

Spherical thrust bearings: SAM



Order key

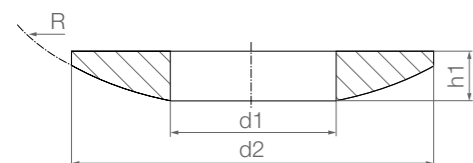
Type Size [mm]

SA M-05



Material:
Spherical washer: iglidur® W300 ► Page 171
Housing pad: igumid G ► Page 1654

Spherical washer



Housing pad



Technical data

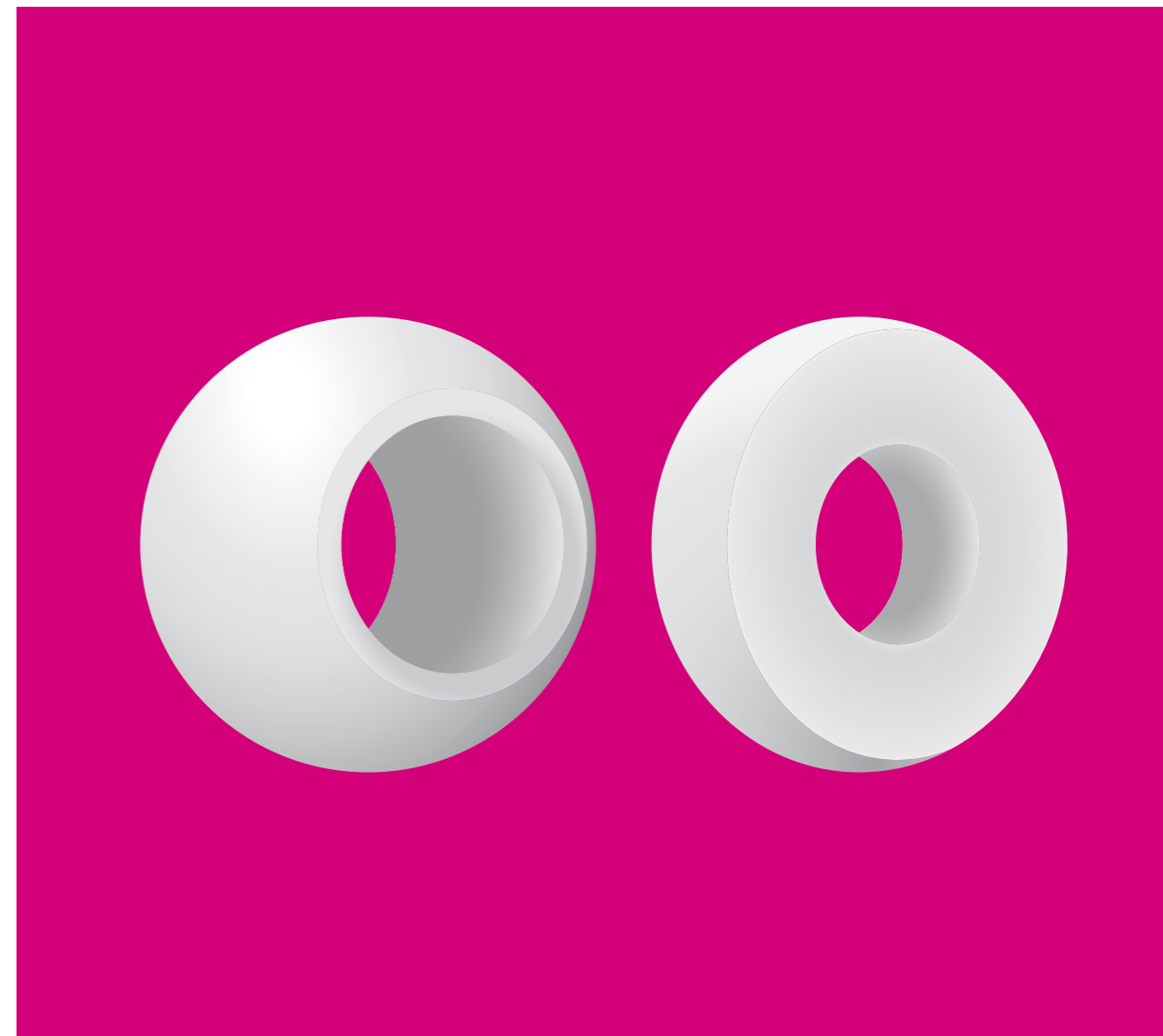
Part No.	Max. static axial compressive strength		Weight [g]
	Short-term	Long-term	
	[N]	[N]	
SAM-05	4,000	2,000	0.9
SAM-06	5,000	2,500	1.1
SAM-08	8,000	4,000	2.2
SAM-10	10,000	5,000	3.4
SAM-12	12,000	6,000	5.9
SAM-16	17,000	8,500	8.5
SAM-20	22,000	11,000	12.8

Dimensions [mm]

