



INDUSTRIALHUB BD

RELIABILITY & ENGINEERING SERVICE PARTNER

BEARING ACCESSORIES GUIDE

Sleeves, lock nuts and plummer blocks: select, fit and service.



How to use this guide

This guide is written for maintenance and reliability engineers who select, fit, inspect and replace bearing accessories in plant. It covers the parts that sit around a bearing: sleeves, lock nuts and plummer block housings.

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03	Why accessories matter
04	Range and selection logic
05	Adapter sleeves
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08	Lock nuts and locking methods
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11	SNL seals, lubrication, ordering
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15	Monitoring, safety and spares
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HOW TO USE THIS GUIDE

- Use pages 4 to 11 to identify and size the parts.
- Use pages 12 and 13 for the work procedure.
- Use page 14 as a shop-floor troubleshooting card.
- Use page 15 for monitoring, safety and spares.
- Tick the ordering checklist before you send an enquiry.

DATA STATUS

Dimensions, tolerances and limits are taken from the SKF catalogue extract and paraphrased. Pages marked **GENERAL PRACTICE** give field practice, not catalogue data. Figures and photos come from the SKF catalogue extract and your own product photos; confirm usage rights.

WORKFLOW

1 Identify Pages 4 to 7	2 Size and lock Pages 7 to 9	3 House and seal Pages 10 and 11	4 Fit and service Pages 12 and 13	5 Diagnose Pages 14 and 15
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Read this first: designations and values must be confirmed against the current manufacturer catalogue before ordering or fitting. Safety limits always come from the manufacturer's manual.

Why bearing accessories matter

A bearing is only as good as how it is seated, located and housed. Accessories hold a tapered-bore bearing on a plain shaft, fix it axially, and carry it in a split housing that keeps lubricant in and contamination out.

01

Seat the bearing

Adapter and withdrawal sleeves let a tapered-bore bearing sit on a plain cylindrical shaft seat. The taper gives the interference fit.

02

Lock it axially

Lock nuts with washers, clips or screws pull the bearing up the taper and keep it there under vibration.

03

House and seal it

SNL plummer blocks, seals and end covers protect the bearing and hold the grease in the housing.

04

Make service easier

Oil-injection ducts and hydraulic nuts help you dismount seized bearings without heat or hammering.

A TYPICAL SLEEVE-MOUNTED ARRANGEMENT



Housing, seals, locating ring, bearing, sleeve, lock nut and washer.

Engineer's view: most premature failures on sleeve-mounted bearings trace back to poor seat tolerances, wrong nut locking or a mismatched seal, not the bearing itself.

Range and selection logic

Choose the sleeve by the shaft layout, the nut by the locking method, and the housing by bearing series, speed and sealing need.

If you have...	Use...
Smooth shaft, bearing position varies	Adapter sleeve with KM nut and MB washer
Stepped shaft, bearing against a shoulder	Withdrawal sleeve plus KM or HM nut
Large bore, hard to remove	Sleeve with oil ducts and a hydraulic nut
Higher axial load or larger size	HM(E) nut with MS clip, or stronger MB..A washer
Sealed bearing	E, C, L or TL sleeve designs
CARB toroidal roller bearing	E, L or TL low-profile nut and washer
Dusty or wet area	TSN..G or four-lip seal; labyrinth for higher speed
High temperature	TSN..S seal, -50 to +200 °C

FOUR FAMILIES AT A GLANCE



Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

Send us the bearing designation and shaft details, and we will return a matched list of sleeve, nut, washer, housing, seals and rings.

