



I. Material

1.1 Plastic Housing Material

1.1.1 PBT

1.1.2 PBT Characters

Item No.	Items	Unit	Value
1	Tensile Strength	Mpa	≥75
2	Bending Strength	Mpa	≥110
3	Dent Impact Strength	J/M	≥35
4	Heat Deforming Pint	°C	≥180
5	Glass Fiber Content	%	10±2
6	Density	g/cm <sup>3</sup>	1.5

1.2 Material for Inlaid Bush

1.2.1 Stainless Steel 304

1.3 Material for Nipple

1.3.1 Stainless Steel 304

2. Tolerance for Plastic Housings

2.1 Tolerance on spherical inside diameter (Unit: um)

Nominal spherical inside diameter			H7				J7			
Da		Incl. (mm)	Dam Deviations		Dam Deviations		Dam Deviations		Dam Deviations	
Over (mm)			High	Low	High	Low	High	Low	High	Low
30		50	+25	0	+30	-5	+14	-11	+19	-11
50		80	+30	0	+36	-6	+18	-18	+24	-18

2.2 Centre Height Tolerance for P200 series (Unit: um)

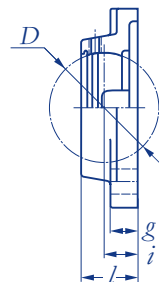
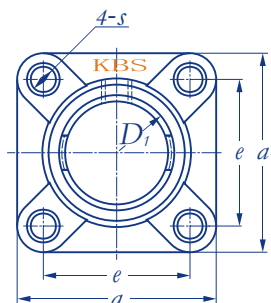
Housing No.	h Deviations
P204--208	

2.3 Tolerance for F200 and FI200 and FI200 (Unit: um)

Housing No.	e Deviations	l Deviations
F204--208、FL204-208	± 0.7	± 0.5



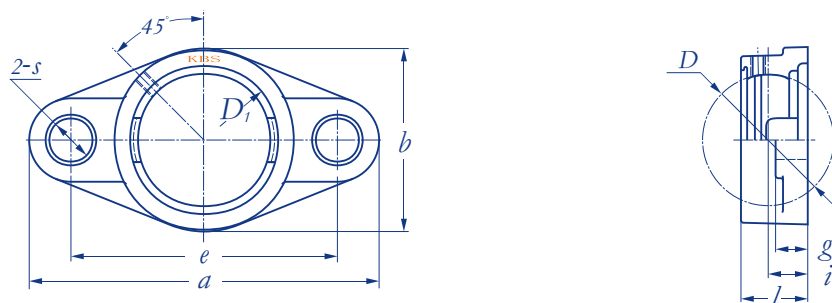
F 200



Inner bore $D$ mm	Housing number	Nominal dimensions mm						
		$a$	$e$	$g$	$I$	$S$	$I$	$D_i$
47	F 204	86	64	13	28	11	16.7	50.0
52	F 205	95	70	14	28	11	17.0	55.0
62	F 206	108	83	14	32	11	19.0	64.0
72	F 207	118	92	16	35	13	21.0	74.5
80	F 208	130	102	17	37	14	23.0	84.0



