

NTN TRAINING PROGRAM

The NTN Ultimate Bearing Experience Technical Roadshow & Pit Stop Challenge



NTN Canada and Industry Partners Announce Donation in Support of Iris Kirby House

› Page / 6 - 7 /



NTN Canada is gearing up to launch NTN Rewards, its first ever points-based loyalty mobile app

› Page / 5 /



NTN Significantly Improves Production Output at Copper Tube Manufacturer by Redesigning Pilger Mill

› Page / 10 - 11 /



PRODUCT PROFILE
NTN Tapered Roller Bearings

› Page / 8 - 9 /



THE NTN ULTIMATE BEARING EXPERIENCE

TECHNICAL & ROADSHOW PIT STOP CHALLENGE

NTN Announces Technical Roadshow Training Program

The NTN UBE Technical Roadshow hits the highways this year bringing an immersive, interactive experience to our customers across Canada. This inaugural tour carries the latest technology for ball and roller bearings, wheel hub assemblies, seals, and linear motion products along with experiential marketing – to bring the NTN story to life.

NTN Canada is helping its sales teams and distributors reach out to customers with a mobile demonstration unit that offers technical training on its bearing products. The company is bringing the roadshow to bearing users across

Canada and providing a safe, socially distanced setting for the demonstrations. NTN's Technical Training Seminars will be conducted live on-site featuring a wide range of products, from NTN KIZEI & ULTAGE Spherical Roller Bearings (for Steel, Pulp & Paper, Cement & Aggregate applications), to NTN Sentinel Series (Food Industry) and NTN Heavy Duty Mounted Units. Also on display will be NTN's new TRIAGE Engineering Solutions portfolio offering a systematic approach to bearing troubleshooting with NTN's INSYNC remote collaboration technology.



The mobile demonstration unit is further evidence of NTN's continuous drive for innovation. NTN's team reacted swiftly to the coronavirus crisis and developed a fully portable demonstration system. Visitors will be able to experience firsthand our newest products, confident that NTN is simultaneously ensuring their wellbeing.

The NTN UBE Technical Roadshow will travel to cities across Canada to give attendees the chance to participate in training seminars, interact with NTN engineers, see product demonstrations and network with industry peers. The one-day event features training seminars to increase technical expertise and hands-on instruction giving dealers and industry partners a chance to spend time with NTN experts.



"We are confident these exciting full day events will show dealers that NTN is here with the products, services and support they need to be successful with their bearing operations," said Paul Meo, President & CEO of NTN Canada. "With the NTN Technical Roadshow, NTN is bringing its innovative bearing technology and latest products directly into customers' backyards. It will be used to hold promotional events as well as product training in little served areas, as well as at major NTN distributor hubs across Canada."



With the NTN Technical Roadshow, bearing end-users will have the opportunity to see exactly how robust NTN bearings are, but more importantly how easy it is to use them and how much operational efficiency in improved production and reduced downtime they will bring to manufacturing plants across Canada.

This show is also an opportunity to experience the speed and intensity of a NASCAR pit stop. Upon completion of their training session, NTN customers can check out the action at the NTN Pit Stop Challenge and compete to change out the tires in the fastest time possible. Grand Prize: The top two national leaderboard winners of the NTN Pit Stop Challenge across Canada will win an NTN Ultimate Bearing NASCAR Racing Experience at Daytona Speedway, Florida. Following the driver's meeting

with crew chief, training and instruction, you will get behind the wheel and drive a NASCAR Race Car for timed racing sessions on the Daytona Speedway. The three day NASCAR Getaway includes a full day of driving at the Daytona International Speedway, a tour of the Kennedy Space Centre, return airfare for two and a three night stay for two, in Daytona, Florida.

NTN UBE Technical Roadshow events can be scheduled through NTN Business Development Managers and each event will feature product demonstrations, an NTN pit stop challenge and refreshments. The NTN Eventbrite portal will be used to share NTN UBE Technical Roadshow information, event dates, times and locations. Wanna hop on board? For more information call (888) 412-4122 (Toll Free) or email communications@ntn.ca

Check your ranking on the Leaderboard!

NTN Technical Roadshow Training Program & Pit Stop Challenge

WELCOME TO THE

UBE ULTIMATE BEARING EXPERIENCE PIT STOP TRACKER!

