4AG INNER SHIM KIT

TODA RACING

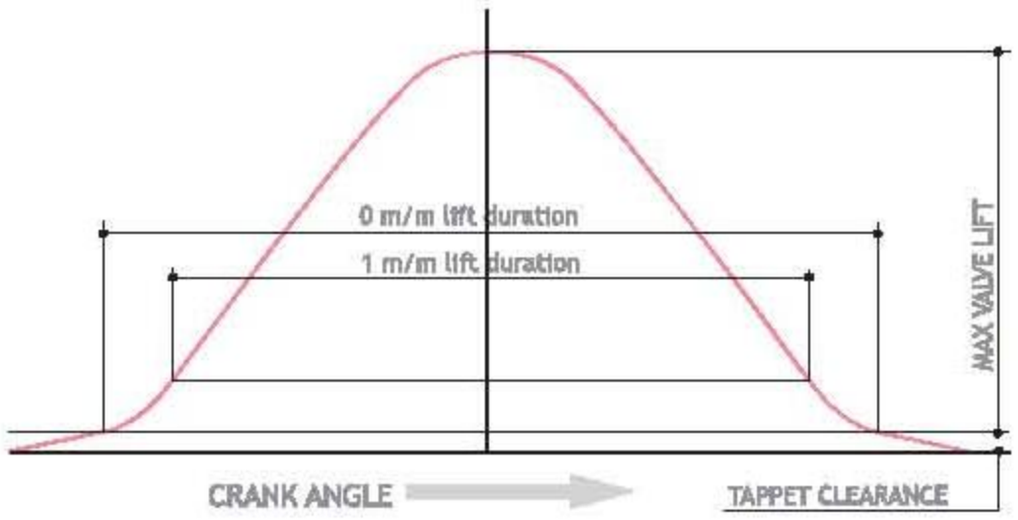
FIGHTEX
Motor Dream.

K20A CAMSHAFTS

DC2 CAMSHAFT SET

ENGINE TYPE : K20A
PARTS NUMBER : 14111-K20-02A

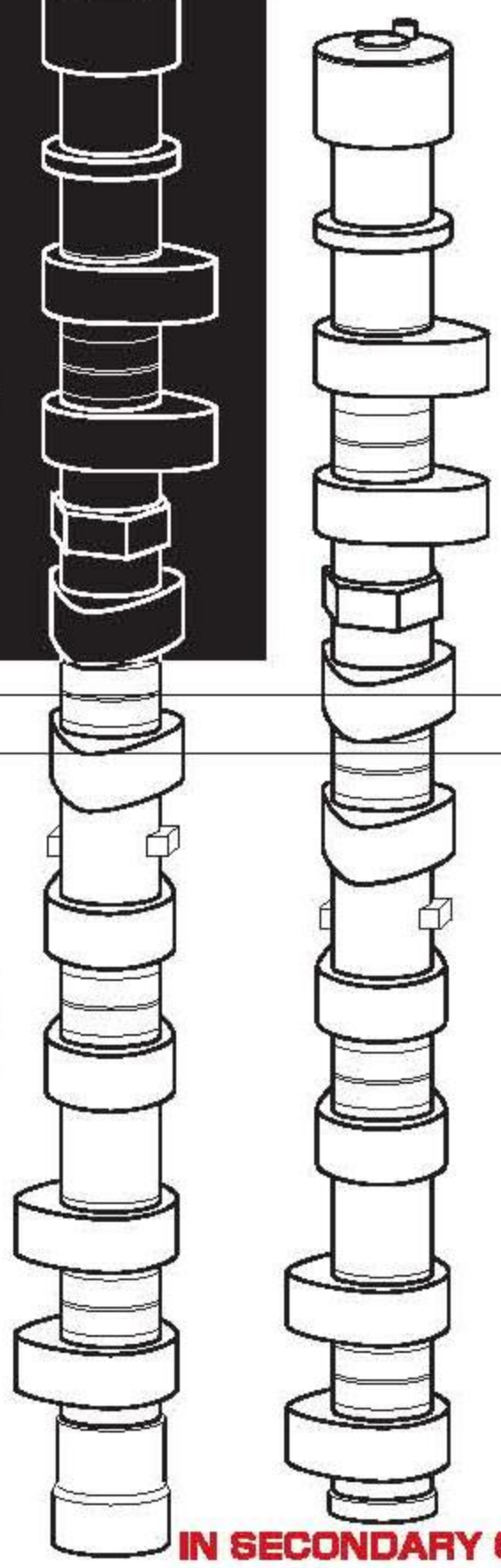
DURATION ANGLE IN	297
HIGH CAM VALVE LIFT	12.5
SECONDARY CAM VALVE LIFT	7.1
PRIMARY CAM VALVE LIFT	7.4
TAPPET CLEARANCE (NORMAL TEMPERATURE)	0.23



