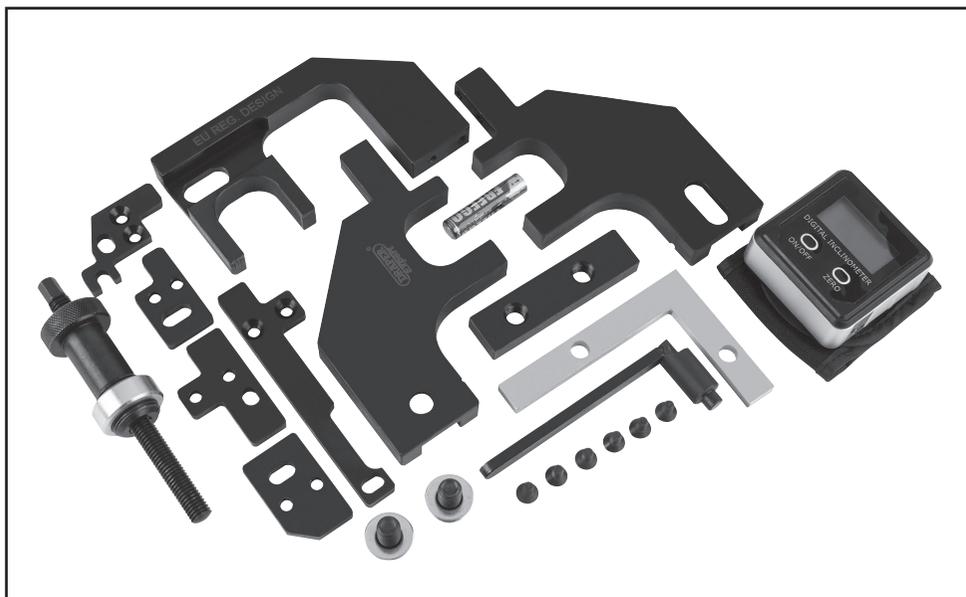




APPLICATION GUIDE FOR: ENGINE **TIMING KIT**

16240



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

1.1 INTRODUCTION:

USER GUIDE FOR: Engine Timing Kit

Stock No: 16240

Part No: ETK133

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.