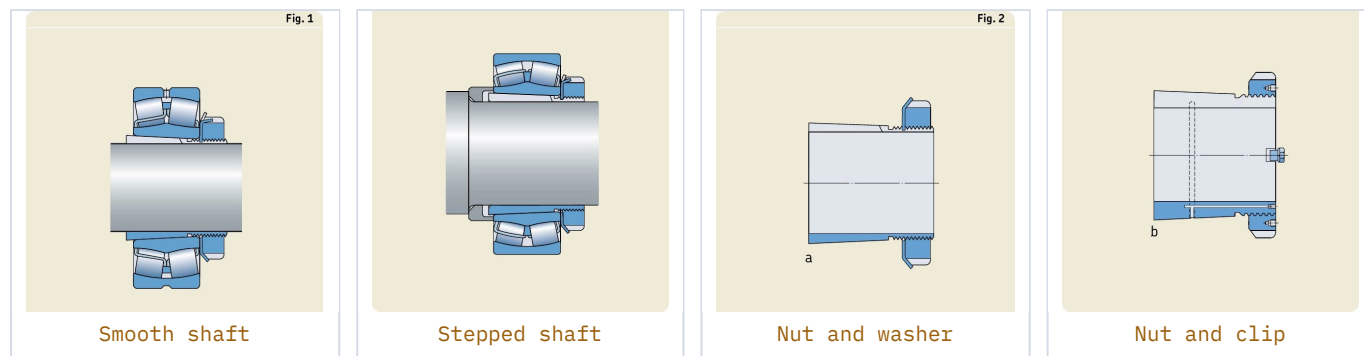
Adapter sleeves

Adapter sleeves are the most commonly used way to locate a bearing with a tapered bore on a cylindrical seat. They suit smooth or stepped shafts and need no extra location on the shaft.

Taper	1:12 external, slotted sleeve
Dimensions	ISO 2982-1; bore tolerance JS9, width h15
Thread	Metric 6g up to size 40; larger sizes metric trapezoidal 7e (ISO 2903)
Locking	Nut and washer (smaller sizes) or nut and clip (larger sizes), supplied with the sleeve
Finish	Phosphated up to size 40; larger sizes protected by solventless rust inhibitor
Shaft seat	h9 with cylindricity IT5/2 (ISO 1101) recommended
Positioning	Smooth shaft: bearing can sit at any position. Stepped shaft: use a stepped ring for accurate axial position and easier dismounting

Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

SLEEVE ARRANGEMENTS (SKF FIGURES)



DESIGN VARIANTS

CARB designs: E, L, TL

Modified sleeves with low-profile nuts and washers for CARB toroidal roller bearings.

Sealed bearings

Use E, C, L or TL designs so the nut or washer does not damage the seal.

Adapter sleeves are not designed for lifting machinery. Never use the sleeve, nut or washer as a lifting point.

Withdrawal sleeves

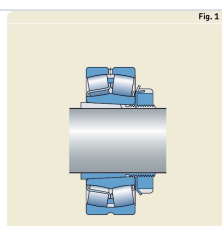
Withdrawal sleeves are used on stepped shafts. The sleeve is pressed into the bearing bore that abuts a shoulder and is held by a nut or end plate. They are also used to dismount bearings.

Taper	1:12, except A(O)H 240 and 241 at 1:30
Tolerances	Bore JS9, width h13
Thread	6g up to size 38, 7e above; mating nut thread 5H up to size 38, 7H above
Oil ducts	Sizes with 200 mm bore and above are AOH with two oil ducts as standard
Not supplied	Lock nut or end plate; KM or HM nuts and washers are ordered separately
Dismounting	Use a dismounting nut or hydraulic nut; both are listed in the product table

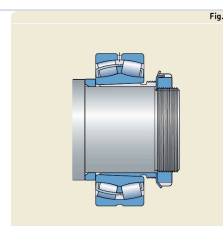
Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

ADAPTER OR WITHDRAWAL SLEEVE?

	Adapter sleeve	Withdrawal sleeve
Shaft layout	Smooth or stepped	Stepped, bearing against a shoulder
Axial position	Any position on a smooth shaft	Fixed by the shoulder
Nut included	Yes	No; order separately
Typical use	Line shafts, fans, replacements	Fixed-position shafts, bearing seats against a shoulder



Adapter sleeve on a smooth shaft



Withdrawal sleeve on a stepped shaft

Check before ordering: a withdrawal sleeve ships without a nut. Add the KM or HM nut and MB washer to the same order.

