LASER®

Part No. 9582

Instructions

Supplementary Tool Kit
for BMW

MADE IN SHEFFIELD

50 Year Warranty



LASER 50 Established 1976 YEARS

www.lasertools.co.uk

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Introduction

Celebrating 50 years of Laser Tools, a combination of the latest innovative supplementary tools for BMW vehicles. It brings together in one kit the Laser 7300, 7034, 2112, 6111, 7329, 7429, 7603, 9305 & 9524. Supplied in a LD33 foam tool organiser tray that can also be combined together with other kits from our 50th Anniversary range and all kept in our new modular toolboxes.

- Includes supplementary tools for flywheel locking, camshaft chain wear indicator, VVT wrench, camshaft adjustment socket & chain cover alignment tool.
- Engine codes include: 1.5L & 1.2L B36, B37, B38, B47, B48; 1.6L N20, N26, N43; 3.0L N52, N53, N54, N55 & B58.
- Equivalent to OEM refs. 11 8 180, 11 8 181, 11 8 182, 11 8 183, 11 8 184, 11 8 185, 2 360 895, 2 450 487, 2 357 900, 0496595 (11 6 130) & 83302455654.
- Designed for use with Laser timing tool kit - Part Nos. 6997, 7242, & 7502 or engine timing master kit 1.2L, 1.5L, 2.0L, 3.0L petrol & diesel - Part No. 9583.
- The kit has been assembled to allow the Laser Tools 50th year storage system to be used. See Part Nos. 9285, 9284 & 9283.
- As part of Laser Tools 50th Anniversary, this tool kit is offered with a 50-year limited warranty. For full details, please visit our website.

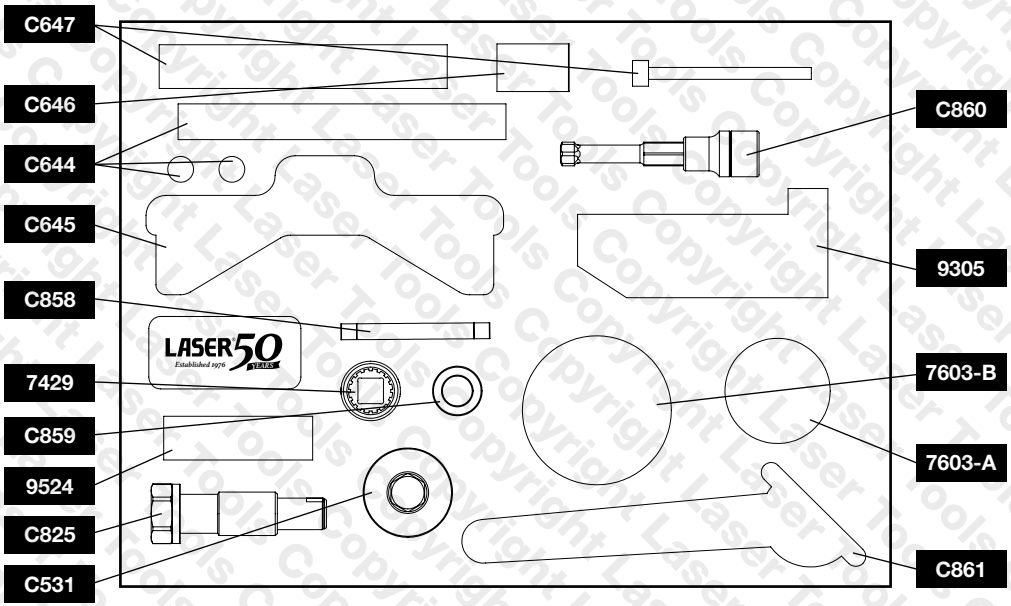
The following instructions are for guidance only. Please refer to OEM derived data such as the vehicle manufacturers' own data or Autodata.

The use of this engine timing tool kit is purely down to the user's discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused whatsoever.



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Components



Comp. Code	OEM Ref.	Description
C647	11 8 180, 11 8 185	Adaptor with Setting Sleeve E46 M47TU
C646	11 8 180, 11 8 184	Adaptor E65/M67
C644	11 8 180, 11 8 182	Locking Piece
C645	11 8 180, 11 8 183	Basic Body
C858	11 9 810, 11 9 811	Flywheel Drive Plate Holding Tool
Part No. 7429	303-1661-3, 2 450 487	Variable Camshaft Timing Adjuster Socket
C859	11 9 265	Long Spacer
Part No. 9524	83302455654	Camshaft Drive Chain Wear Indicator
C825	2 353 281	Camshaft Drive Chain Wear Indicator
C531	11 6 480	Crankshaft Pulley Turning Tool
C860	11 4 180	Flywheel Bolt Socket
Part No. 9305	0496595 (11 6 130)	Flywheel Locking Tool
Part No. 7603-B	2 357 900	Seal Fitting Piece
Part No. 7603-A		Tapered Nose Piece
C861	2 360 895	Actuator Wrench (Pin Wrench)

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7300 Crankshaft Turning/Holding Kit
BMW/Mini

Introduction

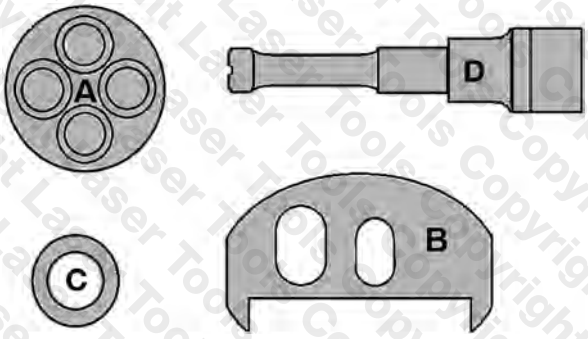
The crankshaft turning tool is designed to fit over the pulley fixing bolts allowing the crankshaft to be turned with a suitable ratchet without removing any pulley fixings. The Torx® socket has been specially machined to reach the flywheel fixing bolts even when the access holes in the dual mass flywheel do not align. The flywheel securing plate is designed to hold the flywheel in position on both automatic and manual transmission flywheels.

- Applications: BMW 1, 2, 3, 5 Series (2014-2017), 4, 7 Series (2015-2017), X1, X3, X4 Series (2014-2017), X5 Series (2015-2017), Mini Clubman (2014-2017), Mini Hatch (2015-2017), Mini convertible (2016-2017).
- Engine codes: B37, B38, B47, B48 (1.2L, 1.5L, 2.0L).
- Equivalent to OEM tools: 11 6 480, 11 9 811, 11 9 265, 11 4 180.

For full timing tool kits see Laser Part Nos. 6997 (B37/B47) & 7242 (B38/B48).

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Components



Ref.	Component Code	OEM Ref.	Description
A	C531	11 6 480	Crankshaft Pulley Turning Tool
B	C858	11 9 810, 11 9 811	Flywheel Drive Plate Holding Tool
C	C859	11 9 265	Long Spacer
D	C860	11 4 180	Flywheel Bolt Socket

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Applications

Manufacturer	Model	Year	Variant
BMW	1 Series	2015-2017	xDrive, sDrive, EfficientDynamics, 18d, 20d, 25d, 114d, 116d, 118d, 120d, 125d, 214d, 216d, 218d, 220d, 225d, 316d, 318d, 320d, 325d, 418d, 420d, 425d, 518d, 520d, 18i, 116i, 118i, 216i, 218i, 318i, 340i, 440i, 740i, 225xe
	2 Series	2014-2017	
	3 Series	2015-2017	
	4 Series	2016-2017	
	5 Series	2014-2017	
	7 Series	2015-2017	
	i8	2014-2017	
	X1	2015-2017	
	X3	2014-2017	
	X4	2014-2017	
	X5	2015-2017	
Mini	Clubman	2015-2017	Cooper/D/SD Ray One/D
	Convertible	2016-2017	
	Mini Hatch	2014-2017	

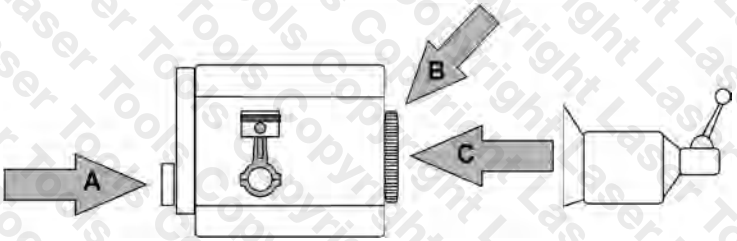
Engine Codes	
1.2L Petrol	B38 A12A
1.5L Diesel	B37 D15A, B37 C15A
1.5L Petrol	B38 B15A, B38 A15A, B38 K15A
2L Diesel	B47 D20A, B47 D20B, B47 C20A, B47 C20B
3L Petrol	B58 B30A

Always refer to the website for most up to date applications:
www.lasertools.co.uk/product/7300

N.B. Always turn the engine in normal direction of rotation.
Do not use timing tools to torque or loosen fixings against unless otherwise stated.

SAFETY WARNINGS PLEASE READ

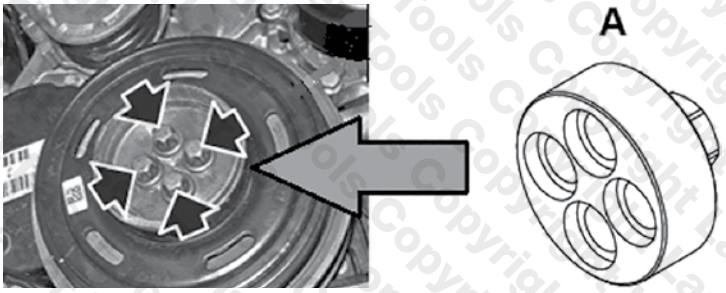
- Personal protection and safety equipment must be used at all times.
- Eye protection and protective gloves must be worn when using these tools.
- Misuse of tools is unsafe, and can cause engine damage.
- Remove damaged tools from use.
- Store in a dry place when not in use.



Instructions

Component A - Crankshaft pulley turning tool

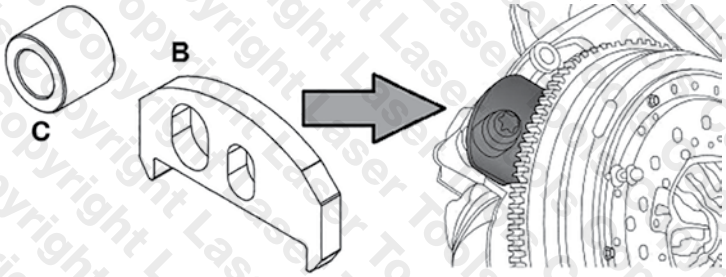
This tool fits over the existing securing bolts that hold the crankshaft pulley on the engine, allowing the rotation of the engine in a safe and controlled manner.



Components B & C - Flywheel drive plate holding tool

The flywheel holding tool can be used on either manual or automatics.

It mounts on one of the existing bolt holes of the bell housing, on the rear of the cylinder block. The spacer can be fitted either side of the holding plate, depending on the depth of the flywheel by one of the existing mounting bolts.



Component D - Flywheel bolt socket

Designed specifically for the BMW ZMS engines with Dual mass flywheel.

The flywheel mounting bolts are off-centre to their respective access points. (As shown below). The reduced diameter of the tool allows for the socket to line up with the bolts.



