



SERVICE INFORMATION

Cust.Serv.- Techn.Dept.
VKT Gi/wi-ba

Two-cylinder motorcycles
Group: Engine

München, April 7, 67
No. 1/67 (244) en.

Re: Reduction of valve clearance

Dear Sirs,

We have changed the cylinder head material of our two-cylinder models in order to avoid the employment of the unhealthy chloric gas required to clean the melting of the hitherto used hydronalium alloy.

Now it has been found, however, that the new alloy does not fully equal the hitherto used alloy concerning its resistance to heat, so that in some cases the valve clearance was reduced by the pressing of the bolt sleeves into the cylinder head material.

Consequently the models

R 50 from chassis No. 644 184 and
R 60 from chassis No. 1812 245 on

will feature new bolt sleeves with a larger bearing surface. Besides the cylinder heads castings will be age-hardened so as to increase the resistance of the material. These modifications will also take place on the model R 69 S though the situation on this model is more favorable.

In case of complaints you are requested to send-in the cylinder heads with a warranty claim.

In the factory, the cylinder head will be provided with new bolt sleeves. A number of already transformed cylinder heads has been prepared by us in order to accelerate the exchange.

For our overseas importers we have compiled a working schedule to allow carrying out the transformation in their own workshops.

1. Take off cylinder heads, remove valves. Clean all parts.
2. Heat the cylinder heads to 250° C (482° F) and pull out bolt sleeves (figure 1).
3. Mount the cylinder head on drilling machine table so the combustion chamber is downward.
4. With a 22 mm Ø counterbore plane, but don't countersink, the surface marked with X in figure 2; this prevents the 21 mm Ø counterbore from deviating on the oblique wall of the cylinder head due to eventual irregularities of the casting during the operation 5.
5. Install the pilot bushing into the 18 mm Ø bore. With the 21 mm Ø counterbore, bore the 18 Ø H 8 bore about 10 mm deep (figure 3).
6. Remove the pilot bushing with a wire hook and finish bore the hole with a 21 mm Ø counterbore (check measure 15 h 11, figure 4).

It is recommended to determine the travel of the drill spindle during the first drilling and to perform the next drillings with a spindle stop in order to obtain equal drilling depths.

