Corolla

AISAN 2-BARREL – TOYOTA 3T-C ENGINES

DESCRIPTION

Carburetor is of 2-barrel, downdraft design and is equipped with automatic choke which is heated by an electrically operated bimetal heating coil. A piston type accelerator pump is incorporated into the primary barrel and an auxiliary accelerator pump system aids in cold engine acceleration. Other equipment includes diaphragms which open secondaries at high speed and full throttle operation. Other features include mixture control (except Federal Auto. Trans.), throttle positioner, choke breaker, choke opener, deceleration fuel cut, hot idle compensation and high altitude compensation (Federal option) devices.

CARBURETOR IDENTIFICATION

Application	Part No.
Federal	21100-28080
With High Altitude Comp.	21100-28110
California	21100-28090

ADJUSTMENTS

NOTE – *It is recommended that Toyota carburetor adjusting kits 09240-00014 and 09240-00020 be used to make the following adjustments.*

HOT (SLOW) IDLE RPM

See appropriate Tune-Up article in TUNE-UP section.

IDLE MIXTURE

See appropriate Tune-Up article in TUNE-UP section.

COLD (FAST) IDLE RPM

See appropriate Tune-Up article in TUNE-UP section.

FLOAT LEVEL

Hold air horn upside-down. Allow float to hang by its own weight. Measure gap between float tip and air horn gasket surface (gasket removed). Bend float by inserting suitable tool in hole until gap is correct. *See Fig. 1 and 2.*

NOTE – *After April 1980 (Engine number 3T-4749400), float level specification changed to .362" (9.2 mm).*

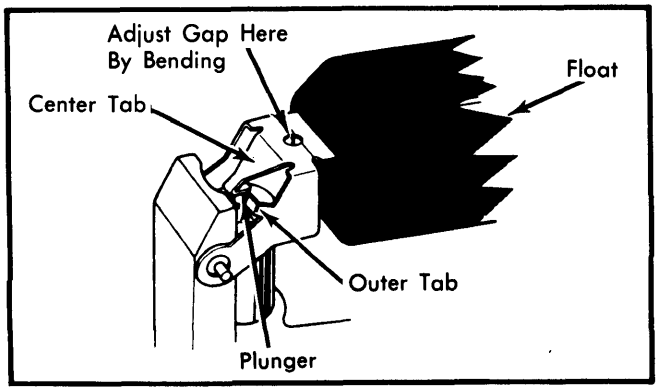


Fig. 1 Point for Adjusting Carburetor Float Level

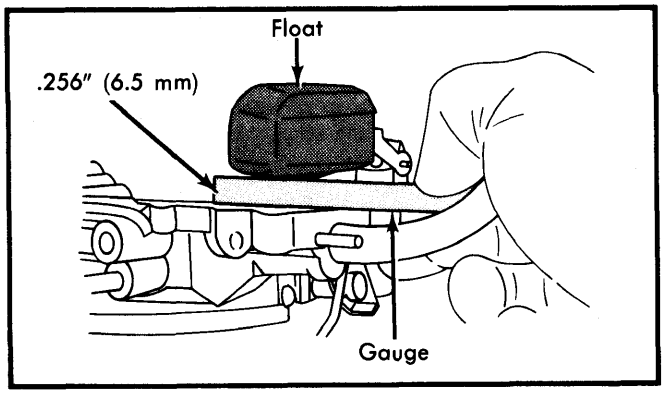


Fig. 2 Float Level Measurement Points and Gauge

FLOAT DROP

Lift up float. Measure gap between needle valve and float lip. Bend float outer tab until gap is correct. *See Fig. 3 and 4.* After adjustment, ensure plunger moves smoothly.

