

QUARRY PACK  
**ALWAYS EFFECTIVE  
AND RELIABLE**  
in extreme conditions

**NTN<sup>®</sup>** **SNR<sup>®</sup>**

[www.ntn-snr.com](http://www.ntn-snr.com)



With You



# SIMPLIFY YOUR ACTIVITY WITH THE NTN-SNR OFFERING:

- SOLUTIONS FOR EVERY STAGE OF THE MANUFACTURING PROCESS.
- ABSOLUTE RELIABILITY TO REDUCE YOUR MAINTENANCE INTERVALS.
- COMPLETE KITS, DESIGNED TO HAVE EVERYTHING ON HAND.

## 1 GRINDING/CRUSHING

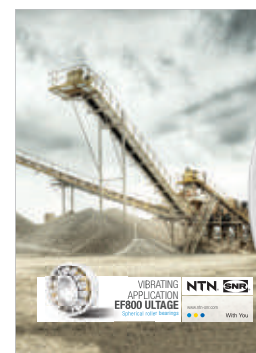
Spherical roller bearings of large size (up to 600 mm) and SNCD ductile cast iron bearings, the turnkey solution for increased impact resistance.



You no longer need to worry about impacts with our range of spherical roller bearings and bearing housings!

## 2 SCREENING

Spherical roller bearings EF800, a range designed for extreme resistance to vibrations



Our EF800 bearings: the perfect solution for vibrating applications.

## 3 CONVEYING

### SNC BEARING HOUSING/ OPEN OR SEALED BEARING KITS:

Order a single product reference and be sure everything is available...

It is simple, everything is in the box!

### SEALED BEARING KITS:

Increased service life for conveyors.

Mounting is made easy thanks to our kits including the specific elements of sealed spherical roller bearings.



We have thought of everything to make mounting easier for you!

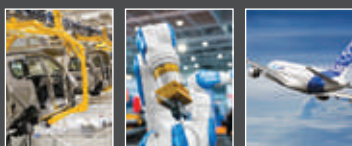
### AGR INSERT BEARINGS:

Premium protection against pollution and lifelong lubrication for reduced maintenance. Adaptable to all self-aligning ball bearing types.



Once you've mounted it, forget about it!





# NTN-SNR, a leading player

Expert in Product Life Cycle Management, NTN Corporation is characterised by the closeness and commitment of its teams. We think ahead to development projects in your strategic markets.

Our engineers work with you to design solutions specific to your market. Our NTN and SNR brands contribute to the excellence of your machines and so support their promotion.

## LUBRICATION, TOOLS & SERVICES

Providing you with a complete solution of tools and services for your bearings, suited to your application, size and resources.

### LUBRICATION RANGE:

Greases: Heavy Duty/VIB.

Single-point lubrication system: Drive Booster.

### TOOL RANGE:

A complete range for mounting and removal assistance.

### TRAINING:

Training of your employees on the choice and maintenance of bearings.

### TECHNICAL ASSISTANCE:

Our Experts & Tools specialists help with maintenance work using our mobile assistance concept, the BeBox.





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# NTN-SNR SOLUTIONS SEALED BEARING KITS FOR CONVEYORS

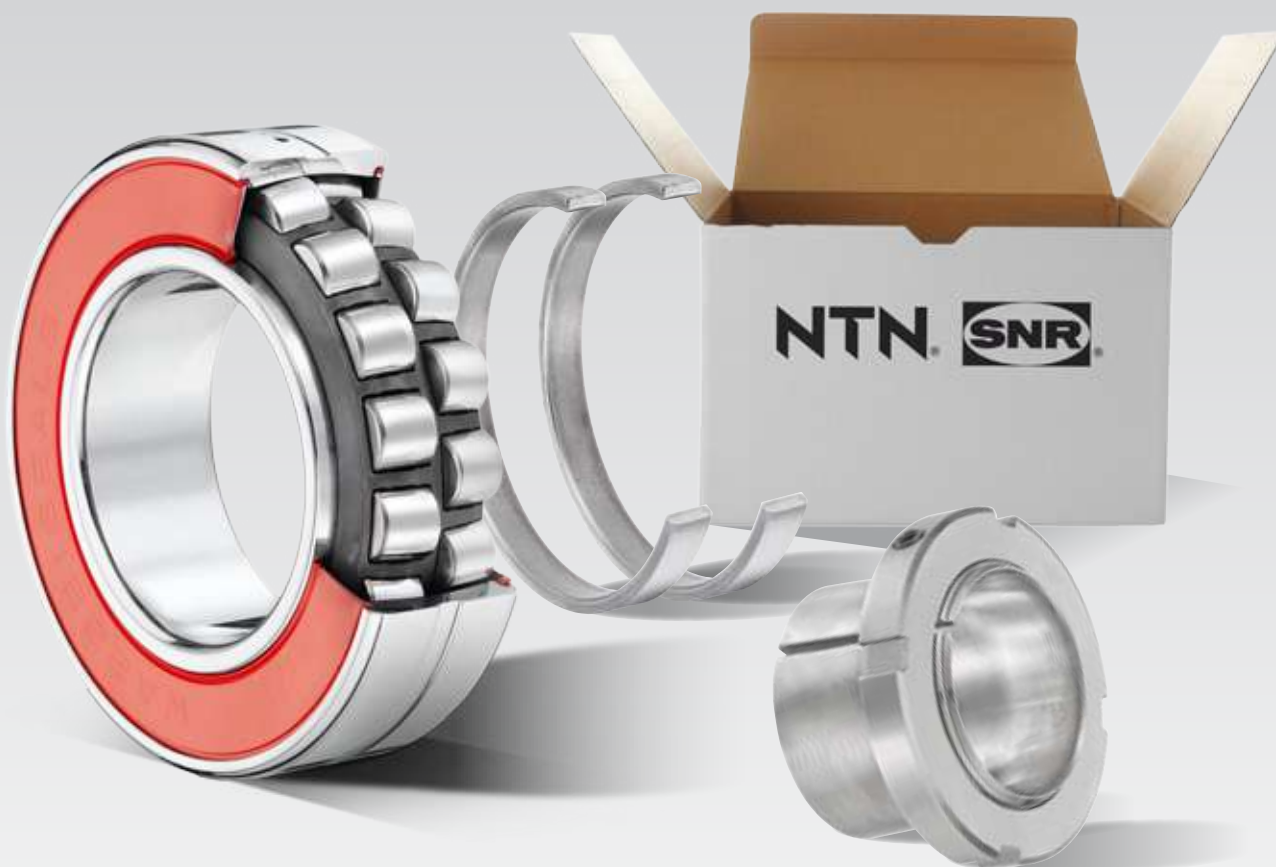
QUARRIES, MINES & CEMENT PLANTS



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## SPECIFIC CHARACTERISTICS:

- Longer service life of the bearing
- Reduced maintenance costs
- Reduction of environmental impact
- Interchangeability with standard open bearings



**CREATED TO INCREASE  
PRODUCTIVITY,  
PERFORMANCE AND  
RELIABILITY IN HARSH  
ENVIRONMENTS**

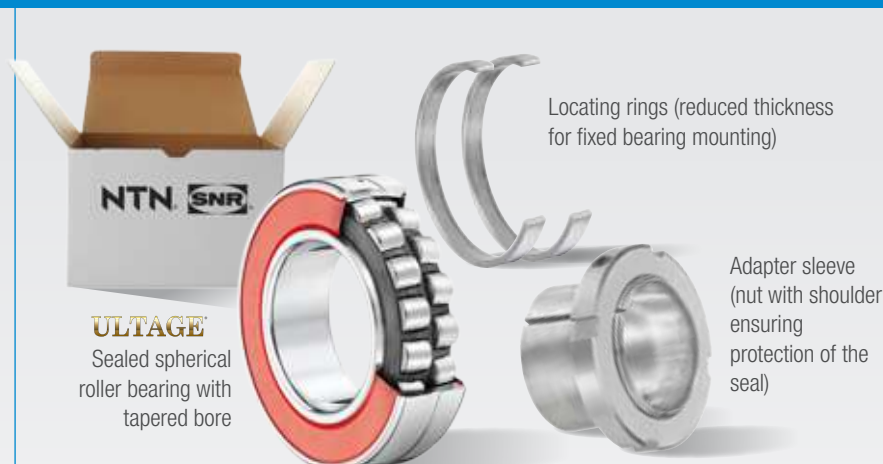
## OPT FOR THE ALL-IN-ONE

### Benefits of kits

- No error in the choice of components
- Simplicity of ordering and storage  
(Only 1 reference to manage instead of 3)
- No oversight at the time of mounting
- Mounting kit for fixed and floating bearings (2 in 1)\*

\* Mounting in standard cast iron bearing housing (SNC NTN-SNR type)

