GAT4404C

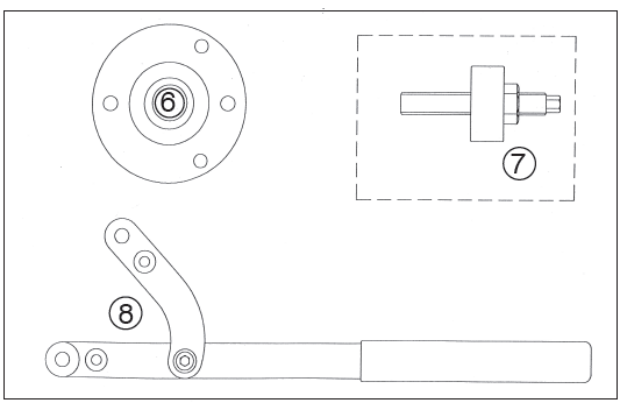
Petrol engine twin camshaft Setting/locking tool Set

Associated tools: GAT4629 Crankshaft Pulley Remover & Installer Set & GAT4736 Crankshaft Pulley Holding Tool

Associated Tool
GAT4629

Associated Tool
GAT4736

IMPORTANT: Always refer to the vehicle manufacturer's service instructions, or proprietary manual, to establish the current procedures and data. Product Information Sets detail applications and use of the tools with any general instructions provided as a guide only.



GAT4629

Applications:

FORD 1.25, 1.4, 1.6, 1.7, 1.8 & 2.0 Twin Cam 16v. DURATEC Petrol engines (Belt & Chain) in
FORD

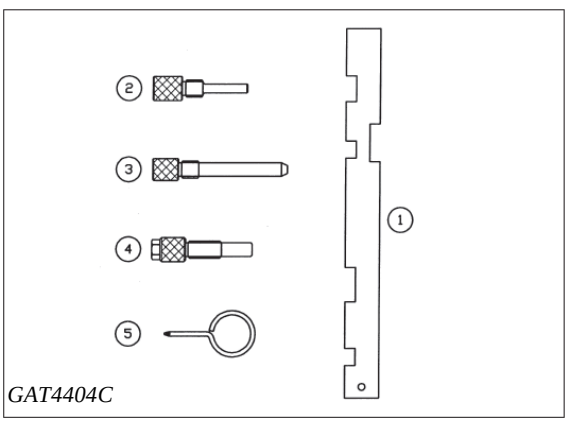
Fiesta/Courier	Fusion	Puma
Focus/C-Max	Mondeo	Cougar
S-Max	Galaxy	Tourneo Connect
Transit Connect		

MAZDA

121	2	3
6	Tribute	

Refer to the Application chart on the following page(s) for specific model information

Additional GATES tools required:
GAT4629 Crankshaft Pulley Remover & Installer Set
GAT4736 Crankshaft Pulley Holding Tool
GAT4844 Sprocket Holding Tool



GAT4404C

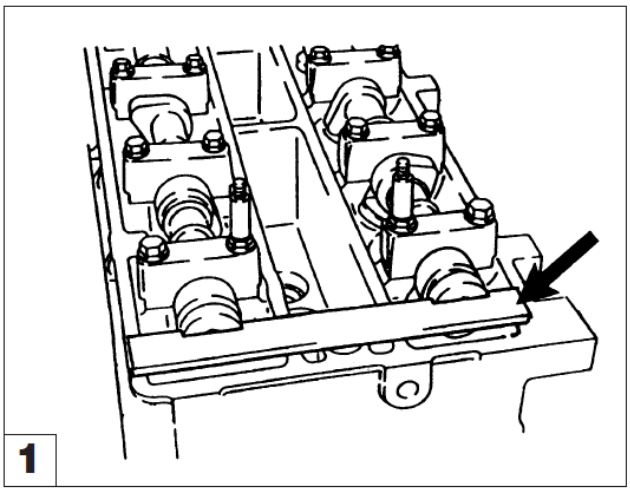
Set contents/spares

item	Part Number	Description
	GAT4404c Set	
1	GAT4933	Camshaft Setting Plate
2	GAT3032-18	Crank TDC Location Pin
3	GAT3032-19	Crank TDC Location Pin
4	GAT3032-21	Crank Holding Tool (+ Crank Pulley Bolt Tightening).
5	GAT4640T7	Timing Belt Tensioner Locking Pin
	GAT4629 Set	
6	GAT4626	Pulley Removal Plate
7	GAT4627	Installer
8	GAT4628	Holding Tool

