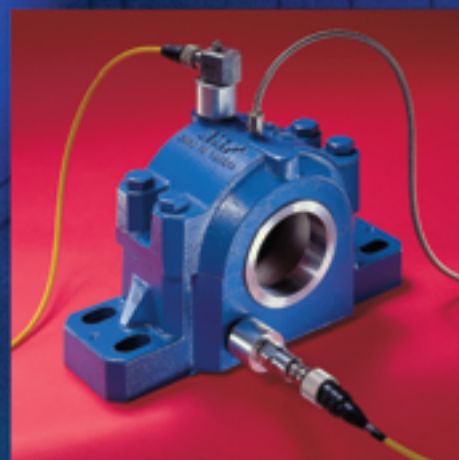
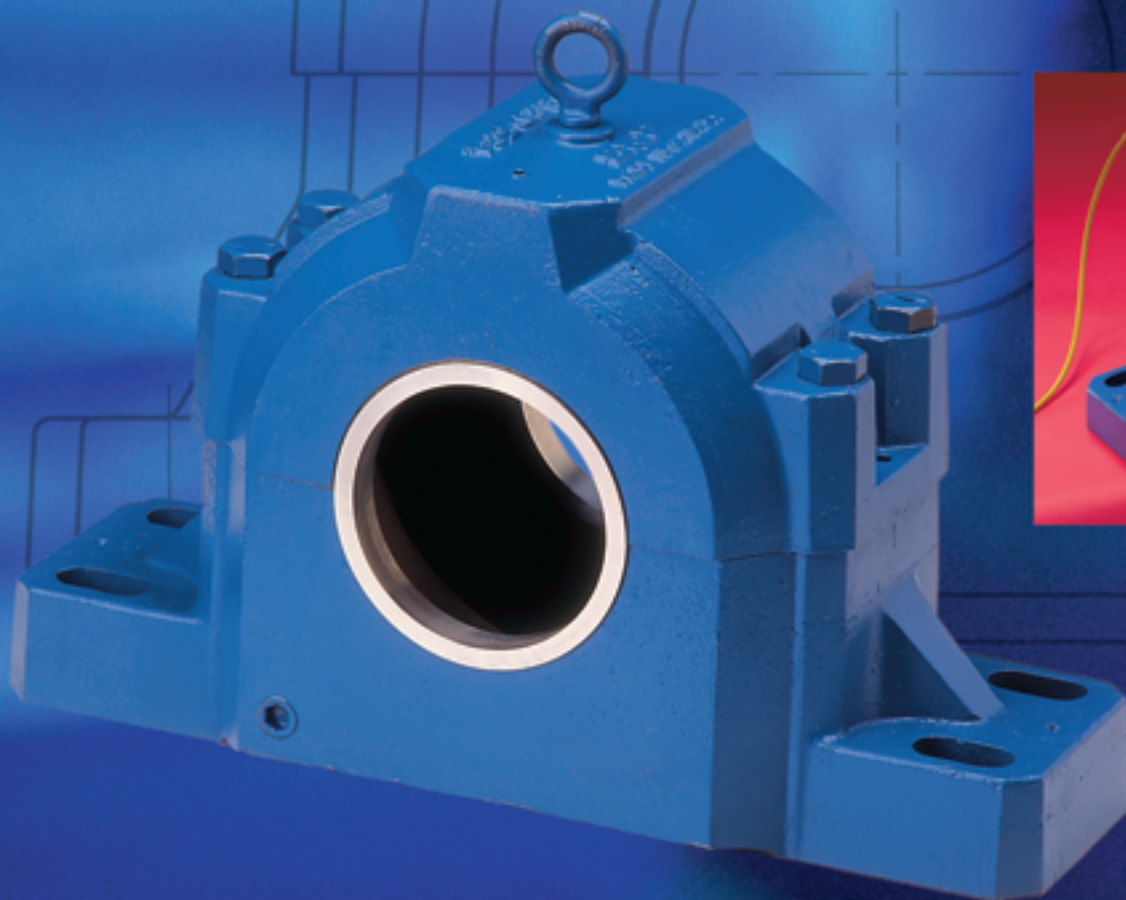


Heavy Duty Pillow Block Maintenance Handbook

Catalogue No. CDN995



SKF Canada Limited

AN ISO 9001 REGISTERED COMPANY

Proud recipient of The Canada Awards for Excellence Certificate of Merit

Correct names for Pillow Block parts:

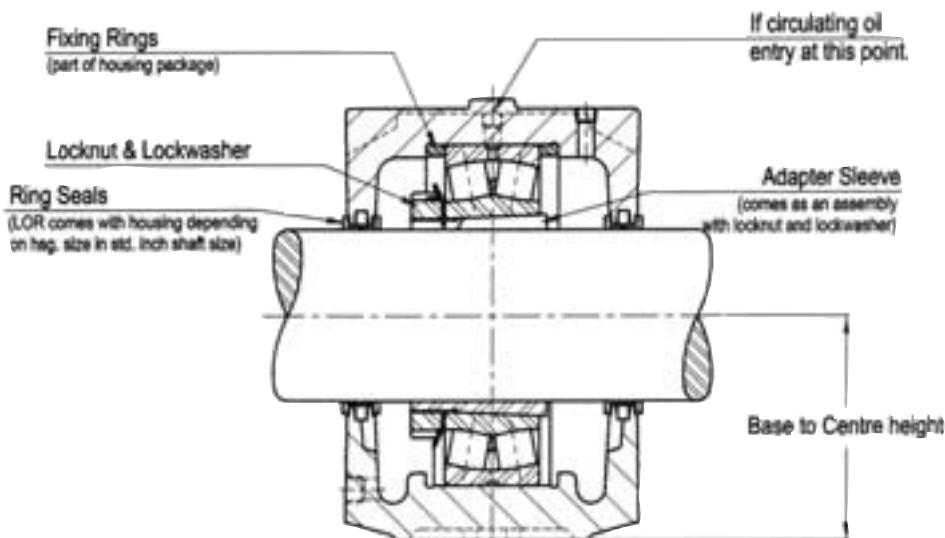
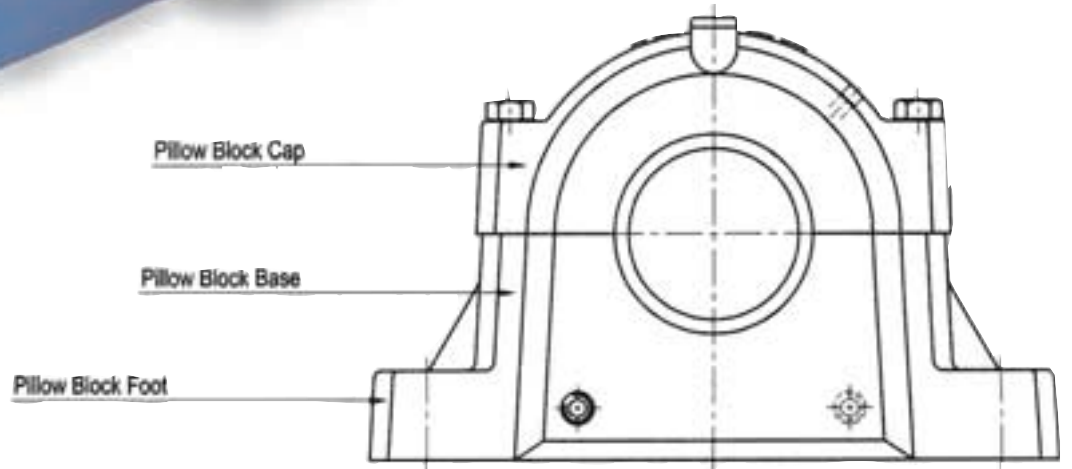
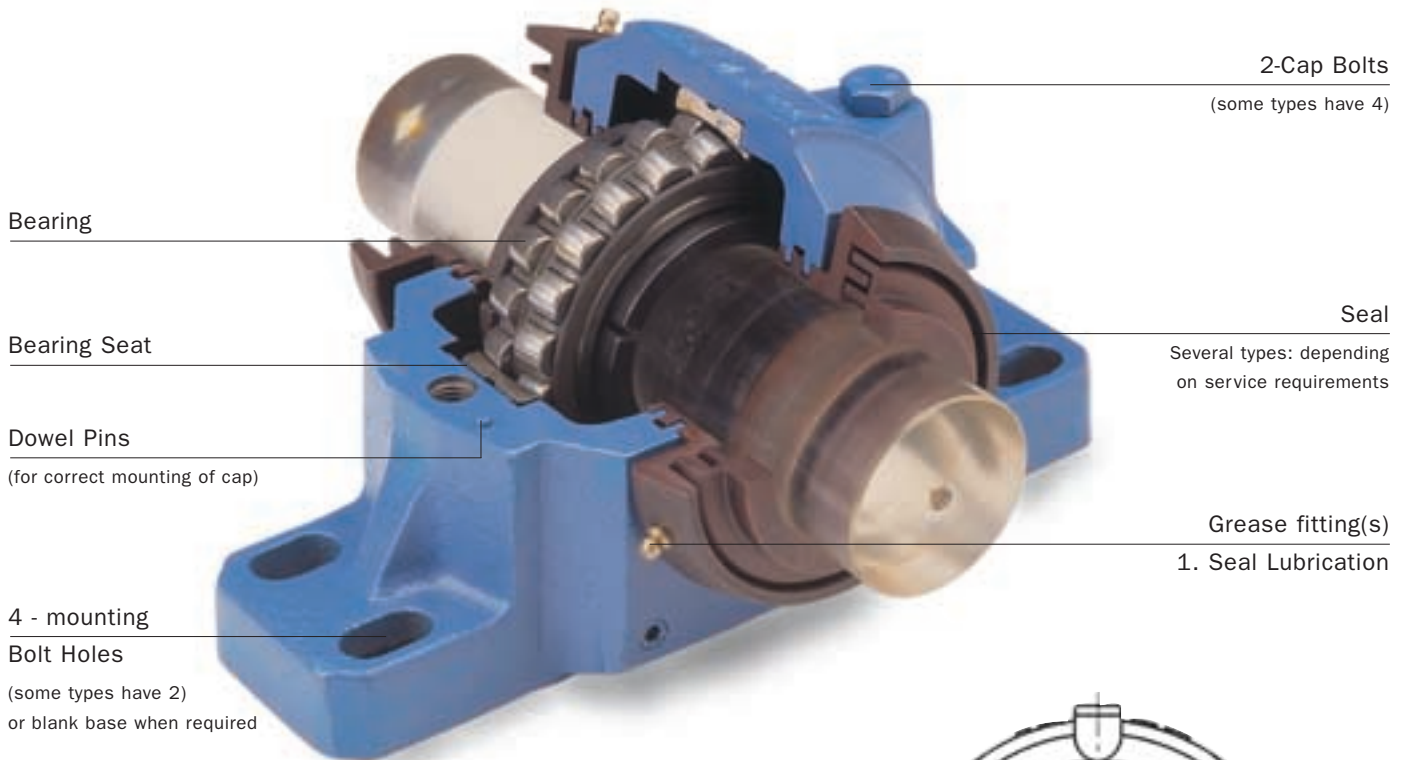


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Pillow Block Series	Seal
SNL, SSNHD	G 13-14
SNL, SSNHD	V-Ring (A) 13 + 15
SNL, SSNHD	Triple Seal S 13 + 24
SNL, SSNHD	Feltseal C 13 + 16
SNL, SSNHD	D and E 13 + 25-26
SAFD	LOR, LORC, A9508/LER 17 + 20
SAFD	TER-C 17 + 21
SAFD	TER-CV 17 + 22
SAF, SAFS, SDAF	LOR, A9508/LER 19 + 20
SAF, SAFS, SDAF	TER 19
SAF, SAFS, SDAF	TER-V 19
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SDCD, SDHD	E 18 + 24
SDCD, SDHD	D 18 + 25
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SNL



The new SNL pillow block housings enable the full service life potential of the incorporated bearing to be exploited with less need for maintenance. Among other enhancements, the housings have increased stiffness making them even more insensitive to uncontrolled and excessive tightening of the attachment bolts.

SAF FSAF SAFS



Standard SAF pillow blocks are made of cast iron with either self-aligning double row ball bearings for normal loads or self-aligning spherical roller bearings for heavy loads. Standard with triple ring seal. Alternative sealing arrangements such as taconite or contact seals are available.

SAFS: Same features, cast in steel.

SNH (Replaced by SNL)



SNH pillow blocks of cast iron with either self-aligning double roll ball bearing for normal loads or self-aligning spherical roller bearing for heavy loads. A variety of different sealing arrangements are available.

SSNHD



SSNHD pillow blocks feature the same sealing arrangements as SNH pillow blocks but the base is kept blank so mounting holes in the base can be drilled and machined for two or four bolt mounting. For added strength SSNHD housings are cast in ductile iron.

SAFD



Interchangeable with SAF and SNCD series blocks made by SKF and their competition. Supplied in ductile iron as standard and stronger than the old designs. These new housings will accommodate the old designs. The new housings will accommodate the standard LER triple ring seals and in addition, a new taconite service seal can be used with the same housing. Increased load capacity can be provided by specifying the 232 series bearing for which the new block has been designed as well as the 222 series. This block utilizes the same components, specifically adapter sleeves and fixing rings, as our popular SNL/ SNH series blocks.

SNCD



Canadian designed pillow blocks made of ductile iron. A variety of sealing arrangements are available but the D and E type seal are considered the standard. Excellent for extreme abrasive materials for instance taconite dust. These pillow blocks can also be supplied in steel. Consult SKF for availability.

SD



Standard SD pillow blocks are made of cast iron and designed for use with larger spherical roller bearings, shaft size 150mm (6") and up. The standard sealing arrangement is the triple ring seal.

SDAF



The SDAF pillow block is designed for applications where the loads require a housing of extra sturdy construction. SDAF pillow blocks can also be supplied in cast steel. Consult SKF for availability.

SDCD

SDCD/MC14



Canadian designed heavy duty pillow block is made of ductile iron to complement the well proven SD design. Sealing features are the same as the SD pillow block. For extreme operating conditions D and E type labyrinth seals are standard. Excellent for abrasive materials i.e. taconite dust. These pillow blocks can also be supplied in cast steel. Consult SKF for availability.

General Information and Housing Material

Some Words About SKF Pillow Blocks (Split Housing)

SKF's complete line of ball and roller bearings and pillow block housings are adaptable to every industrial purpose and offers these outstanding performance advantages:

- Low Friction Characteristics
- Inherent Self-Alignment
- Ease of Assembly
- No Adjustment
- Infrequent Lubrication
- Prevents Drip or Leak
- No Intrusion of Abrasive and Corrosive Matter
- Economical, Trouble-Free Operation

SKF bearing housings are made of grey cast iron, ductile iron and cast steel. The bearing seating of the housings is machined to tolerances such that a loose fit of the bearing outer ring is assured and in most cases the seating width is such that the bearing has axial freedom. Dimensional inaccuracies, slight positioning errors in mounting, and thermal elongation of the shaft can be accommodated in the pillow block housing itself.

Axial location of the bearings is achieved by inserting the fixing rings specified in the housing tables. If only one ring

is to be used with a bearing having an adapter sleeve, the fixing ring should be positioned on the same side of the bearing as the locknut. The bearing is then displaced from its centre position in the housing by the distance equal to half the fixing rings and their designation should be stated.

Pillow block housings shown in the housing tables are horizontally split and are designated for use with self-aligning ball bearings and spherical roller bearings with either a tapered bore and mounted on an adapter sleeve or with a cylindrical bore. The elongated (slotted) bolt holes in the housing base permit slight adjustments to be made to the position of the pillow block. The housings are fitted with dowel pins, or the mating surfaces may be stepped to ensure correct location of the associated caps and bases, which are **NOT interchangeable**.

To ensure reliable function and long operational life of the bearing in the pillow block, the mating surface of the supporting component should be machined to a surface roughness of Ra=1.6 mm (63 RMS). For the flatness IT7 is recommended. When the demand is lower, IT8 can be used.

Comparison of Physical Properties of Typical Pillow Block Housing Material

SKF pillow blocks are usually made of cast iron and are mainly intended for grease lubricated ball or roller bearings. For extra heavy duty applications, ductile iron or cast steel pillow blocks are available.

MATERIAL	SPECIFICATION	ULTIMATE TENSILE STRENGTH		YIELD STRENGTH		MINIMUM ELONGATION %
		psi	Mpa	psi	Mpa	
Cast Iron	ASTM A48 Grade 35	35000	240	-	-	-
Cast Steel	ASTM A27 Grade 65-35	65000	450	34000	240	24
Ductile Iron	ASTM A536 Grade 65-45-12	65000	450	45000	310	12

The method of bearing and housing selection we recommend must only be used for general or standard applications. Where conditions such as high thrust loads, shock loads, extreme temperatures and speeds prevail, consult SKF for detailed recommendations.

SKF Pillow Block Identification

Bold = Prefix

SNL

Pillow block a split design inch and metric variety of sealing options. See page 2.

SNA

Discontinued design replaced by SNL.

SNH

Discontinued design, replaced by SNL.

SSN

Discontinued design, replaced by SSNHD which is ductile iron.

SSNHD

Same as SNL but with blank base, Materials: spheroidal cast iron (ductile iron).

SAF

Pillow block split design inch overall dimensions (North American standard) used for inch shafting. Variety of sealing arrangements available, see Page 8.

Material : Grey cast iron ASTM A 48 grade 35

SAFD

Pillow block split design inch overall dimensions (Canadian Standard) used for inch shafting. Variety of sealing arrangements available see Page 8.

Current standard product

Material: Ductile iron ASTM A 536 grade 65-45-12

Recommended for low temperatures -40°C (-40°F)

SAFS

Same as SAF dimensionally but material cast steel ASTM A 27 grade 65-35

SDAF

Pillow block split design inch overall dimensions (North American standard) heavier design than SAF. Used for inch shafting variety of sealing arrangements available, see Page 8. Current standard product.

Material: Grey cast iron ASTM A 48 grade 35

SD

Pillow block split design metric overall dimensions can be used for metric or inch shafting (European standard) Current standard product

Available with triple ring seals only

Material: Grey cast iron GG 25 (ISO/DIS 185 grade 250)

SDD

Same as SD dimensionally but material spheroidal cast iron GGG 40 (ISO 1083-1976, 500-7)

SDCD

Pillow block split design metric overall dimensions can be used for metric or inch shafting (Canadian standard)

Current standard product

Available with triple seal rings only

Material: Ductile iron

ASTMA 536 grade 65-45-12

Recommended for low temperatures -40°C (-40°F)

SDCD/MC14

Same as SDCD dimensionally but modified to accept extreme service seals (Taconite), see Page 9

SDJC

Pillow block split design, metric overall dimensions (European standard), metric shafting. For reference only. Consult SKF for availability and technical specifications.

