

CO-1

COOLING SYSTEM

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CO

CO-2

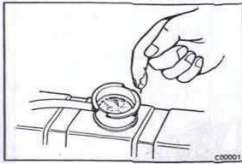
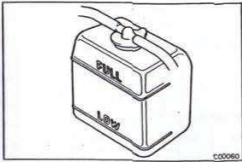
COOLING SYSTEM — Troubleshooting

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Engine overheats	fan belt loose or missing	Adjust or replace belt	CH-4
	dirt, leaves or insects on radiator or condenser	Clean radiator or condenser	CO-7
	hoses, water pump, thermostat housing, radiator, heater, core plugs or head gasket leakage	Repair as necessary	
	thermostat faulty	Check thermostat	CO-8
	injection timing retarded	Set timing	EM-20
	electric cooling system faulty	Inspect electric cooling system	CO-12
	radiator hose plugged or rotted	Replace hose	
	water pump faulty	Replace water pump	CO-4
	radiator plugged or cap faulty	Check radiator and cap	CO-7
	cylinder head or block cracked or water passage clogged	Repair as necessary	

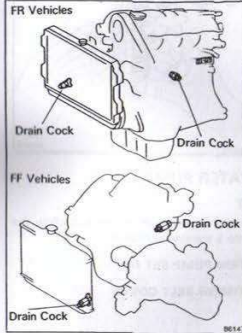
NOTE: If the engine tends to overheat, removal of the thermostat would have an adverse effect, causing a lowering of cooling efficiency.

COOLING SYSTEM — Check and f



CHECK ENGINE

1. CHECK The cooling lines. If low, line.
2. CHECK There scales the cooling If exc

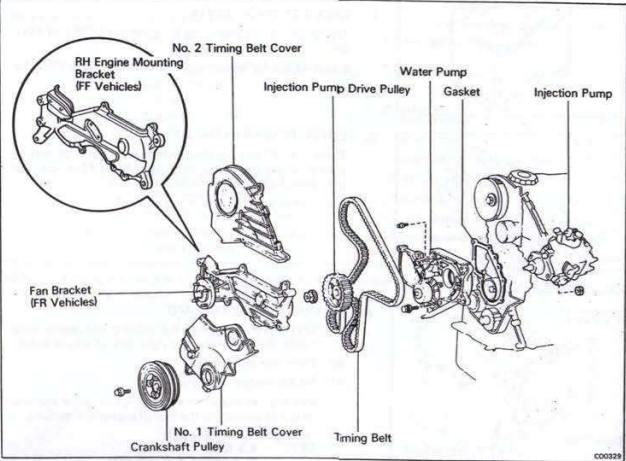


3. REPL (a) D c (b) C (c) F U n Coola C C C C (d) S (e) R

CO-4

COOLING SYSTEM — Water Pump

WATER PUMP
COMPONENTS



REMOVAL OF WATER PUMP

1. DRAIN COOLANT

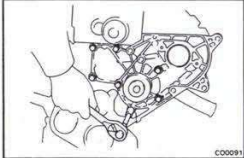
Open the radiator and engine drain cocks, and allow the coolant to drain into a suitable container.

2. REMOVE INJECTION PUMP SET NUTS

3. REMOVE NO. 3 TIMING BELT COVER

4. REMOVE WATER PUMP

Remove seven bolts, and remove the water pump with its gasket.



COOLING SYSTEM

INSPEC

1. INSP

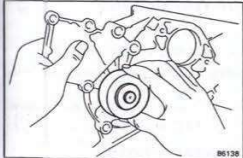
Check for noisy. If necessary, replace the water pump.

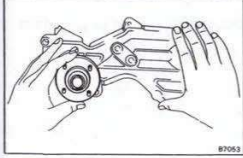
2. INSP

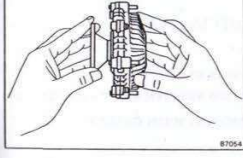
Check for leaks. If necessary, replace the water pump.

3. INSP

Check for leaks. If necessary, replace the water pump.

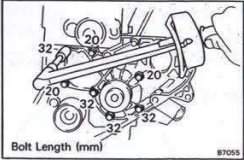






CO-6

COOLING SYSTEM — Water Pump, Thermostat

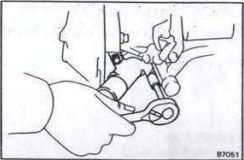


Bolt Length (mm)

INSTALLATION OF WATER PUMP

(See page CO-4)

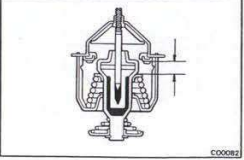
- INSTALL WATER PUMP OVER NEW GASKET**
Install the water pump on a new gasket with seven bolts. Torque the bolts.
NOTE: Each bolt length (mm) is indicated in the figure.
Torque: 185 kg-cm (13 ft-lb, 18 N-m)
- INSTALL NO.3 TIMING BELT COVER**
- INSTALL INJECTION PUMP SET NUTS**
- REFILL WITH COOLANT** (See step 3 on page CO-3)
- START ENGINE AND CHECK FOR LEAKS**



87051



C00081



C00082

THERMOSTAT

REMOVAL OF THERMOSTAT

- DRAIN COOLANT**
- REMOVE WATER INLET**
Remove two bolts and water inlet from the cylinder block.
- REMOVE THERMOSTAT WITH GASKET**

INSPECTION OF THERMOSTAT

NOTE: Thermostat is numbered with the valve opening temperature.

