

PRODUCT CATALOG

PLUMMER BLOCKS

In-house Manufacturing.
Individually Optimized Bearings.
Significant Price Advantage.



SIMPLY
WELL-
ENGINEERED





PRODUCT CATALOG
PLUMMER BLOCKS



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LFD BEARINGS

CONVEYOR IDLERS AND PULLEYS

The LFD Group specializes in the manufacturing and distribution of bearings for the material handling industry. Whether your application is designed for bulk material or single unit dispatch, we have the right solution for your requirements.

LFD's engineering team will recommend an optimized design that is tailored to your specific application, taking into account all relevant variables, such as extreme temperature variations, dust and dirt, as well as noise and vibration requirements. In the material handling industry, our bearings are being used in just about any kind of application including drive and tension stations, turn stations as well as guide pulleys and idlers.



BEARING PRODUCTION ACCORDING TO GERMAN STANDARDS

For decades, we have successfully supplied the material handling industry, developing tailor-made solutions for our customers. Our flexible manufacturing structure allows us to fulfill your requests quickly and efficiently. In close collaboration with you, we develop solutions ensuring long service life, corrosion resistance, smooth running, freedom from maintenance, and energy efficient design – optimized for your particular application and environment.

Our installed customer base values LFD's know-how. We invite you to benefit from our long experience and specific expertise. Fully automated production lines guarantee consistently high quality bearings. As a business practice, all production facilities within the LFD Group are managed in accordance with strict German quality standards. As a result, LFD bearings are extremely resistant, even under extreme conditions.

CAST IRON WITH FLAKE GRAPHITE IN ACCORDANCE WITH DIN EN 1561

Due to the graphite content, the LFD plummer blocks feature excellent heat conductivity as well as outstanding damping properties. LFD plummer blocks are characterized by very high dimensional stability.

For higher loads, LFD offers plummer blocks made of spheroidal cast iron in accordance with DIN EN 1563. Via the desulfurization of the molten metal, a graphite of nearly spherical shape is obtained, the so-called spheroidal graphite or spheroidal cast iron.



LONG BEARING SERVICE LIFE

LFD engineers work diligently to optimize a bearing solution that is tailored to the customer's specific application. We address all critical aspects such as roughness, minimization of noise, lubricants, seals and load carrying capacities, among many others.

A bearing lasts longer, and performs better, when all critical combinations of the components are optimized. However, LFD bearings are designed so that all our standard products can be utilized in a multitude of demanding applications. The particularly high quality of the bearing steels provides the basis: a remarkable degree of purity guarantees, among others, high utilization levels and therefore long service life.



ENERGY EFFICIENT

Surfaces that have undergone LFD's superfinishing lead, due to minimized roughness, to excellent rolling characteristics. The optimization of the operational clearance for the application has a positive impact on the running smoothness of LFD bearings, resulting in significant energy savings during operation. The natural loss of power as a result of metallic friction in bearings is minimized.

LFD chooses for the application at hand the appropriate lubricants, which are designed for temperatures that range between -20°C and $+120^{\circ}\text{C}$. For high temperature environments, combinations of special bearings, lubricants and seals are recommended.

The purpose of the lubricant is, among others, to reduce or prevent the metallic friction of the bearing components by creating a separating lubricant film. If rotational speeds are too low for promoting the formation of a lubricating film, EP-additives in the grease help to keep wear at a low level, despite important forces at work.

LOGISTICS WITH WORLD-WIDE WAREHOUSE CAPACITIES

As a manufacturer, LFD has representations and warehouse facilities on all continents of the globe. As a result, we are able to offer the quickest possible delivery times to our customers.

Thanks to our strong logistics partners, which are represented in over 100 countries with their own offices, we can offer additional advantages. All possible logistics requests can be implemented quickly and reliably world-wide, as close proximity to our customers is a priority for us.



EFFICIENT AND FAVORABLY PRICED

Due to their many advantages, LFD SNL plummer blocks can be employed for numerous applications in a wide range of industries.

The LFD plummer blocks distinguish themselves by their secure and precise assembly, which contributes to minimizing the installation costs. An increased heat dissipation of up to 10% not only extends service life, but also reduces the consumption of lubricants. Their rugged construction allows the use in virtually all industry sectors. With a multitude of seals available, specific environmental conditions can be addressed effectively, in order to ensure long service life. Furthermore, the possibility of relubrication is also beneficial for service life.

Additionally, in combination with various LFD bearings, an adaptation to any kind of load is possible. Thanks to these advantages, the SNL 5, the S 30, and the SD 31 plummer blocks, as well as the 7225 flange units, are utilized in open pit and underground mining, conveyor and transport technology, as well as metalworking—in Germany and all around the world.



Industry sectors

- Cellulose and paper industry
- Metalworking
- Mining and building industry
- Fans
- Conveyor technology
- Handling systems

Requirements

- Long service life
- Rugged construction
- Long lubrication intervals
- Possibility for relubrication
- Possibility for bearing condition monitoring
- Safeguard against mixing up the cover parts
- Quick and easy installation and removal





1.0 LFD SNL 5.. PLUMMER BLOCK HOUSINGS, GENERAL

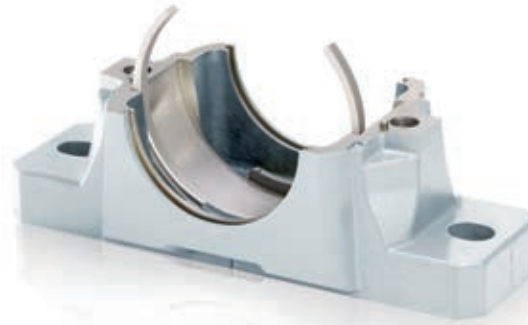
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Plummer block housings

LFD plummer blocks are predominantly made of grey cast iron; other materials such as spheroidal cast iron or cast steel are available on request.



Locating/non-locating bearings

LFD plummer blocks are generally designed so that the bearing is movable. By inserting one or two locating rings, as shown, a locating bearing is created.



Seals

The following seal variants are used with LFD bearing plummer blocks: double lip seal, felt seal, V-ring seal, labyrinth seal, Taconite seals or an end cover.



Bearings

LFD offers spherical roller bearings and self-aligning ball bearings optimized for the application. They can accommodate misalignments and shaft deflections of the bearing seats. Numerous designs are available.



Fasteners

For locating bearings with a tapered bore, LFD offers easy to install adapter and withdrawal sleeves, which are located with lock nuts and lock washers.



Design

LFD collaborates with you to find an optimized solution for your bearing plummer block.

1.1 YOUR COMBINATION OPTIONS

LFD SNL plummer blocks can be combined depending on your specific requirements. In this manner, you can choose exactly what you need and select the combination that is the most suitable and economical.

LFD plummer block housings

As standard, the plummer blocks are made of grey cast iron. Should a higher degree of rigidity be required, then LFD can offer plummer blocks with identical dimensions made of spheroidal cast iron.

As standard, two screw holes are provided for threaded connections. On request, the plummer blocks can also be delivered with four screw holes.

LFD bearings

You can choose between spherical roller bearings and self-aligning ball bearings. Depending on the rotational speeds or loads as well as the inclination and deflection, the choice of the right bearing is of great importance. Please refer to the respective datasheet for the technical specifications of the bearings.

If you require a locating bearing, please make sure that you order the right number of locating rings, as LFD always assumes a non-locating bearing will be used.

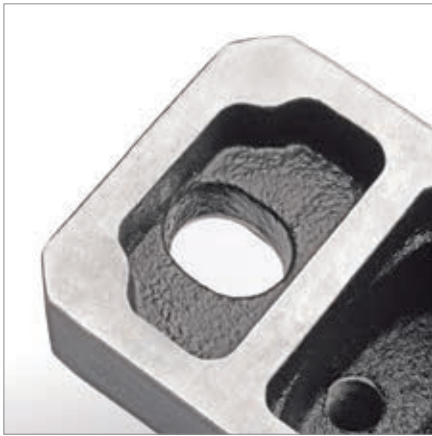
Seals

Depending on the requirement or seal specification, you can select from the following variants: double lip seal, felt seal, V-ring seal, labyrinth seal and one of the combined Taconite seals. In the case of shaft end bearings, you also have the option of fitting the plummer block with an end cover.



1.2 CHARACTERISTICS OF THE LFD SNL PLUMMER BLOCK HOUSINGS

Due to the modular system, in combination with the characteristics of the bearing and sealing options, economic and application-related advantages can be achieved.



Reinforced construction – features of the construction

The plummer block base is reinforced by means of a crosspiece on each side, as a result of which the mounting surface is increased. In conjunction with the plummer block wall, the crosspieces surround the mounting holes in the base, thereby supporting the plummer block on its mounting surface. The mounting screws can be preloaded for the secure fastening of the plummer block without leading to the distortion of the mounting surface or the plummer block base. Additionally, the SNL construction allows an oil bath lubrication even in the case of higher rotational speeds and long relubrication intervals.



Relubrication

As standard, the LFD SNL plummer blocks are fitted with a lubrication hole at the top of the plummer block. Hence, depending on the requirements, it is possible to relubricate the bearing via the provided lubrication nipple.



Optimized heat dissipation

The pronounced central supports in the plummer block base generate an increased area of heat dissipation at the mounting surface. This results in an increased heat dissipation of up to 10% between the bearing and the mounting surface. The reduced operating temperature increases the service life and reduces the consumption of lubricants.



Assembly safeguarding

The upper and lower parts of the plummer block are not interchangeable. To allow a simple and safe assembly, mounting pins have been fitted to the plummer block and act as an anti-rotation stop.



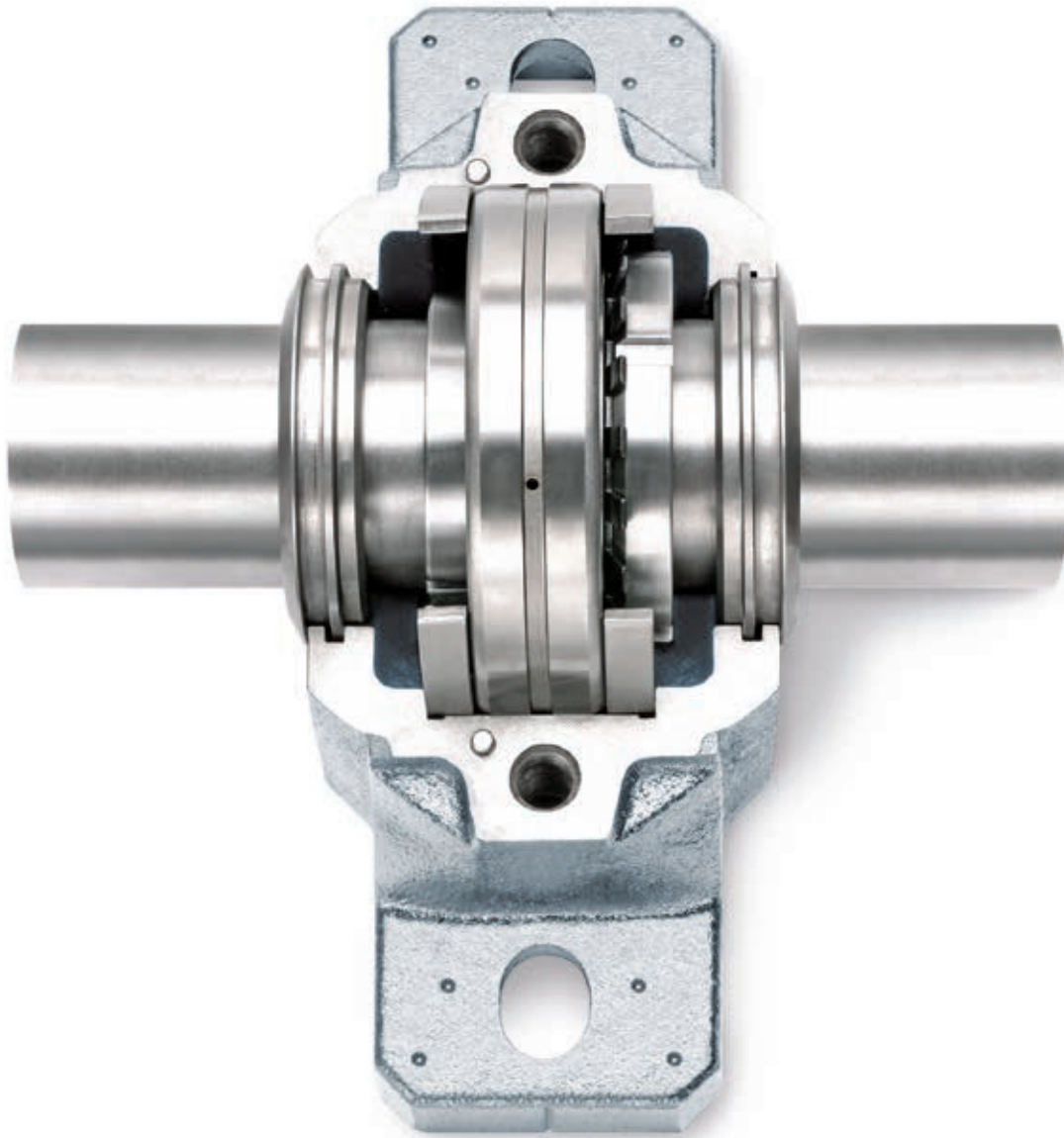
Alignment during assembly

A marking on the plummer block foot, which is aligned vertically to the axis of the locating bore in the plummer block, allows the quick and precise alignment of an LFD SNL plummer block.

Advantages

- Five sealing variants
- Various bearing layouts
- Simple maintenance
- Reinforced construction
- Rugged against overtightening of the mounting screw
- Reduction of the operating temperature due to increased heat dissipation
- Increased service life
- Reduction of the lubricant
- Relubrication is possible
- Assembly safeguarding
- Secure and precise assembly





1.3 BEARING SEAT

Bearing seat with an adapter sleeve

A bearing with a tapered bore (suffix K) can be secured on the shaft by using an adapter sleeve. For that matter, a distinction must be made whether a through shaft (**figure 1**), which is the most inexpensive solution, or a shouldered shaft (**figure 2**) is used. For a shouldered shaft, a support ring as well as a sleeve are additionally required.

Bearing seat with a withdrawal sleeve

A bearing with a withdrawal sleeve is beneficial when the bearing must be mounted and dismounted frequently. For that purpose, the shaft must be shouldered and an additional sleeve is required (**figure 3**).

Bearing seat located directly on a shouldered shaft

Bearings with a direct seat on the shaft can absorb greater axial loads. Furthermore, larger impact loads can be absorbed in this manner. Due to the tolerance of the cylindrical bearing seat, radial distortions during mounting can be ruled out. Therefore, the shaft has to be shouldered and an additional sleeve used (**figure 4**).

Figure 1: Bearing with adapter sleeve on a through shaft

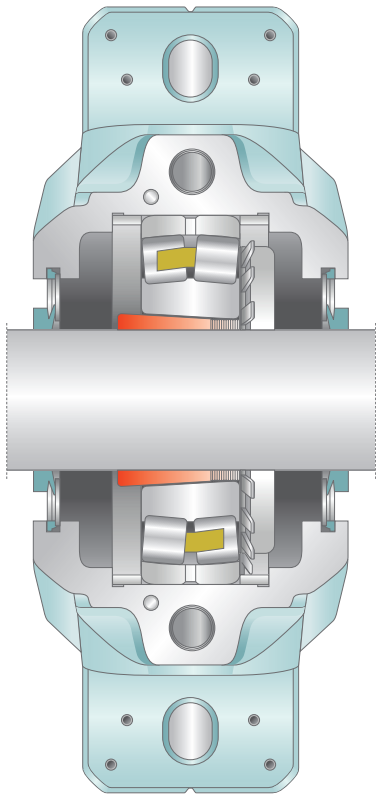


Figure 2: Bearing with adapter sleeve on a shouldered shaft

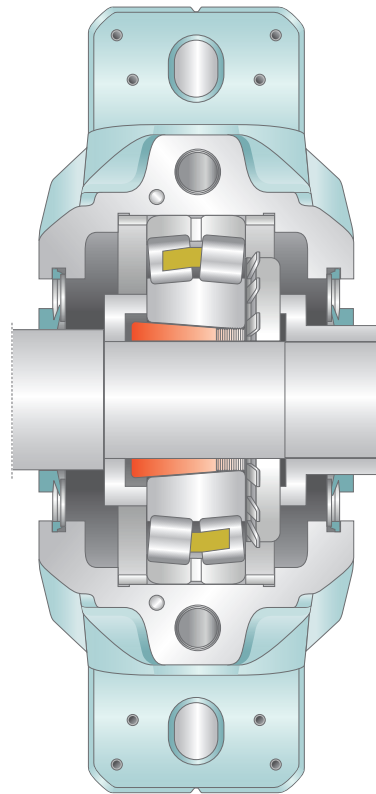


Figure 3: Bearing with withdrawal sleeve on a shouldered shaft

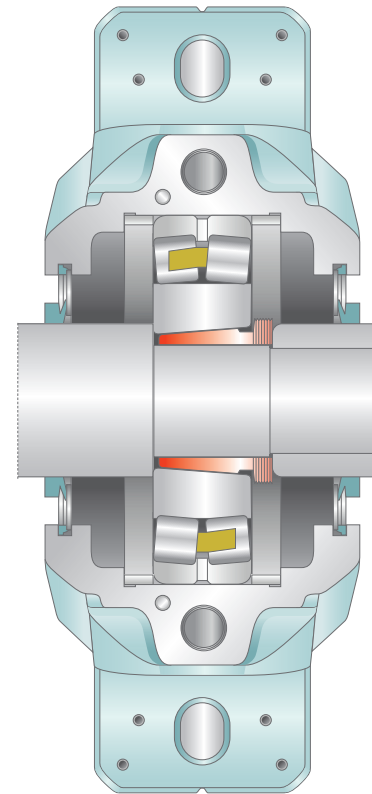
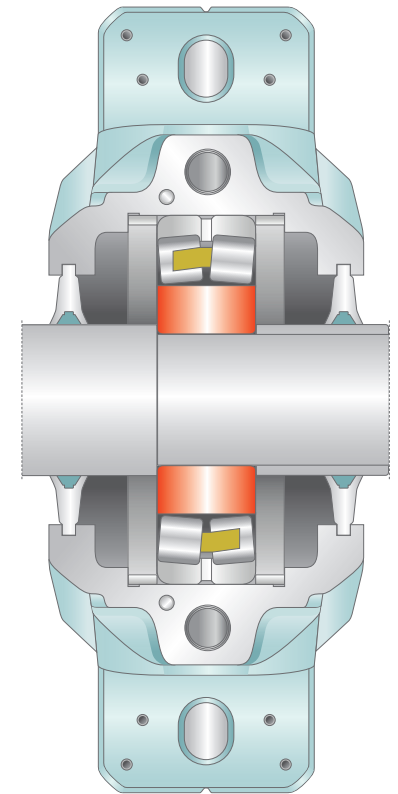


Figure 4: Bearing seat directly on a shouldered shaft



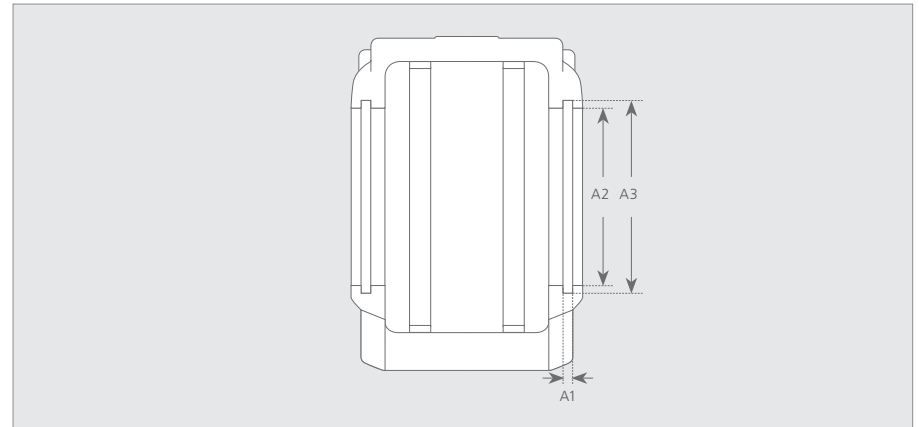
1.4 END COVER (ASNH)

On the shaft end, the LFD SNL plummer blocks can be fitted with an end cover ASNH made of plastic. This cover is inserted into the plummer block instead of the seal (**figure 5**). The plastic cover is suitable up to an operating temperature of max. 100 °C. At higher temperatures, a cover made of sheet steel has to be used. The cover is to be positioned with a corresponding round cord, which is suitable for higher temperatures. The dimensions of the sealing groove can be found in **table 1**.

1.5 LOCATING RINGS (FRB)

Generally, the LFD SNL plummer blocks are constructed as non-locating bearings, thereby enabling shifting. When a locating bearing arrangement is required, locating rings (FRB) must be inserted on both sides (**figure 6**).

