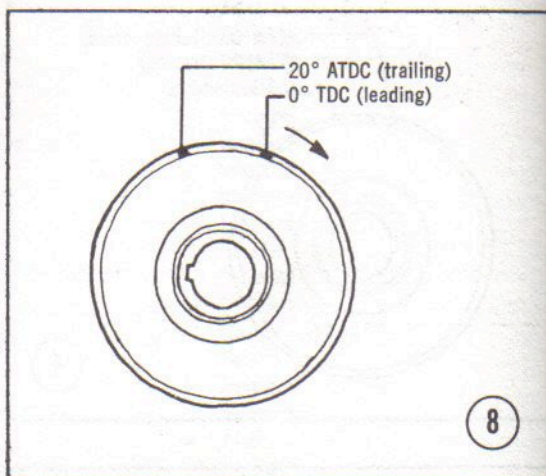
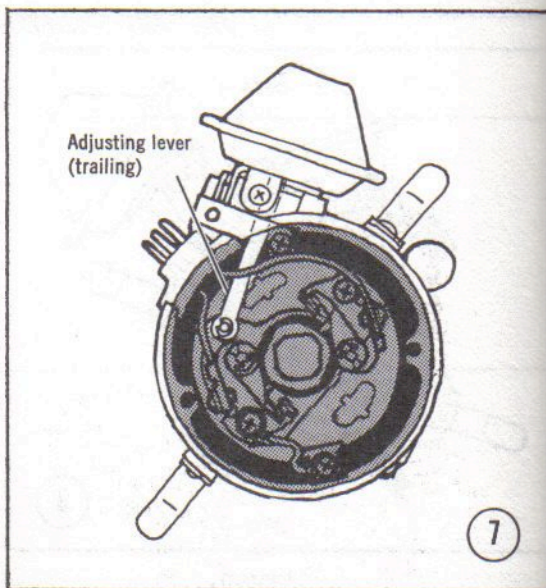
1. Warm the engine to normal operating temperature.
2. Connect a tune-up tachometer to the engine. Use the same tachometer setting as for 4-cylinder piston engines. Connect a timing light to the front rotor's leading (lower) spark plug wire.
3. Check timing. With the engine idling, the timing pointer should line up with the eccentric shaft pulley's 0° (top dead center) mark. See Figure 8.
4. If timing is incorrect, loosen the distributor locknut. Turn the distributor to set timing, then tighten the locknut.
5. Turn off the engine. Move the timing light to the front rotor's trailing (upper) spark plug wire.
6. Start the engine and let it idle. The timing pointer should now line up with the eccentric shaft pulley's 20° ATDC mark (Figure 8). This is trailing timing.

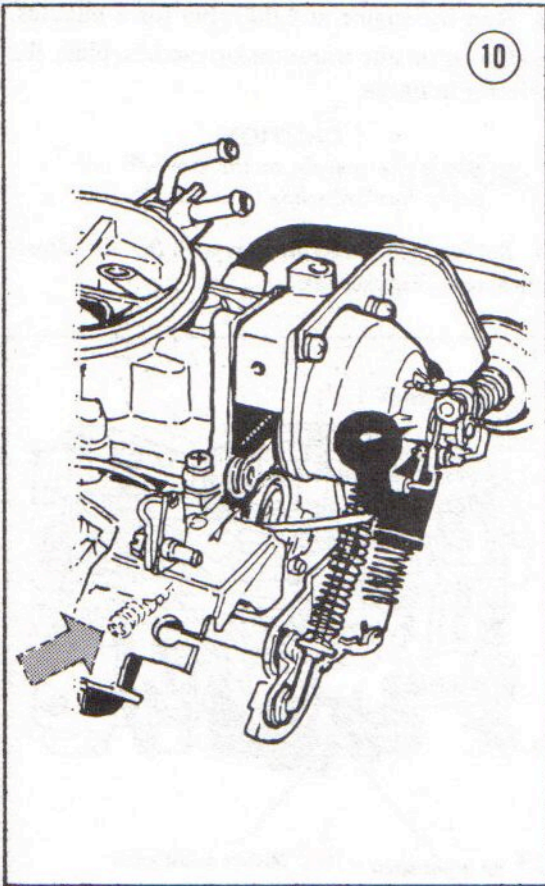
NOTE: *If trailing timing is correct, the following steps are unnecessary.*

7. To adjust trailing timing, loosen the distributor locknut and rotate the distributor body. When trailing timing is correct, tighten locknut.
8. Since Step 7 changes leading timing, it must be reset. To do this, turn off the engine and remove the distributor cap. Loosen the breaker base securing screws (Figure 9) just enough to move the breaker base. Turn the breaker base counterclockwise to advance timing; turn clockwise to retard.
9. Install distributor cap and recheck timing.

CARBURETOR ADJUSTMENT (1975)

Since idle speed changes with the surrounding air temperature, a fan should be set up to blow air into the engine compartment.





1. Warm the engine to normal operating temperature. Turn off all accessories. Remove the gas tank filler cap. On automatic transmissions, place the selector in DRIVE.