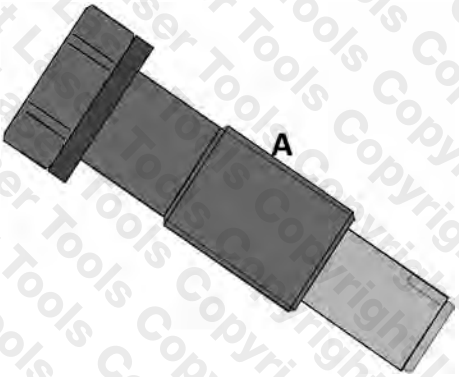
7034 Camshaft Drive Chain Wear Indicator
BMW/Mini

Introduction

The 7034 Camshaft Drive Chain Wear Indicator allows the user to check the timing chain stretch on BMW MINI engines without dismantling the engine. An essential diagnostic tool that can save significant time and cost. The 7034 is made up of 5 individual working components that are manufactured to work together to give a repeatable result every time. The need for close tolerances with minimum friction does make this tool appear to be expensive but the saving in time it can give in diagnosing and confirming chair wear issues can more than justify this expense. The 7034 comes ready assembled and will not need to be adjusted or disassembled.

- BMW & Mini engine applications include: 1.4L, 1.6L, 2.0L & 3.0L engines.
- Engine codes: N12, N13, N16, N18, N47, N57 (petrol and diesel variants).
- Equivalent to OEM ref. 2 353 281.
- Used to measure the amount of chain stretch without dismantling the whole engine. Also useful on equivalent Citroën & Peugeot engines.
- Use in accordance with OEM instructions.

Components



Ref.	Comp. Code	OEM Ref.	Description
A	C825	2 353 281	Camshaft Drive Chain Wear Indicator

Applications

Manufacturer	Model	Sub-model	Range	Year
BMW	1 Series	116d, 118d, 120d,123d	(E81/82/87/88)	2007 - 2014
	1 Series	114d, 116d, 118d, 120d, 125d / 114i, 116i, 118i, 120i	(F20/21)	2011 - 2016
	2 Series Coupe	218d, 220d, 225d	(F22)	2014 - 2016
	3 Series	316d, 318d, 320d, 325d, 330d	(E90/91/92/93)	2007 - 2014
	3 Series	316d, 318d, 320d, 325d, 330d, 335d / 316i, 320i	(F30/31/34)	2012 - 2019
	4 Series	420d, 425d, 430d, 435d	(F32/33/36)	2013 - on
	5 Series	520d	(E60/61)	2007 - 2010
	5 Series	518d, 520d, 525d, 530d, 535d, M550d	(F10/11/07)	2009 - 2017
	6 Series	640d	(F12/13/06)	2011 - 2018
	7 Series	730d, 740d, 750d	(F01/02/04)	2008 - 2015
	X1	16d,18d, 20d, 23d 25d	(E84)	2009 - 2015
	X3	18d, 20d	(E83)	2007 - 2010
	X3	18d, 20d, 30d, 35d	(F25)	2011 - 2017
	X4	30d, 35d	(F26)	2014 - 2018
	X5	30d, 40d, M50d	(E70)	2010 - 2013
	X5	25d, 30d, 40d, M50d	(F15)	2013 - 2018
	X6	30d, 40d, M50d	(E71)	2010 - 2014
	X6	30d, 40d, M50d	(F16)	2014 - 2019

Engine Codes	
1.6L	N47 D16A, N13 B16A
2L	N47 D20A, N47 D20B, N47 D20C, N47 D20D
3L	N57 D30A, N57 D30B, N57 D30C

Manufacturer	Model	Sub-model	Range	Year
Mini	Mini	One D, Cooper D, SD / One, Cooper, Cooper S, JCW	(R56/57)	2006 - 2015
	Clubman/Clubvan	One D, Cooper D, SD / One, Cooper, Cooper S, JCW	(R55)	2007 - 2014
	Coupe	Cooper SD / Cooper, Cooper S, JCW	(R58)	2011 - 2015
	Roadster	Cooper SD / Cooper, Cooper S, JCW	(R59)	2012 - 2015
	Countryman	One D, Cooper D, SD / One, Cooper, Cooper S, JCW	(R60)	2010 - 2017
	Paceman	Cooper D, SD / Cooper, Cooper S, JCW	(R61)	2013 - 2017

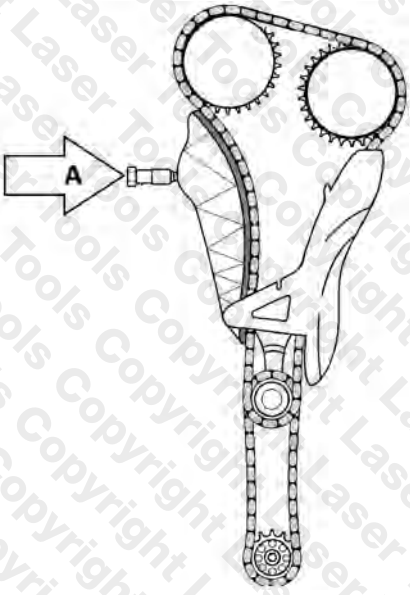
Engine Codes	
1.4L	N12 B14A
1.6L	N47 C16A, N12 B16A, N14 B16A, N14 B16C, N16 B16A, N18 B16A, N18 B16C
2L	N47 C20A

Always refer to the website for most up to date applications: **www.lasertools.co.uk/product/7034**

Instructions

NOTE: Ensure the engine timing marks are aligned.

Where used



Warnings:

- **Always refer to OEM vehicle specific data.**
- **Remove all spark plugs to aid turning of the engine.**

WARNING: do not start the engine while the 7034 is fitted.

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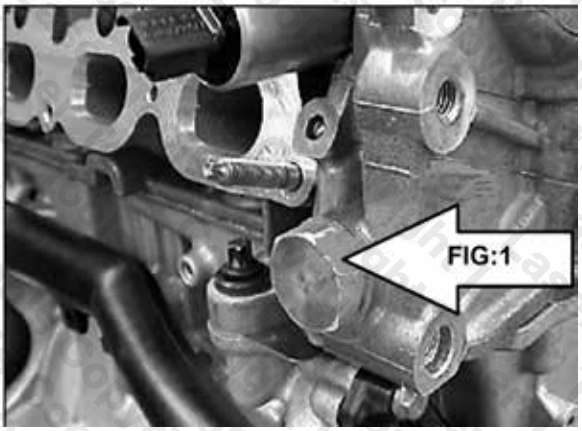
Instructions

Component A

Component A is used to assess the amount of chain stretch in the camshaft timing chain.

1. Remove the timing chain tensioner and washer from the engine.

FIG. 1



2. Screw in component A without the spacer ring as shown.

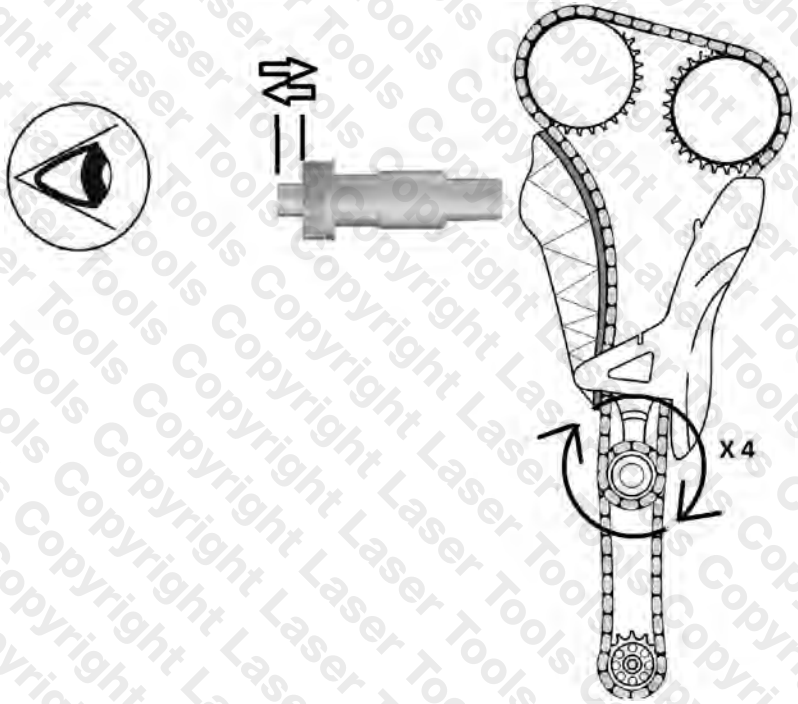
FIG. 2



Instructions

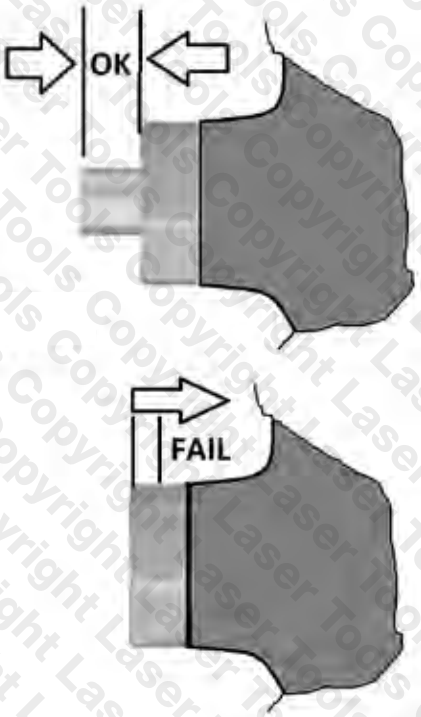
3. Tighten to 70Nm for N47 diesel engines and 80Nm for N12, N16 & N18 petrol engines.
4. Turn the engine 4 complete turns by hand in the normal direction of rotation while watching the sprung loaded centre rod of the 7034. The centre rod will move in and out as the engine is turned. See Fig. 3.

FIG. 3



5. If the rod falls below the level of the head of the 7034 outer body the chain has excessive stretch and should be replaced along with associated guides and tensioners. See Fig. 4.

FIG. 4



6. Always check OEM instructions to confirm result.

WARNING: Never start or attempt to run the engine with the 7034 installed or without the chain tensioner installed.

6111 Flywheel Locking Tool Set
BMW MINI

Introduction

To lock the flywheel through the gearbox bell housing on chain driven petrol and diesel engines.

- BMW applications: M47T2, M57T2, M67, N43, N45, N45T, N46, N46T, N47, N51, N52, N53 & N54.
- MINI applications: W17 diesel engines.
- Equivalent to OEM refs 11 8 180, 11 8 181, 11 8 182, 11 8 183, 11 8 184 & 11 8 185.

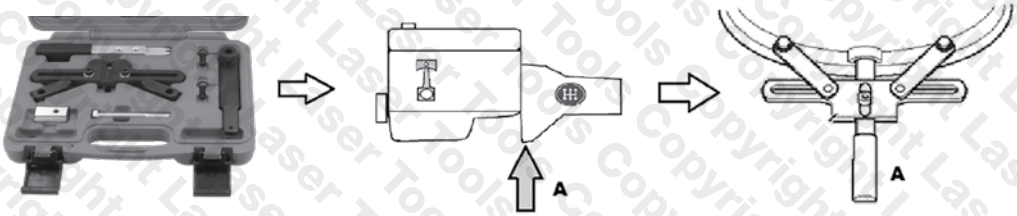
Components

Comp. Code	OEM Ref.	Description
C647	11 8 180, 11 8 185	Adaptor with Setting Sleeve E46 M47TU
C646	11 8 180, 11 8 184	Adaptor E65/M67
C644	11 8 180, 11 8 182	Locking Piece
C645	11 8 180, 11 8 183	Basic Body

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Instructions

Assemble tool as required to lock the flywheel through the gear box bell housing as shown.