Table 1: Dimensions of the plummer block grooves



Plummer block	Dimensions			Plummer block	Dimensions		
Designation	A ₁	A ₂	A ₃	Designation	A ₁	A ₂	A ₃
	mm				mm		
SNL 508	5	51,5	59,5	SNL 518	5	102,5	111,0
SNL 509	5	56,5	64,5	SNL 519	6	131,0	141,0
SNL 510	5	62,0	70,5	SNL 520	6	137,5	147,5
SNL 511	5	67,0	75,5	SNL 522	6	147,5	157,5
SNL 512	5	72,0	80,5	SNL 524	6	157,5	167,5
SNL 513	5	77,0	85,5	SNL 526	6	167,5	177,5
SNL 515	5	87,0	95,5	SNL 528	6	177,5	187,5
SNL 516	5	92,5	101,0	SNL 530	6	192,5	202,5
SNL 517	5	97,5	106,0	SNL 532	6	202,5	212,5

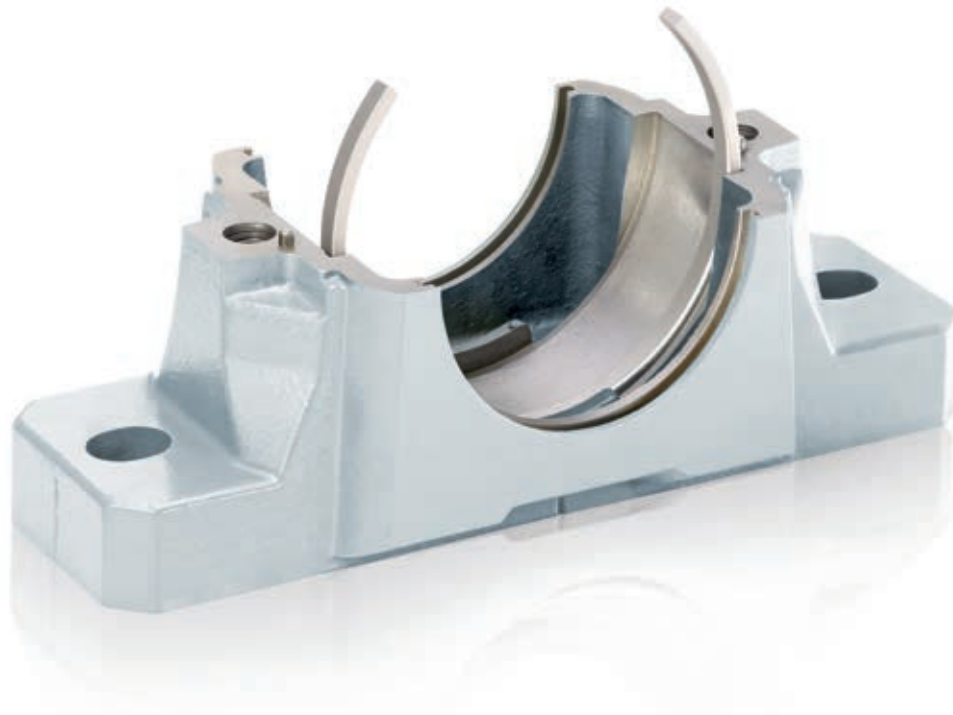


Figure 5: Plummer block with end cover (ASNH)

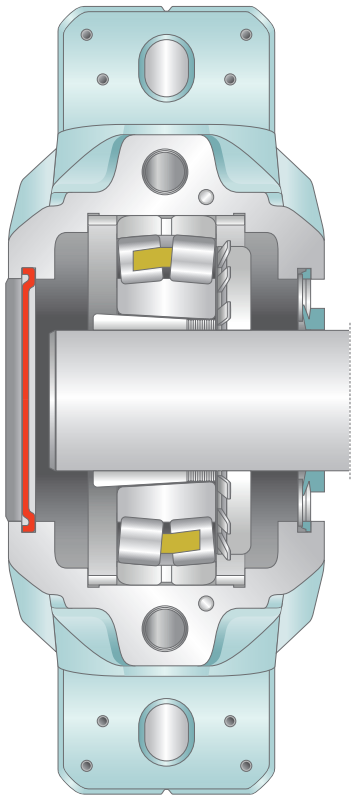
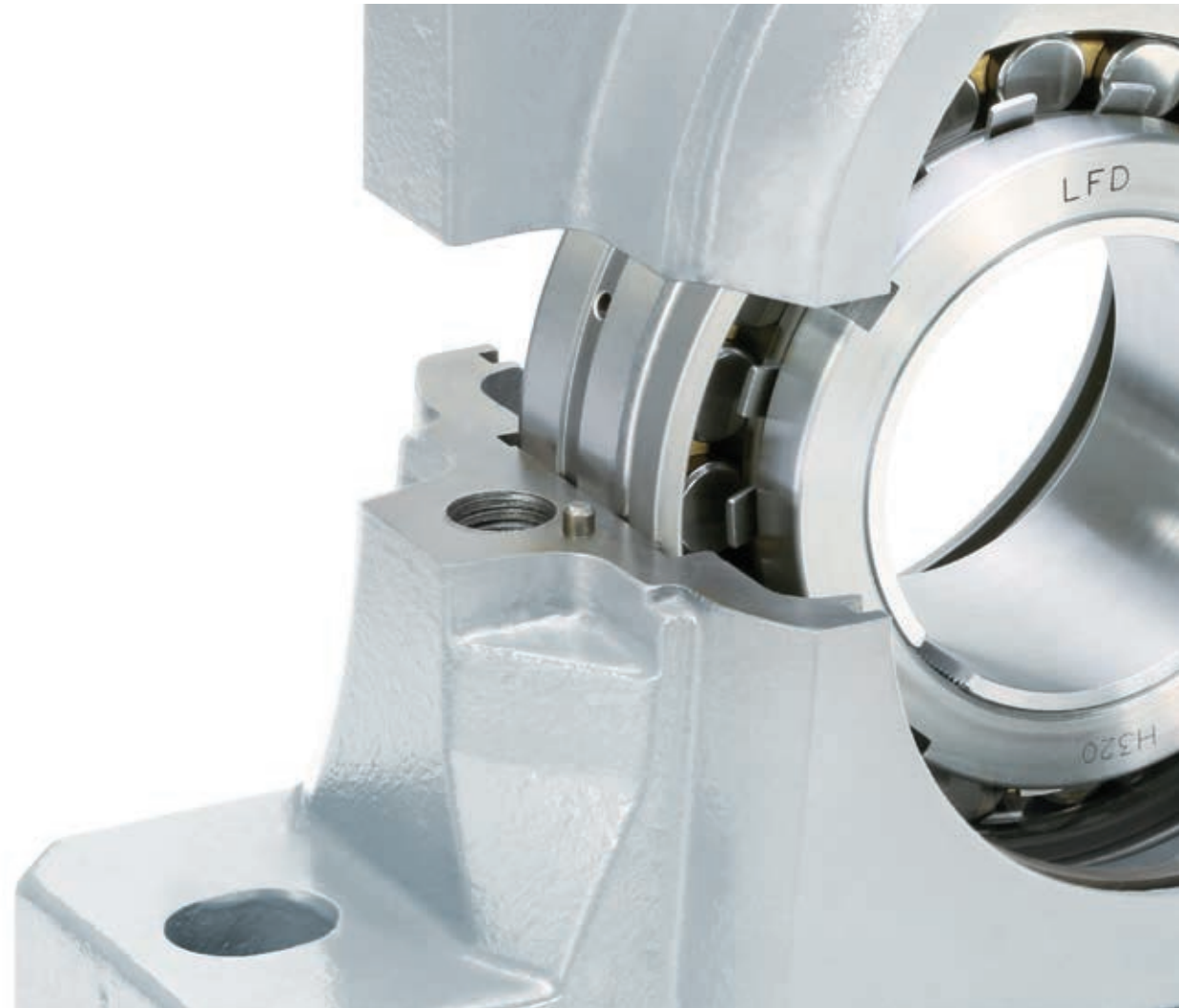
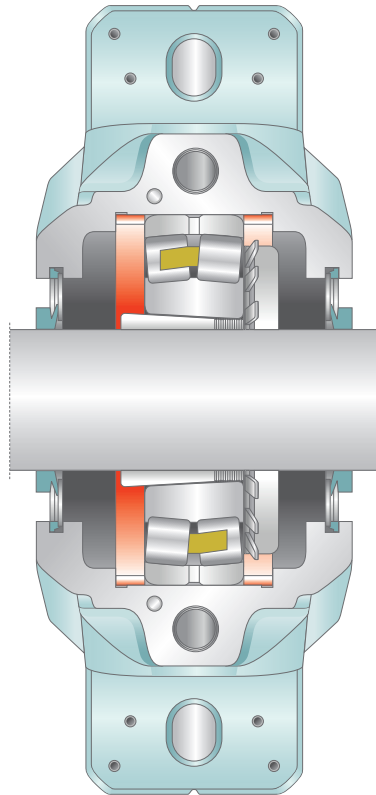


Figure 6: Plummer block with locating ring (FRB)





2.0

2.0 LUBRICATION, CONSTRUCTION AND MOUNTING

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2.1 LUBRICATION: GENERAL

The construction of the LFD SNL plummer blocks makes it possible to lubricate the installed bearing with both grease and oil. However, essentially grease lubrication is recommended.

The respective operating conditions are decisive for the selection of the lubricant. In this regard, the recommendations of the specific lubricant must be followed.

LFD recommends the use of grease lubrication in its plummer blocks. Generally speaking, the correct quantity at the initial fill will provide lubrication for the duration up to the first routine inspection.

2.2 GREASE LUBRICATION

As a rule, the quantity of grease filled during assembly or following an inspection will be sufficient for correct lubrication until the next inspection. However, certain operating conditions such as high rotational speeds, operating temperatures or loads will make more frequent relubrication necessary.

For this, there is the possibility for relubrication in the upper section of the plummer block. As required, the bearing can be relubricated by using the lubrication nipple AH 1/8-27 PT, which is included with the delivery of the plummer block. Additional punch markings (green arrows – **figure 11, page 24**) indicate locations for additional lubrication points.

With LFD, you can relubricate not only the bearing position, but also, if necessary, the sealing joints. For this, punch markings have been fitted in the center outside (red arrows – **figure 11, page 24**).

The correct feed for the lubricant to the bearing position depends on the selected design:
 - For the version with an end cover, the side of the plummer block where the end cover is installed has to be chosen under any circumstances (**figure 9**).

- For the version with a withdrawal sleeve, the back of the withdrawal sleeve should always be chosen (**figure 8**).
- Regarding LFD bearings that are equipped with a circumferential groove with lubrication holes (suffixes W20, W26, W33...), the bearing should be provided with lubricant directly via the outer ring (**figure 7**).

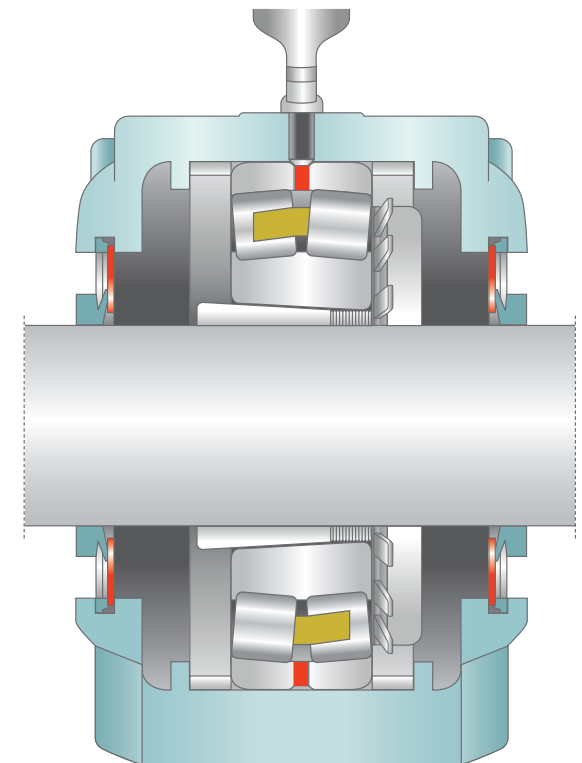


Figure 7:
Lubrication of the bearings via the circumferential groove

Warning:

When using double lip seals TSN 5.. G and felt seals TSN 5.. C, excess lubricant cannot escape from the plummer block. This may lead to overheating and cause the premature failure of the bearing. Should the operating conditions be such that the bearings have to be relubricated rather frequently, then an opening, as shown in **figure 10**, should be installed to allow the lubricant to escape. With regard to double lip seals, it must be taken into account that when surface speed is too high, the sealing lips will be destroyed by overheating.

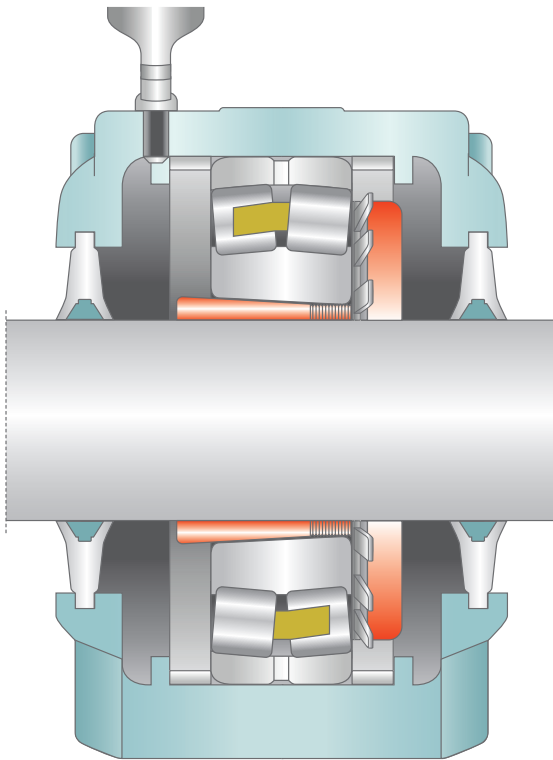


Figure 8:
Lubrication of the bearings with a withdrawal sleeve

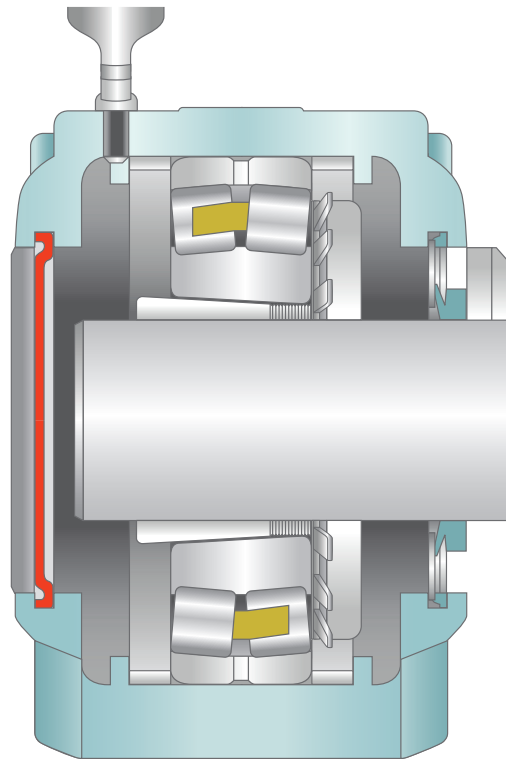


Figure 9:
Lubrication of the bearings with an end cover

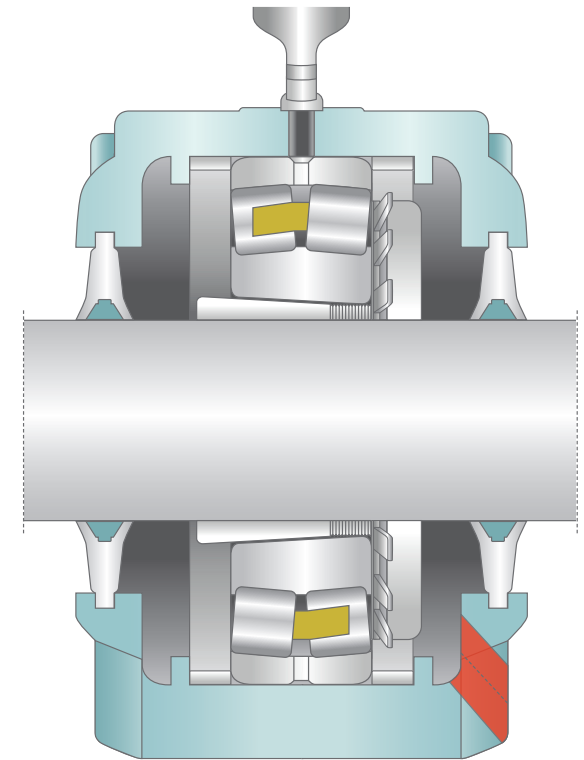


Figure 10:
Lubricant exit opening

2.3 CONSTRUCTION

LFD bearings and LFD SNL plummer blocks have been designed for a long service life, provided a number of points are followed:

In order to achieve a safe and long service life, the installation should primarily be performed by qualified staff, having a certain experience with bearings and plummer blocks. In the course of installation, only tools which allow a correct assembly should be used. The plummer block support surface must be prepared in such a manner that a surface roughness of $R_a < 12,5$ is achieved.

Depending on the bearing that is used, the tightening torque applied has to be such as to not limit the radial clearance of the bearing too much. To ensure that the bearing has sufficient bearing clearance, it can be verified with a feeler gauge. Often, it is sufficient to tilt the bearing during installation. When a slight resistance is encountered, the bearing seat is sufficiently located. The seals must be prepared and installed as described.

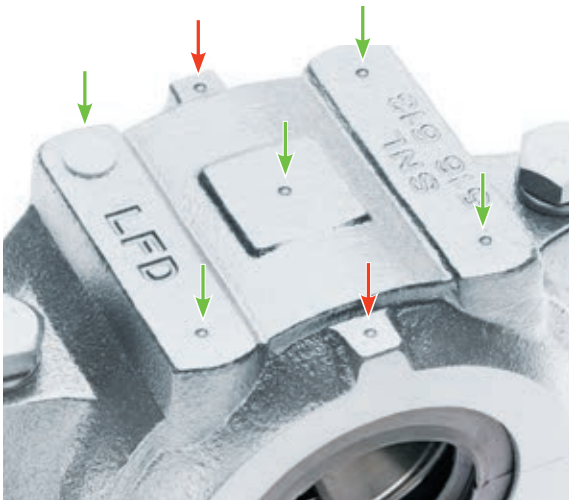
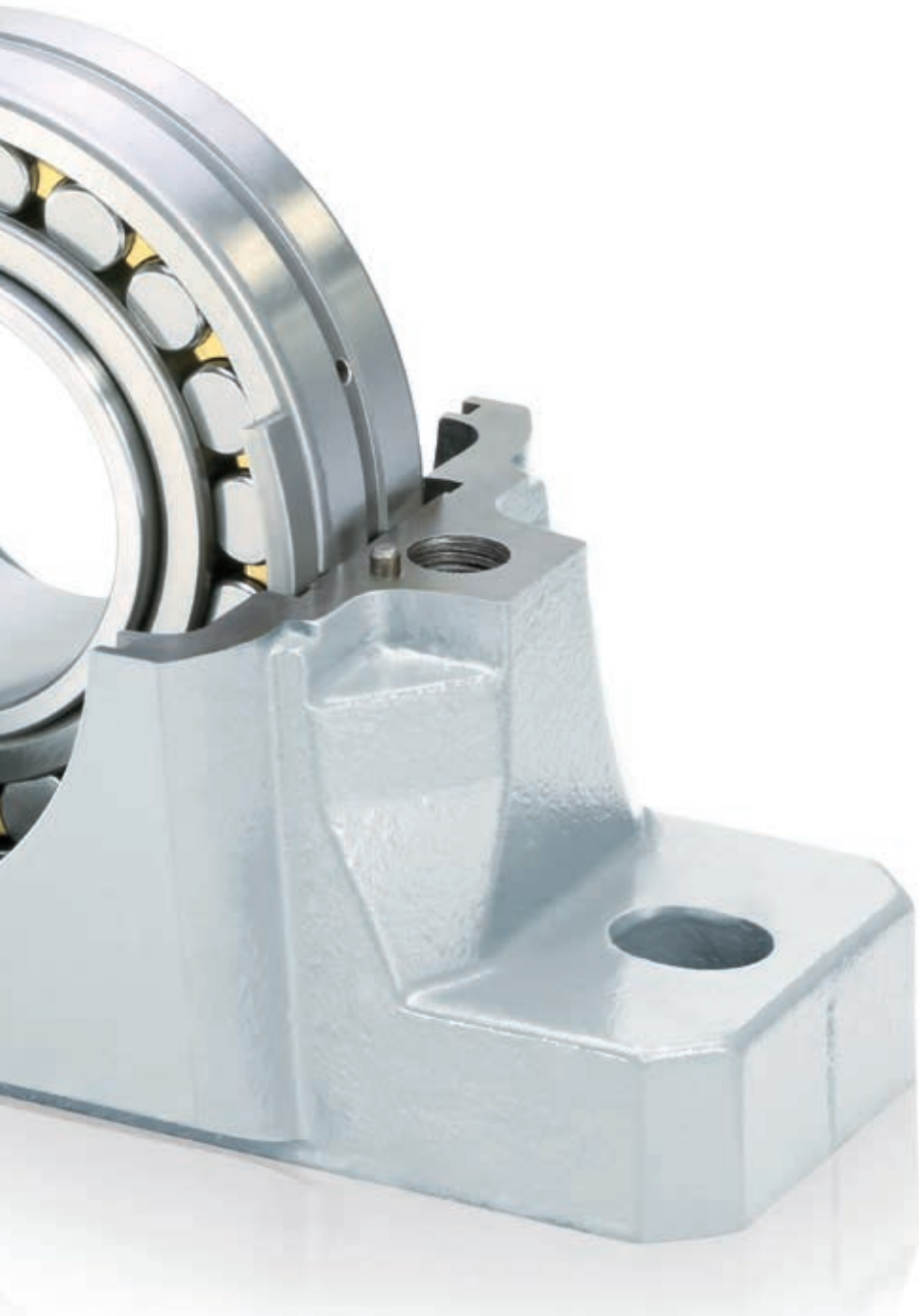


Figure 11:

The five arrows marked in green indicate the punch markings for the possible position of a lubrication nipple for the lubrication of the bearing.

The two arrows marked in red are punch markings for lubrication nipples for the lubrication of the sealing groove.





2.4 MOUNTING

As standard, LFD SNL plummer blocks are delivered with two mounting holes. On request, the plummer blocks can also be ordered with four mounting holes, suffix H4 (**table 2 – page 26**).

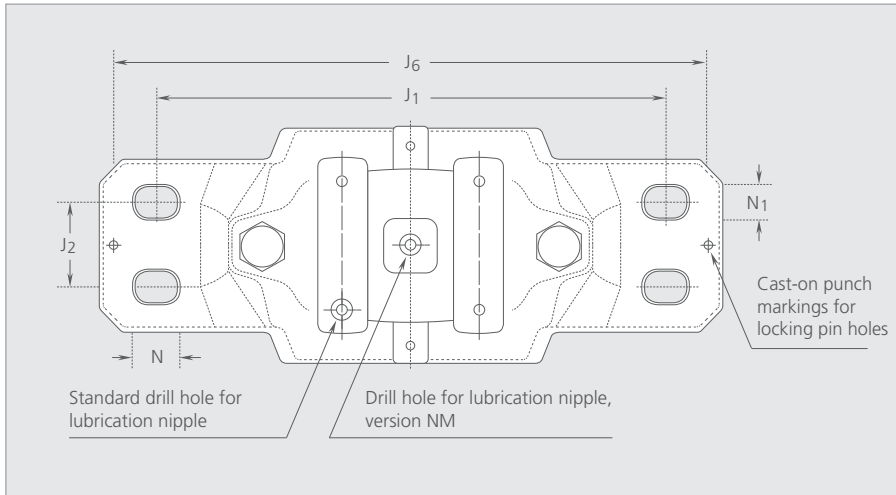
However, it is also possible to drill additional mounting holes. Punch markings have been fitted to the plummer block base for this purpose. The dimensions for the respective mounting holes can be found in **table 3** on **page 26**.



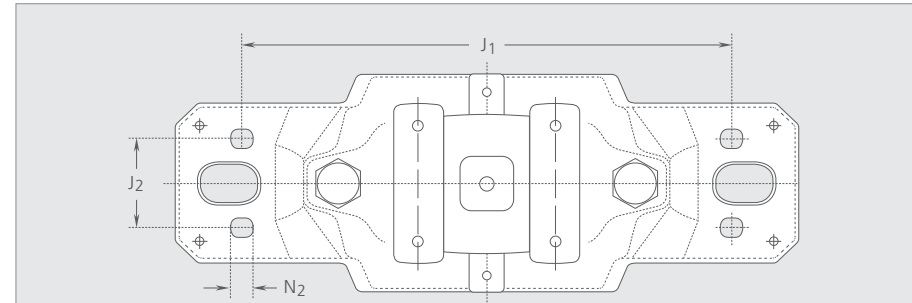
2.5 SET SCREWS AND LOCKING PINS

The set screws used for LFD SNL plummer blocks are hexagon head bolts in accordance with DIN EN ISO 4014:2011 of strength class 8.8. Whether screws with a higher strength class, e.g. 10.9, must be used, has to be decided on an individual basis.

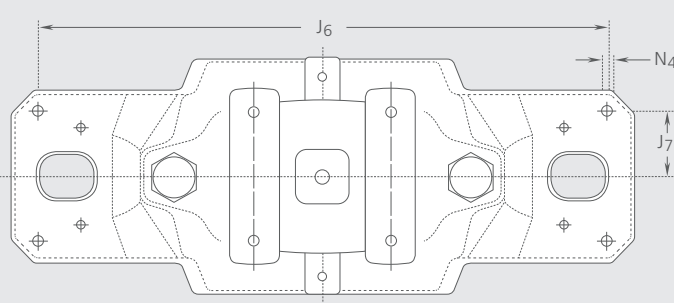
When load directions other than the permissible ones in perpendicular direction to the mounting surface act on the unit, so-called locking pins can be pinned to the mounting surface. The boreholes for the locking pins that are to be used can be found in **table 4** on **page 27**.

