

railway bearings



  
**DAS LAGER**  
**GERMANY** 



## DAS LAGER GERMANY

Das Lager Germany has been created as a new spark on the top of the bearing market by the harmonization of more than 30 years experiences with requirements of today and future. Das Lager Germany Bearings were commenced to the journey in Dusseldorf – Germany and have been offering the highest quality of German engineering and design on each and every single product.

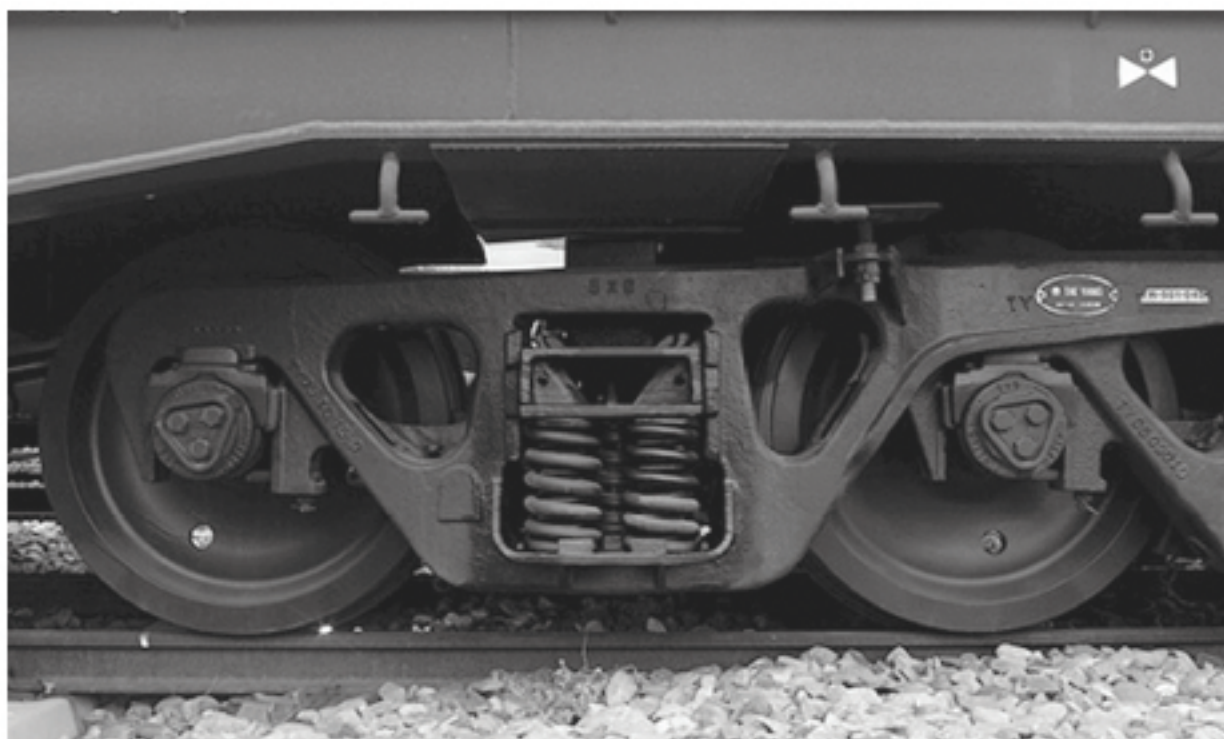
Das Lager Germany Bearings are specially designed and produced in three different production facilities in Europe as Made in Europe. Our bearings are designed according to requirements of end-users by experienced engineers and designers on bearings and components, vehicle industry and fine mechanics. Each and every design has been simulated, virtually runned, tested and produced to reach perfection of customer satisfaction.

Das Lager Germany Bearings provide the highest technological design needs of our customers with the European design and products. Das Lager Germany Bearings have offering a wide range of high performance automotive, cylindrical, spherical bearings to the world market.

Das Lager Germany is promising short delivery time with higheest performance for custom made bearings and multi row cylindrical roller bearings, turbine bearings.

