



**Bearing Solutions for  
High Speed Dental Handpieces**

## Bearing Solutions for High Speed Dental Handpieces



### Improved Performance

A dental handpiece is perhaps one of the most challenging of all bearing applications. The bearing has to operate at speeds of up to 500,000 rpm and the handpiece undergoes repeated sterilisation. These conditions, combined with continual build up of operating debris, can cause the bearing to fail more quickly than expected.

By using Barden dental bearings you can extend the operating life of your handpiece and significantly reduce costs. In addition, Barden dental bearings will improve handpiece performance and, due to their low noise characteristics, will minimise patient anxiety.

To take advantage of these improvements all you have to do is specify Barden **red** bearings.



### Barden Dental Bearings

The Barden Corporation (UK) Ltd is a recognised world leader in super-precision bearing technology. Barden is part of the multinational Schaeffler Group and has built an unrivalled reputation for world class quality, manufacturing expertise and design of customised engineering solutions.

**For over 25 years** Barden has been at the forefront of dental bearing design, enabling today's high performance handpieces to become a reality.

### Why Use Barden?

- Barden is a major supplier to the dental market worldwide and has a bearing to fit every dental handpiece.
- Barden has been at the forefront of developments to improve all areas of dental turbine bearing performance.

- Barden has a continuous dental research programme using on site, state of the art, test facilities backed up by Schaeffler Group R&D.
- Barden is the largest supplier of ceramic hybrid bearings in the world and was the first manufacturer to prove the benefits of hybrid bearings in terms of higher speed capability and extended operating life.
- Barden's unique bearing design capability has enabled handpiece warranty periods to be continuously extended.
- Barden's lean manufacturing and assembly techniques combined with attention to quality result in a high performance bearing at the right price.





## Technical Features and Benefits

Barden's extensive range of dental bearings provides the very best in performance and reliability for all modern high speed dental handpieces.

### Hybrid Bearings

Ceramic balls are harder, lighter, and more wear resistant than steel.

Ceramic balls generate less centrifugal forces at high operating speeds in a dental turbine significantly reducing internal loads and wear.

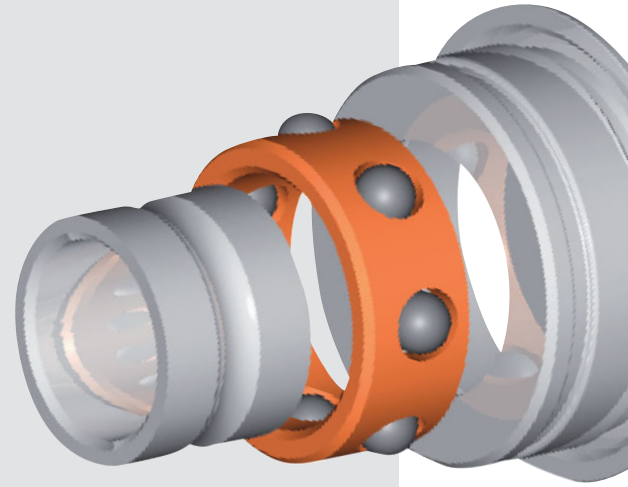
Lubricant life is increased using ceramic balls because less wear particles are produced.

### Increased Speed

Particular attention has been focused on techniques for finishing the inner and outer ring raceways of dental turbine bearings.

## Performance Check List

- ✓ Materials
  - Ceramic balls for longer life
  - High quality stainless steel
- ✓ Full range of bearings for every handpiece
- ✓ Cage materials from economical Phenolic to high performance polymers
- ✓ Standard and integral shields for quietest performance
- ✓ Bore calibration for the perfect fit
- ✓ Special features
- ✓ Advanced sterilisation proof lubricants



The raceways benefit from a new honing technique developed by Barden, which improves both the quality of their surface finish and their relative roundness.

Special internal designs are used to optimise the bearing for capacity, low torque and speed.

**The result is consistently higher speeds over the lifetime of the handpiece.**

### Longer Life

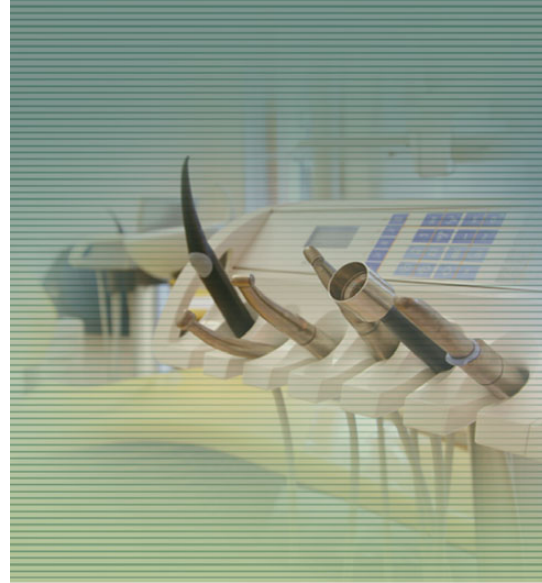
An improved sealing design in Barden dental bearings reduces the critical gap between the integral shield and the bearing inner by 60% when compared to conventional shield and circlip designs.

There are significant benefits to this development such as overcoming the risk of shield ejection, preventing contamination and retaining lubricant more effectively.

The result is a greatly increased life, up to four times that of more traditional bearing solutions.

### Reduced Noise

The compact integral shield design and extremely fine tolerances of Barden bearings reduce operating noise. This results in a more comfortable operating mode and less patient anxiety thanks to reduced vibration and quieter running.



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