Table 2: Dimensions of the pre-ordered screw holes H4

Plummer block	Dimensions					
	Designation	N [mm]	N ₁ [mm]	J ₁ [mm]	J ₂ [mm]	J ₆ [mm]
SNL 511 H4		20	15	210	35	234
SNL 513 H4		20	15	230	40	252
SNL 515 H4		20	15	230	40	257
SNL 516 H4		24	18	260	50	288
SNL 517 H4		24	18	260	50	292
SNL 518 H4		24	18	290	50	317
SNL 520 H4		24	18	320	60	348
SNL 522 H4		24	18	350	70	378
SNL 524 H4		24	18	350	70	378
SNL 526 H4		28	22	380	70	414
SNL 528 H4		32	26	420	80	458
SNL 530 H4		32	26	450	90	486
SNL 532 H4		32	26	470	90	506

Table 3: Dimensions for additional screw holes

Plummer block	Dimensions			Suitable screw size	
	Designation	J ₁ [mm]	J ₂ [mm]		N ₂ [mm]
SNL 508		160	34	11	M 10
SNL 509		160	34	11	M 10
SNL 510		160	34	11	M 10
SNL 511		200	40	14	M 12
SNL 512		200	40	14	M 12
SNL 513		220	48	14	M 12
SNL 515		220	48	14	M 12
SNL 516		252	52	18	M 16
SNL 517		252	52	18	M 16
SNL 518		280	58	18	M 16
SNL 519		280	58	18	M 16
SNL 520		300	66	18	M 16
SNL 522		320	74	18	M 16
SNL 524		330	74	18	M 16
SNL 526		370	80	22	M 20
SNL 528		400	92	26	M 24
SNL 530		430	100	26	M 24
SNL 532		450	100	26	M 24

Table 4: Dimensions for locking pins


The technical drawing shows a top view of a plummer block with three locking pins. Dimension J6 is the total length of the block. Dimension J7 is the height of the block. Dimension N4 is the maximum height of the locking pins. The drawing also shows various mounting holes and a central slot.

Plummer block	Dimensions		
Designation	J ₆ [mm]	J ₇ [mm]	N ₄ max [mm]
SNL 508	188	22	6
SNL 509	188	22	6
SNL 510	188	22	6
SNL 511	234	24,5	8
SNL 512	234	27	8
SNL 513	252	29	8
SNL 515	257	29	8
SNL 516	288	33	8
SNL 517	292	33	8
SNL 518	317	35	8
SNL 519	317	35	8
SNL 520	348	39	8
SNL 522	378	44	8
SNL 524	378	44	8
SNL 526	414	46	12
SNL 528	458	54	12
SNL 530	486	58	12
SNL 532	506	58	12





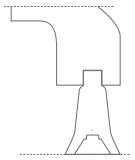
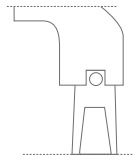
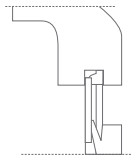
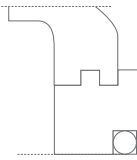
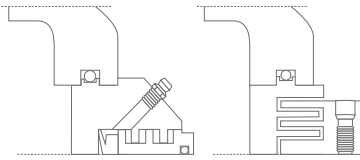
3.0 SEALS

3.0

3.1	Sealing options and their advantages	30
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3.1 SEALING OPTIONS AND THEIR ADVANTAGES

Table 5:

	Double lip seal TSN 5.. G	Felt seal TSN 5.. C	V-ring seal TSN 5.. A	Labyrinth seal TSN 5.. S	Combined Taconite seal TSN 5.. ND
Constructional features					
Operating temperature in °C	-40 to +100	-40 to +100	-40 bis +100	- 50 to + 200	- 40 to + 100
Surface speed in m/s	up to 8	up to 4	up to 7 beyond that only with axial support of the V-ring	good for high rotational speeds	good for high rotational speeds
Compensation of misalignment in degrees	0,5 to 1	up to 0,5	1 to 1,5	up to 0,3	up to 1
Can be relubricated	with grease discharge opening	with grease discharge opening	good	good	very good
Non-locating bearing	very good	very good	limited suitability	good	limited suitability
Locating bearing	very good	very good	very good	very good	very good

Suitable for sealing against					
Dust	very good	good	good	good	limited suitability
Fine solid parts	very good	limited suitability	good	good	good
Rough solid parts	good	limited suitability	limited suitability	good	good
Sharp-edged particles, fragments	good	good	not suitable	very good	very good
Splashing liquids	good	limited suitability	good	not suitable	limited suitability
Solar radiation	good	very good	not suitable	very good	very good



3.2 PERMISSIBLE SHAFT SPEEDS FOR CONTACT SEALS

TSN 5.. C and TSN 5.. G, at operating temperatures of -40 °C up to +100 °C

With the use of a variety of seals, the field of application of the LFD SNL plummer blocks is expanded considerably and the service life is also increased. LFD offers five different seal types: double lip seal, felt seal, V-ring seal, labyrinth seal and combined Taconite seals. The seals are delivered as half or full rings and can therefore be easily installed in the lower or upper shell of the plummer block or directly on the shaft.

In the case of double lip seals and felt seals, attention must be paid that the lubricant does not become congested, as excess lubricant cannot escape through the seal.

The specifications featured in table 6 should be used as guide values for the permissible rotational speed with seals. The choice of the seals, however, must also be made in line with the specific operating temperatures. Every type of seal can be used in the operating temperature range of -40 °C up to +100 °C. Outside of this range, labyrinth seals should be used.

Likewise, the surface speed must be adapted, so that the lip seals are not damaged. Otherwise, the use of labyrinth seals is recommended.

Detailed information on each type of seal is provided on the following pages.

Table 6:

Shaft diameter at the sealing surface	Speeds in [min-1] on the basis of admissible sliding velocities	
	4 m/s	8 m/s
[mm]		
35	2180	4360
40	1910	3820
45	1700	3390
50	1530	3060
55	1390	2780
60	1270	2550
65	1180	2350
70	1090	2180
75	1020	2040
80	960	1910
85	900	1800
90	850	1700
95	800	1610
100	760	1530
110	690	1390
115	660	1330
120	640	1270
125	610	1220
130	590	1180
135	570	1130
140	550	1090

3.3 DOUBLE LIP SEAL TSN 5.. G

Figure 12: The advantages of the double lip seal made of polyurethane lie in its high elasticity and the wear-resistant material. It can compensate for misalignment of 1°, for shafts up to 100 mm, and beyond that of 0.5°. The surface speed can be up to 8 m/s. However, attention must be paid that the lips do not get overheated.

Should the plummer block be relubricated, attention must be paid that lubricant does not become congested, as the double lip seal does not allow excess lubricant to pass through. In this case, the surface speed should not exceed 4 m/s and the plummer block should be fitted with a lubricant exit opening at its bottom. The surface roughness Ra on the shaft should be < 3.2 µm in order to achieve an optimal sealing effect.

Figure 12:
Double lip seal

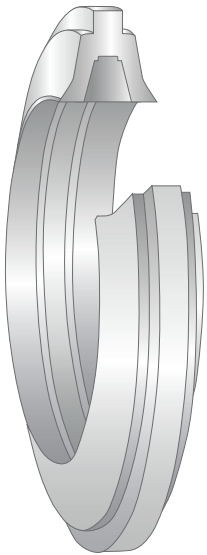
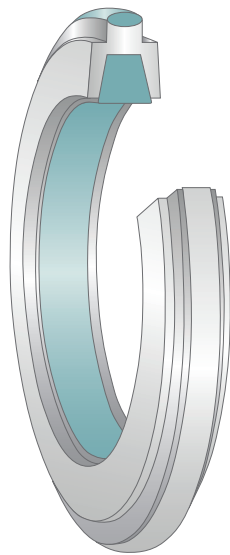


Figure 13:
Felt seal



3.4 FELT SEAL TSN 5.. C

Figure 13: Felt seals are made of felt strips inserted in aluminum half rings. They can compensate inclinations of shafts of up to 0.5°. With a surface speed of above 4 m/s, the contact seal becomes a contactless seal, as a small gap is created between the shaft and the seal.

Should the plummer block be relubricated, attention must be paid that lubricant does not become congested, as the felt seal does not allow excess lubricant to pass through. In this case, the surface speed should not exceed 4 m/s and the plummer block should be fitted with a lubricant exit opening at the bottom of the plummer block. The surface roughness Ra on the shaft should be < 3.2 µm in order to achieve an optimal sealing effect. In order to prevent the seal from rotating along at high surface speeds, a round cord can be positioned in the groove.

3.5 V-RING SEAL TSN 5.. A

Figure 14: A V-ring seal consists of a V-ring with a molded lip seal. This is advantageous at high surface speeds of up to 12 m/s or with only roughly finished shafts. Due to its fixed seat on the shaft, it rotates along. At higher surface speeds, the seal must be secured with a support ring (**figure 15**) on the shaft against lift-off. It can compensate for misalignment of up to 1.5°, for shafts of 50 mm, and up to 1° for shafts of 150 mm. It is only suitable for operating temperatures of -40 °C up to +100 °C.

3.6 LABYRINTH SEAL TSN 5.. S

Figure 16: The seal rings made of steel are advantageous in challenging conditions and at high rotational speeds. Labyrinth seals form a tight sealing gap with the plummer block groove and are delivered together with the round cords, which are positioned between the shaft and the sealing ring. The round cord ensures that the seal rotates along on the shaft.

Inclinations of the shaft of up to 0.3° can be compensated. It is suitable for operating temperatures of -50°C up to $+200^\circ\text{C}$.

Figure 14:
V-ring seal

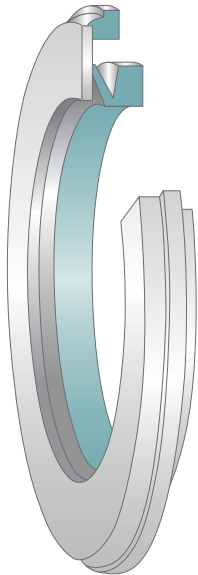


Figure 15:
V-ring seal with support ring

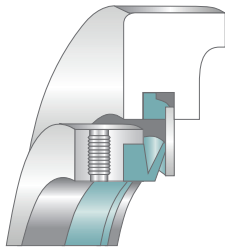


Figure 16:
Labyrinth seal

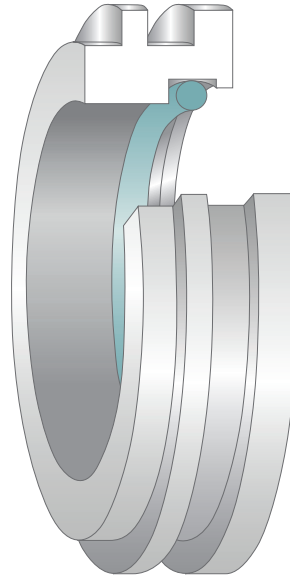


Figure 17:
Combined Taconite seal
with radial labyrinth seal

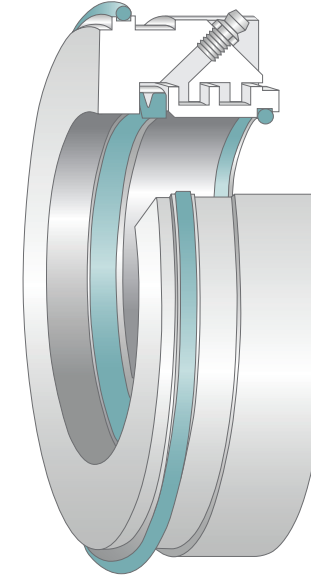
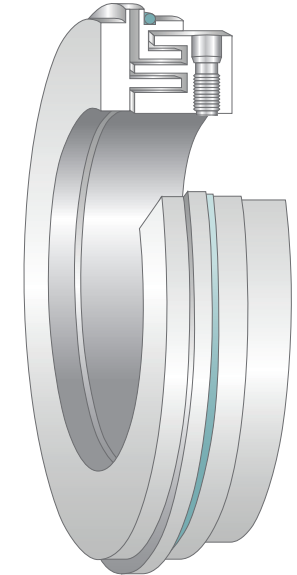


Figure 18:
Combined Taconite seal
with axial labyrinth seal



3.7 COMBINED TACONITE SEAL TSN 5.. ND

Figures 17 + 18: Taconite seals are labyrinth seals. They are beneficial during very demanding operating situations. Additionally, they can also be used for high rotational speeds. The seal can be relubricated in the non-rotating part via a lubrication nipple.

The surface speed can be up to 8 m/s. Inclinations of the shaft of up to 0.5° can be compensated. It is suitable for operating temperatures of -40°C up to $+100^\circ\text{C}$.



4.0 MOUNTING INSTRUCTIONS

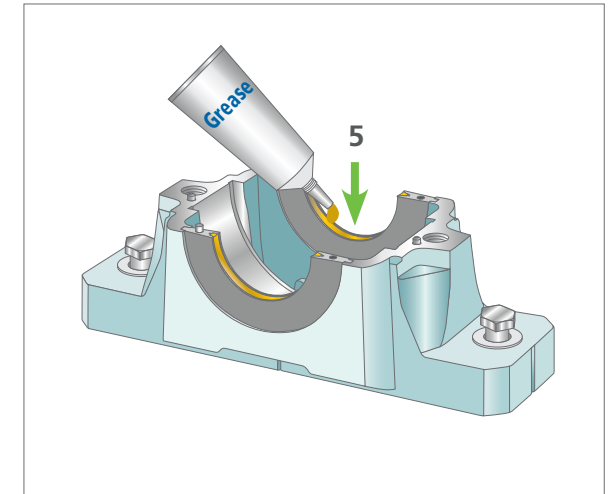
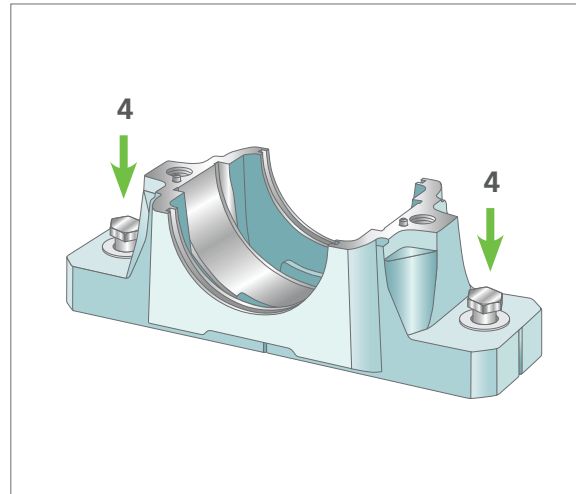
4.0

- 4.1 LFD SNL plummer block housings with double lip seals TSN 5.. G 36 - 37
- 4.2 LFD SNL plummer block housings with felt seals TSN 5.. C 38 - 39
- 4.3 LFD SNL plummer block housings with labyrinth seals TSN 5.. S 40 - 41
- 4.4 LFD SNL plummer block housings with V-ring seals TSN 5.. A 42 - 43
- 4.5 LFD SNL plummer block housings with Taconite seals TSN 5.. ND 44 - 45

4.1 LFD SNL PLUMMER BLOCK HOUSINGS WITH DOUBLE LIP SEALS TSN 5.. G

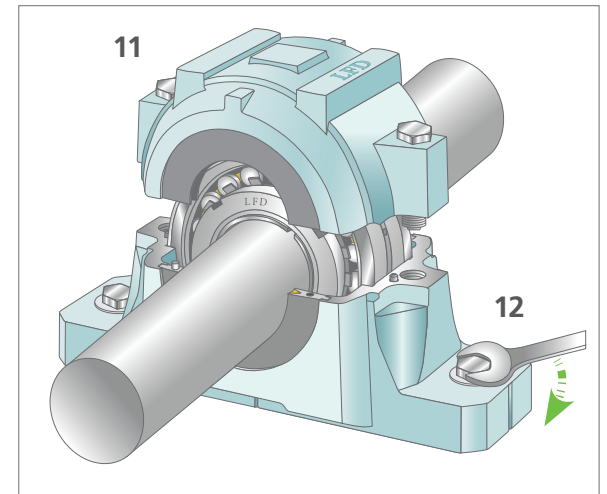
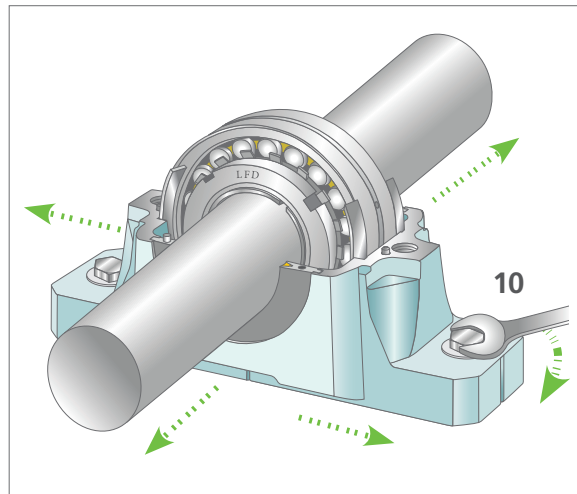
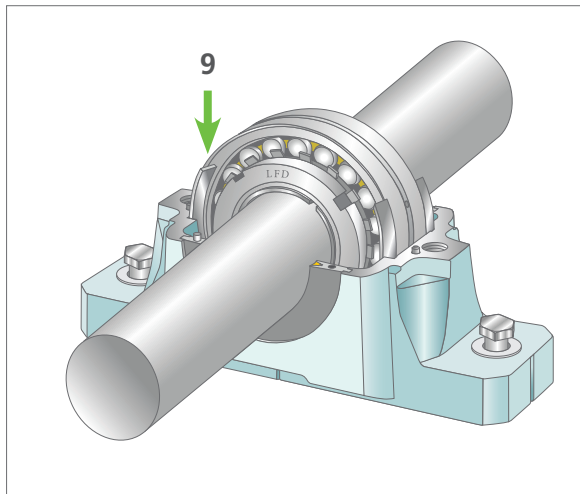
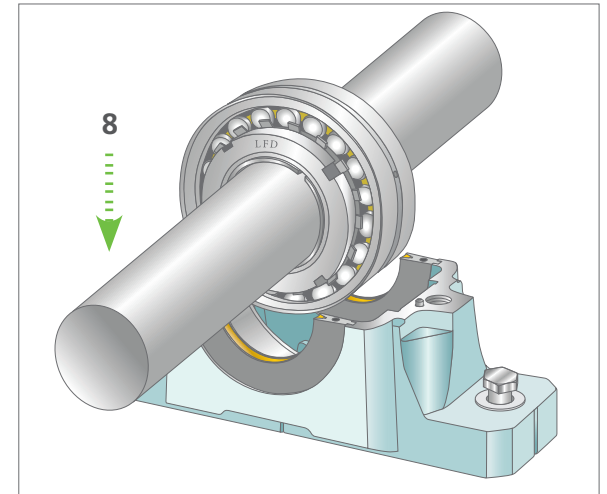
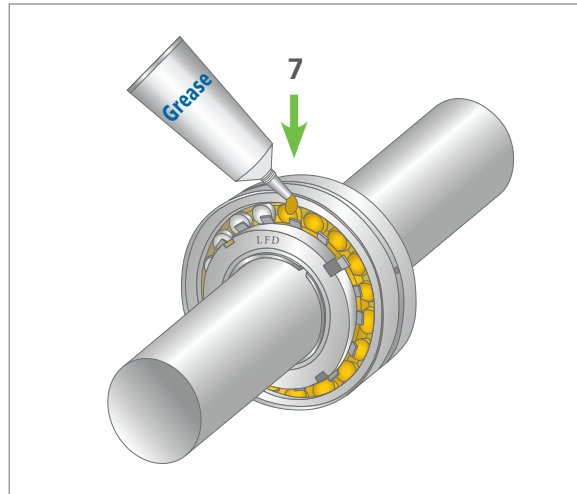
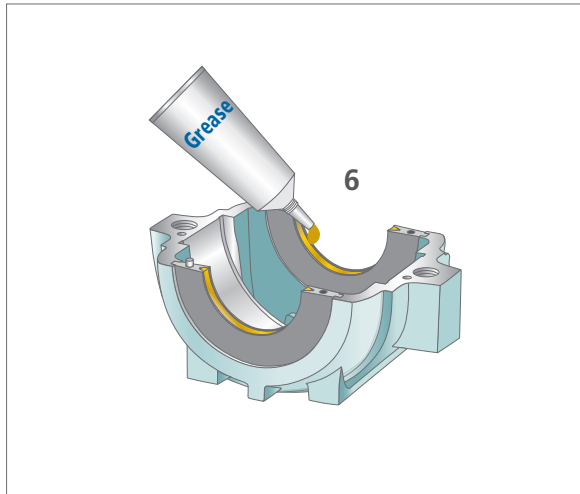
MOUNTING INSTRUCTIONS:

1. The installation location should be clean and the shaft seats should be inspected for their dimensional and form accuracy.
2. The mounting surface should be prepared in such a manner that a surface roughness of $R_a < 12.5 \mu\text{m}$ is achieved.
3. In the case of bearings that are installed on adapter sleeves, the position should be determined beforehand, in order to ensure that the lubrication nipple is correctly positioned for the relubrication, on the reverse of the sleeve. With end covers, the lubrication nipple should always be positioned in such a way that it is located on the side of the cover. Additionally, it should be taken into account that there is one single direction, in which to install the plummer block cap on the base.
4. Mount the bottom side of the plummer block to the mounting surface, however, do not tighten it yet.
5. Insert the seal halves on the left and right-hand side of the lower shell of the plummer block and fill the space between the lip seals with lubricant. When an end cover is used, it is positioned in the plummer block groove, replacing a seal half.
6. Position the other two seal halves in the upper shell and again fill the space between the lip seals with lubricant. If an end cover is used, only one seal half is placed in the plummer block groove of the upper shell.



7. Mount the bearing directly on the shaft or use an adapter sleeve. Then fill the bearing with a sufficient amount of lubricant. Any excess lubricant can be added to the lower plummer block part.
8. Prepare the second bearing according to the description above. Then put the shaft with the bearings into the plummer block bases.
9. In the case of locating bearings, insert the locating rings on both sides of the bearing into the plummer block.

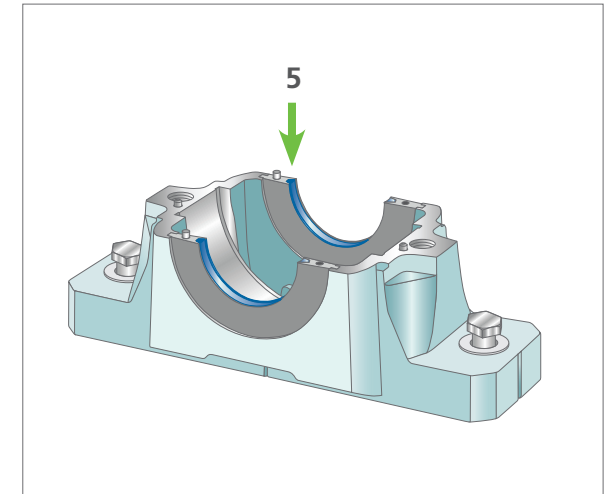
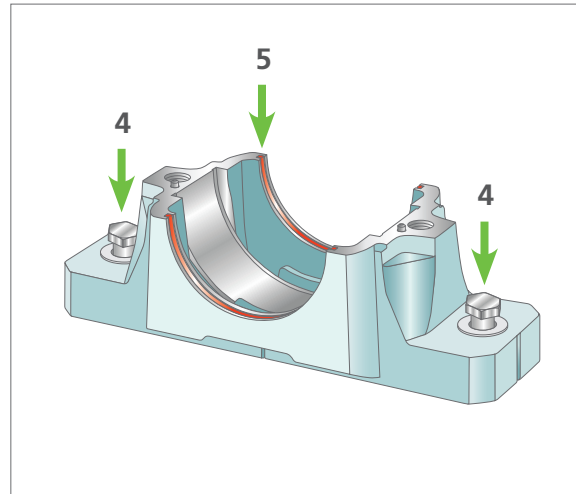
10. Precisely position the plummer block on the support surface with the help of the plummer block indentations and slightly tighten the screws on the plummer block bases.
11. Position the upper parts of the plummer blocks and secure them with the recommended tightening torque.
12. Now also tightly fasten the screws on the plummer block base.



