



DAMAGED GLOW PLUG & HEATER ELEMENT REMOVAL SET 8 & 10MM

MODEL NO: **VS3156**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to
instructions



Wear eye
protection

1. SAFETY

- ☐ **WARNING!** *Ensure Health and Safety, local authority and general workshop practice regulations are adhered to when using tools.*
- ☒ **DO NOT** use tools if damaged.
- ☒ Maintain tools in good and clean condition for best and safest performance.
- ☒ Wear approved eye protection. A full range of personal safety equipment is available from your Sealey stockist.
- ☒ Wear suitable clothing to avoid snagging. **DO NOT** wear jewellery and tie back long hair.
- ☒ **DO NOT** attempt to start engine or move vehicle whilst tools are fitted and work is in progress.
- ☒ Ensure any disconnected fuel pipes are plugged to avoid spillage.
- ☒ Account for all tools and parts being used, **DO NOT** leave them in or near the engine. Return all parts to the case and store this in a safe, dry, childproof location.
- ☐ **WARNING!** These instructions are provided as a guide only. Always refer to the vehicle manufacturer's service instructions, *or a* proprietary manual, to establish the current procedure and data.
- ☐ **WARNING!** The warnings referred to in this guide cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.

2. INTRODUCTION

A comprehensive kit crafted for the removal of broken or damaged glow plugs and heater elements, which are frequently susceptible to breaking during the glow plug extraction process. Saves time by negating the necessity of removing the cylinder head. Functions by drilling and tapping a thread into the broken element, allowing the supplied glow plug adaptors to be used for extraction. The set includes all essential adaptors for drilling, centring, and safely extracting the glow plug and heater elements, featuring M8 x 1mm and M10 x 1mm threads. Supplied in a storage case.

