



WF Maschinenbau delivers solutions for sustainable mobility. Our machines are the result of more than ten years of intense research and development and not only assure perfect end products for e-mobility, they also behave as sustainably as possible during the production process. Thanks to our flow forming machines, your end products are precisely formed to create unique high-strength weight-optimised components.

END PRODUCTS

Single-piece rotor shafts




- Maximum-precision one-piece rotor shaft with improved radial run-out tolerances
- Zero-weld end product 
- Tensile strength boosted by up to approx. 50 %
- Surfaces with greater wear-resistance
- Lower need for machining 
- Forming of internal cooling fins and other cooling geometries possible
- Integration of internal cooling tubes possible
- Length and wall thickness of shaft end freely programmable

Machine series: VSTR + VUD



Rotor shaft with integrated cooling tube

Cooling jackets


- World innovation: Forming of a one-piece cooling jacket featuring external fins in a single flow forming operation 
- Zero-weld end product 
- No complex and expensive milling to create cooling fins 
- Diverse cooling-surface geometries possible
- Processing of aluminium and stainless steel (chromium-nickel alloy/VA) as feed

Machine series: VUD



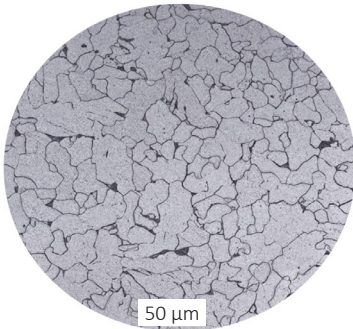
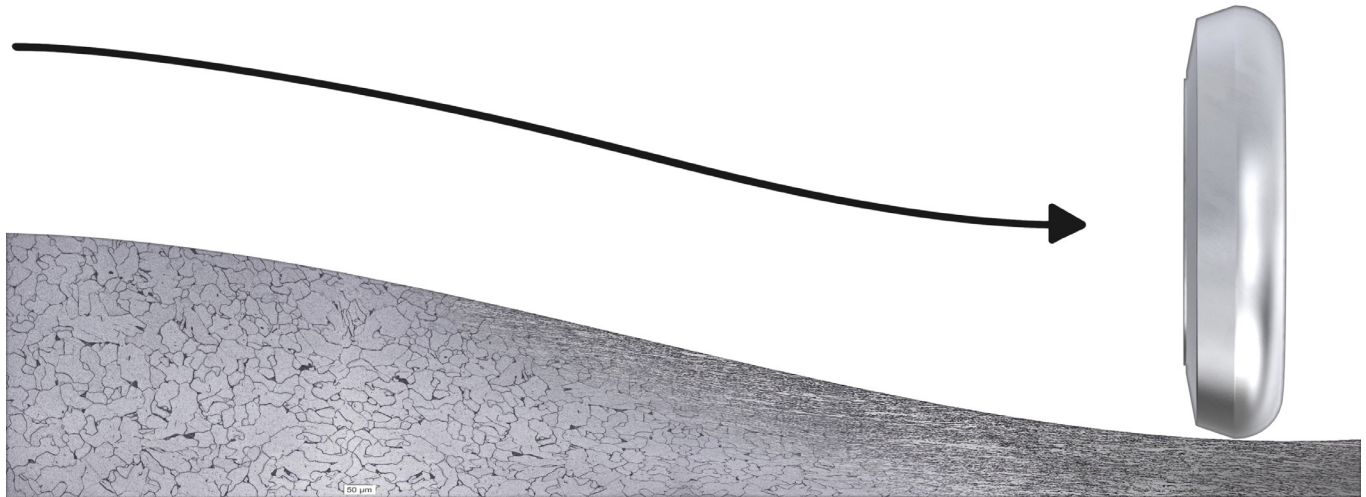
One-piece weight-optimised rotor shaft

Stator carriers

- Production from a tubular preform
- Production with internal fins possible
- Pot-type with internal fins also possible
- Forming of a hub for mounting of a rotor bearing possible
- Zero-weld end product 

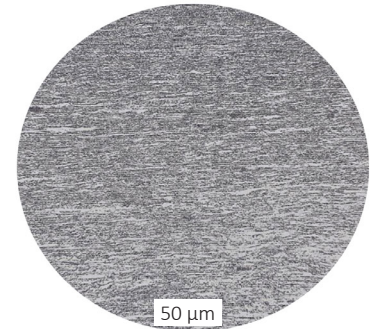
Machine series: VSTR + NAM

Why flow forming?






Preform

- **Enhancement of material strength by around 50%**
- **Homogenisation of microstructure**
- **Higher yield strength**
- **Reduction of necessary wall**



High-strength weight-optimised components

The benefits of producing e-drive components on WF machines

- Extremely robust and durable machine concept applying high forming forces (for 24|7 series production)
- One-piece solution possible in nearly every
- No heating / warming / machining of components prior to forming 
- Cold-forming means significant energy-savings 
- Faster process cycles thanks to elimination of extra jointing and welding work 
- High-strength weight-optimised end products



Unlike other production concepts, flow forming makes it possible to dispense with additional processes, thus raising the energy-efficiency of overall production. Information bearing this symbol describes contributions to sustainable production.