Housing variants

In addition to standard design SNL plummer (pillow) block housings, a number of variants are also available. Variants include housings made of different materials, alternative attachment bolt hole configurations, different bearing seat tolerance classes and modifications for special applications.

Housing material

For applications where extra strength is needed, SNL housings are also available in spheroidal graphite cast iron. Housings made of spheroidal graphite cast iron are available from size 516-613 and are supplied with a solid base (no holes for attachment bolts) as standard. From size 516-613 the housings can be supplied with four oblong holes cast in the base. All housings made of spheroidal graphite cast iron can be supplied with two drilled holes for attachment bolts (designation suffix /MS1).

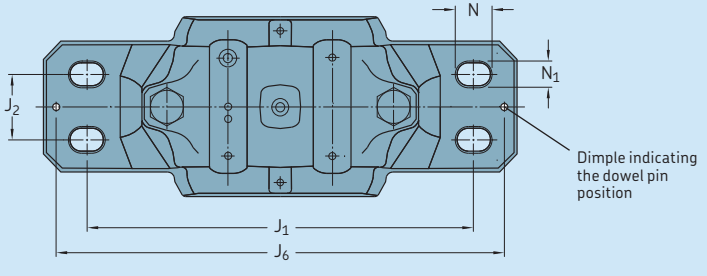
Attachment bolt holes

SNL plummer block housings can be supplied with the following bolt hole configurations:

- four cast holes
  Dimensions are listed in **table 1**. These housings are designated FSNL.

Table 1

Dimensions for four cast attachment bolt holes



Housing Size		Dimensions N	N_1	J_1	J_2	J_6	Attachment bolts Size	Tightening torque[1]
–		mm					–	Nm
FSE 211	**FSE 511-609**	20	15	210	35	234	M 12	80
FSE 212	**FSE 512-610**	20	15	210	35	234	M 12	80
FSE 213	**FSE 513-611**	20	15	230	40	252	M 12	80
FSE 215	**FSE 515-612**	20	15	230	40	257	M 12	80
FSNL 216	**FSNL 516-613**	24	18	260	50	288	M 16	200
FSNL 217	**FSNL 517**	24	18	260	50	292	M 16	200
FSNL 218	**FSNL 518-615**	24	18	290	50	317	M 16	200
	FSNL 519-616	24	18	290	50	317	M 16	200
	FSNL 520-617	24	18	320	60	348	M 16	200
	FSNL 522-619	24	18	350	70	378	M 16	200
	FSNL 524-620	24	18	350	70	378	M 16	200
	FSNL 526	28	22	380	70	414	M 20	385
	FSNL 528	32	26	420	80	458	M 24	665
	FSNL 530	32	26	450	90	486	M 24	665
	FSNL 532	32	26	470	90	506	M 24	665

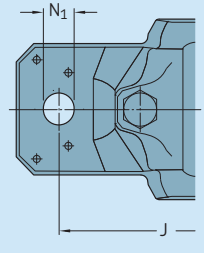
[1] Recommended by bolt manufacturers.

- four drilled holes
  These variants are available for housings with two cast bolt holes, designation SNL, and for housings made of spheroidal graphite cast iron with a solid base, designation SSNLD.
  Dimensions are listed in **table 2**. These housings have the designation suffix /MS2.
  All two-bolt housings have dimples, which mark the bolt hole positions for four-bolt mounting.

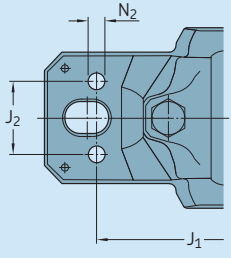
- two drilled holes
  This variant is available for housings made of spheroidal graphite cast iron with a solid base, designation SSNLD.
  Dimensions are listed in **table 2**. The housings have the designation suffix /MS1.

Table 2

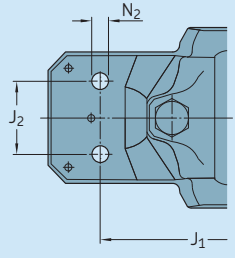
Dimensions for drilled attachment bolt holes



SSNLD.../MS1



SNL.../MS2



SSNLD.../MS2

Housing Size		Two drilled holes (/MS1) Dimensions J	N_1	Appropriate bolt size		Four drilled holes (/MS2) Dimensions J_1	J_2	N_2	Appropriate bolt size	
–		mm		–	in.	mm			–	in.
SNL 205	**SNL 505**	–	–	–	–	114	25	9	M 8	5/16
SNL 206-305	**SNL 506-605**	–	–	–	–	130	29	9	M 8	5/16
SE 207	**SE 507-606**	–	–	–	–	138	29	9	M 8	5/16
SE 208-307	**SE 508-607**	–	–	–	–	160	34	11	M 10	3/8
SE 209	**SE 509**	–	–	–	–	160	34	11	M 10	3/8
(S)SE(D) 210	**(S)SE(D) 510-608**	170	15	M 12	1/2	160	34	11	M 10	3/8
(S)SE(D) 211	**(S)SE(D) 511-609**	210	18	M 16	5/8	200	40	14	M 12	1/2
(S)SE(D) 212	**(S)SE(D) 512-610**	210	18	M 16	5/8	200	40	14	M 12	1/2
(S)SE(D) 213	**(S)SE(D) 513-611**	230	18	M 16	5/8	220	48	14	M 12	1/2
(S)SE(D) 215	**(S)SE(D) 515-612**	230	18	M 16	5/8	220	48	14	M 12	1/2
(S)SNL(D) 216	**(S)SNL(D) 516-613**	260	22	M 20	3/4	252	52	18	M 16	5/8
(S)SNL(D) 217	**(S)SNL(D) 517**	260	22	M 20	3/4	252	52	18	M 16	5/8
(S)SNL(D) 218	**(S)SNL(D) 518-615**	290	22	M 20	3/4	280	58	18	M 16	5/8
	(S)SNL(D) 519-616	290	22	M 20	3/4	280	58	18	M 16	5/8
	(S)SNL(D) 520-617	320	26	M 24	7/8	300	66	18	M 16	5/8
	(S)SNL(D) 522-619	350	26	M 24	7/8	320	74	18	M 16	5/8
	(S)SNL(D) 524-620	350	26	M 24	7/8	330	74	18	M 16	5/8
	(S)SNL(D) 526	380	28	M 24	1	370	80	22	M 20	3/4
	(S)SNL(D) 528	420	35	M 30	1 1/4	400	92	26	M 24	7/8
	(S)SNL(D) 530	450	35	M 30	1 1/4	430	100	26	M 24	7/8
	(S)SNL(D) 532	470	35	M 30	1 1/4	450	100	26	M 24	7/8

Bearing seat tolerance

SNL housings can be supplied with different bearing seat tolerance classes, e.g. for applications prone to vibration, with rotating outer ring load, or for applications operating at high temperatures.

For additional information, contact the SKF application engineering service.

Housings for oil lubrication

For oil lubrication, special seals are required to prevent oil leakage. Oil seals require a modified housing and therefore these housings are supplied together with the seals as a unit. SNL housings are available for oil lubrication from size 516-613. The housing with oil seals is identified by the suffix TURU, e.g. SNL 524 TURU.

SNL plummer block housings have a small oil sump. Be careful not to overfill the sump, or leaks can result. SONL plummer block housings are specially designed for oil lubrication and may be more advantageous. For detailed information refer to *Split plummer block housings SONL series* (→ **page 349**).

Sealing solutions

SNL plummer (pillow) block housings are available with different standard sealing solutions (→ **fig. 8**):

- four-lip seals (TSN .. L)
- V-ring seals (TSN .. A)
- felt seals (TSN .. C) or felt strips (FS 170)
- labyrinth seals (TSN .. S)
- taconite heavy-duty seals (TSN .. ND)
- end covers (ASNH ..)

Table 3 provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, and does not substitute for testing a seal in its application.

Fig. 8

Standard sealing solutions for SNL plummer block housings in the 2, 3, 5 and 6 series

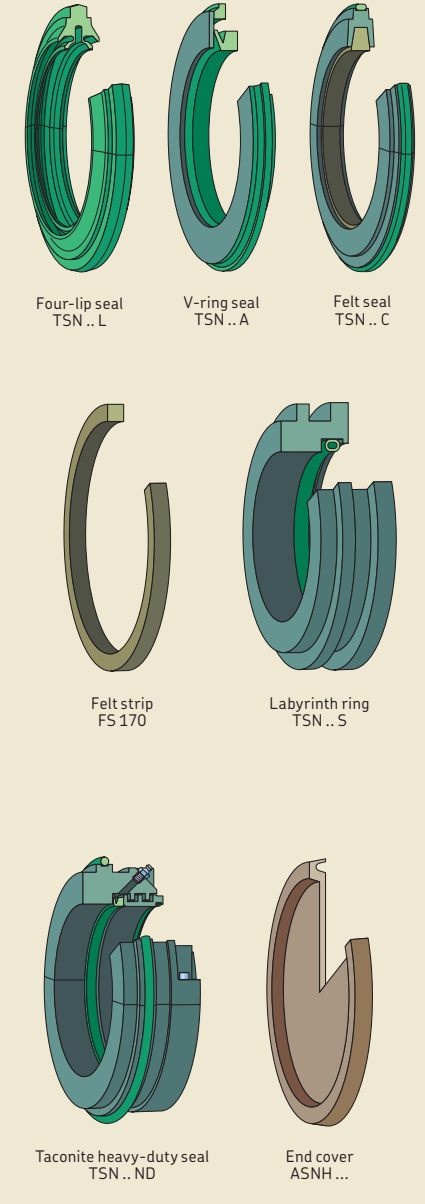


Table 3

Standard sealing solutions for SNL plummer block housings

Seal							
Type	Four-lip split	V-ring	Felt seal split	Felt strip split	Labyrinth	Taconite	End cover
Designation	TSN .. L	TSN .. A	TSN .. C	FS 170	TSN .. S	TSN .. ND	ASNH ..
Material	thermoplastic polyester elastomer	nitrile rubber, steel	felt, nitrile rubber, aluminum	felt	steel, silicone	steel, nitrile rubber	polymer
Seals per pack	2 seals	2 seals	2 seals	1 strip[2]	1 seal	1 seal	1 end cover
Application conditions and requirements							
Temperature [°C]	–40 to +100	–40 to +100	–40 to +100	–40 to +100	–50 to +200	–40 to +100	–40 to +110
Temperature [°F]	–40 to +210	–40 to +210	–40 to +210	–40 to +210	–60 to +390	–40 to +210	–40 to +230
Max. circumferential speed[1] [m/s]	13	7[2]	4[2]	4[2]	not limited	12	n/a
Max. misalignment [°]	1 to 0,5	1,5 to 1	0,5	0,5	0,3	0,5	n/a
Low friction	++	++	–	–	++	+	n/a
Axial shaft displacement	++	–	++	++	+	+	n/a
Vertical arrangement	+	++[3]	– –	– –	– –	–	++
Replacement	++	–	+	+	–	–	++
Shaft tolerance class	h9Ⓔ	n/a	h9Ⓔ	h9Ⓔ	h9Ⓔ	h9Ⓔ	n/a
Shaft roughness R_a [µm]	≤ 3,2	n/a	≤ 3,2	≤ 3,2	≤ 3,2	≤ 3,2	n/a
Sealing suitability							
Dust	++	+	–	–	–	++	++
Fine particles	++	+	–	–	+	++	++
Coarse particles	++	+	+	+	+	++	++
Chips	+	– –	+	+	++	++	++
Liquids when sprayed	+	+	–	–	– –	++	++
Direct sunlight	+	– –	++	++	++	++	++

Symbols: n/a not applicable, ++ very suitable, + suitable, – limited suitability, – – unsuitable

[1] To convert circumferential speeds to rotational speeds → **table 7, page 37**
[2] Higher speeds are possible. For details, refer to the text about the relevant seal.
[3] For details see text about the relevant seal.

