

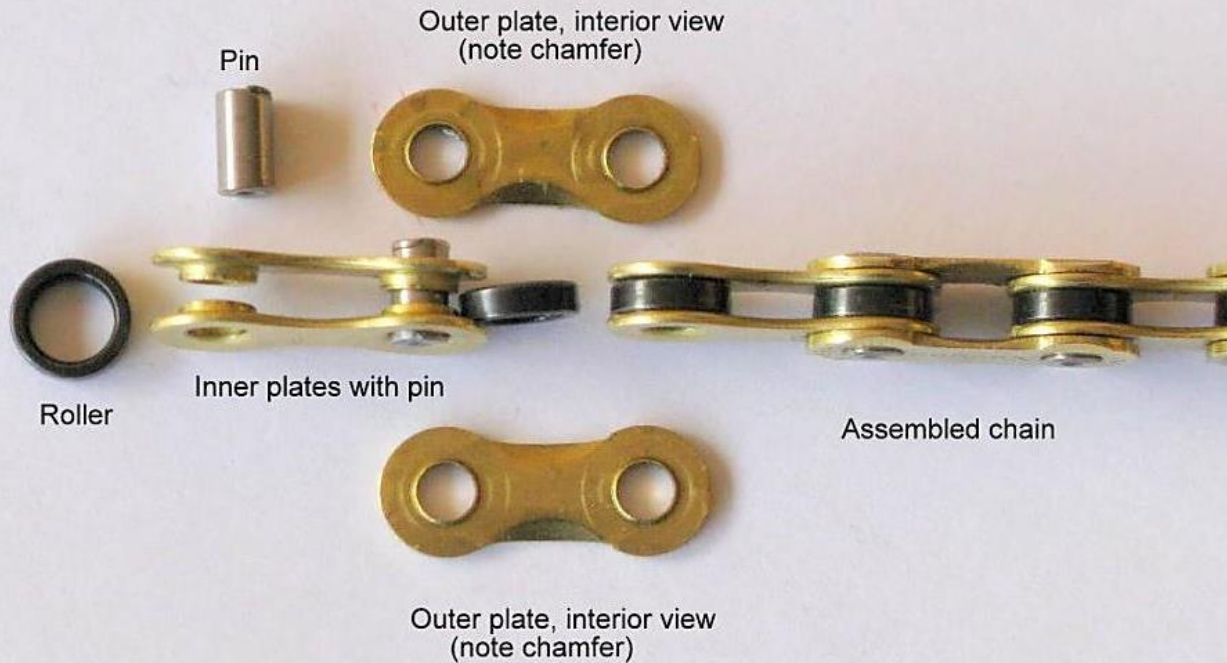
Chains & Chain Rings







Components of a Chain...



In assembling the chain, the rollers are captured between the innerplates whose collars meet face-to-face. The rollers are loose and free to move on the collars. The inner link (two inner plates with two rollers) travels on pins that are fixed to the outerplates. Chain wear (the kind that causes chains to "stretch") is the wear that occurs between the pin and the collars of the inner plates.





Chain Wear

- wear in the chain's pins & bushings causes the chain to lengthen (aka stretch)

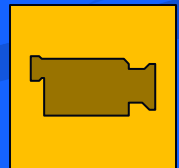


- wear, can be measured with a ruler or tape measure...
- ❖ measure a 12" length, placing an inch mark of the ruler exactly in the middle of one rivet, then looking at the corresponding rivet 12 complete links away
- ❖ on an unworn chain, this rivet will also line up exactly with an inch mark.
- ❖ with a worn chain, the rivet will be past the inch mark.
- ❖ replace when stretch is $1/16$ " or more



Measuring Chain Wear

- wear, can also be determined with a chain checker...
- $>0.75\%$ stretch = replace the chain





