



BEARING HOUSING & ACCESSORIES



J & J Engineering & Journey

25 years ago it was a revolutionary era in bearings industry & that was the time when a revolutionary company J&J Engineering rooted his feet in bearing industry with the motto of giving quality products to the end users. Being the rich experience with great exposure to the outer world & new techniques too.

J&J Engineering has played a pioneering role in the growth of bearing housings in India. It has established itself as the market and brand leader in the bearing housings industry in India. The results of the vast experience, industry knowledge & efforts in the area of research and development led to a growing number of quality products that have created new standards and new products in the bearing world. They stand for quality and engineering excellence. Their operations in Ahmedabad plant are also in accordance with other internationally accepted processes.

The company has a very strong network in dealer around the country & has built a diverse product portfolio to meet the needs of different consumer segments, ranging from standard series in cast iron to advanced high performance custom designed products in customer specific material requirements.

Customized Product

J&J Engineering being a leading manufacturer & supplier of products it also deal with customized design according to client needs so it would be the only halt for end to end solution. The solutions and services in the area comprising Plummer blocks (bearing housings), bearing accessories & housing sealing solutions. Services include technical support & maintenance services.

Field Expertise

Bulk Material Handling

Sugar Plants

Steel Plants

Textile Machineries

Industrial fans

Heavy Eng. Industries

Cement factories & many more...

Tailor Made Housing

Water cooling jackets-Its quality container filled with water that surrounds a machine to cool it; especially that surrounding the cylinder block of an engine.

Oil mist lubrication-Its Oil mist lubrication systems are becoming increasingly popular in a variety of applications where only limited oil feed supply is required; include bearings of electric motors, pumps and compressors in many oil refineries and petrochemical plants.

RTD probe provision-Probes and probe accessories are carefully designed and manufactured according to strict tolerances and specifications. The J&J E Engineering RTD probe design team uses modern tools to develop, model and engineer tailor-made probe solutions.

Vision

Become the gigantic engineering product manufacture company.

Mission

To provide the latest & quality products in bearing industry.

For our customers

Delivering industry-leading, high value products, services and knowledge-engineered solutions within shortest possible periods at best prices possible.

Quality Policy

Quality is what J&J stands for and the key to their global competitiveness. With the most advanced manufacturing facilities equipped with state-of-the-art automated machines, we guarantee to provide our customers with unparalleled quality product.

Future at J&J Engineering

Seek to provide the most high quality products in the bearing housings industry. Products designs are made for customers benefit. From the most basic features to the most sophisticated designs, the products are designed to give customers substantial value.

J&J Engineering is recognized as the new benchmark for modern bearing housings technology, superior quality and personalized service that has ensured our product and nationwide acclaim in the industry.



Basic Information for SBD Series

SBD housing are non-split bearing housing for use with spherical roller bearings. They are available for shaft diameters from 90 to 420 mm. The bearings can be mounted on adapter sleeves, or directly on the shaft. These bearing housing are able to accommodate heavy loads not only acting toward the support surface, but also in other directions. The housing can be supplied with end covers and are available for locating and non-locating bearing arrangements.

Materials

As standard, the housing are manufactured in cast steel (SBDS). If required, housing can be made from grey cast iron (SBDC) or spheroidal graphite cast iron (SBDD)

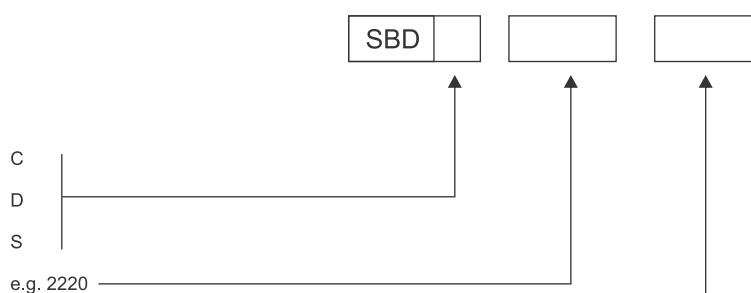
Basic designation

Basic design :

Material: Housing of

- grey cast iron
- spheroidal graphite cast iron
- cast steel

Size designation :



Supplementary designations

Housing for bearing with adapter sleeve for plain cylindrical shaft

No symbol

Housing for bearing with adapter sleeve for stepped cylindrical shaft

C

Housing for bearing with single stepped cylindrical shaft

E

Housing for bearing with double stepped cylindrical shaft

G

Housing for shaft end, with end cover

A

Housing for through shaft

B

Housing for non-locating bearing

L

Housing for locating bearing

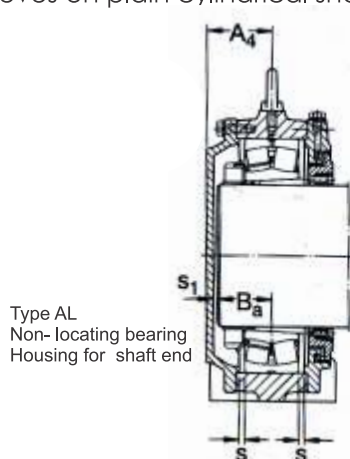
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For combination the symbols are written in the same order as presented above.

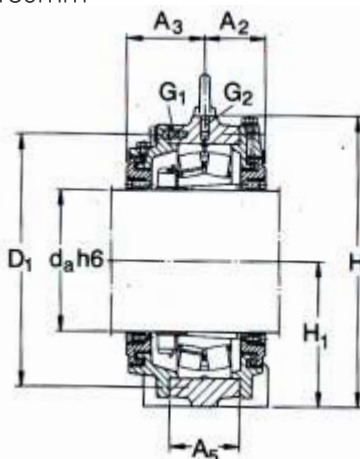
SBD-Series



SBDs Housings, standard type for spherical roller bearings with adapter sleeves on plain cylindrical shafts da 90 to 180mm

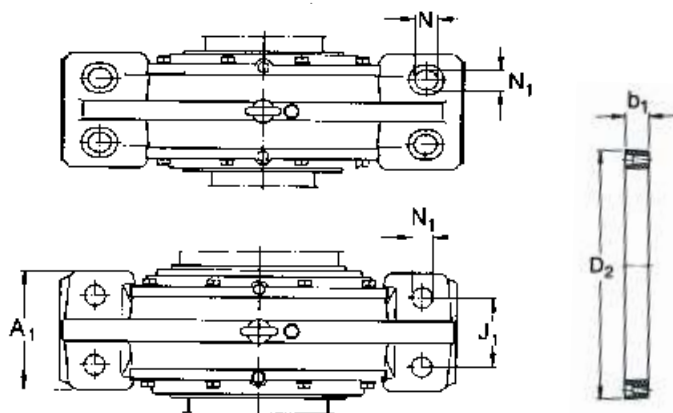
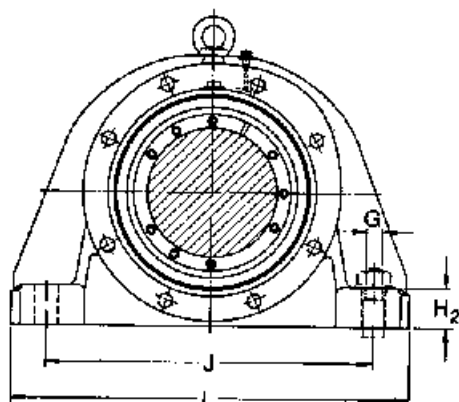


Type AL
Non-locating bearing
Housing for shaft end



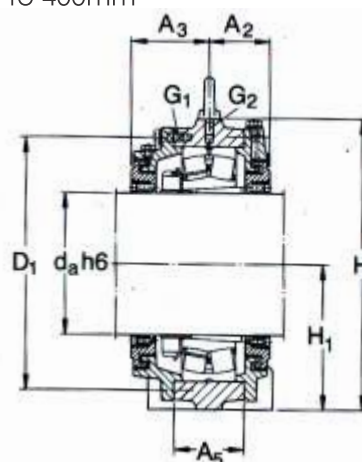
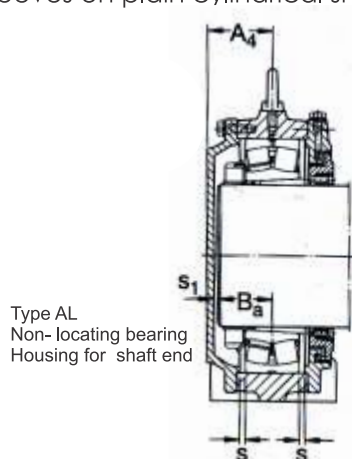
Type BF:
locating bearing
Housing for through shaft

Shaft diameter d_a mm	Housing Dimensions (mm)																	
	A ₁	A ₂	A ₃	A ₄	A ₅	D ₁	H	H ₁	H ₂	J	J ₁	L	N	N ₁	s	G	G ₁	G ₂
90	110	70	85	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12
100	150	81	102	83	80	215	270	130	40	300	80	400	35	25	2	20	M 12	M 12
	120	78	90	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12
	130	91	103	76	90	230	285	140	42	350	70	440	-	28	2	24	M 12	M 16
110	110	63	83	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12
	140	76	93	78	85	230	285	140	40	330	80	410	35	25	2	20	M 12	M 12
	130	80.5	95.5	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12
	140	93	108	78	95	245	305	150	42	370	75	470	35	30	2	24	M 12	M 16
115	120	68	88	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12
	140	80	100	80	90	240	295	145	40	350	80	430	35	25	2	20	M 12	M 12
	140	88	98	70	76	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12
	150	103	108	78	100	260	325	160	45	400	85	500	40	30	2	24	M 12	M 16
125	130	68	88	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12
	150	85	110	85	95	260	315	155	45	380	85	470	35	25	2	20	M 12	M 12
	160	94	104	83	82	275	330	165	50	420	95	510	-	35	3	30	M 10	M 12
	160	108	118	88	110	285	350	170	50	430	85	530	40	30	3	24	M 16	M 20
135	140	73	94	70	76	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12
	200	93	113	93	102	285	345	170	60	450	110	580	45	35	3	24	M 12	M 16
	170	98	108	88	90	300	360	180	52	450	100	540	-	35	3	30	M 12	M 16
	170	113	123	93	120	305	375	180	54	450	90	550	45	35	3	30	M 16	M 20
140	150	78	98	76	76	260	310	155	45	390	90	480	-	28	3	24	M 10	M 12
	200	98	123	98	110	310	368	180	55	430	110	540	40	30	3	24	M 12	M 16
	180	101	116	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16
	180	118	133	98	130	330	395	190	58	490	105	600	-	35	3	30	M 16	M 20
150	160	78	103	83	82	280	330	165	50	420	95	510	-	35	3	30	M 10	M 12
	200	113	136	112	120	330	395	190	60	470	110	570	45	35	3	30	M 12	M 20
	190	112.5	127.5	97	104	335	400	200	60	510	110	600	-	35	4	30	M 12	M 16
	200	128	143	103	135	345	410	200	62	525	110	640	45	35	3	30	M 16	M 20
160	170	83	108	88	90	305	360	180	52	450	100	540	-	35	3	30	M 12	M 16
	200	118	138	116	125	350	410	200	60	490	105	600	45	35	3	30	M 16	M 20
	200	118	133	102	110	360	430	215	65	540	115	640	-	42	4	36	M 16	M 20
	210	133	148	108	140	360	430	210	65	550	120	680	45	35	3	30	M 16	M 20
170	180	93	118	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16
	210	123	143	120	130	370	435	210	65	550	120	680	45	30	3	36	M 16	M 20
	200	118	133	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20
	220	138	153	113	150	385	455	220	75	560	120	710	45	35	4	30	M 16	M 20
180	190	97	122	97	104	340	400	200	60	510	110	600	-	35	4	30	M 12	M 16
	220	127	147	127	135	380	455	220	85	560	120	710	52	42	3	36	M 16	M 24
	210	122	134.5	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20
	240	130	158	118	165	405	475	235	75	640	140	780	52	42	4	36	M 16	M 24

