

Low-Maintenance  
**UKB Pillow Blocks**  
(self-aligning bearing)



# Superior performance and durability in any environment, be it dry, wet, saltwater or chemical.

## UKB Pillow Blocks



### Good to use in any circumstance

Whether in extreme dryness or under seawater, in high-temperature steam or sporadic dampness, even immersed in chemicals, it performs.

### No lubrication

It's essentially self-lubricating, so there is no need to reapply grease.

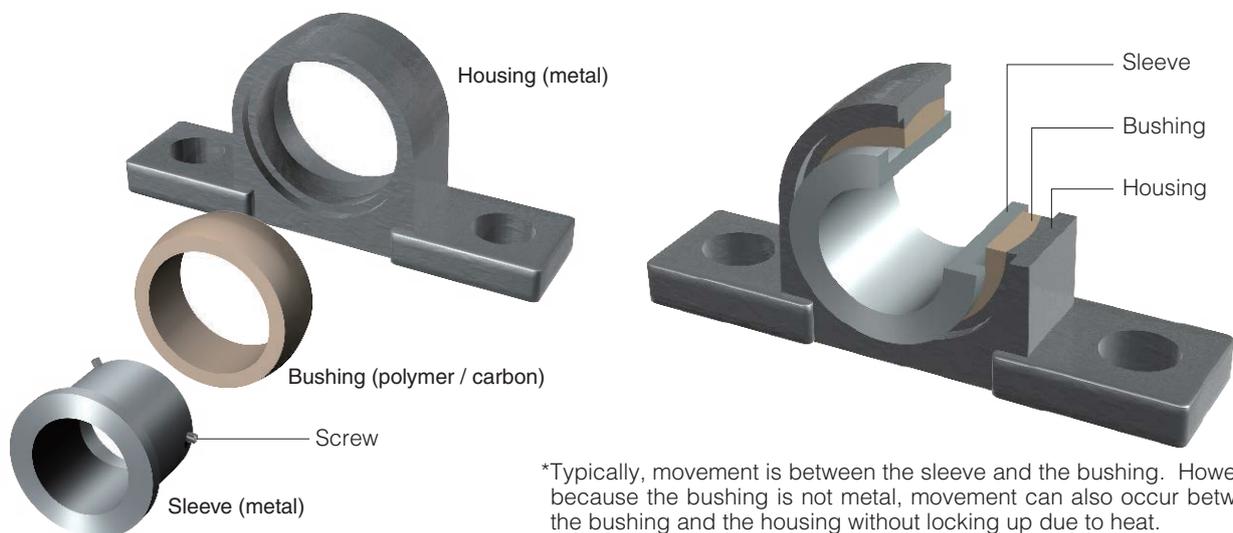
### Superior durability

Built to last, it's lightweight, non-rusting and resistant to corrosion and wear.

### Universal compatibility

Because it's completely compatible with other manufacturers' ball bearing units, you can put it to use without delay.

### UKB Unit Diagram / Three-Part Assembly



\*Typically, movement is between the sleeve and the bushing. However, because the bushing is not metal, movement can also occur between the bushing and the housing without locking up due to heat.

The above is a digital image.

# UKB Pillow Blocks Specifications (Bushing)

## Bushing / Types and Features

Material Number		UKB200	UKB522	UKB131MS	UKB252HG	UKB494	UKB430	UHMWPE	UKB67C
Material Classification		Thermosetting (Phenol)				Tetrafluoroethylene		Ultra High Molecular Weight (Polyethylene)	Carbon
Features		Most suitable in completely dry conditions	For sites with irregular moisture, e.g. steam	Submersion in water	Between 150°C and 250°C	High resistance to physical, water, and chemical damage (black)	Non-damaging to non-metal shaft (beige)	High resistance to chemical damage	Continuous use at 350°C
Density		1.5	1.5	1.4	1.8	2.1	1.84	0.94	1.77
Compressive strength	⊥(Mpa)	230	226	265	334	6.3 (1% Deformation)	9.2 (1% Deformation)	Tensile Strength 44.1	185
	//(Mpa)	147	118	187	147	6.0 (1% Deformation)			
Flexural strength	⊥(Mpa)	118	98	128	147	-	-	Elongation (%) 400	60
	//(Mpa)	83	-	-	166				
Impact strength	⊥(J/m)	157	108	245	421	-	-	Will not fracture	-
	//(J/m)	132	-	-	284				
Linear thermal expansion coefficient	⊥ (x10 <sup>-5</sup> /°C)	3.59	5.0	4.5	3.59	8.4 ~ 10.8	8.3 ~ 12.9	10 ~ 19	0.35
	// (x10 <sup>-5</sup> /°C)	1.80	3.0	3.0	1.80				
Water-absorption swelling rate	⊥(%)	1.0	0.9	1.0	1.0	0	0	< 0.01	-
	//(%)	0.5	0.2	0.2	0.5				
Maximum temperature (°C)		200	130	130	300	260	260	110	350
(Recommended temperature for continual use) (°C)		(150)	(110)	(110)	(250)	(150)	(150)	(60)	(350)