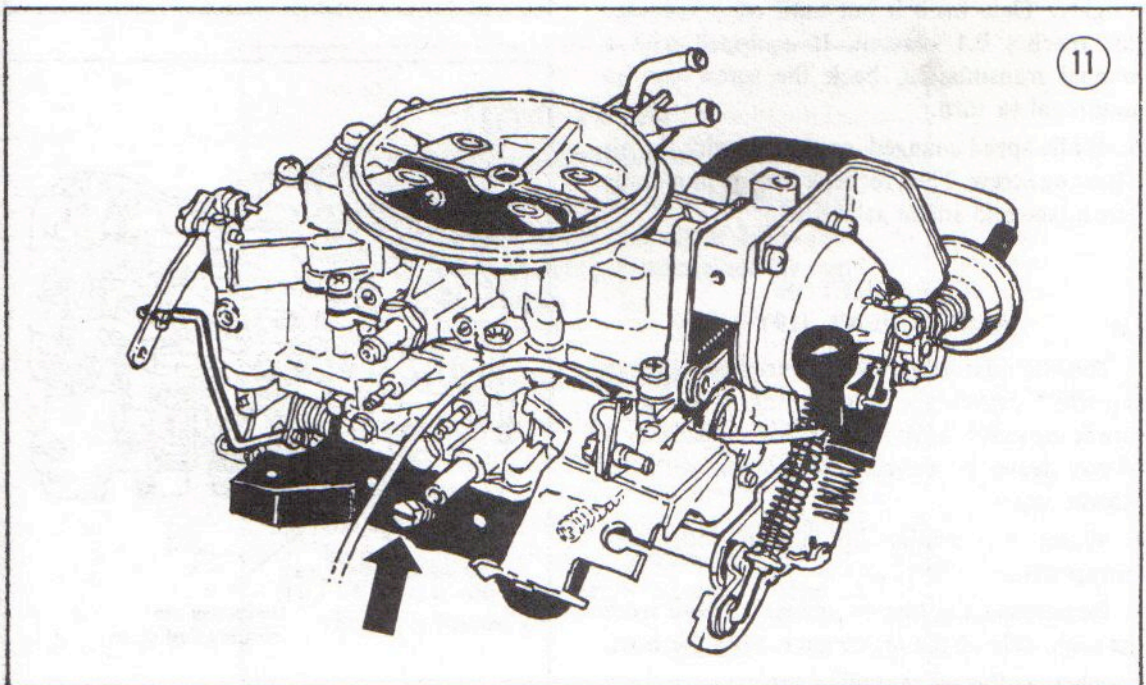
CAUTION

On automatic transmissions, block the wheels so the car will not creep forward.

2. Set idle speed to 800-850 rpm (manual transmission) or 750-800 rpm (automatic transmission). **Figure 10** shows the idle speed screw.

NOTE: The following steps require a CO meter. Although adjustment is possible without one, the car may not meet emission standards.

3. Check CO percentage. If it is 0.1 percent or below, further adjustment is unnecessary.
4. To adjust, turn the mixture screw (**Figure 11**) clockwise until CO percentage drops to zero. Then back the screw out until CO percentage reaches 0.5 percent.
5. Turn the screw clockwise until CO percentage just reaches 0.1 percent. Then turn another $\frac{1}{4}$ turn clockwise.
6. If idle speed has changed, readjust it.



CARBURETOR ADJUSTMENT (1976)

Since idle speed changes with surrounding air temperature, a fan should be set up to blow air into the engine compartment.

1. Warm the engine to normal operating temperature. Turn off all accessories. Remove the gas tank filler cap. On automatic transmissions, place the selector in DRIVE.

WARNING

On automatic transmissions, block the wheels so the car will not creep forward.

2. Disconnect the idle compensator hose from the bottom of the air cleaner. Plug the hose.
3. Set idle speed at 700 rpm with the air adjusting screw (Figure 12).

NOTE: The following steps require a CO meter. Although it is possible to adjust idle mixture without one, the car may not emission standards.

4. Check carbon monoxide percentage with a CO meter. It should be 0.1 percent or less.
5. If CO percentage is incorrect, turn the mixture adjusting screw clockwise until the engine runs roughly. Then back it out until CO percentage just reaches 0.1 percent. If equipped with a manual transmission, back the screw out an additional 1/4 turn.
6. If idle speed changed, readjust it with the air adjusting screw. Then recheck carbon monoxide percentage and adjust as needed.

CARBURETOR ADJUSTMENT (1977)

The idle mixture screw is secured by a limiter cap which prevents it from turning. If idle mixture is incorrect, have the mixture adjusted by a Mazda dealer or a mechanic familiar with the Mazda rotary.