Part No.	d1	d3	d2	h1	h2	H ³⁴⁾	R	Compensation angle
	Spherical washer DIN 2768 medium	Housing pad DIN 2768 medium		Spherical washer	Housing pad	Overall height		
SAM-05	5.2	7.0	15	3.0	3.5	4.7	15	3°
SAM-06	6.2	7.5	16	3.0	4.0	5.3	16	3°
SAM-08	8.2	10.0	20	4.0	5.0	6.8	20	2°
SAM-10	10.2	12.0	24	4.5	5.5	7.5	24	2°
SAM-12	12.5	14.5	30	5.0	6.2	8.0	32	2°
SAM-16	16.2	19.0	36	5.5	6.5	8.7	40	2°
SAM-20	20.2	23.0	44	6.0	7.0	8.6	45	2°

³⁴⁾ In assembled condition

840 Online tools and more information ► www.igus.eu/spherical-thrust-bearings



igubal® spherical balls

Maintenance-free dry operation

Corrosion-free

High compressive strength

Flexible

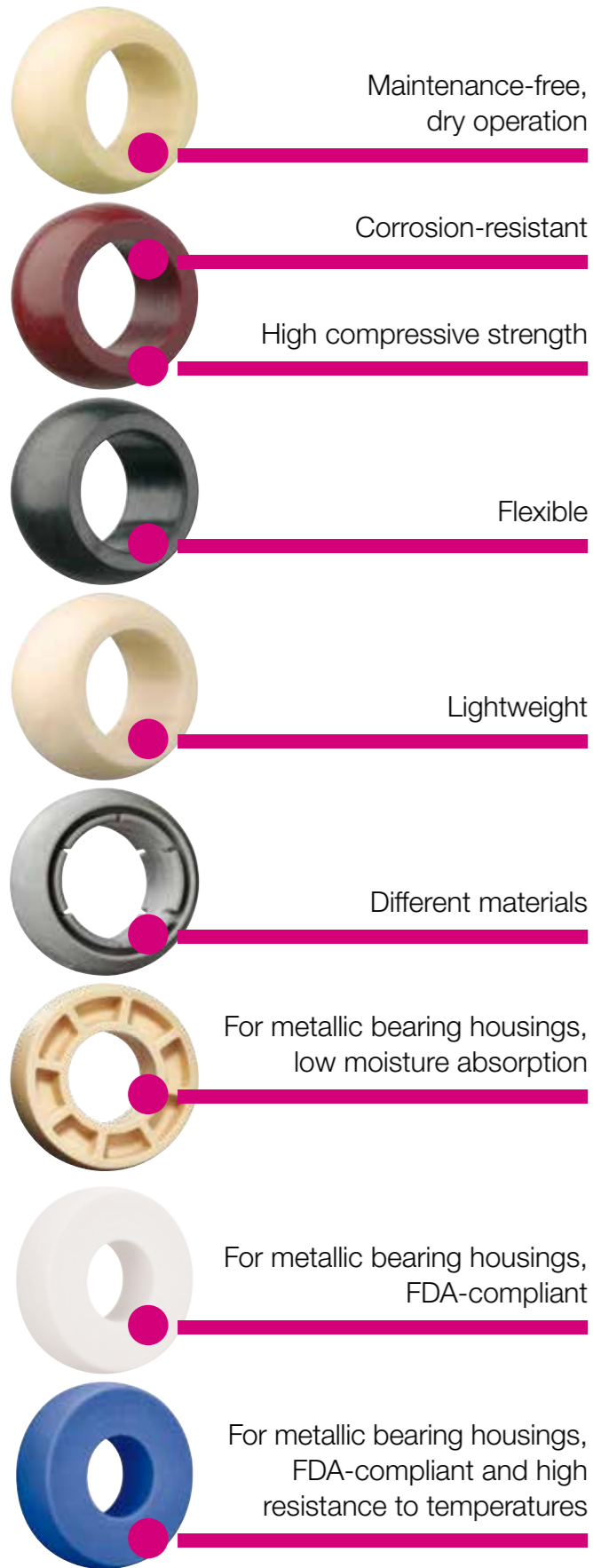
Lightweight

Different materials

Spherical balls for metallic bearing housings



Every single iglidur® material has its own special properties, which determines the suitability for your special applications and requirements. We have available spherical balls made from iglidur® materials W300 (standard), J, J4, R, RN248, UW and X. The spherical balls for metallic bearing housings are available in three materials for housing numbers 203 to 210.



When to use it?

- If you need maintenance-free material
- When dimensional E and K series components should be fitted
- If different iglidur® materials should be tested
- If high compressive strength is required
- If high flexibility is required
- Replacing ball bearings in metallic housings



When not to use it?

- When temperatures are higher than +250°C
- When dimensions above 50mm are required
- When rotation speeds higher than 0.5m/s are required

Tolerances

Maintenance-free igubal® spherical balls are designed with a tolerance of the inner diameter of E10. The shaft tolerance should be included between h6 and h9. All values and tolerances according to DIN ISO 2768-m.



