

TUNE-UP

Celica, Corolla, Corona, Pickup, Starlet, Tercel

ENGINE IDENTIFICATION

Each engine serial number contains an identifying code for engine identification. All numbers are stamped on the left side of engine block. Engine codes are also provided on decal at front edge of valve cover.

ENGINE CODE

Application	Code
Celica, Corona & Pickup	22R
Corolla	3T-C
Starlet	4K-C
Tercel	3A-C

ENGINE COMPRESSION

Run engine until it reaches normal operating temperature. Remove all spark plugs and coil high tension wire. Hold throttle valve wide open and operate engine at cranking speed, when checking compression.

COMPRESSION SPECIFICATIONS

Normal Compression Pressure	
Celica, Corona & Pickup	171 psi (12.0 kg/cm ²)
Corolla	163 psi (11.5 kg/cm ²)
Starlet	156 psi (11.0 kg/cm ²)
Tercel	177 psi (12.5 kg/cm ²)
Min. Compression Pressure	
	128 psi (9.0 kg/cm ²)
Max. Variation	
	14 psi (1.0 kg/cm ²)

VALVE CLEARANCE

Check or adjust valve clearance with engine at normal operating temperature. Remove valve cover and set No. 1 cylinder at TDC. Turn crankshaft with a wrench to align timing marks. Check that rocker arms for No.1 cylinder are loose and for No. 4 cylinder are tight. Adjust intake valve on cylinders No. 1 and No. 2 and exhaust valve on cylinders No. 1 and No. 3. Turn crankshaft 360°. Adjust intake valve on cylinders No. 3 and No. 4 and exhaust valve on cylinders No. 2 and No. 4.

VALVE CLEARANCE SPECIFICATIONS

Application	¹ Clearance In. (mm)
Intake008 (.20)
Exhaust	
Corolla013 (.33)
All Other Models012 (.30)

¹ — Adjust valve clearance with engine hot.

Fig. 1: Firing Order and Distributor Rotation (Celica, Corona and Pickup)

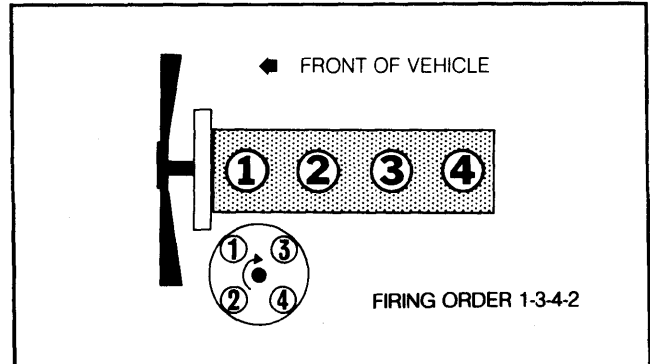


Fig. 2: Firing Order and Distributor Rotation (Corolla and Starlet)

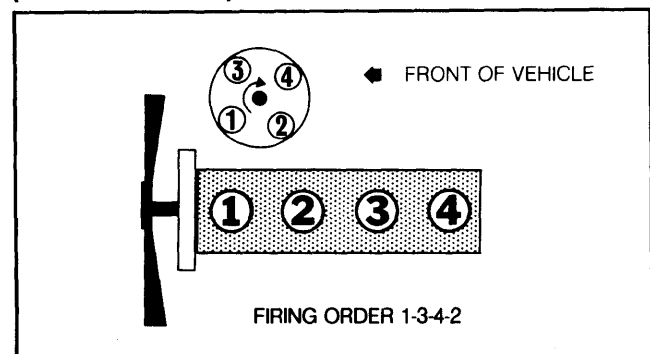
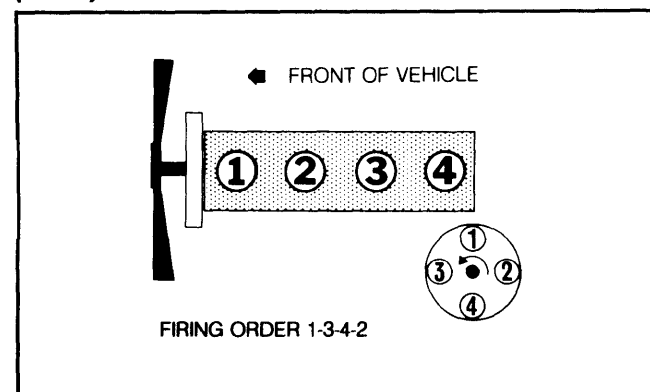


Fig. 3: Firing Order and Distributor Rotation (Tercel)



VALVE ARRANGEMENT

STARLET
E-I-I-E-E-I-I-E
TERCEL
I-E-E-I-I-E-E-I
ALL OTHER MODELS
Right Side — All Intake
Left Side — All Exhaust

1982 Toyota 4 Tune-Up

TUNE-UP (Cont.)

