Von der Werkbank

Zweite, korrigierte Version

Liebe Schrauber,

this chapter is dealing with the geometry of the chassis of the NSU Max. In the previous chapters I have shown the main dimensions of the frame and the fork when dismounted, enabeling you to check if the parts are twisted. Here I will have a look at both components together, frame and fork, when mounted. That will help to check the clearance between front fender and exhaust-bow. Accidented Max's with twisted fork or frame often show too little clearance.

In a first step I identified well known or easy to identify dimensions. The manual gives 1311 mm for the wheelbase. Further, I measured a couple of rear-forks. They have a length of 450 mm for the chain adjuster in its middle position. The front-swingarms have a length of 155 mm. The hight of the axle over ground is 330mm.

In a next step I determind some angles. Rear-fork and front-swingarms are under normal load in a horizontal position and at the same level. I adjusted my Max in exactly that position and measured the angle of the steering column. I used a modern digital device with a automatic level-sensor. The result was 63°, exactly the value given in the book of Trzebiatowski, too.

In the same way I measured the angle of the parting line between the frame and the rear-fender. I always thought the parting line was vertical, but I found out that it is inclined 1.5° to the front. So we cannot use this line as a reference-line.

We will further need the distance of the front-swingarm bearing to the steering column axe. We have determined this distance in the chapter dealing with the fork dimensions, it is 71 mm.

With all these values and a calculator I determined further values, which will help to check a NSU Max-chassis.

The distance of the rear-fork bearing to the front-swingarm bearing is 1311-450=861 mm. That corresponds well with the reference of 86 cm given by Dieter.
The horizontal distance of the rear-fork bearing to the steering-column axe is calculated this way:
1311+93-450-330/tan63°=786 mm
The distance of the rear-fork bearing to the steering-column axe is: 786*cos27=700 mm
With all these values the geometry of a NSU Max frame is well defined. I compared these values with measures taken on my Max. My Max shows 853 mm instead of 861 mm, so it is 8 mm too short. The difference comes partly from the fork, 3 mm, and partly from the frame, 5 mm. The lower fender bars got an oval hole for the front screw and have been slightly curved, so they have overall become shorter. That results in enough clearance between fender and exhaust-bow. One can see that the fender is not in the exact position; looking from the side, it is a bit higher at its front-end that usual. I'm telling myself that this is still in the normal range and -eventhough boarderline- somehow acceptable.
The illustration on the next page provides a summary of the main dimensions. Concerning the tolerances, they should be allways in the direction of a bigger clearance between front fender and exhaust-bow.

Here is a summary of the main reference dimensions easy to check:

1.)
On the disassembled frame we can check the horizontal distance of the rear-fork bearing to the steering-column axe (measured under 63°).
It should be bigger than 786 mm.

2.)
On the disassembled fork we can check the distance of the front-swingarm bearing to the steering-column axe.
It should be smaller than 71 mm.

3.)
On the assembled Max, we can easily measure the distance of the rear-fork bearing to the front-swingarm bearing.
It should be bigger than 861 mm.

Stay on the road! Best regards, yours

Ulrich

Ulrich.Korzeniewski@gmx.net

NSU Max Fahwerksgeometrie

Ermittelt von Ulrich Korzeniewsk Zweite, korrigierte Version

