

Camshafts

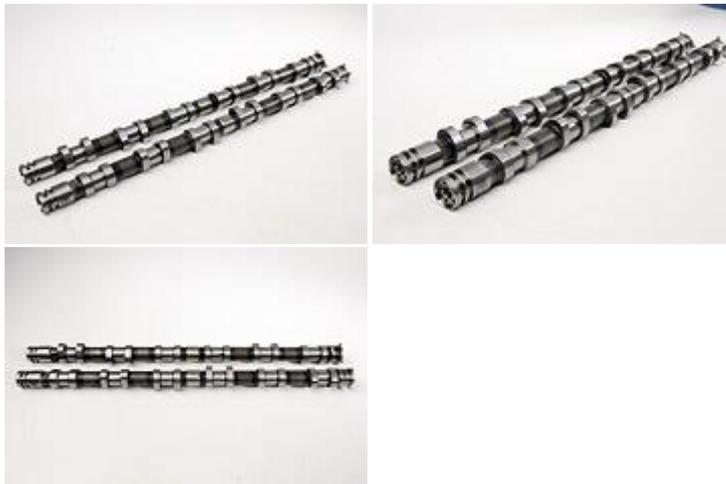


We have a range of specially developed camshafts to suit the SOHC and DOHC Ford 6 cylinder turbo/blown engines. The original profiles have very small duration figures, which impedes breathing and therefore requires relatively high boost levels to achieve reasonable power levels.

Our cams are designed to produce more power by harnessing more residual exhaust gas heat, pressure and velocity to impart greater motion to the turbine, which helps develop turbo boost pressure more efficiently. On the inlet side, careful matching of the valve opening and closing valve events to the piston motion of the long stroke (1.55 L/R ratio) provides much greater cylinder filling capacity, hence engines develop considerably more power from a given boost level.

All lobe profiles are inverted flank asymmetrical designs, with a faster rate of lift to allow the passage of intake/exhaust gases more efficiently. The actual valve lift is only increased slightly to maintain valvetrain stability at high RPM. We also reduce the base circle dimensions slightly to reduce lifter preload, thereby allowing the lifter to function correctly. Due to factory machining variations in the cylinder head, all lifter preloads must be checked when installing cams to ensure preloads are within minimum and maximum tolerance.

The unique feature of our inlet lobe designs is our "Duo phased" timing; a split lobe centreline opens one inlet valve before the other, introducing swirl into the combustion chamber. This increases the effective duration of the inlet without changing manifold vacuum. We developed this innovation in 2006 and it is interesting to note that Ford has also since introduced swirl technology into the FG engine in 2008.



Very minimal changes in manifold vacuum at idle occur following fitment of our Stage 3 and 4 cams however a noticeable lobe develops in the idle after fitting our stage 4Plus and Stage 5 cams. In the power department, it is not uncommon for engines to produce an additional 30-50 kW of power at a given boost level. For the serious power junkie, customers have reported producing over 660KW at 34 psi boost with our Stage 4 cams. Working with our high volumetric efficiency Stage 5 cams we have recorded over 570 RWKW at only 22 psi boost. (All of the above figures were achieved after carrying out the appropriate re-tuning to suit the cams).

Camshafts to suit Ford DOHC 6 Cylinder Engine

Stage 1 Cams #306548 - BA profiles

Advertised Inlet duration	225°
Advertised Exhaust duration	240°
Inlet duration at .050" lift	172.5°
Exhaust duration at .050" lift	179.5°
Lobe lift - inlet and exhaust	.212"
Valve lift - inlet and exhaust	.432"
Lobe centres	112° - Computer controlled

Stage 2 Cams #306549 - BF-FG profiles

Advertised Inlet duration	236°
Advertised Exhaust duration	236°
Inlet duration at .050" lift	184°
Exhaust duration at .050" lift	184°
Lobe lift - inlet and exhaust	.212"
Valve lift - inlet and exhaust	.432"
Lobe centres	112° - Computer controlled

Stage 3 Cams #306550

Advertised Inlet duration	257°
Advertised Exhaust duration	257°
Inlet duration at .050" lift	194°
Exhaust duration at .050" lift	194°
Lobe lift - inlet and exhaust	.223"
Valve lift - inlet and exhaust	.455"
Lobe centres	112° - Computer controlled

Stage 4 Cams #306551 Duo Phased

Advertised Inlet duration	262°
Advertised Exhaust duration	257°
Inlet duration at .050" lift	203°
Exhaust duration at .050" lift	196°
Lobe lift - inlet and exhaust	.223"
Valve lift - inlet and exhaust	.455"
Lobe centres	112° - Computer controlled

Stage 4 Plus Cams #306553 Duo Phased

Advertised Inlet duration	287°
Advertised Exhaust duration	283°
Inlet duration at .050" lift	228°
Exhaust duration at .050" lift	223°
Lobe lift - inlet and exhaust	.249"
Valve lift - inlet and exhaust	.508"
Lobe centres	Suggest 112° - 114°

Stage 5 BattleMaster Cams #306552 Duo Phased

Advertised Inlet duration	303°
Advertised Exhaust duration	298°
Inlet duration at .050" lift	241°
Exhaust duration at .050" lift	236°
Lobe lift - inlet and exhaust	.250"
Valve lift - inlet and exhaust	.510"
Lobe centres	Suggest 112° - 114°

Camshafts to suit Ford AU SOHC 6 Cylinder Engine

Stage 3 Atomic #306590 Cam

Advertised Inlet duration	261°
Advertised Exhaust duration	261°
Inlet duration at .050" lift	200°
Exhaust duration at .050" lift	200°
Valve lift - inlet and exhaust	.501"
Lobe centres	114°

New valve springs should always be used when fitting performance camshafts. Please refer to our [valvetrain section](#) for complete details on matching components.