

Comp Cams MK201-304-17

Instruction Manual

Product: KIT, MASTER CAM, DODGE 5.7/6 .4L HEMI 2006+ VVT (MK201-304-17) Stage 2 '11+ 6.4L MK-Kit
Brand: Comp Cams | **Model:** MK201-304-17

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Comp Cams Master Cam Kit, model MK201-304-17. This kit is specifically designed for Dodge 5.7L and 6.4L HEMI engines from 2006 onwards with VVT (Variable Valve Timing), offering a Stage 2 performance upgrade for 2011+ 6.4L applications. The HRT (HEMI-Specific Grind) camshaft lobe profiles are engineered to maximize power output in these GEN 3 Dodge HEMI engine platforms.

Please read this manual thoroughly before beginning any installation or operation to ensure safety and optimal performance.

2. SAFETY INFORMATION

Working on internal combustion engines involves inherent risks. Adhere to all safety precautions to prevent injury or damage.

- Always wear appropriate personal protective equipment (PPE), including safety glasses, gloves, and hearing protection.
- Ensure the vehicle is properly supported on jack stands or a lift before working underneath it.
- Disconnect the vehicle's battery before starting any electrical work or major component removal.
- Allow the engine to cool completely before beginning work to avoid burns.
- Handle all engine components with care to prevent damage.
- Dispose of fluids and old parts responsibly according to local regulations.
- If you are unsure about any step, consult a qualified automotive technician.

3. PACKAGE CONTENTS

Verify that all components listed below are present and undamaged before beginning installation. The exact contents may vary slightly based on the specific kit configuration.

- Camshaft
- Valve Springs
- Retainers
- Valve Locks
- Pushrods
- Lifters (if applicable to kit type)
- Phaser Limiter (if applicable to VVT kit)



Image 1: Overview of the Comp Cams Master Cam Kit components. This image displays the camshaft, a set of valve springs, pushrods, lifters, and various smaller components such as retainers and valve locks, which are typically included in a comprehensive cam kit.

4. SETUP AND INSTALLATION

Installation of a camshaft kit requires advanced mechanical knowledge and specialized tools. If you are not experienced with engine disassembly and assembly, it is highly recommended to seek professional installation.

General Installation Steps (Consult a service manual for detailed, vehicle-specific instructions):

1. **Preparation:** Disconnect battery, drain coolant and oil, remove necessary accessories (e.g., intake manifold, valve covers, timing cover, harmonic balancer).

2. **Cylinder Head Removal:** Remove cylinder heads to access lifters and pushrods.
3. **Camshaft Removal:** Carefully remove the old camshaft, ensuring not to damage the cam bearings.
4. **Lifter Replacement:** Replace old lifters with new ones provided in the kit. Ensure proper lubrication.
5. **Camshaft Installation:** Install the new Comp Cams camshaft, applying camshaft lubricant to the lobes and journals.
6. **Valve Spring and Retainer Installation:** Install the new valve springs, retainers, and locks on the cylinder heads. Ensure correct installed height.
7. **Pushrod Installation:** Install the new pushrods.
8. **Reassembly:** Reinstall cylinder heads (with new head gaskets), timing cover, harmonic balancer, intake manifold, and all other removed components. Follow factory torque specifications.
9. **Fluid Refill:** Refill engine with fresh oil and coolant.
10. **Initial Startup & Break-in:** Follow specific break-in procedures for the new camshaft (see Operating Considerations).

