

Instructions for:

VARIATOR WRENCH - VARIABLE CAMSHAFT/VALVE TIMING UNIT - ALFA ROMEO & FIAT

Model No: **VS4774**

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 AND 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. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**



## 2. INTRODUCTION & APPLICATIONS

### 2.1 Introduction

On many of the Alfa Romeo and Fiat Twin Camshaft engines, a timing 'variator' unit is fitted to the end of the INLET camshaft and is operated by oil pressure.

The 'variator' makes it possible to alter the timing of the inlet valves depending on the engine load conditions. The 'variator' alters the angular position of the camshaft in relation to the sprocket. If faulty or worn and noisy the 'variator' unit must be removed and replaced as a unit. It cannot be repaired. VS4774 Wrench is required to both remove and install the unit.

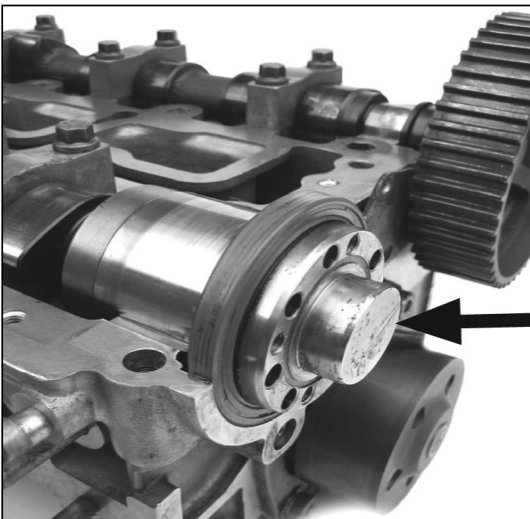
### 2.2 Applications

ALFA ROMEO & FIAT Twin Camshaft engines - removal and installation of the variable valve control unit ('Variator')

## 1. SAFETY INSTRUCTIONS

- 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.
- ✓ Ensure that a vehicle which has been jacked up is adequately supported with axle stands.
- ✓ Wear approved eye protection. A full range of personal safety equipment is available from your Sealey dealer.
- ✓ Wear suitable clothing to avoid snagging. Do not wear jewellery and tie back long hair.
- ✓ Account for all tools, locking bolts, pins and parts being used and do not leave them in or near the engine.
- WARNING!** Incorrect or out of phase camshaft timing can result in contact between valve head and piston crown causing damage to the engine.

**IMPORTANT:** 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.



## 3. INSTRUCTIONS

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The camshaft sprocket is removed, and then the camshaft is removed from the cylinder head, to allow removal of the old 'variator' unit and the fitting of a new unit.

**When removing the camshaft:-** remember to identify/mark each bearing cap so they can be refitted in the correct positions. Release each of the bearing cap bolts gradually, undoing each bolt in sequence, 1/2 a turn at a time to release the camshaft evenly over its length.

**WARNING: If the caps are removed fully, one at a time, the force from the valve springs will lift one end of the camshaft and damage the bearing cap at the other end.**

Fit the camshaft in a vice (with soft protective jaws), and locate the two pegs of the VS4774 Wrench into the non-threaded holes in the 'variator' and secure the wrench in place on the 'variator', with 2 x bolts screwed fully in to the threaded holes.

**IMPORTANT:** Securing the VS4774 with the 2 x bolts avoids any danger of the Wrench slipping when removing what can often be a very tight component, which has been Loctited in place.

When fitting a new 'variator' to the camshaft apply Loctite to the threads, taking care not to get any in the oil channel. Ensure the Loctite has fully cured before refitting the camshaft in the cylinder head.



**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 will be required for any claim.

**INFORMATION:** For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.