(a) Immerse the thermostat in water and heat the water gradually.

(b) Check the valve opening temperature and the valve lift.

Valve opening temperature: 80 – 84°C (176 – 183°F)

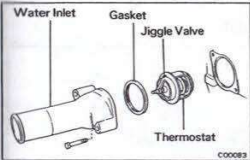
Valve lift: More than 8 mm (0.31 in.) at 95°C (203°F)

If the valve opening temperature and valve lift are not within the specifications above, replace the thermostat.

(c) Check that the valve spring is tight when the thermostat is fully closed.

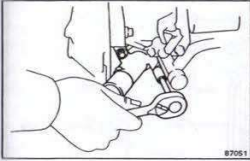
If not closed, replace the thermostat.

COOLING SYSTEM —

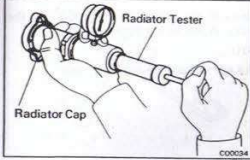


Water Inlet Gasket Jiggle Valve
Thermostat

C00083

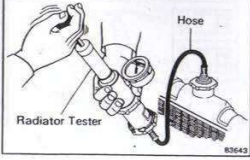


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Radiator Tester
Radiator Cap

C00034



Radiator Tester
Hose

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INSTALLATION

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CO-II

COOLING SYSTEM — Radiator

DISASSEMBLY OF RADIATOR
(RESIN TANK Only)

A/T Vehicles Only

Oil Cooler

Upper Tank

Tank Plate

O-Ring

Core Plate

Core

Core Subassembly

Core Plate

O-Ring

Tank Plate

Lower Tank

1. REMOVE TANK PLATE

(a) Raise the claws of the tank plates with SST in the numerical order shown in the figure.

SST 09230-00010

NOTE: Be careful not to damage the core plate.

3

1

2

4

5

6

7

Tank

Tank Plate

SST

COOLING SYST

(b)

Tank Plate

C00006

2. REA

(a)

(b)

Tank

O-Ring

Core Plate

Core

ASSEM

(See pag

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2. ME

(a)

(b)

SS1

NO1

(c)

Core Plate

Core

Core Plate

C00042

Core Plate

Core

C00087

SST

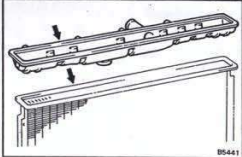
27583

<https://cardiagn.com/cooling-c-engine/>

5/8

CO-10

COOLING SYSTEM — Radiator

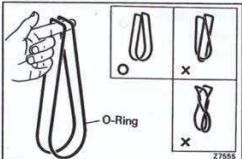


3. INSTALL NEW O-RING AND TANK

NOTE:

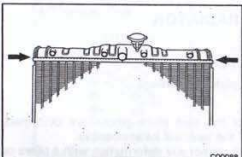
(1) Clean the tank and core plate.

(2) Inspect the O-ring for twists.



O-Ring

27555

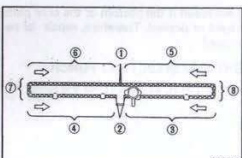


4. INSTALL TANK PLATES

Insert the tank plates from both ends in the direction of the arrows. Firmly set the tank plates in the core plate.

NOTE: The upper and lower tank plates are not the same so be careful not to interchange them.

C00088

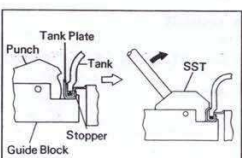


5. STAKE CLAW OF TANK PLATES

Stake the claws of the tank plates with SST in the numerical order shown in the figure.

SST 09230-00010

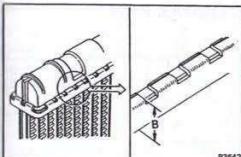
C00085



C00043 C00046

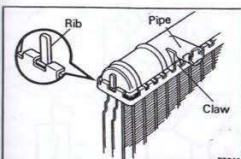
CAUTION: If the bottom of the core plate is staked with the SST or the guide block stopper, it may result in water leakage.

