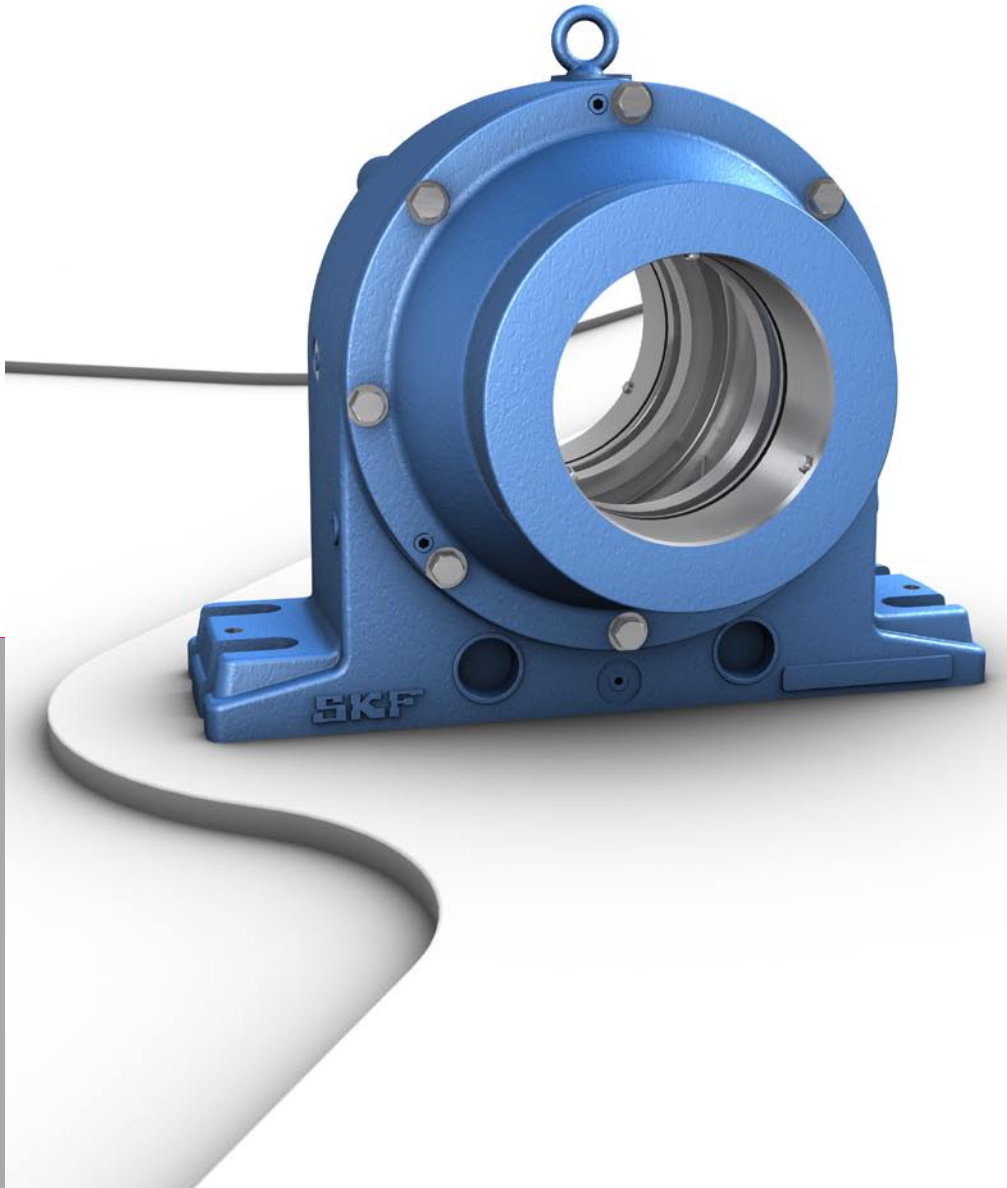

SKF

Housings for paper machines SBFN, SBPN and SDM series

Bearing types
- Spherical roller bearings
- CARB toroidal roller bearings

Bearing dimension series
- 22, 23, 31 (SBFN series)
- 31 (SBPN series)
- 30, 31 (SDM series)

Shaft diameter range
- 60 to 180 mm (SBFN series)
- 180 to 320 mm (SBPN series)
- 340 to 670 mm (SDM series)

Typical shaft-bearing combinations
- Stepped shaft with a bearing on a tapered seat

Seals
- Labyrinth (SBFN and SBPN series)
- Gap-type seal with oil flinger (SDM series)

Lubrication
- Circulating oil lubrication systems

Materials
- Grey cast iron

Mounting
- Two-bolt mounting (SBFN series)
- Four-bolt mounting (SBPN and SDM series)

Compliance to standards
- Not standardized

Supersedes
- SBF, SBP series

With increasing demands placed on the output of paper machines, the operating conditions for housings, bearings and seals in this application are quite severe. Very high temperatures are typical and the risk of water contamination is always high. SKF provides housings for felt rolls, drying cylinders, and Yankee cylinders (used for producing tissue and board).

Housings for paper machines SBFN, SBPN and SDM series

Designations

Designation system for SKF housings for paper machines[1)]

A SBPN 3136 RA/P45

Prefix

A	Short, wide base (SBPN series only)

Series

SBFN	Non-split felt roll housing
SBPN	Non-split drying cylinder housing
SDM	Yankee cylinder housing (split)

Size identification

22(00)	Housing for bearings in the 22 dimension series
23(00)	Housing for bearings in the 23 dimension series
30(00)	Housing for bearings in the 30 dimension series
31(00)	Housing for bearings in the 31 dimension series
..(00)	Size code of the bearing, x 5 = bearing bore diameter [mm]
../..	Bearing bore diameter [mm] e.g. .../530

Suffixes[2)]

–	Housing for metric thread connection arrangements (shaft, oil inlet and sensor attachment threads) (SBFN and SBPN series only)
–	Housing for metric thread connection arrangements (shaft, oil inlet and sensor attachment threads) and through shaft (SDM series only)
A	Housing for a shaft end, with end cover (SBFN and SBPN series only)
B	Housing for a through shaft (SBFN and SBPN series only)
B..	Housing for a through shaft with a modified outer cover for a steam box connection (B1 to B99) (SBPN and SDM series only)
F	Housing for the locating bearing position (drive side)
RA	Housing for a CARB toroidal roller bearing (front side)
N9	Housing for inch thread connection arrangements (shaft, oil inlet and sensor attachment threads)
/P..	Paint variant according to customer specification (P01 to P999)

1) SNL ... TURP housings are included in the Designation system on **page 191**.
2) When multiple suffixes are used, they should be listed in the same order as shown here.

Standard housing design

SKF provides an assortment of housings for paper machines. The four standard housing series that are covered in this publication include:

- SBFN series, for felt rolls
- SBPN series, for drying cylinders
- SDM series, for Yankee cylinders
- SNL ... TURP series, for drying cylinders and felt rolls

SBFN felt roll housings (→ **fig. 1**) are non-split housings. They consist of a housing body and two covers with integrated seals. The base has two oblong cast holes for attachment bolts. Oblong attachment bolt holes enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft. For dimensions and detailed specifications of SBFN housings, contact SKF.

SBPN drying cylinder housings (→ **fig. 2**) are non-split housings. They consist of a housing body and two covers with integrated seals. The base has four cast holes for attachment bolts. Housings for spherical roller bearings have open-ended attachment bolt holes. Housings for CARB toroidal roller bearings have oblong attachment bolt holes. They enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft.

SDM Yankee cylinder housings (→ **fig. 3**) are split housings consisting of a cap, base and two covers with integrated seals. The inboard cover is split to enable removal of the cover without removing the cap. To facilitate handling, the cap has two integral flanges, with a hole cast into each one. The base has four holes for attachment bolts. Housings for spherical roller bearings have drilled attachment bolt holes. Housings for CARB toroidal roller bearings have oblong attachment bolt holes. They enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft.

