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MEGACYCLE CAMS

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This 2005 catalog contains information on many new models as well as some new information (lobe centers, running clearance, etc.) on models which were listed in our previous catalogues. As always, we have shown the current list price for all cams, pistons, valve spring kits and related components. It is best to refer to the current price list or to confirm prices when you order.

CAM TYPES:

We offer 4 different types of cams.

- | | |
|--|--------------------------|
| 1. Hardfaced on stock core (welded lobes—longest wearing) | (exchange core required) |
| 2. New Billet cams, heat-treated on cast or machined billets | (no core needed) |
| 3. Hardfaced on new billet core (when stock cores unavailable) | (no core needed) |
| 4. New Billet core with needle bearing journals | (no core needed) |

CORE DEPOSITS AND RETURNS:

We maintain a finished stock of hardfaced cams for some models. Cams can be shipped from our stock—a core deposit will be charged. The customer's stock cam must be returned within 30 days. All refunds are made by check—no credit memos.

Here is the refund schedule:

- | | |
|--|------------------------------------|
| Cores returned within 30 days | = refund 85% of the original cost. |
| Cores returned over 30 days, less than 90 days | = refund 75% of the original cost. |
| Cores returned over 90 days | = refund 50% of the original cost. |

CORE ACCEPTABILITY GUIDELINES:

1. We accept only used STOCK CAMS for exchange. We can not accept previously re-worked cams on non-factory billets.
2. Cam journals must be round to within .001" and within factory tolerance on diameter.
3. If the cam sprocket is attached to the cam it must not be chipped or worn.
4. Threads or tach drive gears can not be damaged, stripped or altered in any way.
5. Yamaha cams (225/250/500/750/920) which have the locating pin hole and flange to locate the sprocket—must not have chips, cracks or damage to the flange or pin hole.
6. Honda XL-250/350 cores (1977 and prior) are no longer accepted for refund.

Some cores which do not meet the above requirements for refund can be re-worked for your customer on his core. Some cams are functional even though cosmetically unacceptable.

TERMS AND CONDITIONS:

All orders are shipped C.O.D. within the United States. (UPS or FEDEX) Foreign orders must be prepaid (Include cost of freight, or we can send Freight Collect). Orders received by 2:00 PM P.S.T. will ship that day if all parts ordered are in stock. Orders which are to be done on customer's cores—allow 6 to 10 working days (depending on make and model).

We do not accept personal checks on C.O.D. orders. On prepayments, allow 12 working days for processing of personal checks. (Money orders will speed processing).

Minimum invoice amount is \$10.00 (total of parts, shipping and C.O.D. fees).

A deposit will be required on all new cam lobe designs and on special orders for billet cams with undersize base circles (other than our standard base circle dimensions). 50% advance deposit is required before production can begin.

Megacycle Cams are covered by a one year warranty. A copy of the terms of the warranty will be included with each cam purchase. Any parts thought to be defective should be returned immediately (within 30 days) directly to Megacycle. Defective parts will be repaired or replaced.

All goods returned for refund or credit must be accompanied by a copy of the invoice, showing the date of purchase. Cams are subject to a 10% restocking fee. Pistons are subject to a 25% restocking and inspection fee. Parts returned more than 60 days after purchase date may be subject to higher restocking fees.

DEALER STATUS:

We allow the dealer discount to Franchised motorcycle dealers and Non-franchised Repair Shops. Please complete the blue Megacycle dealer application. Be sure to attach your printed business card and 1 sample of printed work order, letterhead or other material showing your shop name and current address. Also please attach a copy of your business license or a tax permit. Until the dealer application is completed and approved, orders will be shipped for cash or money order. Once approved, company checks will be accepted.

GLOSSARY OF TERMS

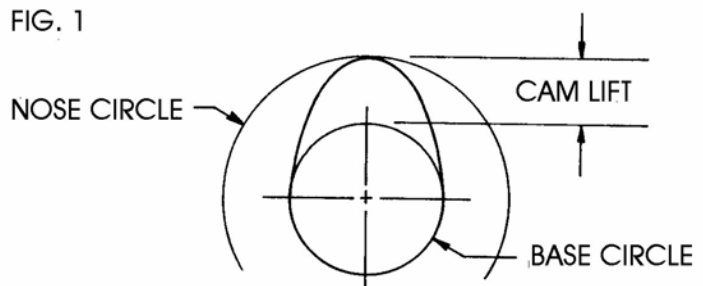
Here is a listing of some terms which will be used throughout this catalog and their definitions as used. The brief descriptions given are to be taken only as general definitions, as in some specific cases the technically correct meaning of the word may be slightly altered. When such is the case, we will try to make note in the catalogue. Although we have tried to make all of the technical information as complete and understandable as possible, it cannot substitute for years of experience and training necessary to become a truly proficient engine mechanic. If you are a beginner, you will naturally make some mistakes as you learn. In some cases these mistakes can be very costly; especially with newer, more sophisticated motorcycles currently produced. We suggest that if you have to pay for help, the money will be well spent—saving you the costly consequences of serious mistakes.

I. VALVE LIFT:

The total amount of movement imparted to the valve by the entire valve train, including any rocker arm multiplication. This is a theoretical number as it does not account for any loss of lift due to deflection within the valve train. This is sometimes referred to as "gross valve lift." In most cases the actual valve lift will be slightly less because of valve lash and deflections due to bending of pushrods, rocker arms, or even flex in the camshaft itself—caused by valve spring and inertia forces.

II. CAM LIFT:

The total amount of rise and fall from the base circle of the cam lobe to the peak and back to the base circle again. See fig.1 to the right:



The best way to measure the cam lift is to rotate the cam between centers and measure the rise and fall with a dial indicator. In some cases an accurate lift measurement can be made with a micrometer by subtracting the smallest dimension across the lobe (B in fig. 2) from the largest (A in fig. 2). Many lobes have some lift for more than 180° of rotation so the smallest dimension measured across the lobe will NOT be the true base circle (B in fig. 3). In such cases, you can NOT accurately measure the cam lift with a micrometer or caliper; you must rotate the cam against a dial indicator.

FIG. 2

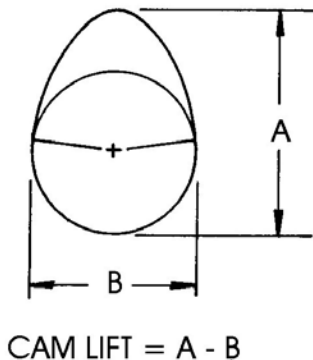
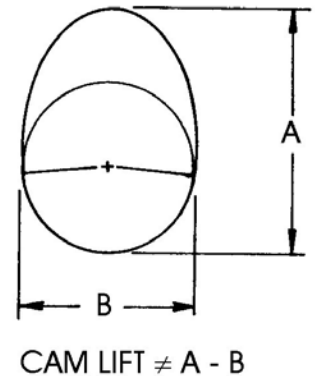


FIG. 3



GLOSSARY OF TERMS—CONTINUED

III. VALVE LASH (also called running clearance, valve or tappet clearance)

For an engine to run properly the valves must close completely and seal well against their seats. For this reason, a certain amount of clearance or “lash” must be maintained in valve train. Just a thousandth of an inch would suffice, except that due to thermal expansion and contraction, some engine parts will change size more than others—thus the valve lash will change with the temperature of the engine. For this reason, most engines require at least several thousandths of an inch clearance when cold. Too little valve lash will result in loss of power, uneven running, over heating and burning of the valves and seats. Too much clearance will cause excessive noise and wear, and in the extreme will cause valve bounce or “float”—resulting in valve and valve spring breakage. There is usually a few thousandths latitude between tight and loose valve lash. An experienced mechanic can determine this range by careful experimentation. The clearance can be changed within the range to tailor the engine performance to a particular application.

In general: More clearance will sharpen up the low and mid range and reduce top end. Please start by installing your cam with the valve lash settings listed on the timing card supplied with each Megacycle Cam. Adjust valve lash according to the application.

IV. VALVE FLOAT

Once the valve train has been set in motion by the camshaft, the inertia would cause continued and uncontrolled opening of the valve. It is the function of the valve spring to provide sufficient force opposing this motion to keep all components in the valve train in contact with one another until the valve is properly returned to its seat. The spring force required to do this is determined by the mass of the valve train, the engine operating speed and the profile of the cam. If any of these three factors causes the spring force requirement to exceed that available, the valve train will separate from the camshaft or “float”. Valve float will usually cause a sharp loss of power, increased noise, and if allowed to continue—will result in rapid and disastrous failure of valve train components. Valve float can occur with no audible indication and no noticeable power loss. Serious damage can result. Valve float damage is caused either by contact between the valve and the piston, or severe impact—created when the valve train contact is finally resumed.

V. CAMSHAFT CONSTRUCTION

There are several manufacturing methods suitable for producing high performance cams. Different lobe surfaces are required for the rocker arm, pushrod and “bucket” follower motors. We offer hardfaced cam lobes on most models. We also offer billet or needle bearing cams for many models. Naturally the type of cam you choose will affect the cost and life of the finished part. The four major cam types we offer are listed on the following pages; they are—Hardfaced cams. New billets—cast iron or steel. Needle bearing replacement cams. Reground, heat-treated cams.

1. HARDFACED CAMS: (the most durable cam lobe surface)

Cam lobes are subjected to high surface stress and impact loading—and to severe frictional wear in all applications except those using roller followers. The best material to withstand this combination of loads is a nickel or cobalt based hard surfacing alloy. One of these alloys must be welded to the lobe surface only (as they are not suitable for use in the body of the camshaft). The hardfacing may be applied to a new steel or iron billet at add wear resistance, or it can be applied to a worn stock cam which has been properly prepared, thus providing additional grinding stock for high-lift profiles. The stock cam (or stock “core”) can then be ground to almost any desired lobe shape. Much skill and painstaking effort goes into the production of hardfaced cams by Megacycle. The result is the most durable (and often the most expensive) cam lobe surface available. Megacycle has developed techniques which enable us to offer hardfaced cams that are priced equal to or below what other cam grinding companies charge for reground or cast iron billet cams.

2. CAST IRON BILLETS:

Most motorcycles are originally equipped with cast iron camshafts. Cast iron cams are relatively inexpensive to produce in volume compared to steel cams—and they wear better than steel cams in cases of sliding cam-to-follower contact. We offer cast iron replacement cams in mild and high performance profiles for most Japanese four-cylinder motors. We purchase these billets with unground lobes, we then grind the desired profile to our specifications (depending on your application). All castings are induction or flame-hardened before grinding which is adequate for some applications. Megacycle goes one step further than most cam grinders to insure reliability by nitriding all cast iron cams after grinding. This extra step explains why Megacycle billet and re-ground cams might cost a few dollars more than our competition. The extra-long life of these heat-treated billet cams more than offsets the few dollars in extra cost. Unfortunately, we can only offer cast iron billet cams for models where the production volume can justify the high initial cost of tooling and the large minimum castings runs required. When cost permits, we offer steel billet cams for models with smaller production volume. (see item 3 below).

GLOSSARY OF TERMS—CONTINUED

V. CAMSHAFT CONSTRUCTION

3. STEEL BILLET CAMS: (including needle bearing billet cams)

Megacycle manufactures steel billet cams on the premises for many models. This includes all Megacycle needle bearing cams for Honda, Kawasaki, Suzuki and Yamaha models. By manufacturing our own steel billet cams, we can offer a wide variety of lobe profiles and stock or oversize bearing diameters for many models. All of our steel billets are specially heat-treated (some offer hardfaced lobes for extra long wearing surfaces). These billet cams are sold outright—no exchange core is needed when ordering these items. Our NS cams feature stock diameter journals so they can be installed in the cam tower or cylinder head without machining the bearing surfaces. Our NB cams have oversized journal diameters and they do require machine work to remove the damaged aluminum from the cylinder head and/or cam cover to allow installation. The NB cams will allow the customer to salvage an otherwise ruined cylinder head and gain added performance (mild or racing) at the same time. We machine cylinder heads on a 20 day rotating schedule. We also provide instructions if the customer would prefer to have the necessary machine work performed by a local machine shop.

4. REGRINDS:

Cam lift is the nose circle radius minus the base circle radius. By leaving the nose circle radius intact and reducing only the base circle radius (grinding the back side of the lobe), both cam lift and duration can be increased. Also, the new profile can be advanced or retarded slightly on the shaft. Regrinding is usually suitable for mild lobe shape changes. A drastic change would result in an unacceptably small base circle and would remove the case hardening of the original lobe surface. All Megacycle reground stock camshafts are heat-treated by the nitriding process after grinding to prevent lobe-wear. We only offer mild/stock replacement profiles in reground cams.

GENERAL INFORMATION

For best performance we recommend that all cams be “degreed in” using a dial indicator on the valve collar or bucket and degree wheel on the crankshaft. In some cases it will be necessary to slot or elongate the bolt holes in the cam sprocket to allow adjustment of the cam timing (to achieve our recommended opening and closing figures). We offer specially drilled cam sprockets for many models to allow quick and accurate timing adjustment.

There are a few common methods for “degreeing in” a camshaft, including the currently popular “lobe center” method. Which method you choose is not important provided you use it with care and consistency. In this way you can be sure that any changes in cam timing can be made accurately. It is not uncommon to encounter slight discrepancies between the timing figures you measure in your engine and those presented on the timing card packaged with the cam. We recommend that any differences be split equally between the opening and closing side of the lobe.

VALVE TO PISTON CLEARANCE

This clearance **MUST** be checked on ALL high performance cams. We recommend .060" clearance for both intake and exhaust valves. It is possible to run the intake clearance at .050" and it is safest to run the exhaust at .070". (We feel .060" on both is a good compromise.) Claying the piston is the safest way to check the clearance.

VALVE SPRING AND VALVE GUIDE CLEARANCE

Check to see that the spring retainer (top) will not contact the valve stem seal at FULL LIFT. At maximum lift there **MUST BE** at least .050" clearance between the retainer and stem seal (.050" to coil bind).

FOUR-CYLINDER PAIRS

When installing four-cylinder cams, take special care to tighten each bearing cap a little at a time. This is to avoid putting undue bending loads in the cam. Make certain that the cams are positioned properly with respect to one another during the tightening so the intake and exhaust valves are not being forced against one another or against the piston. Failure to observe these cautions may result in a broken camshaft. Cams broken during installation are not covered under warranty.

GENERAL INFORMATION — *CONTINUED*

CAMSHAFT SPECIFICATIONS

In this catalog, unless specifically noted, all timing specifications are quoted and may be checked as follows:

A) All pushrod type engines:

- 1) Stated lift is the total lobe lift or the total rise of the cam follower (tappet), NOT VALVE LIFT. To obtain the valve lift, it is necessary to know the actual rocker arm ratio. Since this ratio can vary with pushrod length and valve stem height, it is recommended that for valve spring shimming purposes you measure the actual valve lift.
- 2) durations and opening and closing angles are given at .040" tappet lift. We recommend that cams for these engines be degreed-in before installing the cylinder head

B) All overhead cam type engines:

- 1) Stated lift is the gross lift AT THE VALVE.
- 2) Durations and opening and closing angles are given at .040" valve lift, with zero checking clearance (lash). For engines with shim-adjusted valve lash it may be desirable to check the cam timing at running lash rather than zero lash, to avoid having to re-shim the valves after degreeding-in the cams. If you wish to check the cam timing at running lash, simply deduct the lash from .040" to obtain the correct checking lift. For example, if your running lash is .008", check opening and closing points at .032" valve lift (.040" minus .008" = .032"). In this way, you should obtain the specified timing figures.

When trying to compare different cams using quoted specifications, it is important to be sure that all specifications are given at the same checking point. Otherwise, direct comparisons are not valid. Megacycle chose .040" as a standard since this corresponds closely to one millimeter, which has become a standard checking point with most Japanese motorcycle manufacturers. Be aware, however, that many catalogs and workshop manuals quote cam timing figures at other, often unspecified, checking points.

SOME GENERAL NOTES PERTAINING TO CAM INSTALLATION

- 1) Don't check only valve opening OR closing. Check both opening AND closing and split any deviation from specifications equally between them. This way, you should come within 2 or 3 degrees of specifications.
- 2) ALWAYS check valve-to-piston clearance before running the engine. A quick and easy way to do this is to hold the crank at top dead center on the exhaust stroke, (overlap) and with the crank held in this position, pry the valves open with a lever. You should have a minimum of 1/16" movement before you feel the valve touch the piston.
- 3) If your stock cam sprockets are the type with rubber molded on them, it may be necessary to trim back the rubber to clear the larger-than-stock sprocket flanges on some billet cams. We recommend for all cams that you check to make sure the sprockets fit squarely on the cam and that the sprocket bolts thread in properly before installing the cams in the engine. Observing these precautions will prevent broken sprocket flanges. If for some reason the sprocket or sprocket bolts will not fit properly, please send them in for inspection before attempting installation, as broken sprocket flanges are not covered under warranty.
- 4) We recommend the use of slotted or vernier drilled cam sprockets to facilitate the degreeding-in of your cams. Megacycle offers such sprockets for many applications. In some cases, it may be necessary to elongate or slot the holes in your own sprockets if accessory sprockets are not available for your model.

ROCKER ARMS AND CAM FOLLOWERS

It is necessary to use new or reconditioned cam followers or rocker arms with each new or reconditioned cam shaft. Using worn rocker arms or followers will cause damage to the cam. We offer regrinding of certain tappets and reconditioning of rocker arms for many models.

AERMACCHI single



Hardfaced cams on new billet cores.
Specify slotted end, tapered or spindle end.

Slotted end for point drive.
Spindle end for ignito advance mechanism.
Tapered end for magneto.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
580-01	.290"	298°	109.5°	L-1 reproduction.	40	btc/79 abc	.002" hot
	.264"	282°	110°	Best top end power.	71	bbc/31 atc	.002" hot
580-02	.308"	281°	105.5°	N-6 copy, road race profile.	35	btc/66 abc	.002" hot
	.278"	269°	106.5°	Good mid-range cam.	61	bbc/28 atc	.002" hot

ARIEL SQUARE FOUR

\$344.00 Hardfaced cam on customer core only.
88.00 Tappets - cost each to grind and hardface.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
513x1	.303"	221°	107.5°	Reproduction of STOCK profile. Cam lift at	3	btc/38 abc	
	.303"	221°	107°	Top Dead Center is .048" intake and exhaust.	38	bbc/ 3 atc	

BENELLI 750cc 6-cylinder

Hardfaced cam, on customer core only.
Rocker arms, weld and grind, cost each on customer core.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
BEN-x1	.363"	259°	104.5°	Road race performance. Good mid-range with	25	btc/54 abc	
	.333"	259°	104.5°	added top-end power. Stock pistons may require modification. Hardfaced lobes solve the wear problem.	54	bbc/25 atc	

BMW ROTAX 600 (1994)

\$266.00 Per Pair Hardfaced on customer cores

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
704-x1	.422"	286°					.008"
	.422"	286°					.010"
704-x2	.450"	301°					
704X3	.430"	290°					

BSA twin A-10

Hardfaced cam, on customer core.
Re-radius tappets on customer core, each.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
544-x1	.347"	262°	107°	Reproduction of stock A-65 cam with	24	btc/58 abc	.006"
	.341"	262°	100°	timing retarded 3° for more top-end.	51	bbc/31 atc	.007"
544-x2	.354"	266°	106°	Improved mid-range and top-end pull.	27	btc/59 abc	.005"
	.354"	266°	106°		59	bbc/27 atc	.007"
544-x4	.380"	244°	106°	Mid-range throttle response.	16	btc/48 abc	.006"
	.380"	244°	106°	Torque and acceleration.	48	bbc/16 atc	.008"
544-x3	.400"	280°	103°	Road race profile. Mid-range and top-end	37	btc/63 abc	.008"
	.400"	280°	103°	power. Use racing springs and pistons.	63	bbc/37 atc	.008"
544-x5	.349"	262°	103°	Copy of stock 67-357 cam.	28	btc/54 abc	
	.343"	262°	103°		54	bbc/28 atc	

Send customer cam, and tappet if required. Allow 6 to 8 working days for welding, grinding, etc. Hardfaced lobes solve the lobe wear problems and provide extra long-wearing surface.

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BSA B-50, 250, 441, 500 singles, TRIUMPH TR-5 MX



Hardfaced cam, on new billet core.
 Grind tappet, on customer core, cost each.
 #505-T R/D Spring kit with **titanium tops**
 for B-50 MX and TR-5 MX.
 #504-T R/D Spring kit with **titanium tops**
 for BSA 441.
 #512-T R/D Spring kit with **titanium tops**
 for BSA 250 B25.
 Note: Must specify
 keyway width narrow = .125" (1/8")
 wide = .156" (5/32")
 journal diameter
 both ends same diam. .747"± / .747"±
 or 1 small / 1 large .558"± / .747"±

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
541-x8	.358"	270°	104°	radiused	TT style power. Good mid-range and some added top-end. Best off-road cam.	31 btc/59 abc	.008"
	.358"	270°	104°	3/4"		59 bbc/31 atc	.008"
541-x1	.400"	268°	103°	radiused	Must use modified piston and springs. Good for 1/2 mile and off-road riding.	31 btc/57 abc	.008"
	.400"	268°	103°	3/4"		57 bbc/31 atc	.008"
541-x2	.400"	282°	105°	radiused	Must use racing piston and springs. Short course road-race with tight infield corners.	36 btc/66 abc	.010"
	.400"	282°	105°	3/4"		66 bbc/36 atc	.010"
541-x4	.400"	282°	108°	radiused	BEST road-race profile. Mid-range, maximum top-end power. Race only.	33 btc/69 abc	.010"
	.400"	282°	108°	3/4"		69 bbc/33 atc	.010"
541-20	.397"	284°	105°	flat	Good mid-range and top end power. Use racing springs and piston.	37 bbc/67 abc	.008"
	.397"	284°	105°			67 bbc/37 atc	.008"

Send cam with gear on, we will remove and replace the gear with the proper tools taking special care not to damage the keyway. If radiused tappets are required, use BSA B-40 SS tappets or send tappets to be re-radiused. Allow 6 days.

BSA GOLDSTAR 500

Hardfaced cams per pair, on customer cores.
 Contact R/D directly for springs #511-T R/D valve spring kit with **titanium tops** up to 1963.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
543-x2	.428"	264°	100°	Road race profile. Use modified piston and springs. Mid-range and top-end.	32 btc/52 abc	.006"
	.428"	264°	104°		56 bbc/28 abc	.008"
543-x1	.444"	304°		Stock intake #65-2442		.006"
	.403"	284°		Stock exhaust #65-2446		.006"
543-x6	.397"	270°		Roller profile.		
	.433"	272°				
543-x7	.433"	272°		Roller profile. H & C 1412		
	.433"	272°				

BSA twin A-50, A-65, A-70

Hardfaced cam, on new billet core core.
 Re-radius tappets on customer core, each.
 #509-T R/D valve spring kit with **titanium tops** for A-65.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
542-00	.347"	262°	107°	Reproduction of stock A-65 cam with timing retarded 3° for more top-end.	24 btc/58 abc	.006"
	.341"	262°	100°		51 bbc/31 atc	.007"
542-x2	.356"	276°	106°	Improved mid-range. OK with stock pistons, springs and tappets.	32 btc/64 abc	.005"
	.356"	276°	106°		64 bbc/32 atc	.007"
542-x12	.375"	274°	102°	Best all-around road race cam. Use high perf. pistons and R/D valve springs. New design strong mid-range and top-end power.	35 btc/59 abc	.010"
	.375"	274°	103°		60 bbc/34 atc	.012"
542-x3	.380"	244°	106°	Mid-range throttle response, torque Use modified pistons and springs.	16 btc/48 abc	.006"
	.380"	244°	106°		48 bbc/16 atc	.008"
542-x1	.400"	280°	103°	Road race profile. Mid-range and top-end power. Use racing springs and pistons.	37 btc/63 abc	.008"
	.400"	280°	103°		63 bbc/37 atc	.008"
542-x8	.400"	290°	103°	Full race profile. High R.P.M. power. Sifton 460 reproduction.	42 btc/68 abc	.008"
	.400"	290°	103°		68 bbc/42 atc	.010"

Hardfaced lobes solve the lobe wear problems and provide extra long-wearing surface.

DUCATI 250/350 (valve spring single)



New billet cam, no core needed.
 Rocker arms, weld and grind, cost each.
 Extra cost to restore "valve end" of rockers.
 #607-D R/D valve spring kit. Must remove metal from cylinder head to clear OD of spring.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
564-00	.412"	283°	102.5°	High performance race profile. Good throttle response/ mid-range. Check all clearances.	39 btc/64 abc		.005" - .006"
	.390"	302°	104°		75 bbc/47 atc		.007" - .008"
564-x9	.440"	290°	106°	FULL RACE CAM. MAXIMUM MID RANGE AND TOP END. Use all race components.	39 btc/72 abc		.006"
	.400"	293°	105.5°		73 bbc/41 atc		.008"
Stock	.358"	268°		Stock 250 for your reference.			

DUCATI 750/860 (valve spring twins)

New billet cams, no cores needed.
 Rocker arms, weld and grind on exchange cores, cost each.
 Valve spring kit with **titanium tops**.

565-20	.412"	283°	102.5°	All around road race. Good mid-range and some added top-end. Check clearances.	39 btc/64 abc		.005"
	.390"	302°	104°		75 bbc/47 atc		.007"

DUCATI 450 DESMO single

New billet cam, no core needed.
 Rocker arms, weld and grind on customer parts, cost each.

563-00	.410"	306°		Road race profile.	50 btc/75 bbc		
	.390"	298°			75 bbc/44 atc		

DUCATI DESMO Twins (Early Bevel Gear Drive)

New billet cams, per pair, no core needed.
 Rocker arms, weld and grind on customer parts, cost each.

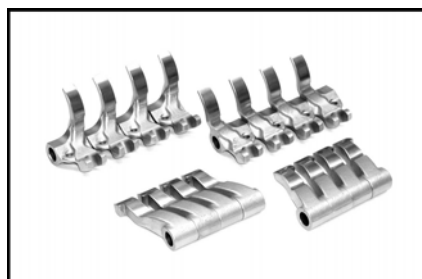
566-00	.464"	290°	106°	Road race. Stock mid-range and top-end. Use modified pistons. Check clearances.	39 btc/71 abc		
	.429"	292°	106°		72 bbc/40 atc		
566-x15				Imola Profile—reproduction			

DUCATI DESMO 750 PANTAH (belt drive) also F1-B

New billet cams, per pair, no core needed.
 Rocker arms, weld and grind on customer parts, cost each.

561-x2	.447"	305°	102.5°	High performance profile. Reproduction of NCR-07.	50 btc/75 abc		n/a
	.410"	305°	102.5°		75 bbc/50 atc		n/a
561-x3	.447"	305°	106.5°	NCR-07 with 4 degree wider lobe center for more top-end.	46 btc/79 abc		n/a
	.410"	305°	106.5°		79 bbc/46 atc		n/a

Ducati rocker arms: which require repair to the "valve" end - extra charge of \$18.00 per rocker arm.



Each to weld/grind, restore.
 This Includes 748, 916, 996 models.
 Our procedure:
 We grind .035" off the existing rocker pad to remove the chrome plating and prepare the surface for welding. We weld a .040" layer of nickel-chrome hardfacing alloy to the surface to create the new pad. We grind, edge, finish this new pad to the correct radius. The finished depth of the nickel-chrome alloy is a minimum of .035". This is double or triple the thickness of the original chrome plated surface on the pad.