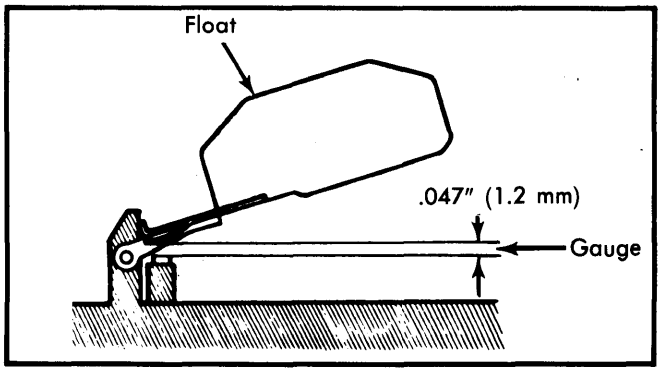


Fig. 3 Float Drop Measurement Points and Gauge

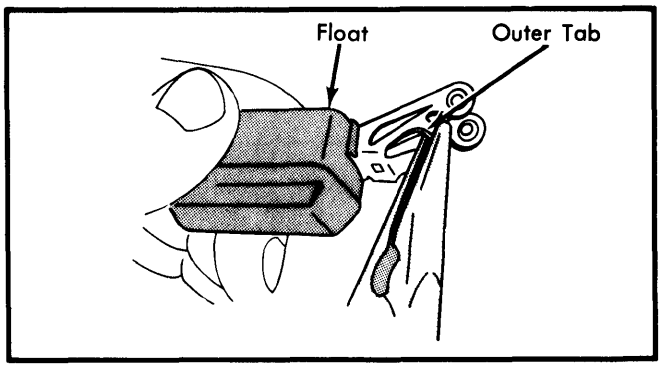


Fig. 4 Position for Adjusting Float Drop

PRIMARY & SECONDARY THROTTLE VALVES

When primary throttle valve is fully opened (90°), secondary throttle valve should also be completely open (80°). If adjustment is necessary, bend throttle shaft link.

NOTE – *The secondary throttle valve should begin to open when primary throttle valve is open 57° from bore surface.*

AISAN 2-BARREL – TOYOTA 3T-C ENGINES (Cont.)

FAST IDLE (BENCH ADJUSTMENT)

Fully close choke valve by turning coil housing. Check angle between thottle valve and throttle bore with angle gauge. Adjust angle to 24° by turning fast idle adjusting screw.

SECONDARY THROTTLE OPENING ANGLE (KICK-UP)

Bend secondary throttle lever to obtain .0059" (.15 mm) clearance between secondary throttle valve and bore when primary throttle valve is open between 64° and 90° (fully open). See *Fig. 5*.

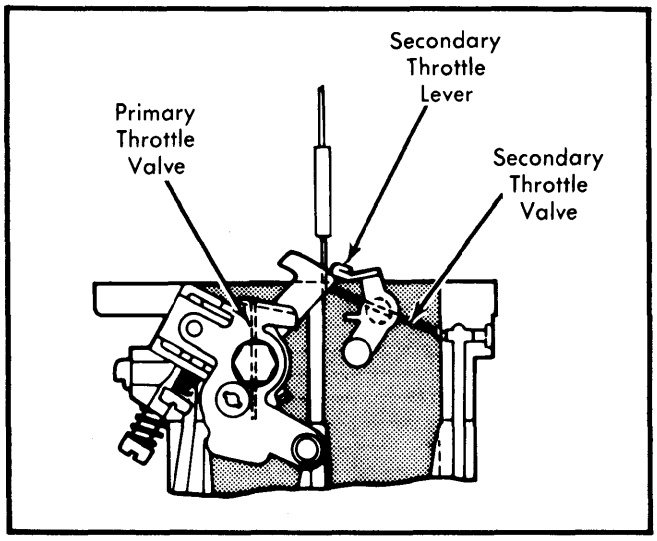


Fig. 5 Carburetor Kick-Up Adjustment

CHOKE UNLOADER

Insert angle gauge. Adjust angle of choke valve so it will be 47° from fully closed position when primary throttle valve is fully open. Bend fast idle cam follower to obtain correct angle. See *Fig. 6*.

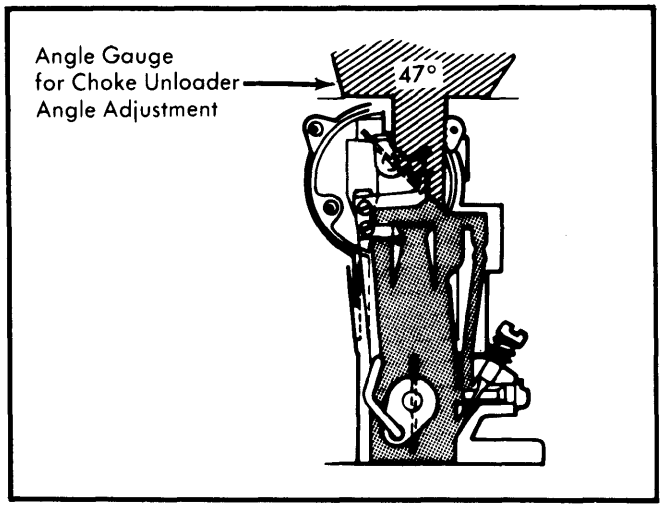


Fig. 6 Adjusting Choke Unloader Angle with Gauge

CHOKE BREAKER

Fully close choke valve by turning coil housing. Connect hoses to breaker vacuum diaphragm and apply vacuum. With vacuum applied, adjust choke angle to 40° (42° Calif.) by bending release tang.

