

Chain Maintenance

Continuous improvement in manufacturing technologies means that modern O, X and Z-ring chain kits offer outstand-

ing mileage – but the drive components are still subject to constant wear and tear.

"Crooked teeth!" and annoyingly short re-tensioning intervals mean that it's time for a new kit! But generally, replacement tends to be long overdue. If you can lift the chain links on the sprocket a few millimetres even though the chain has been correctly tensioned, or if the chain is obviously unequally elongated, then it's time it was scrapped. Bikers who are on the ball will always replace the complete set – because they know that a new chain will very quickly adjust to the degree of wear and tear of the front and rear sprockets. O, X and Z-ring chains have permanent grease lubrication, which ensures that the pins inside the chain are always lubricated. In spite of this, it is still necessary to regularly lubricate everything else with a chain spray. Always use a special chain spray, as one that is not designed specifically for O, X or Z-rings would irreparably damage the O, X or Z-shaped rubber sealing rings. Similarly, only use a special cleaner – never thinners or petrol. If you take your cleaning particularly seriously, you can use a patented device. You might also be surprised how well you can clean up

a dirt-encrusted chain with a special brush. Don't forget: regularly cleaned chains last longer because dirt is abrasive and causes wear and tear, even if you regularly lubricate the chain.

Compared to O-ring chains, X-ring chains have lower power loss due to friction and offer vastly improved durability. While standard chains without O-rings or X-rings offer unbeatably low friction, they are not nearly as durable. And because they also have to be re-tensioned and lubricated much more frequently, they are used almost exclusively in racing. When you lubricate the chain (always on the inside surface), it is good to check the slack at the same time. To do this, turn the rear wheel by hand and determine the tightest spot – this is important because a chain that is too tight will ruin the transmission output shaft bearing – and that is an expensive mistake to make. Standard tension is roughly 2 finger widths of play in the centre of the lower chain run with the bike loaded and on the ground. The easiest way to check this is to sit on the bike and get a

friend to test it for you. To alter the tension at the adjustment mechanism, first loosen the axle and jack the bike up. It is important to adjust evenly on both sides of the swing arm in order to maintain the wheel alignment. If in doubt, check the alignment using a long straight batten or a piece of string. The Profi Laser CAT chain alignment tester enables 100% correct alignment with laser accuracy, in seconds. Bear in mind that overtightened, worn or badly maintained chains can break – and that can result in a badly dented engine case, or even cause an accident or worse!

A drive chain is only as strong as its weakest link. Which is why we recommend fitting an endless chain whenever possible, particularly for DIY mechanics. If this is not possible because the swing arm has a top or bottom strut, use a rivet master link.

1



Undo sprocket

2



Remove rear wheel

3



Replace chain wheel

We recommend:

Items included



Kettenmax Louis Special Edition - Cleaning and lubrication device

Enables precise application of cleaner and lubricant to the chain - Excess is collected in the outflow ■ Tyres, wheels, frame and the road stay clean!

Order no. 10003114

Example use



Example use

Craft-Meyer chain breaker and riveter

Clean and reliable rivet thanks to precision pin ■ Suitable for D.I.D chains with a pitch of 520, 525, 50 (530) and 532. ■ Only use the correct original D.I.D rivet master link

Not suitable for riveting Regina chains!

Order no. 10002556

Chain breaker (not shown)

For breaking chains with 415 to 632 pitch
Order no. 10003901



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If you have no experience of chain riveting, this task is best left to the professionals! Only use clip master links on bikes up to 125 cc.

But now to the topic in hand... Replacing the chain kit!

If you're not sure about this job, ask a professional for help or chat to your local bike workshop. After all, it is a question of your safety. Ideally, this is a two-man job. A second pair of hands helps prevent damage caused by your bike falling over etc.!

1 To get at the chain sprocket, you will first need to remove the footrest, the gearshift (note position!) and a cover. When you lift off the cover, watch out for a possible clutch actuator - try not to disengage it if possible. To secure the motorbike, put it in first gear and engage the rear brake (get your helper to operate the brake) so that you can release the sprocket, or clamp a tightly wound cloth between chain and sprocket. There are various types of sprocket fixture (central nut with tab washer, central screw with tab washer, mounting plate with two smaller screws). First remove the locking device (i.e. bend open tab washer), before loosening the fastening bolt or nut of the sprocket using a suitable socket ratchet wrench and a spot of elbow grease.

2 Now remove the rear wheel. If you don't have a centre stand, please bear in mind that you should not jack the bike up at the swing arm for this task. Remove the chain guard and the rear huggier, if fitted. Loosen the axle nut and

drive out the axle with a plastic hammer. Use a rod if necessary. Hold the wheel securely and carefully let it slide to the floor, push it forward and remove from the chain. Make a note of the mounting location of the spacer sleeves!

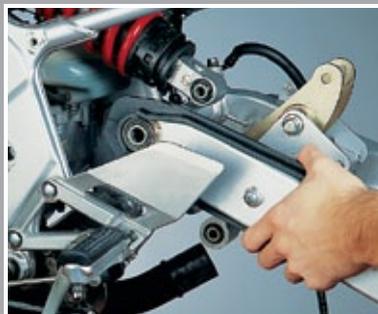
3 Unscrew the sprocket from the mount on the rear wheel. Here too, bend open any tab washers. You should always fit new tab washers and self-locking nuts. Clean the mount and install a new sprocket. Tighten the screws crosswise, preferably using a torque wrench according to manufacturer specifications. Flatten any tab washers back down. Give the wheel a final check: Do all the bearings and seals still look in good working order? Is the rear-wheel damper behind the sprocket mount still correctly tensioned? Replace any damaged components.

