

DETROIT DIESEL



Installation Instructions

18SP624* – Series 50[®] NovaBUS[®] Diesel Particulate Filter Installation

*Revision – 6/15/06

DESCRIPTION

A replacement diesel particulate filter assembly has been released for use in NovaBUS buses with Series 50 diesel engines built after serial number 04R0041511. The appropriate part numbers to mate with the OEM-installed exhaust tubing are listed in Table 1 below. A partial list of available replacement parts is listed in Table 2.

PARTS LIST

See Table 1 for the NovaBUS diesel particulate filter parts:

Part No.	Qty.	Description
23535762	1	Diesel Particulate Filter Assembly
23536049	1	Diesel Particulate Filter Installation Kit
18SP624	1	Installation Instructions

Table 1 Components of S50 NovaBUS Diesel Particulate Filter Installation

Part No.	Qty.	Description
23535829	*	V-Band Clamp
23535830	*	Gasket

* V-Band Clamp and gasket part numbers are provided as a reference for ordering replacement parts, if required, in the event either is damaged during removal or installation.

Table 2 Replacement Service Parts for S50 NovaBUS Diesel Particulate Filter

REMOVAL OF DIESEL PARTICULATE FILTER

Perform the following steps for removal of current components:

 WARNING:
PERSONAL INJURY
To avoid injury from hot surfaces, wear protective gloves or allow engine to cool before removing any component.



PERSONAL INJURY

To avoid injury when removing or installing a heavy engine component, ensure the component is properly supported and securely attached to an adequate lifting device to prevent the component from falling.

NOTE:

The diesel particulate filter weighs approximately 36 Kg (80 lbs).