4.2 LFD SNL PLUMMER BLOCK HOUSINGS WITH FELT SEALS TSN 5.. C

MOUNTING INSTRUCTIONS:

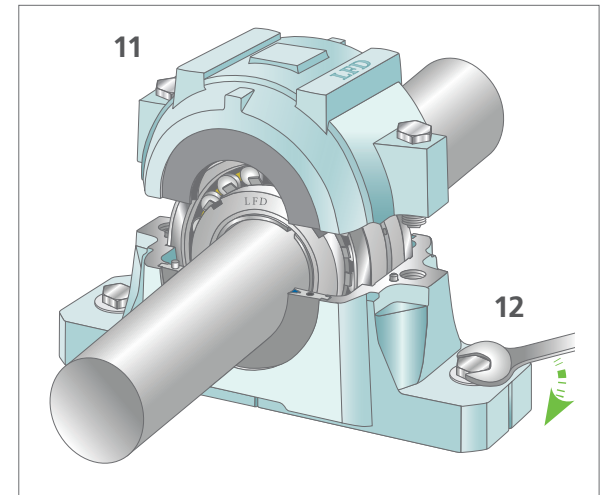
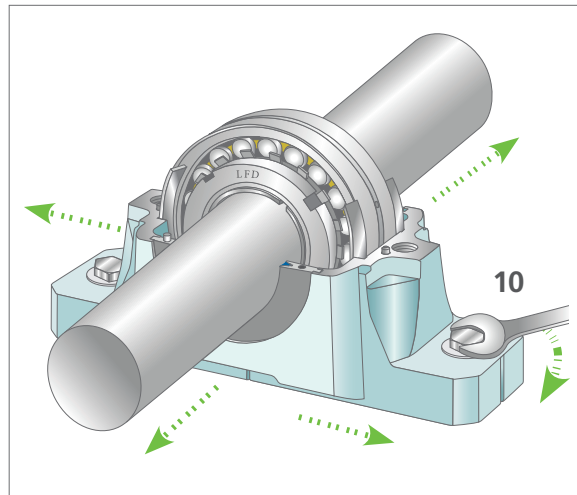
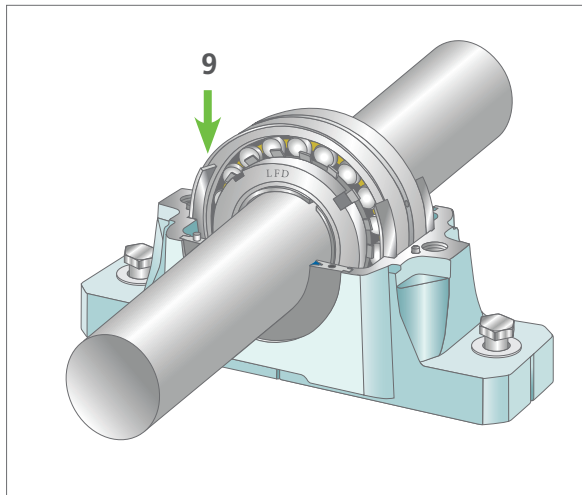
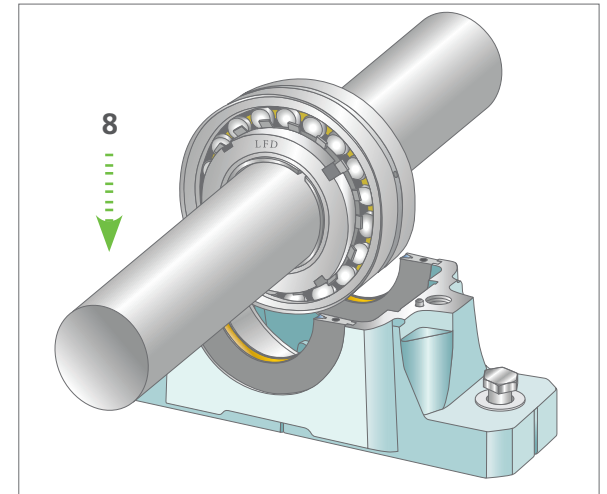
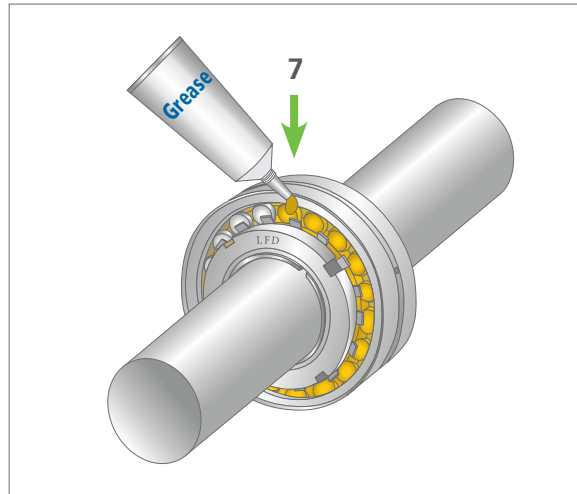
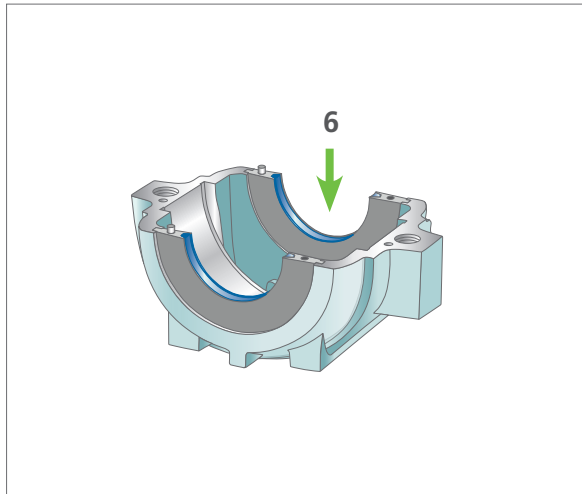
1. The installation location should be clean and the shaft seats should be inspected for their dimensional and form accuracy.
2. The mounting surface should be prepared in such a manner that a surface roughness of $Ra < 12.5 \mu m$ is achieved.
3. In the case of bearings that are installed on adapter sleeves, the position should be determined beforehand, in order to ensure that the lubrication nipple is correctly positioned for the relubrication, on the reverse of the sleeve. With end covers, the lubrication nipple should always be positioned in such a way that it is located on the side of the cover. Additionally, it should be taken into account that there is one single direction in which to install the plummer block cap on the base.
4. Mount the bottom side of the plummer block to the mounting surface, however, do not tighten it yet.
5. Insert the sealing halves on the left and right-hand side in the lower shell of the plummer block. A round cord can be additionally positioned in the plummer block groove when the rotating of the seal should be prevented. When an end cover is used, it is positioned in the plummer block groove, replacing a seal half.
6. Insert the other two sealing halves in the upper shell. A round cord can be additionally positioned in the plummer block groove, in order to prevent the rotation of the seal.



If an end cover is used, only one seal half is placed in the plummer block groove of the upper shell.

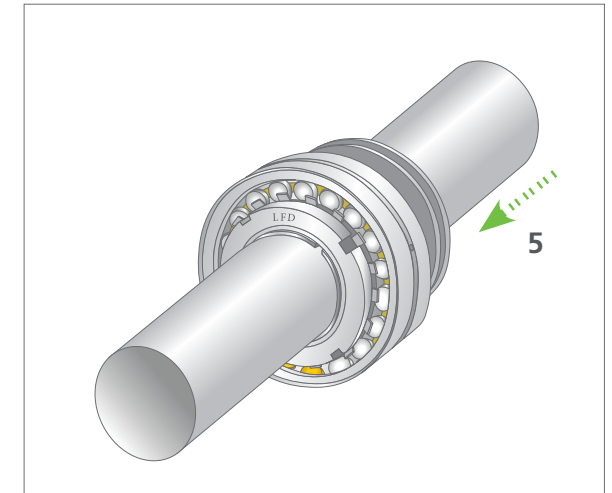
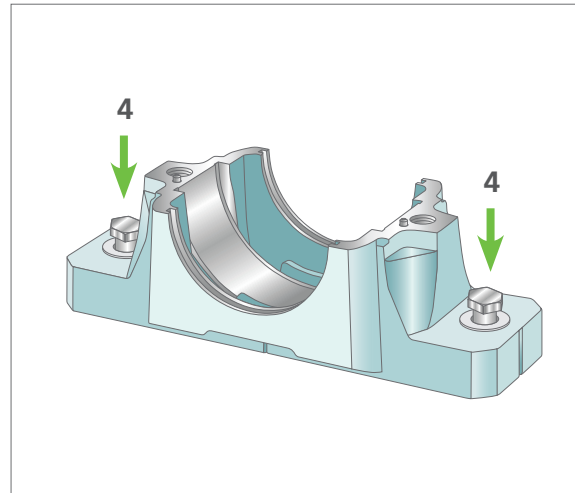
7. Mount the bearing directly on the shaft or use an adapter sleeve. Then fill the bearing with a sufficient amount of lubricant. Any excess lubricant can be added to the lower plummer block part.
8. Prepare the second bearing position as described above. Then put the shaft with the bearings into the plummer block bases.

9. In the case of locating bearings, insert the locating rings on both sides of the bearing into the plummer block.
10. Precisely position the plummer block on the support surface, with the help of the plummer block indentations, and slightly tighten the screws on the plummer block bases.
11. Locate the upper parts of the plummer block and secure them with the recommended tightening torque.
12. Now also tightly fasten the screws on the plummer block base.



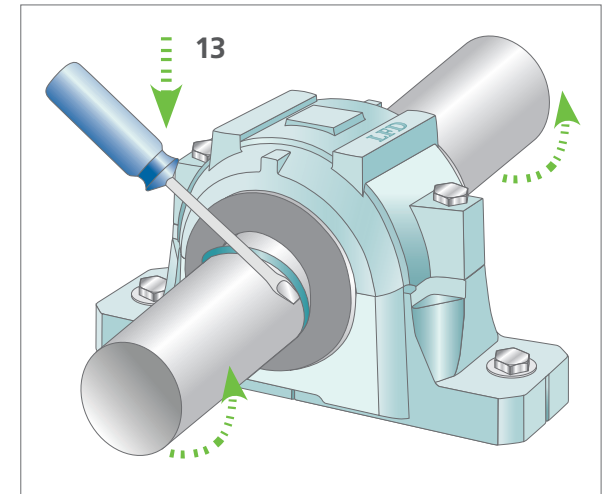
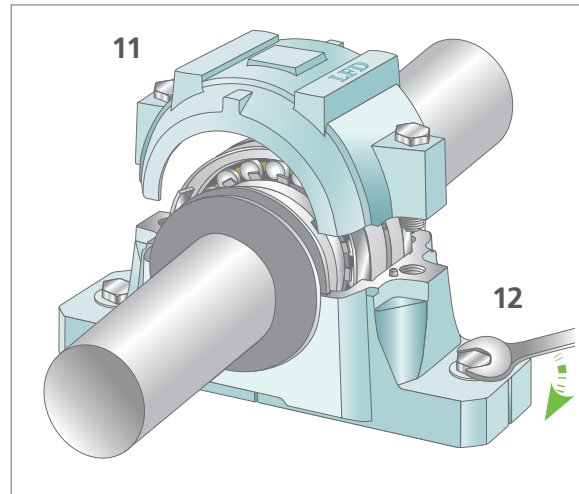
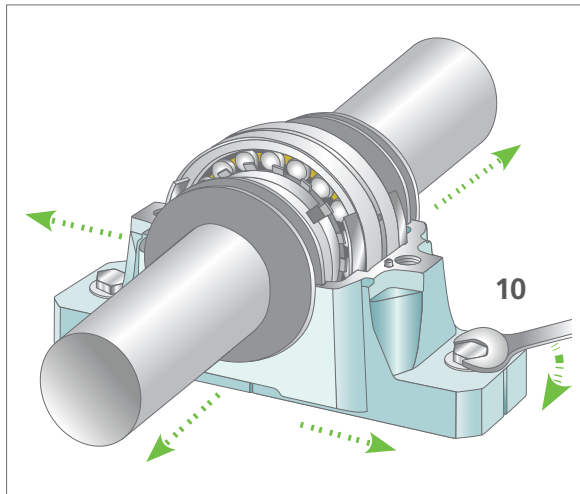
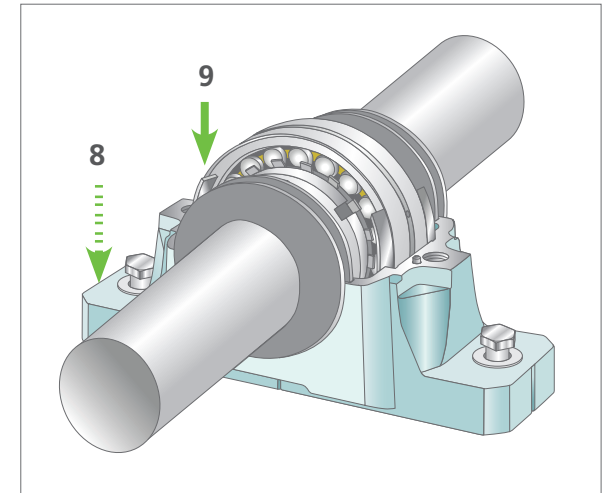
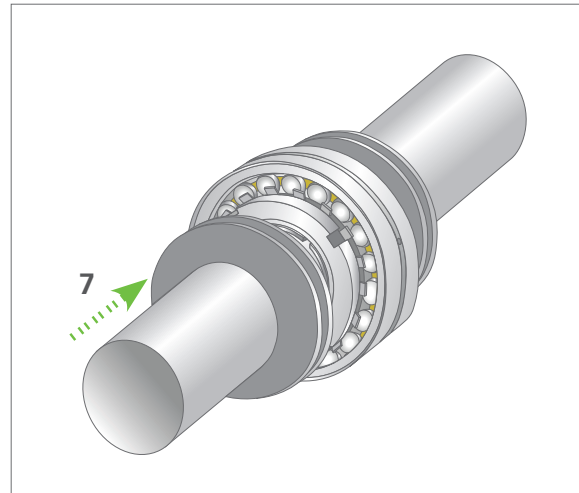
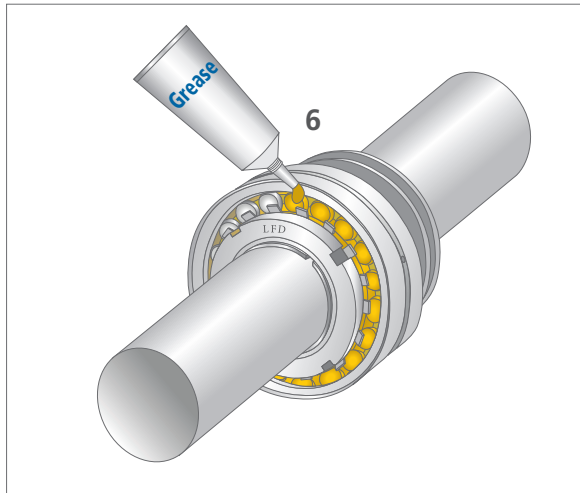
4.3 LFD SNL PLUMMER BLOCK HOUSINGS WITH LABYRINTH SEALS TSN 5.. S MOUNTING INSTRUCTIONS:

1. The installation location should be clean and the shaft seats should be inspected for their dimensional and form accuracy.
2. The mounting surface should be prepared in such a manner that a surface roughness of $Ra < 12.5 \mu m$ is achieved.
3. In the case of bearings that are installed on adapter sleeves, the position should be determined beforehand, in order to ensure that the lubrication nipple is correctly positioned for the relubrication, on the reverse of the sleeve. With end covers, the lubrication nipple should always be positioned in such a way that it is located on the side of the cover. Additionally, it should be taken into account that there is one single direction in which to install the plummer block cap on the base.
4. Mount the bottom side of the plummer block to the mounting surface, however, do not tighten it yet.
5. Push the labyrinth ring in the right direction onto the shaft, that is, the groove for receiving the round cord must be facing the outside.
6. Mount the bearing directly on the shaft or use an adapter sleeve. Then fill the bearing with a sufficient amount of lubricant. Any excess lubricant can be added to the lower plummer block part.
7. Slide the second labyrinth ring in the right direction on the shaft.



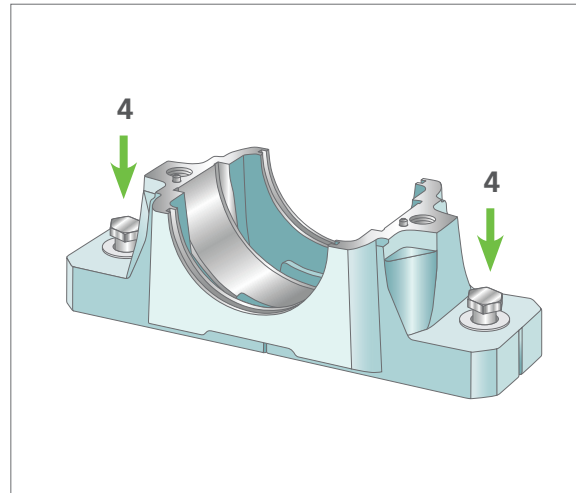
8. Prepare the second bearing position as described above. Then put the shaft with the bearings into the plummer block bases.
9. In the case of locating bearings, insert the locating rings on both sides of the bearing into the plummer block.
10. Precisely position the plummer block on the support surface, with the help of the plummer block indentations, and slightly tighten the screws on the plummer block bases.

11. Locate the upper parts of the plummer blocks and secure them with the recommended tightening torque.
12. Now tightly fasten the screws also on the plummer block base.
13. Finally, insert the provided round cords in the grooves of the labyrinth rings. A blunt screwdriver can also be used for this task.

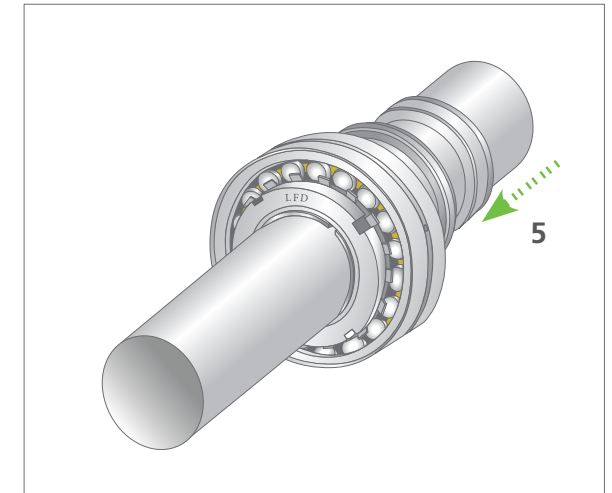


4.4 LFD SNL PLUMMER BLOCK HOUSINGS WITH V-RING SEALS TSN 5.. A MOUNTING INSTRUCTIONS:

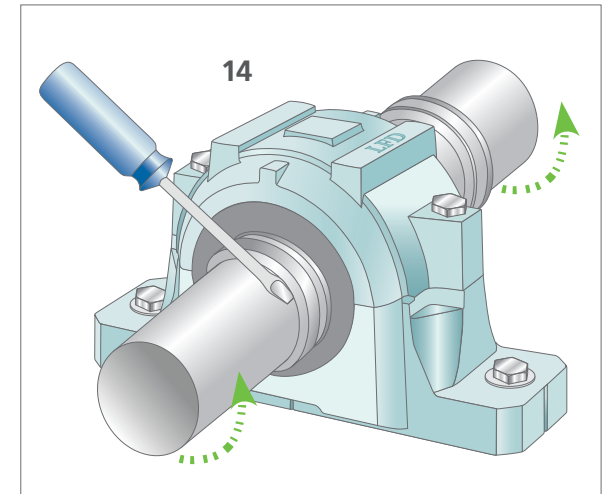
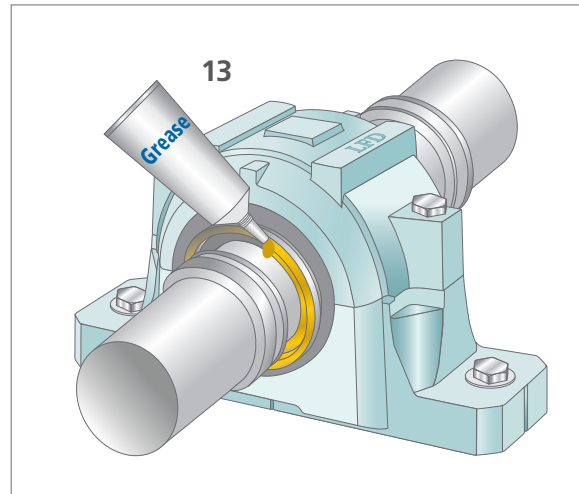
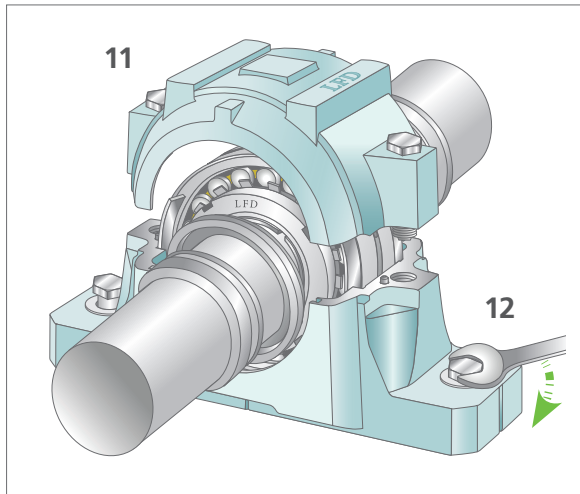
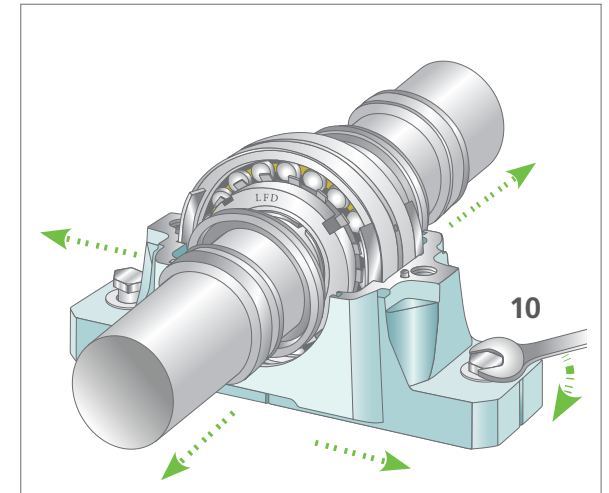
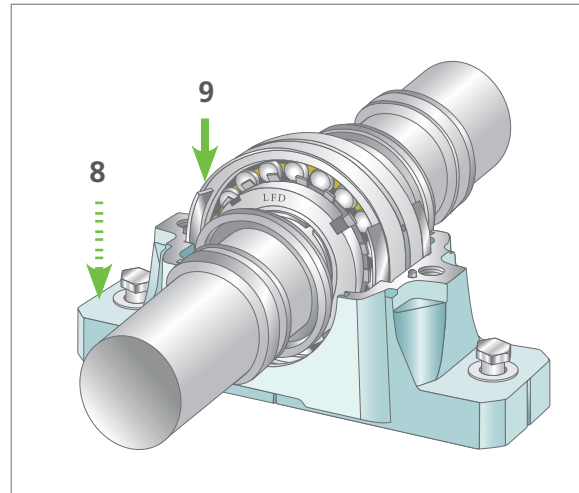
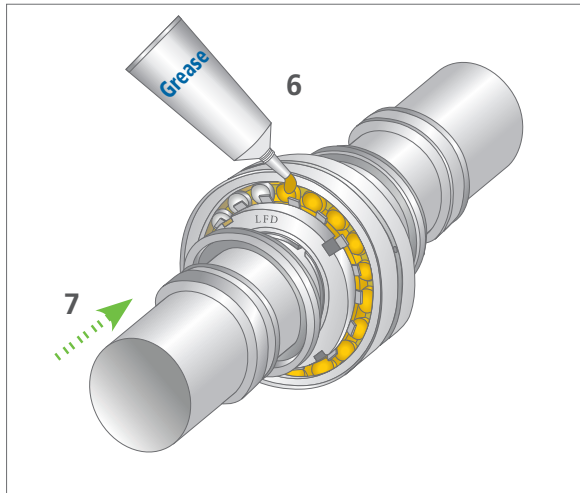
1. The installation location should be clean and the shaft seats should be inspected for their dimensional and form accuracy.
2. The mounting surface should be prepared in such a manner that a surface roughness of $Ra < 12.5 \mu m$ is achieved.
3. In the case of bearings that are installed on adapter sleeves, the position should be determined beforehand, in order to ensure that the lubrication nipple is correctly positioned for the relubrication, on the reverse of the sleeve. With end covers, the lubrication nipple should always be positioned in such a way that it is located on the side of the cover. Additionally, it should be taken into account that there is one single direction in which to install the plummer block cap on the base.
4. Mount the bottom side of the plummer block to the mounting surface, however, do not tighten it yet.
5. Slide the sealing disk with the steel sheet facing the bearing onto the shaft.
6. Mount the bearing directly on the shaft or use an adapter sleeve. Then fill the bearing with a sufficient amount of lubricant. Any excess lubricant can be added to the lower plummer block part.
7. Slide the sealing component with the seal lip facing the bearing onto the shaft.



