

C - SPECIFICATIONS - 4-CYL

1993 Toyota Celica

1993 ENGINE PERFORMANCE

Toyota 4-Cylinder Service & Adjustment Specifications

Celica

INTRODUCTION

Use this article to quickly find specifications related to servicing and on-vehicle adjustments. Use this quick-reference article when you are familiar with an adjustment procedure and only need a specification.

CAPACITIES

BATTERY SPECIFICATIONS TABLE

Application	Amp Hr. Rating
Celica	55

FLUID CAPACITIES TABLE

Application	(1) Quantity
Crankcase (Includes Filter)	
1.6L (4A-FE)	3.4 Qts. (3.2L)
2.0L Turbo (3S-GTE)	4.1 Qts. (3.9L)
2.2L (5S-FE)	
With Oil Cooler	4.4 Qts. (4.2L)
Without Oil Cooler	4.3 Qts. (4.1L)
Cooling System (Includes Heater)	
1.6L (4A-FE)	
A/T	5.9 Qts. (5.6L)
M/T	5.5 Qts. (5.2L)
2.0L Turbo (3S-GTE)	6.3 Qts. (6.0L)
2.2L (5S-FE)	
A/T	7.0 Qts. (6.6L)
M/T	6.9 Qts. (6.5L)
Manual Transaxle (SAE 75W-90/API GL-5)	
1.6L (4A-FE) & 2.2L (5S-FE)	2.7 Qts. (2.6L)
2.0L Turbo (3S-GTE)	5.5 Qts. (5.2L)
Automatic Transaxle (Dexron-II)	
Dry Refill	
1.6L (4A-FE)	8.1 Qts. (7.7L)
2.2L (5S-FE)	8.5 Qts. (8.0L)
Drain & Refill	3.5 Qts. (3.3L)
Differential (SAE 80W-90/API GL-5)	
AWD Rear Axle	1.2 Qts. (1.1L)

(1) - Approximate quantity listed.

QUICK-SERVICE

SERVICE INTERVALS & SPECIFICATIONS

REPLACEMENT INTERVALS TABLE

Component	Months	Miles
Air Filter	36	30,000
Cam Timing Belt	(1)	60,000
Coolant	36	(2) 45,000
Oil & Filter (3)		
1.6L (4A-FE) & 2.2L (5S-FE)		
Normal Service	12	7500
Severe Service	6	3750
2.0L Turbo (3S-GTE)		
Normal Service	6	5000
Severe Service	3	2500
Oxygen Sensor	N/A	80,000
Spark Plugs		
1.6L (4A-FE)	36	30,000
2.0L Turbo (3S-GTE)	72	60,000
2.2L (5S-FE)	72	60,000

(1) - Monthly interval is not available from manufacturer.

(2) - After first change, replace coolant every 30,000 miles or 24 months.

(3) - Different interval is required for normal service and severe service. Severe service is described as trailer towing, police, taxi or local delivery service, or operating in dust conditions.

VALVE CLEARANCE ADJUSTMENT INTERVALS TABLE

Application	Months	Miles
Celica	72	60,000

BELT ADJUSTMENT TABLE (1)

Application	New Belt	(2) Used Belt
1.6L (4A-FE)		
A/C	160 (73)	100 (45)
Alternator	160 (73)	130 (59)
Power Steering	125 (57)	80 (36)
2.0L Turbo (3S-GTE)		
A/C	165 (75)	84 (38)
Alternator		
With A/C	175 (79)	115 (52)
Without A/C	150 (68)	130 (59)
Power Steering	125 (57)	80 (36)
2.2L (5S-FE)		
A/C	165 (75)	110 (50)
Alternator		
With A/C	175 (79)	130 (59)
Without A/C	125 (57)	95 (43)
Power Steering	125 (57)	80 (36)

(1) - Tension In Lbs. (kg) Using Burroughs Tension Gauge.

(2) - Used belt is a belt in operation at least 5 minutes.

