

CAMPAIGN BULLETIN

Subject: **Campaign 07C-1**
Sterling 360 EGR Cooler

Defect Involved

Detroit Diesel has determined that on affected Sterling 360 engines a crack may form on the plate around the exhaust gas inlet of the EGR cooler. The presence of a crack could allow exhaust gas to penetrate the wall between the exhaust gas passage and the coolant passage, resulting in exhaust gas entering the engine coolant passage. This causes excessive pressure to build in the cooling system, which decreases the amount of coolant in the system. Continued operation of the vehicle in this condition could result in an engine overheat and/or the release of un-catalyzed gases through the coolant overflow reservoir.

Replacing the EGR Cooler Assembly and adding a coolant bypass will increase coolant flow to the cooler eliminating cracking due to excessive heat and bring them into compliance with U.S. EPA emissions regulations and prevent customer dissatisfaction.

Engines Involved

A list of engines located in your area of responsibility that require this correction is attached.

The table below gives descriptive information to help identify the affected units:

Model Series	Model Year	Inclusive Mfg. Date (From) (To)	Other Descriptive Information
4M50	2007	01-11-2006 to 11-01-2006	Sterling 360 –COE40, 45
4M50	2007	01-11-2006 to 11-02-2006	Sterling 360 – COE50

Owner Notification

Detroit Diesel will notify owners of equipment incorporating engines identified with this Recall. A copy of the owner letter that will be used by Detroit Diesel is enclosed with this bulletin.

Sterling Dealer Modification Responsibility

Detroit Diesel Repair Facilities are to service all engines subject to Recall 07C-1. Recall 07C-1 is to be performed at no charge to owners on all affected engines under the engine warranty or under the provisions of Recall 07C-1.

Upon completion of Recall 07C-1, or if there is knowledge to the fact that Recall 07C-1 has been performed on an engine that is listed on the Serial Number List provided by DDC, please apply a “**CAMPAIGN 07C-1 COMPLETE**” label on the valve cover.

Instructions for downloading and printing “**Campaign 07C-1 Completed**” labels reside on both the Detroit Diesel Extranet and DDCSN Website.

Parts Information

NOTE: Parts are available from Freightliner PDC’s through Paragon

Part Description	Part Number
EGR Cooler Kit	MBF EX 18 2
EGR Coolant Bypass Kit	MBF EX 18 1

Procedure	Item	Part Name	Part Number	Qty	Kit
EGR Cooler	A	Gasket EGR pipe	MBF ME221927	1	MBF EX 18 1
	B	Gasket EGR	MBF ME222864	5	MBF EX 18 1
	C	Gasket EGR valve B (not needed)	MBF ME221576	1	MBF EX 18 1
	D	Gasket EGR valve A (not needed)	MBF ME221578	1	MBF EX 18 1
	E	Cooler assembly EGR	MBF ME225981	1	MBF EX 18 2
	F	Nut, flange (exh manifold to EGR pipe)	MBF ME201039	3	MBF EX 18 1
	G	Bolt, flange (8x40mm) (EGR pipe to cooler)	MBF MF140233	1	MBF EX 18 1
	H	Bolt, flange (8x50mm) (EGR pipe to cooler)	MBF MF140235	1	MBF EX 18 1
Bypass Piping	I	Joint, water A (LH side)	MBF ME227024	1	MBF EX 18 1
	J	Hose, water B (LH side)	MBF ME227028	2	MBF EX 18 1
	K	Hose, water (curved w/wear cover)	MBF ME227032	1	MBF EX 18 1
	L	Pipe, water (front of engine)	MBF ME227019	1	MBF EX 18 1
	M	Hose, water (smallest diameter)	MBF ME227030	1	MBF EX 18 1
	N	Hose, water (short)	MBF ME227029	1	MBF EX 18 1
	O	Joint, water B (RH side)	MBF ME227009	1	MBF EX 18 1
	P	Clip, hose (23mm)(use with J, K, N)	MBF MS660172	8	MBF EX 18 1
	Q	Clip, hose (19mm)(use with M)	MBF MS660174	2	MBF EX 18 1
	R	Clamp, hose, threaded (use with T and U)	MBF MA609047	4	MBF EX 18 1
	S	Bolt, flange (8x45mm)(use with L)	MBF MF140234	2	MBF EX 18 1
T	Hose, heater water (curved)	MBF MK635506	1	MBF EX 18 1	
U	Hose, heater water (straight, w/wear cover)	MBF MK635505	1	MBF EX 18 1	

Corrective Procedure

Reference the attached **360 – EGR Cooler Recall** procedure (**Attachment I**). Prior to performing the campaign, check the engine valve cover for a completion sticker.