For information about SNL ... TURP housings, refer to the chapter *Split plummer block housings SNL 30, 31 and 32 series*, starting on

Fig. 1

SBFN felt roll housings

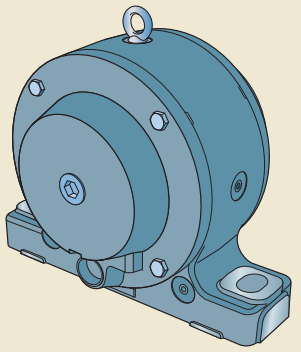


Fig. 2

SBPN drying cylinder housings

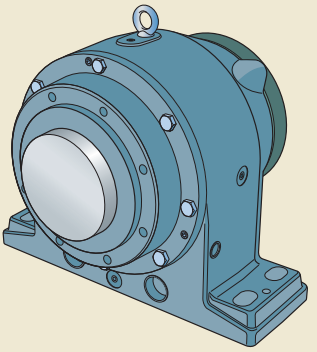


Fig. 3

SDM yankee cylinder housings

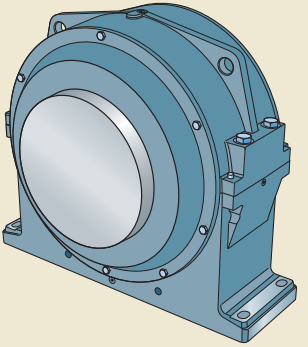
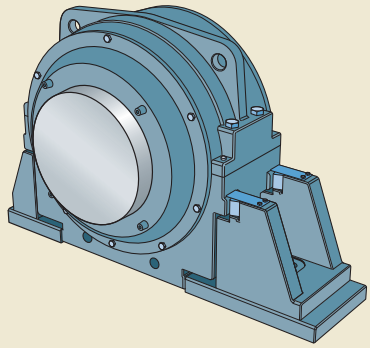


Fig. 4

SDM Yankee cylinder rocker housings



page 189. For information about other housings for felt rolls and drying cylinders such as SBF and SBP housings (predecessors to SBFN and SBPN housings respectively) as well as SDM Yankee cylinder housings on rockers (→ **fig. 4**), all of which can still be supplied by SKF, contact the SKF application engineering service.

Features and benefits

SKF housings for paper machines have the following features and benefits:

Optimized designs

The housing designs are developed together with leading OEMs and are optimized to accommodate the arduous operating conditions present in paper machines.

Effective and maintenance-free seals

SBFN and SBPN housings have upgraded labyrinth seals compared to their predecessors, providing extra protection against liquid contaminants during operation and high pressure wash-downs. The seals also virtually eliminate oil leaks, even for high oil flow rates.

SDM housings have a maintenance-free, non-contact gap-type seal incorporated into each cover.

Prepared for condition monitoring

The housings have tapped holes to attach condition monitoring sensors.

Mounting in different positions

It is possible to mount SBFN housings at angles of 0°, 90°, 180° and 270°.

Housing material

SKF housings for paper machines are made of grey cast iron.

Paint, corrosion protection

SBFN, SBPN and SDM housings are painted blue (RAL 5007) using a water based alkyd/acryl paint. The paint protects the housings in accordance with ISO 12944-2, corrosivity category C2 (→ **page 36**). Housings can be repainted with most water or solvent based one- or two-component paints. The housings can also be supplied painted according to customer specification (→ *Housing variants*, **page 594**).

Unpainted surfaces are protected with a solventless rust inhibitor.

Dimension standards

SBFN, SBPN and SDM housings are not standardized either nationally or internationally.

Housing variants

In addition to standard design housings for paper machines, a number of variants are also available. For additional information, contact the SKF application engineering service.

Housings for connections with inch threads

SBFN, SBPN and SDM housings can be supplied with inch threads for connectors. Threads are in accordance with modified American National Form NS threads and all screws and bolts have UNC threads. Oil inlets and outlets are tapped with NPTF threads and holes for condition monitoring sensors have 5/16-18 UNC threads.

This housing variant is identified by the designation suffix N9, e.g. SBPN 3140 RAN9.

Housings with special paint

SBFN, SBPN and SDM housings can be supplied painted according to customer specification. The housings are identified by the designation suffix P, followed by a number, e.g. SBFN 3136 RA/P45.

Housings for steam joint connections

SBPN and SDM housings can be supplied with a modified cover to accommodate steam joint connections on through shafts (→ **fig. 5**). Various cover designs are available to suit the type of steam joint.

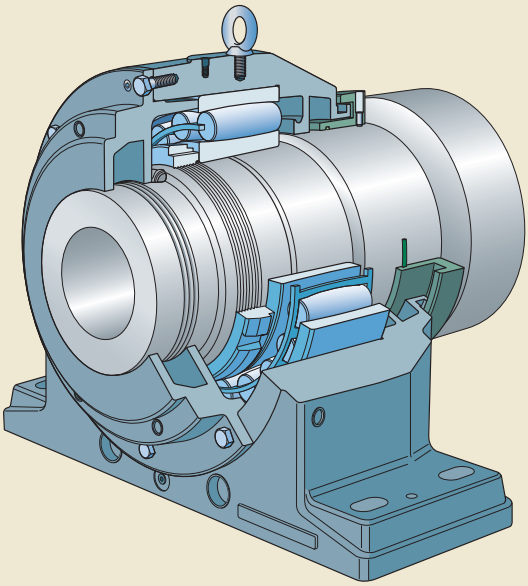
This housing variant is identified by the designation suffix B, followed by a number (from 1 to 99) indicating the cover design, e.g. SDM 30/670 B2RA.

Housings for the wet section

SBFN housings for the wet section can be supplied on request. For additional information,

Fig. 5

Housing for steam joint connection, SBPN series



contact the SKF application engineering service.

Housings for rope sheaves

For rope sheave applications, SBPN drying cylinder housings can be supplied with one side machined to fit the rope sheave. For additional information, contact the SKF application engineering service.

Housings for four-bolt mounting

SBFN housings can be supplied with four holes cast into the base for attachment bolts. For additional information, contact the SKF application engineering service.

Sealing solutions

Table 1 provides an overview of the characteristics and suitability of the sealing solutions for SKF housings for paper machines. This information should be used as a guideline, which cannot substitute for testing a seal in its application.

SBFN (→ **fig. 6**) and SBPN (→ **fig. 7**) housings are equipped with labyrinth seals integrated in each cover. A labyrinth ring, bolted to the shaft, forms an axial labyrinth with the housing cover. Shafts used with SBFN housings require machined grooves that act as oil flingers. End covers are available for housings mounted at the end of a shaft.

SDM housings are equipped with gap-type seals and split oil flinger rings (→ **fig. 8**). The seals are integrated in the covers. The flinger ring is split and mounted directly onto the shaft. The ring is positioned axially by tightening the ring screw into a tapped hole on the shaft.

Fig. 6

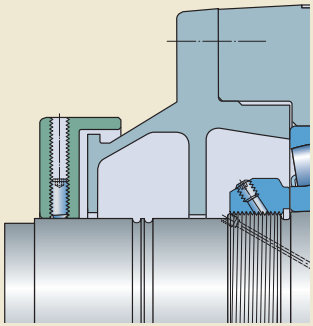


Fig. 7

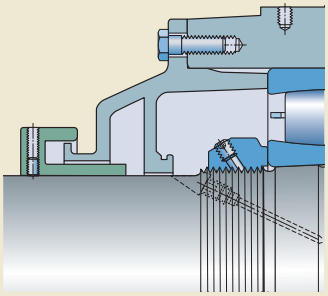


Fig. 8

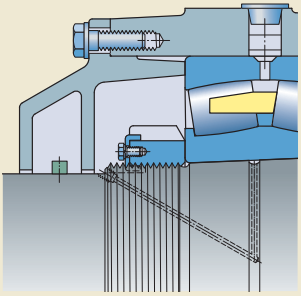
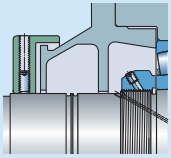
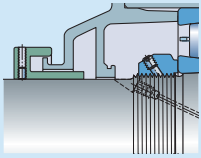
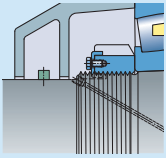


Table 1

Seals for SKF housings for paper machines







	SBFN	SBPN	SDM
Seal			
Type	Labyrinth	Labyrinth	Gap seal with oil flinger
Material	grey cast iron	grey cast iron	grey cast iron, steel
Application conditions and requirements			
Temperature [°C]	–40 to +200	–40 to +200	–40 to +200
Temperature [°F]	–40 to +390	–40 to +390	–40 to +390
Max. circumferential speed [m/s]	bearing dependent	bearing dependent	bearing dependent
Max. misalignment [°]	0,5	0,5	0,3
Low friction	++	++	++
Shaft tolerance class	h9Ⓔ	h9Ⓔ	h9Ⓔ
Shaft roughness R_a [µm]	≤ 3,2	≤ 3,2	≤ 3,2
Sealing suitability			
Dust	–	–	–
Fine particles	+	+	+
Coarse particles	+	+	+
Pressure-wash	+	+	–
Running water	++	++	–

Symbols: ++ very suitable + suitable – limited suitability –– unsuitable

Design considerations

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

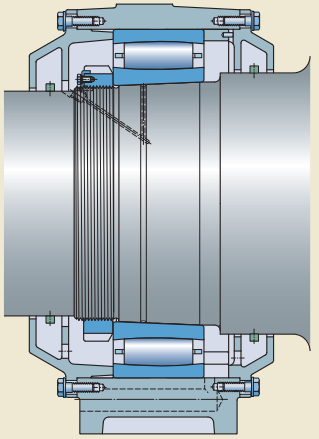
- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing systems* (→ **page 40**)
- *Housing support surface* (→ **page 45**)

For additional information about rolling bearings, refer to the product information available online at skf.com/bearings. For information about paper machine applications, refer to the SKF handbook *Rolling bearings in paper machines*.