Four-lip seals

Four-lip seals replace the former double-lip seals (TSN .. G). When compared to double-lip seals, the new seals are more effective. They also generate less friction, which enables higher shaft speeds. Four-lip seals are horizontally split and easy to mount.

The permissible angular misalignment for seals mounted on shafts ≤ 100 mm in diameter is approximately 1° and approximately 0,5° for larger shafts.

V-ring seals

V-ring seals consist of a V-ring and a sheet steel sealing washer with a vulcanized rubber lip. The rubber lip fits into the seal groove in the housing. The washer is protected against corrosion.

V-rings can accommodate circumferential speeds up to 7 m/s. For circumferential speeds between 7 and 12 m/s, they should be located axially on the shaft. At speeds above 12 m/s, a support ring must be used to prevent the seal from lifting. Recommended dimensions for appropriate support rings for axial and radial location are provided in **table 4**. Housing sizes 205 to 211 and 306 to 314 cannot be used with a support ring and are therefore not suitable for V-ring seals at operating speeds above 7 m/s.

The permissible angular misalignment for V-ring seals is approximately 1,5° for a 50 mm shaft decreasing to approximately 1° for shaft diameters ≥ 150 mm.

The axial movement of the shaft relative to the housing is limited to ±1 mm for shaft diameters up to 65 mm, to approximately ±1,2 mm for shaft diameters up to 100 mm and to approximately ±1,5 mm for larger shaft diameters.

For arrangements with a vertical shaft, the V-ring of the lower seal should be mounted inside the housing.

Felt seals or strips

Felt seals or strips are simple and effective. At circumferential speeds above 4 m/s, a small gap forms between the felt and shaft, transforming the contact seal into a non-contact, gap-type seal.

In applications where bearings are mounted on a plain shaft with an adapter sleeve, split felt ring seals are typically used.

If the bearings are to be installed on a stepped shaft with a cylindrical seat (housing sizes 205 to 218 inclusive), loose felt strips can be used. The strips are 170 mm in length. They should be cut to the correct length and soaked in hot oil for a few minutes prior to mounting. The required number of strips per housing (for both sides) is listed in the product tables (→ **pages 86** to **137**).

Labyrinth seals

For applications where there are high speeds or extreme temperatures, SKF recommends using labyrinth seals. Labyrinth rings, mounted on the shaft, form a multi-stage labyrinth seal with the housing seal grooves. Hollow, silicone rubber cords (2 × 4 mm), supplied with the rings, hold the rings in place on the shaft.

Taconite heavy-duty seals with a radial labyrinth

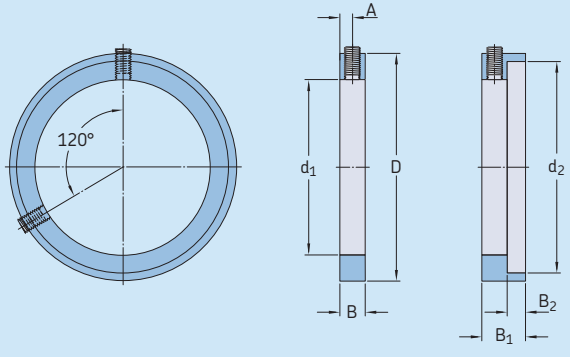
For bearing arrangements that must operate under highly contaminated conditions, such as those encountered in mining, taconite heavy-duty seals, which can be filled with grease, are recommended. Grease enhances the sealing effect and extends the service life of the seals.

Taconite heavy-duty seals are labyrinth seals combined with a V-ring seal. The inner ring of the labyrinth seal is solid but the outer ring is split. They can be relubricated via a grease fitting in the main body of the seal.

The axial movement of the shaft relative to the housing is limited to ±1 mm for shaft diameters up to 65 mm, approximately ±1,2 mm for shaft diameters up to 100 mm and ±1,5 mm for larger shaft diameters.

Table 4

Recommended dimensions for support rings for V-ring seals



7–12 m/s >12 m/s

Shaft diameter	Dimensions							Grub screw to DIN 913	V-ring seal Standard designation	Alternative designation
d_a, d_b[1]	d_1	d_2	B	B_1	B_2	D	A			
–	mm							–	–	
20	20	27,2	5	8,5	3,5	30	2,5	M 3×5	20 VA R	CR 400200
25	25	32,1	5	8,5	3,5	35	2,5	M 3×5	25 VA R	CR 400250
30	30	37,2	5	8,5	3,5	40	2,5	M 3×5	30 VA R	CR 400300
35	35	42,2	5	8,5	3,5	45	2,5	M 3×5	35 VA R	CR 400350
40	40	49,1	7	11,5	4,5	53	3,5	M 4×5	40 VA R	CR 400400
45	45	54	7	11,5	4,5	–[2]	3,5	M 4×5	45 VA R	CR 400450
50	50	59,1	7	11,5	4,5	–[2]	3,5	M 4×5	50 VA R	CR 400500
55	55	64,1	7	11,5	4,5	–[2]	3,5	M 4×5	55 VA R	CR 400550
60	60	69,1	7	11,5	4,5	–[2]	3,5	M 4×5	60 VA R	CR 400600
65	65	74,1	7	11,5	4,5	–[2]	3,5	M 4×5	65 VA R	CR 400650
70	70	81	9	15	6	84	4,5	M 5×6	70 VA R	CR 400700
75	75	86	9	15	6	89,5	4,5	M 5×6	75 VA R	CR 400750
80	80	91	9	15	6	94,5	4,5	M 5×6	80 VA R	CR 400800
85	85	96	9	15	6	100	4,5	M 5×6	85 VA R	CR 400850
90	90	101	9	15	6	105	4,5	M 5×6	90 VA R	CR 400900
95	95	106	9	15	6	109	4,5	M 5×6	95 VA R	CR 400950
100	100	111	9	15	6	115	4,5	M 5×6	100 VA R	CR 401000
110	110	122,9	10	17,5	7,5	128	5	M 6×8	110 VA R	CR 401100
115	115	127,4	10	17,5	7,5	133	5	M 6×8	110 VA R	CR 401100
125	125	138,1	10	17,5	7,5	143	5	M 6×8	130 VA R	CR 401300
135	135	147,5	10	17,5	7,5	153	5	M 6×8	130 VA R	CR 401300
140	140	152,9	10	17,5	7,5	158	5	M 6×8	140 VA R	CR 401400
145	145	158,1	10	17,5	7,5	163	5	M 6×8	150 VA R	CR 401500
155	155	167,5	10	18,5	8,5	173	5	M 6×8	150 VA R	CR 401500
165	165	179,9	10	18,5	8,5	185,5	5	M 6×8	170 VA R	CR 401700
175	175	189,3	10	18,5	8,5	195	5	M 6×8	170 VA R	CR 401700

[1] d_a: shaft diameter for bearings on an adapter sleeve
d_b: shaft diameter for bearings on stepped shafts
[2] Contact the SKF application engineering service for more information.

End covers

Housings at the end of a shaft should have an end cover that fits into the seal groove in the housing.

For applications where temperatures exceed 110 °C *(230 °F)*, steel end covers should be used. These can be cut from sheet steel and placed in the seal groove. Use a hollow silicone rubber cord to hold the cover in place. Seal groove dimensions are provided in **table 5**.

Details of the permissible length of the shaft end are listed in **table 6**.

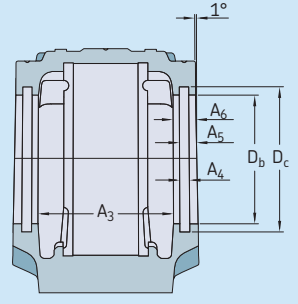
Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**).

SNL housing seals can be used together with SKF sealed self-aligning bearings. When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting.

Table 5

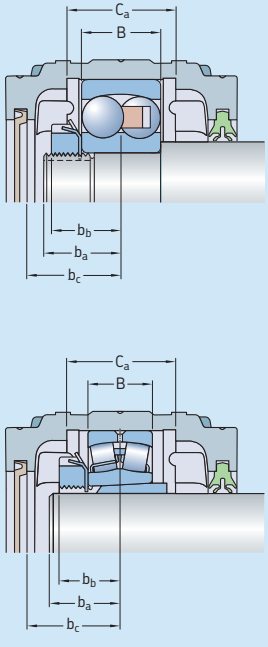
Seal groove dimensions



Housing Size	Dimensions A_3	A_4	A_5	A_6	D_b	D_c
–	mm					
SNL 205	44	5	7,5	10	36,5	44,5
SNL 206-305	54	5	7,5	10	46,5	54,5
SE 207	58	5	8	11	56,5	64,5
SE 208-307	61	5	8	11	62	70,5
SE 209	59	5	9	12	67	75,5
SE 210	64	5	9	12	72	80,5
SE 211	69	5	9	12	77	85,5
SE 212	79	5	9	12	87	95,5
SE 213	82	5	9	13	92,5	101
SE 215	87	5	9	13	102,5	111
SNL 216	92	5	9	13	108	116,5
SNL 217	97	5	9	13	112	120,5
SNL 218	112	5	9	13	120	128,5
SNL 505	45	5	7,5	10	31,5	39,5
SNL 506-605	55	5	7,5	10	36,5	44,5
SE 507-606	59	5	8	11	46,5	54,5
SE 508-607	62	5	8	11	51,5	59,5
SE 509	60	5	9	12	56,5	64,5
SE 510-608	65	5	9	12	62	70,5
SE 511-609	70	5	9	12	67	75,5
SE 512-610	80	5	9	12	72	80,5
SE 513-611	83	5	9	13	77	85,5
SE 515-612	88	5	9	13	87	95,5
SNL 516-613	93	5	9	13	92,5	101
SNL 517	98	5	9	13	97,5	106
SNL 518-615	113	5	9	13	102,5	111
SNL 519-616	116	6	10	14	131	141
SNL 520-617	131	6	10	14	137,5	147,5
SNL 522-619	143	6	10	14	147,5	157,5
SNL 524-620	151	6	11	15	157,5	167,5
SNL 526	156	6	11	15	167,5	177,5
SNL 528	171	6	11	15	177,5	187,5
SNL 530	189	6	11	15	192,5	202,5
SNL 532	201	6	11	15	202,5	212,5

