

# SKF insert bearing units UC range



# SKF UC range, designed for JIS\* equipment

**You need a robust and reliable insert bearing unit solution, one that's easy to install, simple to order and improves productivity. SKF now offers a product that matches your operational and application requirements.**

At SKF, we have developed a range of insert bearing units, called "UC range", designed to be interchangeable with JIS\* equipment. These SKF UC bearing units are designed with a set screw locking feature, to operate in environments where systemic vibrations are characteristic application conditions.

\* JIS: Japanese Industrial Standards

## Easy to order, easy to replace

You want a solution that makes your life easy – A solution with the same boundary dimensions, housing configurations and part numbers as many other products available today on the market.

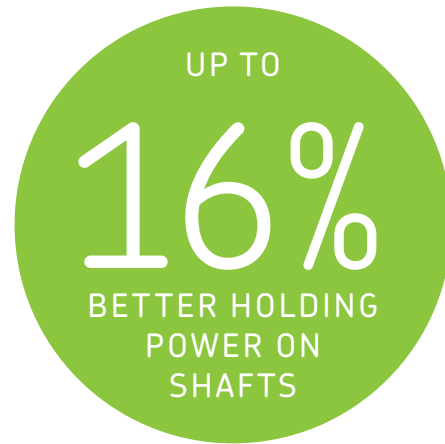
The SKF insert bearing units - UC range achieves this and more. It's an interchangeable solution with JIS\* housings available today on the market with an enhanced locking design insert bearing that helps provide more productive, more reliable, and smoother running rotating equipment.

What's more, no modification of your machine is needed. The dimensions meet most of the current UC designated bearing unit fitting requirements, enhancing interchangeability. And whatever product you need, with SKF you know it will be easy to obtain and straightforward to install.



## Applications include

- Parcel and baggage handling conveyors
- Material handling conveyors
- Food process machinery
- Packaging equipment
- HVAC equipment
- Agriculture machinery
- Construction machinery
- Textile machinery
- Fitness equipment
- Escalators
- Metals industry
- Industrial fans



### Combining JIS\* compatibility with SKF reliability

With over 100 years of experience, SKF understands machine and plant productivity and the need to deliver high rotating equipment performance.

The SKF UC range has been designed to provide reliable performance as well and reduce machine downtime. It includes specific features that can make the difference in your equipment.

### An enhanced set screw locking system

One of the reasons for failure in a low speed, highly loaded conveyor applications is machine vibration loosening the locking systems.

SKF has overcome this problem by using an enhanced set screw locking design. At its heart is a nylon patch that creates extra resistance to screw loosening. A simple, solution which eliminates the labour associated with the use of messy liquid locking compounds that have no removal or reinstallation options.

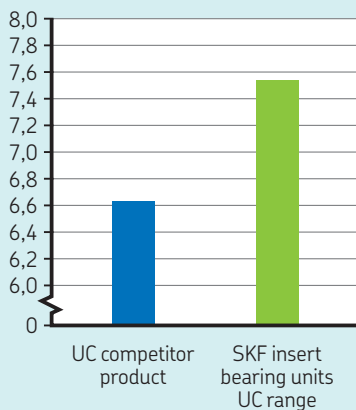
The locking device on the SKF UC range increases the axial holding power by up to 16% (→ **Diagram 1**), so there is greater grip between the shaft and bearing. This is a big advantage for units operating in systemic vibrating applications, such as conveyors.

### A solid base and solid feet for increased cleanliness and better bearing unit support

The solid base design of SKF insert bearing units – UC range provides a cleaner surface with less contaminant ingress for improved bearing unit support, especially the often heavily contaminated conveyor operating environment. A solid base design is now standard on our two bolt flanged housings as well as a solid feet on our pillow block housings (→ **fig. 1**). This limits the opportunity for dirt to collect underneath the housing support – another step forward for better bearing unit hygiene.

