

Technical Service Bulletin (TSB)
ENGINE – 1.5 GSE T4 MHEV
- Malfunction Indication Light (MIL) P0016

REFERENCE:	TSB: 09-011-26 GROUP: 09 - Engine	Date:	June 6, 2026	REVISION:	—
CONCERNED VEHICLES:	2022 - 2025 (BV) Jeep Renegade 2022 - 2025 (MV) Jeep Compass This bulletin applies to vehicles equipped with the 1.5L I4 DOHC Turbo MHEV Engine (Sales Code EYP).			MARKET SPECIFICATIONS: ☐ NA☐ MEA ☐ SA☐ IAP ☒ EE☐ CH NOTE: This bulletin applies to Enlarged Europe markets.	
SYMPTOMS REPORTED BY THE CUSTOMER:	Customers must experience a MIL illumination and the vehicle must exhibit/set the following Diagnostic Trouble Code (DTC): P0016 - Crankshaft/camshaft Timing Misalignment - Bank 1 Sensor 1.				
CAUSE:	Engine timing loss resulting from a tooth jump on the Variable Camshaft Timing (VCT) sprocket				

SUMMARY OF THE REPAIR:

Check the trouble codes in the Engine Control Unit (ECU). Apply this document if the trouble code as mentioned is set (P0016).

Fix Engine Timing and replace the cam-to-cam guide rail (“snubber”).

CLAIM FORM DATA:

Labor Operation No:	Labor Description	Skill Category	Labor Time
09-10-07-90	Guide Rail - Replace (1 - Semi-Skilled)	1 - Engine Repair and Performance	2.2 Hrs.
Failure Code	ZZ	Service Action	

SPARE PARTS:

Qty	Part No.	Description	Notes
1 (AR)	Mopar - 68777757AA EMEA - 46362268	Guide Rail (“Snubber”)	
1 (AR)	Mopar - 68783297AA EMEA - 6000639383	Campaign Kit	

SPECIAL TOOLS/EQUIPMENT:

Description	Ref. No.	Notes
2069100090	Tool, Crankshaft Rotating	
2078900090	Tool, Crankshaft Timing	
2063600090	Pin, Flywheel Locking	
2063500090	Locking, Camshaft	

INSPECTION/CHECK**ENGINE TIMING CHECK (following DTC P0016).****REPAIR PROCEDURE:****ENGINE TIMING CHECK (following DTC P0016)****DISSASSEMBLY**

1. Position the vehicle on a lifting platform.
2. Disconnect the 12V battery.
3. Lift the vehicle.
4. Remove the lower engine cover (7055B54).
5. Remove the right front wheel (4450B04).
6. Remove the right front wheel arch (7055B91).
7. Remove the lower flywheel cover (1024B52).
8. Attach special tool **2069100090** to the crankshaft pulley [Fig. 1](#).