Table 6

Permissible length of a shaft end



Housing Size	Dimensions			Widest bearing that fits the housing Designation	Dimensions	
	b_a[1]	b_c	C_a		B	b_b
–	mm			–	mm	
SNL 205	18	24	25	**22205 E**	18	17
SNL 206-305	20	29	32	**2305 E**	24	19
SE 207	23	32	34	**22207 E**	23	20,5
SE 208-307	26 (22)	33	39	**2307 E**	31	24,5
SE 209	25	32	30	**22209 E**	23	22,5
SE 210	28 (24)	35	41	**22210 E**	23	23,5
SE 211	30 (25)	37	44	**22211 E**	25	25
SE 212	33 (26)	42	48	**22212 E**	28	27
SE 213	35 (30)	45	51	**22213 E**	31	29,5
SE 215	37 (30)	47	56	**22215 E**	31	30,5
SNL 216	39 (33)	50	58	**22216 E**	33	33,5
SNL 217	40 (35)	52	61	**22217 E**	36	36
SNL 218	45 (35)	60	65	**23218 CC/W33**	52,4	44,2
SNL 505	18	24	25	**22205 EK**	18	17
SNL 506-605	20	29	32	**2305 EK**	24	19
SE 507-606	23	32	34	**2306 EK**	27	21,5
SE 508-607	26 (22)	33	39	**2307 EK**	31	24,5
SE 509	25	32	30	**22209 EK**	23	22,5
SE 510-608	28 (24)	35	41	**22308 EK**	33	26,5
SE 511-609	30 (25)	37	44	**22309 EK**	36	29
SE 512-610	33 (26)	42	48	**22310 EK**	40	32
SE 513-611	35 (30)	45	51	**22311 EK**	43	33,5
SE 515-612	37 (30)	47	56	**22312 EK**	46	36
SNL 516-613	39 (33)	50	58	**22313 EK**	48	38
SNL 517	40 (35)	52	61	**22217 EK**	36	36
SNL 518-615	45 (35)	60	65	**22315 EK**	55	42,5
SNL 519-616	47 (40)	61	68	**22316 EK**	58	46
SNL 520-617	51 (45)	69	70	**23220 CCK/W33**	60,3	50,2
SNL 522-619	61	75	80	**23222 CCK/W33**	69,8	55,9
SNL 524-620	65	79	86	**23224 CCK/W33**	76	60
SNL 526	65	81	90	**23226 CCK/W33**	80	63
SNL 528	70	89	98	**23228 CCK/W33**	88	68
SNL 530	80	98	106	**23230 CCK/W33**	96	74
SNL 532	85	104	114	**23232 CCK/W33**	104	80

[1] The dimension b_a is measured from the centre of the housing seat. There are two special cases:
1 For self-aligning ball bearings in the 12 series, values in brackets are suitable.
2 For non-locating bearing arrangements, and in particular for the widest bearings, the values for b_a must be adjusted if the bearing is not centered in the housing seat.

Special seals

In addition to the standard seal assortment, SNL housings are available, on request, with high-temperature seals, taconite heavy-duty seals with an axial labyrinth, or custom seals for special applications.

High-temperature seals

For high operating temperatures, up to 250 °C *(480 °F)*, high-temperature felt seals or strips should be used. The felt seals can accommodate circumferential speeds up to 2 m/s. They are identified by the designation suffix CB, e.g. TSN 516 CB. For additional information about the felt strips, contact the SKF application engineering service.

Taconite heavy-duty seals with an axial labyrinth

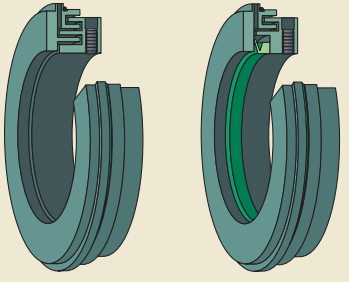
Taconite heavy-duty seals with an axial labyrinth (TSN .. NC or TSN .. NB, → **fig. 9**) can be used under the same conditions as taconite seals with a radial labyrinth. The seals are greased via a hole in the housing cap. Therefore, they can only be used with housings with the suffix T (at the end of a shaft) or the suffix TD (for through shafts).

TSN .. NB seals have a V-ring. It limits the axial movement of the shaft relative to the housing to ±1 mm for shaft diameters up to 65 mm and to approximately ±1,2 mm for sizes up to 100 mm and ±1,5 mm for larger shaft diameters.

Specifications for the seals are listed in **table 7**.

Fig. 9

Taconite heavy-duty seals



TSN.. NC TSN.. NB

Table 7

Taconite heavy-duty seals with an axial labyrinth

Seal		
Designation	TSN .. NC	TSN .. NB
Size range	515 to 532 612 to 620	515 to 532 612 to 620
Application conditions and requirements		
Temperature [°C]	–40 to +250	–40 to +100
Temperature [°F]	–40 to +480	–40 to +210
Max. circumferential speed [m/s][1)]	not limited	12
Max. misalignment [°]	0,5	0,5
Max. axial shaft displacement from a central position [mm]	±2,5	±1 to 1,5
Shaft tolerance class	h9Ⓔ	h9Ⓔ

1) To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.

Custom seals

SNL housings can be equipped with any type of seal that fits the seal groove dimensions in the housing. The relevant dimensions are provided in **table 5** on **page 68**.

If custom seals are to be used, SKF recommends ordering housings in the SNL 2 series rather than those in the 5 or 6 series. Housings in the SNL 2 series have a larger bore at the shaft entrance and can accommodate a wider choice of seal designs.

Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

Typical shaft-bearing combinations

SNL plummer block housings in the 2, 3, 5 and 6 series can accommodate different shaft-bearing combinations (→ **fig. 10**):

- plain shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a cylindrical seat
- stepped shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a withdrawal sleeve

Plain shaft with bearing on an adapter sleeve

This arrangement is standard for housings in the SNL 5 and 6 series. Housings, appropriate parts and dimensions are listed in **product tables 2.1** (→ **page 86**) and **2.2** (→ **page 100**).

Stepped shaft with bearing on a cylindrical seat

This arrangement is standard for housings in the SNL 2 and 3 series, but can also be used for several housings in the SNL 5 and 6 series. Housings, appropriate parts and dimensions are listed in the **product table 2.3**, starting on **page 120**.

The bearing is located axially between a shaft shoulder and a spacer sleeve which is held in place by another component on the shaft. The outside diameter of the spacer sleeve must match the bore diameter of the seal. The spacer sleeve is not supplied with by SKF.

Stepped shaft with bearing on an adapter sleeve

When using an SNL plummer block housing for this arrangement, the dimensions of the abutment ring and the spacer sleeve must fit the housing. Abutment rings and spacer sleeves are not supplied by SKF.

Stepped shaft with bearing on a withdrawal sleeve

When using an SNL housing for this arrangement, the withdrawal sleeve must be located axially on the shaft. This can be done using a spacer sleeve that is held in place by another component. Using a lock nut can be difficult because of the limited space in the housing. The outside diameter of the spacer sleeve must be the same as the shaft abutment diameter d_b, (→ **product tables**) and it should be in accordance with the h9 Ⓔ tolerance class to fit the seal. The spacer sleeve is not supplied by SKF.

Locating and non-locating bearing positions

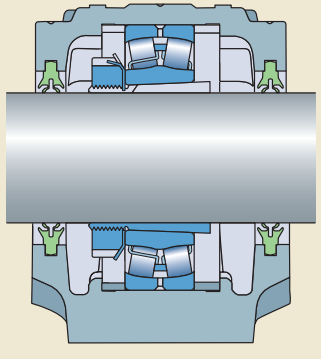
SNL housings can be used for both the locating and non-locating bearing positions.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing on both sides with locating rings. Appropriate locating rings are listed in the product tables.

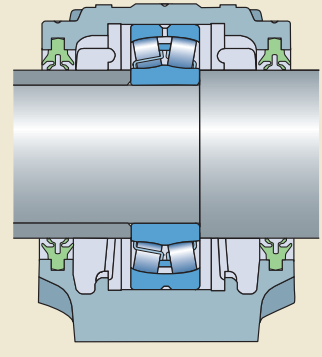
Load carrying capacity

SNL housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing. If loads acting in other directions occur, or if the housing is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing, the cap bolts and the attachment bolts. When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

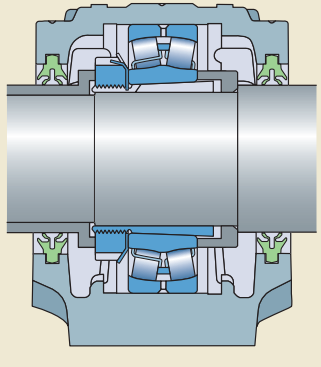
Fig. 10



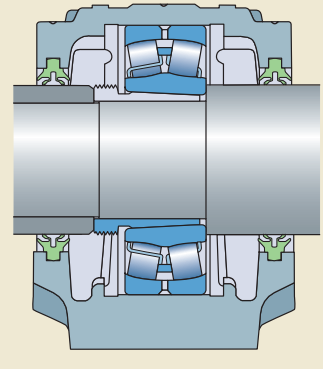
Plain shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a cylindrical seat



Stepped shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a withdrawal sleeve

Breaking loads and safety factors

Guideline values for the breaking loads of housings made of grey cast iron are listed in **table 8**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**). The permissible load can only be exploited if the cap bolts are tightened according to the torque values listed in **table 10** on **page 77**.

The limits for $P_{0°}$ apply only when the housing is not supported over its entire base.

The load P_a is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

For housings made of spheroidal graphite cast iron, the values obtained from **tables 8** and **9** on **pages 75** and **76** respectively should be multiplied by a factor of 1,8.