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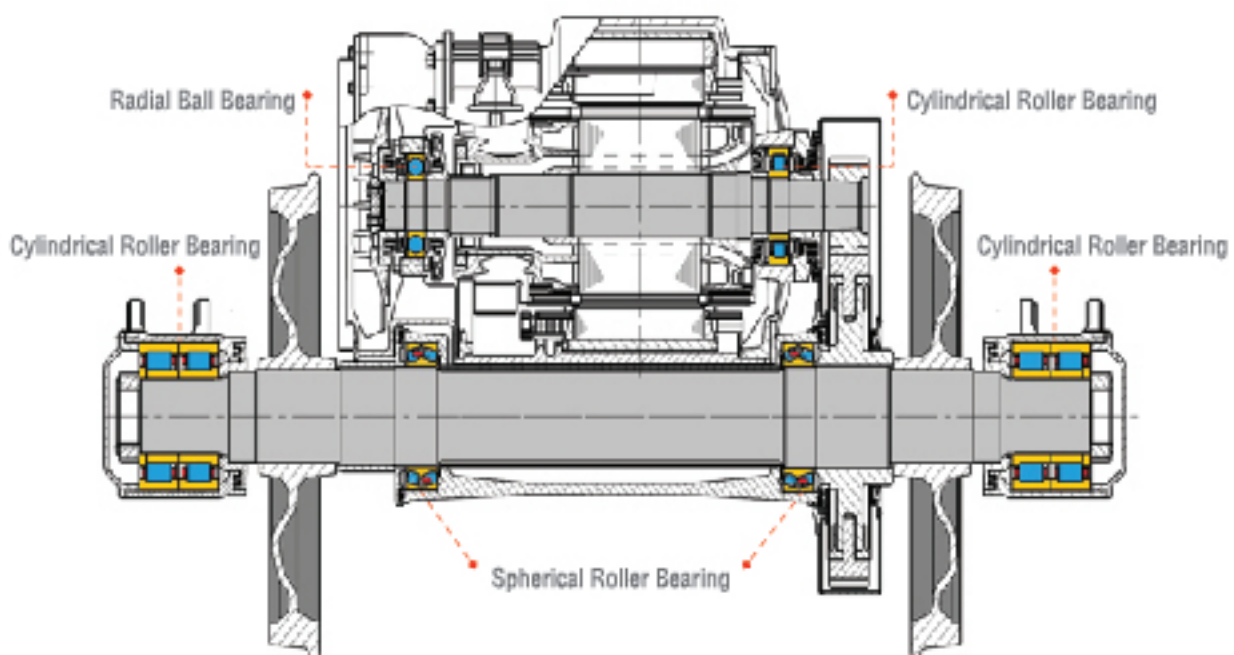
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## JOURNAL BEARINGS

Railway is the rising star of the public and cargo transportation. Safety is one of the top priority subject which concerned with the journal bearings. Das Lager Germany Bearings is promising low vibration and noise level.

Das Lager Germany is offering special desing and modified dimensions as per the end users request. The main characteristic structure of journal bearings, they are wider width and has narrow radius in compare with other type of bearing. In general cylindrical rollers, tapered rollers and spherical rollers are popular types and ball bearings are preferred only the applications where thrust load occurs. Ball bearings are generally used in low load applications.

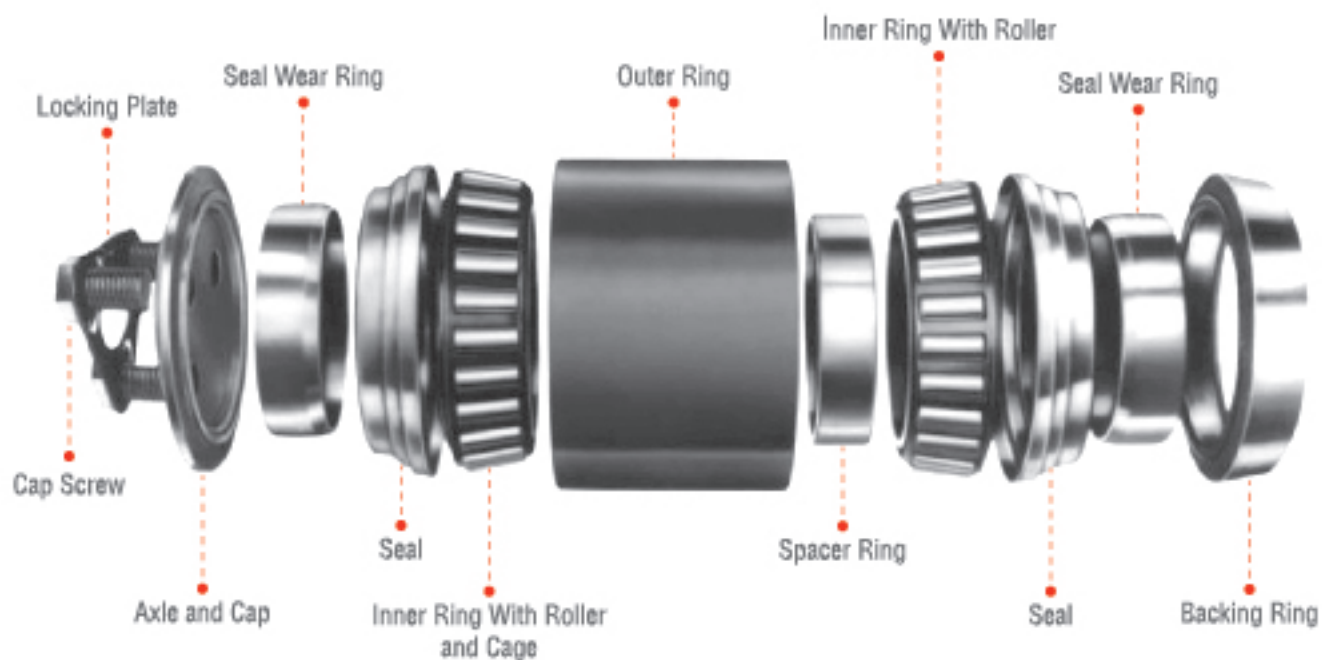


## TAPERED ROLLER BEARING UNITS (TRBU)

TRBU bearings consist of two taper rollers in one casing with the separation of a spacer.

TRBU bearings offer an easy and fast installation because it is a ready-to-mount unit.