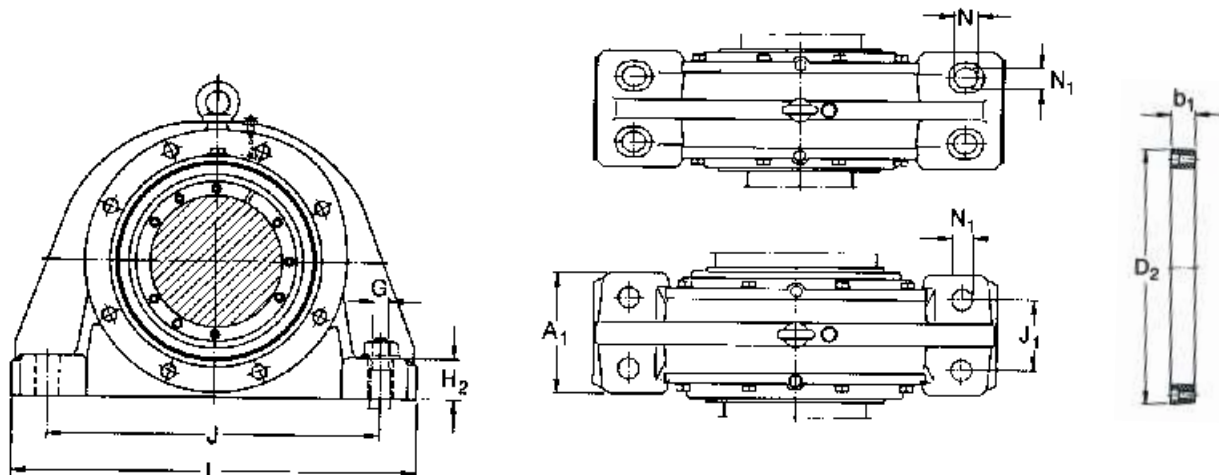


Shaft diameter d_a mm	Other Dimensions (mm)		Appropriate Bearing	Adapter Sleeve	Adapter Ring Designation	Dimensions		Designation Housing of Cast Steel
	B_a	s_1				D_2	b_1	
90	45	11	22220 EK	H 320	PSBD 90	118	18	SBDS 2220
100	52	25	23122 CCK/W33	H 3122	PSBD 100	128	18	SBDS 3122
	50	11	22222 EK	H 322	PSBD 100	128	18	SBDS 2222
	60	9	23222 CCK/W33	H 2322	PSBD 100	128	18	SBDS 3222
110	48	8	23024 CCK/W33	H 3024	PSBD 110	138	18	SBDS 3024
	56	13	23124 CCK/W33	H 3124	PSBD 110	138	18	SBDS 3124
	55	6	22224 EK	H 3124	PSBD 110	138	18	SBDS 2224
	64	7	23224 CCK/W33	H 2324	PSBD 110	138	18	SBDS 3224
115	52	9	23026 CCK/W33	H 3026	PSBD 115	143	18	SBDS 3026
	58	15	23126 CCK/W33	H 3126	PSBD 115	143	18	SBDS 3126
	57	5	22226 EK	H 3126	PSBD 115	143	18	SBDS 2226
	66	5	23226 CCK/W33	H 2326	PSBD 115	143	18	SBDS 3226
125	54	7	23028 CCK/W33	H 3028	PSBD 125	153	18	SBDS 3028
	62	16	23128 CCK/W33	H 3128	PSBD 125	153	18	SBDS 3128
	62	13	22228 CCK/W33	H 3128	PSBD 125	153	18	SBDS 2228
	72	9	23228 CCK/W33	H 2328	PSBD 125	153	18	SBDS 3228
135	56	6	23030 CCK/W33	H 3030	PSBD 135	170	20	SBDS 3030
	70	15	23130 CCK/W33	H 3130	PSBD 135	170	20	SBDS 3130
	66	14	22230 CCK/W33	H 3130	PSBD 135	170	20	SBDS 2230
	78	7	23230 CCK/W33	H 2330	PSBD 135	170	20	SBDS 3230
140	62	6	23032 CCK/W33	H 3032	PSBD 140	175	20	SBDS 3032
	75	15	23123 CCK/W33	H 3132	PSBD 140	175	20	SBDS 3132
	72	8	22232 CCK/W33	H 3132	PSBD 140	175	20	SBDS 2232
	84	6	23232 CCK/W33	H 2332	PSBD 140	175	20	SBDS 3232
150	66	9	23034 CCK/W33	H 3034	PSBD 150	185	20	SBDS 3034
	78	26	23134 CCK/W33	H 3134	PSBD 150	185	20	SBDS 3134
	75	14	22234 CCK/W33	H 3134	PSBD 150	185	20	SBDS 2234
	88	7	23234 CCK/W33	H 2334	PSBD 160	195	20	SBDS 3234
160	70	10	23036 CCK/W33	H 3036	PSBD 160	195	20	SBDS 3036
	82	26	23136 CCK/W33	H 3136	PSBD 160	195	20	SBDS 3136
	78	14	22236 CCK/W33	H 3136	PSBD 160	195	20	SBDS 2236
	90	10	23236 CCK/W33	H 2336	PSBD 160	195	20	SBDS 3236
170	72	8	23038 CCK/W33	H 3038	PSBD 170	205	20	SBDS 3038
	88	22	23138 CCK/W33	H 3138	PSBD 170	205	20	SBDS 3138
	82	10	22238 CCK/W33	H 3138	PSBD 170	205	20	SBDS 2238
	95	10	23238 CCK/W33	H 2338	PSBD 170	205	20	SBDS 3238
180	78	11	23040 CCK/W33	H 3040	PSBD 180	215	20	SBDS 3040
	95	22	23140 CCK/W33	H 3140	PSBD 180	215	20	SBDS 3140
	85	12	22240 CCK/W33	H 3140	PSBD 180	215	20	SBDS 2240
	100	10	23240 CCK/W33	H 2340	PSBD 180	215	20	SBDS 3240

SBDS Housings, standard type for spherical roller bearings with adapter sleeves on plain cylindrical shafts da 2000 to 400mm



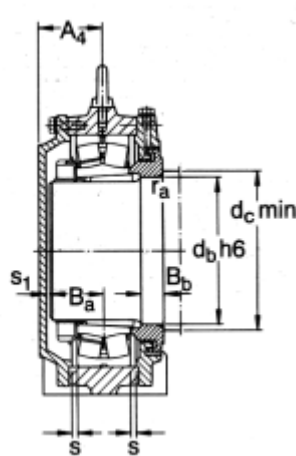
Shaft diameter d_a mm	Housing Dimensions (mm)																	
	A ₁	A ₂	A ₃	A ₄	A ₅	D ₁	H	H ₁	H ₂	J	J ₁	L	N	N ₁	s	G	G ₁	G ₂
200	200	102	137	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20
	230	135	160	135	150	420	485	235	75	640	140	780	52	42	4	36	M 16	M 24
	220	124.5	159.5	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20
	250	148	183	133	175	445	525	260	80	700	140	850	52	42	4	36	M 20	M 24
220	210	102	142	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20
	250	152	182	142	160	455	550	270	80	720	140	890	52	42	4	36	M 20	M 24
	250	130	165	132	144	490	570	285	85	690	150	820	-	42	5	36	M 20	M 24
	250	148	188	148	190	490	590	290	90	750	140	900	52	42	5	36	M 20	M 24
240	220	107	147	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20
	250	152	187	152	175	490	590	290	90	750	140	900	52	42	4	36	M 20	M 24
	260	145	182.5	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24
	290	167	208	158	205	535	625	310	95	800	160	960	65	42	5	36	M 20	M 24
260	240	117	157	122	128	455	520	260	80	630	140	760	-	42	5	36	M 16	M 20
	250	157	197	165	175	510	590	290	90	750	140	900	65	42	5	36	M 24	M 24
	270	152	192	147	158	555	630	315	95	770	170	900	-	42	5	36	M 20	M 24
	300	178	218	163	210	555	645	320	100	840	170	1000	65	42	5	36	M 24	M 30
280	250	122	167	132	144	500	570	285	85	690	150	820	-	42	5	36	M 20	M 24
	300	162	207	167	190	550	655	320	100	840	170	1000	65	42	5	36	M 24	M 30
	280	160	191	152	168	585	660	330	100	820	180	960	-	42	5	36	M 20	M 24
	330	182	222	187	230	600	705	350	105	920	180	1100	75	56	6	48	M 24	M 30
300	260	122	172	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24
	300	177	212	187	210	590	702	350	100	940	160	1150	65	42	5	36	M 24	M 30
	320	175	202	167	180	640	720	360	110	900	200	1060	-	56	5	48	M 24	M 30
	360	192	237	187	250	640	760	370	115	960	200	1150	75	56	6	48	M 24	M 30
320	270	132	177	147	158	565	630	315	95	770	170	900	-	42	6	36	M 20	M 24
	360	197	242	237	220	630	735	370	115	960	200	1105	75	56	6	48	M 24	M 30
	380	202	272	237	265	680	810	390	125	980	200	1200	75	60	6	56	M 24	M 36
340	280	132	182	152	168	585	660	330	100	820	180	960	-	42	6	36	M 20	M 24
	370	197	247	243	225	650	760	380	115	1000	200	1200	75	56	6	48	M 24	M 30
	400	227	282	247	275	710	825	410	130	1040	210	1280	80	68	7	64	M 24	M 36
360	300	137	187	157	168	605	680	340	105	840	190	1000	-	56	6	48	M 20	M 24
	380	202	257	254	230	680	790	390	125	1000	200	1200	75	60	6	56	M 30	M 30
	405	232	297	257	295	745	880	425	135	1100	225	1350	85	68	7	64	M 30	M 36
380	320	142	202	167	180	650	720	360	110	900	200	1060	-	56	6	48	M 24	M 30
	400	197	262	247	235	710	845	410	130	1040	210	1280	80	68	7	64	M 30	M 36
	450	242	307	257	300	790	905	450	145	1160	240	1430	85	68	7	64	M 30	M 36
400	340	147	202	167	180	670	750	375	115	940	210	1100	-	56	6	48	M 24	M 30
	420	212	289	257	260	760	900	450	135	1100	210	1350	85	68	7	64	M 30	M 36
	470	252	317	267	315	835	955	470	150	1220	255	1500	90	72	8	64	M 30	M 36