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HARLEY DAVIDSON VRSA 1000 V-ROD (2002—2003)



Set of 4 cams hardfaced on stock customer cores.
#669-MECH remove and replace decomp. mechanism.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
669-x1 in	.450"	259°	101.5°	Designed for stock pistons and valve springs.	28 btc/51 abc	.008"-.010"
669-x2 ex	.415"	246°	105°	Improved mid-range, throttle response and some added top-end.	48 bbc/18 atc	.012"-.014"
TDC Lift at the valve with lash intake = .151" exhaust = .098"						
669-x3 in	.480"	263°		Race profile. Must use racing valve springs and pistons. Increased upper mid-range and top-end.		.008"-.010"
669-x4 ex	.450"	259°				.012"-.014"
FULL RACE:						
669-x5 in	.515"	284°		Drag race profile. MAX POWER. Must use racing valve springs and pistons.		.008"-.010"
669-x6 ex	.465"	264°				.012"-.014"
Stock in	.430"	248°		Stock valve springs will coil bind at .504" both intake and exhaust.		
Stock ex	.396"	234°				

HUSABERG 600 cc (all years)

Hardfaced cam on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
570-x1	.414"	284°	106°	Full race profile designed by Megacycle for competition use.	36 btc/68 abc	.010"
	.414"	284°	106°		68 bbc/36 atc	.010"
570-x2	.407"	272°	107°	Reproduction of factory "B" cam.	29 btc/63 abc	
	.400"	272°	107°	Race profile.	63 bbc/29 atc	
570-x3	.389"	267°	105.5°	Reproduction of factory "C" cam.	28 btc/59 abc	
	.383"	254°	106°		53 bbc/21 atc	
Stock "A" cam	.385"	253°	108°	For reference only. Not available from Megacycle.	18 btc/54 abc	
	.385"	253°	108°		54 bbc/18 atc	

HUSQVARNA 350/500/510/610 (1984—1992)



New billet cam (with water impeller).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
567-00 (old # 567-x1)	.440"	260°	108°	Fast off-road. Increased mid-range and top-end power. OK with stock pistons and springs. Must shorten the guides or run without guide seals.	22 btc/58 abc	.007"
	.440"	260°	108°		58 bbc/22 atc	.007"
Stock	.390"	254°	109°	Stock valve spring coil bind .517" IN and EX	18 btc/56 abc	
	.382"	252°	108°	Stock travel to guide seal IN = .438" , EX = .416"	54 bbc/18 atc	

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

INDIAN WARRIOR - 500 PARALLEL Twin 1950's

Hardfaced cams per pair, on customer cores only.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
780-x1	.358"	275°	104.5°	ROAD RACE CAM. Modified pistons and springs needed.	33 btc/62 abc	.008"
	.358"	275°	108.5°		66 bbc/29 atc	.010"
780-x2	.343"	270°		Alternate road race profile.		
Stock	.245"	288°		For reference.		

KTM LC-4 600cc (1989—1991), 400 (1995)

**ALSO fits 620cc but customer will sacrifice use of compression release.

New billet cam (cam has no compression release).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
702-25	.415"	282°	106°	Best for 1/2 Mile, Road-race & fast off-road. Use modified pistons and springs. Mid range, top-end.	35 btc/67 abc	.006"
	.405"	277°	106.5°		65 bbc/32 atc	.008"
702-45	.450"	264°	108°	T.T. style power. Strong mid-range torque. Great throttle response. Use modified piston and springs.	24 btc/60 abc	.006"
	.450"	264°	108°		60 bbc/24 atc	.008"
702-x4	.375"	295°	104.5°	Fast Road-race. Top-end power. Use with modified piston and springs.	43 btc/72 abc	.006"
	.375"	285°	104.5°		67 bbc/38 atc	.008"
Stock	.365"	249°	111.5°	For your reference.		

LAVERDA 750 Twin (1970—1976)

Hardfaced cam on customer core (2 piece).
Rocker arms, weld/grind - cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
585-x4	.446"	284°	100°	RACE PROFILE. Mid range and top end increase	42 btc/62 abc	.006"
	.448"	284°	100°		62 bbc/42 atc	.008"
585-x8	.440"	282°	101°	6-C reproduction.	40 btc/62 abc	.006"
	.406"	283°	101.5°		63 bbc/40 atc	.008"
585-x9	.437"	272°	103°	5-C reproduction.	33 btc/59 abc	.006"
	.364"	272°	104°		60 bbc/32 atc	.008"
stock	.384"	254°	102°	For your reference.	27 btc/47 abc	.006"
	.374"	259°	100.5°		50 bbc/29 atc	.008"

LAVERDA Triples

Hardfaced cams per pair 3-cylinder.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
584-x1	.380"	261°	104.5°	OK with stock pistons and springs in all Jota and Mirage models. Improved throttle response, strong mid-range power retains good top-end.	26 btc/55 abc	.003"
	.380"	261°	104.5°		56 bbc/25 atc	.004"
584-x2	.367"	269°	103.5°	Reproduction of factory 3-C profile. Top-end power, open road profile	31 btc/58 abc	.003"
	.367"	269°	103.5°		60 bbc/29 atc	.005"
584-x3	.393"	280°	105°	Reproduction of factory 4-C profile. Use these timing figures for high performance street use. Road race profile. This is the standard cam supplied in most Jota and Mirage models.	35 btc/65 abc	.003"
	.393"	280°	108°		68 bbc/32 atc	.005"
584-x3	Alternate timing per factory manual		102° 106°	This timing was recommended by the factory for ROAD RACING. We feel the 105/108 timing shown above is better suited to high performance street riding.	38 btc/62 abc 66 bbc/34 atc	.003" .005"

GILERA Twin

Hardfaced cam on customer cores per pair.

MATCHLESS G-50

New billet cam, no exchange.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
582-x1	.500"	300°	108°	Road race profile. Team Obsolete grind.	42 btc/78 abc	.007"
	.420"	294°	110°		77 bbc/37 atc	.009"

MATCHLESS G-80 and AJS



Hardfaced on customer cores, per pair.

581x2	.397"	288°	100°	High performance profile.	44 btc/64 abs	.005"
	.397"	288°	106°		70 bbc/38 atc	.007"
581x3	.375"	280°	106°	All around, mid range power.	34 btc/66 abc	.008"
	.355"	280	110°		70 bbc/30 atc	.010"
581-00	.477"	293°	105.5°	FULL RACE PROFILE. Requires extensive modifications	41 btc/72 abc	.008"
	.477"	293°	108.5°		75 bbc/38 atc	.010"

MOTOGUZZI 750/850 Twins



New billet cam, hardfaced, no core needed.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
620-x3	.325"	252°	108°	Designed for stock pistons and springs, check all clearances. Improved road performance. Improved mid-range.	18 btc/54 abc	.005"
	.325"	252°	108°		54 bbc/18 atc	.007"
620-x10	.355"	264°	105°	Road performance. Use racing springs and piston. Improved throttle control.	27 btc/57 abc	
	.355"	264°	105°		57 bbc/27 atc	
620-x7	.382"	296°	108°	Norris 382 profile. Use modified springs and pistons. Mid-range and top-end/road race use.	40 btc/76 abc	
	.382"	296°	108°		76 bbc/40 atc	
620-x8	.372"	294°	104°	Norris RR3 profile. Road race performance, mid-range, good throttle response. Use modified pistons and springs	43 btc/71 abc	
	.360"	285°	108.5°		71 bbc/34 atc	
620-x9	.326"	258°	107°	Norris S. OK with stock pistons and springs.	22 btc/56 abc	.008"
	.326"	258°	107°		56 bbc/22 atc	.010"
620-x11	.360"	282°		Norris SS. Drag Race/Hi Performance.	36 btc/66 abc	.008"
	.360"	282°			68 bbc/34 atc	.010"
Stock	.316"	268°		tappet diameter = .864"		
	.289"	253°				

Shown below are alternate timing figures taken at .020" (these are figures previously quoted by Norris Cycle cams). We prefer to quote all timing at .040" (1mm). We have listed the Norris figures to help you identify these cam profiles.

CAM NUMBER	VALVE LIFT	DURATION AT .020"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
620-x7	.458"	322°	108°	Norris 382 profile. Use modified springs and pistons. Mid-range and top-end/road race use.	53 btc/89 abc	
	.458"	322°	108°		89 bbc/53 atc	
620-x8	.446"	320°	104°	Norris RR3 profile. Road race performance, mid-range, good throttle response. Use modified pistons and springs	56 btc/84 abc	
	.432"	318°	108°		87 bbc/51 atc	
620-x9	.392"	292°	107°	Norris S grind. Mild performance for use with stock pistons and springs. Some exhaust tuning may be needed for best performance.	39 btc/73 abc	.008"
	.392"	292°	107°		73 bbc/39 atc	.010"
620-x11	.424"	304°		Norris SS profile. Drag race/Hi performance	47 btc/77 abc	.008"
	.422"	302°			78 bbc/44 atc	.010"

MEGACYCLE CAMS

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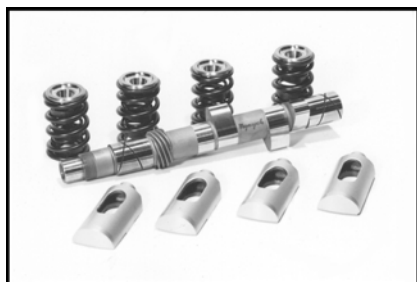
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M.V. AGUSTA (all models)

Four cylinder cams hardfaced on customer core.
Single cylinder cam hardfaced on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE
588-x2	.323"	254°		Four cylinder — copy of stock cam.	
588-x3	.366"	268°		Four cylinder — copy of factory high performance cam.	
588-01	.200"	226°	112°	Single cylinder profile.	1 btc/45 abc
	.200"	226°	112°	High performance — road race.	45 bbc/1 atc

NORTON 750/850 TWINS (also 500 ATLAS and 650)



New billet cam, no core needed.
#901-N R/D valve spring kit with **titanium tops**.
Re-radius cam followers (3" radius) on customer cores, cost each.
Flat tappets - resurface flat on customer cores, cost each.

When flat follower is specified, it is O.K. to substitute the 3" radiused follower.
However - when 3" radiused follower is specified, only radiused follower can be used.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
560-N-R	.350"	280°	104°	flat	Best all around performance for 750cc. Strong low and mid-range power band. Good torque. .139" lift at overlap intake and exhaust.	36 btc/64 abc 64 bbc/36 atc	.013" .013"
560-00	.395"	277°	104.5°	3" radius	Best all around road/road race performance. Strong mid-range, increased top-end. Wide smooth power band. OK with stock pistons in 850 Commando. Check in all others models. Must use spring kit #901-N. or equivalent.	34 btc/63 abc 63 bbc/34 atc	.010" .010"
560-20	.400"	283°	103.5°	3" radius	Updated SSS profile to use with radiused tappets. Use racing piston and springs.	38 btc/65 abc 64 bbc/31 atc	.008" .010"
"SSS"	.355"	275°	106.5°	radius			
560-SS	.390"	276°	104°	flat	Reproduction of factory "SS" profile. Use modified pistons and springs.	34 btc/62 abc 60 bbc/32 atc	.006" .008"
	.335"	272°	104°				
560-NSS	.359"	284°	104°	flat	Norris SS profile. This is not the same as the factory SS profile shown above. This provides added top-end power . Especially good in 850cc and larger motors. Springs recommended.	38 btc/66 abc 66 bbc/38 atc	.008" .010"
	.359"	284°	104°				
560-D+	.405"	296°	105°	flat	Norris fuel/drag competition cam. Racing springs, and pistons required. Race only.	43 btc/ 73 abc 73 bbc/ 43 atc	.015" .015"
	.405"	296°	105°				
560-N480	.436"	312°	106°		**Full race cam for top-end power. Must use racing pistons and springs. This is the Norris 480 profile.	50 btc/82 abc 82 bbc/50 atc	
	.436"	312°	106°		** Special BSA A-65 follower.		
560-x10	.328"	260°	106°	flat	Stock Atlas profile reproduction.	24 btc/56 abc 56 bbc/24 atc	.008" .010"
	.328"	260°	106°				
Stock	.330"	268°			850 Commando for reference.		

All Norton billet cams manufactured by Megacycle use 1/4-28 UNF threads in the threaded hole which secures the ignition advance mechanism. Some of the Norton original stock cams are threaded 1/4-26 BSW. In this case it will be necessary to replace your original bolt with the proper 1/4-28 bolt.

NORTON MANX

Hardfaced on customer cores per pair.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
589-x1	.545"	296°			Road race profile.	43 btc/73 abc	.014"
	.465"	269°			TDC lift IN = .282", EX = .170"	58 bbc/31 atc	.020"

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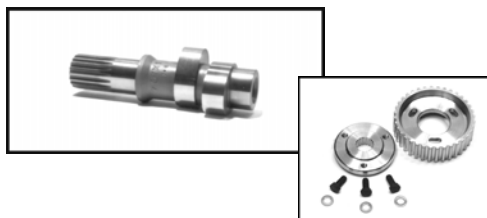
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ROYAL ENFIELD

Hardfaced on customer core.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
550-x1	.355"	264°	107°	Race profile.	25 btc/59 abc	.006"
	.355"	264°	111°		63 bbc/21 atc	.008"
591-x1				Reproduction of BSA profile 65-2442.		

ROTAX, CAN-AM, KTM, 500, 560, 600 (1983—1990)



New billet cam, no exchange needed.

#70111 broach and mark customer gear.

#601-R R/D Spring kit (1010) with **titanium tops**.

#601-RW R/D Spring kit (1006) with **titanium tops**.

#1010-4 R/D replacement springs for 601-R.

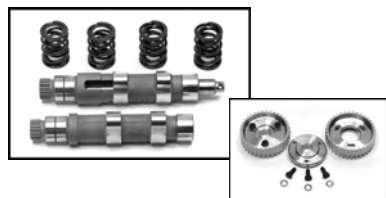
701-15 adjustable cam sprocket assembly.

Our adjustable cam pulley allows quick and accurate cam timing changes. Part #70115.

New manufactured item no exchange needed.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
701-x1	.348"	260°	108°	OK with stock piston and springs. Good low-end and strong mid-range. Check clearances.	22 btc/58 abc	.003"
	.348"	260°	108°		58 bbc/22 atc	.005"
701-x2	.375"	295°	104.5°	Use racing springs and piston. Fast TT, dry trails and desert riding. Mid-range, top-end	43 btc/72 abc	.003"
	.375"	285°	104.5°		67 bbc/38 atc	.005"
701-x5	.450"	264°	110°	Use racing springs and piston. Best ½ mile and mile cam for 500/560's. Good for TT's if straightaways are long and fast. Good top-end.	22 btc/62 abc	.005"
	.450"	264°	110°		62 bbc/22 atc	.007"
TDC lift	.114"					
701-x6	.450"	264°	108°	BEST CAM FOR 500 CC ½ MILE & TT Strong mid-range. Use racing piston and springs.	24 btc/60 abc	.005"
	.450"	264°	108°		60 bbc/24 atc	.007"
TDC lift	.122"					
701-x10	.420"	278°	110°	600cc full race/mile cam for competition. Use racing springs and piston. Mid-range and maximum top-end from the 600cc engine.	29 btc/69 abc	.006"
	.405"	274°	110°		67 bbc/27 atc	.007"
701-x11	.420"	278°	106°	Best all around profile for 560/600's combination ½ mile, mile and TT bikes. Use racing springs and piston. Roll-on power.	33 btc/65 abc	.006"
	.405"	274°	106°		63 bbc/31 atc	.008"
701-x16	.450"	290°	106°	FULL RACE PROFILE. Road race and mile tracks. Mid-range and top-end. Use racing piston & springs.	39 btc/71 abc	.007"
	.425"	282°	110°		71 bbc/39 atc	.009"
701-x20	.450"	290°	102.5°	FULL RACE PROFILE. Modified version of 701-x16. Better mid-range power. Use racing pistons and springs.	42½ btc/67½ abc	.007"
	.425"	282°	102.5°		63½ bbc/38½ atc	.009"
Woods 860	.420"	.290°	101°	Woods 860 for reference.	44 btc/66 abc	
	.422"	.292°	106°		72 bbc/40 atc	

ROTAX 600 DOHC (1992—1993) water cooled



Hardfaced on customer core, per pair.

#703-11 adjustable cam sprockets, per pair.

703-x1	.420"	286°	106°	Road race or Mile dirt track. top end power for all-out racing with high compression pistons and racing springs. Must use SHIM UNDER BUCKET.	37 btc/69 abc	.007"
	.420"	286°	110°		73 bbc/33 atc	.009"
703-x2	.417"	268°	105°	Strong mid-range power, with moderate top end increase. Use HIGH performance pistons and valve springs. Shim on top OK with this cam.	29 btc/59 abc	.007"
	.417"	268°	105°		52 bbc/29 atc	.009"
Stock	.390"	250°		Stock cam for your reference.		
	.390"	250°				

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TRIUMPH 650/750 Twin (1960—1973)



New billet cams per pair, -no exchange cores needed.
 Re-radius tappets on customer core, cost each.
 #506-T R/D valve spring kit with **titanium tops**.
 #70-0301 K.P.M. 650 Triumph alloy pushrods.
 #70-0447 K.P.M. 750 Triumph alloy pushrods.

Tappets — "R" = 1 1/8" radius
 "STD" = 3/4" radius

When R is specified you can also use STD
 which will produce more low RPM power.

CAM NUMBER	CAM LIFT	DURATION AT .020"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
510-05	.348"	282°	100°	"R"	Best for low-end and some mid-range increase. Street/road performance 2500 to 7000 R.P.M. Should clear stock pistons, check clearance. Uses stock springs	41 btc/61 abc	.010"
	.348"	282°	102°			63 bbc/39 atc	.010"
510-15	.355"	297°	105.5°	"R"	The legendary Kenny Harman #15 grind. (Also known as JOMO 15). TT, flat track, all around use. Must use modified pistons and springs.	43 btc/74 abc	.007"
	.355"	297°	105.5°			74 bbc/43 atc	.009"
510-x1	.401"	308°	102°	"STD"	Reproduction of Sifton 460. Racing Use. Mid-range and top-end power.	52 btc/76 bbc	.008"
	.401"	308°	106°	only		80 bbc/48 atc	.010"
510-65	.355"	292°	101°	"R"	For 650 or 750. Best all around street and road cam. Broad power band, mid-range and top-end. TT style performance. Use modified pistons and springs. (Recommended by Motorcyclist Magazine)	45 btc/67 abc	.010"
	.355"	295°	104.5°			72 bbc/43 atc	.010"
	TDC LIFT		.163" in .150" ex				
510-75	.400"	326°	102°	"STD"	Racing use only. Must remove material from the tappet guide blocks to install this cam. High R.P.M. power. Must use racing springs and pistons. Check clearances.	61 btc/85 abc	.008"
	.400"	326°	105°	only		88 bbc/58 atc	.008"
	TDC LIFT @		102° LC = .159" 105° LC = .146"				
510-x2	.375"	296.5°	103°	"R"	New race profile. Best all around road-race. Best peak horsepower. May need to trim flywheel clearance. Use racing pistons and springs. TDC LIFT in = .174" @ 1.1 rocker ratio/with lash ex = .153"	45.5 btc/71 abc	.008"
	.375"	296.5°	105°			73.5 bbc/43 atc	.010"
	Base circle diameter = .812"						
510-95	.400"	340°	108°	"STD"	Full race only. All racing components required. High R.P.M. drag race, grass track, competition.	62 btc/98 abc	.008"-.014"
	.400"	340°	108°	only		98 bbc/62 atc	.008"-.014"
Stock	.322"	272°			.322" 278°	Stock for your reference.	
650	.322"	272°			.322" 278°	750 short rod	

Since the 1984 purchase of Kenny Harman's K.H. Cams by Megacycle – K.H. grinds are available upon request.

TRIUMPH 500 Twin

All cams listed below will work with "R" or "STD" tappets

New billet cams per pair, no exchange needed.
 #513-T R/D valve spring kit, **titanium tops**, 1967 and later.
 Re-radius customer tappets, cost each.

CAM NUMBER	CAM LIFT	DURATION AT .020"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
512-05	.348"	282°	100°		Designed for stock pistons and springs. Good Throttle response/ all around performance.	41 btc/61 abc	.010"
	.348"	282°	102°			63 bbc/39 atc	.010"
512-65	.355"	292°	101°		Best all-around street/road race profile.	42 btc/67 abc	.010"
	.355"	295°	104.5°			72 bbc/43 atc	.010"
512-x5	.293"	237°			1938 Triumph 500 Twin stock reproduction.		
512-x8	.375"	296.5°	103°	on "R"	Best competition road-race profile. Maximum peak horsepower and throttle response. Must use racing pistons and valve springs. Trim flywheel for clearance.	44.5 btc/71 abc	.008"
	.375"	296.5°	105°	on "R"		73.5 bbc/43 atc	.010"

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TRIUMPH and BSA 3-cylinder



New billet cams, per pair, no exchange needed.
Re-radius customer tappets, cost each.
#507-T R/D valve spring kit with **titanium tops**.

TAPPETS: It is necessary to regrind stock tappets to 3/4" radius for all Megacycle cams except (#511-X6) Stock 3 cylinder tappets are 1-1/8" radius.

CAM NUMBER	CAM LIFT	DURATION AT .040"	LOBE CENTERS	TAPPET STYLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
511-05	.345"	282°	98°	3/4"	Best all around profile, road and touring. Use modified pistons and springs. This was the factory road race profile used by Dick Mann at Daytona. Smooth power band.	43 btc/59 abc	.005"
	.345"	282°	102°			63 bbc/39 atc	.007"
511-x5	.375"	287°	104.5°	3/4"	Road race profile. Strong mid-range, top-end. All out racing. Use modified pistons and valve springs.	39 btc/68 abc	.008"
	.375"	287°	107.5°			71 bbc/36 atc	.010"
511-35	.346"	268°	104°	3/4"	Short road race where throttle response is most important. Less top-end than the 511-00. Very strong mid-range.	30 btc/58 abc	.008"
	.346"	268°	104°			58 bbc/30 atc	.010"
511-75	.400"	274°	108°	3/4"	Full race. Must trim tappet guide blocks. High R.P.M. race application. Race components.	29 btc/65 abc	.008"
	.400"	274°	108°			65 bbc/29 atc	.010"
511-95	.400"	288°	100°	3/4"	Special application race profile.	44 btc/64 abc	
	.400"	288°	100°			64 bbc/44 atc	
511-x6	.378"	286°		1-1/8"	Factory TH-13 reproduction.		
Stock	.328"	262°		1-1/8"	For reference.		

TRIUMPH 3-CYL 1994 BUCKET MODEL 900CC

Hardfaced cams per pair on customer cores.

516-x1	.385"	258°			Intake cam improved mid-range and top-end.		
516-x2	.370"	262°			Exhaust cam improved mid-range and top-end.		
Stock in	.355"	258°			For reference.		
ex	.346"	256°			Bucket diameter 28mm.		

VELOCETTE

Hardfaced cams per pair on customer cores.

587-x1					Pushrod single.		
587-x2					Pushrod single.		
587-x3					KTT 350 MK III.		

VINCENT

per pair, new billet cams or hardfaced on customer cores/same price.

Above timing figures are taken and .050" valve lift (NOT at .005" as in the Vincent manual).

All cams will have new bushings installed and honed after finish grinding.

CAM NUMBER	VALVE LIFT	DURATION AT .050"***	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
554-x1	.330"	268°	104°	Improved version of Mark I profile.	30 btc/44 abc	.001"-.003"
	.330"	268°	104°	Touring profile.	44 bbc/30 atc	.001"-.003"
554-x2	.365"	268°	97°	Improved version of Mark II profile.	37 btc/51 abc	.001"-.003"
	.365"	268°	97°	Race Profile	51 bbc/37 atc	.001"-.003"

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

HONDA SL-70, CT-50/70 (1971—1976)

Hardfaced cam, on customer core.
#200-H R/D valve spring kit.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
128-00	.225"	230°	105°	Off-road cam for increased mid-range and top-end power. OK with stock piston. Spring kit 200-H is recommended.	10 btc/40 abc	.004"
	.200"	225°	107.5°		40 bbc/ 5 atc	.004"

HONDA XR-100 (1985—2003) (also XR-75/80 1979—1984)



Hardfaced cam, ON CUSTOMER CORE. XR-80/100 #129-99 core charge (if no customer core).

Early style XR-75 hardfaced cam, no core needed. (early models made before 1977)

#30-4062 KPM valve springs only (use stock tops).

#218-H R/D valve spring kit with aluminum tops.

#259-H R/D valve spring kit with **titanium tops**.

XR-100 Wiseco piston kits 9.4:1

4666M05350 (53.50mm) 4666M05400 (54.00mm) 4665M04800, 4665M04850

4666M05450 (54.50mm)

4666M05500 (55.00mm)

W-5733 Gasket set XR-100 1979—1991

W-5749 Gasket set XR-100 1992—2006

XR-80 9.7:1

4665M04800, 4665M04850

4665M04900

4665M04950

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
129-00	.275"	232°	104°	High performance off-road cam. Check clearance if used with stock piston and springs. Modified piston and springs are recommended.	12 btc/40 abc	.004"
	.275"	232°	106°		42 bbc/10 atc	.004"
129-x6	.300"	256°	102°	High performance/all around cam. Mid-range & top-end. Must use high performance piston & springs	26 btc/50 abc	.004"
	.281"	256°	105°		53 bbc/23 atc	.005"
129-x5	.326"	274°	106°	Full race profile. Use racing piston and valve springs. Extensive modifications needed: Must sink the valves for valve-to-valve clearance. Remove Metal in cam cover & rocker arm to clear the lobe tip. Grind rocker arm for spring retainer clearance. Possible piston modification, grind valve pocket depth.	31 btc/63 abc	.007"
	.326"	274°	106°		63 bbc/31 abc	.007"
TDC lift IN = .131"						
TDC lift EX = .130"						
Stock	.240"	225°		Stock XR-100 for reference.		

HONDA ATC-90/110 (1970—1978) ATC 110 (1979—1985)

Hardfaced cam, no exchange core needed.

#201-H R/D valve spring kit.

#30-0896 KP.M. valve springs only.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
133-00	.282"	236°	101°	Mild performance in stock motor. Increased mid-range. OK with stock piston.	17 btc/ 39 abc	.004"
	.280"	239°	102.5°		42 bbc/ 17 atc	.004"
133-20	.326"	243°	100.5°	Full race cam. Use racing piston and springs. Mid-range and top-end power.	21 btc/ 42 abc	.004"
	.307"	248°	103°		47 bbc/ 21 atc	.004"

HONDA TRX-90 (1993—1997)

Hardfaced cam on customer core.

Remove and reinstall mechanism.

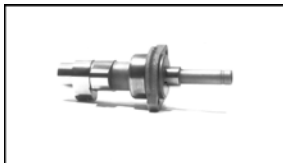
CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
189-x1	.239"	243°	104.5°	OK with stock springs, must check valve to piston clearance. Designed for increased mid-range torque with some added top-end power.	17 btc/56 abc	.005"
	.227"	229°	104.5°		39 bbc/10 atc	.007"
Stock	.205"	202°	97°	For your reference.		
	.205"	202°	97°			

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HONDA 100/125 SL, XL (up to 1978)



Hardfaced (HF) cam, on customer core.

Needle bearing (NB) cam & bearing mount available in all profiles.

#202-H R/D valve spring kit 1976 and later for two piece head only.

** No valve springs available for 1 pc SL-100 heads.

Profiles #12440 and 12440 require racing springs.

