

# GM Timing Tool Kit - 1.4L

- 1.4L Ecotec (Turbo) Timing tool kit is used to set the timing
- For 2011 & up GM models with the 1.4L Ecotec engine
- Compare to GM Factory Tool: EN-49977-100, EN-49977-200, EN-49978, KM-952, KM-953-A & KM-955



**CAUTION:** To prevent injury, always wear gloves and eye protection that meets ANSI Z87.1 and OSHA standards.  
**CAUTION:** To prevent equipment damage, clean and lubricate threaded screws and holes before and after use.

## INSTRUCTIONS:

Engine Code:

1.0: AIOXEP

1.0 Ecoflex: AIOXEP

1.2: A12XEL, L2Q/AI2XEL, LWD/AI2XEL

1.2 Ecoflex: A12XER, A12XEL

1.4: A14XEL, L2Z/A14XEL, LDD/A14XER, LDD/AI4XEL, LUJ/AI4NET 1.4 Ecoflex:

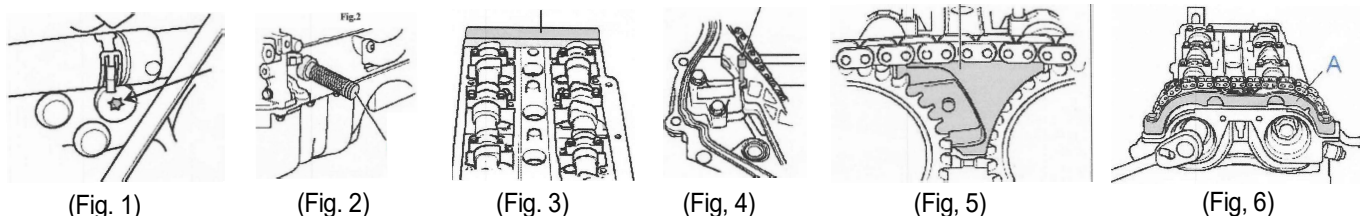
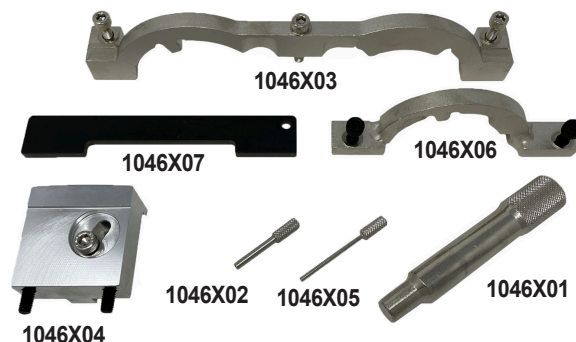
A14XER, LDD, LUH/A14NEL, LUJ/AI4NET, LUU

1.4 Turbo: LUJ/A14NEL, LUJ/AI4NET

The tool in this kit is required to correctly set the engine timing when replacing the timing chain or when cylinder head and/or camshaft removal is required.

This kit covers the 1.0, 1.2 and 1.4 liter twin overhead camshaft petrol engines fitted to a range of Vauxhall, Opel and Chevrolet engines. Replacement of the timing chain will require the removal of the sump.

P/N	Description
1046X01	Cam Holding Pin - Large
1046X02	Timing Pin - Small
1046X03	Cam Sprocket Holders
1046X04	Holding Block
1046X05	Timing Pin - Extra Small
1046X06	Cam Sprocket Holders
1046X07	Cam Locking Plate



### 1. Engine Timing Check/Replacing the Timing Chain:

Note: If the valve timing purely needs to be checked, the chain tensioner can be locked by removing the blanking bolt from the front chain cover: for chain replacement, the front chain cover (Fig. 1) will need to be removed.

- Remove the blanking plug from the cylinder block; rotate the engine until just before the TDC mark on cylinder number one. Slowly turn the crankshaft clockwise until **1046X01** can be inserted into the crankshaft. (Fig.2)
- Remove the camshaft cover and insert **1046X07** into the rear of the camshafts. (Fig.3)
- Remove the timing chain cover; lock the timing chain tensioner in the retracted position using the correct locking pin (either **1046X02** or **1046X05**). (Fig.4) Remove the timing chain tensioner and timing chain guides.
- 1-4 Remove the timing chain and crankshaft sprocket as one assembly.

### 2. Refitting the Timing Chain:

- Fit the timing chain and crankshaft sprocket as one assembly.
- Ensure the timing chain is taught on its non-tensioned side.
- Remove the timing chain tensioner locking pin, camshaft locking plate and crankshaft locking pin.
- Turn the engine two revolutions clockwise by hand and re-insert the crankshaft locking pin and camshaft locking tool.
- If the tools cannot be re-inserted, the valve timing is incorrect.

### 3. Adjusting the Camshaft Timing and Setting the Camshaft Sensor Position:

- Slowly turn the crankshaft clockwise until **1046X01** can be inserted into the crankshaft
- Turn the inlet camshaft to compress the timing chain tensioner and insert either **1046X02** or **1046X05**.
- Slacken both camshaft adjuster bolts.
- Turn the camshafts until the camshaft sensor locating tool (depending on application - either **1046X03** or **1046X06** can be inserted).
- Remove the upper timing chain guide and the timing chain tensioner locking pin.
- Insert **1046X04**. (Fig. 5)
- Fit **1046X03** ensuring it abuts the cylinder head and secure it with the bolts provided. (Fig.6)
- Tighten the inlet camshaft adjuster bolt, followed by the exhaust camshaft adjuster bolt. The tightening torque for both of these bolts is 50 Nm + 60°. The camshafts can be prevented from rotation by using a spanner on the camshaft hexagon.
- Remove all tooling, rotate the engine two turns clockwise, and re-check the valve timing.

