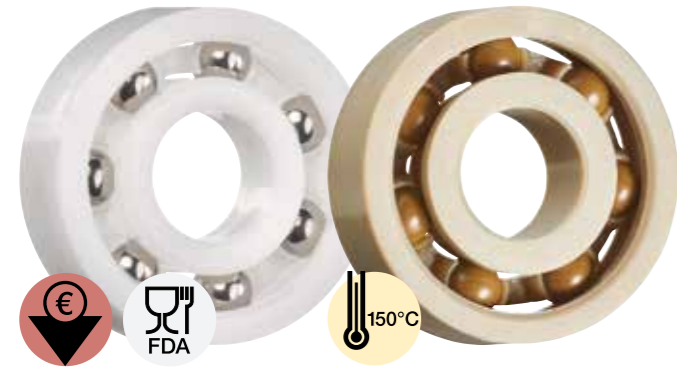


Lubrication and maintenance-free



## Lubrication-free polymer ball bearings

xiros® polymer ball bearings revolutionise the ball bearing market. Thanks to their maintenance-free dry operation and the use of xirodur® high-performance polymers, many applications can be successfully implemented in which conventional metal ball bearings are not suitable.

- Lubrication and maintenance-free
- Corrosion-resistant
- Non-metallic (due to the use of glass and plastic balls), therefore non-magnetic
- For temperatures up to +150°C (depending on material)
- High media resistance, suitable for washdown
- Lightweight
- Electrically insulating (or ESD-compliant)
- FDA-compliant (depending on material)
- Predictable service life

### Typical application areas

- Packaging
- Textile industry
- Test engineering and quality assurance
- Optical industry
- Model making

**Available from stock**  
Detailed information about delivery time online.

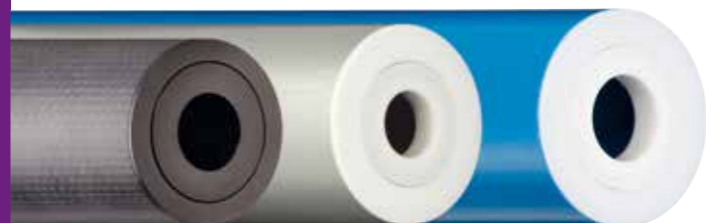
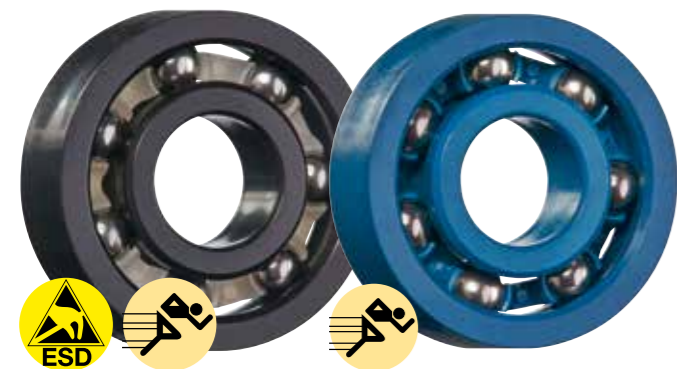
**Price breaks online**  
No minimum order value. No minimum order quantity.

**max. +150°C**  
**min. -100°C**

**10 xirodur® materials**  
**Ø 3–60mm**

**Imperial dimensions available**  
► **Page 1611**

**Service life calculation**  
► **www.igus.eu/xiros-expert**



Overview types



### xiros® radial deep groove ball bearings – standard product range for 3 materials:

- xirodur® B180 – cost-effective standard
  - xirodur® C160 – resistant to chemicals
  - xirodur® A500 – for heat and chemicals
- **From page 886**

### xiros® radial deep groove ball bearings with flange and guide rollers

- With single or double flange
  - Made from xirodur® B180 or F180
  - xiros® system solution: Aluminium, PVC or carbon fibre tube with 2 fixed flange ball bearings
- **From page 910**



### xiros® radial deep groove ball bearings – materials for special applications

- xirodur® M180 – detectable
- xirodur® T220 – for the tobacco industry
- xirodur® G220 – for temperatures up to +120°C
- xirodur® S180 – black (for visible parts)

- xirodur® F180 – antistatic
  - xirodur® F182 – conductive
  - xirodur® D180 – high speeds
- **From page 907**



### xiros® radial deep groove ball bearings – further designs

- With spherical outer diameter
  - Double row for higher loads
  - Multi-axis bearing for rotary and linear movements
- **From page 918**

### xiros® thrust bearing

- For absorbing axial loads
  - Various options
- **From page 928**



### xiros® slewing ring ball bearings

- With glass or stainless steel balls
  - Outer toothed profile
  - With cage
- **From page 930**

### xiros® combinations with igubal®

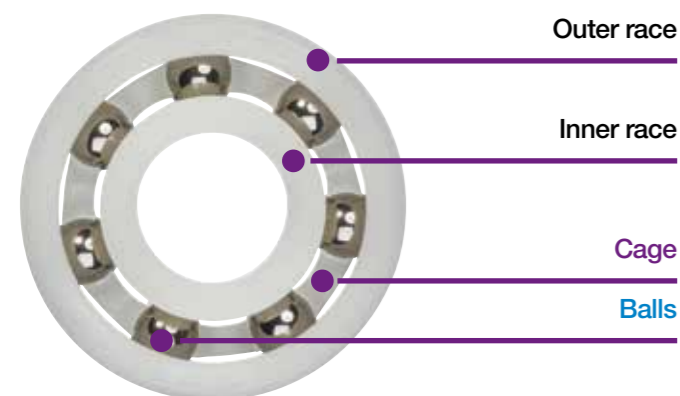
- Fixed or pivoting versions
  - For maintenance-free use in conveyor belts and guide rollers
- **From page 934**

## Radial deep groove ball bearings design

The xiros® polymer ball bearings are single-row deep groove ball bearings based on DIN 625. The lubrication and maintenance-free ball bearings consist of four components:

### The outer and inner races

The suitability of a xiros® polymer ball bearings is largely determined by the materials of the two races. These are made from igus® tribo-polymers to maximise service life and minimise friction. Choice of 5 materials. They allow different values of application temperature, media resistance and price. The table of materials (► Page 824) provides exact information on this topic.



### The cage

The material of the ball bearing cage must fit well to the application. The various material options have quite different chemical and temperature resistance values. The cage materials are compatible with all the different race options within xiros®.