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Applications

Manufacturer	Model	Engine Size	Engine Code	Year
BMW	1 Series (E81/82/87/88) 118d	2.0	20 4D 4	2004-2007
	3 Series (E46) 318d			2003-2007
	3 Series (E46) 318td Compact			2003-2005
	3 Series (E46) 320d			2001-2007
	3 Series (E46) 320td Compact			2001-2005
	3 Series (E90/91/92/93) 318d			2005-2008
	5 Series (E60/61) 520d			2007-2009
	5 Series (E60/61) 520d			2005-2009
	X3 (E83) d			2004-2007
	5 Series (E60/61) 525d	2.5	25 6D 2	2003-2007
	3 Series (E46) 330d	3.0	30 6D 2	2003-2007
	5 Series (E60/61) 530d			2003-2006
	7 Series (E65/66) 730d			2002-2005
	X3 (E83) d			2003-2006
	X5 (E53) D Turbo			2003-2007
	3 Series (E90/91/92/93) 325d	3.0	30 6D 3	2007-2010
	3 Series (E90/91/92/93) 325d			2007-2010
	3 Series (E90/91/92/93) 330d			2005-2008

(Applications continued over).

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Applications

Manufacturer	Model	Engine Size	Engine Code	Year
BMW	5 Series (E60/61) 525d/Xd/xDrive	3.0	30 6D 3	2007-2010
	5 Series (E60/61) 530d/Xd			2005-2007
	5 Series (E60/61) 530d/Xd/xDrive			2007-2010
	7 Series (E65/66) 730d			2005-2008
	X3 (E83) d			2005-2008
	X3 (E83) xDrive 30d			2008-2010
	X5 (E70)			2006-2008
	X5 (E70) xDrive 30d			2008-2010
	5 Series (E60/61) 535d	3.0	30 6D 4	2004-2007
	3 Series (E90/91/92/93) 335d	3.0	30 6D 5	2006-2013
	5 Series (E60/61) 535d			2007-2010
	X3 (E83) sd			2006-2008
	X3 (E83) xDrive 35d			2008-2010
	X5 (E70) sd			2007-2008
	X5 (E70) xDrive 35d			2008-2010
	X6 (E71/72) xDrive35d			2008-2010
	6 Series (E63/64) 635d	3.0	30 6D 5/M57 YD30T2	2007-2011
	3 Series (E90/91/92/93) 325d	3.0	M57 D30 T2	2006-2010
	1 Series (E81/82/87/88) 116i	1.6	N43 B16A/AA	2007-2008
	1 Series (E81/82/87/88) 116i	1.6	N43 B16AA	2009-2010
	1 Series (E81/82/87/88) 116i	2.0	N43 B20K0	2009-2012
	1 Series (E81/82/87/88) 116i			2008-2012
	1 Series (E81/82/87/88) 118i	2.0	N43 B20AY	2006-2014
	1 Series (E81/82/87/88) 120i	2.0	N43 B20A	2006-2014
	1 Series (E81/82/87/88) 120i			2006-2014
	1 Series (E81/82/87/88) 120i	2.0	N43 B20AA	2007-2014
	3 Series (E90/91/92/93) 316i	1.6	N43 B16AA/O0	2007-2011
	3 Series (E90/91/92/93) 318i	2.0	N43 B20AY	2007-2011
	3 Series (E90/91/92/93) 318i	2.0	N43 B20U0	2010-2014
	3 Series (E90/91/92/93) 320i	2.0	N43 B20A	2007-2014
	3 Series (E90/91/92/93) 320i	2.0	N43 B20A/AA	2007-2014
	5 Series (E60/61) 520i	2.0	N43 B20A	2007-2010
MINI	(R50/52/53) One D	1.4	W17D14	2003-2005
	(R50/52/53) One D			2005-2006

Always refer to the website for most up to date applications:
www.lasertools.co.uk/product/6111

7329 Camshaft VVT Actuator Wrench
BMW

Introduction

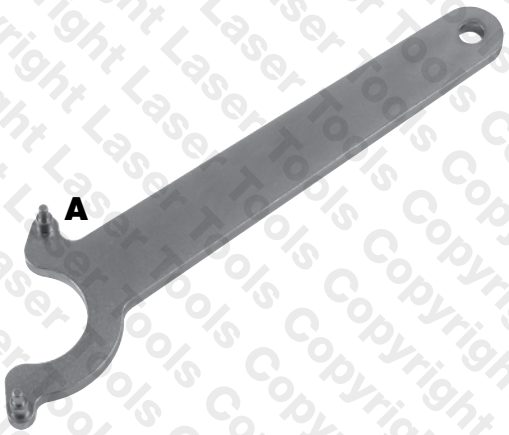
Camshaft VVT actuator wrench for BMW, used to replace leaking actuator seals or when the camshaft requires removal. The wrench is designed to latch into the Variable Valve Timing Actuators and allow safe removal when performing oil seal replacement or cylinder head work on the BMW B38, B46 and B48 petrol engines.

Preparation

Removal and replacement of the camshaft control actuator requires:

- Removal of the sound insulation at the rear of the engine bay (upper middle bulkhead).
- Removal of the acoustic cover at the rear of the engine bay.
- Disconnection of the actuator electrical connections.

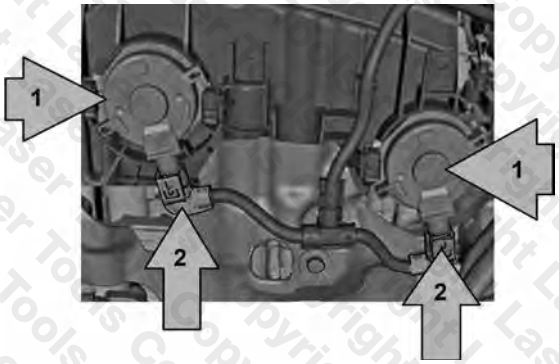
Components



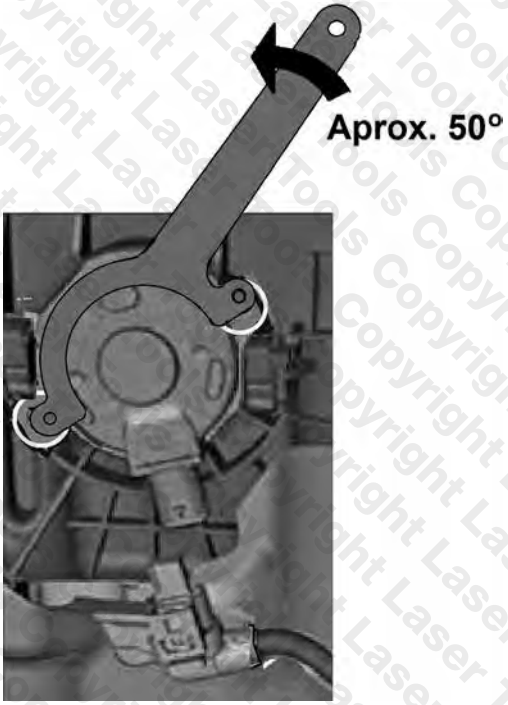
Ref.	Comp. Code	OEM Ref.	Description
A	C861	2 360 895	Actuator Wrench (Pin Wrench)

Actuator Wrench (pin wrench)

- Identify the camshaft actuator units (**1**) as shown in Fig 1. Disconnect the actuator wires (**2**) in Fig 1.



- Place the 7329 on to the actuator as shown in Fig. 2 and turn the actuator through approximately 50°. Remove actuator.



7429 Variable Camshaft Timing Adjuster Socket
1/2"D

Introduction

1/2"D impact quality socket for the centring valve of the camshaft timing on BMW MINI Vanos unit and Ford VCT module.

- Applications include: BMW MINI B36 (1.5L), B38 (1.2 & 1.5L), B48 (2.0L) & Ford 1.0 Ecoboost petrol.
- Size: 22mm x 16 point x 30mm long. 1/2" drive socket.
- Equivalent to OEM refs. 303-1661-3, 2 450 487.
- Manufactured from chrome molybdenum for impact strength with anti-corrosion black phosphate finish.

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7603 Front Crankshaft Cover Alignment Tool

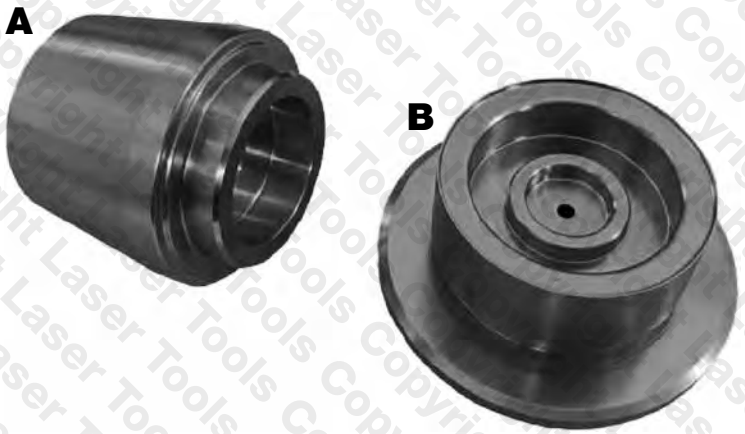
Introduction

Ensures the correct alignment of the front lower timing case cover on BMW B37 and B38 engines. It also helps prevent damage to the new seal during fitting. Use with Laser 7242 Timing Chain Kit (B38 engines), Laser 6997 (B37 engines), Laser 7300 Crankshaft Holding and Turning Kit and Laser 7253 Balance Shaft Removal and Fitting Kit.

- Applications: BMW 1 Series (F20/21), 2 Series (F22/F23), 3 Series (F30/F31), 4 Series (F32/F33/F36), X1 (F48), X2 (F39) and Mini Clubman (F54), Hatch (F55/F56/F57), Countryman (F60).
- Engine codes: B37C, B37D, B38A, B38B.
- Used to align the front engine cover, use in accordance with OEM instructions.
- Equivalent to OEM tool number 2 357 900.

NOTE: Surface of the tool must be kept clean and scratch free to ensure correct operation.

Components



Ref.	BMW OEM Ref.	Description
A	2 357 900	Tapered Nose Piece
B		Seal Fitting Piece

Instructions

Note: Refer to vehicle manufacturer's instructions for vehicle/engine specific data.

Component A/B

- Assemble sections **A** & **B** as shown in Fig.1. Ensure the assembly is clean and free from grit, oil and scratches.

Fig.1

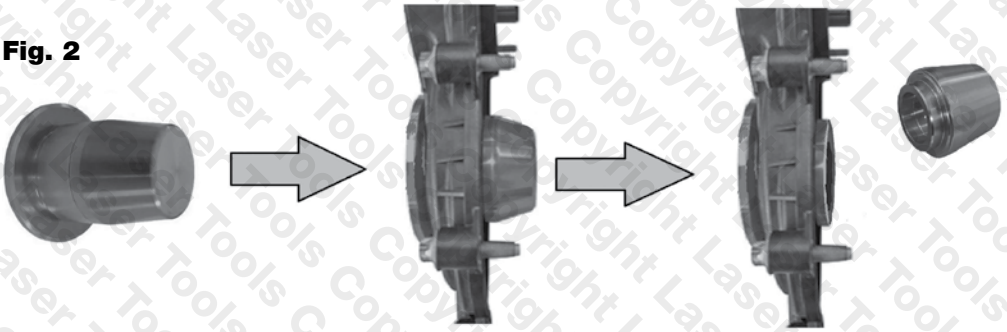


- With the new seal already fitted into the front engine casing on the bench slide the assembled 7603 gently into the seal from the front (outside) of the casing so that the seal fits evenly around the seal fitting piece (**B**) Fig. 2.

Special note: DO NOT lubricate the fitting tool 7603 - refer to OEM BMW instruction.

- Remove section **A** (see Fig. 2).