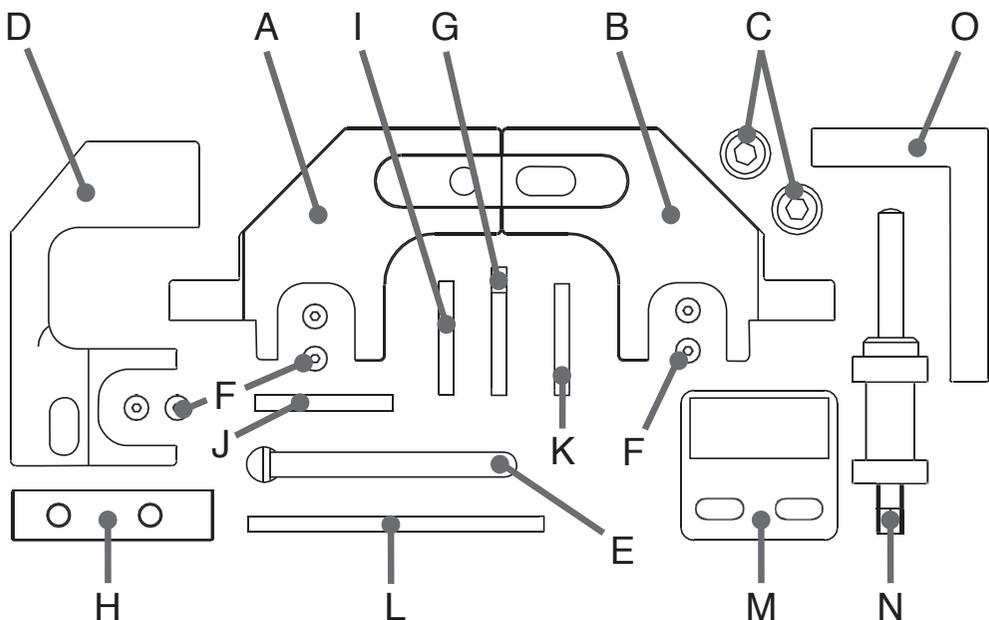
1) Personal safety

- 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	Exhaust Camshaft Alignment Tool	BMW 11 7 440/11 9 551/11 9 540 PSA 0197-A1/A11/A1Z	23795
B	Inlet Camshaft Alignment Tool	BMW 11 9 551 PSA 0197-A2	23796
C	M10 Screw	N/A	23797
D	Inlet Camshaft Alignment Tool	BMW 11 7 440/11 9 551 PSA 0197-A3/A31	23798
E	Flywheel Timing Pin	PSA 0197-BZ	23799
F	6x M5 Screws	N/A	23800
G	Exhaust Camshaft Alignment Tool Adaptor 2	BMW 11 9 540 PSA 0197-A1/A1Z	23801
H	Link Bar For Item A & B	N/A	23802
I	Inlet Camshaft Alignment Tool Adaptor 1	PSA 0197-A2	23804
J	Inlet Camshaft Alignment Tool Adaptor 4	BMW 11 7 440/11 9 551 PSA 0197-A31	23805
K	Exhaust Camshaft Alignment Tool Adaptor 3	BMW 11 7 440/11 9 551 PSA 0197-A11	23806
L	Inlet Camshaft Alignment Tool Adaptor 5	BMW 11 9 540 PSA 0197-A3	23807
M	Digital Inclinometer	PSA G-1376-A	23808
N	Dummy Timing Chain Tensioner	BMW 11 9 340 PSA 0197-M	23809
O	Angle Bracket	PSA E1.100	23810

7. APPLICATION

The **16240** has been developed as an **engine timing kit** for the vehicles listed below. All the necessary components for setting the engine in the 'timed' position to allow the removal and replacement of the timing chain.

Used on the following Vehicles:

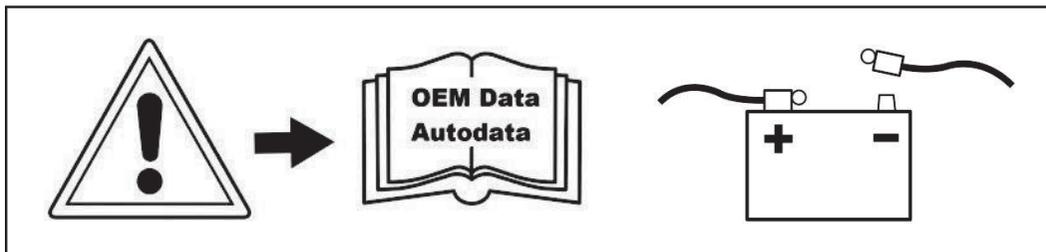
BMW 3 Series 2012 - 2015
BMW 1 Series 2011 – 2016
Citroen C3 III 2010 - 2015
Citroen C3 Picasso 2009 - 2015
Citroen C4 II 2011 - 2015
Citroen C4 2008 - 2011
Citroen C4 Picasso/Grand Picasso 2008 - 2015
Citroen C5 III 2009 - 2015
Citroen DS3/DS3 Cabrio 2009 - 2014
Citroen DS4 2012 - 2015
Citroen DS5 2014 - 2015
Citroen Berlingo III 2009 - 2016
Citroen DS3/DS3 Cabrio 2010 – 2015
Mini Clubman 2007 - 2014 320i EfficientDynamics
Mini Countryman 2010 - 2016 114i
Mini Coupe 2011 - 2015 116i
Mini Mini 2010 - 2015 118i
Mini Paceman 2013 - 2016 120i
Mini Roadster 2012 - 2015 316i
Peugeot RCZ 2010 - 2016 GT THP
Peugeot 207 CC 2007 - 2015 GT THP 175
Peugeot 207 2006 - 2013 THP 156
Peugeot 2008 2013 - 2016 THP 163
Peugeot 208 2012 - 2016 THP 140
Peugeot 3008 2009 - 2016 THP 150
Peugeot 308 2007 - 2016 GTi THP
Peugeot 308 CC 2009 - 2015 VTI/S16
Peugeot 508 2011 - 2016 Cooper S
Peugeot 5008 2009 - 2016 JCW
Peugeot Partner III 2009 - 2016 Cooper