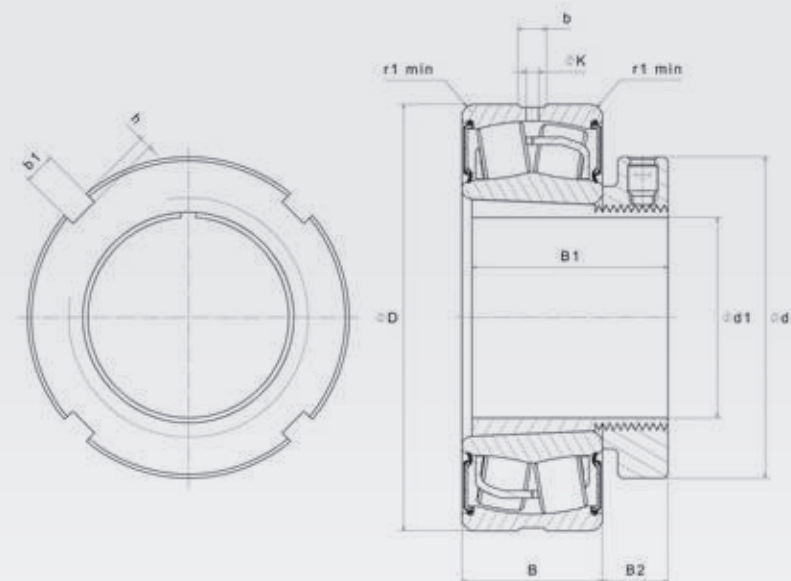
# SEALED BEARING KITS FOR CONVEYORS



Shaft diameters  
from 35 to 90 mm

**26 available KIT references:**  
13 with normal clearance  
13 with C3 clearance

**On request, possibility of extending  
the range to other shaft diameters**



| Description         | Overall dimensions |     |    | Fatigue load limit | Basic capacity |                | Calculation factors |                |                |                | Limit speed | Weight | Number of holes | Dimensions |     |                |                |                |                |                |     | Fitting dimensions  |                     |
|---------------------|--------------------|-----|----|--------------------|----------------|----------------|---------------------|----------------|----------------|----------------|-------------|--------|-----------------|------------|-----|----------------|----------------|----------------|----------------|----------------|-----|---------------------|---------------------|
|                     |                    |     |    |                    | Dynamic        | Static         |                     |                |                |                |             |        |                 | b          | K   | r <sub>1</sub> | d <sub>2</sub> | B <sub>1</sub> | B <sub>2</sub> | b <sub>1</sub> | h   | D <sub>a</sub> max. | r <sub>a</sub> max. |
|                     | d <sub>1</sub>     | D   | B  | C <sub>u</sub>     | C              | C <sub>0</sub> | e                   | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | rpm         | kg     | mm              |            |     |                |                |                |                |                | mm  |                     |                     |
|                     | mm                 |     |    | kN                 | kN             |                |                     |                |                |                |             |        |                 |            |     |                |                |                |                |                |     |                     |                     |
| KIT10X22208EAKW33EE | 35                 | 80  | 28 | 11,2               | 116            | 105            | 0,27                | 2,47           | 3,67           | 2,41           | 2300        | 1      | 3               | 5,4        | 2,5 | 1,1            | 58             | 46             | 13             | 6              | 2,5 | 73,9                | 1                   |
| KIT10X22209EAKW33EE | 40                 | 85  | 28 | 12,7               | 121            | 113            | 0,26                | 2,64           | 3,93           | 2,68           | 2100        | 1      | 3               | 5,8        | 2,5 | 1,1            | 65             | 39             | 13             | 6              | 2,5 | 78,7                | 1                   |
| KIT10X22210EAKW33EE | 45                 | 90  | 28 | 14,5               | 130            | 124            | 0,24                | 2,84           | 4,23           | 2,78           | 2000        | 1,1    | 3               | 5,8        | 2,5 | 1,1            | 70             | 42             | 14             | 6              | 2,5 | 83                  | 1                   |
| KIT10X22211EAKW33EE | 50                 | 100 | 31 | 18                 | 155            | 148            | 0,23                | 2,95           | 4,4            | 2,89           | 1800        | 1,4    | 3               | 6,4        | 3   | 1,5            | 75             | 45             | 14             | 7              | 3   | 93,9                | 1,5                 |
| KIT10X22212EAKW33EE | 55                 | 110 | 34 | 22,1               | 187            | 181            | 0,24                | 2,84           | 4,23           | 2,78           | 1600        | 1,8    | 3               | 6,9        | 3   | 1,5            | 80             | 47             | 14             | 7              | 3   | 102,5               | 1,5                 |
| KIT10X22213EAKW33EE | 60                 | 120 | 38 | 25,2               | 226            | 224            | 0,24                | 2,79           | 4,15           | 2,73           | 1500        | 2,5    | 3               | 7,8        | 3,5 | 1,5            | 85             | 65             | 15             | 7              | 3   | 116,4               | 1,5                 |
| KIT10X22214EAKW33EE | 60                 | 125 | 38 | 28,8               | 235            | 240            | 0,22                | 3,01           | 4,48           | 2,94           | 1400        | 2,6    | 3               | 7,4        | 3,5 | 1,5            | 92             | 52             | 15             | 8              | 3,5 | 117,1               | 1,5                 |
| KIT10X22215EAKW33EE | 65                 | 130 | 38 | 30,3               | 224            | 249            | 0,22                | 3,14           | 4,67           | 3,07           | 1300        | 2,9    | 3               | 7,4        | 3,5 | 1,5            | 98             | 55             | 16             | 8              | 3,5 | 121,6               | 1,5                 |
| KIT10X22216EAKW33EE | 70                 | 140 | 40 | 34,5               | 278            | 287            | 0,22                | 3,14           | 4,67           | 3,07           | 1200        | 3,5    | 3               | 7,9        | 3,5 | 2              | 105            | 59             | 18             | 8              | 3,5 | 131,5               | 2                   |
| KIT10X22217EAKW33EE | 75                 | 150 | 44 | 38,8               | 324            | 330            | 0,22                | 3,07           | 4,57           | 3              | 1200        | 4,2    | 3               | 7,9        | 3,5 | 2              | 110            | 63             | 19             | 8              | 3,5 | 140,8               | 2                   |
| KIT10X22218EAKW33EE | 80                 | 160 | 48 | 43,3               | 384            | 398            | 0,23                | 2,9            | 4,31           | 2,83           | 1000        | 5,3    | 3               | 10         | 4,5 | 2              | 120            | 73             | 19             | 10             | 4   | 149                 | 2                   |
| KIT10X22219EAKW33EE | 85                 | 170 | 51 | 47,9               | 416            | 417            | 0,23                | 2,95           | 4,4            | 2,89           | 1100        | 6,3    | 3               | 9,9        | 4,5 | 2,1            | 125            | 90             | 20             | 10             | 4   | 158                 | 2                   |
| KIT10X22220EAKW33EE | 90                 | 180 | 55 | 53                 | 472            | 495            | 0,24                | 2,84           | 4,23           | 2,78           | 1000        | 7,5    | 3               | 11         | 5   | 2,1            | 130            | 97             | 21             | 10             | 4   | 168                 | 2                   |

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# NTN-SNR SOLUTIONS

## SNC BEARING KITS FOR CONVEYORS

QUARRIES, MINES & CEMENT PLANTS



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**CREATED TO INCREASE  
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RELIABILITY IN HARSH  
ENVIRONMENTS**

### OPT FOR THE ALL-IN-ONE

#### Benefits of kit

- More cost-effective than purchasing components separately
- No error in the choice of accessories
- No oversight of elements at the time of the order and/or mounting
- Simplicity of ordering and storage: Only 1 reference to manage
- Cover plate and locating rings included: for mounting fixed or floating bearings

## SNC BEARING KITS + ULTAGE OPEN BEARING



SNC pillow block  
+ 2 DS double lip seals  
+ plug



**ULTAGE**  
Open spherical  
roller bearing with  
tapered bore



Withdrawal  
sleeve



Locating  
rings

**CONTROL  
UNIT  
OFFERED**



Single-point DRIVE Booster  
lubrication system and its  
protection



### REDUCTION IN OVERALL OPERATING COSTS:

- Elimination of lubrication intervals
- Savings on your grease consumption

| Description            | d          | Bearing ref. |
|------------------------|------------|--------------|
|                        | Shaft [mm] | SNC          |
| KITSNC22208KDS/DB120HD | 35         | SNC 508-607  |
| KITSNC22209KDS/DB120HD | 40         | SNC 509      |
| KITSNC22210KDS/DB120HD | 45         | SNC 510-608  |
| KITSNC22211KDS/DB120HD | 50         | SNC 511-609  |
| KITSNC22212KDS/DB120HD | 55         | SNC 512-610  |
| KITSNC22213KDS/DB120HD | 60         | SNC 513-611  |
| KITSNC22215KDS/DB120HD | 65         | SNC 515-612  |
| KITSNC22216KDS/DB120HD | 70         | SNC 516-613  |
| KITSNC22217KDS/DB120HD | 75         | SNC 517      |
| KITSNC22218KDS/DB120HD | 80         | SNC 518-615  |

Shaft diameters:  
from 35 to 80 mm

20 KIT references available:  
10 With normal clearance  
10 With C3 clearance

On request, possibility of extending  
the range to other shaft diameters

## SNC BEARING KITS + ULTAGE SEALED BEARING



SNC pillow block  
+ 2 DS double lip seals  
+ plug



**ULTAGE**  
Sealed spherical roller  
bearing with tapered bore



Specific  
adapter sleeve



Specific  
locating rings



### REDUCTION IN OVERALL OPERATING COSTS:

The service life of the bearing  
is increased thanks to its seal,  
which acts as a guard against  
pollution

| Description         | d          | Bearing ref. |
|---------------------|------------|--------------|
|                     | Shaft [mm] | SNC          |
| KITSNC10X22208KEEDS | 35         | SNC 508-607  |
| KITSNC10X22209KEEDS | 40         | SNC 509      |
| KITSNC10X22210KEEDS | 45         | SNC 510-608  |
| KITSNC10X22211KEEDS | 50         | SNC 511-609  |
| KITSNC10X22212KEEDS | 55         | SNC 512-610  |
| KITSNC10X22213KEEDS | 60         | SNC 513-611  |
| KITSNC10X22215KEEDS | 65         | SNC 515-612  |
| KITSNC10X22216KEEDS | 70         | SNC 516-613  |
| KITSNC10X22217KEEDS | 75         | SNC 517      |
| KITSNC10X22218KEEDS | 80         | SNC 518-615  |

Shaft diameters:  
from 35 to 80 mm

20 KIT references available:  
10 With normal clearance  
10 With C3 clearance

On request, possibility of extending  
the range to other shaft diameters



# NTN-SNR SOLUTIONS

## AGR: INSERT BEARINGS FOR CONVEYORS

QUARRIES, MINES & CEMENT PLANTS



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**AGR  
sealing system**

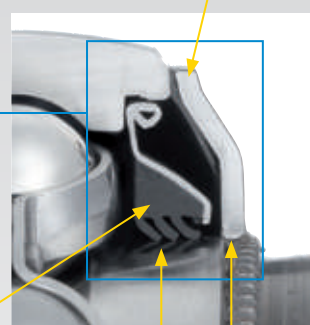
**Triple lip L3**  
Excellent protection  
against pollution

#### For lifelong lubrication:

High-performance grease  
with fill factor of 90%:

- Good protection against wear
- Suitable for heavy loads

**Zinc-plated shield**  
equipped with a single lip  
seal to seal the contact with  
the outer ring (zinc-plated)



**Crimped shield**  
on inner ring  
(zinc-plated)



**CREATED TO INCREASE  
PRODUCTIVITY,  
PERFORMANCE AND  
RELIABILITY IN HARSH  
ENVIRONMENTS**

### ALL-PURPOSE BEARING

#### Benefits

- Protection against splashes in very tough environments
- Sealing suitable for high-pressure cleaning
- Lifelong lubricated insert - no need to re-grease

