

# DETROIT DIESEL



## Installation Instructions

### 18SP623 – Series 50<sup>®</sup> North American Bus Industries<sup>®</sup> Diesel Particulate Filter Installation

#### DESCRIPTION

A replacement diesel particulate filter assembly has been released for use in North American Bus Industries (NABI) buses with Series 50 diesel engines built after serial number 04R0041511. There are two variations on the filter design used. 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 NABI diesel particulate filter parts:

Part No.	Qty.	Description
23535754	1	Diesel Particulate Filter Assembly – D.A.R.T.
23536047	1	Installation Kit – D.A.R.T.
23535755	1	Diesel Particulate Filter – C.T.A. and Antelope Valley
23536046	1	Installation Kit – C.T.A. and Antelope Valley
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**Table 1 Components of S50 NABI Diesel Particulate Filter Installations**

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 of S50 NABI Diesel Particulate Filter**

#### REMOVAL OF DIESEL PARTICULATE FILTER

Perform the following steps for removal of current components:

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

 **WARNING:**

**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.**

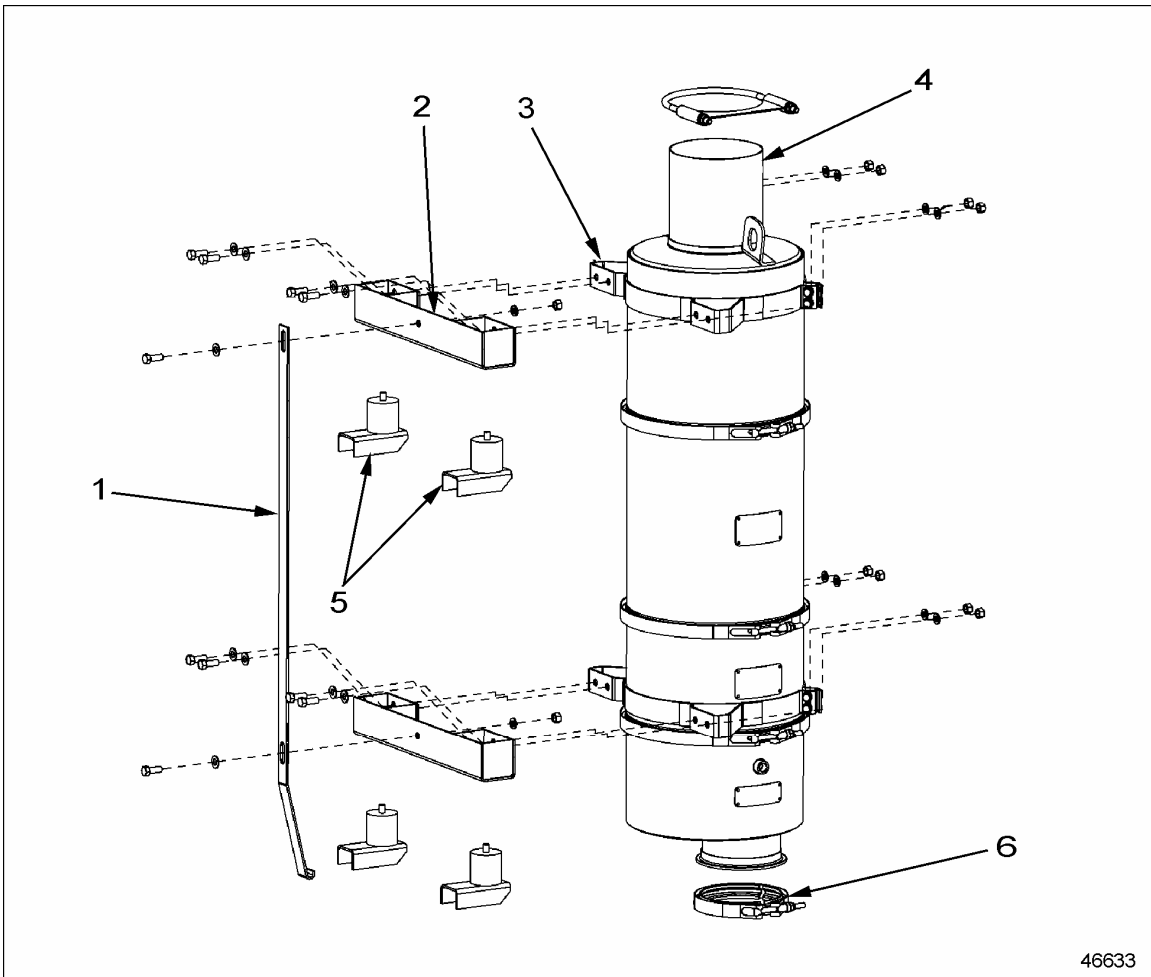
**NOTE:**

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

1. Gain access to the muffler compartment.
2. Disconnect the Exhaust Temperature Sensor probe lead, loosen the sensor retaining nut, and remove the sensor. Retain the sensor for reuse.
3. Remove the exhaust clamp that secures the tail pipe to the outlet of the muffler and then remove the tail pipe.
4. Remove the bolt(s) in the upper mounting bracket clamp securing the top of the outlet section of the filter to the chassis.
5. Loosen and remove the large V-band clamps that secure the center section of the old filter to the inlet and outlet sections.
6. Remove the center and outlet sections individually.
7. Remove the bolt(s) in the lower mounting bracket clamp securing the inlet section of the filter to the chassis.
8. Loosen the clamp securing the exhaust pipe to the filter inlet; separate the pipe from the muffler.
9. Remove the inlet section from the chassis.
10. Remove the old muffler mounting brackets / clamps from the chassis. Retain the bolts, washers, nuts, isolators and bushings for reuse during the installation of the new assembly.