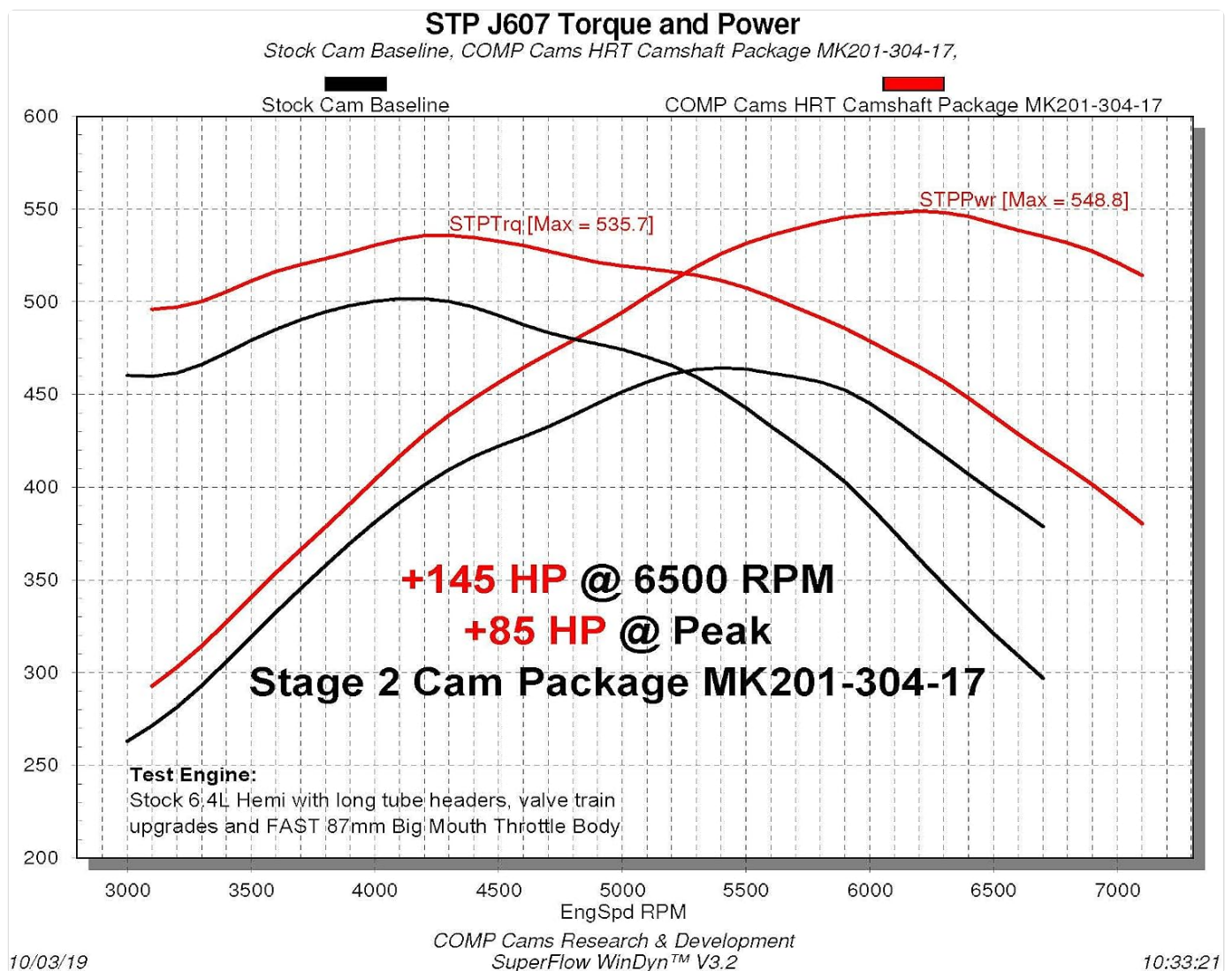


Image 2: STP J607 Torque and Power Dyno Chart. This chart illustrates the performance gains achieved with the Comp Cams HRT Camshaft Package MK201-304-17 compared to a stock cam baseline. It shows significant increases in both horsepower and torque, with a peak gain of +145 HP at 6500 RPM and +85 HP at peak, tested on a 6.4L HEMI engine.

5. OPERATING CONSIDERATIONS

After camshaft installation, proper break-in and tuning are critical for longevity and performance.

- **Camshaft Break-in:** For flat tappet camshafts (if applicable to your specific kit), an initial break-in period at elevated RPM (e.g., 20-30 minutes at 2000-2500 RPM) is crucial to properly seat the lifters. Consult Comp Cams' specific break-in recommendations for your camshaft type.
- **Engine Tuning:** Installation of a performance camshaft requires custom engine tuning (ECM recalibration) to optimize fuel delivery, ignition timing, and VVT operation for the new camshaft's characteristics. Failure to tune the engine can result in poor performance, drivability issues, or engine damage.
- **Oil Requirements:** Use high-quality engine oil with appropriate ZDDP (Zinc Dialkyldithiophosphate) levels, especially during break-in and for flat tappet cams, to protect camshaft lobes and lifters.

6. MAINTENANCE

Regular engine maintenance is essential to ensure the longevity and performance of your camshaft kit and engine.

- **Oil Changes:** Adhere to or exceed the manufacturer's recommended oil change intervals using high-quality engine oil.
- **Valve Train Inspection:** Periodically inspect valve springs, retainers, and pushrods for any signs of wear or damage.
- **Engine Health:** Monitor engine oil pressure, temperature, and listen for any unusual noises that could indicate a problem.

7. TROUBLESHOOTING

If you encounter issues after installation, consider the following common problems and solutions:

- **Rough Idle/Poor Drivability:** This is often due to incorrect engine tuning for the new camshaft. A custom tune is almost always required.
- **Check Engine Light (CEL):** May indicate issues with VVT operation, misfires, or other sensor readings that are out of expected range due to the new cam profile. Requires diagnostic scanning and tuning.
- **Valve Train Noise:** Could be insufficient oil pressure, improper valve lash (if adjustable), or incorrect spring installed height. Recheck installation and oil levels.
- **Loss of Power:** Verify proper timing, fuel pressure, and ensure no vacuum leaks. Most commonly resolved with proper engine tuning.

For persistent issues, consult a qualified performance automotive shop or contact Comp Cams technical support.

8. SPECIFICATIONS

Attribute	Value
Manufacturer	COMP CAMS
Brand	Comp Cams
Model	MK201-304-17
Item Model Number	MK201-304-17
Parcel Dimensions	64.14 x 26.04 x 12.7 cm
Item Weight	11.8 kg
Exterior	Machined

9. WARRANTY AND SUPPORT

Comp Cams products are manufactured to high standards. For specific warranty information regarding your MK201-304-17 Master Cam Kit, please refer to the warranty documentation included with your purchase or visit the official Comp Cams website.

For technical assistance, installation questions, or troubleshooting support, please contact Comp Cams directly through their official customer service channels. Providing your product model number (MK201-304-17) and details of your vehicle will help expedite support.

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