SNCD

Discontinued Canadian designed pillow block, dimensionally interchangeable with SAFD. Pillow block split design inch overall dimension can be used for metric or inch shafting. Available with variety of sealing arrangements see Page 9. Material: ductile iron ASTM A 536 grade 65-45-12

SNCT

Same as SNCD dimensionally but material cast steel ASTM A 27 grade 65-35

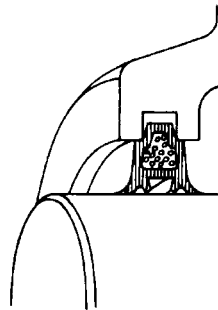
SKF Sealing Arrangements

Seals

There are many different types of seal designs for use in SKF Pillow Blocks. The many alternative choices available ensure that a correct or most suitable solution will be found to meet the condition surrounding a particular application.

If a contact (rubbing seal) is selected, care must be taken with regard to the surface finish of the shaft. It is recommended that the shaft surface roughness does not exceed 125 RMS ($t_a: 3.2 \mu\text{m}$ ISO N8).

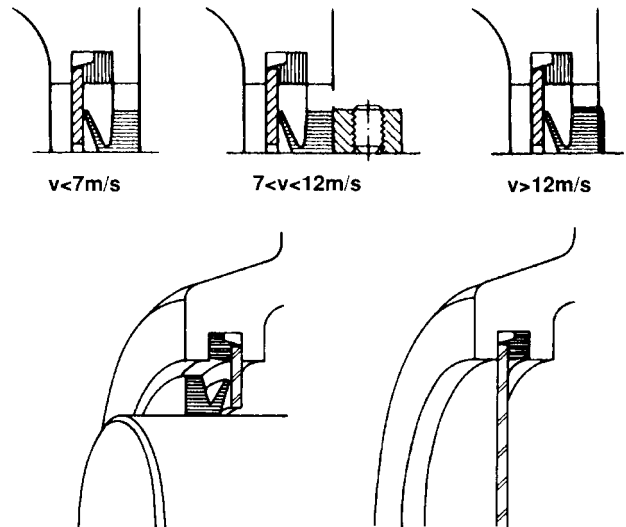
Double lip seal, Type G



The G-seal is made of polyurethane, a wear resistant material with excellent resilience. The split design simplifies mounting. This seal can be used with grease lubrication at peripheral speeds up to 8 m/s (1600 ft/min). The maximum permissible misalignment of the shaft is approximately 1° up to shaft diameters of 100 mm (3.15/16") and 0.5° for larger sizes.

These seals can be used at temperatures between -40° and $+100^\circ\text{C}$ (-40° and $+212^\circ\text{F}$). Double-lip seals are designated TSN followed by the housing number and suffix G, (ie. TNS 511 G).

V-Ring seals, Type A

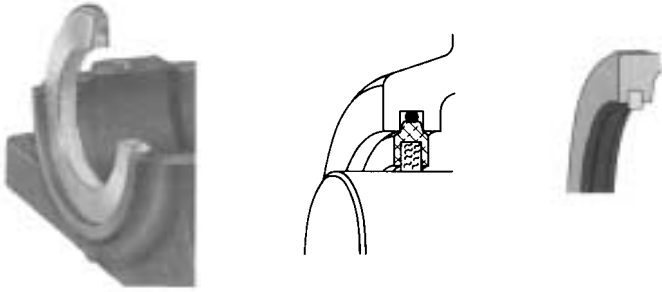


The V-Ring, of Nitrile rubber, has a thin sealing lip which functions in an axial direction. The ring also acts as a flinger as it rotates with the shaft. This type of seal can be used for both grease and oil lubrication and is extremely effective under most operating conditions including high speeds and shafts with rough sealing surfaces. V rings are normally suitable for peripheral speeds up to 7m/sec (1400 ft/min) and if axially clamped tolerate speeds up to 12m/sec (2400 ft/min). The maximum permissible misalignment of the shaft is approximately 1.5° . For a shaft diameter of 50mm, and approximately 1° for shaft diameter of 150mm.

For SNL pillow block housings, the V-rings seal against sheet metal washers which are coated with a rust inhibitor. Each washer has a rubber lip, bonded around its periphery which locates and seals in the housing groove. These seals can be used at temperatures between -40°C and $+100^\circ\text{C}$ (-40°F and $+212^\circ\text{F}$). V-ring seals are designated TSN followed by the housing number and suffix A, for example TSN 511A.

Pillow Block Seal Arrangements

Felt Seals, Type C



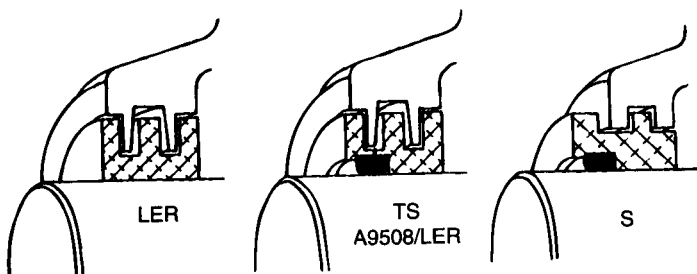
The felt seal is a simple and adequate seal which can be used with grease lubrication at peripheral speeds up to 4m/s (800 ft/min). Pillow block housings of series SNL 5 and SNL 6 are available with split felt seals consisting of oiled felt incorporated in halves of a light alloy ring, the seal halves are fitted into the housing grooves, the O-section cords provide an effective seal between the housing hub bore and the outside diameter of the seal inserts. Misalignment exceeding 0.5° would impair efficiency.

Felt seals are designated TSN followed by the housing number and suffix C, for example TSN 511 C.

Triple Ring Seals Types LOR, LORC, TS, S and A9508/LER

A labyrinth created between the rotating seal ring and its matching hub grooves results in an efficient seal, particularly if the labyrinth is filled with grease. The sliding fit of the rotating seal ring on the shaft ensures that it will automatically find its own proper location relative to the stationary hub grooves. For larger shaft diameters an O-sectioned cord is inserted between the seal ring and the shaft to ensure ring rotation and avoid possible lubricant leakage.

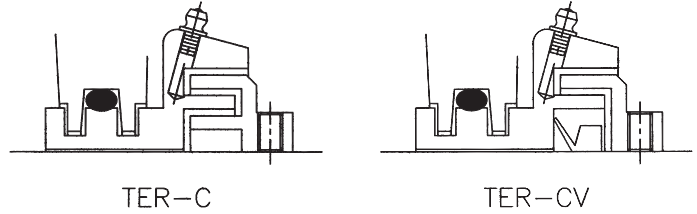
The maximum permissible misalignment between shaft and housing must be restricted to 0.25°.



Labyrinth Seal (Taconite Service Seal)

Type TER5-C and TER5-CV

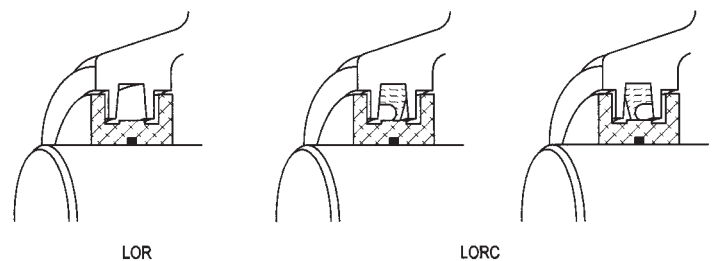
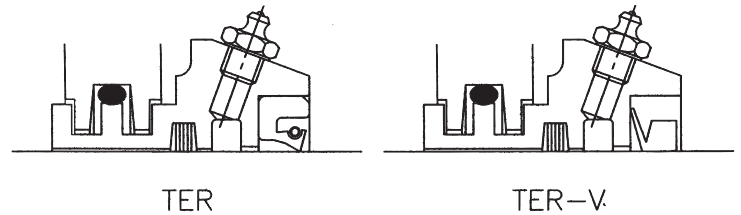
Optional Seal for SAF, SAFD, FSAF, FSAFD



Taconite Service Seal

Type TER, and TER-V

These Taconite seals were developed as an alternative for the SAFD, SAF, SAFS and SDAF blocks without modifications having to be made. The TER and TER V with felt strip or garter spring seal are interchangeable with the TER-C and TER-CV..

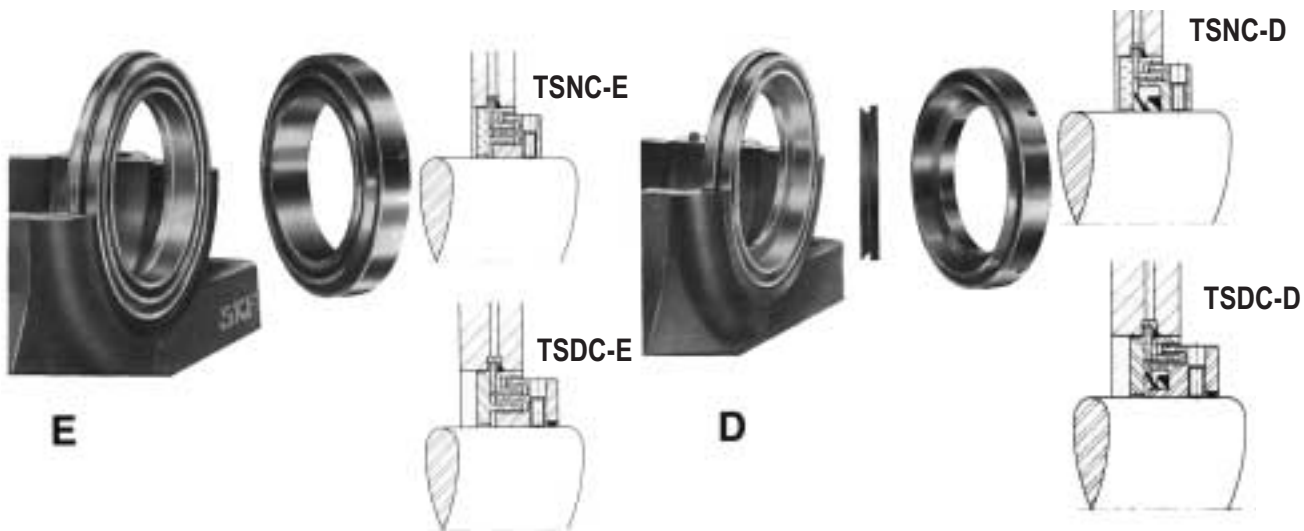


Labyrinth Seals Type D and E

Extreme service seals of D and E types were initially developed for the mining industry, where fine abrasive dusts were prevalent (e.g. taconite), but have since found usage in the pulp, paper, forest and other industries where water and water laden debris prevail. They are most commonly used in the SDCD and SNL series of housing which have additional grease fitting allowing the seals to be periodically purged. Their design offers the distinct advantage that housing caps may be removed for maintenance inspection of bearings with the seals remaining undisturbed.

NOTE: Pillow Blocks SNL and SSNHD must be modified to suffix MC 106 when using TSNC-D, TSNC-E and MC14 seals.

SAFD and FSAFD must be modified to MC 14 when using TSNC-D and TSNC-E. These seals available on special order only.



Seal Options Available for SKF Pillow Blocks						
SEAL DESIGN	SNL SSNHD	SAFD FSAFD	SAF SAFS SDAF	SNCD SNCT	SD	SDCD SDCT SDHD
G Double lip contact type	X	—	—	X	—	—
A V-ring seal contact type	X	—	—	X		
C Felt seal contact type	X	—	—	X		
E Labryinth type	X	X	—	X	—	X
D Labrynth with additional V-ring	X	X	—	X	—	X
TS, & LOR & LORC, S Triple seal Labryinth	S	LER, LOR, LORC A9508LER		LER	TS	TS
TER contact type	—	X	X		—	—
TER V contact type with V-ring	—	X	X		—	—
TER C	—	X	X		—	—
TER CV	—	X	X		—	—

Preparation before Mounting

Check shipment and make certain all assemblies are complete, and no short shipping has occurred on components.

The bearings should be left in their original packages until immediately before mounting so that they do not become dirty. Generally the preservative with which new bearings are coated before leaving the factory need only be removed from the outside cylindrical surface and bore of the bearing.

An exception is if the bearing is to be grease lubricated and used at very high or very low temperatures. In such cases the bearings should be washed and dried to prevent any detrimental effect on the lubricating properties of the greases. Bearings which have become contaminated because of improper handling (damaged package etc.) should be washed and dried before mounting.

Bearings which, when taken from their original package, have a relatively thick greasy layer of preservative, have been hot dipped and should also be washed and dried. Hot dipping is still used, principally on large-size bearings.

Clean shaft and housing*; remove all burrs and sharp edges. Check that the shaft diameter is to recommended tolerance.

Read and become familiar with the bearing mounting procedure and the installation instructions to be used for this assembly.

* NOTE: Caps and bases of housings are not interchangeable. Do not mix.

Adapter Sleeve Mounting – Spherical Roller Bearings

All spherical roller bearings with taper bore, to be mounted on adapter sleeves, have to be driven up the taper sufficiently to achieve the proper reduction of clearance.

The unmounted clearance of each bearing must be measured and recorded. Stand the bearing on the bench and insert progressively thicker feelers the full length of the roller between the unloaded roller and the outer ring at the top location. Never roll the rollers over the feelers as the wrong value will be obtained.

Position the adapter sleeve (less locknut and lockwasher) on the shaft in the correct position for the proposed bearing mounted center line. A light smear of spindle oil applied to the sleeve outside diameter, results in easier mounting/removal of bearing.

Mount bearing on adapter with the large bore side of the inner ring to match the taper on the outside diameter of the adapter. With bearing hand tight on the adapter, locate the bearing and adapter to the proper axial location on the shaft. Do not apply lockwasher. Drive up procedure could damage it. To avoid damage to the bearing it is most important during this and subsequent operations, that the shaft be blocked up so the bearing is unloaded.

Lubricate the chamfered face of the locknut and the threads (use Molykote for larger sizes), then apply locknut with chamfered face to bearing, tighten nut until sleeve is snug on the shaft. Wrenches are available for bearing drive up. For larger bearings, hydraulic mounting nuts are recommended to obtain required internal clearance reduction. Ref. page 42.

Never tighten the locknut with a hammer and drift. The locknut will be damaged and chips can enter the bearing. Continue tightening locknut and measure the internal clearance with feelers until the internal clearance is less than the recorded unmounted clearance figure by the amount shown in table on page 42. Remove locknut and install the washer with the inner prong located in the slot provided in the adapter and have the tabs facing away from the bearing. Re-apply the locknut and tighten until firmly seated against the lockwasher. If necessary tighten the locknut to a point where one of the tabs on the lock washer lines up with a slot in the locknut then bend this tab into that slot.

For a large size adapter sleeves (size 44 and up) the use of the oil injection mounting method is standard practice. For these adapter sizes the lockwasher is replaced with a lockplate. In these cases with the locknut tightened to achieve the proper reduction of internal clearance in the bearing, take lockplate and place its prong in the slot of the adapter sleeve. Note how much the locknut will have to be tightened for the holes in the locknut to align with the holes in the lockplate. Reverse the lockplate and observe how much the locknut will have to be tightened for the hole in the locknut to align with the holes in the lockplate. The lockplate is to be placed in the position requiring the least tightening to align the two sets of holes. When the locknut has been tightened to achieve this, then insert and tighten cap screws. Lock cap screws with lockwire through holes in heads. Do a final check on the mounted internal clearance of the bearing.

Adapter Sleeve Mounting Self-Aligning Ball Bearing

Position adapter sleeve (less locknut and lockwasher) on the shaft in the correct position for the proposed bearing mounted center line. A light smear of clean spindle oil applied to the sleeve outside diameter, results in easier mounting and removal of bearing.

Mount bearing on adapter with the large bore side of the inner ring to match the taper on the outside diameter of the adapter. With bearing hand tight on the adapter, relocate if necessary, the bearing and the adapter to the proper axial location on the shaft. Do not apply lockwasher. Drive up procedure could damage it. To avoid damage to the bearing it is most important during this subsequent operation that the shaft is blocked up so the bearing is not loaded.

Apply the locknut with the chamfered face toward the bearing after lubricating the face of the locknut next to the bearing. Hand tighten the nut with the spanner wrench until the adapter sleeve can neither be moved axially, nor rotated on the shaft. Then with the hammer hit the hook wrench until the locknut has been turned 90° or 1/4 turn on the adapter sleeve (varies with size).

Caution: A loose adapter sleeve can lead to the inner ring turning on the adapter sleeve and/or the adapter sleeve turning on the shaft. To insure that the nut is not excessively tight, make certain the outer ring of the bearing rotates freely.

When mounting a normal fit bearing, swiveling the outer ring will result in a slight drag. If the bearing is a C3 fit, the outer ring will swivel freely. Remove locknut and mount lockwasher with inner prong located in the slot provided in the adapter and the tabs on washer O.D. leaning away from the bearing. Re-apply locknut and tighten until firmly seated against lockwasher. Find lockwasher tab nearest one of the slots in the locknut. If slot is past tab, do not loosen nut, but tighten until a tab can be bent into a slot.

Cylindrical Bore Mounting Self-aligning Ball or Spherical Roller Bearings

Small bearings up to bore size 50mm (2in.)

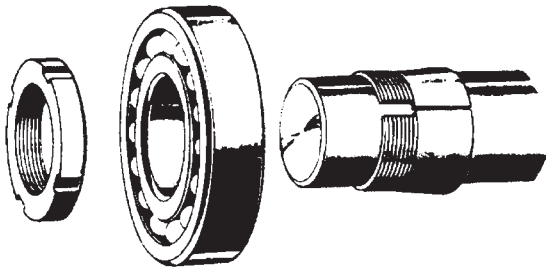
Apply a coat of light oil to the shaft and bearing bore. Fit a clean tube with one end squared and bore slightly larger than the bearing bore, against the bearing inner ring. With the bearing square on the shaft, apply pressure using a press. The bearing must be seated firmly against the shaft shoulder.

Mount lockwasher with inner prong located in the key slot provided in the shaft and tabs on washer O.D. leaning away from the bearing. Apply locknut with face lubricated, tighten with appropriate wrench until all components are locked up solid to shaft shoulder. It may be necessary to further tighten the nut to engage a washer tab with a slot in the nut. A very small movement of the nut will usually align a tab with a slot.

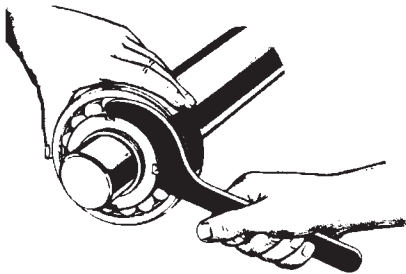
Large Bearings-Bore Size 50mm (2in) and larger

These bearings are not easily pressed on a shaft, and should therefore be heated using an induction heater, hot plate or temperature controlled oven. On very large bearings it may be necessary to use an "oil bath" using a 10%-15% mixture of soluble oil in water to approximately 100°C maximum. The bearing must be on supports to isolate it from direct contact with bottom of the tank, thereby preventing the possibility of localized overheating which could result in bearing damage. Never use an open flame to heat the bearing. Mount the bearing on the shaft firmly against the shoulder, immediately applying the locknut and tighten to prevent the bearing shrinking away from its proper position against the shoulder. When the bearing has cooled, remove the locknut and mount the lockwasher with inner prong located in the key slot provided in the shaft and the prongs on the O/D facing away from the bearing. Apply the locknut with the face lubricated and tighten with appropriate wrench until all components are locked up solid to shaft shoulder. It may be necessary to further tighten the nut to engage a washer tab with a slot in the nut, enabling the tab to be bent down into the slot in the nut. A very small movement of the nut will usually align these.