GAT4404C Application chart

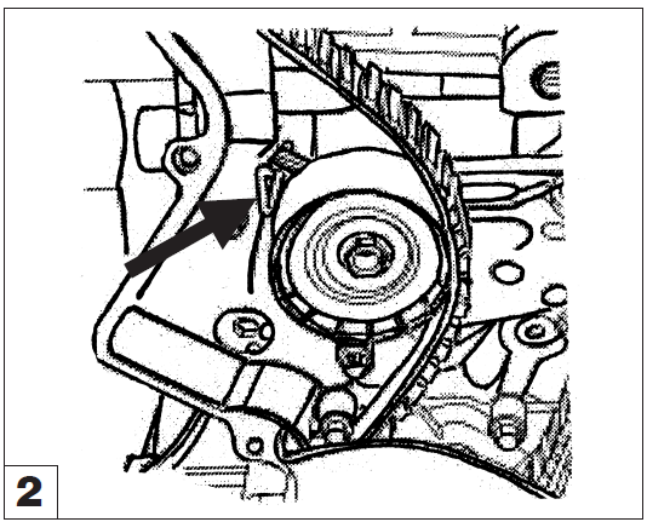
Models/engines	GAT4404 Set Tools					Associated Tool Crank Pulley Hold Remover/Installer		Additional GAT Tools required
	GAT4933	GAT3032-18	GAT3032-19	GAT3032-21	GAT4640 T7	GAT4629	GAT4736	GAT4844 Cam.spr Hold
FORD (Duratec)								
Fiesta / Courier (96-3/97) Automatic Tensioner 1.25 – DHA/DHB/DHC/DHD (Belt)	●	●				GAT4627 Installer only		●
Fiesta / Courier (4/97-02) Semi-Automatic Tensioner 1.25 – DHA/DHB/DHC/DHD/DHE/DHF/DHG (Belt) 1.4 – FHA/FHE (Belt) 1.6 – L1T/L1V (Belt)	●	●		●		GAT4627 Installer only		●
Fiesta / Fusion (02-08) 1.25 – F8JA/F8JB/FUJA/M7JA/M7JB (Belt) 1.4 – FXJA/FXJB (Belt) 1.6 – FYJA/FYJB (Belt)	●			●	●			●
Fiesta 2.0 ST150 (04-08) N4JB (CHAIN)	●	●						
Puma (97-02) 1.4 – FHD/FHF (Belt) 1.6 – L1W (Belt) 1.7 – MHA/MHB (Belt)	●	●				1.4/1.6 –7/98 1.7 All		●
Focus / C-Max (98-08) 1.4 – FXDA/FXDB/FXDC/FXDD/ASDA/ASDB/FXJA (Belt) 1.6 – FYDA/FYDB/FYDC/FYDD/HWDA/HWDB (Belt)	●			●	Focus 9/03 on C-Max 4/05 on			●
Focus (98-05) 1.8 - EYDB/EYDC/EYDD/EYDE/EYDF/EYDG/EYDI/EYDJ (Belt) 2.0 – EDDB/EDDC/EDDD/EDDF (Belt)	●		●					●
Focus 2.0RS / ST170 (01-05) HMDA/ALDA (Belt)	●		●	RS				●
Focus / C-Max (03-08) 1.8 – QQDA/QQDB/QQDC/CSDA/CSDB (CHAIN) 2.0 – AODA/ADOB (CHAIN)	●	●					●	
Mondeo (93-98) 1.6 – L1F/L1J (Belt) 1.8 – RKA/RKB (Belt) 2.0 – NGA (Belt)	●							●
Mondeo (97-00) 1.6 – L1L/L1N/L1Q (Belt) 1.8 – RKF/RKH/RKJ/RKK (Belt) 2.0 – NGB/NGC/NGD (Belt)	●		●					●
Mondeo (00-07) 1.8 – CCBB/CGBA/CGBB/CHBA/CHBB (CHAIN) 2.0 – CJBA/CJBB (CHAIN)	●	●						
Cougar (98-01) 2.0 – EDBA/EDBB/EDBC/EDBD (Belt)	●		●					●
S-Max / Galaxy (06-08) 2.0 – AOWA (CHAIN)	●			●				●
Tourneo Connect / Transit Connect (02-06) 1.8 – EYPA/EYPC (Belt)	●		●					●
MAZDA 121 (95-00) 1.25 – DHA (Belt)	●	●				GAT4627 installer only		●
2 (02-07) 1.25 – FUJA/FUJB (Belt) 1.4 – FXJA/FXJB (Belt) 1.6 – FYJA (Belt)	●			●	●			●
3 (03-06) 6 (02-07) 1.8 - L8 (CHAIN) 2.0 – LF (CHAIN)	●	●					●	
Tribute (01-04) 2.0 – YF (Belt)	●		●					

