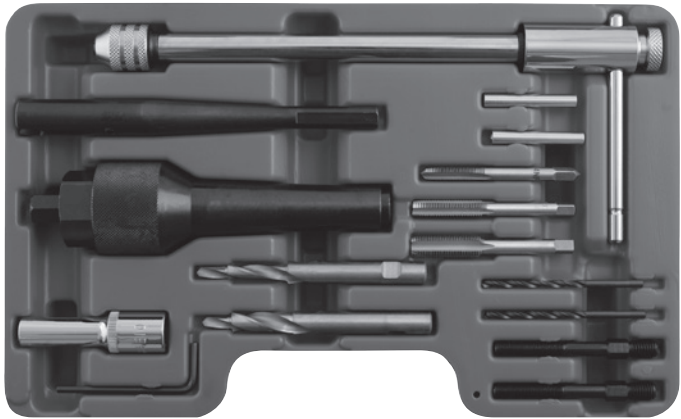




Glow plug  
removal set

K 12190



## **INTRODUCTION**

This tool set is developed for removing broken glow plugs from cylinder heads, specifically where they have sheared off just under the hex flush with the cylinder head. It is suitable for glow plugs with either a M8x1 or M10x1 thread. The comprehensive set includes all necessary adaptors, centering and thread cleaning tools to safely remove the damaged glow plug without damaging the cylinder head.

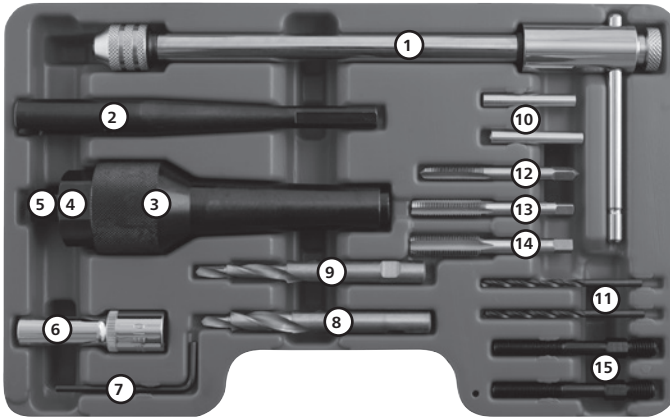
## **SAFETY AND PRECAUTION**

- Always refer to the vehicle manufacturer's documentation to establish the correct procedure for glow plug removal.
- Wear eye protection, particularly when cleaning any swarf away from the engine
- 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.
- **DO NOT** use air tools with this product.

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

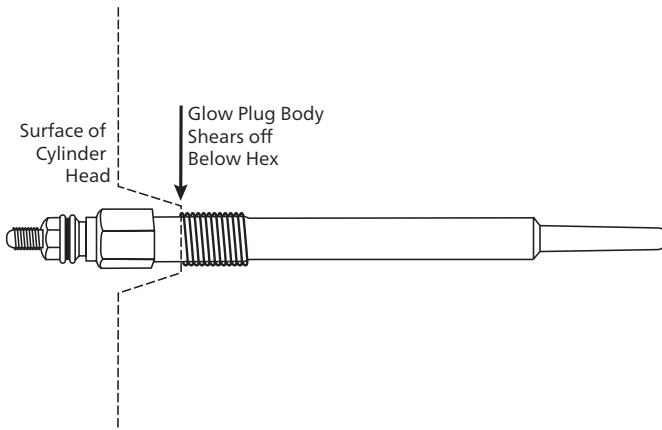


Pos	Description	Part No
1	Ratchet T-bar	
2	Drill holding adaptor	
3	Puller outer housing	
4	Force screw	
5	Force nut	
6	Top connection removal tool	K 12195
7	Hex key	
8	Step drill, M8	K 12194
9	Step drill, M10	K 12193
10	Drill centering sleeves	K 12191
11	Drills, 3.5 mm	K 10805
12	Tap 1/4"	K 12192
13	Tap M8x1	K 11414
14	Tap M10x1	K 12197
15	Puller adaptor mandrells	K 12196

## BEFORE STARTING

- We strongly recommend that the cylinder head is removed from the engine before work is commenced.
- If the cylinder head is not removed from the engine, remove the relevant injector and connect air line adapter to ensure that metal swarf and dust can not enter the combustion chamber.
- Keep well lubricated. Lubricate thread cutting taps with thick machine oil or grease

## OPERATING INSTRUCTIONS



- 1 Pushfit top connection removal tool (6) onto top of glow plug. It may need to be tapped on gently with a hammer.
- 2 Using a 3/8" ratchet wrench, turn clockwise to break the of the glow plug.

**Note:** When top portion of glow plug brakes, it may also shear off the inner glow plug electrode. If the inner electrode does not break, it can be withdrawn completely from the glow plug body. In this case, go strait to point 5.

- 3 Position centering sleeve (10) onto the remains of the glow plug, it may need to be tapped on.
- 4 Using the 3.5 mm drill bit (11), drill a pilot hole into the remains of the connector/ post electrode. Drill down at least 15 mm past the uppermost partof the glow plug body.

- 5 Fit either the M8 (8) or M10 (9) dual size stepped drill (depending on size of glow plug) to the drill bit holding adaptor (2). Secure the stepped drill bit into adaptor by tightening the grub screw with the hex key (7) provided, ensuring the grub screw acts on the flat on the shank of the stepped drill. Fit the drill holding adaptor to the chuck of the drill and drill out the remains of the connector post/ electrode and threaded portion of the glow plug body.

**Note:** The dual size step drill allows removal of remains of the connector post/ electrode while also removing the threaded portion of the glow plug body. Take care to keep the drill straight so that the threads in the cylinder head are not damaged. Drill down again at least 15 mm to remove all of the threaded portion.

- 6 Take either the M8 (13) or M10 (14) tap, depending on size of glow plug, and fit to ratchet T-bar (1). Clean out/ recut the threaded portion of cylinder head. Coat the tap in grease to lubricate and also contain the swarf produced.
- 7 Take the ¼" tap and fit to ratchet T-bar (1). Cut a thread in the remaining glow plug body
- 8 Again, coat the tap in grease to lubricate and also contain the swarf produced. Cut a full 15 mm of thread. The remains of the glow plug can now be removed.
- 9 Screw a puller adaptor mandrel (15) into the ¼" thread that has just been cut.
- 10 Screw on the force screw (4) to the puller adaptor mandrel.
- 11 Fit the puller outer hosing (3) over the force screw.
- 12 Screw on the force nut (5) with raised collar facing inwards.
- 13 Holding the force screw with a 12 mm spanner or socket, wind the force nut down with a 30 mm spanner. This action will draw out the remains of the glow plug body from the cylinder head.
- 14 Before fitting a new glow plug, thoroughly clean inside of the apparatus with a wire brush or similar. Ensure that all swarf, dirt and debris are removed from the apparatus, glow plug thread and combustion chamber before fitting new glow plug.







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