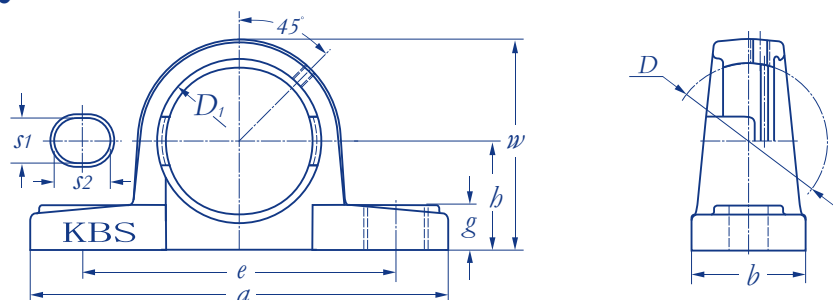
FL 200



Inner bore $D$ mm	Housing number	Nominal dimensions mm							
		$a$	$e$	$b$	$g$	$L$	$S$	$I$	$D_i$
47	SFL 204	113	89.7	64	11	26	11	15	50.0
52	SFL 205	130	98.8	70	13	29	11	17	55.0
62	SFL 206	148	116.7	80	13	31	11	19	64.0
72	SFL 207	164	130.2	90	16	33	13	18	74.5
80	SFL 208	175	143.7	100	20	37	14	21	84.0



P 200



Inner bore <i>D</i> mm	Housing number	Nominal dimensions mm								
		<i>b</i>	<i>a</i>	<i>e</i>	<i>b</i>	<i>S<sub>1</sub></i>	<i>S<sub>2</sub></i>	<i>g</i>	<i>c</i>	<i>D<sub>1</sub></i>
47	P 204	33.3	127	95	38	11	14	14	66	50.0
52	P 205	36.5	140	105	38	11	14	14	71	55.0
62	P 206	42.9	163	119	46	14	18	18	84	64.0
72	P 207	47.6	168	127	48	14	18	18	94	74.5
80	P 208	49.2	184	137	54	14	20	20	99	84.0



## 1. Stainless Steel Housing Material

### 1.1 Material Characters for Housing

Stainless Steel 304 Chemical Contents in %								
Components	C ≤	Si ≤	Mn ≤	P ≤	S ≤	Cr	Ni	Mo ≤
Standard	0.08	2.0	1.5	0.04	0.04	18.0-21.0	8.0-11.0	0.5

### 1.2 Material Mechanical Properties

Item	Yield Strength Mpa ≥	Tensile Strength Mpa ≥	Extension Rate % ≥
Standard	205	480	35

### 1.3 Material for Nipple

#### 1.3.1 Stainless Steel 304

## 2. Tolerance for Stainless Steel Housings

### 2.1 Tolerance on spherical inside diameter (Unit: μm)

Nominal spherical inside diameter		H7				J7			
Over (mm)	Da Incl. (mm)	Dam Deviations		Dam Deviations		Dam Deviations		Dam Deviations	
		High	Low	High	Low	High	Low	High	Low
30	50	+25	0	+30	-5	+14	-11	+19	-11
50	80	+30	0	+36	-6	+18	-18	+24	-18
80	120	+35	0			+22	-13	+29	-20

### 2.2 Bolt Hole Tolerance for Stainless Housing (Unit: mm)

Bolt Hole	Over.6~Inlc.10	Over.10~Inlc.18	Over.18~Inlc.30
Tolerance	0~+0.58	0~+0.70	0~+0.84

### 2.3 Centre Height Tolerance for SP 200 series (Unit: mm)

Housing No .	h Deviations
SP203--210	±0.15

### 2.4 Tolerance for SF 200、SFL 200 and SFB 200 Series (Unit: mm)

Housing No .	e Deviations	i Deviations
SF203--208、SFL203--208、SFB204--208	± 7	± 0.5
SF209--210、SFL209--210、SFB209--210	± 1	± 0.5



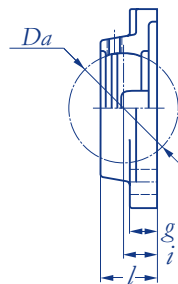
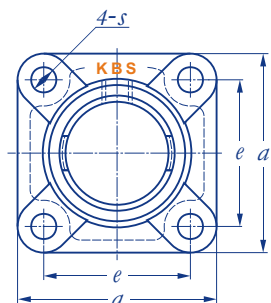
2.5 Tolerance for SFC 200 Series (Unit: mm)

Housing No.	f Deviations		e Deviations	i Deviations	Radial run-out of machined pilot Max.
	High	Low			
SFC204--208	0	-0.046	±0.70	±0.50	0.20
SFC209-210	0	-0.054	±0.70	±0.50	0.20

