

HONDA

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Classic Cycle City

Reinforced Heavy Duty Primary Chains

40 years of waiting for a solution are over



The Honda CB750 SOHC Engine Problem:

When you look at the mechanics of the dual-row chain, it is apparent that the cost of two cheap single chains was a guiding factor of the design. The stock primary chains, made by RK, are state of the art 1968 and were designed for use in gasoline engines making around 50 hp at the rear wheel. Higher than stock RPMs or an increased displacement producing more horsepower soon showed that the original chains were the weak spot in the CB750 SOHC engine.

With brand new stock RK primary chains, the lower crank case to chain tensioner sag is 65.00 mm.

In a stock engine (around 50 hp

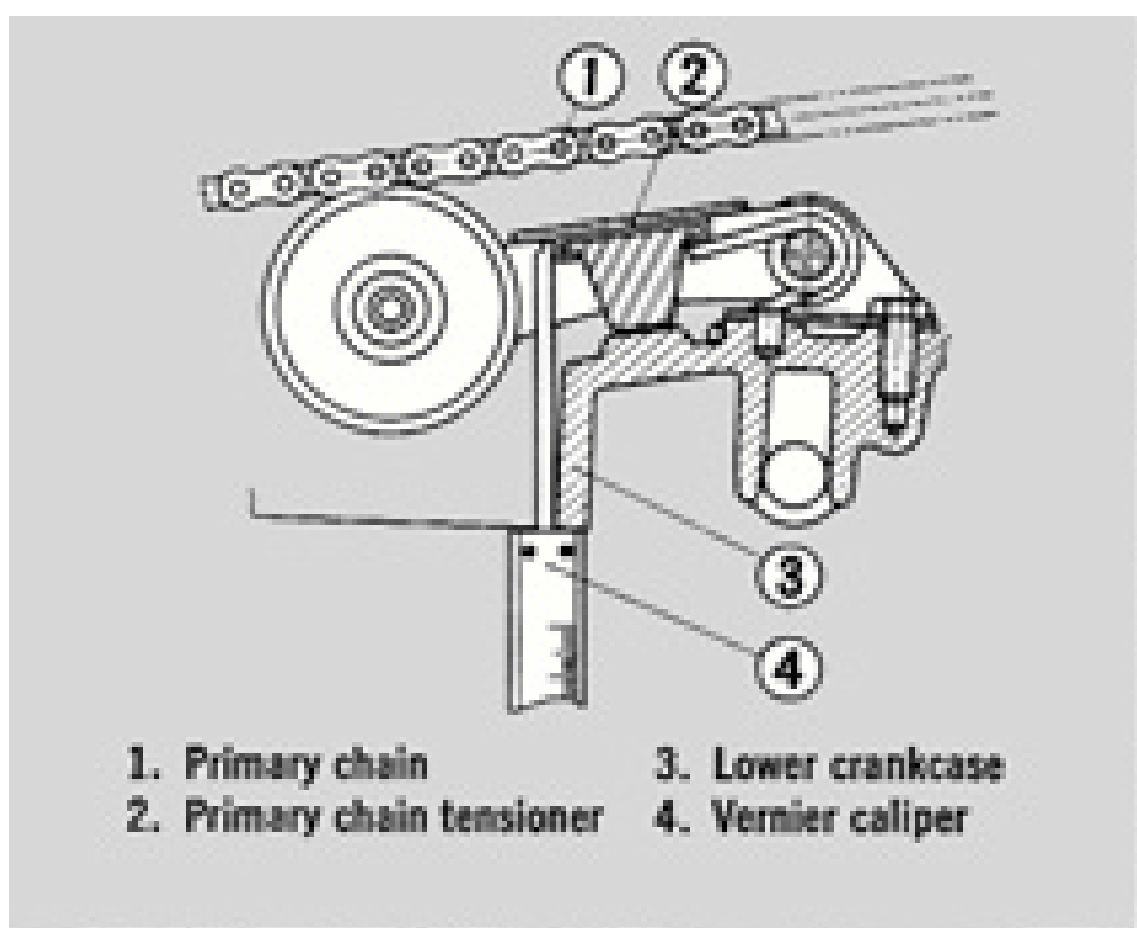
at the rear wheel), stretch after 2-3 races results in 67.00-68.00 mm sag. In a tuned race SOHC engine (100 hp at the rear wheel), we measured a 71.00 mm! sag after three races.

