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MiscRes: Magazine Articles

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"Line 'Em Up", Here's How to Get Your Rear Wheel Tracking Straight

TECH & HOW-TO

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TECH

LINE 'EM UP!

Here's How To Get Your Rear Wheel Tracking Straight

Text and photos by Tom Hurd

On page 30 of this issue of *Hot XL*, I walk you through a chain-to-belt conversion on a 1989 XL. But what I didn't mention in that story is that when I started the job, I noticed that the rear wheel was way out of alignment. Now, I know the owner of the bike and he would not have left the wheel that

"track" straight when it accurately follows the front wheel on a straightaway. When the rear wheel is out of alignment with the frame, and therefore the front wheel, the bike is actually traveling down the road slightly sideways. As you can guess, this makes for poor handling and safety (braking on a wet road can

adjuster's stud sticks straight back, parallel with the ground. There is a nut on each stud which tightens flush against a plate on the back of the swingarm. The end of each axle can float within the slotted swingarm. Tightening or loosening the nuts on the adjusters' studs will allow you to move the wheel forward or



1 One way to check the alignment of the rear wheel is by checking the length of the adjuster studs (see arrow). There's one on each side of the swingarm. See the plate that the adjuster's nut rests against? That slot in the top is supposed to be on the bottom (a common mistake). It's there to drain any water that gets into the swingarm.

way if he knew how to properly adjust it. So though a different story was planned for this spot, Editor Chris Maida and I decided this was a golden opportunity to give our readers a few easy ways to check, and if necessary, realign their Sportster's rear wheel.

Unless you're riding a Top Fuel dragster (they purposely cock the wheel to counteract the pull of the rear chain), a bike's rear wheel always has to be square with the swingarm and frame. If it's not, the bike will not "track" straight on the road. A rear wheel is said to



2 You can either use a machinist's rule or a vernier caliper (shown) to measure the length of the studs. Or go the low tech, but equally accurate, route and use a razor blade to count the amount of threads showing on each stud. The distance, or number of threads, should be the same on both adjuster studs.

get exciting in a hurry), and premature tire wear. In addition, a misaligned rear wheel means the rear chain sprocket or belt pulley is also out of alignment with the one on the transmission. Belt, or chain and sprocket wear is definitely going to be a problem if left unattended. And though this may all sound very dire, the fix is simple, quick, and requires few tools. There's even two ways to do the alignment check.

The first way to check the alignment is to examine the belt/chain tension adjuster at the rear of both sides of the swingarm (photo #1). Each adjuster is attached to the ends of the rear axle. The



3 Another way to check the alignment is to measure the distance from the center of the axle to a fixed point on the swingarm such as the ends of the swingarm or the end of the slots in the swingarm.

backward. You check the alignment of the rear wheel by checking the length of both adjusters' studs. These studs should protrude from the back of the swingarm equally. If the stud lengths are not equal, one side of the axle is too far forward and the wheel is not square with the swingarm or frame.

There are two ways of measuring the studs. The first is to use a machinist's rule or a vernier caliper to measure the length of the studs (photo #2). The second is less expensive. Get a razor blade and use it to count the amount of threads showing on each stud. The distance, or number of threads, should be the same on both adjuster studs. If one stud is longer than the other, the alignment is out.

The second way to check the alignment is to measure the distance from the axle to a fixed point on the swingarm such as the ends of the swingarm or the end of the slots in the swingarm (photo #3). Do this by first finding and marking the center of each end of the axle. Then measure (with a machinist's rule or a vernier caliper) from the center mark you just made to the end of the swingarm, or to the end of the slot in the swingarm. Your choice. Do this on both sides of the axle. If both distances are not the same, the alignment is out.

Whenever you have to readjust the belt's or chain's tension, just remember to always move both nuts the same number of turns. That way the wheel will always be in adjustment.

If you've found that your wheel is out of alignment, here's how to get back on "track." First put the bike on its stand on a solid, level surface with no weight on the seat. Then remove the cotter pin from the axle lock nut (not all models use a cotter pin) and loosen the axle nut. Turn the adjusting nut on the longer stud until the stud lengths are the same as the shorter of the two. Then move the wheel forward until both adjuster nuts contact the swingarm's plates. Now the wheel is accurately aligned.

You can now adjust the chain or belt tension according to the requirements of your particular machine. Do this by turning both adjustment nuts, as if tightening them, the same number of turns. One way to do this is by turning one nut, say one full turn, and then turning the other one the same amount. As you turn the nuts they will pull the wheel back, away from the tranny pulley/sprocket, which will tighten the belt/chain. Continue to turn the nuts until the proper belt/chain tension is reached. Then tighten the axle lock nut to 65 ft.-lb. and, if so equipped, install a new cotter pin.

Now, whenever you have to readjust the belt's or chain's tension, just remember to always move both nuts the same number of turns. That way the wheel will always be in adjustment. ■

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