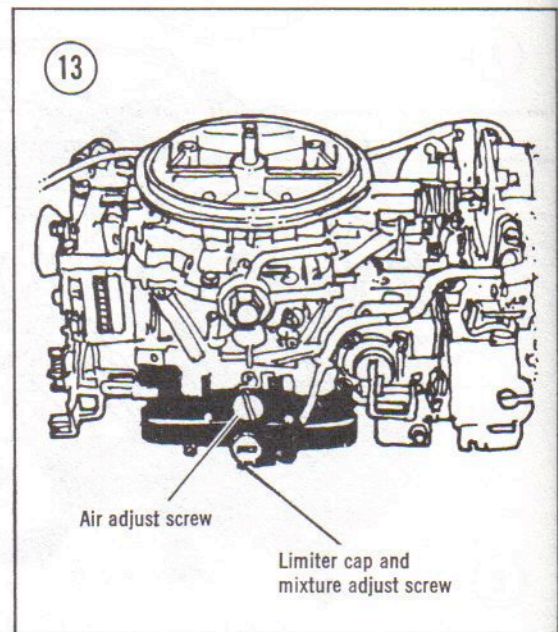
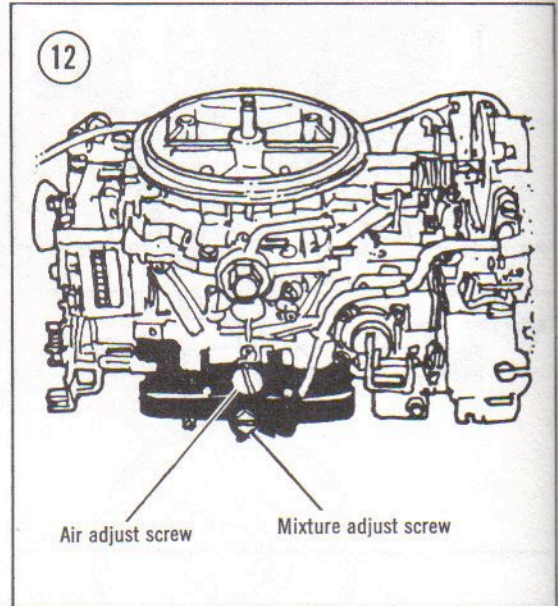
1. Warm the engine to normal operating temperature.
2. Disconnect the idle compensator hose from the underside of the air cleaner. Plug the hose.
3. Remove the gas tank filler cap.

4. Run the engine at 2,000 rpm for 3 minutes.
5. On automatic transmission models, place the selector in DRIVE.

CAUTION

Block the wheels so the car will not creep forward while in DRIVE.

6. Set idle speed at 750 rpm with the air adjusting screw (Figure 13).



shown in Figure 15.
Position the inner seal's protective strip as
be positioned as shown in Figure 14.

the combustion chambers. The seal seam should
of the inner sealing rings faces inward, toward
cross-section, rather than round. The wide side
Rotor housing sealing rings are square in

ENGINE ASSEMBLY

as for earlier models.
Testing and adjustment procedures are the same.
the engine is run for six minutes at 2,000 rpm.
Pump discharge should be 2.0-2.5cc when

Oil Metering Pump Adjustment

OIL PUMPS

ENGINE

CHAPTER FOUR

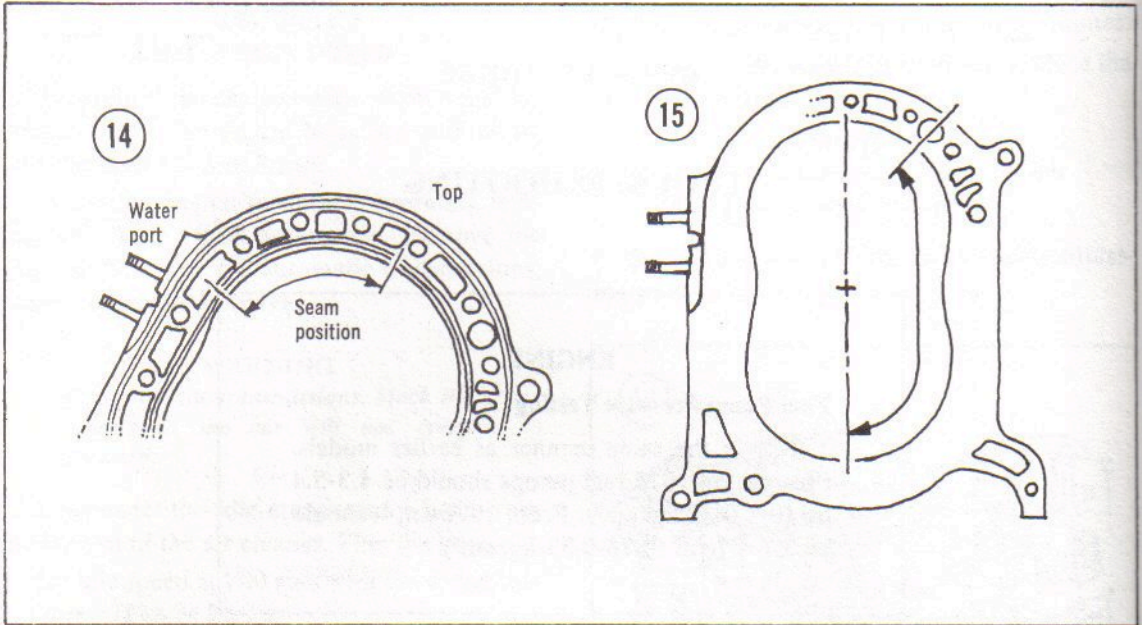
Test in the same manner as earlier models.
Pressure on 1975 fuel pumps should be 4.3-5.4
psi (0.3-0.38 kg/cm²). From 1976 on, it should
be 3.7-4.7 psi (0.26-0.33 kg/cm²).

