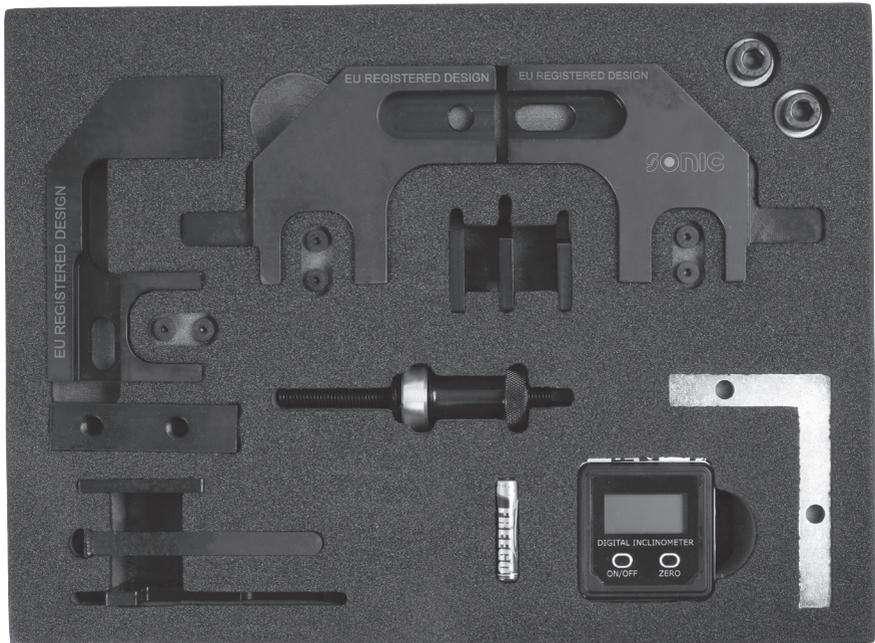


ART NO. 829121



Engine Locking Kit

BMW | Mini | PSA EP 1.4 | 1.6
Chain Driven Engines



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Description

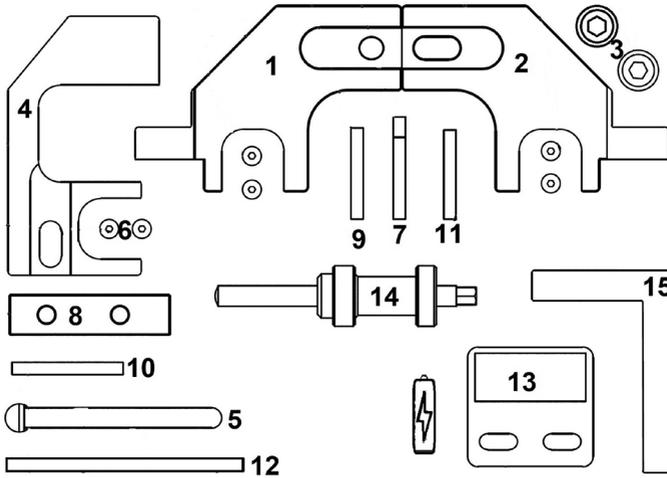
A complete engine timing kit designed to allow the timing to be set and checked on the 1.4 | 1.6 PSA | BMW engines found in the BMW, Mini and PSA ranges. Engine codes covered include N12, N13, N14, N16 and N18 for BMW | Mini and EP3, EP6 for Citroën | Peugeot from 2006 to 2016.



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 these engine timing tools is purely down to the user's discretion and Sonic Equipment cannot be held responsible for any damage caused what so ever.

Plan Layout



Ref	Code	OEM	Description
1	4880375	0197-A1/A1Z, 0197-A11, 11 7 440, 11 9 551, 11 9 540	Exhaust Camshaft Alignment Tool
2	4880372	0197-A2, 11 9 551	Inlet Camshaft Alignment Tool
3	4880349		M10 Screw
4	4880378	0197-A3, 0197-031, 11 7 440, 11 9 540	Inlet Camshaft Alignment Tool
5	4880358	0197-BZ, 11 9 590, 49 6 709, 2 299 362	Flywheel Timing Pin
6	4880416		M5 Screws x 6 off
7	4880373	0197-A1/AZ, 11 9 540	Exhaust Camshaft Alignment Tool Adapter
8	4880380	ALL CAM ASSEMBLIES	Link Bar for A & B
9	4880376	0197-A2, 11 9 551	Inlet Camshaft Alignment Tool Adapter
10	4880377	0197-A31, 11 7 440	Inlet Camshaft Alignment Tool Adapter
11	4880374	0197-A11, 11 9 551, 11 9 440	Exhaust Camshaft Alignment Tool Adapter
12	4880379	0197-A3, 11 9 540	Inlet Camshaft Alignment Tool Adapter
13	4880415	G-1376-A	Digital Inclinometer
14	4880371	0197-M, 11 9 340	Dummy Timing Chain Tensioner
15	4880415	E1.100	Angle Bracket

