

2002 ENGINE COOLING

Specifications & Drive Belt Routing

COOLING SYSTEM BLEEDING

NOTE: Whenever cooling system is drained on Celica, special cooling system bleeding procedure needs to be followed. No special procedure is required for any other models.

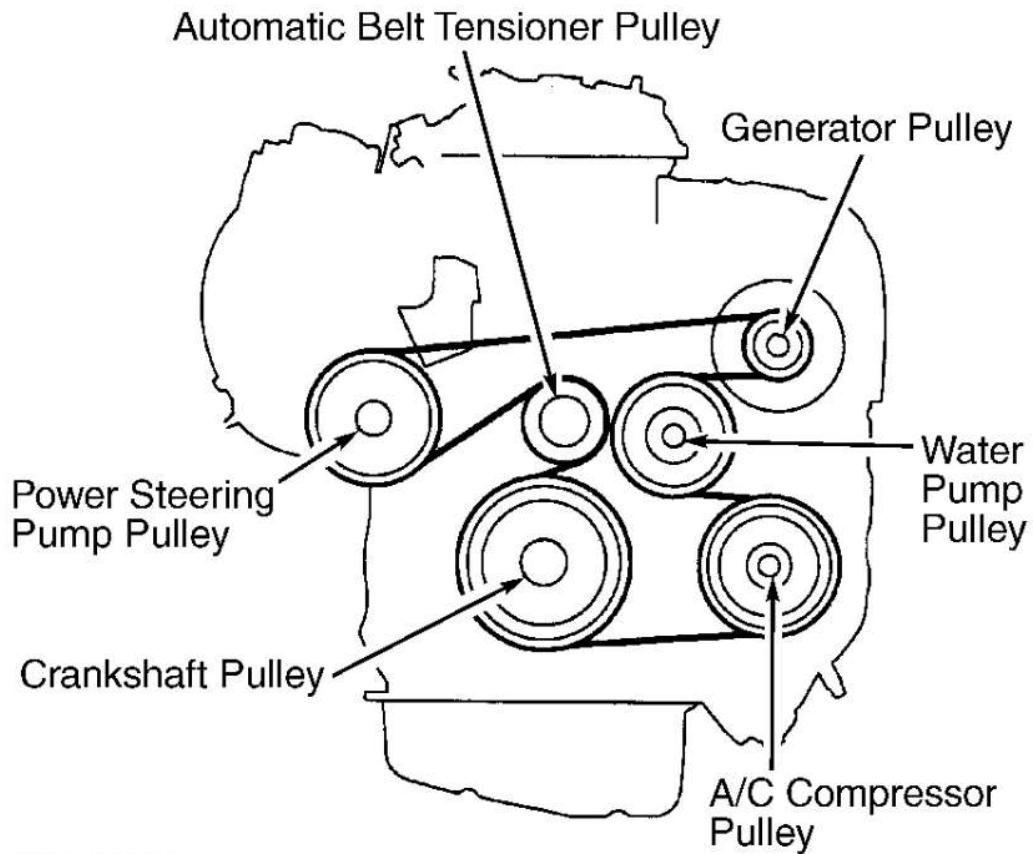
CELICA

NOTE: The following procedure assumes that cooling system has been completely drained by loosening radiator drain plug on bottom of radiator, and engine drain plug on the coolant drain union located on left rear of cylinder block.

1. Remove upper front fender apron cover and upper radiator support cover to access radiator coolant reservoir tank and hoses. Loosen 2 coolant reservoir bolts and 3 reservoir hose retaining clamps. Raise coolant reservoir and place on top of air cleaner cover. Support reservoir from above with wire to prevent reservoir from falling.
2. Remove cooling system bleed plug. Ensure radiator drain plug and engine drain plug on coolant drain union are closed. Add approximately 4 qts. (3.7L) of 50/50 mix of water (preferably distilled water) and coolant to reservoir tank. DO NOT use plain water or alcohol base coolant. Continue to add water/coolant mixture as necessary. If cooling system does not require approximate refill capacity to maintain coolant in reservoir at the FULL mark, air exists in system or system was not properly drained. See **4-CYLINDER COOLING SYSTEM SPECIFICATIONS** table.
3. If cooling system will not take additional coolant, squeeze lower radiator hose while blocking off bleed plug opening with finger. Continue to do this while slowly adding coolant. Start engine with reservoir cap and bleed plug removed. Ensure A/C switch is in OFF position, if equipped. Run engine until cooling fan comes on and goes off one time. Add additional coolant to reservoir as necessary.
4. Install bleed plug and reservoir cap. Rotate reservoir cap 2 1/2 turns until click is heard. Increase engine speed to 3000 RPM for 5 seconds, and then allow to idle for 5 seconds. Repeat this procedure for at least 15 minutes. Turn off engine and allow engine to cool completely. With engine completely cooled, coolant level in reservoir should be between LOW and FULL marks. Next time engine warms to normal operating temperature, coolant reservoir level should be above the FULL mark.
5. Reinstall engine coolant reservoir. Reinstall covers. Check for coolant leaks.

