

# ***DIRTY BIKE***

## ***Primary Chain Drive Buyer's Guide***

**Why upgrade to a chain drive?** First off, in off-road conditions a drive belt can fail much sooner than a chain, especially if you ride in sandy, muddy, or rocky terrain. No one wants to be that guy, stuck in the woods with a broken belt.

At **DIRTYBIKE** we have several kits available. We have 420 X-ring chain kits, 219H chain kit and several 219H kits with super high quality RK sealed O-ring and non O-ring chains. It can get a little confusing, so we are here to help you choose which primary chain drive system is right for you and your ride.

There are two available chain sizes, 420 and 219. The main difference between the two is the amount of roller links. The 420 chain has fewer, larger links so they are super strong, and with an included master link they are easy to replace. The 420 chain is available as a sealed x-ring style. This chain uses sealing rings to keep out dirt and makes the chain last significantly longer. The 219H chain has more, smaller links making it run cooler and much quieter. The 219 chain must be installed on the bike at the same time as the sprockets making installation slightly more difficult.

A connecting link (master link) can make it more convenient to replace the chain since you will not have to remove the swing arm to do the job, but the tradeoff is that a connecting link can fail. Especially if it is reused or installed in the wrong direction.

## **PRIMARY CHAIN DRIVE KITS**

**420 Standard** - Least expensive kit. It does a great job, but it is the loudest of the three and requires frequent lube and adjustment. Includes a connecting link.

**420 Sealed X-ring** - Great choice for sandy/muddy conditions, it is quieter than the standard chain, requires less lubing and lasts longer but robs a little power due to the friction of the x-rings. Includes a connecting link.

**219H with Standard KMC chain** - Much quieter and lighter than the 420 kits (20% lighter than stock belt system) but does require lubing more often. Our 219H endless chain (no master link) runs cooler, giving great durability reliability and resistance to stretching.

**219H with RK chain** – This is the best 219 racing chain in the world! RK has won over 50 world karting titles using this chain. This high quality, pre-stretched, non o-ring chain offers the lowest rolling resistance and is 20% lighter than the stock belt system but does require more frequent lubrication.

**219H with Sealed RK o-ring chain** – This is the best 219 chain in the world! RK has won over 50 world karting titles using this chain. This high quality, pre-stretched sealed o-ring chain is the longest lasting, quietest kit we offer requiring the least amount of maintenance.

	<b>Sealed Chain</b>	<b>Master Link</b>	<b>Noise</b>	<b>Durability</b>	<b>Maintenance</b>
<b>420 Standard</b>	No	Yes	Most	Great	More
<b>420 X-ring</b>	Yes	Yes	Less	Best	Less
<b>219H Standard</b>	No	No	Low	Good	More
<b>219 RK non o-ring</b>	No	No	Low	Great	More
<b>219H RK o-ring</b>	Yes	No	Lowest	Best	Less
<b>219H Gear Reduction</b>	No	No	Low	Good	More

## Recommendations

<b><i>Recommend</i></b>	<b><i>For</i></b>
<b>219H standard</b>	On road and light off road with stock power
<b>219H RK O-ring and non O-ring kits</b>	On road and off road up to 15Kw
<b>420 x-ring</b>	Off road over 15Kw
<b>420 Standard</b>	Too loud, we don't recommend it. You will just bitch about the noise and say our kits suck on social media.

# ***DIRTY BIKE***

## ***Primary Chain Drive Installation***

***The Installation and adjustment procedure is very similar to the stock belt system with a few exceptions:***

The Light Bee primary sprockets should be mounted with the writing facing away from the motor. The Ultra Bee small sprocket should be mounted with the writing, and the long flange facing towards the motor. Follow the included instructions. If they are mounted incorrectly, they will be severely misaligned. This will cause a lot of noise, premature wear and even failure.

### ***Alignment***

To check the alignment, install the new sprockets on the motor and the intermediate shaft. Install the intermediate shaft without the chain and tighten the swing arm bolt and motor mount bolts. Lay a straight edge on the rear sprocket and see where it contacts the front sprocket.

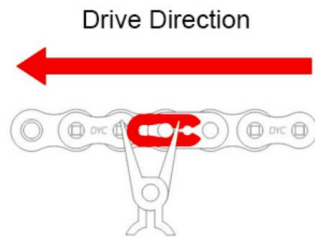


If the alignment gap at the front sprocket is off by more than 1mm, add or remove the shim to bring it back into alignment. Some bikes using the 420 kit will require the alignment shim and some will not. The 219 kit seems to not need it for two reasons: 1) We designed it in house to fit without the use of a shim

and 2) Due to many more links the 219 will accept more misalignment without the excessive noise and wear. Always check the alignment when installing your kit.

### **Master Link**

When installing the connecting link make sure the round end of the clip is facing the direction of rotation. If it is mounted with the opening towards the direction of rotation the clip can contact something while in use and pop the clip off.



### **Adjustment**

Spin the rear wheel slowly by hand to **find the tightest point and use this as the adjustment spot**. 420 chains should be adjusted with a very small amount of free play, about 5mm. Adjust 219 kit to 6-8mm of free play.

If your kit makes a lot of noise after adjustment it is probably too tight! Readjust with more chain slack. A tight primary chain can cause excessive noise, power loss and bearing damage.

***It is much better for the chain to be a little loose than too tight.***

### **Maintenance**

LUBE! And adjustment. Lube before first use and before each ride. If your chain drive system starts making more noise than usual, it is trying to tell you something. **Lube the chain and check the adjustment before every ride.**

Lube the chain from the inside while spinning the rear wheel. ***Even sealed O-ring chains need lube.***