### The balls

The ball materials differ most significantly. In addition to steel, glass or plastics are used. This produces a large difference in mass, which in turn affects inertia, weight and chemical resistance. Stainless steel balls (1.4401) are cost-effective, resistant to chemicals and suitable for high temperatures, but are the heaviest in the range. Glass balls (soda-lime glass) are also resistant to chemicals and have a medium weight. Just like polymer balls, they are non-metallic and non-magnetic. In addition to their excellent chemical resistance, the polymer balls (PAI) are even lighter than stainless steel or glass balls.

## Other designs

### xiros® radial deep groove ball bearings

The other designs include:

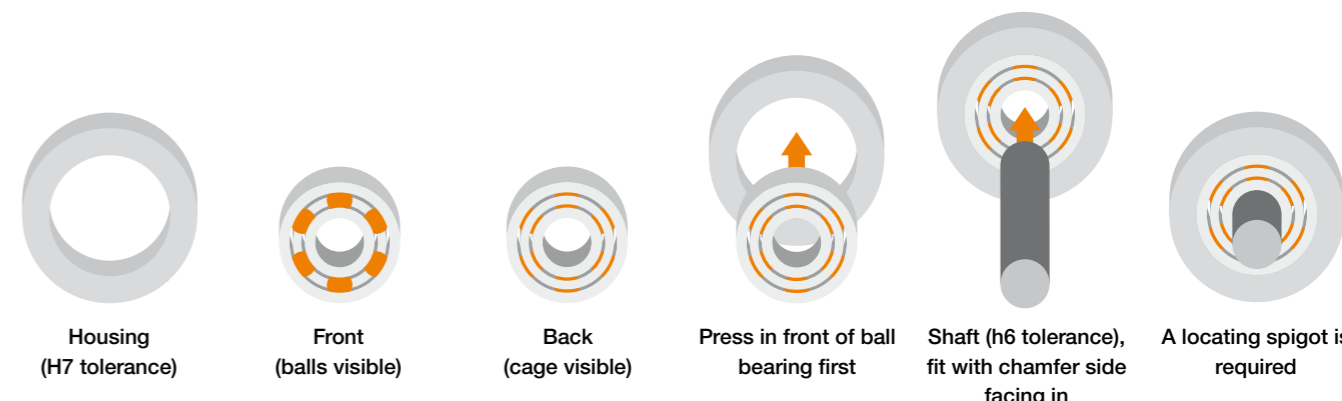
- Convex rollers which can run directly on a profile
- Profiled rollers, e.g. for thread/cable guidance
- Thrust and slewing ring ball bearings for absorbing axial loads
- Multi-axis bearings for linear and radial movements
- Ball bearings designed e.g. for installation in tube ends (also for guide rollers)
- Double-row bearings for absorbing higher forces

### Pillow block and fixed flange bearings

This range is made up by combining xiros® polymer ball bearings with the igubal® pillow block and fixed flange housings, resulting in a higher flexibility in terms of installation of the bearings. The bearing housings make it easy for the user to install these maintenance-free components. Both fixed flange and pillow block bearings are available as fixed or as pivoting design. The difference between the two options is that the pivoting type can compensate for shaft and/or bearing misalignment. A spherical outer race is pressed into the bearing housing, ensuring self-aligning action. If necessary, the inner bearing can be pivoted in all directions. Possible misalignment of two bearing points lying together can thus be compensated for.

### Measurement requirement for injection-moulded xiros® polymer ball bearings

The outer race of our ball bearings has a conical shape. This simplifies the installation in a suitable housing (with the narrow side first). After press-fit into a housing machined to a H7 tolerance the bearing clearance is reduced. Therefore the bearings must be measured over the entire width of the ball bearing. Starting at an angle of 90° from the injection point.



To press in the xiros® polymer ball bearing over the entire width of the housing, apply pressure on the outer race. xiros® radial deep groove ball bearings are only suitable for limited axial loads.

## Development and tests

Through numerous tests the race materials were optimised. The polymers we have developed for use with ball bearings allow higher speeds, greater loads, and longer service life. But the development continues. We believe that polymer ball bearing technology will continue to advance, especially with our experience in the development of tribological polymer materials. Challenge us, talk to us about your applications, tell us what you need from a polymer ball bearing. In the igus® test laboratory the service life and wear of xiros® polymer ball bearings are tested. In addition to the actual material comparison, tests indicate these experiments also answer questions about the impact of external influences such as temperature, humidity or dust.



igus® extends the xiros® test stand in the industry's largest test laboratory for plastics in motion

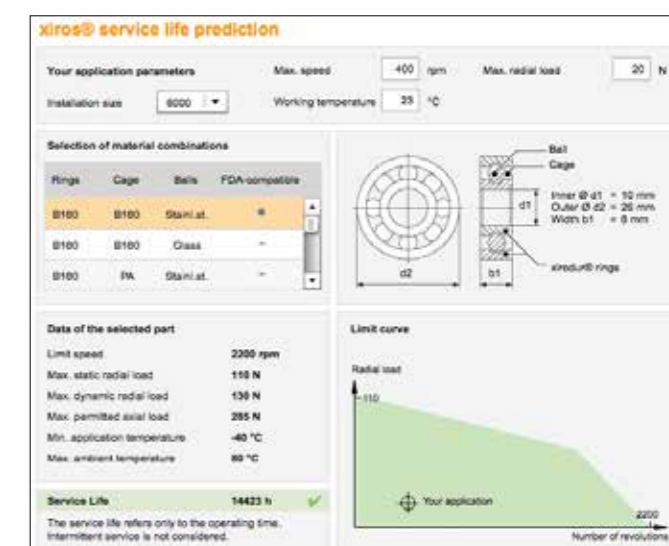
## Predictability

As part of the development of xiros® polymer ball bearing tests are carried out continuously. The high number of test results makes it very difficult to present this information in tabular form. It is for this reason that igus® has developed the online service life calculator, which uses real test results to give an accurate calculation.

The predictability of xiros® polymer ball bearings is one of the most important advantages. Based on the results of many wear tests, the user can calculate the service life of xiros® polymer ball bearings reliably and interpret the application.



