



16 Valve Twin Cam Complete Engine

Stage one engine, small valve head, fully built and dyno.
The exact spec of this engine is as follows:

Applications: daily use road engine, suitable for occasional track use, standard helical 4 speed gearboxes are just sufficient here.

Carburetted engine: 110-120bhp, capacity 1380cc.

- KAD latest spec small valve 16 valve cylinder head with belt assembly, KAD2 inlet and exhaust cams, 10.5:1 compression ratio
- A+ block with centre main strap, bored and honed to 73.5mm
- 73.5mm flat top Omega diecast pistons machined with valve clearance cutouts
- Vandervell VP2 engine bearings
- A+ crankshaft 81.28 stroke
- A+ conrods with ARP bolts
- HP oil pump, water pump
- Twin Weber 40 DCOE carburetors
- Aldon distributor with Ignitor Electronic ignition
- Verto flywheel with Turbo pressure plate and plate
- 4-2-1 exhaust manifold and 2" bore twin box system
- Top and bottom radiator hoses, top radiator mounting
- GRP 16 valve bonnet
- Complete engine unit built and dyno run

Engine as above with Weber Alpha Engine management, this includes complete wiring loom and fuel system – price \$18,100

The KAD 16 valve Twin Cam head conversion is simply in a different league where A series cylinder head comparisons are made. The efficiency of 4 valves per cylinder cannot be matched in its power potential by older designs. Plenty of valve area, well shaped ports and a compact pent roof combustion chamber all contribute providing copious top end power whilst still pulling well from low revs.

The Twin Cam head conversions fit onto any 1275cc A series cylinder blocks. The Cooper S and A+ blocks are best to use as the GT block appears to distort badly when hot. There are a few simple modifications required to the block to accommodate the Twin Cam head, but the main divergence from 5 port practice is in the pistons. With a larger combustion chamber volume than a 5 port, it is necessary to run flat top pistons which require valve clearance pockets to be accurately machined into the piston crown. This is a specialist machining operation which KAD can offer to customers if required. Forged pistons are preferred for their strength and are essential above 130bhp. The original camshaft is retained to drive the oil pump and the distributor.

The bottom end build for a Twin Cam will depend very much on its anticipated power output. At the lower stage of tune it is possible to use A+ cranks and rods, helical drop gears and a standard 4 speed A+ box with a Twin cross pin diff. Whilst this will give reliable service up to 120 bhp, above this it is asking rather a lot from components designed for sixty-odd horsepower. Stage two conversions and above should use EN40B nitrided steel cranks and rods, either from forgings or billet and a 4 bolt steel centre main bearing cap should be fitted to hold the crank in place and give the bearings a chance.

Two versions of the heads are made, the small valve head, with superior low end torque is suitable for road use with a maximum power potential of 160bhp. The big valve race version with larger valves and ports sacrifices a degree of low down pull for increased mid range and top end power.