There is a wide application of this type of bearings such as passenger carriage, high speed trains, locomotives, subways, light rail vehicles, freight wagons etc.



### Tapered Roller Bearing Units

| Class | Size       | Dimensions (inch) |        |       | Dimensions (mm) |         |        |
|-------|------------|-------------------|--------|-------|-----------------|---------|--------|
|       |            | d                 | D      | C     | d               | B       | C      |
| B     | 4 1/4 x 8  | 4                 | 6.5    | 4.5   | 101.6           | 165.1   | 114.3  |
| C     | 5 x 9      | 4.6875            | 7.6875 | 5.63  | 119.063         | 195.263 | 142.9  |
| D     | 5 1/2 x 10 | 5.187             | 8.1875 | 6     | 131.75          | 207.963 | 152.4  |
| E     | 6 x 11     | 5.687             | 8.6875 | 6.437 | 144.45          | 220.663 | 163.5  |
| F     | 6 1/2 x 12 | 6.187             | 9.9375 | 7.25  | 157.15          | 252.413 | 184.15 |
| K     | 6 1/2 x 9  | 6.187             | 9.8375 | 6.3   | 157.15          | 249.873 | 160    |
| G     | 7 x 12     | 6.9995            | 10.875 | 7.31  | 177.787         | 276.225 | 185.74 |
| GG    | 6 1/2      | 6.4995            | 11.882 | 7.75  | 165.087         | 301.803 | 196.85 |
| GG    | 6 7/8      | 6.8745            | 11.882 | 7.75  | 174.612         | 301.803 | 196.85 |

**AAR STANDARDS (Association of American Railroads)**



### Tapered Roller Bearings

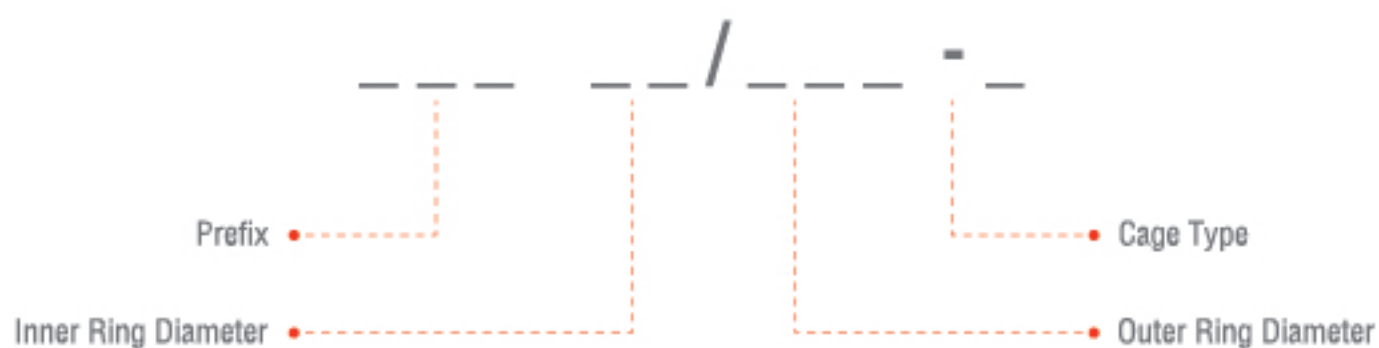
| Designation     | Dimensions (mm) |     |       |
|-----------------|-----------------|-----|-------|
|                 | d               | D   | C     |
| TRBU 90/154-TN  | 90              | 154 | 115   |
| TRBU 100/165-C  | 100             | 165 | 114.3 |
| TRBU 100/175-TN | 100             | 175 | 120   |
| TRBU 100/180-TN | 100             | 180 | 130.2 |
| TRBU 110/180-TN | 110             | 180 | 142   |
| TRBU 120/195-TN | 120             | 195 | 131.4 |
| TRBU 130/210-C  | 130             | 210 | 132   |
| TRBU 130/220-TN | 130             | 220 | 150   |
| TRBU 130/230-TN | 130             | 230 | 160   |
| TRBU 130/240-TN | 130             | 240 | 160   |
| TRBU 140/220-C  | 140             | 220 | 140   |
| TRBU 150/250-TN | 150             | 250 | 160   |
| TRBU 160/270-TN | 160             | 270 | 150   |
| TRBU 160/280-TN | 160             | 280 | 180   |

