

NTN-SNR EF800 Sphericals for Vibrating Screens - the industry's most successful solution for efficient crushing.

The vibratory mechanisms such as those found in screeners, crushers, grinders constitute some of the most demanding applications for bearings. NTN-SNR, from the ULTAGE spherical roller bearing range, has developed a specific design to meet these critical requirements - the EF800 series.



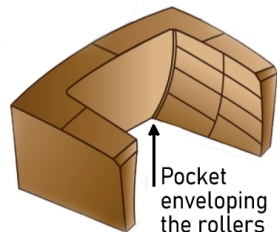
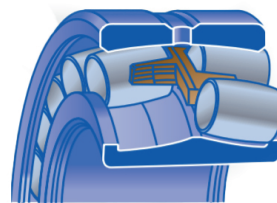
High vibration machinery (shaker screens, crushers, grinders, etc.,) subject bearings to high levels of stress, heavy loads, radial acceleration, centrifugal forces, a highly polluted environment, etc.,. All of this imposes reliability and specific resistance characteristics on the spherical roller bearings.

NTN-SNR's EF800 Sphericals, designed specifically for applications with heavy vibration are:

- Available with cylindrical or tapered bore (K)
- Available with bore diameters from 40 - 200mm
- Manufactured according to EF800 specifications which define the special tolerances and radial clearance of spherical roller bearings.
- Available on request for other series and other dimensions upon request.

OPTIMISED MASSIVE BRASS CAGE

The high radial accelerations of vibrating applications place particular stress on the cage. The EF800 series is equipped with a cage able to respond to this.



- Symmetrical rollers with a machined brass one-piece cage, centred on the rolling elements.
- No floating guide ring or fixed central shoulder section. This prevents any risk of cage / ring seizure in the event of thermal expansion. The self-lubricating properties of the cage reduce heat build-up at high speeds.
- The contoured profile of the cage pockets, the capacity of the copper alloy to withstand impacts, guarantees the stability of the rolling elements under the operating conditions.

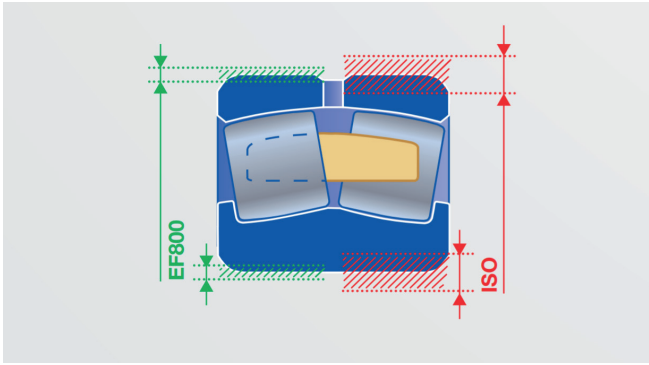
Pollution, overload, overheating, housing deformation or loss of lubricant efficiency are the main causes of failure. When initial damage occurs, the massive brass cage ensures a longer service life, allowing the planning of preventive maintenance.

SPECIFIC DIMENSION TOLERANCES

The EF800 specification sets out reduced bore tolerances for cylindrical bores, tapered bores and for the outer diameters, compared with the tolerance ranges of the standard series, guaranteeing perfect ring adjustment.



Find Your Bearings



- Cylindrical bore: reduced tolerances to g6 or f6 type.
- Tapered bore: reduced tolerances enabling limitation of the axial displacement of the inner ring when setting the clearance during assembly, thereby facilitating the assembly operations.
- Outer diameter; reduced tolerances of P6 type.

REDUCED INTERNAL RADIAL CLEARANCE

In order to avoid any risk of preload on the bearings, linked to the adjustment defects or deformation of the shaft or housing sealing surfaces. NTN-SNR proposes a special radial clearance range that facilitates achievement and control of final radial clearance after assembly and takes specific operating conditions into account for these materials.

EF800 series = C4 with reduced tolerance

Clearance	22320*		Clearance in microns												
	Min	Max	130	135	140	145	150	155	160	165	170	175	180	185	
C4	135	180													
EF800	150	180													

*Cylindrical bore

In certain cases, applications may require the use of a clearance other than C4.

- EF801 series = C3 with reduced tolerance
- EF802 series = C0 with reduced tolerance

NTN-SNR Customer Testimony

EF800 Series is particularly suited to increase the bearing life duration in the most demanding of mine and quarry applications, as may be encountered in screeners, crushers, grinders... AND DECREASE MAINTENANCE COSTS.