Chain Ring & Sprocket Wear

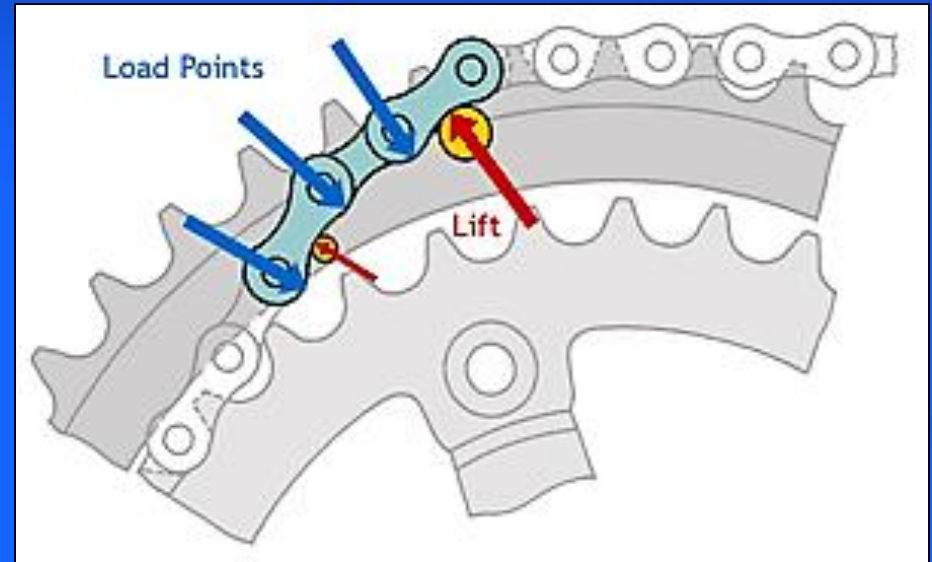
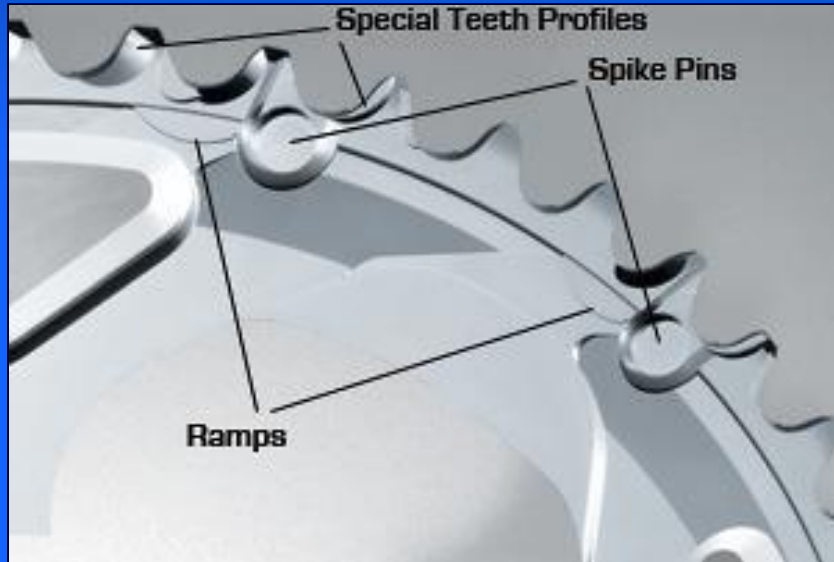
- chain wear affects sprocket wear and vice-versa
- during your measurement of the chain wear...
 - ❖ $< 1/16$ " past the mark, sprockets and chain rings will be OK
 - ❖ $> 1/16$ " past the mark, you should replace the chain, but the sprockets are usually undamaged
 - ❖ $> 1/8$ " past the mark, the sprockets may be too badly worn





