The wise choice for Ultra Reliable Bearings

URB GROUP

SPHERICAL ROLLER BEARINGS WITH PRESSED STEEL CAGES EC - DESIGN

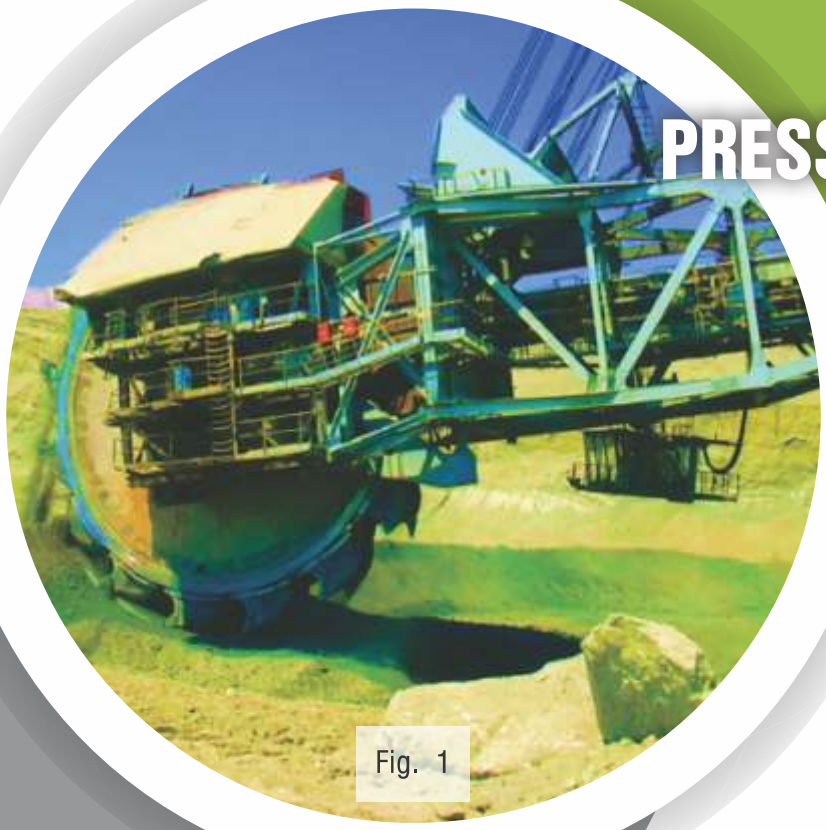

Fig. 1

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Double Row Spherical Roller Bearings

EC design
Dimensional range: ø52 ÷ ø320 mm (outer diameter)