Typical shaft-bearing combinations

Housings for paper machines can accommodate stepped shafts with a bearing on a tapered seat (→ **fig. 9**):

Fig. 9



Locating and non-locating bearing positions

Housings for paper machines are available for both the locating and non-locating bearing positions:

- Housings with the designation suffix F are designed to accommodate spherical roller bearings in the locating bearing position on the drive side.
- Housings with the designation suffix RA are designed for CARB toroidal roller bearings in the non-locating bearing position on the front side.

SKF recommends using a spherical roller bearing on the drive side and a CARB toroidal roller bearing on the front side (→ *The SKF self-aligning bearing system*, **page 41**). However, other housing/bearing combinations are also available (→ **table 2**).

The extent to which a CARB toroidal roller bearing can accommodate axial displacement due to interference with the seal can be calculated. For assistance, contact the SKF application engineering service

Load carrying ability

For information about breaking loads for SBFN housings, contact SKF for more information. SBPN and SDM housings are intended for loads acting perpendicular toward the support surface.

Guideline values for the breaking loads P for SDM housings, based on cap bolt strength, are provided in **table 3**. Housings for paper machines should always be supported over the entire base. Perpendicular loads toward the support surface are limited only by the bearing.

Table 2

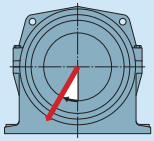
Housing/bearing combinations

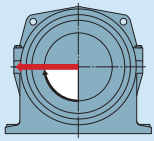
Housing series	Locating bearing position (Drive side)	Non-locating bearing position (Front side)		
	spherical roller bearing with located outer ring	CARB bearing with located outer ring	spherical roller bearing with non-located outer ring	spherical roller bearing with located outer ring in housing on rockers
Felt roll housings				
– SBFN	✓	✓	–	–
– SBF	✓	–	✓[1]	–
Drying cylinder housings				
– SBPN	✓	✓	–	–
– SBP	✓	✓	✓[1]	✓[1]
Yankee cylinder housings				
– SDM	✓	✓	✓[1]	✓[1] [2]

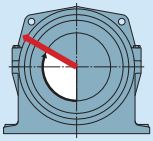
[1] This housing/bearing combination is still available from SKF. However, SKF strongly recommends using a CARB toroidal roller bearing at the front side (→ *The SKF self-aligning bearing system*, **page 41**).
[2] Also available additionally with two support rockers.

Table 3

Breaking loads for SDM housings


$P_{30°}$


$P_{90°}$


$P_{120°}$

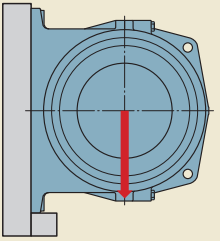
Housing	Breaking loads		
Size	$P_{30°}$	$P_{90°}$	$P_{120°}$
–	kN		
3068	490	325	275
3168	590	295	245
3076	560	310	260
3084	650	305	255
3184	–[1]	–[1]	–[1]
3092	770	320	270
30/530	900	500	425
31/530	1 000	525	450
30/600	1 000	525	450
31/600	–[1]	–[1]	–[1]
30/670	1 090	475	400

[1] Contact SKF.

Additional housing support

When radial loads act at angles between 30° and 120° on SDM and SBPN housings or between 90° and 270° on SBFN housings, a stop should be provided to counter the load. The stop should be sufficiently strong to accommodate the loads acting parallel to the support surface (→ **fig. 10**).

Fig. 10



Operating temperature

The housing material does not set any temperature limits, except for very low temperature applications where impact strength could be a factor. For additional information, contact the application engineering service.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature. Alternative paints that can accommodate higher temperatures are available on request (→ *Housing variants*, **page 594**).

Operating speed

The permissible operating speed of the incorporated bearing is not limited by the housing or the seal.

Shaft specifications

The bearing seat on the shaft should comply with the tolerances required by the bearing (→ SKF handbook *Rolling bearings in paper machines*), which is typically to IT9 tolerance grade. A cylindricity tolerance of IT5/2 and a conicity tolerance of IT7/2 are recommended.

Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts, in accordance with ISO 4014, can be used together with washers.

For SBPN housings, M 24 or 1 UNC attachment bolts with a recommended tightening torque of 665 Nm are suitable. For SDM housings, refer to **table 4**.

Table 4

Torque values for cap bolts and attachment bolts for SDM housings

Housing Size	**Cap bolts** Designation to ISO 262 grade 8.8	Tightening torque	**Attachment bolts** Size	Tightening torque
–	–	Nm	–	Nm
3068	M 24 or 1 UNC	350	M 24 or 1 UNC	665
3168	M 24 or 1 UNC	350	M 24 or 1 UNC	665
3076	M 24 or 1 UNC	350	M 24 or 1 UNC	665
3084	M 30 or 1.1/4 UNC	400	M 24 or 1 UNC	665
3184	M 30 or 1.1/4 UNC	400	M 24 or 1 UNC	665
3092	M 30 or 1.1/4 UNC	400	M 24 or 1 UNC	665
30/530	M 30 or 1.1/4 UNC	400	M 30 or 1.1/4 UNC	1 310
31/530	M 30 or 1.1/4 UNC	400	M 30 or 1.1/4 UNC	1 310
30/600	M 30 or 1.1/4 UNC	400	M 30 or 1.1/4 UNC	1 310
31/630	M 36 or 1.1/2 UNC	600	M 30 or 1.1/4 UNC	1 310
30/670	M 36 or 1.1/2 UNC	600	M 30 or 1.1/4 UNC	1 310

Lubrication

SBFN, SBPN and SDM housings are designed for high-flow circulating oil systems. The oil 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/bearings.

A circulating oil lubrication system typically has supply lines and drain lines. Circulation is normally produced with the aid of a pump. After the oil has passed through the bearing, it drains from the housing and flows into a tank where it is filtered and allowed to cool before being returned to the housing. Proper filtering and cooling of the oil are important factors for bearing and oil service life, and can improve machine performance as well as cost savings.

SBFN housings have two oil inlets and one oil outlet (→ **fig. 11**). One of the inlets as well as the outlet are plugged with plastic plugs. The other inlet, not in use, is plugged with a steel plug.

SBPN and SDM housings have two oil inlets, and two oil outlets on each side (→ **figs. 12** and **13**). SKF recommends using both outlets on the relevant side to sufficiently drain the large quantity of circulating oil. The tapped outlets have two plastic and two steel plugs. The steel plugs should remain on the side opposite the return pipes.

Fig. 11

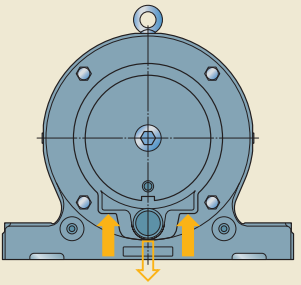


Fig. 12

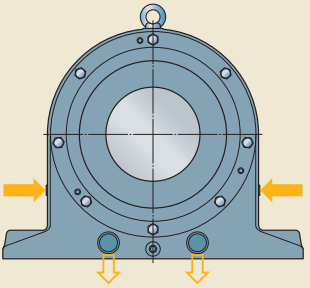
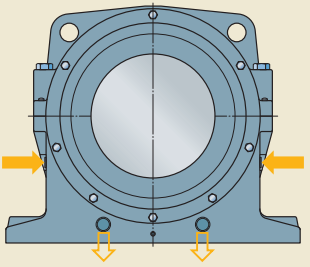


Fig. 13



Mounting

SKF housings for paper machines must be mounted properly by experienced, knowledgeable people using the correct tools.

SBFN housings can be mounted at angles of 0°, 90°, 180° and 270°. To prevent oil leakage, the arrow on the cover should always point upward.