MECHANICAL CHECKS

ENGINE COMPRESSION

Check engine compression with engine at normal operating temperature at specified cranking speed with fully charged battery, all spark plugs removed and throttle wide open.

COMPRESSION SPECIFICATIONS TABLE

Application	Specification
Compression Ratio	9.5:1
1.6L (4A-FE) & 2.2L (5S-FE)	9.5:1
2.0L Turbo (3S-GTE)	8.8:1
Compression Pressure	
1.6L (4A-FE)	191 psi (13.4 kg/cm ²)
2.0L Turbo (3S-GTE)	164 psi (11.5 kg/cm ²)
2.2L (5S-FE)	178 psi (12.5 kg/cm ²)
Minimum Compression Pressure	128 psi (9.0 kg/cm ²)
Maximum Variation Between Cylinders ..	14 psi (1.0 kg/cm ²)

VALVE CLEARANCE

VALVE CLEARANCE SPECIFICATIONS TABLE

Application	In. (mm)
1.6L (4A-FE)	
Exhaust	.008-.012 (.20-.30)
Intake	.006-.010 (.15-.25)
2.0L Turbo (3S-GTE)	
Exhaust	.011-.015 (.28-.38)
Intake	.006-.010 (.15-.25)
2.2L (5S-FE)	
Exhaust	.011-.015 (.28-.38)
Intake	.007-.011 (.18-.28)

IGNITION SYSTEM

IGNITION COIL

IGNITION COIL RESISTANCE TABLE - Ohms @ 68°F (20°C)

Application	Primary	Secondary
1.6L (4A-FE)	1.10-1.70	9000-15,000
2.0L (3S-GTE)	.30-.60	9000-15,000
2.2L (5S-FE)	.30-.60	9000-15,000

DISTRIBUTOR PICK-UP COIL AIR GAP TABLE

Application	In. (mm)
Celica	.008-.016 (.20-.40)
(1) - Cam position sensors are used; air gap is not adjustable.	

DISTRIBUTOR PICK-UP COIL RESISTANCE TABLE

Application	(1) Pick-Up Coil Terminals	(2) Ohms
1.6L (4A-FE)	G1 & G-	185-265
"	NE+ & G-	185-265
2.0L Turbo (3S-GTE)	G1 & G-	125-190
"	G2 & G-	125-190
"	NE & G-	155-240
2.2L (5S-FE)	G+ & G-	185-265
"	NE+ & NE-	370-530

(1) - For proper testing and terminal identification, see
F - BASIC TESTING article in the ENGINE PERFORMANCE
section.

(2) - Specification is with pick-up coil or cam position
sensor temperature between 14 and 104°F (-10 and 40°C).

HIGH TENSION WIRE RESISTANCE

HIGH TENSION WIRE RESISTANCE TABLE

Application	Maximum Ohms
Celica	25,000 Per Wire

SPARK PLUGS

SPARK PLUG TYPE TABLE

Application	NGK No.	Nippondenso No.
1.6L (4A-FE)	BCPR5EY	Q16R-U
2.0L Turbo (3S-GTE)	BKR6EP8	PK20R8
2.2L (5S-FE)	BKR6EP11	PK20R11

SPARK PLUG SPECIFICATIONS TABLE

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
1.6L (4A-FE)	.031 (0.79)	13 (18)
2.0L Turbo (3S-GTE)	.031 (0.79)	13 (18)
2.2L (5S-FE)	.043 (1.09)	13 (18)

FIRING ORDER

FIRING ORDER TABLE

Application	Firing Order
Celica (1)	1-3-4-2

(1) - No. 1 cylinder is located at timing belt or timing
chain end of engine. No. 4 cylinder is located at
flywheel end.