Sleeve data

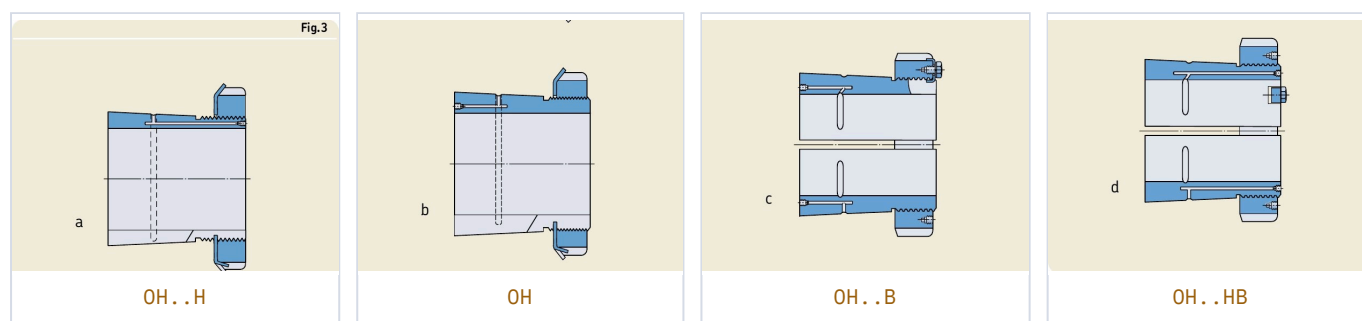
-sizing excerpt, H 3 series adapter sleeves (shaft 20–55 mm)

Shaft d1 (mm)	Sleeve	Thread	B1 (mm)	Mass (kg)	Nut	Washer	Hyd. nut
20	H 305	M25×1.5	29	0.071	KM 5	MB 5	–
25	H 306	M30×1.5	31	0.095	KM 6	MB 6	–
30	H 307	M35×1.5	35	0.14	KM 7	MB 7	–
35	H 308	M40×1.5	36	0.17	KM 8	MB 8	–
40	H 309	M45×1.5	39	0.23	KM 9	MB 9	–
45	H 310	M50×1.5	42	0.27	KM 10	MB 10	HMV 10 E
50	H 311	M55×2	45	0.32	KM 11	MB 11	HMV 11 E
55	H 312	M60×2	47	0.36	KM 12	MB 12	HMV 12 E

Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

OIL INJECTION DESIGNS

Oil injected between sleeve and bearing forms a film that greatly reduces the force needed to mount or dismount. It is standard on sleeves with 200 mm bore and above, and available to special order from 140 to 200 mm.



Orange line shows the oil duct and groove path. Sleeves up to size 40 have one duct; larger sleeves have two (OH..B and OH..HB).

Oil injection and hydraulic nuts need matching equipment and thread adaptors. Check the product table for the oil supply thread before you buy the equipment.

Lock nuts and locking methods

Lock nuts follow ISO 2982-2 for dimensions and threads. Washers and clips follow the same standard.