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Depending on material



8 types
Ø 2–50mm



Imperial dimensions available

► From page 1610



Online product finder

► www.igus.eu/igubal-finder

842 Online tools and more information ► www.igus.eu/spherical-balls

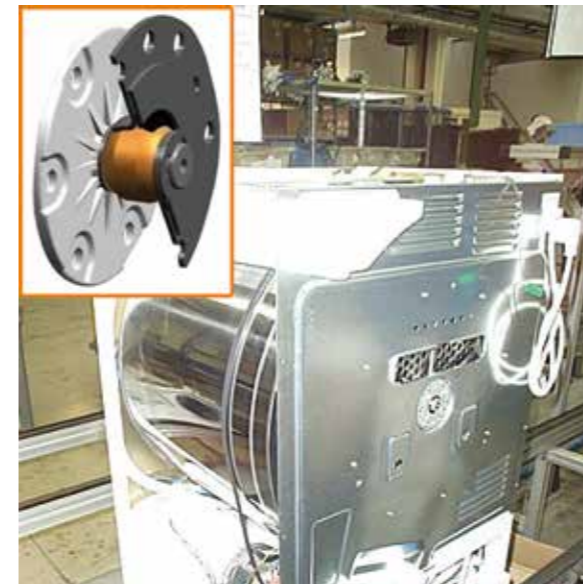


Typical sectors of industry and application areas

- Plant design
- Model building
- Furniture/Industrial design etc.

Improve technology and reduce costs – 110 exciting examples online

► www.igus.eu/igubal-applications



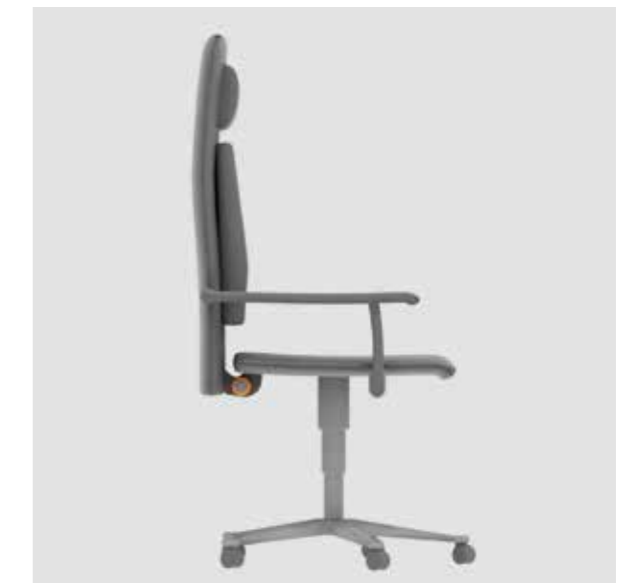
Drum bearing in a tumble dryer



► www.igus.eu/food



Carriage in a crane system



► www.igus.eu/design



3D CAD files, prices and delivery time online ► www.igus.eu/spherical-balls 843

Standard – igubal® spherical balls

iglidur® W300 ▶ Page 171



WKM
K series
metric/imperial
▶ Page 845



WEM
E series
metric/imperial
▶ Page 845

Low-cost – igubal® spherical balls

iglidur® R ▶ Page 247



RKM
K series
metric
▶ Page 846



REM
E series
metric
▶ Page 846

High temperatures – igubal® spherical balls

iglidur® X ▶ Page 279



XKM
K series
metric
▶ Page 847



XEM
E series
metric
▶ Page 847

Low moisture absorption igubal® spherical balls

iglidur® J ▶ Page 159



JKM
K series
metric
▶ Page 848–850



JEM
E series
metric
▶ Page 848

Cost-effective – igubal® spherical balls

iglidur® J4, ▶ Page 1652



J4KM
K series
Metric
▶ Page 851



J4EM
E series
Metric
▶ Page 851



UWEM
E series
Metric
▶ Page 852



J4VEM
E series
Metric
▶ Page 853

Underwater applications – igubal® spherical balls

iglidur® UW ▶ Page 509

Clearance-free, pre-loaded – igubal® spherical balls

iglidur® J4VEM ▶ Page 853

Detectable – igubal® spherical balls

iglidur® RN248 ▶ Page 1657



RN248KM
K series
Metric
▶ Page 854



RN248EM
E series
Metric
▶ Page 854



Standard
UC series
Metric
▶ Page 855



FDA-compliant
UC series
Metric
▶ Page 855

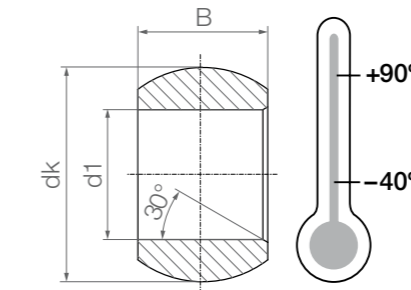
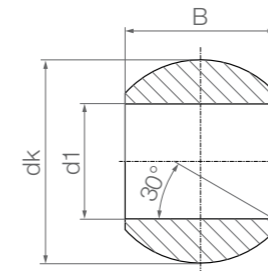