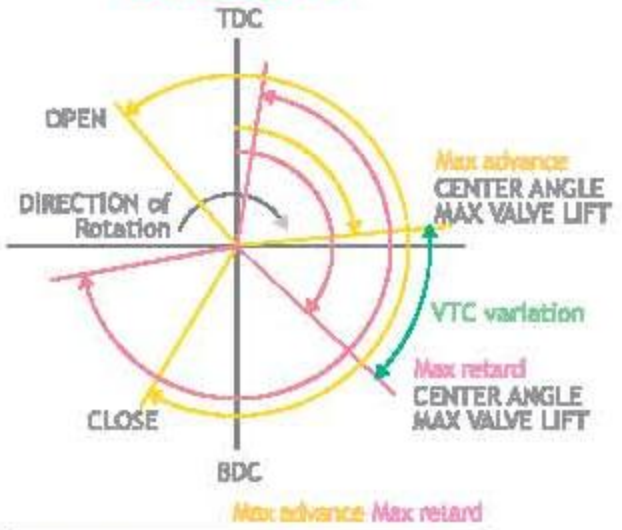
HIGH POWER PROFILE CAMSHAFT

FREE ADJUSTING CAM PULLEY

Ride of Dreams — TODA POWER PRODUCTS

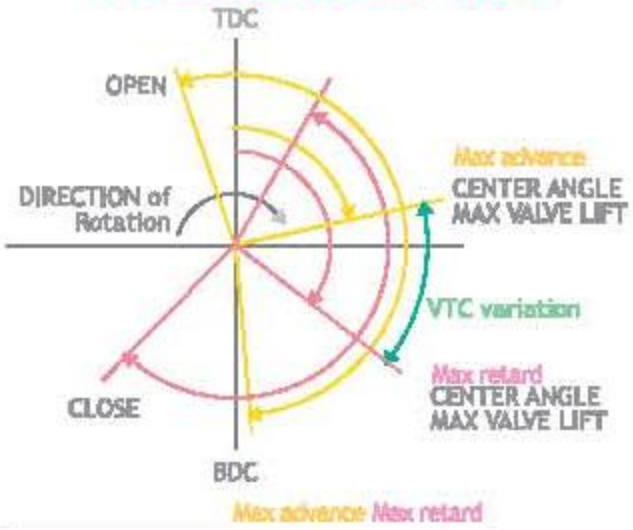


IN HI CAM



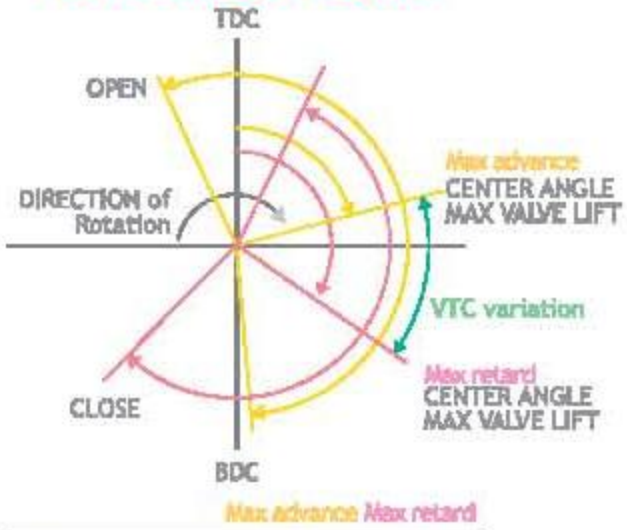
	Max advance	Max retard
INTAKE OPEN BTDC	41.5	-8.5
INTAKE CLOSED ABDC	30.5	80.5
CAM TOP CENTER	84.5	134.5
DEGREES	252	252