2.6 Tolerance for ST 200 Series (Unit: mm)

Housing No.	K Deviations		e Deviations	Parallelism of guide Max.
	High	Low		
ST204-210	±200	0	0 ~ -500	0.50

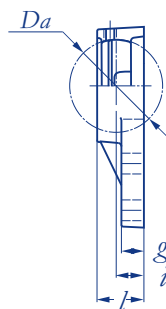
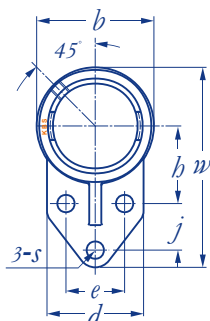
# SF 200



Inner bore <i>Da</i> mm	Housing number	Nominal dimensions mm						Available Bearing No.	Mass kg
		<i>a</i>	<i>e</i>	<i>i</i>	<i>l</i>	<i>g</i>	<i>s</i>		
47	SF 204	86	64	15.1	25.4	12.0	11.1	SUC 204	0.47
52	SF 205	95	70	15.9	27.0	14.0	11.5	SUC 205	0.65
62	SF 206	108	83	17.9	30.0	14.0	13.1	SUC 206	0.85
72	SF 207	118	92	19.1	33.0	14.3	13.1	SUC 207	1.03
80	SF 208	130	102	21.0	36.0	14.3	14.0	SUC 208	1.38
85	SF 209	137	105	21.8	38.0	14.3	16.0	SUC 209	1.50
90	SF 210	143	111	21.8	39.0	15.1	16.0	SUC 210	1.63



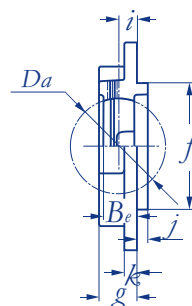
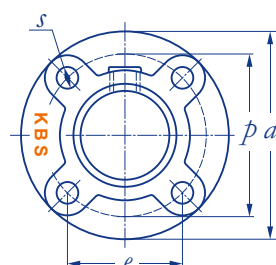
**SFB 200**



Inner bore <i>Da</i> mm	Housing number	Nominal dimensions mm										Available Bearing No.	Mass kg
		<i>w</i>	<i>b</i>	<i>d</i>	<i>l</i>	<i>i</i>	<i>g</i>	<i>s</i>	<i>e</i>	<i>j</i>	<i>b</i>		
47	SFB 204	108	63	60	25.4	16	8.0	9.9	38.1	22.2	42.9	SUC 204	0.39
52	SFB 205	121	70	64	29.0	17	9.5	9.9	41.3	28.6	46.0	SUC 205	0.54
62	SFB 206	137	83	70	32.0	19	9.5	9.9	47.6	31.8	52.4	SUC 206	0.77
72	SFB 207	156	95	83	37.0	21	13.5	13.1	50.8	31.8	60.3	SUC 207	1.16
80	SFB 208	164	100	78	34.0	21	16.0	11.1	50.0	41.0	60.0	SUC 208	1.65
85	SFB 209	174	106	80	34.0	21	18.0	11.1	54.0	42.9	65.0	SUC 209	1.91
90	SFB 210	191	118	102	38.0	21	13.0	13.1	69.9	41.3	74.6	SUC 210	2.34



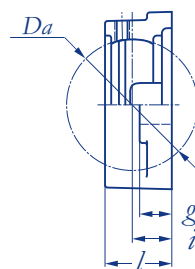
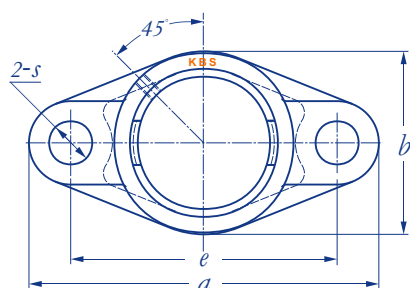
## SFC 200