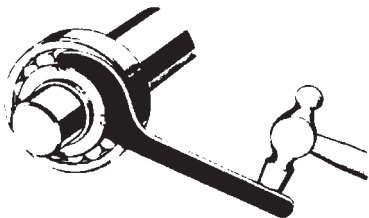
Recommended Method for Mounting Bearings



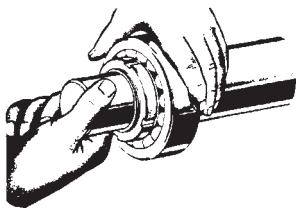
Place the bearing on the sleeve and screw on the nut with the nut chamfer toward the bearing. Tighten the nut just enough to ensure that the bearing and shaft make contact with the sleeve, but do not tighten to drive the bearing further up the sleeve.



Turn the nut with a hook spanner according to the illustration.



To achieve the right fit, turn the nut through the angle α . Then reposition the spanner 180° and tighten a few more degrees by rapping on the spanner with a hammer. SKF has a set of lock nut spanners which are clearly marked with the correct tightening gauge.



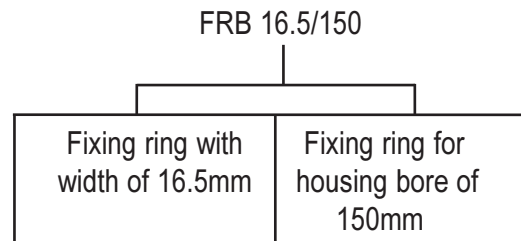
For a self-aligning bearing with normal clearance, the drive-up is correct when the outer ring easily rotates but resists swiveling. If the nut is placed inboard of the bearing, the locking washer must be mounted together with the nut. Lubricate the surfaces that slide against each other during tightening.

Special Note on Location of Bearings in Pillow Blocks

If the bearing is to be held (located), fixing rings are inserted between the side faces of the outer ring and the housing shoulders. If an adapter sleeve is used to secure the bearing to the shaft and only one fixing ring is required, it should be placed on the same side of the bearing as the locknut. The bearing is then displaced from its central position in the housing by a distance equal to half the fixing ring width.

- 1 ring - on the **same side as the sleeve nut**
- 2 rings - one on each side of the bearing
- 3 rings - two on the **same side as the sleeve nut**
- 4 rings - two on each side of the bearing

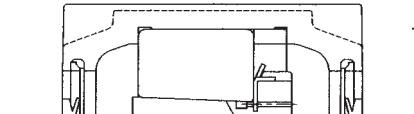
Example:



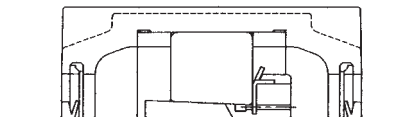
Note:

As opposed to a held bearing - a free bearing is mounted without fixing rings. The bearing positioned in the centre of the bearing seat in the pillow block housing will ensure proper lubrication as well as shaft expansion and contraction.

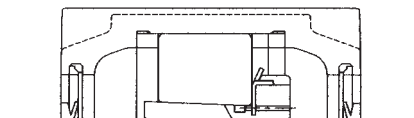
1 RING



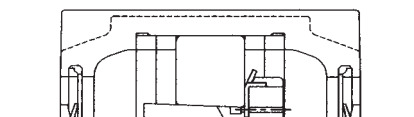
2 RINGS
STANDARD



3 RINGS

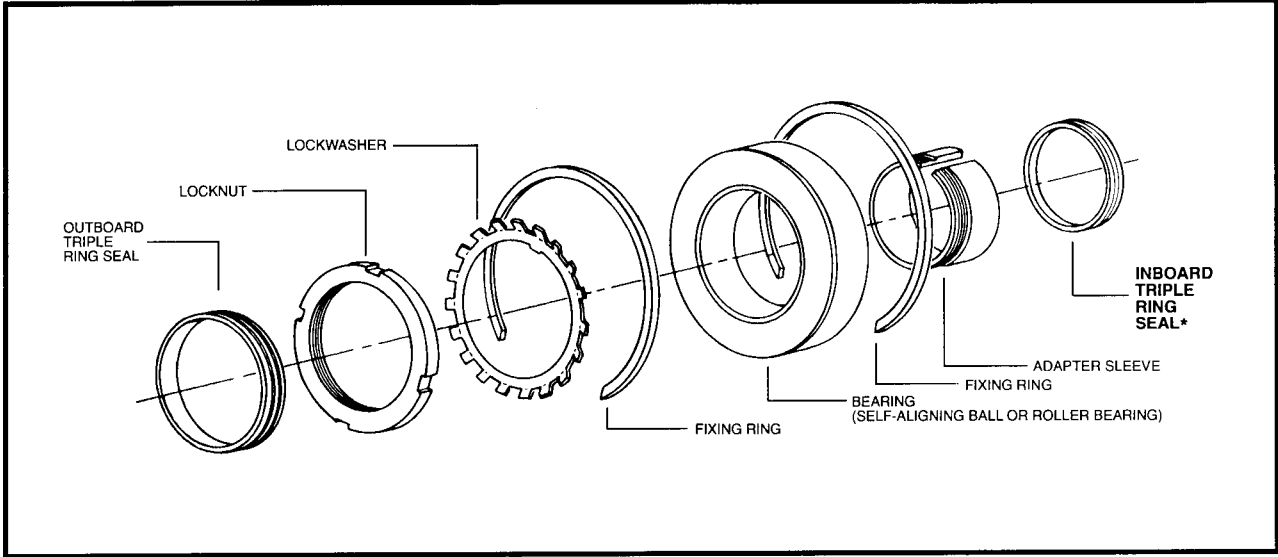


4 RINGS

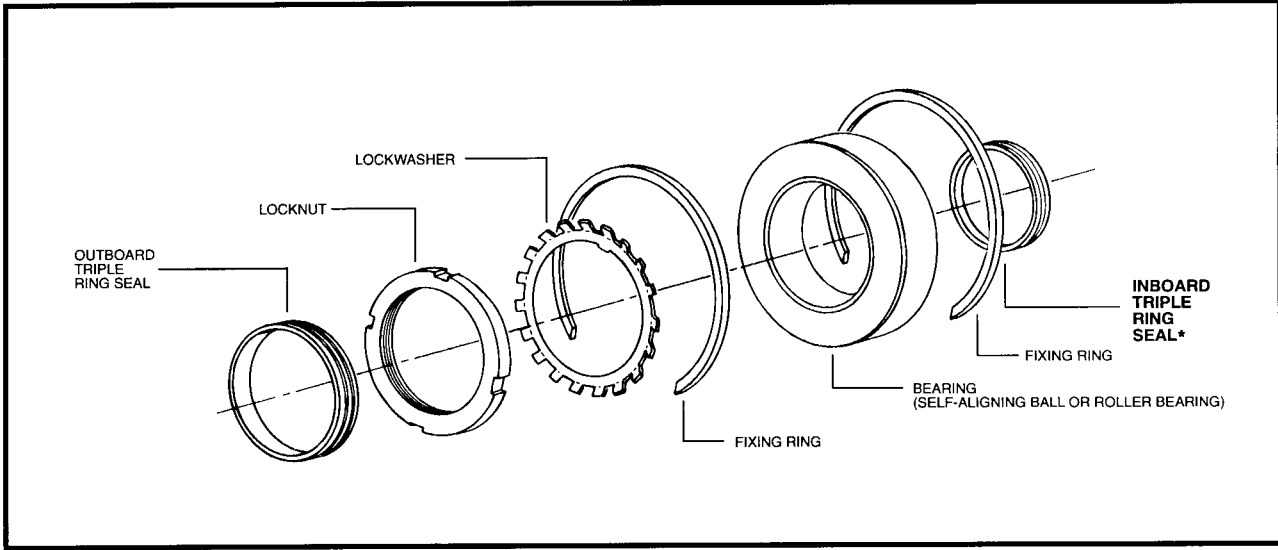


Basic Procedures For Mounting Bearings

Adapter Sleeve Mounting



Cylindrical Bore Mounting

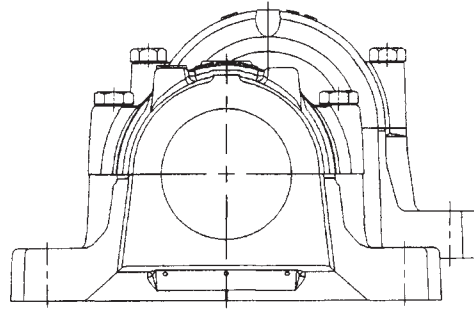


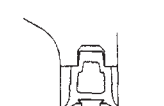
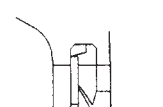
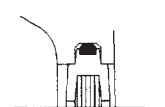

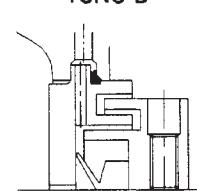
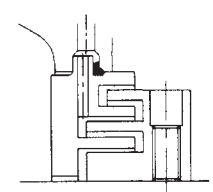
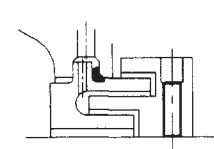
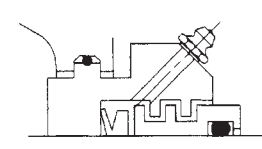
* Note: Do not forget to mount this seal ring first!



**PILLOW BLOCK
HOUSINGS**

SNL, SSNHD



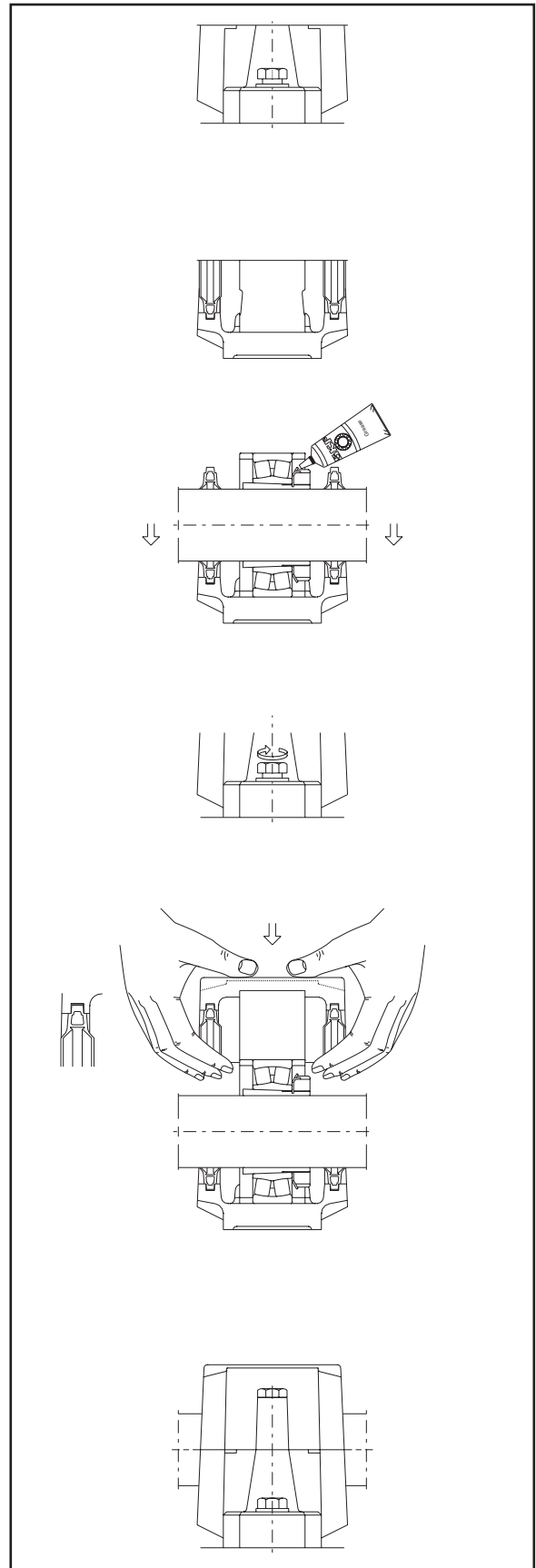
MATERIAL	SNL: cast iron GG20 (ISO/DIS 185 grade 200) SSNHD: Ductile iron			
BEARING SERIES USED	12K, 12EK, 13K, 22K, 22EK, 23K, 222CCK, 222EK, 223CCK, 223EK C 22K, C 23K, C 32K			
SHAFT SIZE RANGE	3/4" to 5-1/2"		20mm to 140mm	
PILLOW BLOCK SIZE	505 - 532 (adapter mounting)			
PILLOW BLOCK LUBRICATION	Grease (for oil lubrication consult SKF)			
STANDARD SEALS	TSN-G 			
OPTIONAL SEALS	TSN-A 	TSN-C 	TSN-S 	TSNC-D 
	TSNC-E 	TSNC/MC17 		Taconite TSN-ND 

Note : Pillow Block SNL & SSNHD must be modified to MC106 when using TSNC-D & E for sizes 520 through 532 and TSNC/MC17 for sizes 515 through 518.

Seal assembly and Mounting Procedure

G-Type Seal

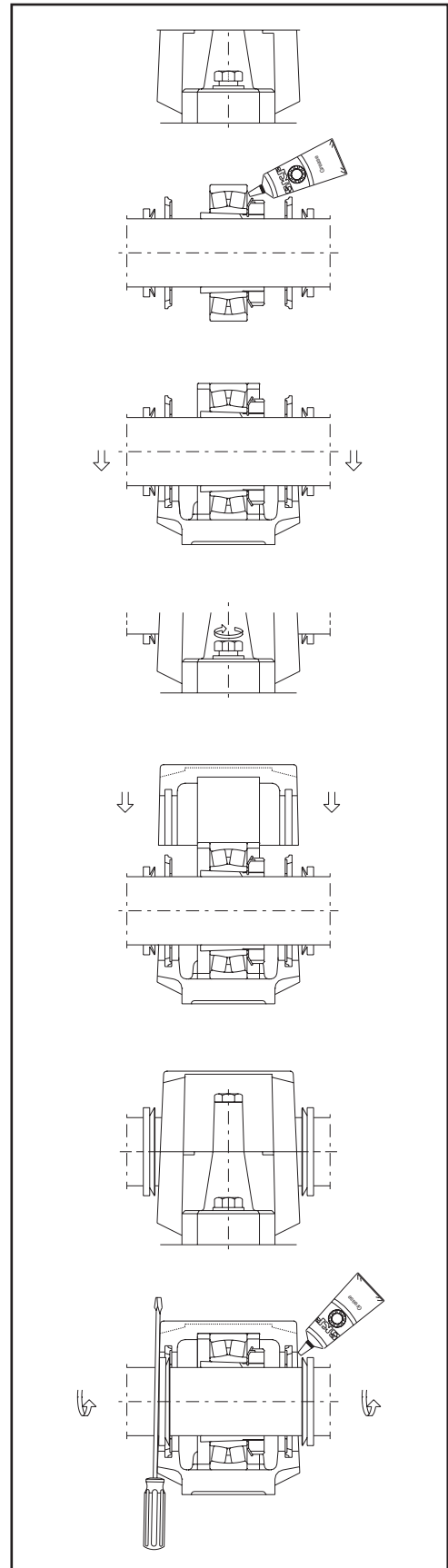
1. The housing base is placed in position and the mounting bolts loosely fitted.
2. The halves of the seals are inserted in the housing grooves and the spaces between the lips of the seals are filled with grease.
3. The bearing is mounted on the shaft (directly or on an adapter sleeve) and filled with grease.
4. The shaft, complete with bearing assembly, is placed in the lower half of the housing.
5. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
6. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
7. The other halves of the seals are inserted in the cap and the space between the lips of the seals filled with grease. For sizes 528-532 and 616-620 the seal halves must be turned so that the spigots fit in the holes of the connecting seal halves.
8. At the first charge of grease, the bearing **MUST** be filled with grease (do not wash out the protective coating) and the housing will be filled one-third full. For greasing quantities, refer to Page 40.
9. The housing cap is fitted and the cap bolts tightened to the recommended torque, see table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of other housings.
10. Finally the housing mounting bolts are tightened to the support.



Seal Assembly and Mounting Procedure

V-Ring Seal Type “A”

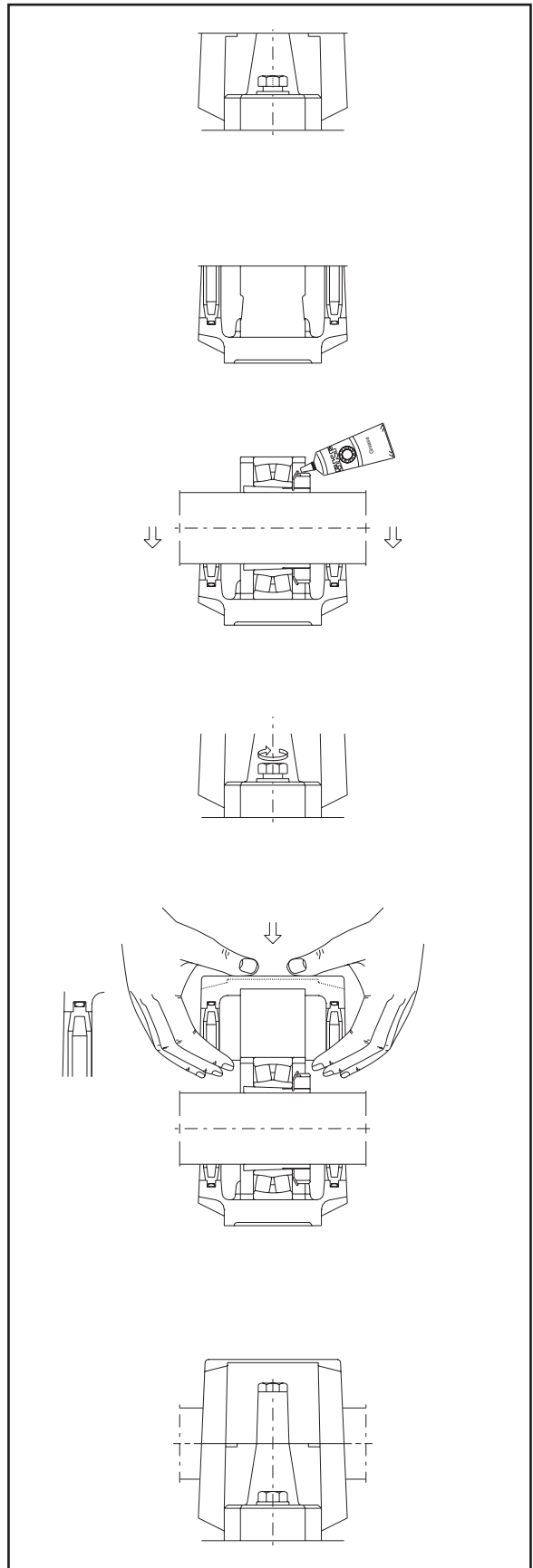
1. The housing base is placed in position and the mounting bolts loosely fitted.
2. One V-ring and one sheet metal washer are placed on the shaft. Care should be taken to position these correctly in relation to the housing. Do not allow the V-ring seal lip to pass through the sheet metal washer.
3. The bearing is mounted on the shaft (directly or on an adapter sleeve) and filled with grease.
4. The second V-ring and sealing washer are placed on the shaft.
5. The shaft, complete with bearing assembly and sealing components, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
8. At the first charge of grease, the bearing must be filled with grease (do not wash out the protective coating) and the housing will be filled one-third full. For greasing quantities, refer to Page 40.
9. The housing cap is fitted and the cap bolts tightened to the recommended torque, see table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. The outer surfaces of the sealing washers are smeared with grease.
12. Finally the V-rings are pushed axially along the shaft until their sealing lips are aligned and in the correct working position relative to the sealing washer. The simplest way to move the V-rings is to use a screwdriver blade while rotating the shaft by hand. V-ring seals may be used for oil lubrication. The assembly shown at the right is for grease. When V-rings are used for oil, the seals are doubled up. Consult SKF for more detail.



