



Options that will allow bearings to withstand high temperatures

by Mike Mortensen - Director of Engineering RBI-USA

For bearing applications experiencing operating temperatures above 250 ° F , some extra cost features may improve bearing performance and life. Some bearing manufacturers offer heat stabilized 52100 steel that has improved dimensional stability at higher temperatures. Another material option for the bearing ring and ball material could be 440C stainless steel, which remains dimensionally stable up to 300° F. The most costly option would make use of ceramic ring and ball materials allow for extremely high operating temperatures that standard bearing steels cannot achieve.

It is advised that nylon cages should not be used for applications that experience operating temperatures above 230° F. A better option would be to use RBI's standard low carbon steel or 302 stainless for the cage material, which can withstand operating temperatures of up to 400° F. Shields are made from steels that are very similar to steels used form cages, thus the shield material is not much of a concern in regards to elevated operating temperatures. On the other hand, seal material choice is critical for elevated operating temperatures. Two options that are available are polyacrylate rubbers and flouroelastomers. Polyacrylate rubber can withstand operational temperatures up to 350° F, while flouroelastomers can withstand operational temperatures up to 400° F.

Aside from the various bearing materials, grease selection is critical for applications that exceed 250° F operating temperatures. Most bearing lubricants degrade when exposed to continuous elevated temperatures, and lose their ability to effectively lubricate the bearing. This may reduce bearing life significantly. This issue can be resolved by choosing fluorinated greases which are designed to withstand exposure to high temperatures.

www.rbibearing.com			
CHICAGO IL (800) 708-2128 (630) 295-5490 Fax	MONROVIA CA (800) 358-7652 (626) 357-7426 Fax	TORONTO ON (800) 724-2426 (905) 670-2062 Fax	CALGARY AB (800) 724-2426 (403) 256-9140 Fax