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Warranty Bulletin

NO: 94-25

DATE: August 1994 **SECTION:** 05

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SUBJECT: RADIATOR FAN DRIVE SYSTEM REPLACEMENT

APPLICATION:

Models	VINs		
H3-40 Vehicles with Series 60 Engine.	2P9H33405P1001316,	2P9H33407P1001317,	2P9H33409P1001318,
	2P9H33400P1001319,	2P9H33409P1001321,	2P9H33400P1001322,
	2P9H33402P1001323,	2P9H3340XP1001330,	2P9H33401P1001331,
	2P9H33403P1001332,	2P9H33400P1001336,	2P9H33402P1001337,
	2P9H33404P1001338,	2P9H33406P1001339,	2P9H33402P1001340,
	2P9H33404P1001341,	2P9H33406P1001342,	2P9H33408P1001343,
	2P9H3340XP1001344,	2P9H33401P1001345,	2P9H33403P1001346,
	2P9H33405P1001347,	2P9H33407P1001348,	2P9H33409P1001349,
	2P9H33405P1001350,	2P9H33407P1001351,	2P9H33409P1001352,
	2P9H33400P1001353,	2P9H33402P1001354,	2P9H33404P1001355,
	2P9H33406P1001356,	2P9H33408P1001357,	2P9H3340XP1001358,
	2P9H33401P1001359,	2P9H33408P1001360,	2P9H3340XP1001361,
	2P9H33401P1001362,	2P9H33403P1001363,	2P9H33405P1001364,
	2P9H33407P1001365,	2P9H33400P1001367,	2P9H33402P1001368,
	2P9H33404P1001369,	2P9H33400P1001370,	2P9H33402P1001371,
	2P9H33404P1001372,	2P9H33406P1001373,	2P9H3340XP1001375,
	2P9H33408P1001376,	2P9H33403P1001377,	2P9H33405P1001378,
	2P9H33409R1001001,	2P9H33400R1001002,	2P9H33406R1001005,
	2P9H33408R1001006,	2P9H3340XR1001007,	2P9H33401R1001008,
	2P9H33403R1001009,	2P9H3340XR1001010,	2P9H33401R1001011,
	2P9H33405R1001013,	2P9H33407R1001014,	2P9H33402R1001017,
	2P9H33404R1001018,	2P9H33406R1001019,	2P9H33404R1001021,
	2P9H33406R1001022,	2P9H33403R1001379,	2P9H3340XR1001380,
	2P9H3340XR1001381,	2P9H33405R1001383,	2P9H33407R1001384,
	2P9H33409R1001385,	2P9H33400R1001386,	2P9H33402R1001387,
	2P9H33404R1001388,	2P9H33406R1001389,	2P9H33402R1001390,
	2P9H33406R1001392,	2P9H33408R1001393,	2P9H3340XR1001394,
	2P9H33401R1001395,	2P9H33403R1001396,	2P9H33405R1001397,
	2P9H33407R1001398,	2P9H33409R1001399.	
H3-40 VIP vehicles with Series 60 Engine.	2P9V33407P1001305,	2P9V33400R1001004,	2P9V3340XR1001382,
	2P9V33400R1001391.		

DESCRIPTION

PRÉVOST CAR's Engineering Department has discovered that the Radiator Fan Drive System does not meet our specified requirements; this analysis has produced the development of a new, stronger system, able to sustain all stresses and strains produced.

To install this System on your vehicle, proceed in the following manner.

MATERIAL

Item no.	Part no.	Description	Qty
1	550688	Gearbox, 90 deg.	1
1A	5011119	Fitting, Gearbox Bleeder	1
2	506663	Belt, poly cog, (to Fan Clutch)	1
3	506690	Belt, V type, AX74, (to Engine)	3

Kit #05-2063 - FAN DRIVE SEAT - includes the following items:

