

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.

CONTENT

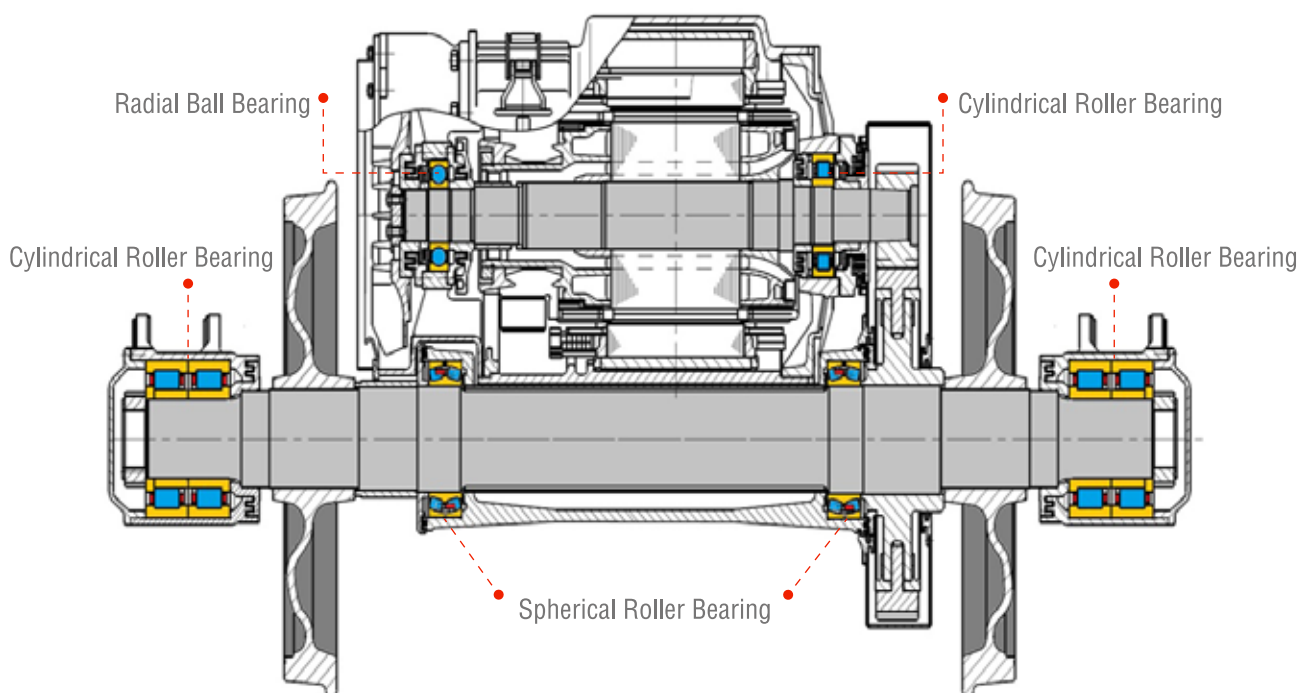
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JOURNAL BEARINGS

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 prefered only the applications where thrust load occures. Ball bearings are generally used in low load applications.