Inner bore $D_a$ mm	Housing number	Nominal dimensions mm										Available Bearing No.	Mass kg
		$a$	$e$	$p$	$s$	$i$	$f$	$g$	$j$	$k$	$B_e$		
47	SFC 204	100	55.1	78	12	10	62	20.5	5	7	17	SUC 204	0.84
52	SFC 205	115	63.6	90	12	10	70	21.0	6	7	19	SUC 205	1.10
62	SFC 206	125	70.7	100	12	10	80	23.0	8	8	20	SUC 206	1.45
72	SFC 207	135	77.8	110	14	11	90	26.0	8	9	21	SUC 207	1.71
80	SFC 208	145	84.8	120	14	11	100	26.0	10	9	22	SUC 208	1.87
85	SFC 209	160	93.3	132	16	10	105	26.0	12	14	23	SUC 209	2.86
90	SFC 210	165	97.6	138	16	10	110	28.0	12	14	24	SUC 210	3.08

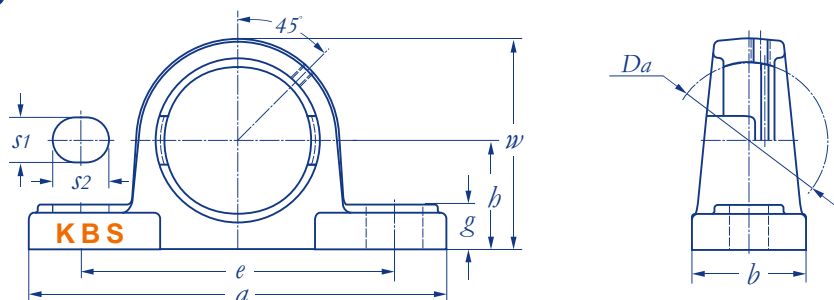


## SFL 200



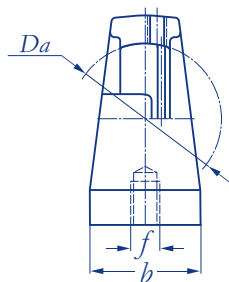
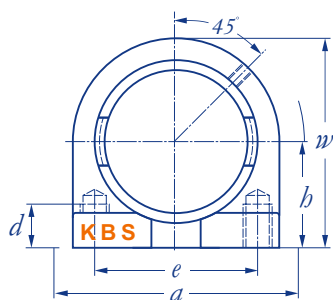
Inner bore $D_a$ mm	Housing number	Nominal dimensions mm								Available Bearing No.	Mass kg
		$a$	$e$	$i$	$b$	$l$	$g$	$s$			
47	SFL 204	112	90.0	15.1	60	25.4	11.5	10	SUC 204	0.32	
52	SFL 205	125	99.0	15.9	68	27.0	13.0	12	SUC 205	0.44	
62	SFL 206	141	117.0	17.9	80	30.0	13.0	12	SUC 206	0.58	
72	SFL 207	156	130.2	19.1	90	33.0	14.3	13	SUC 207	0.74	
80	SFL 208	170	144.0	21.0	100	36.0	14.3	13	SUC 208	0.99	
85	SFL 209	180	148.4	21.8	108	38.0	14.3	15	SUC 209	1.16	
90	SFL 210	190	157.2	21.8	115	39.0	15.1	15	SUC 210	1.36	

