

# NTN SPHERICAL ROLLER BEARING FOR SUCTION ROLL PILOT BEARINGS

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As an integral part of the wet section of a paper machine, suction roll support bearings are subject to the ingress of corrosive contaminants. Contaminates reduce bearing life to months, yet the anticipated  $L_{10}$  theoretical fatigue life is years for the applied loads and speeds. The reduction of bearing service life stems from the ingress of corrosive contaminants (i.e., white-water) through the labyrinth seals.

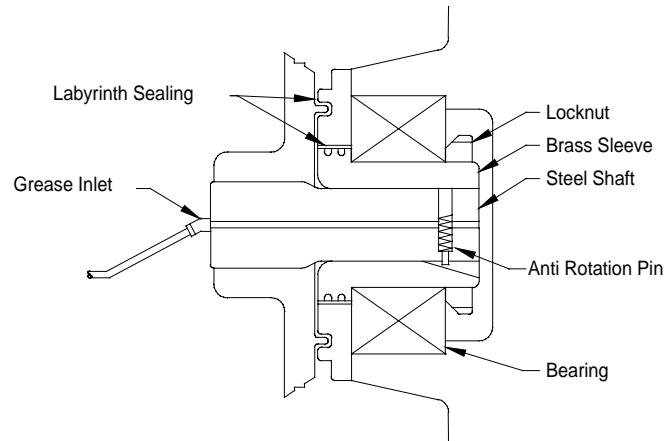


Figure 1: Pilot Bearing Setup

To combat the ingress of contaminants in the field, the inboard pilot bearing cavity is frequently packed with excessive amounts of grease. Excessive amounts of grease, combined with the overall lubricant deterioration, lead to roller skidding and roller skewing. The resultant smearing reduces bearing life and overall performance.

As roll technology improves, rolls can in many cases remain in the machine for longer periods before requiring repair. Due to the critical nature of the suction roll pilot bearing and the harsh environment in which they operate, routine bearing maintenance continues to be necessary and these bearings are automatically discarded.

To increase bearing life, reliability and performance, contaminants must be kept out of the bearing. Better sealing for these roll designs is required while modification to existing roll and housing components must be kept to a minimum. To achieve this goal an optimized spherical roller bearing with integral seal has been developed by NTN. The bearing incorporates one integral contact seal, which is oriented in the roll such that the bearing seal complements the roll labyrinth seal. Avoiding the ingress of contaminants prevents accelerated wear, limits lubricant deterioration and reduces lubricant requirements.

NTN's focus thus far has been placed on developing a dimensional equivalent to an ISO 23252 bearing (260x480x174 mm) which is frequently subject to the described conditions. As the boundary dimensions of the bearing remain the same, no modifications are necessary to the surrounding components.

Testing of the above bearing is scheduled to start in January 2000. Further interest or consultation in exploring the benefits of the above product can be directed to the author:

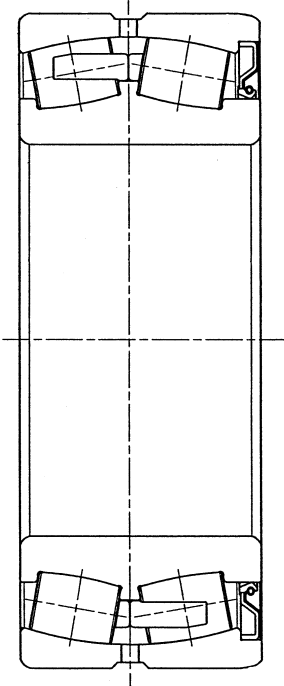
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# NTN SPHERICAL ROLLER BEARING FOR INTERNAL SUCTION ROLL PILOT BEARING

## Special Product Features:

- One integral seal to protect against external contamination and continue to allow relubrication from inboard side
- Dimensionally equivalent to standard ISO bearing for easy retro-fitting of existing equipment
- Special outer ring dimensional tolerance for improved outer ring fitting



NTN Bearing P/N	<i>d</i> (mm)	<i>D</i> (mm)	<i>B</i> (mm)	<i>Cr</i> (KN/lbf)	<i>Cor</i> (KN/lbf)	<i>n<sub>max</sub></i> (rpm)	Bearing Reference
<b>2P3031LC3PX1/0G</b>	150	320	108	1 100 247 000	1 460 328 000	900	22330BL1C3
<b>2P3622LC3PX1/0G</b>	180	380	126	1 540 346 000	2 200 495 000	780	22336BL1C3
<b>2P5217LC3PX1/0G</b>	260	480	174	2 410 542 000	3 950 888 000	570	23252BL1C3
<b>2P5217LKC3PX1/0G</b>	260	480	174	2 410 542 000	3 950 888 000	570	23252BL1KC3