8. Prepare the second bearing position as described above. Subsequently, place the shaft with the bearings in the plummer block bases.
9. In the case of locating bearings, insert the locating rings on both sides of the bearing into the plummer block.
10. Precisely position the plummer block on the support surface with the help of the plummer block indentations and slightly tighten the screws on the plummer block bases.



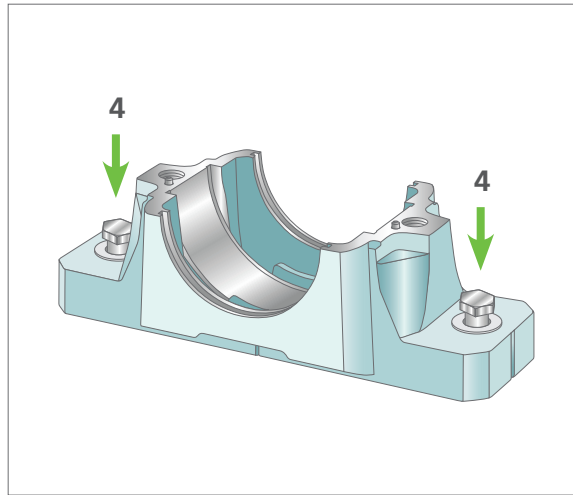
11. Locate the upper section of the plummer block and secure it with the recommended tightening torque.
12. Now tightly fasten the screws on the plummer block base.
13. Grease the abutments on the sealing disk.
14. Finally, correctly align the V-ring with the use of a blunt screwdriver and bring it into the desired position.



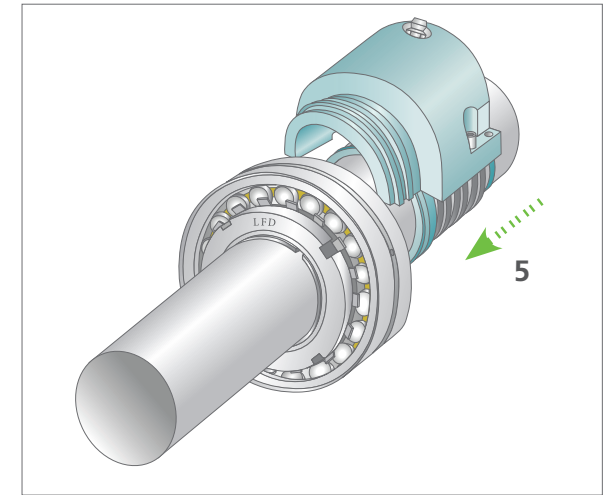
4.5 LFD SNL PLUMMER BLOCK HOUSINGS WITH TACONITE SEALS TSN 5.. ND

MOUNTING INSTRUCTIONS:

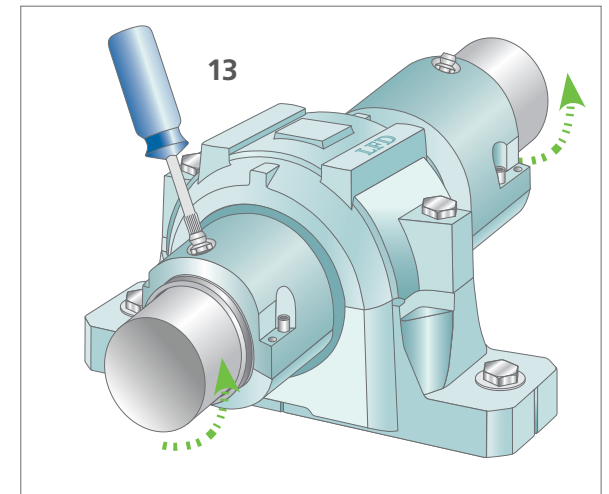
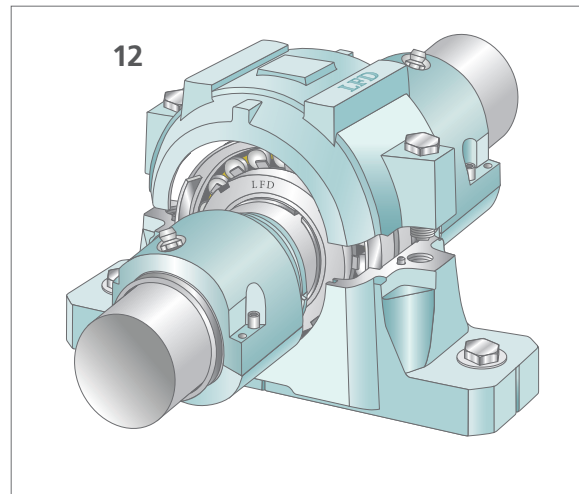
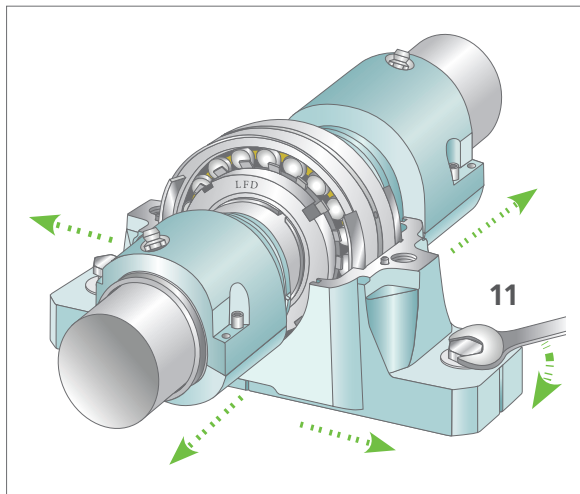
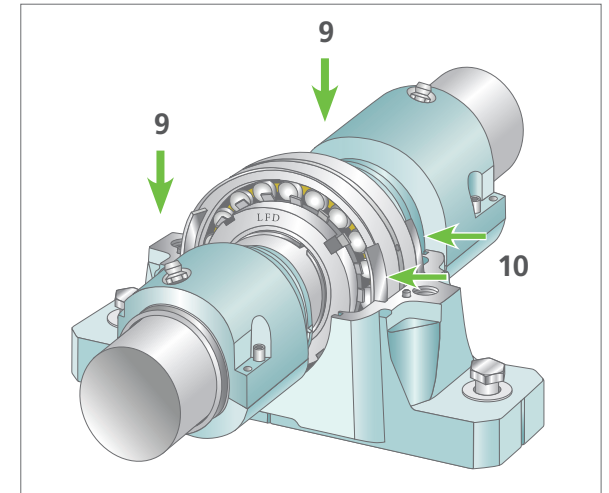
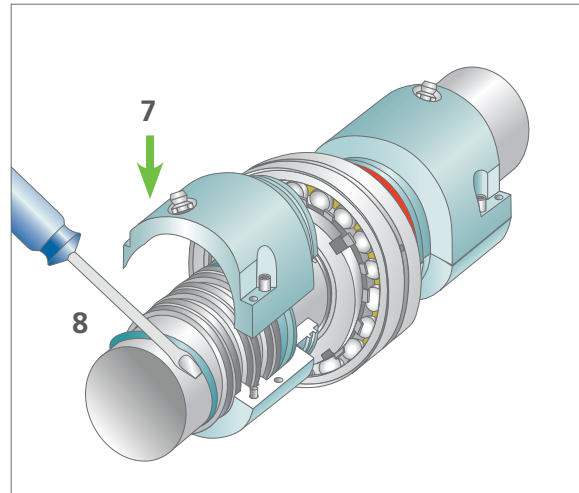
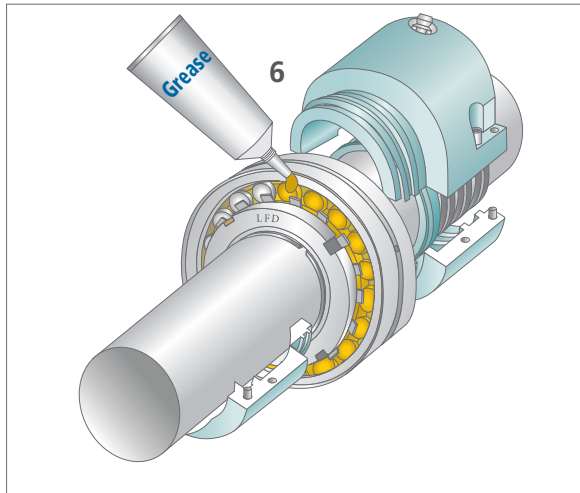
1. The installation location should be clean and the shaft seats should be inspected for their dimensional and form accuracy.
2. The mounting surface should be prepared in such a manner that a surface roughness of $R_a < 12.5 \mu\text{m}$ is achieved.
3. In the case of bearings that are installed on adapter sleeves, the position should be determined beforehand, in order to ensure that the lubrication nipple is correctly positioned for the relubrication, on the reverse of the sleeve. With end covers, the lubrication nipple should always be positioned in such a way that it is located on the side of the cover. Additionally, it should be taken into account that there is one single direction in which to install the plummer block cap on the base.
4. Mount the bottom side of the plummer block to the mounting surface, however, do not tighten it yet.
5. Slide the V-ring on the shaft in such a way that subsequently the sealing lip is facing the bearing. Then slide on the labyrinth ring and position both in the correct position. Align and secure the two half shells, which are not interchangeable. Then mount the O-ring in the groove of the half shells.
6. Mount the bearing directly on the shaft or use an adapter sleeve. Then fill the bearing with a sufficient amount of lubricant. Any excess lubricant can be added to the lower plummer block part.



7. Likewise, install the second Taconite sealing set. Slide the V-ring on the shaft in such a way that subsequently the sealing lip is facing the bearing. Then slide on the labyrinth ring and locate both in the correct position. Align and secure the two half shells, which are not interchangeable. Then mount the O-ring in the groove of the half shells.
8. Insert the provided round cords in the grooves of the labyrinth rings. To do so, a blunt screwdriver can be used.
9. Prepare the second bearing position as described above. Then put the shaft with the bearings into the plummer block bases.



10. In the case of locating bearings, insert the locating rings on both sides of the bearing into the plummer block.
11. Precisely position the plummer block on the support surface with the help of the plummer block indentations and slightly tighten the screws on the plummer block bases.
12. Locate the upper part of the plummer block and secure it with the recommended tightening torque.
13. Now tighten the screws properly to secure the plummer block to the support surface. Fill the seals while the shaft is rotating, via the lubrication nipple with the lubricant utilized for that specific plummer block until it exits at the labyrinth ring.



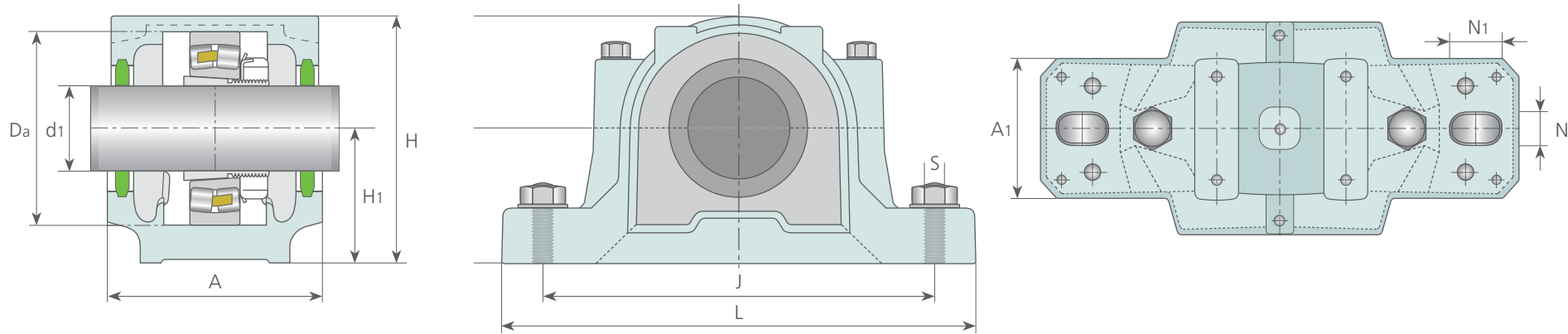


5.0 LFD SNL 5.. PLUMMER BLOCK HOUSINGS

5.0

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5.1 SNL 5.. PLUMMER BLOCK HOUSINGS – DESCRIPTION

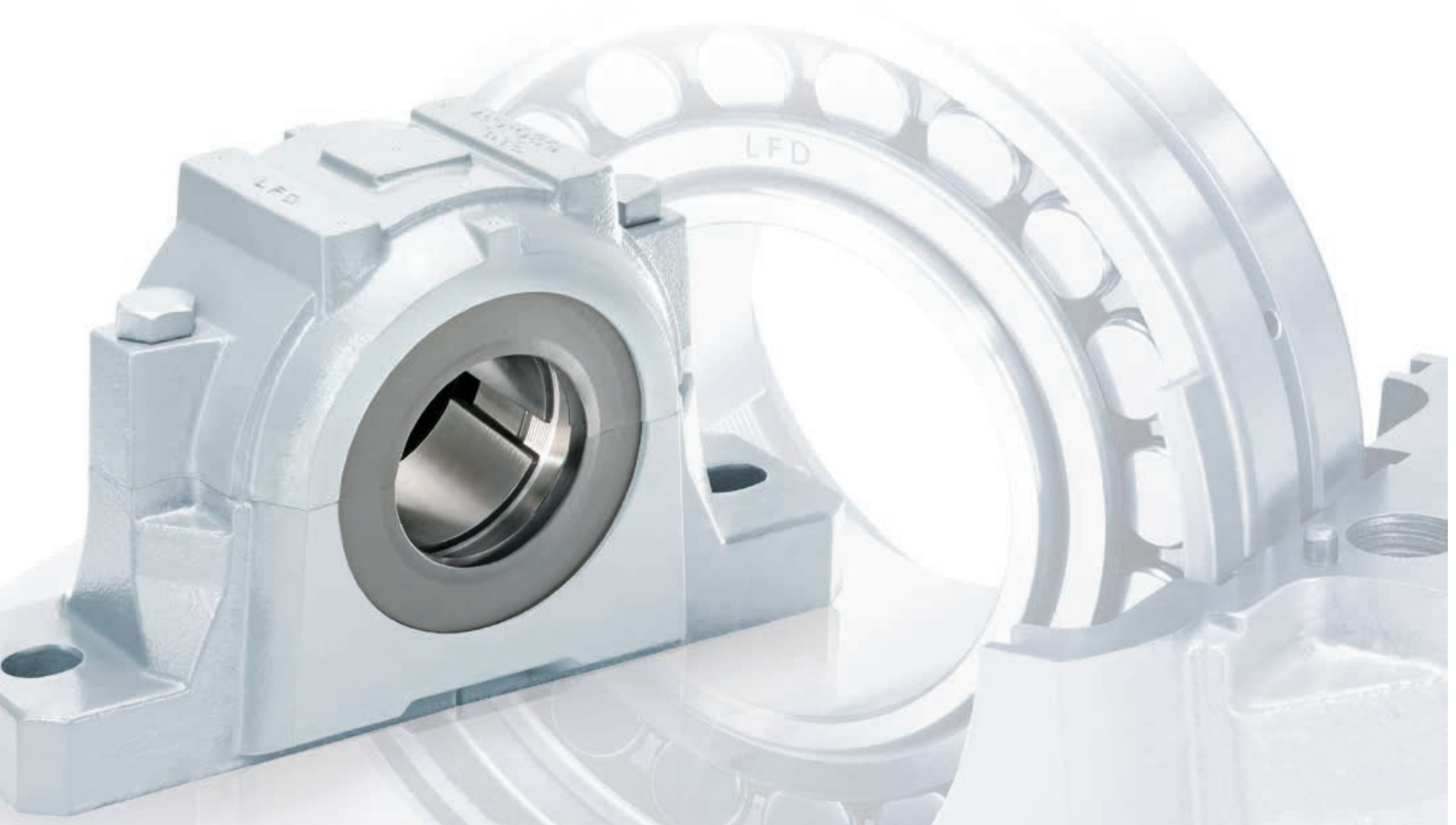


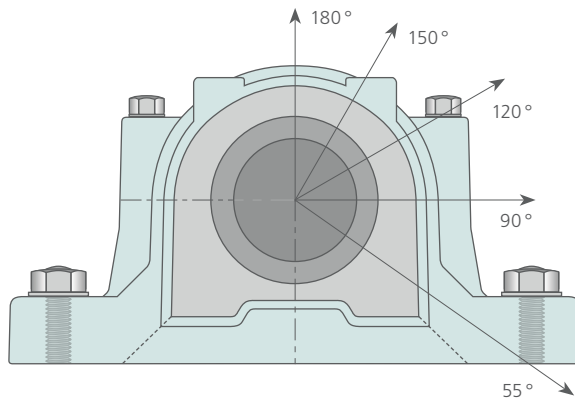
5.2 DIMENSIONS

Shaft diameter	Plummer blocks										Designation	Suitable									Weight	
	d1 [mm]	Da [mm]	A* [mm]	A1 [mm]	H [mm]	H1* [mm]	L* [mm]	J [mm]	S [mm]	N1* [mm]		N [mm]	Bearing	Bearing	Adapter sleeve	Locating rings	End covers	Double lip seal	Felt seal	V-ring seal		Labyrinth seal
35	80	85	60	108	60	205	170	M 12	20	15	SNL 508	1208 K 2208 K	– 22208 K	H 208 H 308	FRB 80 / 10,5 FRB 80 / 8	ASNH 508 ASNH 508	TSN 508 G TSN 508 G	TSN 508 C TSN 508 C	TSN 508 A TSN 508 A	TSN 508 S TSN 508 S	TSN 508 ND TSN 508 ND	3,2
40	85	85	60	109	60	205	170	M 12	20	15	SNL 509	1209 K 2209 K	– 22209 K	H 209 H 309	FRB 85 / 5,5 FRB 85 / 3,5	ASNH 509 ASNH 509	TSN 509 G TSN 509 G	TSN 509 C TSN 509 C	TSN 509 A TSN 509 A	TSN 509 S TSN 509 S	TSN 509 ND TSN 509 ND	3,5
45	90	90	60	113	60	205	170	M 12	20	15	SNL 510	1210 K 2210 K	– 22210 K	H 210 H 310	FRB 90 / 10,5 FRB 90 / 9	ASNH 510 ASNH 510	TSN 510 G TSN 510 G	TSN 510 C TSN 510 C	TSN 510 A TSN 510 A	TSN 510 S TSN 510 S	TSN 510 ND TSN 510 ND	3,85
50	100	95	70	128	70	255	210	M 16	24	18	SNL 511	1211 K 2211 K	– 22211 K	H 211 H 311	FRB 100 / 11,5 FRB 100 / 9,5	ASNH 511 ASNH 511	TSN 511 G TSN 511 G	TSN 511 C TSN 511 C	TSN 511 A TSN 511 A	TSN 511 S TSN 511 S	TSN 511 ND TSN 511 ND	5,2
55	110	105	70	134	70	255	210	M 16	24	18	SNL 512	1212 K 2212 K	– 22212 K	H 212 H 312	FRB 110 / 13 FRB 110 / 10	ASNH 512 ASNH 512	TSN 512 G TSN 512 G	TSN 512 C TSN 512 C	TSN 512 A TSN 512 A	TSN 512 S TSN 512 S	TSN 512 ND TSN 512 ND	6,7
60	120	110	80	149	80	275	230	M 16	24	18	SNL 513	1213 K 2213 K	– 22213 K	H 213 H 313	FRB 120 / 14 FRB 120 / 10	ASNH 513 ASNH 513	TSN 513 G TSN 513 G	TSN 513 C TSN 513 C	TSN 513 A TSN 513 A	TSN 513 S TSN 513 S	TSN 513 ND TSN 513 ND	7,7

Shaft diameter	Plummer blocks										Designation	Suitable										Weight
	d1 [mm]	Da [mm]	A* [mm]	A1 [mm]	H [mm]	H1* [mm]	L* [mm]	J [mm]	S [mm]	N1* [mm]		N [mm]	Bearing	Bearing	Adapter sleeve	Locating rings	End covers	Double lip seal	Felt seal	V-ring seal	Labyrinth seal	
65	130	115	80	155	80	280	230	M16	24	18	SNL 515	1215 K 2215 K	– 22215 K	H 215 H 315	FRB 130 / 15,5 FRB 130 / 12,5	ASNH 515 ASNH 515	TSN 515 G TSN 515 G	TSN 515 C TSN 515 C	TSN 515 A TSN 515 A	TSN 515 S TSN 515 S	TSN 515 ND TSN 515 ND	7,9
70	140	120	90	177	95	315	260	M20	28	22	SNL 516	1216 K 2216 K	– 22216 K	H 216 H 316	FRB 140 / 16 FRB 140 / 12,5	ASNH 516 ASNH 516	TSN 516 G TSN 516 G	TSN 516 C TSN 516 C	TSN 516 A TSN 516 A	TSN 516 S TSN 516 S	TSN 516 ND TSN 516 ND	11
75	150	125	90	183	95	320	260	M20	28	22	SNL 517	1217 K 2217 K	– 22217 K	H 217 H 317	FRB 150 / 16,5 FRB 150 / 12,5	ASNH 517 ASNH 517	TSN 517 G TSN 517 G	TSN 517 C TSN 517 C	TSN 517 A TSN 517 A	TSN 517 S TSN 517 S	TSN 517 ND TSN 517 ND	12,7
80	160	140	100	194	100	345	290	M20	28	22	SNL 518	1218 K 2218 K –	– 22218 K 23218 K	H 218 H 318 H 2318	FRB 160 / 17,5 FRB 160 / 12,5 FRB 160 / 6,25	ASNH 518 ASNH 518 ASNH 518	TSN 518 G TSN 518 G TSN 518 G	TSN 518 C TSN 518 C TSN 518 C	TSN 518 A TSN 518 A TSN 518 A	TSN 518 S TSN 518 S TSN 518 S	TSN 518 ND TSN 518 ND TSN 518 ND	14,8
85	170	145	100	212	112	345	290	M20	28	22	SNL 519	1219 K 2219 K	– 22219 K	H 219 H 319	FRB 170 / 18 FRB 170 / 12,5	ASNH 519 ASNH 519	TSN 519 G TSN 519 G	TSN 519 C TSN 519 C	TSN 519 A TSN 519 A	TSN 519 S TSN 519 S	TSN 519 ND TSN 519 ND	15,5
90	180	160	110	218	112	380	320	M24	32	26	SNL 520	1220 K 2220 K –	– 22220 K 23220 K	H 220 H 320 H 2320	FRB 180 / 18 FRB 180 / 12 FRB 180 / 4,85	ASNH 520 ASNH 520 ASNH 520	TSN 520 G TSN 520 G TSN 520 G	TSN 520 C TSN 520 C TSN 520 C	TSN 520 A TSN 520 A TSN 520 A	TSN 520 S TSN 520 S TSN 520 S	TSN 520 ND TSN 520 ND TSN 520 ND	18,4
100	200	175	120	242	125	410	350	M24	32	26	SNL 522	1222 K 2222 K –	– 22222 K 23222 K	H 222 H 322 H 2322	FRB 200 / 21 FRB 200 / 13,5 FRB 200 / 5,1	ASNH 522 ASNH 522 ASNH 522	TSN 522 G TSN 522 G TSN 522 G	TSN 522 C TSN 522 C TSN 522 C	TSN 522 A TSN 522 A TSN 522 A	TSN 522 S TSN 522 S TSN 522 S	TSN 522 ND TSN 522 ND TSN 522 ND	24,8
110	215	185	120	271	140	410	350	M24	32	26	SNL 524	– –	22224 K 23224 K	H 3124 H 2324	FRB 215 / 14 FRB 215 / 5	ASNH 524 ASNH 524	TSN 524 G TSN 524 G	TSN 524 C TSN 524 C	TSN 524 A TSN 524 A	TSN 524 S TSN 524 S	TSN 524 ND TSN 524 ND	32,2
115	230	190	130	290	150	445	380	M24	35	28	SNL 526	– –	22226 K 23226 K	H 3126 H 2326	FRB 230 / 13 FRB 230 / 5	ASNH 526 ASNH 526	TSN 526 G TSN 526 G	TSN 526 C TSN 526 C	TSN 526 A TSN 526 A	TSN 526 S TSN 526 S	TSN 526 ND TSN 526 ND	39,8
125	250	205	150	302	150	500	420	M30	42	35	SNL 528	– –	22228 K 23228 K	H 3128 H 2328	FRB 250 / 15 FRB 250 / 5	ASNH 528 ASNH 528	TSN 528 G TSN 528 G	TSN 528 C TSN 528 C	TSN 528 A TSN 528 A	TSN 528 S TSN 528 S	TSN 528 ND TSN 528 ND	48,8
135	270	220	160	323	160	530	450	M30	42	35	SNL 530	– –	22230 K 23230 K	H 3130 H 2330	FRB 270 / 16,5 FRB 270 / 5	ASNH 530 ASNH 530	TSN 530 G TSN 530 G	TSN 530 C TSN 530 C	TSN 530 A TSN 530 A	TSN 530 S TSN 530 S	TSN 530 ND TSN 530 ND	56,5
140	290	235	160	344	170	550	470	M30	42	35	SNL 532	– –	22232 K 23232 K	H3132 H2332	FRB 290 / 17 FRB 290 / 5	ASNH 532 ASNH 532	TSN 532 G TSN 532 G	TSN 532 C TSN 532 C	TSN 532 A TSN 532 A	TSN 532 S TSN 532 S	TSN 532 ND TSN 532 ND	63,5

* Guide value, permissible limit values, see ISO 113 (A max., H1 max., Lmax. and N1 min.)