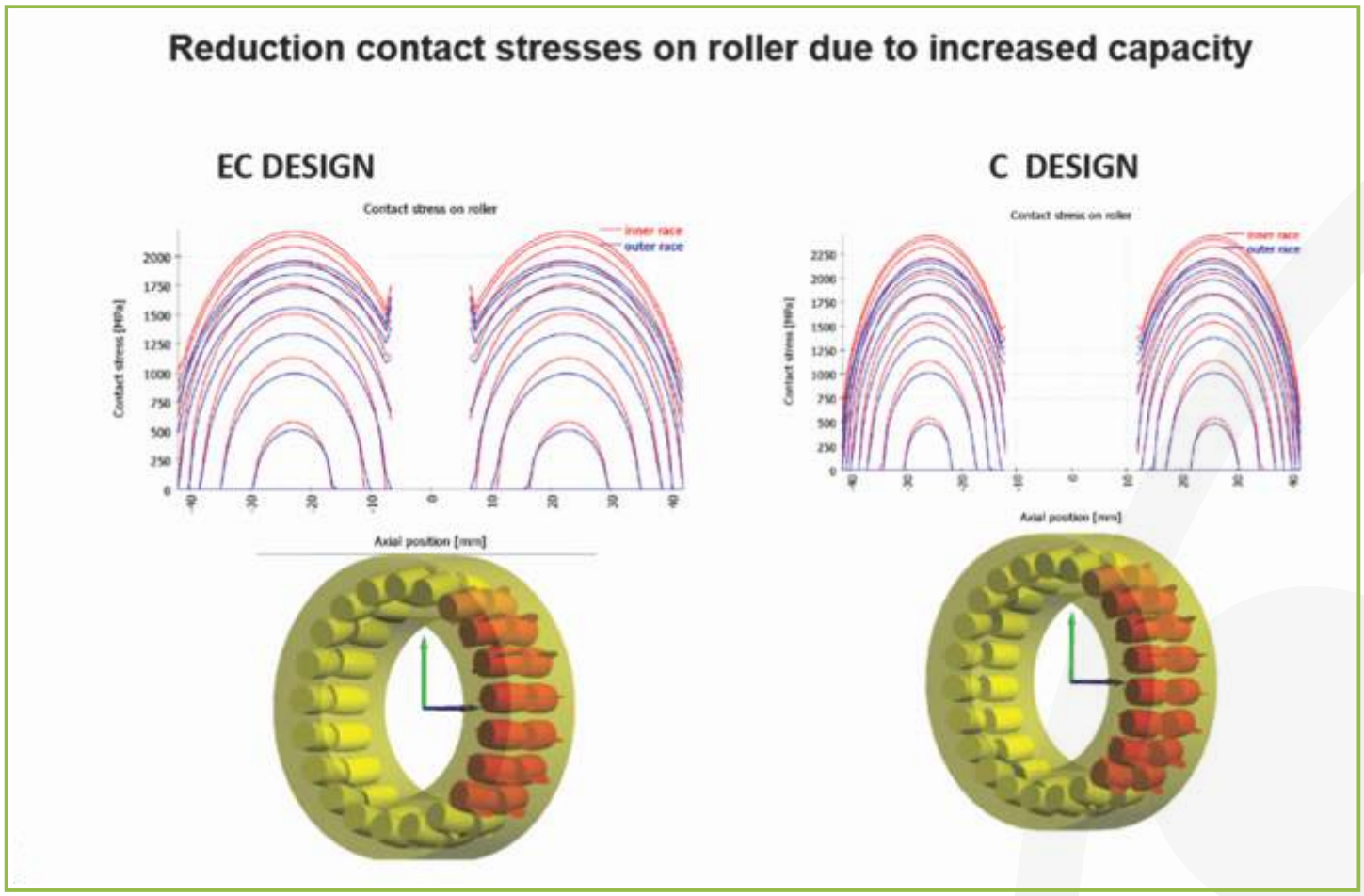
The main features of EC design bearings

IMPROVEMENTS

- High performance materials
- Low residual austenitic content
- Thermal treatment for dimensional stability in operation up to 150^{0}C
- Improved kinematics
- Optimized rolling surfaces made on performance machines

BENEFITS

- Increasing thermal reference speed
- Higher load capacity than standard bearings and longer service life
- Increasing the speed of reduction of friction in operation by increasing the lubrication coefficient which leads to the increase of the bearing life of the bearings



TECHNICAL REFERENCES

- Spherical roller bearings with E-design have usually a normal radial internal clearance but, depending on the operating and mounting conditions the bearings can be made in standard or special clearance classes, based on the customer's request
- EC design bearings under normal operating conditions and with a rotating inner ring can compensate for misalignment up to 0.5^0 and if the loads are small (P / C <0.1) they can compensate up to 2.5^0
- Spherical roller bearings with cylindrical or tapered bore with EC design are made with a groove and lubrication holes on the outer ring to allow lubrication. The exception is bearings that are ordered by customers without these elements
- Spherical roller bearings are made with pressed steel cages
- Symbols of these bearings are with the EC suffix

Type of bearings

EC

ECW33

Series:	Tolerances:	Applications:
213		
222	P0, P6, P5 class	Cement industry
223		Mining industry
230	Constructive versions:	Metallurgical industry
231	EC, ECW33, ECKW33	
232		
239		
240		
241		