Replacement of the primary chains is highly recommended by Honda at 70.00 mm sag in order to avoid engine damages. Since our test results confirm a rather short life for the stock primary chains.

With our brand new heavy duty primary chains, the lower crankcase to chain tensioner sag is 63.70 mm, so our high performance primary chains stretched only 1.30 mm to 65.00 sag after three races in a 91.2 hp SOHC engine, we did not reach the sag limit. Neither did we, in road tests of over 60.000 miles with stock engines, reach the specified sag limit. We highly recommend the use of our chains in stock engines, too. The limited stretch of the chain will reduce the primary chain rattle.

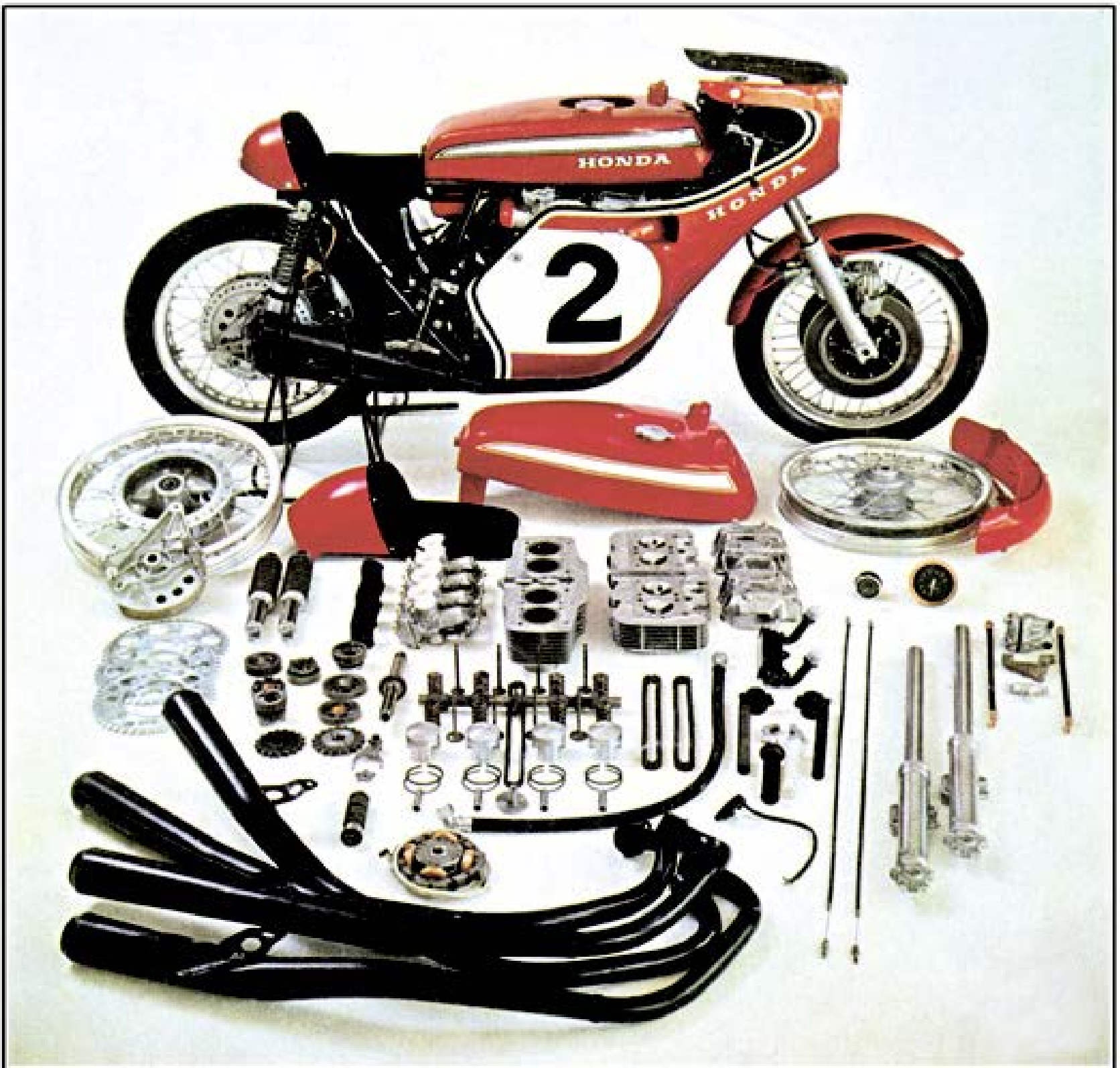
Since the CR-race-kit-chains became no longer available (if they ever were available to the public), countless race teams around the globe have been sidelined with broken drivelines.