FIVE LOCKING METHODS

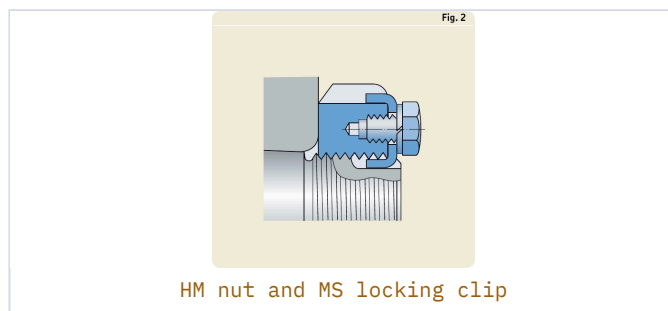
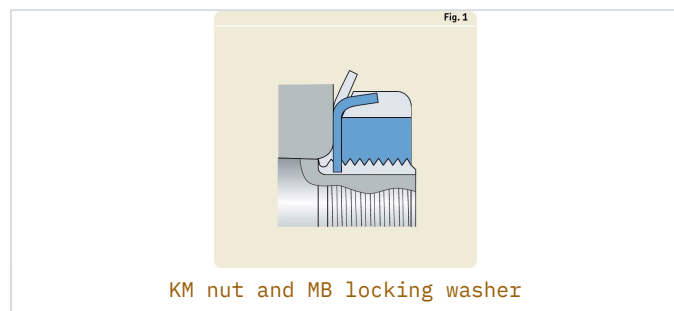
Series	Locking method	Notes
KM, KML	Locking washer (MB)	Standard choice. 4 slots for a hook or impact spanner. Thread 5H up to 200 mm
HM 30/31, HME	Locking clip (MS)	Trapezoidal thread 7H; 8 slots; clip with hex bolt and spring washer
KMFE	Locking screw	Screw locks the nut; no washer groove needed in the shaft
KMK	Integral lock with grub screw	Compact; no separate washer
KMT, KMTA	Three locking pins	Precision nuts for tight axial positioning

Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

TOLERANCES AND SHAFT THREADS

Thread tolerance	KM(L) 5H (ISO 965-3); HM trapezoidal 7H (ISO 2903)
Locating-face axial runout	0.04–0.06 mm, depending on size
Recommended shaft thread	6g, or 7e for trapezoidal threads

LOCKING DEVICES IN SECTION (SKF FIGURES)



The nut face runout matters: a nut pulled up crooked on a thread that is not square loads the bearing unevenly. Check the thread and the shaft shoulder before fitting.

Lock nut data and torque

KM LOCK NUTS WITH MB WASHER, EXCERPT (THREAD M25 TO M60)

Nut	Thread G	d1 mm	d3 mm	B mm	Static axial load kN	Mass kg	Washer
KM 5	M25×1.5	32	38	7	31.5	0.028	MB 5
KM 6	M30×1.5	38	45	7	36.5	0.039	MB 6
KM 7	M35×1.5	44	52	8	50	0.059	MB 7
KM 8	M40×1.5	50	58	9	62	0.078	MB 8
KM 9	M45×1.5	56	65	10	78	0.11	MB 9
KM 10	M50×1.5	61	70	11	91.5	0.14	MB 10
KM 11	M55×2	67	75	11	91.5	0.15	MB 11
KM 12	M60×2	73	80	11	95	0.16	MB 12

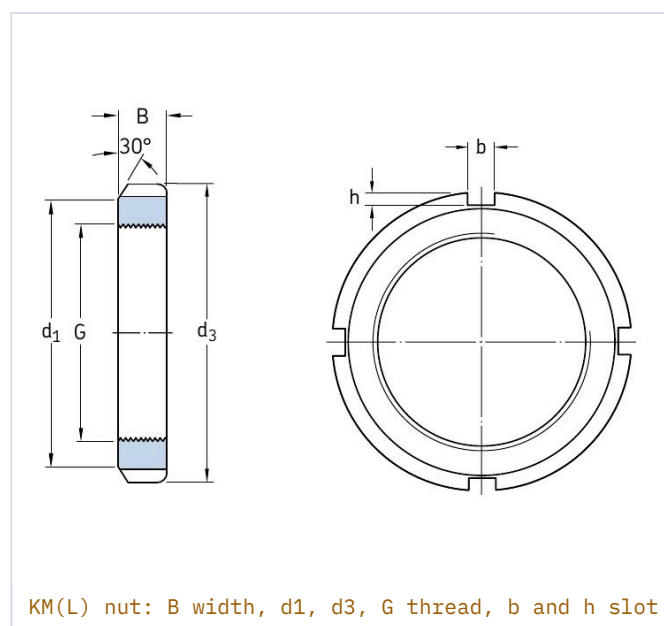
Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