EC- Design

Dimensions			Basic radial load		speed limit		Symbol	
d	D	B	Cr	Cor	grease	oil	cylindrical bore	tapered bore
mm			KN		min $^{-1}$			
25	52	18	48.5	46	8800	11000	22205 ECW33	22205 ECKW33
30	62	20	63	62	7520	9400	22206 ECW33	22206 ECKW33
35	72	23	85	88	6160	7700	22207 ECW33	22207 ECKW33
40	80	23	94	98	5560	6950	22208 ECW33	22208 ECKW33
	90	33	143	145	4800	6000	22308 ECW33	22308 ECKW33
	90	23	100	120	4880	6100	21308 ECW33	21308 ECKW33
45	85	23	98	105	5280	6600	22209 ECW33	22209 ECKW33
	100	36	166	190	4400	5500	22309 ECW33	22309 ECKW33
	100	25	120	135	4640	5800	21309 ECW33	21309 ECKW33
50	90	23	102	120	4680	5850	22210 ECW33	22210 ECKW33
	110	40	212.5	220	3920	4900	22310 ECW33	22310 ECKW33
55	100	25	125	140	4400	5500	22211 ECW33	22211 ECKW33
	120	43	252.5	265	3520	4400	22311 ECW33	22311 ECKW33
60	110	28	148.5	175	3960	4950	22212 ECW33	22212 ECKW33
	130	46	279.5	320	3280	4100	22312 ECW33	22312 ECKW33
65	120	31	182.5	220	3520	4400	22213 ECW33	22213 ECKW33
	140	48	312	360	3120	3900	22313 ECW33	22313 ECKW33
	140	33	228	290	3280	4100	21313 ECW33	21313 ECKW33
70	125	31	189.5	225	3360	4200	22214 ECW33	22214 ECKW33
	150	51	384	455	2800	3500	22314 ECW33	22314 ECKW33
75	130	31	193	250	3360	4200	22215 ECW33	22215 ECKW33
	160	55	430	520	2640	3300	22315 ECW33	22315 ECKW33
80	140	33	211	275	3000	3750	22216 ECW33	22216 ECKW33
	170	58	454.5	550	2240	2800	22316 ECW33	22316 ECKW33
	170	39	320	400	2640	3300	21316 ECW33	21316 ECKW33
85	150	36	260	325	2840	3550	22217 ECW33	22217 ECKW33
	180	60	514	620	2080	2600	22317 ECW33	22317 ECKW33
90	160	40	305.5	410	2640	3300	22218 ECW33	22218 ECKW33
	190	64	575	730	2080	2600	22318 ECW33	22318 ECKW33
	160	52.4	380	450	2080	2600	23218 ECW33	23218 ECKW33
95	170	43	348	450	2480	3100	22219 ECW33	22219 ECKW33
	200	67	626	800	1920	2400	22319 ECW33	22319 ECKW33
100	180	46	393.5	500	2480	3100	22220 ECW33	22220 ECKW33
	215	73	730	960	1760	2200	22320 ECW33	22320 ECKW33
	180	60.3	524	720	1920	2400	23220 ECW33	23220 ECKW33
	150	50	318.5	440	2240	2800	24020 ECW33	24020 ECK30W33
	215	47	482	540	2080	2600	21320 ECW33	21320 ECKW33
	165	52	417	534	2640	3300	23120 ECW33	23120 ECKW33