Timing is measured with zero checking clearance.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
124-00	124-00NB	.300" .260"	260° 248°	106° 108°	OK with stock piston and springs. Increased mid-range power for on and off-road use.	24 btc/56 abc 52 bbc/16 atc .004"
124-20	124-20NB	.314" ** .307"	244° 272°	100° 104°	Use modified piston and springs. Great mid-range torque for off-road use.	22 btc/42 abc 60 bbc/32 atc .004"
124-40	124-40NB	.355" ** .338"	273° 270°	103.5° 102°	Full race cam. Use modified piston and springs. head modification required.	33 btc/60 abc 57 bbc/33 atc .005"
124-22	124-22NB	.325" .305"	247° 253°	103.5° 105.5°	<u>Two piece models only.</u> Should clear stock piston. Use #202-H spring kit. Great mid-range torque cam for off-road.	20 btc/47 abc 52 bbc/21 atc .004"
124-42	124-42NB	.370" .370"	274° 275°	106° 106.5°	<u>Two piece models only.</u> Full race cam. Mid-range, top-end. Use racing piston & 202-H	31 btc/63 abc 64 bbc/31 atc .005"

Our needle bearing cam requires boring of the cylinder head to install the oversize bearings. At the time of this printing, valve springs for Honda SL, XL 100/125 one piece heads are no longer available.

HONDA ATC-125M (1985—1986), TRX-125 (1986)

NO LONGER AVAILABLE.

HONDA 160/175 twin (up to 1970)

Hardfaced cam on customer core.

#122-RA rocker arms, weld and grind, cost each.

252-H R/D valve spring kit with **titanium tops.**

CAM NUMBER	VALVE LIFT	DURATION AT .020"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
122-00	.270" .270"	256° 256°	100° 105°	Mid-range power and torque increase. Good low-end power. Designed for stock pistons and springs, but check all clearances.	28 btc/48 abc 53 bbc/23 atc .006"	
122-20	.246" .246"	281° 283°	110.5° 104.5°	Top-end power. Smooth mid-range. Best with high compression piston. Designed for road race applications. Check all clearances.	30 btc/71 abc 66 bbc/37 atc .005"	
122-x4	.286" .286"	270° 270°	100° 100°	Road race profile. Norris H-175-T	35 btc/55 abc 55 bbc/35 atc .005"	
122-x9	.286" .286"	270° 270°	104° 104°	MAXIMUM top-end power for drag race, long course road race. Use racing pistons, springs etc	31 btc/48 abc 48 bbc/31 atc .005"	

HONDA CB-200 TWIN (1974—1978)

Hardfaced cam, on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .020"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
135-x1	.270" .270"	256° 256°	100° 105°	Mid-range power, increased torque. Designed for stock pistons, springs. Check all clearances.	28 btc/48 abc 53 bbc/23 atc .006"	
135-x9	.286" .286"	270° 270°	104° 104°	ROAD RACE profile. Must use racing pistons & springs. Mid-range and high RPM power increase.	31 btc/48 abc 48 bbc/31 atc .005"	

HONDA CRF-150 (2002—2004)

Hardfaced cam on customer core.

276-H R/D valve spring kit with **titanium tops.**

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
110-x1	.332" .323"	232° 237°	102° 106°	Stage I. OK with stock springs. Torque cam.	13 btc/39 abc 44 bbc/13 atc ."	
110-x2	.356" .341"	243° 247.5°	102° 106°	Stage II. OK with stock springs. All around mid-range.	18.5 btc/44.5 abc 49.5 bbc/18.0 atc ."	
110-x3	.380" .359"	254° 258°	102° 106°	FULL RACE PROFILE. Racing pistons and springs needed.	22.5 btc/51.5 abc 54.5 bbc/23.5 atc ."	
Stock	.292" .284"	218° 222°	103° 105.5°	Stock cam 14100-KPT-900 Stock valve springs OK to .375" lift. (guides to .374")	6 btc/32 abc 36.5 bbc/5.5 atc .005"	

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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HONDA CRF-150-R (2007—2008)

New billet cam with bearings & flange. No core needed.
R.D. # 2200-H valve spring kit with **titanium** tops/PSI springs.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
119-x1	.345" .310"	250° 255°	103° 105.5°	Stage I performance cam. Must use aftermarket spring kit. Torque cam.	22 btc/48 abc 53 bbc/22 atc	.006" .010"
TDC Lift in = .107" ex = .091"						
119-30	.362" .330"	258° 263°	104° 105°	Stage II. All-around profile. Must use #2200-H springs or equiv. Use high performance piston.	25 btc/53 abc 55.5 bbc/26.5 atc	.005" .009"
119-x2	.380" .350"	265° 270°	105.5° 108°	RACE PROFILE. Must use racing piston & springs. Strond mid-range & top-end.	27 btc/58 abc 63 bbc/27 atc	.006" .010"
Stock cam	.321" .299"	247° 267°	106.5° 102.5°	2007 CRF-150 R	17 btc/50 abc 56 bbc/31 atc	.006" .010"
Stock valve springs intake .363" travel to coil bind. .407" travel to stem seal						
" " " exhaust .374" " " " " .460 " " " "						

Our series#

110-99	CRF-150-F	2003 to 2005	stock cam #14100-KPT-900 (2-valve head)
110-99	CRF-230-F	2003 to 2007	stock cam #14100-KPS-900
No cam for	CRF-150-F	2006 & 2007	stock cam #14100-KPT-A00 Roller rocker 2 valve
119-99	CRF-150-R	2007	stock cam #91003 KF0-008 4 valve (int - bucket ex - roller)

HONDA CRF-250 (2004—2009)



New billet cam/ no core needed. Cam will be supplied with press on flangs and adjustable cam sprocket.
Second option - can supply the cam with press-on stock style sprocket - subject to availability.

R/D kit # 292-H Valve springs (PSI race springs) with titanium top retainers.
This 292-H kit fits models with 5mm exhaust valve.
(2008 models which use 4.5mm exhaust valve will need an alternate spring kit.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
112-x1	.350" .342"	256° 260°	102° 106°	Race profile. Mid-range and top-end power. Must use R/D valve springs and race piston.	26 btc/50 abc 56 bbc/24 atc	.006" .012"
TDC LIFT in .122"						
TDC LIFT ex .100"						
Stock cam	.320" .332"	248° 262°	106° 106°	Stock cam for 2004 thru 2007 part # 14100 KRN 670	18 btc/ 50abc 57 bbc/25 atc	
Stock cam	.300" .285"	233° 242°	105° 105°	Part # 14100 KSC 670		
Stock cam				Part # 14100 KRN 730 2005 only		

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HONDA XR 200 (1986—2003), ATC-200X (1981—1986)



New billet/hardfaced cam with bearing on 1 end.
Needle bearing (NS) billet cam and mounting plate.

No core needed. No boring required.

#143-01 vernier drilled sprocket for accurate timing adjustment.

#205-H R/D valve spring kit with aluminum tops.

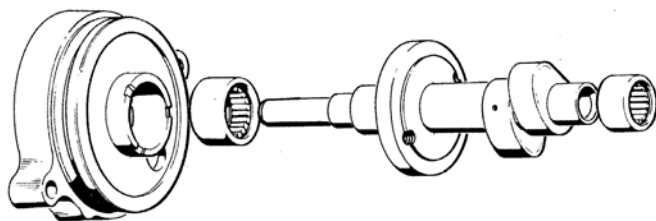
#228-H R/D valve spring kit with **titanium tops**.

#30-4016 P.M. valve springs only (use stock tops).

Wiseco piston kit with rings, pin and clips.

	10:1	12:1		
#4156M06550	65.5 mm	157.92	#4289M06550	— .020"
#4156M06600	66 mm	157.92	#4289M06600	— .040"
#4156M06650	66.5 mm		N.A.	— .060"
#4156M06700	67 mm	173.73	#4289M06700	— .080"

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
143-00	.365"	243°	104.5°	OK with stock piston and springs. Increases mid-range power and torque. Smooth idle.	17 btc/46 abc 46 bbc/17 atc	.005"
143-20	.370"	273°	102.5°	Use modified piston and springs. Best all around cam. Great mid-range and added top-end.	34 btc/59 abc 59 bbc/34 atc	.005"
143-40	.435"	272°	106°	Full race cam. Use racing piston and springs. Maximum mid-range and top-end power. Must cut cylinder head for lobe clearance. Use R/D 228-H	30 btc/62 abc 62 bbc/30 atc	.005"
Stock	.288"	222°	105°	Stock cam #14101-958-000 for your reference.	6 btc/36 abc 35 bbc/ 6 atc	
	.270"	221°	104.5°			



Our needle bearing cam and new mounting plate can be installed in a damaged cylinder head with NO MACHINING. We have eliminated the large journal near the sprocket which usually fails. The new roller bearing in the mounting plate provides a more stable bearing surface on the end near the point drive.

The roller bearing on the small end replaces the steel bushing. Our bearing has the same O.D. as the stock bushing, it slides right into the head. No exchange is required for this needle bearing cam conversion. All profiles available.

HONDA ATC-200X, TRX-200SX (1986—1988)



Hardfaced cam, on customer core.

#234-H R/D valve spring kit with aluminum tops.

4394 series Wiseco piston kits with rings, pin and clips.

4395 series Wiseco piston kits with rings, pin and clips.

	10¼:1	12:1		
#4394M06500		N.A.	— STD	65 mm
#4394M06550		#4395M06550	— .020"	65.5 mm
#4394M06600		#4395M06600	— .040"	66 mm

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
164-x1	.355"	222°	106°	OK with stock piston and guides. Must use springs #234-H. Increased mid-range torque.	5 btc/37 abc 37 bbc/ 5 atc	.004"
164-x2	.408"	268°	108°	Full race cam. Must use racing piston and springs. Must sink the valves .060" for valve-to-valve clearance. Must remove material from the rocker box for lobe clearance.	26 btc/62 abc 62 bbc/26 atc	.004"
Stock	.318"	255°	104.5°	Stock cam #14100-HB5-010 for your reference.	8 btc/37 abc 40 bbc/ 8 atc	
	.308"	228°	106°			

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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HONDA XL-175

Hardfaced (HF) cam, on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .010"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
130-00	.350"	250°	111°	Mild improvement for off-road. OK with stock pistons and springs.	14 btc/56 abc	.003"
	.350"	248°	102°		46 bbc/22 atc	.003"
130-40	.380"	282°	106°	Maximum performance. Mid-range and top-end performance for racing and off-road use.	35 btc/67 abc	.004"
	.380"	283°	107.5°		69 bbc/34 atc	.004"

Megacycle needle bearing cams do not have a tach drive gear. Machining of cylinder head and cover is required to install our needle bearing cams.

HONDA XL-250/350 (up to 1976) 250=1972—1976 350=1974—1978



Hardfaced cam (HF) on billet core.

New needle bearing cam (NB) no core needed.

Machine customer cylinder head 127-HD for (NB) cam.

Rocker arms (127-RA) weld and grind/cost each cust cores.

#127-02 Slotted cam sprocket.

#206-H R/D valve spring kit with aluminum tops, to .425" lift.

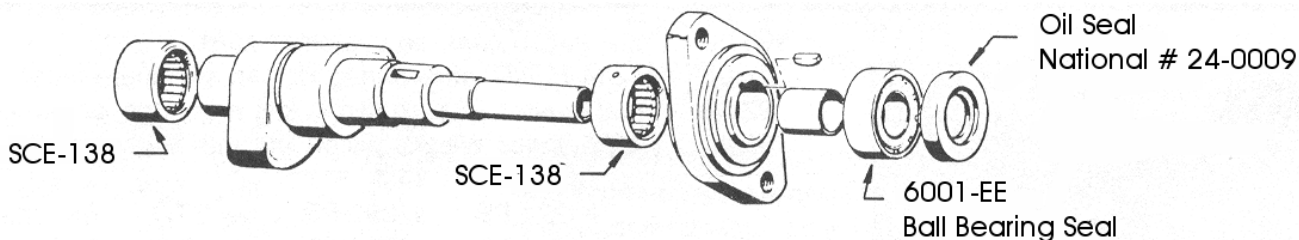
#229-H R/D valve spring kit with **titanium tops**, to .425" lift.

HVS-250 Norris valve springs/use stock tops to .380" lift.

#24-0009 Replacement oil seal for NB cam.

CAM NUMBER HF	NUMBER NB	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
127-00	127-00NB	.345"	241°	100.5°	OK with stock pistons and springs.	20 btc/41 abc	.003"
		.310"	243°	103.5°	Increased mid-range, improved torque.	45 bbc/18 atc	.003"
127-20	127-20NB	.356"	250°	103°	Best all around on and off-road cam. OK with stock XL-350 piston. Must check clearance in XL-250. Great mid-range and top-end. Use HVS-250 valve springs.	22 btc/ 48 abc	.003"
		.332"	252°	104°		50 bbc/22 atc	.003"
127-40	127-40NB	.365"	243°	103.5°	Use with modified piston and springs. Best cam for TT, moto-X. Great throttle response	18 btc/45 abc	.004"
		.365"	243°	103.5°		45 bbc/18 atc	.004"
127-60	127-60NB	.417"	250°	101°	1/8 and 1/4 mile modified midget profile. Strongest mid to upper range cam. Must use racing piston and springs. Smooth power band.	24 btc/46 abc	.004"
		.374"	250°	101°		46 bbc/24 atc	.004"
127-90	127-90NB	.415"	276°	105°	Full race cam. Maximum top-end power. For high R.P.M. applications. 3/8 and 1/2 mile. Must use #229-H, and racing piston. Must grind cylinder head for clearance.	33 btc/63 abc	.005"
		.405"	273°	103.5°		60 bbc/33 atc	.005"

Align boring of a damaged cylinder head is needed to use our needle bearing cams. We bore cylinder heads every 15 days. Send head, cover and 4 bolts. Extra cost to remove studs. Extra charge for welding to repair extensively damaged cylinder heads.



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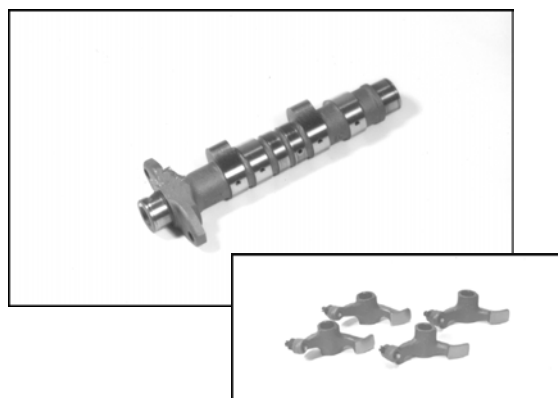
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HONDA 250/305 twin CB 72-77 (up to 1973)

Hardfaced cams per pair, on customer core.
 #253-H R/D valve spring kit with **titanium tops**.
 Rocker arms, weld and grind, on customer cores, cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .010"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
121-00	.275"	290°	105°	Mid-range power for stock motor. Retains good low-end response. Check clearances.	40 btc/70 abc	.004"
	.217"	295°	102.5°		70 bbc/45 atc	.004"
121-20	.330"	325°	102.5°	Road race performance. High R.P.M. racing use. Use racing pistons and valve springs. • Must sink valves to prevent valve-to-valve interference.	60 btc/85 abc	.008"
	.330"	317°	106.5°		85 bbc/52 atc	.008"
121-60	.325"	284°	104°	Fast scrambles, TT. Mid-range and top-end power. Use racing pistons and valve springs.	38 btc/66 abc	.004"
	.325"	278°	105°		64 bbc/34 atc	.004"
CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
121-x5	.413"	286°	102°	Road race competition engines only. • Must sink valves to prevent valve-to-valve interference. TDC lift IN = .173", EX = .152"	41 btc/65 abc	.005"
	.413"	286°	108°		71 bbc/35 atc	.007"

HONDA 250 XL/XR RFVC (1985—1995)



Hardfaced cam, on customer core.
 Rocker arms, weld and grind, on customer cores, cost each.
 #231-H R/D valve spring kit.
 #245-H R/D valve spring kit with **titanium tops**.
 Wiseco piston kits 10½:1 with rings, pin, clips.

XR/XL 250 1984-87	pin	clip	gasket
4329M07500 75.0 mm STD	S-523	CW17	OEM
4329M07550 75.5mm .020"	S-523	CW17	OEM
4329M07600 76.0 mm .040"	S-523	CW17	OEM
XR-250R 1986-03 also XR-250L 1991-95			
4466M07300 73.0 mm STD	S-533	CW17	W5424
4466M07350 73.5mm .020"	S-533	CW17	W5424
4466M07400 74.0 mm .040"	S-533	CW17	W5424
4466M07550 75.5mm 2.5mm over	S-523	CW17	W5424
4466M07700 77.0 mm 4mm over	S-523	CW17	W5425
4466M07800 78.0 mm 5mm over	S-523	CW17	W5425

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
154-00	.315"	223°	105.5°	OK with stock piston. Must use springs #231-H. Good mid-range, torque.	6 btc/37 abc	.003"
	.285"	223°	106.5°		38 bbc/ 5 atc	.005"
154-x5	.325"	255°	100.5°	Best all-around profile. Good throttle response and top-end. Must use modified pistons and springs	27 btc/48 abc	.004"
	.310"	253°	104.5°		51 bbc/22 atc	.006"
154-20	.330"	276°	105°	Best top-end. Use modified piston and springs. High R.P.M. power for fast tracks. Use 12:1, or higher compression.	33 btc/63 abc	.006"
	.315"	276°	105°		63 bbc/33 atc	.008"
154-x3	.350"	239°	105.5°	Torque cam. Best throttle response and acceleration. Not for top-end. Use modified pistons and springs.	14 btc/45 abc	.004"
	.340"	239°	105.5°		45 bbc/14 atc	.006"
Stock	.306"	229°	103.5°	Stock cam #14100-KK1-010 for your reference.	11 btc/38 abc	
	.277"	231°	105.5°		41 bbc/10 atc	

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HONDA NX-250 (1989—1990)

Hardfaced cam per pair, on customer core.

Timing measured at .040" lift with zero checking clearance.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
178-00	.345"	245°	103.5°	All around off-road power. Improved throttle response and mid-range pull. Some added top-end power. OK with stock piston and springs.	19 btc/46 abc	.010"
	.345"	245°	105.5°		48 bbc/17 atc	.012"
Stock	.328"	237°	105°	Stock cam for your reference.	13.5 btc/43.5 abc	.009"
	.304"	232°	107.5°		43.5 bbc/ 8.5 atc	.009"

HONDA XL-250s, XR-250 (1978—1982)



Billet cam, no core needed.
 Hardfaced cam, on customer core.
 New needle bearing billet cam NS or NB.
 Machine cylinder head and cover for NB cam.
 #203-H R/D valve spring kit with aluminum tops.

 #6002 R/D valve guides for cams over .330" lift.
 #4171 PS thru P4 Wiseco 10:1 piston kit with rings.
 Limited to stock on hand.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
134-00	.315"	216°	104°	OK with stock piston and springs. Provides more mid-range and improved throttle response.	4 btc/32 abc	.003"
	.310"	223°	103.5°		35 bbc/ 8 atc	.003"
134-20	.360"	229°	108.5°	Race profile. Must use 12:1 compression or more. Mid-range torque for short tracks where quick acceleration is needed. Must use modified springs, guides and piston.	6 btc/43 abc	.004"
	.360"	234°	111°		48 bbc/ 6 atc	.004"
134-50	.420"	283°	103.5°	Full race cam for high R.P.M. use. Must use 12:1 or more compression. Racing piston, springs and guides. Lobe clearance needed.	38 btc/65 abc	.006"
	.420"	283°	103.5°		65 bbc/38 atc	.008"
134-x4	.430"	253°	104.5°	Race profile. Torque plus top-end power. Use racing piston, springs and guides.	22 btc/51 abc	.006"
	.430"	253°	105.5°		21 bbc/52 atc	.008"
Stock	.298"	212°		Stock cam for your reference.		
	.294"	218°				

NS cams "drop into" stock diameter journal area in the cylinder head. No boring needed to head or cover. NB cams require align boring of cylinder head and cover. We bore cylinder heads every 15 days.

HONDA VTR-250 (1989)

Hardfaced cams per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
176-x1	.365"	252°	103°	Road race. Great mid-range improvement and full top-end power. Use modified pistons and valve spring kit #247-H.	23 btc/49 abc	.007"
	.365"	254°	107°		54 bbc/20 atc	.007"
Stock	.269"	215°	105.5°	Stock cams for your reference.	2 btc/33 abc	.007"
	.272"	217°	104.5°		33 bbc/ 4 atc	.007"

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HONDA TRX-250 X (1986—1992) & TRX-300 EX (1992—2000) 4 valve



Hardfaced rocker arms are strongly recommended with all cams for these models. Stock rocker chrome has a history of failure.

Hardfaced cam (HF) on customer core.
New billet cam (BLT) no exchange needed.
Rocker arms, cost each to weld & grind on customer cores.
#235-H R/D valve spring kit for cams to .340" lift.
#246-H R/D valve spring with guides (#6009) and **titanium tops** for cams to .480" lift.
#6009 R/D valve guides, shorthend for racing use made from aluminum bronze, use stock seals.
W-5463 TRX-300 Wiseco gasket kit.

TRX-250 Wiseco piston kit 12:1 (S-523, CW-17)

#4440M07400	STD	74 mm	2913 XC
#4440M07450	.020"	74.5 mm	2933 XC
#4440M07500	.040"	75 mm	2953 XC
#4440M07550	.060"	75.5 mm	2973 XC
#4440M07600	.080"	76 mm	2992 XC

TRX-300 EX Wiseco piston kit 11:1 (S-523, CW-17)

#4574M07400	STD	74 mm	2913 XC
#4574M07450	.020"	74.5 mm	2933 XC
#4574M07500	.040"	75 mm	2953 XC
#4574M07550	.060"	75.5 mm	2973 XC
#4574M07600	.080"	76 mm	2993 XC

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
166-00	.336"	249°	105.5°	OK with stock piston and guides. Must use #235-H springs. Great throttle response. Good all around performance.	19 btc/50 abc 50 bbc/19 atc	.004" .006"
166-20	.370"	272°	107°	Race profile. Must use modified piston, #246-H spring & guide kit. Mid-range and high R.P.M. power.	29 btc/63 abc 63 bbc/29 atc	.005" .007"
166x10	.420"	252°	105°	Race torque cam. Use racing piston, #246-H springs & guide kit. Great throttle response. Not for top-end use.	21 btc/51 abc 51 bbc/21 atc	.005" .007"
166-x16	.420"	252°	110°	Full race cam. Use 12:1 or more compression, modified guides and #246-H	16 btc/56 abc 56 bbc/16 atc	.005" .007"
Stock	.297"	228°	104°	Stock cam 14100-HC0-000 for reference.	10 btc/38 abc 38 bbc/10 atc	

All profiles available as hardfaced cams on stock cores. 16605 and 16625 billet cams are stocking items. Other profiles available on billet cores are a 3 week special order. Hardfaced cams require 8 working days. Use Koyo #16003 or SNR #16003 bearings with all cams.

HONDA ATC-250 SX/TRX (1985—1986) & TRX-300 EX (1987—1991) 2 valve



Hardfaced cam (HF) on customer core.
New needle bearing cam (NB) with oversize journals.
Machine cylinder head for NB cam.
#232-H R/D valve spring kit.
Wiseco piston kit, TRX-300 1988-2000 10.25:1 2WD,4WD

4629M07400	74 mm	
4629M07450	74.5 mm	Gasket kit
4629M07500	75 mm	W 5573 \$22.00
4629M07550	75.5 mm	
4629M07600	76 mm	

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
15700	.395"	239°	104.5°	OK with stock piston. Must use springs #232-H. Great all around cam. Improves mid-range and top-end power.	15 btc/44 abc 46 bbc/11 atc	.004" .005"
Stock	.319"	226°	106°	Stock cam #14100-HA0-000 for reference.	7 btc/39 abc 39 bbc/ 7 atc	

Save an otherwise ruined cylinder head with our needle bearing cam #15700 NB. Machining of the cylinder head to remove damaged aluminum is required to allow use of our needle bearing cams. We machine cylinder heads every 15 days. Send the head and cover with cover bolts. Remove rocker arms, springs, studs, etc. if possible.

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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HONDA ATC-350-X, TRX (1985—1989)



Hardfaced cam, on customer core.
 Hardfaced on new billet.
 Needle bearing replacement cam, no exchange required.
 NS—stock diameter, NB—oversize diameter.
 #162-HD bore cylinder head for NB cam.
 Rocker arms, weld and grind, on customer core, cost each.
 #233-H R/D valve spring kit chr/moly tops to .390" lift.
 #4393 series Wiseco piston with rings, pin and clips.
 #4396 series Wiseco piston with rings, pin and clips.
 10¼:1 12:1
 #4393M08100 #4396M08100 — STD 81 mm
 #4393M08150 #4396M08510 — .020" 82.5 mm
 #4393M08200 #4396M08200 — .040" 82 mm
 #6009 R/D valve guide—shortened, use stock seal.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
162-00	.333"	234°	108°	OK with stock piston and guides. Must use	9 btc/45 abc	.004"
	.333"	242°	109°	R/D valve springs. Improves mid-range throttle response in stock motor.	50 bbc/12 atc	.006"
162-30	.365"	244°	105°	OK with stock piston and guides. Must use	17 btc/47 abc	.004"
	.370"	250°	109°	R/D springs. <u>Best all around cam</u> for fast off-road use. Great mid-range plus increased top-end power. Best with 10¼:1.	54 bbc/16 atc	.006"
162-40	.405"	249°	103.5°	Race profile. Mid-range torque and top-end.	21 btc/48 abc	.004"
	.405"	249°	103.5°	Must use racing piston, springs and shortened valve guides.	48 bbc/21 atc	.006"
Stock	.313"	221°	107.5°	Stock ATC-350X at .040" cam for your reference.	3 btc/38 abc	
	.303"	221°	102.5°		33 bbc/ 8 atc	

When sending cylinder heads to be bored for NB cams, be sure to send cover and bolts to hold cover to head. If we are to weld the rocker arms, rocker shafts can be left in, we will remove them. Allow 15 days for boring.

HONDA XR/XL-350 RVFC (1983—1986)



Hardfaced cam, on customer core.
 Rocker arms, weld and grind, on customer core, cost each.
 #226-H R/D complete valve spring kit.
 #30-4083 K.P.M. valve springs only, uses stock tops.
 #4286 Wiseco piston 10:1 (1983-84 models).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
145-00	.370"	230°	106°	OK with stock piston in most models. Must use	9 btc/41 abc	.005"
	.350"	228°	105°	R/D or K.P.M. valve springs. Increased mid-range and top-end power. TT type performance.	39 bbc/ 9 atc	.007"
Stock	.318"	217°	104.5°	Stock cam for your reference.	4 btc/33 abc	
	.314"	224°	105°		37 bbc/ 7 atc	

HONDA 350/400 four CB, CL (1972—1978)

Hardfaced cam, on customer core.
 #207-H R/D valve spring kit with aluminum tops.
 #256-H R/D valve spring kit with **titanium tops**.
 #30-1032 K.P.M. valve springs, uses stock tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
131-00	.245"	241°	105.5°	OK with stock pistons and springs. #207-H	15 btc/46 abc	.004"
	.240"	238°	105°	or #30-1032 springs improve performance. Increased mid-range power and some added top-end.	44 bbc/14 atc	.004"
131-20	.290"	243°	104.5°	Road race or street/strip performance. Must	17 btc/46 abc	.004"
	.275"	246°	105°	use modified pistons and springs. Mid-range and top-end power increase.	48 bbc/18 atc	.004"

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HONDA 350 twin CB, CL, K2 (1968—1974)



Late style, hardfaced cam, on customer core.
 Early style, hardfaced cam, on customer core.
 New billet cams - late style only - no core needed.
 #123-NBC install NB sleeves, thrust on cam.
 #123-NBT needle bearing cam tower pair, on customer core.
 #123-RA early or late rocker arms, weld and grind,
 on customer core, cost each.
 #251-H R/D valve spring kit with **titanium tops**.
 Specify early (1968 to 1971)
 late (1972 and later)
 cam cores and rockers are slightly different.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
123-00	.300"	241°	103.5°	OK with stock piston and springs. Smooth low speed idle. Full power from 7,000 R.P.M. Best all around cam.	17 btc/44 abc	.006"
	.305"	244°	105°		47 bbc/17 atc	.006"
123-20	.333"	269°	97.5°	Use modified pistons and springs. TT style performance. Strong mid-range, added top-end.	37 btc/52 abc	.005"
	.334"	263°	94.5°		46 bbc/37 atc	.005"
123-40	.381"	274°	106°	Vintage road-race profile. MUST USE spring kit 251-H and racing pistons. Long or short courses - usable power for both	31 btc/63 abc	.006"
	.360"	275°	103.5°		61 bbc/34 atc	.006"
123-x5	.381"	274°	109°	Winner of 2003 Isle of Man. This is the best competition road-race cam. MUST use racing pistons and springs. Wide, smooth power band. Max mid-range and top-end with this cam.	28 btc/66 abc	.006"
	.360"	275°	106.5°		64 bbc/31 atc	.006"

Late style began at CB 2072210 and CL 2072210 (K-2 models are late style).