KMK: GRUB SCREW TORQUE

Nut size (screw)	Torque
KMK 0 to 7 (M5)	4 Nm
KMK 8 to 10 (M6)	8 Nm
KMK 11 to 16 (M8, M10)	18 Nm
KMK 17 to 20 (M10)	35 Nm

Source: SKF catalogue extract, KMK table.
Confirm before use.

NUT DRAWING (SKF)



Axial load figures are static capacity of the nut. Do not use a lock nut as a load-bearing clamp beyond the bearing manufacturer's guidance.

Bearing block housings

Plummer housings are the most popular split housings. They cover shaft sizes 20 to 160 mm and are dimensionally interchangeable for different products.



SNL split plummer block



Split plummer block styles



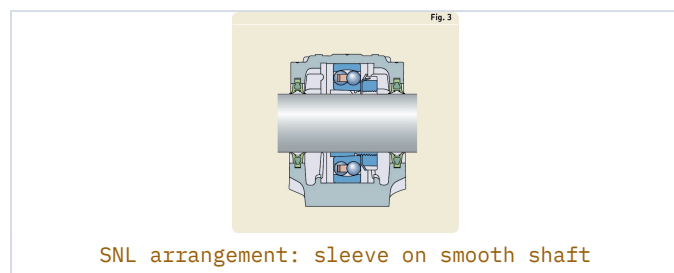
Pillow block and flange units

Material Grey cast iron; SGI options FSND, SSND. ISO 12944-2 Class C2, RAL 9005.

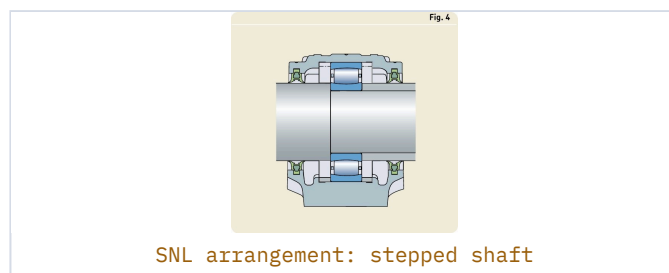
Tolerances Centre height H1 js11. Bearing seat G7; K7 optional.

Matched halves Cap and base share a serial number. Never mix halves.

ARRANGEMENTS WITH SNL HOUSINGS (SKF FIGURES)



SNL arrangement: sleeve on smooth shaft



SNL arrangement: stepped shaft

SHAFT 20–30 mm, EXCERPT

Shaft mm	Housing	A mm	H mm	H1 mm	J mm	L mm	Mass kg
20	SNL 505	67	74	40	130	165	1.45
25	SNL 506	77	89	50	150	185	2.00
25	SNL 606	82	93	50	150	185	2.20

