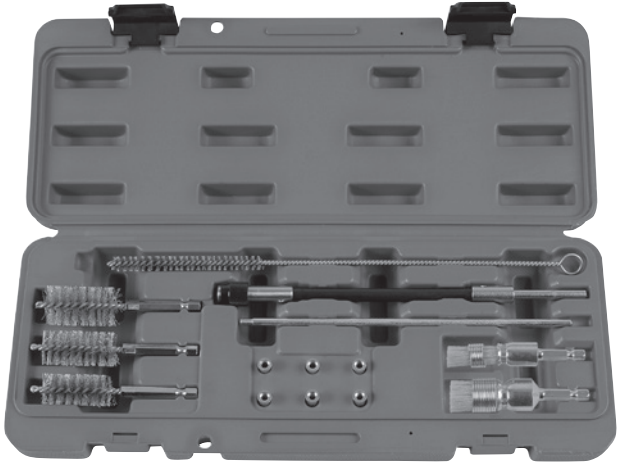




Diesel injector
seat cleaner
set

K 12180



INTRODUCTION

This is a complete kit for efficient cleaning of the Diesel injector seats and port prior to fitting new injectors.

The kit contains three brass coated steel wire brushes for cleaning the carbon deposits from the inner side walls of the port. **Note! These brushes should not be used to clean the injector seat surface.** The two silicone nylon brushes are used for cleaning the base/ injector seat area. These silicone nylon brushes gives a smooth and consistent finish to an aluminum surface, particularly important on a sealing surface.

These cleaning brushes are fitted with quick-chuck shafts that fit into the chuck on the 224 mm flexible extension provided in the set. This extension is designed to be driven by an electric cordless drill.

A set of six plugs (plus insertion rod) are provided to seal off the injector nozzle ports at the bottom of the main injector port, to stop any carbon or dirt entering the combustion chamber during the cleaning process. Subsequently these plugs are removed to enable cleaning of the injector nozzle port. A thin bore steel wire brush is provided for this task.

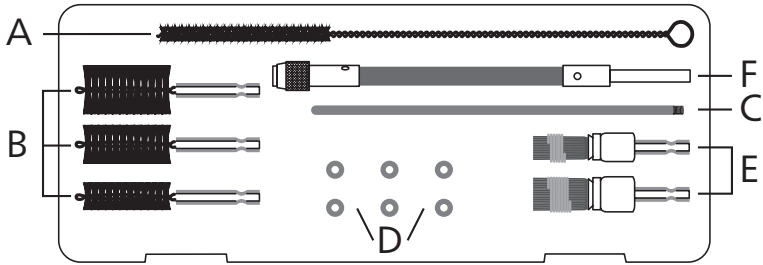
SAFETY AND PRECAUTION

- Always refer to the vehicle manufacturer's documentation to establish the correct procedure for injector removal.
- Eye protection must be worn when carrying out the cleaning process.
- Take care when using one of the cleaning brushes (B), that the end does not get caught in the port sealing plug (D).
- Maintain the tools and set in a clean condition to maintain performance and safety. Break cleaner or similar solvent can be used to clean the brushes and nozzle port cleaner.

Our products are designed to be used correctly and for the purpose they are intended. Kamasa Tools accept no liability for incorrect use. Incorrect use will also invalidate the warranty.

All instructional information provided has been designed to offer general guidance for this tool. While all attention is given to the accuracy of the data, no repair should be attempted without referring to the vehicle manufacturers' documentation or the use of a recognized authority such as Autodata.

PRODUCT SPECIFICATION/ PARTS LIST

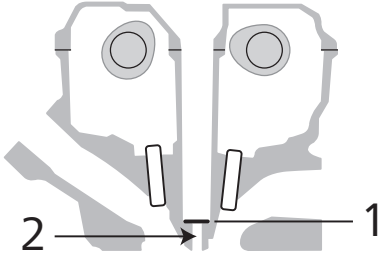


Pos	Description	Part No
A	Injector nozzle port cleaner	K 12181
B	3 pcs brass brush set	K 12182
C	Insertion rod	K 12183
D	Injector nozzle port sealing plug × 6	K 12184
E	2 pcs nylon brush set	K 12185
F	Quick chuck flexible extension	K 12186

OPERATION INSTRUCTIONS

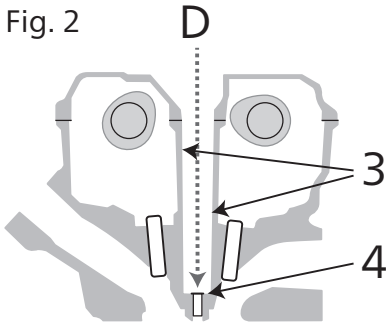
Before attempting to remove the existing injectors, thoroughly clean the area around each injector

Fig. 1



- 1 Extract the injector, then remove the copper sealing washer (1) from the base of the injector port. We recommend the use of a Diesel injector seal puller for this task, for example Kamasa Tools K 435.
- 2 The next step is to seal off the injector nozzle port (2) at the bottom of the main injector port, to stop any carbon or dirt entering the combustion chamber during the cleaning process.
- 3 Refer to components diagram above: lightly screw an injector nozzle port sealing plug (D) onto the insertion rod (C). The sealing plugs are sized to fit the majority of injector nozzle ports.

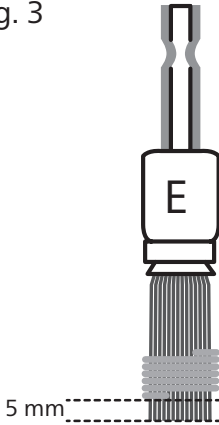
Fig. 2



- 4 Place the injector nozzle port sealing plug (D) into the nozzle port. Then turn the insertion rod (C) anticlockwise to remove it, leaving the sealing plug (D) in place.
- 5 Now choose an appropriately sized cleaning brush (B) and fit to the quick chuck flexible extension (F). When choosing the size of brush, be aware that some injectors port are tapered, getting narrower near the bottom. Then, mounting the assembly to a cordless electric drill, cleanout the sides of the injector port (area 3 in fig. 2).

- 6 Work carefully and ensure that all carbon and dirt deposits have been removed. Take care when using the cleaning brush so that the end does not get caught in the port sealing plug (D) or damage the injector port sealing surface.
- 7 Hold the sealing plug (D) in place with the installation rod (C) while vacuuming out the injector port.

Fig. 3



- 8 Fit an appropriately sized base cleaning brush (B) and fit to the quick chuck flexible extension (F). Push the steel coil mounted over the brush bristles (fig. 3) down to about 5mm from the end of the bristles.

The purpose of the steel is to keep the bristles tightly bunched and straight. As the bristles wear, continue to adjust the steel coil to keep it 5 mm from the end of the bristles.

- 9 Use the base cleaning brush (E) to clean out the base of the injector port (area 4, fig.2). Again, holding the sealing plug in place, vacuum out the injector port.
- 10 Insert the insertion rod (C) and screw it back into the nozzle port sealing plug (D), then withdraw.
- 11 The final step is to clean the injector nozzle port (area 2, fig.1). Apply a small amount of grease to the lower wire brush section of the injector nozzle port cleaner (A). Carefully insert the brush into the nozzle port and clean by turning the cleaner anticlockwise a few turns. Continue to turn as the cleaner is withdrawn. The grease will hold any dirt or carbon deposits and the anticlockwise turning motion bring these deposits upwards and away from the combustion chamber.
- 12 To finish, remember to fit a new copper sealing washer to the base of the injector port before fitting the new injector.



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