Compatible with all self-aligning cast iron  
ball bearings in the NTN-SNR range

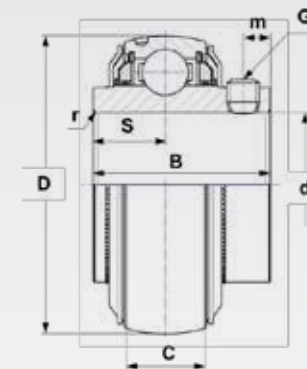


## AGR: INSERT BEARINGS FOR CONVEYORS

### UC...AGR tightening by set screws (2 possible rotation directions)

| Description | d  | D   | C  | B    | S     | m    | G        | r   | Load capacities |             | Weight |
|-------------|----|-----|----|------|-------|------|----------|-----|-----------------|-------------|--------|
|             |    |     |    |      |       |      |          |     | Dyn. (Cr)       | Stat. (Cor) |        |
|             | mm | mm  | mm | mm   | mm    | mm   |          | mm  | kN              | kN          | kg     |
| UC207AGR    | 35 | 72  | 20 | 42.9 | 17.5  | 6.5  | M8x1     | 1.1 | 25.7            | 15.2        | 0.5    |
| UC208AGR    | 40 | 80  | 21 | 49.2 | 19    | 8    | M8x1     | 1.1 | 29.6            | 18.2        | 0.63   |
| UC209AGR    | 45 | 85  | 22 | 49.2 | 19    | 8    | M8x1     | 1.1 | 31.85           | 20.8        | 0.73   |
| UC210AGR    | 50 | 90  | 23 | 51.6 | 19    | 9    | M8x1     | 1.1 | 35.1            | 23.2        | 0.8    |
| UC211AGR    | 55 | 100 | 25 | 55.6 | 22.2  | 9    | M8x1     | 1.5 | 43.55           | 29.2        | 1.1    |
| UC212AGR    | 60 | 110 | 27 | 65.1 | 25.4  | 10.5 | M10x1.25 | 1.5 | 52.5            | 32.8        | 1.37   |
| UC308AGR    | 40 | 90  | 28 | 58*  | 22.2* | 8.5  | M10x1.25 | 2   | 40.56           | 24          | 1.1    |
| UC309AGR    | 45 | 100 | 30 | 57   | 22    | 9    | M10x1.25 | 2   | 53              | 31.8        | 1.26   |

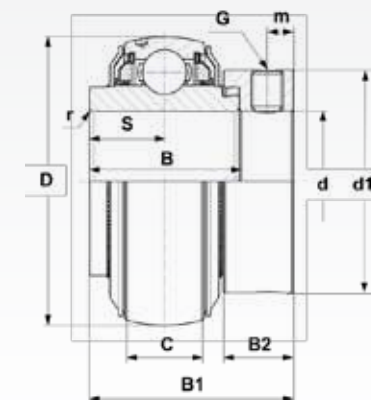
\*Width dimensions higher than standard version.



### EX...AGR Fixing to shaft using eccentric locking collar (1 rotation direction)

| Description | d  | D   | C  | B     | B1    | S     | d1   | m   | B2   | G        | r   | Load capacities |             | Weight |
|-------------|----|-----|----|-------|-------|-------|------|-----|------|----------|-----|-----------------|-------------|--------|
|             |    |     |    |       |       |       |      |     |      |          |     | Dyn. (Cr)       | Stat. (Cor) |        |
|             | mm | mm  | mm | mm    | mm    | mm    | mm   | mm  | mm   |          | mm  | kN              | kN          | kg     |
| EX207AGR    | 35 | 72  | 20 | 37.6  | 51.1  | 18.8  | 55.6 | 6.5 | 17.5 | M8x1     | 1.1 | 25.7            | 15.2        | 0.64   |
| EX208AGR    | 40 | 80  | 21 | 42.8  | 56.3  | 21.4  | 58   | 6.5 | 18.3 | M8x1     | 1.1 | 29.6            | 18.2        | 0.74   |
| EX209AGR    | 45 | 85  | 22 | 42.8  | 56.3  | 21.4  | 63.5 | 6.5 | 18.3 | M8x1     | 1.1 | 31.85           | 20.8        | 0.87   |
| EX210AGR    | 50 | 90  | 23 | 49.2  | 62.7  | 24.6  | 66.9 | 6.5 | 18.3 | M8x1     | 1.1 | 35.1            | 23.2        | 1.01   |
| EX211AGR    | 55 | 100 | 25 | 55.4  | 71.3  | 27.7  | 76.2 | 8   | 20.7 | M10x1.25 | 1.5 | 43.55           | 29.2        | 1.35   |
| EX212AGR    | 60 | 110 | 27 | 61.8  | 77.7  | 30.9  | 82   | 8   | 22.3 | M10x1.25 | 1.5 | 52.5            | 32.8        | 1.67   |
| EX308AGR    | 40 | 90  | 28 | 49.5* | 65.3* | 22.2* | 63.5 | 8   | 20.6 | M10x1.25 | 2   | 40.65           | 24          | 1.28   |

\*Width dimensions higher than standard version.



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# PLUMMER BLOCK SNCD31

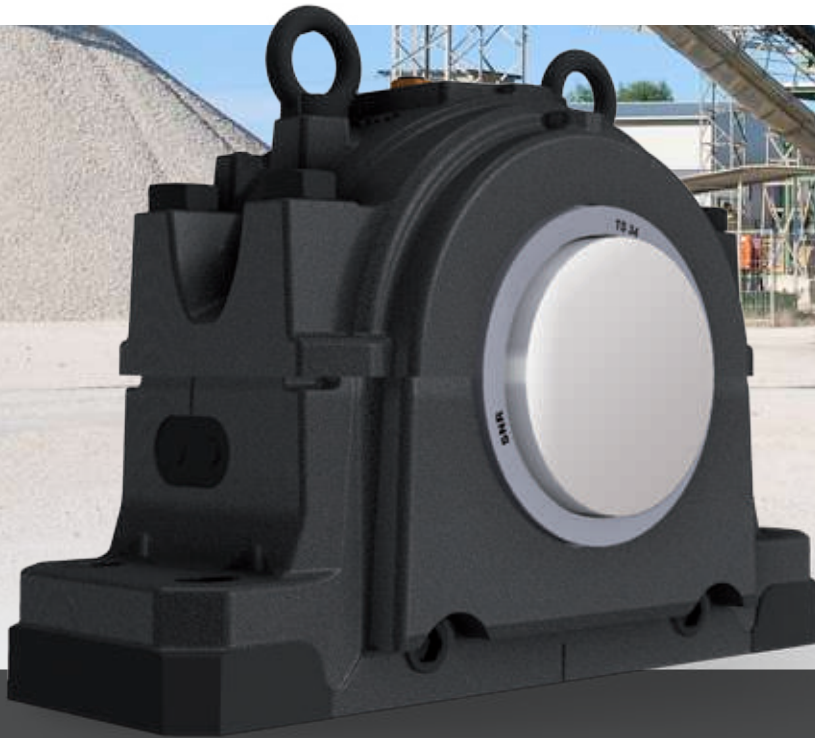
THE NEXT SERIES FOR HIGHEST REQUIREMENTS



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## SNCD31 THE NEXT SERIES

After SNCD500 NTN-SNR will continue its range extension with the large **SNCD31** and **30** series for both cylindrical and tapered bore bearings.

The new SNCD31 are consequently made from spheroidal cast material to have highest shock resistance and good low temperature behavior. This series is interchangeable with SD series according to ISO 113.

## Extend the life duration with the SNC plummer block housing range!

The optimized design provides excellent rigidity and stability, vibration dampening and improves strength and heat dissipation characteristics in order to provide reduced stress levels in the bearing and a cooler running temperature of its lubricant and thereby extending operating and service life.

The SNCD plummer block housings are designed for installation of spherical roller bearings. We recommend the use of our ULTAGE spherical roller bearings with higher increased load capacities and extended service life, to take advantage of the optimal characteristics of the SNC Housings. We complete our range with the tools and solutions of our service department.

## Your benefits:

Improved shape to guarantee excellent stability and rigidity of bearing seat by:

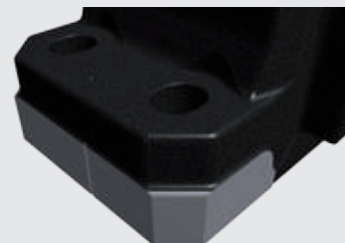
Belt on upper part  
Optimized radii



Reinforced bearing seat  
Uniform load distribution  
>> increased bearing life



Machined surface in two axes allows a easy alignment during installation



## Connection options:

- Delivered with 3 lubrication holes
- 2 grease nipples and added adapter
- 2 x drain holes
- 2 metric threads for vibration measurement
- 1 pipe thread for temperature measurement device
- All bores sealed with screws

## Sealing options

SNCD31 are available with 2 different sealing designs. The most common is a basic labyrinth seal. For severe conditions a taconite seal is available consisting of a 2 part axial labyrinth. For shaft end assemblies the housings can be closed with an end cover.



TS seal



TA seal



With our ULTAGE spherical roller bearings you will have a perfect combination of best in class products for your industry, such as:

- Conveyor systems
- Belt pulleys
- Hoists



ULTAGE



ULTAGE  
**SPHERICAL ROLLER BEARINGS**  
Get bigger / Now up to 600 mm

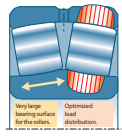


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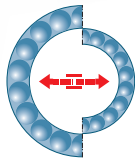


With You

## NOW YOU CAN BENEFIT FROM ALL THE ADVANTAGES OF THE ULTAGE GENERATION:



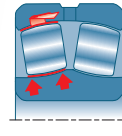
Surface optimisation



Improved performance  
-> reduced dimensions



Increased operating speeds



Reduced friction torque



Reduced power consumption



Reduced operating costs

**Designed for applications in extremely harsh operating environments (steelworks, paper mills, wind farms, mines and quarries, etc.), spherical roller bearings need to be able to withstand:**

- high loads and temperatures
- major misalignments
- polluted atmospheres
- impacts, vibrations.

All these conditions call for exceptional mechanical qualities.

**The NTN-SNR engineers and scientists therefore work tirelessly on:**

- materials selection, heat treatments, surface treatments
- product design
- kinematics of bearings when combining the effects of lubrication with reduced friction, wear & tear and pollution
- manufacturing technologies and improvement of the manufacturing processes.

All this effort generates spectacular results.

Thanks to their dynamic load capacities, among the highest on the market, and the optimisation of all constituent parts of the bearing, NTN-SNR ULTAGE spherical roller bearings allow you to benefit from PREMIUM performance:

- **double the service life compared to a standard solution**
- **improved reliability for your installations**
- **reduced costs of use.**





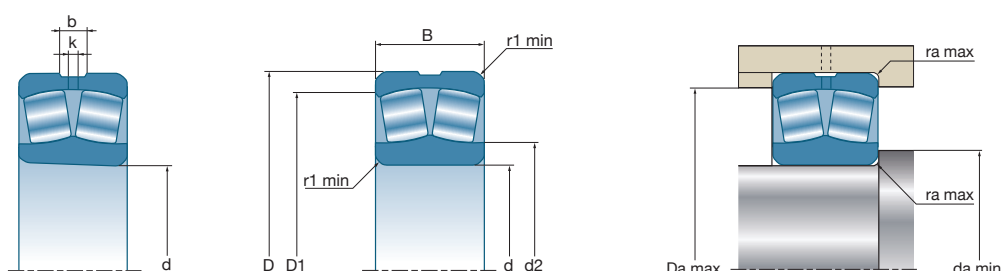
# ULTAGE SPHERICAL ROLLER BEARINGS ARE NOW UP TO 600 MM OUTSIDE DIAMETER

NTN-SNR has extended its premium quality to include larger size bearings.

