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> Carbman 793880 Crankshaft Gear Camshaft Kit Instruction Manual

## Carbman 793880

# Carbman 793880 Crankshaft Gear Camshaft Kit Instruction Manual

Model: 793880 | Brand: Carbman

## 1. INTRODUCTION

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This instruction manual provides essential information for the proper installation, operation, and maintenance of your Carbman 793880 Crankshaft Gear Camshaft Kit. This kit is designed as a replacement part for specific lawn mower engines, ensuring optimal performance and longevity. Please read this manual thoroughly before attempting any installation or maintenance procedures.

## 2. PRODUCT OVERVIEW

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The Carbman 793880 kit includes a crankshaft gear, a camshaft, and two valves, all critical components for the precise timing and operation of your engine's valve train. The camshaft controls the opening and closing of the engine's intake and exhaust valves, while the crankshaft gear drives the camshaft, maintaining synchronization for efficient combustion.



Figure 2.1: Carbman 793880 Crankshaft Gear Camshaft Kit components.

### 3. KEY FEATURES

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- Direct replacement for part numbers: 793880, 793583, 792681, 791942, 795102.
- Designed to fit most 215000 Model Engines.
- Compatible with Toro LX426, Craftsman LT2000, Craftsman LT1000, and Ariens 936053.
- Fits various engine models including: 21R7 (10.5HP), 21R8 (11.5HP), 31R5 (13.5HP), 31R6 (14.5HP), 31R7 (15.5HP), 31R8 (16.5HP), 31R9 (17.5HP), 33R7 (18.5HP), 33R8 (19HP) Models-Intake Series-Vertical Engines.
- Suitable for 31B700, 21A800, 210700, 212700, 212900, 215700, 215900, 216900, 217800, 219800, 21B800, 28BH00, 31A500, 31A700, 31C700, 31E500, 31E700, 31G700, 31K700, 31M700, 31M900, 31N800, 31P700, 31P900, 31Q700, 282H00, 31E877 4 Cycle Small Engine Camshaft applications.

### 4. INSTALLATION GUIDE

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**Important Safety Notice:** Engine repair can be complex and may require specialized tools and knowledge. If you are not confident in your mechanical abilities, it is highly recommended to seek assistance from a qualified professional. Always disconnect the spark plug wire and ensure the engine is cool before beginning any work.

#### 4.1. Preparation

- Gather necessary tools: socket set, wrenches, torque wrench, gasket scraper, new crankcase gasket, and potentially a new vertical shaft oil seal.
- Drain engine oil.
- Clean the work area to prevent contamination.

#### 4.2. Disassembly

1. Remove engine shrouds and any components obstructing access to the crankcase.
2. Carefully remove the crankcase cover. Be prepared for residual oil.

3. Locate and remove the old camshaft and crankshaft gear. Note the position of any timing marks before removal.
4. Thoroughly clean the crankcase and cover mating surfaces, removing all old gasket material. Inspect for any metal debris and clean as necessary (a magnet can be useful for ferrous particles).

### 4.3. Installation

1. Apply assembly lube to the camshaft lobes and journals.
2. Install the new camshaft and crankshaft gear, ensuring that the timing marks on both gears are perfectly aligned. This is crucial for engine timing.
3. If replacing, install the new vertical shaft oil seal.
4. Place a new crankcase gasket onto the clean mating surface.
5. Carefully reattach the crankcase cover, ensuring proper alignment. Tighten bolts to the manufacturer's specified torque settings in the correct sequence.

### 4.4. Reassembly & Initial Start-up

1. Reinstall all removed components and shrouds.
2. Refill the engine with the appropriate type and amount of engine oil.
3. Reconnect the spark plug wire.
4. Attempt to start the engine. Listen for unusual noises and observe for proper operation.

## 5. OPERATING PRINCIPLES

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The camshaft and crankshaft gear work in conjunction to control the engine's four-stroke cycle. The crankshaft, driven by the pistons, rotates the crankshaft gear. This gear, in turn, rotates the camshaft at half the speed of the crankshaft. The camshaft's lobes push against the valve lifters, opening and closing the intake and exhaust valves at precise moments, allowing the engine to draw in air/fuel mixture, compress it, ignite it, and expel exhaust gases.

## 6. MAINTENANCE

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Proper maintenance of your engine is crucial for the longevity of all its components, including the camshaft and crankshaft gear. Regular oil changes with the manufacturer-recommended oil are paramount, as proper lubrication prevents premature wear on these moving parts. Additionally, ensure the engine's air filter is clean to prevent contaminants from entering the engine, which can lead to wear.

## 7. TROUBLESHOOTING

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### 7.1. Engine Hard to Start or Not Turning Over

A common symptom of a worn camshaft, particularly issues with the compression release mechanism, is difficulty starting the engine or the engine not completing a full rotation. If the starter motor struggles to turn the engine past the compression stroke, the camshaft's compression release may be faulty. Replacing the camshaft, as detailed in Section 4, is the typical solution.

### 7.2. Unusual Engine Noises

Clicking, tapping, or grinding noises from the engine's crankcase area could indicate excessive wear on the camshaft lobes, lifters, or gears. Prompt investigation and replacement of worn components are necessary to prevent further engine damage.

### 7.3. Loss of Engine Power

While many factors can cause a loss of engine power, a severely worn camshaft can lead to improper valve timing, resulting in reduced compression and inefficient combustion. If other common causes (fuel, ignition, air filter) have been ruled out, inspect the camshaft and related components.

## 8. SPECIFICATIONS

Attribute	Value
Package Dimensions	5.35 x 5.24 x 4.49 inches
Item Weight	1.35 pounds
Manufacturer	Fuding Hengsheng Motorcycle Accessories Co. LTD
Item Model Number	793880 (Replaces LT2000 LT1000 for fitment)



Figure 8.1: Camshaft and gear with overall width dimension.



Figure 8.2: Detailed dimensions of the camshaft and valves.

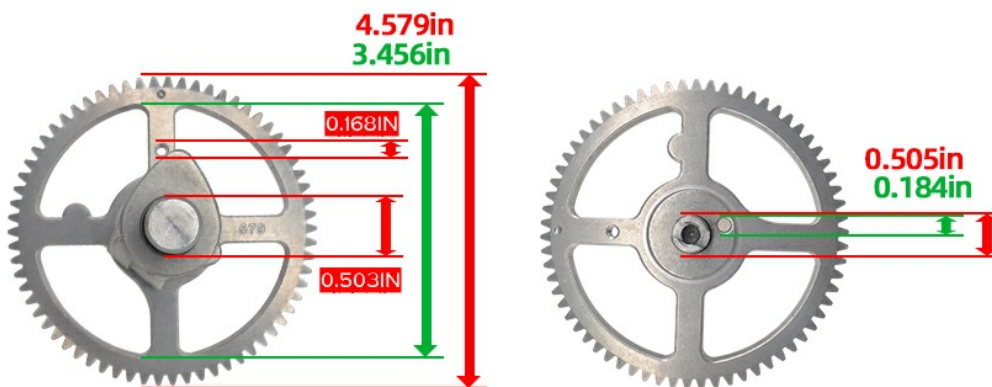


Figure 8.3: Detailed dimensions of the crankshaft gear.

## 9. WARRANTY AND SUPPORT

For any questions regarding the Carbman 793880 Crankshaft Gear Camshaft Kit, or for support with installation and troubleshooting, please contact Carbman customer service. We are committed to providing reliable products and assistance to our customers.

Please refer to your purchase documentation for specific warranty terms and conditions.