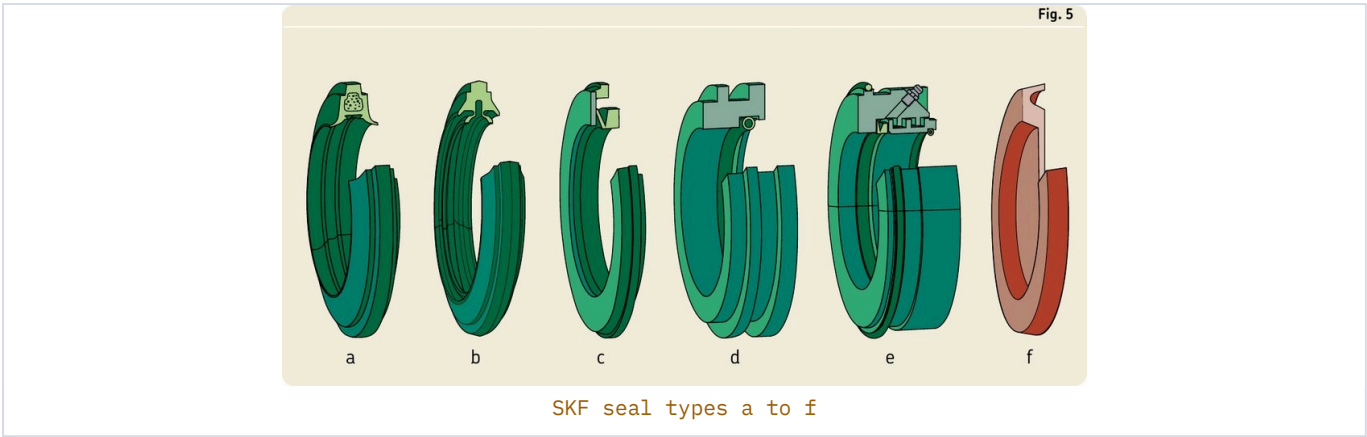
Source: SKF Bearing Accessories selection guide (catalogue extract). Confirm against the current SKF catalogue.

Housings carry loads acting vertically toward the base plate. For other load directions, check the housing, the cap bolts and the attachment bolts, not only the bearing.

Seals, lubrication, ordering

STANDARD SEAL OPTIONS

Seal	Peripheral speed	Temperature
TSN..G	Up to 8 m/s	−40 to +100 °C
Four-lip (L)	Up to 13 m/s	−40 to +100 °C
TSN..A	Up to 7 m/s (12 m/s under special conditions)	−40 to +100 °C
TSN..S	Unlimited speed	−50 to +200 °C
Labyrinth TSN..ND	Up to 12 m/s	−40 to +100 °C



ORDER EXAMPLE

Designation	Part
SNL 512-610	Housing
TSN 512 L	Four-lip seal packs (two seals each)
ASNH 512-610	End cover
FRB 10/110	Locating rings
22212 EK	Spherical roller bearing, tapered bore
H 312	Adapter sleeve

Housing, seals, end cover, locating rings, bearings and sleeves are all ordered separately. A complete order lists every part.

Mounting procedure

GENERAL PRACTICE

Plan the job before you open the housing. Have the correct tools, a clean area and the manufacturer's mounting data to hand.

A

1 • Prepare

Lock out and tag out. Clean the shaft. Check seat h9, cylindricity and threads. Check the housing seat and base flatness (soft foot).

B

2 • Inspect parts

Check markings on sleeve, nut, washer and bearing. Check the thread fits by hand. Never fit a damaged washer or clip.

C

3 • Fit the sleeve

Slide the sleeve on, then the bearing. Position it axially. Fit washer and nut with the tab or face as designed.

D

4 • Drive up

Tighten the nut to the drive-up or clearance reduction in the bearing manufacturer's mounting data. Measure; do not guess.

E

5 • Lock

Bend a washer tab into a slot, fit the clip, or tighten the locking screw or grub screw to the stated torque.

F

6 • Close up

Fit seals, set locating rings, grease the housing, torque cap bolts, align, and record designations and drive-up.

TOOLS AND PARTS FOR THE JOB



Hook spanners, locking washers, nuts and puller



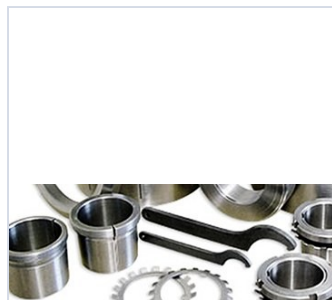
Mounting and dismounting tool case

Never use a hammer directly on the nut slots or bearing. Use the correct spanner, hydraulic nut or oil injection method for larger sizes.