Engine Codes:

1.4cc
8FP (EP3C), 8FR (EP3C), 8FS (EP3), 8FN (EP3C), EP3 (8FS), EP3C (8FP), EP3C (8FR), EP3C (8FN), N12B14AB, N12B14
1.6cc
5FK (EP6C), 5FS (EP6C), 5FP (EP6), 5FW (EP6), 5FL (EP6C), 5FU (EP6CDTX), 5GM (EP6FDTX), 5GT (EP6FDTX), EP6CDTR (5FG), EP6CDTX (5FU), EP6FDTX (5GT), EP6FDTX (5GR), EP6FDTR, EP6FDTR (5GP), EP6FDTR (5GN), EP6CDT (5FV), EP6DT (5FX), EP6FDT (5GW), EP6FDT (5GZ), EP6CDT (5FN), EP6CDT (5FE), EP6CDT (5FM), EP6DTE (5FR), EP6FDTM (5GY), EP6DTS (5FY), EP6CDTM (5FM), EP6CDT (5FA), EP6DT (5FT), EP6 (5FW), EP6C, EP6C (5FS), EP6C (5FH), EP6C (5FK), N18 B16A, N18 B16A/MO, N18 B16C, N18 B16A/MO, N18 B16MO, N18 B16C/TO, N13 B16A, N13, N12B16A, N14B16A, N16 B16A, N16 B16MO, N16 B16UO, N16 B16KO, N16 B16A/MO, N16 B16A/MO

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.

The following instructions are for guidance only. Please refer to OEM derived data such as the vehicles manufactures own data or Autodata.

The use of this engine timing tool kit is purely down to the user's discretion and Draper Tools cannot be held responsible for any damage caused what so ever.



Introduction:

The engine applications listed use two distinct camshaft positions. One engine style positions the camshafts level and the second positions the inlet camshaft noticeably higher than the exhaust camshaft.

While there are only two basic engine configurations there are many different mounting adaptor positions dependent on specific engine code detail. In order to identifying the correct assembly method of the camshaft locking tool for the engine being worked on it is important the OEM tool numbers are correctly identified.

Use the OEM tool numbers with the Laser cross reference chart and drawings below to identify the tool configuration required.

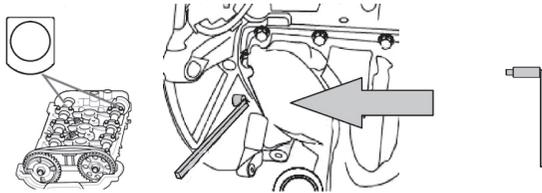
Camshaft Locking Cross reference

PSA OEM TO ELDON TO ITEM NUMBERS			
OEM No.		ELDON COMPONENT NUMBERS	ITEM
0197-A1/A1Z	EX. CAMSHAFT ALIGNMENT ASSEMBLY	E738-012 + E738-006	A+G
0197-A11	EX. CAMSHAFT ALIGNMENT ASSEMBLY	E738-012 + E738-009	A+K
0197-A2	INLET CAMSHAFT ALIGNMENT ASSEMBLY	E738-004 + E738-014	B+I
0197-A3	INLET CAMSHAFT ALIGNMENT ASSEMBLY	E738-029 + E738-031	D+L
0197-A31	INLET CAMSHAFT ALIGNMENT ASSEMBLY	E738-029 + E738-016	D+J
BMW OEM TO ELDON TO ITEM NUMBERS			
11 7 440	CAMSHAFT ALIGNMENT ASSEMBLY	E738-012 + E738-009 + E738-029 + E738-016+ E738-032	A+K+H+D+J
11 9 551	CAMSHAFT ALIGNMENT ASSEMBLY	E738-004 + E738-014+ E738-012 + E738-009 E738-032	A+K+H+B+I
11 9 540	CAMSHAFT ALIGNMENT ASSEMBLY	E738-029 + E738-031 + E738-012 + E738-006 E738-032	A+G+H+D+L

