

TOGETHER FOR A NAMERAKA WORLD



Supporting our clients
and team during
unprecedented times

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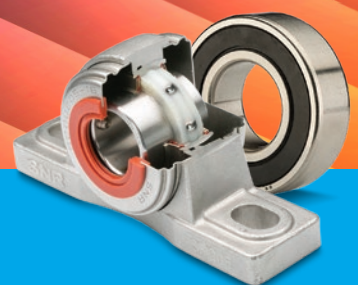
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Together for a **NAMERAKA** World

SUPPORTING OUR CLIENTS AND TEAM DURING UNPRECEDENTED TIMES

The NTN team is here to support you and your projects, anytime and anywhere. In addition to manufacturing quality bearing products, NTN is committed to providing the highest levels of customer service and support.



Ensuring the health and safety of our employees, customers and partners is the utmost priority for us at NTN Canada

Since NTN Canada opened its doors in 1968, our employees and customers have been at the center of everything we do.

Our goal has been and continues to be to deliver world best products and services through our passion for innovation and optimal operation. We aim to contribute to what is called “**Nameraka**” or smooth society in Japanese, the meaning of which is making the world run smoothly with the NTN Spirit Tree as our guiding philosophy. Now more than ever, our “can do” attitude inspires top performance from everyone by encouraging collaboration and commitment, and by embracing challenge. In these uncertain times, our SPIRIT Values guide the way we support our customers as we work collaboratively to implement innovative ideas and creative solutions.

As communicated to our customer base in recent weeks, NTN Canada remains operational during the coronavirus (COVID-19) pandemic, as NTN is deemed an “essential business” that is critical to continuing the economy. Therefore we will continue our efforts to safely maintain product deliveries from our factories and warehouses and to provide support services to our customers.

Today as we face the unprecedented and evolving COVID-19 pandemic, we remain responsive and optimistic about our capabilities in the midst of this ever-changing situation. As always, the health and safety of our employees and our customers is our top priority, and our mission to deliver the Ultimate Bearing Experience remains steadfast.

We understand that our industry partners are also trying to navigate the uncharted waters. Team spirit is particularly evident in times like these, and we are all growing with the new challenges we face. Many NTN employees are working from home. Our customer service, technical support and engineering departments are up and running, and in all cases, maximum commitment and flexibility are more important than ever.

The world as we know is changing fundamentally – but NTN is and will remain a reliable partner to our industry partners throughout these changes. Our passion for providing the most reliable bearing solutions is as strong as ever, and we appreciate the hard work and effort of our NTN Canada employees as they work diligently to support our customer base.

To our customers, partners, and communities, we are grateful for your loyal support, and we promise to stand strong with you as we all look ahead to a promising future. From all of us at NTN, we wish you, your families, and your friends stay strong and in good health.

Sincerely,



Paul Meo
PRESIDENT & CEO OF NTN BEARING
CORPORATION OF CANADA



FB FOOD & BEVERAGE

Bearing solutions for the food and beverage industry

SENTINEL SERIES IS A WORRY-FREE, LUBED FOR LIFE SOLUTION.

Food-grade environments require bearing units specifically designed to adhere to exacting standards. NTN's Sentinel Series provides peace of mind in environments where moisture, cleaning agents and other contaminants run rampant. Our corrosion resistant design shields against all of these problems and our food-grade solid lube withstands the high pressure sanitation and washdown procedures necessary in these environments.

FEATURES AND BENEFITS

- 1 NTN food-grade solid lubricant (NSF H1 registered) provides permanent bearing lubrication by protecting bearings from washout and preventing undesired grease leakage into food
- 2 100% stainless steel bearing are corrosion-resistant and require no coating, eliminating the potential of flaked coatings contaminating end product
- 3 Silicone seal and slinger combination creates a water-resistant barrier to help prevent contamination
- 4 Protective covers for units provide additional protection against contaminants and moisture, while adding additional safety for maintenance personnel
- 5 Full-contact nitrile seals creates a water-resistant barrier to help prevent contamination