"Our installation is subject to very high production demands making availability for maintenance limited. That is why we have to fit machine components, in particular the bearings, with the most reliable and durable equipment possible.

Our aim as quarry operators is to ensure site productivity and efficiency are as high as possible. This keeps costs down and limits machine downtime.

Crushers and screeners are subject to radial stress due to the large amount of impacts and vibration NTN-SNR has developed a special range of spherical roller bearings with brass cage: EF800 bearings.

We have seen a real increase in productivity, thanks to the quality of NTN-SNR EF800 series."

Romain DELHAYE, Quarry Manager, A2C GRANULAT

TOTALLY ADAPTED FOR GREASING EF800 SERIES VIB VIBRATIONS & SHOCKS BEARING GREASE FROM NTN-SNR



This grease is an ideal lubricant for parts subjected to extensive vibrations or impact. Recommended for quarries, cement plants, public works operations, high-load applications in humid, dusty and muddy environments.

STANDARD APPLICATIONS

Shafts in scoops, crushers, grinders, vibrating screeners, scalpers, feeders, washing machines industrial fans, etc.,.

BENEFITS

Excellent resistance to impact, vibrations and heavy loads, excellent resistance to water guaranteeing long-term lubrication.

TEMPERATURE RANGE

From -20°C to +140°C

Example list of NTN-SNR EF800 Sphericals designed for Vibrating Applications

	Shaft Diameter mm	Overall Dimensions			Basic Load Ratings		Reference Speed rpm	Limiting Speeds rpm
		d	D	B	Dynamic kN	Static kN		
22320EF800	100	100	215	73	827	844	2600	3100
22322EF800	110	110	240	80	975	972	2300	2800
22324EF800	120	120	260	86	1170	1280	2000	2500
22326EF800	130	130	280	93	1330	1400	1800	2400
22328EF800	140	140	300	102	1540	1720	1600	2200
22330EF800	150	150	320	108	1740	1890	1500	2100
22332EF800	160	160	340	114	1950	2210	1400	1900
22334EF800	170	170	360	120	2200	2630	1200	1800
22336EF800	180	180	380	126	2420	2810	1200	1700
22338EF800	190	190	400	132	2600	3120	1100	1600

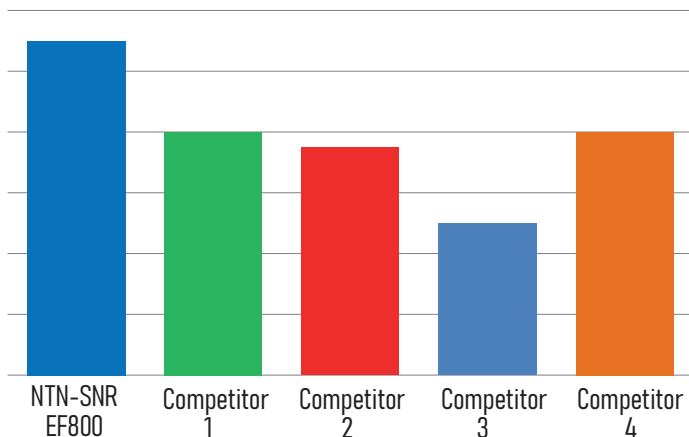
	Shaft Diameter mm	Overall Dimensions			Basic Load Ratings		Reference Speed rpm	Limiting Speeds rpm
		d	D	B	Dynamic kN	Static kN		
22322EKF800	100	110	240	80	975	972	2300	2800
22324EKF800	110	120	260	86	1170	1280	2000	2500
22326EKF800	120	130	280	93	1330	1400	1800	2400
22328EKF800	125	140	300	102	1540	1720	1600	2200
22330EKF800	135	150	320	108	1740	1890	1500	2100
22332EKF800	140	160	340	114	1950	2210	1400	1900
22334EKF800	150	170	360	120	2200	2630	1200	1800
22338EKF800	170	190	400	132	2600	3120	1100	1600

NTN-SNR's range of EF800 bearings includes:

