

## INTRODUCING

# NTN TRIAGE Engineering Solutions Powered by INSYNC Remote Diagnostics



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NTN's commitment to realizing  
a sustainable society

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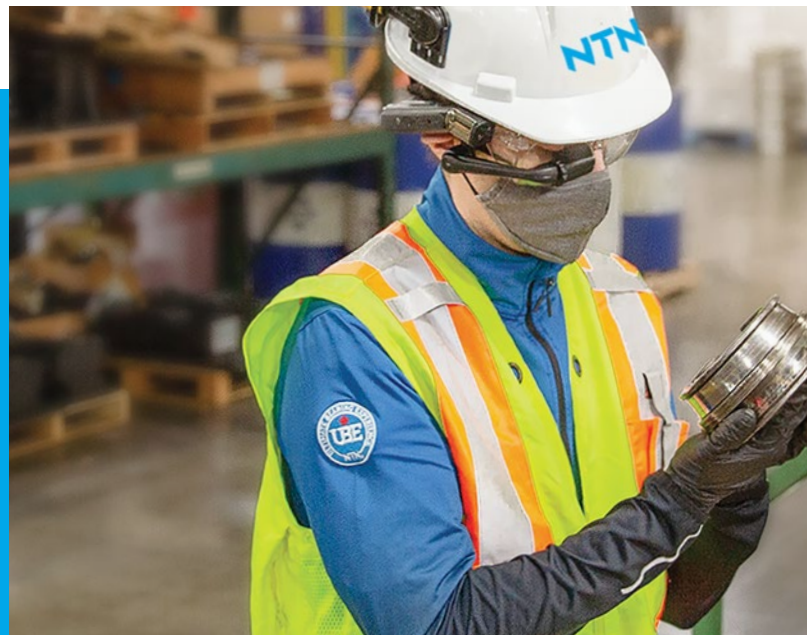
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# NTN Introduces **TRIAGE** Engineering Solutions powered by **INSYNC** Remote Diagnostics



**“Our TRIAGE approach accurately identifies a customer’s problematic critical bearing application through a three-step collaboration process designed to bridge NTN’s extensive engineering knowledge with ground-breaking bearing technology, bringing solutions to your fingertips, anywhere, anytime. ”**

- Mr. Paul Meo, President and CEO of NTN Canada



NTN Canada is rolling out its innovative TRIAGE Engineering Solutions powered by INSYNC Remote Diagnostics to provide industry leading support to its valued customers. NTN’s new TRIAGE based engineering system combines HI (Human Intelligence) with AR (Assisted Reality) to help keep production processes running optimally. A cornerstone of the NTN UBE TRIAGE support system is the introduction of NTN’s INSYNC AR (Assisted Reality) which is designed to remotely connect NTN’s engineering bearing experts to front-line maintenance staff, safely and instantly around the clock, ensuring manufacturing facilities can extract great value from NTN’s bearing solutions now and in the future. The state-of-the-art system allows NTN experts based at NTN Canada’s Engineering Centre to send precise visual instructions remotely to maintenance technicians at any plant or manufacturing facility to ensure bearing maintenance issues can be fixed as quickly and efficiently as possible, minimizing downtime.





"HI + AR = UBE," says Mr. Paul Meo, President and CEO of NTN Canada. "NTN delivers The Ultimate Bearing Experience (UBE) through the new platform. Our TRIAGE approach accurately identifies a customer's problematic critical bearing application through a three-step collaboration process designed to bridge NTN's extensive engineering knowledge with ground-breaking bearing technology, bringing solutions to your fingertips, anywhere, anytime."

NTN has enjoyed continuous growth and expansion over the past 100 years, with over 1,100 engineering associates and 15 research facilities around the world. As a company dedicated to "providing the Ultimate Bearing Customer Experience" NTN remains steadfast in providing the highest level of engineering service despite travel restrictions due to COVID-19.

In Canada, the company depends on its team of engineers, with over 230 years of combined bearing experience in the marketplace,

to support end users at manufacturing facilities with complex bearing applications and troubleshooting. NTN's innovative TRIAGE Engineering Solutions platform offers a systematic approach to defining bearing troubleshooting requirements to support maintenance professionals. If maintenance technicians face complex or unusual servicing points, they can use NTN's INSYNC remote collaboration technology to connect directly with NTN's Engineering Technical Support Centre located at NTN's headquarters in Mississauga, Ontario. The NTN expert is then able to support the field technician through the diagnosis and bearing repair by augmenting images, diagrams and adding repair suggestions into their view.

Marcus Wickert, Director of Engineering at NTN Canada, says: "NTN appreciates that when your equipment is down, the most important thing is to get back up and running. NTN's TRIAGE



Engineering Solutions powered by INSYNC Remote Diagnostics improves on our existing collaboration tools, allowing us to work more efficiently with our industry partners all while significantly reducing travel time. NTN invests this time savings to delivering solutions faster with a tangible cost savings, made possible through augmented reality technology. The new platform offers our customers better real-time support by being able to remotely assess their plant processes, conduct bearing maintenance and minimize downtime. NTN's remote engineers can see issues and opportunities first-hand and find solutions much quicker than through traditional on-site visits by providing the opportunity for better and more effective collaboration. NTN's TRIAGE approach further improves collaboration by enabling more people to participate in troubleshooting problems, as a whole team of NTN experts can help the on-site plant technician solve the bearing problem."