On Ford timing belt replacement applications it is necessary to remove the crankshaft pulley in order to remove the timing belt – **see crankshaft Pulley removal & installation.**

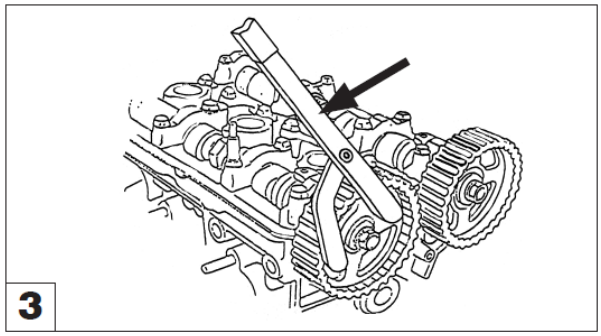


GAT4933 camshaft Setting Plate

On all current Ford 16v. twin camshaft engines (Duratec), GAT4933 Setting Plate is used to lock the camshafts in the correct timing position via slots located at the rear of the camshafts.
For timing applications it is important to ensure that the crankshaft is at TDC (see GAT3032-18, GAT3032-19 and GAT3032-21), and that GAT4933 Setting Plate is in position on the camshafts.
For timing belt replacement applications, the tensioner can then be slackened/compressed and the timing belt removed.



GAT4640T7 Belt tensioner locking Pin – 1.25 / 1.4 / 1.6 engines in Fiesta and Fusion (02-08), and 1.4 / 1.6 engines in Focus/c-Max can have a timing belt tensioner which must be 'locked back' away from the belt to release tension off the timing belt during removal. GAT4640T7 Locking Pin is inserted in to the tensioner to maintain tension off the belt.
Once a new belt is fitted the GAT4640T7 Pin is pulled out allowing the tensioner to react on the belt and apply tension.

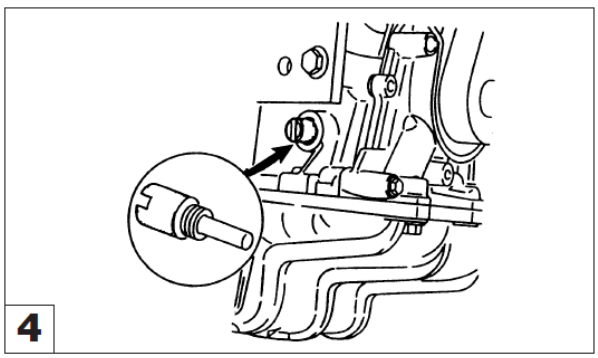


GAT4844 Sprocket Holding tool
Additional tool – not in Set

For timing belt replacement applications, the GAT4933 Setting Plate MUST BE 'locking' the camshafts in position before the camshaft sprockets can be loosened. Use GAT4844 Holding Tool to counter-hold the camshaft sprockets whilst releasing the centre bolt. Some camshafts provide a hexagon to locate a spanner to counter-hold the camshaft.
For all applications, use the appropriate TDC Location Pin ensure the crankshaft is at TDC. Remove the engine/crank blanking plug to allow the appropriate Location Pin to be screwed into position and then **carefully rotate the crankshaft until the web rests against the pin. – see GAT3032-18, GAT3032-19 & GAT3032-21**