Diagram 1

Shaft holding power [kN]



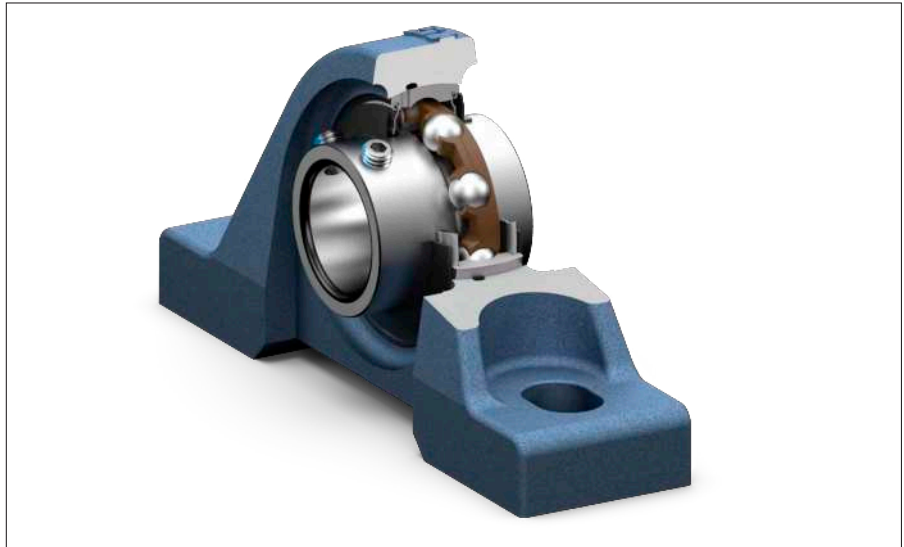
Note: testing results based on two 1/4 in shaft set screws, individual results may vary depending on shaft material and hardness, and other factors.

Fig. 1





Please note that end covers are not included with the SKF insert bearing units and must be ordered separately.



## Optional end covers for flanged and take-up housings

To comply with health and safety regulations, SKF UC bearing units with flanged and take-up housings are available with polypropylene end covers. SKF offers these end covers as high availability option.

## SKF high-quality grease

Poor lubrication accounts for over 36% of premature bearing failures. In fact, most low speed applications fail due to lubrication related issues, not necessarily due to bearing fatigue. Provided recommended maintenance

intervals are followed, SKF high-quality grease helps bearings achieve expected service life as the SKF range of lubricants are designed to perform under real conditions (→ Table 1).

## Sealing system

The standard seal for SKF insert bearing units – UC range is the rugged integral seal protected with an additional flinger to help exclude contaminants. The integral seal consists of a pressed sheet steel washer with a sealing lip made of NBR bonded to its inner surface. The coated non-contact sheet steel washer forms a narrow gap with the cylindrical surface of the inner ring protecting the

land-riding seal against contaminants. Enhancing the seal's effectiveness are externally applied coated flingers.

Other sealing solutions are available for extremely contaminated operating environments. Please contact the SKF application engineering service for more information.

## Benefit from the SKF's global distribution network

Finding replacement parts can sometimes be a challenge. SKF is well positioned to bring you the right support and the right parts, no matter where your application is based. We have 17 000 distribution locations in over 130 countries around the globe.

Table 1

### Lubricating greases

Technical specification	Grease fills in standard insert bearings standard insert bearing units
Thickener	Lithium-calcium soap
Base oil	Mineral oil
Colour	Yellowish brown
Temperature range [°C] (continuous operation)	-30 to +120 <sup>1)</sup>
Kinematic viscosity [mm <sup>2</sup> /s]	190/15
Consistency (to NLGI scale)	2
Other	Long life grease

<sup>1)</sup> The temperature range for reliable operation in accordance with the SKF traffic light concept is between 10 and 120 °C.

## The advantages for you at a glance

- Interchangeable with JIS\* housings
- A more secure locking system in applications where systemic vibrations occur
- Widely available throughout SKF's global distribution network resulting in shorter lead times

\* JIS: Japanese Industrial Standards

# Designations

The complete designation for the SKF insert bearing units – UC range consists of:

- Prefixes, identifying insert bearing or housing series
- Figures, identifying the size
- Suffixes, identifying design and variants

More details about the basic designations and the supplementary designations can be obtained from the table **Designation system**.

## Designation system

<b>Examples:</b>	UCP 205	UC	P	2	05	
	UCF 205-15	UC	F	2	05-15	
	T 215		T	2	15	
	UC 312	UC		3	12	
	UKP 204 K	UK	P	2	04	K

### Bearing series

<b>UC</b>	Insert bearing, cylindrical bore with set screws
<b>UK<sup>1)</sup></b>	Insert bearing with a tapered bore and adapter sleeve