Applications

Make	Model	Year	Type
Citroën	C3 III	2010-2015	VTi VTi LPG VTi 4x2 THP R GTi GTi 30th GT THP 200 GTi THP 250 GTi THP 270 e-THP GT THP GT THP 175 THP 156 THP 163 THP 140 THP 150 GTi THP VTi/S16 Cooper S JCW Cooper 320i 114i 116i 118i 120i 316i
	C3 Picasso	2009-2015	
	C4 II	2011-2015	
	C4	2008-2011	
	C4 Picasso	2008-2015	
	C5 III	2009-2015	
	DS3/DS3 Cabrio	2009-2014	
	DS4	2012-2015	
	DS5	2014-2015	
	Berlingo III	2009-2016	
DS3/DS3 Cabrio	2010-2015		
Peugeot	RCZ	2010-2016	
	207 CC	2007-2015	
	207	2006-2013	
	2008	2013-2016	
	208	2012-2016	
	3008	2009-2016	
	308	2007-2016	
	308 CC	2009-2015	
	508	2011-2016	
	5008	2009-2016	
Partner III	2009-2016		
Mini	Clubman	2007-2014	
	Countryman	2010-2016	
	Coupe	2011-2015	
	Mini	2010-2015	
	Paceman	2013-2016	
	Roadster	2012-2015	
BMW	3 Series	2012-2015	
	1 Series	2011-2016	

Applications

Engine Size	Engine Code
1.4	8FP (EP3C), 8FR (EP3C), 8FS (EP3), 8FN (EP3C), EP3 (8FS), EP3C (8FP), EP3C (8FR), EP3C (8FN), N12B14AB, N12B14
1.6	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/M0, N18 B16C, N18 B16A/M0, N18 B16M0, N18 B16C/T0, N13 B16A, N13, N12B16A, N14B16A, N16 B16A, N16 B16M0, N16 B16U0, N16 B16K0, N16 B16A/M0, N16 B16A/M0

Instructions

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 Sonic Equipment cross reference chart and drawings below to identify the tool configuration required.

Camshaft Locking Cross reference

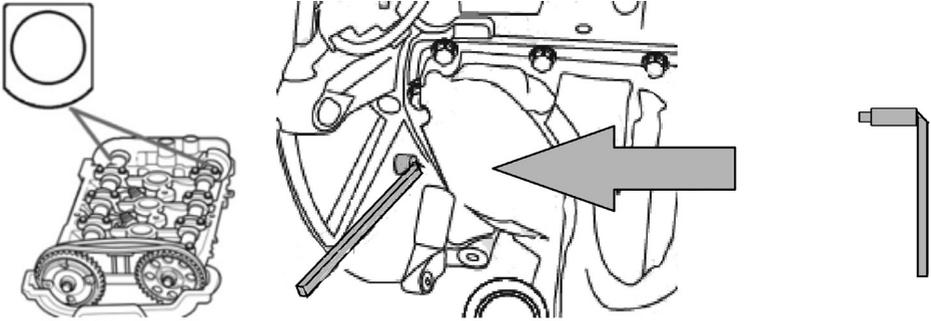
PSA OEM to Sonic Item Numbers		
OEM	Description	Ref.
0197-A1/A1Z	Ex. Camshaft Alignment Assembly	1+7
0197-A11	Ex. Camshaft Alignment Assembly	1+12
0197-A2	Inlet Camshaft Alignment Assembly	2+10
0197-A3	Inlet Camshaft Alignment Assembly	4+10
0197-A31	Inlet Camshaft Alignment Assembly	4+11
BMW OEM to Sonic Item Numbers		
OEM	Description	Ref.
11 7 440	Camshaft Alignment Assembly	1+12+8+4+11
11 9 551	Camshaft Alignment Assembly	1+12+8+2+9
11 9 540	Camshaft Alignment Assembly	1+7+8+4+10

1, 2 & 4 components are EU Registered Design.