IN SECONDARY CAM

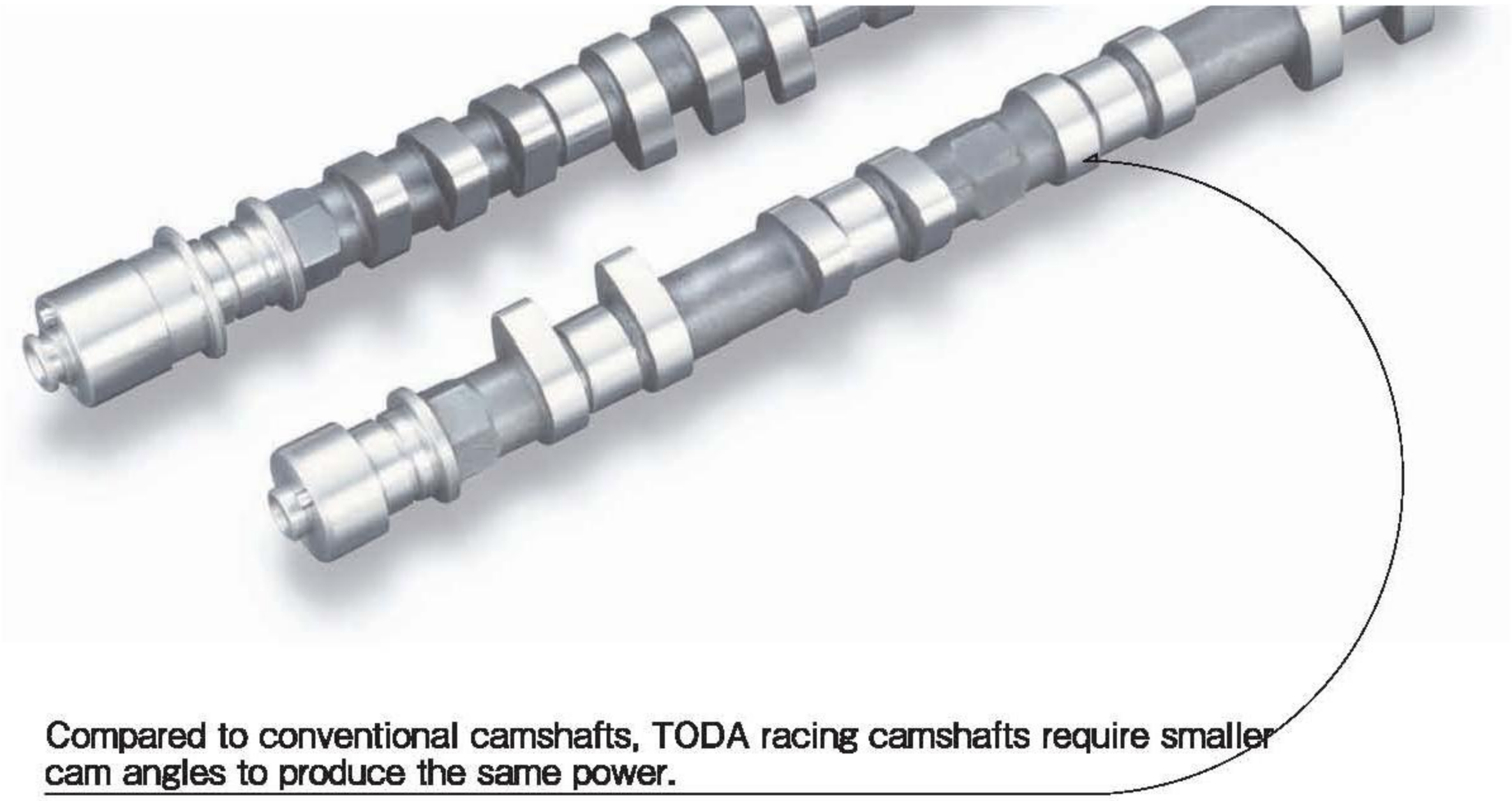


	Max advance	Max retard
INTAKE OPEN BTDC	20.0	-30.0
INTAKE CLOSED ABDC	-5.0	45.0
CAM TOP CENTER	77.5	127.5
DEGREES	195	195