Shift Enhancing Chainrings

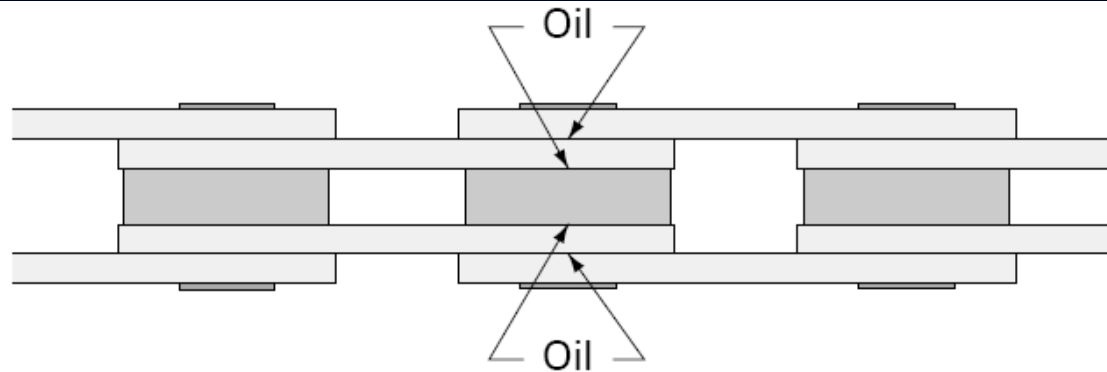
- chainrings may utilize pins and ramps to enhance upshift (moving chain from a smaller to a larger chainring) quality



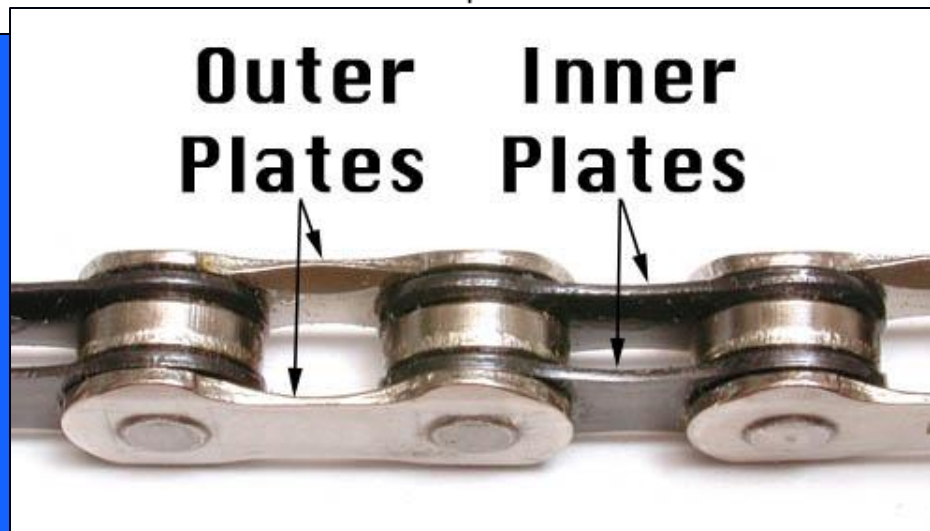
Chain Cleaning & Lubrication



- use the ultrasonic tank to clean
 - rinse in hot water, then dry with compressed air
- lube chain with Tri-Flow at the points indicated below
- allow oil to penetrate 10-15 minutes
- wipe off excess with a rag



