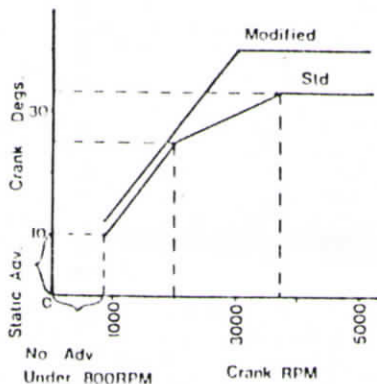
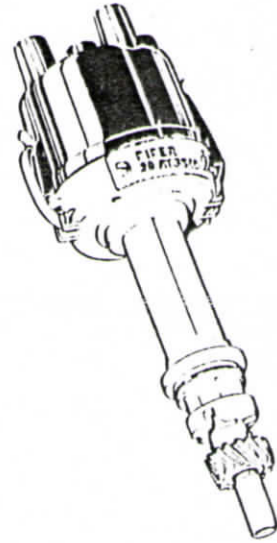


COMPETITION DISTRIBUTORS

The correct ignition advance curve is as important as the right mixture or the optimum cam timing and can be the key to tying up a complete tuning package and producing a smooth power curve rather than a lumpy and unpleasant engine.

In a standard engine, ignition advance is required to compensate for the "burn time" between ignition and the point of maximum pressure build up. In a modified engine using high compression, larger valves, increased overlap cam and decent exhaust manifold, the advance curve characteristics must be changed. At low rpm, the incoming gas will be sluggish with poor swirling capacity requiring a long burn time. As engine revs increase, the charge weight necessitates additional advance over standard and as the deep breathing equipment really starts to work, an increase of 25% more advance is required and this must occur lower in the rev range than standard.



D23. Advance curve diagram.

32

Available for Mini & 'A' series, Ford 1.3/1.6 Crossflow, Ford 3 litre V6, Ford 1.6/2.0 SOHC, Avenger, Opel, Rover etc.

From £40 + VAT

The diagram shows the typical difference between the advance curves of a standard and modified engine.

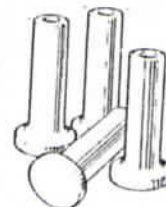
At Piper, we have been modifying individual distributors for over 10 years but now offer a range to cover the most popular engines. All are result of dyno testing where advance characteristics can be measured at 500 rpm intervals and all Piper Competition distributors are run on our test rig to ensure correct specifications before leaving the factory.



CAM FOLLOWERS

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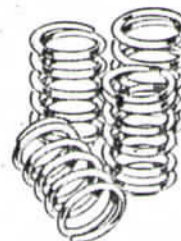
When fitting a new camshaft it is absolutely essential that new followers are also fitted. Failure to replace the old units can result in immediate heavy wear of both cam and follower. Piper offer a range of "Heavy Duty" sets specifically for use in high performance engines. These are produced from the highest quality materials and heat treated to our specification. In addition, two further processes are carried out. Firstly, the followers are tufftrid to give an extra hard surface skin and then phosphate coated. This coating is an anticuffing agent which helps to "run in" the follower in the critical early stages after start up.



Surprisingly you will find that in most cases these followers are no more expensive than the standard parts. Available for Minis, MGB, Ford Pre & Cross Flow (early and late type) Ford 1600/2000 50HC, Vauxhall Chevette, Ford V6, 3 Litre and V4 2 Litre (early and late type). From £15 per set + VAT.

EXTRA STRONG VALVE SPRINGS

A high lift camshaft can impose loadings on the valve train which are outside the limits of control of the original valve spring. The remedy is often to fit a replacement spring which is far heavier than necessary causing power losses and valve train wear.



Piper have developed a range of springs which will eliminate any chance of "valve float" or "bounce", in any given application whilst using the lightest rating practicable

Available for Mini & A Series, MGB, Ford Pre & X/Flow, Ford 1600/2000 OHC, Vauxhall Viva/Chevette, Ford V4 and V6. From £12.50 per set.

