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LASER®

Part No. 7083

Fuel Injector Removal/Installer Tool

BMW N55

Instructions

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Introduction

The Laser 7083 is a special tool designed to remove (stuck injectors) and install injectors in BMW petrol-engined models with N55 engine code up to engine number 14407684 (bottom hold-down clamp version).
(OEM tool reference: 13 0 270.)

These instructions are a guide only. For methods of gaining access to, and disconnecting, fuel lines, wiring, etc, refer to the manufacturer's service documentation before attempting injector removal.

PRECAUTIONS:

- Refer to manufacturer's guidelines and recommendations:
- Injectors may be pulled out with a maximum tensile force of **2000 N** and twisted to a maximum torsional movement of **6 Nm**. If these values are exceeded the injector will be damaged and must be replaced.
- When reassembling, it is essential to adhere to screwing sequences and manufacturer's specified tightening torques. Refer to the manufacturer's service documentation.
- Work to conditions of absolute cleanliness when carrying out repair work on a high pressure fuel system.
- Do not allow any dirt particles or other contamination to get into the system.
- Remove all traces of dirt or contamination before removing fuel lines or other components.
- Use only lint-free cloths (risk of contamination).
- Seal all fuel system openings with protective plugs or caps.

Instructions

Injector removal:

These instructions are a guide only. For methods of gaining access to, and disconnecting, fuel lines, wiring, etc, refer to the manufacturer's service documentation.

Disconnect battery (remove negative terminal). Remove engine cover(s), ignition coils, wiring connectors on injectors, earth (ground) wires, etc. Refer to manufacturer's instructions for removing the injector fuel lines.

Note: the following applies to all injectors, cylinders 1– 6.

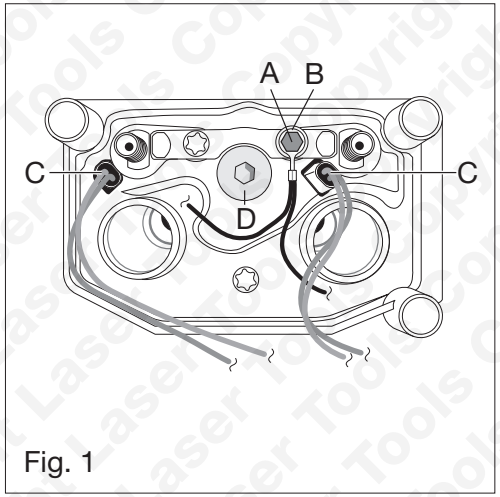

Fig. 1

1. Refer to Figure 1: First remove nut **A**; then remove earth cable **B**.
2. Unlock connectors **C** from injectors and detach.
3. Remove screw plug **D**.

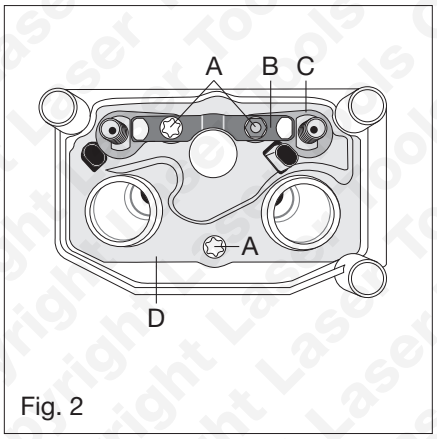

Fig. 2

4. Refer to Figure 2: remove screws **A**.
5. Remove clamping plate **B** and counter support **C**.
6. Note: *clamping plate **B** is a consumable (disposable) part and must be replaced following removal.*
7. Remove EMC plate **D**.

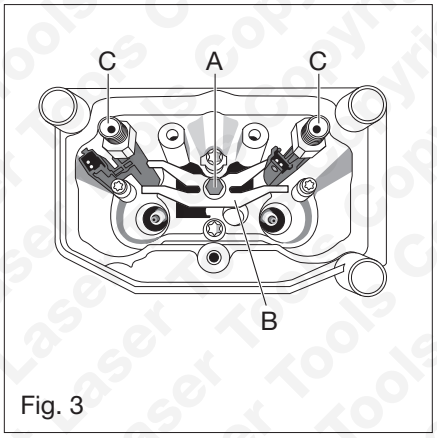

Fig. 3

8. Remove set screw **A**.
9. Carefully pull out the hold-down clamp **B** and remove.
10. Pull injectors **C** out of the cylinder head and remove.
11. Note: *If more than one injector is removed, ensure that each injector is installed back in its original cylinder location. Mark the injectors to identify them.*