FDA-compliant, high temp.
UC series
Metric
▶ Page 855

844 Online tools and more information ▶ www.igus.eu/spherical-balls



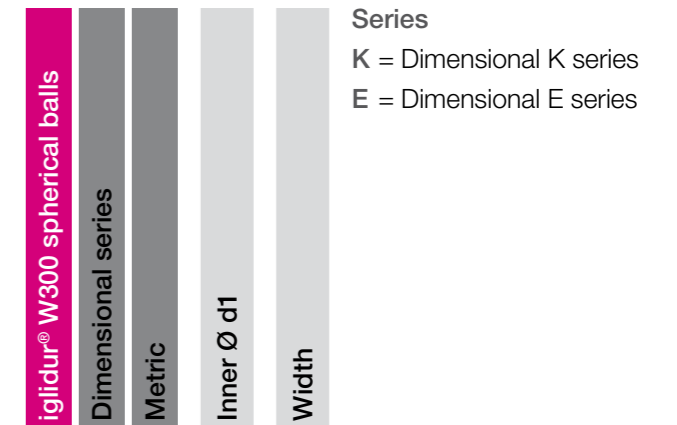
Standard spherical balls: WKM and WEM



Order key

Type Size [mm] Options

W □ M - 02 - 04



inch Imperial dimensions available
▶ Page 1610

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WKM-02-04	2	5.10	4	0.1
WKM-03-06	3	8.10	6	0.3
WKM-05-08	5	11.30	8	0.6
WKM-06-09	6	12.80	9	0.9
WKM-08-12	8	16.00	12	1.6
WKM-10-14	10	19.00	14	2.7
WKM-12-16	12	22.10	16	4.0
WKM-14-19	14	25.40	19	6.0
WKM-16-21	16	28.40	21	8.2
WKM-18-23	18	31.50	23	10.8
WKM-20-25	20	35.10	25	14.5
WKM-22-28	22	38.30	28	18.7
WKM-25-31	25	42.90	31	26.0
WKM-30-37	30	51.20	37	44.7

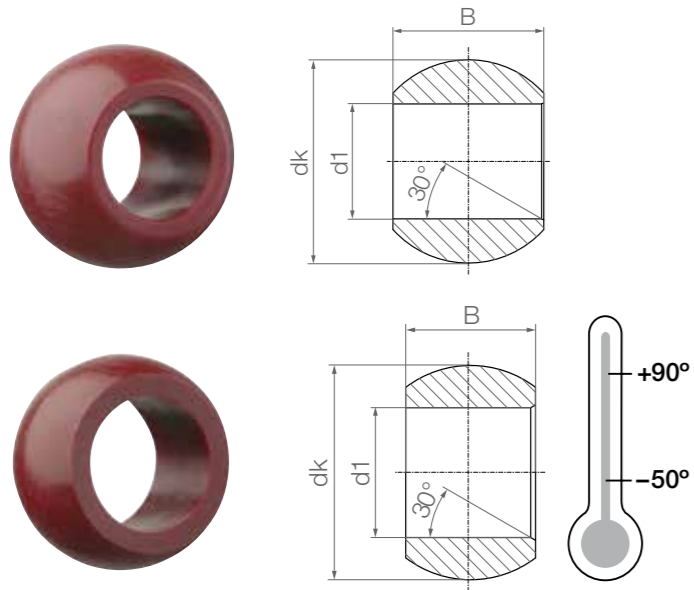
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WEM-04-05	4	8.30	5	0.2
WEM-05-06	5	10.30	6	0.3
WEM-06-06	6	10.30	6	0.4
WEM-08-08	8	13.30	8	0.7
WEM-10-09	10	16.10	9	1.2
WEM-12-10	12	18.10	10	1.5
WEM-15-12	15	22.00	12	2.4
WEM-16-13	16	24.10	13	3.3
WEM-17-14	17	25.10	14	3.7
WEM-20-16	20	29.10	16	5.3
WEM-25-20	25	35.60	20	9.5
WEM-30-22	30	40.90	22	12.1



3D CAD files, prices and delivery time online ▶ www.igus.eu/spherical-balls 845

Low-cost spherical balls:
RKM and REM



Order key

Type	Size [mm]	Options
R □ M-08-12		
iglidur® R spherical balls	Dimensional series	Series
	Metric	K = Dimensional K series
	Inner Ø d1 [mm]	E = Dimensional E series
	Width	

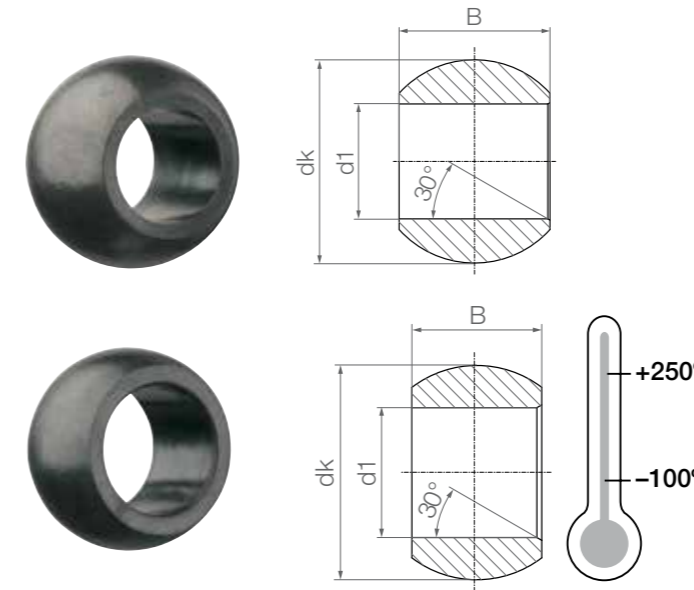
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RKM-08-12	8	15.90	12	1.8
RKM-10-14	10	19.00	14	2.9