For SBFN and SBPN housings, the interface between the housing and covers should be coated with an oil-resistant sealant.

SBPN and SDM housings should be mounted so that the oil outlets with the plastic plugs are facing outward.

For additional information, contact the SKF application engineering service. SKF can also assist during mounting or provide a complete installation service

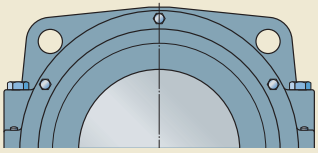
Eye bolts and lifting holes

SBFN and SBPN housings are supplied with an eye bolt on top. SDM housings have two flanges on the cap with a cast hole in each (→ **fig. 14**).

Cap bolt torque specifications

Cap bolts should be tightened to the recommended torque values listed in **table 4** on **page 601**).

Fig. 14



Condition monitoring

SBFN (→ **fig. 15**), SBPN (→ **fig. 16**) and SDM housings (→ **fig. 17**) have tapped holes (M8) for attaching condition monitoring sensors.

Housings with inch thread connections, designation suffix N9, have holes for attaching condition monitoring sensors with 5/16-18 UNC threads.

Fig. 15

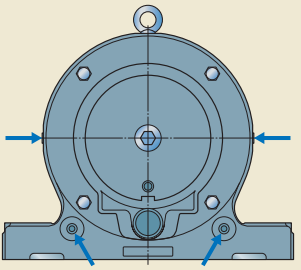


Fig. 16

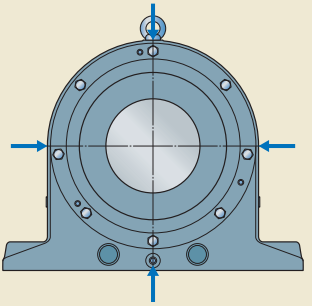
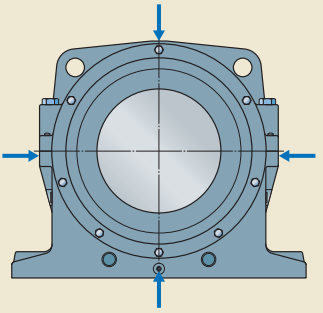


Fig. 17



Accessories

The following accessories are available for housings for paper machines:

- central lubrication systems, e.g. SKF Flowline
- condition monitoring sensors

For additional information, contact SKF.

Ordering information

SKF housings for paper machines are supplied complete with covers, seals and plugs. The bearings must be ordered separately.

Order example

Two housings with inch thread dimensions are required for a felt roll assembly – one for a 22218 EK/C3 spherical roller bearing in the locating bearing position, and one for a C 22218 K/C3 CARB toroidal roller bearing in the non-locating bearing position at the end of a shaft. The following items should be ordered (in addition to the bearings):

- 1 SBFN 2218 BFN9
- 1 SBFN 2218 ARAN9

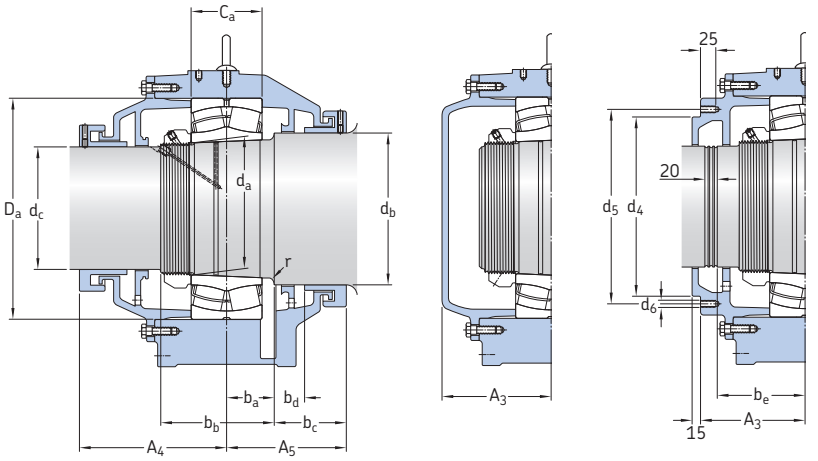
Two housings are required for a drying cylinder assembly – one for a 23144 CCK/C4W33 spherical roller bearing in the locating bearing position, and one for a C 3144 K/C4 CARB toroidal roller bearing in the non-locating bearing position at the end of a shaft. The housings require a special paint that can accommodate special customer requirements. The following items should be ordered (in addition to the bearings):

- 1 SBPN 3144 BF/P..
- 1 SBPN 3144 ARA/P..

Two housings are required for a Yankee cylinder – one for a 230/670 CAK/C084W33 spherical roller bearing in the locating bearing position, and one for a C 30/670 KM/C084 CARB toroidal roller bearing in the non-locating bearing position. The following items should be ordered (in addition to the bearings):

- 1 SDM 30/670 F
- 1 SDM 30/670 RA

13.1 SBPN drying cylinder housings
d_a **180 – 320** mm



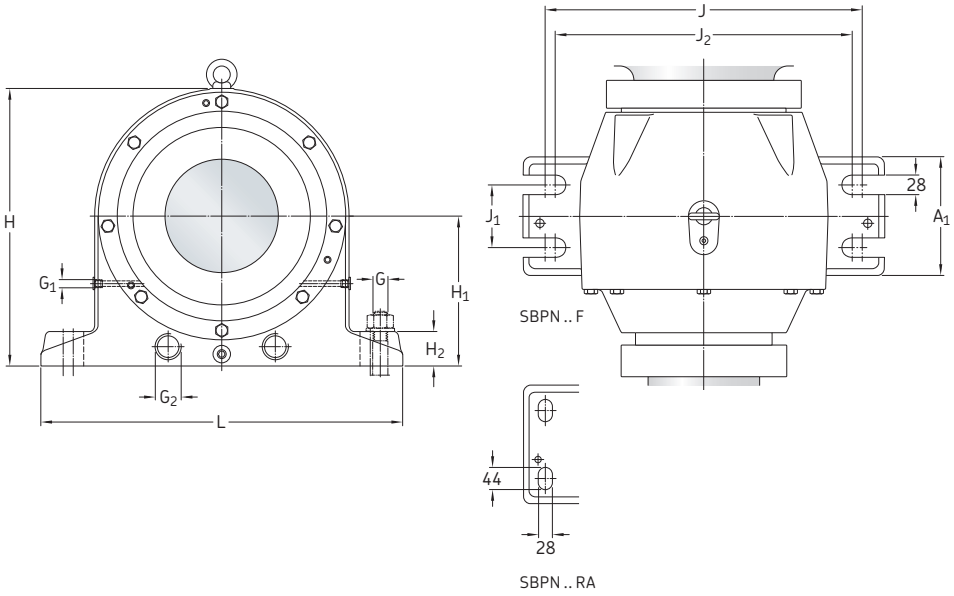
Housing for through shaft (designation suffix B)

Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

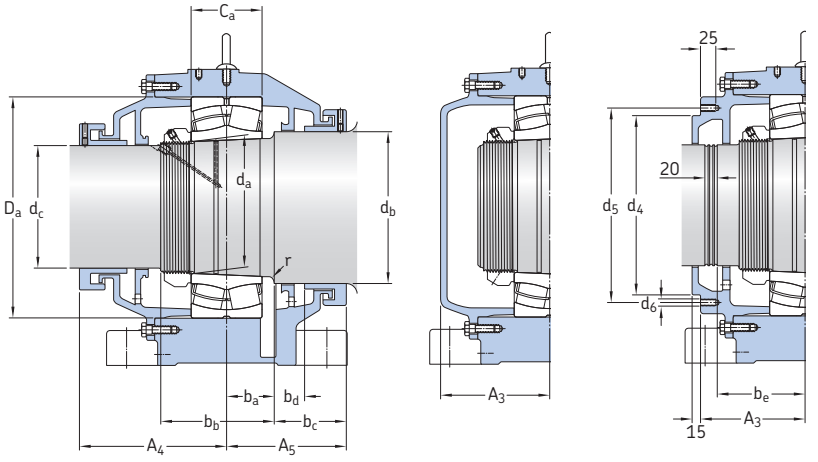
Shaft diameter d_a	**Housing** Designation	**Appropriate parts** Bearing[1]	Lock nut[2]	**Dimensions** Housing A_1	A_3	A_4	A_5	C_a	D_a	H	H_1	H_2	J	J_1	J_2	L
mm	–	–		mm												
180	**SBPN 3136 F** **SBPN 3136 RA**	23136 CCK/W33 C 3136 K	KMT 36	170	155	230	195	96	300	400	220	50	440	90	424	520
200	**SBPN 3140 F** **SBPN 3140 RA**	23140 CCK/W33 C 3140 K	KMT 40	200	165	240	200	112	340	440	240	55	485	115	469	570
220	**SBPN 3144 F** **SBPN 3144 RA**	23144 CCK/W33 C 3144 K	KMT 44	235	175	255	200	120	370	490	265	60	550	135	534	640
240	**SBPN 3148 F** **SBPN 3148 RA**	23148 CCK/W33 C 3148 K	KMT 48	250	190	265	215	128	400	535	285	65	580	150	564	680
260	**SBPN 3152 F** **SBPN 3152 RA**	23152 CCK/W33 C 3152 K	KMT 52	265	200	280	225	144	440	570	310	75	620	160	604	720
300	**SBPN 3160 F** **SBPN 3160 RA**	23160 CCK/W33 C 3160 K	KMT 60	300	215	290	235	160	500	630	335	85	720	180	704	820
320	**SBPN 3164 F** **SBPN 3164 RA**	23164 CCK/W33 C 3164 KM	KMT 64	320	225	300	255	176	540	680	360	85	760	200	744	880