NTN's TRIAGE platform is a three-tier approach to provide

field technicians with the answers and support needed to solve the most problematic bearing applications. NTN's INSYNC Remote Diagnostics can be deployed to a manufacturing facility to connect directly with the NTN engineering and service team using an NTN supplied 4G MiFi device. Through remote collaboration, plant technicians can share bearing application details to receive support from NTN on critical installations and troubleshooting to optimize bearing life and equipment performance.

According to Wickert, "What we have learned during COVID-19 is the power of collaboration. Each of our talented engineering and service staff can provide a unique and beneficial perspective based on their expertise. Despite COVID-19, NTN's engineering team continues to deliver superior bearing services and support. During these trying times, our valued customers can tap into NTN's engineering resources virtually regardless of geography. NTN's TRIAGE platform gets our customers the answers and support they need as efficiently as possible."

**ASK FOR A DEMO**

# Making the World Run Smoothly

## WE SUPPORT



The NTN Group endorses the United Nations Global Compact, thus declaring its commitment to respect and endorse the 10 universally recognized principles of human rights, labour standards, the environment and anti-corruption. NTN strives to bring these principles to life through concrete initiatives and to promote them among its partners. Our NTN Spirit Tree philosophy shapes our commitment to a sustainable future and infuses everything we do. Through our partnerships with local organizations, we continue to build vibrant communities where we live and work, and our "can do" attitude inspires top performance from everyone by encouraging collaboration and commitment and by embracing challenge.

## SDGs

NTN supports and endorses the 17 goals and 169 targets of the UN's Sustainable Development Goals (SDGs) that came into effect in January 2016. This collection of 17 interlinked

global goals are designed to be a "blueprint to achieve a better and more sustainable future for all".

## SUSTAINABLE DEVELOPMENT GOALS





# The Ten Principles of the UN Global Compact

## Human Rights

- **Principle 1:** Businesses should support and respect the protection of internationally proclaimed human rights; and
- **Principle 2:** make sure that they are not complicit in human rights abuses.

## Labour

- **Principle 3:** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- **Principle 4:** the elimination of all forms of forced and compulsory labour;
- **Principle 5:** the effective abolition of child labour; and

- **Principle 6:** the elimination of discrimination in respect of employment and occupation.

## Environment

- **Principle 7:** Businesses should support a precautionary approach to environmental challenges;
- **Principle 8:** undertake initiatives to promote greater environmental responsibility; and
- **Principle 9:** encourage the development and diffusion of environmentally friendly technologies.

## Anti-Corruption

- **Principle 10:** Businesses should work against corruption in all its forms, including extortion and bribery

## Make the World NAMERAKA

### The NTN Spirit Tree and our Corporate Philosophy

We aim to contribute to a "**NAMERAKA**" world with the NTN Spirit Tree as our guiding philosophy. "**NAMERAKA**" means "smooth" in Japanese. Keeping in line with our Spirit Tree philosophy, we conduct our business with high respect and regard for the environment and the communities we serve.

Our corporate philosophy — "We shall contribute to international society by creating new technologies and developing new products" — influences everything we do: research and development of our products; relationships with our customers and our colleagues; and resources for our community and environmental initiatives.

NTN's brand statement "Make the World NAMERAKA" reinforces NTN's commitment to realizing a sustainable society, where people can easily lead a secure and fulfilling life in harmony with nature.



## Our Values

Through challenge, collaboration and commitment and a focus on success, we have created a vibrant company culture where ideas can blossom, people can thrive and success can flourish.

### › Challenge

- We are passionate about our business and our brands.
- We enrich our lives by challenging passionately, acting with initiative and continuing to grow.
- We promote and implement creative and innovative ideas and solutions.

### › Collaboration

- We show respect for and value all individuals for their diverse backgrounds, experiences, styles, approaches and ideas.
- We listen to others for understanding and demonstrate a commitment to integrity and ethics.
- We take care of the natural environment and maintain coexistence with the local community.

### › Commitment

- We strive to delight and serve our customers through the high quality of our products and services.
- We improve the lives of people around the world through our work.
- Our varied competencies and business lines are the founding richness of our company.



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# Value Creation Risks and Opportunities

To respond to changes in the external environment and social issues, the NTN Group periodically and comprehensively checks on the status of risks surrounding Group business.

We have selected a set of nine Global Risks for priority management that are common to all the regions we do business in, and are expected to have major business impacts if actualized.

While we identify changes in the external environment

or social issues as risks, we also recognize their potential as business opportunities as we engage in business activities designed to grow the NTN Group and help resolve these issues.

Our business activities are also designed to achieve the UN's Sustainable Development Goals (SDGs), helping create a world of sustainability, diversity and inclusion in which no one is left behind.

## Risks and Opportunities

THE NINE GLOBAL RISKS MANAGED BY NTN
1. Leakage of confidential information
2. Computer virus / cyberterrorism
3. Violation of Anti-Monopoly Act
4. Natural disaster
5. Fire disaster / explosion
6. Issue of human rights
7. Industrial accident
8. Complaint about product quality
9. Violation of bribery-related laws

BUSINESS OPPORTUNITIES
<b>1. Environmental impact reduction needs</b> <ul style="list-style-type: none"> <li>• Demands for energy-saving products for various machinery types</li> <li>• The rise of the renewable energy industry</li> </ul>
<b>2. Rapidly proceeding electrification</b> <ul style="list-style-type: none"> <li>• Major automotive industry innovations through developments such as CASE*</li> <li>• Use of the IoT and AI</li> </ul>
<b>3. The shrinking production workforce</b> <ul style="list-style-type: none"> <li>• Promoting diversity in the workplace</li> <li>• Demands for manufacturing productivity improvements</li> </ul>
<b>4. Raising human rights awareness</b> <ul style="list-style-type: none"> <li>• Needs for conflict-free raw material procurement</li> <li>• Expanding local production</li> </ul>

\* CASE: An acronym for 'connected', 'autonomous', 'shared' and 'electric'-four words representing developments that are currently on the verge of creating major changes in the automotive industry.