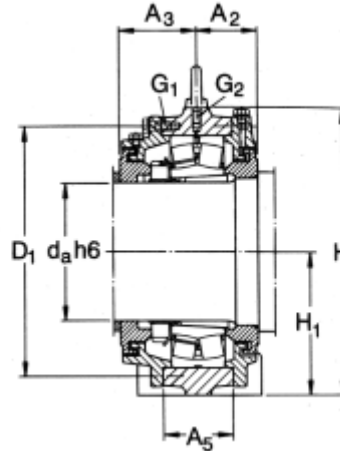
Shaft diameter d_a mm	Other Dimensions		Appropriate Bearing	Adapter Sleeve	Adapter Ring Designation	Dimensions		Designation Housing of Cast Steel
	B_a mm	s_1				D_2	b_1	
200	80	12	23044 CCK/W33	OH 3044 H	PSBD 200	246	25	SBDS 3044
	100	25	23144 CCK/W33	OH 3144 H	PSBD 200	246	25	SBDS 3144
	95	10	22244 CCK/W33	OH 3144 H	PSBD 200	246	25	SBDS 2244
	112	11	23244 CCK/W33	OH 2344 H	PSBD 200	246	25	SBDS 3244
220	85	12	23048 CCK/W33	OH 3048 H	PSBD 220	266	25	SBDS 3048
	106	26	23148 CCK/W33	OH 3148 H	PSBD 220	266	25	SBDS 3148
	105	15	22248 CCK/W33	OH 3148 H	PSBD 220	266	25	SBDS 2248
	122	16	23248 CCK/W33	OH 2348 H	PSBD 220	266	25	SBDS 3248
240	92	13	23052 CCK/W33	OH 3052 H	PSBD 240	286	25	SBDS 3052
	118	24	23152 CCK/W33	OH 3152 H	PSBD 240	286	25	SBDS 3152
	110	13	22252 CACK/W33	OH 3152 H	PSBD 240	286	25	SBDS 2252
	132	16	23252 CACK/W33	OH 2352 H	PSBD 240	286	25	SBDS 3252
260	96	14	23056 CCK/W33	OH 3056 H	PSBD 260	306	25	SBDS 3056
	120	35	23156 CCK/W33	OH 3156 H	PSBD 260	306	25	SBDS 3156
	115	18	22256 CACK/W33	OH 3156 H	PSBD 260	306	25	SBDS 2256
	135	16	23256 CACK/W33	OH 2356 H	PSBD 260	306	25	SBDS 3256
280	105	15	23060 CCK/W33	OH 3060 H	PSBD 280	326	25	SBDS 3060
	125	32	23160 CCK/W33	OH 3160 H	PSBD 280	326	25	SBDS 3160
	120	17	22260 CACK/W33	OH 3160 H	PSBD 280	326	25	SBDS 2260
	142	33	23260 CACK/W33	OH 3260 H	PSBD 280	326	25	SBDS 3260
300	108	15	23064 CCK/W33	OH 3064 H	PSBD 300	350	30	SBDS 3064
	135	40	23164 CCK/W33	OH 3164 H	PSBD 300	350	30	SBDS 3164
	125	26	22264 CACK/W33	OH 3164 H	PSBD 300	350	30	SBDS 2264
	152	21	23264 CACK/W33	OH 3264 H	PSBD 300	350	30	SBDS 3264
320	120	13	23068 CCK/W33	OH 3068 H	PSBD 320	370	30	SBDS 3068
	155	70	23168 CCK/W33	OH 3168 H	PSBD 320	370	30	SBDS 3168
	175	47	23268 CACK/W33	OH 3268 H	PSBD 320	370	30	SBDS 3268
340	120	17	23072 CCK/W33	OH 3072 H	PSBD 340	390	30	SBDS 3072
	160	67	23172 CACK/W33	OH 3172 H	PSBD 340	390	30	SBDS 3172
	180	51	23272 CACK/W33	OH 3272 H	PSBD 340	390	30	SBDS 3272
360	124	17	23076 CCK/W33	OH 3076 H	PSBD 360	410	30	SBDS 3076
	165	73	23176 CACK/W33	OH 3176 H	PSBD 360	410	30	SBDS 3176
	186	55	23276 CACK/W33	OH 3276 H	PSBD 360	410	30	SBDS 3276
380	134	17	23080 CACK/W33	OH 3080 H	PSBD 380	430	30	SBDS 3080
	170	61	23180 CACK/W33	OH 3180 H	PSBD 380	430	30	SBDS 3180
	196	45	23280 CACK/W33	OH 3280 H	PSBD 380	430	30	SBDS 3280
400	135	16	23084 CACK/W33	OH 3084 H	PSBD 400	450	30	SBDS 3084
	190	51	23184 CACK/W33	OH 3184 H	PSBD 400	450	30	SBDS 3184
	212	39	23284 CACK/W33	OH 3284 H	PSBD 400	450	30	SBDS 3284

SBDS Housings, 'C' type for spherical roller bearings with adapter sleeves on stepped cylindrical shafts da 90 to 180mm

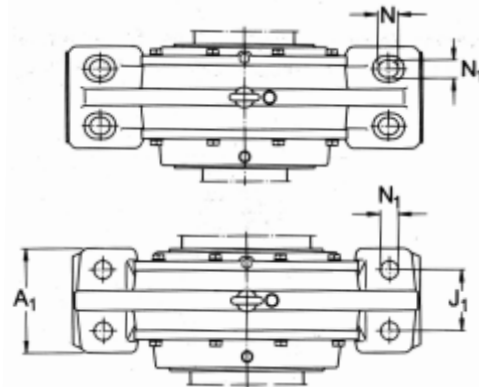
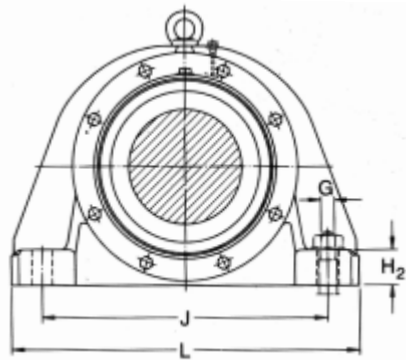
Type AL
Non-locating bearing
Housing for shaft end



Type BF:
locating bearing
Housing for through shaft



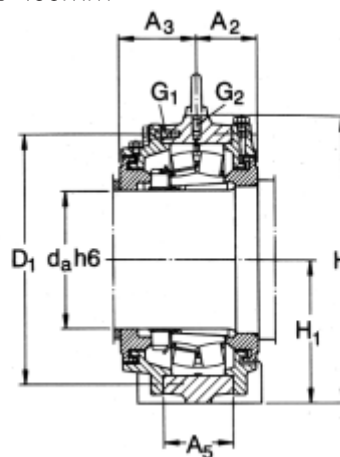
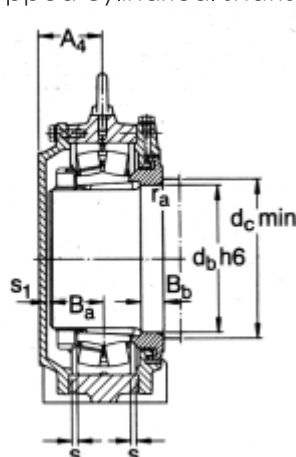
Shaft dia da mm	Housing Dimensions (mm)																		Designation Housing of cast steel
	A ₁	A ₂	A ₃	A ₄	A ₅	D ₁	H	H ₁	H ₂	J	J ₁	L	N	N ₁	s	G	G ₁	G ₂	
90	110	70	85	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 2220 C
100	150	81	102	83	80	215	270	130	40	300	80	400	35	25	2	20	M 12	M 12	SBDS 3122 C
	120	78	90	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 2222 C
	130	91	103	76	90	230	285	140	42	350	70	440	35	30	2	24	M 12	M 16	SBDS 3222 C
110	110	63	83	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 3024 C
	140	76	93	78	85	230	285	140	40	330	80	410	35	25	2	20	M 12	M 12	SBDS 3124 C
	130	80.5	95.5	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 2224 C
	140	93	108	78	95	245	305	150	42	370	75	470	35	30	2	24	M 12	M 16	SBDS 3224 C
115	120	68	88	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 3026 C
	140	80	100	80	90	240	295	145	40	350	80	430	35	25	2	20	M 12	M 12	SBDS 3126 C
	140	88	98	70	70	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12	SBDS 2226 C
	150	103	108	78	100	260	325	160	45	400	85	500	40	30	2	24	M 12	M 16	SBDS 3226 C
125	130	68	88	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 3028 C
	150	85	110	85	95	260	315	155	45	380	85	470	35	25	2	24	M 12	M 12	SBDS 3128 C
	160	94	104	83	82	275	330	165	50	420	95	510	-	35	3	30	M 10	M 12	SBDS 2228 C
	160	108	118	88	110	285	350	170	50	430	85	530	40	30	3	24	M 16	M 20	SBDS 3228 C
135	140	73	94	70	76	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12	SBDS 3030 C
	200	93	113	93	102	285	345	170	60	450	110	580	45	35	3	24	M 12	M 16	SBDS 3130 C
	170	98	108	88	90	300	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 2230 C
	170	113	123	93	120	305	375	180	54	450	90	550	45	35	3	30	M 16	M 20	SBDS 3230 C
140	150	78	98	76	76	260	310	155	45	390	90	480	-	28	3	24	M 10	M 12	SBDS 3032 C
	200	98	123	98	110	310	368	180	55	430	110	540	40	30	3	24	M 12	M 16	SBDS 3132 C
	180	101	116	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 2232 C
	180	118	133	98	130	330	395	190	58	490	105	600	45	35	3	30	M 16	M 20	SBDS 3232 C
150	160	78	103	83	82	280	330	165	50	420	95	510	-	35	4	30	M 10	M 12	SBDS 3034 C
	200	113	136	112	120	330	395	190	60	470	110	570	45	35	3	30	M 12	M 20	SBDS 3134 C
	190	112.5	127.5	97	104	335	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 2234 C
	200	128	143	103	135	345	410	200	62	525	110	640	45	35	3	30	M 16	M 20	SBDS 3234 C
160	170	83	108	88	90	305	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 3036 C
	200	118	138	116	125	350	410	200	60	490	105	600	45	35	3	30	M 16	M 20	SBDS 3136 C
	200	118	133	102	110	360	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2236 C
	210	133	148	108	140	360	430	210	65	550	120	680	45	35	3	30	M 16	M 20	SBDS 3236 C
170	180	93	118	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 3038 C
	210	123	143	120	130	370	435	210	65	550	120	680	45	35	3	36	M 16	M 20	SBDS 3138 C
	200	118	133	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2238 C
	220	138	153	113	150	385	455	220	75	560	120	710	45	35	4	30	M 16	M 20	SBDS 3238 C
180	190	97	122	97	104	340	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 3040 C
	220	127	147	127	135	380	455	220	85	560	120	710	52	42	3	36	M 16	M 24	SBDS 3140 C
	210	122	134.5	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 2240 C
	240	138	158	118	165	405	475	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3240 C



Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)						Appropriate bearing	Adapter Sleeve
	B_a	B_b	d_b	d_c	r_a	s_1		
90	45	35	102	115	4	11	22220 EK	H 320
100	52	30	112	125	4	25	23122 CCK/W33	H 3122
	50	35	112	125	4	11	22222 EK	H 322
	60	32	112	125	4	9	23222 CCK/W33	H 2322
110	48	25	122	135	4	8	23024 CCK/W33	H 3024
	56	30	122	135	4	13	23124 CCK/W33	H 3124
	55	35	122	135	4	6	22224 EK	H 3124
	64	32	122	135	4	7	23224 CCK/W33	H 2324
115	52	25	132	150	6	9	23026 CCK/W33	H 3026
	58	30	132	150	6	15	23126 CCK/W33	H 3126
	57	40	132	150	6	5	22226 EK	H 3126
	66	35	132	150	6	5	23226 CCK/W33	H 2326
125	54	25	142	160	6	7	23028 CCK/W33	H 3028
	62	30	142	160	6	16	23128 CCK/W33	H 3128
	62	40	142	160	6	13	22228 CCK/W33	H 3128
	72	35	142	160	6	9	23228 CCK/W33	H 2328
135	56	25	152	170	6	6	23030 CCK/W33	H 3030
	70	30	152	170	6	15	23130 CCK/W33	H 3130
	66	40	152	170	6	14	22230 CCK/W33	H 3130
	78	40	152	170	6	7	23230 CCK/W33	H 2330
140	62	30	162	185	8	6	23032 CCK/W33	H 3032
	75	30	162	185	8	15	23132 CCK/W33	H 3132
	72	40	162	185	8	8	22232 CCK/W33	H 3132
	84	40	162	185	8	6	23232 CCK/W33	H 2332
150	66	30	172	195	8	9	23034 CCK/W33	H 3034
	78	40	172	195	8	26	23134 CCK/W33	H 3134
	75	45	172	195	8	14	22234 CCK/W33	H 3134
	88	40	172	195	8	7	23234 CCK/W33	H 2334
160	70	30	182	205	8	10	23036 CCK/W33	H 3036
	82	40	182	205	8	26	23136 CCK/W33	H 3136
	78	45	182	205	8	14	22236 CCK/W33	H 3136
	90	45	182	205	8	10	23236 CCK/W33	H 2336
170	72	30	192	215	8	8	23038 CCK/W33	H 3038
	88	40	192	215	8	22	23138 CCK/W33	H 3138
	82	45	192	215	8	10	22238 CCK/W33	H 3138
	95	45	192	215	8	10	23238 CCK/W33	H 2338
180	78	35	202	225	8	11	23040 CCK/W33	H 3040
	95	40	202	225	8	22	23140 CCK/W33	H 3140
	85	45	202	225	8	12	22240 CCK/W33	H 3140
	100	45	202	225	8	10	23240 CCK/W33	H 2340

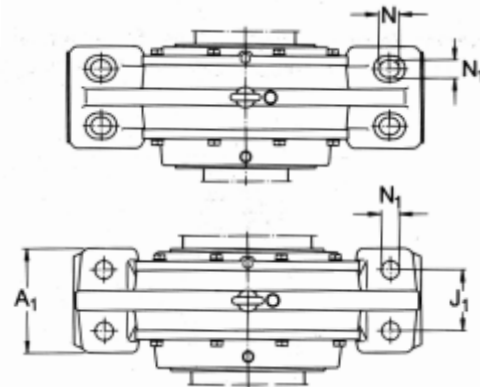
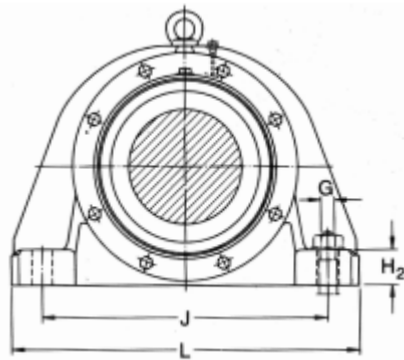
SBDS Housings, 'C' type for spherical roller bearings with adapter sleeves on stepped cylindrical shafts da 200 to 400mm

Type AL
Non-locating bearing
Housing for shaft end



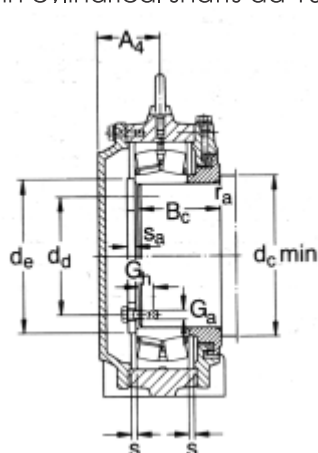
Type BF:
locating bearing
Housing for through shaft

Shaft dia da mm	Housing Dimensions (mm)																		Designation Housing of cast steel
	A ₁	A ₂	A ₃	A ₄	A ₅	D ₁	H	H ₁	H ₂	J	J ₁	L	N	N ₁	s	G	G ₁	G ₂	
200	200	102	137	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 3044 C
	230	135	160	135	150	420	485	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3144 C
	220	124.5	159.5	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 2244 C
	250	148	183	133	175	445	525	260	80	700	140	850	52	42	4	36	M 20	M 24	SBDS 3244 C
220	210	102	142	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 3048 C
	250	152	182	142	160	455	550	270	80	720	140	890	52	42	4	36	M 20	M 24	SBDS 3148 C
	250	130	165	132	144	490	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 2248 C
	250	148	188	148	190	490	590	290	90	750	140	900	52	42	5	36	M 20	M 24	SBDS 3248 C
240	220	107	147	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 3052 C
	250	152	187	152	175	490	590	290	90	750	140	900	52	42	4	36	M 20	M 24	SBDS 3152 C
	260	145	182.5	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 2252 C
	290	167	208	158	205	535	625	310	95	800	160	960	65	42	5	36	M 20	M 24	SBDS 3252 C
260	240	117	157	122	128	455	520	260	80	630	140	760	-	42	5	36	M 16	M 20	SBDS 3056 C
	250	157	197	165	175	510	590	290	90	750	140	900	65	42	5	36	M 24	M 24	SBDS 3156 C
	270	152	192	147	158	555	630	315	95	770	170	900	-	42	5	36	M 20	M 24	SBDS 2256 C
	300	178	218	163	210	555	645	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3256 C
280	250	122	167	132	144	500	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 3060 C
	300	162	207	167	190	550	655	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3160 C
	280	160	191	152	168	585	660	330	100	820	180	960	-	42	5	36	M 20	M 24	SBDS 2260 C
	330	182	222	187	230	600	705	350	105	920	180	1100	75	56	6	48	M 24	M 30	SBDS 3260 C
300	260	122	172	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 3064 C
	300	177	212	187	210	590	702	350	100	940	160	1150	65	42	5	36	M 24	M 30	SBDS 3164 C
	320	175	202	167	180	640	720	360	110	900	200	1060	-	56	5	48	M 24	M 30	SBDS 2264 C
	360	192	237	187	250	640	760	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3264 C
320	270	132	177	147	158	565	630	315	95	770	170	900	-	42	6	36	M 20	M 24	SBDS 3068 C
	360	197	242	237	220	630	735	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3168 C
	380	202	272	237	265	680	810	390	125	980	200	1200	75	60	6	56	M 24	M 36	SBDS 3268 C
340	280	132	182	152	168	585	660	330	100	820	180	960	-	42	6	36	M 20	M 24	SBDS 3072 C
	370	197	247	243	225	650	760	380	115	1000	200	1200	75	56	6	48	M 24	M 30	SBDS 3172 C
	400	227	282	247	275	710	825	410	130	1040	210	1280	80	68	7	64	M 24	M 36	SBDS 3272 C
360	300	137	187	157	168	605	680	340	105	840	190	1000	-	56	6	48	M 20	M 24	SBDS 3076 C
	380	202	257	254	230	680	790	390	125	1000	200	1200	75	60	6	56	M 30	M 30	SBDS 3176 C
	405	232	297	257	295	745	880	425	135	1100	225	1350	85	68	7	64	M 30	M 36	SBDS 3276 C
380	320	142	202	167	180	650	720	360	110	900	200	1060	-	56	6	48	M 24	M 30	SBDS 3080 C
	400	197	262	247	235	710	845	410	130	1040	210	1280	80	68	7	64	M 30	M 36	SBDS 3180 C
	450	242	307	257	300	790	905	450	145	1160	240	1430	85	68	7	64	M 30	M 36	SBDS 3280 C
400	340	147	202	167	180	670	750	375	115	940	210	1100	-	56	6	48	M 24	M 30	SBDS 3084 C
	420	212	289	257	260	760	900	450	135	1100	210	1350	85	68	7	64	M 30	M 36	SBDS 3184 C
	470	252	317	267	315	835	955	470	150	1220	255	1500	90	72	8	64	M 30	M 36	SBDS 3284 C