Seal Assembly and Mounting Procedure

Felt Seal Type “C”

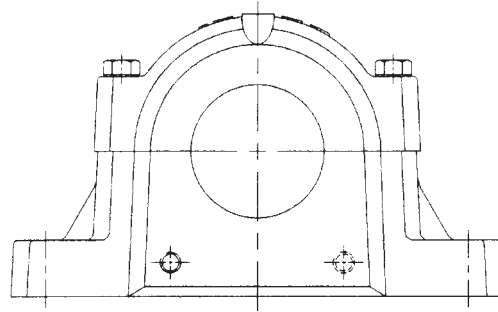
1. The housing base is placed in position and the attachment bolts loosely fitted.
2. The rubber O-section cords are placed in the grooves in the housing base.
3. The halves of the alloy ring with felt seals are mounted on the O-section cords in the grooves of the housing base.
4. The bearing is mounted on the shaft (directly or on an adapter sleeve) and filled with grease.
5. The shaft, complete with bearing assembly, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that the housing is within acceptable limits, and the mounting bolts are then slightly tightened.
8. The rubber O-section cords are placed in the grooves in the housing cap.
9. The felt seals with the light alloy rings are mounted on the O-section cords in the grooves of the housing cap.
10. At the first charge of grease, the bearing **MUST** be filled with grease (do not wash out the protective coating) and the housing will be filled one-third full. For greasing quantities, refer to Page 40.
11. The housing cap is fitted and the cap bolts tightened to the recommended torque, see table on Pages 26 through 37. The seals in the housing cap are held in position while the cap is fitted on the housing base. Note that the cap **must not be interchanged** with that of another housing.
12. Finally, the mounting bolts are tightened to the support.





SAFD, FSAFD

PILLOW BLOCK HOUSINGS



MATERIAL

Ductile Iron ASTM A536 grade 65-45-12

BEARING SERIES USED

12K, 12EK, 22K, 22EK, 222CCK, 222EK, 232CCK

SHAFT SIZE RANGE

1-3/16" to 8"

30mm to 203mm

PILLOW BLOCK SIZE

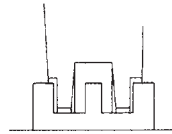
507 - 544 (adapter mounting)

PILLOW BLOCK LUBRICATION

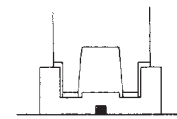
Grease or Oil

STANDARD SEALS

LER

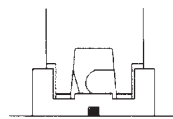


LOR

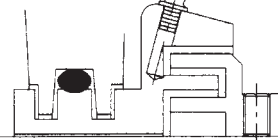


OPTIONAL SEALS

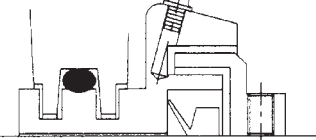
LORC



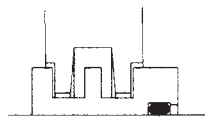
TER-C



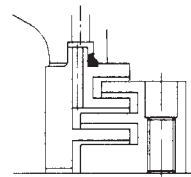
TER-CV



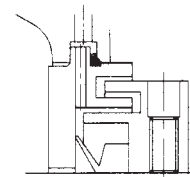
A-9508/LER



TSNC-E



TSNC-D

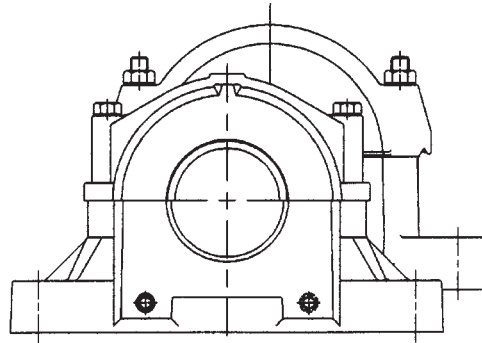


Note : Pillow Block SAFD & FSAFD must be modified to MC14 when using TSNC-D & E type seals sizes 520 through 532. Metric LOR & LORC seals are not available.



PILLOW BLOCK HOUSINGS

SAF, FSAF, SAFS, FSAFS

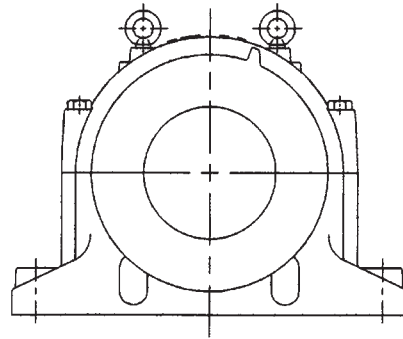


MATERIAL	SAF cast iron ASTM A48 grade 35 SAFS cast steel ASTM A27 grade 65-35		
BEARING SERIES USED	12K, 12EK, 13K, 13EK, 222CCK, 222EK, 223CCK, 230CCK, 230CAK		
SHAFT SIZE RANGE	1-3/8" to 10-1/2"		
PILLOW BLOCK SIZE	024 - 056 (adapter mounting) 507 - 544 (adapter mounting) 609 - 640 (adapter mounting)		
PILLOW BLOCK LUBRICATION	Grease or Oil		
STANDARD SEALS	<p>LOR</p>		
OPTIONAL SEALS	<p>LORC</p>	<p>TER</p>	<p>TER-V</p>



PILLOW BLOCK HOUSINGS

SD, SDCD, SDCD/MC14



MATERIAL	Ductile Iron ASTM A536 grade 65-45-12	
BEARING SERIES USED	230CCK, 231CCK, 232CCK	
SHAFT SIZE RANGE	5-15/16" to 16.142"	150mm to 410mm
PILLOW BLOCK SIZE	3036 - 3088 (adapter mounting) 3134 - 3188 (adapter mounting) 3234 - 3280 (adapter mounting)	
PILLOW BLOCK LUBRICATION	Grease or Oil	
STANDARD SEALS		
OPTIONAL SEALS		

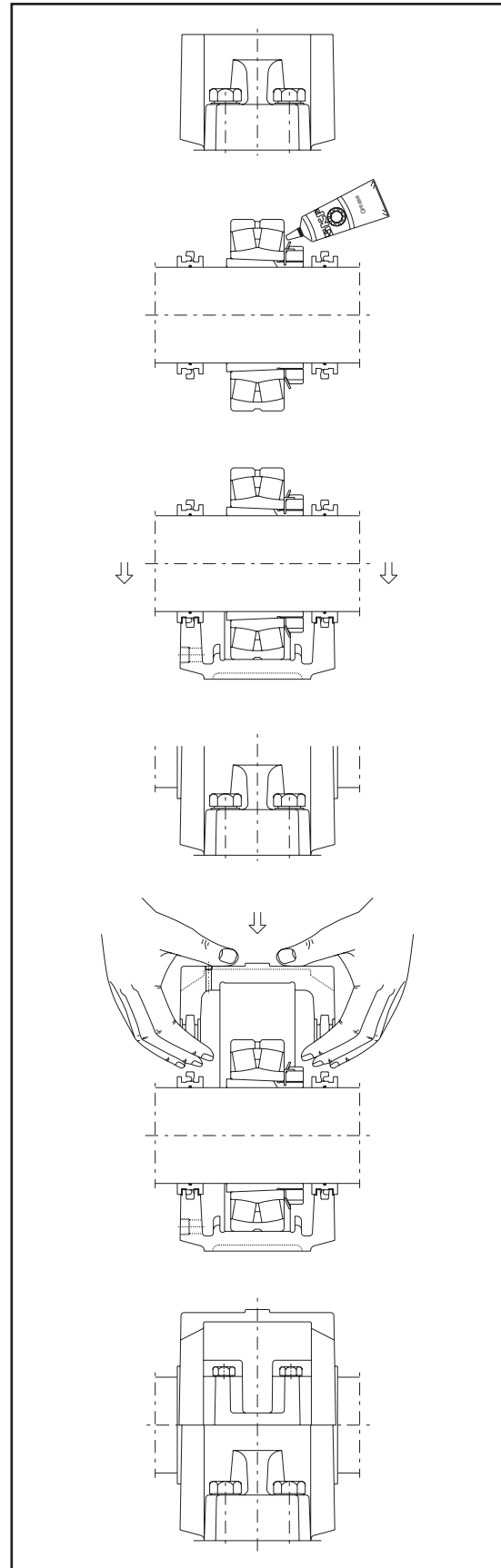
Note : Pillow Block SDCD must be modified to MC14 when using TSDC-D & E type seals.

MATERIAL	Grey cast iron GG 25 (ISO/DIS 185 grade 250)	
BEARING SERIES USED	231CCK,	
SHAFT SIZE RANGE	5-15/16" TO 11.811"	150mm TO 300mm
PILLOW BLOCK SIZE	3134 - 3164 (adapter mounting)	
PILLOW BLOCK LUBRICATION	Grease or Oil	
STANDARD SEAL		

Seal Assembly And Mounting Procedure Triple Ring Seal “LOR, LORC and A 9508/LER”

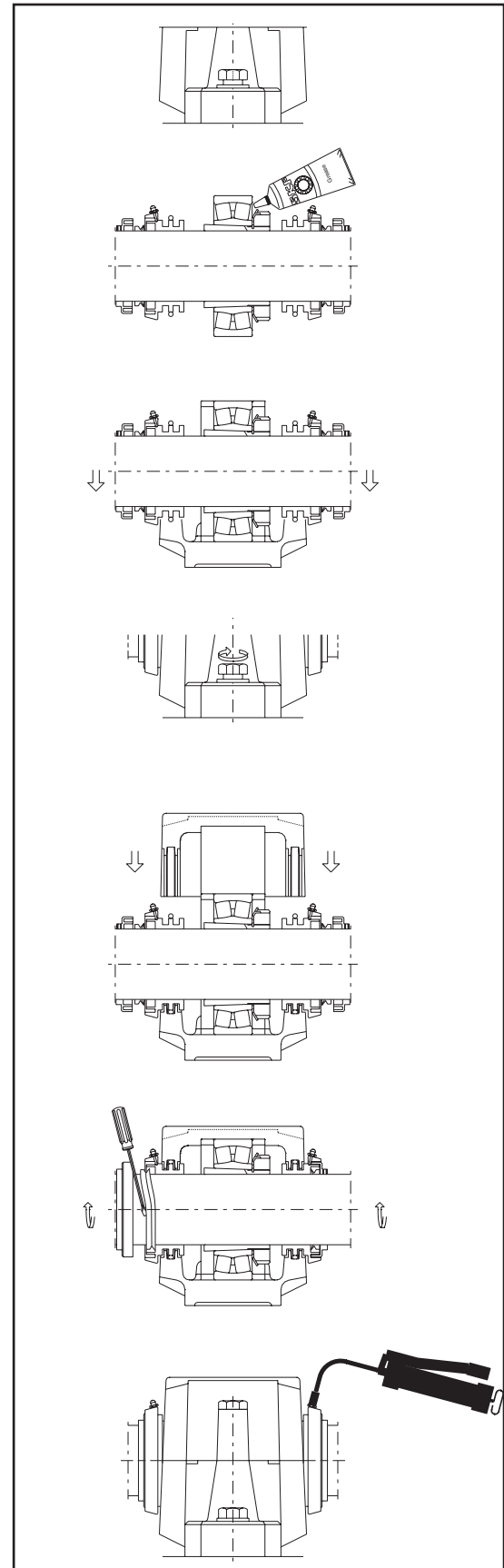
1. The housing base is placed in position and the mounting bolts loosely fitted.
2. One labyrinth seal is placed on the shaft.
3. The bearing is mounted on the shaft (directly or on an adapter sleeve) and filled with grease.
4. The second labyrinth seal is placed on the shaft.
5. The shaft, complete with bearing assembly and labyrinth seals, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
8. At the first charge of grease, the bearing **MUST** be filled with grease (do not wash out the protective coating) and the housing will be filled one-third full. For greasing quantities, refer to Page 40.
9. The housing cap is fitted and the cap bolts tightened to the recommended torque, see table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. Finally the silicon O-ring is placed in the grooves of the labyrinth seals. The simplest way to mount the O-ring is to use a screwdriver blade while rotating the shaft by hand.
12. For the LORC seal insert the inboard LOR seal with the added sealing component assuring that the rubber sealing component is facing in the correct orientation to make it either purgeable or non-purgeable.

NOTE: Instruction 11 is only required for A9508/LER Labyrinth Seal.



Seal Assembly and Mounting Procedure Labyrinth Seals Type “TER-CV”

1. The housing base is placed in position and the mounting bolts loosely fitted.
2. Slide one labyrinth seal, consisting of labyrinth flinger and a V-ring. Note: Make sure seal lip of V-ring is away from flinger. Point prongs of flinger and V-ring towards bearing location. Slide labyrinth insert with O-ring installed on its O.D., in this order, on the shaft.
3. The bearing is mounted on the shaft (directly or on an adapter) and filled with grease.
4. The second labyrinth seal is placed on the shaft following instruction as described above under 2, except reverse sequence.
5. The shaft, complete with bearing assembly and labyrinth seal assemblies, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
8. The housing must be filled 1/3 full with grease, by packing the free space on both sides of the bearing. See page 40. (Do not wash out the protective coating).
9. The housing cap is fitted, being careful not to damage the O-rings on the O.D. of the seal inserts, and the cap bolts tightened to the recommended torque, see Table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. Fill seal labyrinth on insert and flinger with grease.
12. To adjust labyrinth seal flingers, move the flingers axially toward housing till they contact insert. Back flinger off 1/16" (1.6 mm) on "HELD" assembly. For "FREE" assembly back off the amount of the expected shaft expansion plus 1/32" (0.8 mm). Tighten the set screws.

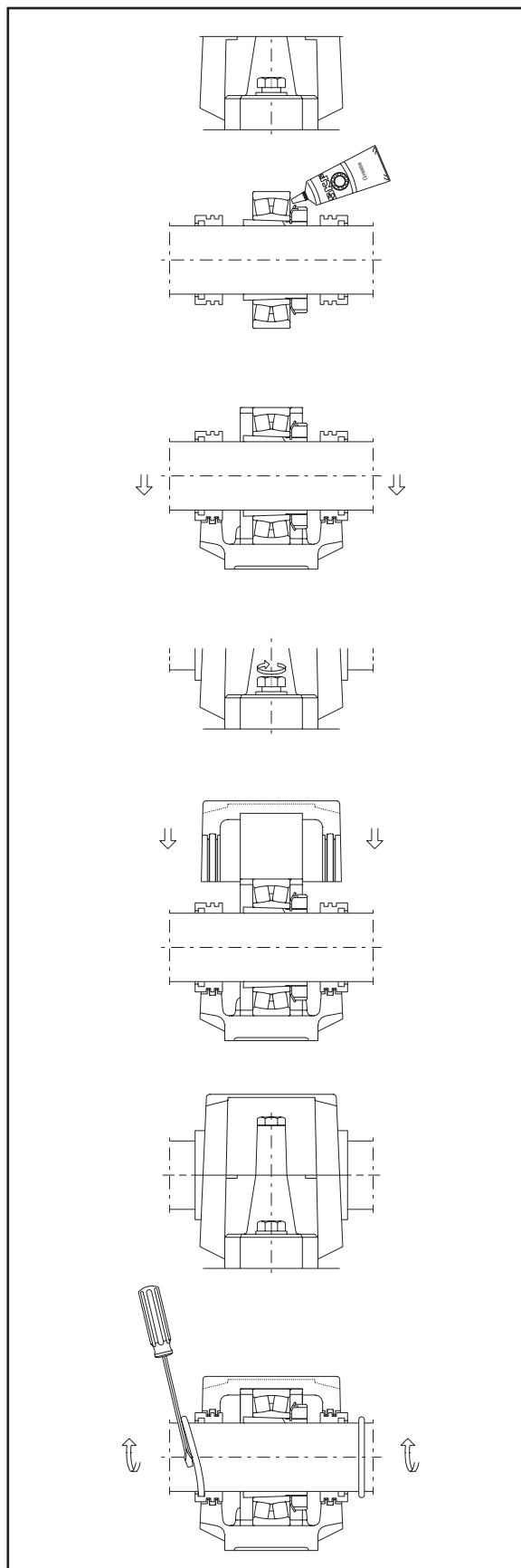


Seal Assembly and Mounting Procedure Labyrinth Seal Type “S” and “TS”

1. The housing base is placed in position and the Mounting bolts loosely fitted.
2. One labyrinth seal is placed on the shaft.
3. The bearing is mounted on the shaft (directly or on an adapter sleeve) and filled with grease.
4. The second labyrinth seal is placed on the shaft.
5. The shaft, complete with bearing assembly and labyrinth seals, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
8. At the first charge of grease, the bearing **MUST** be filled with grease (do not wash out the protective coating) and the housing will be filled one-third full.
* For greasing quantities, refer to Page 40.
9. The housing cap is filled and the cap bolts tightened to the recommended torque, see Table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. Finally the silicon O-section cords are placed in the grooves of the labyrinth seals. The simplest way to mount the cords is to use a screwdriver blade while rotating the shaft by hand.