Fuel Pump Pressure Testing

ENGINE

TROUBLESHOOTING

CHAPTER THREE



CHAPTER FIVE

FUEL AND EXHAUST SYSTEMS

AIR CLEANER

Temperature Setting

The air cleaner setting is controlled automatically, instead of by a hand lever. To check operation, remove the air cleaner cover and push on the flap valve. It should move freely and return under its own spring power.

Idle Compensator

The idle compensator (Figure 16) is used on 1977 models to prevent an overrich mixture during hot idle conditions. At underhood temperatures above $149 \pm 7.2^\circ\text{F}$ ($65 \pm 4^\circ\text{C}$), the valve opens, admitting extra air to the engine.

To test, disconnect the idle compensator's hose from the intake manifold. Below the valve's opening temperature, it should not be possible to suck air through the hose. If it is, replace the idle compensator.

CARBURETOR

Float Adjustment

The procedure is the same as for earlier models, but the specifications differ. See Table 2.

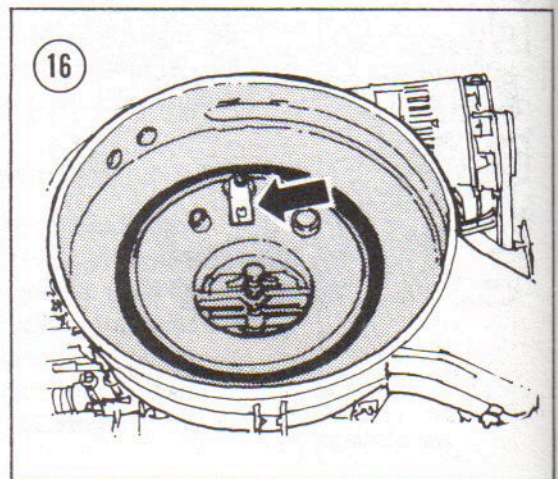


Table 2 CARBURETOR SPECIFICATIONS

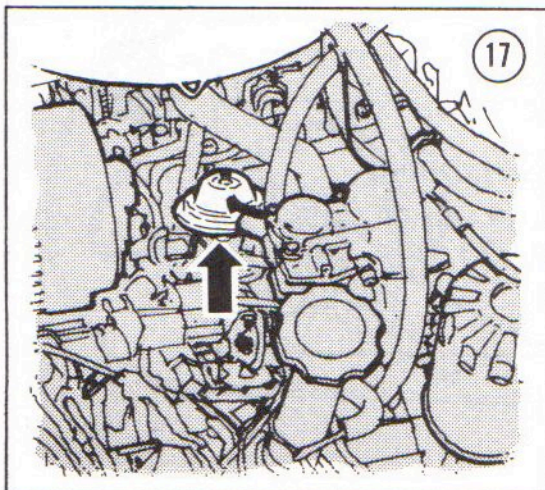
1975	
Fast idle	0.069-0.085 in. (1.75-2.15mm)
Float drop	2.03-2.07 in. (51.5-52.5mm)
Float level	0.39 in. (10mm)
1976	
Fast idle	
Manual transmission	0.079 ± 0.008 in. (2.0 ± 0.2mm)
Automatic transmission (California)	0.079 ± 0.008 in. (2.0 ± 0.2mm)
Automatic transmission (Federal)	0.087 ± 0.008 in. (2.2 ± 0.2mm)
Float drop	2.13 ± 0.02 in. (54 ± 0.5mm)
Float level	0.47 ± 0.02 in. (12 ± 0.5mm)
1977	
Fast idle (California)	0.043-0.055 in. (1.1-1.4mm)
Fast idle (Federal)	0.035-0.043 in. (0.9-1.1mm)
Float drop	2.13 ± 0.02 in. (54 ± 0.5mm)
Float level	0.47 ± 0.02 in. (12 ± 0.5mm)

Fast Idle Adjustment

As with float adjustment, the procedure is the same but specifications differ. See Table 2.

EXHAUST GAS RECIRCULATION SYSTEM

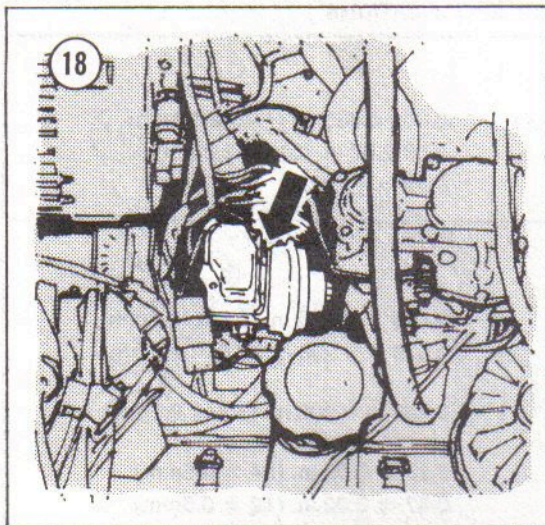
This system is used on 1977 California models with automatic transmission. It should