► [www.igus.eu/xiros-expert](http://www.igus.eu/xiros-expert)



Download the online tool app now



# xiros® polymer ball bearings | Technical data

## Material properties and chemical resistance

General properties	Unit	xirodur®			
		B180	S180	C160	A500
Density	g/cm³	1.41	1.40	1.11	1.30
Colour		white	black	opaque	brown
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	0.2	0.1	0.1
Max. total moisture absorption	% weight	0.7	0.7	0.2	0.4
Mechanical properties					
Flexural modulus	MPa	2,500	2,700	1,900	4,300
Flexural strength at +20°C	MPa	68	65	35	130
Shore D hardness		77	78	67	85
Electrical properties					
Specific volume resistance <sup>1)</sup>	Ωcm	> 10 <sup>14</sup>	> 10 <sup>13</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>
Surface resistance <sup>1)</sup>	Ω	> 10 <sup>14</sup>	> 10 <sup>13</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>
Thermal properties of xiros® polymer ball bearings <sup>1)</sup>					
Max. long-term application temperature	°C	+80	+80	+60	+150 (PEEK) +120 (PA)
Min. long-term application temperatures (in combination with cage material)	°C	-40	-40	0	-100 (PEEK) -40 (PA)

<sup>1)</sup> Depending on the geometry

Table 01: Material data

Medium	xirodur®			
	B180	S180	C160	A500
Alcohols	+	+	+	+
Greases, oils without additives	+	+	+	+
Hydrocarbons	+	+	+ up to 0	+
Fuels	+	+	+ up to 0	+
Strong alkali	+ up to 0	+ up to 0	+	+
Strong acid	-	-	+ up to 0	+
UV radiation	-	0	0	+
Diluted base	+	+	+	+
Diluted acid	0 to -	0 to -	+	+

+ resistant 0 conditionally resistant - non-resistant

Table 02: Chemical resistance of xiros® materials

Detailed chemicals resistance table for xiros® products ► From page 1636

## Recommended tolerances

Fitting	Housing hole	Shaft
Standard:	H7	h6
Press-fit		

For further questions about the dimensioning of the hole and the shaft please contact us.

F180	F182	xirodur®				G220	igumid G
		D180	M180	T220	G220		
1.36	1.42	1.22	1.67	1.28	1.14	1.37	
black	black	blue	blue	beige	grey	black	
0.2	0.2	0.5	0.2	0.3	2.1	1.4	
1.3	0.7	1.4	0.6	0.5	8.9	5.6	
1,600	3,000	135	2,500	1,800	3,000	7,800	
70	95	n.a.	68	65	n.a.	240	
79	79	48	77	76	n.a.	79	
< 10 <sup>12</sup> <sup>1)</sup>	< 10 <sup>4</sup>	> 10 <sup>14</sup>	> 10 <sup>9</sup>	> 10 <sup>10</sup>	> 10 <sup>13</sup>	> 10 <sup>11</sup>	
< 10 <sup>12</sup> <sup>1)</sup>	< 10 <sup>4</sup>	> 10 <sup>14</sup>	> 10 <sup>9</sup>	> 10 <sup>10</sup>	> 10 <sup>12</sup>	> 10 <sup>11</sup>	
+80	+80	+80	+80	+100	+100	+120	
-40	-40	-50	-40	-40	-40	-40	

F180	F182	xirodur®				G220	igumid G
		D180	M180	T220	G220		
+	+	+ up to 0	+	+	0	+	
+	+	+	+	+	+	+	
+	+	+	+	+	+	+	
+	+	+	+	+	+	+	
+ up to 0	+ up to 0	+ up to 0	+ up to 0	+ up to 0	+ up to 0	-	
-	-	0	-	-	-	+ up to 0	
0	0	-	-	+	-	-	
+	+	+ up to 0	+	+	+	0 to -	
0 to -	0 to -	+ up to 0	0 to -	0 to -	0 to -	+	

## Ball materials

Description	Specification
ES: Stainless steel	1.4401
GL: glass	Soda-lime glass or borosilicate glass
PAI: plastic	Polyamide-imide
PP: plastic	Polypropylene

# xiros® polymer ball bearings | Selection guide

According to material properties

xirodur®	B180				S180	C160		
Cage material	PA		B180		PE	PA	PP	
Ball material	ES	GL	ES	GL	ES	ES	ES	GL
<b>Descriptive technical specifications</b>								
Smooth running	●	●	●	●	●	●	●	●
Low moisture absorption	●	●	●	●	●	●	●	●
Chemical resistance			●	●	●		●	●
Seawater-resistant			●	●			●	●
Dirt-resistant	●	●	●	●	●	●	●	●
Higher temperatures								
Higher speeds								
Cost-effective			●	●				
<b>Approvals and standards</b>								
For contact with food			●		●			
Antistatic								
Conductive								
Non-metallic		●		●				●
Detectable								
<b>Availabilities / variants</b>								
Radial deep groove ball bearings	●	●	●	●	●	●	●	●
Radial deep groove ball bearings with flange	●	●	●	●				
End cap	●	●						
Spherical outer diameter	●	●						
Double row	●	●						
Slewing ring ball bearings			●					
Thrust bearing			●	●				

A500					F180		F182	D180	M180	T220	G220
PA		PEEK			PA	PE	PA	PA	M180	PP	PA
ES	GL	ES	GL	PAI	ES	ES	ES	ES	ES	ES	ES
●	●	●	●	●	●	●	●		●	●	
●	●	●	●	●	●	●	●		●	●	
		●	●	●							
		●	●								
●	●	●	●	●	●	●	●		●	●	
●	●	●	●	●							●
								●			
		●				●			●		
					●	●					
	●		●	●							
									●		
●	●	●	●	●	●	●	●	●	●	●	●
					●						

FDA



xirodur® B180 cage, stainless steel balls



xirodur® B180 cage, glass balls



PA cage, stainless steel balls



PA cage, glass balls

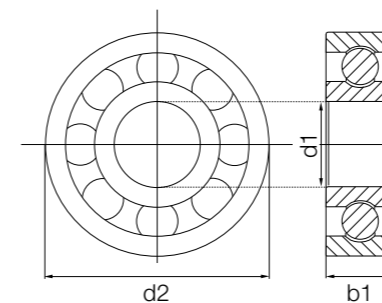
FDA



PE cage, stainless steel balls



Also available with S180 races for visible parts (xirodur® S180 and PA cage)



Order key

Type	Material
------	----------

**BB-623-B180-10-ES**

- Ball bearings
- Dimensions according to DIN 625-1
- Race material
- Cage material
- Ball material

- Options:
- Cage material**
  - 10 = PA
  - 30 = xirodur® B180
  - 50 = PE
  - Ball material**
  - ES = Stainless steel
  - GL = Glass
  - Race material
  - xirodur® B180
  - xirodur® S180