Fig. 2



Instructions

- Fit the engine casing onto the engine as shown in Fig.3 ensuring section **B** aligns correctly on the crankshaft end (**X**).
- Fit the casing bolts in accordance with manufacturers specification and instructions.

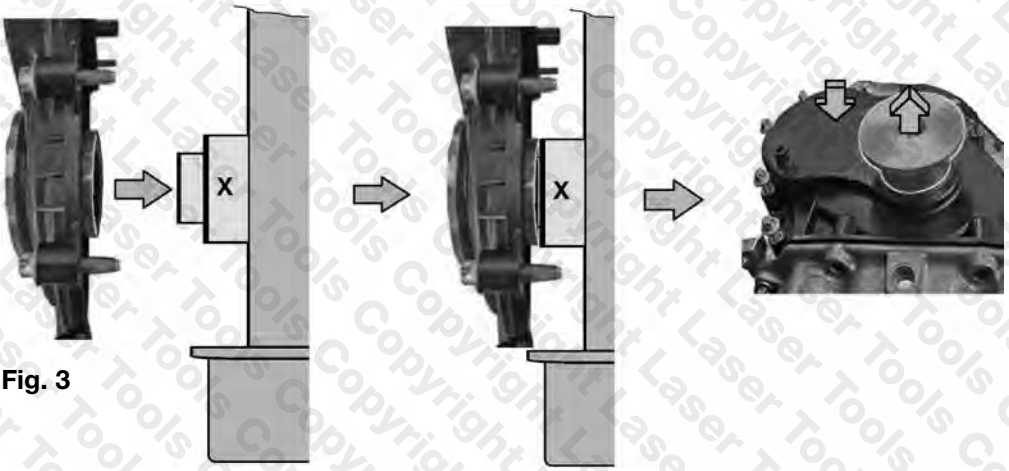


Fig. 3

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9305 Flywheel Locking Tool
BMW

Introduction

Designed to allow the user to lock the flywheel on the BMW engines listed to lock the crankshaft for removal of the front crankshaft pulley or flywheel.

- Applications include: BMW 1 series (2015 - 2019), 2 series (2014 - 2025), 3 series (2015 - 2025), 4 Series (2016 - 2025), 5 Series (2014 - 2023), 6 Series (2017 - 2024), 7 Series (2015 - 2022), 8 Series (2018 - 2025), X3 (2014 - 2024), X4 (2014 - 2025), X5 (2015 - 2025), X6 (2019 - 2025), X7 (2018 - 2025) & Z4 (2019 - 2025).
- Engine applications include: B37 D15A, B37 B15A, B47 D20A, B47 D20B, B48 B20A, B48 B20B, B57 D30A, B57 D30C, B58 B30A, B58 B30B & B58 B30C.
- Designed to lock the flywheel to allow removal of either the flywheel or front pulley fixings.
- Equivalent to OEM ref. 0496595 (11 6 130).

NOTE: Use in accordance with OEM instructions.

Applications

Manufacturer	Model	Year	Engine Codes
BMW	1 Series	2015 - 2019	B37 D15A B37 B15A B47 D20A B47 D20B B48 B20A B48 B20B B57 D30A B57 D30C B58 B30A B58 B30B B58 B30C
	2 Series	2014 - 2025	
	3 Series	2015 - 2025	
	4 Series	2016 - 2025	
	5 Series	2014 - 2023	
	6 Series	2017 - 2024	
	7 Series	2015 - 2022	
	8 Series	2018 - 2025	
	X3	2014 - 2024	
	X4	2014 - 2025	
	X5	2015 - 2025	
	X6	2019 - 2025	
	X7	2018 - 2025	
	Z4	2019 - 2025	

Always refer to the website for most up to date applications:
www.lasertools.co.uk/product/9305

9524 Camshaft Drive Chain Wear Indicator
BMW B48TU

Introduction

The 9524 camshaft drive chain wear indicator allows the user to check timing chain stretch on BMW B48TU petrol engines without dismantling the engine. An essential diagnostic tool that can save significant time and cost, it helps diagnose and confirm chain wear issues. The 9524 comes ready assembled and does not require adjustment or disassembly.

- BMW 2.0L B48TU from 2019 onwards.
- Applications include: BMW 1 Series 120i, M135i, 2 Series M235i, 3 Series 320i & 330i. Mini Cooper S, JCW & GP3.
- Use with 19mm spanner or socket.
- Equivalent to OEM 83302455654.

NOTE: Use in accordance with OEM instructions.

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Safety Warnings – please read

- If the engine has been identified as an Interference engine, damage to the engine will occur if the timing belt has been damaged. A compression check of all the cylinders should be taken before the cylinder head(s) are removed.
- Do not turn crankshaft or camshaft when the timing belt/chain has been removed.
- To make turning the engine easier, remove the spark plugs/glow plugs or injectors.
- Observe all tightening torques.
- Do not turn the engine using the camshaft or any other sprocket.
- Disconnect the battery earth lead (check radio code is available).
- Do not use cleaning fluids on belts, sprockets or rollers.
- Some toothed timing belts are not interchangeable. Check the replacement belt has the correct tooth profile.
- Always mark the belt with the direction of running before removal.
- Do not lever or force the belt onto its sprockets.
- Do not use timing pins to lock the engine when slackening or tightening the crankshaft pulley bolts.
- ALWAYS REFER TO A REPUTABLE MANUFACTURERS WORKSHOP MANUAL.

Our products are designed to be used correctly and with care for the purpose for which they are intended. No liability is accepted by the Tool Connection for incorrect use of any of our products, and the Tool Connection cannot be held responsible for any damage to personnel, property or equipment when using the tools. Incorrect use will also invalidate the warranty.

If applicable, the applications database and any instructional information provided has been designed to offer general guidance for a particular tool'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 tools and information prior to their use.



Safety First. Be Protected.

recycle

When you have finished with this packaging please recycle it

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For GPSR regulations visit: **www.tc-gpsr.com**

9582_Instructions_V1

Warranty

To celebrate our 50th year in business Laser Tools have introduced a 50-year limited warranty. Products Marked with the "Laser 50 Year" logo are covered by the Laser Tools 50-year limited warranty. See the full warranty details on the website for further conditions and exclusions.

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear and tear are excluded as are consumable items and abuse.

TOOL CONNECTION
The Complete Connection

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info@toolconnection.co.uk **www.toolconnection.co.uk**

LASER 50 YEARS
Established 1976

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LASER®

Part No. 9583

Instructions

Engine Timing Master Kit

for BMW 1.2L, 1.5L, 2L, 3L Petrol & Diesel

MADE IN SHEFFIELD

50 Year Warranty



LASER® 50 YEARS Established 1976

www.lasertools.co.uk

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Introduction

Celebrating 50 years of Laser Tools, the 9583 kit brings together Laser 6997, 7242 & 7502 for use on BMW petrol and diesel engines. Supplied in a LD33 foam tool organiser tray that can also be combined together with other kits from our 50th Anniversary range and all kept in our new modular toolbox.

- Applications include: BMW 1 Series (from 2015), 2 Series (from 2014), 3 Series (from 2015), 4 Series (from 2015), 5 Series (from 2014), 6 Series (from 2017), 7 Series (from 2015), X1 (from 2015), X3 (from 2014), X4 (from 2014) & X5 (from 2015). MINI applications include: Clubman (from 2015), Mini Hatch & Convertible, (2014 - 2020), Countryman (from 2018) & Toyota GR Supra (from 2019).
- Engine codes: 1.2L 1.5L B37/B38, 2.0L B47/B48 & 3.0L B58.
- Equivalent to OEM refs. 11 4 120, 2 347 904, 2 365 488, 2 288 380, 11 8 760, 11 8 740, 11 8 030, 2 358 122, 2 456 372, 2 357 904, 2 365 488, 11 6 480, 11 9 260, 11 4 120, 2 448 914, 2 420 824 & 11 9 265.
- For supplementary tools please see Laser Part No. 9582.
- Presented in a LD33 foam tray (448 x 340 x 45mm), convenient for user storage and limiting packaging waste. Sized to fit directly into Laser Tools premium stackable storage system, Part No. 9283 (4 drawer) or Part No. 9284 (2 drawer).
- As part of Laser Tools 50th Anniversary, this tool kit is offered with a 50-year limited warranty. For full details, please visit our website.

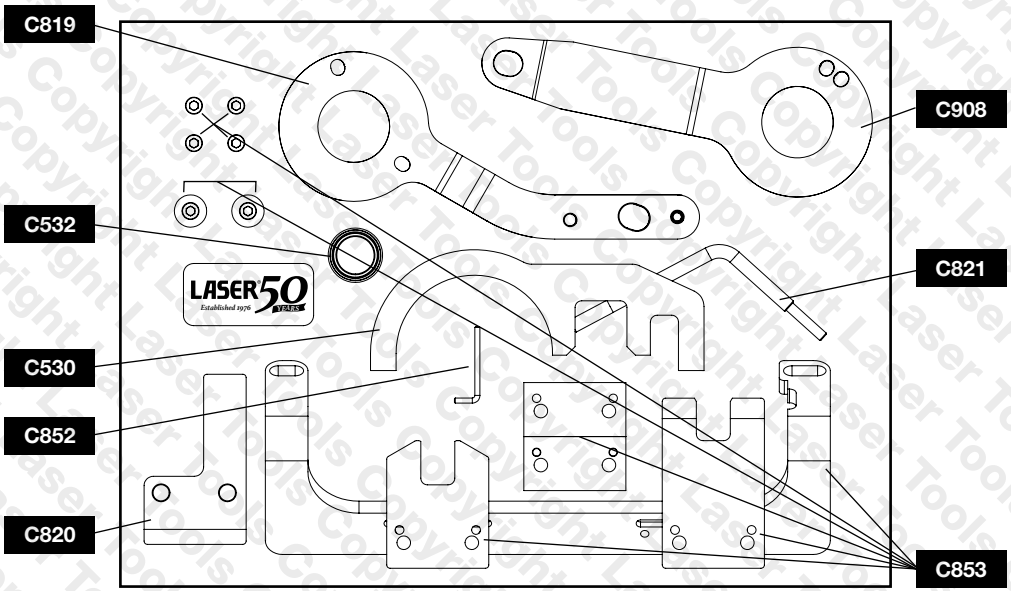
The following instructions are for guidance only. Please refer to OEM derived data such as the vehicle manufacturers' own data or Autodata.

The use of this engine timing tool kit is purely down to the user's discretion and The Tool Connection Ltd. cannot be held responsible for any damage caused whatsoever.



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Components



Comp. Code	OEM Ref.	Description
C819	2 357 904	Crankshaft Holding Tool
C532	11 8 740, 11 8 030	Fuel Pump Sprocket Removal Tool
C530	11 8 760	Camshaft Alignment Tool
C852	11 4 120	Tensioner Locking Pin
C820	2 365 488	Flywheel/Auto Transmission Drive Plate Timing Adaptor
C908	2 420 824	Crankshaft Holding Tool
C821	2 288 380	Flywheel/Drive Plate/Manual Transmission Timing Pin
C853	2 358 122	Camshaft Alignment Tool

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6997 Timing Chain Tool Kit
BMW

Introduction

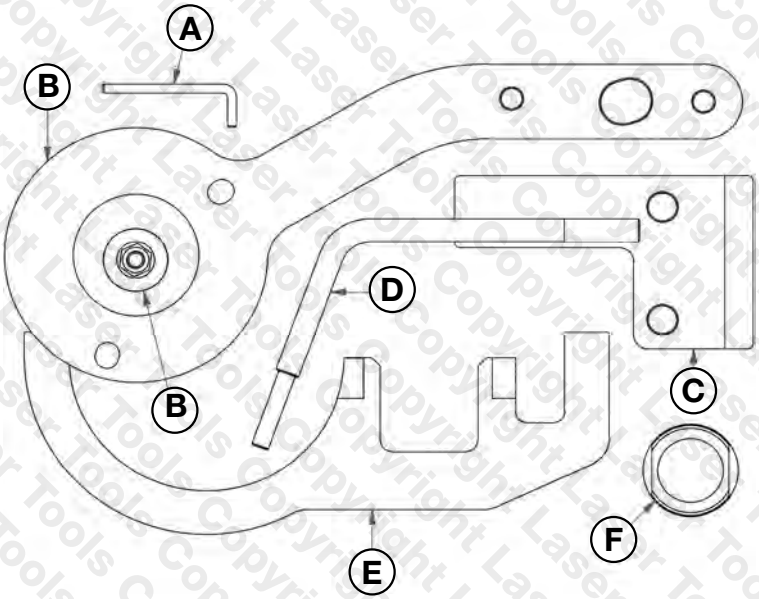
This kit provides the essential tools required to check and set the camshaft and crankshaft timing on the post 2014 BMW MINI 1.5L 3 cylinder (B37) and 2.0L 4 cylinder (B47) diesel engines.

