Incorrect or out of phase engine timing can result in damage to the valves. The Tool Connection cannot be held responsible for any damage caused by using these tools in anyway.

Safety Precautions – Please read

- Disconnect the battery earth leads (check radio code is available)
- Remove spark or glow plugs to make the engine turn easier
- Do not use cleaning fluids on belts, sprockets or rollers
- Always make a note of the route of the auxiliary drive belt before removal
- Turn the engine in the normal direction (clockwise unless stated otherwise)
- Do not turn the camshaft, crankshaft or diesel injection pump once the timing chain has been removed (unless specifically stated)
- Do not use the timing chain to lock the engine when slackening or tightening crankshaft pulley bolts
- Do not turn the crankshaft or camshaft when the timing belt/chain has been removed
- Mark the direction of the chain before removing
- It is always recommended to turn the engine slowly, by hand and to re-check the camshaft and crankshaft timing positions.
- Crankshafts and Camshafts may only be turned with the chain drive mechanism fully installed.
- Do not turn crankshaft via camshaft or other gears
- Check the diesel injection pump timing after replacing the chain
- Observe all tightening torques
- Always refer to the vehicle manufacturer's service manual or a suitable proprietary instruction book
- Incorrect or out of phase engine timing can result in damage to the valves
- It is always recommended to turn the engine slowly, by hand, and to re-check the camshaft and crankshaft timing positions

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TOOL CONNECTION
The Complete Connection

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Guarantee

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

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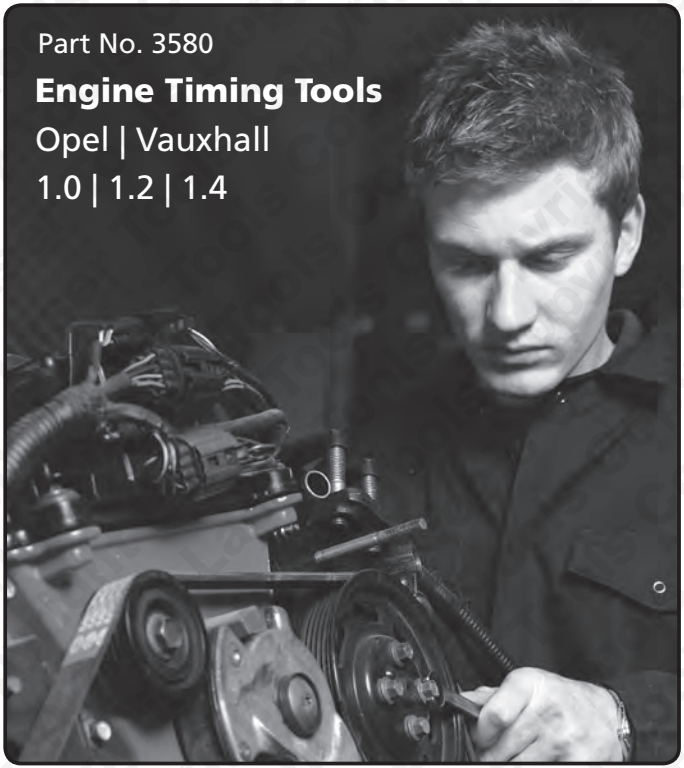
LASER®

Part No. 3580

Engine Timing Tools

Opel | Vauxhall

1.0 | 1.2 | 1.4



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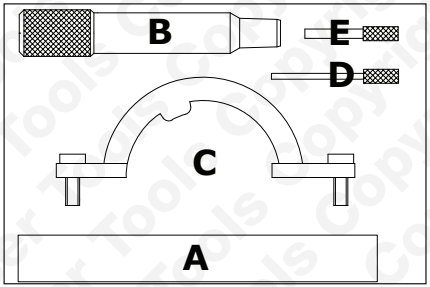
Plan Layout