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
REM-05-06	5	10.20	6	0.4
REM-06-06	6	10.20	6	0.4
REM-08-08	8	13.20	8	0.8
REM-10-09	10	16.10	9	1.3
REM-12-10	12	18.10	10	1.6

High temperatures spherical balls:
XKM and XEM



Order key

Type	Size [mm]	Options
X □ M-10-14		
iglidur® X spherical balls	Dimensional series	Series
	Metric	K = Dimensional K series
	Inner Ø d1	E = Dimensional E series
	Width	

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XKM-10-14	10	19.10	14	2.9

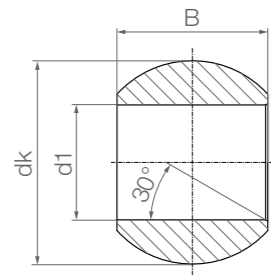
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XEM-05-06	5	10.30	6	0.4
XEM-06-06	6	10.20	6	0.4
XEM-08-08	8	13.30	8	0.8
XEM-10-09	10	16.10	9	1.3
XEM-12-10	12	18.10	10	1.6

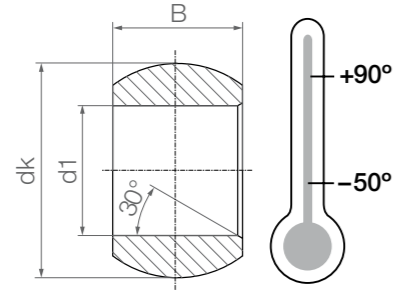
Low moisture absorption spherical balls:
JKM and JEM



JKM



JEM



Order key

Type Size [mm] Options

J □ M-03-06

Series
K = Dimensional K series
E = Dimensional E series

iglidur® J spherical balls
Dimensional series
Metric
Inner Ø d1
Width

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-03-06	3	8.10	6	0.3
JKM-05-08	5	11.30	8	0.7
JKM-06-09	6	12.80	9	1.0
JKM-08-12	8	15.90	12	1.9
JKM-10-14	10	19.00	14	3.1
JKM-12-16	12	22.10	16	4.7
JKM-16-21	16	28.40	21	9.4
JKM-18-23	18	31.50	23	13.2
JKM-20-25	20	35.10	25	17.6
JKM-25-31	25	42.80	31	31.6
JKM-30-37	30	51.20	37	53.0

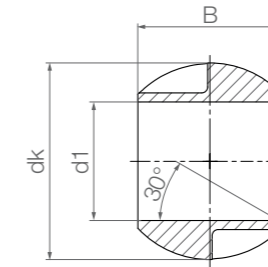
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-04-05	4	8.30	5	0.3
JEM-05-06	5	10.20	6	0.4
JEM-06-06	6	10.20	6	0.4
JEM-08-08	8	13.30	8	0.8
JEM-10-09	10	16.10	9	1.3
JEM-12-10	12	18.10	10	1.7
JEM-15-12	15	22.00	12	2.9
JEM-16-13	16	24.10	13	3.9
JEM-17-14	17	25.20	14	4.1
JEM-20-16	20	29.10	16	6.4
JEM-25-20	25	35.60	20	11.5
JEM-30-22	30	40.90	22	14.5
JEM-40-28	40	53.00	28	31.0

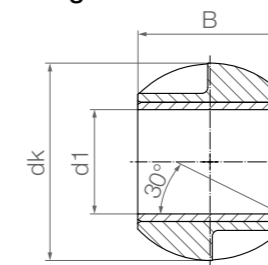
Low moisture absorption spherical balls:
JKM



JKM spherical ball with plain bearing



JKM spherical ball without plain bearing



Order key

Type Size [mm]

J K M-35-49

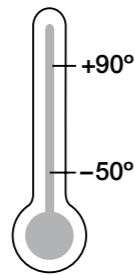
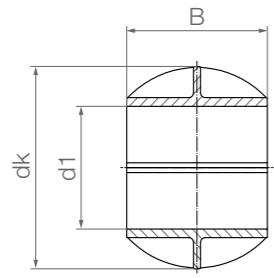
iglidur® J spherical balls
K series
Metric
Inner Ø d1
Width

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-35-49 ³⁵⁾	35	66.30	49	75.5
JKM-40-49	40	66.30	49	54.5
JKM-45-60 ³⁵⁾	45	82.40	60	125.1
JKM-50-60	50	82.40	60	92.1

³⁵⁾ Diameter reduced by means of a plain bearing

Low moisture absorption split spherical balls:
JKM-GT



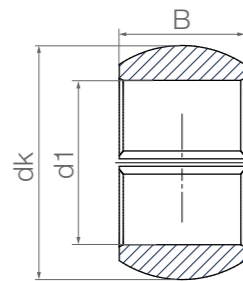
Order key

Type	Version	Size [mm]
J K M- GT 40		
iglidur® J spherical balls	K series	Metric
	Split ball	Inner Ø d1 [mm]

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-GT40	40	66.30	49	54.5
JKM-GT50	50	82.40	60	92.1

Low moisture absorption split spherical balls:
JEM-GT



Order key

Type	Version	Size [mm]
J E M- GT 16		
iglidur® J spherical balls	E series	Metric
	Split ball	Inner Ø d1 [mm]