HONDA 360 twin CB, CJ (1974—1977)

Hardfaced cam, on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
132-40	.382"	251°	109.5°	Road race performance. Good throttle response and top-end. Use modified piston and springs	16 btc/55 abc	
	.382"	248°	110°		54 bbc/14 atc	

HONDA 450/500 twin CB, CL (1968—1982)



Hardfaced cams per pair, on customer core.
 #120-NB convert four cam towers to needle bearings.
 Bore end, install roller bearings grind cam journals,
 install Torrington sleeves, grind to finish diameter.
 #120-RA rocker arms, weld and grind, cost each.
 #254-H R/D valve spring kit with guides, **titanium tops**.
 Machine work required, instructions included.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
120-00	.325"	238°	100°	OK with stock pistons. Improves acceleration & top speed. Retains smooth idle for all around use.	19 btc/39 abc	.003"
	.321"	250°	103°		48 bbc/22 atc	.003"
120-40	.330"	266°	105°	Road-race profile. Must use racing pistons or fly-cut stock pistons. OK with torsion bars. TDC lift: IN = .150" EX = .153"	28 btc/58 abc	.003"
	.330"	282°	103°		64 bbc/38 atc	.003"
120-x11 in	.365"	274°	102°	NEW PROFILE. Designed for vintage road racing with torsion bars. Use racing pistons. Provides good throttle response and increased mid-range/top-end power. TDC lift: IN = .155" EX = .126"	35 btc/59 abc	.004"
120-x12 ex	.350"	270°	106°		61 bbc/ 29 atc	.005"
120-x7	.412"	288°	102°	FULL RACE PROFILE. Mid-range and top-end. Must convert to coil valve springs. Must use racing pistons.	42 btc/66 abc	.004"
	.412"	288°	106°		70 bbc/38 atc	.005"

Do not use torsion bars with this profile.

*Specified valve lash must be measured at the point of contact between the cam lobe and the rocker arm. (Measured at the base circle)

HONDA TRX-400 EX (1996—2003) also HONDA XR-400 RFVC (1996—2003)

HARDFACED ROCKER ARMS ARE REQUIRED.



Hardfaced cam on customer core.

* Compression release mechanism — remove and reinstall.

Rocker arms — cost each to weld and grind.

#264-H XR-400 only R/D valve spring kit with **titanium tops**.

#265-H XR-400 only R/D valve spring kit with cr/moly tops.

#267-H TRX-400 EX only R/D valve spring kit with **titanium tops**.

#268-H TRX-400 EX only R/D valve spring kit cr/moly tops.

Wiseco 4606M08500 (STD) — 4606M08600 (.040") 10:1 piston kit.

Wiseco 4606M08700 (.080), 4606M08800 (.120") 10:1 piston kit.

Wiseco 4628M08500 (STD) — 4628M08600 (.040") 11:1 piston kit.

Wiseco 4628M08700 (.080"), 4628M08800 (.120") 11:1 piston kit.

W5514 85 to 86 mm Wiseco head and base gasket kit.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
196-x1	.346"	246°	105°	All around off/road increased torque/mid-range.	18 btc/48 abc	.008"
	.346"	246°	107°	OK with stock piston and springs.	50 bbc/16 atc	.010"
196-x2	.378"	254°	107°	Racing, desert, mid-range and top-end power	20 btc/54 abc	.004"-.006"
	.378"	254°	107°	Must use racing piston and springs.	54 bbc/20 atc	.005"-.007"
196-x6	.402"	270°	105°	Full race profile. Mid-range/ max. top-end.	30 btc/60 abc	.010"
	.385"	262°	109°	Use racing piston and springs. Best with 440 kit. TDC lift IN = .139", EX = .106"	60 bbc/22 atc	.012"
Stock cam	.327"	236°	107°	For your reference.	btc/ abc	.003"-.005"
	.320"	234°	108°		bbc/ atc	.004"-.006"

HONDA CRF-450 & TRX-450 (2002—2007)



108-x1, 108-x2, 108-x3 CRF-450 2002-2006 New billet cam.

Also TRX-450 2003 to 2007.

118-x1, 118-x2, 118-x3 2007 CRF-450 ONLY.

140-x1, 140-x2, 140x3 2008 CRF-450 and ELEC START TRX-450 2008.

108-SP-CRF CRF-450 only slotted sprocket 2002-2006.

272-H R/D CRF only valve spring kit with **titanium tops** 2002-2007.

30-30640 KPM CRF only valve spring kit with **titanium tops**.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
108-x1 in ex (118-x1)	.430"	266°	102°	RACE PROFILE - best for flat track. Increased mid-range and top-end power. Must use racing piston and valve springs. Intake valve pocket may need cutting on Wiseco piston. TDC lift in = .151" ex = .116"	31 btc/ 55abc	.006"-.008"
	.385"	282°	106°		67 bbc/35 atc	.010"-.012"
108-x2 in ex (118-x2)	.412"	260°	108°	Improved mid-range. TDC lift in = .110" ex = .115"	22 btc/58 abc	.010"
	.350"	268°	108°		62 bbc/26 atc	.012"
108-x3 in ex (118-x3)	.435"	276°	104°	FULL RACE CAM. Maximum top-end. Use racing piston and springs. TDC lift in = .159" ex = .135"	34 btc/62 abc	.010"
	.385"	276°	108°		66 bbc/30 atc	.012"
Stock Cams	.380"	249°	106.5°	2002 stock cam # 1411-MEB-670	18 btc/51 abc	.005"-.0075"
	.356"	272°	107°	TDC lift in = .098" ex = .116"	63 bbc/29 atc	.010"-.012"
Stock Cams	.380"	249°	109°	2003 stock cam # 14110-MEB-770	15.5 btc/53.5 abc	.005"-.007"
	.336"	262°	109°	TDC lift in = .088" ex = .091"	60 bbc/22 atc	.010"-.012"

HONDA CB-1 400cc 4-cylinder (1989—1990 gear drive)

Hardfaced cams per pair on customer cores only.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
182-x1	.301"	236°	102°	Reproduction of Japanese performance profile. Designed for stock pistons and springs, check clearances.	16 bbc/40 abc	.006"
	.284"	232°	104°		40 bbc/12 atc	.008"
182-x2	.322"	255°	102°	FULL RACE. H.R.C. Race Profile Use racing springs and pistons.	25 bbc/49 abc	.006"
	.302"	250°	104°		49 bbc/21 atc	.008"
Stock Cams	.291"	219°		For reference.		
	.288"	217°				

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HONDA XR, XL, FT-500 (1979—1982)



Hardfaced cam, on on customer core.

New billet cam. No core needed.

New needle bearing billet cam NS or NB, no exchange core needed.

#144-HD machine cylinder head for NB cam.

#144-RA rocker arms, weld and grind on customer core, cost each.

#210-HC R/D valve spring kit with cr/moly tops and guides.

#227-H R/D valve spring kit with **titanium tops** and guides.

#1003-4 R/D replacement valve springs for 210-H and 227-H

#209-HC R/D valve spring kit with cr/moly tops, no guides.

#6001 R/D replacement guides, cost each.

Wiseco piston kits with rings, pin and clip.

12:1		10¼:1				Head	
4163M08900	200.69	4117M08900	89mm	STD	W5426	16-6189	
4163M08950	200.69	4117M08950	89.5mm	.020	W5426	16-6189	
4163M09000	200.69	4117M09000	90mm	.040	W5426		
—	220.74	4117M09100	90.93mm	.060	W5426		
resleeving required 220.74		4117M09500	95mm (6mm over)		W5427		

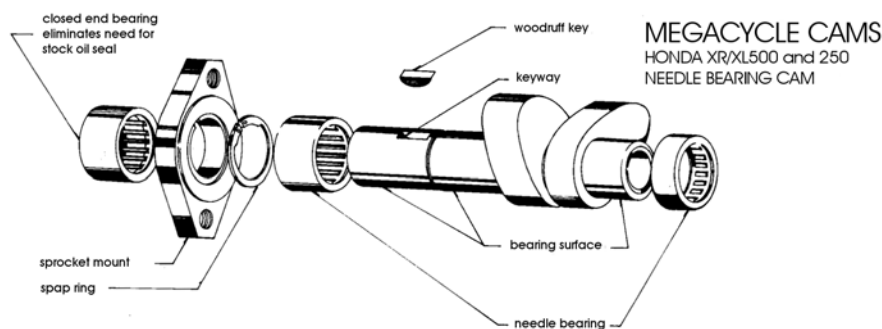
CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
144-30	.333"	234°	108°	OK with stock piston and springs. Increased mid-range power from stock motor.	9 btc/45 abc	.004"
	.333"	242°	109°		50 bbc/12 atc	.006"
144-40	.365"	244°	105°	All-around off-road cam. Must use 210-HC kit and 4117 piston. Mid-range torque, smooth power band.	17 btc/47 abc	.004"
	.370"	250°	109°		54 bbc/16 atc	.006"
144-00	.410"	249°	103.5°	Must use modified springs, guides and piston. Enduro, TT, short track profile. Great mid-range throttle response. Good top-end.	21 btc/48 abc	.005"
	.410"	249°	103.5°		48 bbc/21 atc	.005"
144-20	.408"	276°	100°	Must use modified springs, guides and piston. <u>Best all around cam</u> TT, fast desert riding, road racing. Wide smooth power band.	38 btc/58 abc	.004"
	.408"	276°	100°		58 bbc/38 atc	.004"
144-21	.435"	288°	110°	Must use racing springs, guides and piston. <u>Full racing profile</u> . Maximum mid-range and top-end. Road race, fast ½ mile.	34 btc/74 abc	.005"
	.435"	288°	110°		74 bbc/34 atc	.005"
144-x25	.408"	276°	108°	Variation of the 144-20. More top-end for high R.P.M. use where low-end is not important.	30 btc/66 abc	.004"
	.408"	276°	108°		66 bbc/30 atc	.004"

Note: In FT 500 Models, our closed end bearing on NS and NB cams prevents use of stock tachometer drive pin.

Cam numbers ending in NS = needle bearings for stock diameter head – no boring needed.

Cam numbers ending in NB = needle bearings for oversize diameter – cylinder head must be bored to use these.

Save an otherwise ruined cylinder head with our needle bearing cam. Machining of the cylinder head to remove damaged aluminum is required to allow use of our needle bearing cams. We machine cylinder heads every 15 days. Send the head and cover with cover bolts. Remove rocker arms, springs, studs, etc if possible. Below is a sketch of our needle bearing cam for 1979 to 1982 Honda XL, XR 500, NS or NB available.



HONDA CX-500 twin (1982—1985)

NO LONGER AVAILABLE

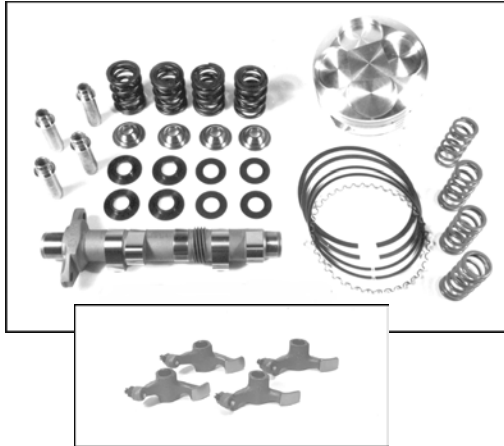
All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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HONDA XL-600 (1983—1987) and 500 RFVC (1983—1985)



Hardfaced cam on customer core.

New billet cam/hardfaced - no core needed.

Rocker arms weld and grind, on customer core, cost each.

#221-H R/D valve spring & guide cr/moly tops to .480" lift.

#222-H R/D valve spring & guide kit **titanium tops** to .480" lift.

#220-H R/D valve spring kit to .350" lift only.

#1010-4 R/D replacement springs for 221-H, 222-H.

#6001 valve guides for racing/shortened - cost each.

XR-500 1983-84 Wiseco piston kits 10¼:1 4330 (STD-.040")

XL-600 1983-87 Wiseco piston kits 11:1

4332M10000	100 mm	STD	3937XC	S-528	CW24
4332M10100	101 mm	.040"	3977XH	S-528	CW24
4332M10241	102.4 mm	.100"	4032GF	S-528	CW24

XR-600 1985-2001 Wiseco piston kits

9:1		11:1				
201.50	4577M09700	207.55	4366M09700	97 mm	STD	3819XH S-528 CW24
201.50	4577M09750	207.55	4366M09750	97.5mm	.020"	3839XH S-528 CW24
201.50	4577M09800	207.55	4366M09800	98 mm	.040"	3858XH S-528 CW24
221.66	4577M10000	228.29	4366M10000	100 mm	3mm o/s	3937XH S-528 CW24

Note: 1989-90 models have Nikasil bore, resleeving required for oversizes use #H5037SL

Hardfaced rocker arms are **STRONGLY RECOMMENDED** with all profiles to prevent damage to cam lobes from worn or chipped chrome plating on used rocker arms.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
148-x25	.325"	246°	102°	OK with stock piston, must use #220-H valve springs. Improves mid-range power and torque.	21 btc/45 abc	.004"-.005"
	.325"	246°	102°		45 bbc/21 atc	.007"
148-x9	.400"	264°	102°	Must use racing piston, springs and guides.	30 btc/54 abc	.005"
	.390"	260°	103°	Good off-road cam for mid-range throttle response.	53 bbc/27 atc	.007"
148-x12	.405"	284°	104°	Full race cam, mile and road race. Must use modified piston and #221-H or #222-H valve spring kit. Great top-end for desert racing yet retains good low-end and mid-range power.	38 btc/66 abc	.005"
	.380"	273°	105.5°		62 bbc/31 atc	.007"
148-x27	N/A	No longer available.				
148-x34	.384"	260°	104°	Use modified springs, guides and pistons.	26 btc/54 abc	.007"
	.351"	256°	105°	good all-around off-road.	53 bbc/23 atc	.009"
148-x35	.480"	291°	105.5°	This is the FULL race profile for professional dirt track mile racers.	40 btc/71 abc	.007"
	.385"	289°	106.5°		71 bbc/38 atc	.009"

HONDA XR-600 R (1988—2000) XR-650 (1993—1999) GB-500 (1989—1991) NX-650



Hardfaced cam on customer core.

Remove and reinstall compression release on hardfaced cam.

Hardfaced new billet, no compression release. No core needed.

Rocker arms weld and grind, on customer core, cost each.

Wiseco piston kits XR-600 1985-01

9:1		11:1				
4577M09700	207.55	4366M09700	97 mm	STD	3819 XH	
4577M09750	207.55	4366M09750	97.5 mm	.020"	3839 XH	
4577M09800	207.55	4366M09800	98 mm	.040"	3858 XH	
4577M10000	228.29	4366M10000	100 mm	3mm o/s	3937 XH	

Wiseco piston kits 10¼:1 XR-650C 1993-94

4562M10000	100 mm	STD	3937XH	S-258	CW24
4562M10100	101 mm	.040"	3977XH	S-258	CW24
4562M10241	102.4 mm		4032GF	S-258	CW24

VALVE SPRING & GUIDE KIT 221-H, 222-H see above

cams	173-x9	see description/application for	148-x9
	173-x12	"	148-x12
	173-x25	"	148-x25
	173-x34	"	148-x34
	173-x35	"	148-x35

(all valve springs, guides and rocker arms are the same for all models including XR/XL/RS-600 XR/XL/GB-500 see above listing for details.)

HONDA 500/550 four (1971—1978)

Hardfaced (HF) cam, on customer core.
 #126-RA rocker arms, weld and grind, cost each.
 #30-4045 K.P.M. valve springs, uses stock tops.
 #212-H R/D valve spring kit with aluminum tops (500/550).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
126-00	.296"	240°	105°	OK with stock piston and springs.	15 btc/45 abc	.004"
	.280"	240°	105°	Improved mid-range and top-end.	45 bbc/15 atc	.005"
126-20	.363"	259°	104.5°	Must use modified piston and springs. Road race or street/strip. Great throttle response.	25 btc/54 abc	.004"
	.333"	259°	104.5°		54 bbc/25 atc	.005"
126-x1	.316"	227°	113.5°	Turbo profile. Use racing pistons and springs.	0 tdc/47 abc	
	.313"	225°	112.5°		45 bbc/0 tdc	
126-x6	.440"	296°	111°	Full race profile. Use 12:1 compression. Big bore race motor 620cc and larger.	37 btc/79 abc	.006"
	.440"	296°	111°		79 btc/37 abc	.006"

HONDA XR-650-R (2000—2003)

Hardfaced cam on customer core.
 Remove and replace decomp. mechanism.
 #270-H R/D valve spring kit with **titanium** top retainers.
 Wiseco Piston kit with rings/pin/clips.
 10:1 11:1
 4715M10000 216.98 4716M10000 100 mm 3937 XS
 4715M10240 238.68 4716M10240 102.4 mm 4032 GF
 W 5892 100 mm Wiseco gasket (W 5891 102.4 mm)

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
106-x1	.435"	268°	106°	High performance for mid-range and top-end power	28 btc/60 abc	.010"
	.415"	262°	107°	MUST USE R/D springs & Wiseco piston or equiv.	58 bbc/24 atc	.010"
stock	.374"	246°	105°	Part # 14000 MBN 670	18 btc/48 abc	.060"
	.375"	248°	105.5°	for your reference.	49 bbc/19 atc	.010"

HONDA NT-650 HAWK (1988—1991) 500 ASCOT twin (1983—1984)



Hardfaced cams per pair, on customer cores.
 241-H R/D valve spring kit with **titanium tops**.
 Wiseco piston lits K 663, K 696
 11:1 80mm and 82mm (cyl boring only)
The 1990-91 XL-600 V Transalp uses the same cams as the NT-650.

153-x1	.350"	251°	106.5°	OK with stock pistons 500 or 650. Improves mid-range power and increases top-end pull. Best with valve springs #241-H.	19 btc/52 abc	.004"
	.350"	253°	106.5°		53 bbc/20 atc	.005"
174-x2	.380"	290°	110°	Long-course road race profile. Must use racing springs and pistons. Top-end power.	35 btc/75 abc	.006"
	.370"	286°	110°		73 bbc/33 atc	.008"
174-x8 NEW	.375"	266°	106°	New grind for ROAD RACING. Use racing springs and pistons. Best short-course road race where throttle response and mid-range are most important. BEST ALL AROUND PROFILE.	27 btc/59 abc	.008"
	.400"	272°	110°		66 bbc/26 atc	.010"
Stock	.315"	233°	103.5°	Stock NT-650 for your reference.	13 btc/40 abc	
	.325"	237°	104.5°		43 bbc/14 atc	

HONDA CB-650 4-cylinder (1979—1982)

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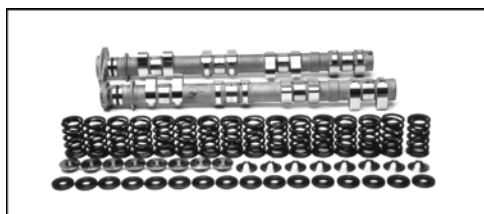
HONDA CBR-600 HURRICANE (1987—1990)



Hardfaced cams per pair, on customer cores.
#239-H R/D valve spring kit with **titanium tops**.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
171-00	.360" .355"	238° 240°	102° 104°	Road race. Must use springs #239-H and modified pistons. Improves mid-range power and throttle response. Added top-end power. Check clearances. Cams must be degreed-in.	17 btc/41 abc 44 bbc/16 atc	.006" .008"
Stock "49"	.331" .323"	232° 235°	105.5° 103.5°	49 state cams for your reference.	11 btc/41 abc 41 bbc/14 atc	
Stock "CA"	.288" .286"	220° 223°	104° 103.5°	California cams for your reference.	6 btc/34 abc 35 bbc/ 8 atc	

HONDA CBR-600 F2/F3 (1991—1998) F4 (1999—2001)



Hardfaced cams per pair, on customer cores.
#255-H R/D spring kit with **titanium tops**.

Wiseco piston kits

R-618	66mm	(1mm OS)	Stock compression.	F2-F3
R-637	67mm	(2mm OS)	13:1 compression.	F2-F3
CK-106	67mm	STD bore	12.8:1	F4 only

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
179-x1	.335" .308"	250° 250°	102° 104°	Designed for stock pistons and springs but check all clearances. Production road-race performance. Improved mid-range power and increased top end.	23 btc/47 abc 49 bbc/ 21 atc	.007" .010"
179-x2	.325" .291"	246° 242°	102° 104°	European superbike grind. OK with stock pistons and springs. Designed for classes limited to stock lift, which allow more duration for added top-end.		.007" .010"
179-x3	.335" .335"	258° 258°	102° 104°	Full race cam. Long course road race or ½ mile mini sprint. Strong mid range and top end. Must use racing springs and pistons.	27 btc/51 abc 56 bbc/22 atc	
Stock "49"	.325" .291"	235° 233°	100° 105.5°	49 state cam specifications for your reference.	17.5 btc/37.5 abc 42 bbc/11 atc	
Stock "CA"	.262" .232"	220° 218°		California cam specifications for your reference.		

Additional profiles for Honda CBR-600 F2/F3/F4 Racing use.

179-x5	.301"	236°				
179-x6	.365"	246°				
179-x7	.322"	255°		Drag race, top-end applications.		
179-x9	.340"	242°				
179-x10	.328"	237°				
179-x11	.350"	243°				

HONDA RS-750 V-twin RACE MOTOR

Hardfaced cams per pair, on customer cores.
Rocker arms, weld and grind, cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
Stock "200"	.394" .395"	286° 282°	100° 98°	Lift on stock race cams can vary depending on year of manufacture.	43 btc/63 abc 59 bbc/43 atc	.007" .008"
150-x24	.460" .390"	290° 280°	104° 104°	Best race cam for the mile. Improved mid-range and top end.	41 btc/ 69 abc 64 bbc/36 atc	.008" .010"

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HONDA 750 CB, K, F (2-valve to 1978)



Hardfaced cam, on customer core.
 Rocker arms, weld and grind, on customer core, cost each.
 #30-0307 K.P.M. valve springs, uses stock tops.
 K-836 K & F models Wiseco 10¼:1 piston kits.
 (Kits include pistons, rings, pins and head gasket)
 W-4934 Wiseco graphite gasket, 811cc—836cc.

* note - billet cams are no longer available for this model.

CAM NUMBER	VALVE LIFT	A DUR. AT .040"	LOBE CNTR	B TDC LIFT	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	C VALVE LASH
125-00	.340"	246°	104°		OK with stock piston and springs. Best with heavy duty springs. All around power increase with smooth power band. This was originally a production road race profile.	19 btc/47 abc	.004"
	.330"	247°	104.5°			48 bbc/19 atc	.004"
125-NR	.350"	252°	106°		Norris R profile. Mild performance increase. Road/Road Race. Some tq engine builders prefer this profile for small tracks in basically stock motors. Springs #30-0307 stongly recommended.	20 btc/52 abc	.005"
	.350"	252°	106°			52 bbc/20 atc	.006"
125-20	.338"	268°	105°		Use high compression pistons and K.P.M. or R/D springs. Mid-range and top-end power, yet retains good low-end.	29 btc/59 abc	.005"
	.337"	283°	111.5°			73 bbc/30 atc	.005"
125-30	.407"	266°	105°		Especially for F-2 1978 models. Great mid-range and top-end. Must use modified pistons and springs. Check carefully in CB, K models.	28 btc /58 abc	.005"
	.407"	268°	106°			60 bbc/28 atc	.005"
125-60	.375"	257°	103.5°		Best all around cam for street and road with K-836 kit and R/D or K.P.M. springs. Strong mid-range great top-end. Lobe clearancing needed.	25 btc/52 abc	.004"
	.354"	253°	103.5°			50 bbc/23 atc	.004"
125-70	.400"	262°	105°		High performance street/road with big bore kit. Use racing pistons and springs. Mini sprint ¾ and ½ mile. More top-end power than our #125-65. Lobe clearancing needed.	26 btc/56 abc	.005"
	.375"	257°	104.5°			53 bbc/24 atc	.005"
125-90	.384"	285°	105.5°		Drag race profile. Must use racing pistons and springs. 12:1 or more compression needed. Not for street use. High R.P.M. cam.	37 btc/68 abc	.005"
	.384"	284°	105°			67 bbc/37 atc	.005"
125-x12	.430"	270°	105°		Race profile. Great throttle control. Maintain high cylinder pressure with this cam. Racing pistons and springs required. 12:1 or more. 850cc and larger.	30 btc/60 abc	.005"
	.445"	273°	106.5°			63 bbc/30 atc	.007"
125-D billet	.345"	265°	105.5°		Kenny Harman "D" grind. OK with stock pistons. Use HD springs. Mid-range and some top-end.	26 btc/59 abc	.005"
	.325"	280°	110°			70 bbc/30 atc	.005"
125-F billet	.385"	270°	107°		Kenny Harman "F" grind. Use racing pistons and springs. Mini sprint, mid-range and top-end.	28 btc/62 abc	.005"
	.330"	278°	110°			69 bbc/29 atc	.005"
125-N-T3	.342"	215°	109.5°		Turbo profile Norris design Turbo charged engines. Use race components.	2 btc/37 abc	.004"
	.312"	222°	110°			41 bbc/ 1 atc	.006"
Stock	.315"	220°					
K/F	.313"	235°					

These are a special order. Send a stock core or add core deposit. Allow 10 days.

Worn stock rocker arms can be welded and ground in 7 days. This produces a long wearing, durable rocker surface for use with all cam types. Rocker arms are done on customer parts only.

HONDA CB-750, 900, 1100 16 valve (1978—1983)

Hardfaced cams, on customer core.
 #30-1017 K.P.M. valve springs, uses stock tops.
 #215-H R/D valve spring kit with aluminum tops.
 #30-1020 K.P.M. cam followers, shim under (AKA tappets).
 tappet diam. = 28 mm/1.102"
 #30-1019 K.P.M. titanium valve collars, shim under.
 Wiseco 10¼ :1 piston kit, complete.
 K-823 (3mm o/s) for CB-750
 K-985 (3mm o/s) for CB-900
 K-1123 (2mm o/s) for CB-1100
 W-3932 Wiseco head gasket for K-823 or K-985.
 W-3924 Wiseco head gasket for K-1123, graphite.