- BMW applications include: 1 Series (from 2015), 2 Series (from 2014), 3 Series (from 2015), 4 Series (from 2015), 5 Series (from 2014), X1 (2015 - 2022), X3 (from 2014), X4 (from 2014) & X5 (from 2015).
- MINI applications include: Clubman (from 2015), Mini Hatch & Convertible (2014 - 2020), Countryman (from 2017).
- Equivalent to OEM refs. 11 4 120, 2 347 904, 2 365 488, 2 288 380, 11 8 760, 11 8 740, 11 8 030.

Designed to be used in accordance with OEM instructions.

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Components



Ref.	Code	OEM Ref.	Description
A	C282	11 4 120	Tensioner Locking Pin
B	C819	2 357 904	Crankshaft Holding Tool
C	C820	2 365 488	Auto Transmission Driveplate Timing Plate
D	C821	2 288 380	Manual Transmission Timing Pin
E	C530	11 8 760	Camshaft Alignment Tool
F	C532	11 8 740, 11 8 030	Fuel Pump Sprocket Removal Tool

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Applications

Manufacturer	Model	Chassis Code	Type	Year	Engine Codes
BMW	1 Series	(F20/F21)	xDrive / EfficientDymamics	2015 - 19	**1.5L d** B37 C15A B37 D15A
		(F40)	xDrive	2019 - on	
	2 Series	(F22/F23)		2014 - 20	
		(F44/F45/ F46)		2014 - on	
	3 Series	(F30/F31/ F34)	xDrive / EfficientDymamics	2015 - 20	
		(G20/21)	xDrive / mhev	2018 - on	
	4 Series	(F32/F33/ F36)	xDrive	2015 - 21	
		(G22/G23)	xDrive / mhev	2020 - on	
	5 Series	(F10/F11)	xDrive	2014 - 17	
		(G30/31)	xDrive / mhev	2017 - on	**2.0L d** B47 C20A B47 C20B B47 D20A B47 D20B
	6 Series	(G32)		2018 - on	
	7 Series	(G11/12)	sDrive / xDrive	2016 - 19	
	X1	(F48)		2015 - 22	
	X2	(F39)		2018 - on	
	X3	(F25)		2014 - 17	
		(G01)	sDrive / xDrive / mhev	2017 - on	
	X4	(F26)	xDrive	2014 - 18	
		(G02)	xDrive / mhev	2018 - on	
	X5	(F15)	sDrive / xDrive	2015 - 18	
		(G05)	xDrive	2018 - on	
MINI	Clubman	(F54)	One D, Cooper D, Cooper SD	2015 - on	**1.5L d** B37 C15A
	Mini Hatch	(F55/F56)		2014 - 20	
	Convertible	(F57)	Cooper D, Cooper SD	2014 - 20	**2.0L d** B47 C20A B47 C20B
	Countryman	(F60)	One D, Cooper D, Cooper SD	2017 - on	

Always refer to the website for most up to date applications:
www.lasertools.co.uk/product/6997

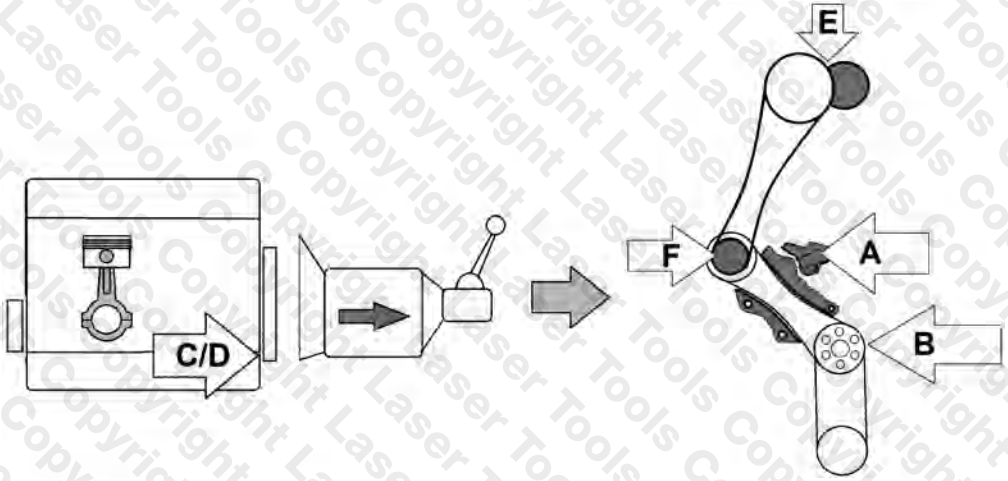
Instructions

Warning: Hybrid drive vehicles (including PHEV & MHEV):

Where the vehicle is a hybrid electric vehicle there may be a risk of injury due to electric shock. Please ensure all manufacturers' safety recommendations are followed at all times including any relevant HV disconnection processes and the use of appropriate PPE as specified by the vehicle manufacturer. No liability is accepted by the Tool Connection for injury or shock to personnel, property or equipment, however caused.

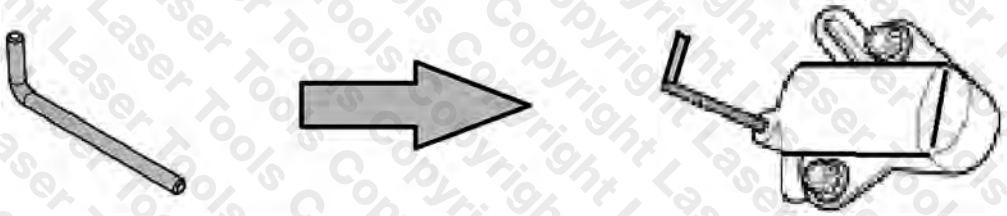
NOTE:

- The timing chains are located at the rear of the engine.
- To use 6997, the engine must be removed from the vehicle and the flywheel removed.
- Ensure the engine timing marks are aligned.



Component A

Used to lock the crankshaft to fuel pump drive chain tensioner in its retracted position as shown.

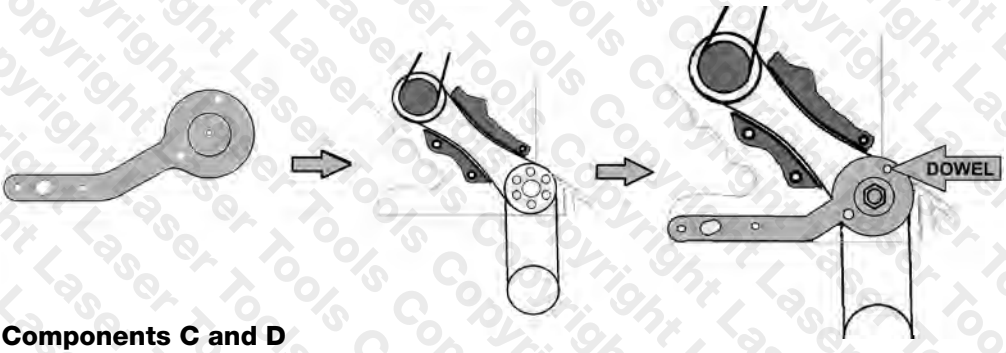


Instructions

Components B

Used to lock the crankshaft in its timed position as shown. The transmission and flywheel must first be removed from the engine.

ENSURE THE CRANKSHAFT DOWEL PIN IS POSTIONED AS SHOWN.

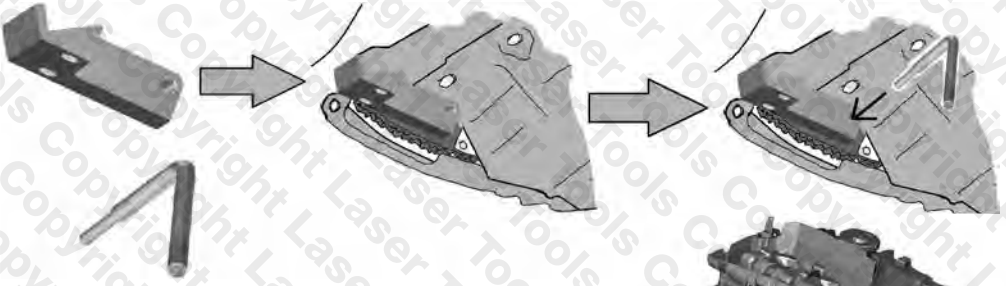


Components C and D

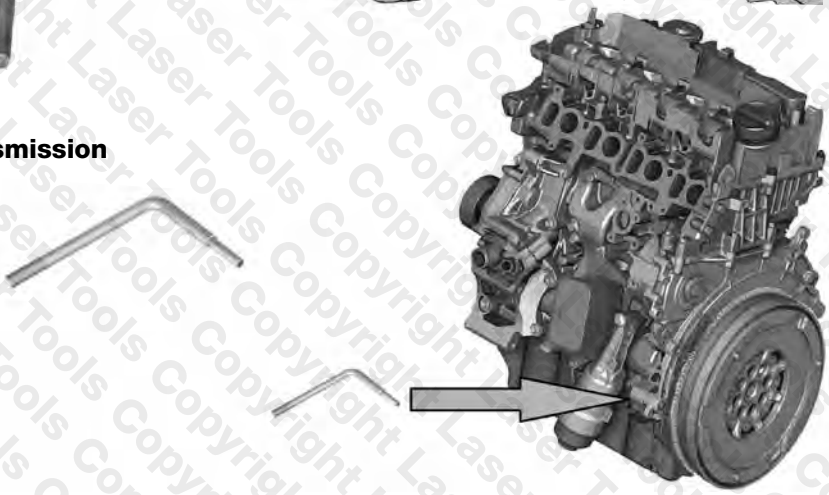
Used together for 2.0 B47 engines equipped with automatic transmission as shown. Use **D** on its own for vehicles with manual transmission.

C AND D CAN ONLY BE USED WITH THE FLYWHEEL/DRIVE PLATE IN PLACE.

Automatic Transmission: Remove starter motor and fit **C** and **D** as shown.