IN PRIMARY CAM



	Max advance	Max retard
INTAKE OPEN BTDC	25.0	-25.0
INTAKE CLOSED ABDC	-5.0	45.0
CAM TOP CENTER	75.0	125.0
DEGREES	200	200



Compared to conventional camshafts, TODA racing camshafts require smaller cam angles to produce the same power.

All production is done in house,so a high standard of quality is assured.

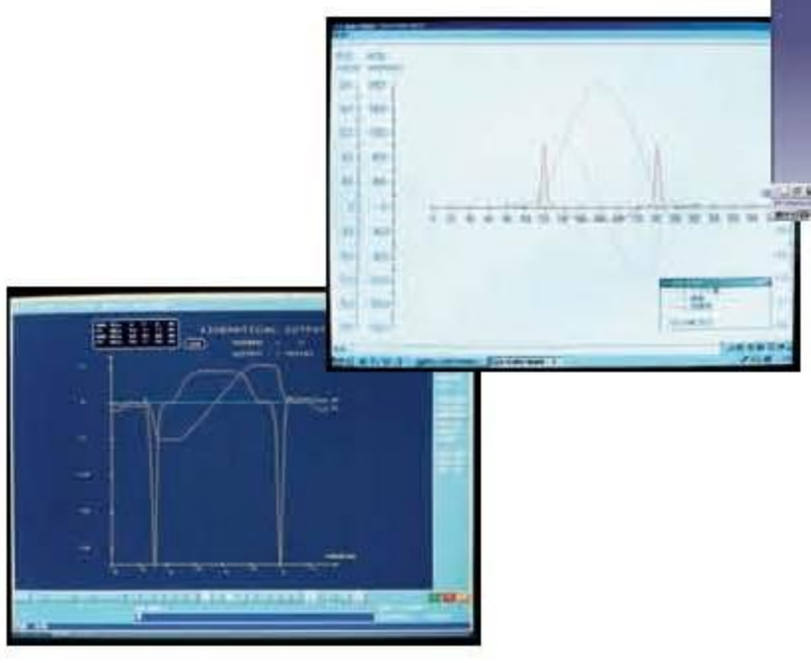
HIGH POWER PROFILE CAMSHAFT

■ Opening Valve Rate Improved — By improving the opening valve rate via the smooth acceleration and the smoothing of the transition from closed to open the period of time that the valve is open for is greatly improved. So by using the principals of quick but smooth actions more air can be drawn through the engine.

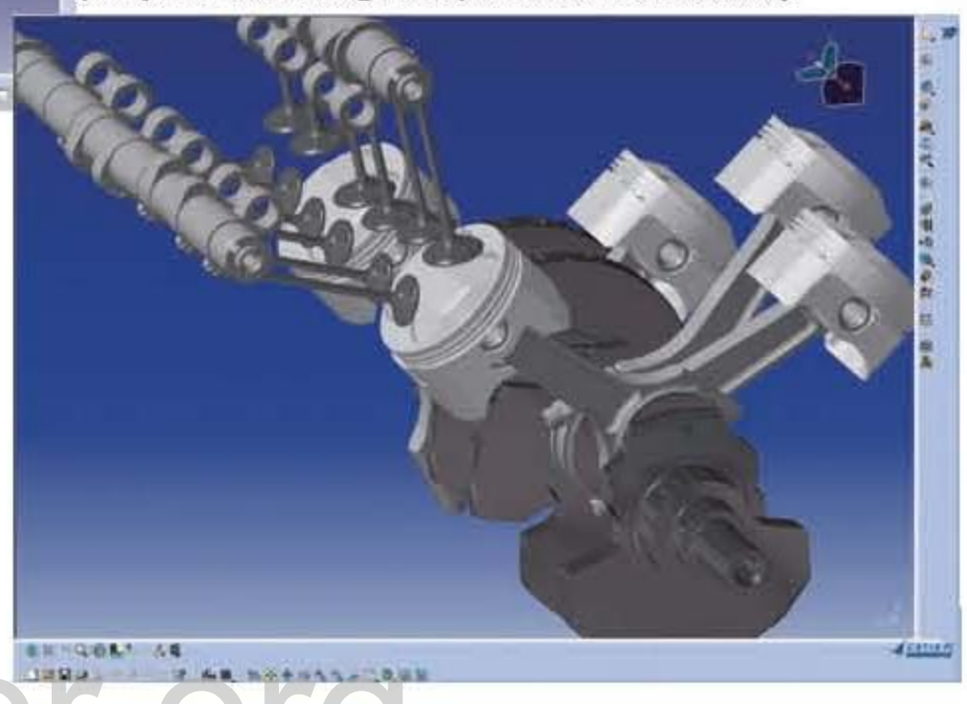
■ Non-symmetrical — The cam profile of both the opening and closing phases of the valve lift are not symmetrical,as the closing phase is extended slightly reducing the impact of the valve when it returns to the seat. Making the valve return quietly to the seat, reduces friction, improves reliability and at the same time reduces valve train noise.