3. SPECIFICATION

Model No. VS3156

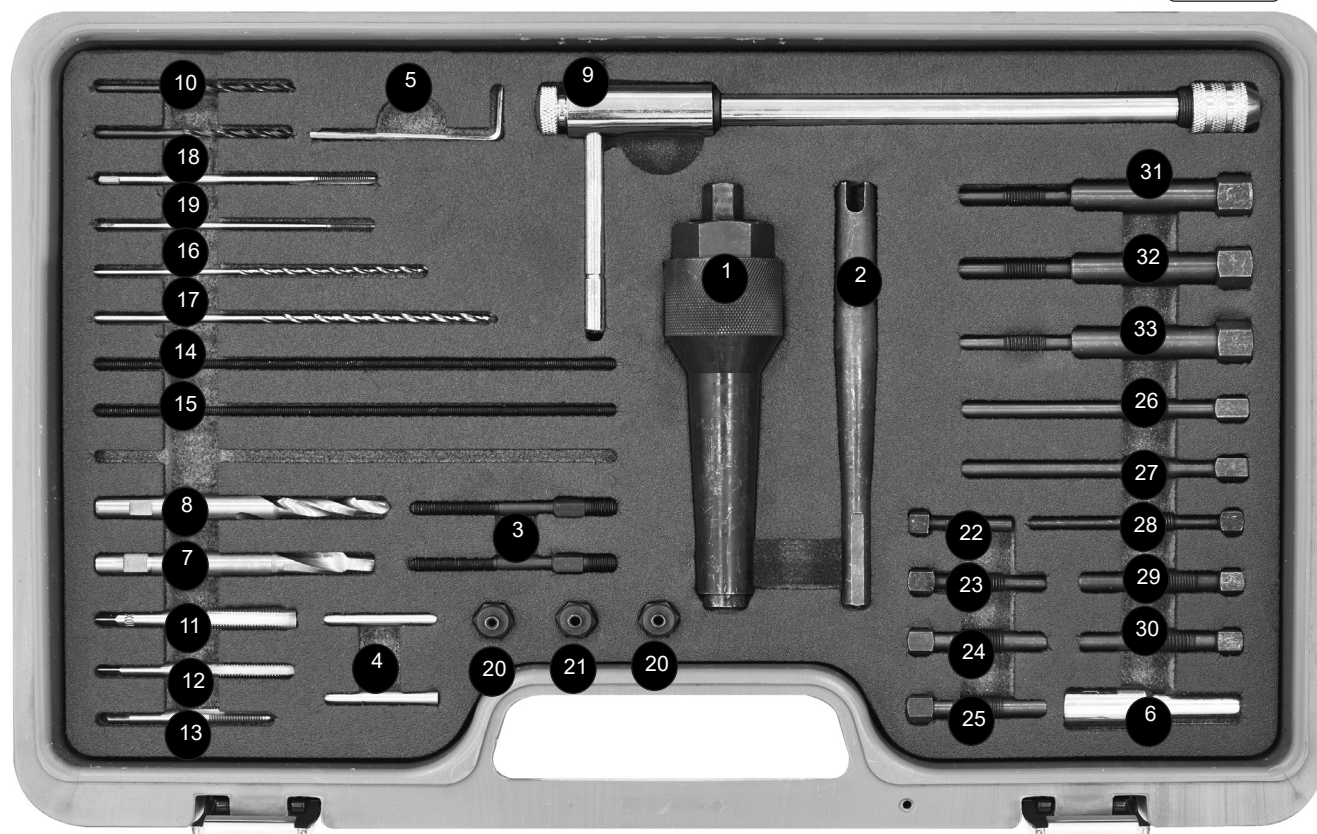
Contents

Drilling/Tapping Guides; M8 x 1, M10 x 1, M10 x 1.25mm, Extraction Adaptors; M8 x 1, M10 x 1, M10 x 1.25mm, Tap & Threaded Rod
Sizes; M3 x 0.5, M4 x 0.7mm, Drill Ø; 2.5, 3.3mm, Taps; 1/4NF28, M8 x 1, M10 x 1mm, Glow Plugs; M8 x 1, M10 x 1mm

Nett Weight: 3.65kg

4. CONTENTS

fig.1

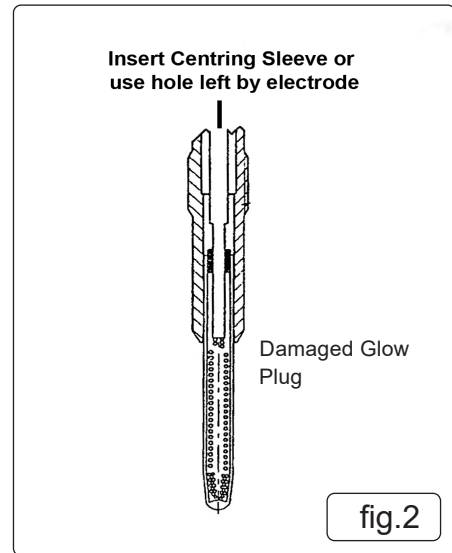
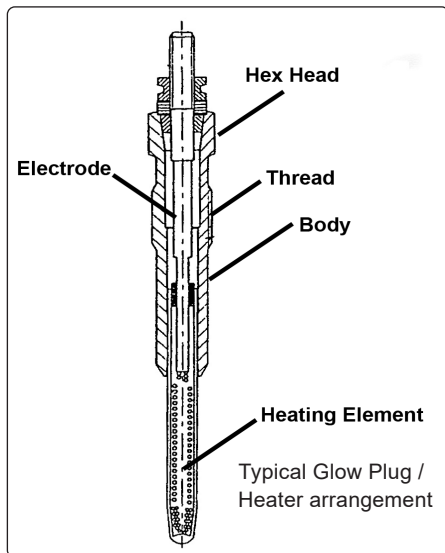


Item No.	Part No.	Qty	Description	Item No.	Part No.	Qty	Description
1	SX0408.V2-01	1.00	Puller housing	17	VS315-V2-04	1.00	Drill Bit 2.5x120
2	SX0408.V2-02	1.00	Drill holding adaptor	18	VS315-V2-05	1.00	Tap M4x0.7
3	SX0408.V2-03	1.00	Puller adaptor mandrels (2pcs/set)	19	VS315-V2-06	1.00	Tap M3x0.5
4	SX0408.V2-04	1.00	Pilot drill centring sleeves (2pcs/set)	20	VS315-V2-07	1.00	Extractor Nut M8x1.0
5	SX0408.V2-05	1.00	Hex Key, 3x55mm, Black, Standard	21	VS315-V2-08	1.00	Extraction Nut M10x1.0
6	SX0408.V2-06	1.00	Star socket (e10)	22	VS315-V2-09	1.00	Drilling Guide (Tap Shaft) M8x1.0
7	SX0408.V2-07	1.00	Drill bit (7mm/5.5mm)	23	VS315-V2-10	1.00	Drilling (Short Shaft) M8x1.0
8	SX0408.V2-08	1.00	Drill bit (9mm/5.5mm)	24	VS315-V2-11	1.00	Drilling Guide (Short Shaft) 10x1.25
9	SX0408.V2-09	1.00	Ratchet t-bar	25	VS315-V2-12	1.00	Drilling Guide (Short Shaft) M10x1.0
10	SX0408.V2-10	1.00	Pilot drills (2pcs/set)	26	VS315-V2-13	1.00	Drilling Guide (Long Shaft) M10x1.0
11	SX0408.V2-11	1.00	Tap (m10x1.0)	27	VS315-V2-14	1.00	Drilling Guide (Long Shaft) 10x1.25
12	SX0408.V2-12	1.00	Tap (m8x1.0)	28	VS315-V2-15	1.00	Drilling Guide (Long Shaft) M8x1.0
13	SX0408.V2-13	1.00	Tap (1/4"-28unf)	29	VS315-V2-16	1.00	Drilling Guide (Tap Shaft) M10x1.0
14	VS315-V2-01	1.00	Threaded Rod M3x0.5	30	VS315-V2-17	1.00	Drilling Guide (Tap Shaft) M10x1.25
15	VS315-V2-02	1.00	Threaded Rod M4x0.7	31	VS315-V2-18	1.00	Extraction Adaptor M8x1.0
16	VS315-V2-03	1.00	Drill Bit 3.3x140	32	VS315-V2-19	1.00	Extraction Adaptor M10x1.0
				33	VS315-V2-20	1.00	Extraction Adaptor M10x1.25