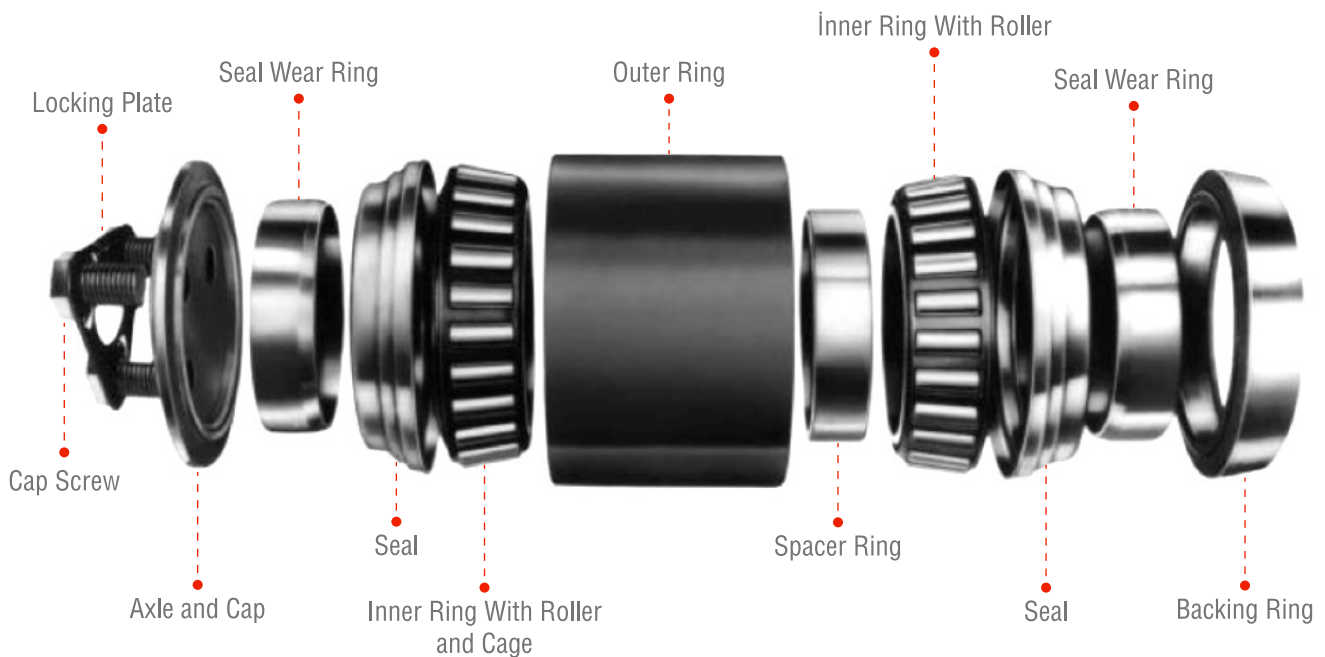


TAPERED ROLLER BEARING UNITS (TAROL)

Tarol or TBU bearings consist of two taper rollers in one casing with the separation of a spacer.

TBU or Tarol bearings offer easy and fast installation because it is 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	4¼ 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	5½ 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	6½ x 12	6.187	9.9375	7.25	157.15	252.413	184.15
K	6½ 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	6½	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)



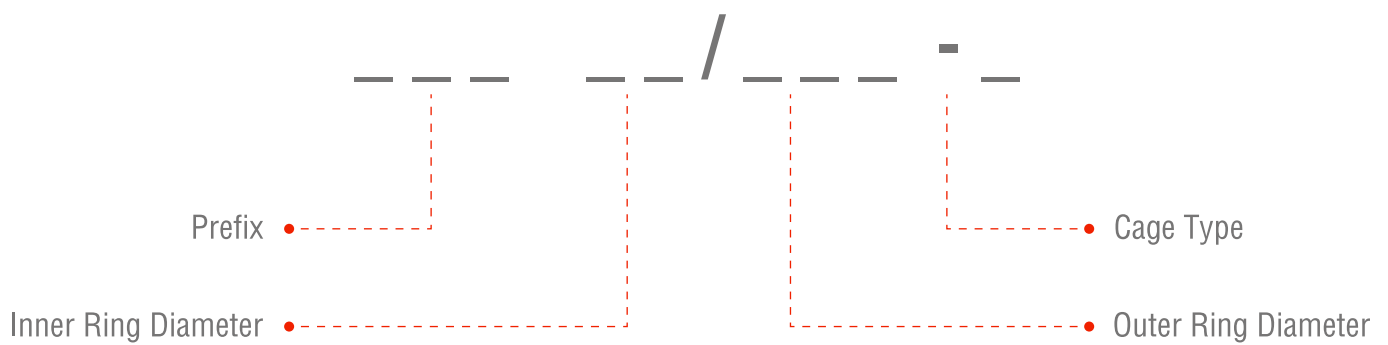
Tapered Roller Bearings			
Designation	Dimensions (mm)		
	d	D	C
TAROL 90/154-TN	90	154	115
TAROL 100/165-C	100	165	114.3
TAROL 100/175-TN	100	175	120
TAROL 100/180-TN	100	180	130.2
TAROL 110/180-TN	110	180	142
TAROL 120/195-TN	120	195	131.4
TAROL 130/210-C	130	210	132
TAROL 130/220-TN	130	220	150
TAROL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