### UIC STANDARTS (International Union of Railways)

#### Suffix

TN: Polyamide Cage

C: Sheet Steel Cage

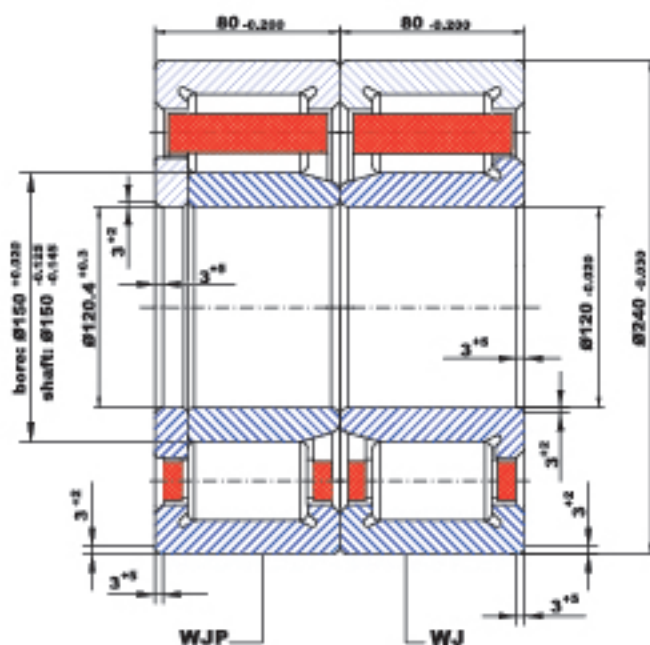


## CYLINDRICAL ROLLER BEARINGS

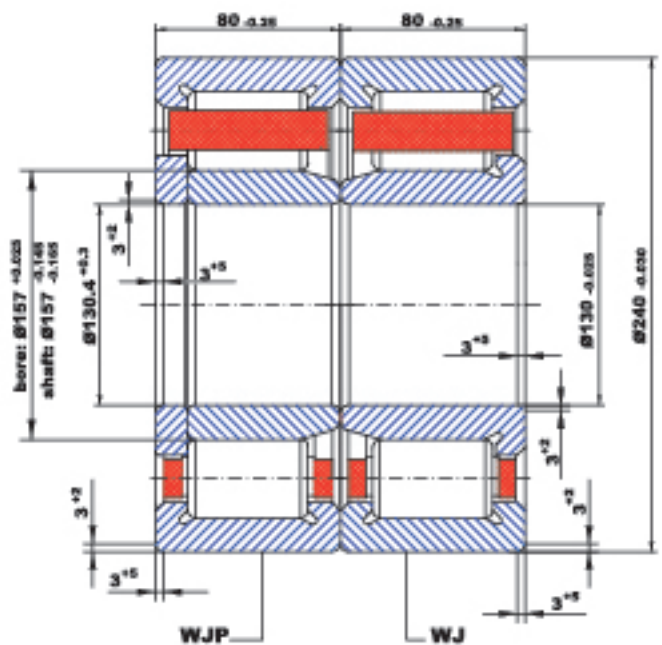
Cylindrical roller bearings have proved their success as journal roller bearings of all kinds for both long distance and local rail vehicles. Das Lager Germany is offering special desing and modified dimensions as per the end users request. Cylindrical Roller Bearings are popular for light rails and long distance vagns due to easy dismantle Operation comparing with other type of bearings. Beside of this advantage, Cylindrical Roller bearings create another advantage for users such as easy mounting and easy maintenance. Cylindrical roller bearings are prefered because of they are reducing costs due to easy maintenance and long working life.

Cylindrical roller bearings have a wide application area in light rail vehicles, locomotives, subways and freight vagns.

Double-row cylindrical roller bearings are adjacent to each other. Examples of these types are WJ+WJP, NJ+NJP.



**WJ+WJP120/240 TNC4**



**WJ+WJP130/240 TNC4**



| Cylindrical Roller Bearing |                 |     |    |                   |       |        |
|----------------------------|-----------------|-----|----|-------------------|-------|--------|
| Designation                | Dimensions (mm) |     |    | Basic Radial (kN) |       | Weight |
|                            | d               | D   | B  | dyn               | stat. |        |
| NU204 EMAP6C3              | 20              | 47  | 14 | 25.7              | 22.2  | 0.132  |
| LM NU205 EMAP6             | 25              | 52  | 15 | 29.3              | 27.7  | 0.158  |
| LM NU207 E                 | 35              | 72  | 17 | 50.3              | 50.2  | 0.31   |
| LM NU207 EMAC4             | 35              | 72  | 17 | 50.3              | 50.2  | 0.33   |
| LM NJ207 EMAC3             | 35              | 72  | 17 | 50.3              | 50.2  | 0.33   |
| LM NJ208 EMAC3             | 40              | 80  | 18 | 52.6              | 51.6  | 0.514  |
| TM NJ219 EMP63             | 95              | 170 | 32 | 210               | 249   | 3.24   |
| LM NJ220 EP62              | 100             | 180 | 34 | 249               | 306   | 3.55   |
| LM NUP220 EMAP63           | 100             | 180 | 34 | 249               | 306   | 3.88   |
| LM NU221 MAC3              | 105             | 190 | 36 | 210               | 256   | 4.5    |
| LM NU222 EMP63             | 110             | 200 | 38 | 279               | 343   | 5.29   |
| LM NU222 EMAP63            | 110             | 200 | 38 | 279               | 343   | 5.69   |
| TM NUP222 EMC4             | 110             | 200 | 38 | 279               | 343   | 5.57   |
| LM NU224 EMC3              | 120             | 215 | 40 | 329               | 412   | 6.46   |
| LM NU224 EMAP63            | 120             | 215 | 40 | 329               | 412   | 6.43   |
| LM NU226 EMAP63            | 130             | 230 | 40 | 356               | 443   | 7.45   |
| LM NU228 EMC3              | 140             | 250 | 42 | 372               | 479   | 9.1    |
| LM NU228 EMAP63            | 140             | 250 | 42 | 372               | 479   | 9.1    |