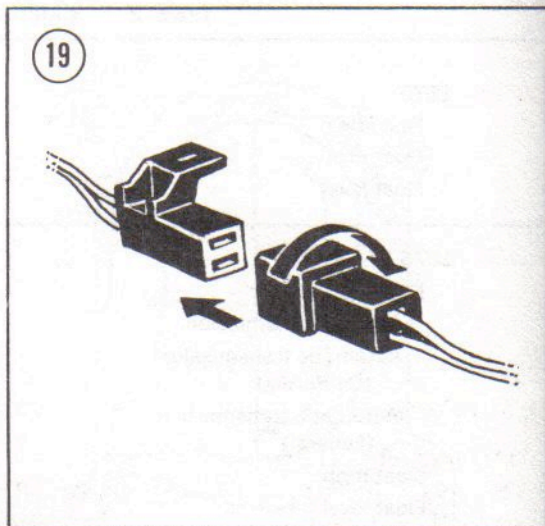
be checked every 12,500 miles or 12 months. A reminder light on the instrument panel comes on when service is due.

System Check

1. Detach the wire from the EGR valve solenoid. **Figure 17** shows the valve.
2. Connect the solenoid wire directly to the positive battery terminal with a jumper wire. The solenoid should click as the wire is connected and disconnected.
3. Warm the engine to normal operating temperature.
4. Disconnect the carburetor end of the solenoid-to-carburetor vacuum line.
5. Disconnect the intake manifold end of the vacuum line running from No. 1 vacuum switch to intake manifold. **Figure 18** shows the No. 1 vacuum switch.
6. Connect the solenoid vacuum line to the intake manifold fitting from which the vacuum switch line was disconnected.



7. Start the engine. It should idle smoothly.
8. Connect the solenoid jumper wire to the battery positive terminal. The engine should stall. If not, remove and clean the EGR valve.



9. After checking the system, turn out the reminder light. To do this, disconnect the light connector (**Figure 19**), turn one side of it 180°, and connect it.

CHAPTER SIX

COOLING SYSTEM

COOLING SYSTEM FLUSHING

Cooling system capacity is 9.6 qt. (9.1 liters) on 1975 models; 9.8 qt. (9.3 liters) from 1976 on.

CHAPTER SEVEN

ELECTRICAL SYSTEM

ALTERNATOR

On-car Testing

This procedure requires an ammeter.

1. Set up the test circuit shown in **Figure 20**. Connect the ammeter negative lead to the alternator "B" terminal. Connect the ammeter positive lead to the wire which was disconnected from the "B" terminal.
2. Run the engine at 2,000 rpm. Note the ammeter reading.
3. Move the test probe from the regulator "F" terminal to the regulator "A" terminal. If the ammeter reading stays the same, the alternator is at fault. If the reading jumps up, the regulator is defective.

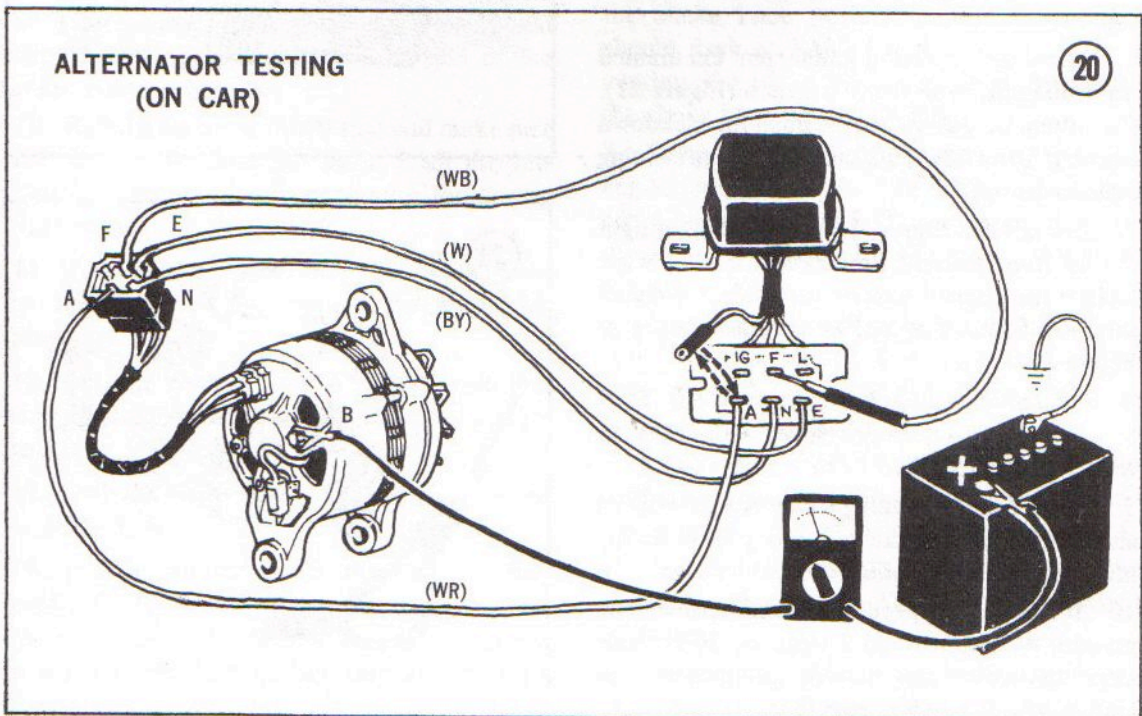
STARTER

Standard brush length is 0.73 in. (18.5mm).
Minimum is ½ in. (11.5mm).