## Strategies for Risks and Opportunities

STRATEGIES FOR MANAGING THE NINE GLOBAL RISKS
1. Establishment of the confidential information management rule which contains the definition of confidential information (including personal information etc.) and regular confirmation of education, enlightenment and training
2. In addition to information security management, establishing systems for rapid contact when problems arise and checking of IT equipment and security software (ensuring the latest versions are installed) on a Groupwide basis
3. Establishment and proper operation of Anti-Monopoly law compliance rules based on HQ's rules and local regulations
4. Clarification of the initial response procedures for disasters (such as safety check and evacuation procedures) and periodic evacuation training and check of emergency reserves
5. Evacuation training, sharing measures for disaster case studies, autonomous checking of firefighting and related equipment, periodic firefighting training
6. Establishment and proper operation of the rule to verify the age of new staff based on the local regulations and to prohibit from forced labor and any form of harassment
7. Establishment and proper operation of the rule concerned with industrial accidents including emergency action plans, reporting to the responsible person and regular training, patrol and safety self-checks based on the safety and health standards
8. Establishment and management of quality assurance systems based on the international standards (ISO9001 and IATF16949)
9. Establishment and proper operation of anti-bribery law compliance rules based on the local regulations and consulting with HQ's rules

STRATEGIES FOR MANAGING THE NINE GLOBAL RISKS
1. Contribute to saving of energy through sales of bearings that are eco-friendly products to support rotating parts of machinery and reduce energy issues. Help the renewable energy industry produce renewable energy by selling bearings used in wind turbines and natural energy products such as NTN Green Power Station and NTN Micro Hydro Turbines.
2. Help create major automotive industry innovations through new automotive products such as sHUB, eHUB and Electric Motor Actuators. Aim to fuel business growth by harnessing these products as new earnings sources. Generate new added value and aim to grow earnings by combining AI and the IoT with the industrial machinery sensing technologies NTN has acquired over many years.
3. Improve employee work-life balance and create pleasant work places to remain competitive in the face of a shrinking production workforce by providing in-house daycare centers and more than the legally mandated lineup of employee leave programs accommodating needs such as childcare and long-term care. Improve work productivity through a robotics business area that sells Wrist Joint Modules (i-WRIST). These sales will help replace manual processes with robots and create manufacturing sites where humans and robots work alongside each other.
4. To ensure the use of conflict-free materials, we periodically survey our suppliers on their awareness of conflict mineral issues. Under the provisions of our NTN CSR Procurement Guidelines, we ask our suppliers to not engage in activities linked to human rights infringements and work to ensure respect for human rights throughout the entire supply chain. We also help create jobs by promoting local production and hiring local workers.

# CONGRATULATIONS TO OUR EARTH DAY

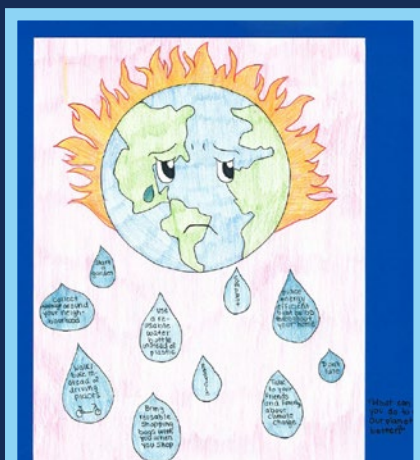
# Winners

For over fifty years, people across the world have celebrated Earth Day on the 22nd of April, promoting the importance of environmental awareness and our role in protecting the planet. For Earth Day 2021, NTN Canada took a different approach due to the stay-at-home order that was in place in Ontario. Instead of tree planting or neighbourhood clean-ups undertaken in previous years, our earth-conscious NTN employees (and their families) created arts and crafts as part of our NTN Earth Day Poster Contest.

The poster contest provided an exciting opportunity for NTN employees and their families to commemorate Earth Day in a meaningful way by expressing their creative solutions to environmental issues.

A total of 8 submissions were received showcasing the importance of reducing, reusing and recycling through artistic educational posters.

NTN Canada thanks everyone for their artwork submission with special recognition to Marcus Wickert, Director of Engineering, for his “Protect Yourself, Protect Our Earth” poster. This submission will be repurposed into a learning tool to increase the organization’s recycling knowledge and to remind everyone how to dispose of their Personal Protective Equipment. The following winners were selected based on originality, message impact and visual appeal:



• Kennealy Nolan (daughter of Paul Nolan)



• Sabella (granddaughter of Param Singh)



• Gwyneth Wells (daughter of Ken Wells)

The art contest is yet another initiative promoting NTN Group’s holistic adoption of ESG into our internal and external operations.



# Ultra-Class™ Ball Bearing Mounted Units



Ultra-Class is NTN's flagship solid-base mounted bearing unit line, delivering high performance and reliability in the most challenging conditions. When protection in harsh environments is paramount, our Ultra-Class series is up to the task, even in challenging industrial applications.

