

Centerless Grinding Wheels

Centerless grinding is a cylindrical machining process which uses abrasive cutting to remove material from a workpiece and improve surface roughness. In general, the centerless grinding process utilizes two wheels: one grinding wheel which removes the material and one regulating wheel which applies lateral pressure in order to carry the workpiece and control its rotational speed and through-feed rate. The process offers high levels of productivity and efficiency for large series of cylindrical workpieces and ensures relatively low processing times. Moreover, due to the versatility of the centerless grinding process, a vast selection of parameters, such as wheel dimensions, rotational speed, throughput speed, grit type and size, bond type and hardness and many more, can be tuned and improved in order to achieve the desired surface finish for the specific processed material.

Finishing and superfinishing wheels

Finishing and superfinishing wheels are abrasive wheels used for special applications in centerless grinding processes. A correct combination of bond type and abrasive grit size helps to obtain a super-finished, low-roughness surface at the end of the grinding operation. Obtainable roughness: $R_a = 0,06 - 0,1 \mu\text{m}$.



Semifinishing wheels

Semifinishing wheels are used for high-precision rectification of steel bars and tubes. The technical properties of the bond combined with an optimal abrasive grit size enable self-dressing effects and provide excellent surface processing capacity for different steel types.

Regulating wheels

Regulating (control) wheels are used for carrying workpieces in centerless grinding operations. They regulate the speed of the workpiece being rotated against the grinding wheel, therefore controlling the material removal rate and feed rate. High traction, long life and good absorption of all excess vibrations during the grinding process are able to offer fast, precise and consistent results.



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Centerless Grinding Wheels

Technical details

Bond type	Synthetic resin
Abrasive type	Aluminium oxide
Grit size	46-800
Hardness	Q-Hard
Peripheral speed (m/s)	35

Dimensions (mm)*

External diameter	100-660
Thickness	10-355
Bore	127-406,4

*other sizes are available on request



Usage

Wheels are available for a wide range of centerless grinding machines including: Napomar, Cincinnati, Mikrosa, Tos, Jotes, Nomoco, Landis, Bryant, Norton, Monza, Giustina, Ghiringhelli etc.

Applications

- Chromed bars and tubes
- Hydraulic cylinders
- Piston rods, gudgeon pins
- Electric motor axels
- Drilling bars



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