THE NTN ADVANTAGE: SOLID LUBRICATION

21X the grease washout resistance

Zero grease leakage

Zero re-lubrication requirements

Zero maintenance



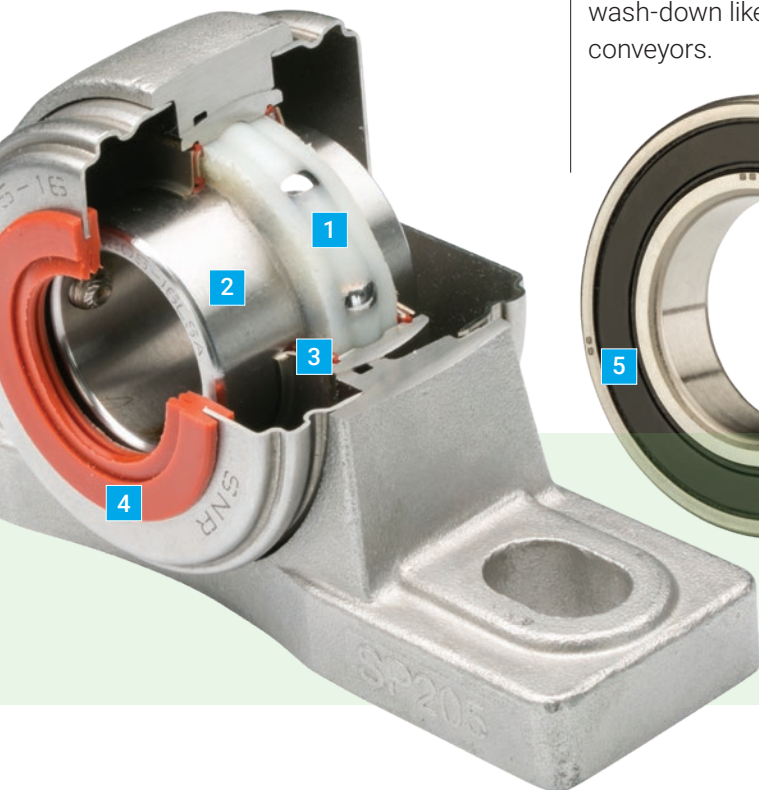
SENTINEL
SERIES

In food processing plants, every minute of uptime matters. But harsh chemicals, grease washout, corrosion and contamination work together to slow a plant's productivity. NTN offers bearing solutions for the food and beverage industry designed to exceed industry standards, together with readily available replacement parts through your local distributor at a moment's notice.

NTN® SENTINEL® SERIES

With premium features like corrosion resistant materials, full-contact seals and solid lubricant, our latest line of maintenance-free bearings defend against your plant's harsh chemicals and wet environments.

Available in both radial ball and mounted unit styles for a wide variety of applications.



› NTN ULTRA-CLASS™ SERIES

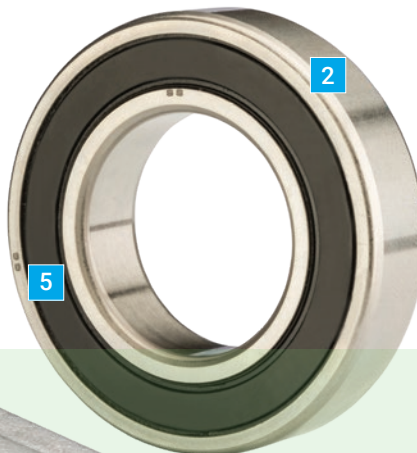


Our flagship mounted ball bearing line features a heavy duty housing and blackoxide coated insert that guards against corrosion, humidity and moisture—ideal for the environment stressors you face. At the same time, its unique flinger design and elastomeric seal keeps out contaminants for longer-lasting performance.

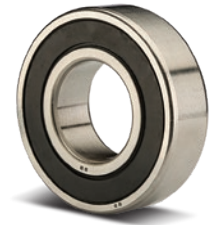
› NTN Corrosion Resistant Line Bearing Units



NTN Corrosion Resistant Line Bearing Units with NSF H1, food-grade grease designed for all general applications that encounter water and corrosive wash-down like inspection, cutting and conveyors.

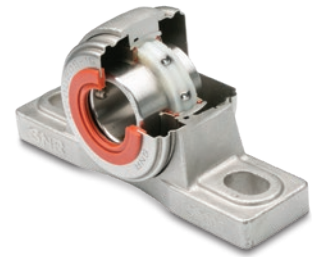


› NTN SENTINEL® SERIES Radial Ball Bearings



Specially designed stainless steel bearings with full-contact seals and H1 solid lubricant prevent grease washout encountered in bottle washing, filling and capping applications.

› NTN SENTINEL® SERIES Mounted Ball Bearings



All units come standard with corrosion-resistant materials, caps and solid lubricant to last longer on conveyors in washdown applications

COMMITTED TO INNOVATION

Our product lines are optimal solutions for an environmentally demanding industry, and we are committed to collaborative development of new and unique solutions for the dynamic rules and regulations of the food and beverage industry.