| Cylindrical Roller Bearing |                 |     |    |                   |       |        |
|----------------------------|-----------------|-----|----|-------------------|-------|--------|
| Designation                | Dimensions (mm) |     |    | Basic Radial (kN) |       | Weight |
|                            | d               | D   | B  | dyn               | stat. |        |
| LM NU230 EMAP63            | 150             | 270 | 45 | 422               | 550   | 11.67  |
| LM NUP230 EMP63            | 150             | 270 | 45 | 422               | 550   | 12.1   |
| TM NUP230 EMP63            | 150             | 270 | 45 | 422               | 550   | 12.1   |
| TM NUP230 EMAP63           | 150             | 270 | 45 | 422               | 550   | 11.67  |
| LM NU232 EMAC3             | 150             | 290 | 48 | 498               | 666   | 14.84  |
| LM NU2218 EMAC3            | 90              | 160 | 40 | 242               | 314   | 3.58   |
| TM NU2219 EMP63            | 95              | 170 | 43 | 273               | 345   | 4.29   |
| TM NU2219 EMP63            | 95              | 170 | 43 | 273               | 345   | 4.38   |
| TM NUP2219 EMP63           | 95              | 170 | 43 | 273               | 345   | 4.42   |
| TM NU2220 EMP63            | 100             | 180 | 46 | 319               | 418   | 5.15   |
| LM NU2220 EMAP63           | 100             | 180 | 46 | 319               | 418   | 5.22   |
| LM NJP2220 EMAP63          | 100             | 180 | 46 | 319               | 418   | 4.77   |
| LM NU2222 EMAP63           | 110             | 200 | 53 | 383               | 516   | 7.22   |
| LM NUP2222 EMAP63          | 110             | 200 | 53 | 383               | 516   | 7.86   |
| LM NU2224 EMAP63           | 120             | 215 | 58 | 446               | 609   | 9.16   |
| LM NU2226 EMAP63           | 130             | 230 | 64 | 523               | 726   | 11.6   |
| LM NU2226 EMC3             | 130             | 230 | 64 | 523               | 726   | 11.6   |
| LM NU305 EMAC3             | 25              | 62  | 17 | 41.2              | 37    | 0.296  |
| LM NJ305 EMAC3             | 25              | 62  | 17 | 41.2              | 37    | 0.296  |
| LM NU306 EMAC3             | 30              | 72  | 19 | 50.5              | 47    | 0.445  |
| LM NU307 EMAC3             | 35              | 80  | 21 | 66.7              | 65.4  | 0.596  |
| LM NU307 EM                | 35              | 80  | 21 | 66.7              | 65.4  | 0.584  |
| LM NU308 EMAC3             | 40              | 90  | 23 | 79.9              | 77.5  | 0.744  |
| LM NU308 EMC3              | 40              | 90  | 23 | 79.9              | 77.5  | 0.745  |
| LM NU309 EP63              | 45              | 100 | 25 | 97.4              | 98.3  | 0.897  |
| LM NU309 EMC3              | 45              | 100 | 25 | 97.4              | 98.3  | 1.022  |
| LM NU309 EMAP63            | 45              | 100 | 25 | 97.4              | 98.3  | 1.035  |
| LM NU310 EMAP63            | 50              | 110 | 27 | 110               | 112   | 1.297  |
| LM NU312 EMAC3             | 60              | 130 | 31 | 150               | 157   | 2.121  |
| LM NU314 EC4               | 70              | 150 | 35 | 205               | 222   | 2.822  |
| LM NU314 EMA6P63           | 70              | 150 | 35 | 205               | 222   | 3.208  |
| LM NU314 EM6P63            | 70              | 150 | 35 | 205               | 222   | 3.213  |
| TM NU315 EMP63             | 75              | 160 | 37 | 240               | 263   | 3.84   |
| TM NUP315 EMP63            | 75              | 160 | 37 | 240               | 263   | 3.82   |
| LM NU316 EMAP63            | 80              | 170 | 39 | 253               | 277   | 4.27   |
| LM NU317 EMAC3             | 85              | 180 | 41 | 288               | 325   | 5.8    |
| LM NUP317 EMAP63           | 85              | 180 | 41 | 288               | 325   | 5.4    |
| LM NU318 EMAP64            | 90              | 190 | 43 | 311               | 349   | 6.44   |
| LM NJ318 EMC3              | 90              | 190 | 43 | 311               | 349   | 6.14   |
| LM NJ318 EMAC3             | 90              | 190 | 43 | 311               | 349   | 5.4    |
| LM NU320 EMP63             | 100             | 215 | 47 | 381               | 427   | 8.53   |