CAM LUBE

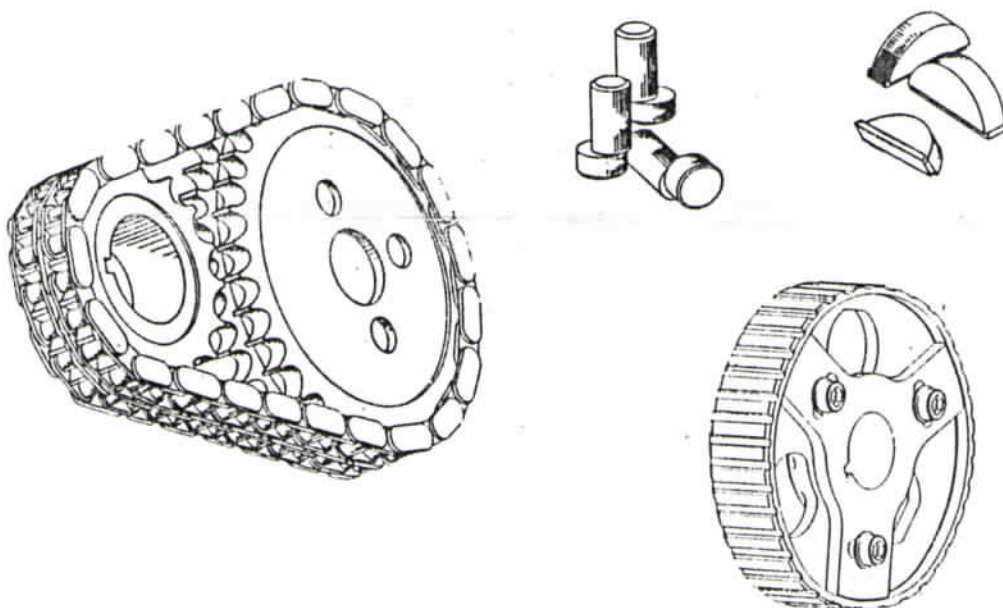
A product designed to give protection during the most critical period, just after start up following a rebuild. The combination of heavy base oils and ZDTP (Zinc Diethiophosphate) allow the lube to "cling" to the cam during building unlike normal oil. Once the engine reaches working temperature, the lube breaks down into the normal oil system. Available in 250cl Bottles. £2.50.



Available for most popular engines.

When installing any performance camshaft, it may be necessary to adjust the cam timing to obtain the maximum performance. We offer various methods for the most popular engines.

Mini, A series and B series	Offset keys to give 2°, 4° and 7° of offset.
Ford X/flow engines	Offset dowels supplied in sets of 1°, 3°, 5°, 7° & 9° of offset.
Ford 1.6/2l SOHC engine	Vernier pulley, infinitely adjustable. Quick and simple.
Ford XR3/RSi/RS Turbo	Vernier pulley, infinitely adjustable. Quick & simple.
Ford X/flow engines	Duplex timing gear. Essential for competition use (available in lightweight version).
Mini and A series	Duplex timing gear. Essential competition use (available in lightweight version).





PIPER

MINI 850, 1000, 1300, + ALL 'A' SERIES

Code	Timing	VL/VC	FL	TDL	Price
HR255	IN 21/59	.347/.014"	109°	.027"	£25.00 Ex + VAT
	EX 59/21	.345/.016"	109°	.025"	

Incredibly flexible road cam particularly for 850 and 1000cc unmodified engines. Power band 1000 - 6000 RPM. Fuel economy will not be affected.

HR270	IN 37/71	.361/.014"	107°	.077"	£25.00 Ex. + VAT
	EX 71/37	.359/.016"	107°	.075"	

Superb combination of flexibility and maximum power. Beats the 731 at all points. Power band 2000 - 7000 RPM. Best results with modified engine.