Contact your local NTN representative today, and find out how we can assist with your unique design requirements or visit www.ntn.ca



NTN Community Garden

Giving Back: Planting for Homeless Shelters in Need

NTN Canada will soon be adding a gardening plot to their headquarters in Mississauga, Ontario. The new NTN community garden will provide employees with the opportunity to till, seed and harvest a small communal plot before work and after, during lunch breaks and on weekends. The garden will be open every day from dawn until dusk, and employee volunteers will be welcome to walk through the gardens and join in planting activities. The garden will allow employees to spend time outdoors, learn to grow and harvest herbs and vegetables and to socialize in a pleasant environment.

All produce, from crisp lettuce and vine-ripened tomatoes, to green onions, brussel sprouts, carrots and crunchy cucumbers, will be donated to feed the hungry at the Haven Toronto Shelter in hopes of helping the homeless receive fresh, nutritious

meals to improve their diet and their overall health.

The plants at NTN's community garden will also contribute to a cleaner environment by adding oxygen to the air and helping to reduce air pollution. In addition, the community garden's root system will help water penetrate deep into the soil, where it is stored and released slowly rather than running off quickly and overwhelming drainage systems. NTN's community garden will also include a composting program, to recycle plant waste such as leaves and tree trimmings into useful fertilizer.

Through community involvement and a genuine desire to help the homeless population, NTN's employees are excited about establishing their Community Garden. The benefits of community gardening – fresh air and exercise, green space, and the chance to build NTN community spirit will make the effort well worth it.

TEAM MEMBER SPOTLIGHT

Christian Oteiza

Warehouse & Logistics Manager

NTN



In the midst of the COVID-19 crisis, NTN team members have had to adjust their daily work routines to meet the new needs of the customers and industry associates they serve. Christian Oteiza, Warehouse & Logistics Manager, is one of those NTN team members who has stepped up to the challenge.

"I've always worked in logistics and really enjoy working one-on-one with people," says Christian. "Our focus at NTN is on meeting the individual needs of the customers we serve, and as a team, we are fortunate to work well together with the help of supportive leadership."

Working in logistics for the past 20 years in the bearings industry, Christian has had the opportunity gain a lot of knowledge about industrial distribution. "In this role, it's important to be energetic, relationship-driven, accommodating and realize that it's all hands on deck at all times," says Christian. "With an industry that's always changing, we must constantly adapt and get ahead of any changes that could affect us and our clients."

As Logistics Manager, Christian is responsible for overseeing logistics services including both inbound and

outbound freight arrangements. "I enjoy the journey of logistics and the sense of accomplishment when things arrive successfully. I get to see the process through from beginning to end, and enjoy seeing a quote progress to an order, working with the warehouse or factory to get the product successfully received by the customer."

As part of his day-to-day management role, Christian offers feedback to the senior management team and helps them plan new strategies to improve speed and efficiency. "The support and flexibility I receive from our executive management are second to none. My ideas and thoughts are heard and my input is valued."

Away from work, Christian enjoys riding his motorcycle and spending time with his family. Christian has also volunteered to work with the Haven Toronto Shelter and Eva's House charity projects to help those impacted by poverty, homelessness and isolation. "Giving back is a wonderful way to reach out to those less fortunate and improve the quality of life in our communities." Thank you, Christian, for delivering the Ultimate Bearing Experience with such passion!

eKnowledge NTN WEB-BASED TRAINING PROGRAM

Virtual learning with eKnowledge

Looking for an online course for some virtual learning?

eKnowledge is NTN's industry-leading, web-based training program geared to providing users with a deeper understanding of bearing products. The training consists of six online product training modules covering different bearing types and nomenclature that can be completed on your own schedule. Following the completion of all modules and quizzes, participants will receive an NTN e-Knowledge certification diploma and a small gift.

Find out more at www.ntn.ca





NTN's Sentinel™ Series Saves Poultry Processing Plant Thousands

A major poultry plant processing approximately 175,000 birds per day was struggling with catastrophic bearing failures on both their poultry cage washing machinery and cage unloading systems. The repetitive failures on these two critical applications were causing very costly downtime at a rate of \$231 per minute.

NTN's engineering and sales support team ran a comprehensive diagnosis of the plant's cage washdown and unloading machinery. They discovered that the competitor's bearing units were only lasting an average of two weeks due to both water contamination and improper lubrication.

