



**Indian Maritime University Kolkata**  
**भारतीय समुद्री विश्वविद्यालय - कोलकाता**  
A Central University, Ministry of Ports, Shipping and Waterways, Govt. of India  
केंद्रीय विश्वविद्यालय, पोत परिवहन और जलमार्ग मंत्रालय, भारत सरकार  
P-19, Taratala Road, Kolkata - 700088  
पी-१९, तारातला रोड, कोलकाता - ७०००८८  
Established: 1949



IMU-KC/PUR/OFFLINE/12/Plummer Block Bearing/24-25

Date: 30.12.2024

**Sub: Quotation for supply of Plummer Block Bearings (SKF / Timken / NKN / NTN / FAG) for Plain Shaft of OD 200 mm at IMU – Kolkata Campus**

Sealed quotations are invited towards supply of 02 sets of Plummer Block Bearings (SKF / Timken / NKN / NTN / FAG) for Plain Shaft of OD 200 mm at Indian Maritime University – Kolkata Campus, located at P-19, Taratala Road, Kolkata - 700088. Each set of the said Plummer Bock Bearing consists of the following items:

- Split Plummer Block Housing (As per the specifications in Annexure – I): 01 no.
- Spherical Roller Bearing (As per the specifications in Annexure – II): 01 no.
- Adapter Sleeve (As per the specifications in Annexure – III): 01 no.
- Labyrinth Seal (As per the specifications in Annexure – IV): 01 no.
- End Cover (As per the specifications in Annexure – V): 01 no.

**\*\*\* For reference to supply right parts (Annexure – VI)**

Bidders (authorised by OEM) are requested to submit their offers in the following format complying with all the specifications of the items as mentioned above:

Sl. No.	Description	Qty.	Rate per unit (in Rs.)	Applicable taxes per unit	HSN Code	Total rate per unit (including taxes)	Total Amount (in Rs.)
A	B	C	D	E	F	G = D + E	H = G x C
01.	Plummer Block Bearings for Plain Shaft of OD 200 mm	02 sets					

#### Terms & Conditions:

- Bidders should quote their rates for reputed brands only (SKF / Timken / NKN / NTN / FAG) as per the above format in their letterhead with official stamp and signature.
- Prospective bidders may visit the Campus on any working day (Monday to Friday) between 10:00 A.M. and 5:00 P.M. for any clarification before submission of their offers.
- The rates quoted should be inclusive of all but excluding taxes, which should be stated separately.
- E-invoicing is mandatory as per Notification No. 61/2020 – Central Tax dated 30.07.2020.
- IMU-KC reserves the right to increase or decrease the required quantities as mentioned above.
- The rates quoted should be valid for two months from the issuance of the letter inviting quotations. IMU-KC may place further orders with the same rates during the said period depending on requirements.
- The quotation should be submitted along with the catalogue and valid certificate from OEM.

8. Warranty: Warranty should be applicable as per the norms of OEM.
9. Item should be delivered preferably within 01 (One) month of placing order, failing which LD @ 0.5% per week or part of the week may be imposed upto a maximum of 10% of the value of the Purchase Order.
10. Submission of multiple bids by a single firm will lead to rejection of the bids and IMU-KC may black list such firms from future participation.
11. Last date of submission of quotation is 13.01.2025.
12. IMU-KC reserves the right to split the order between different bidders in case of tie.
13. The quotation is to be submitted in sealed envelope clearly subscribing “Quotation for Plummer Block Bearings for Plain Shaft of OD 200 mm”.
14. The envelope should be addressed to the Dy. Registrar, Indian Maritime University, P – 19, Taratala Road, Kolkata — 700 088 and deposited in the Tender Box kept at the room of the Director’s Secretariat (1<sup>st</sup> floor, Room No. 124) or can be sent by post.
15. The envelopes are to be sealed properly with gum and not by stapler pin.
16. Evaluation would be done based on the L1 rate quoted by the prospective firms.
17. Payment will be made through NEFT after successful delivery of the item and its acceptance.
18. Notwithstanding anything specified in this letter inviting quotation, IMU-KC at its sole discretion, unconditionally and without assigning any reason, reserves the right:
  - (a) To accept or reject lowest bid or any other bid or all the bids.
  - (b) To accept any bid in full or in part.
  - (c) To reject the bid offer not conforming to the tender conditions.
19. Micro and Small Enterprises should provide valid MSME certificate along with the quotation.
20. MSME quoting within the price band of L1+15% shall be allowed to supply the requirement up to 25% of the tender quantity subject to the condition that such Enterprises bring down their price to L1 price where L1 price is from other than a Micro and Small Enterprise. If L1 offer is from a Micro / Small Enterprise, this provision will not be applicable. In case more than one Micro and Small Enterprise is there within this span, the supply shall be shared proportionately to the tender quantity. For availing the advantage of L1+15%, bidders have to provide the MSME certificate along with the quotation.