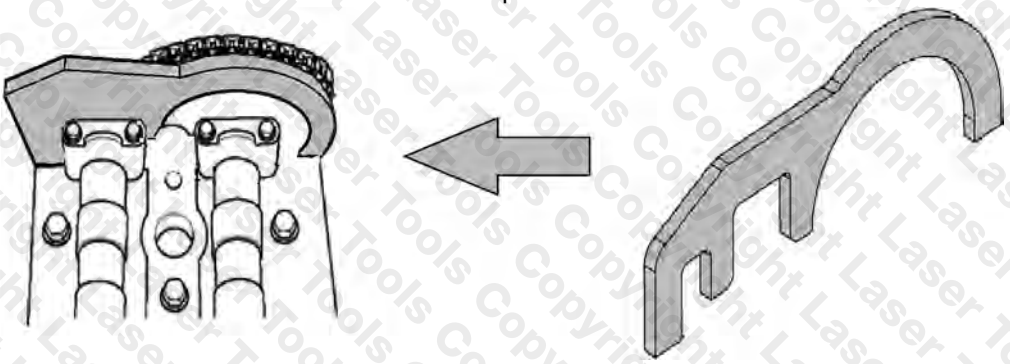


Manual Transmission



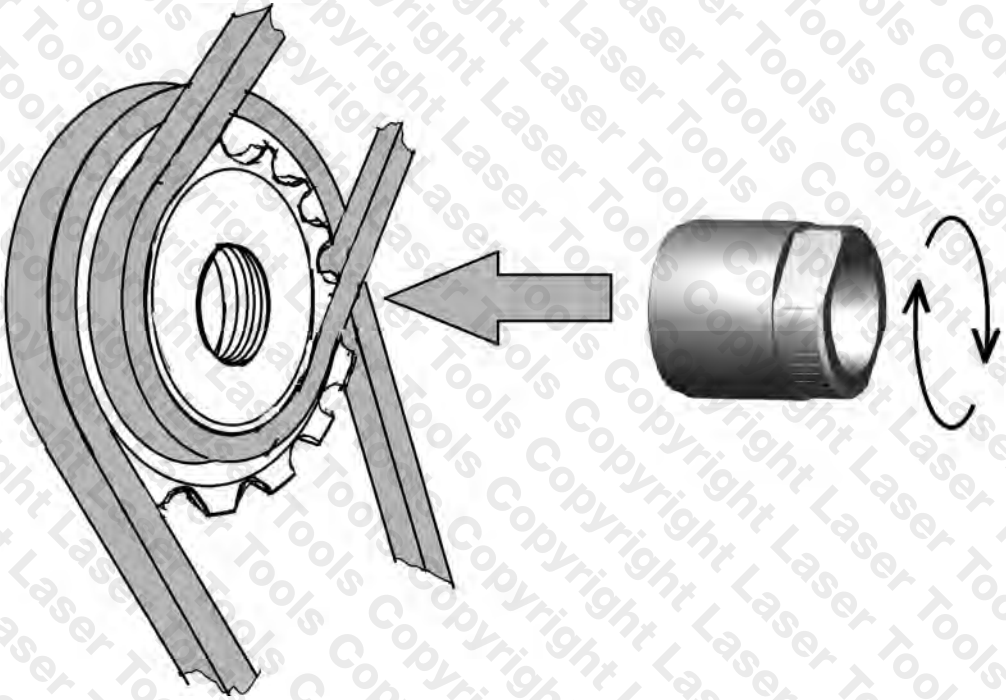
Component E

Used to lock the camshafts in their timed position as shown.



Component F

Used to pull the diesel high pressure pump sprocket off the pump to allow replacement of the chains. Remove the sprocket fixing bolt and screw **F** into the sprocket.



7242 Timing Chain Kit
BMW MINI 1.2, 1.5, 2.0, 3.0 Petrol

Introduction

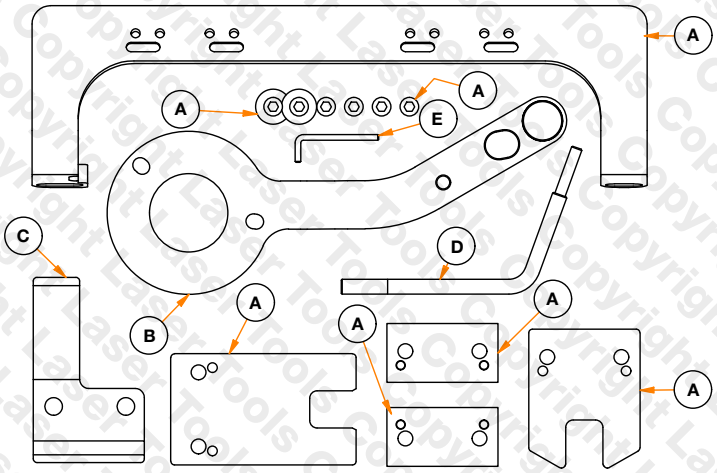
This comprehensive kit has been manufactured for the latest B38 and B48 engined MINI and B38, B48 and B58 BMW engines.

This kit consists of the camshaft and crankshaft holding tools as well as the flywheel alignment tool for manual and automatic vehicles. Please note Laser Timing Chain Pre-Tensioner Tool (Part No. 5153) may also be required. An additional kit may be required if work is being carried out on the balance shafts - use Laser Part No. 7253 (B38 engines) or Part No. 6840 (B48 engines).

- Engine Applications: B38 (1.2L & 1.5L), B48 (2.0L), B58 (3.0L).
- Equivalent to OEM tools: 2 358 122, 2 456 372, 2 357 904, 2 365 488, 2 288 380 & 11 4 120.

Designed to be used in accordance with OEM instructions.

Components



Ref.	Code	OEM Ref.	Description
A	C853	2 358 122	Camshaft Alignment Tool
B	C819	2 357 904	Crankshaft Holding Tool Assembly
C	C820	2 365 488	Flywheel/Drive Plate Adaptor
D	C821	2 288 380	Flywheel/Drive Plate Timing Pin
E	C852	11 4 120	Tensioner Locking Pin

Applications

Manufacturer	Model	Type	Year	Engine Codes
BMW	1 Series	116i, 118i, 120i, 125i, M140i, xDrive	2015 - 19	**1.5L** B38 A15A B38 A15F B38 A15P B38 B15A B38 K15A **1.6L** B48 B16A **2.0L** B46 A20B B46 B20A B46 B20B B48 A20A B48 A20B B48 A20E B48 B20A B48 B20B B48 B20C **3.0L** B58 B30A B58 B30B B58 B30C B58 B30D
		116i, 118i, 120i, 128ti, M135i, xDrive	2019 - on	
	2 Series	216i, 218i, 220i, 225i, 225xe, 230i, M240i, xDrive	2014 - 22	
		218i, 225e, 230e, xDrive	2019 - on	
	3 Series	318i, 320i, 330e, 330i, 340i, xDrive, M3	2015 - 19	
		320i, 325i, 330e, 330i, M340i, xDrive	2019 - on	
	4 Series	418i, 420i, 430i, 440i, xDrive	2015 - 21	
		420i, 430i, M440i mhev, xDrive	2020 - on	
	5 Series	520i, 530i, 540i, 530e mhev, xDrive	2017 - on	
	6 Series	630i mhev, 640i, xDrive	2017 - on	
	7 Series	730i, 740e iPerformance, 740i, 745e PHEV, xDrive	2015 - 22	
	8 Series	840i, xDrive	2018 - on	
	i8		2014 - 20	
	X1	18i, 20i, 25e, 25i, sDrive, xDrive	2015 - 22	
	X2	18i, 20i, 25e, M35i, sDrive, xDrive	2018 - on	
	X3	20i, 30i, 30e, 30i, M35i, mhev, M40i, sDrive, xDrive	2017 - on	
	X4	20i, 30i, M40i, xDrive	2018 - on	
	X5	40i, 45e, xDrive	2018 - on	
	X6	40i, xDrive	2019 - on	
	X7		2018 - 21	
	Z4	20i, 30i, sDrive	2019 - on	
MINI	Clubman	Cooper, Cooper S, JCW, One	2015 - on	**1.2L** B38 A12A **1.5L** B36 A15A B38 A15A **2.0L** B46 B20A B48 A20A B48 A20B B48 A20E B48 A20F
	Convertible		2016 - on	
	Countryman	Cooper, Cooper S, JCW, One, SE	2017 - on	
	Mini Hatch	Cooper, Cooper S, JCW, One	2014 - on	
Toyota	GR Supra		2019 - on	**2.0L** B48 B20B **3.0L** B58 B30C

Always refer to the website for most up to date applications: ***www.lasertools.co.uk/product/7242***

Instructions

Safety Warnings - Please Read

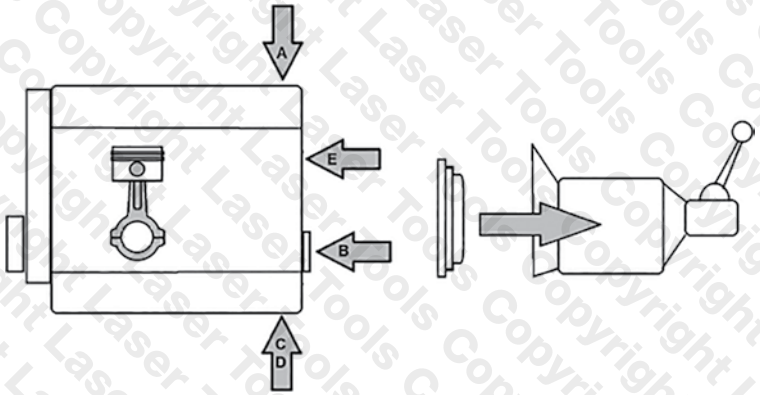
- Personal protection and safety equipment must be used at all times.
- Eye protection and protective gloves must be worn when using these tools.
- Misuse of tools is unsafe and can cause engine damage.
- Remove damaged tools from use.
- Store in a dry place when not in use.

N.B. Always turn the engine in normal direction of rotation.
Do not use timing tools to torque or loosen fixings against unless otherwise stated.

Warning: Hybrid drive vehicles (including PHEV & MHEV):

Where the vehicle is a hybrid electric vehicle there may be a risk of injury due to electric shock. Please ensure all manufacturers' safety recommendations are followed at all times including any relevant HV disconnection processes and the use of appropriate PPE as specified by the vehicle manufacturer. No liability is accepted by the Tool Connection for injury or shock to personnel, property or equipment, however caused.

Where used



Preparation

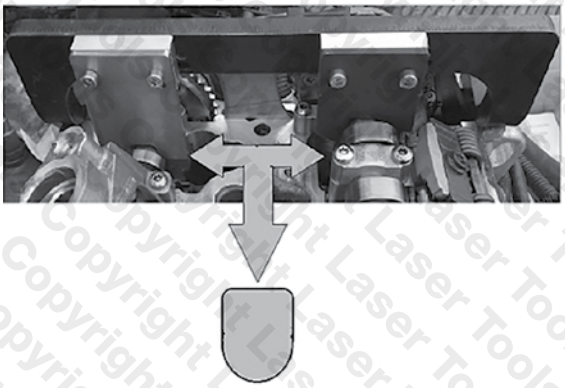
For removal and installation of timing chains, that are located at the rear of the engine:

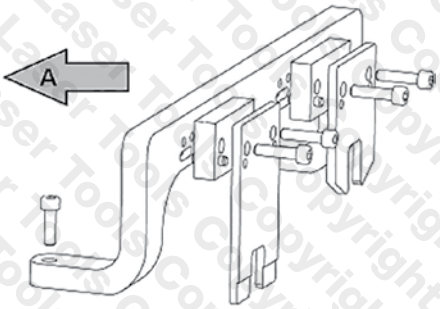
- Engine/transmission removal
- Cylinder head removal
- Flywheel/drive plate removal
- Sump removal
- Timing chain cover removal
- Oil pump chain removal

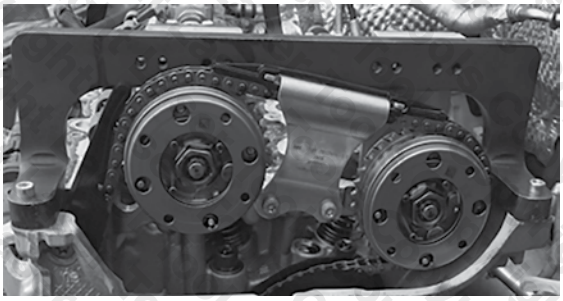
Instructions

Component A

Assemble component **A** but do not fully secure the forks in their position until the camshaft alignment tool is fitted to the cylinder head. When fitting the camshaft alignment tool make sure the middle one of the three flat sections on both camshafts must be pointing upwards.