Fluctuating tension is what caused this, as engineers found out. Chains do not break because the tensile strength is exceeded, but because of material fatigue due to excess fluctuating tension.



In other words, the loads imposed on the chains during deceleration rather than acceleration, make them break in the worst case, and stretch over the limit in the best case.

Honda's Mindbender: 90hp CB-750 Kit



The CR 'kit bike' primary chains which Honda offered for the CR750 were much superior to standard OEM RK chains and minimized breakage when replaced at specified intervals in racing.

The Honda CR750 'Kit Bike' Primary Chains:

European Endurance Teams such as Eckert and Meyer pioneered the use of the Hi-Vo chain conversion, which uses a crank from a CB750 A (automatic) and parts from a Gold Wing clutch drive, along with special Hi-Vo chain and sometimes with a customized special chain tensioner. But this was **NOT** the final solution!

They broke these Hi-Vo chains at the same rate as they broke the standard RK OEM primary chains! The problem is the high RPM

of the crank, in direct drive with the clutch hub driven sprocket. Hi-Vo chains are not designed to handle such high RPMs

... they can't do the job very well for a longer period.

So this solution is

- for the classic racers out there –

not the most cost-effective way to go.



'I am racing the SOHC-Honda for years in Classic-Racing - constantly striving to get a more powerful engine, and ending up with 91,2hp at the rear-wheel.

I had to go the 'Hi-Vo-chain-way' in order to avoid chain-failure.

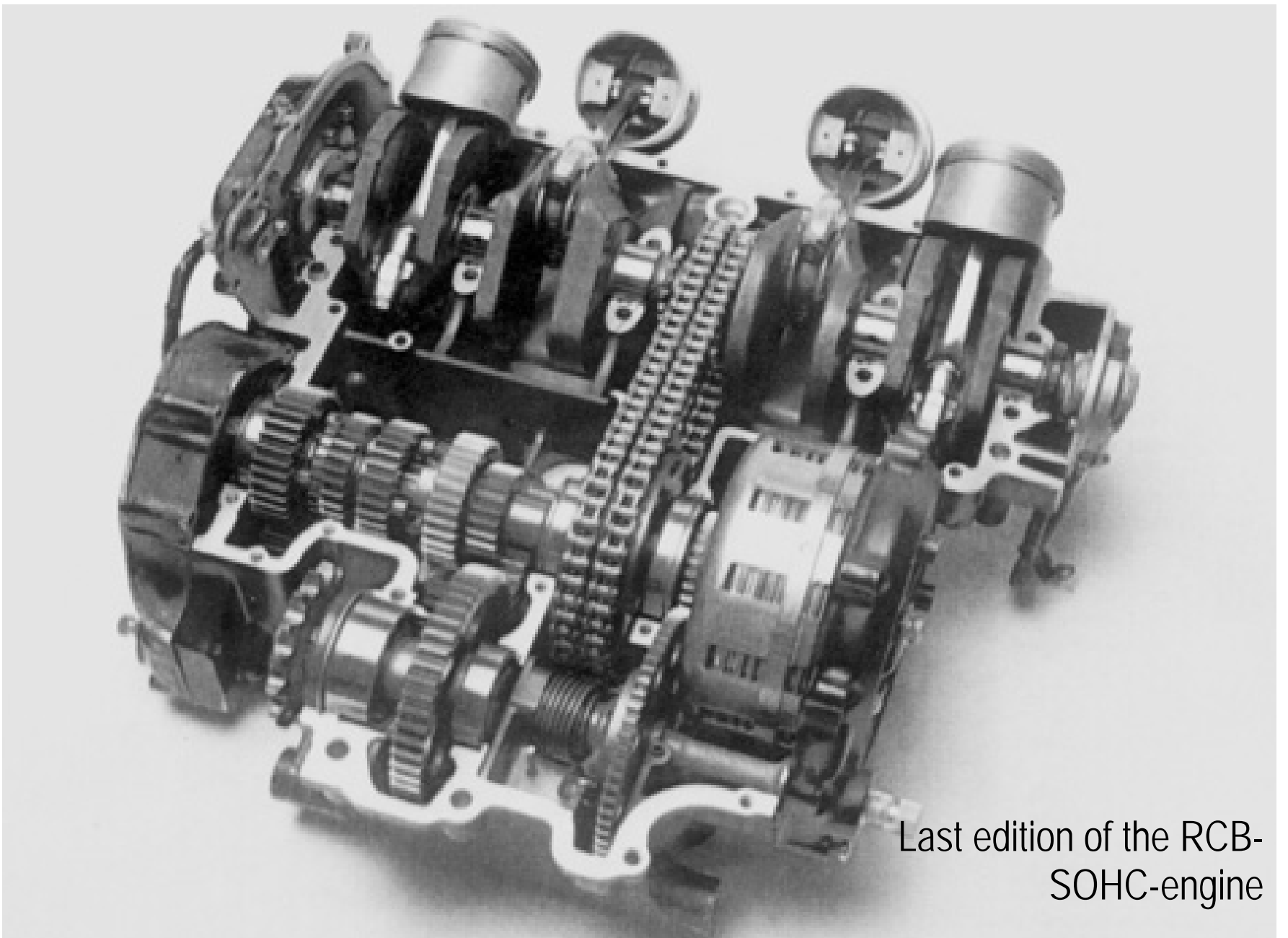
This involves lots of effort, work and money. The system does work and does extend time between changing chains and