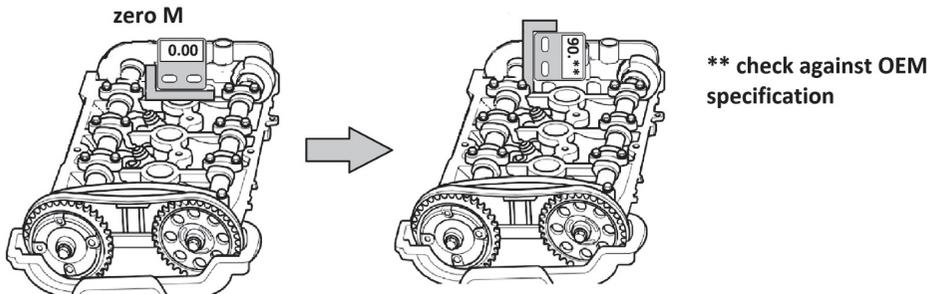
9. PROCEDURE AND APPLICATION GUIDE

Basic component use.

- Lock the Engine with all pistons at equal heights, use a suitable rod or measurement tool to ensure piston 3 and 4 are level. Insert the flywheel timing pin (E).
- Ensure the camshafts are correctly aligned with their alignment flats positioned as shown.



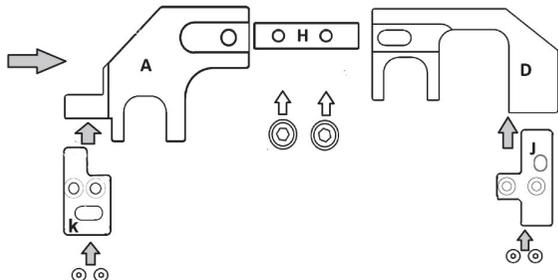
- Use components (M) digital inclinometer and (O) to check the chain stretch in accordance with OEM specification (PSA). Place (M) and (O) on the cylinder head as shown and zero M. move components (M) and (O) so that the angle of the side flat of the camshaft is displayed on (M) as shown. Compare to OEM specification.



- Lock both camshafts with component A + B or A + D with appropriate alignment adaptors as dictated by the OEM part numbers required.
- NB: Mount the camshaft locking components with the link bar (H) facing the Gear box end of the engine.

For BMW N13 and N18 Engines assemble the camshaft locking components as shown.

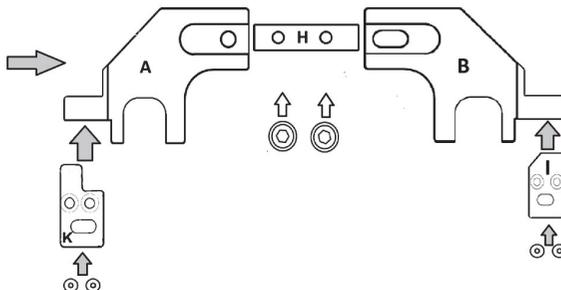
BMW N13/N18 = A+K+H+D+J
OEM = 11 7 440



9. PROCEDURE AND APPLICATION GUIDE

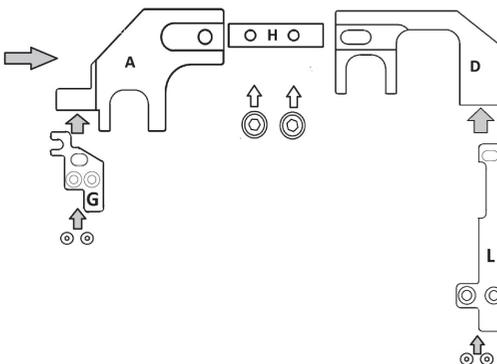
For BMW N14 engines assemble the camshaft locking components as shown.

BMW N14 = A+K+H+B+I
OEM = 11 9 551



For BMW N12 engines assemble the camshaft locking components as shown.