### Housing type

<b>P</b>	Pillow block unit
<b>F</b>	Flanged unit, square 4-bolt flange
<b>FL</b>	Flanged unit, oval 2-bolt flange
<b>FC</b>	Flanged unit, round 4-bolt flange
<b>FS</b>	Flanged unit, square piloted 4-bolt flange
<b>T</b>	Take-up unit for linear motion
<b>FB</b>	Flanged unit, 3-bolt flange
<b>PA</b>	Tapped base pillow block unit
<b>LP</b>	Pillow block unit, lower center height
<b>PH</b>	Pillow block unit, high center height
<b>IP</b>	Thick pillow block unit
<b>FA</b>	Take-up unit for swivel motion
<b>C</b>	Cartridge unit
<b>HA</b>	Hanger unit

### Dimension series

<b>2</b>	Normal series
<b>3</b>	Heavy duty series

### Bore diameter

<b>04</b>	For metric shaft 20 mm
<b>15</b>	75 mm
	For inch shaft Two-digit number follows the basic metric bearing size and is separated from this by a hyphen; it is the number of sixteenths ( $\frac{1}{16}$ ) of an inch
<b>05-15</b>	$\frac{15}{16}$ in = 23,813 mm

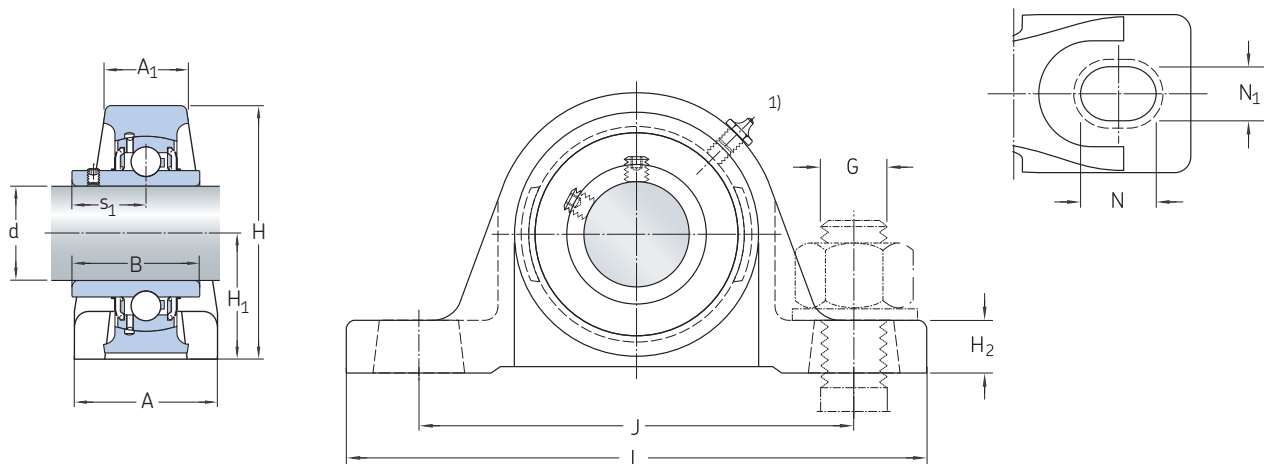
### Suffixes

<b>K</b>	Without adapter sleeve
<b>/AH</b>	Air handling execution
<b>VZ811</b>	With groove for mounting end cover (omitted in some flanged housing types as a standard design)

<sup>1)</sup> Order adapter sleeve separately.