Safe loads

In some countries, safe loads are used instead of breaking loads. Approximate safe loads are listed in **table 9** on **page 76**. These guideline values have been established using accepted engineering practices, taking safety, ultimate tensile strength of the materials and working stresses into account. They reflect a safety factor of 5 against fracture, and a minimum factor of 2 against cap bolt yield.

Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 8**), the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 13** on **page 82**. For FSNL housings, refer to **table 1** on **page 62.**

Load carrying capacity of the cap bolts

Approximate values for the yield points for cap bolts are provided in **table 10** on **page 77**. The values in **table 10** apply to 8.8 class cap bolts, which are supplied with SNL housings made of grey cast iron. SSNLD housings made of spheroidal graphite cast iron are supplied with 10.9 class cap bolts. For these cap bolts, the values obtained from **table 10** should be multiplied by a factor of 1,4.

If a safety factor of 6 is used for the permissible load of grey cast iron SNL housings, the cap bolts do not need to be considered. In this case, the permissible load of the housing is less than the permissible load for the cap bolts.

Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 3**, **page 65**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

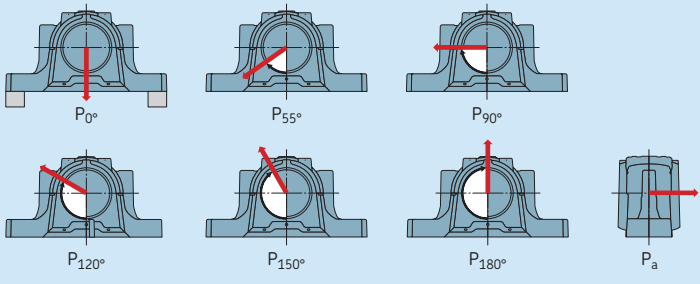
The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature. When temperatures outside the permissible range are expected, contact the SKF application engineering service.

Operating speed

All seals, except non-contact labyrinth seals, limit the permissible operating speed. Speed limits for seals are provided in **table 3** on **page 65** and in **table 7** on **page 70**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

Table 8

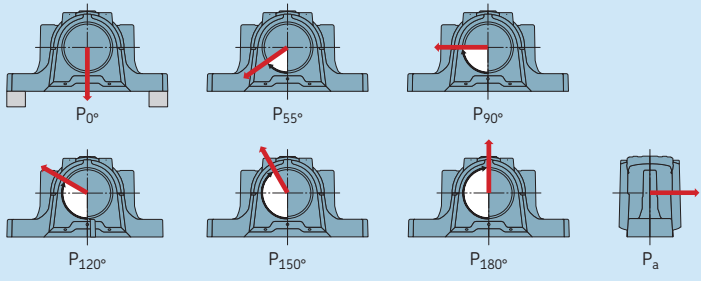
Breaking loads for SNL plummer block housings



Housing Size		Breaking loads $P_{0°}$	$P_{55°}$	$P_{90°}$	$P_{120°}$	$P_{150°}$	$P_{180°}$	P_a
–		kN						
SNL 205	**SNL 505**	100	155	95	70	60	80	52
SNL 206-305	**SNL 506-605**	130	170	100	80	65	85	55
SE 207	**SE 507-606**	140	190	115	85	80	95	60
SE 208-307	**SE 508-607**	150	215	130	95	85	110	70
SE 209	**SE 509**	160	230	140	100	90	115	75
SE 210	**SE 510-608**	170	265	155	120	110	130	85
(F)SE 211	**(F)SE 511-609**	190	275	170	125	115	140	90
(F)SE 212	**(F)SE 512-610**	210	300	180	130	120	150	100
(F)SE 213	**(F)SE 513-611**	270	340	205	150	130	170	110
(F)SE 215	**(F)SE 515-612**	290	410	250	185	160	205	135
(F)SNL 216	**(F)SNL 516-613**	350	430	260	190	175	215	140
(F)SNL 217	**(F)SNL 517**	370	480	290	205	190	240	155
(F)SNL 218	**(F)SNL 518-615**	430	550	340	250	215	275	180
	(F)SNL 519-616	450	580	350	260	230	290	190
	(F)SNL 520-617	470	620	370	280	250	310	200
	(F)SNL 522-619	600	680	410	310	275	340	220
	(F)SNL 524-620	800	790	470	350	320	400	260
	(F)SNL 526	900	900	540	410	360	450	295
	(F)SNL 528	1 000	1 050	630	470	430	530	345
	(F)SNL 530	1 100	1 200	730	540	480	600	390
	(F)SNL 532	1 300	1 450	860	640	570	720	470

Table 9

Safe loads for SNL plummer block housings



Housing		Safe loads for different load directions[1]						
Size		$P_{0°}$	$P_{55°}$	$P_{90°}$	$P_{120°}$	$P_{150°}$	$P_{180°}$	P_a
–		kN/*lbf.*						
SNL 205	**SNL 505**	20	31	19	14	12	16	10,4
		4 500	*6 975*	*4 275*	*3 150*	*2 700*	*3 600*	*2 340*
SNL 206-305	**SNL 506-605**	26	34	20	16	13	17	11
		5 850	*7 650*	*4 500*	*3 600*	*2 925*	*3 825*	*2 475*
SE 207	**SE 507-606**	28	38	23	17	16	19	12
		6 300	*8 550*	*5 175*	*3 825*	*3 600*	*4 275*	*2 700*
SE 208-307	**SE 508-607**	30	43	26	19	17	22	14
		6 750	*9 675*	*5 850*	*4 275*	*3 825*	*4 950*	*3 150*
SE 209	**SE 509**	32	46	28	20	18	23	15
		7 200	*10 350*	*6 300*	*4 500*	*4 050*	*5 175*	*3 375*
SE 210	**SE 510-608**	34	53	31	24	22	26	17
		7 650	*11 925*	*6 975*	*5 400*	*4 950*	*5 850*	*3 825*
(F)SE 211	**(F)SE 511-609**	38	55	34	25	23	28	18
		8 550	*12 375*	*7 650*	*5 625*	*5 175*	*6 300*	*4 050*
(F)SE 212	**(F)SE 512-610**	42	60	36	26	24	30	20
		9 450	*13 500*	*8 100*	*5 850*	*5 400*	*6 750*	*4 500*
(F)SE 213	**(F)SE 513-611**	54	68	41	30	26	34	22
		12 150	*15 300*	*9 225*	*6 750*	*5 850*	*7 650*	*4 950*
(F)SE 215	**(F)SE 515-612**	58	82	50	37	32	41	27
		13 050	*18 450*	*11 250*	*8 325*	*7 200*	*9 225*	*6 075*
(F)SNL 216	**(F)SNL 516-613**	70	86	52	38	35	43	28
		15 750	*19 350*	*11 700*	*8 550*	*7 875*	*9 675*	*6 300*
(F)SNL 217	**(F)SNL 517**	74	96	58	41	38	48	31
		16 650	*21 600*	*13 050*	*9 225*	*8 550*	*10 800*	*6 975*
(F)SNL 219	**(F)SNL 518-615**	86	110	68	50	43	55	36
		19 350	*24 750*	*15 300*	*11 250*	*9 675*	*12 375*	*8 100*
	(F)SNL 519-616	90	116	70	52	46	58	38
		20 250	*26 100*	*15 750*	*11 700*	*10 350*	*13 050*	*8 550*
	(F)SNL 520-617	94	124	74	56	50	62	40
		21 150	*27 900*	*16 650*	*12 600*	*11 250*	*13 950*	*9 000*
	(F)SNL 522-619	120	136	82	62	55	68	44
		27 000	*30 600*	*18 450*	*13 950*	*12 375*	*15 300*	*9 900*
	(F)SNL 524-620	160	158	94	70	64	80	52
		36 000	*35 550*	*21 150*	*15 750*	*14 400*	*18 000*	*11 700*
	(F)SNL 526	180	180	108	82	72	90	59
		40 500	*40 500*	*24 300*	*18 450*	*16 200*	*20 250*	*13 275*
	(F)SNL 528	200	210	126	94	86	106	69
		45 000	*47 250*	*28 350*	*21 150*	*19 350*	*23 850*	*15 525*
	(F)SNL 530	220	240	146	108	96	120	78
		49 500	*54 000*	*32 850*	*24 300*	*21 600*	*27 000*	*17 550*
	(F)SNL 532	260	290	172	128	114	144	94
		58 500	*65 250*	*38 700*	*28 800*	*25 650*	*32 400*	*21 150*

[1] The values are based on a safety factor of 5.

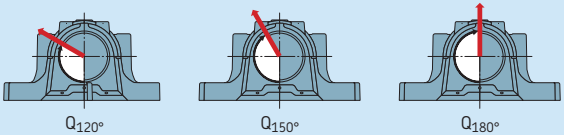
Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 10**). They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

Table 10

Load carrying capacity and torque values for cap bolts and attachment bolts



Housing Size		Cap bolts Yield point for two bolts $Q_{120°}$	$Q_{150°}$	$Q_{180°}$	Size	Tightening torque	Attachment bolts[1] Size	Tightening torque[2]
–		kN			–	Nm	–	Nm
SNL 205	**SNL 505**	150	85	75	M 10×40	50	M 12	80
SNL 206-305	**SNL 506-605**	150	85	75	M 10×40	50	M 12	80
SE 207	**SNL 507-606**	150	85	75	M 10×50	50	M 12	80
SE 208-307	**SNL 508-607**	150	85	75	M 10×50	50	M 12	80
SE 209	**SNL 509**	150	85	75	M 10×50	50	M 12	80
SE 210	**SNL 510-608**	150	85	75	M 10×55	50	M 12	80
SE 211	**SE 511-609**	220	125	110	M 12×60	80	M 16	200
SE 212	**SE 512-610**	220	125	110	M 12×60	80	M 16	200
SE 213	**SE 513-611**	220	125	110	M 12×65	80	M 16	200
SE 215	**SE 515-612**	220	125	110	M 12×65	80	M 16	200
SNL 216	**SNL 516-613**	220	125	110	M 12×70	80	M 20	385
SNL 217	**SNL 517**	220	125	110	M 12×80	80	M 20	385
SNL 218	**SNL 518-615**	400	230	200	M 16×90	150	M 20	385
	SNL 519-616	400	230	200	M 16×90	150	M 20	385
	SNL 520-617	620	360	310	M 20×100	200	M 24	665
	SNL 522-619	620	360	310	M 20×100	200	M 24	665
	SNL 524-620	620	360	310	M 20×110	200	M 24	665
	SNL 526	900	520	450	M 24×130	350	M 24	665
	SNL 528	900	520	450	M 24×130	350	M 30	1 310
	SNL 530	900	520	450	M 24×130	350	M 30	1 310
	SNL 532	900	520	450	M 24×130	350	M 30	1 310

[1] Valid for SE and SNL housings only. For information about attachment bolts for FSE and FSNL housings, refer to **table 1** on **page 62**.
[2] Recommended by bolt manufacturers.

