The universal talent for **highly efficient** toothbrush production

- Tufting, trimming, end rounding – all in one unit
- Very fast and easy changeovers – maximum flexibility
- Up to 98% machine availability

Z. ORCA

ZAHORANSKY
PERFECTLY DIFFERENT
Z.ORCA
Tufting, trimming, end rounding – all in one unit

Manufacturing toothbrushes requires high flexibility. The challenge lies in the wide variety of designs, topographies, use of different filaments and colors. Units also need to be changed over quickly, and must produce cost-effectively to the highest hygiene standards and in different quantities.

There is only one solution to this challenge: Z.ORCA. The universal talent for toothbrush production with high efficiency.

Perfect for complex toothbrushes – even for the premium segment

Z.ORCA is the specialist for fully automated production of toothbrushes. The machine is ideal for brushes with multi component handles, complex topographies and tuft configurations. It is the best solution for toothbrushes which belongs to the premium segment.
**Z.ORCA**

**Maximum flexibility** in the field of toothbrush production

Toothbrush production consists of a closely coordinated chain of different processes. These stations are covered almost to their full extent by a Z.ORCA unit.

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**Injection molding**

Feeding of the finished molded handles into the Z.ORCA

**Handle transport** (add-on)

To increase the level of production automation there is a high-performance feeding unit as an add-on for the Z.ORCA. This system feeds up to 80 brush handles/minute into the tufting machine

**Tufting**

- Fast and precise tufting
- Radial and axial tuft angles
- Processing of all types of tufting material, e.g. tapered filaments, at very high speed

**Trimming**

- Variable number of trimming units
- Different topographies can be achieved via various lengthwise and crosswise spreading devices, which can also be combined
- Additional profile trimmers for special cuts

**End rounding**

- Unique end rounding quality by coated wobble disk grinders
- Optional use of MTG technology (Mechanical Tapered Grinding) for better grinding results with standard nylon filaments – achieves a quality equivalent to the classic “chemical tapered filaments”

**Packaging**

The Z.ORCA can also be linked to a blister packing machine for direct and further processing of the finished brushes. Of course, the ideal partner for this task is the ZAHORANSKY Z.PACK

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Impeccable hygiene by “no human touch” production:
Four models

There are four Z.ORCA versions depending on the number of tufting and cutting/grinding units. Each unit is individually designed and may be upgraded with modular add-ons to suit requirements. For the most complex brushes, the machines can be operated in series with other individual or compact units.

Z.ORCA 118
COMPACT UNIT
1,000 tufts per minute
max. 1,800 toothbrushes per hour

Z.ORCA 113
COMPACT UNIT
1,000 tufts per minute
max. 1,800 toothbrushes per hour

Z.ORCA 216
TWIN PRODUCTION UNIT
2,000 tufts per minute
max. 3,600 toothbrushes per hour

The benefits of the Z.ORCA

- Unbeatable machine availability (up to 98%)
- From granulate to finished product
- Produces up to 60 brushes per minute
- Different topographies
- Perfect end rounding
- Up to six different filament colors
- No human touch for impeccable hygiene
- Fast and reproducible changeovers
- Visualization and software matched to the unit

Higher Performance with add-ons

- High-performance feed unit for up to 80 brush blocks per minute
- Tray loader/unloader as buffer systems
- Depth compensation using a 3rd CNC axis
- Rotating turret for complex hole field geometries
- Filament boxes for processing up to three types of tapered filament in parallel
- Fully automatic insertion of filaments into the material box
- Mechanical tapered grinding of standard nylon filaments
- Handle decoration with decal, hot stamping, tampon printing or laser engraving
- Tufting with handle color recognition
- Data analysis via Ethernet connection
- VPN remote maintenance
- Connection to blister packaging machines (e.g. Z.PACK) to produce finished, packaged toothbrushes
- Increased safety with driver breakage control

The rotating turret is the cost-effective alternative to anchorless in-mold technology. The rotation of +/- 90° makes different anchor/tuft positions possible.

Clear benefits:
- Low additional investment costs
- Well-known technology
- High output and availability

The rotating turret of the Z.ORCA series allows for cost-effective changeovers of complex hole field geometries:

- Closely spaced tufts
- Elongated tufts
- Tufts using holes with separation walls
- Rectangular and oval tufts
- 360° tufts (circles) using circular segments with separation walls

The tufting process can be carried out without reducing the speed, depending on the tuft position and rotations required.
German Engineering with Passion & Perfection

More than a century ago, Anton Zahoransky marked the start of a new era in brush production when he developed the first drilling and tufting machine for brushes. The company has grown into an international business offering complete solutions in the field of machine building and automation technology. It now has four divisions: Mold Making, Systems Technology, Packaging Machines and Brush Machines.

The driving force is and always has been more than just solid “German Engineering” and concentrated innovative strength. It is the unbroken spirit of “Passion & Perfection”: lifeblood, persistence and an absolute desire to develop solutions that deliver exactly what they promise.

ZAHORANSKY – PERFECTLY DIFFERENT