| Cylindrical Roller Bearing |                 |     |     |                   |       |        |
|----------------------------|-----------------|-----|-----|-------------------|-------|--------|
| Designation                | Dimensions (mm) |     |     | Basic Radial (kN) |       | Weight |
|                            | d               | D   | B   | dyn               | stat. |        |
| LM NU320 EMAP63            | 100             | 215 | 47  | 381               | 427   | 8.6    |
| LM NJ320 EMC3              | 100             | 215 | 47  | 381               | 427   | 8.6    |
| LM NJ320 EMAC3             | 100             | 215 | 47  | 381               | 427   | 8.6    |
| TM NUP320 EMP63            | 100             | 215 | 47  | 381               | 427   | 8.23   |
| LM NU322 EC3               | 110             | 240 | 50  | 443               | 513   | 11.03  |
| LM NU322 EMAP63J           | 110             | 240 | 50  | 443               | 513   | 11.9   |
| LM NU322 EMP63             | 110             | 240 | 50  | 443               | 513   | 11.66  |
| LM NU322 EMAP63            | 110             | 240 | 50  | 443               | 513   | 11.03  |
| LM NJ324 EMC3              | 120             | 260 | 55  | 543               | 644   | 14.99  |
| LM NU324 EMP63             | 120             | 260 | 55  | 549               | 644   | 14.84  |
| LM NU326 EMP63             | 130             | 280 | 58  | 607               | 722   | 18.9   |
| LM NU326 EMAP63            | 130             | 280 | 58  | 607               | 722   | 18.65  |
| LM NU1020 MAC3             | 100             | 150 | 24  | 89                | 120   | 1.37   |
| LM NU1026 MC4              | 130             | 200 | 33  | 163               | 221   | 3.76   |
| LM NU1026 MAC3             | 130             | 200 | 33  | 163               | 221   | 3.76   |
| LM NU1026 MAC4             | 130             | 200 | 33  | 163               | 221   | 3.76   |
| LM NU1032 MAP63            | 160             | 240 | 38  | 230               | 328   | 6.04   |
| LM NU1034 MC3              | 170             | 260 | 42  | 277               | 400   | 8.74   |
| LM NU1036 MC3              | 180             | 280 | 46  | 336               | 479   | 10.52  |
| TM NU1036 MC3              | 180             | 280 | 46  | 336               | 479   | 10.52  |
| LM NU1040 MP63             | 200             | 310 | 51  | 395               | 590   | 14.1   |
| LM NU1044 MAP63            | 220             | 340 | 56  | 650               | 1047  | 18.7   |
| LM NU1044 MAP63            | 220             | 340 | 56  | 650               | 1047  | 18.5   |
| LM NU2316 EMAP63           | 80              | 170 | 39  | 353               | 425   | 6.6    |
| LM NU2317 EMA6P63          | 85              | 180 | 60  | 368               | 446   | 7.6    |
| LM NU2319 MAP63            | 95              | 200 | 67  | 390               | 491   | 9.3    |
| LM NU2322 EMAP63           | 110             | 240 | 80  | 667               | 868   | 19.27  |
| LM NU2322 EMAP63           | 110             | 240 | 80  | 667               | 868   | 19.27  |
| LM NU2948 MAP63            | 240             | 320 | 48  | 363               | 689   | 11.20  |
| LM NU407 MAP63             | 35              | 100 | 25  | 75.7              | 69.4  | 1.17   |
| LM NU410 MAC3              | 50              | 130 | 31  | 139               | 136   | 2.25   |
| LM NU410 MAC3              | 50              | 130 | 31  | 139               | 136   | 2.25   |
| LM NU414 MAP63             | 70              | 180 | 42  | 240               | 253   | 5.9    |
| LM NU416 MAP63             | 80              | 200 | 48  | 316               | 339   | 7.5    |
| TM NU424 MP64              | 120             | 310 | 72  | 677               | 776   | 29.92  |
| 487632 MASC4               | 160             | 270 | 168 | 1000              | 1760  | 39.21  |
| WJ+WUJ110/215 MC3          | 110             | 215 | 73  | 773               | 1188  | 26.04  |
| WJ+WJP 110/215 MC3         | 110             | 215 | 73  | 773               | 1188  | 25.34  |
| WJ+WJP117/240 MC4          | 117             | 240 | 160 | 946               | 1464  | 34.7   |
| WJ+WJP118/240 MC4          | 118             | 240 | 160 | 946               | 1464  | 34.46  |
| WJ+WJP119/240 MC4          | 119             | 240 | 160 | 946               | 1464  | 34.22  |