Lubrication

SNL plummer (pillow) block housings in the 2, 3, 5 and 6 series with standard seals are intended for grease lubrication. For oil lubrication, housings with oil seals (→ **page 64**) or SONL plummer block housings (→ **page 349**) should be used.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com.

Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70–80%. For best protection against contaminants, use the SKF three-barrier solution (→ **page 39**). For additional information, contact the SKF application engineering service.

Quantities for 20 and 40% grease fills are listed **table 11**. The values are valid for a typical lithium grease (about 0,95 g/cm³). They include grease for the bearing and the four-lip seals or the sealing washers of V-ring seals. The grease to fill labyrinth seals or taconite heavy-duty seals is not included. For sealed bearings, the values have to be adjusted.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

Table 11

Initial grease fill

Housing		Initial fill	
Size		20%	40%
–		g	
SNL 205	SNL 505	15	25
SNL 206-305	SNL 506-605	25	40
SE 207	SE 507-606	30	50
SE 208-307	SE 508-607	35	55
SE 209	SE 509	40	60
SE 210	SE 510-608	45	70
(F)SE 211	(F)SE 511-609	55	90
(F)SE 212	(F)SE 512-610	80	135
(F)SE 213	(F)SE 513-611	100	160
(F)SE 215	(F)SE 515-612	125	210
(F)SNL 216	(F)SNL 516-613	170	280
(F)SNL 217	(F)SNL 517	200	330
(F)SNL 218	(F)SNL 518-615	260	430
	(F)SNL 519-616	300	480
	(F)SNL 520-617	390	630
	(F)SNL 522-619	530	850
	(F)SNL 524-620	630	1 000
	(F)SNL 526	700	1 100
	(F)SNL 528	900	1 400
	(F)SNL 530	1 100	1 700
	(F)SNL 532	1 300	2 000

Relubrication

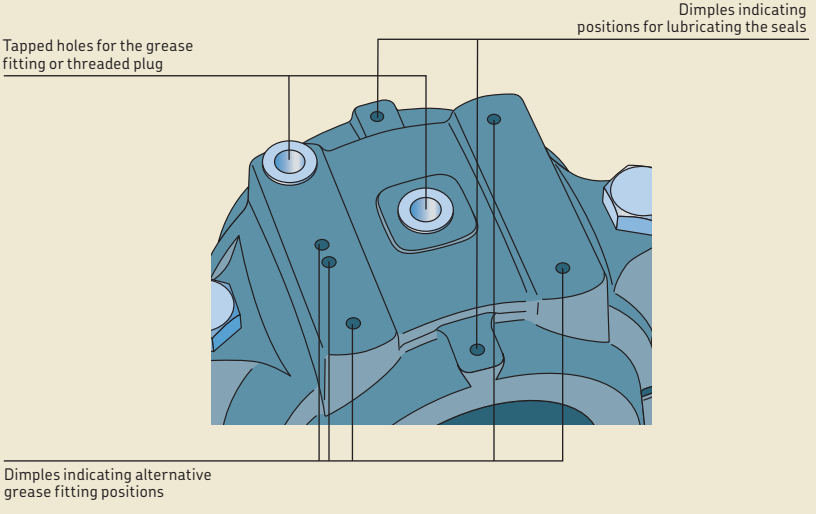
SNL plummer block housings enable relubrication of the incorporated bearings and seals (→ **fig. 11**):

- SNL housings have two holes that have been drilled and tapped for an AH 1/8-27 PTF grease fitting. On a new housing, the holes are covered by plastic plugs. These plugs should be replaced with the grease fitting and threaded plug supplied with the housing.
- If a larger grease fitting or other equipment has to be used, an adapter to change to a G 1/4 thread is available (→ **page 47**).
- Dimples cast into the top of the housing cap indicate alternative positions where holes can be drilled and tapped to accommodate a grease fitting for bearing or seal relubrication.

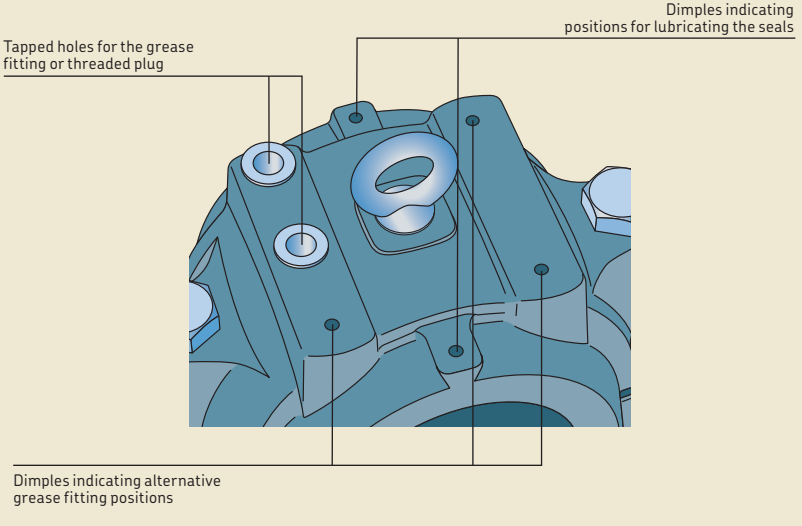
Fig. 11

Relubrication possibilities

SNL housing up to size 218 or 522



SNL housing from size 524 and above



Relubrication via the outer ring

The hole in the centre of the cap should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 12**). When applying grease via the relubrication feature, the shaft should be rotating. Narrow bearings (dimension series 13 and 22) in the locating position can be displaced axially, so that the relubrication groove in the bearing does not line up with the relubrication hole in the housing cap. Make sure the bearing is sufficiently centred when relubricating.

Relubrication from the side

When relubricating from the side, which is typically necessary for self-aligning ball bearings and CARB toroidal roller bearings, the offset hole in the housing should be used. An integrated flange in the housing guides grease from the grease fitting directly to the rolling elements (→ **fig. 13**). This grease guiding system is available on housings from sizes 216 and 516-613 upwards.

When bearings mounted on an adapter sleeve have to be relubricated from the side, the grease should be introduced from the side opposite the lock nut.

When bearings mounted at the end of a shaft have to be relubricated from the side, the grease should be applied at the point closest to the end cover.

Relubrication from the side for housings with V-ring seals

When relubricating bearings from the side in housings with V-ring seals, mount an additional V-ring inside the housing on the side where grease is applied (→ **fig. 14**). This forces the grease to travel through the bearing and exit the housing on the opposite side.

SKF can supply an appropriate V-ring together with a splash plate that fits in the seal groove to cover a bit more than the top half of the housing. These sets are identified by the series designation ASNA followed by the housing size identification and the suffix V, e.g. ASNA 516 V.

Grease escape hole

When four-lip seals (TSN .. L) or felt seals (TSN .. C or FS 170) are used, grease cannot escape via the seals. If relubrication is required, the housing should have a grease escape hole.

SNL housings can be supplied with a grease escape hole (suffix V). A grease escape hole can be drilled into the housing using the dimensions provided in **table 12**.

Fig. 12

Relubrication via the outer ring

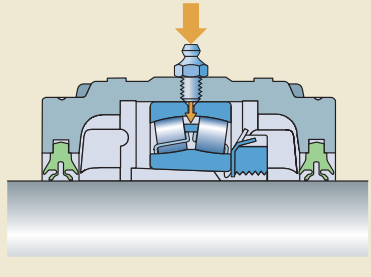


Fig. 13

Relubrication from the side

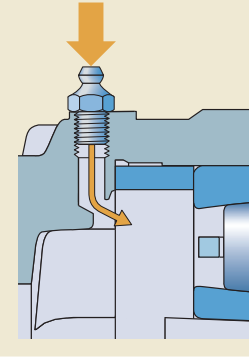
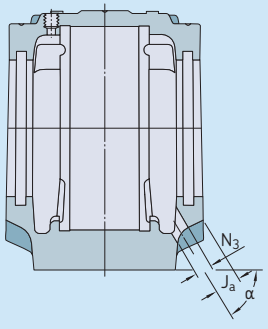


Table 12

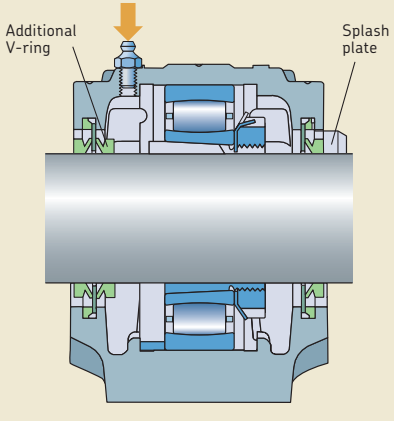
Recommended dimensions for grease escape holes



Housing Size		Dimensions J_a	N_3	α
–		mm		°
SNL 205	SNL 505	8,5	10	45
SNL 206-305	SNL 506-605	10	10	45
SE 207	SNL 507-606	10	10	45
SE 208-307	SE 508-607	9	10	45
SE 209	SE 509	10	10	45
SE 210	SE 510-608	11	10	45
(F)SE 211	(F)SE 511-609	10	12	45
(F)SE 212	(F)SE 512-610	9	12	45
(F)SE 213	(F)SE 513-611	13	12	45
(F)SE 215	(F)SE 515-612	12,5	12	45
(F)SNL 216	(F)SNL 516-613	14	16	45
(F)SNL 217	(F)SNL 517	17	16	45
(F)SNL 218	(F)SNL 518-615	20	16	40
	(F)SNL 519-616	20	16	50
	(F)SNL 520-617	21	16	50
	(F)SNL 522-619	21	20	50
	(F)SNL 524-620	24	20	55
	(F)SNL 526	22	20	55
	(F)SNL 528	23	20	50
	(F)SNL 530	25	20	55
	(F)SNL 532	25	20	60

Fig. 14

V-ring seal and splash plate set mounted in an SNL housing



Mounting

SNL plummer (pillow) block housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

Mounting instructions for each housing are provided with the seal pack. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

Torque specifications

Cap bolts should be tightened to the torque values listed in **table 10** on **page 77**. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 77**.

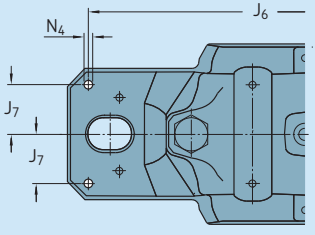
Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, **page 74**).