IGNITION TIMING

IGNITION TIMING TABLE - Degrees BTDC @ RPM

Application (1)	(2) Base Timing	(3) Advance Timing
1.6L (4A-FE)	10 @ 800	0-20 @ 800
2.0L Turbo (3S-GTE) ...	10 @ 800	12-21 @ 800
2.2L (5S-FE)	10 @ 700	13-22 @ 700

- (1) - Check with transmission/transaxle in Neutral and parking brake applied.
 (2) - With jumper wire installed between data link connector terminals TE1 and E1.
 (3) - With jumper wire removed from data link connector.

FUEL SYSTEM

FUEL PUMP

NOTE: Fuel pump performance measures fuel pressure, not regulated fuel pressure.

FUEL PUMP PERFORMANCE TABLE

Application	(1) Pressure - psi (kg/cm ²)
1.6L (4A-FE) & 2.2L (5S-FE)	38-44 (2.7-3.1)
2.0L Turbo (3S-GTE)	33-38 (2.3-2.7)

- (1) - Check fuel pressure with jumper wire installed between data link connector terminals +B and FP, ignition on and engine off.

REGULATED FUEL PRESSURE TABLE

Application	Specification
1.6L & 2.2L	
At Idle With Vacuum	31-37 psi (2.2-2.6 kg/cm ²)
At Idle Without Vacuum	38-44 psi (2.7-3.1 kg/cm ²)
2.0L Turbo	
At Idle With Vacuum	27-31 psi (1.9-2.2 kg/cm ²)
At Idle Without Vacuum	33-38 psi (2.3-2.7 kg/cm ²)

INJECTOR RESISTANCE

INJECTOR RESISTANCE TABLE

Application	Ohms
1.6L (4A-FE) & 2.2L (5S-FE)	13.8
2.0L Turbo (3S-GTE)	2.0-4.0

IDLE SPEED

IDLE SPEED SPECIFICATIONS TABLE

Application (1)	RPM
-----------------	-----

1.6L (4A-FE) (2)	800
2.0L Turbo (3S-GTE)	800
2.2L (5S-FE)	700

- (1) - Check with transmission/transaxle in Neutral and parking brake applied.
 (2) - Check with jumper wire installed between data link connector terminals TE1 and E1.

DASHPOT

DASHPOT SPECIFICATIONS TABLE

Application	RPM
1.6L (4A-FE)	
A/T	2200
M/T	1800

THROTTLE OPENER

THROTTLE OPENER SPECIFICATIONS TABLE

Application	(1) RPM
2.0L Turbo (3S-GTE)	900-1900
2.2L (5S-FE)	1300-1500

- (1) - With electric cooling fan turned off (if equipped).

FUEL CUT

FUEL CUT SPECIFICATIONS TABLE

Application	Fuel Cut RPM	Fuel Return RPM
1.6L (4A-FE)	2300	1700
2.0L Turbo (3S-GTE)	(1)	1600
2.2L (5S-FE)	(1)	1500

- (1) - Fuel cut specification is not available from manufacturer.

THROTTLE POSITION SENSOR (TPS)

THROTTLE POSITION SENSOR RESISTANCE SPECIFICATIONS

Application	Clearance In. (mm)	Terminal	Ohmmeter Reading
1.6L (4A-FE)	024 (.61)	IDL & E2	Continuity
"	"	PSW & E2	No Continuity
"	031 (.79)	IDL & E2	No Continuity
"	"	PSW & E2	No Continuity

"	Fully Open	IDL & E2	No Continuity
"	"	PSW & E2	Continuity
2.0L Turbo (1)	0 (0)	VTA & E2	470-6100
"	020 (.51)	IDL & E2	2300 Or Less
"	028 (.71)	IDL & E2	No Continuity
"	Fully Open	VTA & E2	3100-12,100
"	"	VC & E2	3900-9000
2.2L (5S-FE) (1)	0 (0)	VTA & E2	200-5700
"	020 (.51)	IDL & E2	2300 Or Less
"	028 (.71)	IDL & E2	No Continuity
"	Fully Open	VTA & E2	2000-10,200
"	"	VC & E2	2500-5900
(1) - Apply vacuum to throttle opener before checking TPS.			