

1. TITLE PAGE

1.1 INTRODUCTION:

USER GUIDE FOR: Engine Timing Kit

Stock No: 27100

Part No: ETK284

1.2 REVISIONS:

Date first published June 2018.

As our user manuals are continually updated, users should make sure that they use the very latest version.

Downloads are available from: <http://drapertools.com>

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1.3 UNDERSTANDING THIS GUIDES SAFETY CONTENT:

WARNING! – Information that draws attention to the risk of injury or death.

CAUTION! – Information that draws attention to the risk of damage to the product or surroundings.

1.4 COPYRIGHT © NOTICE:

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3. GUARANTEE

3.1 GUARANTEE

Draper tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, please return the complete tool to your nearest distributor or contact:

Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England.

Telephone Sales Desk: (023) 8049 4333 or:

Product Helpline (023) 8049 4344.

A proof of purchase must be provided.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee period covering parts/labour is 12 months from the date of purchase except where tools are hired out when the guarantee period is 90 days from the date of purchase. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

Note: If the tool is found not to be within the terms of warranty, repairs and carriage charges will be quoted and made accordingly.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the guarantee period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

Draper Tools Limited.

4. GENERAL PRODUCT INFORMATION

This product is designed to be used correctly and with care for the purpose for which it is intended. No liability is accepted by Draper Tools Limited for incorrect use or application of any of our products, and Draper Tools Limited cannot be held responsible for any damage to personnel, property or equipment when using this product. Incorrect use will also invalidate any warranty.

The applications database and any instructional information provided has been designed to offer general guidance for a particular product'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 product and information prior to use.

5. HEALTH AND SAFETY INFORMATION

GENERAL SAFETY INSTRUCTIONS

Warning: Please read all safety warnings and all details carefully. Failure to follow the warnings may result in serious injury or major component damage.

Important: Draper Tools recommends that this product should not be modified or used for any application other than that for which it was designed.

Save all warnings and instructions for future reference.

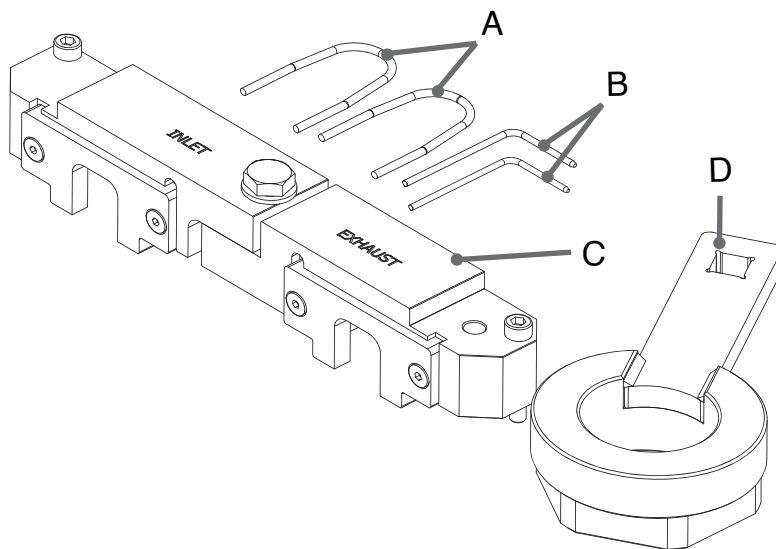
1) Personal safety

- a) Stay alert, watch what you are doing and use common sense when using this product. Do not use this product while you are tired or under the influence of drugs, alcohol or any medication. A moment of inattention while using this product may result in serious personal injury.
- b) Use personal protective equipment as necessary.
- c) Check and remove any part of the product before turning/testing the engine. A part left attached to a rotating part of the engine may result in personal injury or major component damage.
- d) Carefully clean the tool components after every use.
- f) Keep the tool components safe and tidy.
- g) Do not use this product for any purpose other than for which it is designed.

Warning! Some of the packaging materials used may be harmful to children. Do not leave any of these materials in the reach of children.

If any of the packaging is to be thrown away, make sure it is disposed of correctly; according to local regulations.

6. CONTENTS



ITEM	DESCRIPTION	OEM	STOCK No.
A	2x Balance Shaft Sprocket Holding Tool	EN-51153	35758
B	2x Tensioner Locking Pins	EN-50513	35760
C	Camshaft Holding / Alignment Tool	EN-51148	35762
D	Crankshaft Counter Holding Tool	EN-51147	35763

7. APPLICATION

The **27100** has been developed as an **engine timing kit** for the vehicles listed below. Allows the user to lock the engine in the 'timed' position for the removal or replacement of the timing chain. Includes the added component of the camshaft sprocket support bracket, required when removing the camshaft.