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 13**. For FSNL housings, refer to **table 1** on **page 62**. Dimples cast into the housing base mark the recommended positions.

Table 13

Position and size of dowel pin holes



Housing Size		Dimensions J_6	J_7	N_4
–		mm		
SNL 205	**SNL 505**	152	16	5
SNL 206-305	**SNL 506-605**	172	19	5
SE 207	**SE 507-606**	172	19	5
SE 208-307	**SE 508-607**	188	22	6
SE 209	**SE 509**	188	22	6
SE 210	**SE 510-608**	188	22	6
SE 211	**SE 511-609**	234	24,5	8
SE 212	**SE 512-610**	234	27	8
SE 213	**SE 513-611**	252	29	8
SE 215	**SE 515-612**	257	29	8
SNL 216	**SNL 516-613**	288	33	8
SNL 217	**SNL 517**	292	33	8
SNL 218	**SNL 518-615**	317	35	8
	SNL 519-616	317	35	8
	SNL 520-617	348	39	8
	SNL 522-619	378	44	8
	SNL 524-620	378	44	8
	SNL 526	414	46	12
	SNL 528	458	54	12
	SNL 530	486	58	12
	SNL 532	506	58	12

Condition monitoring

SNL housings have appropriate positions for condition monitoring sensors (→ **fig. 15**).

Position 1 is a measurement point perpendicular to the shaft, and should be used when the housing is hung from its support or when loads act away from the support surface.

Position 2 is a measurement point parallel to the shaft and should be used when the loads act toward the support surface.

Both positions 1 and 2 are in accordance with ISO 10816-1.

Position 3 is a measurement point that is approximately 20° to 45° to the shaft axis.

Fig. 15

Measurement points for condition monitoring

Accessories

The following accessories are available for SNL housings in the 2, 3, 5 and 6 series:

- Adapter for G 1/4 connections
- V-ring and splash plate sets (→ **page 80**)
- Automatic lubricators: SKF SYSTEM 24 and SKF MultiPoint
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).

Ordering information

For SNL housings in the 2, 3, 5 and 6 series, each of the following items must be ordered separately:

- housing
- seals
- end cover
- locating rings
- bearing
- adapter sleeve

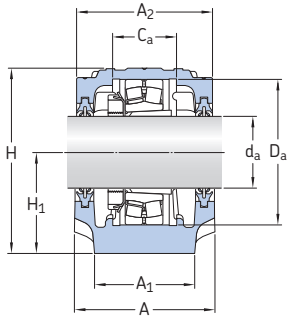
Order example

Two plummer block housings with four-lip seals are required for two 22218 EK spherical roller bearings on H 318 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

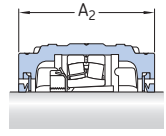
The following items should be ordered (in addition to the bearings and adapter sleeves):

- 2 housings SNL 518-615
- 2 four-lip seal packs TSN 518 L (each pack contains two seals)
- 1 end cover ASNH 518-615
- 2 locating rings FRB 12.5/160

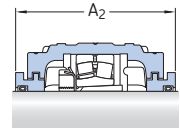
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 20 – 30 mm



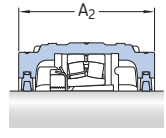
with TSN .. L



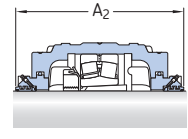
with TSN .. A



with TSN .. S



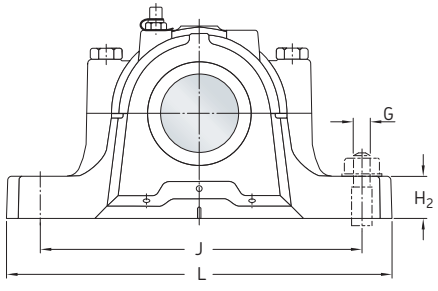
with TSN .. C

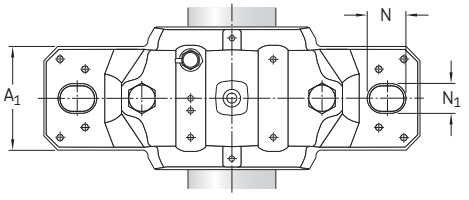


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
20	**SNL 505**	1205 EKTN9	H 205	FRB 5/52	TSN 505 A	ASNH 505	67
		2205 EKTN9	H 305	FRB 3.5/52	TSN 505 C		67
		22205 EK	H 305	FRB 3.5/52	TSN 505 S		80
		C 2205 KTN9	H 305 E	FRB 3.5/52	TSN 505 ND		125
	SNL 506-605	1305 EKTN9	H 305	FRB 7.5/62	TSN 605 A	ASNH 506-605	77
					TSN 605 C		77
					TSN 605 S		89
					TSN 605 ND		135
25	**SNL 506-605**	1206 EKTN9	H 206	FRB 8/62	TSN 506 A	ASNH 506-605	77
		2206 EKTN9	H 306	FRB 6/62	TSN 506 C		77
		22206 EK	H 306	FRB 6/62	TSN 506 S		89
		C 2206 KTN9	H 306 E	FRB 6/62	TSN 506 ND		135
	SE 507-606	1306 EKTN9	H 306	FRB 7.5/72	TSN 606 A	ASNH 507-606	82
		2306 K	H 2306	FRB 3.5/72	TSN 606 C		82
		21306 CCK	H 306	FRB 7.5/72	TSN 606 S		94
					TSN 606 ND		140
30	**SE 507-606**	1207 EKTN9	H 207	FRB 8.5/72	TSN 507 L	ASNH 507-606	82
		2207 EKTN9	H 307	FRB 5.5/72	TSN 507 A		82
		22207 EK	H 307	FRB 5.5/72	TSN 507 C		82
		C 2207 KTN9	H 307 E	FRB 5.5/72	TSN 507 S		94
					TSN 507 ND		145
	SE 508-607	1307 EKTN9	H 307	FRB 9/80	TSN 607 L	ASNH 508-607	85
		2307 EKTN9	H 2307	FRB 4/80	TSN 607 A		85
		21307 CCK	H 307	FRB 9/80	TSN 607 C		85
					TSN 607 S		97
					TSN 607 ND		145

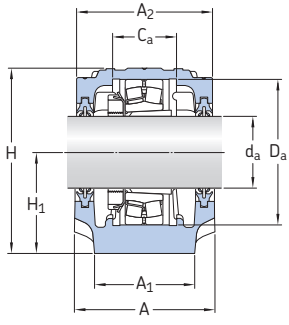
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



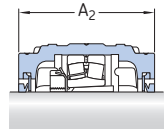


Shaft diameter	Dimensions												Mass Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G	
mm	mm												kg
20	67	46	25	52	74	40	19	130	165	20	15	12	1,45
	77	52	32	62	89	50	22	150	185	20	15	12	2,00
25	77	52	32	62	89	50	22	150	185	20	15	12	2,00
	83	52	34	72	94	50	22	150	185	20	15	12	2,60
30	83	52	34	72	94	50	22	150	185	20	15	12	2,60
	85	60	39	80	108	60	25	170	205	20	15	12	3,40

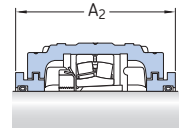
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 35 – 45 mm



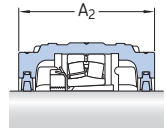
with TSN .. L



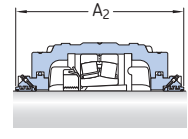
with TSN .. A



with TSN .. S



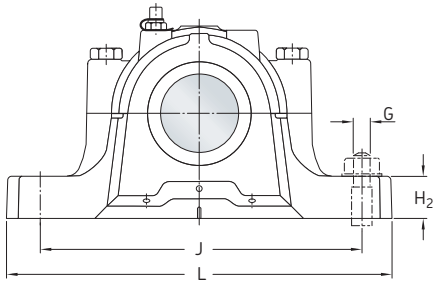
with TSN .. C

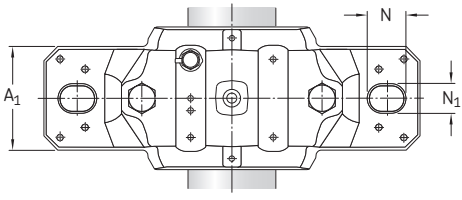


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
35	**SE 508-607**	1208 EKTN9	H 208	FRB 10.5/80	TSN 508 L	ASNH 508-607	85
		2208 EKTN9	H 308	FRB 8/80	TSN 508 A		85
		22208 EK	H 308	FRB 8/80	TSN 508 C		85
		BS2-2208-2CSK	H 2308 E	FRB 5.5/80	TSN 508 S		97
		C 2208 KTN9	H 308 E	FRB 8/80	TSN 508 ND		150
	SE 510-608	1308 EKTN9	H 308	FRB 9/90	TSN 608 L	ASNH 510-608	90
		2308 EKTN9	H 2308	FRB 4/90	TSN 608 A		90
		21308 EK	H 308	FRB 9/90	TSN 608 C		90
		22308 EK	H 2308	FRB 4/90	TSN 608 S		102
					TSN 608 ND		150
40	**SE 509**	1209 EKTN9	H 209	FRB 5.5/85	TSN 509 L	ASNH 509	85
		2209 EKTN9	H 309	FRB 3.5/85	TSN 509 A		85
		22209 EK	H 309	FRB 3.5/85	TSN 509 C		85
		BS2-2209-2CSK	H 309 E	FRB 1/85	TSN 509 S		97
		C 2209 KTN9	H 309 E	FRB 3.5/85	TSN 509 ND		150
	SE 511-609	1309 EKTN9	H 309	FRB 9.5/100	TSN 609 L	ASNH 511-609	95
		2309 EKTN9	H 2309	FRB 4/100	TSN 609 A		95
		21309 EK	H 309	FRB 9.5/100	TSN 609 C		95
		22309 EK	H 2309	FRB 4/100	TSN 609 S		107
					TSN 609 ND		155
45	**SE 510-608**	1210 EKTN9	H 210	FRB 10.5/90	TSN 510 L	ASNH 510-608	90
		2210 EKTN9	H 310	FRB 9/90	TSN 510 A		90
		22210 EK	H 310	FRB 9/90	TSN 510 C		90
		BS2-2210-2CSK	H 310 E	FRB 6.5/90	TSN 510 S		102
		C 2210 KTN9	H 310 E	FRB 9/90	TSN 510 ND		155
	SE 512-610	1310 EKTN9	H 310	FRB 10.5/110	TSN 610 L	ASNH 512-610	105
		2310 K	H 2310	FRB 4/110	TSN 610 A		105
		21310 EK	H 310	FRB 10.5/110	TSN 610 C		105
		22310 EK	H 2310	FRB 4/110	TSN 610 S		117
					TSN 610 ND		165

