MB Products – Chain alignment tool

YOU DO USE THIS TOOL DONT YOU? THIS WEEKS TECH ARTICLE AND NEW PRODUCT!

Anyone building an engine professionally, semi professionally or at home should be building a Lambretta engine using this tool. Okay there are other cheaper not so easy ways to set your sprocket heights but this is way better and Ive used this or a version of this tool from day one.

The proof is in the pudding, my engines don't wear out chains or sprockets!

This chain aligning tool is based on the Innocenti item but now we CNC machine them and anything these days machined from solid and by CNC is not cheap. Prices are increasing on every order, but the out come – as you can see is pure perfection! And compared to some of the tools sold and used are utter and complete ugly rubbish, functional yes but not eye candy!

So what's the reason behind it? It's an important tool to set the height of the rear Crown wheel sprocket to the front drive sprocket. Get it right and the chain sprocket lasts a long time – not forever but many tens of thousands of miles! Get it wrong and you'll be changing a chain in a thousand miles and trust me Ive seen this so often from people building engines with utter complete crap chains made worse running the crown wheel at an angle to the drive sprocket.

The idea is — the drive bearing can be machined slightly different in a casing so one bearing is higher or lower than the other, the drive sprocket oil thrower can vary, as can the drive sprocket sleeve and also where the sprocket is machined which is the one that varies the most! You will be surprised at how poor sprocket heights can be from one manufacturer across the sprocket sizes.

You set the dial gauge to zero on the front sprocket, with the tool mounted on either side of the crank case face, don't mount it over a thread hole as these are usually high so the tool doesn't sit flat. You can file the side casing and you can slightly counter sink the hole to help on a rebuild.

There are a number of standard and MB after market Crown wheel shims, these sit over the gear cluster and sits on the end plate bearing between the Crown wheel, spider and bearing/s, which can all vary. I always start with a 1mm cluster shim. 1mm as I'm not a full shilling when it comes to maths, with 1mm anyone can easily work out do you need to raise or lower the shim size to meet the height of the front sprocket.

Once you've mounted and set the dial gauge to the front sprocket you carefully lift it off without knocking it, spin it around and slowly drop it in place on the Crown wheel to check the height. There are plus and minus figures in the manuals to set these to the factory settings. These days with our MB shims which now come in 0.1mm increments instead of 0.2mm as per

factory, you can easily set the crown wheel height to perfection.

Perfection you say! Well, as with all things Lambrettas, things varying especially today with manufacturers who have no care to quality and chasing down tolerances.

The main problem is 1) Crown wheel lift — up and down, and 2) Crown wheel rock.Crown wheel lift will throw out the readings on the gauge, lift from both sides up and down and watch the needle move. This can be cured in a number of ways 1) if you have the equipment you can machine the spider where the bearings run to take up slack.

Or 2) you can use our MB shims which go on the spider before the spider is fitted to take out this up and down play.

Crown wheel rock is a number of things. It can be the size of the spider, the size of the Crown wheel and the size of the bronze bush or bearings. It's so common to have rock, as usually the bushes wear or are machined wrong in the first place. Once worn it will wear even more. Check out the gauge again to see the dial gauge move rocking the Crown wheel. All you can do to stop this rock is fit a new bush or two or three or four and maybe from different suppliers. Basically the bush is the weak point and its why I no longer use them and why our MB CNC clutches use needle roller bearings as our spiders and Crown wheels are hardened to use needle roller bearings and we chase the tolerances to stop rock and lift. Its not un common for Crown wheels to be soft so you can't use needle rollers and can only use the rubbish bush!

You have to address the Crown wheel before the chain alignment tool can be used to good effect.

Sometimes the sprockets are machined so far out of line you have to space the drive sprocket and MB make 3 drive side oil thrower washers (shims) to help. Sometimes you have lift the Crown wheel or drop it further than what the manual says. MB make under and over sizes shims. I've never had to double up the Crown wheel shims, but it has been known from the factory.

If you have the time, tools and spares you can set the alignment to zero – no plus or minus figures and everything is totally in line.

Or at worse you can set them so with lift and rock you can set them to within the factory tolerances and chain and sprockets don't wear out – IF the quality is there in the first place. MB make our own front and rear sprockets and only use quality Iwis chains or we even have our own quality MB chains made – wear is not an issue!

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Any comments email mark@mbscooters.co.uk