

**Knuckles** for front axles of passenger cars and trucks are deep rolled at the critical fillet radii with HG 6 ballpoint tools (Fig. 7-6). The same tool can also be used to roller burnish bearing seats and sliding surfaces for rotating seals (Fig. 7-7).

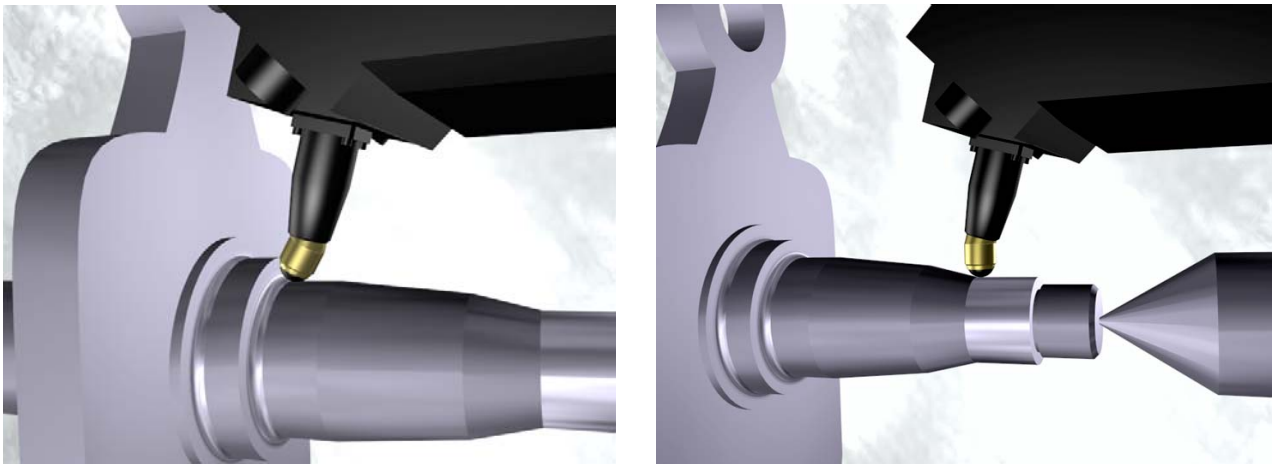


Fig. 7-6: deep rolling of a knuckle fillet radius Fig. 7-7: roller burnishing of a bearing seat

The tools are compact driven tools HG6-5 (see Fig. 3-1, page 6), that don't require any external pump and no supply hose. In this case two tools with different angular positions of the burnishing elements are required. This combined treatment in the same setting after cutting after is extraordinarily advantageous. The durability was increased significantly. Following results can be reported about:

Component	Request	Result
Passenger car knuckle	High cycle fatigue to be higher than after grinding	No component failed in the fatigue tests, test machine was to be repaired several times.
Truck rear axle housing	75000 load cycles at 170 kN	230.000 load cycles at 170 kN (38.000 lbf) 550.000 load cycles at 130 kN (30.000 lbf)