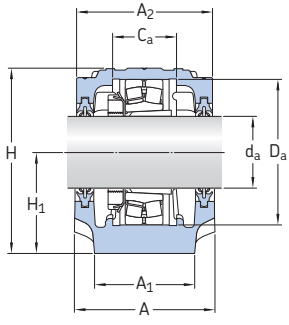
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



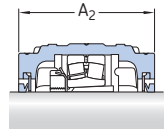


Shaft diameter	Dimensions												Mass Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G	
mm	mm												kg
35	85	60	39	80	108	60	25	170	205	20	15	12	3,40
	90	60	41	90	114	60	25	170	205	20	15	12	3,85
40	85	60	30	85	109	60	25	170	205	20	15	12	3,40
	95	70	44	100	129	70	28	210	255	24	18	16	5,45
45	90	60	41	90	114	60	25	170	205	20	15	12	3,85
	105	70	48	110	134	70	30	210	255	24	18	16	6,15

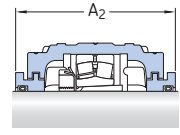
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 50 – 60 mm



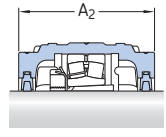
with TSN .. L



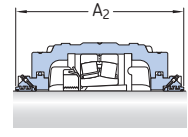
with TSN .. A



with TSN .. S



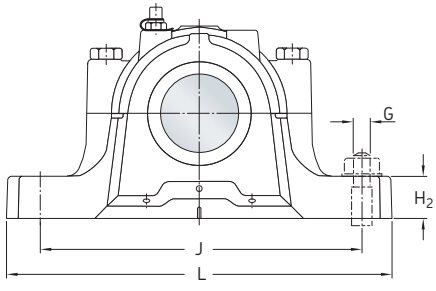
with TSN .. C

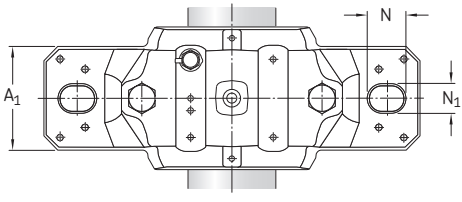


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
50	**SE 511-609**	1211 EKTN9	H 211	FRB 11.5/100	TSN 511 L	ASNH 511-609	95
		2211 EKTN9	H 311	FRB 9.5/100	TSN 511 A		95
		22211 EK	H 311	FRB 9.5/100	TSN 511 C		95
		BS2-2211-2CSK	H 311 E	FRB 6.5/100	TSN 511 S		107
		C 2211 KTN9	H 311 E	FRB 9.5/100	TSN 511 ND		165
	SE 513-611	1311 EKTN9	H 311	FRB 11/120	TSN 611 L	ASNH 513-611	110
		2311 K	H 2311	FRB 4/120	TSN 611 A		110
		21311 EK	H 311	FRB 11/120	TSN 611 C		110
		22311 EK	H 2311	FRB 4/120	TSN 611 S		122
					TSN 611 ND		170
55	**SE 512-610**	1212 EKTN9	H 212	FRB 13/110	TSN 512 L	ASNH 512-610	105
		2212 EKTN9	H 312	FRB 10/110	TSN 512 A		105
		22212 EK	H 312	FRB 10/110	TSN 512 C		105
		BS2-2212-2CSK	H 312 E	FRB 7/110	TSN 512 S		117
		C 2212 KTN9	H 312 E	FRB 10/110	TSN 512 ND		175
	SE 515-612	1312 EKTN9	H 312	FRB 12.5/130	TSN 612 L	ASNH 515-612	115
		2312 K	H 2312	FRB 5/130	TSN 612 A		115
		21312 EK	H 312	FRB 12.5/130	TSN 612 C		115
		22312 EK	H 2312	FRB 5/130	TSN 612 S		127
					TSN 612 ND		175
60	**SE 513-611**	1213 EKTN9	H 213	FRB 14/120	TSN 513 L	ASNH 513-611	110
		2213 EKTN9	H 313	FRB 10/120	TSN 513 A		110
		22213 EK	H 313	FRB 10/120	TSN 513 C		110
		BS2-2213-2CSK	H 2313 E	FRB 6.5/120	TSN 513 S		122
		C 2213 KTN9	H 313 E	FRB 10/120	TSN 513 ND		180
	SNL 516-613	1313 EKTN9	H 313	FRB 12.5/140	TSN 613 L	ASNH 516-613	120
		2313 K	H 2313	FRB 5/140	TSN 613 A		120
		21313 EK	H 313	FRB 12.5/140	TSN 613 C		120
		22313 EK	H 2313	FRB 5/140	TSN 613 S		138
					TSN 613 ND		180

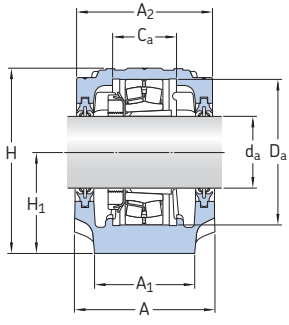
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



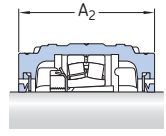


Shaft diameter	Dimensions												Mass Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G	
mm	mm												kg
50	95	70	44	100	129	70	28	210	255	24	18	16	5,45
	110	80	51	120	150	80	30	230	275	24	18	16	7,90
55	105	70	48	110	134	70	30	210	255	24	18	16	6,15
	115	80	56	130	156	80	30	230	280	24	18	16	8,55
60	110	80	51	120	150	80	30	230	275	24	18	16	7,90
	120	90	58	140	177	95	32	260	315	28	22	20	9,50

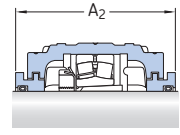
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 65 – 75 mm



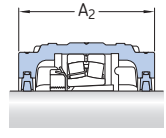
with TSN .. L



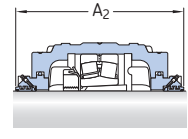
with TSN .. A



with TSN .. S



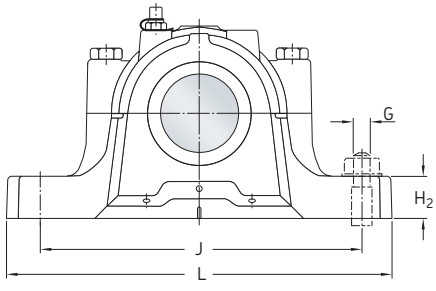
with TSN .. C

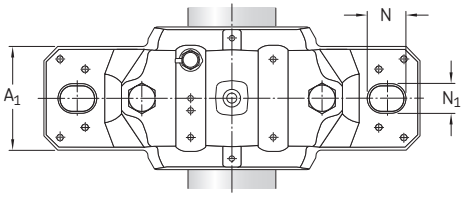


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
65	**SE 515-612**	1215 K	H 215	FRB 15.5/130	TSN 515 L	ASNH 515-612	115
		2215 EKTN9	H 315	FRB 12.5/130	TSN 515 A		115
		22215 EK	H 315	FRB 12.5/130	TSN 515 C		115
		BS2-2215-2CSK	H 315 E	FRB 9/130	TSN 515 S		127
		C 2215 K	H 315 E	FRB 12.5/130	TSN 515 ND		175
	SNL 518-615	1315 K	H 315	FRB 14/160	TSN 615 L	ASNH 518-615	140
		2315 K	H 2315	FRB 5/160	TSN 615 A		140
		21315 EK	H 315	FRB 14/160	TSN 615 C		140
		22315 EK	H 2315	FRB 5/160	TSN 615 S		158
		C 2315 K	H 2315	FRB 5/160	TSN 615 ND		200
70	**SNL 516-613**	1216 K	H 216	FRB 16/140	TSN 516 L	ASNH 516-613	120
		2216 EKTN9	H 316	FRB 12.5/140	TSN 516 A		120
		22216 EK	H 316	FRB 12.5/140	TSN 516 C		120
		BS2-2216-2CSK	H 316 E	FRB 9/140	TSN 516 S		138
		C 2216 K	H 316 E	FRB 12.5/140	TSN 516 ND		205
	SNL 519-616	1316 K	H 316	FRB 14.5/170	TSN 616 L	ASNH 519-616	145
		2316 K	H 2316	FRB 5/170	TSN 616 A		145
		21316 EK	H 316	FRB 14.5/170	TSN 616 C		145
		22316 EK	H 2316	FRB 5/170	TSN 616 S		163
		C 2316 K	H 2316	FRB 5/170	TSN 616 ND		205
75	**SNL 517**	1217 K	H 217	FRB 16.5/150	TSN 517 L	ASNH 517	125
		2217 K	H 317	FRB 12.5/150	TSN 517 A		125
		22217 EK	H 317	FRB 12.5/150	TSN 517 C		125
		BS2-2217-2CSK	H 317 E	FRB 8.5/150	TSN 517 S		143
		C 2217 K	H 317 E	FRB 12.5/150	TSN 517 ND		210
	SNL 520-617	1317 K	H 317	FRB 14.5/180	TSN 617 L	ASNH 520-617	160
		2317 K	H 2317	FRB 5/180	TSN 617 A		160
		21317 EK	H 317	FRB 14.5/180	TSN 617 C		160
		22317 EK	H 2317	FRB 5/180	TSN 617 S		178
		C 2317 K	H 2317	FRB 5/180	TSN 617 ND		220

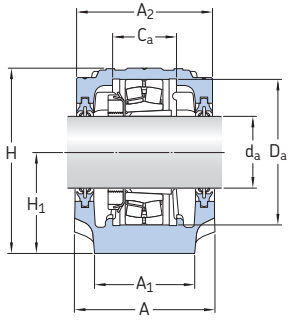
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



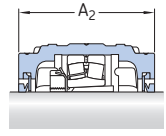


Shaft diameter	Dimensions												Mass Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G	
mm	mm												kg
65	115	80	56	130	156	80	30	230	280	24	18	16	8,55
	140	100	65	160	194	100	35	290	345	28	22	20	12,5
70	120	90	58	140	177	95	32	260	315	28	22	20	9,50
	145	100	68	170	212	112	35	290	345	28	22	20	13,7
75	125	90	61	150	183	95	32	260	320	28	22	20	10,0
	160	110	70	180	218	112	40	320	380	32	26	24	17,6

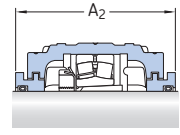
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 80 – 90 mm