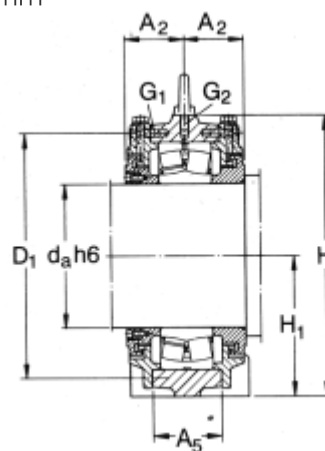


Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)						Appropriate bearing	Adapter Sleeve
	B_a	B_b	d_b	d_c	r_a	s_1		
200	80	35	222	245	8	12	23044 CCK/W33	OH 3044 HB
	100	45	222	245	8	25	23144 CCK/W33	OH 3144 HB
	95	45	222	245	8	10	22244 CCK/W33	OH 3144 HB
	112	45	222	245	8	11	23244 CCK/W33	OH 2344 HB
220	85	35	242	265	8	12	23048 CCK/W33	OH 3048 HB
	106	50	242	265	8	26	23148 CCK/W33	OH 3148 HB
	105	45	242	265	8	15	22248 CCK/W33	OH 3148 HB
	112	45	242	265	8	16	23248 CCK/W33	OH 2348 HB
240	85	35	262	285	8	13	23052 CCK/W33	OH 3052 HB
	118	50	262	285	8	24	23152 CCK/W33	OH 3152 HB
	110	50	262	285	8	13	22252 CACK/W33	OH 3152 HB
	132	45	262	285	8	16	23252 CACK/W33	OH 2352 HB
260	96	35	282	305	8	14	23056 CCK/W33	OH 3056 HB
	120	50	282	305	8	35	23156 CCK/W33	OH 3156 HB
	115	50	282	305	8	18	22256 CACK/W33	OH 3156 HB
	135	50	282	305	8	16	23256 CACK/W33	OH 2356 HB
280	105	35	302	325	8	15	23060 CCK/W33	OH 3060 HB
	125	50	302	325	8	32	23160 CCK/W33	OH 3160 HB
	120	50	302	325	8	17	22260 CACK/W33	OH 3160 HB
	142	50	302	325	8	33	23260 CACK/W33	OH 3260 HB
300	108	35	322	345	8	15	23064 CCK/W33	OH 3064 HB
	135	50	322	345	8	40	23164 CCK/W33	OH 3164 HB
	125	55	322	345	8	26	22264 CACK/W33	OH 3164 HB
	152	50	322	345	8	21	23264 CACK/W33	OH 3264 HB
320	120	40	342	365	8	13	23068 CCK/W33	OH 3068 HB
	155	60	342	365	8	70	23168 CCK/W33	OH 3168 HB
	175	50	342	365	8	47	23268 CACK/W33	OH 3268 HB
340	120	40	362	385	8	17	23072 CCK/W33	OH 3072 HB
	160	60	362	385	8	67	23172 CACK/W33	OH 3172 HB
	180	70	362	385	8	51	23272 CACK/W33	OH 3272 HB
360	124	40	382	405	8	17	23076 CCK/W33	OH 3076 HB
	165	60	382	405	8	73	23176 CACK/W33	OH 3176 HB
	186	70	382	405	8	55	23276 CACK/W33	OH 3276 HB
380	134	40	402	425	8	17	23080 CACK/W33	OH 3080 HB
	170	60	402	425	8	61	23180 CACK/W33	OH 3180 HB
	196	70	402	425	8	45	23280 CACK/W33	OH 3280 HB
400	135	40	422	445	8	16	23084 CACK/W33	OH 3084 HB
	190	60	422	445	8	51	23184 CACK/W33	OH 3184 HB
	212	70	422	445	8	39	23284 CACK/W33	OH 3284 HB

SBDS Housings, 'E' type for spherical roller bearings with cylindrical bore on plain cylindrical shafts da 100 to 200mm

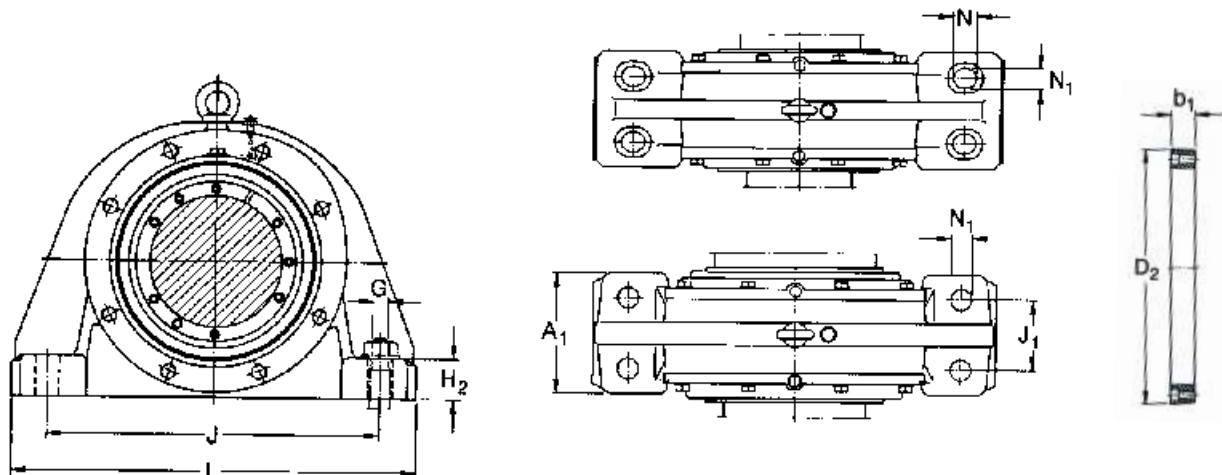


Type AL
Non-locating bearing
Housing for shaft end



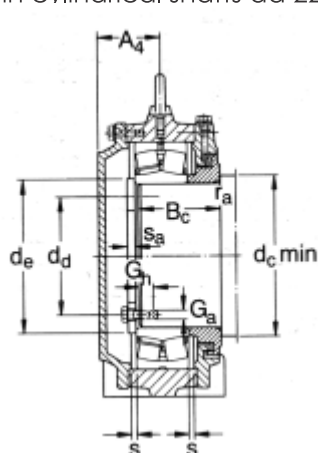
Type BF:
locating bearing
Housing for through shaft

Shaft diameter d_a mm	Housing Dimensions (mm)																	Designation Housing of cast steel
	A_1	A_2	A_4	A_5	D_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G	G_1	G_2	
100	110	70	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 2220 E
110	150	81	83	80	215	270	130	40	300	80	400	35	25	2	20	M 12	M 12	SBDS 3122 E
	120	78	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 2222 E
	130	91	76	90	230	285	140	42	350	70	440	35	30	2	24	M 12	M 16	SBDS 3222 E
120	110	63	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 3024 E
	140	76	78	85	230	285	140	40	330	80	410	35	25	2	20	M 12	M 12	SBDS 3124 E
	130	80.5	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 2224 E
	140	93	78	95	245	305	150	42	370	75	470	35	30	2	24	M 12	M 16	SBDS 3224 E
130	120	68	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 3026 E
	140	80	80	90	240	295	145	40	350	80	430	35	25	2	20	M 12	M 12	SBDS 3126 E
	140	88	70	70	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12	SBDS 2226 E
	150	103	78	100	260	325	160	45	400	85	500	40	30	2	24	M 12	M 16	SBDS 3226 E
140	130	68	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 3028 E
	150	85	85	95	260	315	155	45	380	85	470	35	25	2	20	M 12	M 12	SBDS 3128 E
	160	94	83	82	275	330	165	50	420	95	510	-	35	3	30	M 10	M 12	SBDS 2228 E
	160	108	88	110	285	350	170	50	430	85	530	40	30	3	24	M 16	M 20	SBDS 3228 E
150	140	78	70	76	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12	SBDS 3030 E
	200	93	93	102	285	345	170	60	450	110	580	45	35	3	24	M 12	M 16	SBDS 3130 E
	170	98	88	90	300	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 2230 E
	170	113	93	120	305	375	180	54	450	90	550	45	35	3	30	M 16	M 20	SBDS 3230 E
160	150	78	76	76	260	310	155	45	390	90	480	-	28	3	24	M 10	M 12	SBDS 3032 E
	200	98	98	110	310	368	180	55	430	110	540	40	30	3	24	M 12	M 16	SBDS 3132 E
	180	101	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 2232 E
	180	118	98	130	330	395	190	58	490	105	600	45	35	3	30	M 16	M 20	SBDS 3232 E
170	160	78	83	82	280	330	165	50	420	95	510	-	35	3	30	M 10	M 12	SBDS 3034 E
	200	113	112	120	330	395	190	60	470	110	570	45	35	3	30	M 12	M 20	SBDS 3134 E
	190	112.5	97	104	335	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 2234 E
	200	128	103	135	345	410	200	62	525	110	640	45	35	3	30	M 16	M 20	SBDS 3234 E
180	170	88	88	90	305	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 3036 E
	200	118	116	125	350	410	200	60	490	105	600	45	35	3	30	M 16	M 20	SBDS 3136 E
	200	118	102	110	360	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2236 E
	210	133	108	140	360	430	210	65	550	120	680	45	35	3	30	M 16	M 20	SBDS 3236 E
190	180	93	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 3038 E
	210	123	120	130	370	435	210	65	550	120	680	45	35	3	36	M 16	M 20	SBDS 3138 E
	200	118	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2238 E
	220	138	113	150	385	455	220	75	560	120	710	45	35	4	30	M 16	M 20	SBDS 3238 E
200	190	97	97	104	340	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 3040 E
	220	127	127	135	380	455	220	85	560	120	710	52	42	3	36	M 16	M 24	SBDS 3140 E
	210	122	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 2240 E
	240	138	118	165	405	475	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3240 E

