

# CAMSHAFT TIMING TOOL KIT USER MANUAL






Read Carefully Before Use  
Keep for Future Reference

# Safety Information

## Warning!

- Use these tools **ONLY** in accordance with these instructions and for their intended purposes.
- Keep your work area clean and well lit. Cluttered or dark areas invite accidents.
- Keep children and bystanders away while using these tools.
- **DO NOT** use these tools while you are tired or under the influence of drugs, alcohol, or medication.
- Use the appropriate safety equipment for your job. Wear ANSI and OSHA-approved eye protection and heavy-duty work gloves when using these tools.
- **DO NOT** wear loose clothing or jewelry while using these tools. Keep your hair, clothing, and gloves away from any moving parts.
- Prior to servicing a vehicle, turn off its engine and refer to its manufacturer's service and repair manual for instructions on how to safely secure the vehicle in place with chocks, jacks, stands, etc.
- Always handle compressed springs with extreme care, and keep careful track of the exact placement of each part during removal and replacement.
- **DO NOT** allow people unfamiliar with these tools or these instructions to operate it.
- **DO NOT** overreach. Keep proper footing and balance at all times.
- Maintain these tools. Check for misalignment or binding of parts, breakage of parts, and any other condition that may affect these tools' operation. If these tools becomes damaged, have it repaired before further use.

# Specifications

Valve Spring Compressor		Dimensions	4.2×1.1×1.5 in.	10.8×2.7×3.8 cm
		Wrench Fitment	$\frac{3}{8}$ in.	9.5 mm
		Net Weight	0.3 lb.	0.13 kg
Crankshaft Positioning Tool		Dimensions	9×7.1×2.4 in.	22.9×18×6 cm
		Keyway Diameter	1.29 in.	3.28 cm
		Alignment Dowel Connection Dimensions	0.31×0.62 in.	0.79×1.57 cm
		Net Weight	2.9 lb.	1.3 kg
Camshaft Holding Tool		Dimensions	1×7×2.2 in.	2.5×17.7×5.5 cm
		Clamp Block Dimensions	1×2.6×1.6 in.	2.5×6.5×4 cm
		Net Weight	9.6 oz.	0.25 kg

# Package List

- Valve Spring Compressor Lever × 1
- Valve Spring Compressor Foot × 1
- Crankshaft Positioning Tool × 1
- Camshaft Holding Tools × 2

## Operation

### Valve Spring Compressor

This tool compresses valve springs for quick camshaft, valve seal, valve spring, or retainer service without any need to remove the engine head.

1. Connect the compressor foot to the lever.
2. Slide the foot over the bottom of the spring with the camshaft fitting into the lever's notch.
3. Connect a 3/8" ratchet wrench or breaker bar (not included) to the top of the tool.
4. Press it to compress the spring.
5. Service your engine as needed.
6. Use your ratchet wrench or breaker bar to decompress the spring and then slide the compressor foot off the spring.

Fitment			
1991–2004	Ford	Modular	4.6L 2V V8
			4.6L 4V V8
			5.4L 2V V8
			5.4L 4V V8
			6.8L 2V V10

### Crankshaft Positioning Tool

**⚠** To prevent damage to valves and pistons, **DO NOT** rotate the crankshaft and/or camshaft(s) when removing the timing chain(s) and installing the cylinder heads.

This tool positions the crankshaft at top dead center to install timing chains in case your cylinder head has to be removed when your engine has jumped time. Install the tool over the front cover alignment dowel and align the crankshaft woodruff key with the keyway on the tool as shown in Fig 1.

Fitment			
1993–2022	Ford	Modular	4.6L 2V V8
			4.6L 4V V8
			5.4L 2V V8
			5.4L 3V V8
			5.4L 4V V8
6.8L 2V V10			

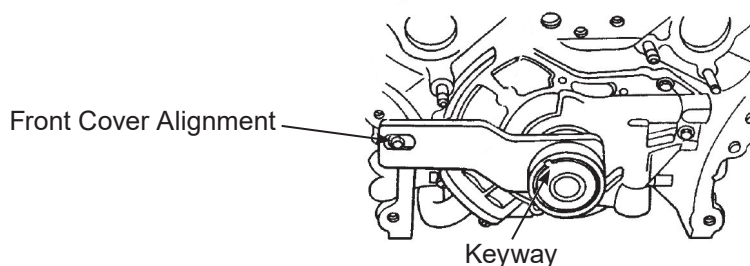


Fig 1.

## Camshaft Holding Tool

This tool ensures camshaft alignment while servicing your vehicle's timing chain.

1. Use a torque wrench (not included) to loosen the bolts on the top clamp.
2. Remove the bottom clamp from the top clamp.
3. Install the tool around the camshaft as shown in Fig 2.
4. To ensure the correct clamping force, torque the hex bolts at 20 ft-lb. Each bolt must engage the same amount of threads in the bottom clamp to ensure clamp alignment. Install the other tool in a similar way if needed.
5. Service your engine as needed.
6. After servicing the engine, use a torque wrench (not included) to remove the tool.

Fitment			
1997–2002	Ford	Econoline	5.4L V8 6.8L V10
		Expedition	
		F Series	
1997–2009	Ford	Econoline	4.6L V8
1998–2002	Lincoln	Navigator	5.4L V8
2003–2009	Ford	F Series	(VIN W Only)

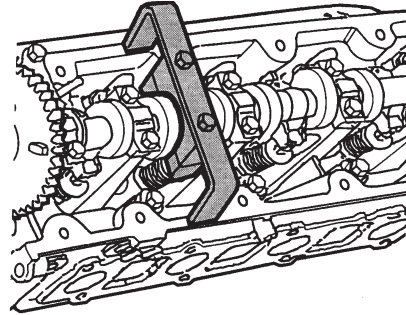


Fig 2.

## Maintenance

- Clean the surface of the used tools with a dry brush or cloth after use. Do not rinse it or use abrasive cleaners or caustic chemicals.
- For best results, lubricate the tools with high-quality anti-corrosive oil between uses.
- Check the parts of the tools periodically for any wear or damage. Repair or replace any problematic parts before further use.
- If these tools will not be used for an extended period of time, lubricate them and store them in a cool dry place inaccessible to children and away from direct sunlight.

## Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us at [support@orionmotortech.com](mailto:support@orionmotortech.com) and we'll resolve your issue ASAP!

For a .pdf copy of the latest version of these instructions, use the appropriate app on your smartphone to scan the QR code to the right.

