



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

16245



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: Common Rail Engine Timing Kit**

**Stock No: 16245**

**Part No: ETK140**

## 1.2 REVISIONS:

**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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## 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

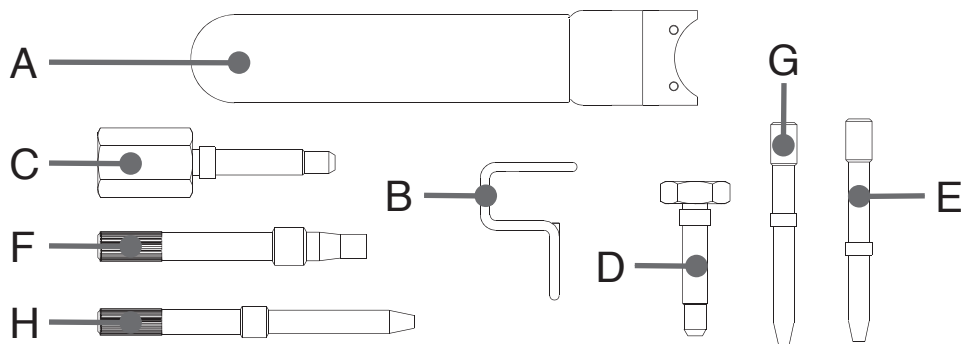
- a) Stay alert, watch what you are doing and use common sense when using this product. Do not use this product while you are tired or under the influence of drugs, alcohol or any medication. A moment of inattention while using this product may result in serious personal injury.
- b) Use personal protective 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

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ITEM	DESCRIPTION	OEM	STOCK No.
A	Tensioner Pulley Adjusting Tool	VM.9660	23920
B	Timing Belt Retaining Tool	VM.1074	23917
C	Inlet Camshaft Locking Pin	VM.1052	23912
D	Exhaust Camshaft Locking Pin	VM.1053	23913
E	Flywheel Locking Pin	VM.8873	23811
F	90° ATDC Pin	VM.1068	23919
G	Flywheel Locking Pin	VM.1080	23911
H	Flywheel Locking Pin	VM.1089	23918

## 7. APPLICATION

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The **16245** has been developed as a **common rail engine timing kit** for the vehicles listed below. Designed to allow the user to lock camshafts in the 'timed' position so the drive chain can be removed and replaced safely.

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

**Chrysler Grand Voyager 2001 - 2008**

**Chrysler Voyager 2001 - 2008**

**LDV Maxus 2005 - 2009**

**Jeep Cherokee 2001 - 2008**

### **Engine Codes:**

**2.5cc**

**R2516C, R2516K, R2516L VM39/40B, R2516L7 VM57/58C**

**2.8cc**

**R2816C5.05A, R2816K4**



## 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.

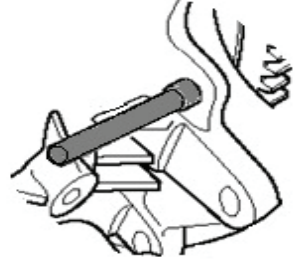
## Preparation

The valve timing on these engines is at 90 degrees after top dead centre on number one cylinder. Remove the following components:

1. right hand engine mount
2. auxiliary drive belts, tensioners and PAS pulley
3. alternator and mounting
4. starter motor

## Components E & F & G & H

Crankshaft Locking Pins – select pin according to fitment. The aperture for the fitment of the crankshaft locking pin is located behind the starter motor. Turn the engine by hand till number one piston is a 90 degrees after TDC and ensure the pin is fully inserted into the back of the flywheel/drive plate.

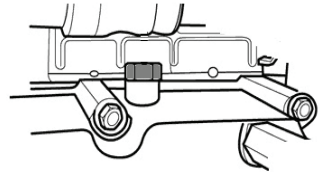


## Component D

Exhaust camshaft locking tool – this tool fits in place of the blanking plug on the rear of the cam cover. *When slackening the Camshaft pulley fixings please ensure an adequate pulley holding tool is used. The Camshaft holding pins are designed to hold the camshafts in their timed position and not withstand the torque of slackening/tightening the pulley fixings.*

## Component C

Inlet camshaft locking pin – this tool fits into the front face of the cam cover just behind the cam belt area, below the oil filler neck. Remove the blanking plug from the cam cover to allow fitment of component 1. ensure the engine is set at 90 degrees after top dead centre and component 4/5 is already in position



## Component B

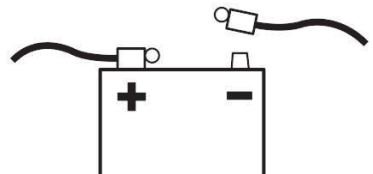
Cam belt Holding Tool – the cam belt holding tool is designed to hold the new belt in place on the crankshaft whilst fitting the belt onto the other pulleys. Due to the number of pulleys that the belt must go round if component B is not used the belt may fall off the crank pulley before the technician can get the belt fully into position. Fits on to the crankshaft pulley flange using one of the pulley bolts and holds the belt against the bottom of the crankshaft cam belt pulley.

## Component A

Belt Tensioner wrench – designed to allow the technician to lever the tensioner back for belt removal and pre-load the tensioner for belt set-up.

*Note: The manufacturer does not provide a High Pressure pump locking facility. The high pressure fuel pump pulley is aligned by lining up the marks on the pulley and back cover. If there are no marks visible it is permissible to mark the pulley and back cover with paint. This should be done prior to belt removal.*

**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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Internet: [drapertools.com](http://drapertools.com)

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.

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