IGNITION CONTROL SYSTEM

The 1975-1976 emission control system uses three sets of points. One set controls the trailing spark plugs. The other sets control the leading spark plugs. The leading advanced points cause No. 1 plug to fire at top dead center; the leading retarded points cause No. 1 to fire at 20° after top dead center.

The 1977 system uses only two sets of points, one for the leading plugs and one for the trailing plugs. On 49-state models, both plugs always



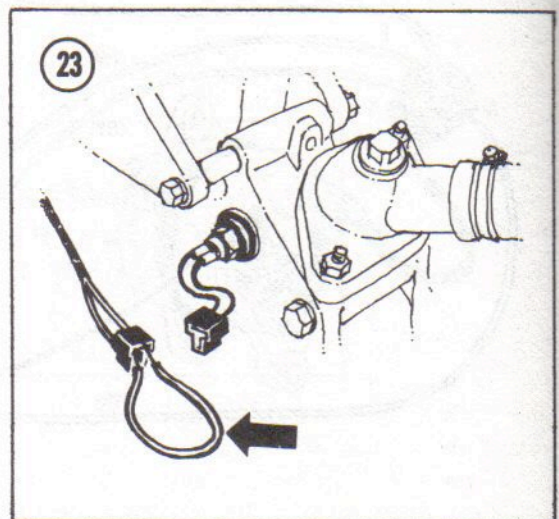
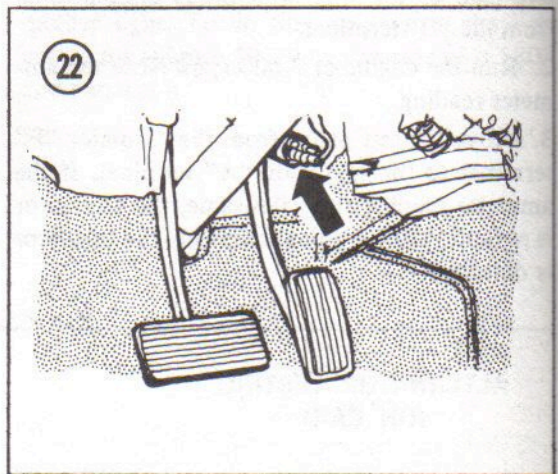
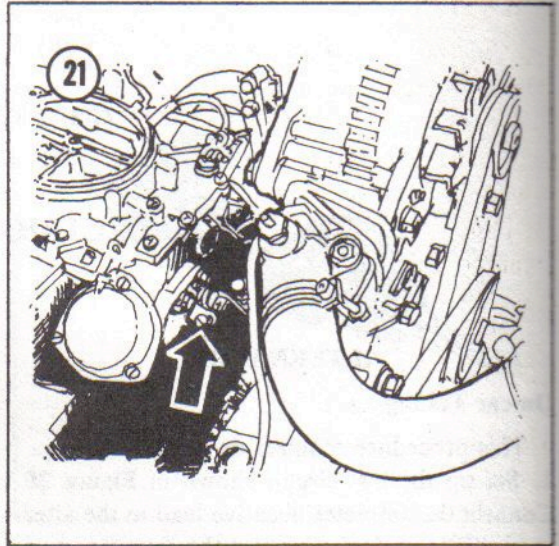
fire. On California models, the trailing plugs cut out under specified speed and temperature conditions.

System Test (1975)

1. Connect a timing light to the front rotor's trailing (upper) spark plug wire. Connect a tune-up tachometer to the engine. Use the same tachometer setting as for a conventional 4-cylinder engine.
2. Start the engine.
3. Raise engine speed to 4,500 rpm, then let it drop slowly. The timing light should go out at a speed between 3,600 and 4,400 rpm.
4. Continue lowering engine speed. The timing light should come back on at a speed between 1,050 and 1,250 rpm. It should stay on all the way down to idle speed.

NOTE: Write down the speed at which the timing light comes on.

5. Slowly increase engine speed until the timing light goes out. Note engine speed. It should be within 80-220 rpm of the speed written down earlier.
6. Hold engine speed at 2,000 rpm. On manual transmissions, push the idle switch (**Figure 21**). On automatic transmissions, push the kickdown switch (**Figure 22**). This should cause the timing light to go on.
7. Turn off the engine. Switch the timing light to the front leading (lower) spark plug wire. Detach the coolant temperature switch connector, and connect a jumper wire as shown in **Figure 23**.
8. Pull the choke knob all the way out. Start the engine and set engine speed at 2,000 rpm with the choke knob.
9. Check ignition timing. The timing pointer should be between the red and yellow timing marks when the light flashes.
10. Watch engine speed. Sometime between one minute, 44 seconds and 2 minutes, 36 seconds after the engine was started, speed should increase several hundred rpm.



