

# WRENCHTECH

## REPLACING A CHAIN & SPROCKETS WITH CHARLIE FLIPPEN

**I**t is always best to replace the chain and sprockets together. Otherwise, the stretched-out chain will quickly shorten the life of the new sprocket. Likewise, worn sprockets will stretch a new chain at an alarming rate.

### TOOLS REQUIRED:

- Red Loctite
- Lint-free rag
- 14mm socket
- Impact wrench
- 8mm T-handle
- Torque wrench
- 6mm Allen wrench
- Fine-grit sandpaper
- Needlenose pliers
- Chain measuring tool
- Circlip puller (optional)
- Chain breaker (optional)
- 14mm open-end wrench
- 32mm open-end wrench
- Straight blade screwdriver

### WHAT YOU NEED TO BUY:

- Chain
- Rear sprocket
- Countershaft sprocket

### TIME TO COMPLETE:

45-60 minutes



### STEP 1

With the bike on the stand, loosen the sprocket bolts while the rear wheel is still on the bike (with the chain attached). This allows the sprocket bolts to loosen easier. By no means should you completely remove the sprocket bolts until the rear wheel is off the bike.



### STEP 2

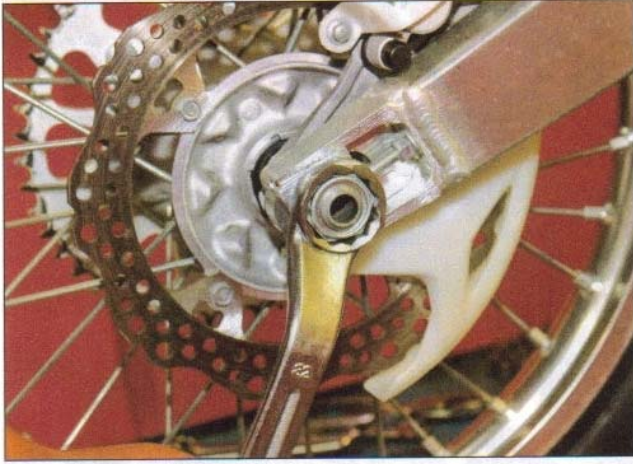
With the wheel still on the bike, remove the countershaft sprocket engine guard. Loosen the countershaft sprocket bolt, but do not completely remove it. If the countershaft sprocket uses a circlip, leave the circlip in place until Step 9.

### STEP 3

Remove the chain master link clip, followed by the master link. Remove the clip with a twist of a straight blade screwdriver, because it's usually faster and it doesn't damage the master link. Once the master link is removed, carefully remove the chain and set it aside. Do not throw it away, as you will need to measure the chain.







#### STEP 4

Remove the rear axle nut. Carefully pull the rear axle out. Do not use a hammer or hard object when tapping the rear axle out, as it could potentially destroy the threads on the axle. With the axle, axle blocks and washer out, remove the rear wheel.



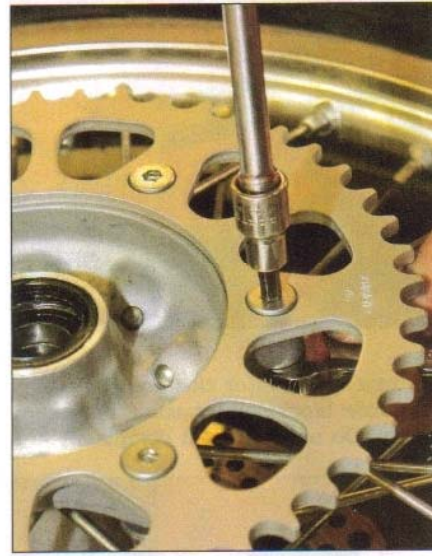
#### STEP 7

As you place the rear sprocket bolts in their housings, make sure that the washers install between the nut and the hub. The flat side of the washer should always face toward the hub, while the rounded side goes toward the nut. Finger tighten the nuts.



#### STEP 5

Lay the rear wheel down with the sprocket facing up on a flat working surface. Make sure that the appropriate Allen (or Torx) wrench fits tightly in the bolt housing before loosening the bolts. Use an open-end wrench on the backing nuts. Remove the rear sprocket.