SPARK PLUGS

SPARK PLUG TYPE

Application	NGK No.	Nippondenso No.
Celica, Corona & Pickup	BPR5EA-L	W16EXR-U
Corolla Federal		J16AR-V11
Calif. Starlet	BPR5EA-L	W14EXR-U
Federal	BPR5EA-L11	W14EXR-U11
Calif. Tercel	BPR5EA-L	W14EXR-U
	BPR5EA-L11	W16EXR-U11

SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
Celica, Corona & Pickup	.031 (0.8)	11-15 (15-20)
Corolla Starlet	.043 (1.1)	11-15 (15-20)
Federal	.043 (1.1)	11-15 (15-20)
Calif. Tercel	.031 (0.8)	11-15 (15-20)
	.043 (1.1)	11-15 (15-20)

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check high tension wire resistance while gently twisting wires. If resistance is not to specifications, or fluctuates from infinity to any value, replace high tension wire(s).

WIRE RESISTANCE

Application	Ohms
All Models	25,000

DISTRIBUTOR

All models use transistorized ignition which eliminates breaker points. Reluctor-to-pick-up air gap is the only adjustment. Measure air gap with a non-magnetic feeler gauge and move pick-up if necessary to correct air gap.

DISTRIBUTOR PICK-UP COIL AIR GAP

Application	In. (mm)
All Models	.008-.016 (.2-.4)

IGNITION TIMING

1) Connect a tachometer and timing light to engine. The positive lead of tachometer is connected to the (-) terminal of coil on all models except Celica, Corona and Pickup. On these models, connect tachometer positive lead to service connector from igniter, located at coil (covered with rubber cap).

2) With engine at normal operating temperature, be sure all hoses are connected, choke valve is fully open, transmission in "N" or neutral position, and all accessories are turned off. Adjust idle speed to timing specifications.

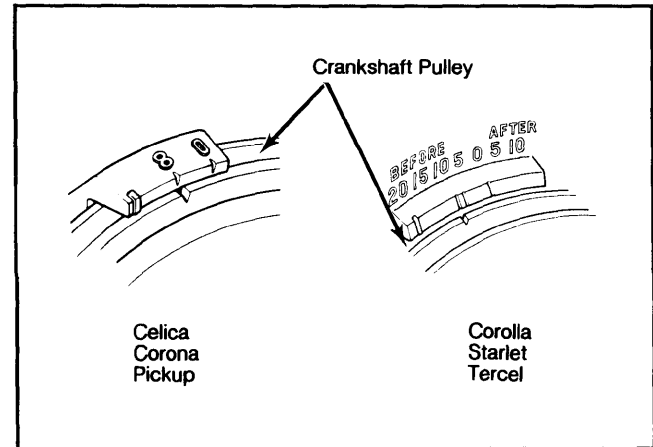
3) On models with dual diaphragm distributor, disconnect and plug hoses at sub-diaphragm and main diaphragm. On all models, check timing and adjust by turning distributor. When timing is set, reconnect sub-diaphragm hose. Timing marks should move. Reconnect main diaphragm hose.

IGNITION TIMING (Degrees BTDC@RPM)

Application	Timing
Celica, Corona & Pickup	8@950
Corolla Starlet	7@950
Tercel	8@950
	5@950

¹ — With distributor sub-diaphragm hose disconnected.

Fig. 4: Ignition Timing Marks



IDLE SPEED & MIXTURE

NOTE: Before starting the engine, plug hose end for following systems: Starlet and Corolla HIC system. Tercel, Air Suction (AS) system for Federal model and HIC system, all models. Celica, Corona and Pickup, HAI system & MC system.