System Test (1976)

1. Connect a tune-up tachometer to the engine. Use the same setting as for a conventional 4-cylinder engine.
2. Connect a timing light to the front rotor's trailing (upper) spark plug wire.
3. Disconnect the coolant temperature switch connector. Connect a jumper wire as shown in Figure 23.
4. Start the engine. Set engine speed at 2,000 rpm by pulling the choke knob.
5. Gradually increase engine speed. The timing light should start to flash at 3,600-4,400 rpm (manual transmission) or 4,400-5,200 rpm (automatic transmission).
6. Let the engine idle. Push the choke knob all the way in.
7. Slowly increase engine speed. The timing light should start flashing at 3,200-3,800 rpm (California) or 2,700-3,300 rpm (non-California).
8. Let engine speed drop slowly. The timing light should go out, then start to flash again at 1,050-1,250 rpm. Note this speed for use in the next step.
9. Let the engine idle, then raise engine speed until the timing light comes on. This should happen at a speed within 80-220 rpm of the speed noted in Step 8.
10. Run the engine at 2,000 rpm and make sure the timing light does not flash. Push the idle switch (Figure 21) and make sure the timing light flashes.
11. Turn off the engine. Move the timing light to the front rotor's leading (lower) spark plug wire.
12. Pull the choke knob all the way out and start the engine. Engine speed should increase to 3,000-3,500 rpm within 10 seconds.
13. Push the choke knob in to set engine speed at 2,000 rpm.
14. Point the timing light at the eccentric shaft pulley. On California models, the timing pointer should be between the red and yellow timing marks when the light flashes. On non-California models, the pointer should be on the advanced

side of the yellow mark (the side opposite the red and white marks).

15. Keep watching the timing marks. Between one minute, 44 seconds and 2 minutes, 36 seconds after the engine was started, the timing should advance further.
16. Connect a voltmeter to the leading ignition coil's positive terminal. Voltage should increase 1-2 volts at 3,600-4,400 rpm.

System Test (1977 California)

1. Connect a timing light to the front rotor's trailing (upper) spark plug wire. Connect a tune-up tachometer to the engine. Use the same tachometer setting as for a conventional 4-cylinder engine.
2. Detach the connector from the coolant temperature sender. Connect a jumper wire as shown in Figure 23.
3. Start the engine. Set engine speed at 2,000 rpm with the choke knob.
4. Gradually increase engine speed. The timing light should come on at 4,200-5,000 rpm.
5. Push choke knob in and let engine idle.
6. Again, slowly increase engine speed. With the choke knob pushed in, the timing light should flash at 3,600-4,400 rpm. This should continue for up to 2 minutes, 36 seconds after the choke knob was first pulled.
7. After 2 minutes, 36 seconds, again raise engine speed from idle. The timing light should come on at 2,700-3,300 rpm (manual transmission) or 2,300-2,700 rpm (automatic transmission).
8. Raise engine speed from idle to 2,000 rpm, then let it drop slowly. The timing light should come on at 1,050-1,250 rpm. Note this speed for use in the next step.
9. Raise engine speed from idle until the timing light comes on. This should happen at a speed within 80-220 rpm of the speed noted in Step 8.
10. Run the engine at 2,000 rpm and push the idle switch (Figure 21). The timing light should come on.
11. If equipped with manual transmission, run the engine at 2,000 rpm. Have an assistant hold

the clutch pedal down and shift into fifth gear. The timing light should come on.

12. Move the timing light to the front rotor's leading (lower) spark plug wire.

13. Start the engine. Set engine speed at 2,000 rpm with the choke knob.

14. Point the timing light at the eccentric shaft pulley. The pointer should be between the red and yellow marks when the light flashes.

15. Keep watching the timing marks. At some point between one minute, 44 seconds and 2 minutes, 36 seconds after the choke knob was pulled, the timing should advance. The pointer should then move to the other side of the yellow timing mark.

16. Connect a voltmeter to the leading ignition coil's positive terminal. Raise engine speed. At a point between 3,600 and 4,400 rpm, the voltage should increase 1-2 volts.

System Test (1977 Non-California)

Since the non-California system's leading and trailing plugs fire at all times, testing the system is relatively uncomplicated. Perform Step 16 of the California system test.