Insert bearing pillow block units, set screws, for metric shafts

d 20 – 100 mm



Dimension	Basic load ratings		Fatigue load limit	Limiting speed with shaft tolerance	Mass	Designations		Unit
	dynamic	static				Housing	Bearing	
d	C	C <sub>0</sub>	P <sub>u</sub>	h6				
mm	kN		kN	r/min	kg	–		
<b>20</b>	12,7	6,7	0,3	6 500	0,66	P 204	UC 204	<b>UCP 204</b>
<b>25</b>	14,0	7,8	0,3	5 850	0,86	P 205	UC 205	<b>UCP 205</b>
<b>30</b>	19,5 26,5	11,4 15	0,5 0,64	5 000 5 300	1,34 2,15	P 206 P 306	UC 206 UC 306	<b>UCP 206</b> <b>UCP 306</b>
<b>35</b>	25,5 33,2	15,3 19,3	0,7 0,815	4 300 4 700	1,62 3,00	P 207 P 307	UC 207 UC 307	<b>UCP 207</b> <b>UCP 307</b>
<b>40</b>	32,5 41,0	20,0 24,0	0,9 1,02	3 750 4 200	2,17 3,55	P 208 P 308	UC 208 UC 308	<b>UCP 208</b> <b>UCP 308</b>
<b>45</b>	32,5 52,7	20,4 32,0	0,9 1,34	3 400 3 750	2,40 5,05	P 209 P 309	UC 209 UC 309	<b>UCP 209</b> <b>UCP 309</b>
<b>50</b>	35,1 61,8	23,2 38,0	1,0 1,6	3 300 3 400	2,88 6,40	P 210 P 310	UC 210 UC 310	<b>UCP 210</b> <b>UCP 310</b>
<b>55</b>	43,6 71,5	29,0 45,0	1,3 1,9	3 000 3 100	3,95 7,80	P 211 P 311	UC 211 UC 311	<b>UCP 211</b> <b>UCP 311</b>
<b>60</b>	52,7 81,9	36,0 52,0	1,5 2,2	2 700 2 900	5,05 9,6	P 212 P 312	UC 212 UC 312	<b>UCP 212</b> <b>UCP 312</b>
<b>65</b>	57,2	40,0	1,7	2 350	6,63	P 213	UC 213	<b>UCP 213</b>
<b>70</b>	62,4	44,0	1,9	2 250	7,17	P 214	UC 214	<b>UCP 214</b>
<b>75</b>	66,3 114,0	49,0 76,5	2,0 3,0	2 100 2 300	8,17 15,5	P 215 P 315	UC 215 UC 315	<b>UCP 215</b> <b>UCP 315</b>
<b>80</b>	71,5 124,0	54,0 86,5	2,2 3,25	1 900 2 150	9,30 18,2	P 216 P 316	UC 216 UC 316	<b>UCP 216</b> <b>UCP 316</b>
<b>85</b>	83,2	64,0	2,5	1 800	12,9	P 217	UC 217	<b>UCP 217</b>
<b>90</b>	95,6	72,0	2,7	1 600	14,5	P 218	UC 218	<b>UCP 218</b>
<b>100</b>	174,0	140,0	4,75	1 700	36,7	P 320	UC 320	<b>UCP 320</b>

1) The grease nipple is centered on the housing for size 210 and above.

## Dimensions

d	A	A <sub>1</sub>	B	H	H <sub>1</sub>	H <sub>2</sub>	J	L	N	N <sub>1</sub>	G	s <sub>1</sub>
mm										–	mm	
20	34	20,8	31	64,29	33,3	13,49	95	127	18	13	M10	18,3
25	38,1	21,27	34	70,64	36,5	15,88	105	139,7	18	13	M10	19,7
30	44,6 47	23,6 31,6	38,1 43	83,34 100	42,9 50	16,67 21	121 140	165,1 182	21 19	17 17	M14 M14	22,2 26
35	45,8 54	26,7 35,8	42,9 48	93,66 111,4	47,6 56	18,26 23	127 160,5	166,69 209	21 24,5	17 17	M14 M14	25,4 29
40	48,8 57	29 37,8	49,2 52	101 119,4	49,2 60	20,64 25	137 170,5	184,15 221	21 26,5	17 17	M14 M14	30,2 33
45	51,2 63	29,3 41,8	49,2 57	107,95 136	54 67	19,05 25	146 190	189,71 247	21 29	17 20	M14 M16	30,2 35
50	55,6 65	30,7 43	51,6 61	115,89 152	57,2 75	19,05 25	159 212,5	206,38 275	22 34,5	20 20	M16 M16	32,6 39
55	58,9 68	34,6 45	55,6 66	126,21 162	63,5 80	22,23 25	171 236,5	219,08 302	22 37,5	20 20	M16 M16	33,4 41
60	61,6 72	34,3 47,8	65,1 71	141,29 170,8	69,8 85	22,23 35	184 250,5	239,71 321	25 36,5	20 24	M16 M20	39,7 45
65	71,9	34,9	65,1	153,59	76,2	25,4	203	265,11	30	25	M20	39,7
70	72,1	40,5	74,6	159,54	79,4	28,18	210	265,91	30	25	M20	44,4
75	73 86	42 57,6	77,8 82	166 202	82,6 100	25,4 40	217 290,5	271,47 368	30 39,5	25 27	M20 M22	44,5 50
80	77,8 93	45,2 61,8	82,6 86	176,21 215	88,9 106	34 40	232 300,5	292,1 378	35 39,5	25 27	M20 M22	49,3 52
85	83,2	47,6	85,7	188,91	95,2	36	247	310,36	35	25	M20	51,6
90	88	50,8	96	202,41	101,6	38	262	327,03	40	27	M22	56,3
100	107	71,4	108	283	140	55	380	482	49,5	36	M30	66