110	200	53	515	650	2120	2650	22222 ECW33	22222 ECKW33
	240	80	877	1160	1600	2000	22322 ECW33	22322 ECKW33
	170	45	342	450	2400	3000	23022 ECW33	23022 ECKW33
	200	69.8	661	920	1600	2000	23222 ECW33	23222 ECKW33
	180	56	470	700	2240	2800	23122 ECW33	23122 ECKW33
	180	69	544	750	1400	1750	24122 ECW33	24122 ECK30W33
120	215	58	595	800	1960	2450	22224 ECW33	22224 ECKW33
	260	86	1015	1340	1480	1850	22324 ECW33	22324 ECKW33
	180	46	365	610	2240	2800	23024 ECW33	23024 ECKW33
	215	76	770.5	1120	1520	1900	23224 ECW33	23224 ECKW33
	180	60	455	800	1920	2400	24024 ECW33	24024 ECK30W33
130	230	64	664.5	880	1960	2450	22226 ECW33	22226 ECKW33
	280	93	1180	1580	1400	1750	22326 ECW33	22326 ECKW33
	200	52	465	730	2080	2600	23026 ECW33	23026 ECKW33
	230	80	835	1270	1520	1900	23226 ECW33	23226 ECKW33
	200	69	566	900	1440	1800	24026 ECW33	24026 ECK30W33
140	250	68	766	1080	1680	2100	22228 ECW33	22228 ECKW33
	300	102	1366	1870	1240	1550	22328 ECW33	22328 ECKW33
	210	53	498	820	1920	2400	23028 ECW33	23028 ECKW33
	250	88	973	1500	1240	1550	23228 ECW33	23228 ECKW33
150	270	73	885	1300	1600	2000	22230 ECW33	22230 ECKW33
	320	108	1530	2110	1200	1500	22330 ECW33	22330 ECKW33
	225	56	562	900	1760	2200	23030 ECW33	23030 ECKW33
	270	96	1190	1750	1240	1550	23230 ECW33	23230 ECKW33
	225	75	713	1140	1360	1700	24030 ECW33	24030 ECK30W33
	250	80	882	1174	1440	1800	23130 ECW33	23130 ECKW33
160	290	80	996	1420	1520	1900	22232 ECW33	22232 ECKW33
	240	60	657	1060	1680	2100	23032 ECW33	23032 ECKW33
	290	104	1257	1900	1200	1500	23232 ECW33	23232 ECKW33
	240	80	772	1320	1200	1500	24032 ECW33	24032 ECK30W33
	270	109	1258	2110	960	1200	24132 ECW33	24132 ECK30W33
170	310	86	1170	1610	1400	1750	22234 ECW33	22234 ECKW33
	260	67	800	1270	1600	2000	23034 ECW33	23034 ECKW33
	310	110	1510	2350	1120	1400	23234 ECW33	23234 ECKW33
180	320	86	1215	1870	1320	1650	22236 ECW33	22236 ECKW33
	280	74	910	1500	1520	1900	23036 ECW33	23036 ECKW33
	320	112	1600	2420	1040	1300	23236 ECW33	23236 ECKW33
	280	100	1119	1900	1120	1400	24036 ECW33	24036 ECK30W33
	300	96	1263	2110	1360	1700	23136 ECW33	23136 ECKW33
	300	118	1468	2590	840	1050	24136 ECW33	24136 ECK30W33
	250	52	455	832	1520	1900	23936 ECW33	23936 ECKW33
190	290	75	947	1530	1440	1800	23038 ECW33	23038 ECKW33
200	310	82	1067	1760	1360	1700	23040 ECW33	23040 ECKW33
	310	109	1309	2280	960	1200	24040 ECW33	24040 ECK30W33

APPLICATIONS

Different industrial applications

Applications:

Spherical roller bearings EC design are used in different industrial applications: eg.

- Mining equipment (Fig.1)
- Industrial gearboxes (Fig.2)
- Pumps (Fig.3)
- Industrial fans (Fig.4)
- Conveyors (Fig. 5)
- Metallurgical industry (Fig.6)

Table1. EC and C Bearing Design Variants' Comparison

Bearing Design Performance level: ◐ Moderate ◔ High ● Very high	Radial loads	Axial loads	Combined loading	Noise	Speed	Misalignment
EC Design	●	◔	●	◔	●	●
C Design	◔	◔	◔	◔	◔	●