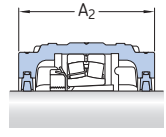
with TSN .. L



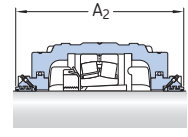
with TSN .. A



with TSN .. S



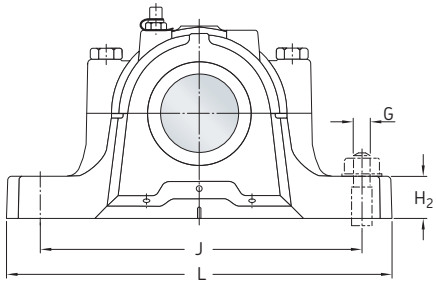
with TSN .. C

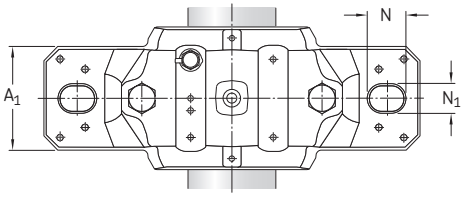


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
80	**SNL 518-615**	1218 K	H 218	FRB 17.5/160	TSN 518 L	ASNH 518-615	140
		2218 K	H 318	FRB 12.5/160	TSN 518 A		140
		22218 EK	H 318	FRB 12.5/160	TSN 518 C		140
		BS2-2218-2CSK	H 2318 E/L73	FRB 8.5/160	TSN 518 S		158
		23218 CCK/W33	H 2318	FRB 6.25/160	TSN 518 ND		225
		C 2218 K	H 318 E	FRB 12.5/160			
85	**SNL 519-616**	1219 K	H 219	FRB 18/170	TSN 519 L	ASNH 519-616	145
		2219 KM	H 319	FRB 12.5/170	TSN 519 A		145
		22219 EK	H 319	FRB 12.5/170	TSN 519 C		145
		C 2219 K	H 319 E	FRB 12.5/170	TSN 519 S		163
					TSN 519 ND		220
	SNL 522-619	1319 K	H 319	FRB 17.5/200	TSN 619 A	ASNH 522-619	175
		2319 KM	H 2319	FRB 6.5/200	TSN 619 C		175
		21319 EK	H 319	FRB 17.5/200	TSN 619 S		191
		22319 EK	H 2319	FRB 6.5/200	TSN 619 ND		235
		C 2319 K	H 2319	FRB 6.5/200			
90	**SNL 520-617**	1220 K	H 220	FRB 18/180	TSN 520 L	ASNH 520-617	160
		2220 KM	H 320	FRB 12/180	TSN 520 A		160
		22220 EK	H 320	FRB 12/180	TSN 520 C		160
		BS2-2220-2CS5K	H 2320 E	FRB 7.5/180	TSN 520 S		178
		23220 CCK/W33	H 2320	FRB 4.85/180	TSN 520 ND		230
		C 2220 K	H 320 E	FRB 12/180			
	SNL 524-620	1320 K	H 320	FRB 19.5/215	TSN 620 A	ASNH 524-620	185
		2320 KM	H 2320	FRB 6.5/215	TSN 620 C		185
		21320 EK	H 320	FRB 19.5/215	TSN 620 S		199
		22320 EK	H 2320	FRB 6.5/215	TSN 620 ND		240
		C 2320 K	H 2320	FRB 6.5/215			

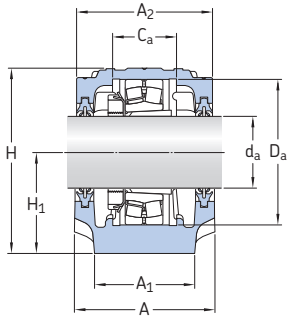
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



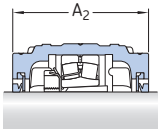


Shaft diameter	Dimensions												Mass Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G	
mm	mm												kg
80	140	100	65	160	194	100	35	290	345	28	22	20	12,5
85	145	100	68	170	212	112	35	290	345	28	22	20	13,7
	175	120	80	200	242	125	45	350	410	32	26	24	22,0
90	160	110	70	180	218	112	40	320	380	32	26	24	17,6
	185	120	86	215	271	140	45	350	410	32	26	24	26,2

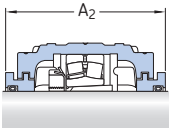
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a 100 – 135 mm



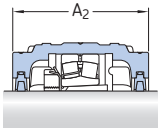
with TSN .. L



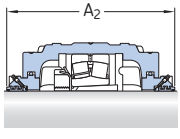
with TSN .. A



with TSN .. S



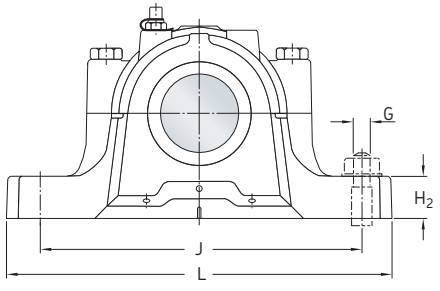
with TSN .. C

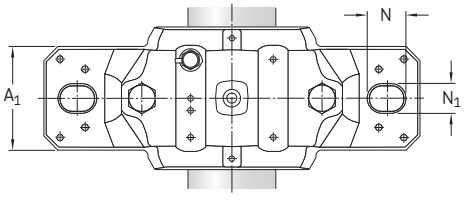


with TSN .. ND

Shaft diameter d_a	Housing	Appropriate parts Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
100	**SNL 522-619**	1222 K	H 222	FRB 21/200	TSN 522 L	ASNH 522-619	175
		2222 KM	H 322	FRB 13.5/200	TSN 522 A		175
		22222 EK	H 322	FRB 13.5/200	TSN 522 C		175
		BS2-2222-2CS5K	H 2322 E	FRB 8.5/200	TSN 522 S		191
		23222 CCK/W33	H 2322	FRB 5.1/200	TSN 522 ND		250
		C 2222 K	H 322 E	FRB 13.5/200			
110	**SNL 524-620**	1224 KM	H 3024	FRB 22/215	TSN 524 L	ASNH 524-620	185
		22224 EK	H 3124	FRB 14/215	TSN 524 A		185
		BS2-2224-2CS5K	H 2324 EH	FRB 8.5/215	TSN 524 C		185
		23224 CCK/W33	H 2324	FRB 5/215	TSN 524 S		199
		C 2224 K	H 3124 L	FRB 14/215	TSN 524 ND		260
		C 3224 K	H 2324 L	FRB 5/215			
115	**SNL 526**	22226 EK	H 3126	FRB 13/230	TSN 526 L	ASNH 526	190
		BS2-2226-2CS5K	H 2326 L	FRB 7.5/230	TSN 526 A		190
		23226 CCK/W33	H 2326	FRB 5/230	TSN 526 C		190
		23226-2CS5K	H 2326 L	FRB 5/230	TSN 526 S		208
		C 2226 K	H 3126 L	FRB 13/230	TSN 526 ND		265
125	**SNL 528**	22228 CCK/W33	H 3128	FRB 15/250	TSN 528 L	ASNH 528	205
		22228-2CS5K	H 3128 L	FRB 15/250	TSN 528 A		205
		23228 CCK/W33	H 2328	FRB 5/250	TSN 528 C		205
		23228-2CS5K	H 2328	FRB 5/250	TSN 528 S		223
		C 2228 K	H 3128 L	FRB 15/250	TSN 528 ND		285
135	**SNL 530**	22230 CCK/W33	H 3130	FRB 16.5/270	TSN 530 L	ASNH 530	220
		22230-2CS5K	H 3130	FRB 16.5/270	TSN 530 A		220
		23230 CCK/W33	H 2330	FRB 5/270	TSN 530 C		220
		C 2230 K	H 3130 L	FRB 16.5/270	TSN 530 S		241
					TSN 530 ND		295

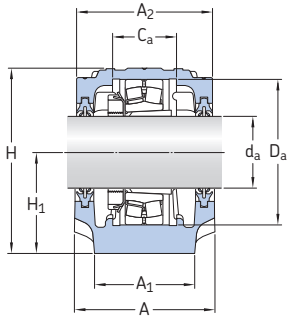
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



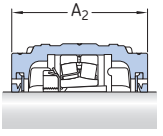


Shaft diameter	**Dimensions**												**Eye bolt** acc. to DIN 580	**Mass** Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G		
mm	mm												–	kg
100	175	120	80	200	242	125	45	350	410	32	26	24	–	22,0
110	185	120	86	215	271	140	45	350	410	32	26	24	M 10	26,2
115	190	130	90	230	290	150	50	380	445	35	28	24	M 10	33,0
125	205	150	98	250	302	150	50	420	500	42	35	30	M 12	40,0
135	220	160	106	270	323	160	60	450	530	42	35	30	M 12	49,0

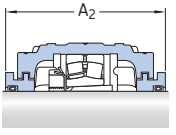
2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
d_a **140** mm



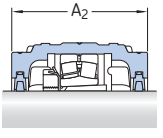
with TSN .. L



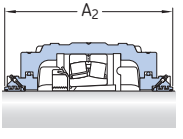
with TSN .. A



with TSN .. S



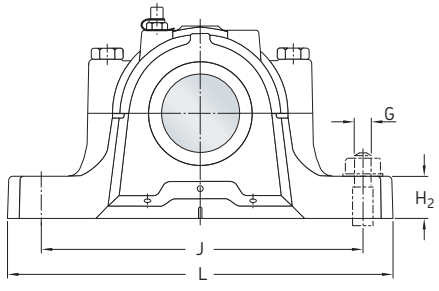
with TSN .. C

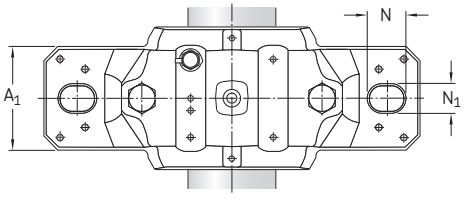


with TSN .. ND

Shaft diameter d_a	**Housing**	**Appropriate parts** Bearing[1]	Adapter sleeve[2]	Locating ring[3]	Seals	End cover	Width incl. seals A_2
mm	–	–					mm
140	**SNL 532**	22232 CCK/W33 22232-2CS5K 23232 CCK/W33 C 3232 K	H 3132 H 3132 H 2332 H 2332 L	FRB 17/290 FRB 17/290 FRB 5/290 FRB 5/290	TSN 532 L TSN 532 A TSN 532 C TSN 532 S TSN 532 ND	ASNH 532	235 235 235 254 315

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.





Shaft diameter	**Dimensions**												**Eye bolt** acc. to DIN 580	**Mass** Housing
d_a	A	A_1	C_a	D_a	H	H_1	H_2	J	L	N	N_1	G		
mm	mm												–	kg
140	235	160	114	290	344	170	60	470	550	42	35	30	M 12	55,0