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> Speedmaster PCE267.1004 Dual Idler Noisy Timing Gear Drive Set Instruction Manual

## Speedmaster PCE267.1004

# Speedmaster PCE267.1004 Dual Idler Noisy Timing Gear Drive Set

Instruction Manual

## INTRODUCTION

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The Speedmaster PCE267.1004 Dual Idler Noisy Timing Gear Drive Set is engineered for enhanced timing precision in Small Block Ford (SBF) 289/302/351W engines with a 1-bolt camshaft. This set features a robust dual-idler design with CNC-machined components, providing a durable and reliable solution for engine timing. It is designed to fit under your stock timing cover, offering a straightforward installation process.

## IMPORTANT SAFETY INFORMATION

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**WARNING: This product is intended for racing applications only and is not for street use. Installation should be performed by qualified personnel with experience in automotive engine mechanics. Always wear appropriate personal protective equipment (PPE) during installation.**

- Ensure the engine is cool and disconnected from the battery before beginning any work.
- Refer to your vehicle's service manual for specific torque specifications and procedures.
- Minor machining may be required on some applications for proper fitment.
- Keep all components clean and free of debris during installation.

## COMPONENTS OVERVIEW

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The Speedmaster PCE267.1004 Timing Gear Drive Set includes the following components:

- Crankshaft Gear
- Camshaft Gear
- Dual Idler Gears with connecting plate
- Offset Bushings (if applicable, for advance/retard adjustment)
- Mounting Hardware (as supplied)





Figure 1: Complete Speedmaster PCE267.1004 Timing Gear Drive Set, showing the crankshaft gear, dual idler assembly, and camshaft gear.



Figure 2: Alternative view of the Speedmaster PCE267.1004 Timing Gear Drive Set, including a dowel pin, highlighting the individual components.

## SETUP AND INSTALLATION

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Proper installation is critical for the performance and longevity of your timing gear drive. Follow these general steps. Consult a professional mechanic if you are unsure about any part of the process.

### 1. Preparation:

- Ensure the engine is at Top Dead Center (TDC) on the compression stroke for cylinder #1.
- Remove the existing timing chain/gear assembly and timing cover.
- Thoroughly clean the engine block and timing cover mating surfaces.

### 2. Crankshaft Gear Installation:

- Install the new crankshaft gear onto the crankshaft. Ensure it is fully seated and aligned with the keyway.

### 3. Camshaft Gear Installation:

- Install the camshaft gear onto the camshaft. Note that this gear is designed for 1-bolt camshafts.
- If using offset bushings for advance/retard adjustment, install them according to your desired timing specification. The maximum advance/retard at the camshaft is 4°, and at the crankshaft is 2°.

### 4. Dual Idler Gear Assembly Installation:

- Position the dual idler gear assembly between the crankshaft and camshaft gears. The idler gears should mesh smoothly with both the crankshaft and camshaft gears.
- Secure the idler assembly using the provided hardware. Ensure all fasteners are torqued to the manufacturer's specifications.

### 5. Clearance Check:

- Rotate the crankshaft manually several full revolutions to ensure smooth operation and proper gear mesh.
- Verify there is adequate clearance between the gear drive components and the timing cover. Minor machining of the timing cover may be required in some applications to prevent interference.

### 6. Reassembly:

- Install the timing cover with a new gasket, ensuring proper alignment.
- Reinstall all removed engine components, fluids, and accessories.

## OPERATING PRINCIPLES

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The Speedmaster Dual Idler Timing Gear Drive replaces the traditional timing chain with a direct gear-to-gear connection. This design offers several advantages:

- **Precise Timing:** Eliminates timing chain stretch, ensuring consistent and accurate camshaft timing relative to the crankshaft.
- **Durability:** Constructed from steel with CNC-machined components for enhanced strength and longevity compared to timing chains.
- **Distinct Sound:** This "noisy" gear drive produces a characteristic whine, often desired in performance applications, indicating its direct gear mesh operation.
- **Adjustability:** Allows for fine-tuning of camshaft timing using offset bushings, with a maximum advance/retard of 4° at the camshaft and 2° at the crankshaft.

## MAINTENANCE

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The Speedmaster Timing Gear Drive is designed for minimal maintenance once installed correctly. However, periodic checks are recommended:

- **Oil Changes:** Ensure regular engine oil changes are performed as per your engine manufacturer's recommendations. Clean engine oil is crucial for the lubrication and longevity of all internal engine components, including the timing gears.
- **Inspection:** During other engine maintenance (e.g., valve cover removal, oil pan removal), visually inspect the timing gear drive for any signs of wear, damage, or loose components. While not typically accessible without removing the timing cover, any unusual noises from the timing cover area should prompt further investigation.
- **Cleanliness:** Maintain a clean engine bay to prevent contaminants from entering the timing cover area.

## TROUBLESHOOTING

Problem	Possible Cause	Solution
Difficulty installing timing cover	Interference with timing gear drive components.	Minor machining of the timing cover may be required for clearance. Carefully identify interference points.
Unusual noise after installation (beyond characteristic whine)	Improper gear mesh, loose components, or interference.	Re-check installation, ensure all fasteners are torqued correctly. Inspect for contact points between gears and cover.
Engine timing issues	Incorrect installation of gears, improper use of offset bushings, or camshaft/crankshaft not at TDC during installation.	Verify camshaft and crankshaft alignment. Re-check offset bushing orientation if used. Consult a professional for timing adjustment.

## SPECIFICATIONS

**Model:** PCE267.1004

**Application:** Small Block Ford (SBF) 289/302/351W with 1-bolt camshaft

**Design:** Dual Idler Gear Drive

**Material:** Steel, CNC-machined components

**Maximum Advance/Retard at Camshaft:** 4°

**Maximum Advance/Retard at Crankshaft:** 2°

**Includes:** Offset Bushings

**Product Dimensions:** Approximately 9.6 x 6.4 x 3.5 inches

**Item Weight:** Approximately 4 pounds

## WARRANTY AND SUPPORT

For specific warranty information regarding your Speedmaster PCE267.1004 Dual Idler Noisy Timing Gear Drive Set, please refer to the documentation provided with your purchase or visit the official Speedmaster website. Speedmaster products are designed and manufactured to high standards, but specific warranty terms may vary.

For technical support, installation assistance, or inquiries about replacement parts, please contact Speedmaster customer service directly. You can often find contact information on the product packaging or on the Speedmaster official website.

**Online Resources:** [Visit the Speedmaster Store on Amazon](#)