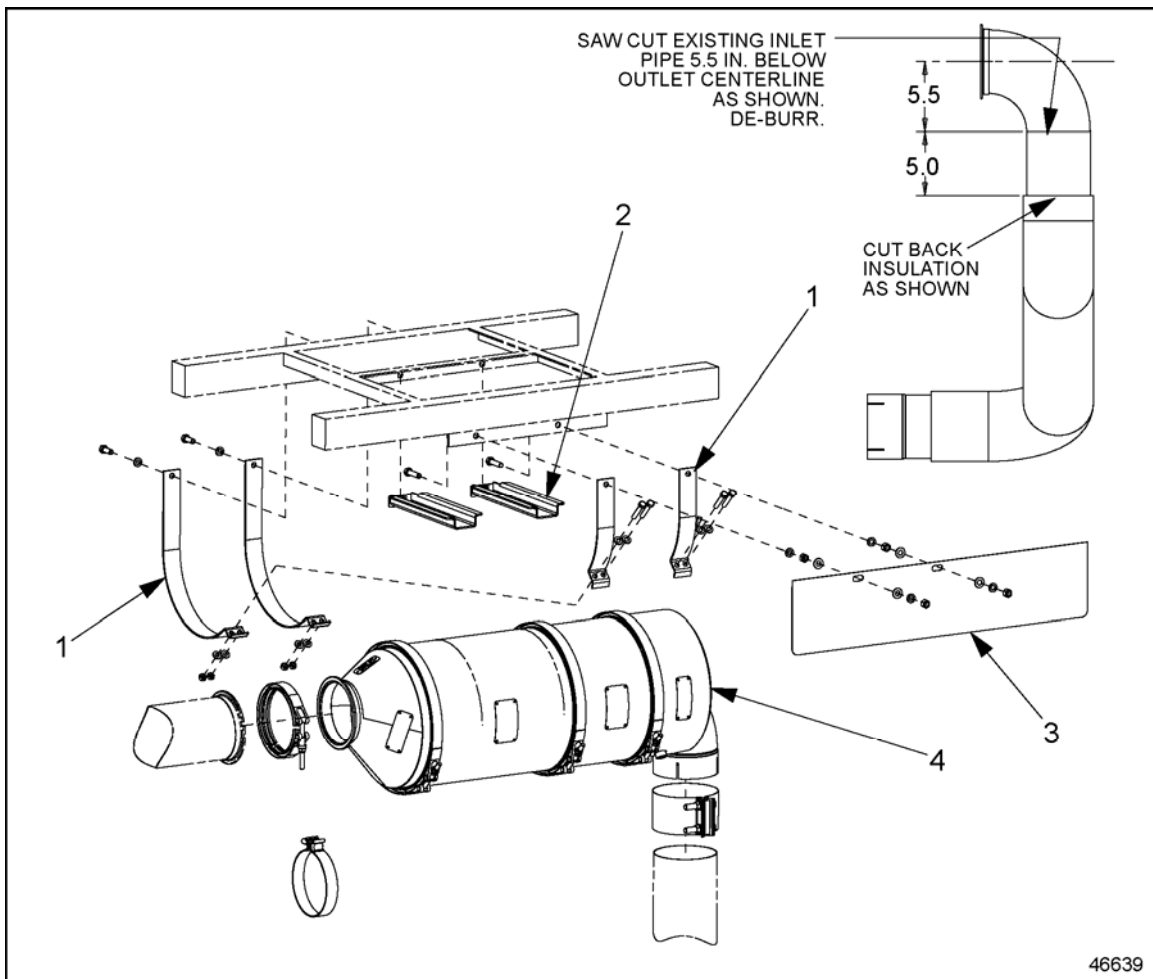
PERSONAL INJURY

To avoid injury from accidental engine startup while servicing the engine, disconnect/disable the starting system.

1. Disconnect the batteries.
2. Gain access to the engine/filter compartment.
3. Disconnect the Exhaust Temperature Sensor probe lead, loosen the sensor retaining nut, and remove the sensor. Retain the sensor for reuse.
4. Remove the jump start battery connector from the mounting bracket.
5. Unbolt the power steering reservoir and remove it or secure it out of the way.
6. Remove the reservoir mounting bracket and jump start connector mounting bracket together.
7. Disconnect the exhaust pipe at the filter outlet.
8. Remove the V-clamp securing the exhaust inlet pipe to the filter outlet.
9. Loosen the clamps securing the filter to the chassis and remove filter assembly.
10. Remove the filter mounting clamps and brackets.

INSTALLATION OF DIESEL PARTICULATE FILTER

Perform the following steps for installation of new components: (refer to Figure 1 for part locations)



- | | |
|---------------------------------|---------------------------------------|
| 1. Mounting Strap (two-piece) | 3. Heat Shield |
| 2. Spacer Bracket (Cross Brace) | 4. Diesel Particulate Filter Assembly |

Figure 1 NOVA/TMC Diesel Particulate Filter Installation Kit

1. Remove ONLY the V-band clamps that secure the outlet and filter sections of the assembly and separate them, keeping the inlet and catalyst sections clamped together, as these will be installed into the vehicle as one assembly.

NOTE:

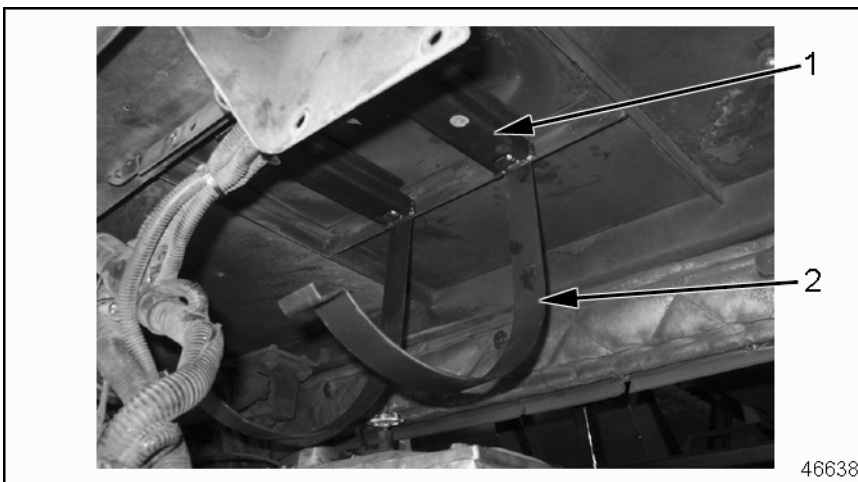
Be careful to avoid damage to the gaskets between each of the filter sections.