I never broke any chain with Hi-Vo- primary chains, but replace on a carefully timed schedule,

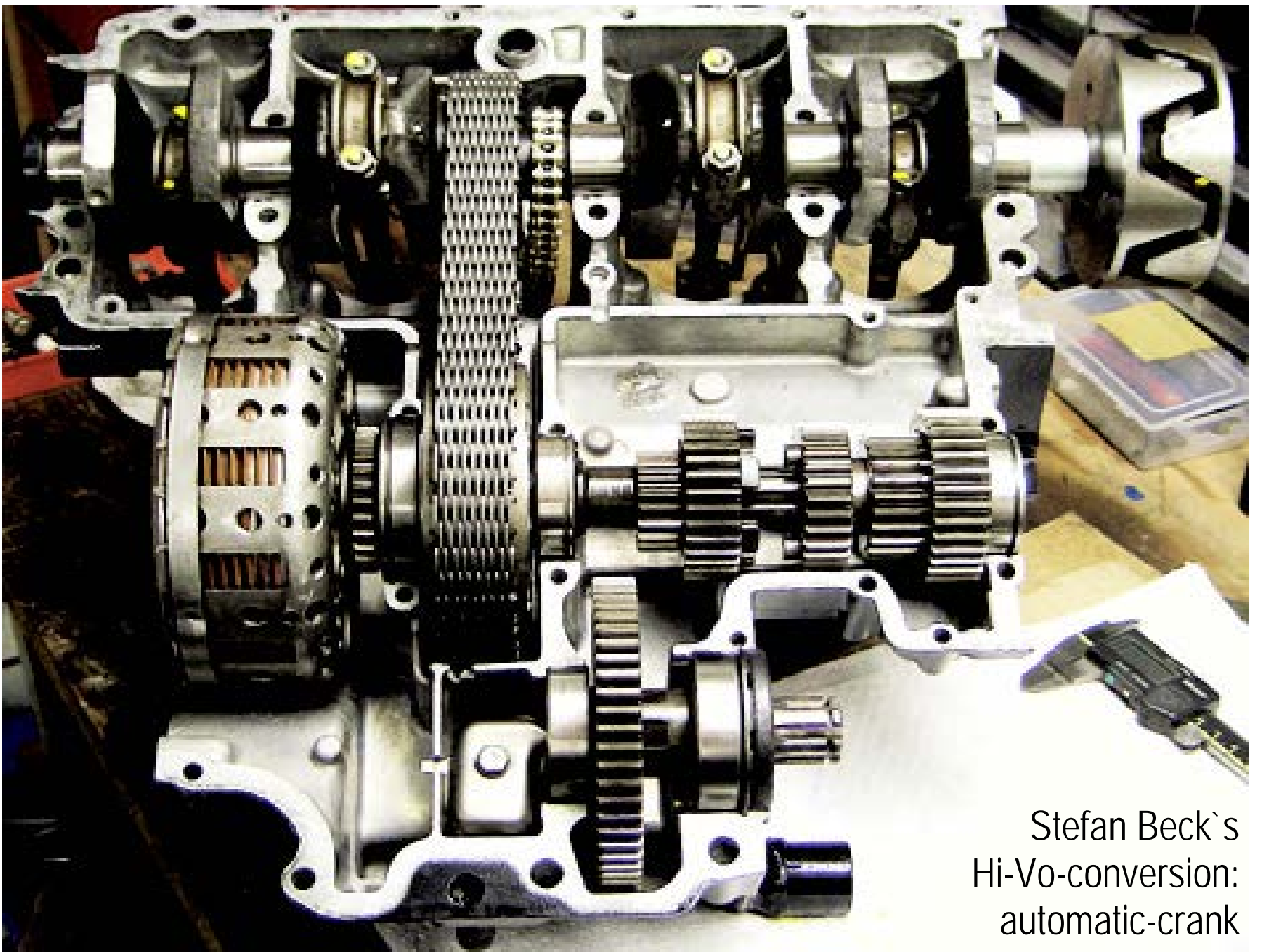
ie: once a year...'