UIC STANDARTS (International Union of Railways)

Suffix

TN: Polyamide Cage

C: Sheet Steel Cage

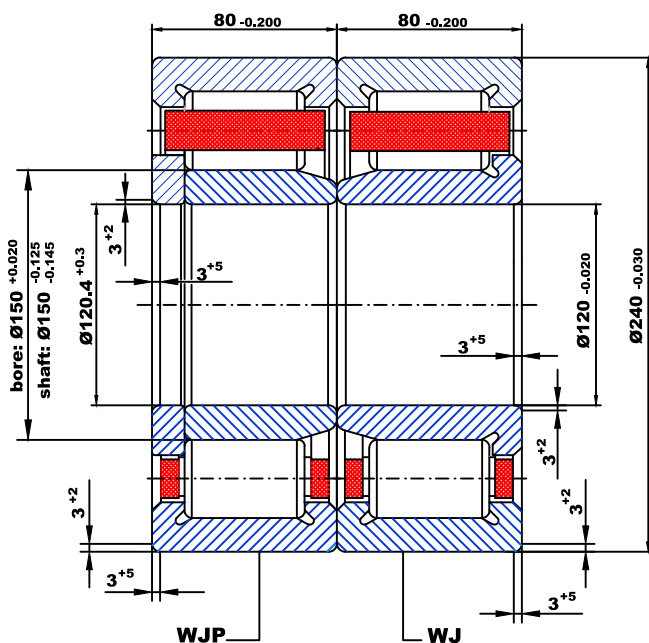


CYLINDRICAL ROLLER BEARINGS

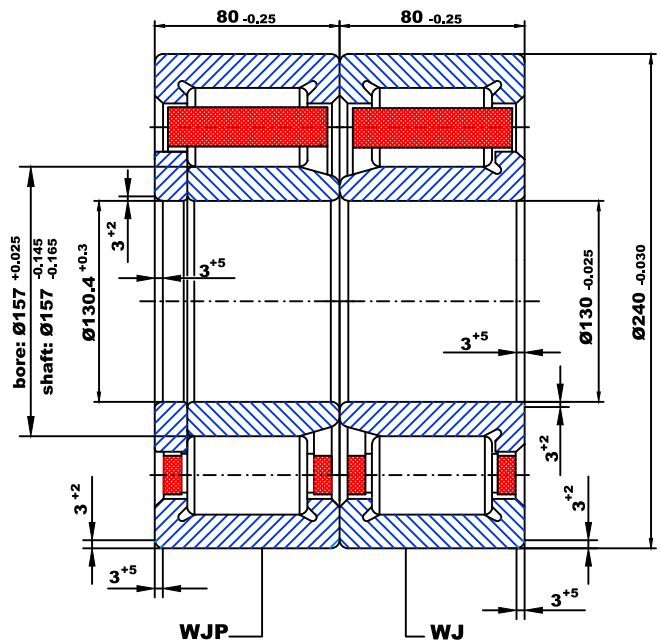
Cylindrical roller bearings have proved their success as journal roller bearings of all kinds for both long distance and local rail vehicles. Das Lager Germany is offering special desing and modified dimensions as per the end users request. Cylindrical Roller Bearings are popular for light rails and long distance wagons 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 preferred 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 wagons.

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 NJ2219 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 NJ2220 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 (TAROL) 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.