4-5 Now comes the bit that many folk don't really enjoy - removal of the swing arm.



4

Remove linkage and ...



5

... swing arm.



6

Install new chain sprocket

We recommend:



Vario hammer

With an replaceable rubber and plastic ends
Order no. 10003997

Profi Laser CAT Chain alignment tester, set

- Laser precision for 100% correct chain alignment
 - Simple and ultra-fast
 - Prolongs chain life
 - Optimises road handling
 - Increases safety
- Order no. 10003097



Procycle 3-piece care set

Set up for the season. Contains: 750 ml
▪ White chain spray
▪ Chain cleaner
▪ Brake cleaner
Order no. 10004887

Please note:

Highly inflammable, irritates the skin, vapours may cause drowsiness or dizziness. Irritating to eyes and skin. Toxic to water organisms; may cause long-term adverse in the aquatic environment.

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However, a little bit of calm and patience go a long way with this job. First detach the brake hose from the swing arm, but do not remove it from the calliper or otherwise open the brake system! It is enough to remove the brake calliper rod from the swing arm and wrap the dismantled brake unit in a cloth and place it underneath the bike. The swing arm is now only connected to the bike at the suspension and axle. If your bike has twin-shock suspension, remove the lower fastenings from the swing arm. If you have a mono-shock, you may need to undo the linkage. Take a moment to look at how the suspension works, and decide which bolts need to be undone. Make a note of the position of all removed components! Finally, undo the axle nut of the swing arm and carefully push out the axle. This is generally well lubricated so try not to let it fall in the dirt.

6 Now you can remove the sprocket. Make sure you remember its installation position – there is often a thicker and a flatter flank. You must re-install it correctly to ensure the correct chain alignment. An incorrectly aligned chain may break! Once you have thoroughly cleaned the surrounding area, you can fit the new sprocket together with the chain in the correct position. Fit a new tab washer, if neces-

sary and fasten the nut/bolt. This will be tightened later with a torque wrench.

7 Use suitable cleaning agents to thoroughly clean all components of the swing arm and swing arm mounting. Grease all moving parts (bushings, bolts). If your swing arm is fitted with a slider to prevent chafing by the chain, this should be replaced if it has worn thin. Before replacing the swing arm, you need to re-grease the swing arm bearings. Always refer to the manufacturer's lubrication instructions. If at all possible, get someone to help you install the swing arm, so that while you are positioning the swing arm in the frame, your assistant can insert the axle. Next, install the shock absorbers and, if you have mono-shock suspension, install the linkage and tighten to the torque recommended by the manufacturer. When re-installing the wheel, double check that the brake, brake calliper mount and spacers are all correctly installed.

8 Nearly finished: Adjust the chain tension as explained earlier in these instructions so that the wheels are perfectly aligned, and then tighten the swing arm and wheel axle and the sprocket with a torque wrench in accordance

with the manufacturer specifications. Secure the rear axle nut with a new cotter pin if necessary. Once you have re-installed the cover, the gearshift and the chain guard, check all the fastenings once again. After approx. 300 km, you should check the tension of your chain again – new chains tend to stretch initially. And don't forget to lubricate – if you use your bike for touring, or simply do lots of miles, you can effectively prolong the life of your chain kit by using an automatic chain oiler, as well as saving yourself a lot of work.



Clean, grease and re-assemble



Adjust chain tension

Please note!

These tips for DIY mechanics contain general recommendations that may not apply to all vehicles or all individual components. As local conditions may vary considerably, we are unable to guarantee the correctness of information in these tips for DIY mechanics. Thank you for your understanding.

D.I.D

Chain kits

Chain + front & rear sprockets

Higher rigidity!
Extra-long service life!
Extra-long running characteristics!

Chain design & components:

RIVET PINS

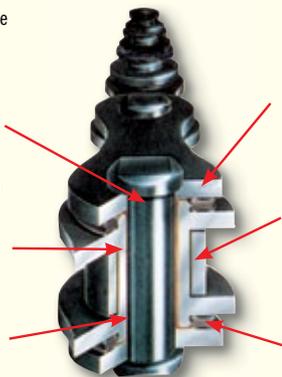
Special steel alloy and innovative D.I.D heat treatment technology minimise surface wear and ensure resistance to extreme impact loads.

PIN BUSHINGS

Extended, rigid bushings with an extremely smooth and hardened surface withstand wear-related expansions.

SPECIAL GREASE

"V" grease, specially developed for X-ring chains and applied in the pin bushing, ensures long service life.



OUTER PLATES

Ultra-light, high-performance link plates are heat-treated with D.I.D's special technology to withstand metal fatigue and prevent temperature-induced cracks.

ROLLERS

Reinforced rollers are made of specially selected steel alloy and withstand repeated heavy impact loads.

X-RINGS

Specially shaped X-rings minimise friction loss - they prevent leakage of the special grease and penetration of dirt and water.

500 cc and larger bikes are fitted exclusively with X-ring chains with gold-plated outer plates!

For Vale*, for Jorge** and for YOU!

Motorcycle manufacturers look for chains with the best running characteristics and the longest service life - that often means chains from D.I.D. Experience and engineering of the highest standard guarantee outstanding quality for your requirements, too. We supply what is surely the most widely used motorbike chain in the world, produced by state-of-the-art manufacturing methods from top-quality components - the "Professional Line" from D.I.D. Extremely long life and noticeably smoother running will make this your chain of choice, as it is for many of the top motorcycle racers.

*Valentino Rossi, nine times Motorcycle World Champion

** Jorge Lorenzo, four times Motorcycle World Champion

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