2. Remove, measure, and cut the exhaust pipe going into the muffler. In addition, the insulation will need to be cut back. See Figures 1 and 2. Reinstall the pipe to the mating exhaust flex tube.



Figure 2 Cutting Inlet Pipe 5.5 in. Below Outlet Centerline

3. Locate the fire sensor above the filter inlet. Loosen the mounting bracket and pivot the bracket toward the front of the vehicle. The Sensor probe should orient away from the filter inlet.
4. Install the new spacer brackets (cross braces), mounting straps, and heat shield loosely. See Figure 3.



1. Spacer Bracket (Cross Brace)
2. 2. Mounting Strap (Two-piece)

Figure 3 Installing Spacer Brackets (Cross Braces)

5. Install the intake / catalyst assembly, taking care to pilot the exhaust inlet pipe into the filter inlet. Secure filter with a mounting strap, but do not tighten the fasteners at this time.
6. Install the gasket and V-band clamp on the catalyst section. Install the filter center section with the part number tag oriented towards the rear of the vehicle. Secure the V-band clamp but do not tighten. Attach the mounting strap around the filter section.
7. Install the gasket and V-band clamp on the filter section. Install the outlet section with the outlet aligned with the mating exhaust / tail pipe. Secure the clamp but do not tighten.
8. Install the tail pipe.

- Install the temperature probe into the M14 x 1.5 threaded boss on the side of the outlet can. Tighten the nut with hand tools only.

NOTE:

Be sure the sensor wires are secured to avoid contact with the filter body and the harness is not under tension.

- Tighten the three large V-clamps securing the filter sections to 16 N·m (12 lb·ft).

NOTICE:

Do not use an impact wrench to tighten the clamps; this may cause galling of the threads.
Check to be sure there is adequate clearance between the filter body and the chassis and adjust if necessary, to allow air circulation.

- Tighten the mounting hardware to secure the filter in the chassis. The 3/8 in. bolts torque to 41-47 N·m (30-35 lb·ft). The exhaust pipe to inlet clamp torque is 20 N·m (15 lb·ft).

- Modify the power steering bracket and jump start connector bracket. See Figure 4.

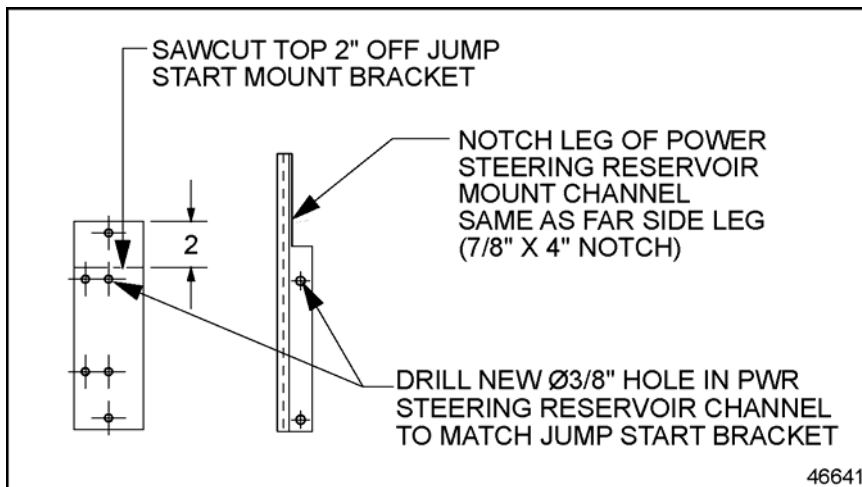


Figure 4 Modifying Power Steering Bracket and Jump Start Conn. Bracket

- Reassemble the brackets and install.
- Reattach the jump start connector to the bracket, if so equipped.
- Reattach the power steering reservoir to the bracket.

NOTE:

If the reservoir was removed, bleed the power steering system as per the recommended OEM procedure.

- Check for exhaust leaks.



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