Previously, Ultage Spherical Roller bearings were available with outside diameter up to 420mm. You can now benefit from all the advantages of the Ultage generation on larger size SRB with outside diameters up to 600mm.

The new range is fitted with massive brass cages. They can be ordered with cylindrical or tapered bore. In case of tapered bore, a comprehensive range of adapter sleeves and withdrawal sleeves is available.

## List of large size Ultage double-row spherical roller bearings already available



| Overall dimensions |     |     | ULTAGE | Designations     | Load limit fatigue<br>C <sub>u</sub> | Basic capacity |                          | Calcul factor |                |                |                | Limit speed | Weight | Number of holes | Dimensions |    |                    |                |                | Fitting dimensions |                    |                    |
|--------------------|-----|-----|--------|------------------|--------------------------------------|----------------|--------------------------|---------------|----------------|----------------|----------------|-------------|--------|-----------------|------------|----|--------------------|----------------|----------------|--------------------|--------------------|--------------------|
| d                  | D   | B   |        | Cylindrical bore |                                      | Dynamic<br>C   | Static<br>C <sub>0</sub> | e             | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>0</sub> |             |        |                 | b          | k  | r <sub>1</sub> min | d <sub>2</sub> | D <sub>1</sub> | d <sub>a</sub> min | D <sub>a</sub> max | r <sub>a</sub> max |
| mm                 |     |     |        |                  |                                      |                | kN                       | kN            |                |                |                |             |        | tr/min          | kg         |    | mm                 |                |                |                    |                    | mm                 |
| 220                | 460 | 145 | *      | 22344EMW33       | 265                                  | 3 270          | 3 680                    | 0,31          | 2,15           | 3,2            | 2,1            | 1 400       | 116    | 8               | 22,3       | 12 | 5                  | 294,3          | 399,8          | 240                | 440                | 4                  |
| 240                | 400 | 160 | *      | 24148EAW33       | 207                                  | 2 860          | 3 990                    | 0,35          | 1,92           | 2,86           | 1,88           | 1 300       | 77     | 3               | 19,37      | 12 | 4                  | 269            | 348,1          | 257                | 383                | 3                  |
|                    | 440 | 120 | *      | 22248EMW33       | 234                                  | 2 500          | 3 550                    | 0,25          | 2,74           | 4,08           | 2,68           | 1 800       | 84     | 8               | 21,07      | 12 | 4                  | 323,5          | 390,1          | 257                | 423                | 3                  |
|                    | 440 | 160 | *      | 23248EMW33       | 240                                  | 3 260          | 4 480                    | 0,35          | 1,95           | 2,9            | 1,9            | 1 300       | 107    | 8               | 27         | 16 | 4                  | 306,4          | 382,1          | 257                | 423                | 3                  |
|                    | 500 | 155 | *      | 22348EMW33       | 307                                  | 3 800          | 4 310                    | 0,31          | 2,18           | 3,24           | 2,13           | 1 300       | 147    | 8               | 20         | 12 | 5                  | 319,9          | 435,4          | 260                | 480                | 4                  |
| 260                | 400 | 140 | *      | 24052EAW33       | 203                                  | 2 520          | 3 820                    | 0,31          | 2,16           | 3,22           | 2,12           | 1 600       | 62     | 3               | 19,3       | 8  | 4                  | 286,2          | 353,9          | 275                | 385                | 3                  |
|                    | 440 | 144 | *      | 23152EMW33       | 233                                  | 2 930          | 4 340                    | 0,3           | 2,25           | 3,34           | 2,2            | 1 400       | 91     | 8               | 20,15      | 12 | 4                  | 322,9          | 388,9          | 277                | 423                | 3                  |
|                    | 440 | 180 | *      | 24152EMW33       | 253                                  | 3 690          | 5 230                    | 0,39          | 1,72           | 2,56           | 1,68           | 1 200       | 111    | 8               | 28,73      | 16 | 4                  | 304            | 376,7          | 277                | 423                | 3                  |
|                    | 480 | 174 | *      | 23252EMW33       | 288                                  | 3 940          | 5 340                    | 0,35          | 1,92           | 2,86           | 1,88           | 1 300       | 141    | 8               | 27         | 16 | 5                  | 328,5          | 414,1          | 280                | 460                | 4                  |
| 280                | 460 | 146 | *      | 23156EMW33       | 257                                  | 3 100          | 4 710                    | 0,29          | 2,35           | 3,5            | 2,3            | 1 400       | 97     | 8               | 20         | 12 | 5                  | 343,3          | 409,3          | 300                | 440                | 4                  |
|                    | 500 | 176 | *      | 23256EMW33       | 302                                  | 4 040          | 5 510                    | 0,33          | 2,03           | 3,02           | 1,98           | 1 200       | 148    | 8               | 28,9       | 16 | 5                  | 350            | 437,6          | 300                | 480                | 4                  |
| 300                | 460 | 118 | *      | 23060EMW33       | 251                                  | 2 420          | 4 230                    | 0,22          | 3,07           | 4,57           | 3              | 1 500       | 75     | 8               | 16         | 10 | 4                  | 369,3          | 420,1          | 315                | 445                | 3                  |
|                    | 460 | 160 | *      | 24060EMW33       | 271                                  | 3 390          | 5 310                    | 0,32          | 2,11           | 3,15           | 2,07           | 1 300       | 96     | 8               | 27         | 16 | 4                  | 345            | 409,7          | 315                | 445                | 3                  |
|                    | 500 | 160 | *      | 23160EMW33       | 303                                  | 3 770          | 5 350                    | 0,29          | 2,28           | 3,39           | 2,23           | 1 300       | 127    | 8               | 27         | 16 | 5                  | 361,6          | 443,5          | 320                | 480                | 4                  |
|                    | 500 | 200 | *      | 24160EMW33       | 314                                  | 4 600          | 6 810                    | 0,38          | 1,76           | 2,62           | 1,72           | 1 000       | 157    | 8               | 34,8       | 20 | 5                  | 350,9          | 430,5          | 320                | 480                | 4                  |
| 320                | 540 | 192 | *      | 23260EMW33       | 356                                  | 4 850          | 6 820                    | 0,34          | 1,98           | 2,94           | 1,93           | 1 100       | 195    | 8               | 27         | 16 | 5                  | 374,1          | 467,4          | 320                | 520                | 4                  |
|                    | 480 | 121 | *      | 23064EMW33       | 274                                  | 2 420          | 4 000                    | 0,24          | 2,84           | 4,23           | 2,78           | 1 400       | 80     | 8               | 20         | 12 | 4                  | 381,6          | 440            | 335                | 465                | 3                  |
|                    | 540 | 176 | *      | 23164EMW33       | 350                                  | 4 370          | 6 730                    | 0,3           | 2,25           | 3,34           | 2,2            | 1 200       | 170    | 8               | 27         | 16 | 5                  | 394,2          | 473,2          | 340                | 520                | 4                  |
|                    | 520 | 133 | *      | 23068EMW33       | 334                                  | 3 220          | 4 970                    | 0,23          | 2,9            | 4,31           | 2,83           | 1 400       | 105    | 8               | 20         | 12 | 5                  | 401,8          | 474,9          | 358                | 502                | 4                  |
| 340                | 580 | 190 | *      | 23168EMW33       | 398                                  | 5 100          | 7 770                    | 0,31          | 2,18           | 3,24           | 2,13           | 1 100       | 215    | 8               | 27         | 16 | 5                  | 417,6          | 506,6          | 360                | 560                | 4                  |
|                    | 540 | 134 | *      | 23072EMW33       | 353                                  | 3 250          | 5 070                    | 0,21          | 3,14           | 4,67           | 3,07           | 1 300       | 110    | 8               | 20         | 12 | 5                  | 419,8          | 492,1          | 378                | 522                | 4                  |
| 360                | 600 | 192 | *      | 23172EMW33       | 407                                  | 5 150          | 8 160                    | 0,3           | 2,28           | 3,39           | 2,23           | 1 000       | 226    | 8               | 27         | 16 | 5                  | 445,8          | 531,7          | 380                | 580                | 4                  |
|                    | 380 | 560 | 135    | *                | 23076EMW33                           | 373            | 3 380                    | 5 620         | 0,22           | 3,07           | 4,57           | 3           | 1 200  | 118             | 8          | 20 | 12                 | 5              | 442,6          | 512,5              | 398                | 542                |
| 400                | 600 | 148 | *      | 23080EMW33       | 417                                  | 4 010          | 6 680                    | 0,22          | 3,01           | 4,48           | 2,94           | 1 200       | 153    | 8               | 20         | 12 | 5                  | 470,4          | 546,8          | 418                | 582                | 4                  |

Bearings available with cylindrical or tapered bore. All types of clearances are available on stock or on request. \*NTN-SNR ULTAGE bearing.  
All other Ultage Spherical Roller Bearings from 420mm up to 600mm OD are available upon request.



# ULTAGE

## SPHERICAL ROLLER BEARINGS

Get bigger / Now up to 600 mm



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Spherical roller bearings

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With You

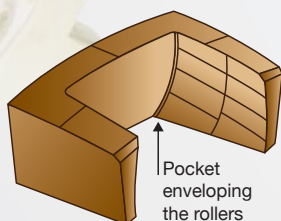
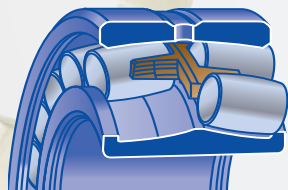
# OPTIMIZE THE EFFICIENCY OF YOUR SCREENS

## THE FEATURES THAT MAKE THE EF800 **ULTAGE**

### OPTIMISED MASSIVE BRASS CAGE: PROVEN RELIABILITY

The high radial accelerations of vibrating applications place a particular stress on the cage.

The EF800 series is equipped with a cage able to respond to this.

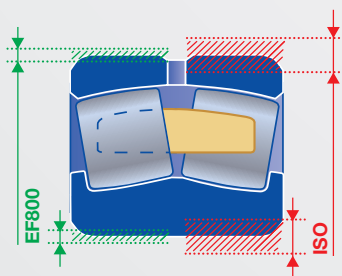


- Symmetrical rollers with a machined brass alloy one-piece cage centered on the rolling elements.
- No floating guide ring or fixed central shoulder section. This prevents any risk of cage/ring seizure in the event of thermal expansion. The self-lubricating properties of the cage material reduce heat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

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

### SPECIFIC DIMENSIONAL TOLERANCES: GUARANTEED STABILITY

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



- 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 to P6 type.