| Cylindrical Roller Bearing |                 |     |     |                   |       |        |
|----------------------------|-----------------|-----|-----|-------------------|-------|--------|
| Designation                | Dimensions (mm) |     |     | Basic Radial (kN) |       | Weight |
|                            | d               | D   | B   | dyn               | stat. |        |
| WJ+WJP120/240 MC3          | 120             | 240 | 160 | 946               | 1464  | 33.98  |
| WJ+WJP120/240 TNC3         | 120             | 240 | 160 | 946               | 1464  | 31.7   |
| WJ+WJP130/240 MC3          | 130             | 240 | 160 | 951               | 1620  | 32.74  |
| WJ+WJP130/240 TNC3         | 130             | 240 | 160 | 951               | 1620  | 30.08  |
| WJ+WJP130/250 MC4          | 130             | 250 | 160 | 1028              | 1660  | 37.7   |
| WJ130/250 F                | 130             | 250 | 80  | 609               | 816   | 18.874 |
| WJP130/250 F               | 130             | 250 | 80  | 609               | 816   | 18.874 |
| WJ+WJP130/250 F            | 130             | 250 | 160 | 1028              | 1660  | 37.75  |
| WJ+WJP130/260M6C4          | 130             | 260 | 172 | 1212              | 1932  | 37.7   |
| WJ+WJP140/300 MC4          | 140             | 300 | 102 | 1554              | 2460  | 71.62  |
| WJ+WJP160/320 MC4          | 160             | 320 | 102 | 1630              | 1676  | 81.57  |
| N WJ110/215 M              | -               | 215 | 73  | 459               | 607   | 9.823  |
| N WJ120/240 M              | -               | 240 | 80  | 560               | 755   | 12.780 |
| N WJ120/240 TN             | -               | 240 | 80  | 560               | 755   | 11.636 |
| N WJ130/240 M              | -               | 240 | 80  | 563               | 823   | 12.47  |
| N WJ130/240 TN             | -               | 240 | 80  | 563               | 823   | 11.143 |
| N WJ130/250 M              | -               | 250 | 80  | 636               | 885   | 14.249 |
| N WJ140/300 M              | -               | 300 | 102 | 990               | 1250  | 27.476 |

### Prefix:

- LM - Locomotive bearing
- TM - Traction motor bearing
- N - Roller bearing without inner ring

### Suffixes:

- E - Cylindrical roller bearings, E-design (increased basic static and dynamic loads)
- C3 - Radial clearance larger than normal, bearings with interchangeable elements
- C4 - Radial clearance larger than C3, bearings with interchangeable elements
- K - Tapered bore bearing
- M - Machined brass cage guided on the rolling elements
- MA - Machined brass cage guided in the outer ring
- MB - Machined brass cage guided in the inner ring
- TN - Polyamide cage
- P6 - Tolerance class more accurate than normal
- P63 - Tolerance class P6 and radial clearance C3
- W33 - Lubrication Groove and holes on the outer ring

## POLYAMIDE CAGES

Tapered (TRBU) and cylindrical roller bearings have polyamide cage and optimised internal geometry to reduce edge stresses and improve lubrication and load distribution.

The advantage of polyamide cages:

- improve safety and performance
- low weight
- reduce friction
- increase grease life
- reduce wear
- lower operating temperature
- very good running properties

Polyamide cage provide correct protect of rollers during mounting and maintenance operations.



## SPHERICAL ROLLER BEARINGS

These bearings are appropriate for thrust loads, radial loads or both of them. Spherical Roller Bearings are providing working conditions without any additional load on the axial bending moments. Das Lager Germany provides steel cages and machined brass cages according to customer choices and application requirements.

Spherical bearings are used in locomotives, other rolling stock as an axle box bearings.



| Spherical Roller Bearing |                 |     |     |                   |       |        |
|--------------------------|-----------------|-----|-----|-------------------|-------|--------|
| Designation              | Dimensions (mm) |     |     | Basic Radial (kN) |       | Weight |
|                          | d               | D   | B   | dyn               | stat. |        |
| LM 23040 MBW33P6         | 230             | 310 | 82  | 760               | 1350  | 21.82  |
| LM 23226 MBP63           | 130             | 230 | 80  | 760               | 1170  | 14.97  |
| LM 23234 CC3             | 170             | 310 | 110 | 1460              | 2320  | 35.82  |
| LM 23234 CC3W33          | 170             | 310 | 110 | 1460              | 2320  | 35.67  |
| 23234 CC3W33             | 168             | 310 | 110 | 1460              | 2320  | 35.77  |
| 23234 CC3W33             | 169             | 310 | 110 | 1460              | 2320  | 35.77  |
| LM 24132 CC3W33          | 160             | 270 | 109 | 1250              | 2110  | 24.96  |
| 24132 CC3W33             | 158             | 270 | 109 | 1250              | 2110  | 25.040 |
| 24132 CC3W33             | 159             | 270 | 109 | 1250              | 2110  | 25.040 |
| LM 24132 MBW33           | 160             | 270 | 109 | 940               | 1558  | 25.38  |
| LM 24136 CC3             | 180             | 300 | 118 | 1460              | 2590  | 33.52  |
| 24136 CC3                | 178             | 300 | 118 | 1460              | 2590  | 33.52  |
| 24136 CC3                | 179             | 300 | 118 | 1460              | 2590  | 33.52  |
| LM 24136 CC3W33          | 180             | 300 | 118 | 1460              | 2590  | 33.42  |
| 24136 CC3W33             | 178             | 300 | 118 | 1460              | 2590  | 33.42  |
| 24136 CC3W33             | 179             | 300 | 118 | 1460              | 2590  | 33.42  |
| LM 25126 MBKC3           | 130             | 240 | 80  | 572               | 1104  | 15.314 |
| LM 25128 MBKC4           | 140             | 260 | 86  | 663               | 1288  | 19.960 |
| LM 25129 CYC3            | 144.475         | 250 | 80  | 728               | 1210  | 16.53  |
| LM 25226 CC3             | 131.796         | 220 | 73  | 561               | 934   | 11.192 |
| LM 25226 CYC3W33         | 131.796         | 220 | 73  | 561               | 934   | 11.172 |
| LM 25326 CC3             | 130             | 220 | 73  | 561               | 934   | 11.35  |
| LM 22326 MB              | 130             | 280 | 93  | 1080              | 1450  | 28.59  |
| LM 23034 MBKC3           | 170             | 260 | 67  | 680               | 1170  | 14.22  |
| LM 23036 MBKC3           | 180             | 280 | 74  | 800               | 1380  | 17.15  |
| LM 23040 MBKC3           | 200             | 310 | 82  | 760               | 1350  | 21.92  |
| LM 23040 MBC3            | 200             | 310 | 82  | 760               | 1350  | 22.02  |
| LM 23956 MBC3W33         | 180             | 250 | 52  | 454               | 830   | 7.79   |