Imperial dimensions available ▶ Page 1611

### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight				
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	PE/ES [g]
623	25	34	4,500	0.37	0.31	0.40	0.32	0.39
633	33	45	4,000	0.83	0.64	-	-	-
684	10	11	4,600	0.26	0.20	-	-	-
694	12	14	4,000	0.42	0.35	-	-	-
604	30	32	3,600	0.65	0.45	-	-	-
624	33	45	4,000	0.79	0.60	0.85	0.62	0.83
634	40	40	3,700	1.50	1.00	-	-	-
685	12	14	4,000	0.45	0.37	-	-	-
695	29	30	3,500	0.73	0.53	-	-	-
605	32	33	3,500	0.96	0.77	-	-	-
625	40	40	3,700	1.42	0.96	1.55	1.01	1.52
635	41	43	3,200	2.59	1.76	-	-	-
686	29	30	3,500	0.76	0.57	-	-	-
696	29	30	3,500	1.05	0.85	-	-	-
606	50	53	3,300	1.89	1.25	-	-	-
626	60	62	3,200	2.06	1.60	2.44	1.69	2.35
636	80	94	2,200	3.96	2.71	-	-	-
687	32	34	3,200	0.80	0.61	-	-	-
697	39	41	3,000	1.47	1.05	-	-	-
607	41	43	3,200	1.97	1.52	-	-	-
627	80	94	2,400	3.85	2.60	-	-	-
688	39	41	3,000	1.17	0.76	1.19	0.75	-
698	60	62	3,200	2.34	1.52	-	-	-
608	80	94	2,400	3.76	2.51	3.79	2.54	3.73

### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination					Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	
3	10	4	●	●	●	●	●	BB-623-B180- <input type="text"/> - <input type="text"/>
3	13	5	●	●	-	-	-	BB-633-B180- <input type="text"/>
4	9	4	●	●	-	-	-	BB-684-B180- <input type="text"/>
4	11	4	●	●	-	-	-	BB-694-B180- <input type="text"/>
4	12	4	●	●	-	-	-	BB-604-B180- <input type="text"/>
4	13	5	●	●	●	●	●	BB-624-B180- <input type="text"/> - <input type="text"/>
4	16	5	●	●	-	-	-	BB-634-B180- <input type="text"/>
5	11	5	●	●	-	-	-	BB-685-B180- <input type="text"/>
5	13	4	●	●	-	-	-	BB-695-B180- <input type="text"/>
5	14	5	●	●	-	-	-	BB-605-B180- <input type="text"/>
5	16	5	●	●	●	●	●	BB-625-B180- <input type="text"/> - <input type="text"/>
5	19	6	●	●	-	-	-	BB-635-B180- <input type="text"/>
6	13	5	●	●	-	-	-	BB-686-B180- <input type="text"/>
6	15	5	●	●	-	-	-	BB-696-B180- <input type="text"/>
6	17	6	●	●	-	-	-	BB-606-B180- <input type="text"/>
6	19	6	●	●	●	●	●	BB-626-B180- <input type="text"/> - <input type="text"/>
6	22	7	●	●	-	-	-	BB-636-B180- <input type="text"/>
7	14	5	●	●	-	-	-	BB-687-B180- <input type="text"/>
7	17	5	●	●	-	-	-	BB-697-B180- <input type="text"/>
7	19	6	●	●	-	-	-	BB-607-B180- <input type="text"/>
7	22	7	●	●	-	-	-	BB-627-B180- <input type="text"/>
8	16	5	●	●	●	●	-	BB-688-B180- <input type="text"/> - <input type="text"/>
8	19	6	●	●	-	-	-	BB-698-B180- <input type="text"/>
8	22	7	●	●	●	●	●	BB-608-B180- <input type="text"/> - <input type="text"/>



Order example:

BB-623-B180-10-ES = Radial deep groove ball bearing with race material xirodur® B180, PA cage and stainless steel balls



Available from stock

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight				
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	PE/ES [g]
628	100	110	2,300	5.57	3.4	–	–	–
638	110	130	2,200	7.82	5.65	–	–	–
689	40	42	2,500	1.30	0.88	–	–	–
699	43	45	2,250	2.08	1.66	–	–	–
609	100	110	2,300	5.12	2.95	–	–	–
629	110	128	2,200	6.20	4.03	6.14	–	–
6800	43	45	2,250	1.56	1.07	–	–	–
6900	60	64	2,000	3.24	2.04	–	–	–
6000	110	130	2,200	5.98	3.83	5.95	3.78	5.98
6200	130	147	2,000	9.32	6.56	9.26	6.51	–
6300	140	150	1,800	13.83	11.02	13.75	–	–
6701	16	18	2,200	0.68	0.57	–	–	–
6801	60	64	2,000	1.82	1.40	–	–	–
6901	80	83	1,800	3.12	2.10	–	–	–
6001	130	147	2,000	6.36	4.18	6.78	4.34	6.66
6201	140	150	1,800	10.04	7.25	9.97	7.12	–
6301	160	220	1,600	15.69	12.90	–	–	–
6702	19	21	1,800	0.94	0.81	–	–	–
6802	80	83	1,800	2.46	1.46	–	–	–
6902	90	94	1,700	4.37	3.12	–	–	–
6002	140	150	1,800	8.68	5.92	8.72	6.23	8.60
6202	160	220	1,600	11.71	8.96	12.26	9.11	12.10
6302	250	320	1,400	10.56	3.95	10.49	–	–
6703	23	25	1,600	0.66	–	–	–	–
6803	90	94	1,700	2.83	1.65	–	–	–
6903	90	94	1,700	–	0.79	–	–	–
6003	160	220	1,600	10.23	7.45	10.72	7.61	10.55
6203	250	320	1,400	19.36	12.75	17.45	12.68	–
6303	280	360	1,200	21.68	13.60	–	–	–
6704	30	36	1,400	1.39	1.17	–	–	–
6804	100	120	1,500	5.19	3.59	–	–	–
6904	140	144	1,150	9.76	–	–	–	–
6004	250	320	1,400	20.81	12.93	19.46	12.89	19.44
6204	280	360	1,200	30.22	22.14	28.87	22.33	–
6304	380	400	1,000	43.85	31.05	–	–	–
6705	32	38	1,200	1.58	1.40	–	–	–
6805	140	144	1,150	6.48	4.16	–	–	–
6905	160	162	900	4.49	4.49	–	–	–
6005	280	360	1,200	24.14	16.07	22.93	15.67	22.58
6205	310	370	1,000	35.99	27.92	34.82	27.51	–
6305	480	520	850	61.12	45.48	–	–	–



