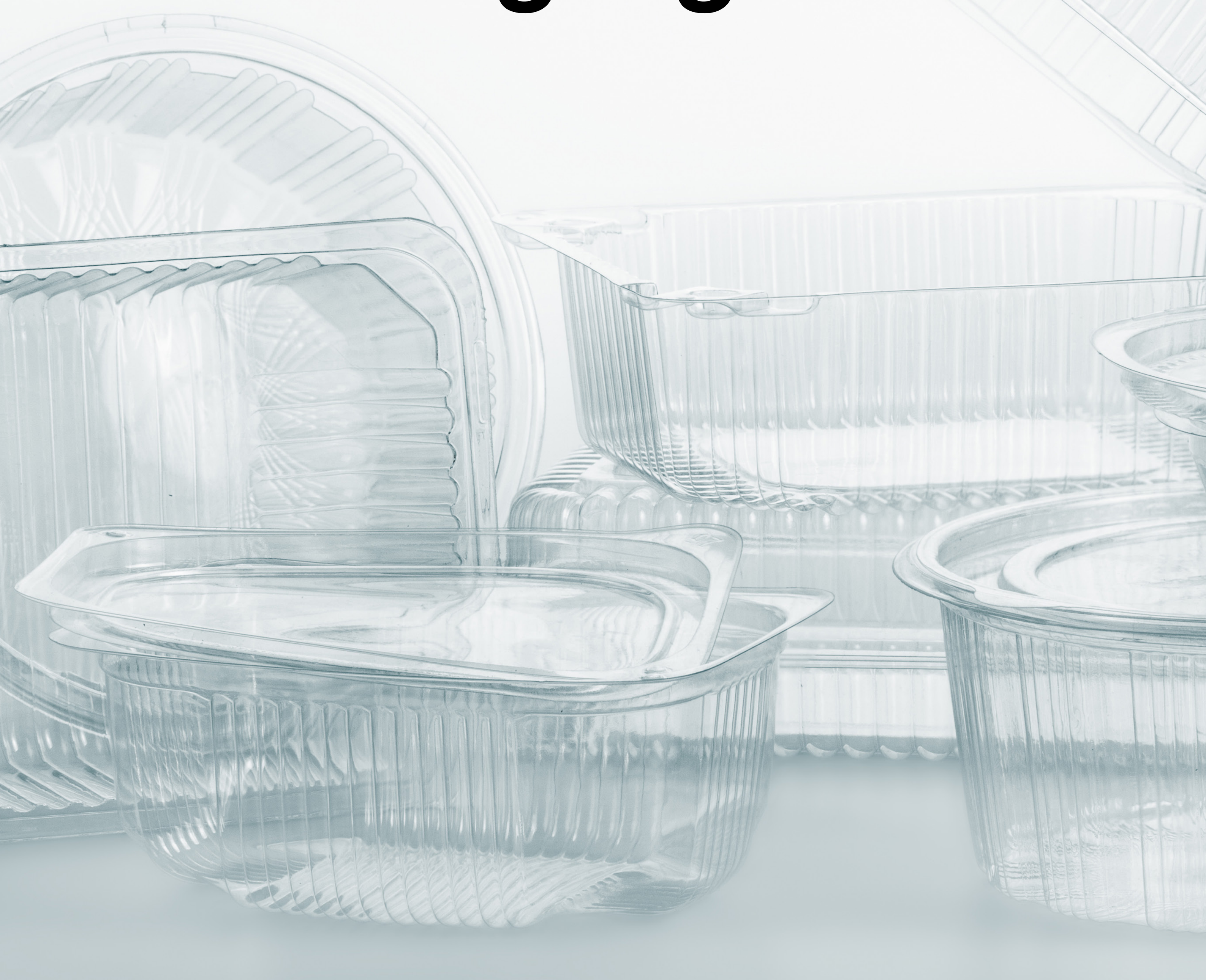
Case Study

Plastic Packaging



ceramicspeed

23 times longer bearing life achieved with CeramicSpeed Bearings

Plastic dust was one of the huge challenges that threatened the bearing life at one of Europe's leading plastic manufacturers.

Problem

Mounted in ovens where the plastic film is extruded 24 hours a day, the bearings are facing a harsh environment, where the temperature varies between 150°C and 170°C. This along with an average of 12-15 start/stop per minute, followed by vibrations, makes it very difficult for conventional steel bearings to last more than 2 weeks.

Solution

CeramicSpeed HighTemp bearings with ceramic balls have a low coefficient of thermal expansion – only a quarter of that of steel balls - and don't micro-weld to the races. These properties mean that our bearings can be used with a lower degree of play compared to other high temperature bearings, improving their function at high RPM.

Result

After implementing CeramicSpeed HighTemp bearings, the company has achieved a bearing life which is 23 times higher compared to conventional bearings. This along with no machine crashes caused by bearings, has increased efficiency and reduced maintenance costs a lot. So in spite of the higher purchase price of hybrid bearings, the investment is already recovered when the bearing life has been extended by only 2 to 3 times.

Technical Highlights

- Harsh environment with plastic dust and vibration
- Many start/stops per minute
- Bearing temperature: 150°C-170°C
- Lubrication: special customized