

Grinding and Polishing

Technical Information Rubber Covered Rollers

Grinding and polishing of rubber covered rollers is a complex manufacturing process. Some requires a thorough expert knowledge and great care if close tolerances are to be achieved. However, it must especially be noted that during the grinding of a rubber roller covering, different temperatures may occur in length and circumference which, because of the great heat expansion coefficient of rubber, result in a limited manufacturing accuracy. Therefore, the below-listed data for the grinding and polishing of rubber roller coverings are only meant for orientation. The dependence of the grinding parameters on material and elastomer hardness must, in each case, be inquired of the respective technical expert department of Böttcher.

Grinding

Grinding wheel

- ⊕ Abrasive: Precious or semiprecious corundum
- ⊕ Grain size: 40 - 80 according to DIN 69 100
- ⊕ Hardness: G according to DIN 69 100
- ⊕ Structure: highly porous, 12 - 14 according to international standards
- ⊕ Bond: ceramics
- ⊕ Width: 80 - 100 mm
- ⊕ Grinding wheel speed: 22 - 45 m/s

Workpiece speed

Depends on the roller diameter and the elastomer hardness of the material. In principle: The lower the workpiece speed, the exacter the grinding operation.

Advance

Depending upon rubber material, cutting depth and grinding wheel size: 20 – 300 mm/min.

Treatment of the grinding wheel

Grinding wheels must be stored in shelves in dry rooms, standing upright, if possible. Prior to clamping, check grinding wheels for the sound, freely suspended, by knocking with a light hammer. A proper wheel sounds pure. Damaged grinding wheels must not be used.

Do not force the grinding wheel onto the shaft. Select bore hole of the grinding wheel 0.1 - 0.35 mm greater in diameter than the shaft diameter. If it cannot be fitted on the shaft with a very narrow play, carefully expand the bore hole on the turning lathe by means of a rough file. The bore must also not be too large, as otherwise the wheel will sag and knock.

Grinding wheels must be carefully balanced so that proper grinding results can be achieved in dimension, form and surface accuracy. In general, static balancing will be sufficient; for these purposes, the balance factor should be smaller than 2 thousandth of the wheel weight. Dressing of the grinding wheels for true running is insufficient, as this will not remove any imbalance.

Prior to being used, newly clamped grinding wheels, according to the Regulations for the Prevention of Accidents, must be subjected to a one-hour trial run at full operating speed. Fastening nuts must be well tightened and, with newly clamped wheels, retightened after some time.