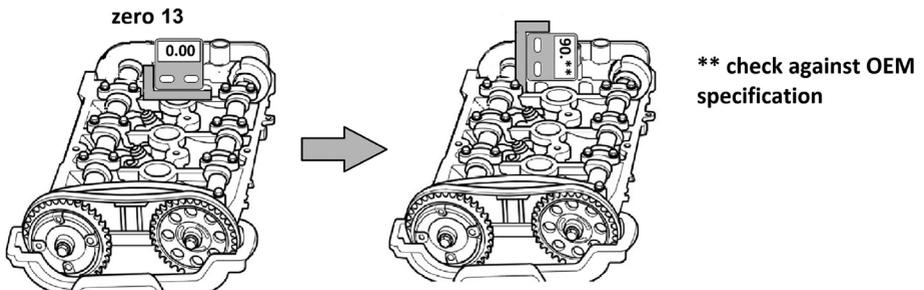
Instructions

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 (5).
- Ensure the camshafts are correctly aligned with their alignment flats positioned as shown.



- Use components (13) digital inclinometer and (15) to check the chain stretch in accordance with OEM specification (PSA). Place (13) and (15) on the cylinder head as shown and zero (13). Move components (13) and (15) so that the angle of the side flat of the camshaft is displayed on (13) as shown. Compare to OEM specification.



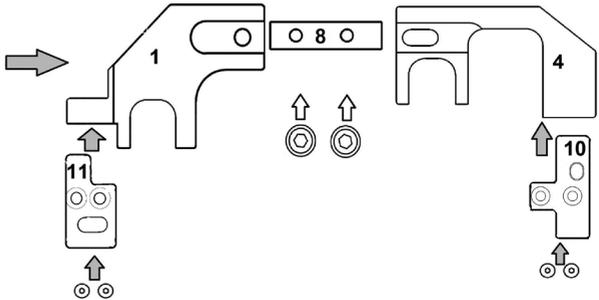
- Lock both camshafts with component 1 + 2 or 1 + 4 with appropriate alignment adaptors as dictated by the OEM part numbers required.

N.B. Mount the camshaft locking components with the link bar (8) facing the gear box end of the engine.

Instructions

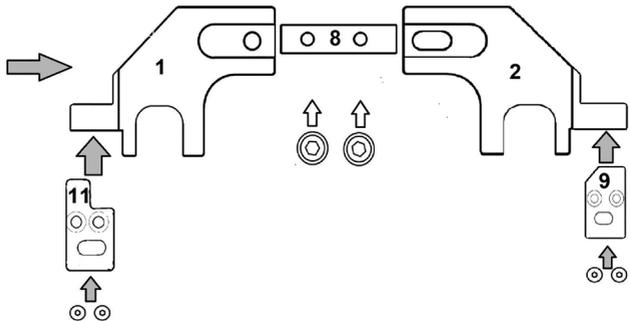
For BMW N13 and N18 engines assemble the camshaft locking components as shown.