The NTN Solution

NTN's team recommended that the plant switch to Sentinel Series bearing units. Our Sentinel Series bearing units are a premium corrosion-resistant bearing with NSF H1 registered solid

lubricant and caps as the standard offering, built to withstand these severe environments. The solid lubrication provides up to 21 times better washout resistance than standard grease and the caps improve the protection even further, which was critical to extending the life of these applications.

The Result

The NTN solution lasted more than 12 times longer! Sentinel Series successfully ran for over 24 weeks compared to the competitor's bearing that was failing every 2 weeks.

The increased uptime and reduced maintenance have resulted in over \$60,000 in savings in the first six months.

The customer was so impressed by the improved performance that they installed additional NTN Sentinel Series bearings across their plant to further increase their productivity.

VALUE ADDED BREAKDOWN

Bearing Usage Reduction
\$37,100

Maintenance Reduction
\$15,600

Uptime Improvement
\$7,540

Documented Cost Savings
\$60,240

Annualized Cost Savings
\$120,480



Why Proper Torque Matters When Installing Food Industry Stainless Steel Insert Bearings



Stainless steel is generally more brittle than traditional 52100 bearing steel. Because of this fact, tightening inner ring set screws in stainless steel insert bearings with the proper torque is essential to avoid fracturing of the inner ring.

A fractured inner ring can lead to two catastrophic events in food & beverage production:

- Migration of contamination such as cleaning solutions or other liquids inside the bearing causing seizure.
- Fractured pieces of the inner ring falling into and contaminating the product being produced.

To avoid either of these outcomes, NTN recommends adhering to the following instructions to ensure proper installation of stainless steel Sentinel Series bearings.

TOOLS REQUIRED FOR INSTALLATION

- Torque Wrench
- Cleaning Tools
- Clean Working Surfaces

1. Prepare the bearing & mounting surfaces

- Remove any burrs or damage on the shaft and mounting area.
- Clean the mounting area to remove any contaminants.
- Ensure that set screws are not protruding into the bore of the bearing.

2. Slide the bearing into position on the shaft and mounting area

- Make sure the mounting area for the housing is flat. If it is not flat, shim to level.
- Rotate the inner ring of the set screw to be at the same 12 o'clock alignment position with the opposing bearing located at the other end of the shaft.

3. Tighten mounting bolts to secure the housing

- Ensure there is less than 2 degrees of misalignment in the shaft.
- Recheck alignment of set screws on bearings at either end of shaft.

4. Properly tighten inner ring set screws:

- Using the maximum torque settings in Table 1, tighten the set screws evenly on the shaft.
- For inner rings with two set screws:
 - » Torque first set screw to HALF the recommended tightening torque.
 - » Torque the second set screw to FULL recommended tightening torque.
 - » Torque the first set screw down to FULL recommended tightening torque.*

* Appropriate set screw torque by size provided on Table 1

5. Perform a final check on alignment of set screws and the bearing unit

Examples of Damage Caused by Excess Set Screw Torque



TABLE 1: RECOMMENDED SET SCREW TIGHTENING TORQUE FOR NTN SENTINEL SERIES BEARING INSERTS

unit	Inch Series		Metric Series	
	Set Screw	Tightening Torque max (in-lbs)	Set Screw	Tightening Torque max (N-m)
201-206	1/4-28UNF	34.5	M6X1	3.9
207-208	5/16-24UNF	73.5	M8X1	8.5
209-212	3/8-24UNF	156.5	M10X1.25	17.7

NTN CANADA CASE STUDY:

Watersmart Peel Indoor Water Efficiency Audit



NTN Bearing Manufacturing Canada was recognized by the Region of Peel for their contribution towards water conservation. The following case study highlights how water reducing measures have achieved a water savings of 143m³/day with expected long-term water savings of 52,323m³/year.

WATER SAVINGS SOLUTIONS:

Chiller re-purposed to cool air compressor system

NTN Bearing used once-through Municipal water to provide supplemental cooling to four air compressors when the cooling tower was unable to provide adequate cooling (predominantly during the summer months). An existing chiller was re-purposed to provide supplemental cooling to the air compressor system in order to replace this once-through cooling water method. Additionally, new supply and return lines were also installed from the chiller to the heat exchangers in the air compressor room. This was completed at the 6740 Kitimat Road location in Mississauga, Ontario.

ECONOMIC BENEFITS:

\$136,521 annually based on water reducing measures, plus a one-time Peel rebate of \$23,002.86, which reduces the payback period to 0.17 years.