5.3 LOAD CARRYING CAPACITY

The guide values of the load carrying capacity depend on the plummer block material of the utilized bearing, the set screws of the upper and lower parts as well as the load direction. The specified guide values are based on a correct installation and an adequate mounting surface, which evenly supports the plummer block base across the entire area. A safety factor of 6 is recommended in relation to the guide value for the breaking load of the plummer block material.

In the case of an axial load, as a precautionary measure, it must be verified whether the plummer block has to be secured with additional pins.

5.4 LUBRICANT: INITIAL FILLING

Plummer blocks SNL 5..		
Plummer block Size	Grease quantity for initial filling 1)	Relubrication
Symbol	g	g
SNL 508	60	10
SNL 509	65	10
SNL 510	75	10
SNL 511	100	15
SNL 512	150	15
SNL 513	180	20
SNL 515	230	20
SNL 516	280	25
SNL 517	330	25
SNL 518	430	40
SNL 519	480	50
SNL 520	630	55
SNL 522	850	70
SNL 524	1000	80
SNL 526	1100	95
SNL 528	1400	110
SNL 530	1700	130
SNL 532	2000	150

Plummer block Symbol	Breaking load of the plummer block					Set screw Size	Load carrying capacity			Tightening torque
	Load direction						Material 8.8	120°	150°	
	55°	90°	120°	150°	180°	Material 8.8				120°
	kN	kN	kN	kN	kN		kN	kN	kN	Nm
SNL 508	215	130	95	85	110	M 10 x 50	150	85	75	50
SNL 509	230	140	100	90	115	M 10 x 50	150	85	75	50
SNL 510	265	155	120	110	130	M 10 x 55	150	85	75	50
SNL 511	275	170	125	115	140	M 12 x 60	220	125	110	80
SNL 512	300	180	130	120	150	M 12 x 60	220	125	110	80
SNL 513	340	205	150	130	170	M 12 x 65	220	125	110	80
SNL 515	410	250	185	160	205	M 12 x 65	220	125	110	80
SNL 516	430	260	190	175	215	M 12 x 70	220	125	110	80
SNL 517	480	290	205	190	240	M 12 x 80	220	125	110	80
SNL 518	550	340	250	215	275	M 16 x 90	400	230	200	150
SNL 519	580	350	260	230	290	M 16 x 90	400	230	200	150
SNL 520	620	370	280	250	310	M 20 x 100	620	360	310	200
SNL 522	680	410	310	275	340	M 20 x 100	620	360	310	200
SNL 524	790	470	350	320	400	M 20 x 110	620	360	310	200
SNL 526	900	540	410	360	450	M 24 x 130	900	500	450	350
SNL 528	1050	630	470	430	530	M 24 x 130	900	500	450	350
SNL 530	1200	730	540	480	600	M 24 x 130	900	500	450	350
SNL 532	1450	860	640	570	720	M 24 x 130	900	500	450	350

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.





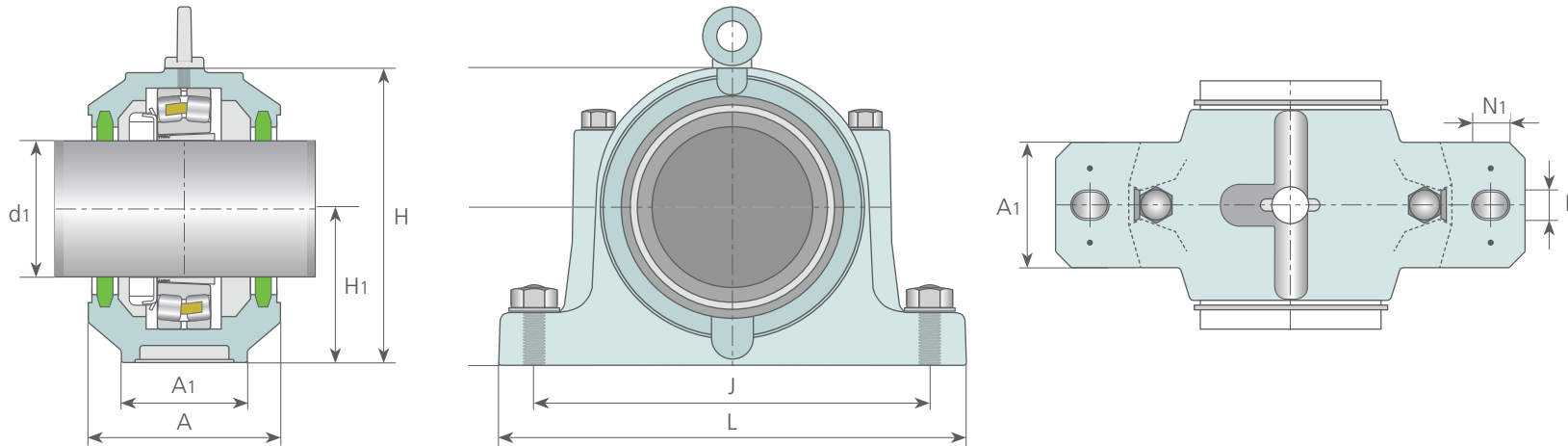


6.0

6.0 LFD S 30.. K PLUMMER BLOCK HOUSINGS

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6.1 S 30.. K PLUMMER BLOCK HOUSINGS – DESCRIPTION



The plummer blocks of version S 30 are two-part plummer blocks. They are fitted with a spherical roller bearing. Easy handling is ensured thanks to the fitted ring bolts.

6.2 MATERIAL

The LFD plummer blocks of the S 30.. K series are made of grey cast iron GG-25. In the case of higher loads, plummer blocks made of spheroidal cast iron GGG-40 can also be supplied if required.

6.3 LUBRICATION

The plummer blocks are designed in such a way that they can be lubricated with both grease and oil. However, we recommend grease lubrication. The specifications of the lubricant must be followed. Please refer to the **table on page 59** for the recommended quantity for the initial fill.

6.4 SEALS

The plummer blocks are provided with a felt seal. A closed cover can be provided as well, however, it must be ordered separately.

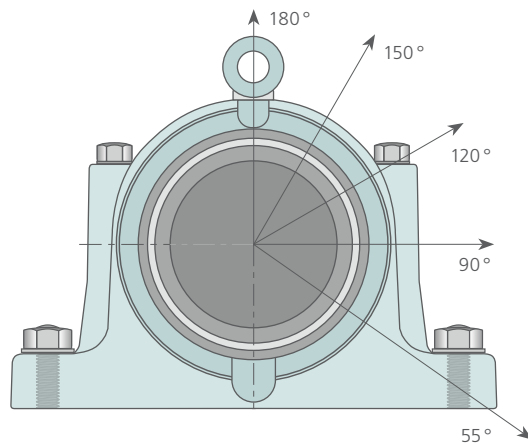
6.5 LOAD

The LFD plummer blocks of the S 30.. K series are designed to accommodate loads acting perpendicularly on the support surface. For this direction, the load carrying capacity of the plummer block is limited by the load rating of the spherical roller bearing. When forces are at work in other directions, it must be verified whether the loads for the plummer block (upper and lower shell) and the threaded connections are permissible. The provided set screws are supplied in strength class 8.8.

6.6 DIMENSIONS

Shaft diameter	Plummer blocks									Suitable bearings, adapter sleeves and locating rings			Felt strips	Cover	Weight
	d1 [mm]	A [mm]	A1 [mm]	H [mm]	H1 [mm]	L [mm]	J [mm]	N1 [mm]	N [mm]	Designation					kg
110	150	110	215	112	390	320	36	30	S 3024 K	23024 CAKW33	H 3024	FRB 180 / 10	FS 3024	DK 3024	16,5
115	160	120	239	125	420	350	36	30	S 3026 K	23026 CAKW33	H 3026	FRB 200 / 10	FS 3026	DK 3026	19,3
125	170	120	259	140	420	350	36	30	S 3028 K	23028 CAKW33	H 3028	FRB 210 / 10	FS 3028	DK 3028	24,6
135	175	130	278	150	460	380	36	30	S 3030 K	23030 CAKW33	H 3030	FRB 225 / 10	FS 3030	DK 3030	29
140	190	130	288	150	470	390	36	30	S 3032 K	23032 CAKW33	H 3032	FRB 240 / 10	FS 3032	DK 3032	37
150	200	160	320	160	540	450	48	36	S 3034 K	23034 CAKW33	H 3034	FRB 260 / 10	FS 3034	DK 3034	45
160	210	160	340	170	560	470	48	36	S 3036 K	23036 CAKW33	H 3036	FRB 280 / 10	FS 3036	DK 3036	65
170	210	160	353	170	560	470	48	36	S 3038 K	23038 CAKW33	H 3038	FRB 290 / 10	FS 3038	DK 3038	67
180	235	170	373	180	615	515	48	36	S 3040 K	23040 CAKW33	H 3040	FRB 310 / 10	FS 3040	DK 3040	72
200	255	190	408	200	690	580	50	42	S 3044 K	23044 CAKW33	H 3044	FRB 340 / 10	FS 3044	DK 3044	98
220	265	200	433	210	720	610	50	42	S 3048 K	23048 CAKW33	H 3048	FRB 360 / 10	FS 3048	DK 3048	110
240	285	220	485	240	820	680	70	52	S 3052 K	23052 CAKW33	H 3052	FRB 400 / 10	FS 3052	DK 3052	148
260	295	230	505	250	860	720	70	52	S 3056 K	23056 CAKW33	H 3056	FRB 420 / 10	FS 3056	DK 3056	165





6.7 LOAD CARRYING CAPACITY

The guide values of the load carrying capacity depend on the plummer block material of the utilized bearing, the set screws of the upper and lower parts as well as the load direction. The specified guide values are based on a correct installation and an adequate mounting surface, which evenly supports the plummer block base across the entire area. A safety factor of 6 is recommended in relation to the guide value for the breaking load of the plummer block material.

In the case of an axial load, as a precautionary measure, it must be verified whether the plummer block has to be secured with additional pins.

6.8 LUBRICANT: INITIAL FILLING

Plummer blocks S 30... K	
Plummer block	Grease quantity for initial filling 1)
Designation	kg
S 3024 K	0,5
S 3026 K	0,8
S 3028 K	0,9
S 3030 K	1,1
S 3032 K	1,2
S 3034 K	1,4
S 3036 K	1,7
S 3038 K	1,9
S 3040 K	2,2
S 3044 K	2,9
S 3048 K	3,2
S 3052 K	4,5
S 3056 K	5,1

Plummer block Designation	Breaking load of the plummer block					Set screw Size	Load carrying capacity			Tightening torque Material 8.8
	Load direction						Material 8.8	120°	150°	
	55°	90°	120°	150°	180°	kN				kN
S 3024 K	540	320	245	215	270	M 20 x 90	260	150	130	200
S 3026 K	620	370	280	250	310	M 20 x 100	260	150	130	200
S 3028 K	700	420	315	280	350	M 20 x 100	260	150	130	200
S 3030 K	780	470	350	310	390	M 20 x 100	260	150	130	200
S 3032 K	860	520	390	345	430	M 20 x 100	260	150	130	200
S 3034 K	1000	600	450	400	500	M 24 x 130	360	210	180	350
S 3036 K	1160	700	520	465	580	M 24 x 130	360	210	180	350
S 3038 K	1300	780	585	520	650	M 24 x 130	360	210	180	350
S 3040 K	1500	890	665	590	740	M 24 x 140	360	210	180	350
S 3044 K	1700	1020	765	680	850	M 30 x 160	640	370	320	400
S 3048 K	1900	1130	845	750	940	M 30 x 160	640	370	320	400
S 3052 K	2200	1320	990	880	1100	M 36 x 180	800	460	400	600
S 3056 K	2500	1500	1120	1000	1240	M 36 x 190	800	460	400	600

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.



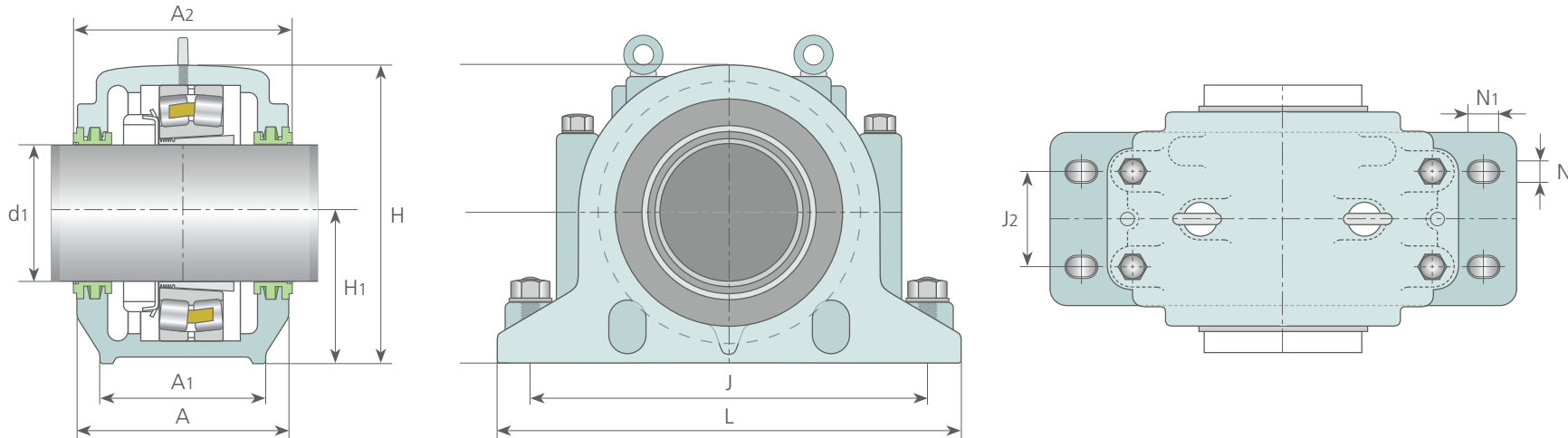
7.0 LFD SD 31.. PLUMMER BLOCK HOUSINGS

7.0

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7.1 SD 31.. PLUMMER BLOCK HOUSINGS – DESCRIPTION



The plummer blocks in the SD 31 design are two-part plummer blocks. They are fitted with a spherical roller bearing. Easy handling is ensured thanks to the fitted ring bolts.

7.2 MATERIAL

The LFD plummer blocks of the SD 31.. series are made of grey cast iron GG-25. For higher loads, plummer blocks made of spheroidal cast iron GGG-40 or cast steel GS-45 can be supplied on request.

7.3 LUBRICATION

The plummer blocks are designed in such a way that they can be lubricated with both grease and oil. However, we recommend grease lubrication. The specifications of the lubricant must be followed. Please refer to the **table** on **page 64** for the recommended quantity for the initial fill.

7.4 SEALS

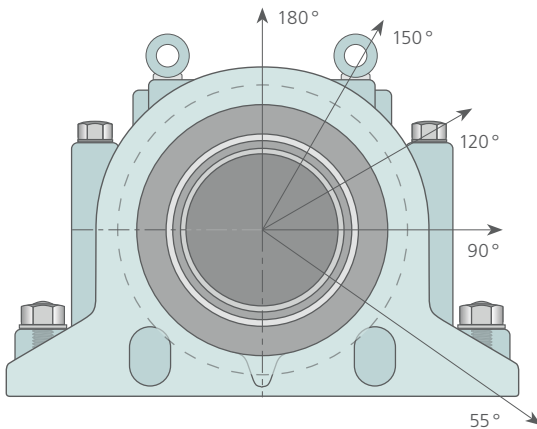
The plummer blocks are supplied with a labyrinth seal or with Taconite seals for use in difficult operating conditions. A closed cover can be provided as well, however, it must be ordered separately.

7.5 LOAD

The LFD plummer blocks of the SD 31.. series are designed to accommodate loads acting perpendicularly on the support surface. For this direction, the load carrying capacity of the plummer block is limited by the load rating of the spherical roller bearing. When forces are at work in other directions, it must be verified whether the loads for the plummer block (upper and lower shell) and the threaded connections are permissible. The provided set screws are supplied in strength class 8.8.

7.6 DIMENSIONS

Shaft diameter	Plummer blocks										Designation	Suitable bearings, adapter sleeves and locating rings			Labyrinth seal	Cover	Weight
	A [mm]	A1 [mm]	A2 [mm]	H [mm]	H1 [mm]	L [mm]	J [mm]	J2 [mm]	N1 [mm]	N [mm]							
150	230	180	240	335	170	510	430	100	36	30	SD 3134	23134 CAKW33	H 3134	FRB 280 / 10	TS 34	DK 34	70
160	240	190	250	355	180	530	450	110	36	30	SD 3136	23136 CAKW33	H 3136	FRB 300 / 10	TS 36	DK 36	79
170	260	210	270	375	190	560	480	120	38	30	SD 3138	23138 CAKW33	H 3138	FRB 320 / 10	TS 38	DK 38	100
180	280	230	290	410	210	610	510	130	40	35	SD 3140	23140 CAKW33	H 3140	FRB 340 / 10	TS 40	DK 40	130
200	290	240	300	435	220	640	540	140	40	35	SD 3144	23144 CAKW33	H 3144	FRB 370 / 10	TS 44	DK 44	146
220	310	260	320	475	240	700	600	150	40	35	SD 3148	23148 CAKW33	H 3148	FRB 400 / 10	TS 48	DK 48	190
240	320	280	330	515	260	770	650	160	48	40	SD 3152	23152 CAKW33	H 3152	FRB 440 / 10	TS 52	DK 52	230
260	320	280	330	550	280	790	670	160	50	42	SD 3156	23156 CAKW33	H 3156	FRB 460 / 10	TS 56	DK 56	260
280	350	310	360	590	300	830	710	190	60	42	SD 3160	23160 CAKW33	H 3160	FRB 500 / 10	TS 60	DK 60	320
300	370	330	380	630	320	880	750	200	60	42	SD 3164	23164 CAKW33	H 3164	FRB 540 / 10	TS 64	DK 64	350
320	390	360	410	670	340	965	840	240	59	49	SD 3168	23168 CAKW33	H 3168	FRB 580 / 10	TS 68	DK 68	550
340	390	360	410	720	360	1040	890	255	59	49	SD 3172	23172 CAKW33	H 3172	FRB 600 / 10	TS 72	DK 72	560
360	405	360	410	750	380	1120	980	255	72	60	SD 3176	23176 CAKW33	H 3176	FRB 620 / 10	TS 76	DK 76	780
380	405	390	440	790	400	1245	1050	270	78	65	SD 3180	23180 CAKW33	H 3180	FRB 650 / 10	TS 80	DK 80	885



7.7 LOAD CARRYING CAPACITY

The guide values of the load carrying capacity depend on the plummer block material of the utilized bearing, the set screws of the upper and lower parts as well as the load direction. The specified guide values are based on a correct installation and an adequate mounting surface, which evenly supports the plummer block base across the entire area. A safety factor of 6 is recommended in relation to the guide value for the breaking load of the plummer block material.

In the case of an axial load, as a precautionary measure, it must be verified whether the plummer block has to be secured with additional pins.