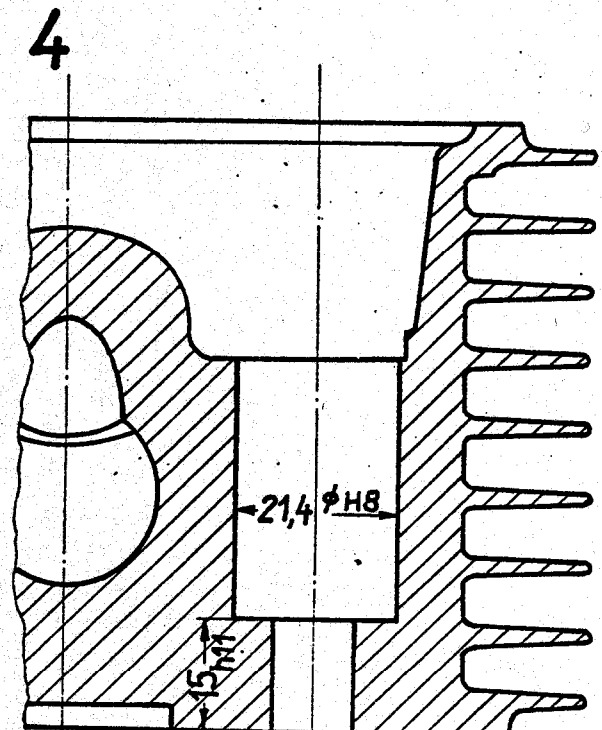
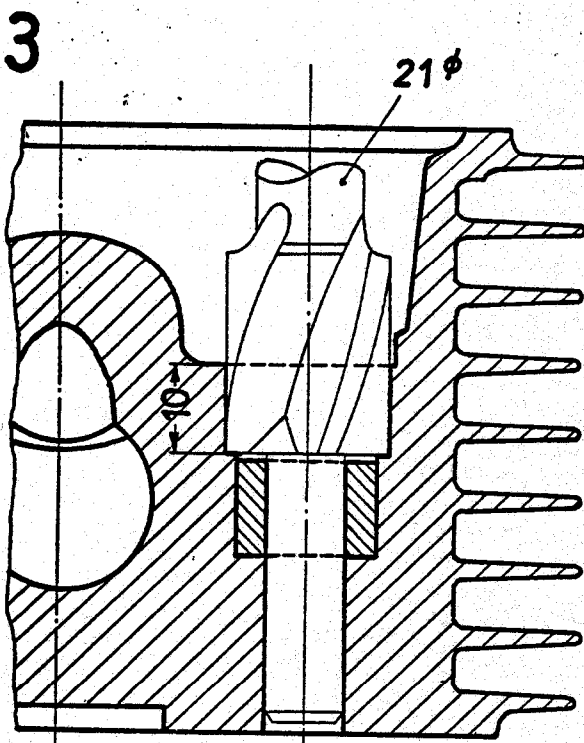
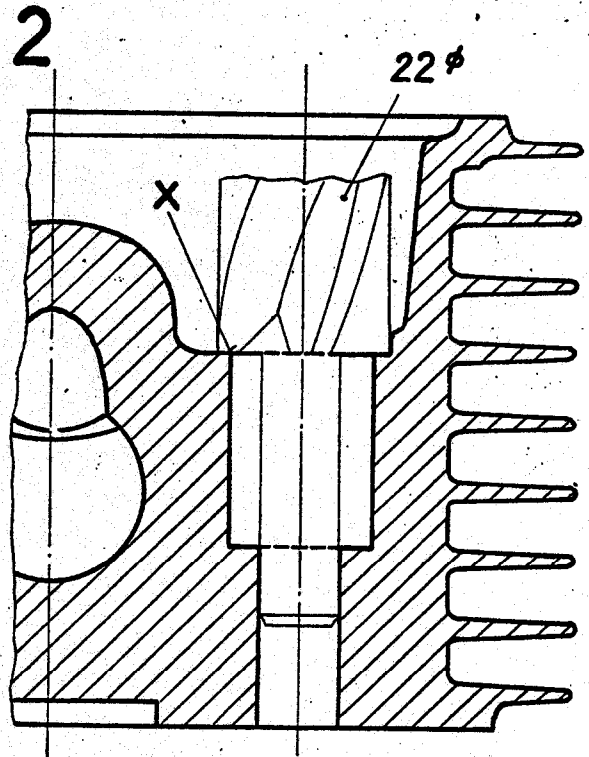
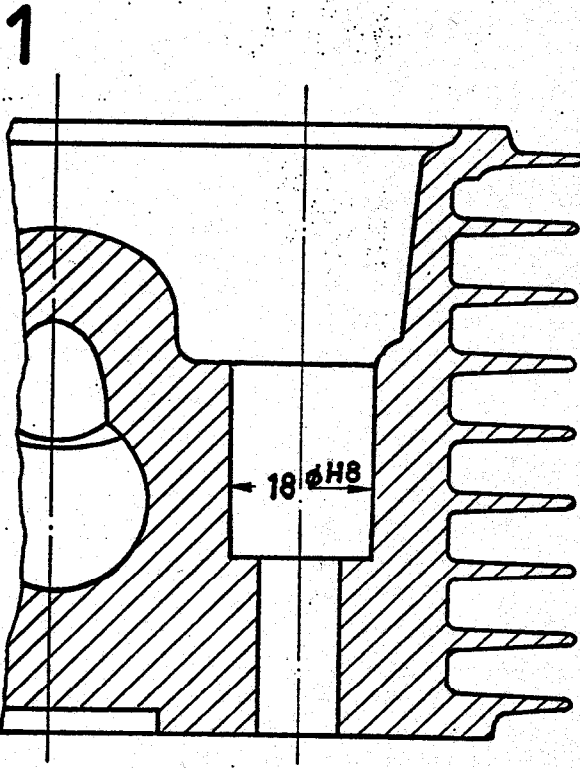
7. Ream the bolt sleeve bore with a chucking reamer 21,4 H 7.
8. Remove the borings with compressed air, rinse the cylinder head in solvent.
9. Heat the cylinder head, but on no account over 250° C (482° F), and press-in, do not drive-in, the new bolt sleeves. Caution! Observe the temperature conscientiously.

Please bear in mind:

Each cylinder head contains two round bolt sleeves (part No. 00 22 113) and two bolt sleeves with a flat (part No. 00 22 115).

The bolt sleeves with a flat are installed on the timing side of the head in a way that the surfaces vertical to the driving direction. The milled surfaces prevent the push rods from touching the bolt sleeves.

10. When installing the cylinder head it is absolutely necessary to use new cylinder head gaskets. The torque limit of the head retaining screws is 3.5 mkn (25.3 ft lbs)



Caution!

The torque limit of the cylinder head bolt has to be checked after having covered 300 miles. Please advise your customers that for motorcycles with transformed cylinder heads the ~~run~~ instructions of the operating manual have to be observed during the first 300 miles.

For the transformation operations on request we put to your disposal the following tools:

- 1 22 mm \emptyset counterbore with 18 mm e9 pin as pilot within the old 18 mm \emptyset H 8 bolt sleeve bore
- 1 21 mm \emptyset counterbore with 10.4 mm \emptyset e9 long pilot
- 1 Bushing for guiding the 21 mm \emptyset counterbore
- 1 Chucking reamer 21.4 mm \emptyset H 7.

For each cylinder head you require two bolt sleeves, Part No. 00 22 113 and two bolt sleeves, Part No. 00 22 115.

Caution! Only these bolt sleeves are suitable for the transformation !

Your workshop must possess the following devices in order to assure an appropriate conversion:

- a) Drying stove for heating the cylinder heads up to approx. 250° C (482°F) or a heating plate. If a heating plate is to be used for heating the cylinder heads, the temperature has to be ascertained by means of thermochrome crayons.
- b) Upright drilling machine with spindle to receive cutting tools with standard cone 2.
- c) Holding jaws to mount the cylinder head upon the drill table.
- d) Simple piercing press.
- e) Depth gauge, measuring range 100 mm.

Very truly yours,

BAYERISCHE MOTOREN WERKE
Aktiengesellschaft

ppa.

i.V.


Makowitzki

Delleske