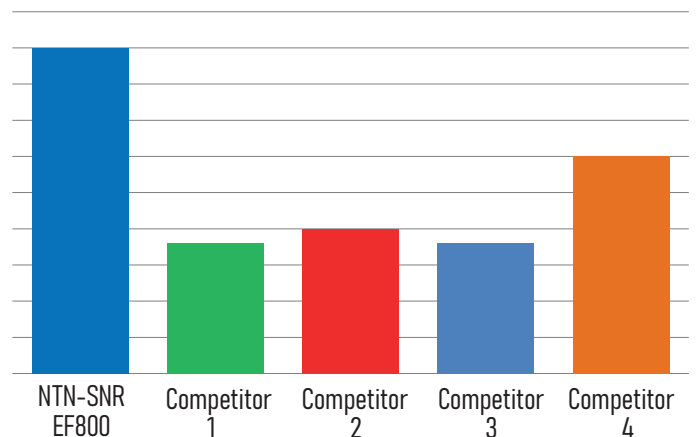
- Bearings with cylindrical bore 22308 to 22340 (40mm - 200mm shaft dia)
- Bearings with tapered bore 22308K to 22340K (35mm to 180mm shaft dia)
- Solutions in 222** range
- Solutions in 233** range

Comparison of Dynamic Load Ratings (kN) between Major Competitors
(Data from each competitor's own technical catalogue)

Example - 22326 for Vibrating Screens



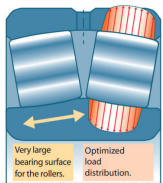
Example - 22332 for Vibrating Screens



ULTAGE™ Spherical Roller Bearings - Less Downtime, More Profit!

Spherical roller bearings are engineered to offer excellent resistance to high temperatures and loads, meaning that they are capable of withstanding the harshest applications. They are a popular choice for absorbing misalignments, impacts and vibrations, as well as operating in polluted environments.

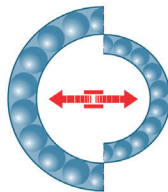
The advantages of the ULTAGE Range



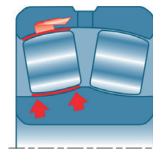
Surface Optimisation



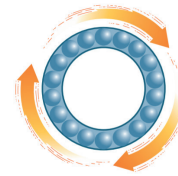
Reduce Power Consumption



Higher Performance for Smaller Dimensions



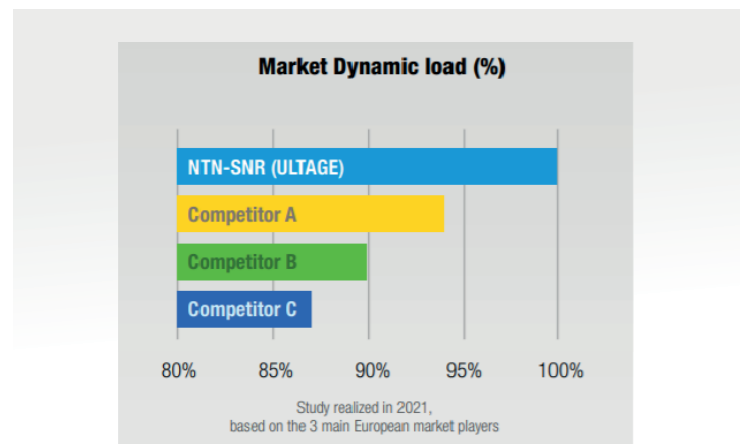
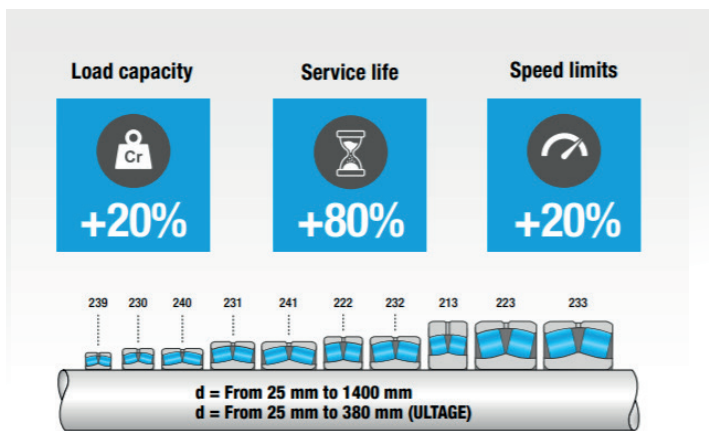
Reduced Friction Torque



Increased Operating Speeds



Reduced Operating Costs



ULTAGE EM Design - Massive Brass Cage

No floating guiding ring nor fixed central rib - improved lubrication; decreased friction; reduced operating temperature.

Enveloping cage centred on roller - excellent roller stability under heavy load; reduction of heat generation; no seizure risk linked to thermal expansion.

Single piece brass cage - excellent resistance to shock and vibration; self-lubricating property, decreasing friction with roller; increased speed.

Optimised curvature ratio - reduced contact pressure; longer service life; lower maintenance costs.