O.I.C. – Purchase

## ANNEXURE - I

### Specifications for Split Plummer (pillow) Block Housing

#### Image:



About Split plummer (pillow) block housing, SNL 30, 31 and 32 series

SNL plummer (pillow) block housings in the 30, 31 and 32 series are robust and suitable for tough operating conditions. They enable the incorporated bearings to achieve maximum service life with less need for maintenance. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements to be made

- Easy to install
- Cost-effective bearing arrangement
- Reduce maintenance
- Minimize lubricant leakage

## Overview

### Dimensions

Diameter of bearing seat	340 mm
Width of bearing seat	130 mm
Centre height (pillow block)	210 mm
Centre distance between bolt holes	510 mm
Centre distance between bolt holes (axial direction)	130 mm
Attachment bolt diameter	30 mm

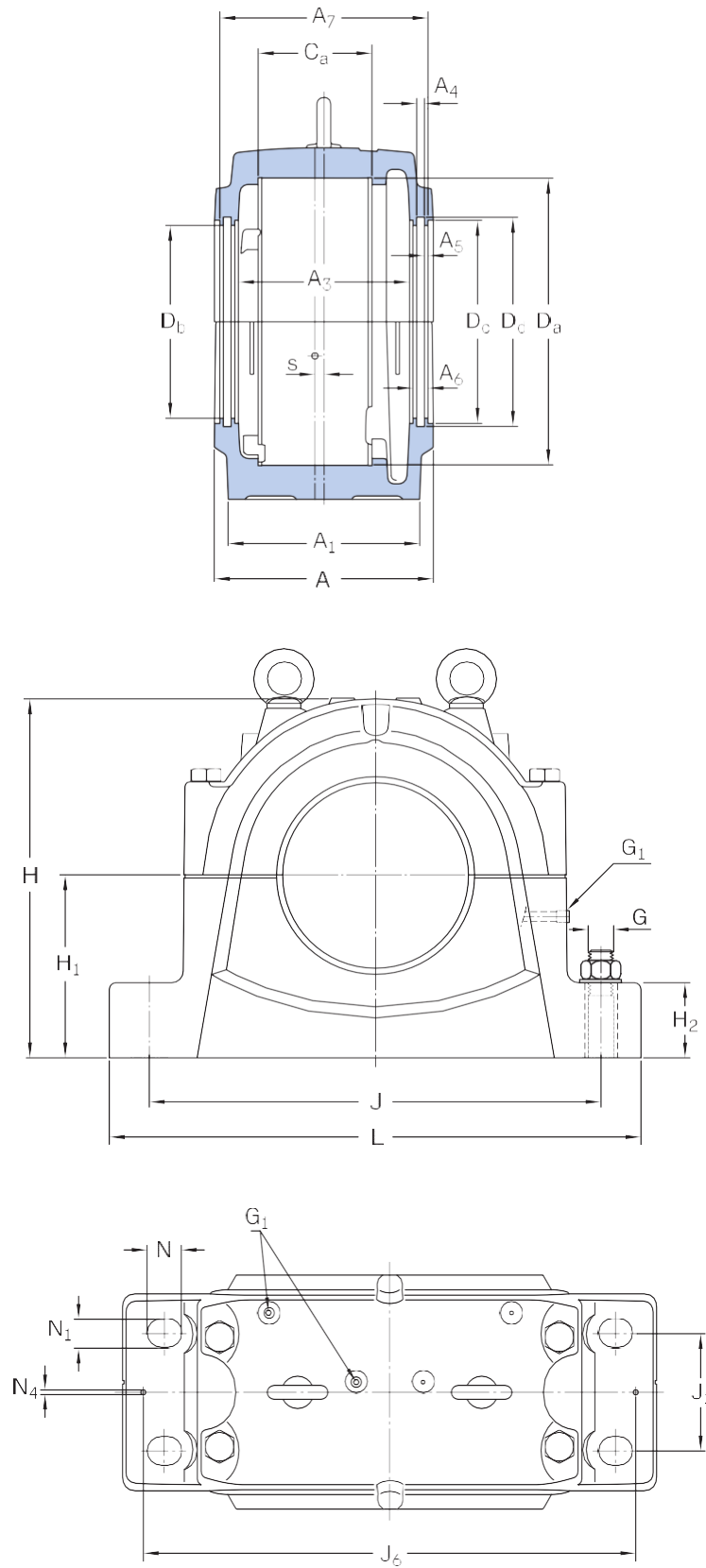
### Properties

Housing type	Plummer/pillow block
Housing configuration	Two-piece
Mounting arrangement	Through shaft/Shaft end
Number of bolt holes for fasteners	4
Material, housing	Cast iron
Bearing housing seal type	Without
Housing lubrication feature/possibility	Grease