Wiring Diagrams

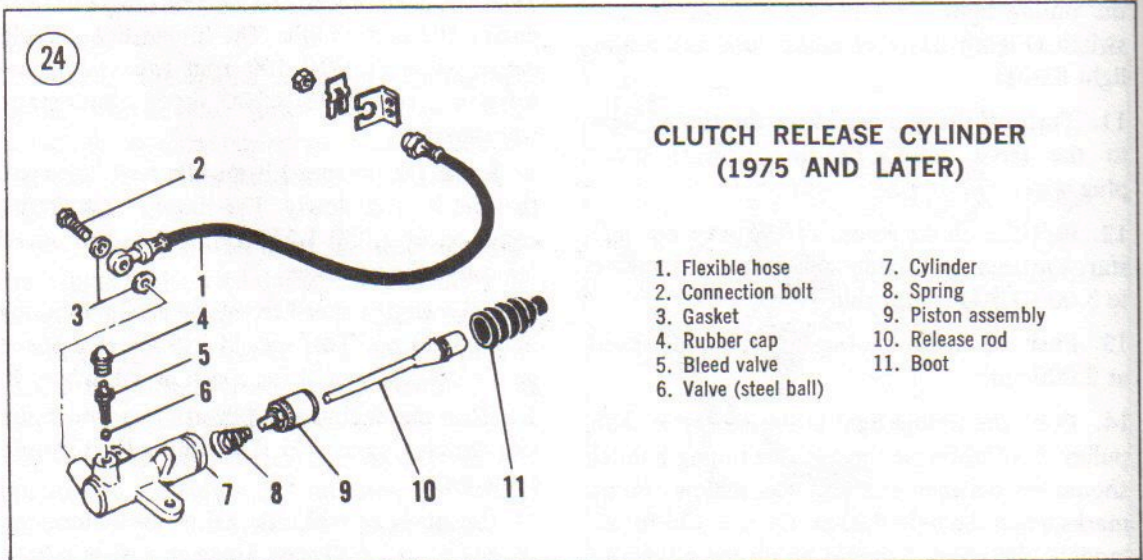
Wiring diagrams for 1974 and later models can be found at the end of the book.

CHAPTER EIGHT

CLUTCH

RELEASE CYLINDER

The release cylinder pushrod is no longer adjustable. **Figure 24** shows the cylinder. Removal/installation and overhaul procedures are the same as for earlier models.



CHAPTER NINE

TRANSMISSION

A 5-speed manual transmission became available in 1976. Removal and installation procedures are the same as for the 4-speed manual transmission.

CHAPTER TEN

BRAKES

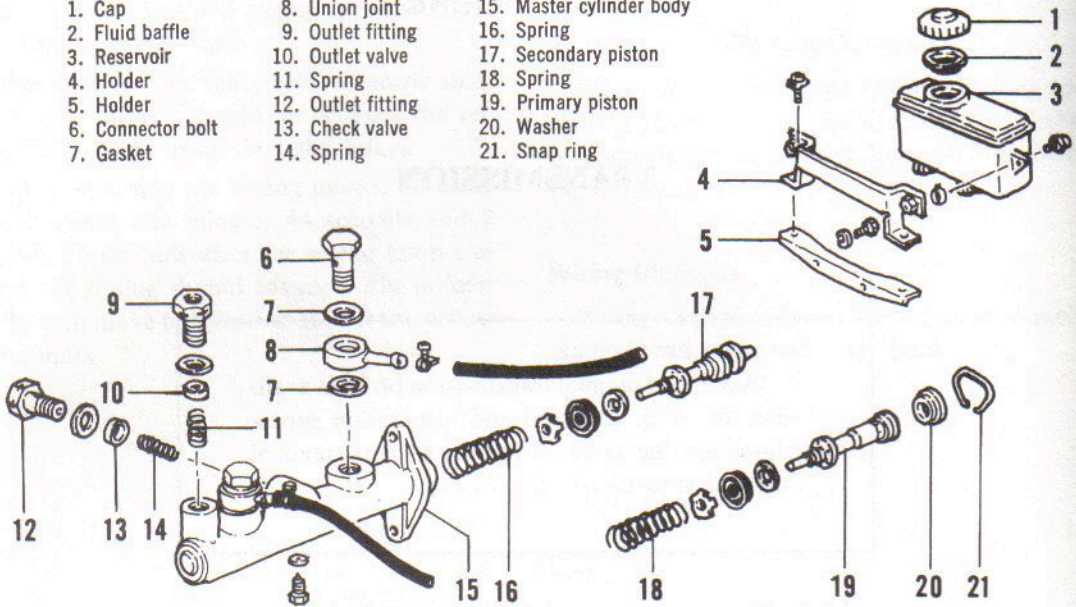
MASTER CYLINDER

The master cylinder has been redesigned (**Figure 25**). Service procedures are the same as for earlier models.

25

MASTER CYLINDER — 1975 AND LATER

- 1. Cap
- 2. Fluid baffle
- 3. Reservoir
- 4. Holder
- 5. Holder
- 6. Connector bolt
- 7. Gasket
- 8. Union joint
- 9. Outlet fitting
- 10. Outlet valve
- 11. Spring
- 12. Outlet fitting
- 13. Check valve
- 14. Spring
- 15. Master cylinder body
- 16. Spring
- 17. Secondary piston
- 18. Spring
- 19. Primary piston
- 20. Washer
- 21. Snap ring



CHAPTER ELEVEN

REAR SUSPENSION, DIFFERENTIAL,
AND DRIVE SHAFT

Tightening torques for some fasteners on 1975 and later models differ from earlier models. See **Table 3**.

Table 3 TIGHTENING TORQUES

	Ft.-lb.	Mkg
Rear spring U-bolt nuts	17-33	3.8-4.6
Pivot bolts, front and rear ends of spring	11-17	1.5-2.3

CHAPTER TWELVE

FRONT SUSPENSION, WHEEL BEARINGS,
AND STEERING

WHEEL ALIGNMENT

STEERING LOCK ANGLES

	Inner	Outer
1975	42°	33° 32'
1976	44° 35' ± 2°	32° ± 35'
1977	43° ± 2°	32° ± 2°