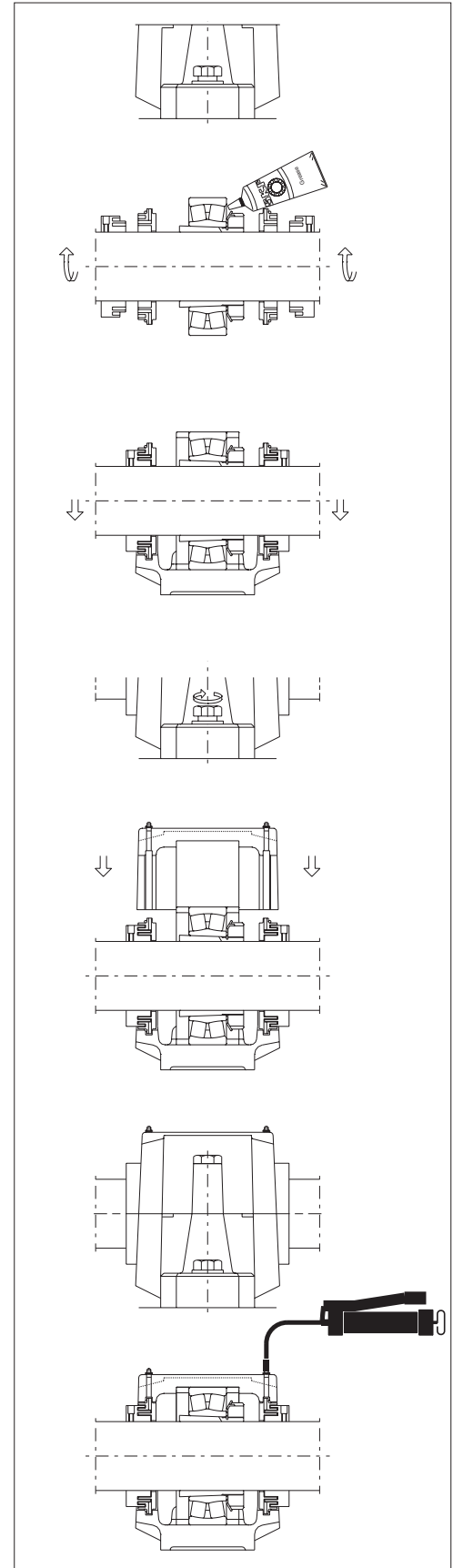
NOTE: Type S is used with SNH and SSNHD.
Type TS is used with SD, SDCD, SDCT and SDHD.

*The initial charge can be increased to half-full for slow to moderate speeds. For slower applications less than 10 rpm consult SKF Engineering Dept.



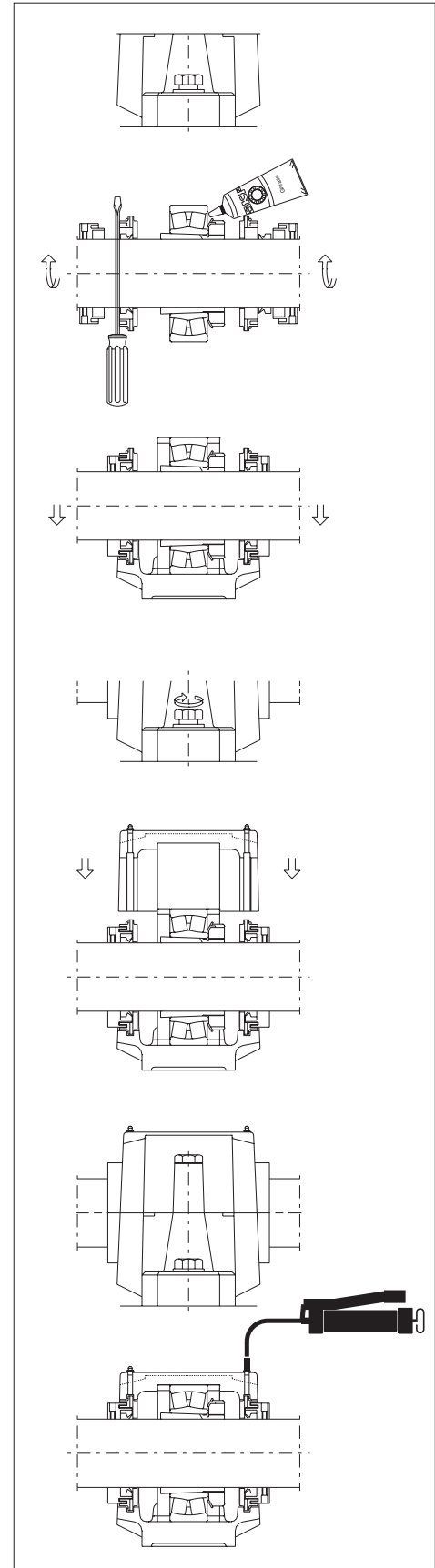
Seal Assembly and Mounting Procedure Labyrinth Seals Type "E"

1. The housing base is placed in position and the mounting bolts loosely fitted.
2. Slide one labyrinth seal, consisting of labyrinth flinger, with prongs towards bearing location and labyrinth insert with O-ring installed on its O.D., in this order, on the shaft.
3. The bearing is mounted on the shaft (directly or on an adapter) and filled with grease.
4. The second labyrinth seal is placed on the shaft following instruction as described above under 2.
5. The shaft, complete with bearing assembly and labyrinth seal assemblies, is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that it is within acceptable limits, and the mounting bolts are then slightly tightened.
8. At the first charge of grease, the bearing **MUST** be filled with grease. See page 40. (do not wash out the protective coating) the housing will be filled one-third full.
9. The housing cap is fitted, being careful not to damage the O-rings on the O.D. of the seal inserts, and the cap bolts tightened to the recommended torque, see Table on Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. To adjust labyrinth seal flingers, move the flingers axially toward housing until they contact insert. Back flinger off $1/16"$ (1.6 mm) on "HELD" assembly. For "FREE" assembly back off the amount of the expected shaft expansion plus $1/32"$ (0.8mm). Tighten the setscrews which secure the flingers on the shaft. To complete the assembly in the case of SDCD housings with these labyrinth seal assemblies, take one half of the 4 mm rubber cord supplied and insert it in the counter bore of each flinger bore adjacent to the outer face.
12. At the initial startup, with shaft rotating, lubricate seals through grease fitting until a bead of grease appears around the periphery of the flingers. NOTE: Use same grease as for lubrication of bearing.

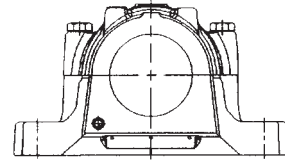


Seal Assembly and Mounting Procedure Labyrinth Seals Type “D”

1. The housing base is placed in position and the mounting bolts loosely fitted.
2. Slide one labyrinth seal, consisting of labyrinth flinger and a V-ring. Note: Make sure seal lip of V-ring is away from flinger. Point prongs of flinger and V-ring towards bearing location. Slide labyrinth insert with O-ring installed on its O.D., in this order, on the shaft.
3. The bearing is mounted on the shaft (directly or on an adapter) and filled with grease.
4. The second labyrinth seal is placed on the shaft following instruction as described above under 2.
5. The shaft, complete with bearing assembly and labyrinth seal assemblies is placed in the lower half of the housing.
6. For held unit, fixing rings are placed in position. For free unit, bearing must be located in center of bearing seat of housing for proper lubrication.
7. The housing base is checked for alignment, ensuring that is within acceptable limits, and the mounting bolts are then slightly tightened.
8. At the first charge of grease, the bearing **MUST** be filled with grease. See page 40. (do not wash out the protective coating) the housing will be filled one-third full.
9. The housing cap is fitted, being careful not to damage the O-rings on the O.D. of the seal inserts, and the cap bolts tightened to the recommended torque, see Pages 26 through 37. Note that the cap **must not be interchanged** with that of another housing.
10. The mounting bolts are tightened to the support.
11. To adjust labyrinth seal flingers, move the flingers axially toward housing till they contact insert. Back flinger off $1/16$ " (1.6 mm) on "HELD" assembly. For "FREE" assembly back off the amount of the expected shaft expansion plus $1/32$ " (0.8 mm). Tighten the set screws which secure the flingers on the shaft. To complete the assembly in the case of SDCD housings with these labyrinth seal assemblies, take one half of the 4 mm rubber cord supplied and insert it in the counter bore of each flinger bore adjacent to the outer face.
12. At the initial start up, with shaft rotating, lubricate seals through grease fitting until a bead of grease appears around the periphery of the flingers. NOTE: Use same grease as for lubrication of bearing.

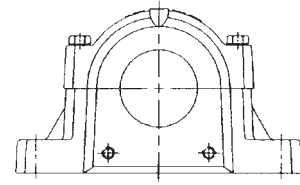


Series: SNL 500 - 600, SNL 200 - 300
 SSNHD 500 - 600, SSNHD 200 - 300



Suffix -VU Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Metric	Ft/Lbs.	Nm	Metric ISO			
505 205	M10	37	50	8.8	1/8-27 NPSF M10 x 1 R1/8 May also be used in the same hole	1/8NPT	(2) 1/2"/12 mm (4) 3/8"/10 mm
506 - 605 206							
507 - 606 207							
508 - 607 208							
509 209							
510 - 608 210							
511 - 609 211							
512 - 610 212							
513 - 611 213							
515 - 612 215	M12	60	80	8.8		1/8NPT	(2) 3/4"/20 mm (4) 5/8"/16 mm
516 - 613 216							
517 217							
518 - 615 218	M16	110	150	8.8	1/8NPT	(2) 3/4"/20 mm (4) 5/8"/16 mm	
519 - 616							
520 - 617 522 - 619 524 - 620	M20	150	200	8.8	1/4NPT	(2) 7/8"/24 mm (4) 5/8"/16 mm	
526							
526	M24	260	350	8.8	3/8NPT	(2) 1"/24 mm (4) 3/4"/20 mm	
528 530 532	M24	260	350	8.8	3/8NPT	(2) 1 1/4"/30 mm (4) 7/8"/24 mm	

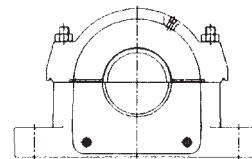
Series: SAFD 500
SAFD 200



Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2) or (4)	Recommended Tightening Torque		Grade			
	Inch	Ft/Lbs.	Nm	SAE	Cap In	Base Out	
507	(2) $\frac{3}{8}$ - 16	40	55	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{1}{2}$ "/12 mm
509	(2) $\frac{7}{16}$ - 14	80	110	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{1}{2}$ "/12 mm
510	(2) $\frac{7}{16}$ - 14	80	110	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{1}{2}$ "/12 mm
511	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm
513	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
515 215	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
516 216	(2) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
517 217	(2) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
518 218	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
520 220	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(2) $\frac{7}{8}$ "/24 mm (4) $\frac{3}{4}$ "/20 mm
522 222	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{3}{4}$ "/20 mm
524 224	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{3}{4}$ "/20 mm
526 226	(4) $\frac{3}{4}$ - 10	380	520	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{7}{8}$ "/24 mm
528 228	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{3}{4}$ "/20 mm
*530 230	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) 1"/24 mm
532 232	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) 1"/24 mm
534 234	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
536 236	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
538 238	(4) 1 - 8	900	1230	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1 $\frac{1}{4}$ "/30 mm
540 240	(4) 1 - 8	900	1230	8	$\frac{1}{4}$ NPT	1NPT	(4) 1 $\frac{1}{4}$ "/30 mm
544 244	(4) 1 - 8	900	1230	8	$\frac{1}{4}$ NPT	1NPT	(4) 1 $\frac{1}{2}$ "/36 mm

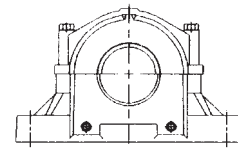
Series: SAF 500
SAF 200
SAF 0

N-Design 4 Hex. head cap bolts.



N-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Inch	Ft/Lbs.	Nm	SAE			
518 218	1/2 - 13	50	70	2	1/8NPT	3/8NPT	(2) 3/4"/20 mm (2) 5/8"/16 mm
520 220 024	5/8 - 11	100	140	2	1/4NPT	3/8NPT	(2) 7/8"/24 mm (4) 3/4"/20 mm
522 222 026	5/8 - 11	100	140	2	1/4NPT	3/8NPT	(4) 3/4"/20 mm
524 224 028	5/8 - 11	100	140	2	1/4NPT	1/2NPT	(4) 3/4"/20 mm
526 226 030 032	3/4 - 10	175	240	2	1/4NPT	1/2NPT	(4) 7/8"/24 mm
528 228	7/8 - 9	165	220	2	1/4NPT	3/4NPT	(4) 1"/24 mm
530 230	7/8 - 9	165	220	2	1/4NPT	3/4NPT	(4) 1"/24 mm
532 232 036 038	7/8 - 9	165	220	2	1/4NPT	3/4NPT	(4) 1"/24 mm
534 234 040	1 - 8	250	340	2	1/4NPT	3/4NPT	(4) 1"/24 mm
536 236	1 - 8	250	340	2	1/4NPT	3/4NPT	(4) 1"/24 mm
538 238 044	1 1/8 - 7	350	480	2	1/4NPT	1NPT	(4) 1 1/4"/30 mm
540 240 048	1 1/4 - 7	500	680	2	1/4NPT	1NPT	(4) 1 1/4"/30 mm
544 244 052	1 3/8 - 6	660	900	2	1/4NPT	1NPT	(4) 1 1/2"/36 mm

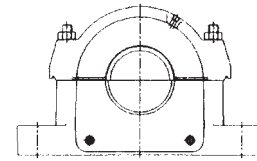
Series: **SAF 500**
SAF 200
A-Design



Note: To recognize A-design, cap of block is held down with 2 hex. Head bolts, except 532 which uses 4 bolts.

A-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4) or (4)	Recommended Tightening Torque		Grade	Cap In	Base Out*	
	Inch	Ft/Lbs.	Nm	SAE			
507	$\frac{3}{8}$ - 16	40	55	8	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{3}{8}$ "/10 mm
509	$\frac{7}{16}$ - 14	80	110	8	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{1}{2}$ "/12 mm
510	$\frac{7}{16}$ - 14	80	110	8	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{1}{2}$ "/12 mm
511 211	$\frac{1}{2}$ - 13	105	150	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm
513 213	$\frac{1}{2}$ - 13	105	150	8	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{5}{8}$ "/16 mm
515 215	$\frac{1}{2}$ - 13	105	150	8	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
516 216	$\frac{5}{8}$ - 11	210	300	8	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
517 217	$\frac{5}{8}$ - 11	210	300	8	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
518 218	$\frac{5}{8}$ - 11	210	300	8	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
520 220	$\frac{3}{4}$ - 10	280	520	8	$\frac{1}{4}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{7}{8}$ "/24 mm (4) $\frac{3}{4}$ "/20 mm
522 222	$\frac{3}{4}$ - 10	280	520	8	$\frac{1}{4}$ NPT	$\frac{3}{8}$ NPT	(4) $\frac{3}{4}$ "/20 mm
524 224	1 - 8	900	1200	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{3}{4}$ "/20 mm
526 226	1 - 8	900	1200	8	$\frac{1}{4}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{7}{8}$ "/24 mm
528 228	1 - 8	900	1200	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
532 232	$\frac{3}{4}$ - 10	380	520	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
534 234	(4) $\frac{3}{4}$ -10	380	520	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
536 236	(4) $\frac{3}{4}$ -10	380	520	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
538 238	(4) $\frac{7}{8}$ -9	600	820	8	$\frac{1}{4}$ NPT	$\frac{3}{4}$ NPT	(4) $1\frac{1}{4}$ "/30 mm
540 240	(4) $\frac{7}{8}$ -9	600	820	8	$\frac{1}{4}$ NPT	1NPT	(4) $1\frac{1}{4}$ "/30 mm
544 244	(4) 1-8	900	1230	8	$\frac{1}{4}$ NPT	1NPT	(4) $1\frac{1}{2}$ "/36 mm

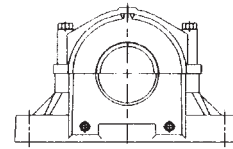
Series: **SAF 600**
SAF 300
SAF O KA
N-Design



Note: To recognize N-design, the block has 4 hex. Head nuts to hold down cap

N-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade	Cap In	Base Out*	
	Inch	Ft/Lbs.	Nm	SAE			
615 315	1/2 - 13	50	70	2	1/8NPT	3/8NPT	(2) 3/4"/20 mm (4) 5/8"/16 mm
616 316	1/2 - 13	50	70	2	1/8NPT	3/8NPT	(2) 3/4"/20 mm (4) 5/8"/16 mm
617 317	5/8 - 11	100	140	2	1/4NPT	3/8NPT	(2) 7/8"/24 mm (4) 3/4"/20 mm
618 318	5/8 - 11	100	140	2	1/4NPT	3/8NPT	(4) 3/4"/20 mm
620 320	5/8 - 11	100	140	2	1/4NPT	1/2NPT	(4) 3/4"/20 mm
622 322	3/4 - 10	175	240	2	1/4NPT	1/2NPT	(4) 7/8"/24 mm
624 324	7/8 - 9	165	220	2	1/4NPT	3/4NPT	(4) 1"/24 mm
626 326	7/8 - 9	165	220	2	1/4NPT	3/4NPT	(4) 1"/24 mm
628 328	1 - 8	250	340	2	1/4NPT	3/4NPT	(4) 1"/24 mm
630 330	1 - 8	250	340	2	1/4NPT	3/4NPT	(4) 1"/24 mm
632 332	1 1/8 - 7	350	480	2	1/4NPT	1NPT	(4) 1 1/4"/30 mm
634 334	1 1/4 - 7	500	680	2	1/4NPT	1NPT	(4) 1 1/4"/30 mm
638 338	1 3/8 - 6	660	900	2	1/4NPT	1NPT	(4) 1 1/2"/36 mm

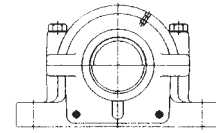
Series: SAF 600
 SAF 300
 SAF O KA
 A-Design



Note: To recognize A-design, cap of block is held down with 2 hex. Head bolts

A-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2)	Recommended Tightening Torque		Grade	Cap In	Base Out*	
	Inch	Ft/Lbs.	Nm	SAE			
613 313	$5/8$ - 11	220	300	8	$1/8$ NPT	$3/8$ NPT	(2) $3/4$ "/20 mm (4) $5/8$ "/16 mm
615 315	$5/8$ - 11	290	300	8	$1/8$ NPT	$3/8$ NPT	(2) $3/4$ "/20 mm (4) $5/8$ "/16 mm
620 320	1 - 8	900	1200	8	$1/4$ NPT	$1/2$ NPT	(4) $3/4$ "/20 mm
622 322	1 - 8	900	1200	8	$1/4$ NPT	$1/2$ NPT	(4) $7/8$ "/24 mm
024 KA	$3/4$ - 10	380	520	8	$1/4$ NPT	$3/8$ NPT	(2) $7/8$ "/24 mm (4) $3/4$ "/20 mm
026 KS	$3/4$ - 10	380	520	8	$1/4$ NPT	$3/8$ NPT	(4) $3/4$ "/20 mm
028 KA	1 - 8	900	1200	8	$1/4$ NPT	$1/2$ NPT	(4) $3/4$ "/20 mm
030 KA	1 - 8	900	1200	8	$1/4$ NPT	$1/2$ NPT	(4) $7/8$ "/24 mm
032 KA	1 - 8	900	1200	8	$1/4$ NPT	$1/2$ NPT	(4) $7/8$ "/24 mm
034 KA	1 - 8	900	1200	8	$1/4$ NPT	$3/4$ NPT	(4) $7/8$ "/24 mm

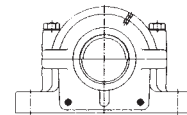
Series: **SAF 500**
SAF 200
L-Design



Note: To recognize L-design, which is the original design and still used for blocks made of steel, cap is held down with 2 hex. head bolts