## Order example:

BB-628-B180-30-ES = Radial deep groove ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination					Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	
8	24	8	●	●	–	–	–	BB-628-B180-30-□
8	28	9	●	●	–	–	–	BB-638-B180-30-□
9	17	5	●	●	–	–	–	BB-689-B180-30-□
9	20	6	●	●	–	–	–	BB-699-B180-30-□
9	24	7	●	●	–	–	–	BB-609-B180-30-□
9	26	8	●	●	●	–	–	BB-629-B180-□-□
10	19	5	●	●	–	–	–	BB-6800-B180-30-□
10	22	6	●	●	–	–	–	BB-6900-B180-30-□
10	26	8	●	●	●	●	●	BB-6000-B180-□-□
10	30	9	●	●	●	●	–	BB-6200-B180-□-□
10	35	11	●	●	●	–	–	BB-6300-B180-□-□
12	18	4	●	●	–	–	–	BB-6701-B180-30-□
12	21	5	●	●	–	–	–	BB-6801-B180-30-□
12	24	6	●	●	–	–	–	BB-6901-B180-30-□
12	28	8	●	●	●	●	●	BB-6001-B180-□-□
12	32	10	●	●	●	●	–	BB-6201-B180-□-□
12	37	12	●	●	–	–	–	BB-6301-B180-30-□
15	21	4	●	●	–	–	–	BB-6702-B180-30-□
15	24	5	●	●	–	–	–	BB-6802-B180-30-□
15	28	7	●	●	–	–	–	BB-6902-B180-30-□
15	32	9	●	●	●	●	●	BB-6002-B180-□-□
15	35	11	●	●	●	●	●	BB-6202-B180-□-□
15	42	13	●	●	●	–	–	BB-6302-B180-□-□
17	23	4	●	–	–	–	–	BB-6703-B180-30-ES
17	26	5	●	●	–	–	–	BB-6803-B180-30-□
17	30	7	–	●	–	–	–	BB-6903-B180-30-GL
17	35	10	●	●	●	●	●	BB-6003-B180-□-□
17	40	12	●	●	●	●	–	BB-6203-B180-□-□
17	47	14	●	●	–	–	–	BB-6303-B180-30-□
20	27	4	●	●	–	–	–	BB-6704-B180-30-□
20	32	7	●	●	–	–	–	BB-6804-B180-30-□
20	37	9	●	–	–	–	–	BB-6904-B180-30-ES
20	42	12	●	●	●	●	●	BB-6004-B180-□-□
20	47	14	●	●	●	●	–	BB-6204-B180-□-□
20	52	15	●	●	–	–	–	BB-6304-B180-30-□
25	32	4	●	●	–	–	–	BB-6705-B180-30-□
25	37	7	●	●	–	–	–	BB-6805-B180-30-□
25	42	9	●	●	–	–	–	BB-6905-B180-30-□
25	47	12	●	●	●	●	●	BB-6005-B180-□-□
25	52	15	●	●	●	●	–	BB-6205-B180-□-□
25	62	17	●	●	–	–	–	BB-6305-B180-30-□



Available  
from stock

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight				
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	PE/ES [g]
6706	34	41	1,000	1.76	1.59	–	–	–
6806	160	162	900	4.49	1.82	–	–	–
6906	190	193	850	13.15	10.13	–	–	–
16006	380	420	900	–	–	28.53	17.33	–
6006	380	400	1,000	–	–	34.15	22.70	–
6206	480	520	850	55.89	39.73	–	–	–
6306	520	660	750	27.00	8.52	–	–	–
6007	480	520	850	–	–	47.29	30.71	–
6008	520	660	750	–	–	54.84	38.73	–
6009	660	690	650	–	–	33.52	57.52	–
6010	740	780	600	–	–	82.33	54.00	–
6011	930	950	550	–	–	119.64	75.80	–
6012	990	1,050	500	–	–	126.66	80.54	–

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination					Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	
30	37	4	●	●	–	–	–	BB-6706-B180-30-□
30	42	7	●	●	–	–	–	BB-6806-B180-30-□
30	47	9	●	●	–	–	–	BB-6906-B180-30-□
30	55	9	–	–	●	●	–	BB-16006-B180-10-□
30	55	13	–	–	●	●	–	BB-6006-B180-10-□
30	62	16	●	●	–	–	–	BB-6206-B180-30-□
30	72	19	●	●	–	–	–	BB-6306-B180-30-□
35	62	14	–	–	●	●	–	BB-6007-B180-10-□
40	68	15	–	–	●	●	–	BB-6008-B180-10-□
45	75	16	–	–	●	●	–	BB-6009-B180-10-□
50	80	16	–	–	●	●	–	BB-6010-B180-10-□
55	90	18	–	–	●	●	–	BB-6011-B180-10-□
60	95	18	–	–	●	●	–	BB-6012-B180-10-□



## Order example:

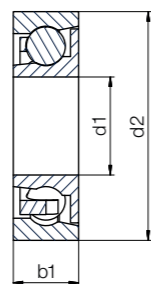
BB-6706-B180-30-ES = Thin ring bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls



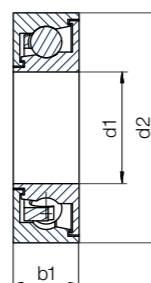
Available from stock



PA cage, with shield on one side stainless steel or glass balls



B180 cage, with labyrinth seal, stainless steel balls



#### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		stainless steel [g]	glass [g]
623	10	25	4,500	0.41	0.33
626	41	43	3,200	2.56	1.71
608	80	94	2,200	3.93	2.67
6000	110	130	2,200	6.21	4.15
6001	138	147	2,000	7.09	4.61
6202	142	155	1,700	12.73	9.63
6003	160	220	1,600	11.12	8.03
6004	250	320	1,400	20.20	13.60
6005	280	360	1,200	23.89	16.51

#### With labyrinth seal

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		stainless steel [g]	glass [g]
6003	160	220	1,600	11.02	8.27



#### Order example:

BB-623-B180-10-ES-C = Radial deep groove ball bearing with race material xirodur® B180, PA cage, stainless steel balls and shield



#### Order key

Type	Material
Ball bearings	Options: Cage material 10 = PA 30 = xirodur® B180 Ball material ES = Stainless steel GL = Glass Shield or labyrinth seal C = One-sided shield LCC = Labyrinth seal
Dimensions according to DIN 625-1	
Race material	
Cage material	
Ball material	
With shield	

#### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PA/ES	PA/GL	
3	10	4	●	●	BB-623-B180-10-□-C
6	19	6	●	●	BB-626-B180-10-□-C
8	22	7	●	●	BB-608-B180-10-□-C
10	26	8	●	●	BB-6000-B180-10-□-C
12	28	8	●	●	BB-6001-B180-10-□-C
15	35	11	●	●	BB-6202-B180-10-□-C
17	35	10	●	●	BB-6003-B180-10-□-C
20	42	12	●	●	BB-6004-B180-10-□-C
25	47	12	●	●	BB-6005-B180-10-□-C

#### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			B180/ES	B180/GL	
17	35	10	●	●	BB-6003-B180-30-□-LCC



Available from stock

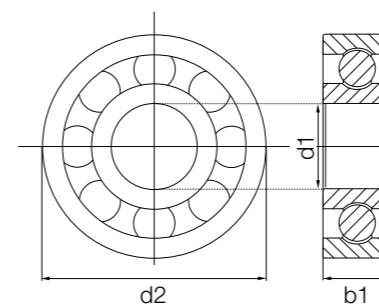




PP cage,  
stainless steel  
balls



PP cage,  
glass balls



## Order key

Type	Material
Ball bearings	Dimensions according to DIN 625-1
Ball bearings	Face material
Ball bearings	Cage material
Ball bearings	Ball material

**BB-623-C160-20-ES**

Cage material  
20 = PP

Options:  
Ball material  
ES = Stainless steel  
GL = Glass

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PP/ES [g]	PP/GL [g]
623	10	11	4,000	0.35	0.26
624	12	13	3,650	–	–
625	20	22	3,100	–	0.21
635	30	31	2,900	1.76	1.03
626	30	34	2,600	2.15	1.43
636	40	42	2,050	2.06	–
627	40	43	2,000	–	–
688	20	21	2,750	1.06	0.24
608	40	46	2,200	3.37	2.21
628	57	61	1,800	–	–
638	60	62	1,670	6.27	4.10
629	60	63	1,680	–	–
6800	20	24	2,100	–	–
6000	60	65	1,700	5.48	3.33
6200	78	81	1,540	7.50	4.71
6801	30	32	1,920	0.84	0.92
6001	70	74	1,580	6.59	3.80
6201	80	83	1,260	–	–
6802	40	43	1,700	–	0.46
6002	80	85	1,500	5.72	4.86
6202	80	85	1,130	–	–
6803	50	51	1,650	–	–
6003	90	96	1,300	9.10	6.22
6203	140	142	1,010	–	–
6804	50	54	1,480	–	–

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PP/ES	PP/GL	
3	10	4	●	●	BB-623-C160-20-□
4	13	5	●	●	BB-624-C160-20-□
5	16	5	●	●	BB-625-C160-20-□
5	19	6	●	●	BB-635-C160-20-□
6	19	6	●	●	BB-626-C160-20-□
6	22	7	●	●	BB-636-C160-20-□
7	22	7	●	●	BB-627-C160-20-□
8	16	5	●	●	BB-688-C160-20-□
8	22	7	●	●	BB-608-C160-20-□
8	24	8	●	●	BB-628-C160-20-□
8	28	9	●	●	BB-638-C160-20-□
9	26	8	●	●	BB-629-C160-20-□
10	19	5	●	●	BB-6800-C160-20-□
10	26	8	●	●	BB-6000-C160-20-□
10	30	9	●	●	BB-6200-C160-20-□
12	21	5	●	●	BB-6801-C160-20-□
12	28	8	●	●	BB-6001-C160-20-□
12	32	10	●	●	BB-6201-C160-20-□
15	24	5	●	●	BB-6802-C160-20-□
15	32	9	●	●	BB-6002-C160-20-□
15	35	11	●	●	BB-6202-C160-20-□
17	26	5	●	●	BB-6803-C160-20-□
17	35	10	●	●	BB-6003-C160-20-□
17	40	12	●	●	BB-6203-C160-20-□
20	32	7	●	●	BB-6804-C160-20-□



## Order example:

BB-623-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls



## Available from stock

Upon request

### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PP/ES [g]	PP/GL [g]
6004	140	142	1,000	17.81	11.20
6204	140	145	950	22.85	4.89
6805	80	82	1,075	–	–
6005	140	151	960	20.63	13.29
6205	170	181	810	26.70	4.89

### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PP/ES	PP/GL	
20	42	12	●	●	BB-6004-C160-20- <input type="text"/>
20	47	14	●	●	BB-6204-C160-20- <input type="text"/>
25	37	7	●	●	BB-6805-C160-20- <input type="text"/>
25	47	12	●	●	BB-6005-C160-20- <input type="text"/>
25	52	15	●	●	BB-6205-C160-20- <input type="text"/>



#### Order example:

BB-6004-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls



#### Available from stock

Upon request



PA cage,  
stainless steel balls



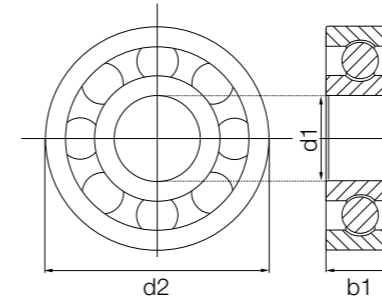
FDA  
PEEK cage,  
stainless steel balls



PEEK cage,  
glass balls



PEEK cage,  
PAI balls



**Order key**

Type	Material
Ball bearings	Dimensions according to DIN 625-1
Race material	Cage material
	Ball material

**BB-623-A500-10-ES**

Options:

- Cage material**
  - 10 = PA
  - 70 = PEEK
- Ball material**
  - ES = Stainless steel
  - GL = Glass
  - PAI = Polyamide-imide

### Technical data

Installation size	Radial load capacity				Max. speed [rpm]	Weight			
	stat.	dyn.	stat.	dyn.		PA/ stainless steel	PEEK/ stainless steel	PEEK/ glass	PEEK/ PAI
	[N]	[N]	[N]	[N]		[g]	[g]	[g]	[g]
623	27	30	-	-	5,000	0.4	0.4	0.3	-
624	30	40	-	-	4,500	1.9	1.0	0.9	-
625	36	43	-	-	3,700	-	-	-	-
635	48	52	-	-	3,400	-	-	-	-
626	54	60	15	20	3,400	2.3	2.3	1.6	1.4
636	72	76	-	-	2,450	-	-	-	-
627	72	74	-	-	2,600	-	-	-	-
688	36	38	-	-	3,150	-	-	-	-
608	72	78	18	25	2,700	3.7	3.7	2.4	2.2
628	98	104	-	-	2,500	-	-	-	-
638	102	108	-	-	2,300	-	-	-	-
629	102	112	-	-	2,350	-	-	-	-
6800	42	46	-	-	2,300	-	-	-	-
6000	102	107	25	34	2,100	6.0	6.0	3.8	3.4
6200	126	132	-	-	2,100	-	-	-	-
6801	54	57	-	-	2,150	-	-	-	-
6001	105	124	-	-	2,040	-	-	-	-
6201	132	141	-	-	1,820	-	-	-	-
6802	72	76	-	-	1,920	-	-	-	-
6002	132	145	32	41	1,900	9.1	9.1	5.2	5.6
6202	135	146	-	-	1,600	-	-	-	-
6803	84	84	-	-	1,760	-	-	-	-
6003	138	152	-	-	1,790	-	-	-	-
6203	228	232	-	-	1,450	-	-	-	-

### Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination				Part No.
			PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
d1	d2	b1					
3	10	4	●	●	●	-	BB-623-A500- <input type="text"/> - <input type="text"/>
4	13	5	●	●	●	-	BB-624-A500- <input type="text"/> - <input type="text"/>
5	16	5	●	●	●	-	BB-625-A500- <input type="text"/> - <input type="text"/>
5	19	6	●	●	●	-	BB-635-A500- <input type="text"/> - <input type="text"/>
6	19	6	●	●	●	●	BB-626-A500- <input type="text"/> - <input type="text"/>
6	22	7	●	●	●	-	BB-636-A500- <input type="text"/> - <input type="text"/>
7	22	7	●	●	●	-	BB-627-A500- <input type="text"/> - <input type="text"/>
8	16	5	●	●	●	-	BB-688-A500- <input type="text"/> - <input type="text"/>
8	22	7	●	●	●	●	BB-608-A500- <input type="text"/> - <input type="text"/>
8	24	8	●	●	●	-	BB-628-A500- <input type="text"/> - <input type="text"/>
8	28	9	●	●	●	-	BB-638-A500- <input type="text"/> - <input type="text"/>
9	26	8	●	●	●	-	BB-629-A500- <input type="text"/> - <input type="text"/>
10	19	5	●	●	●	-	BB-6800-A500- <input type="text"/> - <input type="text"/>
10	26	8	●	●	●	●	BB-6000-A500- <input type="text"/> - <input type="text"/>
10	30	9	●	●	●	-	BB-6200-A500- <input type="text"/> - <input type="text"/>
12	21	5	●	●	●	-	BB-6801-A500- <input type="text"/> - <input type="text"/>
12	28	8	●	●	●	●	BB-6001-A500- <input type="text"/> - <input type="text"/>
12	32	10	●	●	●	-	BB-6201-A500- <input type="text"/> - <input type="text"/>
15	24	5	●	●	●	-	BB-6802-A500- <input type="text"/> - <input type="text"/>
15	32	9	●	●	●	●	BB-6002-A500- <input type="text"/> - <input type="text"/>
15	35	11	●	●	●	-	BB-6202-A500- <input type="text"/> - <input type="text"/>
17	26	5	●	●	●	-	BB-6803-A500- <input type="text"/> - <input type="text"/>
17	35	10	●	●	●	●	BB-6003-A500- <input type="text"/> - <input type="text"/>
17	40	12	●	●	●	-	BB-6203-A500- <input type="text"/> - <input type="text"/>



### Order example:

BB-623-A500-10-ES = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls



### Available from stock

Upon request

## Technical data

Installation size	Radial load capacity				Max. speed [rpm]	Weight			
	stat. [N]	dyn. [N]	PEEK/PAI			PA/ stainless steel [g]	PEEK/ stainless steel [g]	PEEK/ glass [g]	PEEK/ PAI [g]
			stat. [N]	dyn. [N]					
6804	90	93	–	–	1,560	–	–	–	–
6004	234	250	62	88	1,700	19.7	19.7	13.2	11.7
6204	234	238	–	–	1,270	–	–	–	–
6805	132	135	–	–	980	–	–	–	–
6005	405	420	–	–	1,500	–	–	–	–
6205	422	440	–	–	1,100	–	–	–	–

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination				Part No.
			PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
20	32	7	●	●	●	–	BB-6804-A500- <input type="text"/> - <input type="text"/>
20	42	12	●	●	●	●	BB-6004-A500- <input type="text"/> - <input type="text"/>
20	47	14	●	●	●	–	BB-6204-A500- <input type="text"/> - <input type="text"/>
25	37	7	●	●	●	–	BB-6805-A500- <input type="text"/> - <input type="text"/>
25	47	12	●	●	●	●	BB-6005-A500- <input type="text"/> - <input type="text"/>
25	52	15	●	●	●	–	BB-6205-A500- <input type="text"/> - <input type="text"/>



### Order example:

BB-623-A500-10-ES = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls



### Available from stock

Upon request



PA cage,  
stainless steel balls



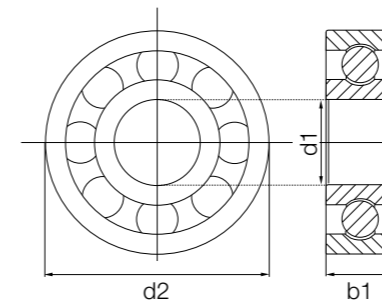
PE cage,  
stainless steel balls



Special designs  
made from  
xirodur® F180  
► Page 910

### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PA/ES [g]	PE/ES [g]
623	10	25	4,500	0.39	0.39
624	20	33	4,000	0.83	0.82
625	40	40	3,700	1.54	1.50
626	41	43	3,200	2.50	2.36
608	80	94	2,200	3.79	3.67
6000	110	130	2,200	5.86	5.76
6001	138	147	2,000	6.72	6.62
6002	140	150	1,800	8.59	8.50
6003	160	220	1,600	10.53	10.39
6004	250	320	1,400	19.24	19.18
6005	280	360	1,200	22.43	22.04



### Order key

Type	Material
Ball bearings	Dimensions according to DIN 625-1
Race material	Cage material
Ball material	

Options:  
**Cage material**  
 10 = PA  
 50 = PE  
**Ball material**  
 ES = Stainless steel

### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PA/ES	PE/ES	
3	10	4	●	●	BB-623-F180-□-ES
4	13	5	●	●	BB-624-F180-□-ES
5	16	5	●	●	BB-625-F180-□-ES
6	19	6	●	●	BB-626-F180-□-ES
8	22	7	●	●	BB-608-F180-□-ES
10	26	8	●	●	BB-6000-F180-□-ES
12	28	8	●	●	BB-6001-F180-□-ES
15	32	9	●	●	BB-6002-F180-□-ES
17	35	10	●	●	BB-6003-F180-□-ES
20	42	12	●	●	BB-6004-F180-□-ES
25	47	12	●	●	BB-6005-F180-□-ES



