



Jacobs Vehicle Systems™

Important Information Regarding Jacobs Service Letter E491

This service letter was originally distributed through Detroit Diesel Corporation to All Detroit Diesel Distributors and Branches. The Bulletin number is 99TS-13, dated February 3, 1999.

Not all engine serial numbers within the range listed in this service letter require the correction detailed in this service letter. Please contact your Detroit Diesel Distributor or Branch for the detailed information in 99TS-13 which includes:

- Engine Serial Numbers Requiring this Correction
- Standard Reimbursement Rates
- Engine Marking Procedure (A Yellow “X” on the turbo boost sensor indicates that this procedure has been performed)
- Notification to Detroit Diesel Corporation
- Warranty information

Thank you,

Product Support
Jacobs Vehicle Systems



Jacobs Vehicle Systems™

Jacobs Engine Brake™ Service Letter E491

SUBJECT: Defective Slave Pistons

MODELS AFFECTED: 770, 750B

DATE: February 1, 1999

Introduction

This service letter addresses two issues concerning early Model 770 and 750B Jacobs Engine Brakes factory installed on 1999 Detroit Diesel 12.7L Series 60 and 8.5L Series 50 engines.

1. Some of the engine brake housings within a specific serial number range may contain defective slave pistons.
2. The retarding performance of engine brakes within this same serial number range can be improved by installing new slave piston adjusting screws.

The affected engines should be inspected and the brake housings re-worked if they contain defective slave pistons. There is a potential for severe engine damage if the defective slave pistons are not replaced. After inspection of the slave pistons, new J-Lash adjusting screws should be installed in the housings.

Impact

Engines that have serial numbers that fall within a specific range listed under Serial Numbers may contain engine brakes with one or more defective slave pistons. These engines must be inspected and the engine brakes reworked if necessary to avoid potential serious engine damage.

The J-Lash adjusting screws on these engine brake housings should be replaced. This will update the engine brakes to the current production configuration and result in a retarding performance increase.

A kit has been released containing the parts necessary to complete this rework.

The inspection and rework procedure is described in the Service Procedures section of this service letter.

Serial Numbers

Engines that may contain engine brakes with defective slave pistons are:

Engine Model	Serial Number Range *		
6067BKXX (12.7L Series 60)	06R473038	through	06R480792
6067MKXX (12.7L Series 60)			
6047MKXX (8.5L Series 50)			

* Note: For updated engine serial number range, please contact your Detroit Diesel Distributor or Detroit Diesel Technical Service. The numbers provided here are current as of 2/01/98 and will be updated.

The engine brake serial numbers that may contain defective slave pistons are:

Engine Brake Model	Serial Number Range		
770 12V (3 Housing)	LA004183	through	LA006856
770 12V (2 Housing)	LB000016	through	LB000033
	LB000098	through	LB000100
770 24V (3 Housing)	LC000001	through	LC000145
750B 12 V	MA000005	through	MA000028
750B 24 V	MB000005	through	MB000038

Part Numbers

The slave piston for Model 770 and Model 750B is part number 24338. If a defective slave piston is found, it must be replaced with a new part number 24338-slave piston.

Current production J-Lash adjusting screws for models 770 and 750B are part number 28082 and have a green color code. Early J-Lash adjusting screws have no part number marking and no color code. If a J-Lash adjusting screw is found with no part number and no color code, it should be replaced with a new part number 28082 adjusting screw.

Note: Some early 28082 screws have the green color code but no part number marked on top, these are current and need no replacement. These J-Lash adjusting screws were installed in housings outside of the specified serial number ranges. There is no service part inventory of any part affected by this change.

One rework kit has been created specifically for all engine brake housings within the serial number ranges listed above. The "770 & 750B Rework Kit" part number is 28172.

Model 770 & 750B Rework Kit (P/N 28172) contains:

Part Number	Description	Quantity
24338	Slave Piston	6
28082	J-Lash (.023)	6

Note: The kit contains excess parts when used to repair a 2 housing engine brake.

Service Procedures

For 1999 Detroit Diesel Series 60 and Series 50 engines with serial numbers that fall in the range above, and have not had this service completed, perform the following:

- (1) Remove the valve cover and inspect the engine brake assemblies. Note the serial numbers marked on the nameplates found on top of each engine brake housing.
- (2) For each engine brake housing, inspect the J-Lash adjusting screw for a green color code and/or part number marked on the top adjacent to the screwdriver slot.
- (3) If no part number is marked on top of the screw and there is no green color code, all the J-Lash screws should be replaced with current production J-Lash adjusting screws, **proceed to step (4)**. If the part number marked on the J-Lash adjusting screw is 28082A or it has the green color code, the brake already contains the correct J-Lash adjusting screws and slave pistons. **Proceed to step (10)**.
- (4) Remove the J-Lash adjusting screw and nut. Save the screw to be returned to Jacobs. Save the nut to be re-used.

NOTE: BE SURE TO PERFORM THE FOLLOWING INSPECTION FOR EACH SLAVE PISTON. THERE ARE TYPICALLY SIX SLAVE PISTONS FOR SERIES 60 AND FOUR SLAVE PISTONS FOR SERIES 50 ENGINES.