■ Material quality — We do not only pursue improvements in power output (via, mechanical design) but we also pursue material quality, in particular the relationship between the contact face of the cam, rocker arms and cam followers, so helping to reduce friction further. We also conduct research into the thermal process on the surface of the cam.
All this data forms the basis for the production of many prototypes where bench tests are carried out alongside actual racing. With everything done in house there is no room for compromise and so you can only benefit from our constant search for improved performance.

CNC(computer numerical control) camshaft finishing machine.



Develops with the use of CAD/CAM
(computer-aided design/computer-aided manufacture)



FREE ADJUSTING CAM PULLEY

Duralumin A-7075 + Hard anodize equals Light Weight High Rigidity High Accuracy

- High-strength and light weight anodized Duralumin A-7075 is extensively used in both the pulley and the inner plate. Creating a cam pulley that is highly accurate, super light and highly rigid.
- Accurate valve timing for all situations.
- Can be used with the original camshaft.
- The adjustments can be carried to 1 deg of the crank angle. (0.5 deg of the cam angle)

HIGH ACCURACY

Differing from the standard sintered one piece pulleys. The Toda adjustable cam pulley is made up of two sections (pulley and inner plate) allowing independent movement between the two. This freedom combined with the vernier type graduations (1 deg of crank angle, 0.5 of cam angle) enables the timing to be adjusted accurately giving maximum results.

SUPER LIGHTNESS

Duralumin A-7075 is used extensively for both its lightness and its high rigidity in both the plate and the cam pulley. With both improved design and material changes an average weight saving of 30% is found. Along with weight reductions comes a reduction in inertia so increasing the engines responsiveness.

HIGH RIGIDITY

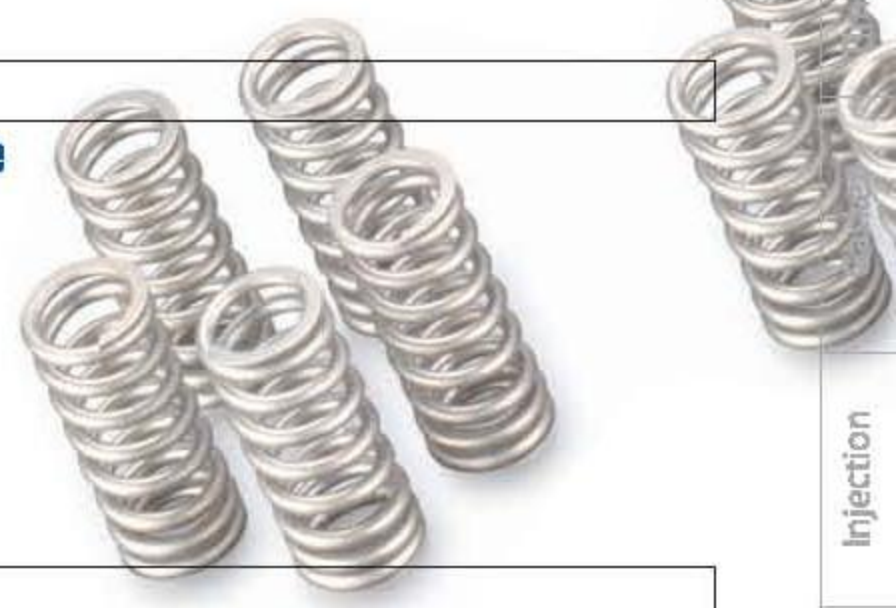
By using Duralumin A-7075 and good design, Toda pulleys have high rigidity. High rigidity leads to improved timing accuracy for either standard or high performance camshafts. Anodized to prevent wear especially form contact with the belt.