Participants who completed the NTN Technical Roadshow Training Program can check their status on the NTN Pit Stop Challenge Leaderboard by visiting <https://keepthescore.co/board/sujpiccbuhr/>

NTN is pleased to share that the NTN UBE Technical Roadshow Program has been successful with 19 events completed to date, over 400 registrations and 1,016 bearing skills educational sessions held from June 2022 – September 2022, which included hands-on workshops and case studies allowing attendees to simulate decision-making processes with challenging bearing applications.

The objectives of the road shows were to communicate latest technology for ball and roller bearings, wheel hub assemblies, seals, and linear motion products, Conclusion: The NTN UBE technical bearing skills-based training program has been well received by the trainees and is now embedded and accepted as part of the NTN training program. Another 17 roadshow events are planned for the remainder of

2022.

The roadshows are also an opportunity to experience the speed and intensity of a NASCAR pit stop. Upon completion of their training session, NTN customers

can check out the action at the NTN Pit Stop Challenge and compete to change out the tires in the fastest time possible. Grand Prize: The top two national leaderboard winners of the NTN Pit Stop Challenge across Canada will win an NTN Ultimate Bearing NASCAR Racing Experience at Daytona Speedway, Florida.

Check how you performed against your opponents as the NTN UBE Technical

Roadshow continues to travel across Canada. Find your friends and colleagues and compare their performance with yours! Our stats live update as you play so you can keep an eye on how you're doing and look at how your friends are performing each training event. If you have just completed your training at an NTN roadshow event, you WILL show up on the leaderboard after the next refresh.

LEADERBOARD TOP 5 (as of Sept 13, 2022)

THE NTN ULTIMATE BEARING EXPERIENCE

TECHNICAL & ROADSHOW PIT STOP CHALLENGE

1	 Jako Larue , Resolute	4.85 Sec
2	Joey Bouchard , Applied Industrial Technologies	5.41 Sec
3	Francis Grenier , Resolute	5.77 Sec
4	Sebastien Trudel , Motion Saint Hyacinthe	6.46 Sec
5	Eric Boudreau , Wajax	6.75 Sec

**WE WOULD LIKE TO THANK ALL PARTICIPANTS FOR THEIR
ACTIVE PARTICIPATION IN OUR BEARING TRAINING PROGRAM
AND PIT STOP CHALLENGE!**

NTN CANADA IS GEARING UP TO LAUNCH NTN REWARDS, ITS FIRST EVER POINTS-BASED LOYALTY MOBILE APP

NTN Bearing Corporation of Canada, a leading bearing supplier to both the industrial and automotive markets will be introducing its customers to a new loyalty program, “NTN Rewards” along with a new mobile app. Both initiatives will help NTN engage with existing customers on a deeper level and attract new ones.

NTN Rewards is a mobile loyalty program app that rewards customer engagement. It incorporates customer favorite benefits such as promotional merchandise and exclusive event invitations, plus more personalized and enhanced experiences including exclusive access to new products, educational programs and members-only sales and events. This NTN Rewards loyalty program will truly be unique within the industry and provide a customer experience unprecedented in the bearings market. “We’re excited for our NTN network of industry partners to experience this enhanced digital platform,” says Rita Payne, Director of Marketing and Communications for NTN Canada. “We believe they’ll appreciate our generous rewards program as we continue to strive to deliver the Ultimate Bearing Experience.”



NTN LOYALTY PROGRAM APP *Coming Soon!*

Both the Rewards Program and the new mobile app are essential elements of NTN Canada’s overall customer experience, and the company looks forward to seeing how customers respond. The NTN Rewards mobile app will feature an insider dashboard allowing customers to easily access their status, available offers, exclusive benefits and points needed to unlock their loyalty benefits. Customers will also be able to scan QR codes received by email or in person at an NTN educational events such as the NTN UBE Technical Road Show and NTN Campus virtual conferences. Once a threshold is reached for accumulated points, customers can redeem points towards promotional merchandise listed on the NTN Rewards loyalty app. User behavior and feedback will help drive the evolution of the app.

Once the app is available on the Apple App Store and Google Play, customers will receive communication on how the new program works and how to enroll. NTN’s onboarding experience for the new loyalty program will be designed to jump start customers for success and show them how to use all major features.



NTN®

NTN Canada and Industry Partners Announce Donation in Support of Iris Kirby House

NTN Canada is proud to announce that its 'Happier Smiles, Happier Faces' campaign raised a total of \$15,000 in support of Iris Kirby House. The donation was announced at the 2022 NTN Distributor Advisory Conference Gala Dinner, which took place at The Rooms Provincial Art Gallery of Newfoundland and Labrador on June 16, 2022. Canada's top industrial distribution companies contributed to this campaign and participated in the cheque presentation ceremony in support of Iris Kirby House, a shelter and a safe haven for women and children who are experiencing domestic violence.