# SP 200



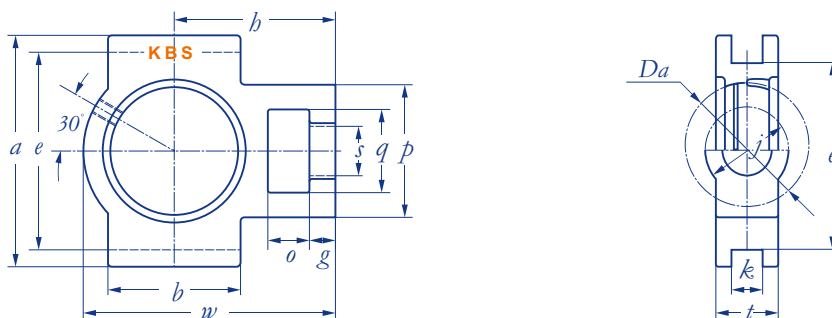
Inner bore $D_a$ mm	Housing number	Nominal dimensions mm								Available Bearing No.	Mass kg
		$b$	$a$	$e$	$b$	$s_1$	$s_2$	$g$	$w$		
47	SP 204	33.3	126	95.0	38	11.0	18	15.1	65.1	SUC 204	0.69
52	SP 205	36.5	141	105.0	38	13.0	18	16.0	70.0	SUC 205	0.74
62	SP 206	42.9	165	121.0	48	14.5	21	18.0	83.0	SUC 206	1.29
72	SP 207	47.6	167	127.0	48	14.5	22	19.0	94.0	SUC 207	1.42
80	SP 208	49.2	184	136.5	54	14.5	22	19.0	100.0	SUC 208	1.82
85	SP 209	54.0	191	146.0	54	15.0	21	20.0	109.0	SUC 209	2.09
90	SP 210	57.2	206	159.0	60	18.0	24	22.0	114.0	SUC 210	2.38

## SPA 200



Inner bore $D_a$ mm	Housing number	Nominal dimensions mm							Available Bearing No.	Mass kg
		$b$	$a$	$e$	$b$	$w$	$f$	$d$		
47	SPA 204	33.3	73	50.8	38	65	3/8"-16	13	SUC 204	0.69
52	SPA 205	36.5	76	50.8	38	70	3/8"-16	13	SUC 205	0.74
62	SPA 206	42.9	102	76.2	38	86	7/16"-14	16	SUC 206	1.29
72	SPA 207	47.6	108	82.6	48	95	1/2"-13	19	SUC 207	1.42
80	SPA 208	49.2	117	88.9	48	100	1/2"-13	19	SUC 208	1.82
85	SPA 209	54.0	127	95.3	51	108	1/2"-13	19	SUC 209	2.09
90	SPA 210	57.2	140	102.0	51	117	5/8"-11	22	SUC 210	2.38

### ST 200



Inner bore $Da$ mm	Housing number	Nominal dimensions mm													Available Bearing No.	Mass kg
		$a$	$e$	$p$	$q$	$s$	$g$	$o$	$b$	$b$	$w$	$k$	$l$	$j$		
47	ST 204	89	76	51	32	19	10	16	51	61	94	12	21	32	SUC 204	0.70
52	ST 205	89	76	51	32	19	10	16	51	62	97	12	24	32	SUC 205	0.81
62	ST 206	102	89	56	37	22	10	16	57	70	113	12	28	37	SUC 206	1.16
72	ST 207	102	89	64	37	22	13	16	64	78	129	12	30	37	SUC 207	1.38
80	ST 208	114	102	83	49	29	16	19	83	88	144	16	33	49	SUC 208	2.09
85	ST 209	117	102	83	49	29	16	19	83	87	144	16	35	49	SUC 209	2.23
90	ST 210	117	102	83	49	29	16	19	86	90	149	16	37	49	SUC 210	2.42



**I. Material**

1.1 Material for outer ring & inner ring

1.1.1 9Cr18 is adopted.

