RÖSLER

… and it makes a difference!

After the ISF® process

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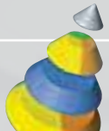
Publ.No. 1230 usa . Specifications are subject to change without notice.

finding a better way

REM SURFACE ENGINEERING



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Before the ISF® process

Isotropic Superfinish (ISF®) Process

Chemically accelerated mass finishing achieves surface finishes as low as Ra = 0.02 µm (Ra = 0.8 µinch), Rz = 0.2 µm (Rz = 8 µinch)

Two strong partners!

The Rösler Company and REM Chemicals, Inc., leaders in vibratory mass finishing, and chemically accelerated surface finishing have combined their knowledge and experience to make the ISF® process available to a wider group of users.

What applications is the ISF® process suitable for?

Materials

- Carbon steel and high-alloy steel
- Stainless steel
- Titanium, zinc, etc.

Typical applications

- Aerospace and automotive gearbox components (mainly gears)
- Race car engine components (cam shafts, tappets, rocker arms)
- Bearing parts (races, rollers)
- Aerospace and power generation turbine components (blades, blisks, disks)
- Turned and milled precision components
- Hand tools, medical implants, surgical instruments, cutting tools

How does the ISF® process work?

The patented ISF® process (chemically accelerated mass finishing) is based on proven components from mass finishing technology.

Reactive ISF® compounds generate a thin oxide layer (black mode) on the surface of the component. Special non-abrasive ceramic media wipes the film from the part's surface.

Peaks on parts are removed without metal removal in the valleys, thus leveling and smoothing the parts surface down to Ra = 0.02 µm (Ra = 0.8 µinch), Rz = 0.2 µm (Rz = 8 µinch).

The ISF® process is then followed by a burnishing step.

ISF® surfaces improve your components' performance characteristics …

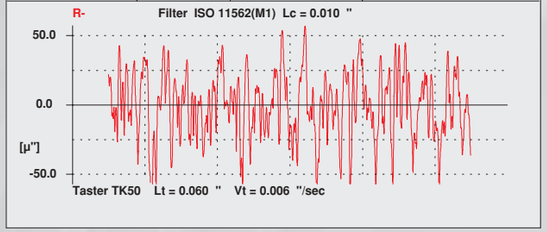
… by

- reducing running noise, friction heat and wear, energy consumption and operating costs
- extending service intervals and overall component life
- allowing the design of lighter weight components

A finish that convinces

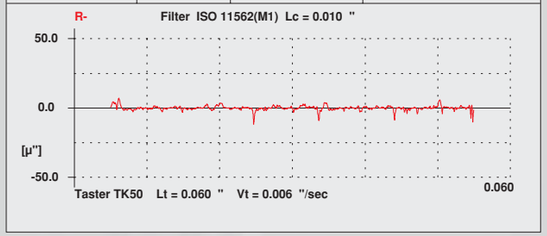
- Surface roughness levels as low as Ra = 0.02 µm (Ra = 0.8 µinch), Rz = 0.2 µm (Rz = 8 µinch).
- Contact area with increased load capacity
- Components geometry maintained
- Surfaces free of abrasive contamination
- Matte to high-gloss surface finishes

measurement-conditions		parameter			
		Ra	19.12 µin	Rmr01(0.100µ")	5.1 %
		Rmax	129.65 µin	Rmr02(0.200µ")	5.1 %
measurement-cond.		Rk	62.60 µin	Rmr03(0.500µ")	5.4 %
tracing pin type /	TK50	Rsk	-0.321	Rmr04(1.000µ")	5.6 %
measuring range /	3200 µ"	Rvk	32.36 µin	Rmr05(1.200µ")	5.8 %
measured section/	0.060 "	Rpk	16.06 µin	Rmr06(2.000µ")	6.5 %
speed /	0.006 "/sec	Rz	117.65 µin	Rmr01(50.0 %)	35.83 µin
cut off	0.010 "			Rmr02(60.0 %)	42.13 µin
filter /	ISO 11562(M			Rmr03(75.0 %)	51.97 µin
measured values /	8000			Rmr04(80.0 %)	55.91 µin
				Rmr05(90.0 %)	66.93 µin
				Rmr06(100.0 %)	110.24 µin



Surface roughness before the ISF® process

measurement-conditions		parameter			
		Ra	1.11 µin	Rmr01(0.100µ")	6.0 %
		Rmax	16.34 µin	Rmr02(0.200µ")	6.0 %
measurement-cond.		Rk	3.54 µin	Rmr03(0.500µ")	7.4 %
tracing pin type /	TK50	Rsk	-0.964	Rmr04(1.000µ")	10.9 %
measuring range /	3200 µ"	Rvk	3.94 µin	Rmr05(1.200µ")	15.4 %
measured section/	0.060 "	Rpk	3.20 µin	Rmr06(2.000µ")	33.5 %
speed /	0.006 "/sec	Rz	13.19 µin	Rmr01(50.0 %)	2.76 µin
cut off	0.010 "			Rmr02(60.0 %)	2.76 µin
filter /	ISO 11562(M			Rmr03(75.0 %)	3.54 µin
measured values /	8000			Rmr04(80.0 %)	3.54 µin
				Rmr05(90.0 %)	3.94 µin
				Rmr06(100.0 %)	14.57 µin



Surface roughness after the ISF® process