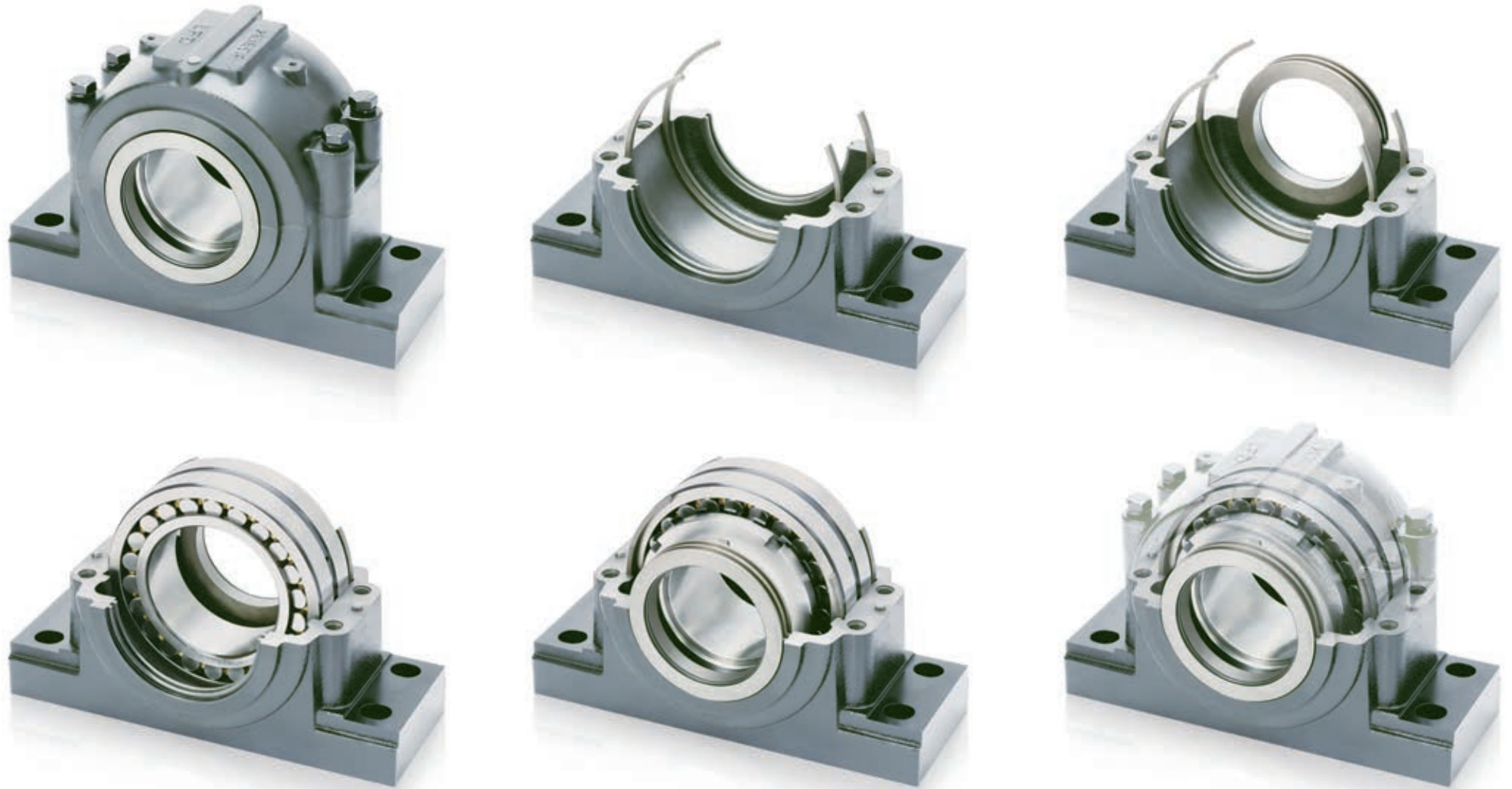
7.8 LUBRICANT: INITIAL FILLING

Plummer blocks SD 31..	
Plummer block	Grease quantity for initial filling 1)
Designation	kg
SD 3134	1,7
SD 3136	2,1
SD 3138	2,8
SD 3140	3,6
SD 3144	4,2
SD 3148	5,2
SD 3152	6,7
SD 3156	7
SD 3160	10
SD 3164	12
SD 3168	18
SD 3172	18
SD 3176	23
SD 3180	23

Plummer block Designation	Breaking load of the plummer block					Set screw Size	Load carrying capacity			Tightening torque Material 8.8
	Load direction						Material 8.8	120° kN	150° kN	
	55° kN	90° kN	120° kN	150° kN	180° kN	120° kN				150° kN
SD 3134	2600	1100	1000	940	1050	M 20 x 130	520	300	260	200
SD 3136	2750	1200	1050	1000	1100	M 20 x 130	520	300	260	200
SD 3138	3000	1350	1150	1100	1200	M 20 x 130	520	300	260	200
SD 3140	4000	1700	1450	1400	1600	M 24 x 150	720	420	360	350
SD 3144	4250	1900	1600	1500	1700	M 24 x 150	720	420	360	350
SD 3148	4600	2300	1800	1600	1850	M 24 x 150	720	420	360	350
SD 3152	5500	2550	2150	2050	2200	M 30 x 180	1280	740	640	400
SD 3156	6600	3100	2400	2250	2650	M 30 x 180	1280	740	640	400
SD 3160	7750	3400	2900	2800	3100	M 30 x 200	1280	740	640	400
SD 3164	8100	3650	3100	3000	3250	M 30 x 220	1280	740	640	400
SD 3168	8850	4000	3200	3100	3550	M 30 x 220	1280	740	640	400
SD 3172	9750	4500	3350	3250	3900	M 30 x 230	1280	740	640	400
SD 3176	10300	4800	3400	3300	4150	M 30 x 240	1280	740	640	400
SD 3180	10700	5000	3500	3400	4300	M 36 x 240	1600	920	800	600

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.

7.9 CONSTRUCTION



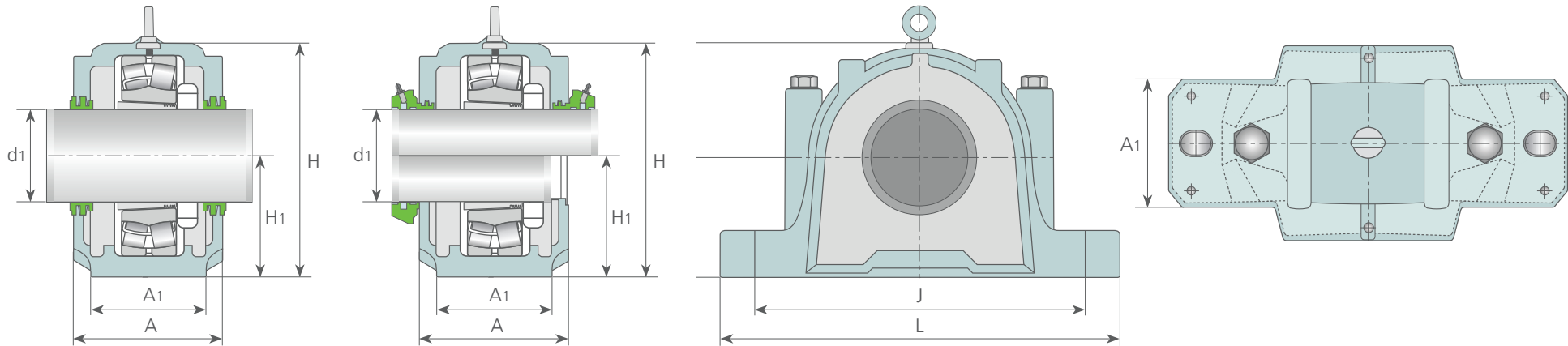


8.0 LFD SAF 5.. PLUMMER BLOCK HOUSINGS

8.0

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8.1 SAF 5.. PLUMMER BLOCK HOUSINGS – DESCRIPTION



The LFD SAF 5.. plummer blocks are two-part plummer blocks. They have been designed for the use with inch shafts.

As standard, the plummer blocks are made of grey cast iron GG-20. Should a higher degree of rigidity be required, LFD can also offer the plummer blocks, with identical dimensions, made of spherical cast iron GGG-40. As standard, two screw holes for threaded connections are provided up to size SAF 520. From size SAF 522 onwards, the plummer blocks are provided with four screw holes in their standard version. On request, the plummer blocks of the sizes SAF 513 – SAF 520 can be supplied with four screw holes, suffix H4, see also **table 2** on **page 26**.

8.2 BEARINGS

The LFD SAF plummer block is designed for the usage with self-aligning ball bearings or spherical roller bearings. Depending on the rotational speeds or loads as well as the inclination and deflection, the choice of the right bearing is of great importance. Please refer to the respective datasheet for the technical specifications of the bearings. If you require a locating bearing, please make sure that you order the appropriate number of locating rings- by default, LFD always assumes that a non-locating bearing will be used.

8.3 SEALS

Depending on the particular requirements, you can choose a labyrinth seal or a combined

Taconite seal. The technical description of the seals can be found on pages 30 to 33. In the case of shaft end bearings, you also have the option of fitting the plummer block with an end cover.

8.4 LUBRICATION

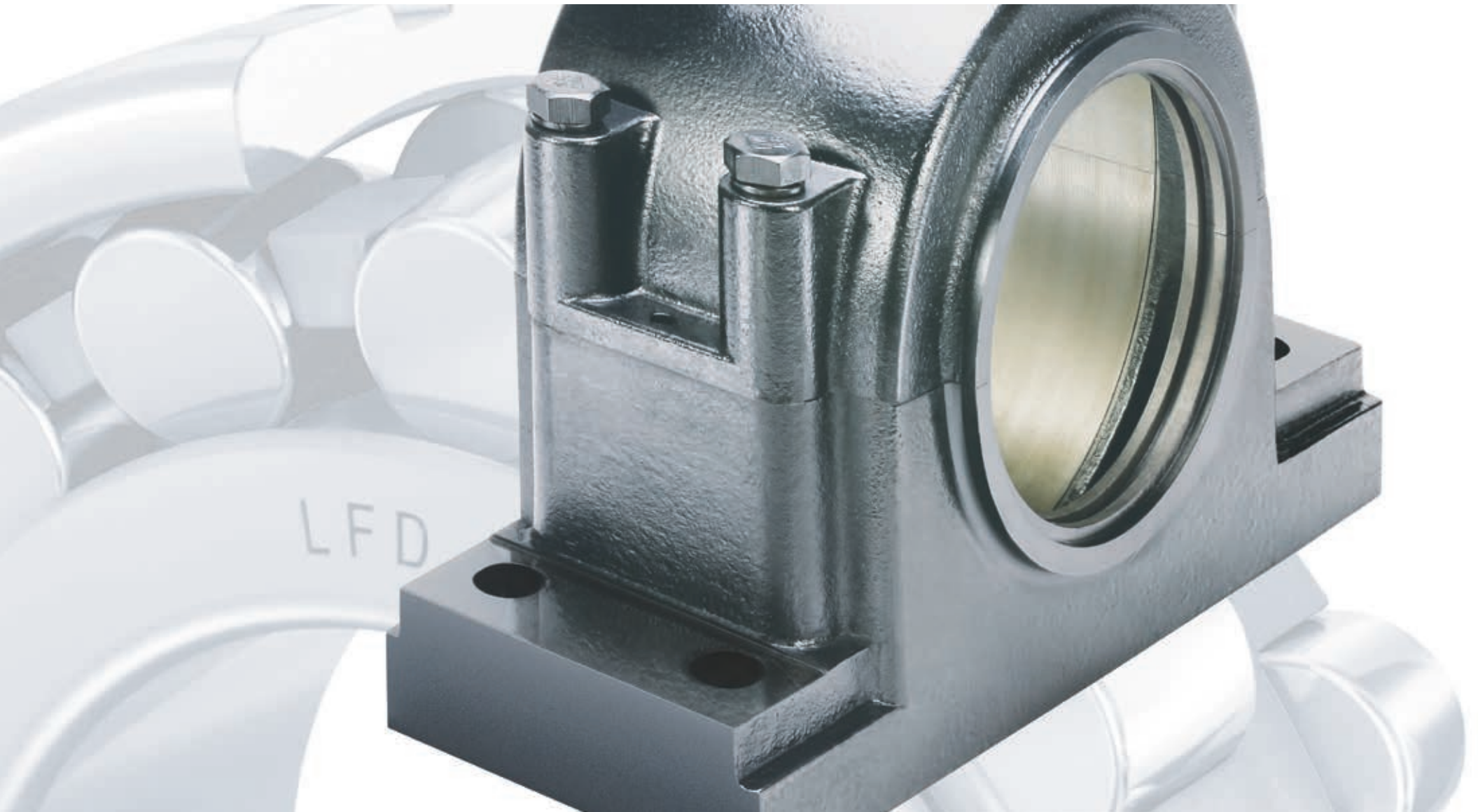
The plummer blocks are designed in such a way that they can be lubricated with both grease and oil. However, we recommend grease lubrication. The specifications of the lubricant must be followed.

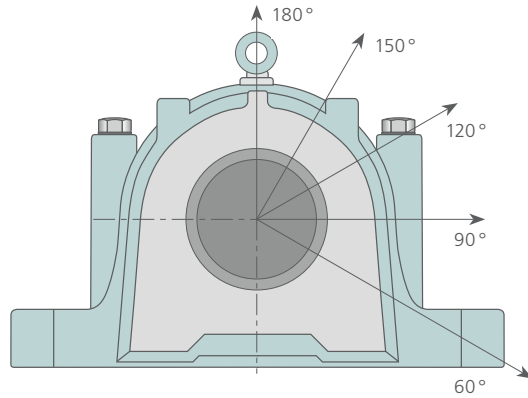
Please refer to the **table** on **page 71** for the recommended quantity for the initial fill. The bearings should be lubricated, as described for the installation of SNL plummer blocks, please see the manual.

8.5 DIMENSIONS

Shaft diameter	Plummer blocks										Suitable bearings, adapter sleeves and locating rings				Labyrinth seal
	d ₁	A	A ₁	H	H ₁	L	J _{min}	J _{max}	S	lbs.	Designation			Number	
1 7/16 (36,513 mm)	3 5/8 (92,075 mm)	2 3/8 (60,325 mm)	4.437 (112,7 mm)	2 1/4 (57,15 mm)	8.252 (209,6 mm)	6.25983 (159 mm)	7.00786 (178 mm)	1/2 (M 12)	8.6 (3,9 kg)	SAF 509	1209 K	HA 209	FRB 85 X 6	2	LER 17
												2209 K - 22209 K	HA 309	FRB 85 X 8	1
1 11/16 (42,862 mm)	3 5/8 (92,075 mm)	2 3/8 (60,325 mm)	4.8031 (122 mm)	2 1/2 (63,5 mm)	8.252 (209,6 mm)	6.49605 (165 mm)	7.00786 (178 mm)	1/2 (M 12)	9.5 (4,3 kg)	SAF 510	1210 K	HA 210	FRB 90 X 6,5	2	LER 20
												2210 K - 22210 K	HA 310	FRB 90 X 6,5	1
1 15/16 (49,212 mm)	3 7/8 (98,425 mm)	2 3/4 (69,85 mm)	5.2323 (132,9 mm)	2 3/4 (69,85 mm)	9.626 (244,5 mm)	7.40156 (188 mm)	7.8740 (200 mm)	5/8 (M 16)	11.02 (5,0 kg)	SAF 511	1211 K	HA 211	FRB 100 X 6	2	LER 24
												2211 K - 22211 K	HA 311	FRB 100 X 8	1
2 3/16 (55,563 mm)	4 1/2 (114,3 mm)	3 1/8 (79,375 mm)	5.815 (147,7 mm)	3 (76,2 mm)	11 (279,4 mm)	8.11022 (206 mm)	9.48817 (241 mm)	5/8 (M 16)	16.98 (7,7 kg)	SAF 513	1213 K	HA 213	FRB 120 X 9	2	LER 29
												2213 K - 22213 K	HA 313	FRB 120 X 9	1
2 7/16 (61,913 mm)	4 11/16 (119,063 mm)	3 1/8 (79,375 mm)	6.2047 (157,6 mm)	3 1/4 (82,55 mm)	11 1/4 (285,75 mm)	8.62203 (219 mm)	9.64565 (245 mm)	5/8 (M 16)	19.18 (8,7 kg)	SAF 515	1215 K	HA 215	FRB 130 X 8	2	LER 37
												2215 K - 22215 K	HA 315	FRB 130 X 10	1
2 11/16 (68,263 mm)	5 5/16 (134,938 mm)	3 1/2 (88,9 mm)	6.689 (169,9 mm)	3 1/2 (88,9 mm)	13 (330,2 mm)	9 5/8 (244,48 mm)	11 (279,4 mm)	3/4 (M 20)	26.9 (12,2 kg)	SAF 516	1216 K	HA 216	FRB 140 X 8,5	2	LER 44
												2216 K - 22216 K	HA 316	FRB 140 X 10	1
2 15/16 (74,612 mm)	5 (127 mm)	3 1/2 (88,9 mm)	7.1654 (182 mm)	3 3/4 (95,25 mm)	13 (330,2 mm)	9 7/8 (250,83 mm)	11 (279,4 mm)	3/4 (M 20)	29.8 (13,5 kg)	SAF 517	1217 K	HA 217	FRB 150 X 9	2	LER 53
												2217 K - 22217 K	HA 317	FRB 150 X 10	1
3 3/16 (80,963 mm)	5 3/8 (146,05 mm)	3 7/8 (98,425 mm)	7.5827 (192,6 mm)	4 (101,6 mm)	13 3/4 (349,25 mm)	10.39368 (264 mm)	11.61415 (295 mm)	3/4 (M 20)	35.1 (15,9 kg)	SAF 518	1218 K	HA 218	FRB 160 X 10	2	LER 188
												2218 K - 22218 K	HA 318	FRB 160 X 10	1
3 7/16 (87,313 mm)	6 1/8 (155,575 mm)	4 3/8 (111,125 mm)	8.5551 (217,3 mm)	4 1/2 (114,3 mm)	15.252 (314,3 mm)	11.61415 (295 mm)	13.11021 (333 mm)	3/4 (M 20)	48.1 (21,8 kg)	SAF 520	1220 K	HA 220	FRB 180 X 11	2	LER 102
												2220 K - 22220 K	HA 320	FRB 180 X 10	1
3 15/16 (100,013 mm)	6 1/2 (165,1 mm)	4 3/4 (120,65 mm)	9.4252 (239,4 mm)	4.938 (125,425 mm)	16 1/2 (419,1 mm)	12.63777 (321 mm)	14.48816 (368 mm)	3/4 (M 20)	61.7 (28,0 kg)	SAF 522	1222 K	HA 222	FRB 200 X 12,5	2	LER 109
												2222 K - 22222 K	HA 322	FRB 200 X 10	1
4 3/16 (106,362 mm)	7 3/8 (187,325 mm)	4 3/4 (120,65 mm)	10.1339 (257,4 mm)	5 1/4 (133,35 mm)	16 1/2 (419,1 mm)	13.26769 (337 mm)	14.48816 (368 mm)	3/4 (M 20)	70.8 (32,1 kg)	SAF 524	22224 K	HA 3124	FRB 215 X 10	1	LER 113
4 7/16 (112,713 mm)	8 (203,2 mm)	5 1/8 (130,175 mm)	11.6299 (295,4 mm)	6 (152,4 mm)	18.374 (466,7 mm)	14.64564 (372 mm)	15.98422 (406 mm)	1 (M 24)	91.9 (41,7 kg)	SAF 526	22226 K	HA 3126	FRB 230 X 10	1	LER 117
4 15/16 (125,412 mm)	7 5/8 (193,675 mm)	5 7/8 (149,225 mm)	12.0236 (305,4 mm)	6 (152,4 mm)	20.126 (511,2 mm)	15.98422 (406 mm)	17.12595 (435 mm)	1 (M 24)	108 (49,0 kg)	SAF 528	22228 K	HA 3128	FRB 250 X 10	1	LER 122
5 3/16 (131,762 mm)	8 3/8 (212,725 mm)	6 1/4 (158,75 mm)	12 1/2 (317,5 mm)	6 5/16 (160,338 mm)	21 1/4 (539,75 mm)	17.00784 (432 mm)	18.26768 (464 mm)	1 (M 24)	135.4 (61,4 kg)	SAF 530	22230 K	HA 3130	FRB 270 X 10	1	LER 125
5 7/16 (138,113 mm)	8 3/4 (222,25 mm)	6 1/4 (158,75 mm)	13 5/16 (338,137 mm)	6 11/16 (169,863 mm)	22 (558,80 mm)	17.40154 (442 mm)	19.25193 (489 mm)	1 (M 24)	149.9 (68,0 kg)	SAF 532	22232 K	HA 3132	FRB 290 X 10	1	LER 130
5 15/16 (150,813 mm)	9 5/8 (244,475 mm)	6 3/4 (171,45 mm)	14 3/16 (360,363 mm)	7 1/16 (179,387 mm)	24 3/4 (628,65 mm)	19.37004 (492 mm)	21.61413 (549 mm)	1 (M 24)	181.0 (82,1 kg)	SAF 534	22234 K	HA 3134	FRB 310 X 10	1	LER 140
6 7/16 (163,512 mm)	10 (254 mm)	7 1/8 (180,975 mm)	14 7/8 (377,825 mm)	8 1/2 (190,5 mm)	26 3/4 (679,45 mm)	20.8661 (530 mm)	23.622 (600 mm)	1 (M 24)	216.9 (98,4 kg)	SAF 536	22236 K	HA 3136	FRB 320 X 10	1	LER 148
6 15/16 (176,213 mm)	10 3/4 (273,05 mm)	7 1/2 (190,5 mm)	15 11/16 (398,462 mm)	7 7/8 (200,025 mm)	28 (711,20 mm)	21.61413 (549 mm)	24.37003 (619 mm)	1 1/4 (M 30)	254.9 (115,6 kg)	SAF 538	22238 K	HA 3138	FRB 340 X 10	1	LER 155
7 3/16 (182,563 mm)	11 1/4 (285,75 mm)	8 (203,20 mm)	16 1/2 (419,10 mm)	8 1/4 (209,55 mm)	29 1/2 (749,30 mm)	22.51964 (572 mm)	24.99995 (635 mm)	1 1/4 (M 30)	306.4 (139,0 kg)	SAF 540	22240 K	HA 3140	FRB 360 X 10	1	LER 159
7 15/16 (201,613 mm)	12 (304,80 mm)	8 3/4 (222,25 mm)	18 5/8 (473,075 mm)	9 1/2 (241,30 mm)	32 3/4 (831,85 mm)	24.76373 (629 mm)	27.87396 (708 mm)	1 1/4 (M 30)	393.3 (178,4 kg)	SAF 544	22244 K	HA 3144	FRB 400 X 10	1	LER 167







8.6 LOAD CARRYING CAPACITY

The guide values of the load carrying capacity depend on the plummer block material of the utilized bearing, the set screws of the upper and lower parts as well as the load direction. The specified guide values are based on a correct installation and an adequate mounting surface, which evenly supports the plummer block base across the entire area. A safety factor of 6 is recommended in relation to the guide value for the breaking load of the plummer block material.

In the case of an axial load, as a precautionary measure, it must be verified whether the plummer block has to be secured with additional pins.

8.7 LUBRICANT: INITIAL FILLING

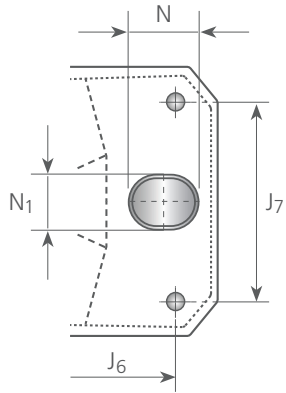
Plummer blocks SAF 5..	
Plummer block	Grease quantity for initial filling 1)
Designation	lbs
SAF 509	0,20 (0,09kg)
SAF 510	0,25 (0,11kg)
SAF 511	0,30 (0,14kg)
SAF 513	0,47 (0,20kg)
SAF 515	0,56 (0,25kg)
SAF 516	0,80 (0,36kg)
SAF 517	0,80 (0,36kg)
SAF 518	0,90 (0,40kg)
SAF 520	1,30 (0,60kg)
SAF 522	1,75 (0,80kg)
SAF 524	2,50 (1,10kg)
SAF 526	3,25 (1,50kg)
SAF 528	3,25 (1,50kg)
SAF 530	3,75 (1,75kg)
SAF 532	4,25 (1,90kg)
SAF 534	5,25 (2,40kg)
SAF 536	6,00 (2,70kg)
SAF 538	7,25 (3,30kg)
SAF 540	8,50 (3,90kg)
SAF 544	11,50 (5,20kg)

Plummer block Designation	Breaking load of the plummer block				
	Load direction				
	60°	90°	120°	150°	180°
	lbs (kN)	lbs (kN)	lbs (kN)	lbs (kN)	lbs (kN)
SAF 509	4700 (20,91)	2800 (12,46)	1700 (7,56)	1500 (6,67)	1800 (8)
SAF 510	6500 (28,91)	3900 (17,3)	2500 (11,1)	2200 (9,79)	2800 (12,4)
SAF 511	10100 (44,93)	6100 (27,1)	3900 (17,3)	3500 (15,57)	4300 (19,1)
SAF 513	11300 (50,26)	6800 (30,2)	4000 (17,79)	3600 (16,01)	4300 (19,1)
SAF 515	17000 (75,62)	10200 (45,4)	6300 (28)	5700 (25,3)	6800 (30,2)
SAF 516	18700 (83,18)	11200 (49,8)	6800 (30,2)	6000 (26,7)	7100 (31,6)
SAF 517	19000 (84,52)	11400 (50,7)	7100 (31,6)	6400 (28,4)	7800 (34,7)
SAF 518	27200 (121)	16300 (72,5)	10200 (45,4)	9100 (40,48)	11200 (49,8)
SAF 520	30500 (135)	18300 (81,4)	11400 (50,7)	10400 (46,2)	12500 (55,6)
SAF 522	33400 (148)	20000 (88,9)	12500 (55,6)	11400 (50,7)	13700 (60,9)
SAF 524	41700 (186)	25000 (111)	16300 (72,5)	15000 (66,7)	18300 (81,4)
SAF 526	42500 (189,05)	25000 (113)	16600 (73,84)	15300 (68)	19000 (84,5)
SAF 528	55900 (249)	33500 (149)	21200 (94,3)	19300 (85,9)	23200 (103)
SAF 530	51700 (230)	31000 (138)	19600 (87,2)	18000 (80)	21600 (89,1)
SAF 532	50900 (226)	30500 (135)	19300 (85,8)	17600 (78,3)	21200 (94,3)
SAF 534	52600 (234)	31500 (140)	19300 (85,8)	17300 (77)	20800 (92,5)
SAF 536	52600 (234)	31500 (140)	19000 (84,5)	17000 (75,6)	20000 (89)
SAF 538	65100 (290)	39000 (173)	24000 (107)	21200 (94,3)	25500 (113)
SAF 540	81800 (364)	49000 (218)	30500 (135)	27000 (120)	32500 (144)
SAF 544	59100 (262,89)	57000 (253)	36000 (160)	32500 (144)	39000 (173)

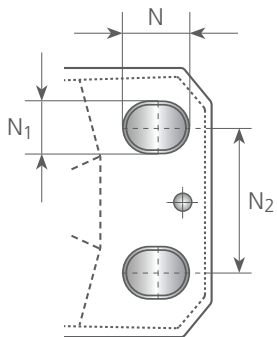
1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.