1.1.2 9Cr18 chemical contents in percentage

Code	Chemical Contents in %				
	C	Si≤	Mn≤	P≤	S≤
9Cr18	0.90~1.00	0.8	0.8	0.035	0.03

1.2 Material for the other components

No.	Items	Material
1	Steel ball	9Cr18
2	Half cage	0Cr18Ni9
3	Seals	Silicon rubbe + 1Cr18Ni9
4	Clinch	0Cr18Ni9
5	Slinger	0Cr18Ni9
6	Set screw	2Cr13 or 0Cr18Ni9

1.3 Material for nipples

1.3.1 Stainless Steel 304 is adopted.

**2. Tolerance**

2.1 Tolerances on outer ring (Unit: um)

Nominal bore diameter D	Over mm	Incl. mm	Dm Deviations		Radial run-out Max
			High	Low	
40	50	50	0	-11	20
50	80	80	0	-13	25
80	120	120	0	-15	35

2.2 Tolerances on inner ring (Unit: um)

Nominal bore diameter D	Over mm	Incl. mm	Dm Deviations		Radial run-out Max
			High	Low	
10	10	10	+18	0	12
18	18	18	+21	0	15
30	30	30	+25	0	18
50	50	50	+30	0	22

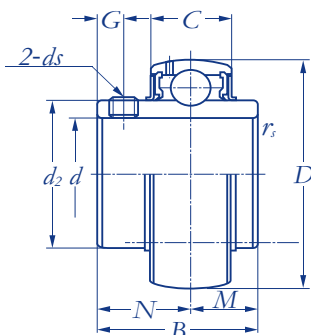


3. Radial Clearance(Un it: um)

Nominal bore diameter D		Radial Clearance	
Over mm	Incl. mm	Min.	Max
10	32	12	28
32	40	13	33
40	50	14	6
50	62	18	43



