



# APPLICATION GUIDE FOR: BALANCE SHAFT SETTING & **LOCKING KIT**

18090



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: Balance Shaft Setting & Locking Kit**

**Stock No: 18090**

**Part No: ETK182**

## 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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## 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

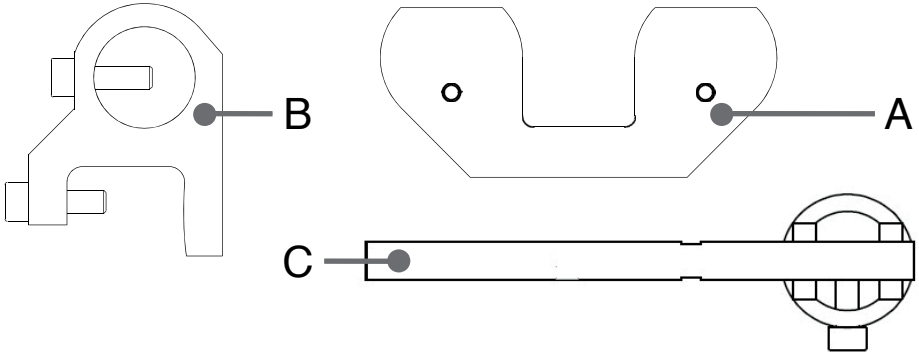
- a) Stay alert, watch what you are doing and use common sense when using this product. Do not use this product while you are tired or under the influence of drugs, alcohol or any medication. A moment of inattention while using this product may result in serious personal injury.
- b) Use personal protective 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	Balancer Shaft Alignment Tool	303-1328 /0190-D	31541
B	Balancer Shaft Locking Tool	303-1329	31559
C	Backlash Lever	303-1330	31667

## 7. APPLICATION

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The **18090** has been developed as a **balance shaft setting and locking kit** for the vehicles listed below. Comprehensive kit for locking and backlash testing of the balance shaft units fitted to the Ford, JLR, PSA group and Mitsubishi 2.2 diesel engines.

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

**Mitsubishi Outlander 2007 - 2013 DI-DC**

**Land Rover Discovery Sport 2015 - 2016 eD4**

**Land Rover Freelander 2 2006 - 2015 SD4**

**Land Rover Range Rover Evoque 2011 - 2015 TD4**

**Peugeot 4007 2007 - 2012 HDi**

**Peugeot 406 2000 - 2006 GT HDi**

**Peugeot 407 2005 - 2011**

**Peugeot 508 2011 - 2015**

**Peugeot 607 2000 - 2009**

**Peugeot 807 2002 - 2010**

**Ford Galaxy 2008 - 2015 TD4e**

**Ford Mondeo 2008 - 2015 TDCi**

**Ford S-MAX 2008 - 2015 DI-D**

**Citroen C5 2000 - 2015**

**Citroen C6 2006 - 2011**

**Citroen C8 2002 - 2010**

**Citroen C-Crosser 2007 - 2012**

### **Engine Codes:**

**2.2cc**

**224DT, DW12CTED4/224DT, DW12BTED4/224DT, KNWA, Q4BA, Q4WA, KNBA, KNBB, 4HK, 4HN, DW12MTED4 (4HK), DW12MTED4 (4HN), DW12ATED (4HX), DW12ATED (4HZ), DW12BTED4 (4HP), DW12BTED4 (4HR), DW12BTED4 (4HS), DW12BTED4 (4HT), DW12CTED4 (4HL), DW12TED4/L4 (4HW), 4HX (DW12TED4), 4HP (DW12BTED4), 4HR (DW12BTED4), 4HS (DW12BTED4), 4HT (DW12BTED4), 4HL (DW12CTED4), 4HR (DW12BTED4), 4HW (DW12TED4/L4), 4HK (DW12MTED4), 4HN (DW12MTED4)**



## 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.



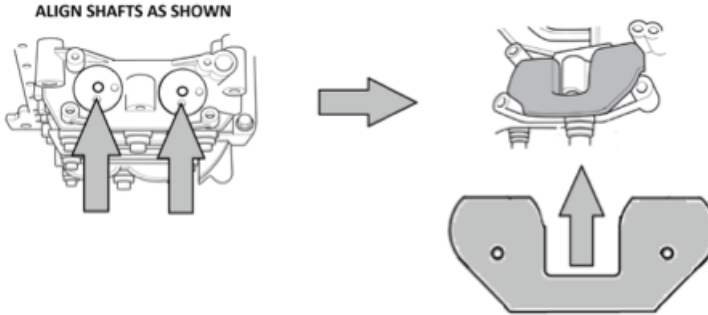
## 9. PROCEDURE AND APPLICATION GUIDE

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

**Initial alignment: align the crankshaft and cam shafts using appropriate alignment tools.**

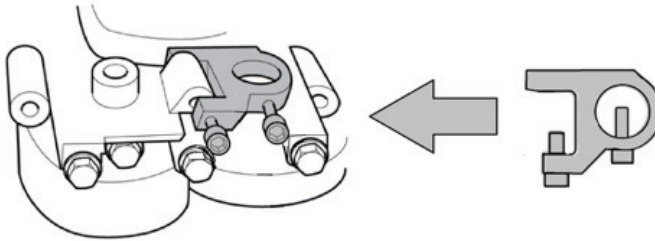
### **Component A BALANCE SHAFT ALIGNMENT TOOL**

Component A is used to align the balance shafts. After aligning the shafts as shown fit A as shown.



### **Component B BALANCE SHAFT LOCKING TOOL**

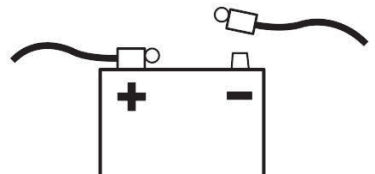
Component B is used to lock the balance shafts. Install as shown.



### **Component C BACKLASH LEVER**

Component C is used to measure the backlash in the balance shaft drive train.

**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,  
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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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