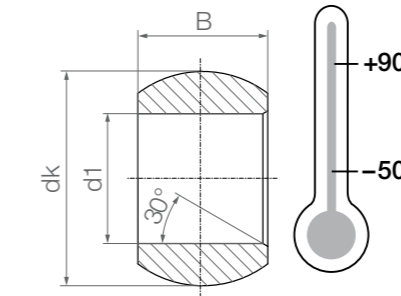
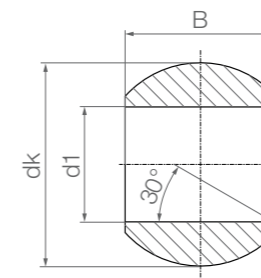
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-GT16	16	23.7	13	3.7
JEM-GT20	20	28.9	16	6.1
JEM-GT25	25	35.6	20	10.9
JEM-GT30	30	40.8	22	14.6

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Cost-effective spherical balls:
J4KM and J4EM



Order key

Type	Size [mm]	Options
J4 □ M-10-14		
iglidur® J4 spherical balls	Dimensional series	Metric
	Inner Ø d1	Width

Series
K = Dimensional K series
E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4KM-10-14	10	19.10	14	3.1
J4KM-12-16	12	22.10	16	4.7

Dimensions [mm]

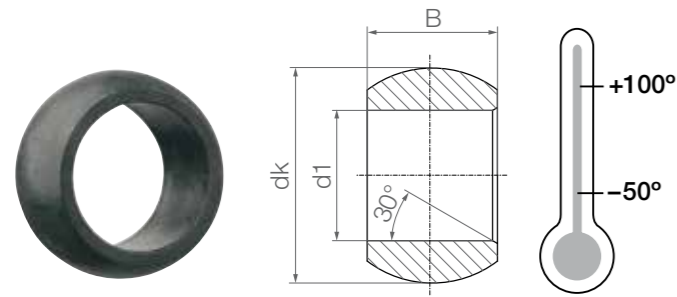
Part No.	d1 E10	dK	B	Weight [g]
J4EM-04-05	4	8.25	5	0.3
J4EM-05-06	5	10.20	6	0.4
J4EM-06-06	6	10.20	6	0.4
J4EM-08-08	8	13.30	8	0.8
J4EM-10-09	10	16.00	9	1.3
J4EM-12-10	12	18.00	10	1.7
J4EM-15-12	15	22.00	12	2.9
J4EM-16-13	16	24.00	13	3.9
J4EM-17-14	17	25.10	14	4.1
J4EM-20-16	20	28.90	16	6.4
J4EM-25-20	25	35.50	20	11.5
J4EM-30-22	30	40.90	22	14.5

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Spherical balls for underwater applications:
UWEM

Order key



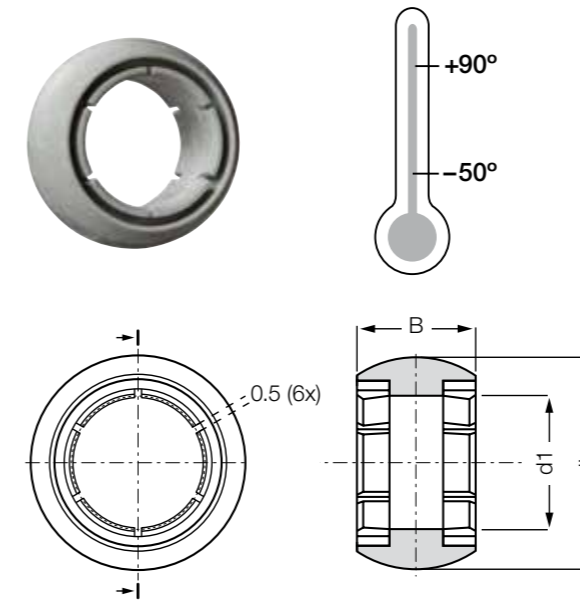
Type	Size [mm]
iglidur® UW spherical balls	UW E M-16-13
E series	
Metric	
Inner Ø d1	
Width	

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
UWEM-10-09	10	16.10	9	1.4
UWEM-16-13	16	23.80	13	4.0
UWEM-20-16	20	28.80	16	6.5
UWEM-25-20	25	35.30	20	11.6
UWEM-30-22	30	40.50	22	15.2

Clearance-free, pre-loaded spherical balls:
J4VEM

Order key



Type	Size [mm]
iglidur® J4 spherical balls	J4 V E M-08-08
Pre-loaded	
E series	
Metric	
Inner Ø d1	
Width	

- Can be combined with all E series housings
- Sizes from 8 to 20mm
- Clearance-free, pre-loaded
- Totally clearance-free in unloaded state

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4VEM-08-08	8	13.20	8	0.7
J4VEM-10-09	10	16.10	9	1.2
J4VEM-12-10	12	18.10	10	1.5
J4VEM-16-13	16	24.10	13	3.7
J4VEM-20-16	20	29.10	16	6.2