Dismounting and maintenance

GENERAL PRACTICE

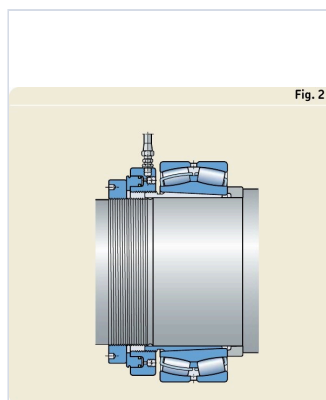
Plan the removal as carefully as the fit. Rust and fretting make a sleeve stick; force damages shafts.



Hook or impact spanner



Hydraulic nut



Hydraulic nut and oil injection



Puller for bearing removal

Hook or impact spanner for small sizes. Dismounting nut or withdrawal sleeve on stepped shafts. Hydraulic nut (HMV) for medium and large sizes. Oil injection on sleeves with ducts.

MAINTENANCE ROUTINE

Interval	Action
Daily or per round	Look for leaks, loose nuts, seal condition, noise and temperature by touch or gun.
Monthly	Check grease condition and quantity, grease nipples, vent and bolts.
Shutdown	Check nut locking, shaft and sleeve seats, cap and base bolts, seals, locating rings.
After any bearing change	Replace washers and clips; inspect threads; re-record the arrangement.

Intervals are a starting point. Set them from the bearing duty, the grease maker's advice and the plant's condition monitoring.

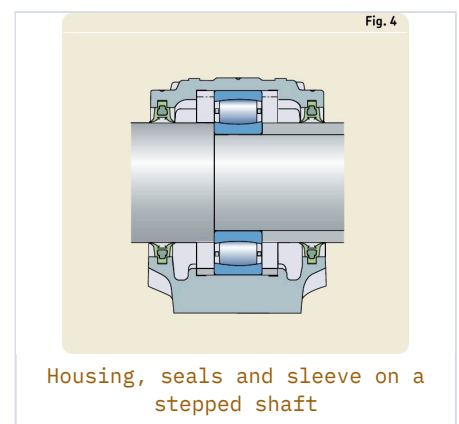
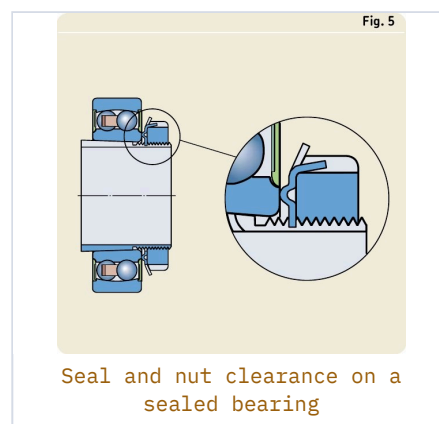
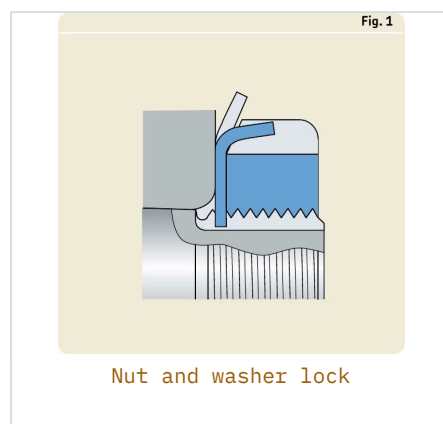
Warning: hydraulic and oil-injection tools work at high pressure. Use rated hoses, couplers and gauges, and keep clear of the line of the nut.