- (5) Attach a length of tubing to a blowgun nozzle and blow out the oil from the engine brake housing adjusting screw hole and slave piston cavity.

⚠ WARNING COVER THE HOLE WITH HAND TOWELS TO MINIMIZE OIL SPRAY.
WEAR EYE PROTECTION WHEN PERFORMING THIS STEP.

- (6) Using a light source, inspect the slave piston to assure the presence of a cross-drilled hole. There are 2 holes per piston. If you cannot see a cross-drilled hole, a bent wire or mechanic's scribe may be used to probe for the presence of a cross-drilled hole (See Figure 1.)

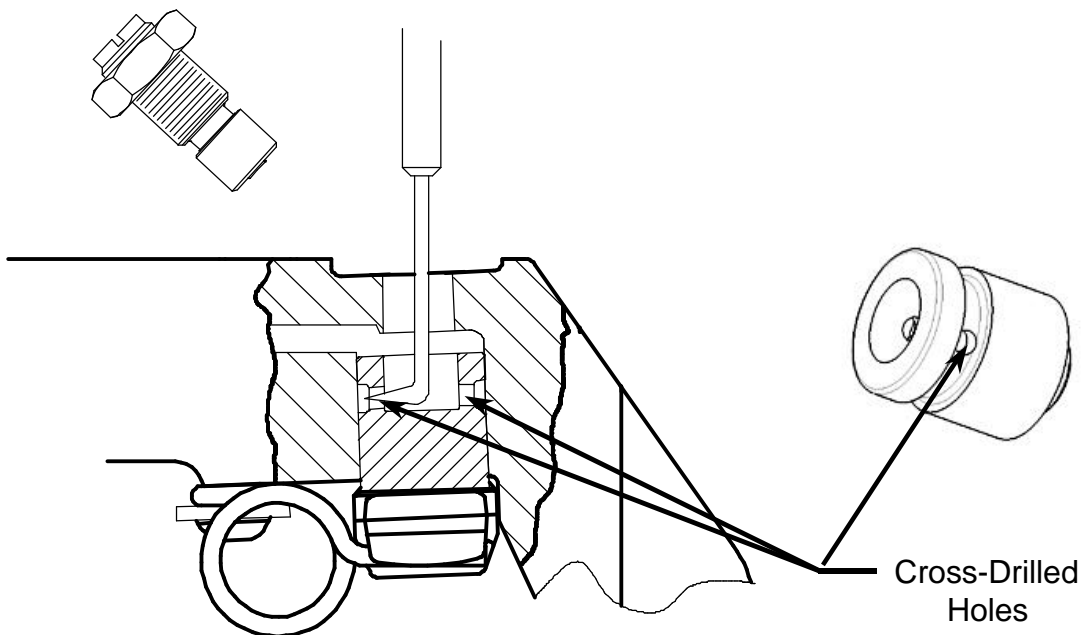


Figure 1. Inspection for Slave Piston cross-drilled hole.

- (7) If no cross-drilled hole can be found, the housing must be removed for re-work and an inspection must be made to assure valve damage has not occurred.
 - a) Using a set of standard feeler gages, measure the exhaust valve lash. Normal exhaust valve lash is .026". If exhaust valve lash exceeds .031", valve damage may have already occurred, refer to Detroit Diesel service procedures for servicing the cylinder head.
 - b) Refer to the Series 60 or Series 50 engine service manual as necessary for the removal, disassembly and assembly of the engine brake housing. During re-assembly, be sure to install new J-Lash adjusting screws part number 28082 and slave pistons with cross-drilled holes.
 - c) Re-install the engine brake following the procedures in the Series 60 or Series 50 service manual.
- (8) If the presence of a cross-hole in each slave piston can be confirmed visually or with a probe, the engine brake housing does not need to be removed, and there is no danger of engine damage from the engine brake.
- (9) Install a new J-Lash adjusting screw part number 28082. Adjust slave piston lash to .023" (0.584 mm) using the procedure for J-Lash adjusting screws. Refer to Jacobs Service Letter E488 for the J-Lash adjusting procedure.
- (10) Complete re-assembly of the engine. Refer to Detroit Diesel information for engine marking procedure to indicate that this service was completed.

Warranty

The warranty is administered by Detroit Diesel Corporation. The standard warranty applies to this product.

To process a warranty claim for the removal of the engine brake to replace a slave piston, all parts removed **must** be returned to Jacobs Vehicle Systems. This includes all slave pistons and J-Lash screws. The engine serial number, engine brake serial number(s) and the Detroit Diesel Claim number must be included with the parts. Refer to Detroit Diesel Corporation for standard reimbursement amounts and other warranty information.

Return parts and information to: Attn: Beth Cudney
Jacobs Vehicle Systems
22 East Dudley Town Rd.
Bloomfield, CT 06002

Technical support, service parts, and warranty administration for Jake Brake[®] products applied to Detroit Diesel engines are now provided by authorized Detroit Diesel service locations worldwide.