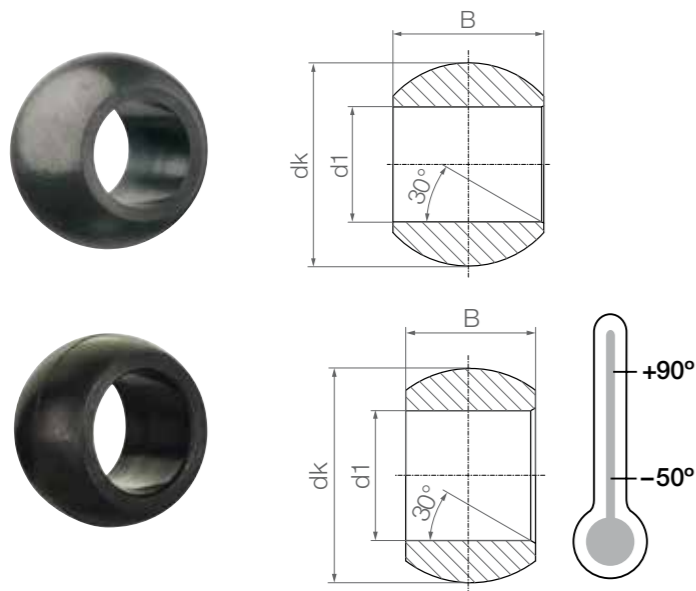
5 sizes available: Ø 8, 10, 12, 16, 20mm

combinable with:

- igubal® rod ends EA(L)RM ▶ Page 758
- igubal® rod ends EB(L)RM ▶ Page 756
- igubal® pillow block bearings ESTM ▶ Page 795
- igubal® fixed flange bearings EFOM ▶ Page 806

- igubal® fixed flange bearings EFSM ▶ Page 808
- igubal® clip bearings EGFM-T ▶ Page 829
- igubal® spherical bearings EGLM ▶ Page 825
- igubal® double joints EGZM ▶ Page 831

Detectable spherical balls:
RN248KM and RN248EM



Order key

Type	Size [mm]	Options
RN248	M-06-09	
iglidur® RN248 spherical balls		
Dimensional series	Metric	Series
Inner Ø d1		K = Dimensional K series
Width		E = Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RN248KM-06-09	6	12.80	9	1

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RN248EM-05-06	5	10.30	6	0.4
RN248EM-06-06	6	10.20	6	0.4
RN248EM-08-08	8	13.20	8	0.8
RN248EM-10-09	10	16.10	9	1.3

Slim spherical balls made of iglidur® materials for various metallic bearing housings

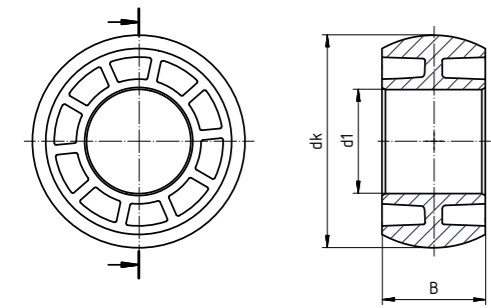


- 3 different spherical ball materials available: iglidur® J, A180 and A350
- Eight dimensions for housing numbers range includes UC203 to UC210
- Maintenance-free, dry operation
- Durable
- Corrosion-free
- Resistant to dirt

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force	
					radial [N]	axial [N]
made of iglidur® J, low coefficient of friction (material information ► From page 159)						
JEM-17-17	UC203	17	47	17	10,000	7,500
JEM-20-17	UC204	20	47	17	11,500	7,500
JEM-25-17	UC205	25	52	17	14,500	7,500
JEM-30-19	UC206	30	62	19	19,500	9,500
JEM-35-20	UC207	35	72	20	24,000	10,500
JEM-40-21	UC208	40	80	21	29,000	12,000
JEM-45-22	UC209	45	85	22	34,000	13,000
JEM-50-24	UC210	50	90	24	41,500	15,500
made of iglidur® A180, FDA-compliant all-rounder (material information ► From page 361)						
A180EM-17-17	UC203	17	47	17	7,500	6,000
A180EM-20-17	UC204	20	47	17	9,000	6,000
A180EM-25-17	UC205	25	52	17	11,500	6,000
A180EM-30-19	UC206	30	62	19	15,500	7,500
A180EM-35-20	UC207	35	72	20	19,000	8,500
A180EM-40-21	UC208	40	80	21	23,000	9,000
A180EM-45-22	UC209	45	85	22	27,000	10,000
A180EM-50-24	UC210	50	90	24	33,000	12,000
made of iglidur® A350, for high temperatures and chemicals (material information ► From page 369)						
A350EM-17-17	UC203	17	47	17	17,000	13,000
A350EM-20-17	UC204	20	47	17	20,000	13,000
A350EM-25-17	UC205	25	52	17	25,000	13,000
A350EM-30-19	UC206	30	62	19	34,000	17,000
A350EM-35-20	UC207	35	72	20	41,500	18,500
A350EM-40-21	UC208	40	80	21	50,000	20,000

Cost-effective spherical balls
for various metallic bearing housings



- Cost-effective due to injection moulding method
- Eight dimensions for housing numbers range includes UC203 to UC210
- Maintenance-free, dry operation