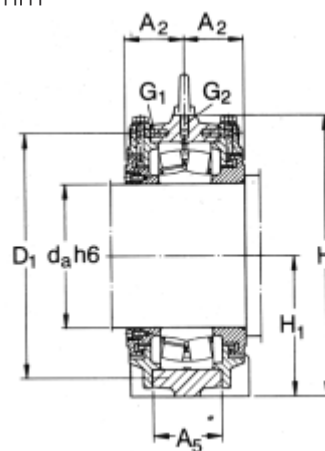


Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)								Appropriate bearing	Adapter ring Designation	Dimensions	
	B_c	G_a	G_h	d_c	d_d	d_e	r_a	s_a			D2	b1
100	90	M 10	18	115	75	115	4	10	22220 E	PSBD 100	128	18
110	107	M 8	15	125	90	122	4	8	23122 CC/W33	PSBD 110	138	18
	102	M 10	18	125	85	128	4	10	22222 E	PSBD 110	138	18
	123	M 8	15	125	90	135	4	8	23222 CC/W33	PSBD 110	138	18
120	84	M 10	18	135	95	132	4	10	23024 CC/W33	PSBD 120	148	18
	105	M 8	15	135	100	133	4	8	23124 CC/W33	PSBD 120	148	18
	107	M 10	18	135	95	138	4	10	22224 E	PSBD 120	148	18
	128	M 10	18	135	95	145	4	10	23224 CC/W33	PSBD 120	148	18
130	92	M 10	18	150	105	145	6	10	23026 CC/W33	PSBD 130	165	18
	110	M 8	15	150	110	145	6	8	23126 CC/W33	PSBD 130	165	18
	117	M 10	18	150	105	150	6	10	22226 E	PSBD 130	165	18
	140	M 10	18	150	105	155	6	10	23226 CC/W33	PSBD 130	165	18
140	92	M 10	18	160	115	155	6	10	23028 CC/W33	PSBD 140	175	20
	116	M 10	18	160	115	155	6	10	23128 CC/W33	PSBD 140	175	20
	125	M 10	18	160	115	162	6	10	22228 CC/W33	PSBD 140	175	20
	145	M 10	18	160	115	170	6	10	23228 CC/W33	PSBD 140	175	20
150	104	M 10	18	170	125	165	6	10	23030 CC/W33	PSBD 150	185	20
	130	M 10	18	170	125	165	6	10	23130 CC/W33	PSBD 150	185	20
	132	M 10	18	170	125	175	6	10	22230 CC/W33	PSBD 150	185	20
	158	M 10	18	170	125	180	6	10	23230 CC/W33	PSBD 150	185	20
160	105	M 10	18	185	135	175	8	10	23032 CC/W33	PSBD 160	195	20
	138	M 10	18	185	135	178	8	10	23132 CC/W33	PSBD 160	195	20
	138	M 12	20	185	130	185	8	12	22232 CC/W33	PSBD 160	195	20
	167	M 12	20	185	130	190	8	12	23232 CC/W33	PSBD 160	195	20
170	109	M 10	18	195	145	185	8	10	23034 CC/W33	PSBD 170	205	20
	154	M 10	18	195	145	185	8	10	23134 CC/W33	PSBD 170	205	20
	152	M 16	25	195	130	200	8	16	22234 CC/W33	PSBD 170	205	20
	179	M 12	20	195	140	205	8	12	23234 CC/W33	PSBD 170	205	20
180	122	M 10	18	205	155	195	8	10	23036 CC/W33	PSBD 180	215	20
	163	M 12	20	205	150	195	8	12	23136 CC/W33	PSBD 180	215	20
	157	M 16	25	205	140	210	8	16	22236 CC/W33	PSBD 180	215	20
	185	M 12	20	205	150	215	8	12	23236 CC/W33	PSBD 180	215	20
190	128	M 12	20	215	160	205	8	12	23038 CC/W33	PSBD 190	225	20
	172	M 12	20	215	160	210	8	12	23138 CC/W33	PSBD 190	225	20
	160	M 16	25	215	150	220	8	16	22238 CC/W33	PSBD 190	225	20
	197	M 12	20	215	160	205	8	12	23238 CC/W33	PSBD 190	225	20
200	135	M 16	25	225	160	215	8	16	23040 CC/W33	PSBD 200	246	25
	180	M 12	20	225	170	220	8	12	23140 CC/W33	PSBD 200	246	25
	167	M 20	30	225	150	235	8	20	22240 CC/W33	PSBD 200	246	25
	198	M 16	25	225	160	240	8	16	23240 CC/W33	PSBD 200	246	25

SBDS Housings, 'E' type for spherical roller bearings with cylindrical bore on plain cylindrical shafts da 220 to 420mm

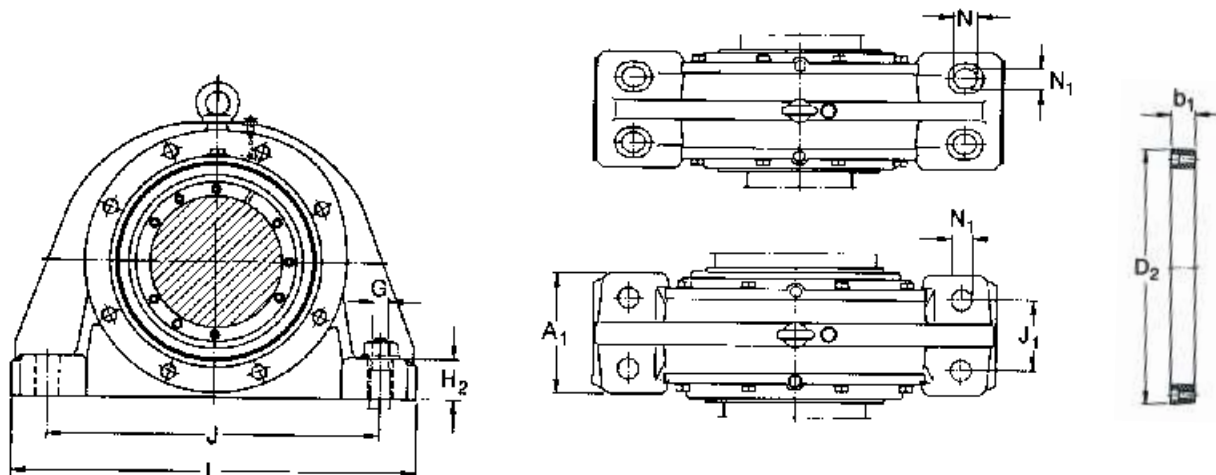


Type AL
Non-locating bearing
Housing for shaft end



Type BF:
locating bearing
Housing for through shaft

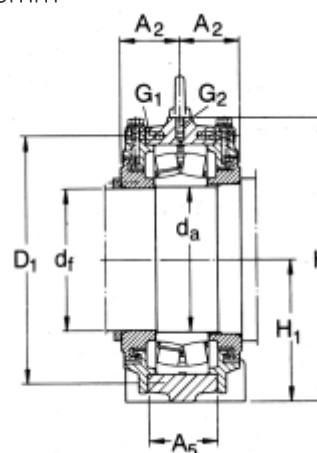
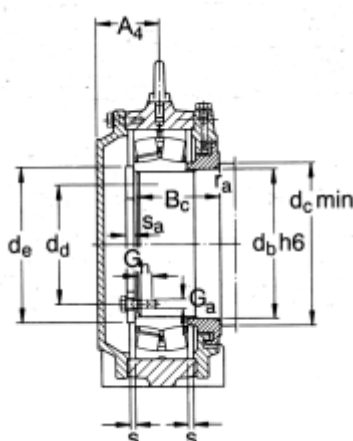
Shaft diameter d_a mm	Housing Dimensions (mm)																	Designation Housing of cast steel
	A_1	A_2	A_4	A_5	D_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G	G_1	G_2	
220	200	102	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 3044 E
	230	135	135	150	420	485	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3144 E
	220	124.5	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 2244 E
	250	148	133	175	445	525	260	80	700	140	850	52	42	4	36	M 20	M 24	SBDS 3244 E
240	210	102	107	118	290	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 3048 E
	250	152	142	160	455	550	270	80	720	140	890	52	42	4	36	M 20	M 24	SBDS 3148 E
	250	130	132	144	490	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 2248 E
	250	148	148	190	490	590	290	90	750	140	900	52	42	5	36	M 20	M 24	SBDS 3248 E
260	220	107	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 3052 E
	250	152	152	175	490	590	290	90	750	140	900	52	42	4	36	M 20	M 24	SBDS 3152 E
	260	145	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 2252 E
	290	167	158	205	535	625	310	95	800	160	960	65	42	5	36	M 20	M 24	SBDS 3252 E
280	240	117	122	128	455	520	260	80	630	140	760	-	42	5	36	M 16	M 20	SBDS 3056 E
	250	157	165	175	510	590	290	90	750	140	900	65	42	5	36	M 24	M 24	SBDS 3156 E
	270	152	147	158	555	630	315	95	770	170	900	-	42	5	36	M 20	M 24	SBDS 2256 E
	300	178	163	210	555	645	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3256 E
300	250	122	132	144	500	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 3060 E
	300	162	167	190	550	655	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3160 E
	280	160	152	168	585	660	330	100	820	180	960	-	42	5	36	M 20	M 24	SBDS 2260 E
	330	182	187	230	600	705	350	105	920	180	1100	75	56	6	48	M 24	M 30	SBDS 3260 E
320	260	122	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 3064 E
	300	177	187	210	590	702	350	100	940	160	1150	65	42	5	36	M 24	M 30	SBDS 3164 E
	320	175	167	180	640	720	360	110	900	200	1060	-	56	5	48	M 24	M 30	SBDS 2264 E
	360	192	187	250	640	760	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3264 E
340	270	132	147	158	565	630	315	95	770	170	900	-	42	6	36	M 20	M 24	SBDS 3068 E
	360	197	237	220	630	735	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3168 E
	380	202	237	265	680	810	390	125	980	200	1200	75	60	6	56	M 24	M 36	SBDS 3268 E
360	280	132	152	168	585	660	330	100	820	180	960	-	42	6	36	M 20	M 24	SBDS 3072 E
	370	197	243	225	650	760	380	115	1000	200	1200	75	56	6	48	M 24	M 30	SBDS 3172 E
	400	227	247	275	710	825	410	130	1040	210	1280	80	68	7	64	M 24	M 36	SBDS 3272 E
380	300	137	157	168	605	680	340	105	840	190	1000	-	56	6	48	M 20	M 24	SBDS 3076 E
	380	202	254	230	680	790	390	125	1000	200	1200	75	60	6	56	M 30	M 30	SBDS 3176 E
	405	232	257	295	745	880	425	135	1100	225	1350	85	68	7	64	M 30	M 36	SBDS 3276 E
400	320	142	167	180	650	720	360	110	900	200	1060	-	56	6	48	M 24	M 30	SBDS 3080 E
	400	197	247	235	710	845	410	130	1040	210	1280	80	68	7	64	M 30	M 36	SBDS 3180 E
	450	242	257	300	790	905	450	145	1160	240	1430	85	68	7	64	M 30	M 36	SBDS 3280 E
420	340	147	167	180	670	750	375	115	940	210	1100	-	56	6	48	M 24	M 30	SBDS 3084 E
	420	212	257	260	760	900	450	135	1100	210	1350	85	68	7	64	M 30	M 36	SBDS 3184 E
	470	252	267	315	835	955	470	150	1220	255	1500	90	72	8	64	M 30	M 36	SBDS 3284 E



Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)								Appropriate bearing	Adapter ring Designation	Dimensions	
	B_c	G_a	G_h	d_c	d_d	d_e	r_a	s_a			D2	b1
220	144	M 16	25	245	180	240	8	16	23044 CC/W33	PSBD 220	266	25
	191	M 16	25	245	180	245	8	16	23144 CC/W33	PSBD 220	266	25
	195	M 20	30	245	170	260	8	20	22244 CC/W33	PSBD 220	266	25
	216	M 16	25	245	180	265	8	16	23244 CC/W33	PSBD 220	266	25
240	145	M 20	30	265	190	260	8	20	23048 CC/W33	PSBD 240	286	25
	212	M 16	25	265	200	265	8	16	23148 CC/W33	PSBD 240	286	25
	186	M 20	30	265	190	285	8	20	22248 CC/W33	PSBD 240	286	25
	224	M 16	25	265	200	290	8	16	23248 CC/W33	PSBD 240	286	25
260	155	M 20	30	285	210	285	8	20	23052 CC/W33	PSBD 260	306	25
	220	M 16	25	285	220	285	8	16	23152 CC/W33	PSBD 260	306	25
	205	M 20	30	285	210	325	8	20	22252 CAC/W33	PSBD 260	306	25
	249	M 16	25	285	220	335	8	16	23252 CAC/W33	PSBD 260	306	25
280	166	M 20	30	305	230	305	8	20	23056 CC/W33	PSBD 280	326	25
	225	M 16	25	305	240	305	8	16	23156 CC/W33	PSBD 280	326	25
	212	M 24	35	305	220	345	8	24	22256 CAC/W33	PSBD 280	326	25
	261	M 20	30	305	230	380	8	20	23256 CAC/W33	PSBD 280	326	25
300	177	M 20	30	325	250	325	8	20	23060 CC/W33	PSBD 300	350	30
	237	M 20	30	325	250	325	8	20	23160 CC/W33	PSBD 300	350	30
	225	M 24	35	325	240	375	8	24	22260 CAC/W33	PSBD 300	350	30
	273	M 20	30	325	250	380	8	20	23260 CAC/W33	PSBD 300	350	30
320	179	M 20	30	345	270	345	8	20	23064 CC/W33	PSBD 320	370	30
	260	M 20	30	345	270	350	8	20	23164 CC/W33	PSBD 320	370	30
	245	M 24	35	345	260	400	8	24	22264 CAC/W33	PSBD 320	370	30
	291	M 24	35	345	260	410	8	24	23264 CAC/W33	PSBD 320	370	30
340	194	M 24	35	365	280	370	8	24	23068 CC/W33	PSBD 340	390	30
	287	M 24	35	365	280	370	8	24	23168 CC/W33	PSBD 340	390	30
	308	M 24	35	365	280	435	8	24	23268 CA/W33	PSBD 340	390	30
360	197	M 24	35	385	300	390	8	24	23072 CC/W33	PSBD 360	410	30
	288	M 24	35	385	300	390	8	24	23172 CAC/W33	PSBD 360	410	30
	337	M 24	35	385	300	455	8	24	23272 CA/W33	PSBD 360	410	30
380	200	M 24	35	405	320	410	8	24	23076 CC/W33	PSBD 380	430	30
	294	M 24	35	405	320	410	8	24	23176 CA/W33	PSBD 380	430	30
	346	M 30	45	405	305	480	8	30	23276 CA/W33	PSBD 380	430	30
400	211	M 24	35	425	340	430	8	24	23080 CAC/W33	PSBD 400	450	30
	291	M 24	35	425	340	430	8	24	23180 CA/W33	PSBD 400	450	30
	364	M 30	45	425	325	505	8	30	23280 CA/W33	PSBD 400	450	30
420	217	M 30	40	445	345	450	8	30	23084 CA/W33	PSBD 420	470	30
	318	M 30	45	445	345	450	8	30	23184 C/W33	PSBD 420	470	30
	380	M 30	45	445	345	535	8	30	23284 CA/W33	PSBD 420	470	30

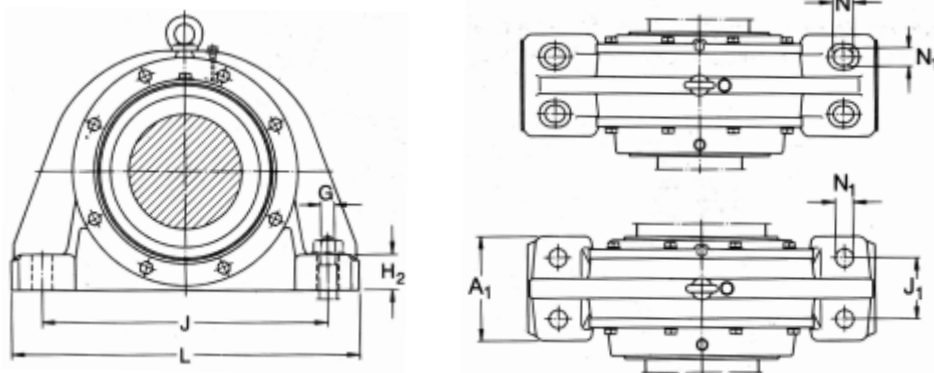
SBDS Housings, 'G' type for spherical roller bearings with cylindrical bore on steeped cylindrical shafts d_a 100 to 200mm

Type AL
Non-locating bearing
Housing for shaft end



Type BF:
locating bearing
Housing for through shaft

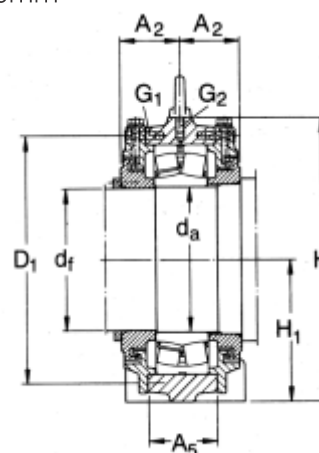
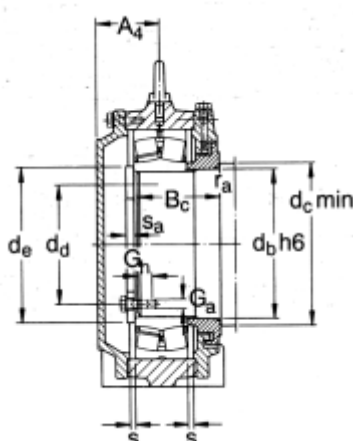
Shaft diameter d_a mm	Housing Dimensions (mm)																	Designation Housing of cast steel
	A_1	A_2	A_4	A_5	D_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G	G_1	G_2	
100	110	70	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 2220 G
110	150	81	83	80	215	270	130	40	300	80	400	35	25	2	20	M 12	M 12	SBDS 3122 G
	120	78	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 2222 G
	130	91	76	90	230	285	140	42	350	70	440	35	30	2	24	M 12	M 16	SBDS 3222 G
120	110	63	63	56	195	230	115	35	300	60	370	-	24	2	20	M 8	M 12	SBDS 3024 G
	140	76	78	85	230	285	140	40	330	80	410	35	25	2	20	M 12	M 12	SBDS 3124 G
	130	80.5	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 2224 G
	140	93	78	95	245	305	150	42	370	75	470	35	30	2	24	M 12	M 16	SBDS 3224 G
130	120	68	68	64	215	260	130	38	340	60	410	-	24	2	20	M 8	M 12	SBDS 3026 G
	140	80	80	90	240	295	145	40	350	80	430	35	25	2	20	M 12	M 12	SBDS 3126 G
	140	88	70	70	245	290	145	42	370	80	430	-	28	3	24	M 10	M 12	SBDS 2226 G
	150	103	78	100	260	325	160	45	400	85	500	40	30	2	24	M 12	M 16	SBDS 3226 G
140	130	68	68	70	230	275	140	40	360	70	430	-	28	3	24	M 8	M 12	SBDS 3028 G
	150	85	85	95	260	315	155	45	380	85	470	35	25	2	20	M 12	M 12	SBDS 3128 G
	160	94	83	82	275	330	165	50	420	95	510	-	35	3	30	M 10	M 12	SBDS 2228 G
	160	108	88	110	285	350	170	50	430	85	530	40	30	3	24	M 16	M 20	SBDS 3228 G
150	140	73	70	76	245	290	145	42	370	80	455	-	28	3	24	M 10	M 12	SBDS 3030 G
	200	93	93	102	285	345	170	60	450	110	580	45	35	3	24	M 12	M 16	SBDS 3130 G
	170	98	88	90	300	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 2230 G
	170	113	93	120	305	375	180	54	450	90	550	45	35	3	30	M 16	M 20	SBDS 3230 G
160	150	78	76	76	260	310	155	45	390	90	480	-	28	3	24	M 10	M 12	SBDS 3032 G
	200	98	98	110	310	368	180	55	430	110	540	40	30	3	24	M 12	M 16	SBDS 3132 G
	180	101	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 2232 G
	180	118	98	130	330	395	190	58	490	105	600	45	35	3	30	M 16	M 20	SBDS 3232 G
170	160	78	83	82	280	330	165	50	420	95	510	-	35	3	30	M 10	M 12	SBDS 3034 G
	200	113	112	120	330	395	190	60	470	110	570	45	35	3	30	M 12	M 20	SBDS 3134 G
	190	112.5	97	104	335	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 2234 G
	200	128	103	135	345	410	200	62	525	110	640	45	35	3	30	M 16	M 20	SBDS 3234 G
180	170	83	88	90	305	360	180	52	450	100	540	-	35	3	30	M 12	M 16	SBDS 3036 G
	200	118	116	125	350	410	200	60	490	105	600	45	35	3	30	M 16	M 20	SBDS 3136 G
	200	118	102	110	360	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2236 G
	210	133	108	140	360	430	210	65	550	120	680	45	35	3	30	M 16	M 20	SBDS 3236 G
190	180	93	88	96	315	370	185	55	480	105	570	-	35	3	30	M 12	M 16	SBDS 3038 G
	210	123	120	130	370	435	210	65	550	120	680	45	35	3	36	M 16	M 20	SBDS 3138 G
	200	118	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 2238 G
	220	138	113	150	385	455	220	75	560	120	710	45	35	4	30	M 16	M 20	SBDS 3238 G
200	190	97	97	104	340	400	200	60	510	110	600	-	35	4	30	M 12	M 16	SBDS 3040 G
	220	127	127	135	380	455	220	85	560	120	710	52	42	3	36	M 16	M 24	SBDS 3140 G
	210	122	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 2240 G
	240	138	118	165	405	475	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3240 G



Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)											Appropriate bearing
	B_b	B_c	G_a	G_h	d_b	d_c	d_d	d_e	d_f	r_a	s_a	
100	35	90	M 10	18	102	115	75	115	98	4	10	22220 E
110	30	107	M 8	15	112	125	90	122	108	4	8	23122 CC/W33
	35	102	M 10	18	112	125	85	128	108	4	10	22222 E
	32	123	M 8	15	112	125	90	135	108	4	8	23222 CC/W33
120	25	84	M 10	18	122	135	95	132	118	4	10	23024 CC/W33
	30	105	M 8	15	122	135	100	133	118	4	8	23124 CC/W33
	35	107	M 10	18	122	135	95	138	118	4	10	22224 E
	32	128	M 10	18	122	135	95	145	118	4	10	23224 CC/W33
130	25	92	M 10	18	132	150	105	145	128	6	10	23026 CC/W33
	30	110	M 8	15	132	150	110	145	128	6	8	23126 CC/W33
	40	117	M 10	18	132	150	105	150	128	6	10	22226 E
	35	140	M 10	18	132	150	105	155	128	6	10	23226 CC/W33
140	25	92	M 10	18	142	160	115	155	138	6	10	23028 CC/W33
	30	116	M 10	18	142	160	115	155	138	6	10	23128 CC/W33
	40	125	M 10	18	142	160	115	162	138	6	10	22228 CC/W33
	35	145	M 10	18	142	160	115	170	138	6	10	23228 CC/W33
150	25	99	M 10	18	152	170	125	165	148	6	10	23030 CC/W33
	30	130	M 10	18	152	170	125	165	148	6	10	23130 CC/W33
	40	132	M 10	18	152	170	125	175	148	6	10	22230 CC/W33
	40	158	M 10	18	152	170	125	180	148	6	10	23230 CC/W33
160	30	105	M 10	18	162	185	135	175	158	8	10	23032 CC/W33
	30	138	M 10	18	162	185	135	178	158	8	10	23132 CC/W33
	40	138	M 12	20	162	185	130	185	158	8	12	22232 CC/W33
	40	167	M 12	20	162	185	130	190	158	8	12	23232 CC/W33
170	30	109	M 10	18	172	195	145	185	168	8	10	23034 CC/W33
	40	154	M 10	18	172	195	145	185	168	8	10	23134 CC/W33
	45	152	M 16	25	172	195	130	200	168	8	16	22234 CC/W33
	40	179	M 12	20	172	195	140	205	168	8	12	23234 CC/W33
180	30	117	M 10	18	182	205	155	195	178	8	10	23036 CC/W33
	40	163	M 12	20	182	205	150	195	178	8	12	23136 CC/W33
	45	157	M 16	25	182	205	140	210	178	8	16	22236 CC/W33
	45	185	M 12	20	182	205	150	215	178	8	12	23236 CC/W33
190	30	128	M 12	20	192	215	160	205	188	8	12	23038 CC/W33
	40	172	M 12	20	192	215	160	210	188	8	12	23138 CC/W33
	45	160	M 16	25	192	215	150	220	188	8	16	22238 CC/W33
	45	197	M 12	20	192	215	160	225	188	8	12	23038 CC/W33
200	35	135	M 16	25	202	225	160	215	198	8	16	23040 CC/W33
	40	180	M 12	20	202	225	170	220	198	8	12	23140 CC/W33
	45	167	M 20	30	202	225	150	235	198	8	20	22240 CC/W33
	45	198	M 16	25	202	225	160	240	198	8	16	23240 CC/W33

