

Challenges

A German JV company in China was producing anti-friction bearings and steel balls ranging from 13.95 to 80mm in diameter with precision class ranging from G10 to G200. The bearings and steel balls were being manufactured for Wind Power, Construction Machinery, Mining Equipment, Medical CT scanners and defense-related equipment, such as naval vessels, radar antennas, and airborne vehicles.

Although the customer was meeting the basic production requirements with the current locally supplied metalworking fluid, they were experiencing issues with high foaming and low grinding efficiency. To optimize their process, Quaker introduced MICROCUT® 525 W into their operation.

Providing Solutions

With the introduction of MICROCUT® 525 W the bearing manufacturer was able to achieve cost savings and improve their operations:

- 15% increase in cycle time
- Higher productivity through doubled sump life and good fines settling
- Reduction in odor
- Good operator acceptance
- Monthly total cost savings per machine
- Slower drop in concentration of MICROCUT® 525 W than the competition, reducing daily coolant make-up rates by 23%
- Elimination in manual brushing that was previously required to help grinding during production

Product Description

MICROCUT® 525 W is designed for light-to-medium-duty machining and grinding operations requiring a high degree of cleanliness, detergency, and cooling. It is suitable for use on carbon steel, cast iron, aluminum and other non-ferrous alloys. It is especially good for ball grinding operations.

Process & Equipment

Part:	Bearing Ring, Model 6204
Material:	CRSS-3.0-001 from An Steel
OEM:	He Nan Xin Xiang Machinery Plant
Filtration System:	Paper
Wheel:	Local: P8*9*3

Below is a comparison chart of the local brand versus MICROCUT® 525 W.

Product	Local Brand	MICROCUT® 525 W
Price RMB/KG	30 RMB (\$4.50 USD)	37 RMB (\$5.55 USD)
Sump Size (L)	1,000	1,000
Concentration	4%	2.5%
Ball Diameter	49.98 mm	49.98 mm
Grinding Cycle Time (average)	10hrs/batch	8.5hrs/batch
DCR Frequency	7 days	14 days*
Foam/Settling	high/poor	low/good
Monthly Cost (28 days per month)*	4,800 RMB (\$720 USD)	3,700 RMB (\$555 USD)

* No filter.

Monthly cost for MICROCUT® 525 W: assume daily make up and fines drag out is 2 times initial charge cost, so monthly cost 3,700 RMB (555 USD equivalent).

Product & Process Expertise

Metalworking lubricants represent a very minor part of the costs in a metalworking process, typically less than 1%. This case illustrates the importance of correct fluid selection. The impact of the fluid can be a multiple of its costs, making the price of a metalworking fluid insignificant. That is why Quaker focuses on developing fluids with the highest performance without compromise, fluids that sharpen your competitive edge.