8.8 DIMENSIONS FOR SET SCREWS AND ADDITIONAL LOCKING PINS

Locking pins



Additional set screws H4



Plummer block						Set screw
Designation	N	N ₁	N ₂	J ₆	J ₇	M
SAF 509	1 (25,4)	5/8 (15,875)	-	7 1/4 (184,2)	1 3/8 (34,925)	1/2 (M 12)
SAF 510	7/8 (22,225)	5/8 (15,875)	-	7 1/4 (184,2)	1 3/8 (34,925)	1/2 (M 12)
SAF 511	1 3/16 (30,163)	3/4 (19,05)	-	8.874 (225,4)	2 (50,8)	5/8 (M 16)
SAF 513	1 7/16 (36,513)	3/4 (19,05)	-	10.252 (260,4)	2.374 (60,3)	5/8 (M 16)
SAF 513 H4			2 (50,8)			
SAF 515	1 1/4 (31,75)	3/4 (19,05)	-	10 1/2 (266,7)	2.374 (60,3)	5/8 (M 16)
SAF 515 H4			1 7/8 (47,7)			
SAF 516	1.5626 (39,69)	7/8 (22,2)	-	12 (304,8)	2 1/2 (63,5)	3/4 (M 20)
SAF 516 H4			2 1/8 (54,1)			
SAF 517	1.437 (36,5)	7/8 (22,2)	-	12 (304,8)	2 1/2 (63,5)	3/4 (M 20)
SAF 517 H4			2 1/8 (54,1)			
SAF 518	1.626 (41,3)	7/8 (22,2)	-	12 3/4 (323,85)	2.874 (73)	3/4 (M 20)
SAF 518 H4			2 1/8 (54,1)			
SAF 520	1.752 (44,5)	1 (25,4)	-	14.252 (362)	3.374 (85,7)	7/8 (M 22)
SAF 520 H4			2 3/8 (60,5)			
With four screw holes only						
SAF 522	1 13/16 (46,03)	7/8 (22,2)	2 3/4 (69,85)			3/4 (M 20)
SAF 524	1 1/2 (38,1)	7/8 (22,2)	2 3/4 (69,85)			3/4 (M 20)
SAF 526	1 5/8 (41,3)	1 5/16 (23,813)	3 1/4 (82,6)			7/8 (M 22)
SAF 528	2 (50,8)	1 1/8 (28,575)	3 3/8 (85,9)			1 (M 24)
SAF 530	1 3/4 (44,5)	1 1/8 (28,575)	3 3/4 (95,3)			1 (M 24)
SAF 532	2 1/16 (52,388)	1 1/8 (28,575)	3 3/4 (95,3)			1 (M 24)
SAF 534	2 1/4 (57,15)	1 1/8 (28,575)	4 1/4 (108)			1 (M 24)
SAF 536	2 1/2 (63,5)	1 1/8 (28,575)	4 5/8 (117,6)			1 (M 24)
SAF 538	2 3/4 (69,85)	1 3/8 (34,925)	4 1/2 (114,3)			1 1/4 (M 30)
SAF 540	2 5/8 (66,675)	1 3/8 (34,925)	5 (127)			1 1/4 (M 30)
SAF 544	2 5/8 (66,675)	1 5/8 (41,275)	5 1/4 (133,4)			1 1/4 (M 30)





9.0 LFD 7225.. FLANGE UNITS

9.0

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9.1 7225.. FLANGE UNITS – DESCRIPTION



The flange units of type 7225.. are manufactured in two different versions. From size 722505 up to 722513, they are offered as a triangle-shaped plummer block and from 722515 up to 722522, they are offered as a square-shaped plummer block. For both shapes, the bearing seat is designed as a non-locating bearing. A locating bearing arrangement is achieved by inserting locating rings. The plummer blocks can be fitted with self-aligning ball bearings of the 12.. K and 22.. K series or with a spherical roller bearing of the 222.. K series.

9.2 MATERIAL

Both versions are manufactured with grey cast iron GG-20.

9.3 LUBRICANT

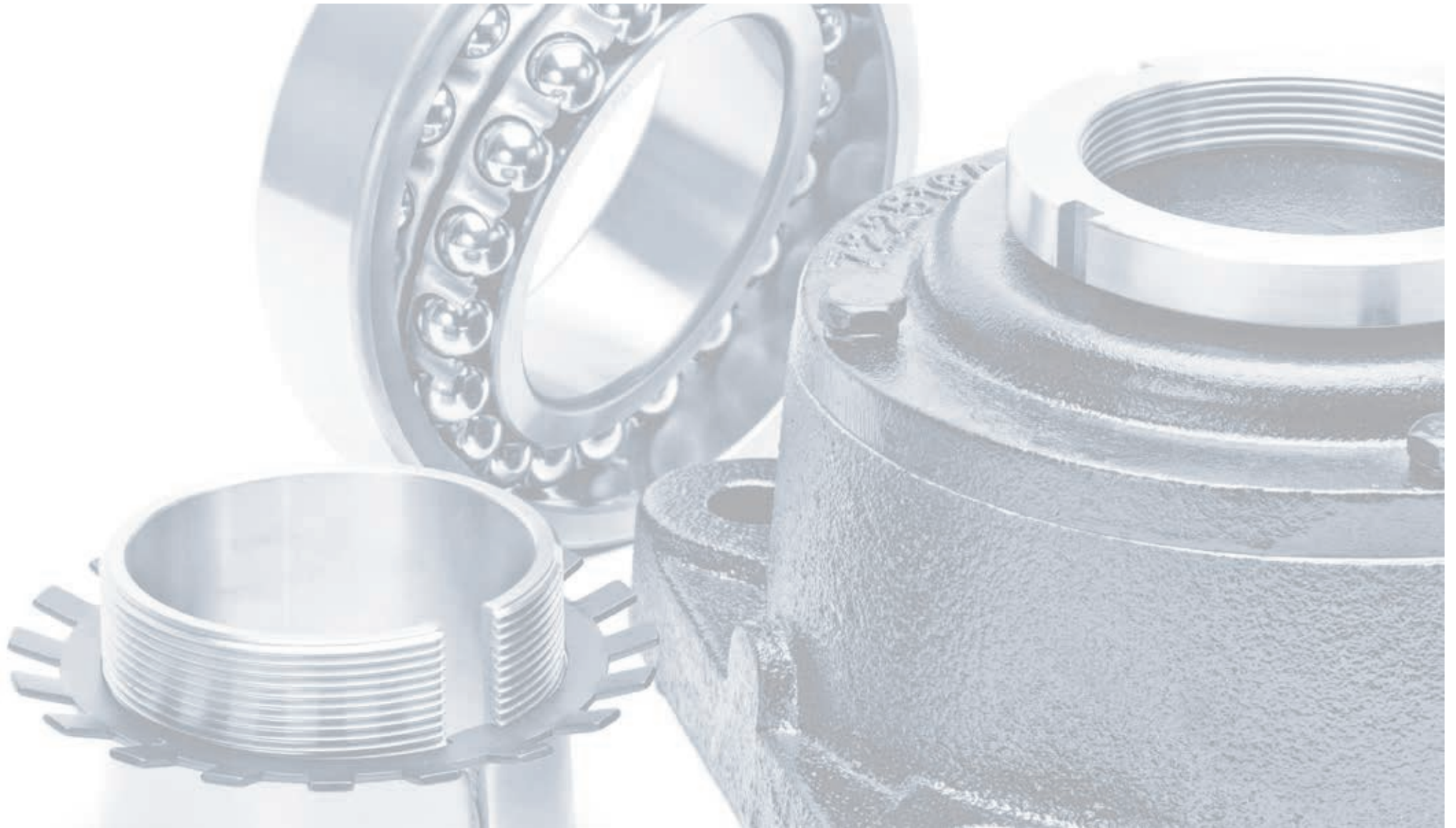
The flange units are operating with grease lubrication and can be relubricated via the fitted lubrication nipple. Please refer to the tables on page 78 and 80 for the recommended quantity for the initial fill.

9.4 SEALS

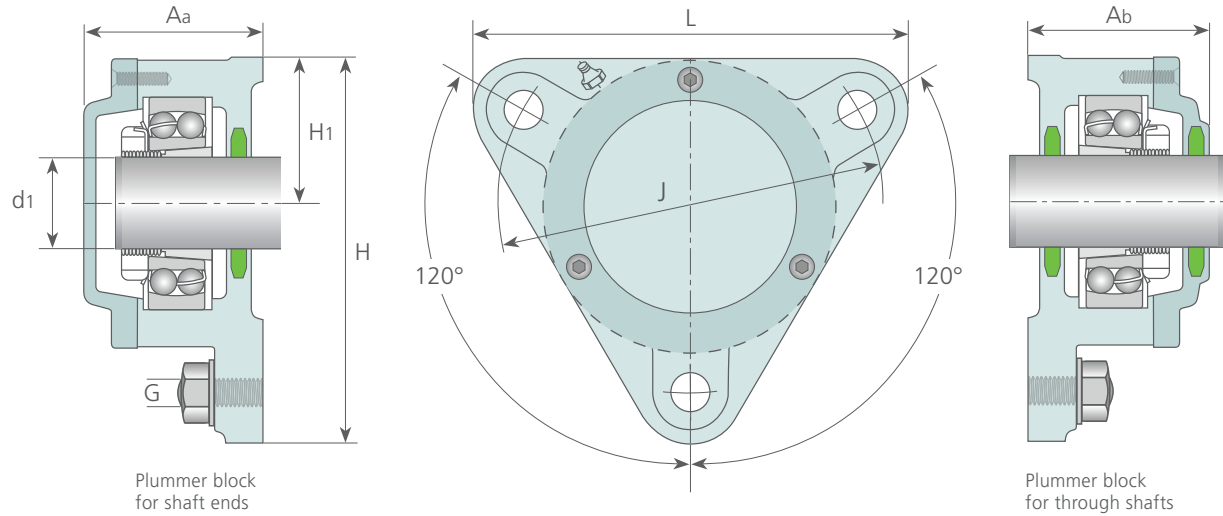
The plummer blocks can be ordered with a closed cover (suffix A) or with an open cover (suffix B) for a through shaft, for example 722511 A or 722511 B.

9.5 LOAD

For flange units, the radial load carrying capacity is determined by the utilized bearing and the set screws of the plummer block.



7225.. THREE-HOLE FLANGE UNITS



9.7 LUBRICANT: INITIAL FILLING

Flange units 7225..		
Plummer block	Plummer block	Grease quantity for initial filling 1)
Designation	Designation	g
722505 A	722505 B	15
722506 A	722506 B	25
722507 A	722507 B	35
722508 A	722508 B	45
722509 A	722509 B	50
722510 A	722510 B	50
722511 A	722511 B	60
722512 A	722512 B	90
722513 A	722513 B	120

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.

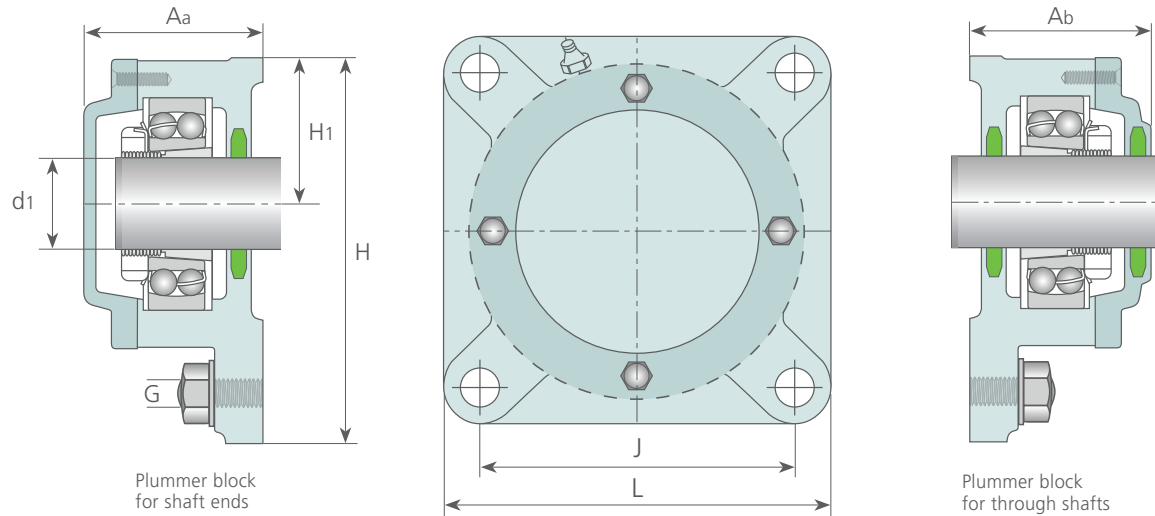
9.6 DIMENSIONS

Shaft diameter	Flange units								Suitable bearings, adapter sleeves and locating rings/spacers				Felt strips	
	Closed cover	Open cover						A / B kg	Shaft end	Through shaft				
d ₁ [mm]	A _a [mm]	A _b [mm]	H [mm]	H ₁ [mm]	L [mm]	J [mm]	G [mm]		Designation	Designation				
20	51,5	56,5	100	38	110	96	M 10	1,48 / 1,55	722505 A	722505 B	1205 K – 2205 K – 22205 K	H 205 – H 305 – H 305	FRB 52/5 – ZW 42/52 – ZW 42/52	FS 05
25	57	59,5	117	44	130	116	M 10	2 / 2,1	722506 A	722506 B	1206 K – 2206 K – 22206 K	H 206 – H 306 – H 306	FRB 62/6 – ZW 50/62 – ZW 50/62	FS 06
30	59,5	63,5	130	48,5	145	130	M 12	2,9 / 3	722507 A	722507 B	1207 K – 2207 K – 22207 K	H 207 – H 307 – H 307	FRB 72/8 – ZW 65/72 – ZW 65/72	FS 07
35	64	65,5	143	54	160	140	M 12	3,43 / 3,48	722508 A	722508 B	1208 K – 2208 K – 22208 K	H 208 – H 308 – H 308	FRB 80/7 – ZW 70/80 – ZW 70/80	FS 08
40	64,5	69,5	160	60	180	160	M 12	4,2 / 4,3	722509 A	722509 B	1209 K – 2209 K – 22209 K	H 209 – H 309 – H 309	FRB 85/6 – ZW 75/85 – ZW 75/85	FS 09
45	68,5	73	160	60	180	160	M 12	4,3 / 4,45	722510 A	722510 B	1210 K – 2210 K – 22210 K	H 210 – H 310 – H 310	FRB 90/5 – ZW 80/90 – ZW 80/90	FS 10
50	75,5	81,5	172	65	192	170	M 12	5,25 / 5,45	722511 A	722511 B	1211 K – 2211 K – 22211 K	H 211 – H 311 – H 311	FRB 100/6 – ZW 85/100 – ZW 85/100	FS 11
55	77	82	189	72	210	180	M 12	6,8 / 7,15	722512 A	722512 B	1212 K – 2212 K – 22212 K	H 212 – H 312 – H 312	FRB 110/8 – ZW 90/110 – ZW 90/110	FS 12
60	80	86	203	78	225	190	M 12	7,65 / 7,8	722513 A	722513 B	1213 K – 2213 K – 22213 K	H 213 – H 313 – H 313	FRB 120/10 – FRB 120/2 – FRB 120/2	FS 13

9.8 CONSTRUCTION



7225.. FOUR-HOLE FLANGE UNITS



9.10 LUBRICANT: INITIAL FILLING

Flange units 7225..		
Plummer block	Plummer block	Grease quantity for initial filling 1)
Designation	Designation	g
722515 A	722515 B	250
722516 A	722516 B	300
722517 A	722517 B	350
722518 A	722518 B	400
722520 A	722520 B	500
722522 A	722522 B	650

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.

9.9 DIMENSION

Shaft diameter	Flange units								Suitable bearings, adapter sleeves and locating rings/spacers				Felt strips	
	Closed cover	Open cover						A / B kg	Shaft end	Through shaft				
d1 [mm]	Aa [mm]	Ab [mm]	H [mm]	H1 [mm]	L [mm]	J [mm]	G [mm]		Designation	Designation				
65	100	107	190	95	190	152	M 16	10,55 / 10,85	722515 A	722515 B	1215 K – 2215 K – 22215 K	H 215 – H 315 – H 315	FRB 130/8 – FRB 130/10 – FRB 130/10	FS 15
70	102	114	190	98	196	152	M 16	12,3 / 12,7	722516 A	722516 B	1216 K – 2216 K – 22216 K	H 216 – H 316 – H 316	FRB 140/8,5 – FRB 140/10 – FRB 140/10	FS 16
75	107	115	210	105	210	170	M 16	14,75 / 15,5	722517 A	722517 B	1217 K – 2217 K – 22217 K	H 217 – H 317 – H 317	FRB 150/9 – FRB 150/10 – FRB 150/10	FS 17
80	112	119	210	105	210	170	M 16	16,35 / 17	722518 A	722518 B	1218 K – 2218 K – 22218 K	H 218 – H 318 – H 318	FRB 160/10 – FRB 160/10 – FRB 160/10	FS 18
90	124	134	250	125	250	198	M 20	22,3 / 22,9	722520 A	722520 B	1220 K – 2220 K – 22220 K	H 220 – H 320 – H 320	FRB 180/10 and FRB 180/12 – FRB 180/10 – FRB 180/10	FS 20
100	134	137	270	135	270	219	M 20	27,8 / 28,3	722522 A	722522 B	1222 K – 2222 K – 22222 K	H 222 – H 322 – H 322	FRB 200/12,5 – FRB 200/10 – FRB 200/10	FS 22

9.11 CONSTRUCTION





10.0 LFD TIL 5.. K FLANGE UNITS

10.0

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10.1 TIL 5.. K FLANGE UNITS – DESCRIPTION



The flange units of the TIL 5.. K series are produced in two different designs: the A design features a closed end cover, while the B design has an open end cover. The bearing seat is designed for the locating bearing position. The plummer blocks can be fitted with self-aligning ball bearings of the 22.. K series or with spherical roller bearings of the 222.. K series.

10.2 MATERIAL

The plummer blocks and end covers are made of grey cast iron GG-20.

10.3 LUBRICANT

The flange units are operating with grease lubrication and can be relubricated using the attached grease nipple. Please refer to the table on page 85 for the recommended quantity for the initial fill.

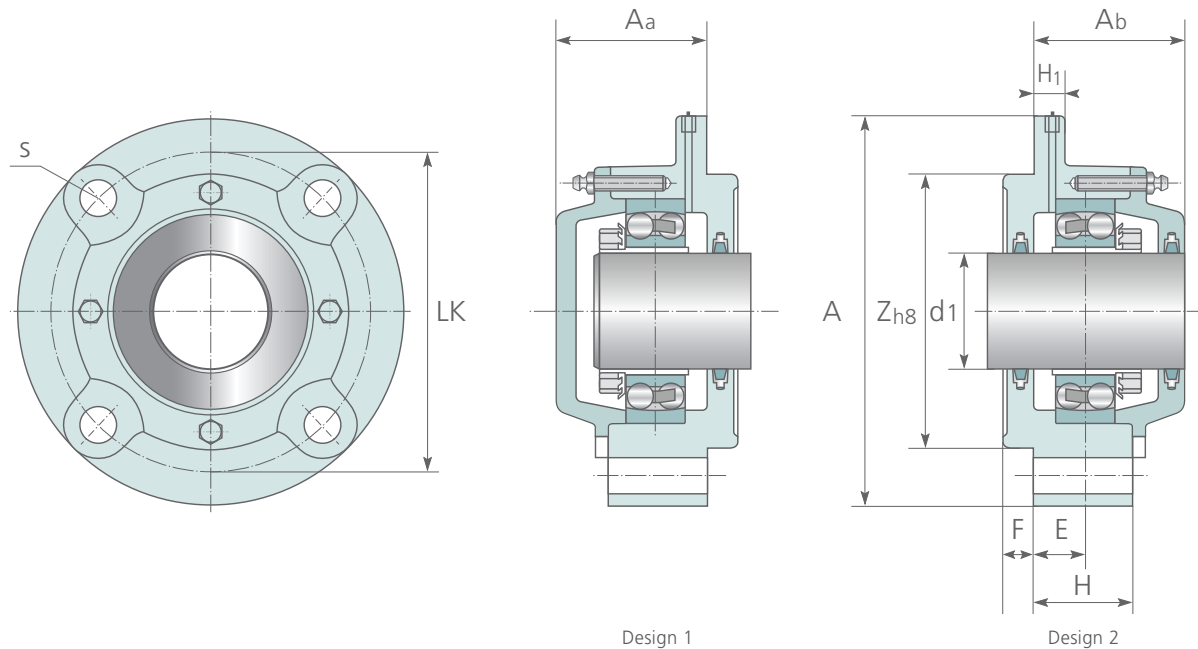
10.4 SEALS

The plummer blocks can be ordered with a closed end cover (suffix A) or, for a through shaft, with an open end cover (suffix B), e.g. TIL 511 K A or TIL 511 K B. The open side is sealed with a felt ring seal.

10.5 LOAD

The flange units' radial load carrying capacity depends on the utilized bearings and the set screws on the plummer block.

TIL 509 K ... TIL 513 K FLANGE UNITS FOR SELF-ALIGNING BALL BEARINGS/SPHERICAL ROLLER BEARINGS 2200K/22200K + H300



9.7 LUBRICANT: INITIAL FILLING

Flange units TIL 5.. K		
Plummer block	Plummer block	Grease quantity for initial filling 1)
Designation	Designation	g
TIL 509 K A	TIL 509 K B	50
TIL 511 K A	TIL 511 K B	60
TIL 512 K A	TIL 512 K B	80
TIL 513 K A	TIL 513 K B	120

1) The recommendations of the lubricant manufacturer must be followed and may deviate from these quantity specifications.

9.6 DIMENSIONS

Shaft diameter	Flange units										Mass	Suitable bearings and sleeves		Felt strips		
	Closed cover	Open cover										Shaft end	Through shaft			
d1 [mm]	Aa [mm]	Ab [mm]	H [mm]	H1 [mm]	F [mm]	E [mm]	LK [mm]	A [mm]	Zh8 [mm]	S Screw [mm]	kg	Designation	Designation			
40	64	64	36	15	12	16,5	132	160	105	16	3,35	TIL 509 K A	TIL 509 K B	2209 K – 22209 K	H 309	FS 09
50	70	70	40	15	12	24,5	150	185	125	18	5,00	TIL 511 K A	TIL 511 K B	2211 K – 22211 K	H 311	FS 11
55	70	70	40	15	12	21,0	160	195	135	18	6,00	TIL 512 K A	TIL 512 K B	2212 K – 22212 K	H 312	FS 12
60	77	77	43	15	14	22,5	170	205	145	18	7,10	TIL 513 K A	TIL 513 K B	2213 K – 22213 K	H 313	FS 13

Recommended screw size see dimension table column "S"



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