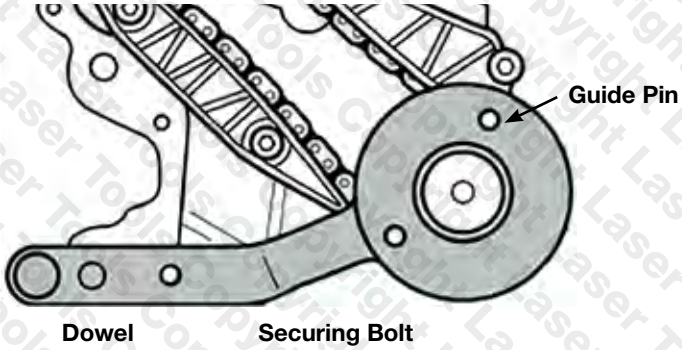


Camshaft alignment tool fitted in position, and both forks can now be secured.

Instructions

Component B

The crankshaft holding tool must be secured in order to loosen the central securing bolt of the crankshaft. Position the holding tool on the crankshaft and located on the guide pin, make sure that the securing bolt and dowel on crankcase are aligned, the securing bolt can now be tightened.



Component C/D

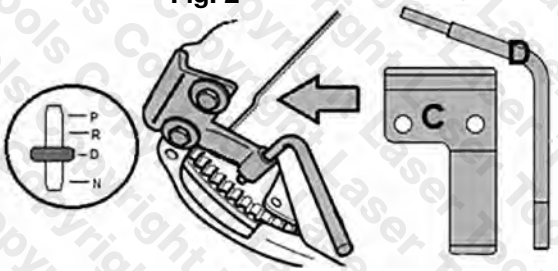
Align engine at TDC on No 1 cylinder and insert the stepped timing pin Fig 1.

If vehicle is an automatic, component **C** will have to be used when fitting the stepped timing pin Fig 2. Check camshaft lobes positions as shown in Fig 3.

Fig. 1



Fig. 2



Camshaft Lobes

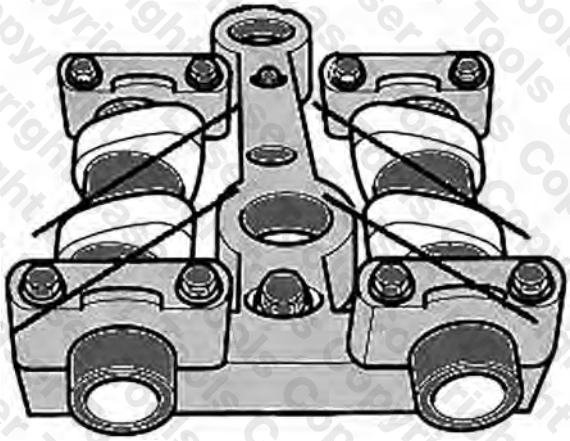
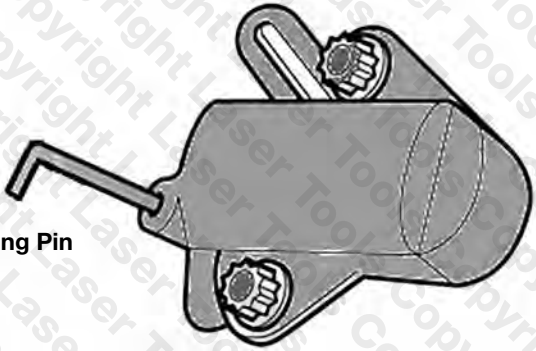


Fig. 3

Component E

Using a suitable tool, compress the tensioner piston to its fully retracted position and secure with locking pin.



Tensioner Locking Pin

7502 Engine Timing Kit
BMW 3.0L Diesel

Introduction

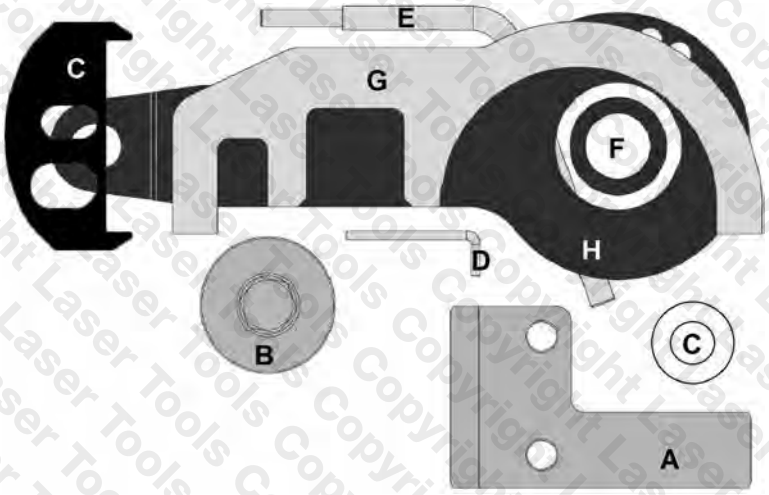
This engine timing kit provides the essential tools required to check and set the camshaft and crankshaft timing on the post 2015 BMW 3.0L (B57) diesel engines found in the BMW 5, 6 & 7 series models.

- Applications include: BMW 7 Series (from 2015); 5 Series, 6 Series Gran Turismo, X3 (from 2017); 8 Series, X4, X5 (from 2018).
- Engine code: BMW B57 D30 from 2015 onwards. For chain drive, diesel engines.
- Equivalent to OEM tools 2 365 488, 11 6 480, 11 9 260, 11 4 120, 2 288 380, 2 448 914, 11 8 760, 2 420 824, 11 9 265, 11 8 740.

Note: if the camshafts are removed Laser recommend the use of Laser Part No. 7067 Split Gear Alignment Tool to aid refitting of the camshafts.

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Components



Ref.	Comp. Code	OEM Ref.	Description
A	C820	2 365 488	Auto G/Box Drive Pin Adaptor
B	C531	11 6 480	Crankshaft Pulley Turning Tool
C	C858 C859	11 9 260, 11 9 265	Flywheel Locking Tool & Spacer
D	C852	11 4 120	Tensioner Pin
E	C821	2 288 380	Crankshaft Timing Pin
F	C532	11 8 740, 2 448 914	Fuel Pump Sprocket Removal Tool
G	C530	11 8 760	Camshaft Alignment Tool
H	C908	2 420 824	Crankshaft Holding Tool

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Applications

Manufacturer	Model	Sub Model	Range	Year
BMW	3 Series	330d	G20/21	2019-on
		xDrive		
	5 Series	530d	G30/31	2017-on
		540d		
		M550d		
		xDrive		
	6 Series Gran Turismo	630d	G32	2017-on
		640d		
		xDrive		
	7 Series	730d	G11/12	2015-on
		740d		
		750d		
		xDrive		
	8 Series	840d xDrive	G14/15	2018-on
	8 Series Gran Coupe	840d xDrive	G16	2019-on
	X3	xDrive 30d	G01	2017-on
		M40d		
	X4	xDrive 30d	G02	2018-on
		M40d		
	X5	xDrive 30d	G05	2018-on
		M50d		
	X7	xDrive 30d	G07	2018-on
		M50d		

Engine Codes	
3.0	B57 D30A, B57 D30B, B57 D30C

Always refer to the website for most up to date applications: ***www.lasertools.co.uk/product/7502***

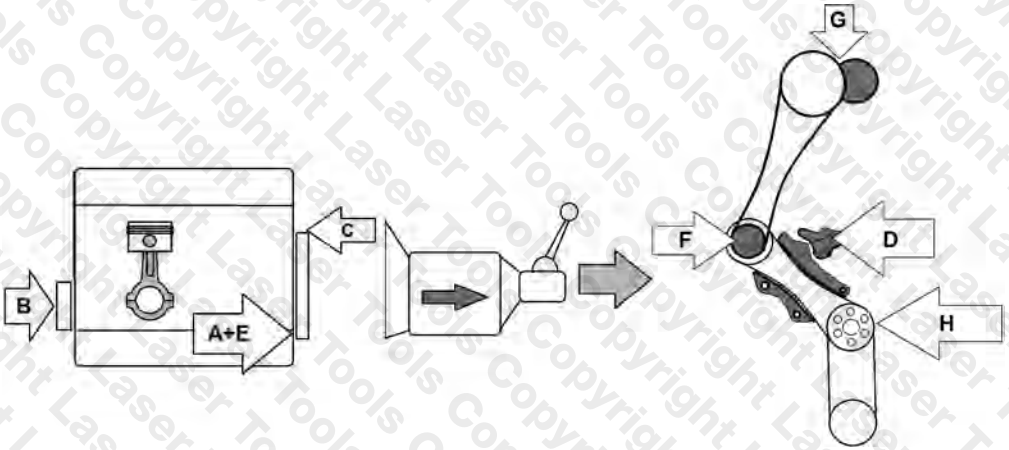
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Instructions

NOTE:

- The timing chains are located at the rear of the engine.
- To use 7502 the engine must be removed from the vehicle and the flywheel removed.
- Ensure the engine timing marks are aligned.

Where Used



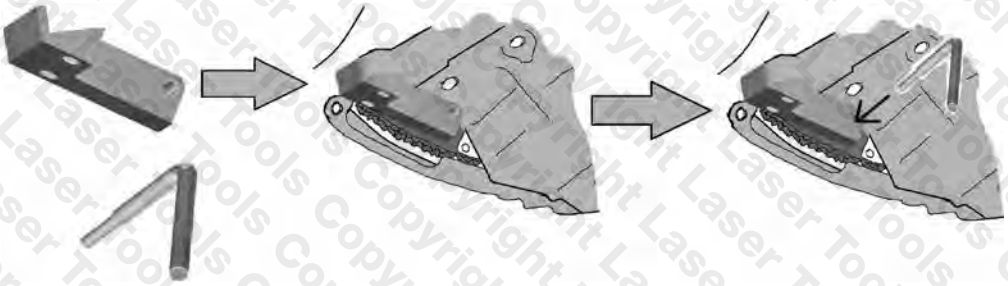
Instructions

Components A and E

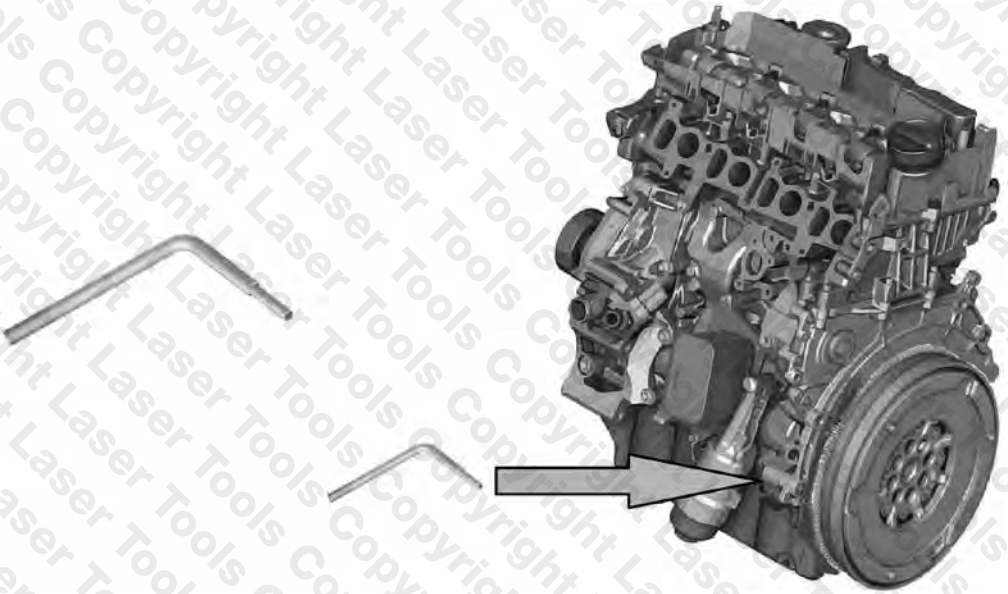
Components **A** and **E** are used together for 3.0 B57 engines equipped with automatic transmission as shown. Use **E** on its own for vehicles with manual transmission.