HR285	IN 38/70	.388/.014°	106°	.087"	£25.00 Ex. + VAT
	EX 70/38	.387/.015"	106°	.086"	

A cam that betters the 544 throughout the new range. Power band 2,500 - 8000 RPM very minor losses in bottom end power, slightly lumpy tickover. The ultimate 'A' Series road cam.

N.B. On small bore 850 and 1000 MINI engines with exhaust valve running over the block pockets will be necessary.

HR300	IN 46/74	.410/.015"	104°		£35.00 Ex.
	EX 78/42	.410/.015"	108°		

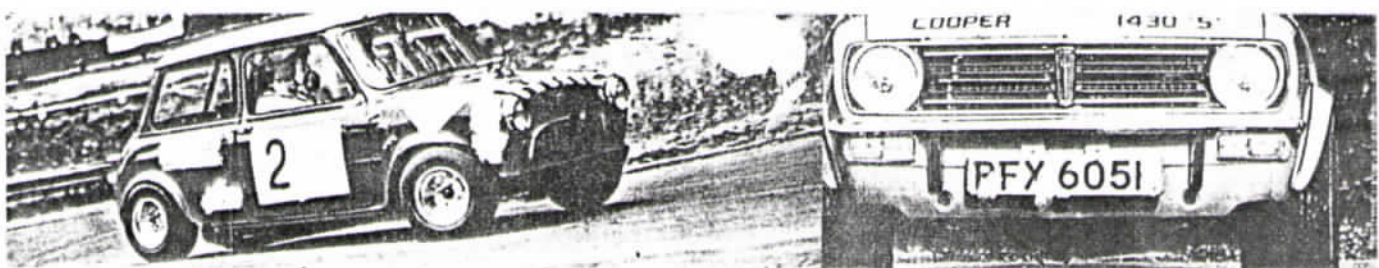
An excellent combination of top end of 649 and mid range of 544. Ideal cam for Autocross, Autograss, Rally etc. Where mid range must be retained. Power band 3200 - 8000 RPM.

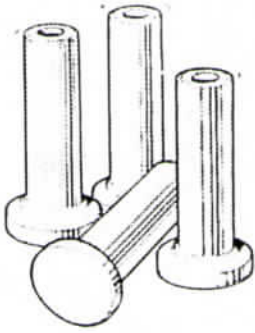
HR320	IN 54/82	.393/.015"	104°	.146"	£35.00 Ex
	EX 82/54	.392/.016"	104°	.145"	

Gives extra mid range but particularly top end power. Circuit cam for all engines but can be used as Rallycross etc. in 1300 or larger. Power band 4000 - 8400 RPM.

HR330	IN 54/82	.410/.016"	102°	.154"	£35.00 Ex.
	EX 97/63	.410/.016"	102°	.181"	

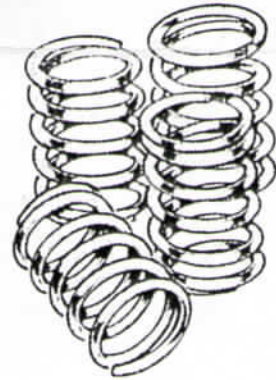
Ultimate circuit cam for 1000 short stroke and 1300 engines. Power band 5000 - 9000 RPM.





When fitting a replacement camshaft, it is essential that new cam followers are also used. Piper Heavy Duty Followers are specially heat treated and coated for performance use and are very competitively priced at £15 per set + VAT.

Piper Extra Strong Double Valve Springs for the Mini range are rated at 200 lbs and are suitable for both road and competition use, giving a load of 228 lbs at .420 lift. £15 per set + VAT.



Piper offset keys offer a simple and inexpensive way of adjusting Mini cam timing. A pack contains 2°, 4° and 7° offset £10.50 per set + VAT.

Piper Cam Lube - the first few minutes of running are the most critical and Piper Cam Lube will prevent scuffing in the early stages. £2.25 per 250 cl bottle.