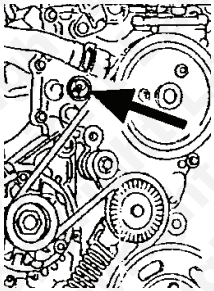


Ref	Code	Oem Ref	Description
A	C174	KM-953	Camshaft Setting Plate
B	C175	KM-952	Crankshaft TDC Timing Pin
C	C176	KM-954	Timing Disc Position Gauge
D	C177	KM 955	Tensioner Retaining Pin 2.5mm
E	C178	KM-955	Tensioner Retaining Pin 4mm

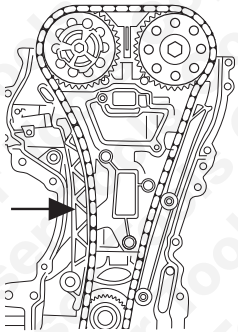
Introduction (DE)

1. Die Spannstifte **(D / E)** dienen zur Befestigung der hydraulisch betätigten Spannschiene, die bei Austauscharbeiten am Riemen vom Kontakt mit der Simplex-Kette entfernt werden müssen.

D



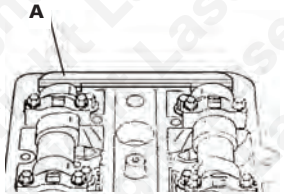
E



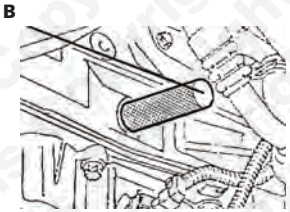
Instruction (DE)

Die richtige Ventilsteuerung wird erreicht, wenn der erste Zylinder am OT angekommen ist und die einzelnen Justierwerkzeuge korrekt zum Einsatz gebracht werden können.

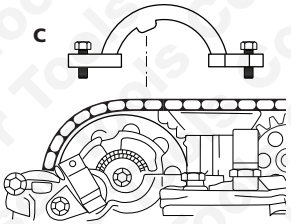
1. Nockenwellen-Einstellplatte **(A)** dient zur korrekten Lagebestimmung beider Nockenwellen und wird in die Aussparungen der Nockenwellen horizontal zur Zylinderkopfoberseite eingesetzt.



2. Der Kurbelwellen-Fixierdorn **(B)**, der die richtige OT-Lage der Kurbelwelle einstellt, wird in den Motorblock in eine Aussparung eingeführt, die sich auf der ersten Kurbelscheibe der Kurbelwelle befindet.



3. Die Taktscheiben-Positionierleere **(C)** wird mit dem eingangsseitigen Nockenwellengetriebe verbunden, um die Nockenwelle und die Sensorscheibe auf richtige Ventilsteuerung einzustellen.



Applications

The application list for this product has been compiled cross referencing the OEM Tool Code with the Component Code.

In most cases the tools are specific to this type of engine and are necessary for Cam belt or chain maintenance.

If the engine has been identified as an interference engine valve to piston damage will occur if the engine is run with a broken Cam belt.

A compression check of all cylinders should be performed before removing the cylinder head.

Always consult a suitable work shop manual before attempting to change the Cam belt or Chain.

The use of these engine timing tools is purely down to the user's discretion and The Tool Connection cannot be held responsible for any damage caused what so ever.

ALWAYS USE A REPUTABLE WORKSHOP MANUAL

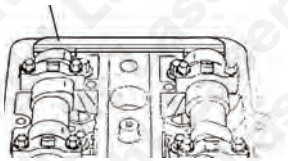
Manufacturer	Model	Style	Engine Code	Year
Vauxhall/Opel	Agila	1.0 | 1.2	Z10XE | Z12XE	2004
	Agila	1.0 | 1.2	Z10XEP | Z12XEP	2003-08
	Corsa-B	1.0	X10XE	1997-00
	Corsa-B	1.2	X12XE	1997-00
	Corsa | Combo-C	1.0 | 1.2 | 1.4	Z10XEP | Z12XEP Z14XEP	2003-09
	Astra-G	1.2	X12XE	1998-04
	Astra-G	1.4	Z14XEP	2003-06
	Astra-H	1.4	Z14XEL | Z14XEP	2004-09
	Tigra-B	1.4	Z14XEP	2004-09
	Meriva	1.4	Z14XEP	2004-09

Instruction (GB)

The correct engine timing position is achieved when the first cylinder is at TDC and each of the timing tools can be correctly fitted.