5. OPERATION

5.1. TYPICAL REMOVAL

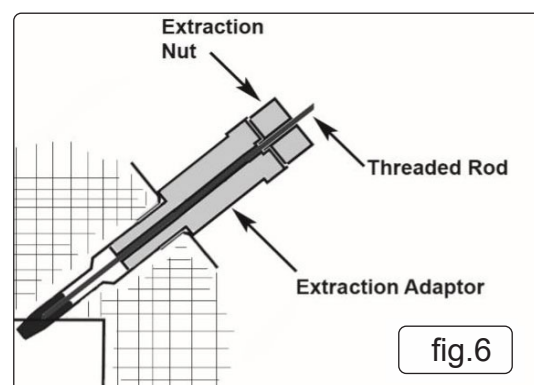
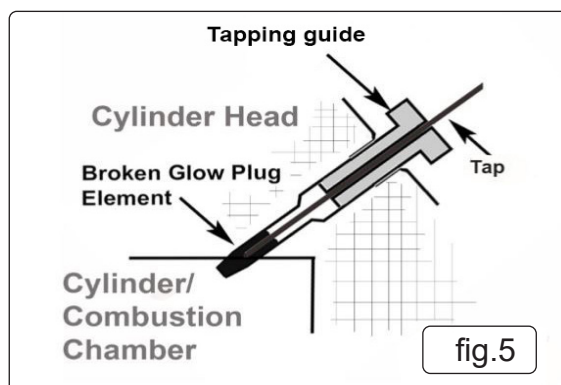
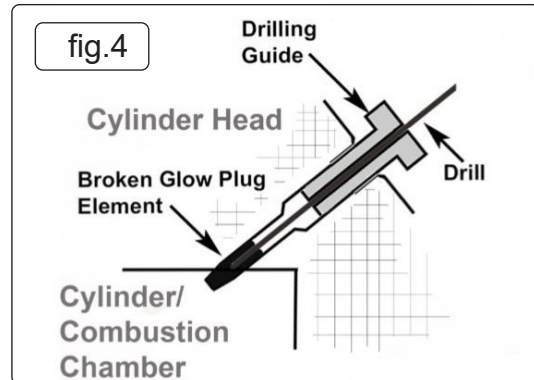
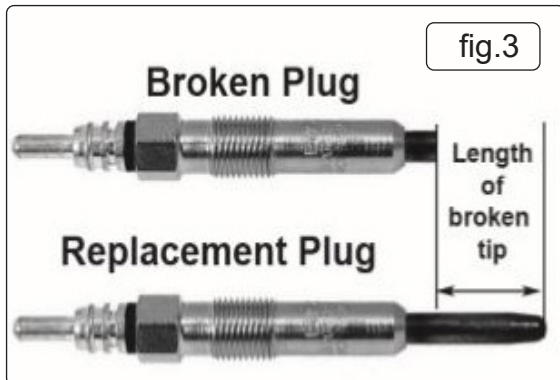
- 5.1.1. Remove the relevant injector and connect an air line via an appropriate adaptor to the aperture to ensure dirt and swarf do not enter the combustion chamber as the procedure is carried out. Wear eye protection.
- 5.1.2. Push fit Star Socket (6) onto the top of the glow plug; it may need to be tapped on lightly. Then, using a 3/8" ratchet, remove/break off the top part of the glow plug.
- 5.1.3. (See fig.2) Insert Centring Sleeve (4) into the recess in the top of the glow plug. Fit Pilot Drill (10) to an electric drill and insert pilot drill into centering sleeve, drill a pilot hole in the centre of the glow plug remains. Ensure that pilot drilling is at least 15mm deep. Clean away the swarf using an air line. **Note:** If the electrode can be withdrawn in one piece, the aperture created may be used as a pilot.
- 5.1.4. If this is the case, proceed to 5.4.
- 5.1.5. Fit either 7mm (7) or 9mm (8) Drill Bit into the Drill Holding Adaptor (2) and lock in place with the grub screw, using the hex key (5). Make sure that the grub screw bears on the flat, machined surface on the shank of the drill bit. Carefully drill out the centre of the glow plug and threaded portion of glow plug body. Take care not to damage the female threads in the cylinder head.