CHOKE OPENER

Fully close choke valve by turning coil housing. Connect hose to opener diaphragm and apply vacuum. With vacuum applied, adjust choke angle to 85° (between choke valve and bore) by bending relief tang.

AUTOMATIC CHOKE

Set coil housing scale to center line of thermostat case. Turn coil housing and adjust engine starting mixture to conform with vehicle operating conditions. When mixture for starting is too rich, turn clockwise; when too lean, turn counterclockwise.

NOTE – *Choke valve fully closes at atmospheric temperature of 77°F (25°C).*

THROTTLE POSITIONER

Turn carburetor upside-down and place throttle positioner adjusting screw against tab on throttle lever. Check angle between throttle valve and bore. Adjust angle to 17° (16.5° Calif.) by turning throttle positioner adjusting screw. See *Fig. 7*.

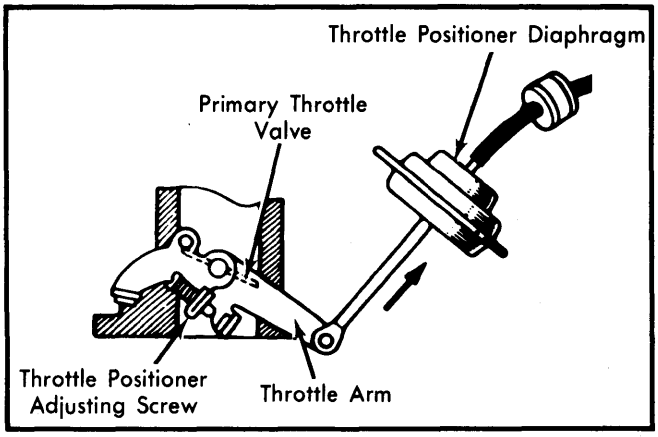


Fig. 7 Making Throttle Positioner Adjustment

ACCELERATOR PUMP

Place a straight edge on top of air horn and measure full travel of pump plunger. Make measurement at boot end. Adjust travel distance to .197" (5.0 mm) by bending accelerator pump actuating rod at existing bend.

OVERHAUL

NOTE – *It is recommended that Toyota carburetor driver kit 09860-11011 be used during carburetor overhaul.*

AISAN 2-BARREL – TOYOTA 3T-C ENGINES (Cont.)

DISASSEMBLY

Air Horn – 1) Disconnect choke breaker vacuum hose. Remove pump lever connecting link and pump lever. Remove fast idle cam link circlip and throttle valve return spring.

2) Remove terminal from thermostatic coil connector. Remove all fittings from air horn. Remove 8 air horn retaining screws and carefully lift off air horn.

