

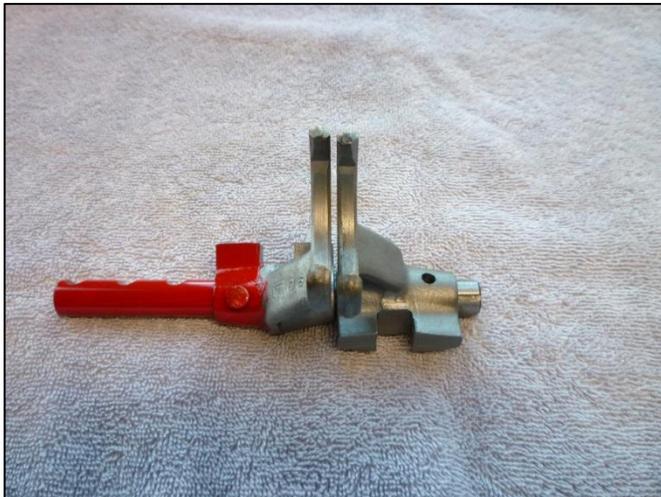
Bent Tower Forks

by Tom Endy

When rebuilding a transmission tower it is important that both shifting forks are straight and not bent. Otherwise the two forks will not engage the slots in the two slider gears and the tower will not fit down onto the transmission housing.

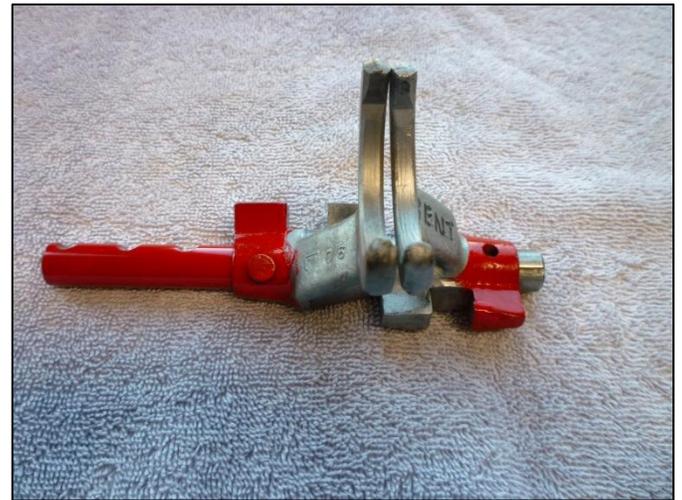
It is not clear how shifting forks get bent in normal service. However, occasionally a shifting fork shows up bent from some type of manhandling. And it is difficult to tell if one or both shifting forks are bent during a rebuild.

A simple jig can be built to test the straightness of a shifting fork. Two known straight shifting forks, a fork shaft, and a locking pin are all that is needed to make the jig.



Two known good shifting forks are assembled as seen in the photo. The one on the left is pinned to the shaft and painted red and is the reference fork. The one on the right is a fork being tested and is also a known good fork. It is slid onto the shaft in the manner shown. Note there is a nominal $1/16$ " space between the legs of each fork. The fork on the right being tested can be rotated and the space will remain even.

A slight variation in the spacing is not a problem as there is sufficient room for the two sliders to be positioned in the neutral position. The important thing is that the spacing is nominally even.



In this photo the fork on the right being tested is known to be bent. Note that the two legs of the fork are touching at the top of the photo while there is a nominal space of $1/16$ " between the bottom two fork legs. The bent fork on the right can be rotated and the bent fork will strike the opposite leg.

The bent fork was previously installed in a transmission tower during a restoration and when complete would not engage the two slider gears and the tower would not fit down onto the transmission housing. A visual inspection did not reveal that either fork was bent as the fork that was bent was only bent slightly, but it was enough to prevent engagement of the gears.

It was only after replacing both forks was the tower able to engage the gears and fit down onto the transmission housing. The assembling of the test jig determined which fork was bent.

This handy jig can be used to check each shifting fork destined for rework and installation in a transmission tower.