BMW N13/N18 = 1+11+8+4+10
OEM = 11 7 440



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

BMW N14 = 1+11+8+2+9
OEM = 11 9 551

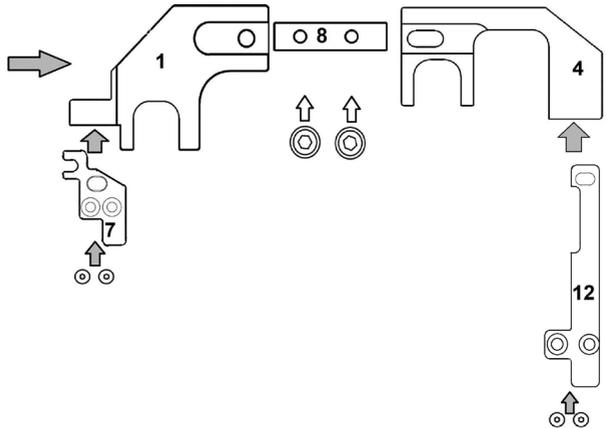


Instructions

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

BMW N12/N16 = 1+7+8+4+12

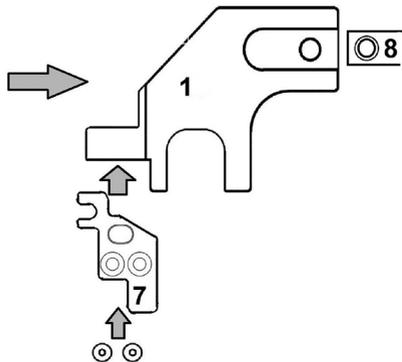
OEM = 11 9 540



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

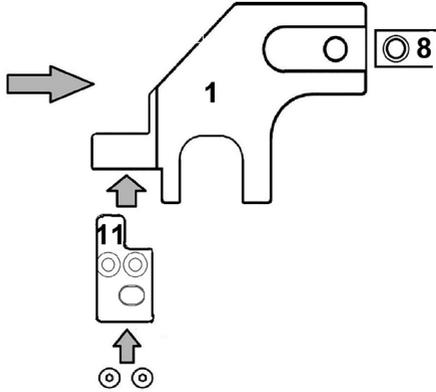
N.B. Mount the camshaft locking components with the link bar (H) facing the gear box end of the engine.

OEM 0197-A1/A1Z = 1+7

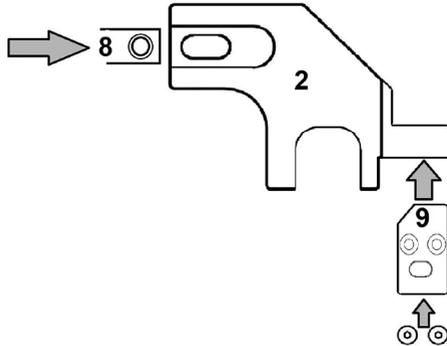


Instructions

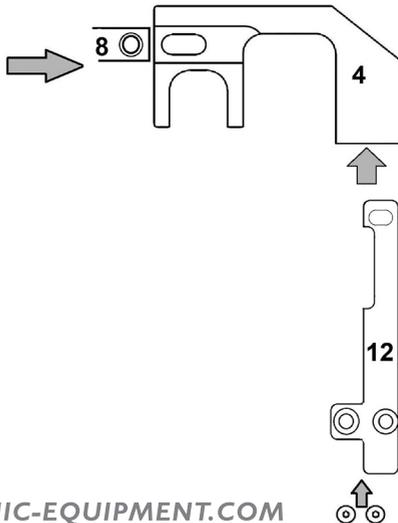
OEM 0197-A11 = 1+11



OEM 0197-A2 = 2+9

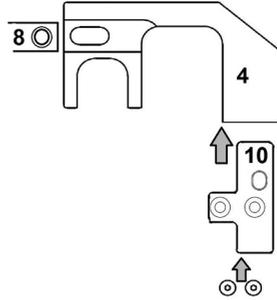


OEM 0197-A3 = 4+12



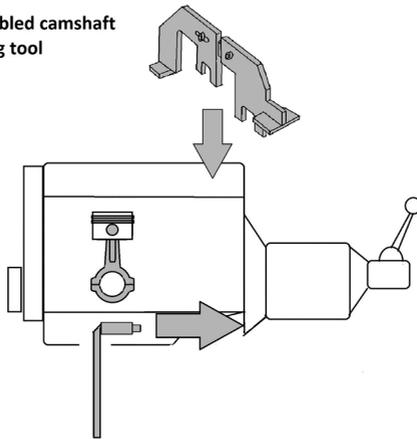
Instructions

OEM 0197-031 = 4+10 →

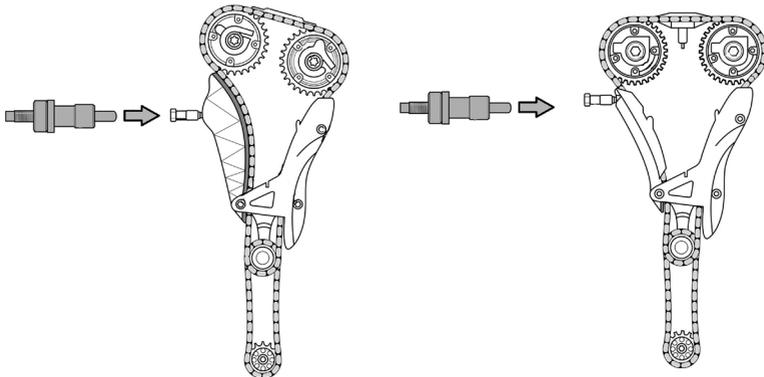


Use of locking components:

Assembled camshaft
locking tool



Use component **(14)** dummy timing chain tensioner tool to pre-load the timing chain when setting the timing. Tighten the pre-tensioner to EOM specification.



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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.

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