### Logistics

Product net weight	124 kg
eClass code	23-05-17-01
UNSPSC code	31171519

# Technical specification



## Dimensions

## BEARING SEAT

$D_a$	340 mm	Diameter of bearing seat
	G7	Tolerance class of bearing seat diameter
$C_a$	130 mm	Width of bearing seat
$H_1$	210 mm	Centre height of bearing seat

## OUTSIDE DIMENSIONS

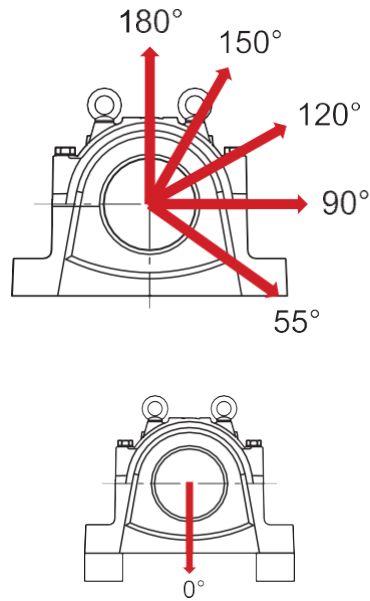
$D_b$	221.4 mm	Bore diameter
A	280 mm	Overall width
$A_1$	230 mm	Foot width
$G_1$	1/8-27 NPSF	Thread of relubrication holes
H	411 mm	Overall height
$H_2$	85 mm	Foot height
L	610 mm	Overall length
J	510 mm	Distance between attachment bolts
$J_1$	130 mm	Axial distance between attachment bolts
N	42 mm	Length of attachment bolt hole (radial)
$N_1$	35 mm	Width of attachment bolt hole
s	10 mm	Offset of bearing axis

## SEAL GROOVES

$A_3$	206 mm	Inside width
$A_4$	11 mm	Width of seal groove
$A_5$	5.5 mm	Width of labyrinth stage
$A_6$	22 mm	Width of labyrinth
$A_7$	262 mm	Width between seal grooves
$D_c$	236.4 mm	Diameter of seal groove
$D_d$	245.4 mm	Diameter of seal groove

## DOWEL PINS

$J_6$	560 mm	Distance between dowel pins
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## Calculation data

### BREAKING LOADS

$P_{0^\circ}$	2 600 kN	Breaking load at $0^\circ$ load angle (if the housing is not supported over its entire base)
$P_{55^\circ}$	3 200 kN	Breaking load at $55^\circ$ load angle
$P_{90^\circ}$	1 600 kN	Breaking load at $90^\circ$ load angle
$P_{120^\circ}$	1 100 kN	Breaking load at $120^\circ$ load angle
$P_{150^\circ}$	1 000 kN	Breaking load at $150^\circ$ load angle
$P_{180^\circ}$	1 300 kN	Breaking load at $180^\circ$ load angle
$P_a$	840 kN	Breaking load, axial

### YIELD POINTS OF CAP BOLTS

$Q_{120^\circ}$	1 800 kN	Load to reach yield point at $120^\circ$ load angle
$Q_{150^\circ}$	1 040 kN	Load to reach yield point at $150^\circ$ load angle
$Q_{180^\circ}$	900 kN	Load to reach yield point at $180^\circ$ load angle

## Materials

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Housing material	Cast iron
Corrosion protection	Paint - in accordance with ISO 12944-2, corrosivity category C2

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## Mounting information

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Recommended diameter of attachment bolts	G	30 mm
Recommended tightening torque for attachment bolts		1 310 N·m
Size of cap bolts		M24x160
Tightening torque for cap bolts		350 N·m
Size of eye bolt		M20
Initial grease fill, 20%		1.6 kg
Initial grease fill, 40%		2.7 kg

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## Included products

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Grease fitting	AH 1/8-27 PTF, M1 G 1/8
Adapter	LAPN 1/8

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## Compatible products

### Component

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Nipple with threads female G 1/4 to male G1/8

[LAPN 1/8](#)



## ANNEXURE – II

### Specifications of Spherical Roller Bearing with tapered bore and relubrication features

#### Image:



#### About Spherical roller bearing with tapered bore and relubrication features:

Spherical roller bearings can accommodate heavy loads in both directions. They are self-aligning and accommodate misalignment and shaft deflections, with virtually no increase in friction or temperature. The design includes features to facilitate relubrication. The bearings can be used in a modular system, including housings, sleeves and nuts.

