Converting a Commando to an O-Ring chain

by Fred Eaton

All prices quoted are current as of 08/25/18

Summary:

This article covers what is required to convert a Commando rear drive chain to an o-ring chain.

Procedure:

First, the stock chain size for a Commando is a 530 chain which is a 5/8" x 3/8" chain. The width of the 530 chain rivet is about .85" wide. This chain just fits between the gearbox and the inner primary case. An o-ring chain has two o-rings between the outer plates and the inner link, keeping dirt and grime from the inner roller. The two o-rings make the chain about 1/8" wider than a stock chain, therefore a 530 o-ring chain will not fit between the gearbox and the inner primary case. I have seen a lot of Commando inner primary cases where the stock chain has rubbed against the case when the case was not properly aligned.

In order to upgrade your Commando to an o-ring chain, you first must go down one size from a 530 to a 520 chain which is a 5/8" x 1/4" chain. The 520 o-ring chain is just about the same width as the stock 530 chain. The width of the 520 chain rivet is about .85" wide.

Second, you need to change your gearbox sprocket (counter shaft sprocket) to a 520 sprocket. Your stock 530 sprocket is too thick to fit between the links of the 520 o-ring chain. This may be a good time to change your gearing if you are not happy with your present gearing (see chart at the end of the article for gearing ratios and speeds/RPM). We stock the standard size sprockets in the 520 thickness:

- Gearbox Sprocket, 19 Tooth, For 520 Chain, part # 04-0480/A, $45.72.
- Gearbox Sprocket, 20 Tooth, For 520 Chain, part # 06-0931/A, $61.75.
- Gearbox Sprocket, 21 Tooth, For 520 Chain, part # 06-0721/A, $55.85.
- Gearbox Sprocket, 22 Tooth, For 520 Chain, part # 06-0759/A, $55.47.

- Gearbox Sprocket, 23 Tooth, For 520 Chain, part # 06-3420/A, $0.00.

Third, you need to have your rear sprocket milled down to accept the thinner 520 o-ring chain. We can mill down your rear sprocket or we sell new sprockets converted to the 520 thickness. You may want to think about also modifying your rear sprocket to accept a sealed bearing. Some prices are listed below, but call if what you want to do is not listed:

- Upgrade Rear Drum to 520 Chain, part # 06-2764/520O, $100.00.
- Upgrade Rear Drum to sealed Bearings & 520 Chain, part # 06-2764/520CU, $298.50.
- 520 Chain Brakedrum Assy with Sealed Bearing, part # 06-2764/520, $249.00.
- Upgrade Customers MK3 Rear Sprocket for 520 Chain, part # 06-6011/520O, $100.00.
- MK3 Rear Sprocket to Sealed Bearing & 520 Chain, part # 06-6011/520, $612.55.

Fourth, you need to select the type and length of 520 o-ring chain. We stock two types of 520 o-ring chain, plain and gold. The gold chain has gold links.

Some prices are listed below, but call if what you want to do is not listed:

Sprocket Size	Chain Length	Plain Part #	Plain Price	Gold part #	Gold Price
19t	98 Links	70-400221	$66.63	70-400231	$74.44
20T & 21T	100 Links	70-400222	$65.72	70-400232	$75.92
22T & 23T	98 Links	70-400223	$76.92	70-400233	$77.41

Fifth, you need to use a different chain lube. The o-ring chain lube is mainly used to keep the o-rings moist and pliable. We sell the PJ1 o-ring chain lube (part # 78-200002, $7.00)

Overall Gear ratio and speed/RPM chart

The gear ratios are assuming stock engine sprocket and rear sprockets.

Gearbox Sprocket	19T	20T	21T	22T	23T
Overall Gear Ratio	4.84	4.60	4.38	4.18	3.99
6000rpm	92mph	97mph	102mph	106mph	112mph
7000rpm	107mph	113mph	119mph	124mph	130mph

Sixth, the clearance between the countershaft sprocket and the gearbox shell is minimal at best and should be checked. I place the chain on the bike with the master link in place (the master link is a bit fatter than the rest of the chain) and spin the chain so the master link runs past the gearbox shell. If the master link did not rub against the shell, you are fine. If the master link did rub against the shell, you will have to shim out the sprocket. The only shims available to shim out the sprocket are (part # 06-7569, $2.20) and are .003" thick. The shim or shims will go in-between the counter shaft sprocket and the bearing spacer (04-0131).

The sleeve gear (4th gear main) fits up against the inner race of the mainshaft bearing on the inside of the gearbox and the bearing spacer fits up against the inner race on the outside. The shim or shims fit up against the bearing spacer and the countershaft sprocket fits up against the shims or the bearing spacer with the sprocket nut pulling everything together.

Return to Old Britts home page ..... **Return to Technical Articles**