DRIVE BELT ROUTING

Automatic belt tension is used to provide proper tension on serpentine drive belt. For serpentine drive belt routing, see **Fig. 1 -Fig. 3** .



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Fig. 1: Drive Belt Routing (Camry 2.4L 4-Cyl., Camry Solara 2.4L 4-Cyl. & Highlander 2.4L 4-Cyl.)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

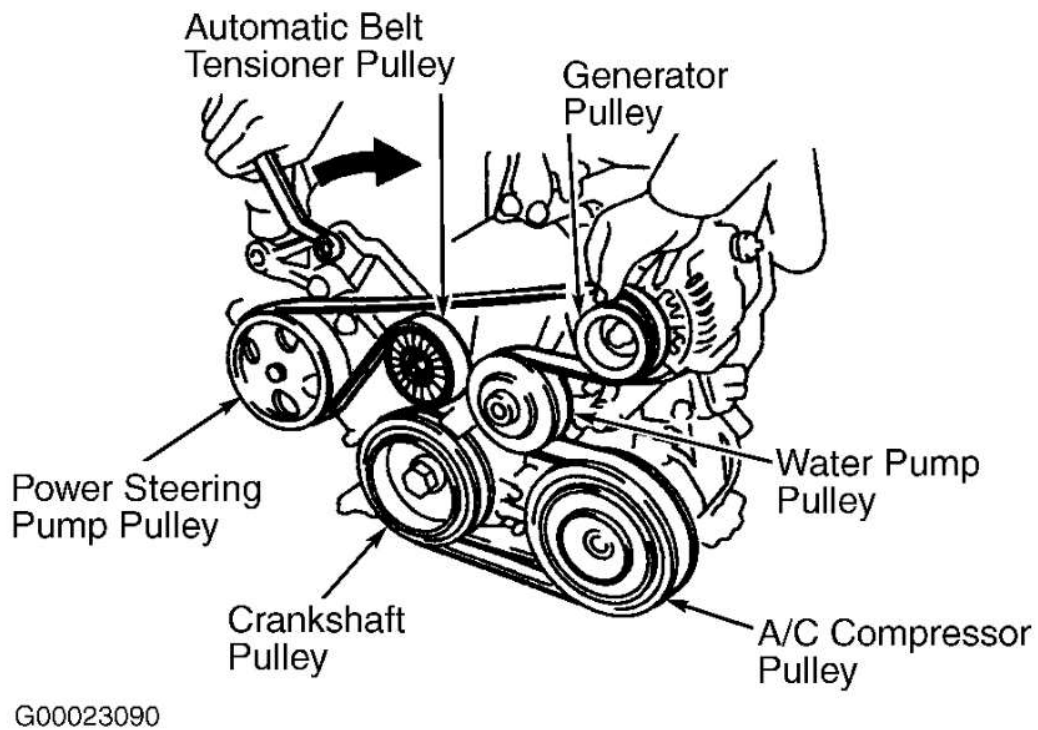
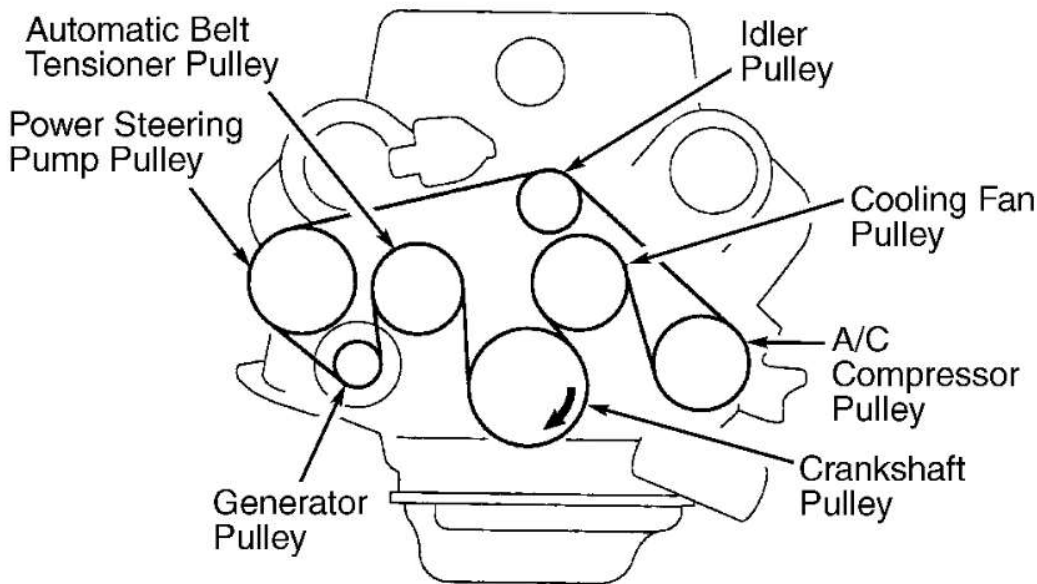


