Overhauling Brake Drum

Special tools: P 38, VW 400, VW 401, VW 411, VW 418

12 Ti

General

If the inner diameter of brake drums, which are unevenly worn, scored or oval, has not yet reached the wear limit of 11.1023" (282 mm) they may be made serviceable by machining.

Prior to machining a brake drum, it should be checked whether the ovalty which is felt by a intensively vibrating brake pedal, is not caused by incorrectly balanced wheels, a wobbling rear axle shaft or unevenly worn tires. Wobbling rear axle shafts must be replaced. Checking foot and parking brake separately will indicate whether the ovalty is caused by the front axle or the rear axle. It may,however, occur that inspite of a correctly machined brake drum and true running axle shaft the mounted brake drum does not run unobjectively. This may be traced back to a small difference between the serration of the axle shaft and that on the mandrel P 38. This can be remedied by offsetting the brake drum on the serration.

After every machining of the brake drums check carefully whether the inner diameter does not exceed the permissible wear limit of 11.1023" (282 mm). To ensure proper reconditioning of the brake drums, an accurate lathe must be available. Not only machining on brake drums, but also most of the inspection jobs on shafts, rods etc. are carried out on the lathe.

It is very important that the contact surfaces and bearing seats of the drums are cleaned carefully prior to mounting the brake drums on the lathe. Dirt will make perfect eccentricity of the drums impossible, or cause run-out.

If the brake drums have already reached their wear limit or are near it, or if their bearing seats are worn beyond possibility of press fit of the bearing, they have to be replaced by new ones. The same applies if the rear wheel brake drum rivets are insecure.

To avoid unequal braking action, make certain that brake drums opposite each other do not differ as to their inside diameter more than .008" (0.2 mm).

Machining

1. Remove front brake drum, conical roller bearing and oil seal.
2. Clean brake drum.
3. Mount brake drum on mandrel (P 38).
4. Place brake drum and mandrel between head and tail stock of lathe and check for run-out.
5. Machine drum surface by means of carbide lathe tool at low cutting speed, adhering to the max. permissible tolerance of 11.10" (282.0 mm). Make sure that surface is perfectly smooth, do not polish.

Inspection

1. Care must be taken to avoid a tapering cut of the braking surface (Max. permissible taper .04" = 0.1 mm).
2. Reverse mandrel P 38 and drum in lathe and check drum for run-out. Check at point where wheel contacts drum (at wheel studs on the side away from center of drum). Permissible run-out .004" (0.1 mm). If necessary press out wheel bolts and reface wheel contact surface.
3. The braking surfaces of two opposite drums should be of one series (of equal make).

Characteristics for identification:

Version a) without mark

Version b) small bore or punch
at 1.6" (4 mm) wide face of brake surface.

Replacing Wheel Bolts

Wheel bolts may be removed and refitted using VW repair press 400 in connection with VW 401, VW 411, and VW 418. Damaged wheel bolts should be replaced by new ones.

If wheel bolts fit loosely, they must be replaced by oversize bolts.