

# C - SPECIFICATIONS

## 1994 Toyota Celica

1994 ENGINE PERFORMANCE  
Toyota Service & Adjustment Specifications  
Celica

### INTRODUCTION

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

### CAPACITIES

CAUTION: Some transaxles require that differential be filled separately from transaxle. A special amount of lubricant is required for differential. See appropriate FLUID CAPACITIES table.

#### FLUID CAPACITIES - 1.8L (7A-FE)

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Application	(1) Quantity
Crankcase (Includes Filter) .....	3.9 Qts. (3.7L)
Cooling System (Includes Heater)	
A/T .....	7.0 Qts. (6.6L)
M/T .....	6.4 Qts. (6.1L)
Manual Transaxle (SAE 75W-90/API GL-5) ...	2.7 Qts. (2.6L)
Automatic Transaxle (Dexron-II)	
Dry Refill .....	8.0 Qts. (7.6L)
Drain & Refill .....	3.5 Qts. (3.3L)

(1) - Approximate quantity listed.

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#### FLUID CAPACITIES - 2.2L (5S-FE)

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Application	(1) Quantity
Crankcase (Includes Filter) .....	4.1 Qts. (3.9L)
Cooling System (Includes Heater)	
A/T .....	7.5 Qts. (7.1L)
M/T .....	7.1 Qts. (6.7L)
Manual Transaxle (SAE 75W-90/API GL-5) ...	2.7 Qts. (2.6L)
Automatic Transaxle (Dexron-II)	
Dry Refill .....	5.9 Qts. (5.6L)
Drain & Refill .....	2.6 Qts. (2.5L)
Differential (Dexron-II) With A/T .....	1.7 Qts. (1.6L)

(1) - Approximate quantity listed.

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### QUICK-SERVICE

### SERVICE INTERVALS & SPECIFICATIONS

#### REPLACEMENT INTERVALS

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Component	Months	Miles
Air Filter .....	36 .....	30,000
Cam Timing Belt .....	(1) .....	60,000
Coolant .....	36 .....	(2) 45,000
Oil & Filter (3)		
Normal Service .....	12 .....	7500
Severe Service .....	6 .....	3750
Oxygen Sensor .....	N/A .....	80,000
Spark Plugs		
1.8L (7A-FE) .....	36 .....	30,000
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

Application	Months	Miles
Celica .....	72 .....	60,000

#### BELT ADJUSTMENT - 1.8L (7A-FE) (1)

Application	New Belt	(2) Used Belt
A/C .....	130 (59) .....	70 (32)
Alternator .....	175 (79) .....	115 (52)
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.

#### BELT ADJUSTMENT - 2.2L (5S-FE) (1)

Application	New Belt	(2) Used Belt
A/C .....	165 (75) .....	110 (50)
Alternator		
With A/C .....	165 (75) .....	110 (50)
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, all spark plugs removed and throttle wide open.

## COMPRESSION SPECIFICATIONS

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Application	Specification
Compression Ratio .....	9.5:1
Compression Pressure	
1.8L (7A-FE) .....	191 psi (13.4 kg/cm <sup>2</sup> )
2.2L (5S-FE) .....	178 psi (12.5 kg/cm <sup>2</sup> )
Minimum Compression Pressure .....	142 psi (10.0 kg/cm <sup>2</sup> )
Maximum Variation Between Cylinders ..	14 psi (1.0 kg/cm <sup>2</sup> )

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## VALVE CLEARANCE

### VALVE CLEARANCE SPECIFICATIONS - 1.8L (7A-FE)

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Application	In. (mm)
Exhaust .....	.010-.014 (.25-.35)
Intake .....	.006-.010 (.15-.25)

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### VALVE CLEARANCE SPECIFICATIONS - 2.2L (5S-FE)

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Application	In. (mm)
Exhaust .....	.011-.015 (.28-.38)
Intake .....	.007-.011 (.18-.28)

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## IGNITION SYSTEM

### IGNITION COIL

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

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Application	Primary	Secondary
1.8L (7A-FE) .....	1.11-1.75 .....	9000-15,700
2.2L (5S-FE) .....	.36-.55 .....	9000-15,400

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## DISTRIBUTOR SENSORS

### DISTRIBUTOR PICK-UP COIL AIR GAP

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Application	In. (mm)
1.8L (7A-FE) .....	.008-.016 (.20-.40)
2.2L (5S-FE)	
Calif. Models .....	.008-.020 (.20-.51)
Except Calif. Models .....	.008-.016 (.20-.40)

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### DISTRIBUTOR PICK-UP COIL RESISTANCE - 1.8L (7A-FE)

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Pick-Up Coil Terminals (1)	(2) Ohms
G+ & G- .....	185-275
NE+ & NE- .....	370-550

- (1) - For proper testing and terminal identification, see F - BASIC TESTING article.
- (2) - Specification is with pick-up coil temperature between 14 and 122°F (-10 and 50°C).

