Fitting Instructions

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from a spire nut to a bodyshell

Description: **Performance Camshafts**

Applications: **4 Cylinder Triumph Engines**

Safety First

New cam followers must be fitted when installing a new camshaft as well as using cam lube on the camshaft, pushrods and followers during engine build and initial start up. All components should be inspected for wear and for damage during the build. They should be replaced if there is any doubt as to their condition.
When starting initially, make sure that the engine is not allowed to just idle till warm; use a fluctuating throttle up to 2500rpm, to ensure adequate oil flow around the camshaft and followers. Moss Europe Ltd accepts no liability whatsoever for damage, loss or injury incurred as a result of using this literature. Always check your Tuning Manuals.

Special Tools & Equipment Required

Timing Disc (TT2929), to fit onto the crankshaft
Dial gauge (MTR1062) to measure valve/rocker movement accurately
Indicator pointer for timing disc (a bent wire bolted to the engine plate is all that is required)
Feeler gauge (DMR51720)
Cam Lube (KEN2)

Associated Products

Duplex vernier conversion kit small bearing (TT1328X), duplex vernier conversion kit large bearing (TT14281), cam followers (TT1209)

Notes

All camshafts are specially coated for improved wear resistance; this is not to be removed.
Always fit new cam followers when installing a new camshaft. Warranty will not be accepted unless receipts show new followers purchased at the same time as the camshaft. Additionally, always use cam lube on the camshaft, pushrods and followers during engine build and initial start up.
Valve springs must be suitable for the profile being installed, follow recommendations in the Tuning Manual.
Cam followers can affect the upper rev limit of the cam profile, so ensure that the types fitted are correct for the profile.
The size of an engine will always alter the characteristics of a profile, the larger the cc, the wider the power band.
When installing our performance camshafts, disregard any timing marks on the cam gears – they are not to be used.

4 Cylinder Camshafts

Part No.	Profile	Cam size	Inlet timing	Exhaust timing	Camshaft duration	Lift	Install figure	Inlet valve clearances	Exhaust valve clearances	Note
212164/TH5	Fast Road	Small bearing	37-63	73-27	280˚	0.281”	103˚	0.022”	0.024”	A
212164/TH6	Fast Road 89	Small bearing	42-68	78-32	290˚	0.309”	103˚	0.022”	0.024”	A
TT10504N	Road 83	Large bearing	30-56	74-28	266˚	0.288”	103˚	0.016”	0.016”	A
TT14041 (N)	Road 89	Large bearing	22-70	62-26	272˚	0.276”	112˚	0.012”	0.014”	A
TT1405N	Fast Road	Large bearing	30-70	70-30	280˚	0.270”	108˚	0.014”	0.015”	A
TT10505N	Fast Road 83	Large bearing	37-63	74-28	280˚	0.288”	103˚	0.022”	0.024”	A
TT14051N	Fast Road 89	Large bearing	36-74	58-34	290˚	0.293”	106˚	0.014”	0.014”	A
TMG10506	Sprint 90	Large bearing	39-71	81-29	290˚	0.302”	110˚	0.022”	0.024”	B
TT10906N	Race 83	Large bearing	42-68	78-32	298˚	0.302”	103˚	0.022”	0.024”	C

Note	Valve springs	Installed height
A	Use TT1307 double springs, without any lower collars or spacers.	33-34mm
B	Use TT1307/TT1308 depending on application or use.	33-34mm
C	Use TT1308 double springs, without any lower collars or spacers.	32-34mm

NOTE: Installation figure in degrees, as text -
Number one inlet, valve fully open at___crankshaft degrees
Tappet settings are all for when engine is HOT.
Initial setting of tappet clearances are to be plus 0.005” greater than figure listed, then reset correctly after engine is hot.

Procedure
We feel that the only accurate method of obtaining maximum power is for the performance cam to be installed and timed around the inlet stroke; not the exhaust as with standard installation.
Read through the instructions and familiarise yourself with the aims. If you are worried about the next part of the instructions, you can temporarily install the cam as per workshop manual BUT make up a method to control the TDC accurately so that the installation point can be checked and amended later. Do not necessarily take it that the TDC pointer on the timing cover is correct, and anyway will not be available to you, until after installation is complete.

1. Make an indicator arm bolted to the block to accurately point to the timing disc when installed.

2. Loop the timing chain only, onto the crank gear.

3. Install the camshaft into the block with cam lube on the journals, not the cam lobes yet.

4. Fit timing disc to crank, use the pulley nut to clamp into position.

5. Use a dial gauge onto the top of the block to measure the TDC point. Accurately measure the upwards and downwards point using a set figure; then set the crank to mid point, and align the pointer with the timing disc at zero° (TDC).

6. Rotate the crankshaft in the direction of rotation (clockwise) till the installation position is achieved ie __° ATDC. This will require you to read off 90° plus __° to read the required figure.

7. Either install the cylinder head or use dummy followers to allow the dial gauge to obtain the centre of full lift of No 1 inlet valve. The cam lube needs to be used if assembling with the head, on both cam and followers.

8. Rotate the camshaft only to maximum lift of No 1 inlet valve, again making sure you obtain the centre of maximum lift.

9. Align the cam-gear and the chain to the camshaft and connect up. DO NOT MOVE either cam or crank at this point. The gear will align using either combinations of mounting holes (they are offset against the gear cut) or easier still with the Vernier cam gear, where adjustment is made on the outer gear against the centre. If using standard single chain then the gear is reversible for best installation, Duplex gears are not reversible.