NOTE: Mixture adjustment is NOT a part of normal tune-up procedure and should not be performed unless carburetor is overhauled or vehicle fails emissions testing.

1) With air cleaner installed, run engine until it reaches normal operating temperature. Ensure that choke is fully open, all accessories are off and all vacuum lines connected. Check and adjust timing.

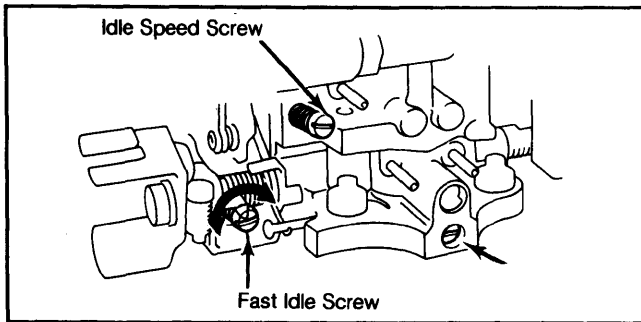
2) Place transmission in neutral and check that fuel level in carburetor sight glass is about mid-way. Remove idle mixture screw protective cover and idle limiter caps, if installed, and adjust idle speed to specifications.

TUNE-UP (Cont.)

3) Turn idle mixture adjusting screw to obtain maximum RPM. Now, turn idle speed screw until IDLE MIXTURE RPM is obtained. Repeat adjustments again, turning idle mixture screw to obtain maximum RPM, then idle speed screw to obtain idle mixture speed. Repeat until highest RPM is obtained before setting final idle mixture speed.

4) Once idle mixture speed is set after the highest possible RPM is obtained using the previous procedures, turn in idle mixture adjusting screw until normal IDLE SPEED RPM is obtained. Install replacement mixture screw cap and protective cover, if so equipped.

Fig. 5: Carburetor Adjusting Screws (All Models)



IDLE SPEED & MIXTURE

Application	Idle Mixture RPM	Idle Speed RPM
Celica & Corona		
Man. Trans.	740	700
Auto. Trans.	790	750
Corolla		
Man. Trans. ¹	820	650
Auto. Trans. ¹	880	750
Pickup		
Man. Trans.	740	700
Auto. Trans.	790	750
Starlet		
Federal	580	550
Calif.	730	700
Tercel		
Man. Trans.		
4-Spd.	600	550
5-Spd.	700	650
Auto. Trans.	850	800

¹ — With power steering, set to 940/850 RPM.

COLD (FAST) IDLE RPM

CELICA, CORONA & PICKUP

1) After setting idle speed and mixture, stop engine. Remove air cleaner. Disconnect and plug hoses at distributor vacuum advance, choke opener diaphragm and EGR valve. On manual transmission models, disconnect and plug hoses for hot air intake and mixture control system.

2) On all models, hold throttle valve slightly open. Push choke valve closed and release throttle valve.

Without touching accelerator, start engine. Set fast idle to specifications by turning fast idle adjusting screw.

COROLLA

1) After setting idle speed and mixture, stop engine. Remove air cleaner. Disconnect hoses at hot idle compensation system, choke opener diaphragm to BSV at diaphragm, and 2nd stage choke breaker diaphragm to jet restrictor at diaphragm.

2) Hold throttle valve slightly open. Push choke valve closed and release throttle valve. Without touching accelerator, start engine. Set fast idle to specification by turning fast idle adjusting screw.

STARLET

1) After setting idle speed and mixture, stop engine. Remove air cleaner. Disconnect and plug hoses for hot idle compensation system, EGR valve and choke opener diaphragm.

2) Start engine. Pull choke knob out about half way and depress accelerator pedal once. Check that fast idle cam is at 2nd stage and that engine speed has increased to about 3500 RPM.

3) Fully open choke valve. With engine cooling fan off, adjust fast idle speed to specifications by turning fast idle adjusting screw.

TERCEL

1) After setting idle speed and mixture, stop engine. Remove air cleaner. Disconnect and plug air suction (AS) hose on Federal models. Disconnect hose from EGR valve and from choke opener diaphragm. Hold throttle valve slightly open. Push choke valve closed and release throttle valve.

2) Without touching accelerator, start engine. With engine cooling fan off, adjust fast idle speed to specifications by turning fast idle adjusting screw.