**INSTALLATION OF DIESEL PARTICULATE FILTER**

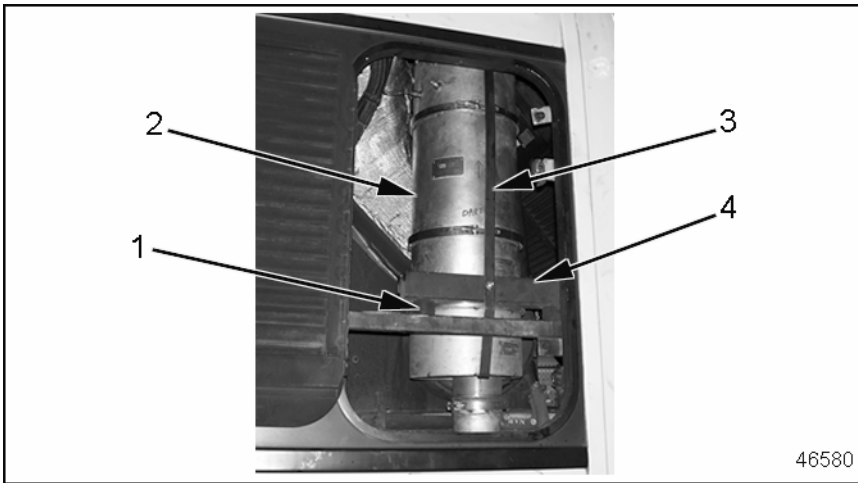
Perform the following steps for installation of new components: (Refer to Figure 1 and Figure 2 for parts location)



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- |                              |   |
|------------------------------|---|
| 1. Hanger Strap              | 4. Diesel Particulate Filter Assembly         |
| 2. Channel Bracket           | 5. Isolators (from original OEM installation) |
| 3. Mounting Bracket Assembly | 6. V-Band Inlet Clamp                         |

**Figure 1 NABI DPF Installation Kit**



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- |  |                    |
|--|--------------------|
| 1. Isolator (from original OEM installation) | 3. Hanger Strap    |
| 2. DPF Assembly                              | 4. Channel Bracket |

**Figure 2 NABI DPF Removal and Installation**

1. Install the new channel brackets to the original locations using the hardware saved from removal procedure.
2. Loosen the V-band clamps and separate the four sections of the filter. Be careful to avoid damage to the gaskets located between each of the filter sections.
3. Install the muffler lower section. Line up the inlet section with the exhaust pipe and attach the pipe, leaving the exhaust clamp loose.
4. Loosely attach a mounting bracket around the catalyst section using two 5/16 in. bolts, four flat washers and two lock nuts.
5. Install the gasket and clamp on the inlet section upper surface. Install the catalyst section with the part number tag oriented toward the side access door. Secure the clamp but leave loose.
6. Attach the mounting bracket on the catalyst section to the lower channel bracket using four 3/8 in. bolts, four flat washers, four lock washers, and four hex nuts. Do not tighten.
7. Install the gasket and clamp on the upper portion of the catalyst section. Install the filter center section with the part number tag oriented toward the side access door. Secure the clamp but do not tighten.
8. Install the gasket and clamp on the top of the filter section. Loosely attach a mounting bracket around the outlet section using two 5/16 in. bolts, four flat washers and two lock nuts.
9. Install the outlet section. Secure the clamp but do not tighten. Orient the temperature sensor port to allow sufficient clearance for sensor installation and operation without contacting the chassis.
10. Attach the mounting bracket on the outlet section, to the upper channel bracket using four 3/8 in. bolts, four flat washers, four lock washers, and four hex nuts. Do not tighten.
11. Attach the hanger strap to the center of the channel brackets using two 3/8 in. bolts, two flat washers, two lock washers, and two hex nuts, making sure the strap is installed with the "hook end" down and facing towards the filter. Do not tighten.
12. Install the tail pipe with the outlet oriented toward the rear of the vehicle.
13. Install the U-clamp on the tail pipe. Do not tighten hardware at this time.
14. Install the temperature probe into the M14 x 1.5 threaded boss on the side of the outlet can. Tighten the nut using 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.

15. Tighten the three large 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.

16. Tighten the mounting hardware to secure the filter in the chassis. The 5/16 in. bolts torque to 18-23 N·m (13-17 lb·ft). 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).
17. Check for exhaust leaks.
18. Re-secure the side access door and upper exhaust compartment access cover.

## NOTICE:

Be sure the exhaust pipe does not contact the upper cover to avoid heat transfer and damage to the fiberglass rear cap on the bus.

**DETROIT DIESEL**

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