- 5.1.6. Fit the $\frac{1}{4}$ " tap provided into the ratchet T-bar. Cut a thread with this in the remains of the glow plug body, cutting at least 15mm of thread.
- 5.1.7. Screw a Puller Adaptor Mandrel (3) into the thread that has just been cut into the glow plug. Remove the nut from the force screw in the Puller Housing (1) and thread the force screw onto the mandrel. Slide the outer sleeve of the puller housing over the force screw.
- 5.1.8. Re-fit the nut to the force screw with the collar facing the outer sleeve. Hold the head of the force screw with a 12mm wrench or socket and wind the nut down using a 30mm wrench. This will draw the remaining lower part of the glow plug free from the cylinder head.
- 5.1.9. Fit either M8 (12) or M10 (11) Tap into Ratchet T-Bar (9). Run the tap down to clean/restore the threads in the cylinder head. Application of grease to the tap will both lubricate and help contain the swarf.
- 5.1.10. Clean thoroughly the thread and surrounding area and make sure that the combustion chamber (if head is in-situ) is free from debris before fitting a replacement glow plug.
- 5.1.11. Ensure all tools are removed from the engine bay and returned to the tool tray, and store this in a safe, dry, childproof location.

5.2. REMOVAL OF DAMAGED PLUG

- 5.2.1. With reference to the replacement glow plug, find the matching drilling guide and screw into the glow plug port. Determine the length of the broken portion as in fig.3.
- 5.2.2. Place the appropriate drill (2.5mm for M8, 3.3mm for M10) in a drill and, using the appropriate sized drill guide (fig.4), drill into the broken glow plug element to a depth of approximately 10mm if the broken stub is long enough.



- 5.2.3. Select the appropriate tap and cut a thread into the broken glow plug element ensuring the tap is turned back frequently to clear swarf away from the cutter (fig.5). Ensure a good quality cutting fluid such as Sealey SCSCF400 is used when cutting the thread.
- 5.2.4. Once a thread has been formed into the broken glow plug element, remove the tap and tap guide.
- 5.2.5. Screw in the appropriate extraction adaptor.
- 5.2.6. Select the appropriate threaded rod and screw into the broken glow plug element.
- 5.2.7. Run the correct extractor nut down the threaded rod until it makes contact with the extraction adaptor
- 5.2.8. Turn the extractor nut gently with a spanner until the broken portion comes free. (fig.6).
- 5.2.9. Unscrew the extraction adaptor carefully and remove it, along with the threaded rod and glow plug element.
- 5.2.10. As the glow plug element reaches the top of the port, brush or blow away any swarf to reduce the risk of debris entering the aperture.
- 5.2.11. Examine glow plug element and aperture to ensure that no debris is in the glow plug port before fitting the replacement glow plug.

6. MAINTENANCE

- 6.1. Clean each element after use. Remove any swarf, grease or oily residue using a lightly oiled clean rag,
- 6.2. Replace each element into its relevant location within the case.
- 6.3. Store the case in a suitable, dry and clean environment.

7. END OF LIFE

- 7.1. Dispose of any and all elements and case in accordance with ;local, regional and national requirements and legislation.



ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



REGISTER YOUR
PURCHASE HERE

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

Important: No Liability is accepted for incorrect use of this product.

Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Jack Sealey Ltd t/a Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk, IP32 7AR UK
Jack Sealey (EU) Ltd t/a Sealey Group, Farney Street, Carrickmacross, Co. Monaghan, A81 PK68 Ireland
Tel: 01284 757500 • **Email:** sales@sealey.co.uk • **Web:** www.sealey.co.uk