## Bushing / Quick Guide

Environment	Dry	Irregular moisture, e.g. steam	In water or saltwater	Chemicals	Food*
Minimum temperature ~ 110°C	UKB200 UKB522 UKB67C	UKB522 UKB67C	UKB522 UKB131MS UKB67C	UKB67C UKB494 UHMWPE (~ 60°C)	UKB430 UKB67C UHMWPE (~ 60°C)
~ 150°C	UKB200 UKB67C	-	-	UKB67C UKB494	UKB430 UKB67C
~ 250°C	UKB252HG	-	-	-	UKB67C
~ 350°C	UKB67C	-	-	-	UKB67C

\*If used with food, consultation is required. For information on other environmental conditions, please ask.

# UKB Pillow Blocks Performance

## Tolerable pressure / velocity ranges (by material)

Material number (UKB)		UKB200	UKB522	UKB131MS	UKB252HG	UKB494	UKB430	UHMWPE	UKB67C	
<b>P</b> max	Maximum recommended pressure (Mpa)	8	10	19.6	8	3	3	2	3	
<b>V</b> max	Maximum recommended velocity (M/sec)	1	1.5	5 (Underwater)	1	3	3	2	4	
Maximum PV Values (Mpa·m/sec)	D	Dry	1	1.5	-	1	1.5	1.5	0.13	0.5
	W	Water lubrication	-	54	78	-	3	-	1	5
	G	Grease	-	3	1.5	-	10	10	0.5	5

## Friction coefficients (tested values)

	UKB200	UKB522	UKB131MS	UKB252HG	UKB494	UKB430	UHMWPE
Dry	0.2 ~ 0.4	0.15 ~ 0.3	-	0.2 ~ 0.4	0.1 ~ 0.3	0.06 ~ 0.23	0.1 ~ 0.3
Water lubrication	0.08 ~ 0.15	0.04 ~ 0.12	0.05 ~ 0.13	-	< 0.3	< 0.13	0.06 ~ 0.2
Grease	0.05 ~ 0.16	0.08 ~ 0.2	0.08 ~ 0.20	0.05 ~ 0.16	0.01 ~ 0.05 (Oil lubrication)	0.01 ~ 0.05 (Oil lubrication)	0.11 ~ 0.26

## Sleeve functions and types

- Shaft stability
- Shaft and scratch guard
- Directional axial load (one-way)\*

Sleeve type	Steel plating	SUS304
Recommended bushing	UKB200 UKB252HG	UKB131MS UKB494 UKB430 UHMWPE
	UKB522, UKB67C	

\*In case of bidirectional axial load, special sleeves are available by request.

## Housing types

They are compatible with conventional housing sizes, so there is no need for design alteration.

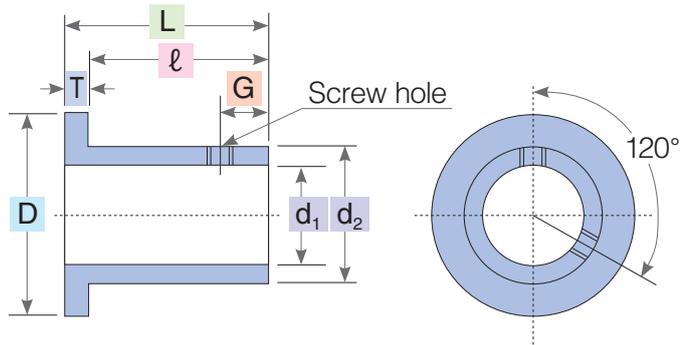
	Material	Shape	Size
Standard or high temperature	Cast iron	Pillow (P) Square Flange (F) Rhombus Flange (FL) Round Flange (FC)	All sizes are available.
Special use (e.g., water)	Stainless steel	Pillow (P) Rhombus Flange (FL)	204 ~ 210

# UKB pillow blocks bushing and sleeve gauge sizes

## Sleeves



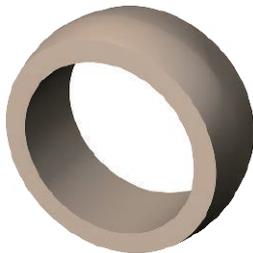
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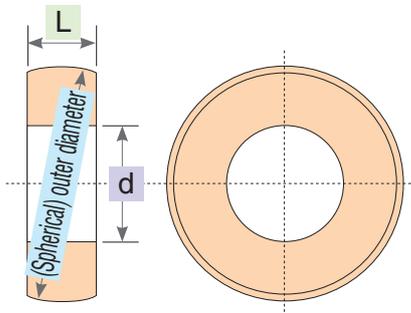
### 200 series sleeves (S45C, SUS304)

