HYDRAULIC ROLLER LIFTERS

INSTALLATION INSTRUCTIONS

PART NUMBERS

850-16 **851-16** **856-16** **875-16** **877-16** **900-16** **8960-16**

Thank you for choosing **COMP Cams®**. We are proud to be part of the **Edelbrock Group®** family of performance brands and appreciate your trust in our products. **COMP Cams** is dedicated to pushing the limits of valvetrain performance and innovation.

These instructions provide the necessary information for the proper installation and use of your product.

Please read these instructions completely before beginning installation to ensure safe and correct operation.

Most installations can be completed using standard tools and accepted procedures; however, a basic level of mechanical knowledge is recommended. If you are not comfortable performing this installation, it is strongly recommended that a qualified professional complete the work.

BEFORE YOU BEGIN

These instructions provide the proper installation procedure for **COMP Cams Hydraulic Roller Lifters**.

Before installation, **verify** that the engine's oiling system is clean and free of sludge, silicone debris, or other contaminants. Contaminants in the oil system can restrict lifter operation and may cause premature lifter failure.

For optimal performance, set lifter preload to **3/4 turn** of the rocker arm adjusting nut.

- ❏ ***Verify this product is compatible with your application***
- ❏ ***Read all instructions before starting installation***
- ❏ ***Ensure all required tools and parts are available***
- ❏ ***Work on a clean surface and keep components free of debris***

IMPORTANT NOTICE

Proper installation is the responsibility of the installer. Failure to follow instructions may result in poor performance, engine or vehicle damage, and may void the warranty.

SETTING HYDRAULIC LIFTER PRELOAD

Correct lifter preload is important for proper valvetrain operation. Insufficient preload may cause **valvetrain noise**, while **excessive preload may damage the lifter hydraulics or cause low manifold vacuum**.

Follow the procedure on the **next page** to help ensure proper engine performance and reliability.

SUPPORT

If you have any questions or require technical assistance, please contact COMP Cams Technical Support:

1-800-999-0853 • compcams.com

(Monday–Friday, 7:00 AM – 5:00 PM (CST)

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INSTRUCTIONS

1. **CLEAN AND INSPECT THE LIFTERS**
   Clean the **lifters** with **mineral spirits** or **parts-washing solvent** to remove debris from shipping or handling.

   Verify that each roller wheel rotates smoothly.

   NOTE: *The roller wheels may feel as though they have more drag than expected due to the grease used during assembly and break-in. This is normal.*

WARNING: The roller wheel needle bearings are pre-greased with special **OE grease** that is critical for initial break-in.

When cleaning the lifters:

DO NOT remove or blow out the grease from the needle bearings.
DO NOT use aerosol cleaners.
DO NOT spin the roller wheels with compressed air.

2. **PREPARE THE LIFTERS**
   DO NOT "pre-pump" the **hydraulic lifters** with engine oil before installation or valve adjustment. Pumped-up lifters may cause the valves to open during adjustment instead of allowing the lifter plunger to be positioned correctly.

   Soak the **lifters** in **DRIVEN® Break-In Oil (#FTJS-03706)** or equivalent for at least **two hours**. This ensures the outer surfaces of the lifters are adequately lubricated before installation. Soaking may also result in a quieter initial startup by allowing the oil to displace some air from the lifter plunger reservoir.

   Verify that each lifter fits properly in its lifter bore. Excessive clearance or a tight-fitting lifter may cause camshaft damage and engine failure.

NOTE: ***Verify*** *lifter-to-lifter-bore clearance.* ***Contact*** *your engine builder or block manufacturer for the specified clearance.*

3. **INSTALL THE LIFTERS**
   With the camshaft installed, place the prepared lifters into the lifter bores.

   If using hydraulic roller lifters with link bars, verify the correct link-bar orientation:

   On retrofit lifters, **position** the **link bars** toward the valley of the block.

   If the link bar has an arrow, install with the **arrow pointing upward (↑).**

   If the engine block was originally equipped with hydraulic roller lifters, verify that each lifter roller wheel is positioned to roll along the camshaft lobe.

   IMPORTANT: *Incorrect roller orientation will result in camshaft damage and improper oiling.*

4. **INSTALL THE PUSHRODS AND ROCKER ARMS**
   Thoroughly **clean** all **pushrods** because most engines oil through the center of the pushrod. **If reusing the original pushrods, ensure** they are completely clean inside and out.

   Apply a small amount of **DRIVEN Engine Assembly Grease (#FTJS-00734)** or equivalent to each end of the pushrods, then **install** the **pushrods**.

   Thoroughly **clean** the **rocker arms**. **If reusing the original rocker arms, inspect** each one for excessive wear and replace any questionable components. **Apply** a small amount of **assembly lube** to all rocker-arm contact surfaces.

   Using a **clean rag** or **towel**, **clean** the **valve-stem tips** and **inspect** them for excessive wear. **Apply assembly lube** to the areas where the rocker arms contact the valve stems, then **install** the **rocker arms**.

   Verify that each pushrod is **fully seated** in the **lifter** and **rocker-arm seat** before making valve adjustments.

