Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool's use and while all attention is given to the accuracy of the data no project should be attempted without referring first to the manufacturer's technical documentation (workshop or instruction manual) or the use of a recognised authority such as Autodata.

It is our policy to continually improve our products and thus we reserve the right to alter specifications and components without prior notice. It is the responsibility of the user to ensure the suitability of the tools and information prior to their use.

Safety First. Be Protected.

7084_Instructions_V1

Guarantee

If this product fails through faulty materials or workmanship, contact our service department direct on: +44 (0) 1926 818186. Normal wear and tear are excluded as are consumable items and abuse.

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The Complete Connection

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7084

LASER®

Fuel Injector Installer/Removal Tool

- The Laser 7084 is a special tool designed to remove (stuck) injectors and install injectors in BMW 4.4 litre petrol-engined models with N63 and S63 engine codes.
- Laser 7084 is equivalent to OEM adapter plate (OEM 2 249 115) and the extraction/insertion threaded units from OEM 13 0 320. Laser 7084 brings these components into one tool.

www.lasertools.co.uk

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7084 Fuel Injector Removal/Installer tool

Once the injector is removed the seal can be replaced using Laser 7085.

As the different engine configurations have different methods of gaining access to, and disconnecting, fuel lines, wiring, etc, these instructions are a guide only — refer to the manufacturer's service documentation before attempting injector removal.

Precautions

- Refer to manufacturer's guidelines and recommendations:
- Disconnect negative battery terminal (electric fuel pumps starts automatically when door is opened).
- Do not carry out any work on the fuel system if the engine coolant temperature is above 40°C.
- 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; clean off the injector shafts.
- Use only lint-free cloths (risk of contamination).
- Seal all fuel system openings with protective plugs or caps.
- Ensure that no fuel is sprayed onto the ignition coils; the resistance of the silicone material is reduced by contact with fuel which may cause an ignition coil to fail.
- Before reinstalling the ignition coils, blow out the spark plug apertures with compressed air and make sure the aperture is absolutely clean.

9. Install hold-down clamp (**B**) with clamp curvature as shown in Figure 7.

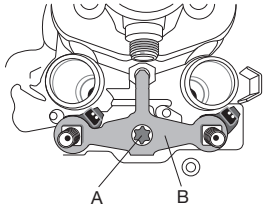

Fig. 8

10. Refer to Figure 8: Fit hold-down clamp **B** onto injectors. Only hand-tighten the securing screw **A** by a few threads.
11. Refer to manufacturer's service documentation for procedure and model-specific tightening torque figures for fitting the fuel lines to the injectors and high pressure pump.
12. Finally, follow the manufacturer's service documentation for procedure for final tightening torque sequence for hold-down clamp (**B**), injector nuts and high pressure pump nut.

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

1. Insert injectors into the injector bores.
2. Refer to Figure 5: Fit the Laser 7084 tool (**A**) over the pair of injectors. Secure with the screws **B** and **C** (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 **E** onto the top of the injectors. Tighten down the injector sleeves **E** onto the injectors.
4. Tighten down the tool securing screws **B** and **C** — refer to manufacturer's service documentation for model-specific tightening torque for these bolts.

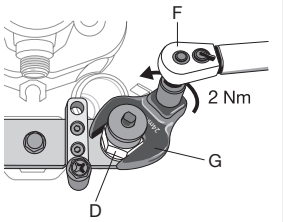

Fig. 6

5. Refer to Figure 6: Set torque wrench to **2 Nm** anti-clockwise rotation.
6. With the torque wrench **F**, use a 24mm crows foot wrench attachment (**G**) on the hexagon head of the pull-out thread **D**.
7. Turn the torque wrench in an anti-clockwise direction until the **2 Nm** figure is reached.
8. Then remove the Laser 7084 tool.

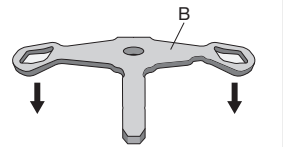

Fig. 7

Injector Removal

As the different engine configurations have different methods of gaining access to, and disconnecting, fuel lines, wiring, etc, refer to the manufacturer's service documentation before attempting injector removal.

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

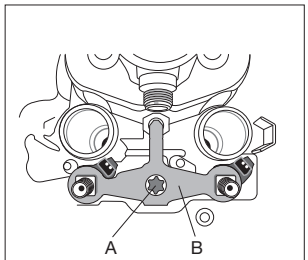

Fig. 1

1. Refer to Figure 1: First release set screw **A**.
2. Remove the hold-down clamp **B**.
3. Remove injectors by pulling up out of cylinder head.
4. If more than one injector is removed, mark injectors so that they can be reinstalled in their original cylinder location.

Procedure for removal of stuck injector(s):

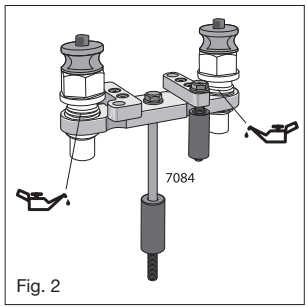

Fig. 2

1. Use the Laser 7084 tool to remove injectors that are stuck.
2. Refer to Figure 2: lightly oil the two pull-out threads on the tool.
3. NOTE: Pull-out thread is a left-hand thread.

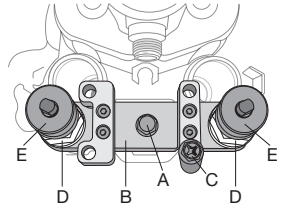

Fig. 3

4. Refer to Figure 3: Fit the Laser 7084 tool (**B**) over the pair of injectors. Secure with the screws **A** and **C** (initially just screw in a few threads).
5. Screw in the pull-out threads **D** (left-hand thread) until it is possible to screw the injector sleeves **E** onto the top of the injectors. Tighten down the injector sleeves **E** onto the injectors.
6. Tighten down the tool securing screws **A** and **C** — refer to manufacturer's service documentation for model-specific tightening torque for these screws.

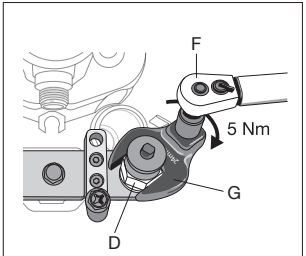

Fig. 4

7. Refer to Figure 4: Set torque wrench **F** to **5 Nm** clockwise rotation.
8. With the torque wrench, use a 24mm crows foot wrench attachment (**G**) on the hexagon head of the pull-out thread (**D**).
9. NOTE: the torque figure is critical — if the torque wrench clicks when the injector is being pulled out, the **injector must be replaced**.

10. Turn the torque wrench in a clockwise direction until the injector is pulled out.
11. 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).

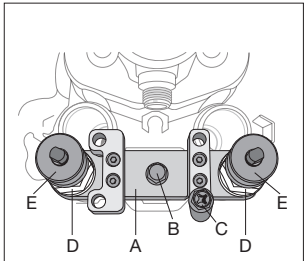

Fig. 5