- Accommodate misalignment
- High load carrying capacity
- Relubrication features
- Low friction and long service life
- Increased wear resistance

#### Overview:

##### **Dimensions:**

- Bore diameter: 220 mm
- Outside Diameter 340 mm
- Width 90 mm

##### **Performance:**

- Basic dynamic load rating: 1261 kN
- Basic static load rating: 1860 kN
- Reference speed: 1600 r/min
- Limiting speed: 2000 r/min

**Properties:**

- Number of rows: 2
- Locating feature, bearing outer ring: Without
- Bore type: Tapered 1:12
- Cage: Sheet metal
- Radial internal clearance: C3
- Tolerance class for dimensions: Normal
- Tolerance class for run-out: P5
- Sealing: Without
- Lubricant: None
- Relubrication feature: With
- Candidate for remanufacturing: Yes
- Product net weight: 28.2 kg

## ANNEXURE - III

### Specifications for Adapter Sleeve

#### Image:



#### **About Adapter Sleeve for oil injection mounting with HM lock nut and MS locking clip, metric dimensions**

Adapter sleeves are the most commonly used components for locating bearings with a tapered bore onto a cylindrical seat as they can be used on plain shafts or stepped shafts. These sleeves enable use of the oil injection method to mount and dismount bearings, and they are slit and are supplied complete with a lock nut and locking device. They are easy to install and require no additional location on the shaft.

- Easy to install
- Complete with lock nut
- Complete with locking device

#### Overview

#### Dimensions

Bore diameter Width	200 mm
Thread designation	126 mm Tr220x4

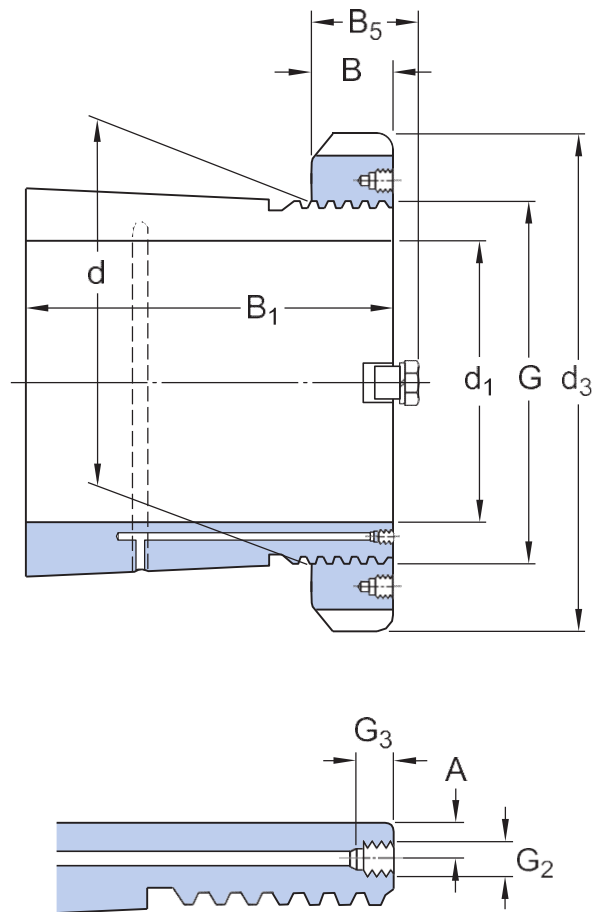
#### Properties

Taper	1:12
Holes for oil injection	With

#### Logistics

Product net weight	9.3 kg
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## Technical specification



## Dimensions

$d_1$	200 mm	Bore diameter
$d$	220 mm	Outside diameter small taper
$d_3$	260 mm	Outside diameter lock nut
$B_1$	126 mm	Width
$B$	30 mm	Width lock nut
$B_5$	40.6 mm	Width lock nut including locking clip
$G$	Tr220x4	Thread
$G_2$	M6	Thread oil supply duct
$G_3$	10 mm	Length thread for oil supply duct
$A$	3.9 mm	Distance bore - oil supply duct
	1:12	External taper

## Included products

## Associated products

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Hydraulic nut

HMV 44E

## Compatible products

### Component

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Lock nut with metric trapezoidal thread, for locking by clip

[HM 3044](#)

Locking clip for metric lock nuts

[MS 3044](#)

### Recommended product

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Hydraulic nut for mounting or dismounting of bearings

[HMV 44E](#)

## ANNEXURE – IV

### Specifications for Labyrinth Seal

#### Image:



#### About Labyrinth Seal:

Housing seals are the first barrier against contamination. For applications where there are high speeds or extreme temperatures, and for highly contaminated environments. This cost-effective sealing solution can have a significant impact on bearing service life as contaminants have to pass through three barriers to reach the bearing.

