

**DETROIT DIESEL**

A DelmarChrysler PowerSystems Company



August 30, 2004

To: All Distributors – North America  
Attn: General Service Manager  
Subject: **Safety Recall 04C-2**  
Series 50 Exhaust Temperature Sensor

Attached is your copy of Safety Recall 04C-2. Also attached is a list of engine serial numbers that, according to our records, were sold and shipped to your Distributorship, and are affected by Safety Recall 04C-2.

It is essential that units still in your inventory be modified.

If any of these engines have been sold and delivered, it will be required that owners be notified of this Recall so corrective action can be taken. Owners can be notified by sending the attached owner letter.

Additionally, a quantity of adhesive labels has been included so that, upon completion of the repairs, the label can be affixed on the valve cover indicating the campaign has been completed.

If you determine that any of the engines listed, are now located outside your area, or in the event you have any questions, contact Detroit Diesel.

The Detroit Diesel Warranty System can be utilized to determine if a particular engine serial number is affected by this campaign.

The attached campaign bulletin should be used when announcing this campaign to your dealer organization if required.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Dziadzio'.

R. P. Dziadzio, Manager  
Service Operations

# DETROIT DIESEL

A DaimlerChrysler PowerSystems Company



August 30, 2004

To: All Distributors – North America  
Attn: General Service Manager  
Subject: Safety Recall 04C-2  
Series 50 Exhaust Temperature Sensor

Attached is your copy of Safety Recall 04C-2. Our records show no engines eligible for this modification were shipped to your Distributorship.

A quantity of adhesive labels has been included so that, upon completion of the repairs, the label can be affixed on the valve cover indicating the campaign has been completed.

POWERNET can be utilized to determine if a particular engine serial number is affected by this campaign by utilizing "Data Type 5, Campaign" on the Unit History Menu Selection Screen.

The attached campaign bulletin should be used when announcing this campaign to your dealer organization if required.

If you have any questions regarding this Recall, please contact Detroit Diesel.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Dziadzio".

R. P. Dziadzio, Manager  
Service Operations

**DETROIT DIESEL**

A Detroit/Chrysler PowerSystems Company



**Attention Owner:**

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act.

Detroit Diesel Corporation (DDC) has decided that a defect which relates to motor vehicle safety exists in the exhaust systems in certain Series 50 engines in transit buses.

The turbocharger can fail, allowing lubricating oil to enter the exhaust system. This can result in a fire in the engine compartment.

Records available to us indicate that your vehicle is equipped with one of these affected engines. DDC will repair your engine at no charge to you to install an exhaust temperature sensor to prevent the possibility of an exhaust or engine compartment fire. At the same time, the ECM will need to be reprogrammed to initiate activation of the sensor. We estimate that it will take approximately 2.5 hours to repair your engine. Please contact your authorized Detroit Diesel Distributor to arrange a service date.

If you have any questions about this recall campaign, you may call 313-592-3708. If you believe that DDC has failed or is unable to remedy the defect without charge within a reasonable time, you may submit a complaint to the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, D.C. 20590 or call the toll-free Auto Safety Hotline at 1-888-327-4236.

If you had this installation done before you received this letter, you may be eligible to receive reimbursement for the cost of obtaining a pre-notification remedy of the problem associated with this recall. For more information, contact Warranty Administration at Detroit Diesel Corporation, 13400 Outer Drive West, Detroit, MI 48239 or call (313) 592-5791.

We are sorry to cause you this inconvenience; however, we have taken this action in the interest of your continued satisfaction with our products.

**DETROIT DIESEL CORPORATION  
CAMPAIGN BULLETIN 04C-2  
SERVICE ADMINISTRATION-CAMPAIGN COORDINATOR (BX-5)**

**DETROIT DIESEL**

A DaimlerChrysler PowerSystems Company



Dear Equipment Manufacturer:

Detroit Diesel Corporation (DDC) and the National Highway Traffic Safety Administration (NHTSA) have determined that there is a safety concern on the exhaust systems on certain Series 50 engines in transit buses. This Safety Recall will require the installation of an exhaust temperature sensor and reprogramming of the ECM. This concern involves the potential for a turbocharger failure to result in an engine compartment fire.

Our records indicate that some of the affected engines were shipped to you. A list of those engine serials numbers is enclosed.

To help assure customer satisfaction with the equipment you have assembled with these engines, owners of these affected engines should be instructed to contact their Detroit Diesel service outlet to arrange a service date to have the necessary repairs completed.

This service will be completed at no charge to owners of all affected engines under the engine warranty or under the provisions of this Recall notice.

Instructions for the campaign have been sent to all Detroit Diesel Distributors and Dealers. The time necessary to modify these engines is approximately 2.5 hours.