Item no.	Part no.	Description	Qty
4	052000	Seat ass'y	1
5	051294	Securing bracket	1
6	052005	Securing bracket	1
7	500145	Screw, cap, hex, zp, 3/4-16x3, 1/2, G5	3
8	507347	Sleeve, steel	2
9	630002	Sleeve, rubber	2
10	500735	Nut, hex, sto, zp, 3/4-16	3
11	051991	Arm, tensioning	1
12	501497	Fitting, grease, 6009 (B-6)	1
13	052003	Stud, pivoting	1
14	507293	Sleeve, steel	2
15	502542	Washer, flat	1
16	500811	Nut, hex, sto, lo, zp, M12-1.75	1
17	500802	Washer, lo, spt, zp, 16.2x27.4x3.5	1
18	502588	Nut, hex, zp, M16-2	1
19	052004	Spacer	2
20	5001132	Screw, cap, hex, zp, 5/16-18	1
21	500476	Washer, lo, spt, zp, .317x.586x.078	1
22	950208	Bellow, air, 3" dia. 1M1A	1
23	500792	Nut, hex, zp, 5/8-11	1
24	640996	Fitting, hose-1/8, elbow,	1
25	052011	Pulley ass'y, tensioning	1
26	500482	Washer, lo, spt, zp, .506x.873x.125	6
27	560503	Clip, retaining, cable	1
28	500470	Washer, lo, spt, zp, .193x.334x.047	1
29	500574	Screw, ma, tr, ph, ss, 10-24x1 1/4	1
30	500985	Washer, fl, zp, 11/32x.875x.125	1
31	500786	Nut, hex, 10-24	1
32	503402	Tubing, plastic, black, 1/4"	3.15 ft

33	052066	Bracket, upper, tensioning	1
34	500088	Screw, cap, hex, zp, 1/2-20x1.5, G5	2
35	500446	Washer, fl, zp, .531x1.25x.125	2
36	500716	Nut, hex, zp, 1/2-20	2
37	5001150	Washer, fl, zp, 17x30x3	1
38	680038	Loctite, .242-31	.001 bt
39	500451	Washer, fl, zp, .812x2x.148	2

Kit #05-2064 - TENSIONING ARM TO ENGINE - includes the following items:

Item no.	Part no.	Description	Qty
40	052050	Tensioning arm ass'y	1
41	5001150	Washer, fl, zp, 17x30x3	1
42	950208	Bellow, air, 3" dia, 1M1A	1
43	500792	Nut, hex, zp, 5/8-11	1
44	501707	Fitting, 56 x 4	1
45	641127	Elbow	1
46	680098	Sealer, (TEFLON), 250 ml.	.001 tu

Kit #05-2065 - HARDWARE - includes the following items:

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Item no.	Part no.	Description	Qty
47	500714	Nut, hex, sto, zp, 7/16-20	4
48	051779	Plate, attachment ass'y	2
49	050705	Spacer, seat	6
50	504601	Clips, insulated	3
51	500069	Screw, cap, hex, ZPM8-1.25x16, G10.9	3
52	500874	Washer, fl, zp, 8.4x17x1.6	3
53	504015	Tie wrap	10
54	550690	Bushing, c/w 3 screws	1
55	550691	Bushing, c/w 3 screws	1
56	502744	Nut, hex, sto, zp, M8-1.25	4
57	500874	Washer, fl, zp, 8.4x17x1.6	4
58	502528	Screw, cap, hex, EMNM8-1.25x20, G8.8	6
59	5001003	Washer, lo, spt, zp, 8.1x12.7x2	6
60	500214	Screw, cap, hex, zp, 1/2-13x1 1/4, G5	4
61	500048	Screw, cap, hex, zp, 3/8-24x1 1/4, G5	6
62	500478	Washer, lo, spt, zp, .380x.683x.094	6
63	560503	Clip, retaining, cable	2
64	500470	Washer, lo, spt, zp, .193x.334x.047	2
65	500574	Screw, ma, tr, ph, ss, 10-24x1 1/4	2
66	550186	Key, 1/4 sq. x 1 1/4 lg.	2
67	500786	Nut, hex, 10-24	2
68	500177	Screw, cap ,hex, zp, 1/4-20x1, G8	6
69	500473	Washer. lo, spt, zp, .262x.489x.062	6
70	500666	Nut, spring	4
71	500179	Screw, cap, hex, zp, 5/16-18x3/4, G5	1
72	500441	Washer, fl, zp, .312x.734x.065	1
73	500476	Washer, loc, spt, zp, .317x.586x.078	1
74	500709	Nut, 7/16-20, (temp.)	1

Note:_Material can be ordered through regular channels._

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PROCEDURE

Warning: *Park vehicle safely, apply parking brake, stop engine and set battery master switches to the "OFF" position prior to working on the vehicle.*

Caution: *When vehicle is parked overnight or for an extended period of time, battery switches should always be set to the "OFF" position.*

€Figure 1 05009

1. Open Engine Compartment rear doors, release tension on Drive Belts, then slip Belts (Qty=2) off Fan Transfer Gearbox Pulleys. Discard Belts.