Sleeve number	Inner diameter	d1	d2	D	L	l	T	G	M screw hole	
									S45C	SUS304
204	20	20	30	38	30.8	26.8	4	4.5	6×0.75	6×1
205	25	25	35	43	33.3	28.3	5	5	6×0.75	6×1
206	30	30	40	49	37.7	31.7	6	5	6×0.75	6×1
207	35	35	45	55	42.4	35.4	7	6	8×1	8×1.2
208	40	40	50	60	48.2	40.7	7.5	8	8×1	8×1.25
209	45	45	60	70	48.7	41.2	7.5	8	8×1	8×1.25
210	50	50	65	75	51.1	44.1	7	9	10×1.25	10×1.5

## Bushings



The above is a digital image.



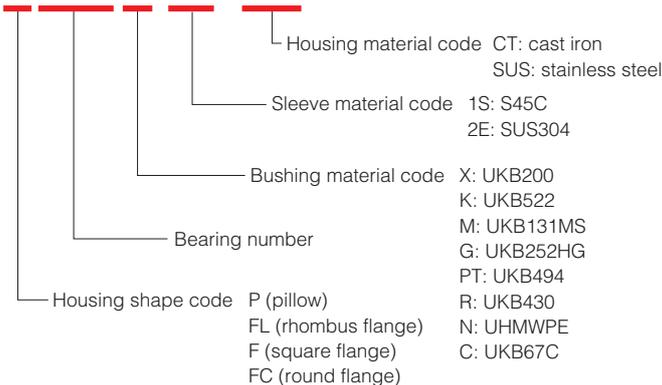
### 200 series bushings

Bushing number	Inner diameter	(Spherical) outer diameter	d	L
204	20	47	30	17
205	25	52	35	17
206	30	62	40	19
207	35	72	45	20
208	40	80	50	21
209	45	85	60	22
210	50	90	65	23

## How to read the product code

UKB product codes consist of one- or two-letter codes for the housing shape or product numbers, bearing numbers, and codes for other options such as size. When ordering, be sure to use the correct UKB product code.

**Full unit**  
UKB-P207K-1S-CT



**Bushings only**  
UKB-BB208 X

Bushing material code  
Bearing number

**Sleeves only**  
UKB-BS208-2E

Sleeve material code  
Bearing number

**Housings only**  
UKB-P208-SUS

Housing material code  
Bearing number

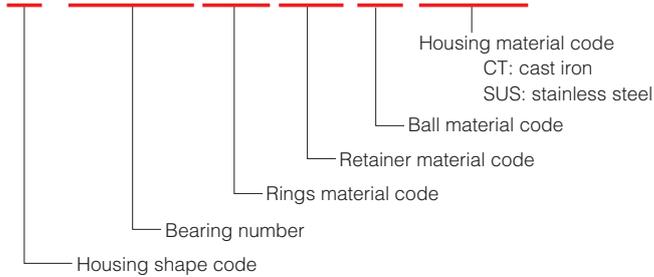
# Special UKB pillow block types

## Self-aligning rolling bearing

Standard rolling bearings function best under low friction.

Product code (full unit)

### UKB-P-B205PKPT-A-SUS



Product code (bearings only)

### UKB-BG205PKPT-A

#### Rings / retainers material codes

Material	Phenol			PTFE				UHMWPE	PP	PEEK	PPS	PCTEE	PVDF	Carbon		
Material code	SD	SDK	SDHG	PT	PTG	PTE	PTN	PE	PP	PK	PKG	PS	PSG	PCT	PV	CY

#### Ball material codes

Material	Ceramic				Stainless steel		Soda-lime glass	Plastic				
Material code	A	Z	N	C	S	S6	G	PP	PE	PV	PTN	PK

## Material selection quick guide

### Outer ring / inner ring / retainer

● Highly Recommended    ■ Recommended    ▲ Not Recommended    × Unusable

Environment	Material code	Dry	Irregular moisture	Water or saltwater	Steam	Chemical				Non-magnetic	Insulating
						Acid	Alkaline	Organic solvent	Oil		
Phenol	SD	●	●	●	●	■	×	●	●	●	●
	SDK	●	●	●	●	■	×	●	●	×	×
	SDHG	●	▲	▲	×	■	×	■	●	×	×
PTFE	PT	●	●	●	●	●	●	●	●	●	×
	PTG	●	●	●	●	●	×	●	●	●	●
	PTE	●	●	●	●	●	●	●	●	●	●
	PTN	●	●	●	●	●	●	●	●	●	●
UHMWPE	PE	■	■	●	×	●	●	●	●	●	●
PP	PP	▲	■	■	▲	■	■	■	■	●	●
PEEK	PK	■	■	■	■	●	●	●	●	●	●
	PKG	●	■	■	●	●	●	●	●	●	×
PPS	PS	■	●	●	●	●	●	●	●	●	●
	PSG	●	●	●	●	●	●	●	●	●	×
PCTFE	PCT	■	■	■	●	●	●	■	■	●	●
PVDF	PV	■	■	■	●	●	●	■	■	●	●
Carbon	CY	●	■	■	●	●	●	●	●	■	×