Note sprocket flange diameters:

36mm on CB-750 1979 and 1980
 34 mm on CB-750 1981-1982, all CB-900 and CB-1100

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
138-00	.350"	244°	108°	OK with stock pistons and springs. For use in 750 and 900 (not 1100). Improved mid-range.	14 btc/50 abc	.004"
	.350"	244°	108°		50 bbc/14 atc	.004"
138-x2	.354"	254°	108°	OK with stock pistons and springs in CB-1100. Strong mid-range, added throttle response.	19 btc/55 abc	.004"
	.354"	254°	108°		55 bbc/19 atc	.004"
138-30	.375"	257°	107.5°	Best all around cam. Street and road/street and strip. OK with stock pistons in CB-1100. Use modified pistons in 750 and 900. Valve springs needed in all models. Strong mid-range, good throttle response, added top-end.	21 btc/56 abc	.005"
	.375"	257°	107.5°		56 bbc/21 atc	.006"
138-x4	.355"	264°	108°	OK with stock pistons and springs in 900/1100. Smooth power band, added top-end. Best with high compression and valve spring kit.	24 btc/60 abc	.004"
	.355"	264°	108°		60 bbc/24 atc	.004"

All profiles shown below require the use of shim-under cam followers and tops.

138-10	.410"	250°	106°	Drag race profile. Use racing springs, pistons and followers. Maintain maximum cylinder pressure with this cam. Great mid-range and top-end.	19 btc/51 abc	.004"-.006"
	.410"	250°	106°		51 bbc/19 atc	.004"-.006"
138-40	.404"	238°	108°	Pro stock race profile. Must use all race components.	11 btc/47 abc	.004"-.005"
	.404"	238°	110°		49 bbc/ 9 atc	.004"-.005"
138-50	.385"	228°		Turbo profile. Turbo charged race motors only.		
138-60	.413"	266°	IN & EXH	Race only. Mid-range and top-end power.		
138-x11	.428"	264°	IN & EXH	Race only. Maximum for drag race competition.		
Stock	.355"	232°		CB-750 .319" 222°	CB-900 .322" 228°	
CB-1100	.359"	234°		1979-80 .296" 218°	.316" 226°	

HONDA V-45 SABRE/MAGNA (1982—1986)

Hardfaced cams, set of four, on customer cores.
 Rocker arms, weld and grind, on customer core, cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
152-x4	.360"	254°	110°	OK with stock pistons and springs. Added mid-range, increased top-end.	17 btc/57 abc	.004"
	.360"	254°	110°		57 bbc/17 atc	.005"

HONDA 750 MAGNA (1994—1995)

Hardfaced cams on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
197-x1	.340"	233°	100°	High performance use.	16.5 btc/36.5 abc	.006"
	.340"	233°	100°		46.5 bbc/6.5 atc	.010"
Stock	.316"	219°	98.5°	For your reference.	11 btc/28 abc	.006"
	.304"	217°	110°		minus 1.5/38.5 atc	.010"

HONDA V-4 500 INTERCEPTOR (1984—1985 and 1986 late style)

\$598.00 Hardfaced cams per set of four, on customer cores.
66.00 Rocker arms, weld and grind, on customer core, cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
156-00	.350"	250°	104°	OK with stock pistons and springs. Road race performance. Mid-range and top-end power.	21 btc/49 abc	.005"
	.350"	250°	104°		49 bbc/21 atc	.007"
Stock cams	.308"	236°		Intake cam #14120-MJ8-0001984 and 1985 models only Exhaust cam #14140-MJ8-000		
	.299"	236°				
167-00	.350"	250°	104°	For 1986 500 interceptors only.	21 btc/49 abc	
	.350"	250°	104°		49 bbc/21 atc	

HONDA V-45 700/750 INTERCEPTOR (up to 1985)



Hardfaced cams, per set of four, on customer cores.
Rocker arms, weld and grind, on customer core, cost each.
#30-1017 K.P.M. valve springs, uses stock tops.
Solve the chronic cam and rocker wear problems in Interceptor models with Megacycle welded cams and rockers.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
147-00	.365"	240°	105°	OK with stock pistons and springs. Designed for mid-range power increase in stock motor. Welded rocker arms suggested for longer wear.	15 btc/45 abc	.006"
	.365"	240°	105°		45 bbc/15 atc	.007"
147-20	.360"	254°	110°	OK with stock pistons, K.P.M. or R/D springs are recommended. Greatly improved top-end power. Good mid-range response. Check all clearances.	17 btc/57 abc	.006"
	.360"	254°	110°		57 bbc/17 atc	.007"
147-40	.396"	262°	105°	Road race profile. Good mid-range throttle control. Added top-end power. Must use racing piston and springs. Smooth power band.	26 btc/56 abc	.006"
	.360"	254°	105°		52 bbc/22 atc	.007"
147-x7	.396"	262°	106°	Long course road race. Maximum top-end power. Must use racing springs and pistons.	25 btc/57 abc	
	.396"	262°	106°		57 bbc/25 atc	
Stock cams	.317"	232°		V-45 750 Interceptor 1984 stock cams.		
	.317"	238°				

HONDA VFR-750 (1990—1996) bucket type follower

NO LONGER AVAILABLE.

HONDA VFR-700/750 gear drive (up to 1986)

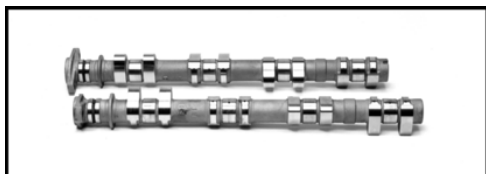
NO LONGER AVAILABLE.

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HONDA CBR-900 RR (1992—1999)



Hardfaced cams per pair, on customer cores.
 #258-H R/D valve spring kit with **titanium tops**.
 Wiseco big bore piston kits 12:1 compression.
 R-945 72mm (2mm OS) rings 2835 XA
 W-5484 Wiseco gasket - spring steel.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
183-x2 in	.335"	250°	104°	Production road race profile. Designed for stock pistons and springs. Increased throttle response. Improved mid-range, some added top-end power.	21 btc/49 abc	.006"
183-x1 ex	.326"	246°	104°		47 bbc/19 atc	.008"
183-x7 in	.350"	243°	101.5°	Race profile. Use R/D springs and racing piston	20 btc/43 abc	.006"
183-x8 ex	.340"	233°	105.5°		42 bbc/11 atc	.008"
Stock	.279"	223°	100°	California cams for your reference.	11.5 btc/31.5 abc	
Calif	.285"	227°	100°		33 bbc/14 atc	
49 state cams	.322"	235°	100°	49 state cams for your reference.	18 btc/37 abc	
	.312"	237°	100°		39 bbc/18 atc	

HONDA GL-1000 and GL-1100 (Gold Wing models)

Hardfaced cams per pair, on customer cores.

137-00	.425"	271°	108.5°	OK with stock pistons in 1976-77 models.	27 btc/64 abc	.004"
	.425"	271°	108.5°	Use modified pistons in 1988 and later models. Valve springs improve performance. Open road power with increase in mid-range and top-end.	64 bbc/27 atc	.004"
Stock cams	.356"	239°	112.5°	stock 1978 GL-1000 intake	7 btc/52 abc	
	.336"	237°	112.5°	stock 1978 GL-1000 exhaust	51 bbc/ 6 atc	

HONDA V-65 MAGNA 1100 (1983—1986)



Hardfaced cams, per set of four, on customer cores.
 Rocker arms, cost each to weld and grind on customer parts.
 Send customer's cams and rockers for reworking.

151-00	.360"	234°	106°	OK with stock pistons and springs. Increased throttle response, added top-end. Welded rockers recommended.	11 btc/43 abc	.006"
	.360"	234°	106°		43 bbc/11 atc	.007"
151-x1	.405"	254°	108°	Use modified pistons and springs. Road race performance. High R.P.M.	19 btc/55 abc	.005"
	.405"	254°	108°		55 bbc/19 atc	.007"

Our welded cams and rocker arms solve the chronic wear problems in the V-65 plus providing improved performance and longer wearing cams and rockers. Pistons and valve spring kits to be available soon.

HONDA VF-1000 R gear drive (rocker arm models 1985—1986)

Hardfaced cams, per set of four, on customer cores. 2 lobes each cam.
 Rocker arms, cost each to weld and grind customer parts.

158-x1	.396"	262°	105°	Road race profile. Must use modified pistons and valve springs.	26 btc/56 abc	.005"
	.360"	254°	105°		52 bbc/22 atc	.007"
158-x2	.360"	254°	110°	OK with stock pistons and springs, but check all clearances. All around performance.	17 btc/57 abc	.004"
	.360"	254°	110°		57 bbc/17 atc	.004"

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HONDA VT-1100 ACE (Also 1100 Shadow) (1996—1998)

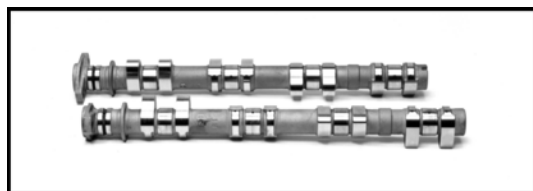


Cams, per pair.
Hardfaced on customer cores

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
103-x1 in	.385"	224°	105°	All around performance. Designed for stock pistons & springs, but check all clearances. Improved throttle response and some added top-end power.	7	btc/37 abc	HYD
103-x1ex	.385"	224°	105°		37	bbc/7 atc	HYD
TDC Lift .064" in & ex							
Stock in	.315"	215°	102.5°	Front/105.5° Rear	stock timing	front 5 btc/30 abc rear 2 btc/33 abc	HYD HYD
Stock ex	.315"	215°	102.5°	Front/106.5° Rear	stock timing	front 30 bbc/5 atc rear 37 bbc/-2 atc	HYD HYD

Our profile 103-x1 was designed for use with stock pistons and valve springs. At the time of this printing, there are no high performance springs available, pistons could be special ordered from one of the specialty piston manufacturers.

HONDA CBR-1100 XX (Blackbird) (1997—2003)



Cams, per pair.
Hardfaced on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
105-x3 in	.360"	246°	101.5°	Mild performance improvement. Designed for stock pistons & valve springs but check all clearances.	25	btc/46 abc	.008"
105-x4 ex	.352"	238°	104°		43	bbc/15 atc	.010"
105-x1 in	.397"	248°	100°	Road race profile. Must use racing pistons & valve springs. Improves mid-range acceleration. Increased Peak Horsepower.	24	btc/44 abc	.008"
105-x2 ex	.340"	233°	103.5°		40	bbc/31 atc	.010"

Additional profiles available upon request

Stock cam specifications for reference

stock in	.340"	244°	102°	Stock intake - for reference	20	btc/44 abc	
stock ex	.331"	236°	104°	Stock exhaust - for reference	42	bbc/14 atc	

HONDA VTR-1000 (1988—1999)

Hardfaced cams set of 4 on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
102-x1 in	.443"	257°	°	Road race profile. Must use racing pistons & valve springs	btc/	abc	."
102-x1 ex	.443"	257°	°		bbc/	atc	."
102-x2 in	.450"	280°	°	Race profile - modified pistons and springs.	btc/	abc	."
102-x3 ex	.435"	272°	°	Race profile - modified pistons and springs.	bbc/	atc	."
Stock							
intake	.400"	249°		For reference			
exhaust	.435"	272°		For reference			

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HONDA CBX 6-cylinder 1050cc (1979—1983)



Hardfaced cams per set of four, on customer cores.
 #30-1018 K.P.M. valve springs (tops #30-1021 or stock).
 #30-1022 K.P.M. shim under cam followers (24)
 #30-1021 K.P.M. shim under **titanium tops** (24)

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
139-00	.350"	244°	110°	OK with stock pistons. Springs #30-1018 are recommended. Increased mid-range power. Some added top-end. Good all around cam.	12 btc/52 abc	.005"
	.350"	244°	110°		52 bbc/12 atc	.006"
139-x6	.325"	238°	110°	Mild improvement in 1981-'82 motors. OK with stock springs and pistons. Improved mid-range, some added top-end.	9 btc/49 abc	.005"
	.325"	238°	110°		49 bbc/ 9 atc	.006"
139-20	.375"	257°	110.5°	Best all around performance cam for street and road use. Must use modified pistons and springs. Full power in mid-range and top-end.	18 btc/59 abc	.004"
	.350"	244°	110°		52 bbc/12 atc	.006"
139-x3	.380"	261°	110.5°	Use modified pistons and springs. Best for BIG BORE motors with 10.5:1 pistons. Wide, smooth power band. For mid-range & TOP-END performance.	20 btc/61 abc	.005"
	.380"	261°	110.5°		61 bbc/20 atc	.006"
All remaining cams in this section require use of shim under cam followers and components.						
139-40	.410"	250°	110°	DRAG RACE profile. Strong acceleration. Maintain high cylinder pressure with this cam. Must use racing springs, pistons, etc.	15 btc/55 abc	.005"
	.404"	238°	108°		47 bbc/11 atc	.005"
139-50	.385"	228°	110°	TURBO race profile. Shim under. Must use racing pistons and springs.	4 btc/44 abc	.005"
	.385"	228°	114°		48 bbc/0 tdc	.006"
139-60	.413"	266°	110°	PRO STOCK. Competition profile. Use 13:1 or more compression, racing springs. Shim under. Mid range & high RPM Power band.	23 btc/63 abc	.005"
	.410"	250°	110°		55 bbc/15 atc	.006"
Stock cams	.308"	222°		Intake 1979/80 models		
	.278"	228°		Exhaust 1979/80 models		

HONDA VFR-1000 V-45 INTERCEPTOR (up to 1986) chain drive

Hardfaced cams per set of four, on customer cores.
 Rocker arms, cost each to weld and grind.
 #30-1017 K.P.M. valve springs, uses stock tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
161-00	.365"	240°	105°	OK with stock pistons and springs. Strong mid-range power increase.	15 btc/45 abc	.005"
	.365"	240°	105°		45 bbc/15 atc	.007"
161-20	.360"	254°	110°	OK with stock pistons, springs #30-1017 are strongly recommended. Increased mid-range and top-end power, road-race performance.	17 btc/57 abc	.004"
	.360"	254°	110°		57 bbc/17 atc	.005"

HONDA VFR-1000 (1991) gear drive (bucket type follower)

NO LONGER AVAILABLE.

KAWASAKI KLT-110

NO LONGER AVAILABLE.

KAWASAKI 250 Mojave KSR (1987—1992)

Hardfaced (HF) cams per pair, on customer cores.
New billet (BLT) cams with adjustable timing. No exchange needed.

Stock bearing diameter.

#4418M07400 (STD) 11½:1 Wiseco piston kit.

#4418M07450 (.020") 11½:1 Wiseco piston kit.

#4418M07500 (.040") 11½:1 Wiseco piston kit.

#318-K R/D valve spring kit with cr/moly tops.

#319-K R/D valve spring kit with **titanium tops**.

Hardfaced rocker arms, cost each [2 per engine].

Billet cams provide adjustable timing.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE	
487-00	487-05	.365"	247°	106.5°	OK with stock pistons and springs.	17 btc/50 abc	.004"
		.365"	247°	106.5°	Improves throttle response and torque.	50 btc/17 atc	.006"
487-20	487-25	.380"	261°	105.5°	<u>Best</u> all around cam for off-road riding.	25 btc/56 abc	.004"
		.380"	261°	105.5°	Use modified piston and springs. Mid-range and top-end power. Stock valve springs could be used to .395" lift.	56 bbc/25 atc	.006"
487-40	487-45	.405"	271°	105.5°	Full race cam. Must use racing piston and valve springs. Fast desert racing. Mid-range and top-end power. High R.P.M. use.	30 btc/61 abc	.004"
		.405"	271°	105.5°		61 bbc/30 atc	.006"

KAWASAKI KLR-250 DOHC single (1984—1991)

Hardfaced cams per pair, on customer cores.

#318-K R/D valve spring kit with cr/moly tops.

#319-K R/D valve spring kit with **titanium tops**.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
489-x1	.380"	261°	105.5°	OK with stock springs, maybe stock piston.	25 btc/56 abc	
	.380"	261°	105.5°	Good mid-range power, plus added top-end.	56 bbc/25 atc	
489-x2	.405"	271°	105.5°	Full race cam. Use modified piston and springs. Mid-range and top-end power.	30 btc/61 abc	
	.405"	271°	105.5°		61 bbc/30 atc	
489-x3	.365"	247°	106.5°	OK with stock pistons & springs. Improved torque plus strong mid-range throttle response.	17 btc/50 abc	
	.365"	247°	106.5°		50 bbc/17 atc	

KAWASAKI KLT-250 Prairie (1983—1987)



Hardfaced cam, on customer core.

Stock cam has factory ball bearings.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
479-00	.390"	250°	100°	OK with stock piston and springs.	25 btc/45 abc	.005"
	.390"	252°	96°	Improved torque, mid-range power.	42 bbc/30 atc	.006"
479-20	.408"	272°	106°	Race profile. Use modified piston and springs. Mid-range and top-end power.	30 btc/62 abc	.005"
	.408"	275°	107.5°		65 bbc/30 atc	.006"

KAWASAKI KLX-250 (1993—1995) Bayou

NO LONGER AVAILABLE.

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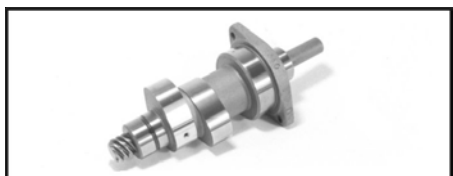
KAWASAKI 250 NINJA twin and Eliminator (1986—1991)

Hardfaced cams, on customer core.

#313-K1 R/D valve spring kit with **titanium tops**.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
486-x1	.349"	243°	104.5°	OK with stock pistons, must use heavy duty valve springs. Road race performance.	17 btc/46 abc	.004"
	.349"	243°	104.5°	Full mid-range with some added top-end.	46 bbc/17 atc	.004"
Stock	.304"	231°		Stock intake and exhaust.		

KAWASAKI 200/250 KL, KZ (mechanical point drive) (1978—1982)



Hardfaced cam, on customer cores.

473-00	.390"	250°	100°	OK with stock springs. Improved mid-range power with stock motor.	25 btc/45 abc	.005"
	.390"	252°	100°		46 bbc/26 atc	.005"
473-20	.408"	272°	106°	Use modified piston and springs. Fast off-road and desert riding. Mid-range and top-end.	30 btc/62 abc	.005"
	.408"	275°	107.5°		65 bbc/30 atc	.006"
473-40	.418"	251°	105.5°	Use modified piston and springs. Torque cam. Great mid-range throttle response. Full power in low and mid-range for muddy trails.	20 btc/57 abc	.005"
	.418"	252°	103°		49 bbc/23 atc	.006"

KAWASAKI KLX-250 (electronic ignition models) (1980—1983)



Hardfaced cam, on customer cores.

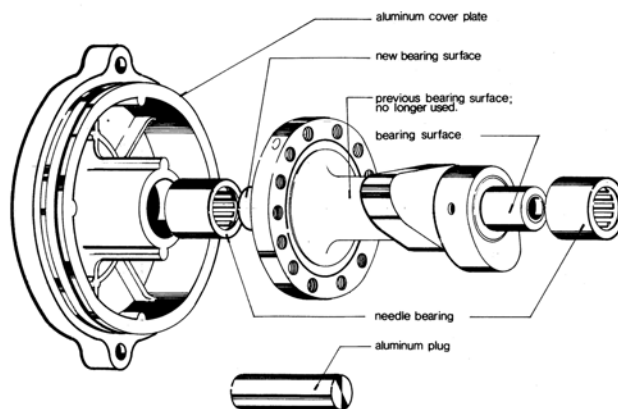
New needle bearing billet with modified cover plate
\$20.00 deposit on cover.

476-00	.390"	250°	100°	OK with stock piston and springs. Improve the mid-range power, retain low-end pull.	25 btc/45 abc	.005"
	.390"	252°	100°		46 bbc/26 atc	.006"
476-20	.408"	272°	106°	Use modified piston and springs. Fast off-road and desert riding. Mid-range and top-end power.	30 btc/62 abc	.005"
	.408"	275°	107.5°		65 bbc/30 atc	.006"
476-40	.418"	251°	105.5°	Use modified piston and springs. Torque cam. Great throttle response. Full power and low mid-range. Good for muddy steep trails.	20 btc/51 abc	.005"
	.418"	252°	103°		49 bbc/23 atc	.006"

Save a ruined cylinder head with our needle bearing conversion. We eliminate the center journal (which usually fails), we then create a new bearing surface in the modified cover plate which we supply. Improved reliability and performance with one of the above cams.

No machine work needed to install our needle bearing conversion—we supply everything.

Our cams offer alternate sprocket bolt holes for adjustable cam timing.



KAWASAKI KLF-300 (1984—1986)

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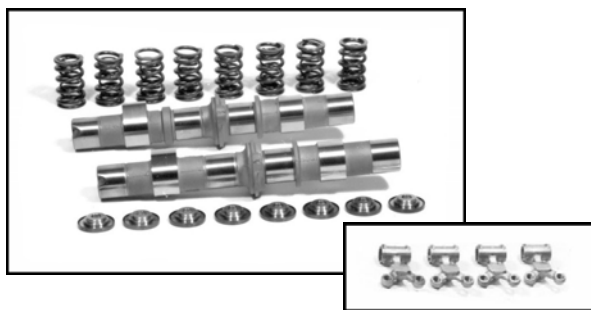
KAWASAKI 305 GPZ/KZ twin (1982—1985)

NO LONGER AVAILABLE.

KAWASAKI 400 twin KZ (1974—1980)

NO LONGER AVAILABLE.

KAWASAKI EX-500 twin (1987—1992)



Hardfaced cams, per pair, on customer cores.
Rocker arms, weld and grind. Price each, on customer core.
#316-K R/D valve spring kit with cr/moly tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
492-x3	.375"	250°	105°	Mild Performance cam designed for use with stock pistons and springs.	21 btc/51 abc	.006"
	.375"	250°	105°		51 bbc/21 atc	.008"
492-20	.410"	260°	106°	Road race performance. Improved mid-range throttle control plus added top-end power. Must use R/D springs. Should clear stock piston, but you must check for .060" valve to piston clearance.	24 btc/56 abc	.006"
	.410"	260°	108°		58 bbc/22 atc	.008"
Stock	.352"	242°		Intake and exhaust stock cams at .040".		

KAWASAKI 550 KZ/GPZ (1980—1985)



Hardfaced cams, per pair, on customer cores.
#478-02 slotted cam sprocket, no exchange needed.
#329-K R/D valve springs only.
K-615 10¼:1 Wiseco piston kit, 61mm (3mm oversize).
W-3162 Wiseco head gasket (60mm-61mm).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
478-00	.350"	244°	107°	OK with stock pistons and springs. Improves mid-range power for street/road use.	15 btc/49 abc	.007"
	.350"	244°	107°		49 bbc/15 atc	.009"
478-20	.354"	254°	110°	OK with stock pistons & springs in GPZ models. Improves mid-range power, increased top-end.	17 btc/57 abc	.007"
	.350"	244°	107°		49 bbc/15 atc	.009"
478-60	.410"	250°	105°	Race profile. Where torque is needed. Must use modified pistons & springs. Great throttle control. Full power in mid-range, some added top-end.	20 btc/50 abc	.007"
	.410"	250°	108°		53 bbc/17 atc	.009"
478-x3	.380"	261°	108.5°	Best where top-end is important. Good Mid-range, very strong RPM power. Best with high compression and big bore. Must use modified pistons & springs.	22 btc/59 abc	.006"
	.380"	261°	108.5°		59 bbc/22 atc	.008"
Stock	.298"	213°	intake	Stock	.326" 234°	intake
KZ-550	.301"	215°	exhaust	GPZ-550	.325" 233°	exhaust

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KAWASAKI KLR-600 single (1984—1986) and KLR-650 (1987—1992)



Hardfaced cams, per pair, on customer cores.
#1006-4 R/D valve springs, use stock tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
481-x6	.350"	244°	108°	OK with stock pistons and springs.	14 btc/50 abc	.006"
	.350"	244°	108°	Mild increase in mid-range power.	50 bbc/14 atc	.008"
481-00	.410"	250°	108°	OK with stock piston. Must use R/D springs.	17 btc/53 abc	.006"
	.410"	250°	108°	Must press guides .020" deeper into the head. Increased mid-range and top-end.	53 bbc/17 atc	.008"
481-x5	.380"	261°	107.5°	OK with stock piston. Must use R/D springs.	23 btc/58 abc	.006"
	.380"	261°	107.5°	Wide, smooth power band. Increased top-end and slight mid-range improvement. Smooth idle.	58 bbc/23 atc	.008"
481-x7	.417"	268°	107°	Road race performance. Must use racing springs and piston. 12:1 or more. Max. high RPM power with this cam. Must use shortened guides.	27 btc/61 abc	.006"
	.417"	268°	107°		61 bbc/27 atc	.008"
Stock Cams	.345"	227°		Stock cam for reference.		
	.355"	222°		Stock cam for reference.		

KAWASAKI KLX-650 (1993)

Hardfaced cams on customer cores

410-00	.354"	254°	108°	Designed for stock pistons and springs	19 btc/55 abc	.006"-.008"
	.354"	254°	108°	Improved torque and mid-range.	55 bbc/19 atc	.008"-.010"
410-20	.380"	261°	102.5°	Best all around, improved mid-range	28 btc/53 abc	.006"-.008"
	.380"	261°	108.5°	and some added top-end.	59 bbc/22 atc	.008"-.010"
410-x1	.417"	268°	102°	Desert racing/road race where top-end	32 btc/56 abc	.008"
	.417"	268°	108°	power is important. Racing pistons and springs.	62 bbc/26 atc	.010"
Stock KLX-650		intake = .346"	232°	exhaust = .326"	227°	

KAWASAKI 600 NINJA (1985—1991) GPZ/R

Hardfaced cams, per pair, on customer cores.
Rocker arms, weld and grind, on customer core, cost each.
discontinued R-633 Wiseco 11:1 kit to 1987 (3mm oversize).

484-x1	.380"	256°	106°	OK with stock pistons and springs. High performance springs are recommended for better valve control. Approx. 15% added top-end power and greatly improved mid-range, throttle response.	22 btc/54 abc	.006"
	.380"	256°	110°		58 bbc/18 atc	.008"
484-x2	.386"	272°	107°	Full race profile. Drag and other high R.P.M. uses. Must use 12:1 or higher compression. Top-end power. Must use springs #322-K .	29 btc/63 abc	.006"
	.386"	272°	110°		66 bbc/26 atc	.008"
Stock	.330"	234°	105°	Stock cams (1985-86) for your reference.	12 btc/42 abc	
	.330"	234°	111°		48 bbc/ 6 atc	

KAWASAKI ZX-6 600 (1991—1994 D,E) & ZZR-600 European Model

Hardfaced cams, per pair, on customer cores.