Failure modes and troubleshooting

GENERAL PRACTICE

Symptom	Likely cause	Action
Nut or sleeve loosens	Washer tab not bent, clip missing, damaged thread	Fit a new washer or clip; check thread and locking method
Bearing runs hot after fitting	Too much drive-up, misalignment, over-greasing, seal drag	Check clearance reduction, alignment, grease quantity
Fretting rust on shaft or sleeve	Movement at the fit; wrong seat tolerance	Check h9 and cylindricity; refit with a new sleeve
Grease leaks at housing	Mixed cap and base, damaged seal, over-greasing	Match serial numbers; replace seal; correct grease amount
Seal wears quickly	Wrong seal for speed or temperature; shaft run-out	Select by speed and temperature limits; check the shaft
Bearing stuck on sleeve	Corrosion or fretting at the taper	Use oil injection or a hydraulic nut; avoid heat and hammering
Housing bore distorted	Soft foot or uneven base	Shim and re-check; torque bolts evenly
Noise, vibration	Misalignment, looseness, contamination, loss of lubricant	Check mounting, seals and grease; take vibration readings

WHERE TO LOOK (SKF FIGURES)



Treat one failure as a clue. If a nut loosens twice, change the locking method or fix the cause, rather than tightening harder.

Monitoring, safety and spares

GENERAL PRACTICE

Condition monitoring

Track housing temperature and vibration trends. Use the cast marks on SNL housings for sensor positions, or the SN variant with a tapped sensor hole.

Safety

Lock out and tag out. Support the shaft before opening a housing. Do not use sleeves, nuts or housings as lifting points. Keep hands clear when using hydraulic tools.

Spares strategy

Keep sleeve, nut and washer sets for critical positions. Keep seal packs and locating rings. Hold one spare housing half-set for common sizes.

Receiving checks

Check markings and designation against the order. Check packaging and rust protection. Ask for the supplier's certificate and keep batch records.

RECEIVING CHECKLIST

Designation	Matches order and drawing
Markings	Clear, correct, same fonts and finish as the maker's
Condition	No rust, damage or loose parts; protective coating intact

SPARE PARTS TO STOCK



Seals, sleeves, lock nuts, locking washers and rolling elements

If a part's markings or packaging look wrong, quarantine it and ask the supplier. A counterfeit bearing accessory can fail without warning.

Global brands and cross-reference

The data in this guide is from SKF. Equivalents from other makers are to be confirmed from their own catalogues.

SKF

BEARINGS AND ACCESSORIES

Adapter and withdrawal sleeves, lock nuts and SNL housings. Source of the data in this guide.

FAG

BEARINGS AND ACCESSORIES

Rolling bearings with matching sleeves, nuts and housings.

Timken

BEARINGS AND HOUSINGS

Bearings, housed units and accessories for heavy industry.

NTN

BEARINGS AND UNITS

Bearings and accessories for general industry.

NSK

BEARINGS AND ACCESSORIES

Bearings, sleeves and lock nuts for many applications.

CROSS-REFERENCE RULE

Never swap parts between brands on designation alone. Compare against the maker's data:

Taper	Thread class	Bore and width tolerance	Locking method	Housing seat fit
				
Adapter sleeves, locking washers and lock nuts				

We support solutions from recognized brands including SKF, FAG, Timken, NTN and NSK, subject to technical suitability, product availability and specific customer requirements.



REQUEST A QUOTATION

Send the bearing number, shaft size and seat details, or a photo of the old parts. We reply with the matching accessory, price and delivery time.

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★ WE STAY AFTER DELIVERY

AFTER-SALES SERVICE

- Commission and start up equipment
- Find faults and analyse failures
- Plan shutdowns and advise on repairs

★ 20 YEARS ON THE PLANT FLOOR

WHO LEADS US

- Erect, commission and revamp mills
- Operate and maintain through shutdowns
- Troubleshoot and engineer spares

WHAT WE SUPPLY AND SUPPORT

PARTS

- Adapter and withdrawal sleeves
- Lock nuts, washers and clips
- SNL plummer blocks and seals
- Hydraulic nuts, pullers, spanners

SUPPORT

- Match parts to your bearing
- Fit, lock and torque advice
- Spares stock planning
- Quotation and delivery follow-up