### REDUCED INTERNAL RADIAL CLEARANCE: EASY SET-UP

In order to avoid any risk of preload on the bearings, linked to adjustment defects or deformation of the shaft or housing seating 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

Ex. EF800 clearance value vs C4 clearance value

| 22220           |      |      | Clearance in micron |     |     |     |     |     |     |     |     |     |     |     |
|-----------------|------|------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Clearance       | Mini | Maxi | 130                 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 |
| C4              | 135  | 180  |                     |     |     |     |     |     |     |     |     |     |     |     |
| EF800 Clearance | 165  | 180  |                     |     |     |     |     |     |     |     |     |     |     |     |

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

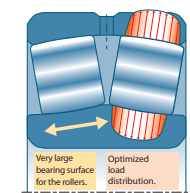
- EF801 series = C3 with reduced tolerance



EF800 SERIES: SPECIFIC BEARINGS FOR APPLICATIONS SUBJECT TO HIGH VIBRATIONS

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: EF800 series.

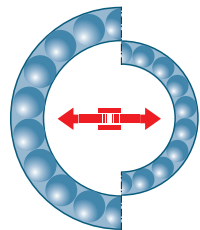
ADVANTAGES OF THE ULTAGE RANGE:



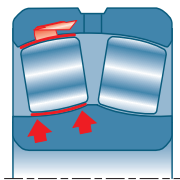
Surface optimisation



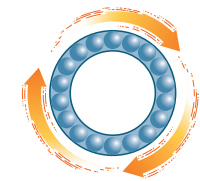
Reduced power consumption



Improved performance -> reduced dimensions



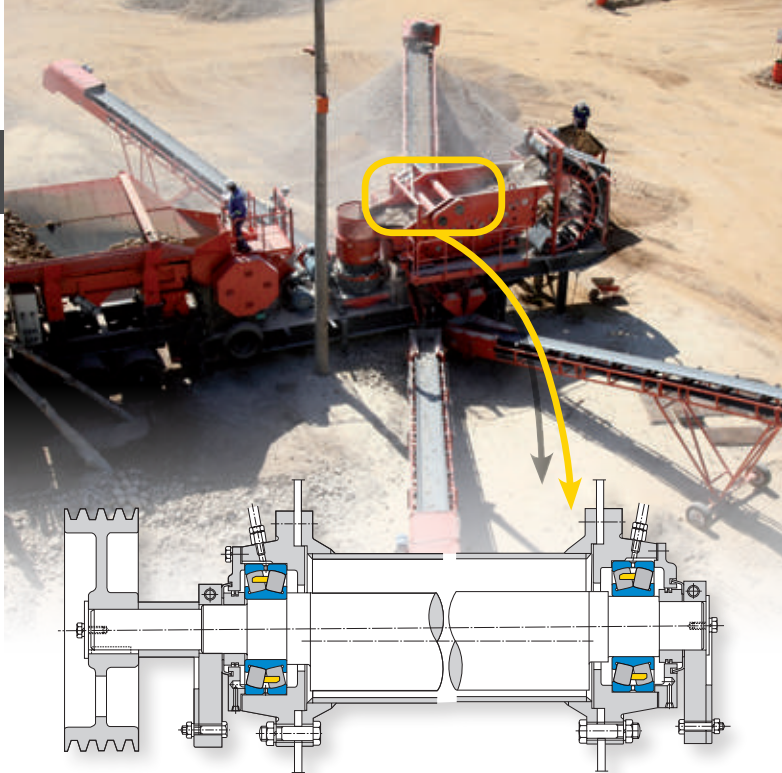
Reduced friction torque



Increased operating speeds

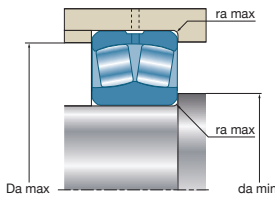
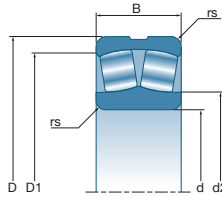
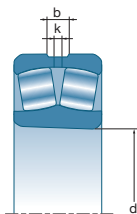


Reduced operating costs



REQUIREMENTS FOR YOUR APPLICATIONS SUBJECT HIGH VIBRATING

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 this imposes reliability and specific resistance characteristics on the spherical roller bearings.



THESE BEARINGS ARE:

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

EF800 SERIES CATALOGUE LIST

|                  | Diameters | Overall dimensions |     |             | Designations | Fatigue load limits | Basic load ratings |      | Calculation factors |                |      |                | Reference speeds | Limiting speeds | Weights | Number of holes | Dimensions     |                |       |       |       | Fitting dimensions |                |                |                |                |
|------------------|-----------|--------------------|-----|-------------|--------------|---------------------|--------------------|------|---------------------|----------------|------|----------------|------------------|-----------------|---------|-----------------|----------------|----------------|-------|-------|-------|--------------------|----------------|----------------|----------------|----------------|
|                  |           | d                  | D   | B           |              |                     | Bore               | Cu   | C                   | C <sub>0</sub> | e    | Y <sub>1</sub> |                  |                 |         |                 | Y <sub>2</sub> | Y <sub>0</sub> | b     | k     | rs    | d <sub>2</sub>     | D <sub>1</sub> | d <sub>a</sub> | D <sub>a</sub> | r <sub>a</sub> |
|                  |           |                    |     |             |              |                     |                    |      |                     |                |      |                |                  |                 |         |                 |                |                |       |       |       |                    |                |                |                |                |
| Cylindrical bore | 40        | 40                 | 90  | 33          | 22308EF800   | 13,7                | 169                | 152  | 0,36                | 1,87           | 2,79 | 1,83           | 5800             | 7400            | 1,02    | 3               | 5,9            | 3              | 1,5   | 52,5  | 77    | 49                 | 81             | 1,5            |                |                |
|                  | 45        | 45                 | 100 | 36          | 22309EF800   | 17,2                | 206                | 187  | 0,36                | 1,9            | 2,83 | 1,86           | 5300             | 6700            | 1,42    | 3               | 6,4            | 3              | 1,5   | 58    | 85,8  | 54                 | 91             | 1,5            |                |                |
|                  | 50        | 50                 | 110 | 40          | 22310EF800   | 20,4                | 250                | 232  | 0,36                | 1,87           | 2,79 | 1,83           | 4900             | 6100            | 1,83    | 3               | 7,3            | 3,5            | 2     | 63,8  | 93,8  | 61                 | 99             | 2              |                |                |
|                  | 55        | 55                 | 120 | 43          | 22311EF800   | 25,4                | 296                | 274  | 0,36                | 1,87           | 2,79 | 1,83           | 4600             | 5600            | 2,34    | 3               | 7,8            | 3,5            | 2     | 68,7  | 102,9 | 66                 | 109            | 2              |                |                |
|                  | 60        | 60                 | 110 | 28          | 22212EF800   | 20,8                | 179                | 171  | 0,24                | 2,84           | 4,23 | 2,78           | 5700             | 7500            | 1,17    | 3               | 6,9            | 3              | 1,5   | 71,9  | 98,5  | 69                 | 101            | 1,5            |                |                |
|                  | 60        | 60                 | 130 | 46          | 22312EF800   | 29,6                | 340                | 319  | 0,35                | 1,95           | 2,9  | 1,91           | 4300             | 5100            | 2,89    | 3               | 8,7            | 4              | 2,1   | 75,3  | 111,9 | 72                 | 118            | 2              |                |                |
|                  | 65        | 65                 | 140 | 48          | 22313EF800   | 33,9                | 369                | 343  | 0,33                | 2,06           | 3,06 | 2,01           | 4000             | 4800            | 3,60    | 3               | 9,2            | 4              | 2,1   | 81,3  | 121,2 | 77                 | 128            | 2              |                |                |
|                  | 70        | 70                 | 150 | 51          | 22314EF800   | 37,8                | 420                | 396  | 0,34                | 2              | 2,98 | 1,96           | 3800             | 4500            | 4,27    | 3               | 10,4           | 5              | 2,1   | 86    | 128,7 | 82                 | 138            | 2              |                |                |
|                  | 75        | 75                 | 160 | 55          | 22315EF800   | 43,3                | 491                | 467  | 0,34                | 2              | 2,98 | 1,96           | 3600             | 4200            | 5,21    | 3               | 10,5           | 5              | 2,1   | 91,9  | 138,3 | 87                 | 148            | 2              |                |                |
|                  | 80        | 80                 | 140 | 33          | 22216EF800   | 32,5                | 267                | 272  | 0,22                | 3,13           | 4,67 | 3,06           | 4300             | 5800            | 2,07    | 3               | 7,9            | 3,5            | 2     | 94,9  | 126,7 | 91                 | 129            | 2              |                |                |
|                  | 80        | 80                 | 170 | 58          | 22316EF800   | 47,3                | 541                | 522  | 0,34                | 2              | 2,98 | 1,96           | 3400             | 3900            | 6,20    | 3               | 10,5           | 5              | 2,1   | 98,6  | 147,4 | 92                 | 158            | 2              |                |                |
|                  | 85        | 85                 | 180 | 60          | 22317EF800   | 52,6                | 599                | 604  | 0,32                | 2,09           | 3,11 | 2,04           | 3200             | 3600            | 7,16    | 3               | 11             | 5              | 3     | 107,9 | 156,7 | 99                 | 166            | 2,5            |                |                |
|                  | 90        | 90                 | 190 | 64          | 22318EF800   | 58                  | 668                | 652  | 0,33                | 2,06           | 3,07 | 2,01           | 3000             | 3500            | 8,50    | 3               | 11,6           | 5              | 3     | 110,1 | 165,1 | 104                | 176            | 2,5            |                |                |
|                  | 95        | 95                 | 200 | 67          | 22319EF800   | 62,8                | 732                | 750  | 0,32                | 2,09           | 3,11 | 2,04           | 2800             | 3300            | 10,1    | 3               | 12,1           | 6              | 3     | 120   | 174   | 109                | 186            | 2,5            |                |                |
|                  | 100       | 100                | 180 | 46          | 22220EF800   | 52,6                | 472                | 495  | 0,24                | 2,84           | 4,23 | 2,78           | 3600             | 4600            | 5,10    | 3               | 11,2           | 5              | 2,1   | 118,2 | 160,8 | 112                | 168            | 2              |                |                |
|                  | 100       | 100                | 215 | 73          | 22320EF800   | 72,4                | 827                | 844  | 0,34                | 1,98           | 2,94 | 1,93           | 2600             | 3100            | 12,8    | 3               | 13,3           | 6              | 3     | 126,7 | 186,7 | 114                | 201            | 2,5            |                |                |
|                  | 110       | 110                | 200 | 53          | 22222EF800   | 64,3                | 602                | 643  | 0,25                | 2,69           | 4    | 2,63           | 3300             | 4100            | 7,20    | 3               | 12,2           | 6              | 2,1   | 130,1 | 178,4 | 122                | 188            | 2              |                |                |
|                  | 110       | 110                | 240 | 80          | 22322EF800   | 84,5                | 975                | 972  | 0,32                | 2,09           | 3,11 | 2,04           | 2300             | 2800            | 17,4    | 3               | 15,6           | 7              | 3     | 138,9 | 208,1 | 124                | 226            | 2,5            |                |                |
|                  | 120       | 120                | 260 | 86          | 22324EF800   | 98,9                | 1170               | 1280 | 0,32                | 2,09           | 3,11 | 2,04           | 2000             | 2500            | 22,6    | 3               | 18             | 8              | 3     | 156,9 | 224   | 134                | 246            | 2,5            |                |                |
|                  | 130       | 130                | 280 | 93          | 22326EF800   | 113                 | 1330               | 1400 | 0,33                | 2,06           | 3,06 | 2,01           | 1800             | 2400            | 27,9    | 3               | 18,9           | 9              | 4     | 164,7 | 243   | 147                | 263            | 3              |                |                |
| 140              | 140       | 300                | 102 | 22328EF800  | 129          | 1540                | 1720               | 0,33 | 2,03                | 3,02           | 1,98 | 1600           | 2200             | 34,9            | 3       | 18,9            | 9              | 4              | 181,7 | 260,3 | 157   | 283                | 3              |                |                |                |
| 150              | 150       | 320                | 108 | 22330EF800  | 143          | 1740                | 1890               | 0,34 | 2                   | 2,98           | 1,96 | 1500           | 2100             | 42,0            | 3       | 19,9            | 9              | 4              | 201   | 278,3 | 167   | 303                | 3              |                |                |                |
| 160              | 160       | 340                | 114 | 22332EF800  | 158          | 1950                | 2210               | 0,33 | 2,03                | 3,02           | 1,98 | 1400           | 1900             | 50,7            | 3       | 20,3            | 10             | 4              | 219   | 295,2 | 177   | 323                | 3              |                |                |                |
| 170              | 170       | 360                | 120 | 22334EF800  | 175          | 2200                | 2630               | 0,32 | 2,09                | 3,11           | 2,04 | 1200           | 1800             | 59,0            | 3       | 20,3            | 10             | 4              | 236   | 312,9 | 187   | 343                | 3              |                |                |                |
| 180              | 180       | 380                | 126 | 22336EF800  | 190          | 2420                | 2810               | 0,32 | 2,09                | 3,11           | 2,04 | 1200           | 1700             | 70,2            | 3       | 20,9            | 10             | 4              | 241,8 | 328,2 | 197   | 363                | 3              |                |                |                |
| 190              | 190       | 400                | 132 | 22338EF800  | 209          | 2600                | 3120               | 0,32 | 2,12                | 3,15           | 2,07 | 1100           | 1600             | 81,6            | 3       | 20,8            | 10             | 5              | 262,2 | 345,6 | 210   | 380                | 4              |                |                |                |
| 200              | 200       | 420                | 138 | 22340EF800  | 229          | 2830                | 3530               | 0,31 | 2,15                | 3,2            | 2,1  | 1000           | 1500             | 95,0            | 3       | 21,1            | 10             | 5              | 280   | 363,1 | 220   | 400                | 4              |                |                |                |
| Tapered bore     | 35        | 40                 | 90  | 33          | 22308EKF800  | 13,7                | 169                | 152  | 0,36                | 1,87           | 2,79 | 1,83           | 5800             | 7400            | 1,02    | 3               | 5,9            | 3              | 1,5   | 52,5  | 77    | 49                 | 81             | 1,5            |                |                |
|                  | 40        | 45                 | 100 | 36          | 22309EKF800  | 17,2                | 206                | 187  | 0,36                | 1,9            | 2,83 | 1,86           | 5300             | 6700            | 1,42    | 3               | 6,4            | 3              | 1,5   | 58    | 85,8  | 54                 | 91             | 1,5            |                |                |
|                  | 45        | 50                 | 110 | 40          | 22310EKF800  | 20,4                | 250                | 232  | 0,36                | 1,87           | 2,79 | 1,83           | 4900             | 6100            | 1,82    | 3               | 7,3            | 3,5            | 2     | 63,8  | 93,8  | 61                 | 99             | 2              |                |                |
|                  | 50        | 55                 | 120 | 43          | 22311EKF800  | 25,4                | 296                | 274  | 0,36                | 1,87           | 2,79 | 1,83           | 4600             | 5600            | 2,32    | 3               | 7,8            | 3,5            | 2     | 68,7  | 102,9 | 66                 | 109            | 2              |                |                |
|                  | 55        | 60                 | 130 | 46          | 22312EKF800  | 29,6                | 340                | 319  | 0,35                | 1,95           | 2,9  | 1,91           | 4300             | 5100            | 2,87    | 3               | 8,7            | 4              | 2,1   | 75,3  | 111,9 | 72                 | 118            | 2              |                |                |
|                  | 60        | 65                 | 140 | 48          | 22313EKF800  | 33,9                | 369                | 343  | 0,33                | 2,06           | 3,06 | 2,01           | 4000             | 4800            | 3,45    | 3               | 9,2            | 4              | 2,1   | 81,3  | 121,2 | 77                 | 128            | 2              |                |                |
|                  | 60        | 70                 | 150 | 51          | 22314EKF800  | 37,8                | 420                | 396  | 0,34                | 2              | 2,98 | 1,96           | 3800             | 4500            | 4,20    | 3               | 10,4           | 5              | 2,1   | 86    | 128,7 | 82                 | 138            | 2              |                |                |
|                  | 65        | 75                 | 160 | 55          | 22315EKF800  | 43,3                | 491                | 467  | 0,34                | 2              | 2,98 | 1,96           | 3600             | 4200            | 5,13    | 3               | 10,5           | 5              | 2,1   | 91,9  | 138,3 | 87                 | 148            | 2              |                |                |
|                  | 70        | 80                 | 170 | 58          | 22316EKF800  | 47,3                | 541                | 522  | 0,34                | 2              | 2,98 | 1,96           | 3400             | 3900            | 6,10    | 3               | 10,5           | 5              | 2,1   | 98,6  | 147,4 | 92                 | 158            | 2              |                |                |
|                  | 75        | 85                 | 180 | 60          | 22317EKF800  | 52,6                | 599                | 604  | 0,32                | 2,09           | 3,11 | 2,04           | 3200             | 3600            | 7,06    | 3               | 11             | 5              | 3     | 107,9 | 156,7 | 99                 | 166            | 2,5            |                |                |
|                  | 80        | 90                 | 190 | 64          | 22318EKF800  | 58                  | 668                | 652  | 0,33                | 2,06           | 3,07 | 2,01           | 3000             | 3500            | 8,38    | 3               | 11,6           | 5              | 3     | 110,1 | 165,1 | 104                | 176            | 2,5            |                |                |
|                  | 85        | 95                 | 200 | 67          | 22319EKF800  | 62,8                | 732                | 750  | 0,32                | 2,09           | 3,11 | 2,04           | 2800             | 3300            | 9,95    | 3               | 12,1           | 6              | 3     | 120   | 174   | 109                | 186            | 2,5            |                |                |
|                  | 90        | 100                | 215 | 73          | 22320EKF800  | 72,4                | 827                | 844  | 0,34                | 1,98           | 2,94 | 1,93           | 2600             | 3100            | 12,6    | 3               | 13,3           | 6              | 3     | 126,7 | 186,7 | 114                | 201            | 2,5            |                |                |
|                  | 100       | 110                | 240 | 80          | 22322EKF800  | 84,5                | 975                | 972  | 0,32                | 2,09           | 3,11 | 2,04           | 2300             | 2800            | 17,2    | 3               | 15,6           | 7              | 3     | 138,9 | 208,1 | 124                | 226            | 2,5            |                |                |
|                  | 110       | 120                | 260 | 86          | 22324EKF800  | 98,9                | 1170               | 1280 | 0,32                | 2,09           | 3,11 | 2,04           | 2000             | 2500            | 22,2    | 3               | 18             | 8              | 3     | 156,9 | 224   | 134                | 246            | 2,5            |                |                |
|                  | 120       | 130                | 280 | 93          | 22326EKF800  | 113                 | 1330               | 1400 | 0,33                | 2,06           | 3,06 | 2,01           | 1800             | 2400            | 27,4    | 3               | 18,9           | 9              | 4     | 164,7 | 243   | 147                | 263            | 3              |                |                |
|                  | 125       | 140                | 300 | 102         | 22328EKF800  | 129                 | 1540               | 1720 | 0,33                | 2,03           | 3,02 | 1,98           | 1600             | 2200            | 34,3    | 3               | 18,9           | 9              | 4     | 181,7 | 260,3 | 157                | 283            | 3              |                |                |
|                  | 135       | 150                | 320 | 108         | 22330EKF800  | 143                 | 1740               | 1890 | 0,34                | 2              | 2,98 | 1,96           | 1500             | 2100            | 41,2    | 3               | 19,9           | 9              | 4     | 201   | 278,3 | 167                | 303            | 3              |                |                |
|                  | 140       | 160                | 340 | 114         | 22332EKF800  | 158                 | 1950               | 2210 | 0,33                | 2,03           | 3,02 | 1,98           | 1400             | 1900            | 50,0    | 3               | 20,3           | 10             | 4     | 219   | 295,2 | 177                | 323            | 3              |                |                |
|                  | 150       | 170                | 360 | 120         | 22334EKF800  | 175                 | 2200               | 2630 | 0,32                | 2,09           | 3,11 | 2,04           | 1200             | 1800            | 58,2    | 3               | 20,3           | 10             | 4     | 236   | 312,9 | 187                | 343            | 3              |                |                |
| 170              | 190       | 400                | 132 | 22338EKF800 | 209          | 2600                | 3120               | 0,32 | 2,12                | 3,15           | 2,07 | 1100           | 1600             | 79,9            | 3       | 20,8            | 10             | 5              | 262,2 | 345,6 | 210   | 380                | 4              |                |                |                |
| 180              | 200       | 420                | 138 | 22340EKF800 | 229          | 2830                | 3530               | 0,31 | 2,15                | 3,2            | 2,1  | 1000           | 1500             | 95,0            | 3       | 21,1            | 10             | 5              | 280   | 363,1 | 220   | 400                | 4              |                |                |                |

# Why use NTN-SNR EF800 spherical roller bearings?

## CUSTOMER BENEFITS

### 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 TO DECREASE MAINTENANCE COSTS.



#### Romain DELHAYE

Quarry Manager  
A2C GRANULAT

"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."