When a new timing belt is installed, the tensioner should be applied following the manufacturer's procedure. Then using GAT4844 Holding Tool, counter-hold the camshaft sprockets whilst tightening the centre bolt. Remove setting plate and TDC Location Pin.
Rotate the engine a least two revolutions and return to TDC position inserting location pin. Re-check camshaft position by ensuring that GAT4933 Setting Plate can be easily inserted into its slots. If not, re-check tensioning procedure again.

NOTE: For early Fiesta/Escort 1.6i/1.8i and Mondeo 1.6/1.8/2.0 (-98) 16v. engines, only GAT4933 Cam Setting Plate is used. A TDC Location Pin entry point is not provided.



GAT3032-18, GAT3032-19 and GAT3032-21 crankshaft TDC location Pins

refer to the Application chart for details of location Pin use for each specific engine.

TDC Location Pins are used in conjunction with GAT4933 Camshaft Setting Plate to ensure correct timing position is established and maintained during engine timing applications.

In general terms GAT3032-18 Location Pin is used on the EARLY small size BELT engines and 1.8/2.0 CHAIN engines.
Ford replaced the GAT3032-18 with GAT3032-21 for LATER small size BELT engines and also used it to counter-hold the crankshaft during the TIGHTENING ONLY (Not removal) of the crankshaft pulley bolt. It is also used on the 2.0 CHAIN engines in S-Max/Galaxy, but not for counter-holding the crankshaft on this engine.
GAT3032-19 Location Pin is used on larger size BELT Duratec engines.

Application Summary

GAT3032-18 – Fiesta/Courier 1.25/1.4 (-97) and Puma 1.4/1.6/1.7 16v, (Belts)
Focus / C-Max (03-08) 1.8/2.0 CHAIN,
Mondeo (00-07) 1.8/2.0 CHAIN

GAT3032-19 – Focus (98-05)1.8/2.0,
Mondeo (97-00)1.6/1.8/2.0 , Cougar 2.0 16v.
Transit/Tourneo Connect 1.8 16v. (Belts)

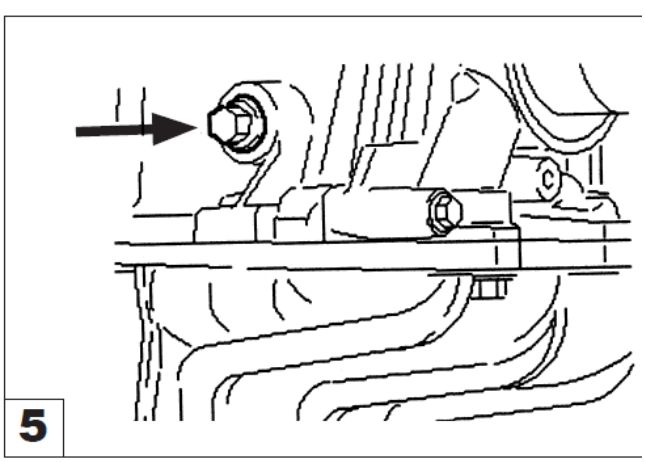
GAT3032-21 – Fiesta/Fusion (02-08) 1.25/1.4/1.6,
Focus (98-08) 1.4/1.6 (Belts).
S-Max/Galaxy (06-08) 2.0 CHAIN

Remove the engine/crank blanking plug to allow the appropriate Location Pin to be screwed into position and then **carefully** rotate the crankshaft until the web **rests** against the pin.

WARNING: GAT3032-18, GAT3032-19 and GAT3032-21 Location Pins are used to position the crankshaft only. they MUST NOT be used to counter-hold the crank whilst RELEASING the crankshaft pulley bolt – see crankshaft Pulley removal & installation tools.