26.13 Lubricate each link at the four points shown.



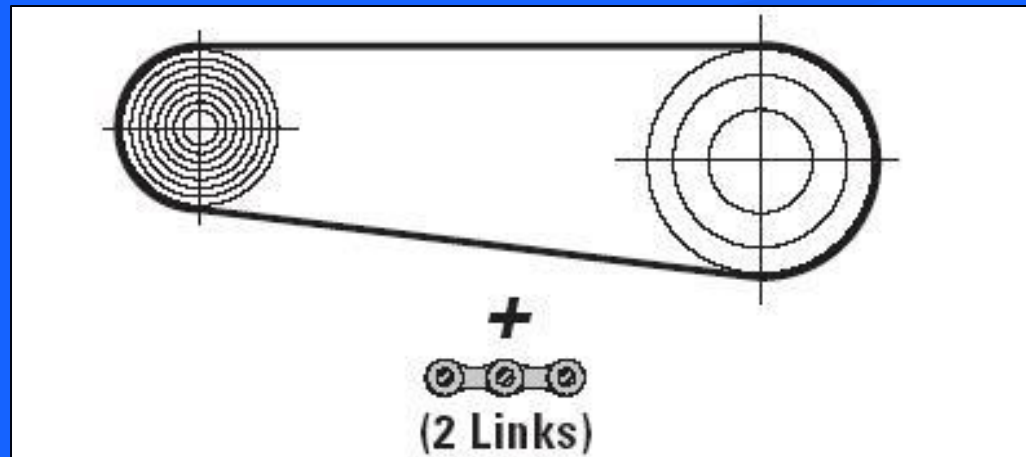
Measuring / Installing New Chains

- replacement chains must be compatible with the number of rear sprockets the bike has
 - the width varies on chains depending on the number of rear sprockets



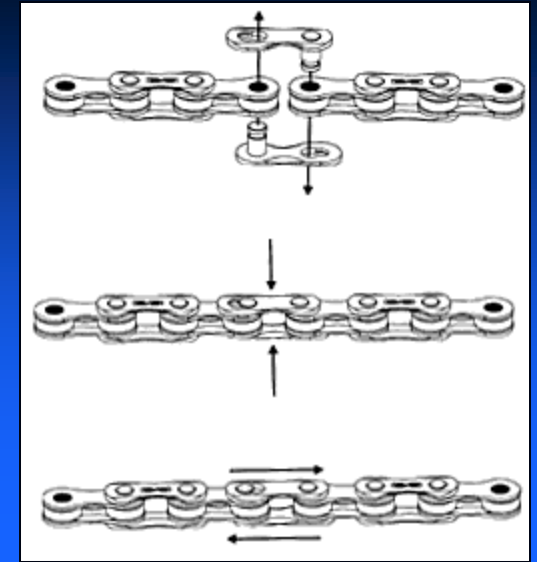
Measuring / Installing New Chains

- new chains will be longer than your old one
- use your old one to bring the new one down to the correct size with a chain breaker
 - use Barnett's chain length calculator
 - or, place the new chain around the largest rear sprocket (bypassing the derailleur) and largest chain ring – then add 2 more links

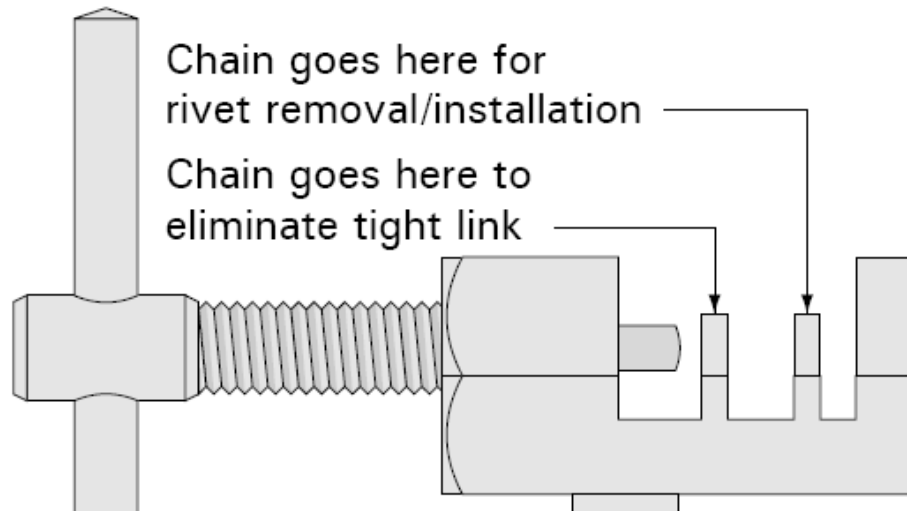


Chains

- chain links (aka master links) can be used to reconnect chains



- tight/binding links can be loosened with chain tool...



26.10 This is a side view of a chain tool with two cradles. Note which one is for rivet removal and installation.