# EXPERTS & TOOLS

## ADDITIONAL TOOLS AND LUBRICATION

### A MUST FOR MOUNTING / DISMOUNTING EF800 SERIES (TAPERED BORE)

## HYDRAULIC NUT HMV SERIES FROM NTN-SNR

### 3 GOOD REASONS TO USE HYDRAULIC NUTS FROM NTN SNR

- The most professional tool to provide the drive up force required
- Precise and reliable adjustment of radial bearing clearance
- Cost effective, easy to use and secure, it will reduce your down time



Request catalogue

### TOTALLY ADAPTED FOR GREASING EF800 SERIES

## LUBRICATION **VIB VIBRATIONS & SHOCKS** 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

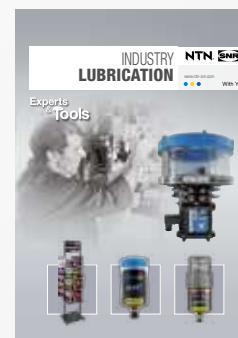
Shafts in scoops, crushers, grinders, vibrating screeners, scalpers, feeders, washing machines, industrial fans, etc.

#### 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.



Request catalogue

### EASY DISMOUNTING FOR EF800 TO AVOID FRETTING CORROSION

## ANTI-FRETTING PASTE

The NTN-SNR anti-fretting paste is specially designed to prevent contact rust between 2 metal surfaces.

#### COMMERCIAL REFERENCES

LUB ANTI FRETTING PASTE / T 60G

LUB ANTI FRETTING PASTE / B 750G



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HEAVY INDUSTRY  
**OUR LUBRICATION SOLUTIONS  
TAILORED TO YOUR NEEDS**  
benefits of automatic lubrication

**NTN®** **SNR®**

[www.ntn-snr.com](http://www.ntn-snr.com)



With You

# 1

## REVIEW OF APPLICATION/EQUIPMENT TYPE 4 MAIN APPLICATIONS TO FOCUS ON:

### Electric motor lubrication

#### Points to check:

- ☐ Motor manufacturer's recommendations
- ☐ Motor speed
- ☐ Grease trap / escape port design, access and condition
- ☐ Bearing types
- ☐ Historical lubrication practices
- ☐ Requirements for safe access
- ☐ Desired service schedule
- ☐ Location of lubrication points on bearing housings



Industry: **mining**

Application: **electric motor bearings**

Lubrication system: **NTN-SNR DRIVE BOOSTER**

Installation solution: **remote beam clamp mount**

### Fan bearing and seal lubrication

#### Points to check:

- ☐ Bearing types & speeds
- ☐ Seal types
- ☐ Characteristics of recommended lubricant
- ☐ Operating conditions
- ☐ Historical lubrication practices
- ☐ Requirements for safe access
- ☐ Desired service schedule
- ☐ Location of grease entry points on bearing housings



Industry:

**power plant**

Application:

**fan / blower bearings**

Lubrication system:

**NTN-SNR DRIVE BOOSTER**

Installation solution:

**remote beam clamp mount**

### Slurry pump lubrication

#### Points to check:

- ☐ Pump manufacturer's recommendations
- ☐ Seal types
- ☐ Characteristics of recommended lubricant
- ☐ Typical bearing operating temperatures
- ☐ Operating conditions
- ☐ Bearing types, lubrication points and grease migration directions
- ☐ Historical lubrication practices
- ☐ Desired service schedule
- ☐ Wash down procedures
- ☐ Requirements for safe access



Industry: **quarry**

Application: **slurry pump**

Lubrication system: **NTN-SNR DRIVE BOOSTER**

Installation solution: **remote beam clamp mount**

### Conveyor pulley bearing lubrication

#### Points to check:

- ☐ Bearing types & speeds
- ☐ Seal types
- ☐ Characteristics of recommended lubricant
- ☐ Operating conditions
- ☐ Historical lubrication practices
- ☐ Requirements for safe access
- ☐ Desired service schedule
- ☐ Location of lubrication points on bearing housings



Industry: **quarry**

Application: **conveyor bearing / seal (hybrid solution)**

Lubrication system: **NTN-SNR DRIVE BOOSTER**

Installation solution: **remote beam clamp mount**



## 2





## CHOICE OF INSTALLATION METHOD

### REMOTE INSTALLATION DECISION MAKING

In many cases, it is safer to install remote mount lubrication systems as access can't be free from hazards while machinery is operating.

A **“YES”** to any of the questions indicates that remote mounting is likely to be required.















1. Is it necessary to remove protective guards or safety cages to access the lubrication point?
2. Is it difficult or unsafe-to-access the lubrication point while equipment is running?
3. Is the lubrication point subject to severe vibration or high temperatures which may damage the lubrication system?
4. Is it necessary to get permits to access lubrication points such as those in confined spaces or located at heights?
5. Is the lubrication point exposed to excessive amounts of water, process materials or impact from solid material?








| NO > Direct mounting  |   | YES > Remote mounting   |  |
|---|---|---|--|
|    |    |                       |   |
| <b>Common mounting -<br/>DRIVE BOOSTER<br/>ACCESSORIES</b>  | <b>Common mounting -<br/>READY BOOSTER<br/>ACCESSORIES</b>  | <b>Standard duty<br/>INSTALLATION KITS</b>  | <b>Heavy duty<br/>INSTALLATION KITS</b>  |
| <b>A</b><br>1 x Reducer G1/8 male x G1/4 female<br>1 x Reducer M6 male x G1/4 female<br>1 x Reducer M8x1 male x G1/4 female<br>1 x Reducer M10x1 male x G1/4 female | <b>A</b><br>1 x Reducer G1/8 male x G1/4 female<br>1 x Reducer M6 male x G1/4 female<br>1 x Reducer M8x1 male x G1/4 female<br>1 x Reducer M10x1 male x G1/4 female | They are highly versatile and can be adapted for attachment to beam sections or square mesh safety cages. | They have been specifically designed for use in operational areas which are subject to regular wash down and water impact, such as the conditions found in coal handling preparation plants. |
| <b>B</b><br>1 x Extension 45 mm G1/4 male x G1/4 female   | <b>B</b><br>1 x Extension 45 mm G1/4 male x G1/4 female   |   |  |
| <b>C</b><br>1 x Angle 45° or 90° G1/4 male x G1/4 female  | <b>C</b><br>1 x Angle 45° or 90° G1/4 male x G1/4 female  |   |  |
| <b>D</b><br>1 x Support flange<br>LUBER PROTECTION BASE G1/4 male x G1/4 female   | <b>D</b><br>1 x Support flange<br>LUBER READY PROTECTION BASE G1/4 male x G1/4 female   |   |  |



# 3

## CHOICE OF LUBRICATION SOLUTION AND LUBRICANT POINT

| CHOICE OF SINGLE-POINT LUBRICATION SYSTEM   |   |   |   |
|---|---|---|---|
|   | READY  | SMART  | DRIVE  |
|    |        |       |        |
|    | -20° to 60°C  | -20° to 60°C  | -10° to 60°C  |
|    | Max 5 Bar   | Max 6 Bar   | 6 Bar   |
|    | 60 / 125 cm <sup>3</sup>  | 125 cm <sup>3</sup>   | 120 / 250 cm <sup>3</sup>   |
|    | 1, 2, 3... 12 months<br>at +20 °C / UNIVERSAL+<br>without counter pressure              | 1, 2, 3... 12 months<br>independent of<br>operating temperature                         | 1, 2, 3... 12 months<br>independent of<br>operating temperature<br>and counter pressure   |
|   | < 2 meter hose extension<br>at +20 °C with lubricant UNIVERSAL+,<br>hose iØ 9.5 mm      |   | < 5 meter hose extension<br>at +20 °C with lubricant UNIVERSAL+,<br>hose iØ 9.5 mm        |
|  | IP 68   | IP 65   | IP 65   |
|  | CE Ex   | CE Ex   | CE  |

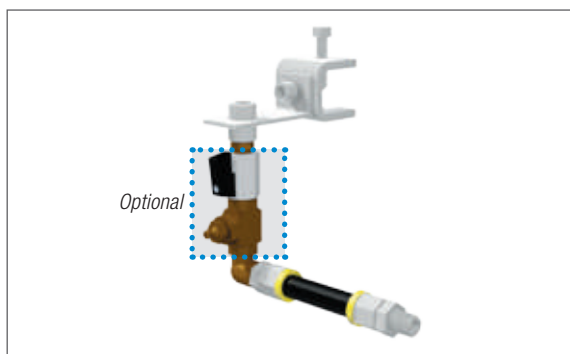
| FOR YOUR APPLICATION  |   |   |   |  |
|---|---|---|---|--|
| 0 limited suitability<br>+ suitable ++ very suitable                                      |  conveyors |  electric motors |  pumps |  blowers / fans |
| READY  | +   | +   | +   | +  |
| SMART  | 0   | +   | 0   | +  |
| DRIVE  | ++  | ++  | ++  | ++   |
| Regular load GREASES (high speed greases)   |   |   |   |  |
| Shell Gadus S2 V100 2 (Alvania RL 2) *  |   | •   |   | •  |
| Shell Gadus S5 T100 2 (Stamina RLS 2) *   |   | •   |   | •  |
| ExxonMobil MOBIL POLYREX EM*  |   | •   |   | •  |
| Castrol Spheerol AP 2*  |   | •   |   | •  |
| NTN SNR LUB UNIVERSAL+  |   | •   |   | •  |
| Multipurpose GREASES (extreme pressure greases)   |   |   |   |  |
| NTN SNR LUB HEAVY DUTY+   | •   |   | •   |  |
| Shell Gadus S3 V220C 2 (Albida EP 2) *  | •   |   | •   |  |

\* Grease available on demand only. MOQ will apply



## 4 SELECTION OF THE INSTALLATION KIT

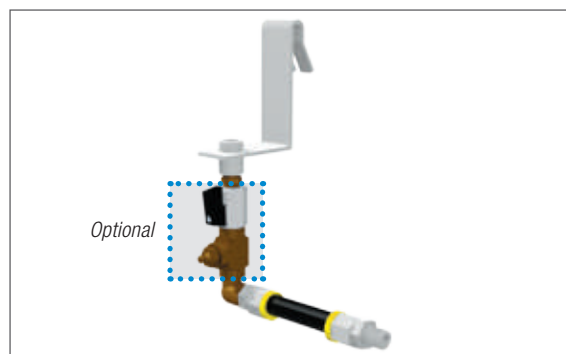
### STANDARD DUTY KITS



**Installation kit standard duty beam clamp mount**

READY / SMART BOOSTER

1-point beam clamp mount incl. 1 m hose



**Installation kit standard duty cage hanger mount**

READY / SMART BOOSTER

1-point cage hanger mount incl. 1 m hose



#### A Brackets

Compact stainless steel brackets. Can be easily attached to square cage mesh using a hook attachment design or to beam sections using beam clamps.

#### B Beam clamp

Easy-to-use beam clamps, supplied with case hardened cup head set screws and stainless steel assembly screws. **30 or 65 mm available.**

#### C Purge connection with manual valve G1/4 (optional)

Used for convenient additions of supplementary grease, line purging and grease blockage cleaning.

**LUBER PURGE w MANUAL VALVE**

#### D Angle 90° R1/4 male x G1/4 female

#### E Hose connector G1/4 male

For hose iØ 9.5 mm. Two included per lubrication point.