Stefan Beck, Germany, Egli-Honda 888

The Previous Honda CB750 Four / SOHC Engine Work-Around



Last edition of the RCB-SOHC-engine



Stefan Beck's
Hi-Vo-conversion:
automatic-crank

To make the Hi-Vo chain work, it needs two things: a complex tensioning system and an oil supply provided from the rear oil pressure switch area. This is a nightmare for any privateer - even the 'big' teams struggled to make it work!



Dick Mann's win in Daytona on the CR 750 inspired many around the world and gave birth to a new breed of racer...still nowadays paraded on the race-tracks



The Ultimate Solution: The Honda CR750 / CB750 Superduty Primary Chains



OEM-chains use "split roller" bushings and the bushings are not nitrated

Technical background:

These chains were developed in 2007 using state of the art technology, produced for lifetime durability in highly stressed chain drives and were designed for use in the Honda CB750 Four K0 - K7 and F1 - F2 engines.

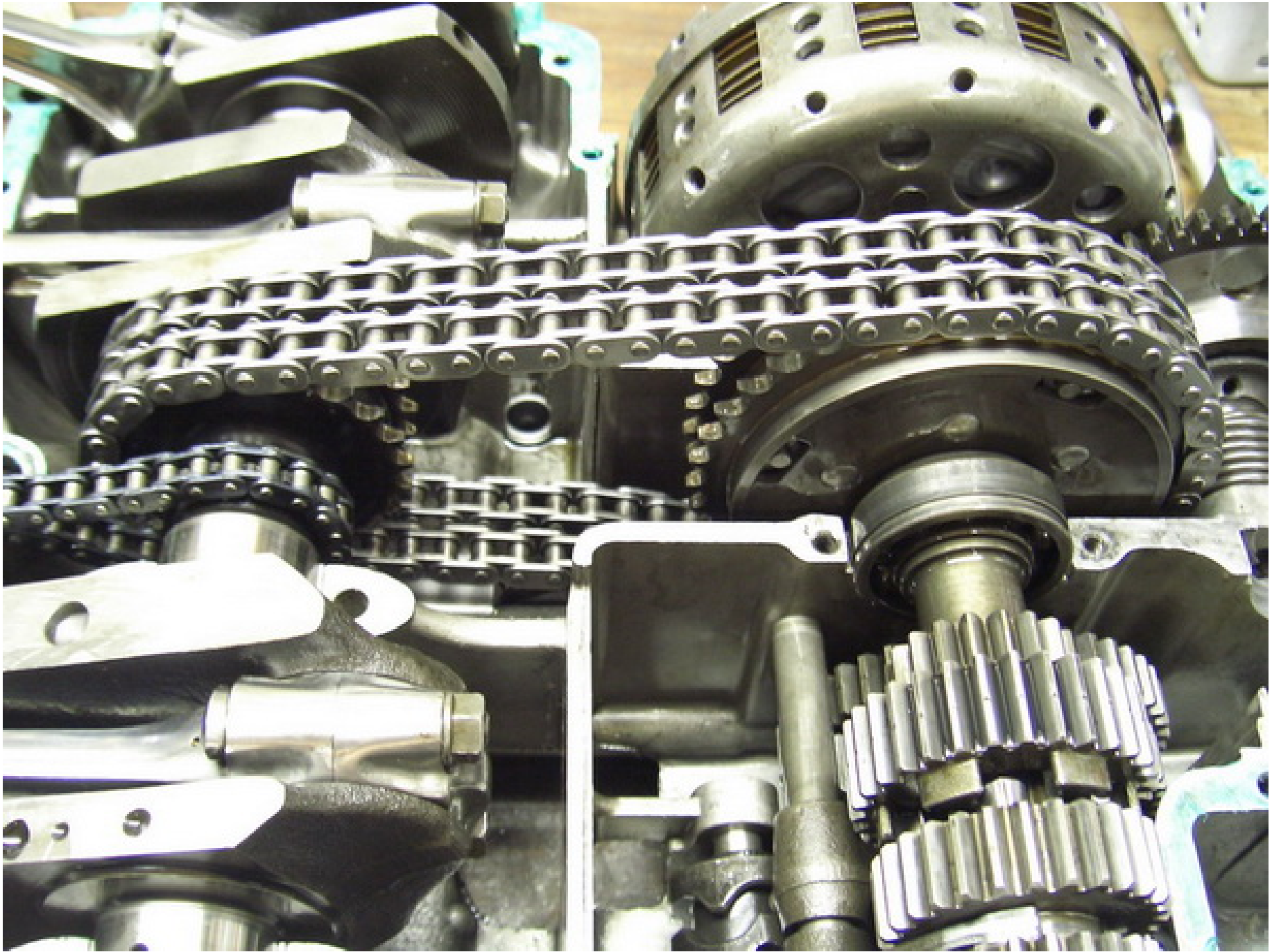
The important benefits of our new chains are:

- improved maximum fluctuating tension due to precisely manufactured seamless bushes and stronger bolts.
- higher load capacity offering more reliability against chain breakage in high performance engines.
- better wear behavior due to larger joint surface and extremely wear-resistant surfaces of bushes and bolts.
- minimized chain stretch over the whole engine life.

To sum it all up:

The design limitation on the HONDA CB750 SOHC engine has been lifted with a cost-effective component that is easily installed and duplicable over any number of engines

These newly developed top class heavy duty primary chains for the CR750/CB750 engine are made with an equal chain pitch and length to the OEM chains. Our new and stronger primary chains will go right in your engine and allow use of the Honda stock primary chain tensioner. This solution works!



The heavy duty primary chains assembled in a CB750 engine.



Advantages of the new primary chains:

- A maximum tensile strength of 15.5 kN per chain and maximum fluctuating tension of 6.3 kN per chain.
- Bolts have 15% more surface area than RK primary chains.
- Manufactured with seamless, nitrated and bead blasted bushings.
- bolts have heat treatments.
- Less weight!

Weight comparison:

reinforced heavy duty chains: 742.2 grams. (each 371.1 grams.);

stock RK chains: 754.2 grams (each 377.1 grams);

Hi-Vo (automatic chain): 888.0 grams.

Although our reinforced primary chains are much stronger, they reduce the rotation masses more than 14.00 grams in comparison with the stock RK chains and more than 146.00 grams in comparison with the Hi-Vo Chain from the automatic engine.



Inner plate treatment is finely struck and not wasted



Seamless, nitrated bushes. Bolt diameter is 0.60 more in comparison with stock primary chains



Inner width of inner plate is 0.4 mm more in comparison with stock RK chains. Please note the rough RK chain surface.



Measured stretch of the stock RK chains is 1.00 % / 60.000 miles.
Our chains stretch only 0.20% / 60.000 miles.