NOTE: In case of chemical environment, please consult with us regarding chemical type and temperature.

### Ball

● Highly Recommended    ■ Recommended    ▲ Not Recommended    × Unusable

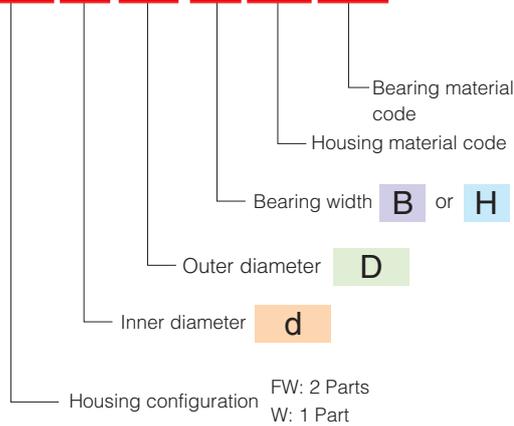
Ball	Environment	Material code	Dry	Water	Chemical	Heat	Insulating	Other notes
Ceramic	Alumina Al <sub>2</sub> O <sub>3</sub>	A	●	■	●	●	●	Subject to corrosion
	Zirconia ZrO <sub>2</sub>	Z	●	■	●	●	●	
	Silicon Nitride Si <sub>3</sub> N <sub>4</sub>	N	●	■	●	●	●	
	Silicon Carbide SiC	C	●	■	●	●	●	
Stainless steel	SUS304	S	●	●	▲	●	×	Not subject to corrosion
	SUS316	S6	●	●	▲	●	×	
Soda-lime glass		G	●	■	▲	■	●	Unusable in rapidly changing temperatures
Plastic	PP	PP	×	●	■	Please ask.	●	Liquid injection or low speed recommended
	PE	PE	×	●	■		●	
	PVDF	PV	×	●	■		●	
	PTFE	PTN	■	●	●		●	
	PEEK	PK	■	■	●		●	

# Self-aligning sliding bearing

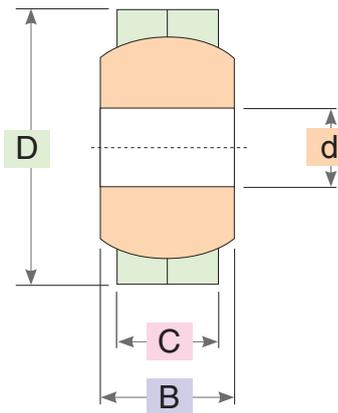
When there's not enough space for the housing, but you still need aligning.

Product code

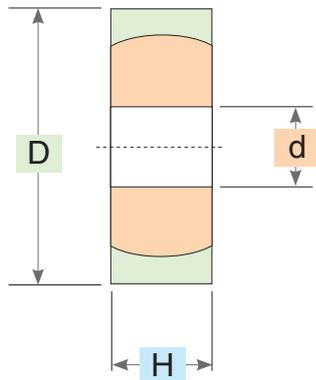
## UKB-FW173014S6PT



FW Configuration



W Configuration



Standard Sizes (mm)

d	D	B	C	H
10	19	9	6	8
12	22	10	7	8
15	26	12	9	10
17	30	14	10	12
20	35	16	12	14
22	37	19	16	15
25	42	20	16	17
	42	21	18	
30	47	22	18	18
	50	27	23	
35	55	25	20	22
	55	30	26	
40	62	28	22	25
	62	33	28	
45	68	32	25	27
	72	36	31	
50	75	35	28	30
	80	42	36	
60	90	44	36	36

Custom-made sizes also available

Bearing material codes

Bearing material	Phenol			PTFE				UHMWPE	PP	PEEK	PPS	PCTEE	PVDF	Carbon		
Material Code	SD	SDK	SDHG	PT	PTG	PTE	PTN	PE	PP	PK	PKG	PS	PSG	PCT	PV	CY

Housing Codes

Housing Material	SUS304	SUS316	S45C	Various plastics
Housing Codes	S4	S6	C4	See bearing material codes above

[www.kashima-kagaku.com](http://www.kashima-kagaku.com)



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