L-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Inch	Ft/Lbs.	Nm	SAE			
507	$\frac{3}{8}$ - 16	20	27	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{3}{8}$ "/10 mm
509	$\frac{7}{16}$ - 14	30	40	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{1}{2}$ "/12 mm
510	$\frac{7}{16}$ - 14	30	40	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{1}{2}$ "/12 mm
511	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(4) $\frac{5}{8}$ "/16 mm
513	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
515	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
516 216	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
517 217	$\frac{5}{8}$ - 11	100	140	2	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm

Series: **SAF 600**
SAF 300
L-Design



Note: To recognize L-design, which is the original design and still used for blocks made of steel, cap is held down with 2 hex. head bolts

L-Design Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Inch	Ft/Lbs.	Nm	SAE			
308	$\frac{7}{16}$ - 14	30	40	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{1}{2}$ "/12 mm
609 309	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{5}{8}$ "/16 mm
610 310	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{5}{8}$ "/16 mm
611 311	$\frac{1}{2}$ - 13	50	70	2	$\frac{1}{8}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
613 313	$\frac{5}{8}$ - 11	100	140	2	$\frac{1}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm

Series: **SAFS 500, SAFS 200, SAFS O**

Note: To recognize A-design, cap of block is held down with 2 hex. Head bolts

Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (2) or (4)	Recommended Tightening Torque		Grade	Cap In	Base Out*	
	Inch	Ft/Lbs.	Nm	SAE			
509 510	(2) $\frac{7}{16}$ - 14	70	110	8	$\frac{1}{8}$ NPT	$\frac{1}{8}$ NPT	(2) $\frac{7}{16}$ "/12 mm
511	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{1}{4}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm
513 515	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{1}{4}$ NPT	$\frac{1}{4}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{1}{2}$ "/12 mm
516 216	(2) $\frac{1}{2}$ - 13	110	150	8	$\frac{3}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{5}{8}$ "/16 mm (4) $\frac{5}{8}$ "/16 mm
517 217	(2) $\frac{5}{8}$ - 11	220	300	8	$\frac{3}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
518 218	(4) $\frac{1}{2}$ - 13	110	150	8	$\frac{3}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{3}{4}$ "/20 mm (4) $\frac{5}{8}$ "/16 mm
520 220 024	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{3}{8}$ NPT	$\frac{3}{8}$ NPT	(2) $\frac{7}{8}$ "/24 mm (4) $\frac{3}{4}$ "/20 mm
522 222 026	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{3}{8}$ NPT	$\frac{3}{8}$ NPT	(4) $\frac{3}{4}$ "/20 mm
524 224 028	(4) $\frac{5}{8}$ - 11	220	300	8	$\frac{1}{2}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{3}{4}$ "/20 mm
526 226 030 032	(4) $\frac{3}{4}$ - 10	380	520	8	$\frac{1}{2}$ NPT	$\frac{1}{2}$ NPT	(4) $\frac{7}{8}$ "/24 mm
528 228 034	(4) $\frac{7}{8}$ - 9	600	820	8	$\frac{3}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
530 230	(4) $\frac{7}{8}$ - 9 mm	600	820	8	$\frac{3}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
532 232 036 038	(4) $\frac{7}{8}$ - 9 mm	600	820	8	$\frac{3}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
534 234 040	(4) 1 - 8	900	1200	8	$\frac{3}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
536 236	(2) $1\frac{3}{8}$ - 6	2380	3250	8	$\frac{3}{4}$ NPT	$\frac{3}{4}$ NPT	(4) 1"/24 mm
538 238 044	(4) $1\frac{1}{8}$ - 7	1280	1750	8	1NPT	1NPT	(4) $1\frac{1}{4}$ "/30 mm
540 240 048	(4) $1\frac{1}{4}$ - 7	1820	2450	8	1NPT	1NPT	(4) $1\frac{1}{4}$ "/30 mm
544 244 052	(2) $1\frac{3}{8}$ - 6	2380	3250	8	1NPT	1NPT	(4) $1\frac{1}{2}$ "/36 mm

Series: SD 31							
Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Inch	Ft/Lbs.	Nm	SAE			
34	M24	260	350	8.8	*	*	(4) 1"/24 mm
36	M24	260	350	8.8	*	*	(4) 1"/24 mm
38	M24	260	350	8.8	*	*	(4) 1"/24 mm
40	M24	260	350	8.8	*	*	(4) 1 ¹ / ₄ "/30 mm
44	M24	260	350	8.8	*	*	(4) 1 ¹ / ₄ "/30 mm
48	M30	300	400	8.8	*	*	(4) 1 ¹ / ₄ "/30 mm
52	M30	300	400	8.8	*	*	(4) 1 ¹ / ₂ "/36 mm
56	M30	300	400	8.8	*	*	(4) 1 ¹ / ₂ "/36 mm
60	M30	300	400	8.8	*	*	(4) 1 ¹ / ₂ "/36 mm
64	M30	300	400	8.8	*	*	(4) 1 ¹ / ₂ "/36 mm

Series: SDCD 30, SDCD 30 / MC14
SDCD 0, SDCD0 / MC14

Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade	Cap In	Base Out	
	Inch	Ft/Lbs.	Nm	SAE			
36	⁷ / ₈ - 9	400	550	5	¹ / ₄ NPT	*	1"/24 mm
38	⁷ / ₈ - 9	400	550	5	¹ / ₄ NPT	*	1"/24 mm
40	1 - 8	600	820	5	¹ / ₄ NPT	*	1"/24 mm
44	1 - 8	600	820	5	¹ / ₄ NPT	*	1 ¹ / ₄ "/30 mm
48	1 - 8	600	820	5	¹ / ₄ NPT	*	1 ¹ / ₄ "/30 mm
52	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₄ NPT	*	1 ¹ / ₄ "/30 mm
56	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₄ NPT	*	1 ¹ / ₄ "/30 mm
60	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₄ NPT	*	1 ¹ / ₂ "/36 mm
64	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₄ NPT	*	1 ¹ / ₂ "/36 mm
68	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₄ NPT	*	1 ¹ / ₂ "/36 mm
72	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₂ NPT	*	1 ¹ / ₂ "/36 mm
76	1 ¹ / ₄ - 7	1100	1500	5	¹ / ₂ NPT	*	1 ¹ / ₂ "/36 mm
80	1 ¹ / ₂ - 6	*	*	5	¹ / ₂ NPT	*	1 ³ / ₄ "/45 mm
84	1 ³ / ₄ - 5	*	*	5	¹ / ₂ NPT	*	2"/50 mm
88	1 ³ / ₄ - 5	*	*	5	¹ / ₂ NPT	*	2"/50 mm

Series: SDCD 31, SDCD 31 / MC14 SDHD (sizes 34 and 72 only)
SDCD 1, SDCD1 / MC14

Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade			
	Inch	Ft/Lbs.	Nm	SAE	Cap In	Base Out	
34	$7/8$ - 9	600	820	8	$1/4$ NPT	*	1"/24 mm
36	$7/8$ - 9	400	550	5	$1/4$ NPT	*	1"/24 mm
38	1 - 8	600	820	5	$1/4$ NPT	*	1"/24 mm
40	1 - 8	600	820	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
44	1 - 8	600	820	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
48	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
52	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
56	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
60	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
64	1 $1/4$ - 7	1100	1500	5	$1/2$ NPT	*	1 $1/2$ "/36 mm
68	1 $1/2$ - 6	*	*	5	$1/2$ NPT	*	1 $3/4$ "/45 mm
72	1 $1/2$ - 6	*	*	8	$1/2$ NPT	*	1 $3/4$ "/45 mm
76	1 $3/4$ - 5	*	*	5	$1/2$ NPT	*	2"/50 mm
80	1 $3/4$ - 5	*	*	5	$1/2$ NPT	*	2"/50 mm
84	1 $3/4$ - 5	*	*	5	$1/2$ NPT	*	2"/50 mm
88	1 $3/4$ - 5	*	*	5	$1/2$ NPT	*	2"/50 mm

Series: SDCD 32, SDCD 32 / MC14
SDCD 2, SDCD2 / MC14

Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade			
	Inch	Ft/Lbs.	Nm	SAE	Cap In	Base Out	
34	1 - 8	600	820	5	$1/4$ NPT	*	1"/24 mm
36	1 - 8	600	820	5	$1/4$ NPT	*	1"/24 mm
38	1 - 8	600	820	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
40	1 $1/4$ - 7	600	820	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
44	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/4$ "/30 mm
48	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
52	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
56	1 $1/4$ - 7	1100	1500	5	$1/4$ NPT	*	1 $1/2$ "/36 mm
60	1 $1/4$ - 7	1100	1500	5	$1/2$ NPT	*	1 $1/2$ "/36 mm
64	1 $1/2$ - 6	*	*	5	$1/2$ NPT	*	1 $3/4$ "/45 mm
68	1 $3/4$ - 5	*	*	5	$1/2$ NPT	*	2"/50 mm

Series: SDAF 500
SDAF 200

Housing Size	Cap Bolt Information				Lubrication Fitting Hole Detail		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade			
	Inch	Ft/Lbs.	Nm	SAE	Cap In	Base Out	
520 220	$3/4$ - 10	175	240	2	$1/4$ NPT	$1/4$ NPT	(4) $3/4$ "/20 mm
522 222	$7/8$ - 9	165	220	2	$1/4$ NPT	$1/4$ NPT	(4) $7/8$ "/24 mm
524 224	$7/8$ - 9	165	220	2	$1/4$ NPT	$1/4$ NPT	(4) $7/8$ "/24 mm
526 226	$7/8$ - 9	165	220	2	$1/4$ NPT	$3/8$ NPT	(4) 1"/24 mm
530 230	$1 1/8$ - 7	350	480	2	$1/4$ NPT	$3/8$ NPT	(4) $1 1/8$ "/27 mm
532 232	$1 1/8$ - 7	350	480	2	$1/4$ NPT	$1/2$ NPT	(4) $1 1/8$ "/27 mm
536 236	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 1/4$ "/30 mm
538 238	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 3/8$ "/36 mm
540 240	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 3/8$ "/36 mm
544 244	$1 3/8$ - 6	660	900	2	$1/4$ NPT	$3/4$ NPT	(4) $1 1/2$ "/36 mm

Series: SDAF 600
SDAF 300
SDAF 0

Housing Size	Cap Bolt Information				Lubrication		Base or Attachment bolts Qty (2) or (4) inch/metric
	Size Qty. (4)	Recommended Tightening Torque		Grade	Fitting Hole Detail		
	Inch	Ft/Lbs.	Nm	SAE	Cap In	Base Out	
617 317	$3/4$ - 10	175	240	2	$1/4$ NPT	$1/4$ NPT	(4) $3/4$ "/20 mm
618 318	$3/4$ - 10	175	240	2	$1/4$ NPT	$1/4$ NPT	(4) $3/4$ "/20 mm
620 320	$7/8$ - 9	165	220	2	$1/4$ NPT	$1/4$ NPT	(4) $7/8$ "/24 mm
622 322	$7/8$ - 9	165	220	2	$1/4$ NPT	$3/8$ NPT	(4) 1"/24 mm
624 324	$1 1/8$ - 7	350	480	2	$1/4$ NPT	$3/8$ NPT	(4) $1 1/8$ "/27 mm
626 326	$1 1/8$ - 7	350	480	2	$1/4$ NPT	$1/2$ NPT	(4) $1 1/8$ "/27 mm
628 328	$1 1/8$ - 7	350	480	2	$1/4$ NPT	$1/2$ NPT	(4) $1 1/4$ "/30 mm
630 330	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 1/4$ "/30 mm
632 332	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 3/8$ "/36 mm
634 334	$1 1/4$ - 7	500	680	2	$1/4$ NPT	$3/4$ NPT	(4) $1 3/8$ "/36 mm
636 336	$1 3/8$ - 6	660	900	2	$1/4$ NPT	$3/4$ NPT	(4) $1 1/2$ "/36 mm
638 338	$1 3/8$ - 6	660	900	2	$1/4$ NPT	$3/4$ NPT	(4) $1 1/2$ "/36 mm
640 340	$1 3/8$ - 6	660	900	2	$1/4$ NPT	$3/4$ NPT	(4) $1 5/8$ "/39 mm
060	$1 3/8$ - 6	660	900	2	*	*	(4) $1 5/8$ "/39 mm
064	$1 3/8$ - 6	660	900	2	*	*	(4) $1 5/8$ "/39 mm
068	$1 3/4$ - 5	1250	1700	2	*	*	(4) $1 7/8$ "/48 mm
072	$1 3/4$ - 5	1250	1700	2	*	*	(4) $1 7/8$ "/48 mm
076	$1 3/4$ - 5	1250	1700	2	*	*	(4) $1 7/8$ "/48 mm
080	$1 3/4$ - 5	1250	1700	2	*	*	(4) 2"/50 mm
084	$1 3/4$ - 5	1250	1700	2	*	*	(4) 2"/50 mm

LUBRICATION

General

It is necessary to lubricate rolling bearings to prevent metallic contact between rolling elements, raceways and cage.

The most favourable running (operating) conditions for a rolling bearing is obtained when the minimum quantity of lubricant necessary to ensure reliable operation is used.

However, the quantity used also depends on additional functions required of the lubricant, i.e. sealing and cooling.

Lubricating properties deteriorate as a result of aging and mechanical churning. When using labyrinth and taconite seals in severely contaminated environments, it is suggested to shorten the lubrication interval. Also certain operating conditions i.e. high speeds, high temperatures or heavy loads require more frequent lubrication.

The choice of lubricants depends primarily on the temperature range, operating speed and magnitude of the load.

Either oil or grease of proper quality can be considered for lubricating bearings. At low and medium speeds, grease usually permits a simpler method of obtaining reliable and durable lubrication. It requires a simpler sealing system and has an additional advantage of affording excellent protection to bearings against rust and intrusion of contaminants. With high speeds, it becomes necessary to add fresh grease and remove old grease more frequently to obtain safe operation. At some limiting speed, grease must be replaced so often that it becomes impractical. Then oil should be used.

When oil is used, it is advisable to employ an oil reservoir or an adequate supply of oil and effective housing seals so that the oil does not leak out. The level of oil should be about the center of the lowest ball or roller when the bearing is stationary.

Too high an oil level or too large a quantity of grease, usually results in a high operating temperature due to churning of the lubricant.

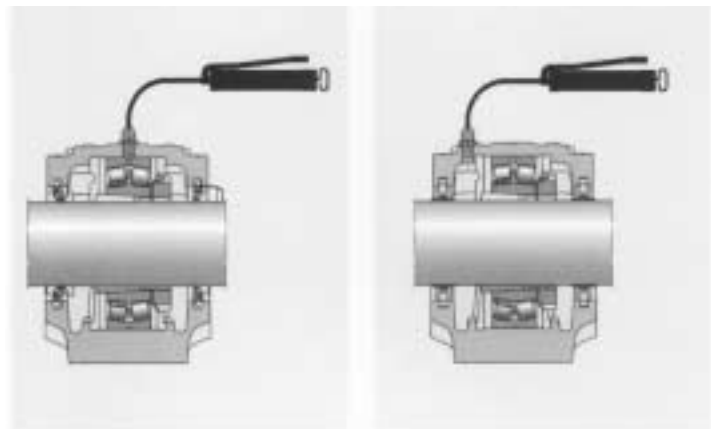
Grease Lubrication

SKF pillow block housings are primarily intended for grease lubrication. In the majority of cases it is sufficient to charge the housings with grease on mounting and to replace this grease periodically, either at specified time interval or when performing inspections.

Pillow block housings caps can be equipped with grease fittings. For spherical roller bearings with W33 or E suffix (groove in outer ring and three lubricating holes spaced at 120°) the center lubricating fitting must be used. For bearing without the E or W33 feature, either of the two side lubrication fitting are used to supply grease. Generally the side opposite the lock nut.

Lubrication through center fitting for W33

Non W33



If grease is used as a lubricant, at installation of bearing the lubricant must be worked in between the rolling elements. The housing should be packed 1/3 full. As a precaution, never mix greases with unlike base oils or incompatible thickeners. It should also be noted that bearings are generally lubricated after mounting. This ensures an accurate clearance measurement, avoids the mess in trying to handle a greasy bearing, and decreases the possibility of additional contamination being introduced into the bearing.

Only where, after mounting, an even distribution of grease in the bearing is not possible should one consider greasing prior to mounting.

Relubrication and Relubrication Intervals

Relubrication Intervals

The period during which a grease lubricated bearing will function satisfactorily without relubrication is dependent on the bearing type, size, operating conditions (load, speed, temperature, environment) and the grease used. The relubrication intervals (hours of operation) obtained from Diagram A are valid for bearings in stationary machines where loading conditions are normal. The diagram is based on the use of an age resistant, quality grease and is valid for bearing temperatures of +70°C. At temperatures over 70°C, the lubricating intervals should be halved for each 15°C rise, but the maximum permissible operating temperature for the grease should obviously not be exceeded. Conversely, if operating temperatures are lower than 70°C, the intervals can be lengthened to about twice the 70°C values for operating temperatures of 50°C and below. It should be noted however that, relubrication intervals may vary significantly even where apparently similar greases are used.

Contaminated grease results in failures such as premature fatigue, polishing wear, etc. Where there is a risk of the grease becoming contaminated, the relubrication intervals should be reduced. This reduction also applies to applications where the grease is required to seal against moisture (e.g. bearings in paper making machines, where water runs over the bearing housings, relubrication should be done once a week).

The amount of grease

The amount of grease needed for relubrication can be estimated using the following formula:

$$G = 0,005 D B$$

where

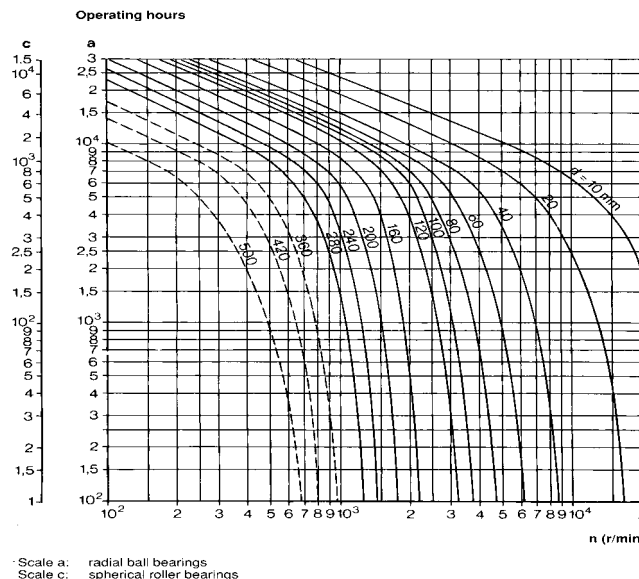
G = grease quantity, g (for ozs, x 0.0353)

D = bearing outside diameter, mm

B = total bearing width, mm

If the relubrication interval is not specified we suggest at regular plant maintenance shutdown to remove and replace the lubricant. The cap of split housings and the cover of one-piece housing can usually be taken off to expose the bearing. After removing the used grease, fresh grease should be packed between the rolling elements.

If frequent relubrication is required a grease nipple should be fitted to the housing. A grease gun can then be used to ensure that fresh grease actually reaches the bearing and replaces the old grease. After a number of such relubrications, the housing should be opened and the used grease removed before fresh grease is added.