Warranty Information

Claim Type:	04
Modification:	07C1
Failure Code:	098
Complaint Code:	PD
Primary Failed Part:	MBF ME225981
Labor:	4.0 Hours
Labor Operation Code:	059900
Parts Return:	None

Should you have any additional questions, please contact Detroit Diesel.

DETROIT DIESEL
13400 Outer Drive West
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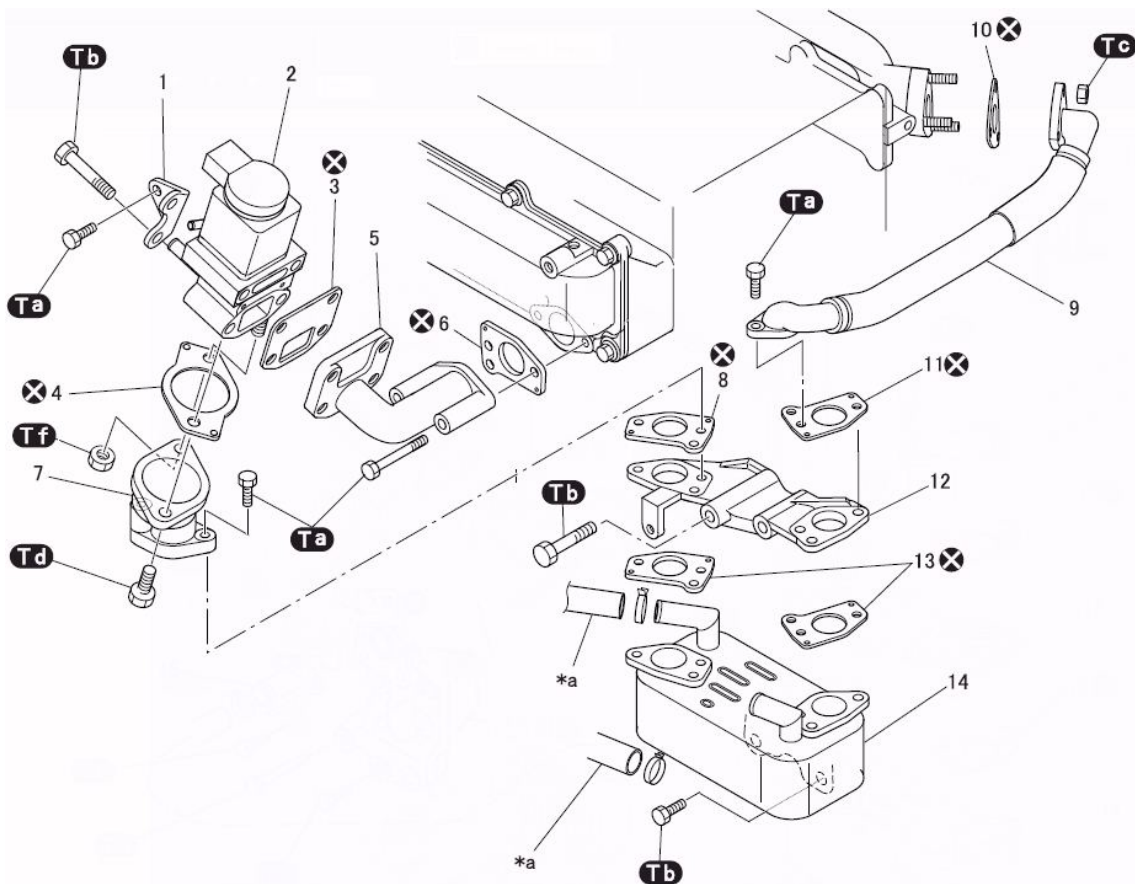
360 – EGR Cooler Recall

Procedure

1. Park, set parking brake, shutoff engine, chock wheels, tilt cab, disconnect batteries. Engine must be cool to perform this work.
2. Drain coolant from vehicle. Coolant will NOT be reused.
3. EGR cooler replacement.

IMPORTANT: Bolt lengths vary so keep in order during removal and installation.

- a. Remove EGR valve as a complete assembly (Fig 1, callouts 2, 5, 7).
- b. Remove EGR pipe (Fig 1, callout 9).
- c. Remove hoses from EGR cooler.
- d. Remove EGR cooler bottom mounting bolts.
- e. Remove EGR cooler bracket B (Fig 1, callout 12).
- f. Install new cooler (kit item E) in reverse order using new gaskets (kit items A,B), bolts (kit items G, H), and nuts (kit item F). Fig 1, callouts 3 and 4 (kit items C, D) are not needed since the EGR valve was removed as an assembly.
- g. Tighten all bolts/nuts finger tight until the cooler, brackets, EGR assembly, and pipe are in place to ensure that all mating surfaces are properly aligned. Snug up all bolts. Finally torque all fasteners.