DISTRIBUTOR PICK-UP COIL RESISTANCE - 2.2L (5S-FE)

Pick-Up Coil Terminals (1)	(2) Ohms
California	
G1 & G- .....	125-200
G2 & G- .....	125-200
NE & G- .....	155-250
Except California	
G+ & G- .....	185-275
NE+ & NE- .....	370-550

- (1) - For proper testing and terminal identification, see F - BASIC TESTING article.
- (2) - Specification is with pick-up coil temperature between 14 and 122°F (-10 and 50°C).

**HIGH TENSION WIRE RESISTANCE**

HIGH TENSION WIRE RESISTANCE

Application	Maximum Ohms
Celica .....	25,000 Per Wire

**SPARK PLUGS**

SPARK PLUG TYPE

Application	NGK No.	Nippondenso No.
1.8L (7A-FE) .....	BKR5EYA .....	K16R-U
2.2L (5S-FE) .....	BKR6EP11 .....	PK20R11

4-CYLINDER SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
1.8L (7A-FE) .....	.031 (0.79) .....	13 (18)
2.2L (5S-FE) .....	.043 (1.09) .....	13 (18)

**FIRING ORDER**

FIRING ORDER

Application	Firing Order
4-Cylinder (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.

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## IGNITION TIMING

IGNITION TIMING (Degrees BTDC @ RPM)

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Application (1)	(2) Base Timing	(3) Advance Timing
1.8L (7A-FE) .....	10 @ 700 .....	5-15 @ 700
2.2L (5S-FE) .....	10 @ 750 .....	0-10 @ 750

- (1) - Check with transmission/transaxle in Neutral, parking brake applied, electric cooling fan (if equipped) and A/C off.  
(2) - With jumper wire installed between data link connector terminals TE1 and E1.  
(3) - With jumper wire removed from data link connector.
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## FUEL SYSTEM

### FUEL PUMP

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

#### FUEL PUMP PERFORMANCE

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Application	(1) Pressure psi (kg/cm <sup>2</sup> )
Celica .....	38-44 (2.7-3.1)

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

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Application	At Idle W/Vacuum psi (kg/cm <sup>2</sup> )	At Idle W/O Vacuum psi (kg/cm <sup>2</sup> )
Celica .....	31-37 (2.2-2.6)	... 38-44 (2.7-3.1)

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#### FUEL PUMP RESISTANCE

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Application	Ohms
Celica .....	.2-3.0

- (1) - Information is not available from manufacturer.
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## INJECTOR RESISTANCE

INJECTOR RESISTANCE - Ohms @ 68°F (20°C)

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Application	Ohms
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Celica ..... 13.4-14.2

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## IDLE SPEED

### IDLE SPEED SPECIFICATIONS

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Application (1)	RPM
1.8L (7A-FE) .....	700
2.2L (5S-FE) .....	750

(1) - Check with transmission/transaxle in Neutral, parking brake applied, electric cooling fan (if equipped) and A/C off.

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## THROTTLE OPENER

### THROTTLE OPENER SPECIFICATIONS

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Application	(1) RPM
Celica .....	1300-1500

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

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## FUEL CUT

### FUEL CUT SPECIFICATIONS (1)

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Application	Fuel Cut RPM	Fuel Return RPM
1.8L (7A-FE) .....	(2) .....	1400
2.2L (5S-FE) .....	(2) .....	1500

(1) - Check with A/C off.

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

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## THROTTLE POSITION SENSOR (TPS)

### TPS RESISTANCE SPECIFICATIONS

Application	Clearance In. (mm)	Terminal	Ohmmeter Reading
1.8L (7A-FE) (1)	0 (0)	VTA & E2	200-5700
	.016 (.41)	IDL & E2	2300 Or Less
	.035 (.89)	IDL & E2	No Continuity
	Fully Open	VTA & E2	2000-10,200
		VC & E2	2500-5900
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.			