5. **ADJUST LIFTER PRELOAD**
   COMP Cams Hydraulic Roller Lifters can be used with **adjustable** and **non-adjustable valvetrain designs**. The **preload adjustment procedure** differs for each design. **Follow** the appropriate procedure below.

   Adjustable Rocker Arms

   A. **Rotate** the engine in its normal direction of rotation. **Begin** with **cylinder No. 1**.
   B. When the exhaust valve begins to open, **adjust** the **intake valve**.
   C. **Hold** the **pushrod** between your fingertips and **move it** up and down while **slowly tightening** the **rocker arm**.

D. **Continue tightening** until there is **no vertical slack** in the **pushrod**. This is **zero preload**.

E. **Verify** that the **pushrod** is properly seated in the **lifter** and **rocker-arm seat**.

F. From zero preload, **tighten** the **rocker-arm adjusting nut** an **additional 1/2 to 1 full turn**.

G. **Rotate** the engine until the **intake valve reaches maximum lift** and is almost fully closed.

H. **Adjust** the **exhaust valve** using the same procedure, setting it to **zero preload plus 1/2 to 1 full turn**.

I. **Repeat** the procedure for each cylinder until all valves have been adjusted.

Non-Adjustable Rocker Arms

A. **Install** the **pushrods** and **torque** all **rocker-arm bolts** in the proper sequence and to the specified torque.

B. **Rotate** the engine by hand in its normal direction of rotation until both the intake and exhaust valves have opened and completely closed. Allow a couple of minutes for the lifters to bleed down.

C. Using the **valve-cover gasket surface** on the cylinder head as a reference point, **place** a small, clearly defined mark on the pushrod. **Choose** a **reference point** and **viewing angle** that can be accurately duplicated.

D. **Loosen** the **rocker-arm** or **rocker-shaft bolts**. **Leave** the **rocker arms** on the **cylinder head** to support the pushrods.

E. **Verify** that the **pushrods** are standing freely in the lifters with no preload.

F. Using the same reference point and angle, **place** a **second mark** on the **pushrod**.

G. **Measure** the distance between the **two marks**. This measurement represents the amount of lifter preload.

H. **The correct lifter preload is 0.020" to 0.080".** If preload is outside this range, adjustment is required.

I. Different-length pushrods can be used to correct preload. When determining the required pushrod length, include the required **0.020" to 0.080"** preload.

For pedestal-mount rocker arms, shims may be installed under the pedestal to reduce preload. **Shaft-mounted rocker-arm stands** may also be shimmed to reduce preload. **If preload is insufficient**, longer pushrods are required.

In most cases, only one intake and one exhaust pushrod need to be checked. If the valve-stem heights are not equal, check preload at each valve.

6. INITIAL ENGINE STARTUP

After installing the lifters, **DO NOT** allow the engine to sit for an extended period before initial startup. This helps prevent breakdown of the protective oil film.

If this is a **new engine build** or the **engine has not recently been operated**, **prime the oil system** before initial startup. This helps prevent the new lifters from running dry while the oil pump builds pressure.

Even with a **primed oil system**, slight noise from the new hydraulic lifters may occur during the initial warm-up cycle or after the engine has been sitting for several days. This noise may continue for several minutes while the lifters circulate oil and fill their reservoirs.

During this period:

Keep engine speed below **3500 RPM**.

DO NOT operate the engine under **full load**.

IMPORTANT: *Monitor engine oil pressure during startup. Oil pressure should rise into the normal operating range within the first few seconds. If it does not, shut off the engine and investigate the oiling problem before continuing.*

7. Additional Information

For additional information regarding the importance of care and cleanliness when installing COMP Cams® lifters, refer to the following installation video:

COMP Cams Lifter Installation Video (https://youtu.be/thMhEjniJGg)

GENERAL WARRANTY INFORMATION

LIMITED WARRANTY

Thank you for choosing an **Edelbrock Group** product. **Edelbrock Group** warrants that each new product is free from defects in material and workmanship for the applicable warranty period, provided the product is:

- ***Properly installed***
- ***Used under normal operating conditions***
- ***Properly maintained***
- ***Not modified or altered***
- ***Not damaged through misuse, abuse, negligence, or unauthorized repair***

This warranty applies only to the original purchaser. If you believe your product is defective, contact **Edelbrock Group Technical Support** before returning the product. Products approved for warranty inspection must be returned freight prepaid with proof of purchase and a description of the issue. If inspection confirms a defect in material or workmanship, **Edelbrock Group** will, at its discretion, repair or replace the product. This warranty covers the product only and does not include labor, removal, installation, shipping, or incidental expenses unless otherwise required by law.

LIMITATION OF LIABILITY

To the maximum extent permitted by law, **Edelbrock Group** shall not be liable for incidental, consequential, property, or personal injury damages resulting from the use or installation of its products. Any implied warranties, including merchantability and fitness for a particular purpose, are limited to the duration of the applicable warranty period unless otherwise prohibited by law.

OFF-HIGHWAY USE

Many **Edelbrock Group** products are intended for off-highway use only. Installation of off-highway products on pollution-controlled vehicles may violate federal, state, or local emissions regulations and may void the vehicle manufacturer's warranty. Always verify local emissions regulations before installation.

LEGAL RIGHTS

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

CALIFORNIA PROPOSITION 65 WARNING

This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

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