Initial grease charges for split pillow blocks

The approximate initial grease charge (mass) for split pillow blocks is given in these tables. The recommended initial grease charge is one-third to one-half the volume of the free space in the pillow block, and the empty space between rolling elements and cage filled with grease (buttered). This recommendation is for moderate speeds and normal or light bearing loads ($C/P > 8.3$).

Housing size and Series	Grease quantity		Housing size and Series	Grease quantity		Housing size and Series	Grease quantity		Housing size and Series	Grease quantity	
SNL, SSNHD			SAF, SAFS, SAFD			SAF			SD 31, SDCD 30, SDCD 31		
	g.	oz.		g.	oz.		g.	oz.		g.	oz.
505	25	0.9	507	70	2.5	308	127	4.5	34	1800	64
205			509	85	3.0	609, 309	142	5.0	36	2200	78
506 - 605	40	1.4	510	113	4.0	610, 310	184	6.5	38	2900	103
206			511	142	5.0	611, 311	227	8.0	40	3800	134
507 - 606	50	1.8	513	213	7.5	312	283	10.0	44	4400	155
207			515	255	9.0	613, 313	369	13.0	48	5500	194
508 - 607	60	2.1	516, 216	369	13.0	314	397	14.0	52	7000	247
208			517, 217	369	13.0	615, 315	397	14.0	56	7400	260
509	65	2.3	518, 218	397	14.0	616, 316	453	16.0	60	10500	370
510 - 608	75	2.6	520, 220	595	21.0	617, 317	567	20.0	64	13000	460
210			522, 222	794	28.0	618, 318	624	22.0	68	17500	620
511 - 609	100	3.5	524, 224	1134	40.0	620, 320	1134	40.0	72	18400	650
211			526, 226	1475	52.0	622, 322	1475	52.0	76	19200	680
512 - 610	150	5.3	528, 228	1475	52.0	624, 324	1700	60.0	80	22200	790
212			530, 230	1700	60.0	626, 326	1930	68.0	84	29300	1050
513 - 611	180	6.4	532, 232	1930	68.0	628, 328	2400	84.0	88	30000	1070
213			534, 234	2381	84.0	630, 330	2722	96.0	SDCD 32		
515 - 612	230	8.1	536, 236	2722	96.0	632, 332	3290	116	34	2200	78
215			538, 238	3290	116.0	634, 334	3860	136	36	2900	103
516 - 613	280	9.9	540, 240	3860	136.0	638, 338	5200	184	38	3800	134
216			544, 244	5200	184.0	SAF-K			40	4400	155
517	330	12	SDAF			024 KA	595	21.0	44	5500	194
217			520	571	20	026 KA	794	28.0	48	7000	247
518 - 615	430	15	522	771	27	028 KA	1134	40.0	52	7400	260
218			524	914	32	030 KA	1475	52.0	56	10500	370
519 - 616	480	17	526	1257	44	032 KA	1475	52.0	60	13000	460
520 - 617	630	22	530	1371	48	034 KA	1475	52.0	64	17500	620
522 - 619	850	30	532	1714	60	036 KA	1930	68.0	68	18400	650
524 - 620	1000	35	534	2171	76	038 KA	1930	68.0	72	19200	680
526	1100	39	536	2514	88	040 KA	2381	84.0	76	22200	790
528	1400	49	538	2971	104	044 KA	3290	116.0	80	29300	1050
530	1700	60	540	3657	128	048 KA	3860	136.0	84	30000	1070
532	2000	70	544	4800	168	052 KA	5200	184.0	88	37000	1300
						056 KA	7000	248.0			

SKF Grease - Technical Specifications

Designation	Properties								
	Temperature range				Consistency acc. to NLGI	Thickener	Base oil	Base oil viscosity	
	from		to					at 40°C	100°C
-	°C	°F	°C	°F	-	-	-	mm ² /s	mm ² /s
LGMT2	-30	-22	+120	+250	2	Lithium soap	Mineral oil	110	11
LGMT3	-30	-22	+120	+250	3	Lithium soap	Mineral oil	120	12
LGEP2	-30	-22	+110	+230	2	Lithium soap	Mineral oil	190	15
LGEM2	-20	-4	+120	+250	2	Lithium soap	Mineral oil	510	32
LGLT2	-55	-65	+110	+230	2	Lithium soap	Di-ester oil	15	3.7
LGHT3	-30	-22	+150	+300	3	Lithium complex	Mineral oil	110	13
LGWM1	-30	-22	+110	+230	1	Lithium soap	Mineral oil	200	16

With the help of the Table, the right grease can be selected with due consideration to the operating conditions. For more detailed information on other SKF greases not listed and their recommended application, consult SKF.

Operating requirements	Designation						
	LGMT2	LGMT3	LGEP2	LGEM2	LGLT2	LGHT3	LGWM1
High temperature	xx	xx	xx	x	xx	xxx	
Low temperature	xx	xx	xx		xxx	xx	xxx
High speed	xx	xx	x		xxx	xx	
Low speed and/or vibrations	x	x	xx	xxx		x	xx
Low friction	xx	xx	x		xxx	xx	xx
Heavy load	xx	xx	xxx	xxx		x	xxx
Vibrations	xxx	xxx	xxx	xxx	x	xxx	
Resistance to water	xxx	xxx	xxx	xx	xxx	xxx	xxx
Rust protection	xx	xx	xxx	xx	x	xx	xxx

no cross = not suitable

x = suitable for normal requirements

xx = suitable for extreme requirements

xxx = very suitable for extreme requirements

Mounting of Spherical Roller Bearings (with tapered bore)

Metric Measurement

Bearing bore diameter		Radial internal clearance (unmounted)						Reduction in radial internal clearance		Axial drive-up* Taper 1:12 on diameter		Minimum Permissible residual clearance after mounting bearings with initial clearance		
d		Normal		C3		C4								
over	incl.	min	max	min	max	min	max	min	max	min	max	Normal	C3	C4
mm		mm												
30	40	0.035	0.050	0.050	0.065	0.065	0.085	0.020	0.025	0.35	0.40	0.015	0.025	0.040
41	50	0.045	0.060	0.060	0.080	0.080	0.100	0.025	0.030	0.40	0.45	0.020	0.030	0.050
51	65	0.055	0.075	0.075	0.095	0.095	0.120	0.030	0.040	0.45	0.60	0.025	0.035	0.055
66	80	0.070	0.095	0.095	0.120	0.120	0.150	0.040	0.050	0.60	0.75	0.025	0.040	0.070
81	100	0.080	0.110	0.110	0.140	0.140	0.180	0.045	0.060	0.70	0.90	0.035	0.050	0.080
101	120	0.100	0.135	0.135	0.170	0.170	0.220	0.050	0.070	0.75	1.10	0.050	0.065	0.100
121	140	0.120	0.160	0.160	0.200	0.200	0.260	0.065	0.090	1.10	1.40	0.055	0.080	0.110
141	160	0.130	0.180	0.180	0.230	0.230	0.300	0.075	0.100	1.20	1.60	0.055	0.090	0.130
161	180	0.140	0.200	0.200	0.260	0.260	0.340	0.080	0.110	1.30	1.70	0.060	0.100	0.150
181	200	0.160	0.220	0.220	0.290	0.290	0.370	0.090	0.130	1.40	2.00	0.070	0.100	0.160
201	225	0.180	0.250	0.250	0.320	0.320	0.410	0.100	0.140	1.60	2.20	0.080	0.120	0.180
226	250	0.200	0.270	0.270	0.350	0.350	0.450	0.110	0.150	1.70	2.40	0.090	0.130	0.200
251	280	0.220	0.300	0.300	0.390	0.390	0.490	0.120	0.170	1.90	2.70	0.100	0.140	0.220
281	315	0.240	0.330	0.330	0.430	0.430	0.540	0.130	0.190	2.00	3.00	0.110	0.150	0.240
316	355	0.270	0.360	0.360	0.470	0.470	0.590	0.150	0.210	2.40	3.30	0.120	0.170	0.260
356	400	0.300	0.400	0.400	0.520	0.520	0.650	0.170	0.230	2.60	3.60	0.130	0.190	0.290
401	450	0.330	0.440	0.440	0.570	0.570	0.720	0.200	0.260	3.10	4.00	0.130	0.200	0.310
451	500	0.370	0.490	0.490	0.630	0.630	0.790	0.210	0.280	3.30	4.40	0.160	0.230	0.350
501	560	0.410	0.540	0.540	0.680	0.680	0.870	0.240	0.320	3.70	5.00	0.170	0.250	0.360
561	630	0.460	0.600	0.600	0.760	0.760	0.980	0.260	0.350	4.00	5.40	0.200	0.290	0.410
631	710	0.510	0.670	0.670	0.850	0.850	1.090	0.300	0.400	4.60	6.20	0.210	0.310	0.450
711	800	0.570	0.750	0.750	0.960	0.960	1.220	0.340	0.450	5.30	7.00	0.230	0.350	0.510
801	900	0.640	0.840	0.840	1.070	1.070	1.370	0.370	0.500	5.70	7.80	0.270	0.390	0.570
901	1000	0.710	0.930	0.930	1.190	1.190	1.520	0.410	0.550	6.30	8.50	0.300	0.430	0.640

Inch Measurement

Bearing bore diameter		Radial internal clearance (unmounted)						Reduction in radial internal clearance		Axial drive-up* Taper 1:12 on diameter		Minimum Permissible residual clearance after mounting bearings with initial clearance		
d		Normal		C3		C4								
over	incl.	min	max	min	max	min	max	min	max	min	max	Normal	C3	C4
mm		inches												
30	40	0.0014	0.0020	0.0020	0.0026	0.0026	0.0033	0.0008	0.0010	0.014	0.016	0.0006	0.0010	0.0016
41	50	0.0018	0.0024	0.0024	0.0031	0.0031	0.0039	0.0010	0.0012	0.016	0.018	0.0008	0.0012	0.0020
51	65	0.0022	0.0030	0.0030	0.0037	0.0037	0.0047	0.0012	0.0016	0.018	0.024	0.0010	0.0014	0.0022
66	80	0.0028	0.0037	0.0037	0.0047	0.0047	0.0059	0.0016	0.0020	0.024	0.030	0.0010	0.0016	0.0028
81	100	0.0031	0.0043	0.0043	0.0055	0.0055	0.0071	0.0018	0.0024	0.028	0.035	0.0014	0.0020	0.0031
101	120	0.0039	0.0053	0.0053	0.0067	0.0067	0.0087	0.0020	0.0028	0.030	0.043	0.0020	0.0026	0.0039
121	140	0.0047	0.0063	0.0063	0.0079	0.0079	0.0102	0.0026	0.0035	0.043	0.055	0.0022	0.0031	0.0043
141	160	0.0051	0.0071	0.0071	0.0091	0.0091	0.0118	0.0030	0.0039	0.047	0.063	0.0022	0.0035	0.0051
161	180	0.0055	0.0079	0.0079	0.0102	0.0102	0.0134	0.0031	0.0043	0.051	0.067	0.0024	0.0039	0.0059
181	200	0.0063	0.0087	0.0087	0.0114	0.0114	0.0146	0.0035	0.0051	0.055	0.079	0.0028	0.0039	0.0063
201	225	0.0071	0.0098	0.0098	0.0126	0.0126	0.0161	0.0039	0.0055	0.063	0.087	0.0031	0.0047	0.0071
226	250	0.0079	0.0106	0.0106	0.0138	0.0138	0.0177	0.0043	0.0059	0.067	0.094	0.0035	0.0051	0.0079
251	280	0.0087	0.0118	0.0118	0.0154	0.0154	0.0193	0.0047	0.0067	0.075	0.106	0.0039	0.0055	0.0087
281	315	0.0094	0.0130	0.0130	0.0169	0.0169	0.0213	0.0051	0.0075	0.079	0.118	0.0043	0.0059	0.0094
316	355	0.0106	0.0142	0.0142	0.0185	0.0185	0.0232	0.0059	0.0083	0.094	0.130	0.0047	0.0067	0.0102
356	400	0.0118	0.0157	0.0157	0.0205	0.0205	0.0256	0.0067	0.0091	0.102	0.142	0.0051	0.0075	0.0114
401	450	0.0130	0.0173	0.0173	0.0224	0.0224	0.0283	0.0079	0.0102	0.122	0.157	0.0051	0.0079	0.0122
451	500	0.0146	0.0193	0.0193	0.0248	0.0248	0.0311	0.0083	0.0110	0.130	0.173	0.0063	0.0091	0.0138
501	560	0.0161	0.0213	0.0213	0.0268	0.0268	0.0343	0.0094	0.0126	0.146	0.197	0.0067	0.0098	0.0142
561	630	0.0181	0.0236	0.0236	0.0299	0.0299	0.0386	0.0102	0.0138	0.157	0.213	0.0079	0.0114	0.0161
631	710	0.0201	0.0264	0.0264	0.0335	0.0335	0.0429	0.0118	0.0157	0.181	0.244	0.0083	0.0122	0.0177
711	800	0.0224	0.0295	0.0295	0.0378	0.0378	0.0480	0.0134	0.0177	0.209	0.276	0.0091	0.0138	0.0201
801	900	0.0252	0.0331	0.0331	0.0421	0.0421	0.0539	0.0146	0.0197	0.224	0.307	0.0106	0.0154	0.0224
901	1000	0.0280	0.0366	0.0366	0.0469	0.0469	0.0598	0.0161	0.0217	0.248	0.335	0.0118	0.0169	0.0252

1. * Valid for solid steel shafts only.

Shaft tolerances and fits

Shaft tolerance limites for adapter mounting

Nominal Shaft diameter		Diameter tolerances		Max permissible taper and ovality on radius
over	incl.	max	min	
in.				
0.3940	0.7090	+0.00	-.0017	.00015
0.7090	1.1810	+0.00	-.0020	.00020
1.1810	1.9690	+0.00	-.0024	.00020
1.9690	3.1500	+0.00	-.0029	.00025
3.1500	4.7240	+0.00	-.0034	.00030
4.7240	7.0870	+0.00	-.0039	.00035
7.0870	9.8430	+0.00	-.0045	.00040
9.8430	12.402	+0.00	-.0051	.00045
12.402	15.748	+0.00	-.0055	.00050
15.748	19.685	+0.00	-.0061	.00055

Nominal Shaft diameter		Diameter tolerances		Max. permissible taper and ovality
over	incl.	max	min	
mm		µm (.001 mm)		
10	18	+0	-43	4.0
18	30	+0	-52	4.5
30	50	+0	-62	5.5
50	80	+0	-74	6.5
80	120	+0	-87	7.5
120	180	+0	-100	9.0
180	250	+0	-115	10.0
250	315	+0	-130	11.5
315	400	+0	-140	12.5
400	500	+0	-155	13.5

Shaft tolerances for spherical roller bearings with cylindrical bore

Brg. Size	Inches		ISO Fit	Millimeters	
	Max.	Min.		Max.	Min.
07	1.3785	1.3780	l5	35.013	35.002
08	1.5753	1.5749	lk5	40.013	40.002
09	1.7724	1.7720	k6	45.020	45.009
10	1.9693	1.9689	m5	50.020	50.009
11	2.1663	2.1658	m5	55.024	55.011
12	2.3631	2.3626	m5	60.024	60.011
13	2.5600	2.5595	m5	65.024	65.011
14	2.7571	2.7563	m6	70.030	70.011
15	2.9539	2.9532	m6	75.030	75.011
16	3.1508	3.1500	m6	80.030	80.011
17	3.3478	3.3470	m6	85.035	85.013
18	3.5447	3.5438	m6	90.035	90.013
19	3.7415	3.7407	m6	95.035	95.013
20	3.9384	3.9375	m6	100.035	100.013
22	4.3325	4.3316	n6	110.045	110.023
24	4.7262	4.7253	n6	120.045	120.023
26	5.1201	5.1192	n6	130.052	130.027
28	5.5138	5.5129	n6	140.052	140.027
30	5.9082	5.9072	p6	150.068	150.043
32	6.3019	6.3009	p6	160.068	160.043
34	6.6956	6.6946	p6	170.068	170.043
36	7.0893	7.0883	p6	180.068	180.043
38	7.4834	7.4823	p6	190.079	190.050
40	7.8771	7.8760	p6	200.079	200.050
44	8.6645	8.6634	p6	220.079	220.050
48	9.4519	9.4508	p6	240.079	240.050
52	10.2397	10.2384	p6	260.088	260.056
56	11.0271	11.0258	p6	280.088	280.056
60	11.8161	11.8149	r6	300.130	300.098
64	12.6041	12.6027	r6	320.144	320.108
68	13.3915	13.3901	r6	340.144	340.108
72	14.1791	14.1777	r6	360.150	360.114
76	14.9665	14.9651	r6	380.150	380.114
80	15.7539	15.7525	r6	400.150	400.114
84	16.5419	16.5404	r6	420.166	420.126
88	17.3293	17.3278	r6	440.166	440.126

Shaft tolerances for self aligning ball bearings with cylindrical bore

Brg. Size	Inches		ISO Fit	Millimeters	
	Max.	Min.		Max.	Min.
05	0.9847	.9843	k5	25.011	25.002
06	1.1815	1.1812	k5	30.011	30.002
07	1.3785	1.3780	k5	35.013	35.002
08	1.5753	1.5749	k5	40.013	40.002
09	1.7722	1.7717	k5	45.013	45.002
10	1.9690	1.9686	k5	50.013	50.002
11	2.1659	2.1654	k5	55.015	55.002
12	2.3628	2.3623	k5	60.015	60.002
13	2.5596	2.5591	k5	65.015	65.002
14	2.7565	2.7560	k5	70.015	70.002
15	2.9533	2.9528	-	75.015	75.002
16	3.1502	3.1497	k5	80.015	80.002
17	3.3472	3.3466	k5	85.018	85.003
18	3.5440	3.5434	k5	90.018	90.003
19	3.7409	3.7403	k5	95.018	95.003
20	3.9377	3.9371	k5	100.018	100.003
22	4.3318	4.3312	m5	110.028	110.013

AUTOMATIC LUBRICATION, WHERE YOU WANT IT, 24 HOURS A DAY, 7 DAYS A WEEK.

Any bearing deprived of correct lubrication will fail well within its predicted lifespan. With that fundamental engineering principle in mind, SKF, the world's largest bearing manufacturer, has introduced SKF SYSTEM 24, a new generation of automatic lubricators that bridge the conflicting interests of commercial need and environmental pressures.

Mounted in seconds, SKF SYSTEM 24 provides constant lubrication at a predetermined rate to minimize downtime and reduce the costs of expensive manual maintenance procedures.

A range of advanced lubrication products is available such as LAGD 125/WA2, a grease for general purposes, wide temperature applications (has EP additives); LAGD 125/LG202 grease and LAGD 125/HFP 120 oil, both non-toxic, non-staining, food compatible products.

