



# APPLICATION GUIDE FOR: ENGINE **TIMING KIT**

27229



This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all information before operating product.

This guide has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains necessary information to ensure its correct and safe use. By following the information contained in this guide, it will ensure both product and operator safety, together with longer life of the product itself.

All photographs and drawings in this guide are supplied by Draper Tools to help illustrate the operation of the product.

Whilst every effort has been made to ensure the accuracy of information contained in this guide, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

# 1. TITLE PAGE

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## 1.1 INTRODUCTION:

**USER GUIDE FOR: Engine Timing Kit**

**Stock No: 27229**

**Part No: ETK134**

## 1.2 REVISIONS:

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**Date first published June 2018.**

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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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In all cases this copyright notice must remain intact.

## 2. CONTENTS

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<b>1. TITLE PAGE</b>	
1.1 INTRODUCTION .....	2
1.2 REVISION HISTORY .....	2
1.3 UNDERSTANDING THIS GUIDE.....	2
1.4 COPYRIGHT NOTICE .....	2
<b>2. CONTENTS</b>	
2.1 CONTENTS .....	3
<b>3. GUARANTEE</b>	
3.1 GUARANTEE .....	4
<b>4. GENERAL PRODUCT INFORMATION</b>	
4.1 GENERAL PRODUCT INFORMATION .....	5
<b>5. HEALTH AND SAFETY INFORMATION</b>	
5.1 GENERAL SAFETY INSTRUCTIONS FOR USE	
<b>Personal safety</b> .....	6
<b>6. CONTENTS</b>	
6.1 PARTS DRAWING AND LISTING .....	7
<b>7. APPLICATION</b>	
7.1 PRODUCT APPLICATION AND COMPATIBILITY LISTING .....	8
<b>8. PREPARATION</b>	
8.1 ADVISORIES BEFORE USE .....	9
<b>9. PROCEDURE AND APPLICATION GUIDE</b>	
9.1 APPLICATION GUIDANCE .....	10
<b>10. EXPLANATION OF SYMBOLS</b>	
10.1 EXPLANATION OF SYMBOLS .....	11

## 3. GUARANTEE

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### 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

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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

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### 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.**

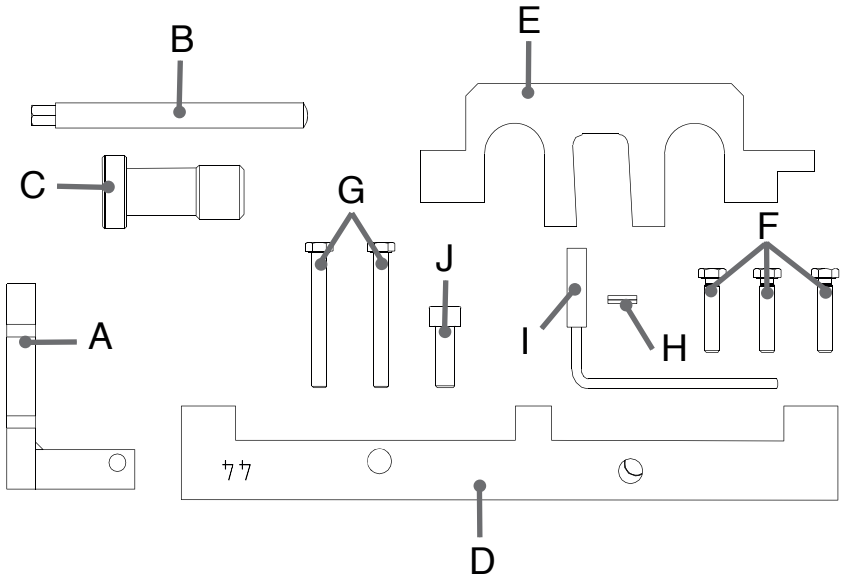
#### 1) Personal safety

- 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	Crank Holding Tool	83 96 210 KM- J-38122-A	35788
B	Inlet Camshaft Alignment Block	83 96 046 KM-6362-1	35789
C	Exhaust Camshaft Alignment Block	83 96 079 KM-6362-2	35790
D	Tensioner Pin	83 96 392 KM-6077	35791

## 7. APPLICATION

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The **27229** has been developed as an **engine timing kit** for the vehicles listed below. Allows the user to lock camshafts and the crankshaft in the 'timed' position so the timing chain or timing belt can be removed and replaced safely.