COOLING SYSTEM



NOTE: (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)

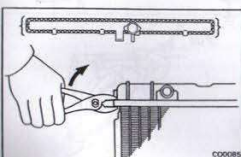
Heigh



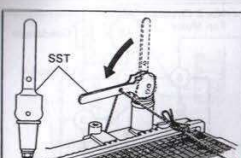
Rib Pipe Claw

80642

80641

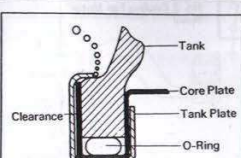


C00085 C00085



SST

27557 27558



Tank Core Plate Tank Plate O-Ring Clearance

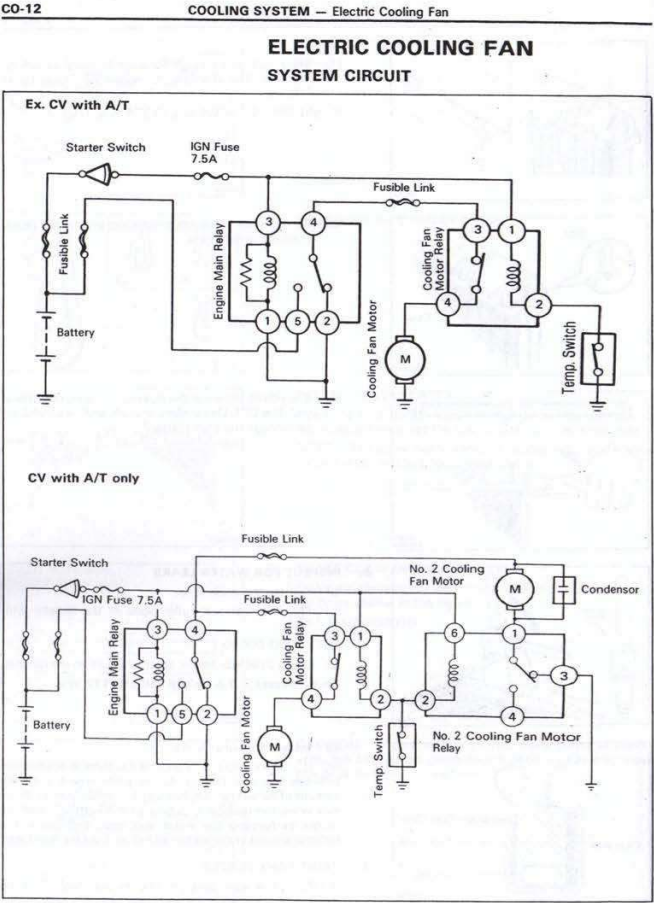
C00035

6. INSPECTION

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7. FINAL INSPECTION

NOTE: (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)



COOLING SYSTEM —

ON-VEH Low Te

1. TURN ON

CONFIRM

If it does not work, check the fan motor and the temperature switch.

2. DISCONNECT

CONFIRM

If not working, check the fan motor and the temperature switch.

3. CONFIRM

High Te

4. STALL

(a)

(b)

If not working, check the fan motor and the temperature switch.

INSPECTION

1. INSPECT

LOCATE

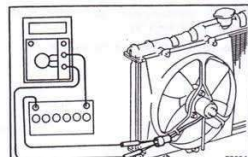
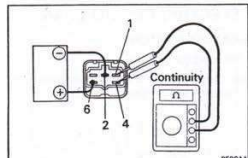
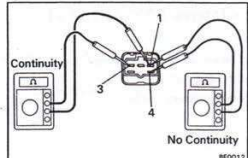
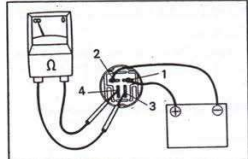
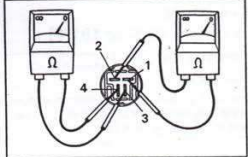
(a)

(b)

If not working, check the fan motor and the temperature switch.

CO-14

COOLING SYSTEM — Electric Cooling Fan



2. INSPECT COOLING FAN MOTOR RELAY
LOCATION: In the engine compartment relay box.
(a) Using an ohmmeter, check that there is continuity between terminals 1 and 2.
(b) Check that there is continuity between terminals 3 and 4.
If there is no continuity, replace the relay.
(c) Apply battery voltage between terminals 1 and 2.
(d) Check that there is no continuity between terminals 3 and 4.
If there is continuity, replace the relay.

3. INSPECT NO. 2 COOLING FAN MOTOR RELAY (CV with A/T only)
LOCATION: In the engine compartment relay box.
(a) Using an ohmmeter, check that there is continuity between terminals 1 and 3.
(b) Check that there is no continuity between terminals 1 and 4.
If continuity is not as specified, replace the relay.
(c) Apply battery voltage between, terminals 6 and 2.
(d) Check that there is continuity between terminals 1 and 4.
If there is no continuity, replace the relay.

4. INSPECT ENGINE MAIN RELAY (See page CH-19)

5. INSPECT FAN MOTOR
(a) Connect battery voltage to the fan motor connector.
(b) Check to see that the motor rotates smoothly.