## CORROSION AND SHOCK RESISTANCE

The Ultra-Class line features a black oxide coated bearing insert to provide superior corrosion resistance over standard bearing inserts. The combination of the heavy-duty, solid cast housing and a robust steel cage provide longer life under extreme conditions.

## PATENTED SET SCREW TECHNOLOGY

NTN's exclusive ball-point set screw design is standard in all Ultra-Class products and provides superior tightening torque characteristics without damage to the shaft-mounting surface.

## SUPERIOR SEALING PROTECTION

Combining a nitrile rubber seal in tandem with NTN's flinger design creates a fan-like mechanism that prevents particles from building up and infiltrating the seals. The end result is longer bearing life & less unplanned downtime in your production lines.



# NTN Ultra-Class handles splash better than competitors

Testing Ultra-Class against the competition on the NTN Test Laboratory's Contamination Machine, the Ultra-Class design significantly outperformed all of the competitor designs.

## NTN Knows Dirt

Heavy industry is not a clean place. The critical bearings you depend on to keep your facility running smoothly must perform flawlessly for long run times while dealing with dirt and dust. NTN knows this fact and developed robust ball bearing mounted units to deal with this prominent bearing killer.

NTN's Ultra-Class line is fitted with heavy-duty, full-contact molded rubber seals that ride on black oxide coated bearing inserts to help reduce corrosion. In addition to the seals, steel flingers are pressed onto the inserts creating a labyrinth effect. These standard components and materials combine to keep out damaging dirt, dust and moisture, for maximum performance.

## Putting It To The Test

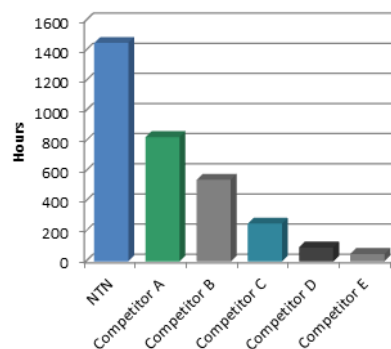
NTN tested Ultra-Class against multiple samples from each of the leading bearing manufacturers. They were run on the NTN Test Laboratory's Contamination Machine involving:

- dust/water slurry mixture
- continuous start/stop cycling
- run to failure (vibration or leak-through) or suspended at 1,000 hours

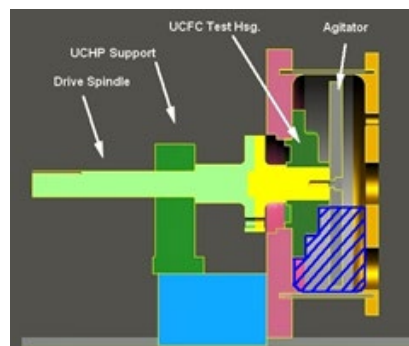
Dozens of tests were conducted yielding each product's resistance to contamination.

NTN's Ultra-Class design significantly outperformed all the competitor designs, with a life 76% longer than the closest competitor.

Contamination Test Bearing Life



Beyond the lab in the real world, Ultra-Class units prove their value to outlast other designs in challenging services plagued with dust and dirt.



Ultra-Class on sawmill chain conveyor



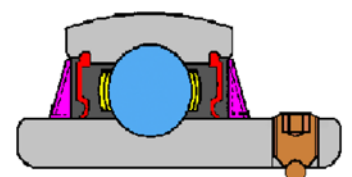
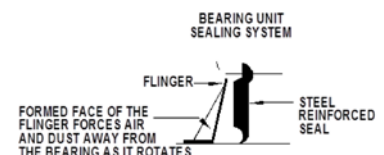
Contamination machine setup

**Test results demonstrate a 76% longer life than the closest competitor.**

**This increase in bearing life can be attributed to the following features:**

- A heavy-duty, full-contact molded rubber seals inserted in the outer ring (non-rotating ring)
- In addition to the seal, a second inner ring slinger design with raised "ribs" on the face, act as a fan mechanism to push away contamination that tries to build up on the bearing side face
- The combination of the rotating metal slinger and non-rotating seal creates a labyrinth effect making the ingress of contamination even more difficult (See design figures below)
- Ultra-Class bearings are supplied with high-performance, lithium-based grease with additives to ensure long service life, sufficient lubrication and corrosion protection

These standard components and materials combine to keep out damaging dirt, dust and moisture, for maximum performance.





## MASTERCLASS - Webinar NTN-SNR Linear Guide On-Line Configurator

NTN Canada's Peter Vorvis, P.Eng, Sales Manager, Linear and Automation, has prepared a Master Class webinar on the NTN-SNR Linear Guide On-Line Configurator. This video will be available to view beginning June 6th by visiting <https://www.ntn-snr.com/industry-masterclass>

In the video, Peter demonstrates how to use the configurator as a fast and efficient on-line tool for selecting Linear Guide systems. The configurator can be used to assist customers in specifying their requirements for industry applications and for finding an NTN-SNR part number that matches their preferences. The configurator is available in 20 languages and will also interchange competitive part numbers, with over 30 brands currently programmed into this platform.

Visit [ntn.ca](http://ntn.ca) to learn more about the NTN SNR linear motion solutions portfolio encompassing Profile Ball Rails, Runner Blocks, Linear Shafting, Ball Bushings and Linear Actuators. NTN SNR, a world leader in linear motion offers the widest range in the market, long-term maintenance free operation and high assembling tolerances for maximum performance to meet the demands of the most diverse industry applications.