**Fig. 1**

9. Lower the vehicle.

10. Remove the valve cover (1016A20) [Fig. 2](#).

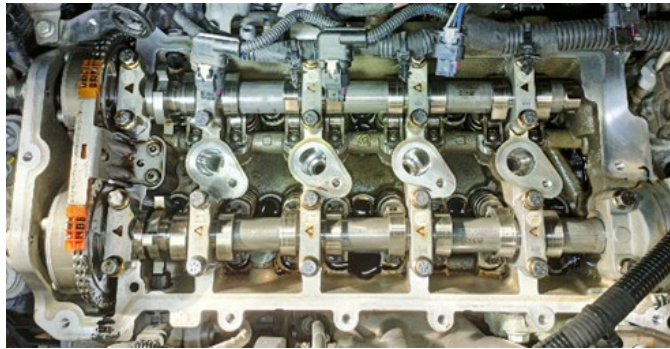


Fig. 2

11. Remove the rear shaft seal from the exhaust camshaft (1036B38) [Fig. 3](#).

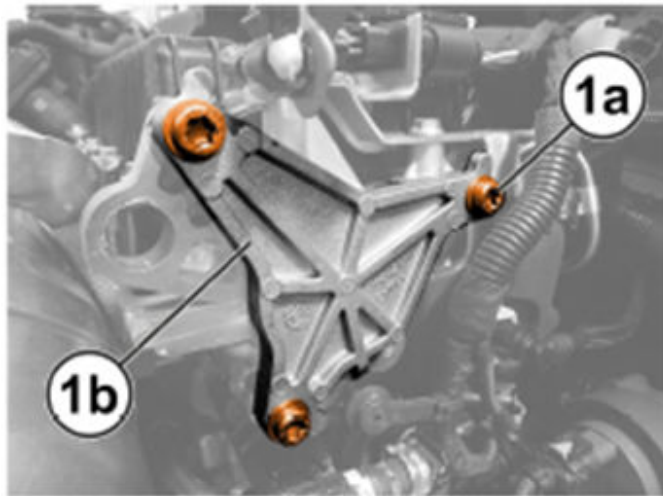


Fig. 3

12. Use tool **2069100090** to rotate the crankshaft until the special timing chain tool **2078900090** can be fitted to the **INTAKE** camshaft [Fig 4](#) and [Fig. 5](#). Once inserted, fix the screws accordingly.

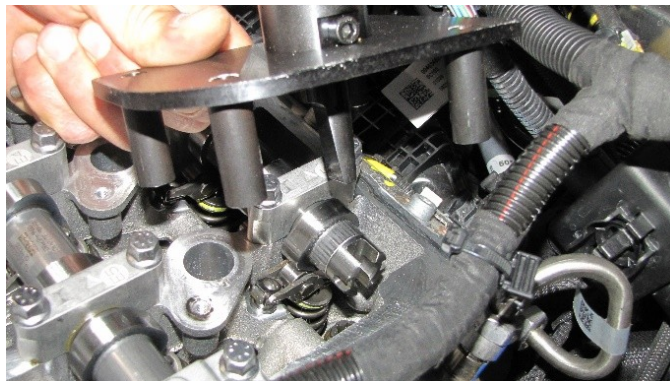


Fig. 4

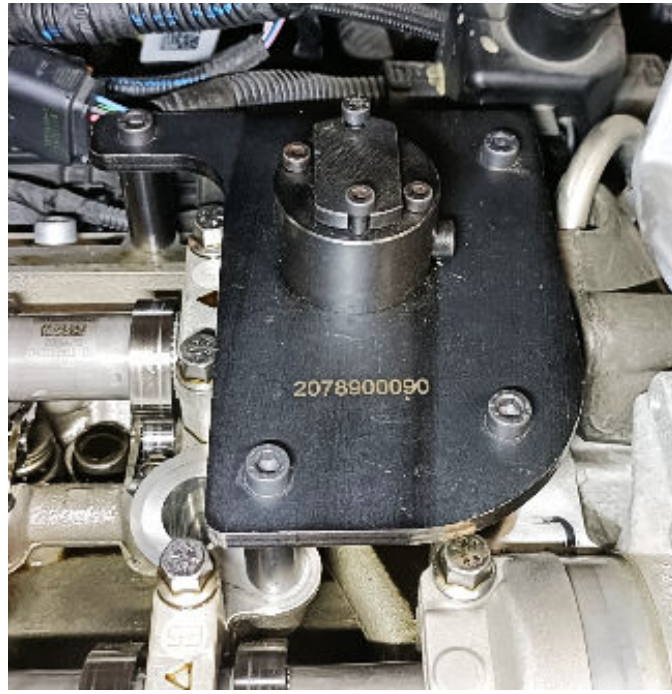


Fig. 5

13. Lift the vehicle.

14. Insert the flywheel locking pin **2063600090** [Fig. 6](#).



Fig. 6

15. Insert a suitable 9 mm diameter pin into the crankshaft pulley, which fits into the corresponding recess on the timing cover [Fig. 7](#).



Fig. 7

16. Loosen the crankshaft pulley bolt—but **do not remove it completely**—and lower the vehicle.
17. Remove the camshaft phase solenoid valves (1056F48) from both camshaft adjusters [Fig.8](#).