If you wish to have Detroit Diesel notify owners of your equipment by sending the attached letter, please provide us with the equipment identification numbers (related to the serial numbers of the engines corresponding to each piece of equipment) of your involved equipment, and the names and addresses of the purchasers. Otherwise, you may decide to notify the owners yourself. Please promptly advise us of your wishes.

We are sorry to cause you this inconvenience, however, we have taken this action in the interest of continued customer satisfaction with both your products and ours.

**DETROIT DIESEL CORPORATION  
CAMPAIGN BULLETIN 04C-2  
SERVICE ADMINISTRATION CAMPAIGN CORDINATOR (BX-5)**

# SAFETY RECALL BULLETIN

Subject: **Safety Recall 04C-2**  
**Series 50 Exhaust Temperature Sensor**

## **Defect Involved**

Detroit Diesel Corporation (DDC) has determined that certain Series 50 engines in buses will need to have an exhaust temperature sensor installed. At the same time it will be necessary to program the ECM software logic to shutdown the engine in the event of a fire in the exhaust system.

The cause of the problem was engines experiencing turbocharger failure. This can lead to fire in the exhaust system of the bus.

## **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:

<b>Model Series</b>	<b>Model Year</b>	<b>Inclusive Mfg. Date</b>	
		<b>(From)</b>	<b>(To)</b>
50	1998	4R-22360	4R-26735
	1999	4R-26736	4R-31113

## **Owner Notification**

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

**Distributor / Dealer Modification Responsibility**

Detroit Diesel Distributors are to service all engines subject to this Recall. The Recall is to be performed at no charge to owners on all affected engines under the engine warranty or under the provisions of this Recall notice.

Upon completion of this Recall, or if there is knowledge to the fact that this Recall has been performed on an engine that is listed on the complete serial number list provided by DDC, please apply the "CAMPAIGN 04C-2 COMPLETE" label on the valve cover.

**Parts Information**

- o **SENSOR KIT 23524969**
  - ⇒ Sensor, Exhaust Temperature 23521882
  - ⇒ Harness, Exhaust Temperature Sensor 23524831
  - ⇒ Adaptor, M-14 x 1.5 Threaded 23524760
  - ⇒ Cap, M-14 x 1.5 Threaded Adaptor 23524980
  
  - ⇒ **DDEC Calibration** 6N4D-  
XXXX (1996) → 6N4D-8538  
(1997) → 6N4D-8574  
(1998) → 6N4D-8595

**Corrective Procedure**

- o **Reference ATTACHMENT I**

Installation Instructions (18SP465): **INSTALL EXHAUST GAS TEMPERATURE MEASUREMENT; Kit 23524969 on a Series 50 Engine, pp. 1-4.**

**Safety Recall Bulletin 04C-2**  
**Page Three**

**Warranty Information**

<b>Claim Type:</b>	<b>04</b>
<b>Modification:</b>	<b>04C2</b>
<b>Failure Code:</b>	<b>029</b>
<b>Complaint Code:</b>	<b>XX</b>
<b>Primary Failed Part:</b>	<b>23521882</b>
<b>Labor:</b>	<b>2.5 hours</b>
<b>Parts Return:</b>	<b>None</b>

It is expected that this Recall will be completed as soon as possible. Should you have any additional questions, please contact Detroit Diesel.

Affix the following label to the valve cover:



**DETROIT DIESEL CORPORATION**  
13400 Outer Drive West  
Detroit, Michigan 48238-9001

**BULLETIN**

# DETROIT DIESEL



## Installation Instructions

### 18SP465—Install Exhaust Gas Temperature Measurement Kit 23524969 on a Series 50 Engine

#### Introduction

This kit is intended for use on an Orion® V bus powered by a Series 50® diesel-fueled engine. The kit consists of the items listed in Table 1.

Item	Part No.	Qty.	Description
1	23521882	1	Sensor, Exhaust Temperature
2	23524831	1	Harness, Exhaust Temperature Sensor
3	23524760	1	Adaptor, M-14 x 1.5 Threaded
4	23524980	1	Cap, M-14 x 1.5 Threaded Adaptor
	18SP465	1	Installation Instructions

Table 1 - Components of Kit 23524969

#### Installation

Install the exhaust temperature sensor from the kit in the exhaust outlet of the muffler/catalyst assembly as follows:

1. Record the engine serial number, vehicle identification number, and bus number. Verify that the vehicle ignition is switched to the OFF position.



#### CAUTION:

To avoid the possibility of personal injury (burns) from the hot muffler/catalyst assembly, allow the engine to cool to ambient temperature before working on the muffler/catalyst assembly or installing the sensor.