**Peter Vorvis**

SALES MANAGER FOR LINEAR AND AUTOMATION  
NTN BEARING CORPORATION OF CANADA

WEDNESDAY, JUNE 9, 2021, 2:00 PM ET

FREE WEBINAR

## Rear Axle Wheel Bearing Replacement Revolution

### WEBINAR DETAILS:

Rear solid axles never went away, they evolved. New bearing designs, wheel speed sensors and advanced limited-slip, air locker differentials have added new wrinkles to the repair process. Servicing these axles represents a significant opportunity for shops. In a 45-minute webinar, experts from BCA Bearings by NTN will cover what it takes to service a rear axle's bearings and how to increase your productivity when doing these jobs.

### WHY SHOULD YOU ATTEND?

- You want to learn how to service axle bearings.
- You want to learn about the changes in rear axles.
- You want to reduce the time waiting for parts and sublet repairs.

### THE WEBINAR WILL ANSWER THE FOLLOWING QUESTIONS:

- What are the symptoms and noise will a failed solid axle wheel bearing make?
- When should an axle shaft be replaced?
- What special tools are required for servicing a solid axle's bearings?
- How do you service wheel bearings for a floating / semi-floating axle design?
- How do I service the wheel speed sensor and parking brake?
- Parts involved in the servicing of solid axles. (Seals, Repair Sleeves, Bearings, Repair Bearings, etc)

Registration Link: <https://webinars.on24.com/babcox/rearaxlebearings>



This video will be available  
on demand to view beginning  
**June 10th** by visiting

[https://bcabearings.com/  
technical-resources/videos/](https://bcabearings.com/technical-resources/videos/)



# National Sales Inc. has been appointed to represent NTN Canada's Automotive Aftermarket Portfolio



NSI PRESIDENT, SEAN WILLIAMS



**NSI President, Sean Williams, will work in collaboration with NTN Canada's Automotive Aftermarket Division, led by Robert Pitt with the support of Jim Dunlevy, Inside Sales Associate, as they strive to deliver the Ultimate Bearing Experience providing exceptional service and support to their valued partners across Canada.**

National Sales Inc. is a leading limited line sales agency in the automotive aftermarket industry providing coverage from coast to coast. Since 1998, National Sales has provided top quality representation to its partners nationwide. They support their market with a sales force comprised of 16 representatives and offices in Milton, Ontario.

NTN services the automotive aftermarket with a diverse portfolio of products under the BCA and Bower brands. Well known for over a century of experience in supplying wheel end solutions in North America, NTN's BCA line up of products fulfills more than 30% of the demand for North American OE vehicle production and is the #1 supplier of hub assemblies. In the Aftermarket, NTN BCA offers highly-engineered replacement parts that meet or exceed OE engineering specifications meeting full-line coverage for both domestic and foreign nameplates. NTN Bower's tapered roller bearings enjoy a reputation for reliability and performance for big rigs and other hard-working vehicles. Bower's North American-based, dedicated automotive engineering and testing center entrenches Bower as the industry leader in bearing innovation. Bower and BCA are owned by NTN, a leading global manufacturer of automotive and industrial bearings.



Complete product and catalog information for the BCA and Bower product lines can be found at [ShowMeTheParts.com](http://ShowMeTheParts.com) and [go.ntnamericas.com/BowerHDBearings](http://go.ntnamericas.com/BowerHDBearings).



# NTN's SFCW Bearing Units Successfully Quadruple Uptime by Reducing Contamination

A leading manufacturer of industrial absorbents was experiencing bearing failures in one of their grinding mills. The grinding mill application is located in a very dirty environment and incorporates an open spherical roller bearing mounted into a specialty housing that contains external seals. The mill is located at the top level of the facility and very difficult to access when problems do arise. After a thorough application review, it was determined that failure was a result of bearing seizure due to contamination ingress introduced during installation.

## The NTN Solution

After further scrutiny of application and mounting procedures, NTN's team determined a sealed spherical roller bearing would eliminate the ingress of contamination during installation. So therefore, NTN recommended the facility switch to our SFCW unit,

a 4-bolt flanged, ductile iron unit with a robust sealed spherical roller bearing that has versatile mounting configurations resulting in the proper mounted radial clearance. For this application, the unit was installed similarly to the spherical roller bearing previously used, but since it is sealed and in a unitized housing, the installation time was reduced by 75%, saving on the system downtime as well.

## The Result

The NTN solution has been proven to last 4 times longer! The SFCW bearing unit has successfully run for over 24 months without a single failure, compared to the original bearings that were failing every six months. The increased bearing life, decreased downtime and reduced acquisition cost resulted in over \$171,000 in annual cost savings.

## VALUE ADDED BREAKDOWN

Uptime Improvement  
**\$149,310**

Reduced Acquisition Cost  
**\$12,082**

Maintenance Reduction  
**\$10,500**

Documented Cost Savings  
**\$171,892**

Annualized Cost Savings  
**\$171,892**



## NTN COMMUNITY GARDEN

# Planting for Homeless Shelters in Need

The benefits of community gardening – fresh air and exercise, green space, and the chance to build NTN community spirit are definitely worth the effort! Thanks to the hard work of NTN volunteers and their families, over 500 vegetable plants were added to the NTN community garden located at NTN's headquarters in Mississauga, Ontario. The garden provides employees with the opportunity to harvest a small communal plot while following COVID-19 workplace health and safety procedures, including masking and social distancing. All produce 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.