Fig. 2: Drive Belt Routing (Celica, Corolla, MR2 & RAV4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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Fig. 3: Drive Belt Routing (Land Cruiser, Sequoia & Tundra 4.7L V8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SPECIFICATIONS

BELT ADJUSTMENT

Ensure all drive belts are adjusted to proper tension. See appropriate BELT ADJUSTMENT table. On models with an automatic belt tensioner, no adjustment is necessary, but serpentine drive belt must be properly installed.

4-CYLINDER BELT ADJUSTMENT - Tension In Lbs. (kg) Using Belt Tension Gauge

Application	New Belt	(1) Used Belt
Camry & Camry Solara		
Drive Belt	(2)	(2)
Celica & Corolla		
Drive Belt	(2)	(2)
ECHO		
A/C	110-154 (50-70)	77-100 (35-45)
Generator	121-143 (55-65)	55-88 (25-40)
Power Steering	100-121 (45-55)	55-77 (25-35)
Highlander & MR2		

Drive Belt	(2)	(2)
Prius		
A/C	99-121 (44-55)	57-77 (26-35)
Water Pump	99-121 (44-55)	57-77 (26-35)
RAV4		
Drive Belt	(2)	(2)
Tacoma		
A/C	135-185 (61-84)	80-120 (36-54)
Generator	116-169 (53-76)	66-88 (30-40)
Power Steering	135-180 (61-82)	85-120 (39-54)
(1) Used belt is a belt in operation at least 5 minutes.		
(2) Automatic belt tensioner is used. Adjustment is not required.		