2. Drain and recuperate Radiator Coolant as per *Section 05* of *Maintenance Manual*.

3. Remove and discard Screws (Qty=2) securing Radiator Overflow Hose to Lower Support Rod (see fig. 2), remove and discard Lower Retention Rod (1 Screw, 1 Clip), then secure Radiator Overflow Hose with three (3) Tie Wraps (item #53) as shown on Fig. 1.

4. Disconnect Tensioning Bellows' Air Hoses (Qty=2), then remove Gearbox Seat Assembly from vehicle (3 bolts). Also remove Tensioning Arm to Engine; recuperate three (3) bolts and discard Arm.

€Figure 2 05010

NOTE: *If your vehicle has been fitted with a Retrofit Stabilizer Rod Kit, then also remove all of these reinforcement components and discard.*

If Seat Bolts cannot be removed with Wrenches, then use an Oxyacetylene Torch to cut them out.

WARNING: *Only qualified personnel should be authorized to perform welding tasks. Always wear appropriate safety equipment. Weld in a well ventilated area. Protect Urethane and other flammable products from sparks with fire retardant materials. Always keep a Fire Extinguisher within your reach.*

After Seat has been extracted from Compartment, temporarily remove Radiator's Return Pipe (see fig. 2) and then grind parched areas clean of burrs and excess slag.

5. Disassemble 3"V" Pulley and Multi "V" Pulley (c/w coupling) from Seat and set them aside for reuse (see fig. 2).

Remove Gearbox from seat (to be returned to PRÉVOST) then discard Gearbox Seat.

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€Figure 3 05011

6. Disassemble Pulley from Fan Clutch and set aside for reuse. Unplug fan's Wiring Harness from Engine Connector and remove it's Securing Straps. Disassemble Fan from it's Seat (4 bolts), remove Seat Bolts (Qty=5) and discard Seat & Hardware while taking care not to damage Wiring Harness. Rest Fan against Radiator Shroud.

7. Using an Oxyacetylene Torch, reposition Radiator Coolant Shut-off Valve at an angle of approx. 45º to Lower Seat Plating (see fig. 3).

WARNING: *Only qualified personnel should be authorized to perform welding tasks. Always wear appropriate safety equipment. Weld in a well ventilated area. Protect Urethane and other flammable products from sparks with fire retardant materials. Always keep a Fire Extinguisher within your reach.*

€Figure 4 05012

8. Remove Breather from Gearbox Housing (see fig. 3) and install Fitting (item #1A) in it's place. Then install Breather on Fitting. Use "Teflon" on all threaded connections.

CAUTION: *If, when turning Central Shaft clockwise the L.H. Side Shaft turns counterclockwise, then Bleeder is installed on the wrong side of Housing. Bleeder must then be relocated to the other side of Housing for System to work properly; otherwise Fan will turn backwards.*

CAUTION: *Oil level is correct when oil seeps out of loosened Oil Level Plug (see fig. 4).*

9. Preassemble the following items to Fan Gearbox Seat Ass'y (item #4):
(see fig. 5 for details)

- Gearbox (item #1) c/w Breather with the following hardware:
  - 4 of each items #26 & 60.
- Securing Brackets (items 5 & 6) with the following hardware:
  - 2 of each items #7,8,9,10 & 39.
- Upper Tensioning Bracket (item #33) with the following hardware:
  - 2 of each items #26,34,35 & 36.
- Tensioning Arm (item #11) with the following hardware:
  - 1 of each items #12,13,15,16,17 & 18 and 2 of item #14.
- Bellow (item #22) to Tensioning Arm with the following hardware:
  - 1 of each items #20,21,23,24,30 & 37.
  - use LOCTITE (item #38) at 2 places.
- Air Pressure Tubing (item #32) to Bellow with the following hardware:
  - 1 of each items #27,28,29 & 31.
- Tensioning Pulley Ass'y (item #25) to Tensioning Arm with the following hardware:
  - 1 of each items #7 & 10 and 2 of item #19.

€Figure 5 05013

€Figure 6 05014

10. Temporarily install Gearbox Seat Ass'y on Radiator Seat's Lower Plating at 3.5" (88 mm) from Engine Cradle (see fig. 6). Also, temporarily secure Fan to Gearbox Seat (see fig. 5) "SIDE VIEW" for exact position) with (4) four of each items #56 & 57.

11. Center Seat Ass'y using Fan Shroud, then mark the spot where Anchoring Bolts are to be located at center of Seat Brackets' slots and holes (4 places).

12. Disassemble Fan from Gearbox Seat, then remove Seat Ass'y from Engine Compartment. Rest Fan against Radiator Shroud.

13. Drill four (4) holes 19/32" (15mm) at marked spots, then slot holes to 1" (25mm) parallel to Engine Cradle and centered on drilled holes.