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] As an alternative to KMT lock nuts, it is also possible to use KML or HM lock nuts with a locking device.



Shaft diameter	Dimensions Housing			Shaft												Mass Housing	
d_a	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	d_4	d_5	d_6	r	A	B
mm	–			mm							–	mm		–		kg	
180	M 24	G 1/2	G 1.1/4	65	150	130	55	128	200	160	M 180x3	225	250	M 12	5	118	115
200	M 24	G 1/2	G 1.1/4	75	170	125	50	138	230	180	M 200x3	265	290	M 12	8	133	147
220	M 24	G 1/2	G 1.1/4	75	190	125	50	148	250	200	Tr 220x4	305	330	M 12	8	189	205
240	M 24	G 1/2	G 1.1/4	85	205	130	55	163	275	220	Tr 240x4	335	360	M 12	8	244	256
260	M 24	G 1/2	G 1.1/2	95	225	130	55	173	300	240	Tr 260x4	355	380	M 12	8	259	273
300	M 24	G 1/2	G 1.1/2	105	250	130	55	188	340	280	Tr 300x4	435	460	M 12	8	342	358
320	M 24	G 1/2	G 1.1/2	115	270	140	65	198	360	300	Tr 320x5	455	480	M 12	8	445	465

13.2 SBPN drying cylinder housings – short, wide base
d_a **180 – 320** mm



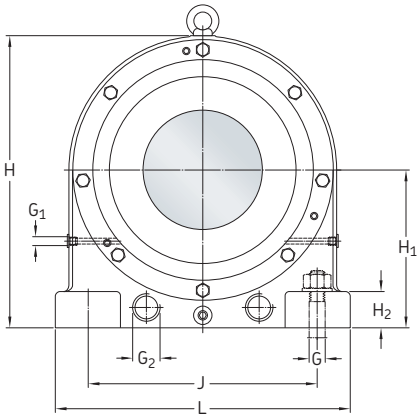
Housing for through shaft (designation suffix B)

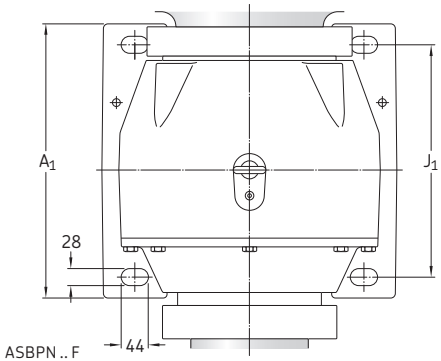
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

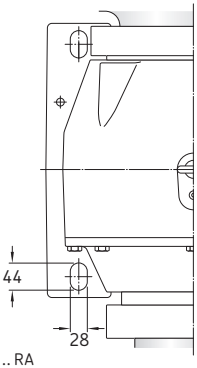
Shaft diameter	Housing Designation	Appropriate parts Bearing[1]	Lock nut[2]	Dimensions Housing										
d_a				A_1	A_3	A_4	A_5	C_a	D_a	H	H_1	H_2	J	L
mm	–	–		mm										
180	**ASBPN 3136 F** **ASBPN 3136 RA**	23136 CCK/W33 C 3136 K	KMT 36	350	155	230	195	96	300	400	220	50	320	400
220	**ASBPN 3144 F** **ASBPN 3144 RA**	23144 CCK/W33 C 3144 K	KMT 44	410	175	255	200	120	370	490	265	60	380	490
260	**ASBPN 3152 F** **ASBPN 3152 RA**	23152 CCK/W33 C 3152 K	KMT 52	445	200	280	225	144	440	570	310	75	470	580
300	**ASBPN 3160 F** **ASBPN 3160 RA**	23160 CCK/W33 C 3160 K	KMT 60	480	215	290	235	160	500	630	335	85	560	670
320	**ASBPN 3164 F** **ASBPN 3164 RA**	23164 CCK/W33 C 3164 KM	KMT 64	500	225	300	255	176	540	680	360	85	580	710

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] As an alternative to KMT lock nuts, it is also possible to use KML or HM lock nuts with a locking device.





ASBPN .. F



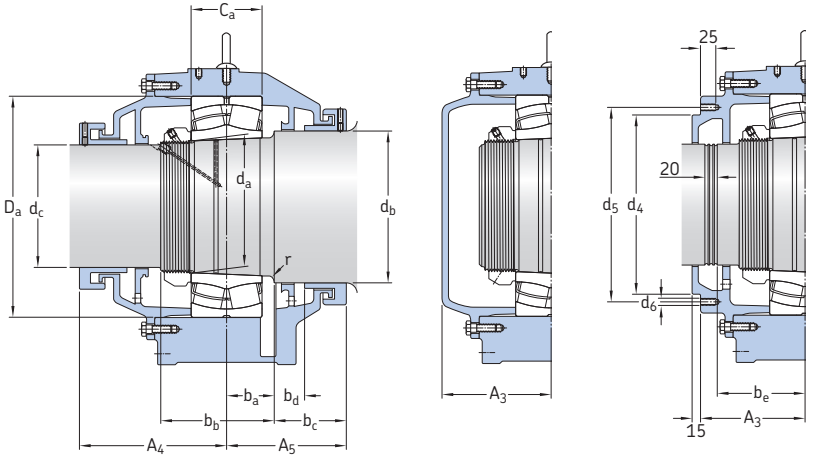
ASBPN .. RA

Shaft diameter	Dimensions Housing			Shaft												Mass Housing
d_a	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	d_4	d_5	d_6	r	
mm	–			mm							–	mm		–	mm	kg
180	M 24	G 1/2	G 1.1/4	65	150	130	55	128	200	160	M 180x3	225	250	M 12	5	1)
220	M 24	G 1/2	G 1.1/4	75	190	125	50	148	250	200	Tr 220x4	305	330	M 12	8	203
260	M 24	G 1/2	G 1.1/2	95	225	130	55	173	300	240	Tr 260x4	355	380	M 12	8	1)
300	M 24	G 1/2	G 1.1/2	105	250	130	55	188	340	280	Tr 300x4	435	460	M 12	8	1)
320	M 24	G 1/2	G 1.1/2	115	270	140	65	198	360	300	Tr 320x5	455	480	M 12	8	1)

1) Contact SKF for missing values.