- Good protection from contamination
- Keep the lubricant in the housing
- Part of the three barrier solution
- Cost-effective

#### Overview:

##### **Dimensions:**

- Outside diameter: 235 mm
- Shaft diameter: 200 mm
- Housing groove diameter: 245.4 mm
- Width: 42 mm

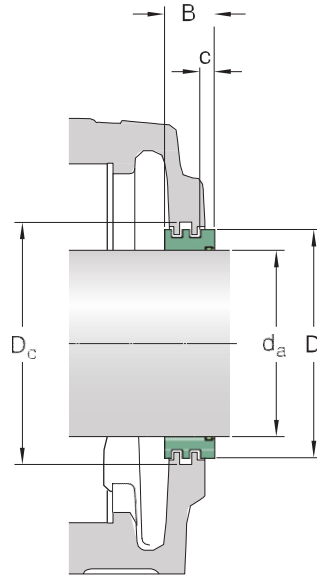
##### **Properties:**

- Accessory type: Housing seal
- Sealing type: Labyrinth
- Material: Steel with silicone element
- Product net weight: 2.72 kg

## Technical specification:

Material

Steel with silicone element



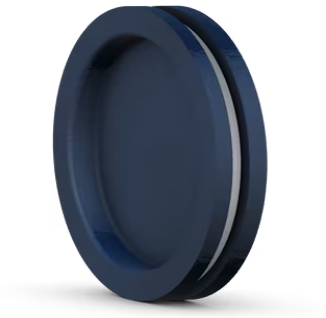
## Dimensions

$d_a$	200 mm	Shaft diameter
$D_c$	245.4 mm	Diameter of seal groove
$D$	235 mm	Outside diameter
$B$	42 mm	Width
$c$	12 mm	Distance to side face

## ANNEXURE – V

### Specifications for End Cover

#### Image:



#### About End Cover, for SNL bearing housings:

End covers can be used at the end of shafts instead of seals. End covers in the ETS series are designed for SNL bearing housings in sizes 34 to 96. They have good resistance to most chemicals, are robust, and can withstand high operating temperatures. End covers are easy to install and cost-effective accessories.

- Robust design
- Good chemical resistance
- Designed for high operating temperatures
- Easy to install
- Cost-effective

#### Overview

##### Dimensions

Outside diameter	236 mm
Width	21 mm

##### Properties

Accessory type	End cover
Material	Cast iron with silicone element

##### Logistics

Product net weight	3.16 kg
eClass code	23-05-17-90
UNSPSC code	31171519

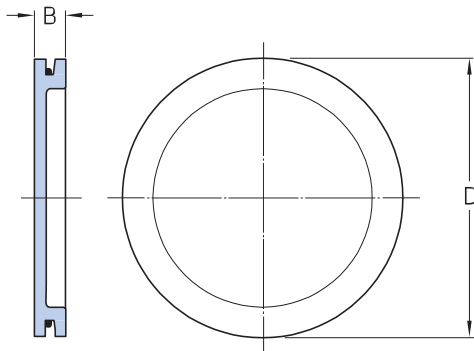


## Technical specification

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Material

Cast iron with silicone element



## Dimensions

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D	236 mm	Diameter
B	21 mm	Width

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# Bill of materials

<b>Input</b>	Shaft seat diameter, da: 200 mm	Center height of shaft seat, HI: 210 mm
	Shaft type: Plain	Distance between attachment bolts, J: 510 mm
		Bearing width, B: 90 mm
		Bearing outer diameter, D: 340 mm

	Product	Pack quantity Required for one housing
	<b>SNL 3044</b> Split plummer block housing - J: 510 mm   HI: 210 mm	<b>1</b>
	<b>23044 CCK/C3W33</b> Spherical roller bearing - d: 220 mm   D: 340 mm   B: 90 mm	<b>1</b>
	<b>OH 3044 H</b> Adapter sleeve	<b>1</b>
	<b>TS 44</b> Labyrinth seal	<b>1</b>
	<b>ETS 44</b> End cover	<b>1</b>