Exact length match of the stock RK chains

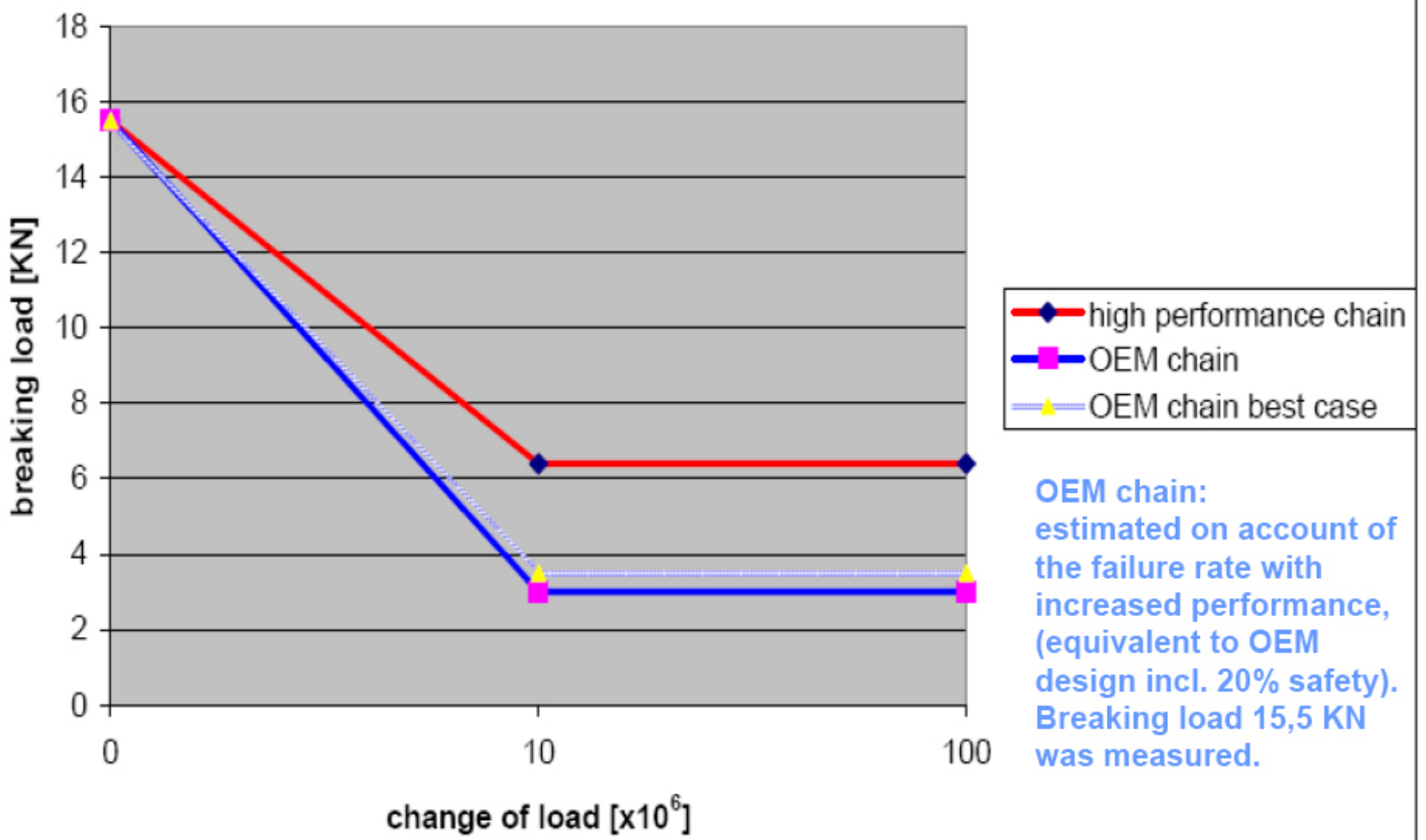
Data sheet & comparison

Honda CB750 SOHC stock RK primary chain vs.
Classic Cycle City reinforced heavy duty primary chain