COMPONENT CODES **A** AND **E** CAN ONLY BE USED WITH THE FLYWHEEL/ DRIVE PLATE IN PLACE.

Automatic Transmission: remove starter motor and fit **A** and **E** as shown.

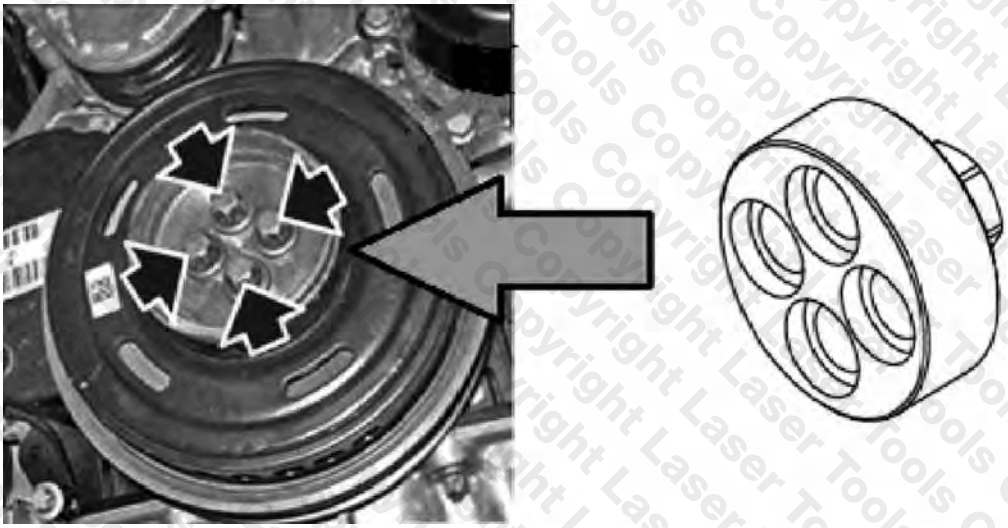


Manual Transmission



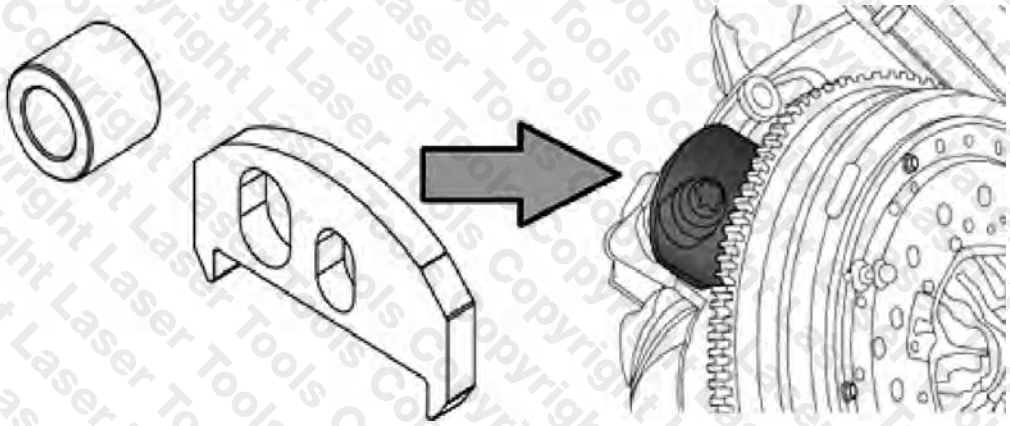
Component B

Fits over the existing crankshaft pulley fixing bolts allowing the crank to be turned.



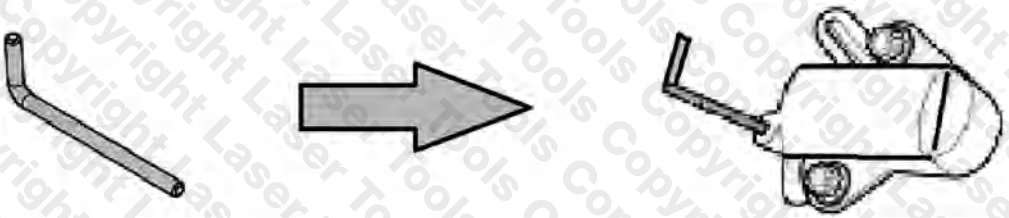
Component C

Used to lock and hold the flywheel ring gear to allow removal of the holding bolts.



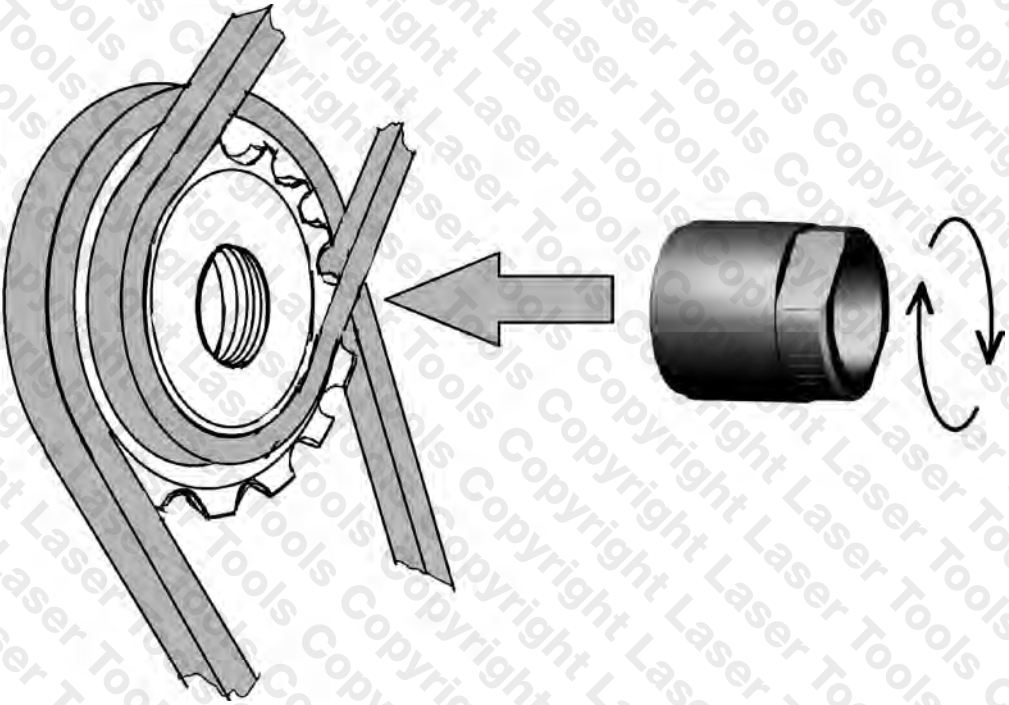
Component D

Used to lock the crankshaft to fuel pump drive chain tensioner in its retracted position as shown.



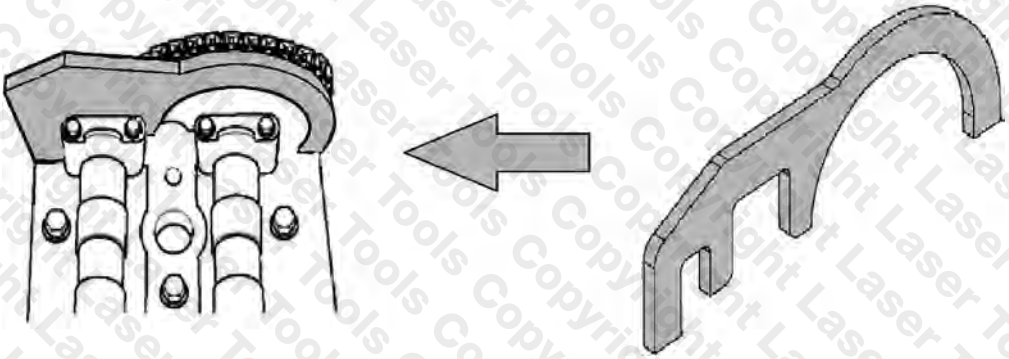
Component F

Used to pull the diesel high pressure pump sprocket off the pump to allow replacement of the chains. Remove the sprocket fixing bolt and screw **F** into the sprocket.



Component G

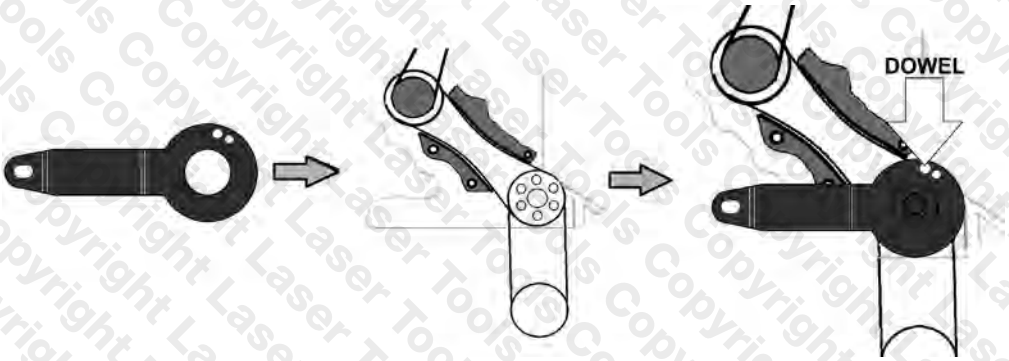
Used to lock the camshafts in their timed position as shown.



Component H

Used to lock the crankshaft in its timed position as shown. The transmission and flywheel must first be removed from the engine.

ENSURE THE CRANKSHAFT DOWEL PIN IS POSTIONED AS SHOWN.



Safety Warnings – please read

- If the engine has been identified as an Interference engine, damage to the engine will occur if the timing belt has been damaged. A compression check of all the cylinders should be taken before the cylinder head(s) are removed.
- Do not turn crankshaft or camshaft when the timing belt/chain has been removed.
- To make turning the engine easier, remove the spark plugs/glow plugs or injectors.
- Observe all tightening torques.
- Do not turn the engine using the camshaft or any other sprocket.
- Disconnect the battery earth lead (check radio code is available).
- Do not use cleaning fluids on belts, sprockets or rollers.
- Some toothed timing belts are not interchangeable. Check the replacement belt has the correct tooth profile.
- Always mark the belt with the direction of running before removal.
- Do not lever or force the belt onto its sprockets.
- Do not use timing pins to lock the engine when slackening or tightening the crankshaft pulley bolts.
- ALWAYS REFER TO A REPUTABLE MANUFACTURERS WORKSHOP MANUAL.

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Warranty

To celebrate our 50th year in business Laser Tools have introduced a 50-year limited warranty. Products Marked with the "Laser 50 Year" logo are covered by the Laser Tools 50-year limited warranty. See the full warranty details on the website for further conditions and exclusions.

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear and tear are excluded as are consumable items and abuse.

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