### **Used on the following Vehicles:**

**BMW 1 Series 2004 - 2009**

**BMW 3 Series 2002 - 2007**

**BMW 3 Series 2005 - 2010**

### **Engine Codes:**

**1.6cc**

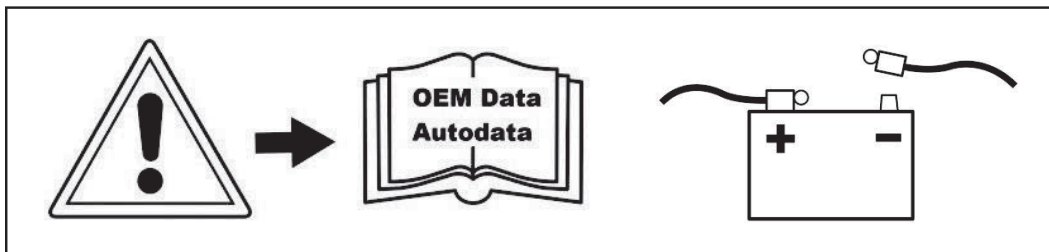
**N45 B16A, N45T B16AC, N40 B16A**



## 8. PREPARATION

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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.

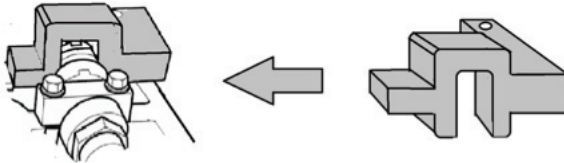


## 9. PROCEDURE AND APPLICATION GUIDE

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

### Components 1 = CAMSHAFT LOCKING TOOL - INLET

Used to lock the inlet camshaft in its timed position. With the engine set at TDC N0.1, fit at the end of the Camshaft opposite the Cam Chain sprockets. When correctly fitted with the inlet cam correctly timed component should sit squarely on the cylinder head top face.

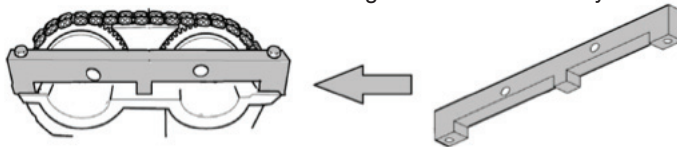


### Components 2 & 3 = CHAIN TENSIONER PRE-LOAD TOOL

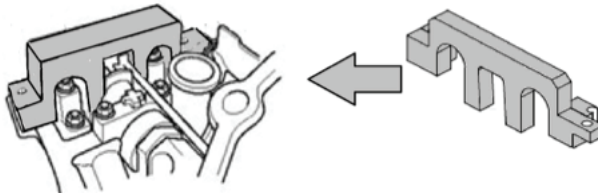
Component 2 & 3 are provided to allow the user to release the tension on the camshaft chain tensioner which is particularly required when removing or replacing the Cam chain, or setting/removing/replacing the VANOS units(s)

### Component 4 = VANOS SENSOR ALIGNMENT TOOL

Component 4 is designed to allow the user to set the start position of the VANOS units on the camshafts to ensure the Variable Valve Timing will function correctly.

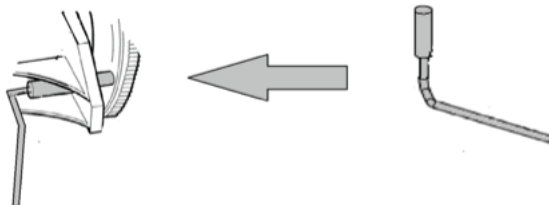


Component 5 locates on the exhaust Cam. When correctly fitted and the exhaust cam correctly timed component should sit squarely on the cylinder head with less than 1mm gap between component 5 and the cylinder head. Component 5 also holds down component 1.

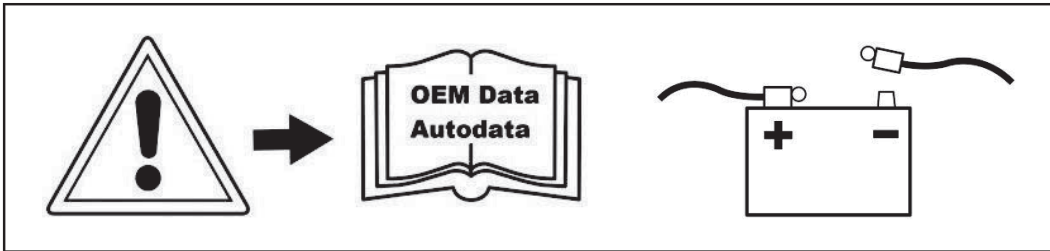


### Components 7 = FLYWHEEL LOCKING PIN

Component 7 is used to lock the crankshaft in its timed position (No1 at TDC). 7 locates through the engine block into the flywheel just below the starter motor.



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



## 10. EXPLANATION OF SYMBOLS

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### 10.1 EXPLANATION OF SYMBOLS



Read the guide.



Refer to website.

# CONTACTS

Draper Tools Limited, Hursley Road,  
Chandler's Ford, Eastleigh, Hampshire. SO53 1YF. U.K.

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E-mail: [sales@drapertools.com](mailto: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

CMDB0618

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