#### CAUTION:

To prevent possible personal injury from accidental engine startup or vehicle movement, disconnect the battery power and grounds cables and place chocks under the wheels before working on the vehicle.

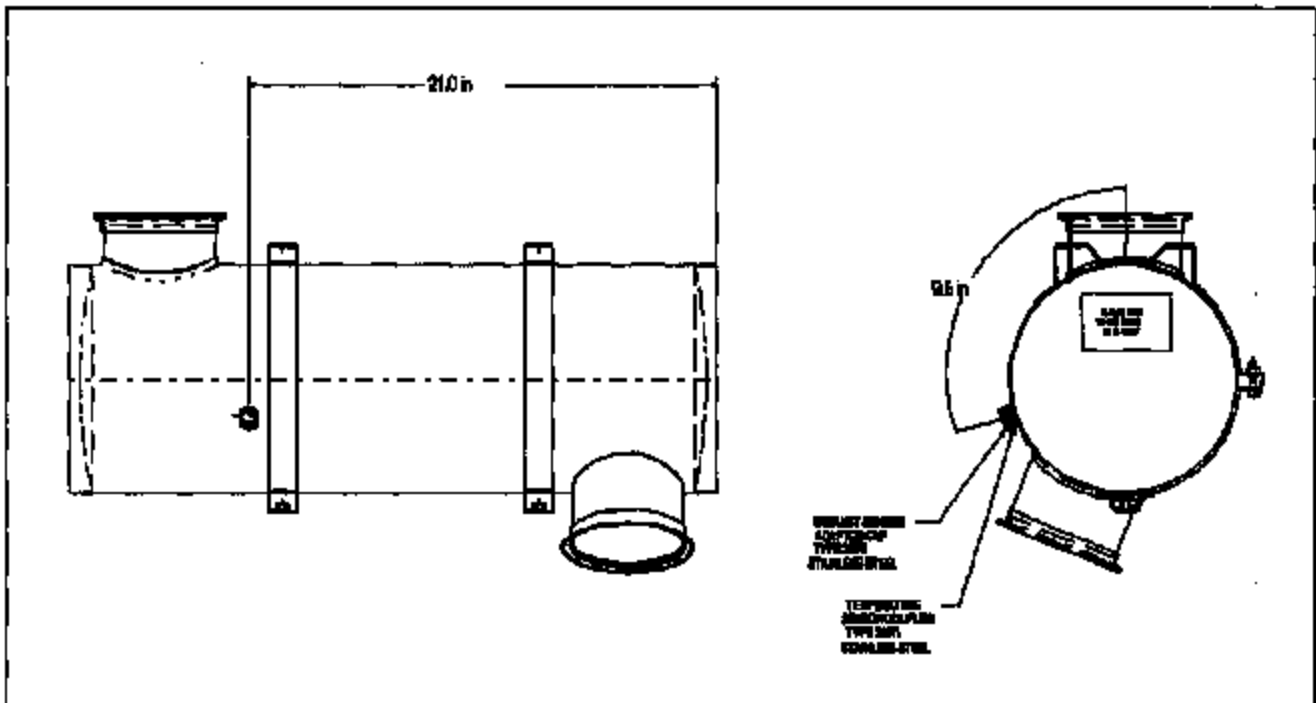
2. With the engine at ambient temperature, mark the adaptor insertion location on the heat shield. See Figure 1. The dimensions shown indicate the exact adaptor location.

**NOTE:** To ensure accuracy, all measurements must be made on the muffler/catalyst assembly and not on the heat shield.

3. Using the adaptor insertion mark as the centerline of the hole, carefully drill a two-inch diameter hole through the muffler/catalyst heat shield with a hole saw or comparable tool. Remove any sharp edges and/or burrs from the outside surface of the heat shield.
4. Repeat the measurements described in step 2 and mark the location of the adaptor on the muffler/catalyst outer shell. Using a 16.5 or 17mm O.D. drill bit, drill through the muffler/catalyst assembly. Remove any sharp edges and/or burrs from this surface.