Practical benefits

SKF SYSTEM 24 sets new standards in lubrication management and efficiency:

- **Reliability - allowing fit and forget procedures until predetermined replacement time.**
- **Transparent container to check lubricant levels**
- **High capacity, compact size permits installation in restricted areas.**
- **Dispense rate setting is a simple part of the installation process.**
- **Can be temporarily deactivated**
- **Reduced inventory cost as one lubricator covers all time settings.**
- **Hermetic sealing prevents ingress of dirt or foreign matter.**
- **No harmful chemicals to generate the drive gas.**
- **Lubricator time set dial allows easy and accurate adjustment of lubrication flow**
- **Transparent container allows visual checking of dispense rate**
- **Cartridge neck screws into lubrication point or accessories**
- **Special piston shape ensures optimum emptying of lubricator**



TECHNICAL DATA

Grease capacity	125 ml, (4.25fl oz. US)
Nominal emptying time	Adjustable; 1 - 12 months
Ambient temperature range	-20° to +55°C (-5° to +130°F)
Maximum operating pressure	4 bar (60 psi)
Drive mechanism	Gas cell producing hydrogen gas (H ₂)
Connection thread	1/4" BSP
Recommended storage temperature	+20°C (+70°F)
Storage life of lubricator	2 years
Gas cell life	3 year
Weight	Approx 190g (6.7 oz) lubricant included

For additional Maintenance Products Tooling, Heaters and Lubricants contact your local SKF sales office or www.skf.ca

SKF Shaft Alignment Tool TMEA 1

Simplified alignment of rotating machinery

Approximately 50% of breakdowns in rotating machinery are caused by misalignment of the shafts. Poor machine alignment generates additional loads and vibration, causing premature damage to bearings, seals and couplings. It also significantly increases the energy consumption.

Using only four buttons and the well proven laser alignment techniques, the SKF Shaft Alignment Tool TMEA 1, makes accurate machine alignment operation simpler and quicker than with traditional methods and equipment. The TMEA 1 is supplied in a sturdy portable carrying case equipped with all the necessary accessories.

High accuracy but simple to operate

The TMEA 1 alignment tool uses two measuring units, both provided with a laser diode and a positioning detector. After attaching the measuring units to the shafts the on-screen instructions guide you simply through the alignment procedure. The machine can then be correctly positioned according to the calculated live values provided on the display.

SKF precut machinery shims are a timesaving accessory to any rotating machine alignment job.

Good alignment means:

- Reduced maintenance costs
- Longer bearing, seal and coupling life
- Less vibration and noise
- Less energy consumption
- Fewer unplanned stops

User-friendly tool:

- Only four buttons to operate
- Spirit levels integrated in the unit
- On-screen instructions
- Displays live results
- Easy attachment of measuring units
- Basic set of shims included
- Weight only 4,5 kg
- Sturdy portable carrying case



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SKF's Belt Alignment Tool TMEB1

Laser technology combines precise accuracy with simple operation

Accurate pulley alignment ensuring well-aligned belts is the key to Trouble-Free Operation of your belt driven equipment. BeltAlign, SKF's belt alignment tool, is the most precise alignment tool for V-belt pulleys available. Its advanced lightweight design coupled with cutting-edge technology makes it an ideal solution to enhance performance and reduce down time of your machinery. With only two components, BeltAlign is fast and easy to attach, and requires no training to operate.

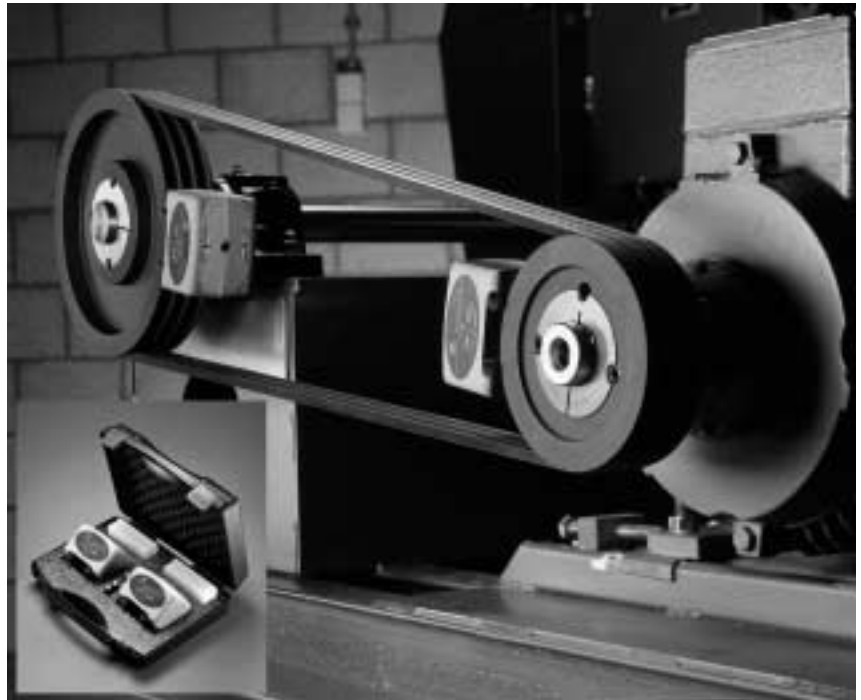
SKF BeltAlign attaches simply and securely to the pulley; two V-guides grip the groove while bar magnets hold the unit firmly in place.

Accurate alignment means:

- Less wear on belt and pulley
- Less friction and therefore lower energy consumption
- Less vibration and noise
- Increased safety-prevents belt turnover in the pulley
- Increased up time
- Lower costs

Advantages:

- User-friendly tool
- Fast and easy to attach, easy to use
- Aligns grooves of the pulley rather than its face, allowing for alignment of pulleys of unequal width or with dissimilar faces even fits applications where pulley face cannot be used as a reference
- No trial and error. The laser position indicates the nature of misalignment allowing easy, accurate adjustment
- Facilitates simultaneous adjustment of tension and alignment
- V-guides allow for alignment of a wide range of V-belt pulleys
- The unique dual laser eliminates need for mirrors or reflectors, minimising diffusion of the beam over longer distances.
- Long (6 m) operating distance
- Only two components
- Lightweight



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TIH 015 Heater

**Quality heater from SKF that does what heaters should do.
And at a very competitive price!**

SKF Bearing heaters are powerful, safe and have excellent long-term reliability.

SKF induction heater TIH 015 is made for heating bearings and other annular metal components up to approximately 40 lbs (20 kg), reaching a maximum temperature of approximately 600°F (300°C), depending on weight, geometry and material of the workpiece.

Induction heating

An induction heater is similar to a transformer, using the principle of a primary coil with a large number of windings and a secondary coil with a few windings on a mutual iron core. When heated by an SKF induction heater, the bearing becomes the short circuited, single turn secondary coil through which a high current flows at a low voltage, generating heat. The heater itself, as well as the yoke, remain at ambient temperature.

The SKF TIH 015 heater

The induction heater has a glass-fiber, reinforced housing in which a coil on a U-shaped iron core is mounted together with the START/STOP button. The heater is supplied with two top yokes suitable for bore diameters from 0.8 inch (20 mm) and 1.6 inch (40 mm). Every TIH 015 heater is provided with a 2 meter cable and a standard plug with a round grounding pin. Please note that the SKF TIH 015 is not equipped with automatic demagnetization, which instead must be done manually.

Safety feature

The TIH 015 is equipped with automatic overheating protection. With every heater, a free pair of heat resistant gloves is included.

This quality SKF heater comes with a 3 year warranty for long term reliability.



For additional Maintenance Products Tooling, Heaters and Lubricants contact you local SKF sales office or www.skf.ca

SKF New Puller Series: EasyPull TMM

Safe and simple dismounting of bearings

Equipped with spring operated arms and safety pin, SKF's new patent-pending EasyPull is one of the most user-friendly and safe tools on the market today. Ergonomically designed, the spring-operated arms enable the user to position the puller behind the component with just one movement of the hand. Costs resulting from exchange of expensive spare parts are avoided with the EasyPull's unique safety pin which breaks instead of the pull itself, should excessive force be used. Additionally, hazardous slipping of the puller claws is avoided due to the special locking mechanism which ensures a tighter grip of the components as the pulling force increases.

EasyPull dismounts the most difficult bearings

Dismounting a bearing can be a demanding task for both user and puller. The new EasyPull, with its uniquely designed opening mechanism and safety pin, makes dismounting easy. Simply open the arms of the EasyPull by pressing the red rings together, place the EasyPull behind the component with one movement of your hand and pull either manually or with one of SKF's hydraulic tools. It's as easy as that.

- **User-friendly:**
 - Extremely user-friendly due to spring operated and self-locking arms, gripping behind the component with just one movement of the hand
 - Ergonomic red-rings
 - Available in three sizes with a maximum withdrawal force of 3, 5 or 8 tonnes (30, 50 or 80kN), enabling easy selection
 - Hydraulic force generators available for the 8 tonne (80kN) EasyPull
 - Light-weight
- **Safe:**
 - Safety pin minimises any injury to the user and prevents damage to puller arms, rings and spindle
 - Self-locking: Arms prevent risk of slipping of puller under load
- **Cost-saving:**
 - No need to buy expensive spare-parts; a unique safety pin breaks should excessive force be used
 - Service life of puller extended by safety pin
 - Self-centering avoids damage to shaft
 - Efficient use of time due to quick dismounting



For additional Maintenance Products Tooling, Heaters and Lubricants contact you local SKF sales office or www.skf.ca

Bearing Working Conditions	Grease Selector Key												
	LGMT 2	LGMT 3	LGEP 2	LGWM 1	LGHB 2	LGEM 2	LGEV 2	LGLT 2	LGLC 2	LGHQ 3	LGWA 2	LGFP 2	LGGB 2
High temperature above 120°C					★								
Low temperature				★									★
Very high speed	○	○	○		★	×	×	★	★	○	○		○
Very low speed and/or oscillating movements			○	○	★	★	★	×	×				
Low torque and friction requirements	★	○		○		×	×	★	★	○	○	○	
Vibration			★	×	○	★	★			○	○	○	
Heavy load	○	○	★	★	★	★	★	×		○	○	○	○
Rust inhibiting properties	○	○	★	★	★	○	★	○	★	○	★	★	×
Water resistance	○	○	★	★	★	○	★	★	★	○	★	★	×

Technical Specifications

Grease Type	Description	Temperature Range	Thickener/ Base Oil	Base Oil Viscosity (*)	Available Pack Sizes	Grease Type	Description	Temperature Range	Thickener/ Base Oil	Base Oil Viscosity (*)	Available Pack Sizes
LGMT 2	All purpose Industrial and Automotive	-30/+120°C -22/+250°F	Lithium soap/mineral oil	110	35-200g tube, 420 ml cartridge, 1-5-18-50-180 kg	LGEV 2	Extremely high viscosity with solid lubricants	-10/+120°C -14/+250°F	Lithium-calcium soap/mineral oil	1,020	35g tube, 5-18-50-180kg
LGMT 3	All purpose Industrial and Automotive	-30/+120°C -22/+250°F	Lithium soap/mineral oil	120-130	420ml cartridge, 1-5-18-50-180kg	LGLT 2	Low temperature	-55/+110°C -65/+230°F	Lithium soap/di-ester oil	15	200g tube, 1-80kg
LGEP 2	Extreme pressure	-20/+110°C -4/+230°F	Lithium soap/mineral oil	200	420 ml cartridge, 1-5-18-50-180 kg	LGLC 2	Low temperature high speed	-40/+120°C -40/+250°F	Calcium complex soap/ester-mineral oil	24	200g tube, 1-180kg
LGWM 1	Extreme pressure low temperature	-30/+110°C -22/+230°F	Lithium soap/mineral oil	200	420 ml cartridge, 5-50-180 kg	LGHQ 3	High temperature	-20/+150°C -4/+300°F	Lithium complex soap/mineral oil	110	420ml cartridge, 1-5-18-50-180 kg
LGHB 2	EP high viscosity high temperature (*)	-20/+150°C -4/+300°F	Complex calcium sulphionate/mineral oil	400-450	420ml cartridge, 1-5-18-50-180 kg SYSTEM 24	LGWA 2	Wide temperature (*)	-30/+140°C -22/+284°F	Lithium complex soap/mineral oil	185	35-200g tube, 420ml cartridge, 1-5-18-50-180 kg SYSTEM 24
LGEM 2	High viscosity plus solid lubricants	-20/+120°C -4/+250°F	Lithium soap/mineral oil	500	420ml cartridge, 5-18-180kg SYSTEM 24	LGFP 2	Food compatible	-20/+110°C -4/+230°F	Aluminium complex/medical white oil	130	420ml cartridge, 5-18-180kg SYSTEM 24
(*) 1 mm ² at 40°C/104°F (*) 2) For continuous operation: max. temperatures 90°C/194°F					(*) 3) LGWA 2 can withstand peak temperatures 90°C/194°F (*) 4) LGHB 2 can withstand peak temperatures of 200°C/392°F	LGGB 2	"Green" biodegradable low toxicity	-40/+120°C (*) -40/+250°F	Lithium-calcium soap/synthetic ester oil	110	420 ml cartridge, 5-18-180kg SYSTEM 24

Powerful Electronic information tools from SKF
SKF Interactive Engineering Catalogue



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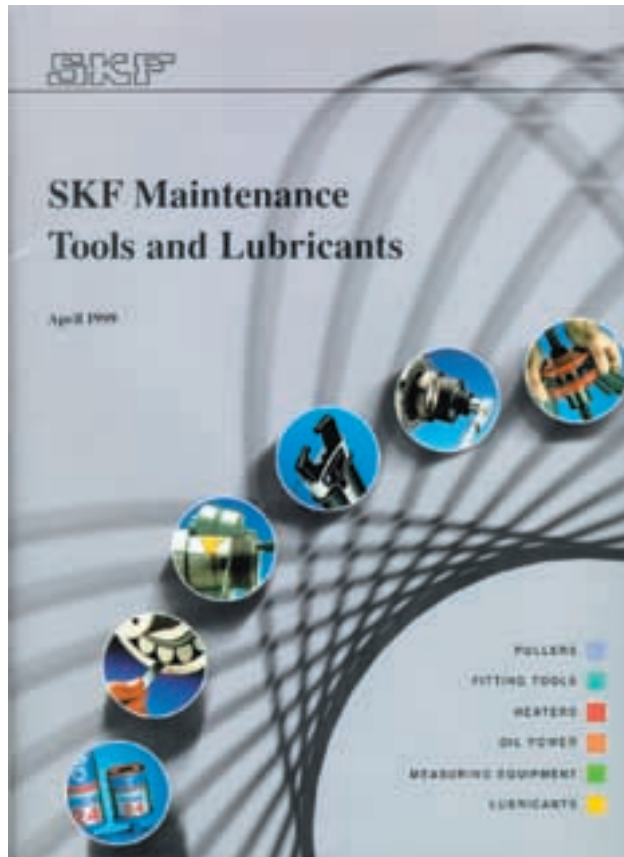
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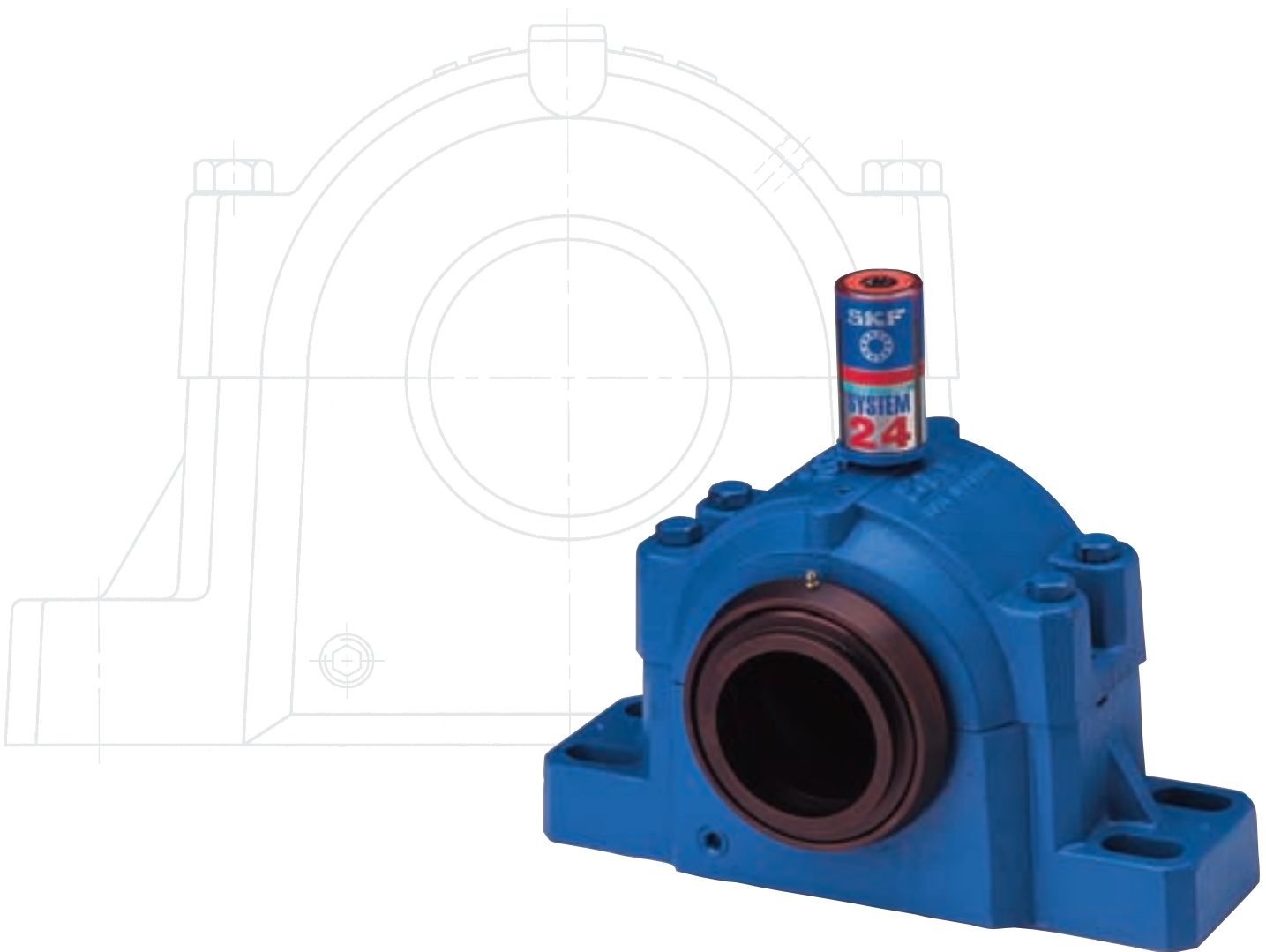
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SKF Canada Limited

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SKF Canada Limited Head Office

40 Executive Court
 Scarborough, Ontario
 M1S 4N4
 Tel: (416) 299-1220
 Fax: (416) 292-0399

SKF (Vancouver)

3665 Wayburne Drive
 Burnaby, B.C.
 V5G 3L3
 Tel: (604) 291-9921
 Fax: (604) 291-2965

SKF (Edmonton)

5220 75th Street
 Edmonton, Alberta
 T6E 5S5
 Tel: (780) 466-5219
 Fax: (780) 450-1779

SKF (Montréal)

101 ave. Lindsay
 Dorval, Québec
 H9P 2S6
 Tel: (514) 636-5230
 Fax: (514) 636-5279

Web-site: <http://www.skf.ca>

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