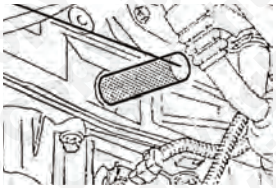
1. Camshaft Setting Plate **(A)** is used to correctly position both camshafts, and fits into the slots of each camshaft to align horizontally in relation to the top surface of the cylinder head.

A



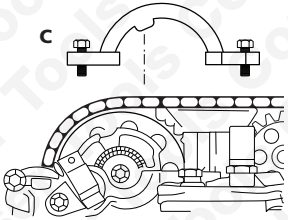
2. The Crankshaft Locking Pin **(B)** which positions the crankshaft at TDC is inserted through the engine block and locates into a slot located on the first crank web of the crankshaft.

B



3. The Timing Disc Position Gauge **(C)** is connected to the cylinder head at the inlet camshaft sprocket to achieve the correct timing position of the camshaft and the sensor disc.

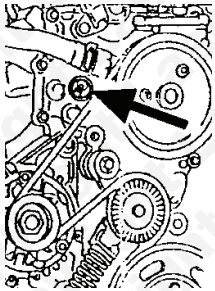
C



Instruction (ES)

1. Los pasadores del tensor se utilizan para retener el rail tensor hidraulico que no debe tocar la cadena durante el cambio de correa.
2. Si es necesario ajustar el calado el rail tensor se debe retractar para evitar daño.
3. Mover el rail cuidadosamente con una palanca y sujetarlo con un pasador.
4. Hay un agujero en la tapa de la cadena de distribución.
5. Afloje el piñon del árbol de levas y usando una llave fija sujete el arbol d levas.
6. Use una tuerca nueva y aprtiete parcialmente para permitir el disco de caldo girar.
7. Quite el pasador del tensor.
8. Coloque el disco del sensor para que permita montar la placa de calado **(C)**.
9. Apriete la tuerca del piñon al torque correcto mientras sujete el arbol de levas.

D



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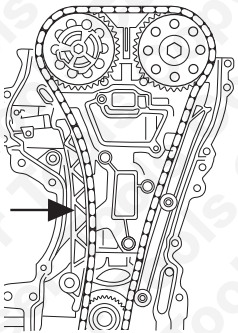
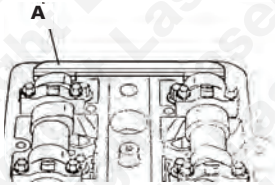


Instruction (FR)

Le moteur correct qui chronomètre la place est accompli quand le cylindre premier est à PMH et chacun des outils du réglage peut être allé parfaitement correctement

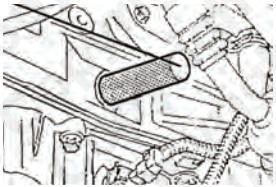
1. L'outil de calage l'arbre a cammes **(A)** est utilisé pour placer les deux arbres à cames correctement, et crises dans les fentes de chaque arbre à cames aligner par rapport à la surface du moteur du cylindre horizontalement.

A



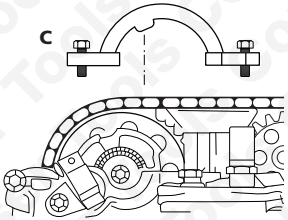
2. Le Pige de blocage de vilebrequin **(B)** quelles places le vilebrequin à PMH est inséré à travers le bloc du moteur et localise dans une fente localisée sur le tissu de la manivelle premier du vilebrequin.

B



3. L'outil de reglage la jauge de la disque. **(C)** est connecté à la tête du cylindre à la dent de l'arbre à cames de l'entrée pour accomplir la place du réglage correcte de l'arbre à cames et le disque de la sonde.