### Order example:

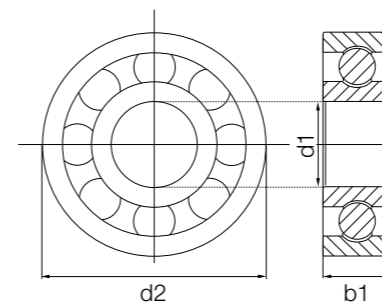
BB-623-F180-10-ES = Radial deep groove ball bearing with race material xirodur® F180, PA cage and stainless steel balls



Available  
from stock



PA cage,  
stainless steel balls



## Order key

Type	Material
<b>BB-608-F182-10-ES</b>	
Ball bearings	
Dimensions according to DIN 625-1	
Race material	
Cage material	
Ball material	

**Cage material**  
**10** = PA  
**Ball material**  
**ES** = Stainless steel

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight PA/ES [g]
	stat. [N]	dyn. [N]		
608	80	94	2,200	–
6000	110	130	2,200	–
6001	138	147	2,000	4.31

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Part No.
8	22	7	●	BB-608-F182-10-ES
10	26	8	●	BB-6000-F182-10-ES
12	28	8	●	BB-6001-F182-10-ES



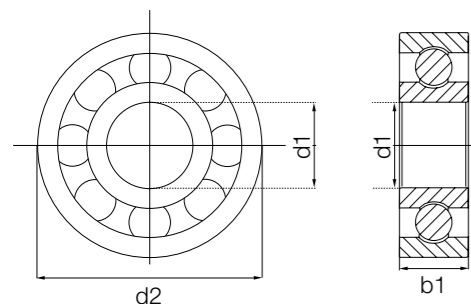
## Order example:

BB-608-F182-10-ES = Radial deep groove ball bearing with race material xirodur® F182, PA cage and stainless steel balls



## Available from stock

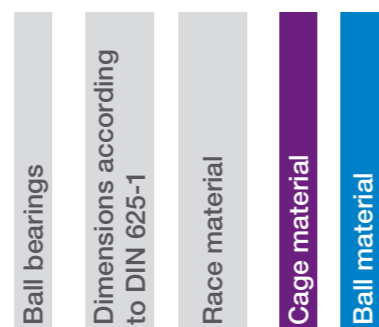
Upon request

PA cage,  
stainless steel balls

Order key

Type Material

BB-623-D180-10-ES



Cage material

10 = PA

Ball material

ES = Stainless steel

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight PA/ES [g]
	stat. [N]	dyn. [N]		
623	7	12	5,500	0.40
626	13	18	4,500	2.00
608	20	32	4,300	3.70
6000	28	36	4,200	5.78
6001	32	49	4,000	6.55
6002	44	50	3,870	8.26

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Part No.
3	10	4	●	BB-623-D180-10-ES
6	19	6	●	BB-626-D180-10-ES
8	22	7	●	BB-608-D180-10-ES
10	26	8	●	BB-6000-D180-10-ES
12	28	8	●	BB-6001-D180-10-ES
15	32	9	●	BB-6002-D180-10-ES

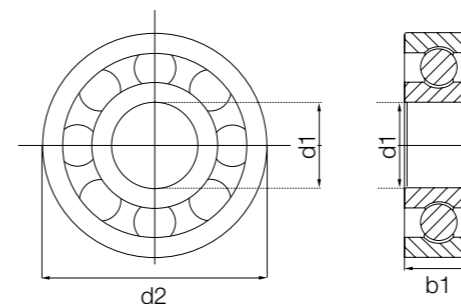


Order example:

BB-623-D180-10-ES = Radial deep groove ball bearing with race material xirodur® D180, PA cage and stainless steel balls



Upon request

xirodur® M180 cage,  
stainless steel balls

Order key

Type Material

BB-6000-M180-40-ES



Cage material

40 = xirodur® M180

Ball material

ES = Stainless steel

## Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight M180/ES [g]
	stat. [N]	dyn. [N]		
6000	85	119	1,900	6.53
6003	180	250	1,400	11.01

## Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
10	26	8	BB-6000-M180-40-ES
17	35	10	BB-6003-M180-40-ES



Order example:

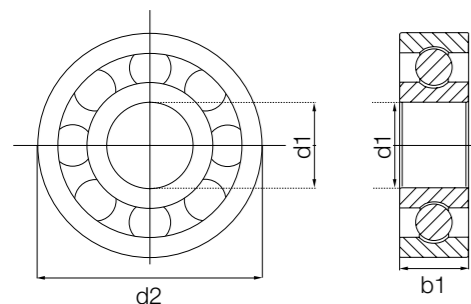
BB-6000-M180-40-ES = Radial deep groove ball bearing with race material xirodur® M180, M180 cage and stainless steel balls



Upon request



PP cage,  
stainless steel balls



Order key

Type	Material
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## BB-6002-T220-20-ES

Ball bearings	Dimensions according to DIN 625-1	Race material	Cage material	Ball material
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Cage material

20 = PP

Ball material

ES = Stainless steel

### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight PP/ES [g]
	stat. [N]	dyn. [N]		
6002	130	160	1,200	8.36

### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
15	32	9	BB-6002-T220-20-ES



Order example:

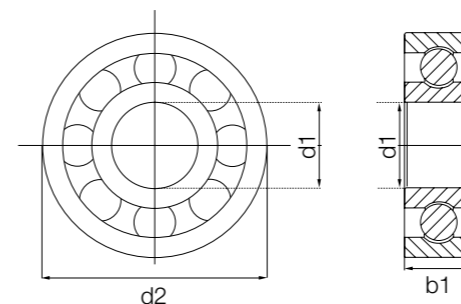
**BB-6002-T220-20-ES** = Radial deep groove ball bearing with race material xirodur® T220, PP cage and stainless steel balls



Upon request



PA cage,  
stainless steel balls



Order key

Type	Material
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## BB-6000-G220-10-ES

Ball bearings	Dimensions according to DIN 625-1	Race material	Cage material	Ball material
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Cage material

10 = PA

Ball material

ES = Stainless steel

### Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight PA/ES [g]
	stat. [N]	dyn. [N]		
6000	95	110	2,000	5.49

### Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
10	26	8	BB-6000-G220-10-ES



Order example:

**BB-6000-G220-10-ES** = Radial deep groove ball bearing with race material xirodur® G220, PA cage and stainless steel balls



Upon request