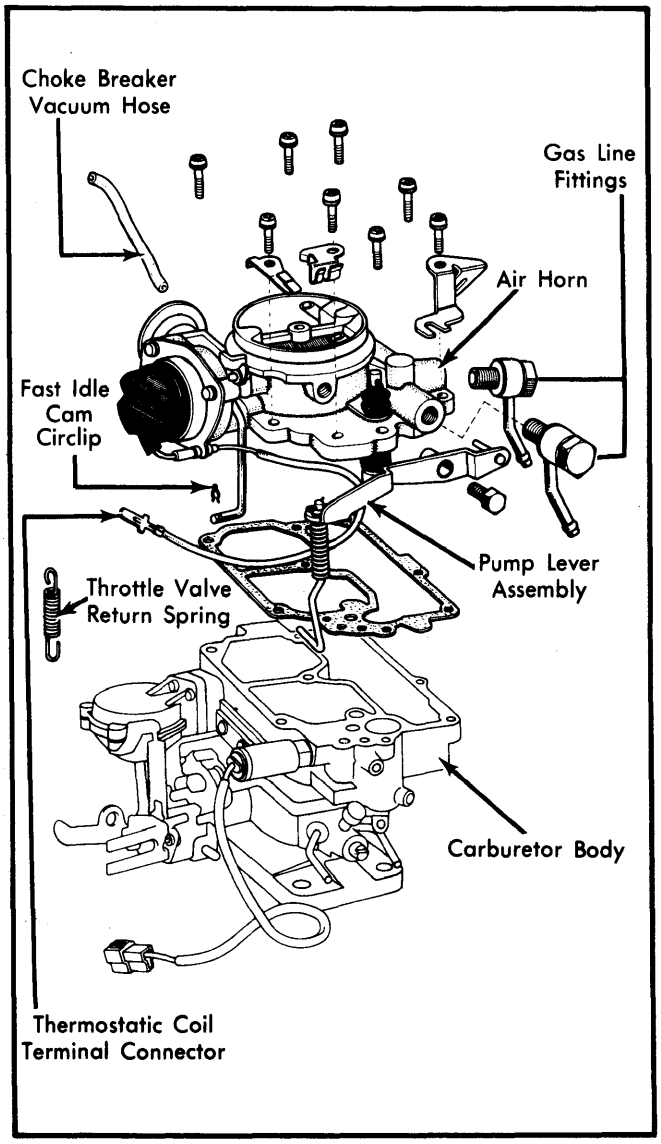


Fig. 8 Exploded View of Air Horn Assembly

Float Parts – Remove pump plunger, float assembly and needle valve pin, spring and valve assembly. Using appropriate driver, remove needle valve seat. Remove power piston retaining clip and screw. Remove power piston and spring assembly.

Automatic Choke Parts – Remove coil housing, then remove choke lever retaining screw and lever. Remove thermostat case and gasket, choke breaker diaphragm, relief lever, choke valve retaining screws and choke valve and choke shaft.