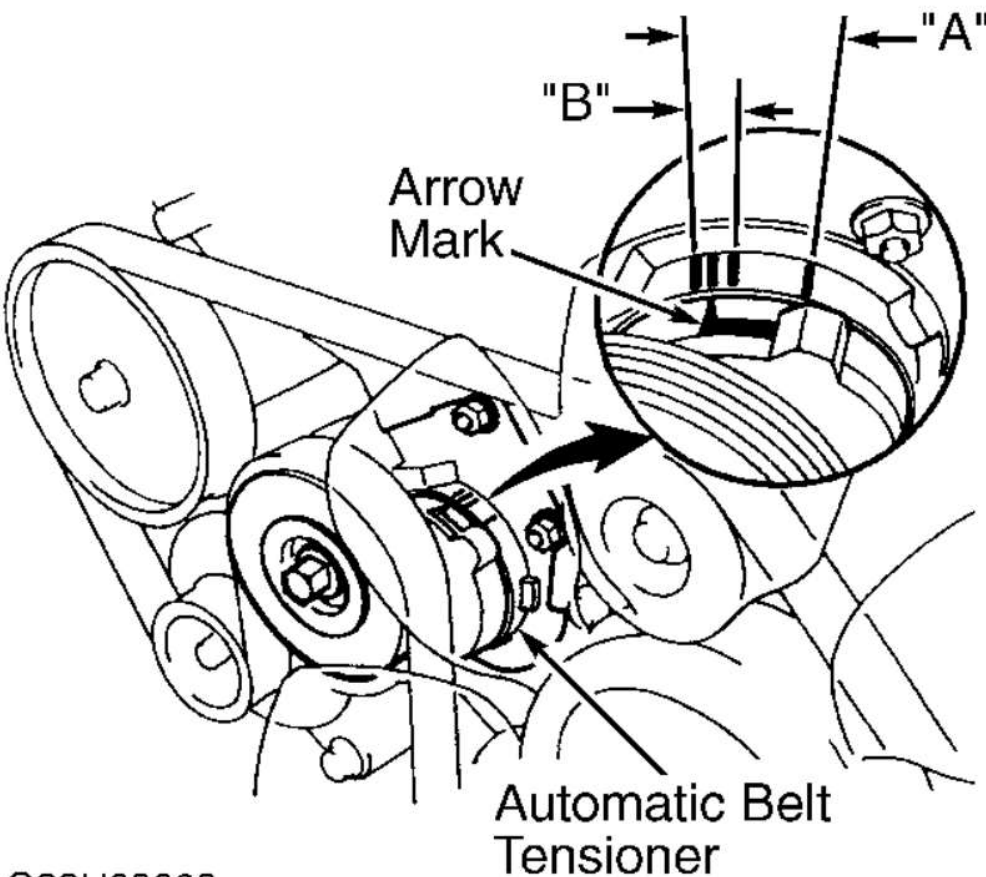
V6 BELT ADJUSTMENT - Tension In Lbs. (kg) Using Belt Tension Gauge

Application	New Belt	(1) Used Belt
Avalon		
A/C	143-187 (65-85)	66-110 (30-50)
Generator	170-180 (77-82)	95-135 (43-61)
Power Steering	120-185 (54-84)	95-135 (43-61)
Camry		
A/C	138-192 (63-87)	66-110 (30-50)
Generator	138-192 (63-87)	66-110 (30-50)
Power Steering	146-190 (66-86)	73-117 (33-53)
Camry Solara		
A/C	138-192 (63-87)	99-121 (44-55)
Generator	170-180 (77-82)	95-135 (43-61)
Power Steering	150-185 (68-84)	95-135 (43-61)
Highlander		
A/C	138-192 (63-87)	66-110 (30-50)
Generator	138-192 (63-87)	66-110 (30-50)
Power Steering	146-190 (66-86)	73-117 (33-53)
Sienna		
A/C	138-192 (63-87)	66-110 (30-50)
Generator	170-180 (77-82)	95-135 (43-61)
Power Steering	150-185 (68-84)	95-135 (43-61)
Tacoma & 4Runner		
A/C	135-185 (61-84)	80-120 (36-54)
Generator	140-180 (64-82)	80-120 (36-54)
Power Steering	135-180 (61-82)	85-120 (39-54)

Tundra		
A/C	135-185 (61-84)	80-120 (36-54)
Generator	135-185 (61-84)	80-120 (36-54)
Power Steering	135-180 (61-82)	85-120 (39-54)
(1) Used belt is a belt in operation at least 5 minutes.		

V8 BELT ADJUSTMENT - Tension In Lbs. (kg) Using Belt Tension Gauge

Application	New Belt	(1) Used Belt
Land Cruiser, Sequoia & Tundra		
Drive Belt	(2)	(2)
(1) Used belt is a belt in operation at least 5 minutes.		
(2) Automatic belt tensioner is used. Adjustment is not required. Belt must be replaced if arrow mark on automatic belt tensioner is not within area "A". See Fig. 4 .		



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Fig. 4: Locating Arrow Mark On Automatic Belt Tensioner (Land Cruiser, Sequoia & Tundra 4.7L)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

COOLING SYSTEM SPECIFICATIONS

4-CYLINDER COOLING SYSTEM SPECIFICATIONS

Application	Specification
Coolant Replacement Interval	30,000 Miles Or 24 Months
Coolant Capacity	
Camry & Camry Solara	6.6 Qts. (6.2L)
Celica	
1ZZ-FE	
A/T	5.9 Qts. (5.6L)

