

# DETROIT DIESEL



## Installation Instructions

### 18SP618 – Series 50<sup>®</sup> New Flyer<sup>®</sup> Diesel Particulate Filter Installation

#### DESCRIPTION

A replacement diesel particulate filter assembly has been released for use in New Flyer 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

New Flyer diesel particulate filter parts are listed in Table 1.

Part No.	Qty.	Description
23535756	1	Diesel Particulate Filter Assembly – all except New York City Transit and Las Vegas
23535758	1	Diesel Particulate Filter Assembly – New York City Transit and Las Vegas only
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**Table 1 Components of S50 New Flyer 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 New Flyer 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). If a suitable lifting device is used, the filter assembly may be removed as a single assembly, therefore eliminating steps 5 and 6.

1. Remove the left rear side and upper access panels covering the filter 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 upper U-clamp and mounting bracket securing the top of the outlet section of the filter.
4. Remove the tail pipe section.
5. Loosen and remove the large V-band clamps that secure the center section of old filter to the inlet and outlet sections.
6. Remove the center and outlet sections individually.
7. Loosen and remove the V-band clamp securing the inlet tube to the filter inlet; separate the pipe from the filter.
8. Remove the bolts (3 qty.), nuts and washers securing the inlet section to the chassis. Hardened washers are installed between the bolt head and the filter mounting tab and between the chassis bracket and nut on some applications. There are also two standard 3/8 in. washers installed between the filter mounting tabs and the upper side of the chassis bracket on some models.

**NOTE:**

Do not mix the hardened and standard washers.

9. Remove the inlet section from the chassis.

## **INSTALLTION OF DIESEL PARTICULATE FILTER**

Perform the following steps for installation of new components:

### **NOTE:**

If a suitable lifting device is used, the filter assembly may be installed as a complete assembly. Steps 1, 3, 4 and 5 will then not be required and the complete assembly can be lowered through the upper access panel.

1. Loosen the V-band clamps and separate the four sections of the filter. Be careful to avoid damage to the gaskets between each of the filter sections.
2. Install the lower section through the left side rear access hole. Align the three mounting pads with the holes in the chassis and the exhaust tube with the inlet flange of the filter. Install the three 3/8 in. x 16 x 1.5 bolts, washers and nuts. Do not tighten the fasteners at this time.
3. Install the exhaust clamp at the filter inlet but do not tighten.

### **NOTE:**

Some installations use a hardened washer between the bolt head and the filter bracket and the bottom side of the chassis and the nut. Be sure to install the hardened washers in the correct location.

4. Install the gasket and clamp on the inlet section upper surface. install the catalyst section with the part number tag oriented towards the side access door. Secure the clamp but do not tighten.
5. Install the gasket and clamp on the upper portion of the catalyst section. Install the filter center section with the part number tag oriented towards the side access door. Secure the clamp but do not tighten.
6. Install the gasket and clamp on the top of the filter section. Install the outlet section with the part number tag oriented towards the side access door. Secure the clamp but leave loose. Orient the temperature sensor port 15 degrees clockwise from the front of the vehicle as viewed from the top.
7. Install the tail pipe with the 45 degree outlet oriented towards the rear of the vehicle.
8. Install the U-clamp and brackets securing the top of the filter and the outlet tailpipe to the chassis. Do not tighten hardware at this time.
9. 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.

10. 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.

11. Tighten the mounting hardware to secure the filter in the chassis. Torque the 3/8 in. bolts to 41-47 N·m (30-35 lb·ft). The exhaust pipe to inlet clamp torque is 20 N·m (15 lb·ft).
12. Check for exhaust leaks.
13. Reinstall the fiberglass side access door and the 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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