Callout	Item	Torque
1	EGR bracket	-
2	EGR valve	-
3	EGR valve gasket B (kit item C)	-
4	EGR valve gasket A (kit item D)	-
5	EGR cooler adapter B	-
6	EGR gasket (kit item B)	-
7	EGR cooler adapter A	-
8	EGR gasket (kit item B)	-
9	EGR pipe	-
10	EGR pipe gasket (kit item A)	-
11	EGR gasket (kit item B)	-
12	EGR cooler bracket B	-
13	EGR gasket (kit item B)	-
14	EGR cooler (kit item E)	-
*a	Water hose	-
⊗	Non-reusable	-
Ta	Torque to	17 ft.lbs
Tb	Torque to	33 ft.lbs
Tc	Torque to	15 ft.lbs
Td	Torque to	42 ft.lbs
Tf	Torque to	42 ft.lbs

4. Coolant bypass installation.

- a. At engine left hand side remove existing hose (Photo 1) and install new joint (kit item I), hoses (kit item J and K), and new clips (kit item P qty 6)(Photo 2).
- b. At engine right hand side remove existing hose between engine front cover to heater plumbing and mounting clamp (Photo 3). Save clamp.
- c. Make up joint/hose/clip/clamp assembly (kit items M, N, O, P qty 2, Q qty 2, T, R qty 2)(Photo 4). Reuse mounting clamp from step 4b.
- d. Install assembly to engine and heater pipe. Align like shown in Photo 3, taking care to position clips/clamps away from fan.
- e. Remove two front cover bolts, install new water pipe (kit item L)(photo 3) with clips to new hoses in step 4a and 4c, and then mount the pipe to the engine cover with new bolts (kit item S qty 2). Position the new clips/clamps away from fan. Tighten threaded clamps as shown in Fig 2. Rotate the fan by hand and visually inspect for adequate clearance.
- f. Engine left hand side remove the existing engine to heater pipe hose and install new hose (kit item U) with clamps (kit item R qty 2)(photo 5). Tighten threaded clamps as shown in Fig 2.

Photo 1



Photo 2



Photo 3

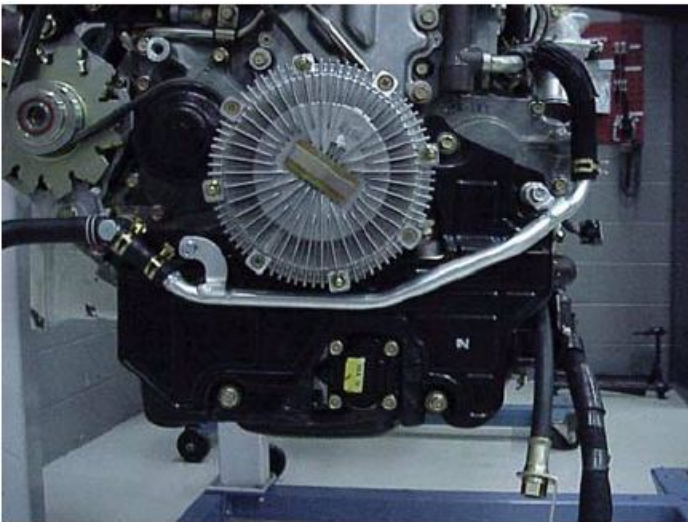


Photo 4



Photo 5

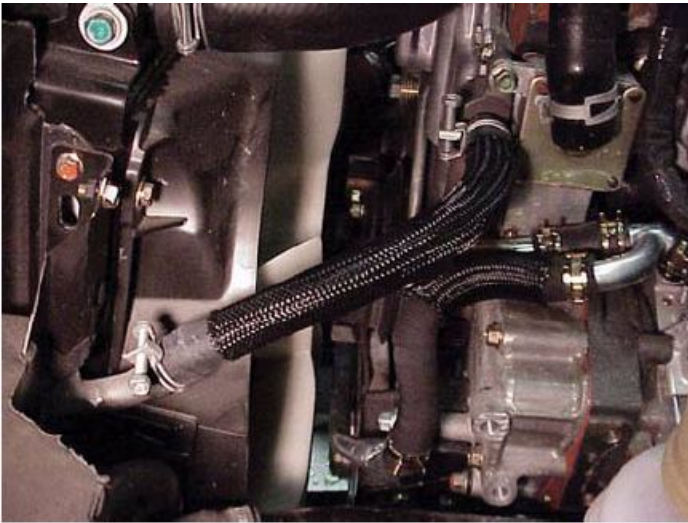


Figure 2



5. Fill vehicle cooling system with new coolant. Use a fully formulated Ethylene Glycol antifreeze that meets SAE J814-C. System capacity is 17 quarts.
6. Reconnect battery cables.
7. Run the vehicle to operating temperature, shutdown, and once the engine has cooled, recheck coolant level.
8. Put a completion sticker on the engine valve cover.