Used on the following Vehicles:

Vauxhall/Opel Astra-J 2013 - 2015 SIDI Turbo

Vauxhall/Opel Cascada 2013 - 2015 SIDI Turbo ecoFLEX

Vauxhall/Opel Insignia 2013 - 2016 Turbo SIDI

Vauxhall/Opel Insignia Country Tourer 2014 - 2016

Vauxhall/Opel Zafira-C Tourer 2013 - 2016

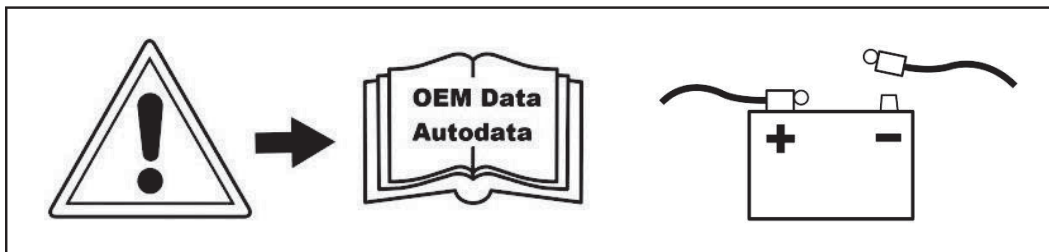
Engine Codes:

1.6cc

LVP/A16XHT, LWC/A16SHT, LVP/B16XHT, LWC/B16SHL, LWC/B16SHT

8. PREPARATION

The following is for guidance only. Please refer to OEM derived data such as the vehicle manufacturer's own data or Autodata. The use of this product is purely down to the user's discretion and Draper Tools Limited cannot be held responsible for any damage caused what so ever.



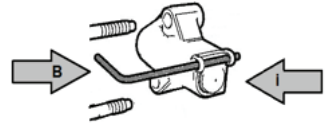
9. PROCEDURE AND APPLICATION GUIDE

Depending on manufacture and model, some engine components do change. Please check with Autodata or the manufacturer's data before use.

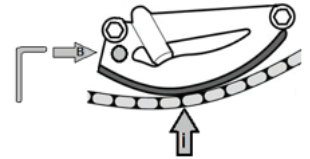
A. Balance shaft sprocket locking x2

The balance shaft sprockets and chain are located at the rear of the engines. To gain access the flywheel must be removed.

- Engine at TDC number 1 cylinder.
- Camshaft locking tools (C) fitted in place to lock the camshafts.
- Ensure balance shaft timing marks align.
- Fit Balance shaft holding tools as described by Manufacturer instructions to secure the timing position.



Balance shaft tensioner



B. Valve Timing Chain

Tensioner pins x 2

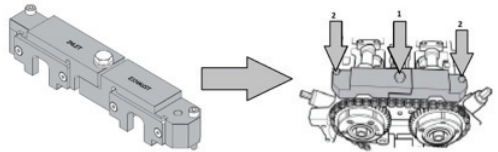
Component (B) is used to lock and hold the timing chain and balance shaft chain tensioners in their fully retracted position.

- Push tensioner fully in (i)
- Insert locking pin (ii)

Camshaft Holding & Alignment Tools

Component (C) is made up of two camshaft locking tools that are designed to bolt together on the engine to lock the camshafts.

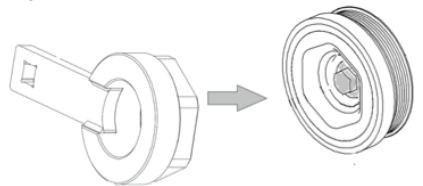
- Set engine to TDC number 1 cylinder.
- Ensure timing marks on crankshaft sprocket and camshaft sprockets align (See manufacturer data).
- Fit Camshaft Locking tool (C) as shown.
- Tighten the holding bolts in the order shown to hand tight only.



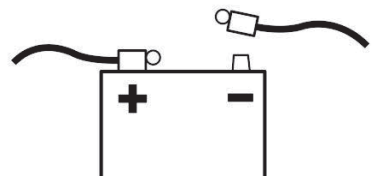
C. Crankshaft Pulley Holding Tool

Component (D) is used to hold the crankshaft front pulley while loosening or torquing the pulley fixing bolt. See manufacturer data for tightening torque.

Use a 1/2" breaker bar or similar to hold (D).



Please note images are for guidance only and subject to change.



10. EXPLANATION OF SYMBOLS

10.1 EXPLANATION OF SYMBOLS



Read the guide.



Refer to website.

CONTACTS

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E-mail: sales@drapertools.com

General Enquiries: (023) 8026 6355

Service/Warranty Repair Agent:

For aftersales servicing or warranty repairs, please contact the
Draper Tools Helpline for details of an agent in your local area.

YOUR DRAPER STOCKIST

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