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force	
					radial [N]	axial [N]
JEM-17-17-SP	UC203	17	47	17	7,500	4,000
□EM-20-14-SP New	P204	20	47	14	8,000	4,000
JEM-20-17-SP	UC204	20	47	17	8,000	4,000
□EM-25-15-SP New	P205	25	52	15	9,000	4,000
JEM-25-17-SP	UC205	25	52	17	9,000	3,500
□EM-30-16-SP New	P206	30	62	16	13,500	5,000
JEM-30-19-SP	UC206	30	62	19	13,500	5,000
JEM-35-20-SP	UC207	35	72	20	14,500	6,500
JEM-40-21-SP	UC208	40	80	21	21,000	6,000
JEM-45-22-SP	UC209	45	85	22	23,000	5,500
JEM-50-24-SP	UC210	50	90	24	25,000	5,500



Image exemplary

856 Online tools and more information ► www.igus.eu/spherical-balls

Order key

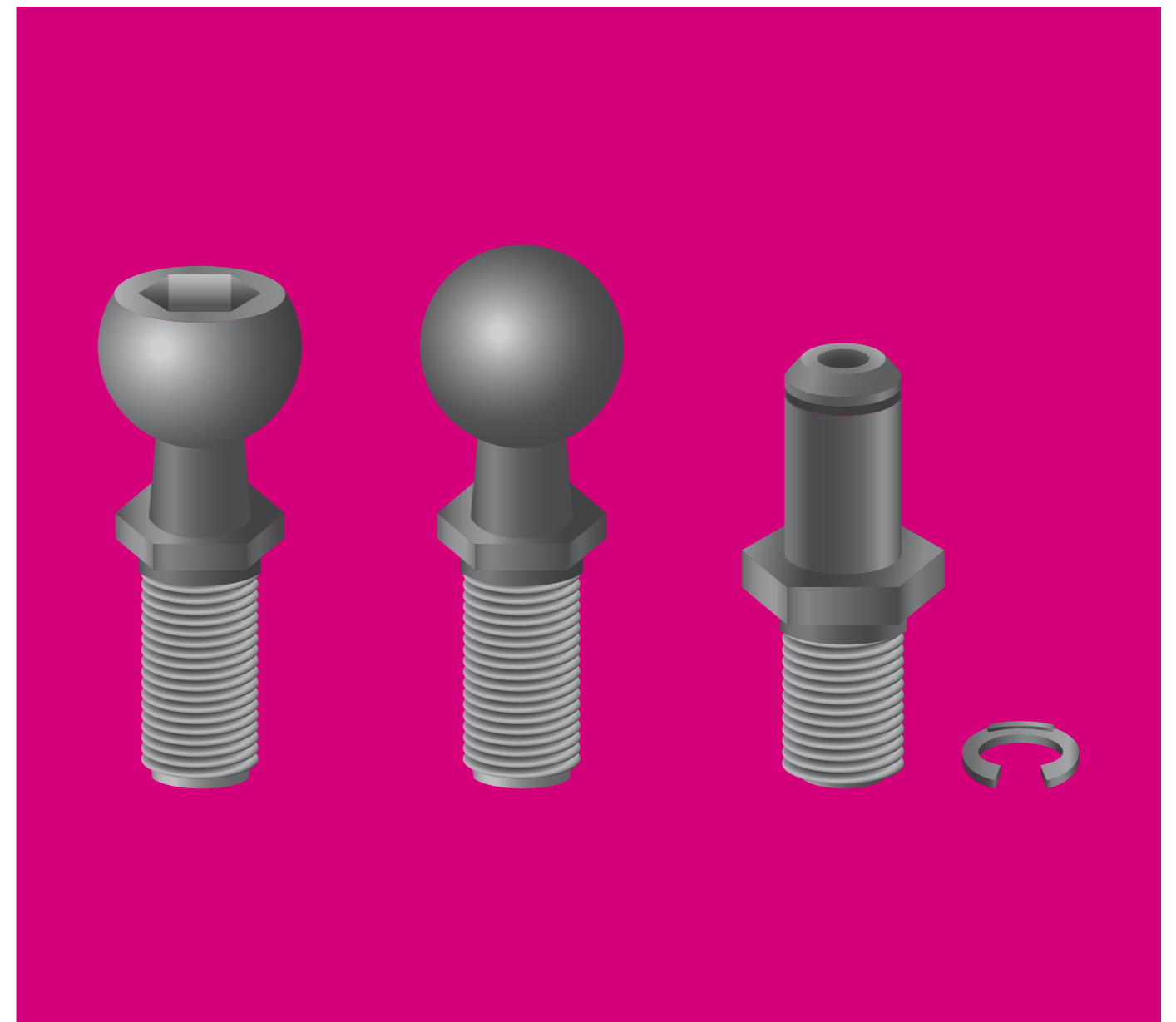
Type	Size [mm]	Version
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J EM-17-17 SP

iglidur® material	iglidur® J spherical balls	Inner Ø d1	Width	Injection moulding
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i Material:
 iglidur® J, low coefficients of friction ► Page 159
 iglidur® J4, Low-cost material ► Page 1652

- Durable
- Resistant to corrosion and chemicals
- Resistant to dirt
- Low moisture absorption



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Ball studs made of plastic, galvanised steel
and stainless steel

Adapter screw made from plastic

Adapter for E series pillow block bearings