FAST IDLE SPEED

Application	Fast Idle RPM
Celica, Corona & Pickup	2600
Corolla	
Man. Trans. ¹	3400
Auto. Trans. ¹	3200
Starlet	3500
Tercel	3600

¹ — If equipped with power steering set speed 200 RPM lower.

FUEL PUMP

FUEL PUMP PERFORMANCE

Application	Pressure psi (kg/cm ²)	Volume in 30 Sec. Pints (Liters)
All Models	3.2 (.23)	1 (.5)

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

1982 Toyota 4 Tune-Up

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with a Nippondenso transistorized ignition system.

IGNITION COIL

RESISTANCE Ohms@68°F (20°C)

Application	Primary	Secondary
Corolla	0.8-1.1	11,500-15,500
Pickup	0.4-0.5	8500-11,500
Starlet	1.3-1.7	10,000-15,000
All Others	0.8-1.1	10,700-14,500

FUEL SYSTEMS

CARBURETORS

All models use Aisan 2-Bbl. carburetors.

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Amp. Hr. Rating
Standard	50
Optional	60

STARTER

All models are equipped with Nippondenso solenoid-actuated starters.

STARTER SPECIFICATIONS

Application	Volts	Amps	Test RPM
Conventional	11.0	50	5000
Reduction	11.5	90	3000

ALTERNATORS

All models are equipped with Nippondenso alternators.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
Celica, Corona & Pickup	40, 55 & 60
Corolla, Starlet & Tercel	45, 50 & 55

ALTERNATOR REGULATOR

All models are equipped with Nippondenso alternator regulators.

REGULATOR OPERATING VOLTAGE@68°F (20°C)

Application	Voltage
All Models	13.8-14.8

SERVICE SPECIFICATIONS

BELT ADJUSTMENT

Lbs. (Kg) of Tension Using Strand Tension Gauge

Application	New Belt	Used Belt
All Models	125 (57)	80 (36)

REPLACEMENT INTERVALS

Component	Miles
Oil Filter	10,000
Air Filter	30,000
Fuel Filter	60,000
Spark Plugs	
Federal	15,000
Calif.	30,000

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	
Celica, Corona & Pickup	4.9 qts. (4.6L)
Corolla	4.0 qts. (3.8L)
Starlet & Tercel	3.7 qts. (3.5L)
Cooling System (Includes Heater)	
Celica, Corona & Pickup	8.9 qts. (8.4L)
Corolla	7.8 qts. (7.4L)
Starlet	6.0 qts. (5.7L)
Tercel	5.5 qts. (5.2L)
Man. Transmission (SAE 80W-90)	
Celica	2.5 qts. (2.4L)
Corolla	1.8 qts. (1.7L)
Corona	2.7 qts. (2.6L)
Pickup	
4-Spd.	2.1 qts. (1.9L)
5 Spd.	2.7 qts. (2.6L)
Starlet	2.6 qts. (2.5L)
Man. Transaxle (SAE 80W-90)	3.5 qts. (3.3L)
Auto. Transmission (ATF Type F)	2.5 qts. (2.4L)
Auto. Transaxle (ATF Type F)	2.3 qts. (2.2L)
Transfer Case (SAE 80W-90)	3.4 pts. (3.2L)
Differential (SAE 80W-90)	
Celica & Corona	
Banjo-Type	2.8 pts. (1.3L)
Unitized-Type	2.6 pts. (1.2L)
Corolla & Starlet	2.2 pts. (1.0L)
Pickup	
2-WD	
7.5"	3.6 pts. (1.7L)
8.0"	3.8 pts. (1.8L)
4-WD (Front and Rear)	2.3 pts. (1.1L)
Tercel (Front With Auto. Transaxle)	2.0 pts. (.9L)
Fuel Tank	
Celica	16.1 gals. (60.9L)
Corolla	
Exc. Station Wagon	13.2 gals. (49.9L)
Station Wagon	12.4 gals. (46.9L)
Corona	
Exc. Station Wagon	16.1 gals. (60.9L)
Station Wagon	15.5 gals. (58.6L)
Pickup	
Short Bed	13.5 gals. (51.1L)
Long Bed	16.0 gals. (60.6L)
Starlet	10.6 gals. (40.1L)
Tercel	11.9 gals. (45.0L)