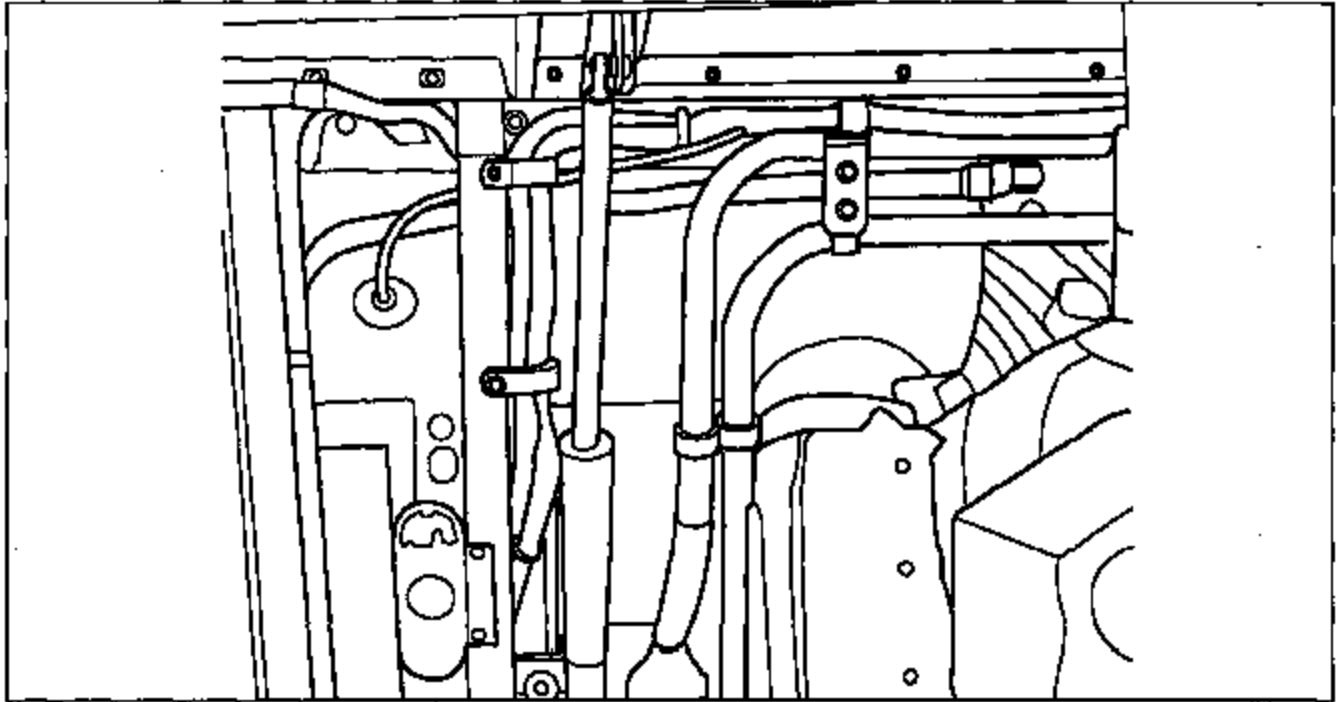
#### NOTICE:

To prevent damage to the DDEC® electronic control system, disconnect the 5-pin power connector at the ECM (electronic control module) before welding. Failure to isolate the DDEC system from high current flow can result in severe ECM damage.



**Figure 1 - Adapter insertion location**

5. With the power harness disconnected from the engine ECM, seat the exhaust temperature sensor adaptor (Item 3) on the surface of the muffler/catalyst assembly. The threads of the adaptor should face toward the rear of the bus. Install the adaptor cap (Item 4) by rotating it approximately four full turns and weld the adaptor in place.
6. While the adaptor is cooling, remove the adaptor cap (Item 4). With the adaptor at ambient temperature, install the exhaust temperature sensor (Item 1). See Figure 2 and note arrows for correct sensor cable routing. Use care to route the cable away from the heat shield surface.
7. Remove the oil pressure sensor connector located on the right, rear side of the engine block (as viewed from the rear of the bus). Connect it to the compatible three-pin end of the electrical harness (Item 2). Plug the remaining 3-pin connector into the oil pressure sensor.
8. Remove the thirty-pin vehicle interface harness connector from the ECM. Strip and install the ten, blunt-cut and unterminated single wire of the electrical harness (Item 2) into cavity D-3 using the typical DDEC pull-to-seat crimped terminator.
9. Connect the two-pin female Weather Pack® connector on the electrical harness to the male connector on the end of the exhaust temperature sensor. Route the sensor cable and conduit along existing wiring conduit in the engine compartment and tie-wrap to secure them in place.



**Figure 2 - Proper Routing of Temperature Sensor Harness**

10. Reconnect the thirty-pin vehicle interface connector and the power harness to the ECM.
11. Contact DDC Technical Service and request that the 6N4C group be changed from 301 to 323 for the engine serial number recorded. Once this change is complete, reprogram the ECM using mainframe data. After a successful download, plug in a DDR (diagnostic data reader) and verify that a reading is received for exhaust temperature and that no active codes exist.

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**DETROIT DIESEL**  
CORPORATION



13400 Outer Drive, West / Detroit, Michigan 48239-4001  
Telephone: 313-592-5000  
[www.detroitdiesel.com](http://www.detroitdiesel.com)

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