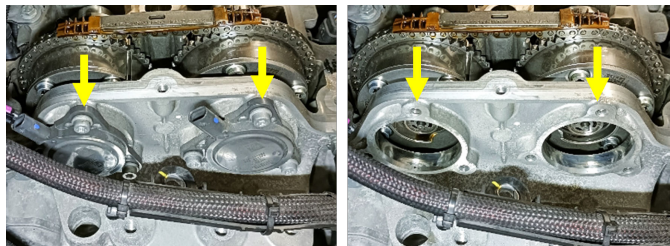


Fig. 8

18. Loosen the **INTAKE** camshaft adjuster screw using a 22 mm socket [Fig. 9](#). Rotate the **EXHAUST** camshaft (using the camshaft adjuster screw) until you can insert special tool **2063500090** [Fig. 10](#) and [Fig. 11](#).

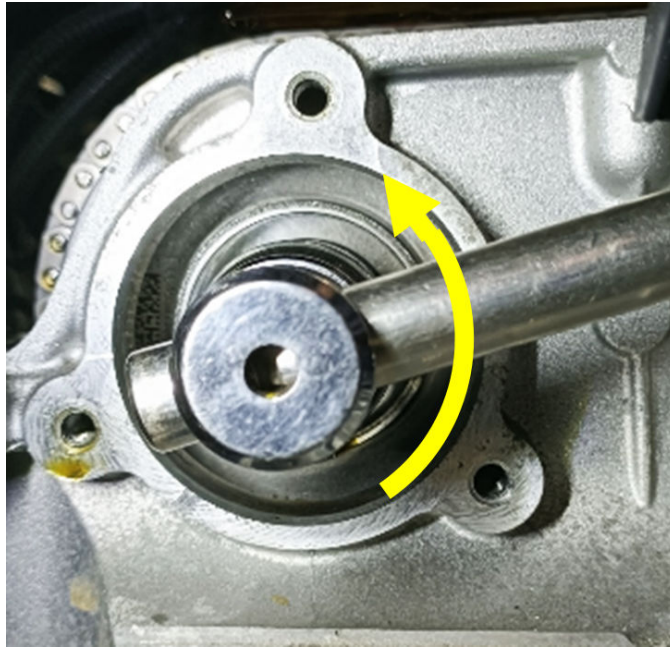


Fig. 9

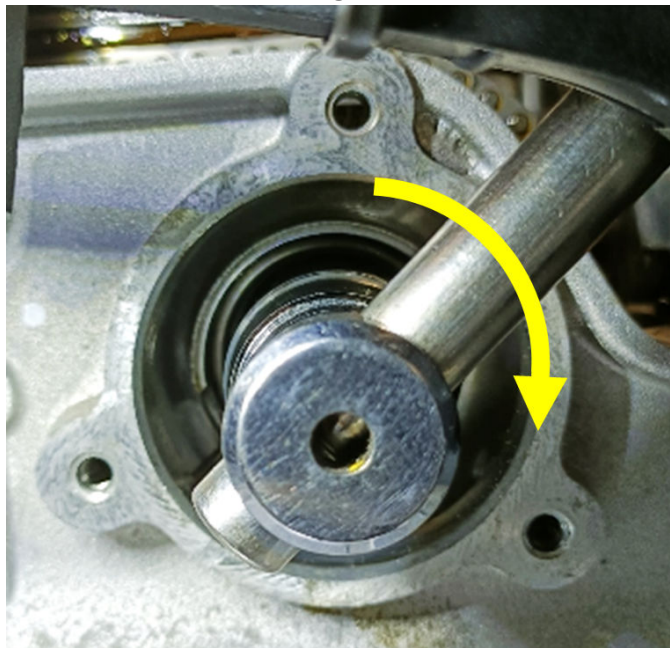


Fig. 10



Fig. 11

NOTE: The exhaust camshaft is equipped with a centering pin that must align with the pin on the special tool [Fig. 12](#).