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CAUTION: *When drilling holes, be careful not to perforate Muffler, located 1" (25mm) below Plating.*

14. Install both Attachment Ass'y Plates (item #48) through Lower Plating and secure them with 4 Spring Nuts (item #70). Then install one (1) Spacer (item #49) on Spring Nuts at both locations (See fig. 6).

€Figure 7 05015

15. Reinstall Seat Ass'y and install Fan on Seat as in step #10. Center Seat Ass'y using Fan Shroud then temporarily secure Ass'y with one (1) Spacer (item #49) and two (2) Nuts (item #74) at both Anchoring Locations.

16. Install existing 3"V" Pulley (previously removed at step #4) on Gearbox Central Shaft with new Bushing (item #55) and Key (item #66). Using a Straight Edge, align this Pulley with Engine Pulley, while taking Pulleys outer edge thicknesses under consideration *ie. 3"V" Pulley's outer edge is thicker than Engine Pulley's.* (see fig. 7)

NOTE: *Generously apply LOCTITE 271 (or equiv.) on Shaft before installing Pulley.*

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€Figure 8 05016

17. Using a Universal Protractor, check 3"V" Pulley's vertical angle with that of Engine Pulley's. If angles do not correspond, raise Seat Ass'y by shimming with additional Spacers (item #49 - 2 supplied for this purpose).

NOTE: *Use a straight edge to measure Engine Pulley's vertical angle. (see fig. 8)*

18. Recheck alignments (steps 15,16 & 17), then replace temporary anchoring nuts (item #74) with four (4) nuts (item #47) and tighten with wrench.

19. Reinstall existing Fan Clutch Pulley (previously removed at step #6) with six (6) screws and washers (items #58 & 59).

NOTE: *Generously apply LOCTITE 271 (or equiv.) on Shaft before installing Pulley.*

20. Reinstall existing Multi"V" Pulley (previously removed at step #5) with new Bushing (item #54), bushing screws and washers (items #68 & 69 - 6 each), Key (item #66) and new Snap Ring screws & washers (items #61 & 62 - 6 each).

NOTE: *Generously apply LOCTITE 271 (or equiv.) on Shaft before installing Pulley.*

21. Align Multi"V" Pulley with Fan Pulley using method at step #16.

22. Secure existing Fan Clutch Wiring Harness with items #63,64,65 & 67 (2 each) at both locations shown on fig. 5 "TOP VIEW". Connect Harness Connector to Engine Connector then use tie wraps (item #53) to secure loose sections.

23. Install Tensioning Arm Ass'y (item #40) to Engine using existing Bolts (Qty=3), recuperated at step #4 and items #41,42,43,44,45,71,72 & 73. Use LOCTITE (item #38) and Teflon Sealer (item #46) as required. See fig. 9 for details.

24. Reinstall Radiator's Return Pipe and fittings previously removed at step #4.

25. Connect Tensioning Air Lines (1 exist. & 1 new) to fittings at Tensionning Arm Ass'y (see fig. 9). Use Tie Wraps (item #53) to secure loose sections.

NOTE: *If existing Air Line is to short, loosen Insulated Clips (items #50,51 & 52 on fig. 9) and pull out required length. If Clips are decayed, replace with new ones supplied.*

26. Install Belt (item #2) from Fan Clutch to Gearbox and Belt (item #3) from Gearbox to Engine.

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€Figure 9 05017

27. With Valves set at "OPEN", refill Radiator Coolant with recuperated Fluid, check level and top off if necessary.

CAUTION: *In order for Tensioning System to work properly, the distance between the inside faces of "Tensioning Arm to Engine" Bellow Brackets should be between 2 3/8" (60 mm) and 2 1/2" (64 mm) (see fig. 8); if not, release tension on System and reajust distance using Bolts securing Upper Tensioning Bracket, item #33 (see fig. 4).*

28. Reset Belt Tensioning Pressure Control Valve from 75 PSI (515 kPa) to 50 PSI (345 kPa) as per *Maintenance Manual section 12*. Then check for leaks as per *Service Bulletin 94-09*.

29. Use your DDR Diagnostic Data Reader to erase *"LOW COOLANT"* codes in ECU.

NOTE: *After work has been completed, a visual check can be done to ensure that system is working properly.*

WARRANTY

This modification is covered by the manufacturer's normal warranty. We will reimburse you the parts and twelve hours (12.0) of labour upon receipt of removed Gearbox and a completed A.F.A. form on which you must specify as per Warranty Bulletin 94-18.

Expiration date:August 1995