497-x6 in	.363"	248°	102°	Road race performance. For stock pistons and springs. Check all clearances. Improved throttle response and top-end.	22 btc/46 abc	.007"
497-x7 ex	.353"	237°	106.5°		45 bbc/12 atc	.009"
Stock Cams	.353"	237°	Intake	Stock cam for reference		
	.334"	237°	Exhaust	Stock cam for reference		
Race Cams	.365"	246°	Intake	Factory race cam for reference		
	.353"	237°	Exhaust	Factory race cam for reference		

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KAWASAKI 750 NINJA (1987—1988) GPX, 2X, F2

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
488-x1	.241"	248°	102°	Superbike road race profile. Must use modified springs and pistons. Increased mid-range and top-end.	22 btc/46 abc	
	.241"	246°	105°		48 bbc/18 atc	
Stock	.221"	240°	102°	For your reference.		
	.221"	238°	105°			

KAWASAKI ZX-7 750 (1989—1990)

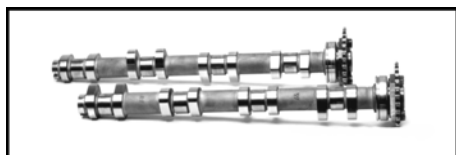


Hardfaced cams per pair, on customer cores.
(If no cores sent—add \$335.00)

Timing is measured at .040" lift at the valve with **zero** checking clearance.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
495-x5A	.365"	245°	104.5°	All around "road race" performance. Designed for stock pistons & springs. Improved mid-range, more top-end. TDC LIFT with lash IN = .101" EX = .081"	18 btc/47 abc	.008"
	.365"	245°	108.5°		51 bbc/14 atc	.010"
Factory race	.385"	252°	104°	Factory race grind. For your reference.	22 btc/50 abc	.006"-.010"
	.385"	252°	104°		50 bbc/22 atc	.008"-.012"
Stock cams	.354"	238°	104°	1990 ZX-7 stock cams. For your reference.	15 btc/43 abc	
	.338"	230°	104°		39 bbc/11 atc	

KAWASAKI ZX-750 (1991—1994) & ZX9 (1995—1996)



Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
498-x8 in	.366"	244°	104°	Reproduction of ZX-7 R profile. Best choice for all around high performance road race. Use ZX-7R pistons and springs. IN = 49118-1107, EX = 49118-1108	18 btc/46 abc	.006"
498-x9 ex	.355"	234°	104°		41 bbc/13 atc	.008"
Stock	.287"	219°		Stock figures for your reference.		
J cams	.287"	219°				
Muzzy x4 in	.380"	254°		These Muzzy profiles must be purchased through Muzzy's Racing (541) 385-0706.		
Muzzy x3 in	.377"	255°				

KAWASAKI KZ-1300 6 cylinder (1979—1988)

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
490-70	.375"	257°	108°	OK with stock pistons and springs for increased street/road performance. Added mid-range and top-end power.	20.5 btc/56.5 abc	.005"
	.375"	257°	106°		54.5 bbc/22.5 atc	.007"
490-x11	.384"	270°	108°	Must use modified pistons and springs. Good for upper mid-range and top-end power.	27 btc/63 abc	.006"
	.384"	270°	108°		63 bbc/27 atc	.008"
Stock	.328"	230°		Stock KZ-1300 for your reference.		
	.305"	232°				

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KAWASAKI 650/750 KZ, GPZ, and ZX-750 (1976—1985)



Hardfaced (HF) cams, per pair, on customer cores.
 #40-0893 K.P.M. valve springs to .425" lift.
 #40-4089 K.P.M. valve springs to .475" lift.
 #40-1008 K.P.M. **titanium tops** (use for 40-4089).
 #40-1013 K.P.M. cam buckets (shim under 650/750).
 #305-K R/D 750 KZ/GPZ valve spring kit.
 Wiseco 10¼:1 K-700 for 650
 and K-810 kit for GPZ, KZ-750 (3mm o/s).
 W-2486 for 650, or W-3163 for 750 head gaskets.

See note below regarding base circles.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
471-00	.354"	254°	110°	OK with stock pistons and springs. Mild increase in power from 3800 to 7500. Good mid-range.	17 btc/57 abc		.004"
	.354"	254°	110°		57 bbc/17 atc		.004"
471-70	.380"	256°	105°	All around street/road performance cam. Wide smooth power band. GPZ-750 OK with stock pistons and springs. All other models require modified pistons and springs.	23 btc/53 abc		.004"
	.380"	261°	108.5°		59 bbc/22 atc		.004"
471-10	.410"	250°	105°	Use racing pistons & springs. Road race/drag race. Great throttle control. Mid-range and top-end. Great for ¼ and ½ mile mini sprints.	20 btc/50 abc		.006"
	.410"	250°	105°		50 bbc/20 atc		.006"
471-20	.417"	268°	107°	Use racing pistons & springs. Road race & drag race with 12½:1 or more compression. High R.P.M. <u>Cut cyl. head for lobe clearance.</u>	27 btc/61 abc		.004"
	.417"	268°	107°		61 bbc/27 atc		.005"
471-60	.438"	258°	108°	Drag race profile. Use racing pistons and springs. Mid-range and top-end power in full race motors.	21 btc/57 abc		.006"
	.438"	258°	108°		57 bbc/21 atc		.006"
471-90	.428"	264°	108°	Superbike race profile. Wide smooth power band. Use racing pistons and springs. Mid-range and top-end. <u>Cut cyl. head for lobe clearance.</u>	24 btc/60 abc		.006"
	.428"	264°	110°		62 bbc/22 atc		.006"
471-50	.405"	230°	110°	Turbo profile. Use turbo pistons and racing valve springs. Racing use in turbo charged motors.	5 btc/45 abc		.006"
	.405"	230°	114°		49 bbc/1 atc		.006"
Stock GPZ-750		.354"	250°	Stock KZ-650	.308"	220°	

Caution: GPZ 750 engines made 1983 and 1984 require special 1.070" base circle diameter in some models. All other 750 and all KZ-650 engines have a stock base circle of 1.110". To be sure, measure your stock cams.

KAWASAKI KZ-750 twin (1976—1983)

Hardfaced cams per pair, on customer cores.
 #40-1015 P.M. valve springs. Discontinued - call K.P.M.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
475-20	.406"	238°	108°	OK with stock pistons and springs for all around street and road. Increased mid-range and top-end.	11 btc/47 abc		.005"
	.417"	268°	107°		61 bbc/27 atc		.005"
475-40	.465"	270°	108°	Full race cam. Use modified pistons and springs. Drag race, road race, high R.P.M. power.	27 btc/63 abc		.005"
	.465"	270°	108°		63 bbc/27 atc		.005"

KAWASAKI Vulcan 800

Hardfaced cams per pair, on customers cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE OPEN/CLOSE	RUNNING CLEARANCE
414-x1	.368"	255°	108°	All around road performance. Designed for stock pistons & springs. Improves mid-range and top-end. TDC lift IN = .109" EX = .095"	20 btc/56 abc		.005"
	.368"	256°	110°		58 bbc/18 atc		.005"
Stock	.325"	230°	112°	For reference. TDC lift IN = .049" EX = .046"	3 btc/47 abc		.005"
	.310"	228°	112°		46 bbc/2 atc		.011"

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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KAWASAKI 900/1000 (1973—1983) 2-valve



New billet cams, no exchange cores needed.
 Hardfaced on new billet [.490" to .530" lift].
 #40-0449 K.P.M. valve springs to .425" lift.
 #40-1016 K.P.M. racing valve springs to .475" lift.
 (K.P.M. springs use stock tops or #1008-Ti tops)
 #40-1008-Ti K.P.M. **titanium tops**, shim under.
 #40-1013 K.P.M. cam followers, shim under (8).
 #306-K R/D valve spring kit with alloy tops.
 #308-K R/D valve spring kit with **titanium tops**, shim under.
 K-1045 Wiseco 10¼:1 piston kit (with W-3917,W-5380 base)
 K-1075-1 Wiseco 10¼:1 piston kit (with W-3918,W-5380 base)
 R-1075 12:1 race only piston kit with W-3918,W-5380 base)
 Head gaskets W-3917 (1015), W-3918 (1075-1135),
 W-3919 (1172-1202).

Any of the profiles shown on this page can be used in GPZ, J models with our sprockets #477-97

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	BASE CIRCLE	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
470-05	.354"	254°	110°	1.110"	OK with stock pistons and springs. Improved mid-range power 3500 to 7500. No cutting needed to clear cyl head. Street/road performance.	17 btc/57 abc 57 bbc/17 atc	.004"
470-75	.380"	261°	107.5°	1.110"	Best all around street/road profile. OK with stock pistons in 1000cc, must check in 900cc. Strong top-end. Use springs #40-449.	23 btc/58 abc 59 bbc/22 atc	.004"
A	.380"	261°	108.5°				
470-15	.410"	250°	108°	1.110"	Torque cam. Street/drag performance. Must use modified pistons and springs. Good mid-range and some added top-end with 10¼:1. Best cam for use with oversize valves.	17 btc/53 abc 53 bbc/17 atc	.005"
A	.410"	250°	108°				.006"
470-25	.417"	268°	107°	1.110"	Road race/drag race, use 12:1 or more compression. Use modified springs and pistons. Full power top-end, some added mid-range. Shim on top O.K.	27 btc/61 abc 61 bbc/27 atc	.004"
A	.417"	268°	107°				.005"
470-x22	.410"	270°	108°	1.075"	Drag race profile where top-end power is most important.	27 btc/63 abc 63 bbc/27 atc	.004"
A	.384"	270°	108°				.005"
470-x26	.355"	232°	110°		Mild turbo profile. OK with stock pistons and springs	6 btc/46 abc 46 bbc/ 6 atc	.005"
	.355"	232°	110°				.006"

Remaining cams for Kawasaki 900/1000 require shim under type cam followers #40-1013 and tops #40-1008-Ti as well as racing springs and pistons. (KZ-650 cam followers & tops can also be used for shim under profiles)

470-45	.480"	270°	108°	1.020"	Pro stock combination. Full race profile for high R.P.M. use with 13:1 or more compression.	27 btc/63 abc 68 bbc/32 atc	.005"
A	.450"	280°	108°	1.050"			.007"
470-55	.405"	230°	110°	1.110"	Turbo charged race motors only. Racing springs, turbo pistons, etc.	5 btc/45 abc 49 bbc/ 1 atc	.005"
A	.405"	230°	114°				.005"
470-65	.438"	258°	108°	1.090"	Best all around profile. Very strong mid-range. Good acceleration to 8000+ R.P.M. Shim under. Base circle is .020" under stock unless special ordered.	21 btc/57 abc 57 bbc/21 atc	.006"
A	.438"	258°	108°				.007"
470-85	.465"	270°	108°	1.050"	Drag race, maximum top-end power. Use 13:1 or more compression. Shim under. 1.050" base circle	27 btc/63 abc 63 bbc/27 atc	.005"
A	.465"	270°	108°				.007"
470-x15	.465"	264°	108°	1.050"	Drag race and mini sprint. Good torque and acceleration in motors to 1150cc. Shim under.	24 btc/60 abc 62 bbc/22 atc	.006"
A	.465"	264°	110°				.007"
470-x24	.520"	277°	109.5°	1.00"	Competition drag race—intake only. Specify B.C.	29 btc/68 abc	.006"
470-x25	.490"	279°	112.5°	1.020"	Competition drag race—exhaust only. Specify B.C.	72 bbc/27 atc	.007"
A							
470-x28	.495"	265°	107.5°	1.00"	Drag race and mini sprint. OK with 12:1 compression. Great torque and acceleration.	25 btc/60 abc 63 bbc/22 atc	.006"
	.495"	265°	110.5°	1.00"			.008"
Stock cams	.327"	237°		1.110"	Kawasaki Z-1 stock cams for your reference.		
	.296"	229°					

Note: If a special base circle diameter is needed, allow 14 working days. There is a 50% deposit on special orders.

A Cams showing this note may require machining of the cylinder head and/or cam cover for lobe clearance.

TDC LIFT FIGURES FOR YOUR REFERENCE IN CALCULATING VALVE TO PISTON CLEARANCES:

CAM # 470-15	.410"/250°	CAM # 470-25	.417"/268°	CAM # 470-65	.438"/258°	CAM # 470-x15	.465"/264°
TDC Lift at 104°	LC = .111"	TDC Lift at 100°	LC = .171"	TDC Lift at 100°	LC = .199"	TDC Lift at 100°	LC = .194"
	106° LC = .103"		102° LC = .162"		102° LC = .189"		102° LC = .183"
	108° LC = .095"		104° LC = .153"		104° LC = .180"		104° LC = .173"
	110° LC = .088"		106° LC = .145"		106° LC = .170"		106° LC = .163"
	112° LC = .080"		108° LC = .136"		108° LC = .160"		108° LC = .152"
			110° LC = .128"		110° LC = .150"		110° LC = .142"
			112° LC = .120"				112° LC = .132"
			114° LC = .112"				114° LC = .122"

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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KAWASAKI GPZ-1100 and J-1000 (1981—1984) silent chain models



Cam and sprocket kit. Billets 47015, etc with sprockets 7797.
#477-97 sprockets per pair (if purchased separately).
#40-1016 K.P.M. valve springs springs, use 40-1008-Ti or stock tops.

#40-1008-Ti K.P.M. **titanium tops**, use with 40-1016.

#40-1013 K.P.M. cam buckets (shim under GPZ/J).

Wiseco pistons for GPZ-1100 and J-1000

GPZ-1100 1981-82 K-1136 10¼:1 74 mm (1.5 mm OS)

K-1171 10¼:1 75 mm (2.5 mm OS)

GPZ-1100 1983-84 K-1173 9½:1 75 mm

K-1172 10¼:1 75 mm

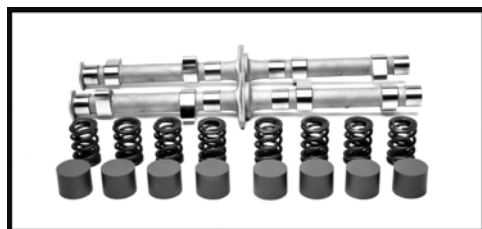
J-1000 1981-83 K-1076 10¼:1 72 mm (2.5 mm OS)

K-1106 10¼:1 73 mm (3.5m m OS)

For additional profiles see kawasaki 900/1000 listing. Cams are interchangeable when used with our sprockets #477-97.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
470-15 and 477-97	.410"	250°	108°	OK with stock pistons and springs. Check all clearances. Best all around street/road performance.	17 btc/53 abc 53 bbc/17 atc	.005" .006"
470-25 and 477-97	.417"	268°	107°	Road race. Use modified pistons and springs High R.P.M. power for drag race with. 13:1 ++. Best all around performance in modified engine.	27 btc/61 abc 61 bbc/27 atc	.005" .006"
470-65 and 477-97	.438"	258°	108°	Race profile. Mid-range and top-end. Must use racing pistons and springs. Lobe clearance needed.	21 btc/57 abc 57 bbc/21 atc	.005" .006"
Stock GPZ-1100		.354" .338'	238° 239°	(All Kawasaki 900/1000 profiles on page 27 can be used in the GPZ with sprockets #477-97)		

KAWASAKI ZR-1100 (1993—1994)



Hardfaced cams per pair, on customer cores.
#40-1016 K.P.M. valve springs.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
499-x1	.438"	258°		Use racing pistons and springs.		
499-x2 in	.392"	255°	104.5°	All around street/drag performance.	23 btc/52 abc	.006"-.008"
499-x3 ex	.370"	252°	109°	Designed for stock pistons and springs. Check all clearances.	55 bbc/17 atc	.009"-.011"
Stock	.356" .339"	240° 239°		Stock cams for your reference.		

Additional profiles being tested.

KAWASAKI 1500 VULCAN

Hardfaced on customer cores, per pair.

415-x1	.345" .345"	234° 234°	109° 109°	OK with stock pistons. Must use 343-K. Mid-range and top-end improvement.	8 btc/46 abc 46 bbc/8 atc	hydraulic rocker/ lash n/a
Stock	.298" .291"	213.4° 217.3°	112° 110°	1996 Vulcan 1500 Classic stock cam specs for reference.		

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KAWASAKI NINJA /ELIMINATOR 900 GPZ/R and 1000-R (1984—1991)



Hardfaced cams, per pair, on customer cores.
 Rocker arms, weld and grind, on customer core, cost each.
 #309-K R/D valve spring kit with cr/moly tops.
 Wiseco 11:1 piston kits for 900 Ninja.
 K-972 — 75mm (2.5mm o/s)
 K-1039 11:1 Wiseco kit for 1000-R 75.5mm (1.5mm o/s).
 W-3885 graphite head gasket 900/1000 (74mm—75.5mm).

****HARDFACED ROCKER ARMS ARE STRONGLY RECOMMENDED WITH ALL CAMS****

THESE CAMS FIT: NINJA, CONCOURS, ELIMINATOR, ALL HAVE THE SAME CAMS

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
480-x2	.375"	252°	105°	OK with stock pistons. Heavy duty springs are recommended. Improves mid-range, adds some top-end. Best all around cam.	21 btc/51 abc	.006"
	.375"	252°	105°		51 bbc/21 atc	.008"
480-x3	.404"	254°	105°	Must use racing springs and pistons. Mid-range and top-end. Maintain maximum cylinder pressure with this cam. Drag race or road race performance.	22 btc/52 abc	.006"
	.404"	254°	105°		52 bbc/22 atc	.008"
480-x1	.400"	262°	108°	Drag race. Must use 14:1 or more compression. Use #311-K or #309-K only. High R.P.M. racing. Use in full race motors. Lobe clearance required.	23 btc/59 abc	.005"
	.400"	262°	112°		63 bbc/19 atc	.007"
480-x4	.460"	266°	110°	Intake only competition drag race 14:1 or more compression. Racing springs and pistons.	23 btc/63 abc	.008"
Stock	.348"	245°	100.5°	Stock cam for your reference.	22 btc/43 abc	
	.348"	248°	101°		45 bbc/23 atc	

KAWASAKI ZX-10 & ZX-11 (1988—2001) (1000—1100cc)

Hardfaced cams on customer cores.
 Hardfaced rocker arms.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
493-x1	.410"	245°	103.5°	Must grind rocker arms to clear lobe tips. Designed for use with stock pistons, but check clearance. Use R/D valve spring kit #325-K.	19 btc/46 abc	.006"
	.410"	240°	104°		34 bbc/16 atc	.008"
Stock cams	.362"	239°		For reference		

KAWASAKI ZX-12-R (2000—2003), ZX-9 (1988—2000)

Hardfaced cams per pair on customer cores.
 No valve springs available at this time.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
419-x1 intake	.405"	255°		Racing valve springs and pistons required. RACE PROFILE. Increased mid-range and top-end power.		
419-x2 exhaust	.397"	248°		Race Profile		
419-x3 intake	.377"	253°		Race Profile		
419-x4 intake	.415"	252°		Race Profile		
419-x5 intake exhaust	.385"	252°		Stage I all around performance.		
Stock	.358"	250°		Intake cam stock ZX-12 2000	Bucket diameter	
Stock	.342"	246°		Exhaust cam stock ZX-12 2000	26.5 mm (1.040")	

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SUZUKI DRZ-125 (2002—2008)

Hardfaced cam on customer core.
New Billet cam - no core needed.
R.D. Valve spring kit # _____

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
Stock cam:						
intake	.270"	200°	98°	stock cam	1 btc/19 abc	.003"-.005"
exhaust	.270"	201°	100.5°		21 bbc/0 atc	.005"-.007"
330-00 in	.320"	215°	102.5°	Stage I. Improved mid-range and torque.	5 btc/30 abc	.008"
ex	.305"	213°	103.5°	OK with stock piston & valve springs. TDC lift IN = .046" EX = .039"	30 bbc/3 atc	.010"
330-x2 in	.358"	234°	100°	Stage II. All-around race. Springs needed.	17 btc/37 abc	.010"
ex	.252"	236°	102°	Might clear stock piston- Must check. TDC lift IN = .090" EX = .078"	40 bbc/16 atc	.010"

SUZUKI 230 QUADSPORT (1985—1994) and LT-250 (1988—1991)



Hardfaced (HF) cam, on customer core.
New billet (BLT) cam, no exchange needed.
#409-S R/D valve spring kit with cr/moly tops.
#413-S R/D valve spring kit with **titanium tops**.
Wiseco 10:1 piston kit with rings, pin and clips. 4382M06650

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE	
HF 393-00	BILLET 393-05	.400"	236°	107°	OK with stock piston. Must use spring kit.	11 btc/45 abc	.004"
		.400"	240°	107°	Improved mid-range and throttle response.	47 bbc/13 atc	.006"
393-20	393-25	.430"	282°	106°	Must use modified pistons and springs.	35 btc/67 abc	.005"
		.430"	284°	106°	Desert racing, mid-range and top-end power OK with stock valve guides.	68 bbc/36 atc	.007"
Stock		.324"	235°	105.5°	Stock 230 for reference.	12 btc/43 abc	
		.390"	237°	106.5°		45 bbc/12 atc	

SUZUKI DR-250 and LT-300 (1982—1987)

NO LONGER AVAILABLE

SUZUKI DR-370 and DR/SP-400 (1978—1982)

Hardfaced cam on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE	
370 382-20	400 386-20	.455"	255°	108.5°	OK with stock pistons and springs. #402-S	19 btc/56 abc	.005"
		.455"	255°	108.5°	springs will improve performance. Great mid-range power. Check clearances.	56 bbc/19 atc	.005"
382-40	386-40	.450"	277°	107.5°	Use modified pistons and springs. Desert	31 btc/66 abc	.005"
		.450"	278°	108°	racing and high R.P.M. use. Top-end power.	67 bbc/31 atc	.005"
Stock		.278"	226°		Stock DR-370 cam for your reference.	.397"	226°

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SUZUKI RMZ-450 and LTR-450 (2010)

Per pair billets/ WITHOUT sprockets.
Per pair install customer sprockets.
R/D spring kits # _____

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
332-x1	.400"	250°	°	Intake Stage I torque	btc/ abc	."
332-x2	.385"	254°	°	Exhaust Stage I	bbc/ atc	."
332-x3	.420"	266°	°	Intake Stage II mid-range / top-end.	btc/ abc	."
332-x4	.400"	268°	°	Must use R/D # _____	bbc/ atc	."
Stock cams					2010	
RMZ-450	.378"	239°		intake # 12710-35G-10	12710-28H-10	
	.382"	243°		exhaust # 12720-35G-10	12720-28H-10	
LTR-450	.338"	235°		intake # 12710-45-G00		
	.373"	248°		exhaust # 12720-45-G00		

We have RMZ-450 stock sprockets and bearings in stock.

We do NOT have any LTR-450 sprockets (4-wheeler uses different # of teeth on the sprocket customer must send stock LTR cams - we can remove sprockets and install on our billets.

SUZUKI RMZ-250 (2007—2008)

NEW BILLET CAMS per pair (without sprockets).
customer must send stock cams and sprockets
to install on new billet cams.
Cost per pair to change sprockets and decomp.
Valve springs - Contact R/D Spring Co or Pro Circuit.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
335-x1	.385"	250°	104°	Increased torque, more upper mid-range.	21 btc/49 abc	.008"
335-x2	.355"	248°	106°	Moto-X performance.	50 bbc/18 atc	.010"
Stock cam specifications:						
Int	350"	238°		tappet diameter in = 26 mm (1.024")		.008"
Exh	330"	244°		ex = 24 mm (0.945")		.010"

SUZUKI DR-500 (1982—1984)

Hardfaced cam, on customer core.
Rocker arms, weld and grind, cost each.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
387-20	.394"	245°	108.5°	Use modified piston and springs.	14	btc/51 abc	.005"
	.387"	253°	109.5°	Off-road, wide power band.	56	bbc/17 atc	.007"
387-x5	.429"	272°	105°	Race profile. TT, moto-X, mid-range and top-end power. Must use modified pistons and kit #403-S.	31	btc/61 abc	.005"
	.411"	274°	105°		62	bbc/32 atc	.007"
Stock	.326"	232°	109.5°	Stock DR-500 for your reference.	6.5	btc/45.5 abc	
	.329"	234°	110.5°		47.5	bbc/6.5 atc	

SUZUKI DR/SP-600 (1985—1986) DR-650 (1990—1995)

Hardfaced cam, on customer core.
#418-S R/D valve spring kit with **titanium tops**.
Rocker arms weld and grind, cost each

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
394-00	.400"	245°	106.5°	Must use spring kit. Should work with stock piston, must check. All around off-road power. Great mid-range, added top-end pull.	16	btc/49 abc	.005"
	.390"	253°	109.5°		56	bbc/17 atc	.007"
394-x2	.400"	268°	103°	Race profile. Use spring kit and modified piston. Fast TT, moto-X. TDC lift IN = .134", EX = .125"	31	btc/57 abc	.005"
	.385"	270°	105°		60	bbc/30 atc	.007"
Stock	.364"	237°	109°	Stock DR-600 for your reference.	9.5	btc/47.5 abc	
	.367"	241°	111°		51.5	bbc/9.5 atc	

SUZUKI DR-750 SINGLE (1989—1990) European Model

Hardfaced cam, on customer core.
#422-S R/D valve spring kit with **titanium tops**.
Rocker arms cost each to weld and grind.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
310-00	.420"	258°	107°	OFF ROAD RACE PROFILE. Must use R/D kit. Strong mid-range, wide power band. Use modified piston. Modify compression release or rocker arm for reduced base circle diameter.	22	btc/56 abc	.006"
	.420"	250°	108°		63	bbc/17 atc	.008"
310-x5	.510"	288°	108°	FULL RACE PROFILE. Must use racing piston, springs, etc. TOP END, desert racing. Must grind rocker cover. TDC in = .179" ex = 157"	36	btc/72 abc	.006"
	.510"	288°	114°		78	bbc/30 atc	.008"

SUZUKI GS-500 [425, 450] TWIN (1978—1992)

Hardfaced cams, per pair, on customer cores.
#60-4046 K.P.M. valve springs, uses stock tops, GS-500/425/450.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
384-00	.354"	254°	110°	OK with stock pistons and springs. Increased mid-range power in stock motors.	17	btc/57 abc	.003"
	.354"	254°	110°		57	bbc/17 atc	.003"
384-70	.380"	261°	107.5°	Use modified pistons and springs. Best all around street and road performance. Increased mid-range and top-end. Wide, smooth power band.	23	btc/58 abc	.004"
	.380"	261°	108.5°		59	bbc/22 atc	.004"
384-20	.417"	268°	107°	Must use modified pistons and springs. Road race performance. Maximum top-end power. Power from 3500 to 8500 with high compression.	27	btc/61 abc	.004"
	.417"	268°	107°		61	bbc/27 atc	.004"
384-x4	.438"	258°		SHIM UNDER BUCKETS. Full race profile.			
Stock	.345"	243°		Stock 1989 GS-500 E for your reference.			
	.326"	246°					

SUZUKI GSF-400 Bandit (1992—1993)

Hardfaced cams per pair on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
316-x1	.231"	248°	100°	Road race profile. Increased Mid-range and top-end.	24 btc/44 abc	.006"
	.231"	248°	104°	Designed for stock springs. Check all clearances.	48 bbc/20 atc	.008"

SUZUKI GS-550/650 2-valve models (1977—1982) KATANA (1983—1986)

Hardfaced cams, per pair, on customer core.
#60-0891 K.P.M. valve springs, uses stock tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
383-00	.354"	254°	110°	OK with stock pistons and springs. Improved mid-range and some added top-end power.	17 btc/57 abc	.005"
	.354"	254°	110°	Valve spring kit is recommended.	57 bbc/17 atc	.005"
383-10	.410"	250°	108°	Must use racing pistons and springs. Street/drag performance. Maximum throttle response and acceleration. Full power 3500 to 7500.	17 btc/53 abc	.005"
	.410"	250°	108°		53 bbc/17 atc	.005"
383-70	.380"	261°	107.5°	Best all around street/road performance. Use modified pistons and springs. Mid-range and some added top-end power increase.	23 btc/58 abc	.005"
	.380"	261°	108.5°		59 bbc/22 atc	.005"
383-20	.417"	268°	107°	Use modified piston and springs. Road race and drag race with 12:1 or more compression.	27 btc/61 abc	.005"
	.417"	268°	107°	Top-end power.	61 bbc/27 atc	.005"

SUZUKI GS-550 E 16-valve (1983—1985)

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
391-x1	.350"	248°	108°	OK with stock pistons and springs. Mid-range and some added top-end. Endurance racing profile. Greatly improved throttle response and acceleration.	16 btc/52 abc	.005"
	.350"	248°	108°		52 bbc/16 atc	.007"
391-x2	.390"	252°	106°	Drag race profile. Must use racing springs and pistons. 12:1 or more compression needed. Do not use this cam with stock springs or pistons.	20 btc/52 abc	.006"
	.390"	252°	112°		58 bbc/14 atc	.008"
Stock	.307"	230°		Stock GS-550 for your reference.		
	.268"	231°				

SUZUKI GSXR-600 (1993—1994)

13.585" overall cam length
25 mm cam follower diameter
Water cooled — 16 valves.