Procedure for removal of stuck injector(s):

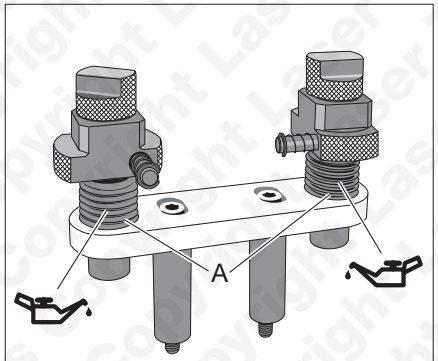

Fig. 4

1. Use the Laser 7083 tool to remove injectors that are stuck.
2. Refer to Figure 4: lightly oil the two pull-out threads **A** on the tool.
3. Unscrew the pull-out threads (refer to Figure 4).
4. Note: *pull-out thread **A** is a left-hand thread.*

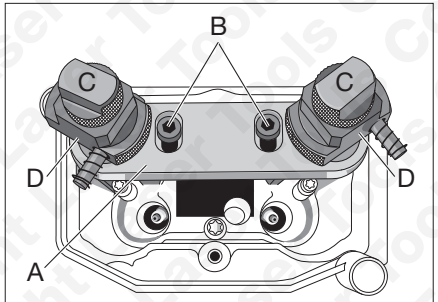

Fig. 5

5. Refer to Figure 5: Fit the Laser 7083 tool **A** over the pair of injectors. Secure with the bolts **B** (initially just screw in a few threads).
6. Screw in the pull-out threads **D** (left-hand thread) until it is possible to screw the threaded injector sleeves **C** onto the top of the injectors. Tighten down the injector sleeves **C** onto the injectors.
7. Tighten down the tool securing bolts **B** — refer to manufacturer's service documentation for tightening torque for these bolts.

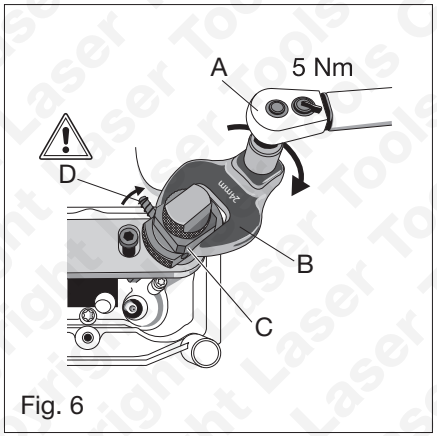

Fig. 6

8. Refer to Figure 6: Set torque wrench **A** to **5 Nm** clockwise rotation.
9. With the torque wrench, use a 24mm crows foot wrench attachment **B** on the square head of the pull-out thread **C**.
10. Note: *the torque figure is critical — if the torque wrench clicks when the injector is being pulled out, the **injector must be replaced***.
11. Turn the torque wrench in a clockwise direction until the injector is pulled out.
12. Note: **Risk of damage**. *Make sure the retaining pin **D** does not touch the cylinder head cover while the injector is being turned; if necessary press back the retaining pin*. (Refer to Figure 6.)
13. If you intend to re-use the injector, fit protective caps to the injector tip and the top fuel line connection.

Injector installation:

NOTE: Refer to manufacturer's service documentation for injector installation procedures regarding reusing existing injector(s), or fitting new injector(s).

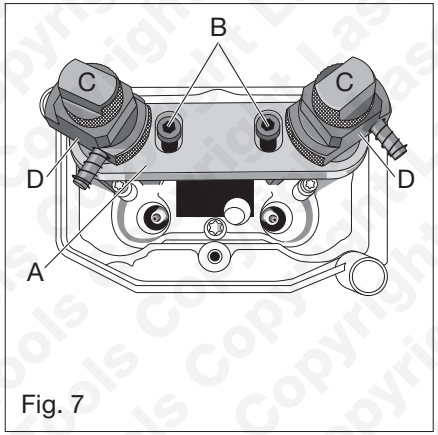

Fig. 7

1. Fit injector or injectors back into cylinder head.
2. Refer to Figure 7: Fit the Laser 7083 tool (**A**) over the pair of injectors. Secure with the bolts **B** (initially just screw in a few threads).
3. Screw in the pull-out threads **D** (left-hand thread) until it is possible to screw the injector sleeves **C** onto the top of the injectors. Tighten down the injector sleeves **C** onto the injectors.
4. Tighten down the tool securing bolts **B** — refer to manufacturer's service documentation for tightening torque for these bolts.