13.3 SBPN drying cylinder housings, with inch connection threads

d_2 **180 – 320** mm



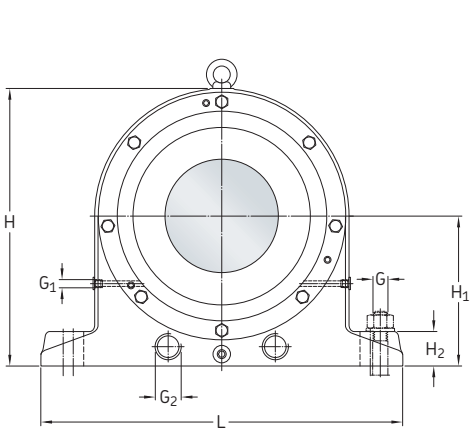
Housing for through shaft (designation suffix B)

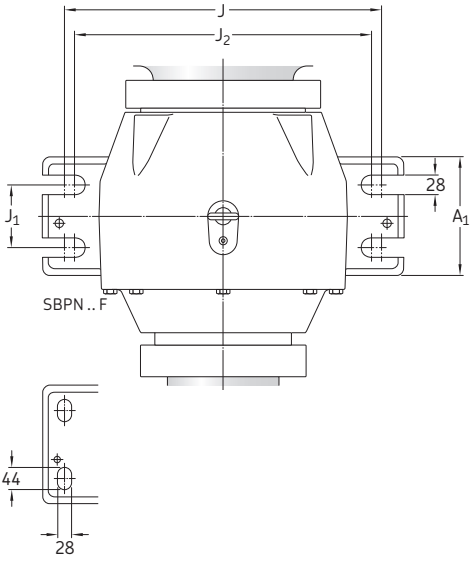
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	A_5	C_a	D_a	H	H_1	H_2	J	J_1	J_2	L
mm/*in.*	–	–			mm												
180 *7,087*	**SBPN 3136 FN9** **SBPN 3136 RAN9**	23136 CCK/W33 C 3136 K	N 036	W 036	170	155	230	195	96	300	400	220	50	440	90	424	520
200 *7,874*	**SBPN 3140 FN9** **SBPN 3140 RAN9**	23140 CCK/W33 C 3140 K	N 040	W 040	200	165	240	200	112	340	440	240	55	485	115	469	570
220 *8,661*	**SBPN 3144 FN9** **SBPN 3144 RAN9**	23144 CCK/W33 C 3144 K	N 044	W 044	235	175	255	200	120	370	490	265	60	550	135	534	640
240 *9,449*	**SBPN 3148 FN9** **SBPN 3148 RAN9**	23148 CCK/W33 C 3148 K	N 048	PL 48	250	190	265	215	128	400	535	285	65	580	150	564	680
260 *10,236*	**SBPN 3152 FN9** **SBPN 3152 RAN9**	23152 CCK/W33 C 3152 K	N 052	PL 52	265	200	280	225	144	440	570	310	75	620	160	604	720
300 *11,811*	**SBPN 3160 FN9** **SBPN 3160 RAN9**	23160 CCK/W33 C 3160 K	N 060	PL 60	300	215	290	235	160	500	630	335	85	720	180	704	820
320 *12,598*	**SBPN 3164 FN9** **SBPN 3164 RAN9**	23164 CCK/W33 C 3164 KM	N 064	PL 64	320	225	300	255	176	540	680	360	85	760	200	744	880

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.

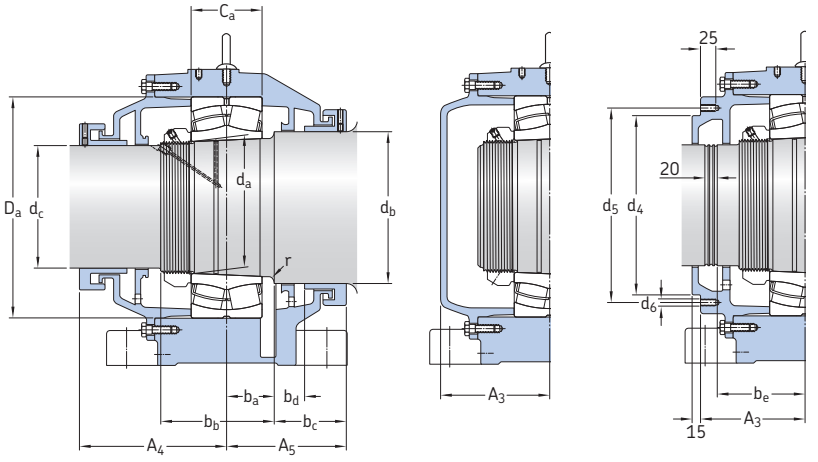




Shaft diameter	**Dimensions** Housing			Shaft								Threads/ inch					**Mass** Housing	
d_a	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d		d_4	d_5	d_6	r	A	B
mm/*in.*	–			mm							in.	–	mm		–	mm	kg	
180 *7,087*	1 UNC	NPTF 1/2	NPTF 1.1/4	65	150	130	55	128	200	160	7.063	8	225	250	M 12	5	118	115
200 *7,874*	1 UNC	NPTF 1/2	NPTF 1.1/4	75	170	125	50	138	230	180	7.844	8	265	290	M 12	8	133	147
220 *8,661*	1 UNC	NPTF 1/2	NPTF 1.1/4	75	190	125	50	148	250	200	8.625	8	305	330	M 12	8	189	205
240 *9,449*	1 UNC	NPTF 1/2	NPTF 1.1/4	85	205	130	55	163	275	220	9.439	6	335	360	M 12	8	244	256
260 *10,236*	1 UNC	NPTF 1/2	NPTF 1.1/2	95	225	130	55	173	300	240	10.189	6	355	380	M 12	8	259	273
300 *11,811*	1 UNC	NPTF 1/2	NPTF 1.1/2	105	250	130	55	188	340	280	11.781	6	435	460	M 12	8	342	358
320 *12,598*	1 UNC	NPTF 1/2	NPTF 1.1/2	115	270	140	65	198	360	300	12.559	6	455	480	M 12	8	445	465

13.4 SBPN drying cylinder housings, with inch connection threads – short, wide base

d **180 – 320** mm



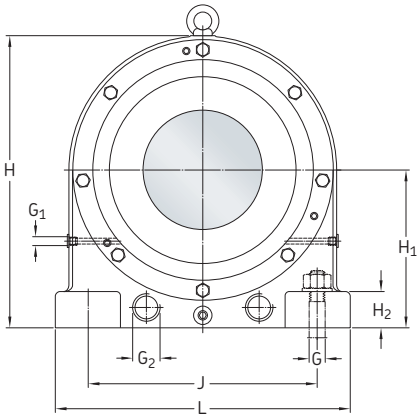
Housing for through shaft (designation suffix B)

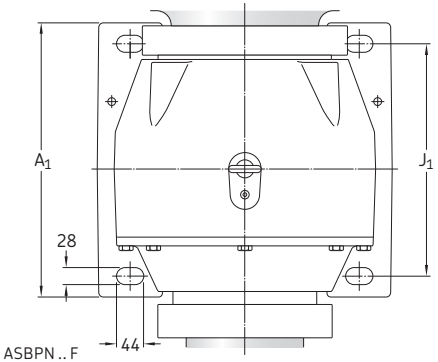
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

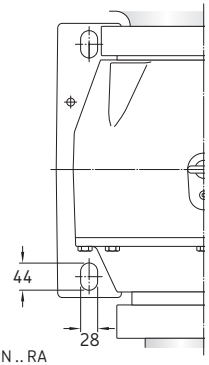
Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	A_5	C_a	D_a	H	H_1	H_2	J	J_1	L
mm/*in.*	–	–			mm											
180 *7.087*	**ASBPN 3136 FN9** **ASBPN 3136 RAN9**	23136 CCK/W33 C 3136 K	N 036	W 036	350	155	230	195	96	300	400	220	50	320	280	400
220 *8.661*	**ASBPN 3144 FN9** **ASBPN 3144 RAN9**	23144 CCK/W33 C 3144 K	N 044	W 044	410	175	255	200	120	370	490	265	60	380	340	490
260 *10.236*	**ASBPN 3152 FN9** **ASBPN 3152 RAN9**	23152 CCK/W33 C 3152 K	N 052	PL 52	445	200	280	225	144	440	570	310	75	470	375	580
300 *11.811*	**ASBPN 3160 FN9** **ASBPN 3160 RAN9**	23160 CCK/W33 C 3160 K	N 060	PL 60	480	215	290	235	160	500	630	335	85	560	410	670
320 *12.598*	**ASBPN 3164 FN9** **ASBPN 3164 RAN9**	23164 CCK/W33 C 3164 KM	N 064	PL 64	500	225	300	255	176	540	680	360	85	580	430	710

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.