Shelters, like Haven Toronto, are reporting a shortage in food donations required to help vulnerable people survive the COVID-19 crisis. NTN Canada will deliver a fresh box of vegetables each day to Haven Toronto over a 6-week period beginning in August. The harvest will include NTN grown tomatoes, lettuce, peppers, eggplants, yellow squash and green beans. NTN's community garden will provide an opportunity for over 200 people per day at the Haven Toronto Shelter to enjoy nutritious food at no cost. Through community involvement and a genuine desire to help the homeless population, NTN's employees are excited about investing their gardening skills and expertise in such worthwhile work.

NTN Canada thanks employees and their families for volunteering at the NTN Community Garden and for their continuing help to maintain the garden's grounds.







## NTN CANADA IS PROUD TO SUPPORT BDI CANADA'S CARE BAG CAMPAIGN FOR ICU NURSES

NTN Canada is proud to support BDI Canada's Care Bag Campaign for Brampton Civic Hospital's Intensive Care Unit Nursing Staff. Throughout May 2021, NTN Canada provided donations packaged for the ICU Nursing team as they continued their important work during the pandemic.

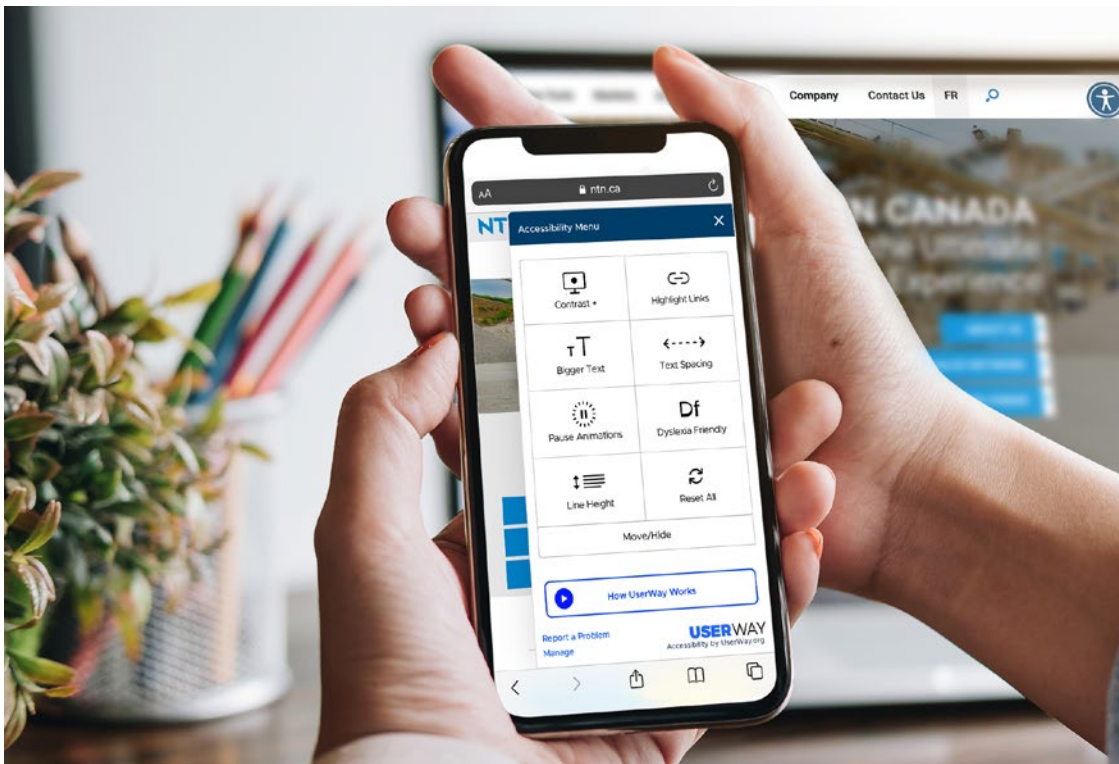
Three skids of toiletries containing hand cream and deodorant, along with nutritious snacks, assorted chocolates, candies, water bottles and Tim's gift cards were delivered to BDI Canada's Brampton branch location for assembly into gift packages for the ICU nursing team.

The NTN gift contribution was organized by Anna Petta, Executive Assistant – NTN Community Relations, as a small token of our thanks to the front-line nurses who have worked tirelessly to keep our community healthy. Their commitment, care and courage are integral to our communities, especially during these unprecedented times, and NTN extends to the ICU nursing team a big thank you from the bottom of our NTN hearts for everything you do!

And a special shoutout to Vanessa Antonoff, Branch Manager at BDI Canada Inc. for fueling this allied initiative on behalf of the Power Transmission industry and providing much needed support to our Brampton front line caregivers. According to Vanessa, "The ICU nurses were absolutely delighted at the hospital and it was way more than they expected! There is not really a way we can properly thank them for everything they selflessly risk and invest every day to save lives on the front line, but hopefully this has brightened their day and enabled them to enjoy a little self-care of their own."







CLICK THIS ICON  
TO EXPLORE

WWW.NTN.CA

# NTN Canada Offers Enhanced Website Accessibility and Functionality for All Users

NTN Canada's web site has been redesigned to meet new guidelines issued by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C), making its website platform available to, and usable by, all users, including those with disabilities.

The guidelines issued by the WAI are designed to keep the aesthetic nature of the website content intact, while ensuring that the information is readily accessible to persons with visual and other disabilities. The implemented guidelines are of particular benefit to visually impaired computer users who rely on screen reader voice output or magnification technology and who, like others, rely on a keyboard instead of a mouse for computer navigation.