### Suffixes:

- C - Modified inner design, increased basic load, symmetrical rollers, pressed sheet cage
- M - Machined brass cage guided on the rolling elements
- MA - Machined brass cage guided in the outer ring
- MB - Machined brass cage guided in the inner ring
- K - Tapered bore bearings, taper 1:12
- C3 - Radial clearance larger than normal, bearings with interchangeable elements
- C4 - Radial clearance larger than C3, bearings with interchangeable elements
- P6 - Tolerance class more accurate than normal
- W33 - Lubrication Groove and holes on the outer ring

## RADIAL BALL BEARINGS

| Radial Ball Bearing |                 |     |    |                   |       |        |
|---------------------|-----------------|-----|----|-------------------|-------|--------|
| Designation         | Dimensions (mm) |     |    | Basic Radial (kN) |       | Weight |
|                     | d               | D   | B  | dyn               | stat. |        |
| LM 6200 2RSP6       | 10              | 30  | 9  | 5.1               | 2.4   | 0.032  |
| LM 6201 2RSP6       | 12              | 32  | 10 | 6.9               | 3.1   | 0.037  |
| LM 6202 2RSP6       | 15              | 35  | 11 | 7.8               | 3.8   | 0.046  |
| LM 6203 2RSP6       | 17              | 40  | 12 | 26                | 48    | 0.07   |
| LM 6204 2RSP6       | 20              | 47  | 14 | 12.8              | 6.7   | 0.105  |
| LM 6206 ZZ          | 30              | 62  | 16 | 19.3              | 10.8  | 0.197  |
| LM 6207 ZZ          | 35              | 72  | 17 | 25.7              | 15.6  | 0.29   |
| LM 6304 P64         | 20              | 52  | 15 | 15.9              | 7.9   | 0.158  |
| LM 6308 C3          | 40              | 90  | 23 | 40.8              | 24    | 0.641  |
| 6310                | 50              | 110 | 27 | 61.8              | 36.1  | 1.06   |
| 6311 C3             | 55              | 120 | 29 | 70.4              | 42.8  | 1.38   |
| 6312 C3             | 60              | 130 | 31 | 80.9              | 49.4  | 1.72   |
| 6320 C4             | 100             | 215 | 47 | 162.4             | 135.7 | 6.98   |

### Suffixes:

- 2RS - Bearing with 2 seals, friction on the rib of the inner ring
- ZZ - Bearing with 2 shields
- C3 - Radial clearance larger than normal, bearings with interchangeable elements
- C4 - Radial clearance larger than C3, bearings with interchangeable elements
- P6 - Tolerance class more accurate than normal
- P64 - Tolerance class P6 and radial clearance C4

## INSULATED BEARINGS FOR TRACTION MOTOR

Generally traction motor bearings are working under high radial loads and heavy conditions. Bearings are exposed to excessive loads and side effects of high speed during regular working conditions. Beside of this, bearing are exposed to the electrical corrosion. Electric currents flow to the ground through bearings and the bearings are under effect of this current which may cause a damage on the bearing. Mainly observed damages on the raceway and rollers are corrosions and pittings because of electrical current.

Das Lager Germany bearings are providing solutions for these kind of potential damages by the ceramic-coated, insulated bearings. The insulation applied to the inner or outer ring.

The insulated bearings are applied to traction motors widely in high speed locomotives, fast electric locomotives.



## GREASE

To choose a correct journal bearing, one of the most important issue is to choose right grease. Also, grease quantity is very important too. Grease must provide the requirements of national standards or international standards ( Association of American Railroads, DIN, International Union of Railways etc ).There are quite a lot parameters like high speeds, seasonal conditionals, heavy loads, pollution etc. To choose correct grease.

## RE-CONDITIONING

Das Lager Germany is offering reduce your purchasing costs of new bearing by the re-conditioning service. As the first step of the re-conditioning, all bearings components are dismantled and checked, after determining of the re-condition parts and degree of process, Das Lager Germany deliver re-conditioned bearings with certain guarantees such as 6 years or 660.000 km.

Das Lager Germany re-conditioning can be applied all well known brands of bearings and helps you to save a huge amount in a short period by the;

- Fast delivery
- Effective re-conditioning
- Reduced stock quantities
- Higher durability and lifetime
- Cheaper than a new bearing price

## TERMS OF DELIVERY

General terms and conditions are individually stipulated between Das Lager Deutschland GmbH WÄLZLAGERFABRIK and its customers.

No responsibility is accepted for the accuracy of this information. Changes due to technical improvements can be made without any advance notice.



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