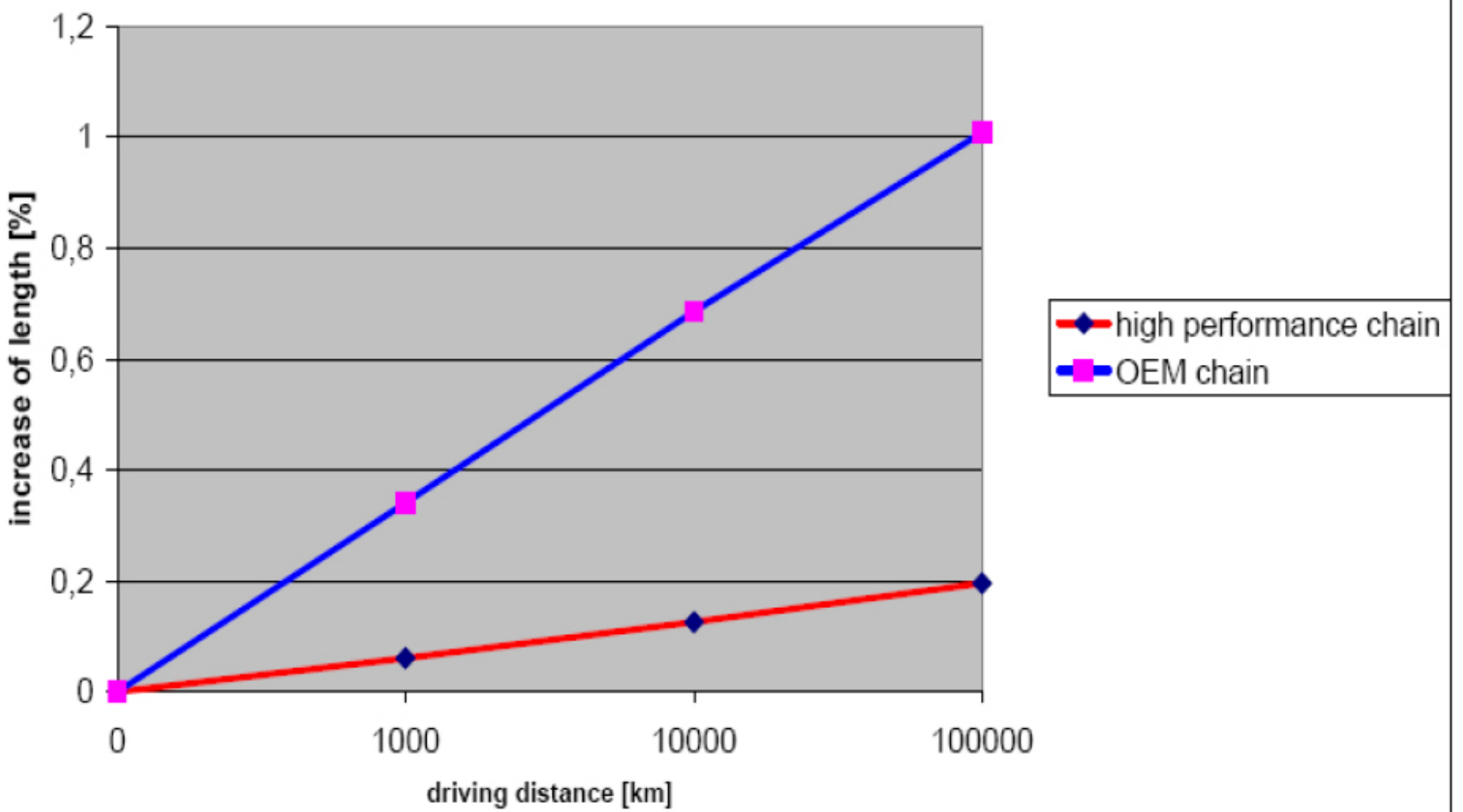
Comparison: Primary chain Honda CB 750 SOHC (RK) and reinforced heavy duty primary chain for Honda CR750 and CB750 SOHC K0-K8, F-F3 (1969-1978)

	stock primary chain (RK) CB750 SOHC	heavy duty primary chain CB750 SOHC
bolt treatment	hardened	chemical and heat treatment that builds up extremely wear resistant chromium carbide))
bushes	with seam (not directed)	precisely seamless (high bushes stability and shape accuracy)
bush treatment	hardened	nitrated (extremely wear resistant inner joint surface and outer edge)
inner plate treatment	coarsely stamped, waisted	bead blasted to reduce residual compressive stress and improve durability, fine stamped, not waisted
outer plate treatment	coarsely stamped, waisted	bead blasted to reduce residual compressive stress and improve durability, fine stamped, not waisted
tensile strength	15.26 KN / 1.5296 kp (tested)	15.5 KN / 1.5806 kp (tested)
fluctuation tension	3.0 KN / 0.30591 kp (enough contingency fund for stock engines, extrapolated by loss at higher load)	6.3 KN / 0.64242 kp (par value) (appr. +100% in comparison with Honda's RK stock chain)
elongation (100.000 km / 62.000 miles)	1.00 %	0.20 %
weight (each)	377.1 gr. / 13.302 oz	371.1 gr. / 13.090 oz

comparison durability / primary chains CB750 SOHC [per chain]



comparison resistance to wear / primary chains CB750 SOHC (normal street load)



If you have any additional questions, please feel free to ask.
Any queries will be answered by Classic Cycle City.

Classic Cycle City (Germany)
Schützenstr.16
78462 Konstanz, Germany
phone: +49 (0)7531-9026474
fax: +49 (0)7531-9028191
email: info@ClassicCycleCity.de
web: www.ClassicCycleCity.de

Classic Cycle City LLC (USA)
PO BOX 1234 or
8863 ½ Los Coches Rd.
Lakeside, CA 92040, USA
phone: +1 619-390-1735
fax: +1 619-390-1761
email: info@ClassicCycleCity.com
web: www.ClassicCycleCity.com



Classic Cycle City

Exclusive distributor of high performance heavy duty
primary chains for Honda CR750/CB750 SOHC engines.