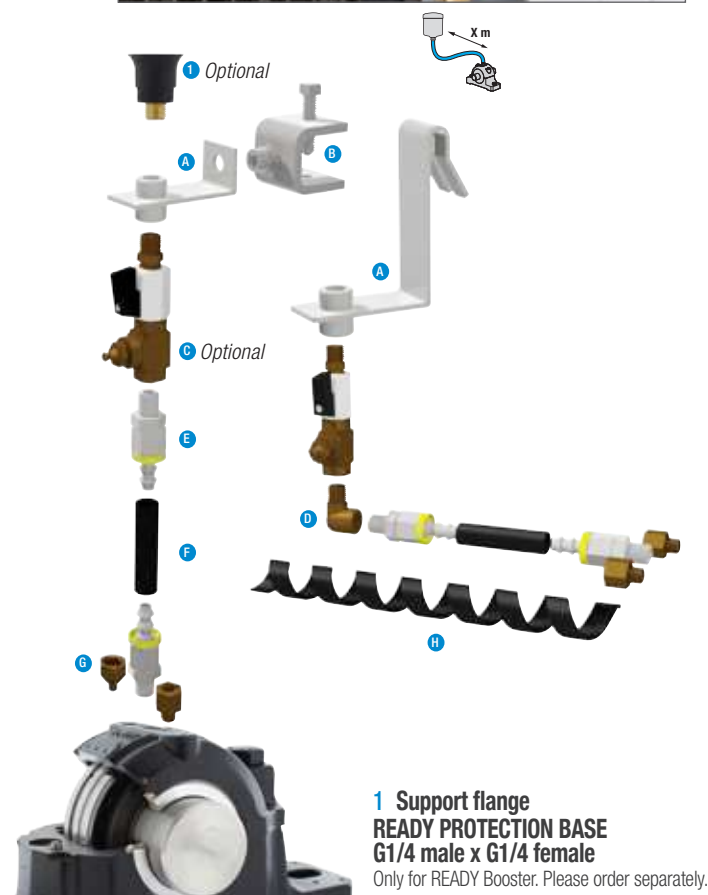
#### F Heavy Duty hose

Supplied with iØ 9.5 mm : 1 m per lubrication point is included.

#### G Reducing adapter

Three reducers R1/8, R1/4 and M10x1 included for each lubrication point.

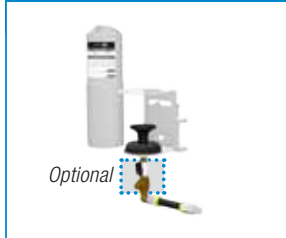
#### H Hose spiral guard



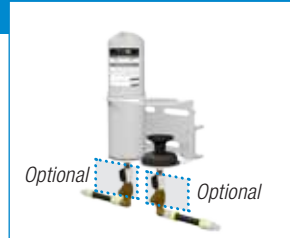
4'

## SELECTION OF THE INSTALLATION KIT HEAVY DUTY KITS

### INSTALLATION KIT HEAVY DUTY BEAM CLAMP MOUNT



**1 point beam clamp mount for DRIVE BOOSTER.**  
incl. 2 m hose



**2 points beam clamp mount for DRIVE BOOSTER.**  
incl. 4 m hose

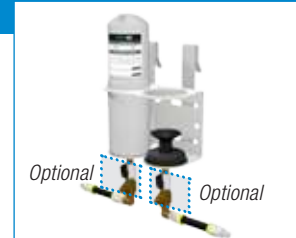
|                                    |  |                                    |
|------------------------------------|--|------------------------------------|
| LUBER HDKIT 1P 30 mm<br>BEAM CLAMP |  | LUBER HDKIT 2P 30 mm<br>BEAM CLAMP |
| LUBER HDKIT 1P 65 mm<br>BEAM CLAMP |  | LUBER HDKIT 2P 65 mm<br>BEAM CLAMP |



### INSTALLATION KIT HEAVY DUTY CAGE HANGER MOUNT

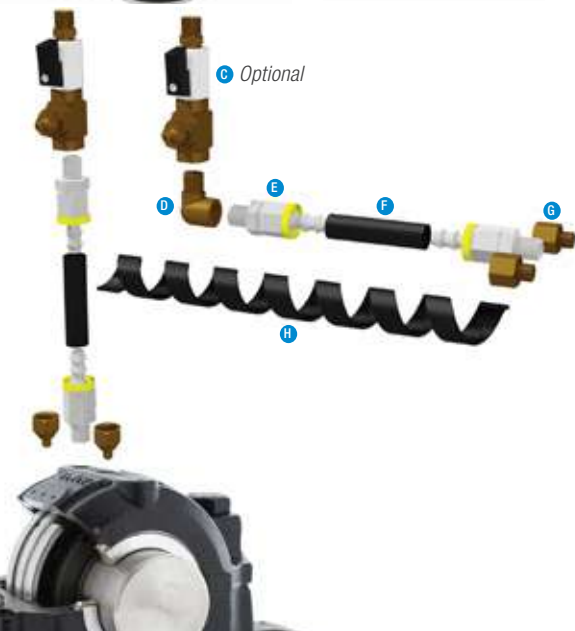


**1 point cage hanger mount for DRIVE BOOSTER.**  
incl. 2 m hose



**2 points cage hanger mount for DRIVE BOOSTER.**  
incl. 4 m hose

|                            |                            |
|----------------------------|----------------------------|
| LUBER HDKIT 1P CAGE HANGER | LUBER HDKIT 2P CAGE HANGER |
|----------------------------|----------------------------|



#### A Brackets incl.

1. Support flange DRIVE
2. Cover clip for protection cap
3. Protection cap DRIVE BOOSTER Heavy Duty 250 (plastic)

Compact stainless steel brackets. Can be easily attached to square cage mesh using a hook attachment design or to beam sections using beam clamps.

#### B Beam clamp

Easy-to-use beam clamps supplied with case hardened cup head set screws and stainless steel assembly screws. **30 or 65 mm available.**

#### B' Cage hanger arm (stainless steel)

#### C Purge connection with manual valve G1/4 (optional)

Used for convenient additions of supplementary grease, line purging and grease blockage cleaning.

**LUBER PURGE w MANUAL VALVE**

#### D Angle 90° R1/4 male x G1/4 female

#### E Hose connector G1/4 male

For hose iØ 9.5 mm . Two included per lubrication point.

#### F Heavy Duty hose

Supplied with iØ 9.5 mm hose 2 m per point.

#### G Reducing adapter

Three reducers R1/8, R1/4 and M10x1 included for each lubrication point.

#### H Hose spiral guard



# HEAVY INDUSTRY: OUR LUBRICATION SOLUTIONS TAILORED TO YOUR NEEDS

## BENEFITS OF AUTOMATIC LUBRICATION

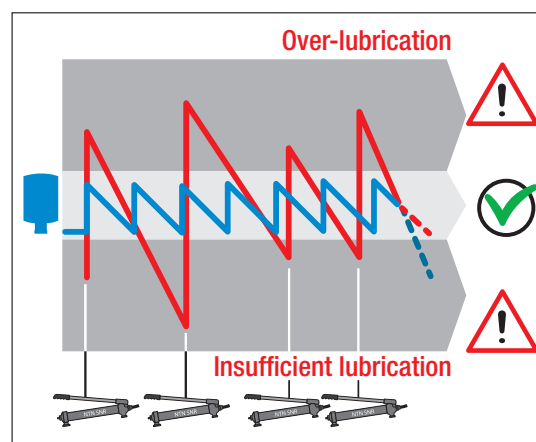
Only appropriate lubrication can guarantee the optimal operation of bearings and the related mechanical assembly.  
55% of premature bearing failures are caused by inappropriate lubrication.

### Too much grease

- Increase in operating temperature
- Degradation of grease with high speed bearings
- use of fresh grease not optimized
- Possibility to damage contact type seals

### Too little grease

- Premature wear
- Under-lubrication leads to accelerated degradation of remaining grease
- Risk of contamination entry due to lack of lubricant purge



The automatic lubricator can be used to ensure the constant and regular lubrication of your bearings. The lubricator is easy to integrate and can be used to optimize lubrication without any need to modify your installations.

## WHY AND WHERE DO WE NEED AUTOMATIC LUBRICATORS

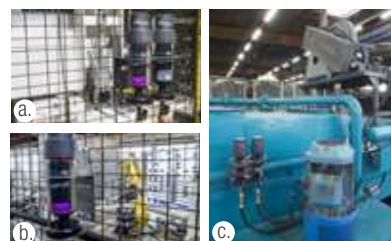
### 1) Prevention of bearing contamination

- Pump seal purging
- Conveyor pulley bearing re-lubrication & seal purging
- Lubrication of bearing & seal purging at the same time



### 2) Improvement in safety & efficiency

- Remotely mounted lubrication system used for a conveyor pulley where the bearings are mounted behind a guard thereby avoiding unnecessary access
- Automatically relubricate equipment in confined spaces or at excess height where a permit may be required
- Remotely mounted lubrication systems at ground level for difficult to access equipment such as large electric motors, fans and pumps

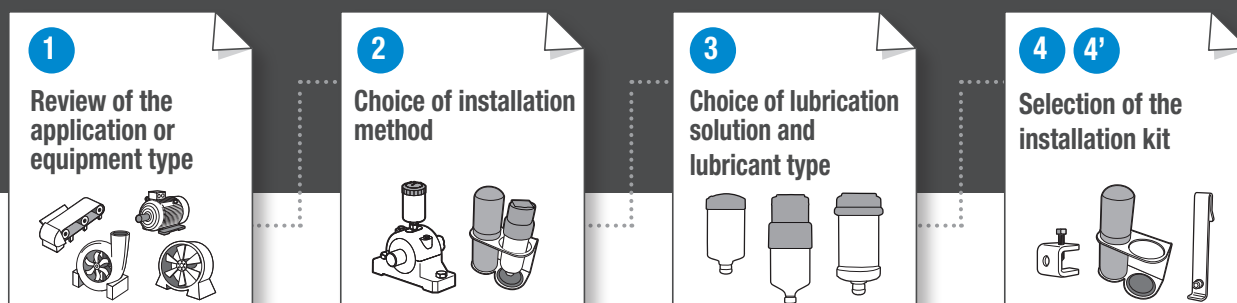


**Safety gain:** Improve safety by avoiding the need to lift, handle cages or guards, to perform work at heights, or within confined spaces by providing safe to access locations for the lubricators.

**Efficiency gain:** Save time which would otherwise be required during shutdowns for permits, isolations, equipment preparation and other time consuming requirements.

## REVIEW & SELECTION PROCEDURE

### 4 SIMPLE STEPS TO CHOOSE THE RIGHT LUBRICATION SOLUTION





# HEAVY INDUSTRY OUR LUBRICATION SOLUTIONS

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