JAKE BRAKE®
Jacobs Vehicle Equipment Company

Service Letter

Service Letter No. 399
August, 1994

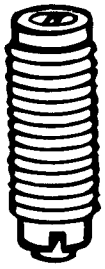
SUBJECT: PowerLash™ Assembly Release

MODELS AFFECTED: 750/760/760A/765

Effective July 28, 1994, the Jacobs P/N 015931 Reset Screw Assembly used on Jake Brake Models 750/760/760A/765 will be obsolete and replaced with a PowerLash assembly, P/N 020382, for service requirements. The PowerLash represents an improvement in Jake Brake reliability by reducing the dynamic loads on the torsion spring. This change will be incorporated into production in approximately one month.

The PowerLash differs from the reset screw in both operation and appearance. Operationally, the PowerLash uses patented Jacobs technology to shorten the exhaust valve opening event, thereby limiting the amount of slave piston and bridge travel and reducing torsion spring stroke with no loss in retarding performance. The PowerLash can be distinguished from the reset screw by the recessed screwdriver slot in the PowerLash versus the straight-through slot on the reset screw as illustrated below. Also, the part number appears on the top of the PowerLash body near the screwdriver slot.

P/N 015931
Reset Screw Assembly



P/N 020382
PowerLash Assembly

With the release of the PowerLash, Jacobs recommends the following service procedure changes as related to Jake Brake Models 750/760/760A/765:

Torsion Spring Failure

Jacobs recommends that **any** unit experiencing a torsion spring failure should be updated with six (6) new PowerLash assemblies (four in the case of the Model 750 on the four cylinder Series 50 engine) in addition to six (6) new torsion springs. Jacobs PowerLash Assembly Group, P/N 020514, contains six (6) PowerLash assemblies and instructions. The Torsion Spring Replacement Group, P/N 019575, remains the appropriate service part for the latest design torsion springs. If a torsion spring failure occurs in the warranty period (2 years/unlimited miles), Jacobs will warranty the replacement of all PowerLash assemblies and torsion springs.

In the unlikely event of a torsion spring failure on a unit already installed with PowerLash Assemblies, Jacobs recommends changing all six (6) springs using P/N 019575 only.

Instructions for torsion spring failure:

(continued)

1. Remove the engine valve cover and the Jake Brake housings from the engine.
2. Loosen the slave piston hex nut and completely back out all reset screws. **Discard** all reset screws. **DO NOT REUSE THE RESET SCREW ASSEMBLIES.**
3. Remove **and discard** the existing torsion spring, button head screw and washer. **DO NOT REUSE THE TORSION SPRINGS, SCREWS OR WASHERS.**
4. Check the machined surface on the housing (where the torsion spring is secured) for burrs or sharp edges. If burrs or sharp edges are found, stone or file lightly. A slight depression in the housing surface is normal due to the torque of the screw.
5. Install the replacement torsion spring, screw and washer from the Torsion Spring Replacement Group, P/N 019575.
   a. Install the washer (P/N 019741) under the button head screw (P/N 019740).
   b. Place the torsion spring (P/N 019576) with the legs extending over the bridge.

      NOTE:

      THE WASHER IS TO BE INSTALLED BETWEEN THE HEAD OF THE SCREW AND THE TORSION SPRING.

   c. With the washer over the center part of the spring, use a 7/32" hex key wrench to screw down the P/N 019740 button head screw until contact is made with the P/N 019741 washer.
   d. Using a bar placed through both the torsion spring coils, push the spring toward the slave piston. This locates the spring over the bridge assembly correctly.
   e. Use a hand torque wrench to tighten the button head screw to 15 lbft. (20 N•m). **DO NOT OVERTIGHTEN!** Do not use a pneumatic torque wrench or impact wrench for tightening the button head screw.
6. After completing the installation, make sure the gap between the outside diameter of the coils on each side of the spring and the bridge is equal, and there is no distortion of the springs' coils caused by the installation. Check all new spring installations.
7. Install the new PowerLash assemblies and original locknuts. Do not tighten.
8. Reinstall the engine brakes and set the Jake Brake lash per normal installation procedures.

⚠ CAUTION

DO NOT EXCEED 25 LBFT. (35 N•M) WHEN TIGHTENING POWERLASH JAM NUT DURING SLAVE LASH SETTING PROCEDURES.

Reset Screw Failure

Jacobs recommends that any Jake Brake Model 750/760/760A/765 experiencing a reset screw failure should be updated with six (6) new PowerLash assemblies (four in the case of the Model 750 on the 4-cylinder Series 50 engine) using Jacobs PowerLash Assembly Group P/N 020514. If a reset screw failure occurs during the warranty period (2 years/unlimited miles), Jacobs will warrant the replacement of all PowerLash assemblies.

PowerLash Failure

If a PowerLash should experience a failure, the correct service procedure will be to fix as fail for the failed part only.

Tune-Up Kits

The P/N 020382 PowerLash assembly is a direct replacement for the P/N 015931 Reset Screw Assembly. The Jake Brake Model 750 tune-up kit, P/N 019766, and Model 760A/765 tune-up kit, P/N 019875, will be changed to substitute the Reset Screw Assembly with the PowerLash Assembly. The part numbers will be changed in mid-August and another service letter will be issued announcing the new part numbers. Until the new tune-up kits are released and available, Jacobs recommends that new PowerLash assemblies be substituted for the P/N 015931 reset screws.

Field inventory of P/N 015931 reset screws can be returned via normal channels for appropriate credit and reference Service Letter No. 399 on the return.

This is a Jacobs product improvement and not subject to campaign.