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DPTOOL BN12

DPTOOL Camshaft Alignment Timing Tool Set User Manual

Model: BN12 | Brand: DPTOOL

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective use of the DPTOOL Camshaft Alignment Timing Tool Set. This specialized tool kit is designed for precise engine timing adjustments and maintenance on compatible BMW and Mini Cooper engines. Proper use of these tools ensures accurate camshaft and crankshaft positioning, which is critical for engine performance and longevity.



Image 1.1: The complete DPTOOL Camshaft Alignment Timing Tool Set stored in its protective blue case.

2. SAFETY INFORMATION

WARNING: Always prioritize safety when working with automotive tools and engines. Failure to follow safety precautions can result in serious injury or damage to the vehicle.

- Always wear appropriate personal protective equipment (PPE), including safety glasses, gloves, and protective clothing.

- Ensure the vehicle is securely supported on jack stands or a lift before beginning any work.
- Disconnect the vehicle's battery before performing any engine work to prevent accidental starting or electrical hazards.
- Refer to the vehicle manufacturer's service manual for specific procedures, torque specifications, and additional safety guidelines.
- Keep the work area clean, well-lit, and free from obstructions.
- Do not use damaged or modified tools.
- This tool set is intended for use by qualified and experienced automotive technicians.

3. PACKAGE CONTENTS

The DPTOOL Camshaft Alignment Timing Tool Set (Model BN12) includes the following components:

- Camshaft Locking Tools (various shapes for intake and exhaust camshafts)
- Crankshaft Locking Pin (Top Dead Center pin)
- Chain Tensioner Locking Pin
- Flywheel Locking Pin
- Fixing Screws for camshaft tools
- Durable Storage Case



Image 3.1: A detailed view of the various camshaft locking tools, crankshaft pin, and fixing screws included in the kit.

4. SETUP AND INSTALLATION

Before proceeding with any timing procedure, ensure the engine is cold and the vehicle's battery is disconnected. Always consult your vehicle's specific service manual for detailed instructions and torque specifications.

4.1. Engine Compatibility

This tool set is compatible with the following BMW and Mini Cooper engines:

- BMW N12, N13, N14, N16, N18 engines
- Mini Cooper 1.4, 1.6 16V (R55, R56, R57, R60 models)
- Also compatible with certain Citroen C4, C4 Picasso, Peugeot 207, 308 engines (EP3, EP6, EP6DT/DTS)

OEM Equivalent Part Numbers: 117 440, 119 340, 119 590, 496 709.

4.2. General Timing Procedure Overview

The primary function of this tool set is to lock the camshafts and crankshaft in their correct timed positions when

performing tasks such as timing chain replacement, cylinder head removal, or other engine repairs that disturb the engine timing.

1. Bring the engine to Top Dead Center (TDC) for cylinder 1.
2. Insert the crankshaft locking pin to secure the crankshaft.
3. Install the appropriate camshaft locking tools onto the intake and exhaust camshafts to hold them in their timed positions.
4. Perform the necessary repair or maintenance.
5. Remove the tools in reverse order after confirming timing is correct and all components are torqued to specification.

4.3. Application for N12, N14, N16 Engines

For N12, N14, and N16 engines, use the specific camshaft locking tools designed for these engine types. These tools ensure the camshafts are correctly aligned during timing chain or component replacement.

Fit BMW N12 N14 N16 Engine



Image 4.1: Camshaft locking tools correctly positioned on an N12, N14, or N16 engine cylinder head, ensuring precise timing.

4.4. Application for N13, N18 Engines

For N13 and N18 engines, utilize the camshaft locking tools specifically shaped for these engine variants. Proper fitment is crucial for accurate timing.



Fit BMW N13 N18 Engine

Image 4.2: Camshaft locking tools correctly positioned on an N13 or N18 engine cylinder head, ensuring precise timing.

4.5. Video Demonstration

Watch the official product video for a visual guide on how to use the DPTOOL Camshaft Alignment Timing Tool Set for both N12/N14/N16 and N13/N18 engines. The video demonstrates the installation of the camshaft and crankshaft locking tools.

Your browser does not support the video tag.

Video 4.1: Demonstration of the DPTOOL Camshaft Alignment Timing Tool Set in use on BMW N12, N14, N16, N13, and N18 engines.

5. OPERATING INSTRUCTIONS

Once the appropriate camshaft and crankshaft locking tools are securely installed, the engine's timing is fixed. This allows for the safe removal and installation of timing chain components, camshafts, or cylinder head work without losing engine timing. Always ensure the tools are fully seated and secured before proceeding with any work that requires the engine to be locked.

After completing the repair, carefully remove all timing tools in reverse order of installation. Rotate the engine manually a few times (e.g., two full crankshaft rotations) and re-check the timing marks with the tools to confirm correct alignment before reassembling the engine and attempting to start it.

6. MAINTENANCE

To ensure the longevity and accuracy of your DPTOOL Camshaft Alignment Timing Tool Set:

- Clean all tools thoroughly after each use to remove oil, grease, and debris.
- Store the tools in their original protective case in a dry environment to prevent rust and damage.
- Inspect tools for any signs of wear, damage, or deformation before each use. Do not use damaged tools.
- Lightly oil moving parts or threaded sections (like the crankshaft locking pin) if storing for extended periods.

7. TROUBLESHOOTING

If you encounter issues while using the timing tool set, consider the following:

- **Tools not fitting correctly:**

- Ensure you are using the correct tools for your specific engine model (N12/N14/N16 vs. N13/N18).
- Verify the engine is at the correct Top Dead Center (TDC) position for cylinder 1.
- Check for any obstructions or debris preventing proper tool seating.
- If the timing chain is stretched, the camshafts may be slightly out of alignment, preventing the tools from seating. In such cases, the camshafts may need to be rotated slightly to allow the tools to fit, indicating a stretched chain that requires replacement.

- **Engine timing still incorrect after reassembly:**

- Double-check all steps in the vehicle's service manual and ensure all tools were used correctly.
- Verify that all components (timing chain, tensioners, sprockets) are in good condition and installed correctly.
- Ensure all bolts are torqued to the manufacturer's specifications.
- Seek professional automotive assistance if the issue persists.

8. SPECIFICATIONS

Feature	Detail
Brand	DPTOOL
Item Weight	7.39 pounds
Package Dimensions	13.3 x 10 x 2.72 inches
Item Model Number	BN12
Manufacturer Part Number	BN12

OEM Part Number Equivalents	117 440, 119 340, 119 590, 496 709
Manufacturer	Shenzhen Dapeng Aoto Tools CO.,LTD

9. WARRANTY AND SUPPORT

DPTOOL offers a **12-month warranty** on this product. If the tool set experiences any quality problems within this period, DPTOOL will provide a refund or replacement.

For technical support, warranty claims, or any inquiries regarding your DPTOOL product, please contact the manufacturer or your point of purchase. Keep your purchase receipt as proof of purchase for warranty purposes. You can visit the official DPTOOL store on Amazon for more information and contact options:[DPTOOL Store](#)

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