Crankshaft Pulley removal & installation tools

Some engines do not have a keyway/woodruff key on the crankshaft to position the pulley. In these cases pulleys can be friction fit or on a taper on the crank and retained by 'stretch bolts'.
There are a number of tools/methods employed to hold the crank pulleys whist they are being installed, dependant upon engine – refer to application chart.



GAT3032-21 crankshaft TDC location Pin and Holding tool (crank Pulley Bolt tightening only)

Fiesta/courier (97-08) 1.25/1.4, Fusion (02-08) 1.25/1.4, Focus (98-08) 1.4/1.6/2.0rS/St170. Belts – TDC location and crank Holding.

NOTE: S-Max/Galaxy 2.0 CHAIN for TDC Location only – see **GAT4736**
GAT 3032-21 Crankshaft TDC Pin is used to position the crankshaft at TDC for specific timing applications**.**
GAT3032-21 Pin is also used on specific engines **for installing and tightening only** of a new crankshaft pulley bolt **– refer to Application chart.**

GAT3032-21 is screwed into the side of the engine and the crankshaft turned in the normal direction of rotation until the crankshaft web rests against the tool. This provides the counter-holding position whilst the pulley bolt is tightened.

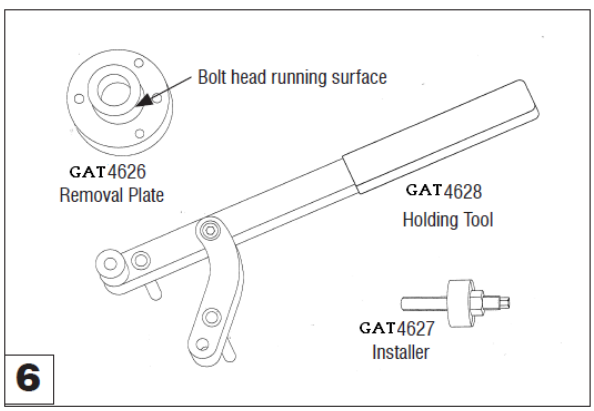
WARNING: Do Not use GAT3032-21 for counter-holding when undoing the pulley bolt.

GAT4629 crankshaft Pulley remover & installer Set – Associated tool, not in GAT4404c Set

comprises: GAT4626 Pulley removal Plate
GAT4627 Pulley installer
GAT4628 Holding tool

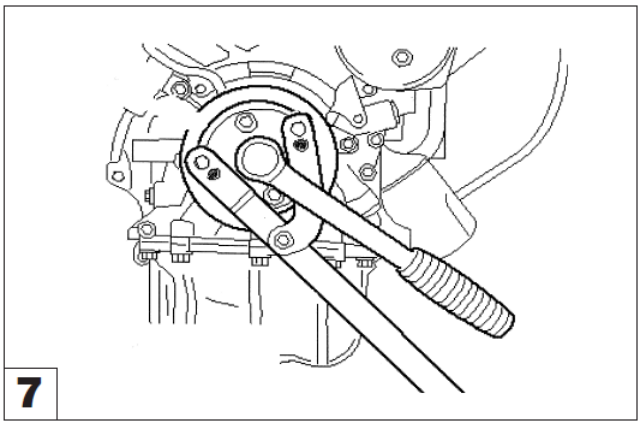
Fiesta/courier (-02) 1.25/1.4 – uses GAT4627 installer only
Puma 1.4/1.6 (-98) and 1.7(-02) uses complete GAT4629 Set

On the above applications specialised tools are required to remove and/or install the crankshaft pulley.



GAT4626 crank Pulley removal Plate

GAT4626 Removal Plate is used in conjunction with GAT4628 Holding Tool to remove crank pulley.
The Removal Plate is bolted onto the pulley and is subsequently prevented from rotating by Holding Tool GAT4628. As the pulley centre bolt is unscrewed it reacts on the Removal Plate to withdraw the pulley off the crankshaft.
Lubricate the 'bolthead running surface' of GAT4626 Removal Plate and bolt it onto the pulley (2 bolts) with the running surface against the domed head of the pulley centre bolt.