Cams 314-x1 etc. Hardfaced on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
314-x1 in	.342"	244°	98°	Increased torque and better throttle response.	24 btc/40 abc	.006"- .008"
314-x1 ex	.339"	242°	104°	Better carburetor efficiency than stock profile. Designed for stock pistons and springs - check clearance.	45 bbc/17 atc	.010"- .012"
Stock cams	.326"	249°		Stock GSXR-600 cam spec's for reference.		

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SUZUKI SV-650 Twin (1999—2003)



Cams (4 per set) hardfaced on customer cores.
 #430-S R/D valve spring set (springs only - use stock tops).
 #60-60030 K.P.M. valve spring kit with **titanium tops**.
 Wiseco piston kits 12:1 compression. Includes head gasket
 Std bore (81MM) CK-113
 3 MM oversize CK-114
 Adjustable cam sprockets A.P.E. # CSAKS (4 per set).
 Install adjustable sprockets (4).

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
Stock	.319"	232°		intake/ stock cam		
	.240"	208°		exhaust/ stock cam		
Stock tappet diameter = 26 MM						
325-x15 in	.324"	246°		Intake STAGE I /ok with stock valve springs.	20 btc/46 abc	.007"-.009"
325-x16 ex	.300"	235°		Exhaust STAGE I /ok with stock valve springs.	45 bbc/10 atc	.010"-.012"
325-x8 in	.350"	245°	101.5°	STAGE II - Valve springs 430-S are required.	21 btc/45 abc	
325-x10 ex	.340"	233°	103.5°	All-around cam. Improved mid-range and top-end.	40 bbc/13 atc	
325-x1 in	.370"	252°	100°	Road race performance.	26 btc/46 abc	.010"
325-x2 ex	.353"	246°	104°	Must use racing pistons and valve springs. TDC Lift in = .134" ex = .092"	47 bbc/19 atc	.010"
					Racing use only.	

At this time - hardfaced on customer cores only. With or without sprockets attached.
 SV-650 new billet cams to be available soon. These will be supplied without sprockets - adjustable sprockets will be required.

SUZUKI GSXR-750 (1993—1995)

13.635" overall cam length
 26 mm cam follower diameter
 Water cooled — 16 valves.

Cams 313-x1 etc. Hardfaced on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
313-x3 in	.365"	246°	104°	All around profile. Improved throttle response.	19 btc/47 abc	.006"
313-x5 ex	.252"	237°	107.5°	Expanded mid-range power. Designed for stock pistons and springs, but it is close. Must check clearances.	46 bbc/11 atc	.008"
313-x9 in	.397"	248°		Full race.		
313-x10	.340"	233°	103.5°	Mild performance cam. Designed for stock pistons and springs - check all clearances.	13 btc/40 abc 40 bbc/13 atc	.006" .008"
Stock	.338"	247°		GSXR-750 1993 stock data for reference.		
cams	.324"	245°		Mark 17E		

SUZUKI GSXR-750 (1996—1998)

26 mm tappet diameter

Hardfaced cam per pair on customer cores
 This model has press-on sprockets.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
318-x2 in	.353"	246°	102°	All around road race performance. OK with stock pistons and springs - check all clearances.	21 btc/45 abc	
318-x2 ex	.353"	246°	104°		47 bbc/19 atc	
318-x1	.370"	252°	102°	Must use Yoshimura valve springs / Race profile		
318-x6	.415"	252°	104°	" " " " " / Race profile		
318-x8	.397"	248°	102°	" " " " " / Race profile		
318-x10	.405"	255°	104°	" " " " " / Race profile		
Stock in	.335"	243°	102°	For reference 1996 stock cams.	19 btc/44 abc	
cams ex	.303"	230°	104°		39 bbc/11 atc	

SUZUKI GSX-600 KATANA 16-VALVE (1988—1990)

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
396-00	.355"	249°	103.5°	OK with stock pistons and springs. Check all clearances. Strong mid-range increase, added top end. (Retains low end power). (old # 396-x10)	21 btc/48 abc	.006"
	.355"	249°	103.5°		48 bbc/21 atc	.007"
396-20	.379"	252°	104°	Road race—all around road race performance. Use racing pistons and springs. (old # 396-x2).	22 btc/50 abc	.006"
	.360"	265°	104.5°		57 bbc/38 atc	.008"
Stock	.338"	230°	104°	Stock GSX-600 cams for your reference.	11 btc/39 atc	
	.290"	227°	103.5°		37 bbc/10 atc	

SUZUKI GS-750, 850, 1000 2-valve (1977—1982)

Hardfaced (HF) cams per pair, on customer cores.

#60-0891 K.P.M. valve springs, uses stock tops.

#406-S R/D complete valve spring kit.

#60-1026 K.P.M. shim under followers.

Wiseco 10¼:1 piston kit. K-844, K-1085, K-1100

PART NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
381-00	.354"	254°	110°	OK with stock pistons and springs in 850/1000 must check 750. Increased mid-range power.	17 btc/57 abc	.006"
	.354"	254°	110°		57 bbc/17 atc	.008"
381-10	.410"	250°	108°	Best street/strip cam. Use modified piston and springs. Maximum throttle response, mid-range added top-end. Good with oversize valves.	17 btc/53 abc	.006"
	.410"	250°	108°		53 bbc/17 atc	.008"
381-70	.380"	261°	107.5°	All around road, road race performance. Top-end power. Use spring kit. Stock pistons OK in 1000cc, must use modified pistons in 750 and 850.	23 btc/58 abc	.006"
	.380"	261°	108.5°		59 bbc/22 atc	.008"
381-20	.417"	268°	107°	Road race and certain drag race motors. OK with shim on top. Must use modified pistons and valve springs. Mid-range and top-end power with 11:1 or more	27 btc/61 abc	.006"
	.417"	268°	107°		61 bbc/27 atc	.008"

All remaining cams in this section require use of shim under cam followers, racing springs and high compression pistons etc.

381-60	.438"	258°	108°	Best drag race profile, shim under. Cylinder head cutting required for clearance. Great mid-range power and acceleration with this profile.	21 btc/57 abc	.006"
	.438"	258°	108°		57 bbc/21 atc	.008"
381-50	.405"	230°		Turbo charged profile, race only.		
381-80	.465"	270°	108°	Full race profile. 12:1 or more. Cylinder head must be cut. Maximum top-end power. High R.P.M. use.	27 btc/63 abc	.006"
	.465"	270°	108°		63 bbc/27 atc	.008"
381-x16 IN	.520"	277°		Intake Pro Stock	1.00" BC	
318-x17 EX	.490"	279°		Exhaust Pro Stock	1.00" BC	

Cam timing measured at .040" lift at the valve with zero clearance.

SUZUKI 800 Intruder (same as 700/750 Intruder) (1992—1997)

Cams per pair. Hardfaced on customer cores.

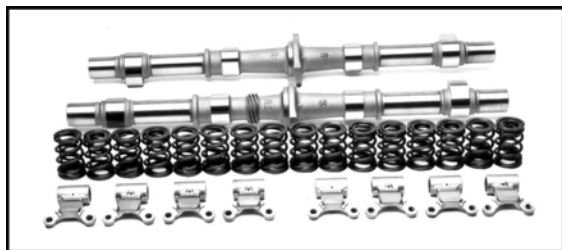
CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
320-x1	.380"	238°	105°	Designed for stock pistons and valve springs. Improves throttle response and mid-range power. Check for .060" valve to piston clearance before starting the motor.	14 btc/44 abc	.007"
	.370"	240°	109°		49 bbc/11 atc	.007"
Stock in	.343"	226°	104°	Stock Suzuki 750 and 800 Intruder		
Stock ex	.343"	231°	111°	for your reference.		

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SUZUKI GS-750, GS-1100, GS-1150 (1979—1986)



New billet (BLT) cam, no cores needed.
 Hardfaced (HF) cam, per pair, on customer cores.
 #60-1028 K.P.M. valve springs, uses stock tops.
 #407-S R/D valve spring kit with cr/moly tops.
 Rocker arms, weld and grind, cost each.
 Rocker arms, weld & grind with EXTENDED pad, each.
 Wiseco 10¼:1 piston kits 750, 1100, 1150
 K-1133 (2mm o/s), K-1168 (3mm o/s),
 W-3925 head gasket for K-1133 or K-1168.

** HARDFACED rocker arms are strongly recommended.
 EXTENDED PAD is recommended for cams over .400" lift.

BILLET PART NUMBER	H.F. PART NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST	OPEN/CLOSE	RUNNING CLEARANCE
385-05	385-00	.325" .325"	240° 240°	108° 108°	OK with stock pistons and springs. Improves throttle response and mid-range power. Spring kit will improve performance, but not required.	12 btc/48	abc.006"—.007" 48 bbc/12 atc.007"—.008"	
385-35	385-30	.355" .355"	250° 250°	108° 108°	Best all around street/strip performance with stock guides. Must use modified pistons and springs. Great throttle response, mid-range and added top-end power.	17 btc/53	abc.006"—.007" 53 bbc/17 atc.007"—.008"	
385-x13B	385-x13	.360" .360"	258° 258°	108° 112°	Must use modified pistons and springs. OK with stock guides. Best mid-range and top-end for Big Bore.	21 btc/57	abc .006" 61 bbc/17 atc .008"	
All cams shown below require use of shortened valve guides #60-1029 plus racing pistons and springs, and in some cases removal of material from the cylinder head and or rocker arms. 13:1 compression is required.								
385-25	385-20	.390" .390"	252° 252°	108° 108°	Drag race profile, medium sized motors especially with oversize valves. Maintain maximum cylinder pressure with this cam. 18% HP increase 3500 to 7500.	18 btc/54	abc .006" 54 bbc/18 atc .008"	
385-45	385-40	.390" .390"	262° 262°	108° 108°	Drag race profile. 12½:1 or more compression a must. Mid-range and high R.P.M. power. Can also use with 385-x11 or x15 intake for full race motor.	23 btc/59	abc .006" 59 bbc/23 atc .008"	
385-55	385-50	.378"	240°	108°	Turbo profile. Racing only.			
385-85	385-80	.420" .420"	256° 256°	108° 108°	Pro stock/competition drag race profile. Race motors with 13:1 or more compression.	20 btc/56	abc .007" 56 bbc/20 atc .008"	
385-x11B	385-x11	.430"	269°	109.5°	Intake only. Competition drag race profile. use with 385-45 exhaust cam.	25 btc/64	abc .007"	
385-x15B	385-x15	.445"	257°	109.5°	Intake only. Competition drag race profile. Use with 385-25 exhaust cam. 13:1 or more compression.	19 btc/58	abc .007"	
385-x16		.400" .400"	242° 242°	108° 108°	Special race profile. Torque and mid-range power.	13 btc/49	abc .006" 49 bbc/13 atc .008"	
385-x24 in		.442"	262°	108°	Intake. Competition drag race.	23 btc/59	abc .008"—.009"	
385-x21		.405" .405"	270° 270°		Full race. Maximum top-end.			
Stock		.283" .265"	241° 230°		Stock GS-1100 for your reference.			

Note: 6mm sprocket bolt holes on original cams up to 1983.
 7mm sprocket bolt holes on 1984 and later stock cams and all billet cams.

For some race profiles, hardfaced cams are recommended (rather than billet cams). The special alloy used by Megacycle to weld the lobes solves the wear problems which are so chronic to these 16-valve Suzuki motors. Welded and precision ground rocker arms will increase the life of the cams and rockers. Send stock cams or rocker arms to be welded, allow 8 working days processing time.

SUZUKI GSXR-750/1100 (1986—1990)



Hardfaced cams, per pair, on customer cores.
 Rocker arms, weld and grind, cost each.
 #60-1002 K.P.M. valve springs only, uses stock tops.
 #60-4155 K.P.M. **titanium tops**.
 R771—71mm GSXR-750 Wiseco 13:1 kit thru 1987
 R775—74mm GSXR-750 Wiseco 13:1 kit 1988-89
 R1109—78mm GSXR-1100 Wiseco 12:1 1986-88
 #60-4156-1 shortened valve guides for cams over .380".

All cam timing is measured at .040" lift at the valve with zero checking clearance.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
395-20	.379"	252°	104°	Best all around performance. Road race. Must use high performance springs. Designed for stock pistons, but check clearance.	22 btc/50 abc	.006"
	.360"	265°	104.5°		56 bbc/28 atc	.008"
395-x2 exhaust	.379"	252°	105°	Use with 395-20 intake for tight road race courses and mini sprint ¼ and ⅜ mile tracks. Must use racing springs. Designed for stock pistons - check clearance.	51 bbc/21 atc	.008"
395-x10 exhaust	.355"	249°	103.5°	Use this exhaust cam with 395-20 intake for improved mid-range torque on short course road race or other mild performance applications. OK with stock springs.	48 bbc/21 atc	.008"
395-x5	.375"	260°	106°	Good mid-range and top-end power. Must use racing springs and pistons. Drag race and other high R.P.M.	24 btc/56 abc	.006"
	.375"	260°	106°		56 bbc/24 atc	.008"

All profiles shown above can be used with stock valve guides.

The profiles shown below (.380" or more valve lift) require use of shortened valve guides. In some cases it may be possible to sink the guides (press them into the cylinder head) to allow the required .020" clearance to stem seal. Failure to check this may cause severe damage to the valve train.

395-x15	.397"	260°	104°	Maximum top-end power with valve train reliability use 13:1 or more compression, racing valve springs and short guides. Drag race, especially for 1250 + cc engines.	26 btc/54 abc	.007"
	.397"	260°	110°		60 bbc/20 atc	.009"
395-x13 in	.423"	253°	104.5°	Race combination. Best mid-range power and acceleration. Use this cam when throttle response is most important. Use Yoshimura valve springs.	22 btc/51 abc	.006"
395-x12 ex	.400"	242°	104°		45 bbc/17 atc	.008"
395-x6	.425"	254°	104°	Drag race. Upper mid-range and top-end power. Use racing pistons, springs and guides.	23 btc/51 abc	.006"
	.425"	254°	104°		51 bbc/23 atc	.008"
395-x7 intake	.435"	270°	104°	Intake only. Full race, competition drag race. Cylinder head must be cut.	31 btc/59 abc	.006"
395-x8	.442"	268°	104°	Full race motors only. 14:1 or more compression Racing pistons, springs and guides. Cylinder head must be cut.	30 btc/58 abc	.006"
	.442"	268°	104°		58 bbc/30 atc	.008"
Stock	.355"	248°	104°	Stock 1988 GSXR 750 for your reference.	20 btc/48 abc	
	.334"	242°	104°		45 bbc/17 atc	
Yosh	.380"	246°		Yosh stage II cam data.		
STG II	.328"	236°		For reference only.		

Cylinder head cutting: It is necessary to check for lobe clearance and rocker arm clearance when using any high lift cams. It may be necessary to grind away some aluminum for lobe clearance.

Rocker arms: We offer welding and grinding of the stock rocker arms. We will remove the damaged or worn chrome plating, weld a new rocker pad and precision grind for a long wearing surface. On customer cores only.

SUZUKI GSXR-750/1100 (1991—1992 U.S. models)

We do not offer camshafts or valve springs for 1991-92 models. Due to the fragile valve train design, we do not recommend installing high performance cams in these models. It is possible to convert to 1989-90 style cams, rocker arms, etc. The charge is \$100.00 per cam to weld and machine the thrust flange on 1989-90 cams to be used in the 1991-92 cylinder heads.

SUZUKI GSX-1000 (2002—2005)

Hardfaced cams/ per pair on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
328-x1 in	.405"	255°		Intake only.		
328-x2 in	.397"	248°		Intake only.		
328-x4 in	.385"	252°	102°	STAGE I Race profile.	24 btc/48 abc	
328-x3 ex	.350"	244°	105°	STAGE I Race profile .	47 bbc/17 atc	
328-x5 in	.385"	258°		Intake only.		
328-x6 ex	.360"	252°		Exhaust only.		
328-x7 in/ex	.408"	256°		Intake or exhaust.		
Stock in	.355"	251°		Intake 35 F stock cam for reference.	Stock cam followers :	26 MM intake
Stock ex	.314"	227°		Exhaust 35 F stock cam for reference.	Stock cam followers :	24 MM exhaust

High Performance valve springs are required with most of these cams.

SUZUKI GSXR-1100 (1993—1996) Water cooled

13.715" overall cam length.
26 mm cam follower diameter.

Hardfaced cams per pair on customer cores only.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
315x-8 in	.360"	252°	102°	OK with stock pistons and springs	24 btc/48 abc	.006"
315x-19ex	.353"	246°	104°	All around / mid range - top end.	47 bbc/19 atc	.008"
315x-5 in	.385"	252°	102°	Drag race - use racing pistons	22 btc/50 abc	.006"
315x-8 ex	.360"	252°	104°	and valve springs.	50 bbc/20 atc	.008"
315x-17 in	.415"	252°	104°	Alternate race profile Must use racing pistons and springs	20 btc/50 abc.	.006"-.008"
Intake 49	.342"	244°		1993 stock 49 state intake cam mark 46E		
Exhaust 49	.339"	241°		" " exhaust 46E		
Calif. In	.287"	226°		California model intake cam 1995		

SUZUKI GSX 1300 Hayabusa (1998—2010)

Hardfaced cams (per PAIR) on customer cores.
#60-60015 K.P.M valve spring kit with **titanium tops**.
#CSAKS-1300 A.P.E. Adjustable cam sprockets.

DO NOT REMOVE THE IGNITION TRIGGER PIN FROM THE INTAKE WHEN YOU SEND THE CAMS TO BE HARDFACED.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
324-x5 in	.360"	252°	102°	Stage I - O.K. with stock pistons and valve	24 btc/48 abc	.007"-.009"
324-x15 ex	.334"	237°	105.5°	springs. Increased power upper mid-range, great throttle response.	44 bbc/ 13atc	.010"-.012"
324-x8 in	.385"	252°	102°	Stage II- O.K. with stock pistons and stock	24 btc/48 abc	.007"-.009"
324-x5 ex	.360"	252°	106°	valve springs. Stronge mid-range and top-end.	52 bbc/20 atc	.010"-.012"
Stock in	.346"	240° at .040"		stock compression 11:1		
Stock ex	.244"	220° at .040"		stock cam follower diameter 28mm		
324-x1	.410"	250°				
324-x2	.443"	257°				
324-x3	.385"	248°				
324-x6	.405"	255°				
324-x9	.415"	252°				
324-x10	.377"	253°				
324-x11	.404"	264°				
324-x14	.397"	248°				
324-x17	.425"	257°				
324-x18	.445"	266°				
324-x19	.400"	241°				
324-x20	.415"	246°				

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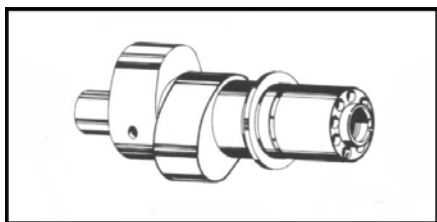
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YAMAHA YFM-80 (1985—1987)

NO LONGER AVAILABLE.

YAMAHA YTM 200/225 TRI-MOTO (1984—1991) also YFB-250 Timberwolf



Hardfaced (HF) cam, on customer core.
#908-VPS, VP1 Venolia 11:1 piston, uses stock rings.
(Venolia for YTM-200 only)

All Megacycle billet and needle bearing cams have nine alternate timing pin location holes to allow quick and accurate cam timing adjustment. Advance to gain low-end. Retard to gain top-end.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
261-00	.360"	250°	107°	OK with stock pistons. Should use #100-Y spring kit. Improves mid-range torque. Best cam for muddy trail riding.	18 btc/52 abc	.004"
	.360"	247°	107.5°		51 bbc/16 atc	.004"
261-20	.375"	266°	105°	Must use modified piston and springs. Great mid-range and top-end. Best for fast, dry Trails, desert and moto-X.	28 btc/58 abc	.005"
	.375"	266°	105°		58 bbc/28 atc	.007"

YAMAHA 250 XT (1984—1985) 350 XT, TT (1985—1992) DOHC



Hardfaced cams, per pair, on customer cores.
#115-Y R/D valve spring kit with aluminum tops.
#116-Y R/D valve spring kit with **titanium tops**.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
270-x6	.354"	254°	106°	OK with stock pistons and springs. Best for 1/8 mile tracks, modified midgets. Good throttle control. Mid-range and top-end.	21 btc/53 abc	.005"
	.354"	254°	106°		53 bbc/21 atc	.007"
270-x1	.375"	257°	106.5°	OK with stock pistons, springs recommended. Best with high compression piston. 1/4, 1/2 mile, mid-range and top-end.	22 btc/55 abc	.005"
	.375"	257°	106.5°		55 bbc/22 atc	.007"
270-x2	.410"	250°	107°	<u>Shim under tappets</u> . Race only. Must use racing springs and pistons. Fast 1/2 and 3/8 mile tracks.	18 btc/52 abc	.005"
	.410"	250°	107°		52 bbc /18 atc	.007"
270-x3	.428"	264°	106°	<u>Shim under tappets</u> . Race only. Top-end, 1/2 mile and high R.P.M. use.	26 btc/58 abc	.005"
	.428"	264°	106°		58 bbc/26 atc	.007"
Stock 250	.327"	242°	250 XT measured at .040"		stock compression 10:1	
Stock 350	.305"	233°	350 XT, TT measured at .040"		stock compression 9:1	

YAMAHA XS-400 TWIN (1979—1983)

Hardfaced cam, on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
255-00	.360"	252°	109°	OK with stock pistons and springs. Improved mid-range and top-end power, retains smooth idle. Good street and road race performance.	17 btc/55 abc	.005"
	.360"	252°	109°		55 bbc/17 atc	.005"

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YAMAHA 350 WARRIOR, XT, BW (1987—2001) 250 TT, XT (1980—1983) Also Wolverine



Hardfaced cam, on customer core.
 #252-01 vernier adjustable cam sprocket.
 See pages 61 and 62 for installation instructions and chart
 #101-Y R/D valve spring kit 250/350.
 #121-Y R/D valve spring kit with **titanium tops**.
 Wiseco 10¼:1 piston with rings, pin, clips (350)
 4419M08300 (83 mm) 3268 XC
 4419M08350 (83.5mm) 3287 XC
 4419M08400 (84 mm) 3307 XC
 W-5746 Wiseco head and base gasket kit (350).

CAM NUMBER	VALVE LIFT	DUR. AT .040"	LOBE CNTR	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	VALVE LASH
252-x1	.450"	276°	106°	Must use #101-Y spring kit. OK with stock piston.	32 btc/64 abc	.006"
	.450"	276"	106°	Must modify valve cover for exhaust lift. Mid-range and top-end power. Fast TT, enduro racing. Must use vernier cam sprocket to adjust power band.	64 bbc/32 atc	.006"
252-x2	.415"	246°	106°	Best all-around cam for mid-range power. OK with stock piston. MUST use 101-Y valve springs or equivalent.	17 btc/49 abc	.010"
	.395"	245°	106.5°		49 bbc/16 atc	.010"
Stock	.380"	232°	108°	Stock Yamaha 250 TT/XT cam.		
	.382"	233°	108°	Stock Yamaha warrior YFM, BW 350 cam.		

YAMAHA 500 TT, XT, SR (1975—1982)



Hardfaced on Megacycle billet/ no core needed.
 Hardfaced cam, on customer core.
 Rocker arms, weld and grind, cost each, on customer cores.
 #251-01 vernier drilled sprocket.
 See pages 61 and 63 for installation instructions and chart
 #102-Y R/D valve spring kit with aluminum tops.
 #110-Y R/D valve spring kit with **titanium tops**.
 #80-0514 K.P.M. valve springs only, uses stock tops.
 Wiseco 10:1 piston, ring, pin and clips
 #4045M08700, 4045M08750, 4045M08800 (std thru .040")
 #4045M08850, 4045M08900 (.006 & .080")
 #4190M0900 Wiseco 11:1 piston 90mm (3mm o/s).
 W-5079 90 MM **copper** head gasket.
 W-5688 88-90 MM head & base gasket set.

CAM NUMBER	VALVE LIFT	DUR. AT .040"	LOBE CNTR	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	VALVE LASH
251-30	.500"	273°	108.5°	Best all around cam for off-road, TT style riding. Must use modified piston and springs.	28 btc/65 abc	.005"
	.500"	273°	108.5°		65 bbc/28 atc	.005"
251-40	.480"	256°	108°	OK with stock pistons. Must use 08-0514 or 102-Y springs. Best for low-end, off-road riding on muddy trails. Great torque and throttle response.	20 btc/56 abc	.005"
	.480"	253°	106.5°		53 bbc/20 atc	.005"
251-62	.495"	300°	102°	Use modified piston and springs. Racing use for TT, ice race or road race, where mid-range and full <u>top-end</u> power are needed. Smooth power band. TDC lift in = .233" ex = .225"	48 btc/72 abc	.005"
	.465"	296°	102°		70 bbc/46 atc	.005"
251-80	.585"	285°	105.5°	Torque cam for fully modified engines only. Racing springs and piston, modify spring bottoms. Off-road racing, moto-X, desert, etc.	37 btc/68 abc	.005"
	.580"	283°	106.5°		68 bbc/35 atc	.005"
251-x18	.590"	300°	107°	Full race cam. Top-end. Use modified pistons and springs. TDC lift in = .254" ex = .215"	43 btc/73 abc	.008"
	.530"	300°	107°		77 bbc/43 atc	.010"
Stock	.390"	244°	107°	Stock TT 500 cam for your reference.	15 btc/ 49 abc	
	.390"	246°	108°		51 bbc/ 15 atc	

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

251-01 YAMAHA 500 TT/XT/SR VERNIER CAM SPROCKET
252-01 YAMAHA 250 TT, 350 WARRIOR CAM SPROCKET

INSTRUCTIONS

The MEGACYCLE CAMS vernier drilled cam sprocket provides nine equally spaced drive pin holes to allow precise installation of the camshaft in a Yamaha 500 single engine. To utilize this sprocket, proceed as follows:

- STEP 1: Install the cam using the stock pin hole, marked "S" and the stock timing marks. Measure the valve timing using whatever method you prefer. The method you use to "degree" the cam is not important, as long as you use it consistently.
- STEP 2: After comparing the observed valve timing as measured in Step 1 with the desired valve timing, decide how much you would like to advance or retard the cam. It is possible that no change will be necessary. Remember that you can not alter the intake timing without a corresponding change in exhaust valve timing and vice versa.
- STEP 3: Once you have decided how you would like to move the cam, use the attached chart to select the alternate sprocket drive pin hole and timing mark which will come closest to providing the desired change. The nine pin holes in conjunction with the thirty-four sprocket teeth will allow you to come within ± 1.2 crankshaft degrees of any desired location.
- STEP 4: Install the cam using the new drive pin hole and timing mark. Recheck the valve timing. You should now have the desired timing. If, for some reason you wish to further alter the timing or the desired results were not achieved; repeat the procedure from Step 1.