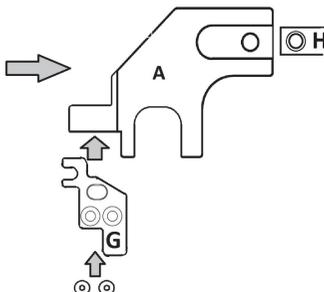
BMW N12/N16 = A+G+H+D+L
OEM = 11 9 540



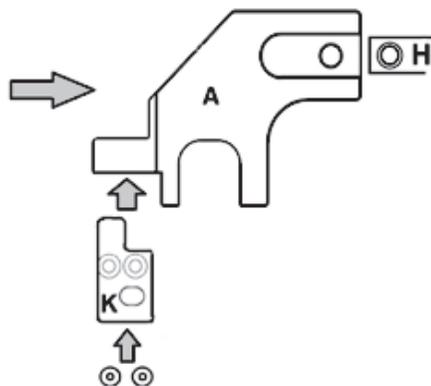
For Peugeot Citroen assemble the camshaft tools according to the OEM tool numbers required as shown here:

- NB: Mount the camshaft locking components with the link bar (H) facing the Gear box end of the engine.

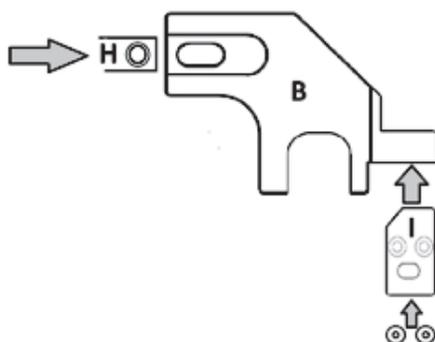
OEM 0197-A1/A1Z = A+G



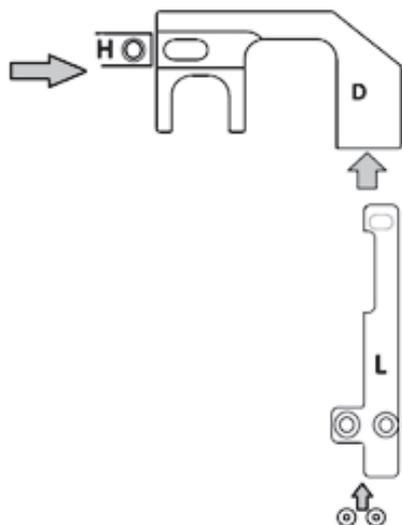
OEM 0197-A11 = A+K



OEM 0197-A2 = B+I

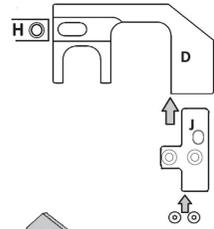


OEM 0197-A3 = D+L



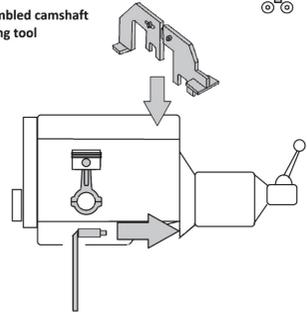
9. PROCEDURE AND APPLICATION GUIDE

OEM 0197-031 = D+J →

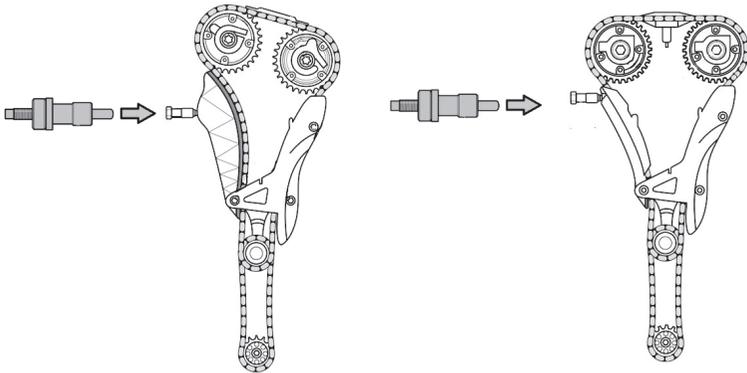


Basic use of locking components:

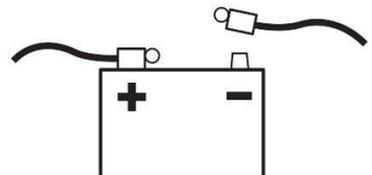
Assembled camshaft locking tool



Use component (N) dummy timing chain tensioner tool to pre-load the timing chain when setting the timing. Tighten the pre-tensioner to EOM specification.



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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