oerlikon
balzers

Precise manufacturing.

BALINIT coatings for low-wear worm gears and replacement of bronze wheels.

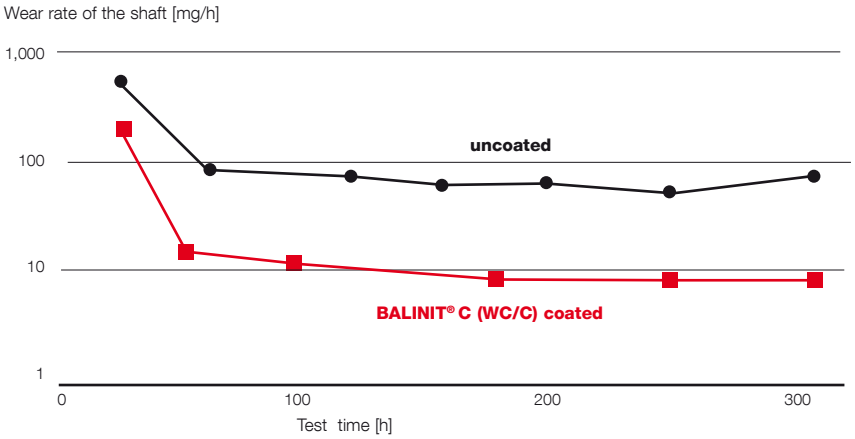
General Engineering

BALINIT C and BALINIT DLC enable wear resistance under extreme conditions.

Worm gears transform high speeds of shafts into high torques. The contact surface operates at extreme pressure-velocity products, i.e. up to 1000N/mm^2 and 4 m/s. Today's solutions use bronze wheels to protect the gear against seizure, but bronze is soft and wears so that the stem can loose the required precision. The optimal solution for this problem is either BALINIT® C or BALINIT® DLC.

They are used in two different designs: First, the shaft running against the bronze wheel is coated, significantly reducing the wear of the bronze. Second, the shaft running against a steel wheel is coated. Both solutions are serially introduced for adjustment movements in tooling machine and are also considered for future continuous running transmissions.

Benefit now from consistently low actuation forces and resistance against premature wear:



Less system wear for BALINIT® C coated worm shaft running against bronze wheel

Your advantages with BALINIT C and BALINIT DLC coated worm gears:

- Less wear of the bronze wheel running against the coated shaft
- Substitution of the bronze wheel with a steel wheel
- Reduced use of the of expensive bronze material and environmentally hazardous alloying element lead
- Higher workpiece accuracy due to less system wear

We recommend: BALINIT C and BALINIT DLC for highest reliability.

	BALINIT® DLC	BALINIT® C
Coating material	a-c:H	Me-C:H
Micro hardness (HK 0.05)	2,500	1,000
Typical thickness	2 - 4 µm	2 - 4 µm
Coefficient of friction µ against steel (dry)	0.1 - 0.2	0.1 - 0.2
Colour	Black grey	Anthracite

There's much more to talk about – please get in touch to discuss how we can help you to improve your business.

Oerlikon Balzers Coating AG | Balzers Technology & Service Centre | Iramali 18 | 9496 Balzers | Liechtenstein
T: +423 388 7500 | F: +423 388 5419 | E: components.balzers@oerlikon.com | www.oerlikon.com/balzers

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