## The new accessibility features on the NTN Canada website include:

- Use of sufficient contrast between foreground and background colours.
- Text elements that can be resized.
- Links that have visible focus styles to assist those only using

a keyboard, to help maintain their orientation.

- Links that do what they say or have additional, non-visible, information that can be read by screen reading devices.
- Correct use of headings, with a logical outline to assist those using screen reading devices.
- Correct use of tables to display appropriate tabular information, with headings and captions to assist those using screen reading devices.
- Use of cascading style sheets (CSS) to control the presentation of our website, keeping the presentation separated from the structure assists those using screen reading devices.

NTN is committed to providing a website that is accessible to the widest possible audience, regardless of technology or ability, and in doing so, adhere to internationally accepted guidelines and standards. NTN will continue to seek to ensure that its website is accessible to people who use assistive technology like screen readers and those unable to use a mouse or other pointing devices.

# TOGETHER FOR A *NAMERAKA* WORLD SUPPORTING OUR CLIENTS AND TEAM



Awesome Shot #2 Done



“

I got my COVID-19 vaccination because I have a duty to keep my community and colleagues safe. I don't want to be the reason someone gets sick, loses a loved one or suffers. Vaccines save lives and it is the best chance we have to get back to normal.

**Paul Meo**

President and CEO of NTN Bearing Corporation of Canada

Since the beginning of the COVID-19 pandemic, the safety of our employees and customers has been our number one priority. NTN has consistently adjusted our operations to align with Health Canada's evolving guidelines from various authorities including Peel Public Health and the CDC. We are optimistic about recent developments as a number of different vaccine options are becoming available across Canada.

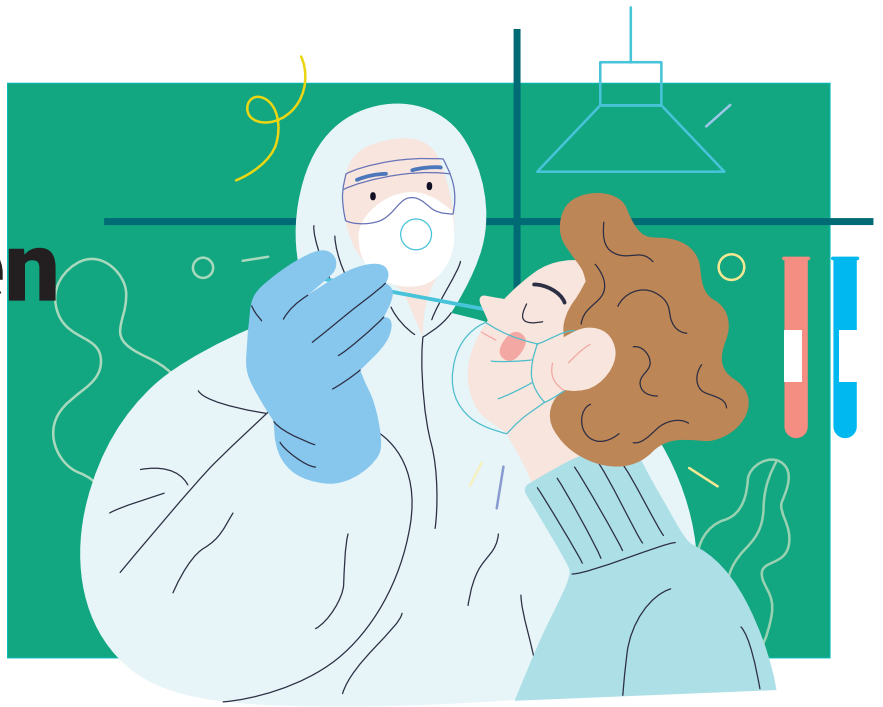
Although we understand that the decision about whether to vaccinate is a personal choice, we have encouraged our NTN employees to consider receiving one of the Health Canada approved COVID-19 vaccines.

Our passion for providing the most reliable bearing solutions is as strong as ever and we thank our employees for their continued commitment to health and safety at NTN and for following our established safety procedures.



# Rapid Antigen Testing

**NTN**<sup>®</sup>



In an effort to provide additional reasonable measures to protect NTN employees against the COVID-19 virus, NTN Canada will be introducing a Rapid Antigen Screening Program. The program is scheduled to commence on Tuesday June 8th, 2021 on day shift at both NTN Bearing Manufacturing Canada and NTN Bearing Corporation of Canada Ltd.

It is important to note that Antigen Testing does not replace current provincial testing requirements for individuals who are symptomatic or who may have come in contact with a positive case. NTN employees with COVID-19 symptoms are still required to isolate and schedule a test as required by Public Health. Rapid testing will be conducted on NTN employees who are symptom free to provide peace of mind.

**To date, NTN Canada has been working hard to protect the health and safety of its employees with the implementation of the following precautions:**

- COVID-19 Daily Screening Program
- Additional PPE (Masks & Face Shields)
- Additional cleaning and disinfecting of high touch surfaces
- Ensuring physical distancing of employees with reminders, floor signs, staggered shift start times and break times, additional protective barriers in office spaces, temperature screening
- Air Purifiers in meeting rooms and break rooms

## What is Antigen Screening?

### Antigen screening:

- Is used for screening purposes only. It is NOT used for diagnosis of a positive COVID-19 infection.
- Is completed by performing a nasal swab to collect a sample for analysis. The swab results are ready within 15-20 minutes.
- Detects certain proteins in the Corona Virus to confirm if the virus is present.
- Does not replace public health measures such as screening, physical distancing, masking and hand hygiene.

