TECHNICAL BULLETINS-No.6

THE ZÜNDAPP COMPANY LTD., NÜRNBERG/CUSTOMER SERVICE DEPT.
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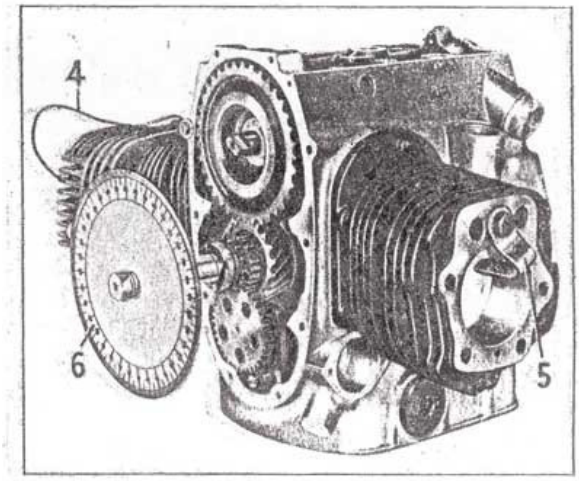
Contents: Adjustment of the Camshaft for KS600 and KS601 Motors.

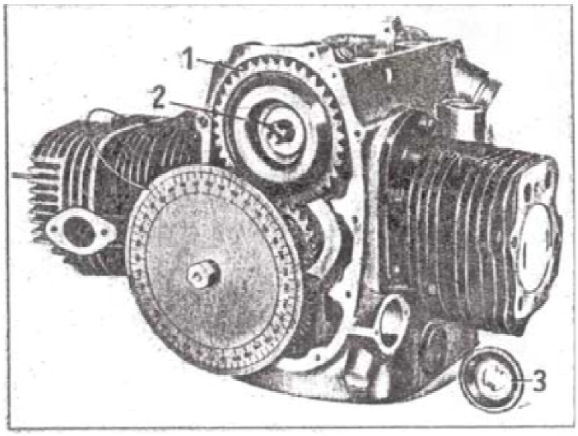
Adjustment of the KS600 and KS601 Camshaft

Inquiries on the part of our dealers have revealed that a lack of clarity exists with regard to the adjustment of the camshaft for our KS600 and KS601 Zündapp motors.

In response, we provide you, in the following, suitable instructions which, if adhered to, will allow you to carry out the correct adjustment without additional procedures. **(The numbers located in the brackets refer to the illustrations)**



1. Remove generator.
2. Remove front engine cover.
3. Unscrew the mounting nut **(right-hand thread)** of the large camshaft gear **(1)** after bending back the retaining washer. For this step, the camshaft **(2)** should be prevented from turning using the flats of of the ventilator drive so that the teeth of the gear **(1)** are not damaged.
4. Remove the toothed camshaft driver **(3)** which couples the camshaft **(2)** to the camshaft gear **(1)**.
5. Remove the camshaft gear **(1)**.
6. Remove the left side **(facing in the direction of travel)** cylinder head.
7. Remove the valve cover on the right side cylinder.
8. Insert both pushrods into their positions in the left cylinder and, with two fingers, push on both with similar pressure.
9. Now turn the camshaft **(2)** until these pushrods are positioned exactly at the point where their movements overlap. **(one closing as other just opening)**



10. Set valve lash for both valves of the right cylinder to 1 mm or 0.040 inches.
11. Now slowly turn the camshaft **(2)** either direction until it snaps into a fixed position. **(After this step, do not turn the camshaft further!)**

12. Fasten a degree-wheel **(6)** onto the crankshaft **(M12x1 Thread)** and a pointer **(4)** made from wire onto the crankcase so that its end indicates on the scale of the degree-wheel **(6).**
13. Affix a piece of angle iron **(5)** on the gasket surface of the left cylinder with a bolt (**M10x1.5 Thread)**. The length of the other leg should be approximately 35 mm or 1.375 inches and oriented to extend down into the cylinder bore.
14. Turn the crankshaft until the left piston just touches the angle **(5).**
15. Mark the position as indicated by the pointer **(4)** on the degree-wheel **(6)**.
16. Now turn the crankshaft in the opposite direction until the left piston again comes to rest on the angle.
17. Again mark the position as indicated by the pointer **(4)** on the degree-wheel **(6)**, as in Step 15.
18. Determine the number of degrees between the two marks on the degree-wheel **(6)** which is the portion that the pointer **(4)** did not pass through.
19. The halfway point between the two marks is the position of top dead center **(TDC)** on the degree-wheel **(6)**. **(Mark this position on the degree-wheel)**
20. Remove the piece of angle iron.
21. Now turn the crankshaft until the pointer **(4)** points to the mark on the degree-wheel **(6)** which indicates TDC. The pistons are now positioned at top dead center.
22. For camshafts with an overall lobe height of 27 mm **(Part No. 1961 *z* 17)**, the crankshaft is next to be positioned 2 degrees after TDC and, for camshafts with an overall lobe height of 28 mm **(Part no. 1961 *z* 12)**, the crankshaft is next to be positioned 3 degrees before TDC.
23. Place the large camshaft gear **(1)** onto the camshaft **(2)** in any arbitrary tooth position.
24. Now slide the toothed camshaft driver **(3)** onto the camshaft **(2)** and see if its teeth will easily, without interference, engage the mating teeth of the camshaft gear **(1)**. If this is not the case, try turning the toothed camshaft driver **(3)** 180 degrees and try again. If it is again not possible to achieve an easy engagement in this position, the camshaft gear **(1)** must be shifted one tooth in its engagement with the crankshaft gear. Now try again to achieve a noninterference engagement with the camshaft driver **(3)**. If a satisfactory result is not achieved, repeat the process, as described above, until the camshaft driver **(3)** can easily be inserted.
25. Install the retaining washer and nut to mount the camshaft gear **(1)**. When tightening the nut, make certain to hold the camshaft **(2)** as directed in Step 3 so as not to damage the laminated material of the gear teeth. Bend the retaining washer up to hold nut secure.
26. Remove the degree-wheel **(6)** and the pointer **(4)**.
27. Reassemble the motor.
28. Set valve lash. Intake 0.20 mm (0.008 in.)/Exhaust 0.25 mm (0.010 in.)

Please make your shop personnel thoroughly familiar with the aforementioned instructions.

Note: Because the difference between the camshafts 1961z**12** and 1961z**17** can lead to confusion, in the future, the shafts will be marked with a **12** or a **17** on their end faces. If there is any doubt, please send the camshafts to us for determination of the type.

Available Parts:

1 Degree-wheel	ZWN 392 E
1 Mounting bolt M12x1x20	DIN 933