HIGH PERFORMANCE VALVE SPRING

Toda Up Rated Valve Springs help the cam and your engine to operate to the max.

- The progressive pitch coil springs are used to prevent valve spring surging and improve the natural frequency.
- High strength Si-Cr steel & ultra high strength Si-Cr steels are used.
- Designed for high lifts.
- Depending on engine type egg shaped wire is utilized.

EGG - SHAPED See P044



LASH ADJUSTER LOCK

The lock lash adjuster is designed to convert the hydraulic tappet into a solid tappet releasing more performance from the camshafts.

The objective of the standard valve lash adjuster is quiet running and minimum maintenance. The standard lash adjuster can leak, this can lead to problems in maintaining the required clearance, leading to a drop in performance.

Note:
To enable the full potential of the cam to be realized oil pressure tappets should be replaced by solid tappets.

※Use with TODA High Power Cam.

INNER SHIM KIT

Inner-shim KIT removing weight from the moving parts of the valve train reduces inertia and friction allowing the engine to rev higher.

Replacing the original outer shim designed tappet with an inner shim design not only helps in reducing friction but improves security.

※ Strongly recommended for competition engine.

B16A/B16B/B18C

B16A/B16B/B18C
High Power Profile Camshaft
IN ¥46,000 / EX ¥46,000

All three-cam profiles have been redesigned to increase power through out.

IN ■14111-B16-0□□×1
EX ■14121-B16-0□□×1

B16A/B16B/B18C Camshaft

Part No	Angle (valve lift)		Price
★14111-B16-00A	220(6.0) / 290(11.6) / 240(9.0)	IN	¥46,000
★14121-B16-00A	220(5.5) / 280(11.2) / 240(8.5)	EX	¥46,000
★14111-B16-02A	220(6.0) / 295(12.0) / 240(9.0)	IN	¥46,000
★14121-B16-02A	220(5.5) / 285(12.0) / 240(8.5)	EX	¥46,000
14111-B16-00B	250(11.0) / 295(12.0) / 250(11.0)	IN	¥46,000
14121-B16-00B	250(11.0) / 285(12.0) / 250(11.0)	EX	¥46,000
14111-B16-00C	250(11.0) / 295(12.5) / 250(11.0)	IN	¥46,000
14121-B16-00C	250(11.0) / 295(12.5) / 250(11.0)	EX	¥46,000
14111-B16-02C	250(11.0) / 300(12.5) / 250(11.0)	IN	¥46,000
14121-B16-02C	250(11.0) / 300(12.5) / 250(11.0)	EX	¥46,000

※The cam angles for Primary, Mid, Secondary are indicated.
※TODA Up Rated Valve Springs required.
★ Can idle with standard ECU.

B16A/B16B/B18C
Heavy Duty Oil Pump
¥22,000

Made from high spec material and machined by CNC, to give you improved high-speed reliability. Standard Honda oil pumps are made from sintered alloy, this is fine for standard use but, for high performance applications, reliability is questionable. (Size φ80mm or φ84mm)

φ80mm■15131-B16-001
φ84mm■15131-B16-000

B16A/B16B/B18C
Free Adjusting Cam Pulley
IN·EX Common ¥13,000 ×2

In all sections duralumin A-7075 is used.

IN·EX common ■14211-B16-001×2

The adjustment can be carried out to 1 deg of the crank angle.
● With a vernier degree scale.