M/T	6.0 Qts. (5.7L)
2ZZ-GE	
A/T	6.1 Qts. (5.8L)
M/T	6.2 Qts. (5.9L)
Corolla	
A/T	6.0 Qts. (5.7L)
M/T	6.1 Qts. (5.8L)
ECHO	
A/T	4.5 Qts. (4.3L)
M/T	4.7 Qts. (4.4L)
Highlander	6.8 Qts. (6.4L)
MR2	11.0 Qts. (10.4L)
Prius	5.2 Qts. (4.9L)
RAV4	
A/T	6.6 Qts. (6.2L)
M/T	6.7 Qts. (6.3L)
Tacoma	
2WD	
PreRunner	
A/T	8.7 Qts. (8.2L)
M/T	8.8 Qts. (8.3L)
Except PreRunner	
A/T	8.2 Qts. (7.8L)
M/T	8.5 Qts. (8.0L)
4WD	
A/T	8.7 Qts. (8.2L)
M/T	8.8 Qts. (8.3L)
4Runner	
With Rear Heater	9.5 Qts. (9.0L)
Without Rear Heater	8.5 Qts. (8.0L)
Pressure Cap Standard Opening Pressure	
Camry & Highlander	(1) 13.4-17.6 psi (.95-1.25 kg/cm ²)
Camry Solara, Corolla, Prius & Tacoma	(2) 10.7-14.9 psi (.75-1.05 kg/cm ²)
Celica, ECHO, MR2 & RAV4	(3) 13.5-17.8 psi (.96-1.25 kg/cm ²)
Thermostat Opening Temperature	
Camry, Camry Solara, Celica, ECHO, Highlander, MR2, Prius, RAV4 & Tacoma	176-183°F (80-84°C)

Corolla	165-173°F (74-78°C)
(1) Minimum opening pressure is 11.2 psi (.78 kg/cm ²).	
(2) Minimum opening pressure is 8.5 psi (.59 kg/cm ²).	
(3) Minimum opening pressure is 11.5 psi (.80 kg/cm ²).	

V6 COOLING SYSTEM SPECIFICATIONS

Application	Specification
Coolant Replacement Interval	30,000 Miles Or 24 Months
Coolant Capacity	
Avalon	9.5 Qts. (9.0L)
Camry & Camry Solara	9.7 Qts. (9.2L)
Highlander	9.9 Qts. (9.4L)
Sienna	11.0 Qts. (10.4L)
Tacoma	
2WD	
PreRunner	
A/T	10.5 Qts. (10.0L)
M/T	10.7 Qts. (10.1L)
Except PreRunner	10.3 Qts. (9.7 L)
4WD	
A/T	10.5 Qts. (9.9L)
M/T	10.7 Qts. (10.1L)
Tundra	10.5 Qts. (9.9L)
4Runner	
With Rear Heater	9.5 Qts. (9.0L)
Without Rear Heater	8.5 Qts. (8.0L)
Pressure Cap Standard Opening Pressure	
Avalon, Camry, Camry Solara & Sienna	(1) 12.1-16.4 psi (.85-1.15 kg/cm ²)
Highlander	(2) 13.4-17.8 psi (.95-1.25 kg/cm ²)
Tacoma & 4Runner	(3) 10.7-14.9 psi (.75-1.05 kg/cm ²)
Thermostat Opening Temperature	176-183°F (80-84°C)
(1) Minimum opening pressure is 10.0 psi (.70 kg/cm ²).	
(2) Minimum opening pressure is 11.2 psi (.78 kg/cm ²).	
(3) Minimum opening pressure is 8.8 psi (.62 kg/cm ²).	

V8 COOLING SYSTEM SPECIFICATIONS

Application	Specification
Coolant Replacement Interval	30,000 Miles Or 24 Months

Coolant Capacity	
Land Cruiser	
With Front Heater Only	15.5 Qts. (14.7L)
With Front & Rear Heater	16.3 Qts. (15.4L)
Sequoia	
With Front Heater Only	12.4 Qts. (11.7L)
With Front & Rear Heater	14.1 Qts. (13.4L)
Tundra	12.3 Qts. (11.6L)
Pressure Cap Standard Opening Pressure	
Land Cruiser	⁽¹⁾ 13.4-17.8 psi (.95-1.25 kg/cm ²)
Sequoia & Tundra	⁽²⁾ 10.7-14.9 psi (.75-1.05 kg/cm ²)
Thermostat Opening Temperature	176-183°F (80-84°C)
⁽¹⁾ Minimum opening pressure is 11.4 psi (.80 kg/cm ²).	
⁽²⁾ Minimum opening pressure is 8.6 psi (.60 kg/cm ²).	