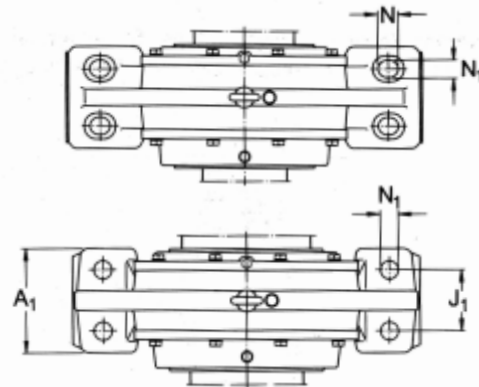
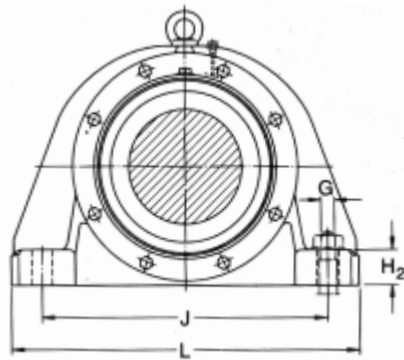
SBDS Housings, 'G' type for spherical roller bearings with cylindrical bore on steeped cylindrical shafts d_a 220 to 420mm

Type AL
Non-locating bearing
Housing for shaft end



Type BF:
locating bearing
Housing for through shaft

Shaft diameter d_a mm	Housing Dimensions (mm)																	Designation Housing of cast steel
	A ₁	A ₂	A ₄	A ₅	D ₁	H	H ₁	H ₂	J	J ₁	L	N	N ₁	s	G	G ₁	G ₂	
220	200	102	102	110	370	430	215	65	540	115	640	-	42	4	36	M 16	M 20	SBDS 3044 G
	230	135	135	150	420	485	235	75	640	140	780	52	42	4	36	M 16	M 24	SBDS 3144 G
	220	124,5	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 2244 G
	250	148	133	175	445	525	260	80	700	140	850	52	42	4	36	M 20	M 24	SBDS 3244 G
240	210	102	107	118	390	450	225	70	560	120	680	-	42	4	36	M 16	M 20	SBDS 3048 G
	250	152	142	160	455	550	270	80	720	140	890	52	42	4	36	M 20	M 24	SBDS 3148 G
	250	130	132	144	490	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 2248 G
	250	148	148	190	490	590	290	90	750	140	900	52	42	5	36	M 20	M 24	SBDS 3248 G
260	220	107	117	128	435	500	250	75	600	130	720	-	42	4	36	M 16	M 20	SBDS 3052 G
	250	152	152	175	490	590	290	90	750	140	900	52	42	4	36	M 20	M 24	SBDS 3152 G
	260	145	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 2252 G
	290	167	158	205	535	625	310	95	800	160	960	65	42	5	36	M 20	M 24	SBDS 3252 G
280	240	117	122	128	455	520	260	80	630	140	760	-	42	5	36	M 16	M 20	SBDS 3056 G
	250	157	165	175	510	590	290	90	750	140	900	65	42	5	36	M 24	M 24	SBDS 3156 G
	270	152	147	158	555	630	315	95	770	170	900	-	42	5	36	M 20	M 24	SBDS 2256 G
	300	178	163	210	555	645	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3256 G
300	250	122	132	144	500	570	285	85	690	150	820	-	42	5	36	M 20	M 24	SBDS 3060 G
	300	162	167	190	550	655	320	100	840	170	1000	65	42	5	36	M 24	M 30	SBDS 3160 G
	280	160	152	168	585	660	330	100	820	180	960	-	42	5	36	M 20	M 24	SBDS 2260 G
	330	182	187	230	600	705	350	105	920	180	1100	75	56	6	48	M 24	M 30	SBDS 3260 G
320	260	122	137	154	520	590	295	90	730	160	860	-	42	5	36	M 20	M 24	SBDS 3064 G
	300	177	187	210	590	702	350	100	940	160	1150	65	42	5	36	M 24	M 30	SBDS 3164 G
	320	175	167	180	640	720	360	110	900	200	1060	-	56	5	48	M 24	M 30	SBDS 2264 G
	360	192	187	250	640	760	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3264 G
340	270	132	147	158	565	630	315	95	770	170	900	-	42	6	36	M 20	M 24	SBDS 3068 G
	360	197	237	220	630	735	370	115	960	200	1150	75	56	6	48	M 24	M 30	SBDS 3168 G
	380	202	237	265	680	810	390	125	980	200	1200	75	60	6	56	M 24	M 36	SBDS 3268 G
360	280	132	152	168	585	660	330	100	820	180	960	-	42	6	36	M 20	M 24	SBDS 3072 G
	370	197	243	225	650	760	380	115	1000	200	1200	75	56	6	48	M 24	M 30	SBDS 3172 G
	400	227	247	275	710	825	410	130	1040	210	1280	80	68	7	64	M 24	M 36	SBDS 3272 G
380	300	137	157	168	605	680	340	105	840	190	1000	-	56	6	48	M 20	M 24	SBDS 3076 G
	380	202	254	230	680	790	390	125	1000	200	1200	75	60	6	56	M 30	M 30	SBDS 3176 G
	405	232	257	295	745	880	425	135	1100	225	1350	85	68	7	64	M 30	M 36	SBDS 3276 G
400	320	142	167	180	650	720	360	110	900	200	1060	-	56	6	48	M 24	M 30	SBDS 3080 G
	400	197	247	235	710	845	410	130	1040	210	1280	80	68	7	64	M 30	M 36	SBDS 3180 G
	450	242	257	300	790	905	450	145	1160	240	1430	85	68	7	64	M 30	M 36	SBDS 3280 G
420	340	147	167	180	670	750	375	115	940	210	1100	-	56	6	48	M 24	M 30	SBDS 3084 G
	420	212	257	260	760	900	450	135	1100	210	1350	85	68	7	64	M 30	M 36	SBDS 3184 G
	470	252	267	315	835	955	470	150	1220	255	1500	90	72	8	64	M 30	M 36	SBDS 3284 G



Shaft diameter d_a mm	Shaft abutment and fillet dimensions (mm)											Appropriate bearing
	B_b	B_c	G_a	G_h	d_b	d_c	d_d	d_e	d_f	r_a	s_a	
220	35	144	M 16	25	222	245	180	240	218	8	16	23044 CC/W33
	45	191	M 16	25	222	245	180	245	218	8	16	23144 CC/W33
	45	195	M 20	30	222	245	170	260	218	8	20	22244 CC/W33
	45	216	M 16	25	222	245	180	265	218	8	16	23244 CC/W33
240	35	145	M 20	30	242	265	190	260	238	8	20	23048 CC/W33
	50	212	M 16	25	242	265	200	265	238	8	16	23148 CC/W33
	45	186	M 20	30	242	265	190	285	238	8	20	22248 CC/W33
	45	224	M 16	25	242	265	200	290	238	8	16	23248 CC/W33
260	35	155	M 20	30	262	285	210	285	258	8	20	23052 CC/W33
	50	220	M 16	25	262	285	220	285	258	8	16	23152 CC/W33
	50	205	M 20	30	262	285	210	325	258	8	20	22252 CAC/W33
	45	249	M 16	25	262	285	220	335	258	8	16	23252 CAC/W33
280	35	166	M 20	30	282	305	230	305	278	8	20	23056 CC/W33
	50	225	M 16	25	282	305	240	305	278	8	16	23156 CC/W33
	50	212	M 24	35	282	305	220	345	278	8	24	22256 CAC/W33
	50	261	M 20	30	282	305	230	380	278	8	20	23256 CAC/W33
300	35	177	M 20	30	302	325	250	325	298	8	20	23060 CC/W33
	50	237	M 20	30	302	325	250	325	298	8	20	23160 CC/W33
	50	225	M 24	35	302	325	240	375	298	8	24	22260 CAC/W33
	50	273	M 20	30	302	325	250	380	298	8	20	23260 CAC/W33
320	35	179	M 20	30	322	345	270	345	318	8	20	23064 CC/W33
	50	260	M 20	30	322	345	270	350	318	8	20	23164 CC/W33
	55	245	M 24	35	322	345	260	400	318	8	24	22264 CAC/W33
	50	291	M 24	35	322	345	260	410	318	8	24	23264 CAC/W33
340	40	194	M 24	35	342	365	280	370	338	8	24	23068 CC/W33
	60	287	M 24	35	342	365	280	370	338	8	24	23168 CC/W33
	50	308	M 24	35	342	365	280	435	338	8	24	23268 CA/W33
360	40	197	M 24	35	362	385	300	390	358	8	24	23072 CC/W33
	60	288	M 24	35	362	385	300	390	358	8	24	23172 CAC/W33
	70	337	M 24	35	362	385	300	455	358	8	24	23272 CA/W33
380	40	200	M 24	35	382	405	320	410	378	8	24	23076 CC/W33
	60	294	M 24	35	382	405	320	410	378	8	24	23176 CA/W33
	70	346	M 30	45	382	405	305	480	378	8	30	23276 CA/W33
400	40	211	M 24	35	402	425	340	430	398	8	24	23080 CAC/W33
	60	291	M 24	35	402	425	340	430	398	8	24	23180 CA/W33
	70	364	M 30	45	402	425	325	505	398	8	30	23280 CA/W33
420	40	217	M 30	40	422	445	345	450	418	8	30	23084 CA/W33
	60	318	M 30	45	422	445	345	450	418	8	30	23184 C/W33
	70	380	M 30	45	422	445	345	535	418	8	30	23284 CA/W33