Fig. 2

Fig. 3

Fig. 4

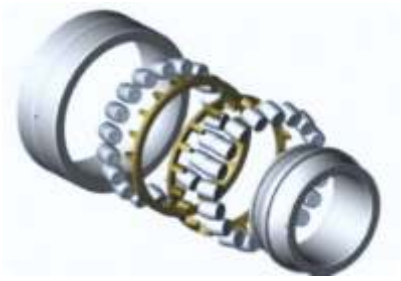
Fig. 5

Fig. 6

Expert advice and software designed for different applications

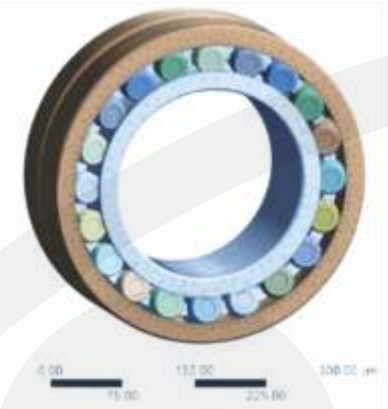
3D Modeling

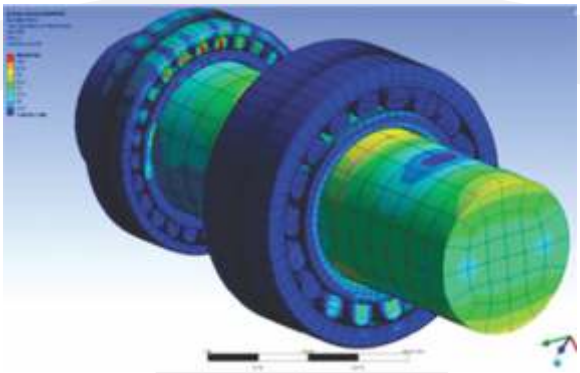
Workgroup based, interactive designing in 3D visualization

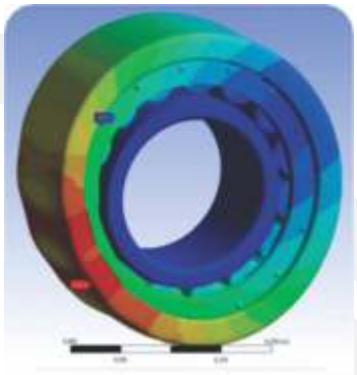


FEA - Analysis

Finite element tool for structural analysis, including linear, nonlinear and dynamic studies

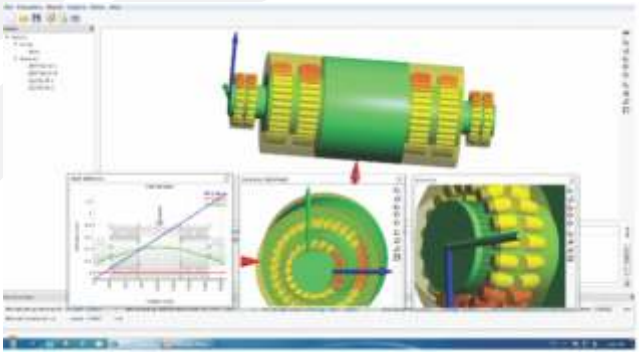






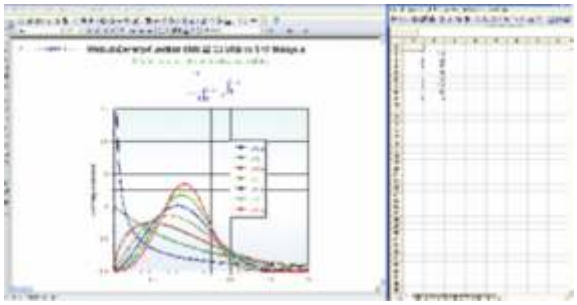
Rolling Calculation and Shaft Calculation

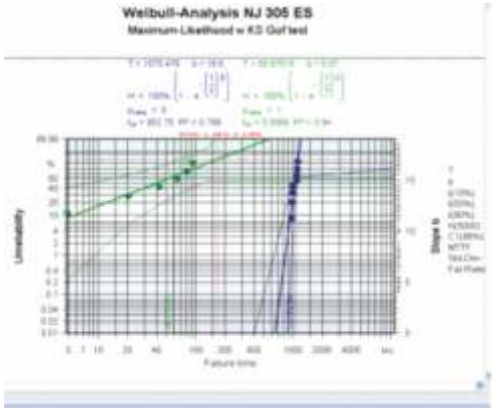
URB company uses computer programs with finite element simulation taking into account internal bearing geometry and operating conditions.



Visual Xsel v.12.0

Implementing the accurate Weibull analysis for laboratory tests





URB GROUP

RULMENTI Barlad has a long tradition in manufacturing of rolling bearings for more than 60 years,being one of the leading bearings manufacturers in Central and South Eastern Europe.

The key to success has been a consistent focus on maintaining the high quality of our products and services and investing in product development.

Our fundamental principles include respect for customers and meeting their needs. Therefore, we respond to market demands, offering, besides standard bearings and sizes, a wide range of non-standard bearings that are specific to various applications.