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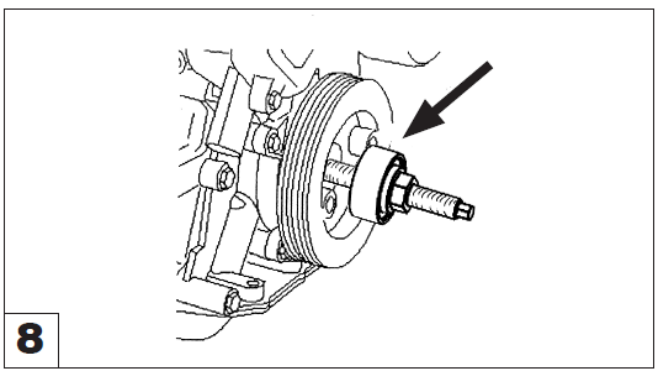
GAT4628 Holding tool

Locate the two pegs of GAT4628 Holding Tool in to the remaining two holes in the GAT4626 Removal Plate and use it to counter-hold the plate and pulley to prevent turning whilst unscrewing the pulley centre bolt. As the bolt is unscrewed it pushes the Removal Plate forward and this in turn extracts the pulley off its shaft.
On some later engines GAT4628 Holding Tool can be used without the removal plate. Use the end holes of the Holding Tool and bolt it directly on to the pulley.



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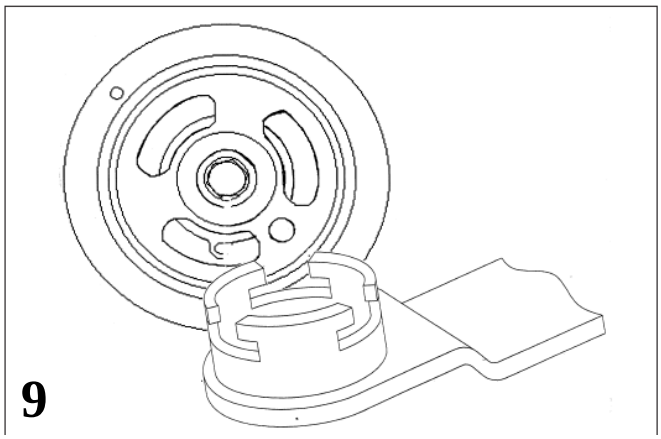
GAT4627 crank Pulley installer

Replacing the crankshaft pulley on certain Fiesta and Puma engines requires specialised Installer GAT4627 – see application chart.

IMPORTANT: A new pulley centre bolt is always required.
The pulley **MUST NOT** be pressed on using the centre bolt as this results in the torque specification for the bolt being achieved before the pulley is fully installed. Use GAT4627 Installer to press the pulley fully onto the shaft and then fit the new centre bolt.
Place the pulley on shaft and screw the Installer Centre Screw into the shaft thread. Screw on the Force Nut Assembly and holding the end of the Centre Screw with a socket, turn the Force Nut to install the pulley. Remove the GAT4627 and install new pulley bolt to manufacturers specified torque/angle.



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Castillated slots of GAT4736 match 3 slots in pulley

GAT4736 crankshaft Pulley Holding tool
Associated tool – not in GAT4404c Set
- Focus/c-Max (03-08) 1.8/2.0, Mondeo (00-07)1.8/2.0, S-Max/Galaxy 2.0 16v. CHAIN engines

GAT4736 Holding Tool locates into the slots in the crankshaft pulley to counter-hold it whilst the pulley bolt is released or tightened..
The crankshaft pulley and crank position rotor are combined. The pulley is secured to the crankshaft by contact pressure of its centre bolt, and is located in its correct position by means of an M6 bolt.

IMPORTANT: The M6 bolt **MUST NOT** be used to counter-hold the pulley whist tightening the centre bolt a damage to the timing cover will result.
The centre bolt washer must be a minimum of 5.5mm thick or a friction washer must be used. Install new pulley bolt to manufacturers specified torque/angle**.**