WATER SAVINGS:

NTN Bearing Manufacturing Canada's water reducing measures has achieved a verified water savings of 143m³/day and estimated annual water savings of 52,323m³/year.

WATER REDUCING MEASURES
Chiller re-purposed
COST OF IMPLEMENTATION
\$46,005.72
COST OF SAVINGS (rebate)
\$23,002.86
WATER SAVINGS (L/day)
143,000
ANNUAL SAVINGS
\$136,521.00



Introducing NTN's **NEW** Distributor Online Platform



NTN Canada Launches Improved On-Line Ordering System for Authorized Industrial Distributors

Developed with the aid of valuable distributor feedback, our updated DOL platform has been designed to enhance your on-line ordering experience. Multiple shopping carts give you the ability to save orders in progress and come back later to place them. Easily created address books allow you to store your customer information so frequently used shipping addresses are always at your fingertips. Watch lists allow you to track inventory and receive notification when it arrives.

Here are some of the new features you can look forward to when using our new DOL system:

PLACE ORDERS EASIER

Create an order with the Order Pad function or upload a spreadsheet with the products you need using Order Uploader, or manage your Shopping Cart (or multiple carts!) to create an ongoing Stocking Order template. Once a part is selected, the LIVE inventory availability, customer-specific pricing, and desired packaging options are shown in the Shopping Cart. With the multiple shopping cart feature, you can have more than one order open at a time –and you can name each order so you can keep your orders straight. This helps you manage heavy customer loads so you can still answer the phone, take new orders, or handle any last minute tasks.

MULTIPLE LOOK UPS

Users can look up parts by NTN part number, by competitive part number or OE part number. The Autocorrect function helps direct to the correct number needed. Also, users can find the correct part by entering dimensions and specification in the Build-A-Bearing function.

CONTROL AND TRACK ORDERS

Select the best method of shipping for each order, control request dates and shipping schedules, and view your account's sales history. Plus, see when an order was shipped, what location it was shipped from, and when it is expected to arrive.

QUICKLY CONNECT WITH YOUR CUSTOMER SERVICE REPRESENTATIVE

On DOL, your account-specific Sales and Customer Service representatives contact information is easily accessible.



NEW USER-FRIENDLY DESIGN



IMPROVED FUNCTIONALITY



ENHANCED CONTENT



For more information, please watch the DOL Tutorial video at www.ntn.ca or email our customer support team at ntnorderdesk@ntn.ca.

Changes to Hours and Service Due to COVID-19

To comply with physical distancing requirements and to keep everyone as safe as possible, please note we are not permitting drivers to enter our Canadian distribution headquarters in Mississauga at this time.

Please call us when you arrive and we will provide further instructions.

For PICK UP

please call (647) 402-4034

For RECEIVING

please call (905) 795-4798

For the WAREHOUSE OFFICE

please call (905) 795-4858

Please note that our warehouse hours have temporarily changed due to precautions related to Coronavirus.

Warehouse Hours of Operation:

Monday to Friday

8:30am - 12:00pm & 1:00pm - 5:00pm

Address:

305 Courtneypark Drive West,
Mississauga, Ontario



Your sales rep and our customer service team continue to be available to help in any way we can to support your bearing requirements.

Orders can be placed during the following hours:

Monday to Friday 8:00am to 7:00pm EST,
by calling (888) 412-4122.

NTN Announces Additional Single Point Lubricator SKUs

All bearings, mechanical parts and industrial processes need lubrication to optimize life and production. In fact over 55% of premature bearing failures are lubrication related. The most common causes are missed lubrication intervals, applying the wrong type or amount of lubricant, applying lubricant at incorrect intervals based on recommendations, excessive pressure resulting in seal failure, and contamination ingress. NTN recognizes the importance that proper lubrication plays in the life and performance of all components in

any manufacturing process and is pleased to announce the addition of 245 SKUs to its single point lubricator product line. The new SKUs have been incorporated into Bearing Finder, NTN's digital support platform designed to aid distributors, design engineers, and end users in finding the perfect bearing or related product to use in any application.

In addition to single point lubricators now being housed on Bearing Finder, a "Related Products" feature has been added to 6,538 mounted unit SKUs

to which single point lubricators are compatible. In total, Bearing Finder now houses 39,712 SKUs. Bearing Finder is hosted on a proprietary platform that offers a customizable part search tool, interactive and downloadable CAD illustrations, comprehensive part interchanges, and exhaustive data sets. It's part of NTN's industry-leading suite of training and cataloging entities.

To access NTN's Bearing Finder platform, visit www.ntn.ca



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