**Although the Rapid Antigen Testing is voluntary, NTN Canada is encouraging its employees to participate. The screening will be conducted twice per week (Tuesday & Friday) as recommended by medical experts. Participation by NTN employees in regular screening will aid in:**

- Identifying those who have COVID-19 but who are not yet showing symptoms (asymptomatic). This may enable early detection of positive cases more quickly and break chains of transmission.
- Identifying potential positive cases of COVID-19 and ensuring that those who are ill isolate.
- Reducing the spread of COVID-19 within NTN facilities, thereby protecting all employees on site.

NTN Canada appreciates the continued commitment of its employees to COVID-19 safety procedures as we remain steadfast in our effort to deliver an elevated customer experience.





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**NTN Corporation**

## NTN Corporation Receives Japanese Society of Tribologists Technology Award

NTN Corporation has been conferred with the prestigious 2020 Technology Award by the Japanese Society of Tribologists for the development of its tapered roller bearing with ultra long operating life for automobiles.

This award recognizes outstanding achievements related to tribology and acknowledges NTN's ULTAGE Tapered Roller Bearing for automotive applications as a product that contributes greatly to fuel efficiency of automobiles.

NTN's proprietary roller (rolling element) design minimizes contact surface pressure of the raceway surface and improves rolling operating life. This technological innovation has enabled a bearing operating life that is 1.8 times longer compared to conventional products.



# NTN's Halfshafts Adopted in the All New 2021 Cadillac Escalade from General Motors

NTN Corporation is pleased to announce the award of business to provide the rear halfshafts (CVJ) for 100% of MY2021 Cadillac Escalades. To meet the demands of GM's high production volume, NTN began the mass production of the halfshafts in the summer of 2020. The all-new 2021 Escalade went on sale in late-2020 in North America, with availability in other countries to follow.

## NTN Halfshafts Adopted in the 2021 Cadillac Escalade



Full-size SUVs have traditionally used a solid axle rear end that connects the left and right tires without the use of halfshafts. As demand for full-size SUVs has continued to grow, particularly in North America, the demand for improved ride comfort and vehicle dynamics has also grown. The all-new 2021 Cadillac Escalade has been engineered to accommodate an independent rear suspension (IRS) which transforms the driving dynamics of the vehicle, allowing each rear wheel to handle road conditions independently to enhance ride quality, steering responsiveness and overall driver control. This new IRS system also enables a lower interior floor to expand the Escalade's interior roominess, and improve comfort by allowing easier access to the second and third rows, as well as creating a more natural seating position for third-row occupants.

To implement the all-new independent rear suspension, the Escalade required halfshafts that could provide the smooth transfer of power and refinement Cadillac buyers have come to expect, and also stand up to the 420 horsepower and 460 lb-ft of torque produced by the standard 6.2L V-8 engine. These rear halfshafts also need to operate flawlessly with the Escalade's

new and enhanced chassis technologies, including magnetic ride control, air ride adaptive suspension, and the electronic limited-slip differential, which deliver a responsive, precise driving experience and offer exceptional isolation from the road; and this is where NTN engineering comes in.

NTN's EBJ (E Series Ball Fixed Joint) and EDJ (E Series Double Offset Joint) halfshafts are engineered to accommodate large SUVs, and feature a lightweight, compact design using our proprietary, eight ball track technology. In addition to our unique design, which provides optimum geometric operating angles required for rear halfshafts, we use a tubular interconnecting shaft design, to make them lighter and more rigid. These precision-engineered halfshafts help improve both function and ride comfort, as well as reducing vehicle weight for improved fuel efficiency.

## NTN's Halfshafts

As a global market share leader in CVJ products, NTN secured this business due to our overall technical capabilities and excellent reputation for quality and reliability that satisfy the needs of full-size SUV customers. In addition to the iconic, luxury Cadillac Escalade, NTN's halfshafts are also used in all of GM's full-size SUVs including the Chevrolet Tahoe and Suburban and GMC Yukon.

GM's full-size SUVs are particularly popular in their segment in North America with a continuous increase in demand, and sales of approximately 300,000 units per year. As NTN works to expand sales in the North America automotive industry, we believe there is a lot of growth potential for halfshafts as AWD/4WD vehicles remain in high demand, and OEM suspension designs shift to IRS.

NTN was founded in 1918 and began manufacturing halfshafts in 1963. We have continuously grown our business through the development of products that meet the needs of the ever-evolving automotive industry. NTN will continue working with OEMs to develop products that meet their dynamic needs, and contributing to the evolution and expansion of the global automotive industry.



## MAKING THE WORLD RUN SMOOTHLY

The NTN Group endorses the United Nations Global Compact, thus declaring its commitment to respect and endorse the 10 universally recognized principles of human rights, labour standards, the environment and anti-corruption. NTN strives to bring these principles to life through concrete initiatives and to promote them among its partners. Our NTN Spirit Tree philosophy shapes our commitment to a sustainable future and infuses everything we do. Through our partnerships with local organizations, we continue to build vibrant communities where we live and work, and our “can do” attitude inspires top performance from everyone by encouraging collaboration and commitment and by embracing challenge.

**WE SUPPORT**



### NTN Spirit



**CHALLENGE**



**COLLABORATION**



**COMMITMENT**



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