



## **Jacobs Exhaust Brake™ Service Letter X9**

**SUBJECT: EX3116/3126 Exhaust Brakes Incorrectly Applied to  
1998 Caterpillar 3126B Engines**

**MODELS AFFECTED: Caterpillar EX3116/3126**

**DATE: March 13, 1998**

### **Introduction**

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Jacobs Vehicle Systems has discovered that in some cases Jacobs Exhaust Brake Model EX3116/3126 has been installed on 1998 Caterpillar 3126B engines (S/N prefix 7AS). This is not an approved application and may cause engine damage. Only Model EX3126B Exhaust Brake Assembly, P/N 025223, is approved for installation on the 1998 Caterpillar 3126B engine. This Service Letter details a procedure for modifying Model EX3116/3126 exhaust brakes to Model EX3126B specifications so that they may be used on 1998 Caterpillar 3126B engines.

### **Impact**

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Model EX3126B Exhaust Brake Assembly, P/N 025223, **is required** for use on 1998 Caterpillar 3126B engines. Model EX3116/3126 Exhaust Brake Assembly, P/N 019667, must be used for Caterpillar 3116 and 3126 engines only. Any misapplication of Model EX3116/3126 exhaust brakes to 3126B engines must be corrected immediately by either replacing the brake assembly or performing the following modification procedure.

### **Service Information**

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To modify Model EX3116/3126 to Model EX3126B specifications, perform the following procedure.

**NOTE:** FOR ADDITIONAL INFORMATION, REFER TO P/N 019747, EX3116 & EX3126 SERIES INSTALLATION MANUAL, AND P/N 019748, EX3116 & EX3126 SERIES PARTS MANUAL (BOTH REVISED 12/97).

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## Part 1: Exhaust Brake Assembly Removal

1. Before beginning the modification procedure, obtain new gaskets as required. In all cases where the exhaust brake has been installed on a vehicle, Gasket P/N 019590 will be required (this is the gasket between the header pipe and the exhaust brake assembly). If you must disassemble the header pipe from the turbo outlet to remove the exhaust brake assembly, Gasket P/N 019593 is also required. In this case, Gasket Group, P/N 019665, may be ordered. This group contains both gaskets.
2. Ensure the vehicle ignition is off and that there is no power to the exhaust brake circuit. Unplug the exhaust brake solenoid from the main wire harness.
3. Remove the air line to the air cylinder on the exhaust brake assembly.
4. Note how the exhaust brake assembly is oriented so that you can reinstall it in the same position. Remove the exhaust brake assembly from the vehicle by loosening the "V" clamps holding the assembly to the header pipe. Retain the original clamps. Discard the gasket found between the exhaust header pipe and the exhaust brake assembly.

## Part 2: Exhaust Brake Assembly Modification

To modify the exhaust brake assembly to meet Model 3126B specifications, the orifice in the butterfly plate must be drilled to 11 mm (0.433") diameter. To ensure good performance and reliability, the drilling must be performed carefully and accurately. A good quality 11 mm or  $\frac{7}{16}$ " drill bit may be used.

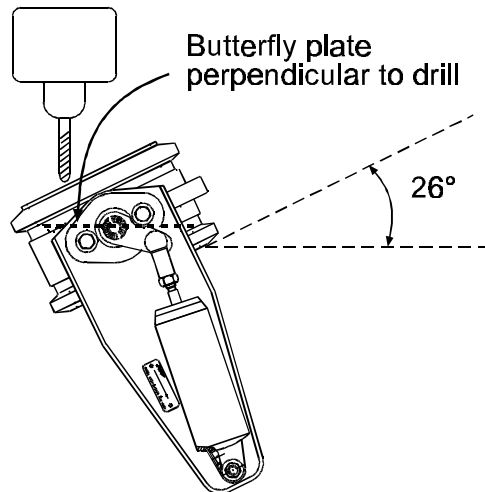
1. To close the butterfly plate for drilling, air pressure should be applied to the air cylinder. Install a  $\frac{1}{4}$ " NPT fitting in the air cylinder or otherwise modify the air cylinder fittings to allow a supply of compressed air.



**WARNING** KEEP CLEAR OF THE EXHAUST BRAKE WHEN APPLYING OR REMOVING COMPRESSED AIR. THE BUTTERFLY VALVE IN THE ASSEMBLY MOVES RAPIDLY AND COULD CAUSE PERSONAL INJURY.

1. Clamp the exhaust brake assembly onto a drill press table. Tilt the table or drill press head  $26^{\circ}$  to ensure the hole is drilled perpendicular to the butterfly plate (see Figure 1). Drill out the orifice in the butterfly plate.
2. Disconnect the compressed air from the exhaust brake assembly and remove it from the drill press. Use clean towels and/or compressed air to remove any metal shavings. **IMPORTANT!** All metal shavings and other particles must be removed from the exhaust brake assembly to ensure smooth, reliable operation.
3. Stamp the identification plate on the air cylinder bracket to change the Model to EX3126B and the part number to P/N 025223.

Figure 1



### Part 3: Reinstall the Exhaust Brake

1. Use a new Gasket, P/N 019590, when reinstalling the exhaust brake. Install this gasket on the upstream end of the exhaust brake assembly (the side pointing away from the air cylinder and bracket). Make sure that the gasket is installed on the locating pilot on the exhaust brake inlet.
2. Attach the exhaust brake assembly to the header pipe, using the original "V" Clamp, P/N 019595. Tighten only enough to hold the parts loosely in place. Be sure to install the exhaust brake assembly so the air cylinder points away from the turbocharger.
3. Position the exhaust brake assembly in its original orientation, or see the Installation Manual for recommended orientation. **NOTE:** Do not position the exhaust brake with the air cylinder above or below the exhaust pipe.
4. Reattach the downstream exhaust pipe to the exhaust brake assembly using the other "V" Clamp, P/N 019595. No gasket is required between the exhaust brake and this section of pipe.
5. Align and support all components as required. Tighten all "V" clamps to 70 - 80 lb-in. (8-9 N•m).
6. Reinstall the vehicle air supply to the air cylinder, using Teflon® thread sealing tape where required on pipe fittings.
7. Reconnect the solenoid to the main wire harness.
8. Test the exhaust brake for proper operation. Be sure to check for leaks in the system when the exhaust brake is operated. Any leaks must be corrected or performance will be reduced.

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## Warranty Information

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This information is provided by Jacobs Vehicle Systems for informational purposes only. Any application of Model EX3116/3126 to Caterpillar Model 3126B engines is an unapproved application. As stated in the product warranty statement, Jacobs Vehicle Systems is not responsible for damage to the exhaust brake or components, engine or vehicle resulting from unapproved application of its products. In addition, Jacobs Vehicle Systems is not responsible for parts, labor, or other costs associated with modifications required due to misapplication of the exhaust brake or its components.

No Jacobs products are subject to campaign by Jacobs as a result of this information.

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