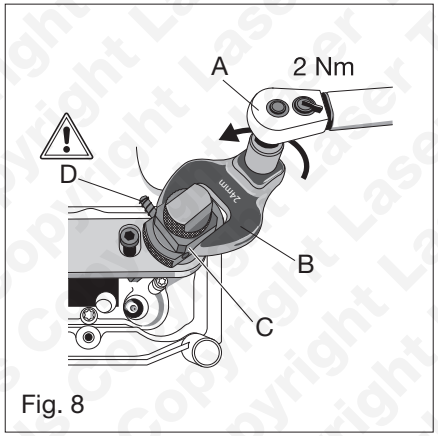

Fig. 8

5. Refer to Figure 8: Set torque wrench to **2 Nm** anti-clockwise rotation.
6. With the torque wrench **A**, use a 24mm crows foot wrench attachment B on the square head of the pull-out thread **C**.
7. Turn the torque wrench in an anti-clockwise direction until the **2 Nm** figure is reached.
8. Note: **Risk of damage**. *Make sure the retaining pin **D** does not touch the cylinder head cover while the injector is being turned; if necessary press back the retaining pin.* (Refer to Figure 8.)
9. Then remove the Laser 7083 tool.

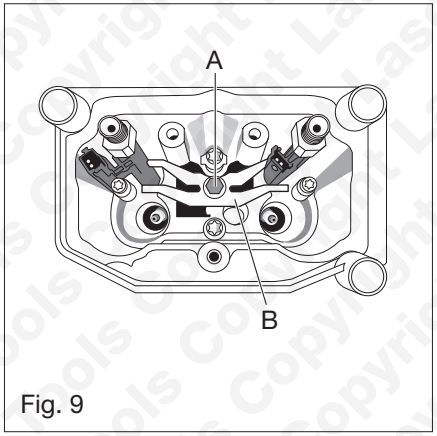

Fig. 9

10. Install hold-down clamp **B**.
11. Tighten screw A hand-tight only so that the hold-down clamp is not tight and the injector(s) can still be turned if necessary.

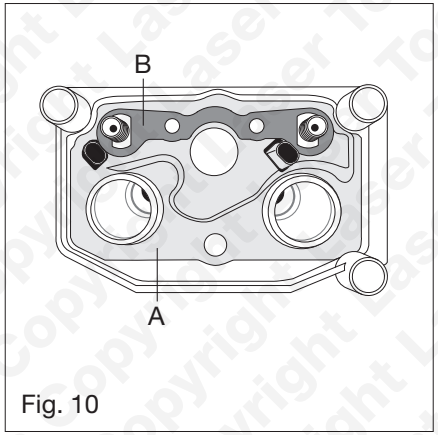

Fig. 10

12. Align injectors. Note: *do not twist injectors to **6 Nm**. The injector will have to be replaced if this value is exceeded.*
13. Install the EMC plate **A**.
14. Fit the counter support **B** over the injectors.

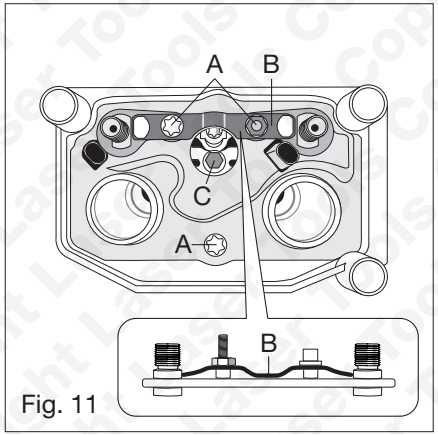

Fig. 11

15. Install new clamping plate **B**. Refer to Figure 11 for correct orientation of clamping plate.
16. Insert screws **A** and only tighten hand-tight at this stage. Fully tighten only after pressure lines have been refitted to the injectors and fuel rail, and the hold-down clamp screw **C** has been tightened — refer to manufacturer's service documentation for tightening torque for this screw.

Refer to the manufacturer's service documentation for final reassembly of previously removed components, and connection to diagnostic system for injector quantity compensation procedure.

Safety Warnings - please read

- Wear eye and hand protection when using this tool kit.
- Always carefully clean the tool components after each use.
- Keep the tool components safe and tidy in the supplied case.
- Do not use the kit for any purpose other than for which it is designed.

Safety First. Be Protected.