ASBPN .. F



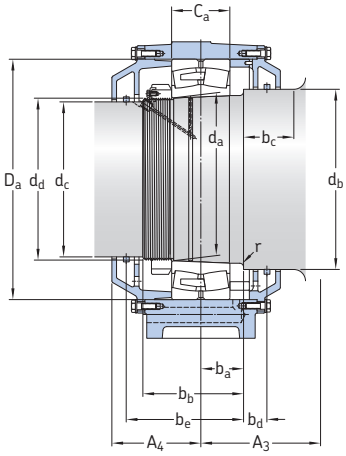
ASBPN .. RA

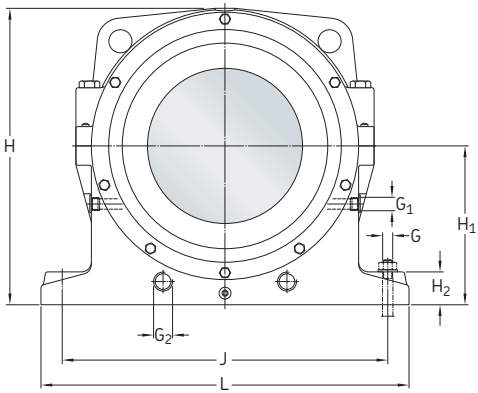
Shaft diameter	**Dimensions** Housing			Shaft								Threads/ inch					**Mass** Housing
d_a	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d		d_4	d_5	d_6	r	
mm/*in.*	–			mm							in.	–	mm				kg
180 *7.087*	1 UNC	NPTF 1/2	NPTF 1.1/4	65	150	130	55	128	200	160	7.063	8	225	250	M 12	5	[1]
220 *8.661*	1 UNC	NPTF 1/2	NPTF 1.1/4	75	190	125	50	148	250	200	8.625	8	305	330	M 12	8	203
260 *10.236*	1 UNC	NPTF 1/2	NPTF 1.1/2	95	225	130	55	173	300	240	10.189	6	355	380	M 12	8	[1]
300 *11.811*	1 UNC	NPTF 1/2	NPTF 1.1/2	105	250	130	55	188	340	280	11.781	6	435	460	M 12	8	[1]
320 *12.598*	1 UNC	NPTF 1/2	NPTF 1.1/2	115	270	140	65	198	360	300	12.559	6	455	480	M 12	8	[1]

[1] Contact SKF for missing values.

13.5 SDM Yankee cylinder housings

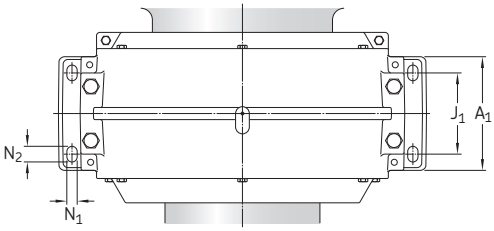
d **340 – 600** mm



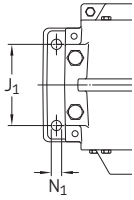


Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	C_a	D_a	H	H_1	H_2	J	J_1	L
mm	–	–			mm										
340	**SDM 3068 F** **SDM 3068 RA**	23068 CCK/W33 C 3068 K	HM 3068	MS 3068-64	260	195	210	133	520	650	345	75	760	170	860
	SDM 3168 F **SDM 3168 RA**	23168 CCK/W33 C 3168 KM	HM 3068	MS 3068-64	320	210	255	190	580	740	400	80	800	180	900
380	**SDM 3076 F** **SDM 3076 RA**	23076 CCK/W33 C 3076 K	HM 3076	MS 3080-76	260	200	220	135	560	710	380	80	790	170	890
420	**SDM 3084 F** **SDM 3084 RA**	23084 CAK/W33 C 3084 KM	HM 3084	MS 3084	280	205	230	150	620	765	410	85	840	180	950
	SDM 3184 F **SDM 3184 RA**	23184 CKJ/W33 C 3184 KM	HM 3084	MS 3084	400	290	310	224	700	910	480	85	1045	280	1165
460	**SDM 3092 F** **SDM 3092 RA**	23092 CAK/W33 C 3092 KM/C3	HM 3092	MS 3092-88	310	220	250	163	680	850	450	85	970	200	1090
530	**SDM 30/530 F** **SDM 30/530 RA**	230/530 CAK/W33 C 30/530 KM	HM 30/530	MS 30/600-530	360	240	270	185	780	960	510	85	1090	240	1200
	SDM 31/530 F **SDM 31/530 RA**	231/530 CAK/W33 C 31/530 KM	HM 30/530	MS 30/600-530	410	325	355	272	870	1065	550	85	1220	240	1360
600	**SDM 30/600 F** **SDM 30/600 RA**	230/600 CAK/W33 C 30/600 KM/C3	HM 30/600	MS 30/600-530	410	325	355	200	870	1065	550	85	1220	240	1360

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.



SDM .. RA

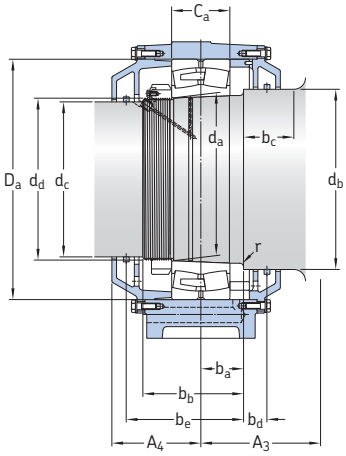


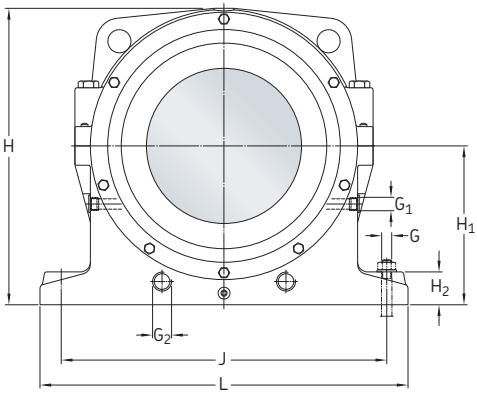
SDM .. F

Shaft diameter	**Dimensions** Housing					Shaft									**Mass** Housing
d_a	N_1	N_2	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	r	
mm	mm		–			mm							–	mm	kg
340	30	50	M 24	G 1	G 1.1/4	95	225	130	65	270	380	320	Tr 340x5	10	386
	30	50	M 24	G 1	G 2	130	295	110	48	353	390	320	Tr 340x5	10	572
380	30	50	M 24	G 1	G 1.1/4	95	230	135	70	280	420	360	Tr 380x5	10	475
420	30	50	M 24	G 1	G 1.1/2	110	260	130	60	305	465	400	Tr 420x5	10	494
	30	50	M 24	G 1	G 1.1/2	180	375	150	70	450	465	400	Tr 420x5	10	882
460	30	50	M 24	G 1	G 1.1/2	110	270	140	70	320	510	430	Tr 460x5	10	750
530	38	58	M 30	G 1	G 2	135	300	140	65	365	580	500	Tr 530x6	10	914
	38	58	M 30	G 1	G 2	195	425	160	85	505	590	500	Tr 530x6	10	1 530
600	38	58	M 30	G 1	G 2	160	345	195	120	470	660	560	Tr 600x6	15	1 550

13.5 SDM Yankee cylinder housings

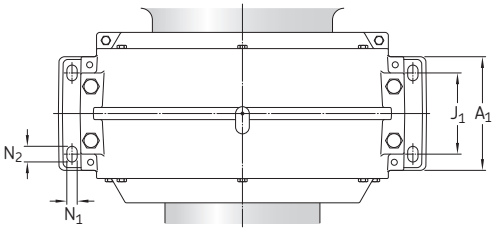
d **630 – 670** mm



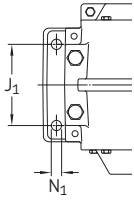


Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	C_a	D_a	H	H_1	H_2	J	J_1	L
mm	–	–			mm										
630	**SDM 31/630 F** **SDM 31/630 RA**	231/630 CAK/C3W33 C 31/630 KMB/HA3C4	HM 31/630	MS 31/630	510 [2]	[2]	[2]	315	1 030 [2]		700 [2]		1 330	350	1 500
670	**SDM 30/670 F** **SDM 30/670 RA**	230/670 CAK/W33 C 30/670 KM/HA3C4	HM 30/670	MS 30/670	420	300	330	230	980	1 180	620	85	1 260	300	1 380

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Contact SKF for missing values.