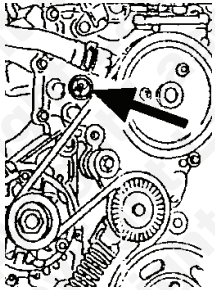
C



Instruction (FR)

4. Les piges de tendeur **(D+E)** est retenait les tendeur activés hydrauliques raillent qui doit être déplacé de contact avec la chaîne du simplex pendant le travail de remplacement de la ceinture.
5. Si l'ajustement au réglage est nécessaire le rail du tenseur doit être se rétracté pour éviter le Rail dégât. Le devrait être manipulé à l'aide d'un levier avec soin loin et devrait être retenu avec une Épingle. Un trou du service est fourni dans l'abri de la chaîne du réglage.
6. Publiez le verrou de la dent de l'arbre à cames de l'entrée, utilisez une clef à la comptoir influence l'arbre à cames et pas les outils du réglage.
7. Allez parfaitement un nouveau verrou de la dent et la partie pour permettre au disque du réglage de tourner.
8. Enlevez le tendeur qui retient l'épingle.
9. Placez le disque de la sonde pour autoriser la jauge **(C)** être allé parfaitement.
10. Serrez le verrou de la dent au du moment de rotation correct tenue l'arbre à cames en sens inverse.
11. Enlevez tous les outils du réglage.
12. Manuellement, tournez le moteur dans la direction normale deux fois, jusqu'à en arrière au PMH.
13. Vérifiez que chacun des outils du réglage peut être ré - allé parfaitement correctement.

D



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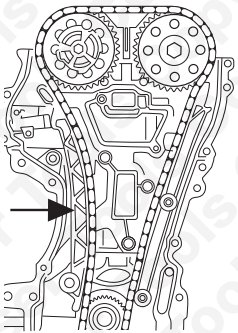
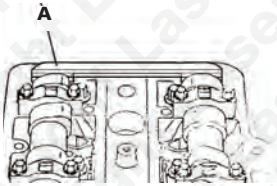


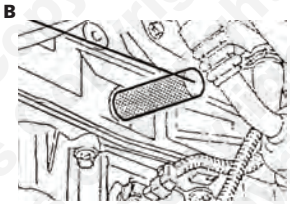
Instruction (ES)

La posicion correct se consigue cuando el primer cilindro esta a sup unto muerto superior y cada una de las herramientas se pueden mmontar correctamente.

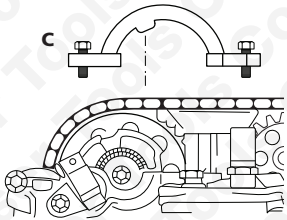
1. La placa de bloqueo del árbol de levas **(A)** se usa para posicionar los 2 árboles de levas y cabe entre los 2 ranuras de cada arbol de levas para alinear horizontalmente en ralcion al superficie superior del cilindro.



2. El pasador de cigüeñal **(B)** que posiciona el cigüeñal al punto muerto superior se inserta a través del bloque del motor a una ranura en el cigüeñal.

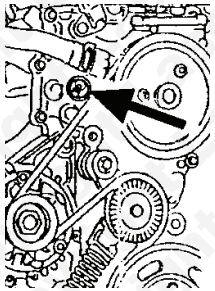


3. La placa de bloqueo del árbol de levas se coloca a la parte superior del cilindro junto al piñon del árbol de levas.



Instruction (GB)

1. Tensioner Retaining Pins (D+E)are used to retain the hydraulic activated tensioner rail which must be moved from contact with the simplex chain during the work of belt replacement.



2. If adjustment to the timing is necessary the tensioning rail must be retracted to avoid damage. The Rail should be carefully levered away and retained with a Pin. A service hole is provided in the timing chain cover.

3. Release the inlet camshaft sprocket bolt, use a spanner to counter-hold the camshaft and not the timing tools.

4. Fit a new sprocket bolt and part tighten to enable the timing disc to turn.

5. Remove the tensioner retaining pin.

6. Position the sensor disc to allow the gauge (C) to be fitted.

7. Tighten the sprocket bolt to the correct torque whilst counter holding the camshaft.

8. Remove all the timing tools.

9. Manually, turn the engine twice in the normal direction, until back to the Top Dead Centre position.

10. Check that each of the timing tools can be re-fitted correctly.