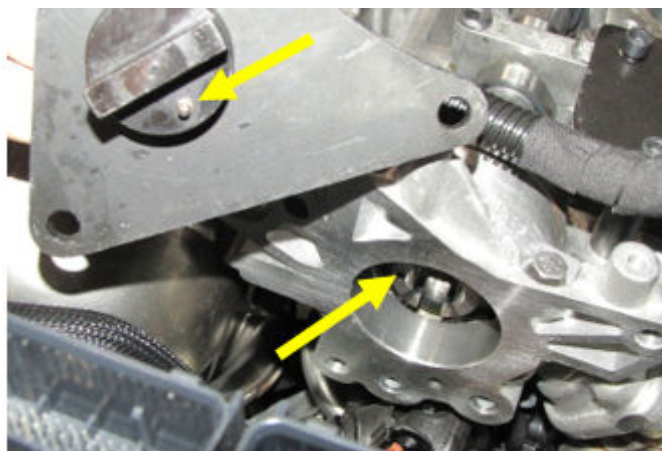


Fig. 12

19. Tighten the **INTAKE** camshaft adjuster screw according to the tightening strategy shown in the table 1 below [Fig 13](#).



Fig. 13

Screw tightening strategy (FPW 1.00101.93)
Torque + angle: 20Nm+50° Cl.A
Final torque: min 90 Nm – max 140 Nm

20. Reinstall the camshaft phase solenoid valves (1056F48) and the elastic insert (1008B10).
21. Lift the vehicle.

22. Completely remove and discard the crankshaft pulley bolt. Insert a NEW pulley bolt and tighten the crankshaft pulley bolt [Fig. 14](#) according to table 2 below.



Fig. 14

Screw tightening strategy (FPW 1.00101.93)
Torque + angle: 20Nm+235° Cl.A
Final torque: min 180 Nm – max 250 Nm

23. Remove the flywheel locking pin and the 9 mm diameter pin from the crankshaft pulley.
24. Lower the vehicle.
25. Remove the old guide rail (“snubber”) [Fig 15](#).

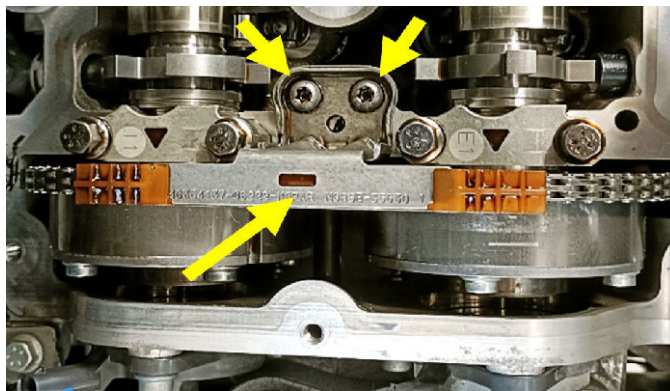


Fig. 15

26. Install the new guide rail (“snubber”) Fig. 16. Tighten the screws to the torque specified in table 3 below.

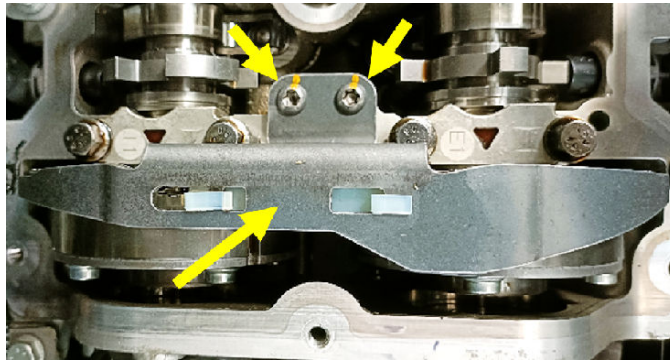


Fig. 16

Screw tightening strategy (FPW 1.00101.93)	Limiti Sperimentali – Metodo A	
Tightening torque 9 Nm Cl.B	Cmin 7 Nm	Cmax 13 Nm

27. Remove the timing tools from the exhaust and intake shafts.

28. Complete engine and vehicle.

CONTROL MODULE CODES:

Before flashing, the control module must have the following data			
HW number	HW version	SW number	SW version
XXXX	XX	XX	XX
After programming, the control module will have the following data			
XX	XX	XX	XX

POLICY:

Reimbursable within the provisions of the warranty.

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