It is very important that the surface where the sprocket rests on the end of the camshaft be very clean and free of any grit or foreign matter. The sprocket locating pin must be securely pressed into the cam and the bolt which tightens the sprocket onto the cam **MUST** be tightly in place. It may be necessary to use a small amount of "Loctite" to secure the bolt after you have decided which drive pin hole you will be using. The lip (or flange) which guides the bolt and holds the sprocket in place is delicate. Be careful not to chip or crack this lip. If damage does occur, the sprocket can easily become misaligned and cause problems.

Thank you for buying a MEGACYCLE product.

If you need assistance, call between 9:00 PM and 5:00 PM Monday to Friday.

YAMAHA 250 TT, 350 WARRIOR VERNIER CAM SPROCKET INSTALLATION CHART

Desired Timing Change	Use Hole	Use Timing Mark
Advance 2.5°	2	C
5.0°	4	G
7.5°	6	K
10.0°	8	O
12.5°	1	A
15.0°	3	E
15.5°	5	I
20.0°	7	M
Retard 2.5°	7	N
5.0°	5	J
7.5°	3	F
9.4°	1	B
10.0°	8	P
12.5°	6	L
17.5°	4	H
20.0°	2	D

YAMAHA 500 TT XT SR VERNIER CAM SPROCKET INSTALLATION CHART

Desired Timing Change	Use Hole	Use Timing Mark
Advance 2.4°	4	G
4.7°	8	O
7.1°	3	E
9.4°	7	M
11.8°	2	C
14.1°	6	K
16.5°	1	A
18.8°	5	I
Retard 2.4°	5	J
4.7°	1	B
7.1°	6	L
9.4°	2	D
11.8°	7	N
14.1°	3	F
16.5°	8	P
18.8°	4	H

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YAMAHA FZR-400 FZR-600 (1988—1993) YZF-600 (1994—1997)



Hardfaced cams, per pair, on customer cores.
R-619 Wiseco piston kit (.040" over)
Same compression ratio as stock-

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
276-x1	.335"	250°	102°	Designed for use with stock pistons. Must check clearance. Should use #117-Y. Best short course road race cam. Provides better acceleration, mid-range and some top-end.	23 btc/47 abc	.007"
	.308"	250°	104°		49 bbc/21 atc	.010"
276-x8	.320"	255°	102.5°	Road race/ top-end.	25 btc/50 abc	.010"
	.320"	255°	106.6°		54 bbc/21 atc	.010"
276-x9	.306"	246°	100°	Factory "Kit" race cam.	23 btc/43 abc	.007"
	.286"	237°	100.5°		39 bbc/18 atc	.010"
276-x6	.354"	254°	102°	ROAD RACE PROFILE. Good throttle response with strong mid-range. Plus top-end gain. Must use racing pistons and springs.	25 btc/49 abc	
	.354"	254°	104°		51 bbc/23 atc	
276-x12	.320"	221°		Turbo charges motors only.		
Stock	.299"	238°		Stock FZR-400 cam for your reference.		
	.288"	230°				

YAMAHA 550 SECA, 600 FJ/FZ (1981—1992) and RADIAN (1986—1990)

Hardfaced cams per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
257-10	.350"	244°	107°	XJ-550 OK with stock pistons and springs. Increased mid-range power. Smooth idle.	15 btc/49 abc	.005"
	.350"	244°	107°		49 bbc/15 atc	.007"
257-00	.354"	254°	108°	FZ-600 OK with stock pistons, must use #105-Y springs. Good mid-range, top-end.	19 btc/55 abc	.005"
	.354"	254°	108°		55 bbc/19 atc	.007"
257-30	.375"	257°	108.5°	Best all around road race profile. Should clear 600 stock pistons. Use modified pistons in 550. Must use with #105-Y springs in all models. Good high R.P.M. cam with added mid-range power.	20 btc/57 abc	.005"
	.375"	257°	108.5°		57 bbc/20 atc	.007"
257-40	.410"	250°	105°	Race cam. 1/4 mile and 3/8 modified midget tracks. Use racing pistons and springs. Good throttle control. Use wider LC for higher power band.	20 btc/50 abc	.005"
	.410"	250°	105°		50 bbc/20 atc	.007"
257-20	.417"	268°	107°	Top-end. Drag race with 13:1 or more compression. Certain long course road race tracks. Must use racing pistons, springs, carbs, exhaust.	27 btc/61 abc	.006"
	.417"	268°	107°		61 bbc/27 atc	.008"
Stock	.308"	233°		Stock 550 for your reference.		
	.279"	228°				
Stock	.326"	244°		Stock 600 FJ for your reference.		
	.307"	244°				

YAMAHA XTZ 750 TWIN, TDM 850 (5-valve 1989—1994) & TRX-850

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
279-x1	.335"	257°	103.5°	Road race performance. Improved acceleration, strong mid-range with added top-end power. Designed for stock springs, must modify pistons.	25 btc/52 abc	
	.335"	264°	108°		60 bbc/24 atc	
Stock	.305"	229.5°	105°	1989 stock XTZ 750 timing for your reference.	10 btc/39.5 abc	
	.315"	238°	109°		44 bbc/14 atc	

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YAMAHA 600 TT, XT, SRX, 550 TT (1982—1996)



Hardfaced cam, on customer core.

Rocker arms, weld and grind, cost each, on customer core.

#111-Y R/D valve spring kit with aluminum tops to .450" lift.

#112-Y R/D valve spring kit with **titanium tops** to .450" lift.

#120-Y R/D valve spring and guide kit **titanium tops** to .500" lift.

Wiseco 11½:1 piston, ring, and pin kits

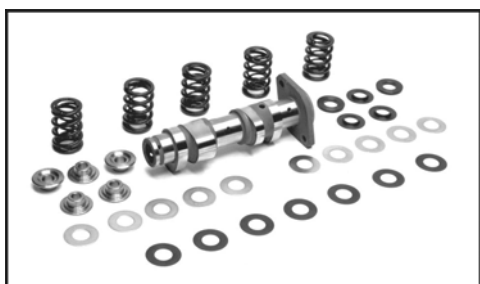
#4619M09500 — STD for TT chrome bore only (95mm)

#4596M09500 — STD for SRX or TT cast iron bore (95mm)

#4596M09600 — .040" over for SRX,TT,XT (96mm)

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
266-00	.375"	246°	108°	OK with stock piston. Must use spring kit.	15 btc/51 abc	.004"
	.365"	244°	108°	Good mid-range, improved throttle response.	50 bbc/14 atc	.006"
266-20	.430"	278°	102°	Must use modified piston and springs. Great mid-range and top-end power. TT, road race, fast off-road and desert racing. Best all around.	37 btc/61 abc	.005"
	.415"	281°	102.5°		63 bbc/38 atc	.007"
266-x4	.490"	276°	108°	Racing use only. Use racing piston and #120-Y spring and guide kit. Full power in mid-range and top-end. Cut cylinder head to clear lobes.	30 btc/66 abc	.005"
	.470"	276°	108°		66 bbc/30 atc	.007"
266-x6	.430"	278°	108°	All around performance for more top-end than 266-20. Use modified pistons and springs. ROAD RACE profile.	31 btc/67 abc	.005"
	.415"	281°	108.5°		69 bbc/32 atc	.007"
266-x10	.452"	292°	108°	Top end/road race. Use racing pistons and springs	38 btc/74 abc	.005"
	.412"	294°	112°		79 bbc/35 atc	.007"
266-x12	.452"	292°	102°	Road racing, more low end than 266X10. Must use racing springs and pistons.	44 btc/68 abc	.005"
	.412"	294°	106°		73 bbc/41 atc	.007"
Stock	.342"	239°	108°	Stock XT-550/600 for your reference.		

YAMAHA 660 RAPTOR (2001—2006) XT 5-VALVE (1990—1994)



Hardfaced cam on customer core.

#123-Y R/D valve spring kit with **titanium tops**.

#80-80030 K.P.M valve spring kit with **titanium tops**.

#4737 Wiseco pistons 100 MM to 101 MM 11:1 Raptor.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
280-x2	.395"	243°	106.5°	Mild performance. Increased torque and mid-range.	15 btc/48 abc	.005"-.007"
	.372"	236°	106°	Must use R/D or KPM springs.	44 bbc/12 atc	.007"-.009"
280-x3	.452"	276°	102°	All around/ increased mid-range and top-end. Retains good throttle response. Must use R/D or KPM springs.	36 btc/60 abc	.005"-.007"
	.429"	274°	102°		59 bbc/35 atc	.007"-.009"
280-x4	.452"	276°	108°	All around/ more top-end than 280-x3. Must use racing piston. Use R/D or KPM springs.	30 btc/66 abc	.005"-.007"
	.429"	274°	108°		65 bbc/29 atc	.007"-.009"
280-x11	.395"	243°	107.5°	Mild performance/ Mid-range & some top end. Must use R/D or KPM springs.	14 btc/49 abc	.005"-.007"
	.372"	236°	108°		46 bbc/10 atc	.007"-.009"
280-x14	.452"	292°	108°	Full race / upper mid-range & top-end. Best with BIG BORE/ High compression. Must use either KPM or R/D springs.	38 btc/74 abc	.005"-.007"
	.412"	294°	108°		75 bbc/39 atc	.007"-.009"

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YAMAHA 650/750 TWIN (1968—1985)



Hardfaced cam, on customer core (#25000, 25030 etc).
Modified firing order. Hardfaced on customer core.

Specify the profile and crank phasing.

#103-Y R/D valve spring kit with aluminum tops.

#130-Y R/D valve spring kit with **titanium tops**.

Rocker arms, weld & grind customer parts, price each.

YA-132 80mm cylinder sleeve.

Wiseco 10:1 piston 80mm X 20mm (3150XC, S423, CW20)

Wiseco 10:1 piston 81mm X 20mm (3189XC, S423, CW20)

Adjustable cam sprocket - press on assembly (see photo).

W-2732 80mm head gasket.

Kit # 250-W750 10:1 street compression

includes: 2 Wiseco 80 mm pistons, rings, pin and clips

2 80 mm cylinder sleeves.

1 W-2732 80-81 mm head gasket.

22mm wrist pin in 1968 to 1972 models (early)

20mm wrist pin in 1973 to 1984 models (late)

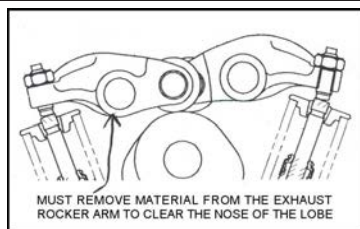
34 tooth cam sprocket = EARLY 1968 to 1972

36 tooth cam sprocket = LATE 1973 to 1984

Timing is measured at .040" lift (zero clearance)

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
250-00	.420"	272°	110°	OK with stock pistons & guides. Valve springs 103-Y are recommended. Improved mid-range power.	26 btc/66 abc	.006"
	.420"	272°	104°		60 bbc/32 atc	.006"
250-20	.415"	250°	104°	New all around street cam. OK with stock pistons & guides. Springs # 103-Y recommended. Improved mid-range power.	21 btc/49 abc	.010"
	.400"	246°	104°		47 bbc/19 atc	.012"
250-30	.440"	271°	103.5°	Use modified pistons and springs #103-Y. Best all around "torque" cam. Great throttle response and strong top-end pull. Guide modification needed.	32 btc/59 abc	.005"
	.440"	271°	103.5°		59 bbc/32 atc	.007"
250-40	.480"	265°	105.5°	Race cam. Use 11:1 pistons and #130-Y springs. Best acceleration cam. Must shorten guides .080"	27 btc/58 abc	.006"
	.480"	265°	105.5°		58 bbc/27 atc	.007"
250-50	.550"	284°	104°	New full race grind TDC lift with lash IN = .200" EX = .181"	38 btc/66 abc	.010"
	.520"	280°	108°		68 bbc/32 atc	.012"
250-x57	.505"	281°	102.5°	Top-end power. Must use racing pistons and springs. Modify spring base/seats. Must shorten guides .080"	38 btc/63 abc	.006"
	.515"	281°	107.5°		68 bbc/33 atc	.006"
Stock	.360"	234°		Stock 650 for your reference.		

YAMAHA RAPTOR 700 (2006—2007)



Hardfaced cam on customer core (with flange).

Extra cost to remove & replace mechanism.

KPM #80-80410 valve spring kit with **titanium tops**. OK to .480"

R/D #152-Y valve spring kit with **titanium tops**. OK to .440"

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
294-x1	.420"	246°	106°	OK with stock valve springs. ?___ stock piston. Improved torque & mid-range power.	17 btc/49 abc	.005"
	.385"	244°	106°		48 bbc/16 atc	.008"
TDC LIFT in .093" ex .085"						
294-x2	.480"	264°	104°	Must use spring kit #80-80410. & 11:1 piston. ** Must GRIND FOR CLEARANCE.	28 btc/54 abc	.005"
	.445"	260°	104°		56 bbc/26 atc	.008"
TDC LIFT in .142" ex .132"						
294-x4	.480"	264°	108°	Must use spring kit #80-80410. & 11:1 piston. ** Must GRIND FOR CLEARANCE.	24 btc/ 60abc	.005"
	.445"	260°	108°		58 bbc/22 atc	.008"
Stock	.386"	237°	106.5°	Stock cam #1S3 12170-00 TDC Lift in .071" ex .061"	12 btc/45 abc	.005"
	.347"	235°	107.5°		45 bbc/10 atc	.007"

** When installing the 294-x2 & 294-x4 cam it is necessary to remove material from the exhaust rocker arm to clear the increased lift of the cam lobe. SEE DIAGRAM. Valve spring kit #80-80410 must be installed with cam 294-x2. This is the only kit currently available which will allow the .480" intake valve lift. Other valve spring kits do not have adequate travel to accommodate the .480" lift.

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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YAMAHA VIRAGO XV 700, 750, 920, 1000 (1981—1992) & 1100



Hardfaced (HF) cams, on customer cores.

#107-Y R/D valve spring kit for 750 only, with aluminum tops.

#122-Y R/D valve spring kit for 920/1000 only, with **titanium tops**.

Venolia XV-750 .010" 11:1 piston, cost each.

Rocker arms, weld and grind, cost each.

Our needle bearing cams have extra timing pin holes to allow cam timing advance or retard. These are stock diameter/ no boring needed

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
258-x2	258-x2 NS	.502"	268°	108°	Road-race. Must use modified pistons and springs. Mid-range and top-end power.	26 btc/62 abc .005"
		.502"	268°	108°		62 bbc/26 atc .007"
258-x5	258-x5 NS	.420"	264°	108°	OK with stock pistons. Spring kit recommended. Improves mid-range power in an otherwise stock motor. Check clearances.	24 btc/60 abc .005"
		.420"	264°	108°		60 bbc/24 atc .007"
258-x3	258-x3 NS	.495"	300°	107°	Must use racing pistons and springs. Road-race performance mid-range and top-end	43 btc/77 abc .005"
		.475"	300°	107°		77 bbc/43 atc .007"
258-x1	258-x1 NS	.580"	283°	104.5°	Race only - 1000 motors. Fully modified engine.	
Stock		.401"	245°	107.5°	Stock 750 and 920 for your reference.	15 btc/50 abc
		.401"	247°	107.5°		51 bbc/16 atc

YAMAHA XS-750 III 3-cylinder (1976—1979)

Hardfaced cams, per pair, on customer cores.

#40-0449 K.P.M. valve springs (use with stock tops, bottoms)

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
253-00	.354"	254°	110°	OK with stock pistons and springs. Improves mid-range, smooth idle.	17 btc/57 abc	.005"
	.354"	254°	110°		57 bbc/17 atc	
253-70	.380"	261°	107.5°	Best all around street and road performance.	23 btc/58 abc	
	.380"	261°	108.5°	Must use modified pistons and springs.	59 bbc/22 atc	
253-20	.417"	268°	107°	Road race, drag race. Must use high compression pistons and springs.	27 btc/61 abc	.005"
	.417"	268°	107°		61 bbc/27 atc	
Stock	.347"	239°		Stock cam for your reference.		
	.328"	241°				

YAMAHA 650/750 SECA, MAXIM (1980—1985)

Hardfaced cams, on customer core.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
256-00	.354"	254°	108°	OK with stock pistons and springs. Good mid-range. Some top-end. Best in stock motor.	19 btc/55 abc	.005"
	.354"	254°	108°		55 bbc/19 atc	.007"
256-30	.375"	257°	108.5°	Should clear stock pistons, but must check.	20 btc/57 abc	.005"
	.375"	257°	108.5°	Best all around road race. Must use #106-Y.	57 bbc/20 atc	.007"
256-40	.410"	250°	105°	Drag race. Mid-range torque. Great throttle response. Use racing pistons and springs.	20 btc/50 abc	.005"
	.410"	250°	105°		50 bbc/20 atc	.007"
256-20	.417"	268°		Road race. Best for top-end. Use #106-Y + 12:1 or more compression.		
256-60	.438"	258°		Shim under! Drag race. Use #106-Y + 12:1 compression.		
Stock	.335"	236°		Stock XJ-650 for your reference.		
	.305"	232°				

YAMAHA XJ-900 SECA 4-cylinder (1983—1984)

Hardfaced cams, per pair, on customer cores.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
262-00	.375"	257°	107.5°	OK with stock pistons and springs. Street and road cam for improved mid-range and top-end.	21 btc/56 abc	.006"
	.375"	257°	107.5°		56 bbc/21 atc	.007"
262-10	.410"	250°	108°	Must use modified pistons and springs. Race only. Racing pistons and springs needed.	17 btc/53 abc	.007"
	.410"	250°	108°		52 bbc/17 atc	.008"
Stock	.343"	240°	108°	Stock cams for your reference.	12 btc/48 abc	
	.326"	236°	108°		46 bbc/10 atc	

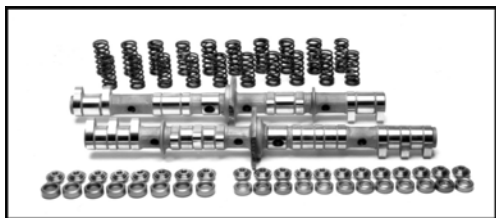
All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.

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YAMAHA FZ-750, FZR-1000 (1986—1992), OWO1, YZF-750



FZ-750 hardfaced cams, per pair, on customer cores.
 FZR-1000 hardfaced cams, per pair, on customer cores.
 R-1029 Wiseco FZR-1000 R 1987-88 12:1 76.5mm 1.5mm o/s.
 R-1041 Wiseco FZR-1000 1989-96 12:1 77mm 1.5mm o/s.
 R-1070 Wiseco FZR-1000 1989-96 12:1 78mm 2.5mm o/s
 resleeving required.

CAM NUMBER (OWO1)	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
FZ-750 FZR-1000						
271-x1 275-x1 (278-x1)	.305" .305"	258° 258°	104° 104°	Race kit cam profile. For short road race courses. Increased top-end and some mid-range gain. Must use racing springs. Must check VTP clearance, .060" is needed.	25 btc/53 abc 53 bbc/25 atc	.007"-.008" .009"-.010"
271-x2 275-x2 (278-x2)	.335" .335"	250° 250°	106° 106°	Must use racing springs and pistons. Best all around road race profile for a mixture of long and short tracks. Best mid-range, peak horsepower and throttle control with this cam.	19 btc/51 abc 51 bbc/19 atc	.007"-.008" .009"-.010"
271-x3 275-x3 (278-x3)	.335" .335"	258° 258°	106° 106°	Long course road race. Best all around in FZR-1000. Must use racing springs and pistons. Best mid-range and top-end in big motors for high R.P.M. race applications.	23 btc/55 abc 55 bbc/23 atc	.007"-.008" .009"-.010"
271-x4 275-x4 (278-x4)	.355" .355"	264° 264°	105° 105°	Drag race, professional road race only. Use 13:1 or more compression and #119-Y springs. Top-end, Daytona style power band.	27 btc/57 abc 57 bbc/27 atc	.007"-.008" .009"-.010"
271-x5 275-x5 (278-x5)	.308" .308"	250° 250°	104° 104°	Should work with stock pistons and springs. Moderate increase in mid-range and top-end.	21 btc/49 abc 49 bbc/21 atc	.007"-.008" .009"-.010"
Stock FZ-750	.297" .292"	243° 241°	103.5° 103.5°	5.75° lobe offset sample timing for reference.	18 btc/45 abc 44 bbc/17 atc	
Stock 1986 FZR-1000	.287" .282"	241° 233°	103.5° 103.5°	8° lobe offset	17 btc/44 abc 40 bbc/13 atc	
Stock 1989 FZR 1000	.299" .315"	244° 243°		8° lobe offset	Stock 1987 FZR-1000	.299" 243° .293" 242°
Stock 1990 OWO1	.301" .317"	251° 251°		7° lobe offset	OWO1 factory race cam.	.304" 258° .320" 258°

YAMAHA XS-1100 (1979—1983—including 2-valve XJ models)

Hardfaced cams, per pair, on customer cores.
 #254-02 drilled cam sprocket, per pair, outright price.
 Wiseco 10¼:1 piston kits (bore into stock cylinders)
 K-1179 = 74mm
 K-1196 = 74.5mm

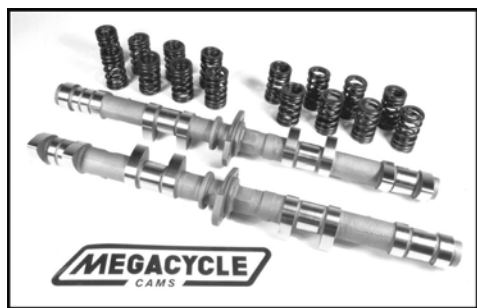
254-00	.354" .354"	254° 254°	110° 110°	OK with stock pistons and springs. Slight increase in mid-range power for street/road riding.	17 btc/57 abc 57 bbc/17 atc	.006" .008"
254-70	.380" .380"	261° 261°	107.5° 108.5°	Best all around road cam. Must use springs #109-Y or #80-0449. Should clear stock pistons, must check, .060" VTP clearance is needed. Great mid-range and added top-end.	23 btc/58 abc 59 bbc/22 atc	.007" .009"
254-20	.417" .417"	268° 268°	107° 107°	Drag race, certain road race - long course, high R.P.M. power. Must use racing springs and pistons.	27 btc/61 abc 61 bbc/27 atc	.007" .009"
254-10	.410" .410"	250° 250°	105° 108°	Shim under tappets, racing pistons and springs are needed. Drag, torque, mid-range throttle response.	20 btc/50 abc 53 bbc/17 atc	.007" .009"
254-60	.438" .438"	258° 258°	108° 108°	Drag race, competition use. Shim under. Must use racing springs and pistons. Max. cylinder pressure.	21 btc/57 abc 57 bbc/21 atc	.007" .009"
Stock	.345"	235°		XJ models - stock timing (more radical than XS stock models)		

MEGACYCLE CAMS

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YAMAHA FJ-1100/1200 (1984—1993)



Hardfaced cams, per pair, on customer cores.
 #30-1017 K.P.M. valve springs (set of 16).
 Use stock tops or #30-1019, shim under.
 #30-1020 K.P.M. cam followers, shim under.
 Needed with cams over .400" lift.
 #30-1019 K.P.M. titanium top retainers for shim under.
 Needed with cams over .400" lift.
 K-1188 Wiseco 10¼:1 piston kit.
 R-1188 Wiseco 12:1 77 mm.
 K-1219-1 Wiseco 10¼:1 78 mm (1 mm o/s FJ-1200).
 K-1250 Wiseco 10¼:1 with sleeves.
 K-1314 Wiseco 10¼:1 with sleeves.

All timing is checked at .040" (1mm) with zero checking clearance.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	VALVE CLEARANCE
268-00	.375"	257°	104.5°	OK with stock pistons and springs, we recommend springs #30-1017. Improved throttle response and added top-end power.	24 btc/53 abc	.006"
	.375"	257°	106.5°		55 bbc/22 atc	.008"
268-x6	.355"	264°	106°	Drag race performance, needs high compression piston and racing springs. Top-end power.	26 btc/58 abc	.006"
	.355"	264°	106°		58 bbc/26 atc	.007"
268-x7	.380"	261°	105.5°	Best all-around road-race performance. Use springs #30-1017 and high performance pistons.	25 btc/56 abc	.006"
	.380"	261°	106.5°		57 bbc/24 atc	.008"
Factory race	.355"	256°		OK with shim on top.		
	.347"	249°				

All remaining cams in this series require shim under type cam followers as well as racing springs and tops.

268-x2	.410"	250°	109°	<u>Shim under</u> . Racing use where mid-range power is most important.	16 btc/54 abc	.006"
	.410"	250°	106°		51 bbc/19 atc	.008"
268-x3	.413"	266°	108°	<u>Shim under</u> , racing piston 12:1 or higher, racing valve springs. Drag race and other.	25 btc/61 abc	.006"
	.413"	266°	108°		61 bbc/25 atc	.008"
268-x8	.422"	286°	108°	Drag race - 1300cc +. Use all race components.	35 btc/71 abc	.006"
	.422"	286°	108°		71 bbc/35 atc	.008"
268-x4	.428"	264°	109°	<u>Shim under</u> , racing pistons, springs. Maximum mid-range for competition drag race.	23 btc/61 abc	.006"
	.428"	264°	109°		61 bbc/23 atc	.008"
268-x5	.404"	238°	108°	Turbo charged motors. <u>Shim under</u> , racing pistons and springs.	11 btc/47 abc	.006"
	.404"	238°	108°		47 bbc/11 atc	.008"
Stock	.315"	233°	For your reference	sample at 104.5° LC	12 btc/41 abc	
	.313"	232°		sample at 104° LC	40 bbc/12 atc	

All cams on this page can be installed at several settings, with lobe centers from 104° to 109°. We have shown timing at the best all around setting. You may want to recompute the settings at a higher lobe center for top-end power, or at a lower lobe center for street or low-end power requirements. Duration divided by 2 minus LC = intake open.

YAMAHA V-MAX 1200 (1985—1992) and Royal Star (1995)

Hardfaced cams, per set of four, on customer cores.
 #30-1017 K.P.M. valve springs, use stock tops.

CAM NUMBER	VALVE LIFT	DURATION AT .040"	LOBE CENTERS	DESCRIPTION AND APPLICATION	INTAKE OPEN/CLOSE EXHAUST OPEN/CLOSE	RUNNING CLEARANCE
274-00	.375"	257°	106.5°	Designed for stock pistons, must check.	22 btc/55 abc	.006"
	.375"	257°	106.5°	Improved mid-range, some added top-end. Mini sprint 1/8 & 1/4 mile. Use #30-1017.	55 bbc/22 atc	.008"
274-x7	.354"	254°	106°	OK with stock pistons and springs.	21 btc/53 abc	.006"
	.354"	254°	106°	Strong mid-range torque.	53 bbc/21 atc	.008"
274-x2	.410"	250°		Race only. Modified pistons, springs and <u>shim under</u> followers.		
Stock	.324"	241°		Intake and exhaust same. For your reference.		
Royal Star Cams		*****		These are the profiles used in the Vance and Hines project bike:		
274-x11	.306"	213°		Intake cams Vance and Hines project bike		
274-x12	.325"	217°		Exhaust cams Vance and Hines project bike		
Intake	.263"	196°	100°	Stock Royal Star	2 atc/18 abc	
Exhaust	.306"	213°	109.5°	for reference.	36 bbc/3 btc	

All timing is quoted at .040" lift at the valve with zero checking clearance unless otherwise stated.