

<p>Article No. 96-21-12</p>	<ul style="list-style-type: none"> • COOLING SYSTEM—PULSATING COOLANT FLOW—NOISE—“KNOCK/THUMP”—AUDIBLE IN PASSENGER COMPARTMENT—3.0L ENGINE • NOISE—“KNOCK/THUMP”—COOLING SYSTEM—AUDIBLE IN PASSENGER COMPARTMENT—3.0L ENGINE
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LIGHT TRUCK: 1991-95 RANGER
1995 AEROSTAR

This TSB is being republished in its entirety to include the 1995 model year and to add Aerostar to the list of affected vehicles.

ISSUE: A “knocking/thumping” noise may be audible in the passenger compartment on some vehicles. This noise is most pronounced with the engine at normal operating temperature. The noise is caused by steam formation in the cooling system. The noise is then transmitted through the heater hoses and heater core.

ACTION: Install a Coolant By-Pass Kit. This increases coolant flow which reduces steam formation. Refer to the following Diagnostic and Service Procedure for details.

DIAGNOSTIC AND SERVICE PROCEDURE

1. Check that base timing is at 10° BTDC with SPOUT disconnected.
2. Check for excessive exhaust system restrictions. A restricted exhaust could elevate cooling system temperatures.

3. If dash-mounted cooling temperature gauge fluctuates, check that gauge and sending unit are functioning properly.
4. Check for restrictions or kinks in the radiator or heater hoses.
5. Pressure check cooling system for leaks.
6. Confirm proper Engine Coolant Temperature (ECT) sensor signal to EEC-IV processor. Refer to TSB Article 93-24-8 (Cooling System - Thermostat Diagnosis) for tool and procedure to check thermostat.
7. Check for correct 50/50 coolant mix. Verify that freezing point is -37°C (±3°C) or -35°F (±5°F).
8. For 1991-93 Rangers, install a 110 kPa (16 psi) Radiator Cap (F4TZ-8100-B). These model year vehicles originally came with a 90 kPa (13 psi) radiator cap.
9. If concern still exists, install service Coolant By-Pass Kit and verify that concern has been resolved. Refer to the Application Chart in this article.

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- **COOLING SYSTEM—PULSATING COOLANT FLOW—NOISE—“KNOCK/THUMP”—AUDIBLE IN PASSENGER COMPARTMENT—3.0L ENGINE**
- **NOISE—“KNOCK/THUMP”—COOLING SYSTEM—AUDIBLE IN PASSENGER COMPARTMENT—3.0L ENGINE**

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Cont'd.**

COOLANT BY-PASS KIT CONTENTS

Application	Coolant By-Pass Kit (-8522-)	Lower Radiator Hose	Elbow - Hot Water Heater Connection	Clip	Nut and Washer M8 X 1.25 Hex	Stud M8 X 1.25 X 104.3 Hex	Instruction Sheet
1991 Ranger w/auto. trans.	F47Z-A	Yes	Yes	Yes	Yes	Yes	I.S. 6787A
1991 Ranger w/manual trans.	F47Z-B	Yes	Yes	Yes	Yes	Yes	I.S. 6787A
1992 Ranger w/auto. trans.	F47Z-C	Yes	Yes	N/A	N/A	N/A	I.S. 6787A
1992 Ranger w/manual trans.	F47Z-D	Yes	Yes	N/A	N/A	N/A	I.S. 6787A
1993-94 Ranger w/auto. trans.	F47Z-E	Yes	Yes	N/A	N/A	N/A	I.S. 6787A
1993-94 Ranger w/manual trans.	F47Z-F	Yes	Yes	N/A	N/A	N/A	I.S. 6787A

COOLANT BY-PASS KIT CONTENTS

Application	Coolant By-Pass Kit (-8522-)	Hose And Clamp Assy. - w/By-Pass	By-Pass Fitting	M8 X 1.25 Nut And Washer	Stud M8 X 1.25 X 104.3 Hex	A/C Hose Brace	Instruction Sheet
1995 Ranger - All	F57Z-AA - Includes Water Pump Pulley	Yes	Yes	Yes	Yes	Yes	I.S. 6831
1995 Aerostar	F59Z-CA	Yes	Yes	N/A	N/A	N/A	I.S. 6840A

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PART NUMBER	PART NAME
F57Z-8522-AA	By-Pass Kit (1995 Ranger)
F59Z-8522-CA	By-Pass Kit (1995 Aerostar)
F47Z-8522-A	By-Pass Kit (1991 Ranger With Automatic Transmission)
F47Z-8522-B	By-Pass Kit (1991 Ranger With Manual Transmission)
F47Z-8522-C	By-Pass Kit (1992 Ranger With Automatic Transmission)
F47Z-8522-D	By-Pass Kit (1992 Ranger With Manual Transmission)
F47Z-8522-E	By-Pass Kit (1993-94 Ranger With Automatic Transmission)
F47Z-8522-F	By-Pass Kit (1993-94 Ranger With Manual Transmission)
F4TZ-8100-B	Radiator Cap

OTHER APPLICABLE ARTICLES: 93-24-8

SUPERSEDES: 95-12-8

WARRANTY STATUS: Eligible Under The Provisions Of Bumper To Bumper Warranty Coverage For 1992-95 Model Year Vehicles, Basic Warranty Coverage For 1991 Model Year Vehicles

OPERATION	DESCRIPTION	TIME
962112A	Install Kit - 1991 Ranger	1.2 Hrs.
962112B	Install Kit - 1992-94 Ranger	0.7 Hr.
962112C	Install Kit - 1995 Ranger	1.1 Hr.
962112D	Install Kit - 1995 Aerostar	1.0 Hr.

DEALER CODING

BASIC PART NO. 8522 OASIS CODES: 111000, 208000, 402000, 497000, 702000, 702100, 702300	CONDITION CODE 11
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