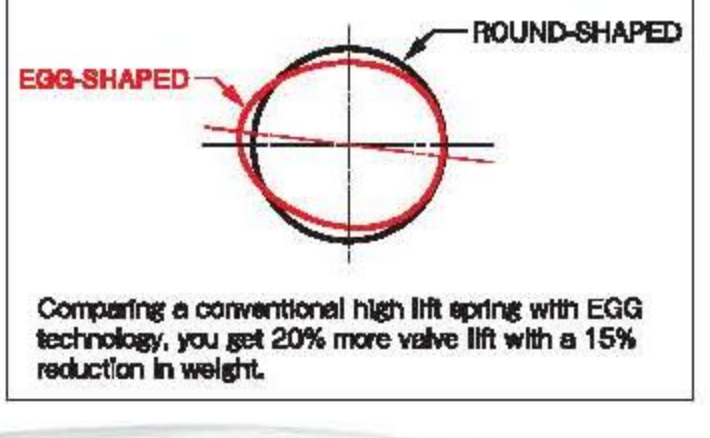
B16A/B16B/B18C
Up Rated Valve Springs
¥36,000

EGG -SHAPED

■14760-B16-000

● Remodeled natural frequency and improved valve spring material. These progressive pitch coil springs have been redesigned to give valve lifts of up to 12.5mm safely.
● Egg shaped springs are used to achieve the required high lifts safely.
● Can be used up to 12.5mm of lift.

EGG -SHAPED



Comparing a conventional high lift spring with EGG technology, you get 20% more valve lift with a 15% reduction in weight.

B16A(EG6)

B16B(EK9)

■ Over 5000rpm, VTEC KILLER CAM developed only for Racing.

B16A/B16B/B18C VTEC KILLER CAMSHAFT
High Power Profile Camshaft
IN ¥56,000 / EX ¥56,000

VTEC KILLER

Our B engine camshaft has been redesigned in response to the requests made by our B type race engine users.
Valve lift 12.0→12.5(IN)、11.5→12.0(EX),
Higher lifts makes for more powerful performances.

Design

- The primary and secondary lobs are designed to be the same size.
- The diameter of the main shaft has been made more uniform in size alongs with a hollowed out inside. This gives you a camshaft that has increased rigidity and weight savings for improved reliability and more accurate valve timing.
- Optimized surface treatment designed to prevent wear, sticking as well as helping in the early stages of running in.

Characteristics

- The mid rocker cam is removed & both pins are changed, reducing the valve train mass, for better response.
- Disabling the VTEC system removes fluctuations in oil pressure system, securing a reliable oil feed to all the main moving components.

※Lost motion valve should be removed.
※Should be used inconjunction with quad throttle (TODA) bodies for best effect.

IN ■14111-B16-□□□×1
EX ■14121-B16-□□□×1

VTEC KILLER CAMSHAFT

Part No	Angle (valve lift)		Price
14111-B16-006	285 (12.5)	IN	¥56,000
14111-B16-011	295 (12.5)	IN	¥56,000
14111-B16-016	305 (12.5)	IN	¥56,000
14121-B16-006	285 (12.0)	EX	¥56,000
14121-B16-011	295 (12.0)	EX	¥56,000
14121-B16-016	305 (12.0)	EX	¥56,000

※Standard valve springs cannot be used.
※TODA Up Rated Valve Springs required.
※Standard ECU cannot be used.

B16A/B16B/B18C Required accessories for VTEC KILLER cams
High Power Profile Camshaft Set(with plugs & spacers)
VTEC KILLER CAMSHAFT KIT ¥134,400
including cams, plugs & spacers

Exhaust Head Plug ¥3,000 → Exhaust cam rear blanking plug. An aluminum plug with O-ring.
Spool Valve Cover ¥15,000

Rocker Arm Plugs
■14651-B16-000 ¥1,000 ×8
Rocker Arm Spacers
■14632-B16-000 ¥1,800 ×8

※ Rocker arm spacer arrangement.

※Camshafts & Rocker Arm Spacers installation.

※ Spool Valve Cover & Exhaust Head Plug installation image.