SDM .. RA



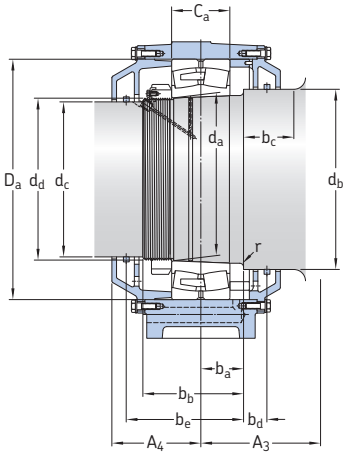
SDM .. F

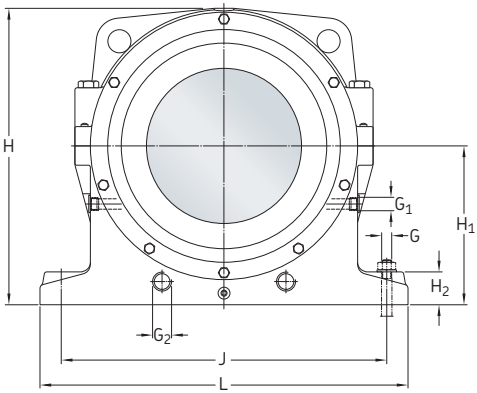
Shaft diameter	**Dimensions** Housing					Shaft									**Mass** Housing
d_a	N_1	N_2	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	r	
mm	mm		–			mm							–	mm	kg
630	38	58	M 30	G 1	G 2	[1]	[1]	[1]	[1]	[1]	710	590	Tr 630x6	[1]	2 420
670	38	58	M 30	G 1	G 2	190	395	150	65	475	750	630	Tr 670x6	15	1 420

[1] Contact SKF for missing values.

13.6 SDM Yankee cylinder housings, with inch connection threads

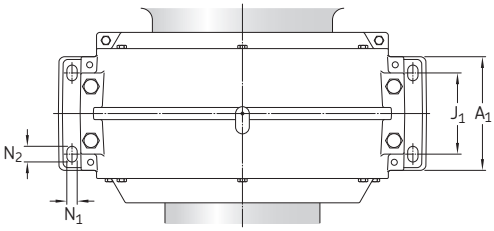
d **340 – 600** mm



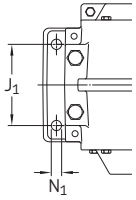


Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	C_a	D_a	H	H_1	H_2	J	J_1	L
mm/*in.*	–	–			mm										
340 *13.368*	**SDM 3068 FN9** **SDM 3068 RAN9**	23068 CCK/W33 C 3068 K	N 068	PL 68	260	195	210	133	520	650	345	75	760	170	860
	SDM 3168 FN9 **SDM 3168 RAN9**	23168 CCK/W33 C 3168 KM	N 068	PL 68	320	210	255	190	580	740	400	80	800	180	900
380 *14.961*	**SDM 3076 FN9** **SDM 3076 RAN9**	23076 CCK/W33 C 3076 K	N 076	PL 76	260	200	220	135	560	710	380	80	790	170	890
420 *16.535*	**SDM 3084 FN9** **SDM 3084 RAN9**	23084 CAK/W33 C 3084 KM	N 084	PL 84	280	205	230	150	620	765	410	85	840	180	950
	SDM 3184 FN9 **SDM 3184 RAN9**	23184 CKJ/W33 C 3184 KM	N 084	PL 84	400	290	310	224	700	910	480	85	1 045	280	1 165
460 *18.110*	**SDM 3092 FN9** **SDM 3092 RAN9**	23092 CAK/W33 C 3092 KM/C3	N 092	PL 92	310	220	250	163	680	850	450	85	970	200	1 090
530 *20.866*	**SDM 30/530 FN9** **SDM 30/530 RAN9**	230/530 CAK/W33 C 30/530 KM	N 530	PL 530	360	240	270	185	780	960	510	85	1 090	240	1 200
	SDM 31/530 FN9 **SDM 31/530 RAN9**	231/530 CAK/W33 C 31/530 KM	N 530	PL 530	410	325	355	272	870	1 065	550	85	1 220	240	1 360
600 *23.622*	**SDM 30/600 FN9** **SDM 30/600 RAN9**	230/600 CAK/W33 C 30/600 KM/C3	N 600	PL 600	410	325	355	200	870	1 065	550	85	1 220	240	1 360

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.



SDM .. RA

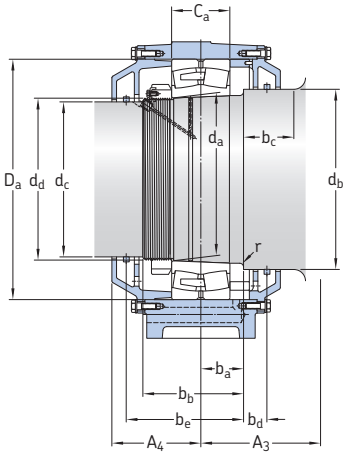


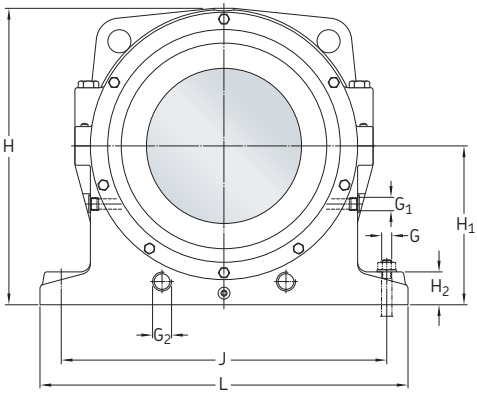
SDM .. F

Shaft diameter	**Dimensions** Housing					Shaft										**Mass** Housing
d_a	N_1	N_2	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	threads/ inch	r	
mm/*in.*	mm		in.			mm							in.	–	mm	kg
340 *13.368*	30	50	1 UNC	NPTF 1	NPTF 1.1/4	95	225	130	65	270	380	320	13.303	5	10	386
	30	50	1 UNC	NPTF 1	NPTF 2	130	295	110	48	353	390	320	13.303	5	10	572
380 *14.961*	30	50	1 UNC	NPTF 1	NPTF 1.1/4	95	230	135	70	280	420	360	14.921	5	10	475
420 *16.535*	30	50	1 UNC	NPTF 1	NPTF 1.1/2	110	260	130	60	305	465	400	16.496	5	10	494
	30	50	1 UNC	NPTF 1	NPTF 1.1/2	180	375	150	70	450	465	400	16.496	5	10	882
460 *18.110*	30	50	1 UNC	NPTF 1	NPTF 1.1/2	110	270	140	70	320	510	430	18.071	5	10	750
530 *20.866*	38	58	1.1/4 UNC	NPTF 1	NPTF 2	135	300	140	65	365	580	500	20.827	4	10	914
	38	58	1.1/4 UNC	NPTF 1	NPTF 2	195	425	160	85	505	590	500	20.827	4	10	1 530
600 *23.622*	38	58	1.1/4 UNC	NPTF 1	NPTF 2	160	345	195	120	470	660	560	23.583	4	15	1 550

13.6 SDM Yankee cylinder housings, with inch connection threads

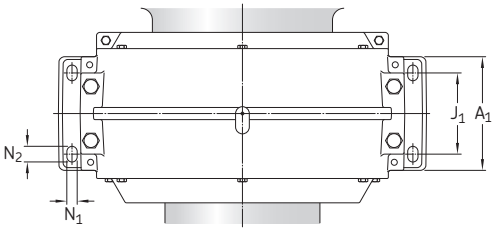
d **630–670** mm



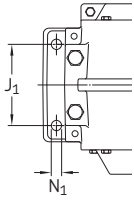


Shaft diameter d_a	Housing Designation	Appropriate parts Bearing[1]	Lock nut	Locking clip	Dimensions Housing A_1	A_3	A_4	C_a	D_a	H	H_1	H_2	J	J_1	L
mm/*in.*	–	–			mm										
630 *24.803*	**SDM 31/630 FN9** **SDM 31/630 RAN9**	231/630 CAK/C3W33 C 31/630 KMB/HA3C4	N 630	PL 630	510	[2]	[2]	315	1 030	[2]	700	[2]	1 330	350	1 500
670 *26.378*	**SDM 30/670 FN9** **SDM 30/670 RAN9**	230/670 CAK/W33 C 30/670 KM/HA3C4	N 670	PL 670	420	300	330	230	980	1 180	620	85	1 260	300	1 380

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Contact SKF for missing values.



SDM .. RA



SDM .. F

Shaft diameter	**Dimensions** Housing					Shaft										**Mass** Housing
d_a	N_1	N_2	G	G_1	G_2	b_a	b_b	b_c min.	b_d	b_e	d_b	d_c	d_d	threads/ inch	r	
mm/*in.*	mm		in.			mm							in.	–	mm	kg
630 *24.803*	38	58	1.1/4 UNC	NPTF 1	NPTF 2	1)	1)	1)	1)	1)	710	590	24.760	4	1)	1)
670 *26.378*	38	58	1.1/4 UNC	NPTF 1	NPTF 2	190	395	150	65	475	750	630	26.339	4	15	1 420

1) Contact SKF for missing values.