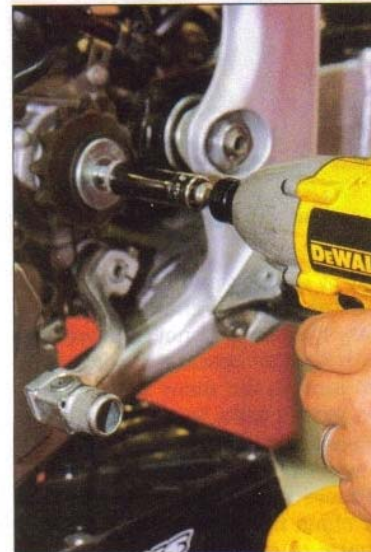
#### STEP 8

In a star pattern, tighten the nuts and bolts. The star pattern creates equal surface tension around the circumference of the sprocket. Unequal tension can cause the bolts to come loose. Use a torque wrench to tighten the rear sprocket bolts to the required setting found in your owner's manual.



#### STEP 6

Use fine-grit sandpaper to lightly clean the hub edges where the old sprocket was seated to ensure a flat mating surface for the new sprocket. Place the new sprocket on the hub. Spin the sprocket a few times to make sure that there are no burrs or sharp edges that will snag the sprocket during tightening. Apply a dab of red Loctite to each sprocket bolt, regardless of whether the sprocket nuts are self-locking.

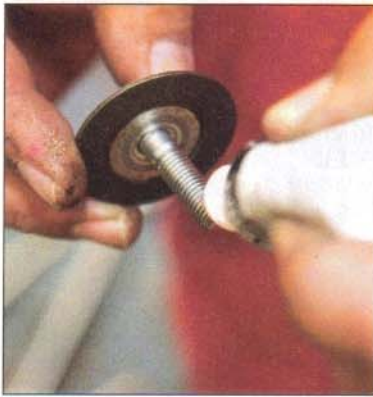


#### STEP 9

If the countershaft sprocket is held in by a circlip, extract it with circlip pliers. Slowly pull the countershaft sprocket off the output shaft splines. Clean the splines with a rag. Always remember that the lip edge of the countershaft sprocket faces inward toward the engine. The flat side of the countershaft sprocket should face outward. Place the new countershaft sprocket on the output shaft splines.



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## STEP 10

Apply red Loctite to the threads of the countershaft sprocket bolt. Hand-tighten the bolt, but don't tighten it completely until the new chain has been installed on the drive system. If your bike uses a circlip, install it, making sure that it is completely seated into the output shaft groove.



## STEP 13

Be aware that the new chain will be tight during installation. This is because the old chain stretched over time. It will be necessary to adjust the chain adjuster blocks to accommodate the new chain. Once the chain is completely wrapped around the sprockets and through the chainguide, install the master link, link plate and link clip. Always install the master link clip so that the open end faces rearward.



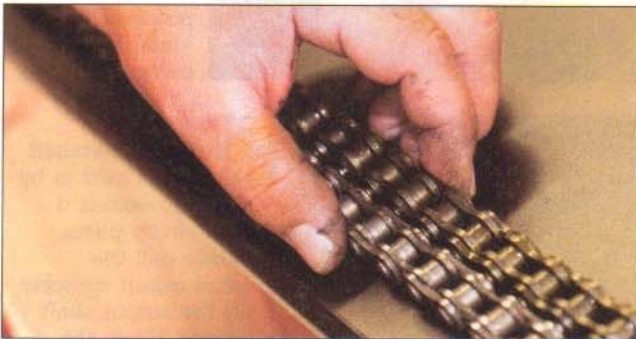
## STEP 11

Carefully install the rear wheel after cleaning the rear axle. Be mindful of the axle blocks and washer. Finger tighten the rear axle nut. Do not tighten it completely!



## STEP 14

Tighten the countershaft sprocket bolt. Torque the bolt to the recommended setting found in your owner's manual. Once the bolt is tightened, install the countershaft sprocket engine guard.



## STEP 12

Take your new chain out of the box and extend it on a flat surface next to the outstretched old chain. Make sure that the number of links are the same. If not, remove the proper number of links with a chain breaker. It is imperative that you do not remove too many links. Resist the urge to use two master links to make up for any length discrepancy. Measure twice; cut once. Before installing the new chain, inspect the chainguide, chain rollers and chain slider. If these items are worn, replace them. Otherwise, the new chain might wear through the plastic and into the swingarm or chainguide cage.



## STEP 15

Using a chain measuring tool, check the chain sag. Consult your owner's manual to determine the proper chain sag for your bike. On a Honda, the proper sag is 35mm from the master link center pin with up and down play from directly behind the swingarm chain slider. When tightening the rear axle, place a rag between the chain and the rear sprocket and spin the rear wheel backward to apply tension to the chain. This ensures that the chain blocks are pulled tightly forward against the chain adjusters. Tighten the axle. Remove the rag and tighten the chain adjuster nuts. □