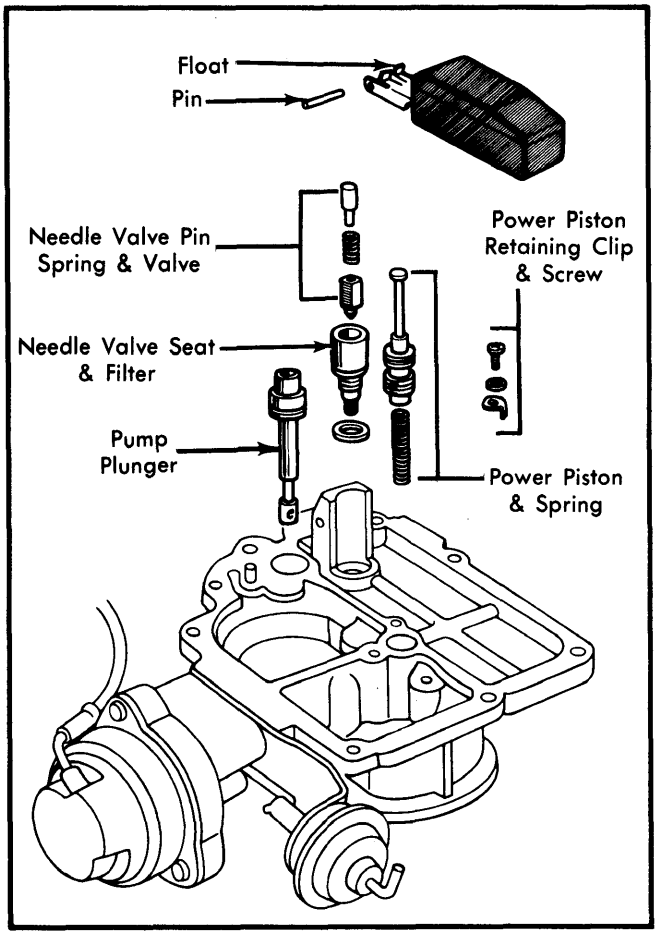


Fig. 9 Exploded View of Float Parts

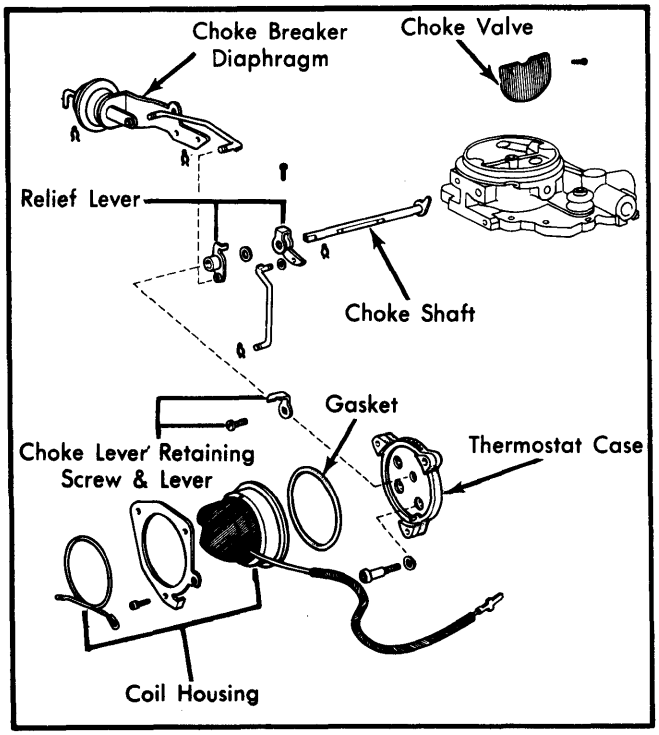


Fig. 10 Exploded View of Automatic Choke Parts

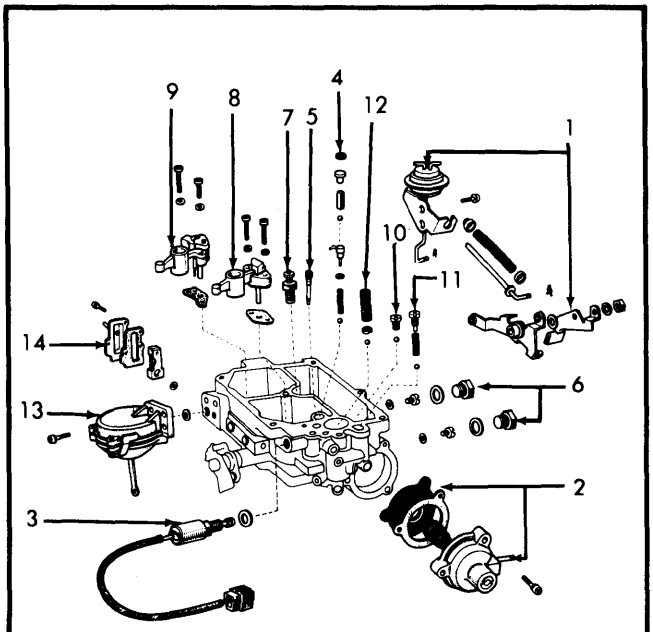
AISAN 2-BARREL – TOYOTA 3T-C ENGINES (Cont.)

Body Parts – 1) Remove throttle positioner assembly, auxiliary accelerator pump (AAP) diaphragm, and fuel cut solenoid.

2) Remove acceleration pump nozzle, discharge weight, valve, spring and check ball. Arrange in order of removal for reassembly reference. *See Fig. 11.*

3) Remove slow jet, primary and secondary main jet plugs and jets, power valve and primary and secondary venturi. Remove AAP inlet valve plug and check ball, then remove AAP outlet valve plug, spring and check ball.

4) Remove pump inlet valve retainer with tweezers, then remove check ball. Remove secondary throttle valve diaphragm and carefully remove gasket. Remove hot idle compensator assembly (Federal models).



1. Throttle Positioner Assy.
2. AAP Diaphragm
3. Fuel Cut Solenoid
4. Pump Discharge Weight, Outlet Valve & Nozzle Assy.
5. Slow Jet
6. Primary & Secondary Main Jet Plugs & Jets
7. Power Valve
8. Primary Venturi
9. Secondary Venturi
10. AAP Inlet Valve
11. AAP Outlet Valve
12. Pump Inlet Valve Assembly
13. Secondary Throttle Valve Diaphragm
14. Hot Idle Compensator

Fig. 11 Exploded View of Carburetor Body Parts

Flange Parts – Remove vacuum passage bolts and arrange in proper order for reassembly reference. Remove flange retaining bolts and separate flange and carburetor body. Discard gasket. Remove idle mixture adjusting screw with appropriate tool (09243-00010).

