

DETROIT DIESEL



Installation Instructions

18SP619 – Series 50[®] Orion[®] WMATA Diesel Particulate Filter Installation

DESCRIPTION

A replacement diesel particulate filter assembly has been released for use in Orion WMATA 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 Orion WMATA diesel particulate filter parts:

Part No.	Qty.	Description
23535761	1	Diesel Particulate Filter Assembly – Orion - WMATA
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Table 1 Components of S50 Orion WMATA Diesel Particulate Filter Installation

Part No.	Qty.	Description
23535823	*	V-Band Clamp
23535824	*	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 Orion WMATA 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.

 **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. 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 clamp that secures the filter to the chassis. Retain the parts for reuse upon installation of the new filter assembly.
4. Remove the exhaust clamp that secures the tailpipe to the outlet of the muffler and remove the tail pipe.
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. Loosen, then remove the exhaust clamp and separate the exhaust pipe from the filter inlet.
8. Remove the bolts, washers, and nuts (spacers and/or bushings if equipped) from the mounting tabs holding the inlet housing section to the chassis. Retain the parts for reuse upon installation of the new filter assembly.
9. Remove the inlet section from the chassis.

INSTALLATION OF DIESEL PARTICULATE FILTER

Perform the following steps for installation of new components:

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 filter inlet section through the left side rear access opening. Lower the inlet section housing and line up the mounting tabs to the chassis mounts. Loosely install the bolts, washers and nuts (spacers/bushings if equipped). Secure but do not tighten the fasteners at this time.
3. Connect the exhaust pipe to the muffler inlet housing but do not tighten the clamp.
4. Install the gasket and V-band 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. Locate the outlet section and mark the approximate position for the temperature probe. Install the tail pipe into the outlet section so that the outlet of the tail pipe will be facing the rear of the vehicle. Loosely attach the upper chassis mounting clamp around the outlet housing. Install the outlet/tail pipe assembly up into the vehicle and secure up out of the way as high as possible, to allow clearance for the filter section installation.
6. Install the gasket and V-band 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.
7. Install the gasket and V-band clamp on the top of the filter section and set the outlet section on the filter section. Secure the clamp but do not tighten.
8. 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.

9. 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.

10. Tighten the mounting hardware to secure the filter in the chassis. Torque the mounting tab bolts to 31 N·m (23 lb·ft). Align the bottom edge of the exhaust clamp with the muffler inlet edge when installing the clamp. The exhaust pipe to inlet clamp torque is 81N·m (60 lb·ft).
11. Check for exhaust leaks.
12. Reinstall the cross brace, the street side access door and the upper exhaust compartment access cover, if removed.

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.
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