## SUC 200

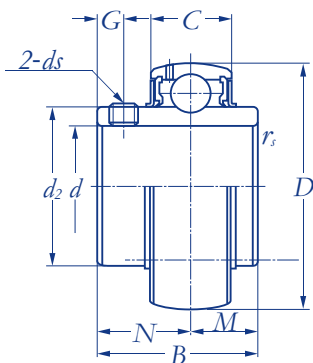


Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch										Basic load ratings kN		Weight Kg
		<i>d</i>	<i>D</i>	<i>B</i>	<i>C</i>	<i>d</i> <sub>2</sub>	<i>r</i>	<i>N</i>	<i>M</i>	<i>G</i>	<i>d</i> <sub>s</sub>	dynamic <i>C</i> <sub>r</sub>	static <i>C</i> <sub>or</sub>	
12 1/2	SUC 201	12	47	31.0	17	28.3	1.5	12.7	18.3	5	M6x0.75	12.84	6.65	0.21
	SUC 201-8	0.5000	1.8504	1.2205	0.6693	1.1142	0.0591	0.5000	0.7205	0.1969	1/4-28	12.84	6.65	0.21
15 9/16	SUC 202	15	47	31.0	17	28.3	1.5	12.7	18.3	5	M6x0.75	12.84	6.65	0.20
	SUC 202-10	0.5625	1.8504	1.2205	0.6693	1.1142	0.0591	0.5000	0.7205	0.1969	1/4-28	12.84	6.65	0.20
17 11/16	SUC 203	17	47	31.0	17	28.3	1.5	12.7	18.3	5	M6x0.75	12.84	6.65	0.19
	SUC 203-11	0.6875	1.8504	1.2205	0.6693	1.1142	0.0591	0.5000	0.7205	0.1969	1/4-28	12.84	6.65	0.19
20 3/4	SUC 204	20	47	31.0	17	28.3	1.5	12.7	18.3	5	M6x0.75	12.84	6.65	0.17
	SUC 204-12	0.7500	1.8504	1.2205	0.6693	1.1142	0.0591	0.5000	0.7205	0.1969	1/4-28	12.84	6.65	0.18
25 13/16 7/8 1	SUC 205	25	52	34.1	17	34.0	1.5	14.3	19.8	5	M6x0.75	14.02	7.88	0.21
	SUC 205-14	0.8125												0.23
	SUC 205-15	0.8750	2.0472	1.3425	0.6693	1.3386	0.0591	0.5630	0.7795	0.1969	1/4-28	14.02	7.88	0.22
	SUC 205-16	1.0000												0.20
30 1-1/16 1-1/8 1-3/16 1-1/4	SUC 206	30	62	38.1	19	40.3	1.5	15.9	22.2	5	M6x0.75	19.46	11.31	0.32
	SUC 206-17	1.0625												0.36
	SUC 206-18	1.1250	2.4409	1.5000	0.7480	1.5866	0.0591	0.6260	0.8740	0.1969	1/4-28	19.46	11.31	0.34
	SUC 206-19	1.1875												0.31
	SUC 206-20	1.2500												0.30
35 1-1/4 1-7/16 1-3/8 1-7/16	SUC 207	35	72	42.9	20	46.9	2.0	17.5	25.4	6.5	M8x1	25.67	15.30	0.47
	SUC 207-20	1.2500												0.53
	SUC 207-21	1.4375	2.8346	1.6890	0.7874	1.8465	0.0787	0.6890	1.0000	0.3150	5/16-24	25.67	15.30	0.51
	SUC 207-22	1.3750												0.48
	SUC 207-23	1.4375												0.45
40 1-1/2 1-9/16	SUC 208	40	80	49.2	21	52.4	2.0	19.0	30.2	8	M8x1	29.52	18.14	0.64
	SUC 208-24	1.5000	3.1496	1.9370	0.8268	2.0630	0.0787	0.7480	1.1890	0.3150	5/16-24	29.52	18.14	0.68
	SUC 208-25	1.5625												0.65
45 1-5/8 1-11/16 1-3/4	SUC 209	45	85	49.2	22	57.4	2.0	19.0	30.2	8	M8x1	31.67	20.68	0.68
	SUC 209-26	1.6250												0.78
	SUC 209-27	1.6875	3.3465	1.9370	0.8661	2.2598	0.0787	0.7480	1.1890	0.3150	5/16-24	31.67	20.68	0.74
	SUC 209-28	1.7500												0.70
50 1-13/16 1-7/8 1-15/16 2	SUC 210	50	90	51.6	24	61.8	2.0	19.0	32.6	10	M10x1.25	35.07	23.18	0.80
	SUC 210-29	1.8125												0.91
	SUC 210-30	1.8750	3.5433	2.0315	0.9449	2.4331	0.0787	0.7480	1.2835	0.3937	3/8-24	35.07	23.18	0.87
	SUC 210-31	1.9375												0.82
	SUC 210-32	2.0000												0.78





## SUC 200



Shaft dia. mm inch	Bearing number	Nominal dimensions mm inch										Basic load ratings kN		Weight Kg
		$d$	$D$	$B$	$C$	$d_2$	$r_s$	$N$	$M$	$G$	$d_s$	dynamic $C_r$	static $C_{or}$	
55	SUC 211	55	100	55.6	25	68.7	2.0	22.2	33.4	10	M10x1.25	43.38	29.23	1.12
	2 SUC 211-32	2.0000												1.27
	2-1/16 SUC 211-33	2.0625	3.9370	2.1890	0.9843	2.7047	0.0787	0.8740	1.3150	0.3937	3/8-24	43.38	29.23	1.22
	2-1/8 SUC 211-34	2.1250												1.17
	2-3/16 SUC 211-35	2.1875												1.10
60	SUC 212	60	110	65.1	27	75.7	2.5	25.4	39.7	10	M10x1.25	47.76	32.93	1.53
	2-1/4 SUC 212-36	2.2500												1.67
	2-5/16 SUC 212-37	2.3125	4.3307	2.5630	1.0630	2.9803	0.0984	1.0000	1.5630	0.3937	3/8-24	47.76	32.93	1.60
	2-3/8 SUC 212-38	2.3750												1.51
	2-7/16 SUC 212-39	2.4375												1.45