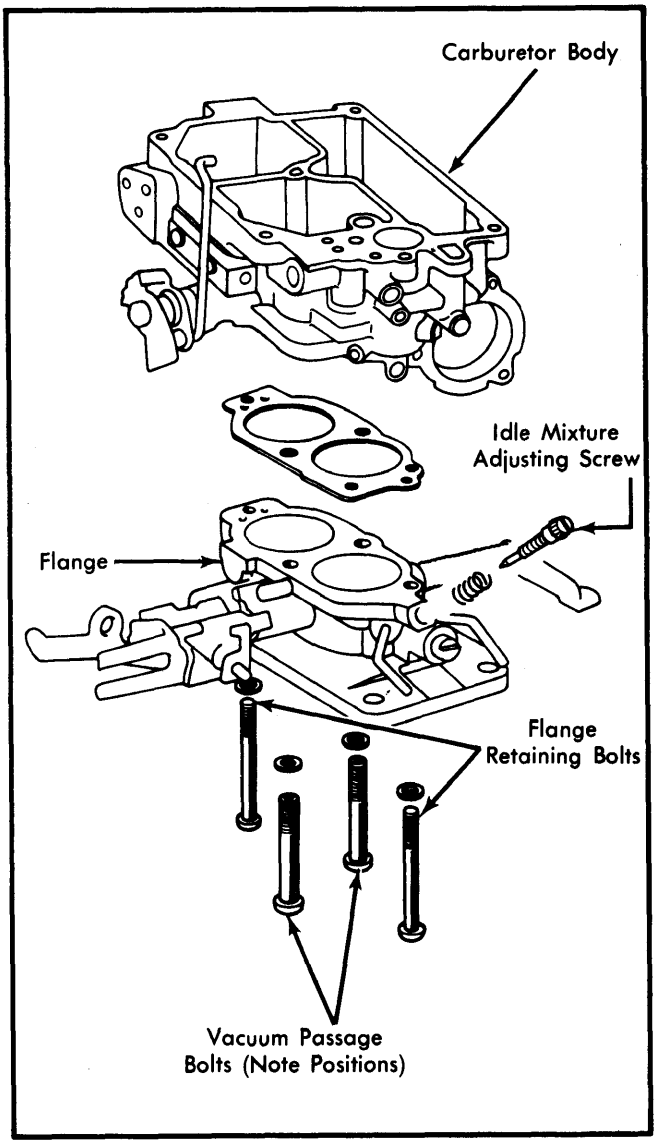


Fig. 12 Exploded View of Carburetor Flange Parts

CLEANING & INSPECTION

Clean all parts in suitable solvent (carburetor cleaner) and blow dry. Do not attempt to clean jets or other passages with wire or other metal objects. Inspect all parts for wear or damage and replace necessary parts.

REASSEMBLY

Use all new gaskets, reverse disassembly procedure and note the following:

1) When assembling flange parts, ensure vacuum passage bolts are installed in correct position.

2) When assembling secondary throttle valve diaphragm, ensure gasket is properly installed and seated.

AISAN 2-BARREL – TOYOTA 3T-C ENGINES (Cont.)

3) Ensure AAP and pump valves, springs and check balls are properly installed in appropriate orifices.

4) When installing main jets, primary jet is "brass" colored and secondary jet is "chrome" colored.

5) When installing pump discharge weight and outlet valve assembly, ensure all components are installed in correct order. See *Fig. 11*.

6) After installing power piston retaining clip and screw, check power piston for smooth operation.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Application	Idle Speed (Engine RPM)		Float Level Setting In. (mm)	Float Drop In. (mm)	Fast Idle Angle	Choke Breaker Opening Angle	Accel. Pump Stroke In. (mm)	Throttle Positioner Angle
	Hot	Fast						
Corolla	700①②	3000③	.256 (6.5)	.047 (1.2)	24°	40°④	.197 (5.0)	17°⑤

① – Idle Speed – Auto. Trans. w/o power steering – 750 RPM.
All transmissions with power steering – 850 RPM.
② – Mixture Speed – Man. Trans. w/o power steering – 760 RPM.
Auto. Trans. w/o power steering – 810 RPM.
All transmissions with power steering – 920 RPM.
③ – Fast Idle – Calif. w/power steering – 2600 RPM.
Fed. w/power steering & Calif. w/o power steering – 2800 RPM.
④ – Calif. models – 42°.
⑤ – Calif. models – 16.5°.