Dignitaries in attendance included The Honourable Siobhan Coady, Deputy Premier and Minister of Finance, Newfoundland and Labrador & Ms. Debbie Hanlon, City Councillor, St. John's. The NTN group donation made through its network of industrial distributors will be used to fund the installation of a new security system at the Iris Kirby House. Special thanks to the generous donors of this incredible fundraising campaign: Affiliated Distributors Inc., Applied Industrial Technologies, BDI Canada Ltd., Canadian Bearings Limited, Ficomis Inc., General Bearing Service Inc., Motion Industries (Canada) Inc., and Wajax Ltd.



“We are deeply touched by the generous support of our distributors”

PAUL MEO

PRESIDENT & CEO OF NTN BEARING CORPORATION OF CANADA

“As individuals and as an organization, all of us at NTN have a deep connection to the communities in which we operate and feel we have a responsibility to give back and lend our support where it can make a difference. We feel honoured to have distributor partners that feel the same way. The personal stories we heard really drove home how important Iris Kirby house is to so many families in Newfoundland. And while our Happier Smiles, Happier Face Campaign has ended for this important cause, Iris Kirby House still needs more support, so we encourage everyone to visit their donation page as it's never too late to contribute to such a worthwhile cause.”

Over 80 guests were treated to spectacular live entertainment, including the St. Patrick's dancers, known for their Irish step dancing, performed with tap shoes. Their stunning dance performance set to traditional Newfoundland music had the audience spellbound. One of the sad effects of the pandemic has been the dramatic surge in domestic violence and what stood out most was hearing from a young mother who escaped violence and has built a new, safer life with the help of Iris Kirby House. The generosity of the room at this gala was incredible and the NTN family and its distributor partners are so proud to have offered their support to this worthy cause.



HAPPIER SMILES HAPPIER FACES

The evening program also included a key-note presentation and live auction conducted by special guest, NASCAR driver, Alex Tagliani. Alex delivered remarks to recognize the importance of supporting struggling kids and mothers across the country who need emergency services —food, shelter, clothing, medical care and safety. Alex also led the live auction of his collector's racing helmet to raise funds and support for Le Miton, a shelter for women victims of domestic violence and their children. This cause is very near and dear to Tagliani as it is in close proximity to his TAG E-Karting Centre. Mr. Mike Allen, President of Applied Technologies, presented a cheque for \$5,000 to Le Miton Women's Service on August 27, 2022, representing a combined donation on behalf of Applied Industrial Technologies, NTN Canada and Tagliani Foundation.



Iris Kirby House



PRODUCT PROFILE

NTN TAPERED ROLLER BEARINGS

ROLL WITH THE HIGHEST QUALITY BEARINGS

NTN Tapered Roller Bearings (TRBs) are designed for the most demanding applications in industries such as mining, forestry and steelmaking. With almost 100 million tapered roller bearings manufactured every year under NTN and Bower brands, it's no wonder that NTN TRBs rival all major competitors on the market.

Heat treated based on application needs, case carburization creates a hardened steel “case” around the outside of the bearing, while leaving a soft core, providing excellent heavy shock-load capabilities. Case carburization also delivers greatly increased component durability and extended life, resulting in increased maintenance intervals and reduced downtime.



Tapered Roller Bearings

Utilizing conical rollers and raceways arranged so that the rollers and raceways meet at a common apex, NTN's tapered roller bearing rollers are guided by contact between the large end of the roller, providing high capacity for radial and single thrust loads.



2-Row Tapered Roller Thrust Bearings

Optimized internal geometry to ensure the highest load capacity is achieved to support high thrust loads.

4-Row Tapered Roller Bearings

Made with a wide variety of features to keep contaminants out and lubrication in that include RustGuard® and engineered face seals to displace moisture and prevent rust and corrosion.

4-Row Cylindrical Roller Bearings

Made from the cleanest steel that is treated and formed with the highest quality processes, including options like case carburized, carbonitriding and/ or phosphate coating for superior mill performance.

COMPREHENSIVE PRODUCT COVERAGE

NTN offers tapered roller bearings in ISO (metric), inch and J-metric series. NTN also supplies tapers as single-row (cone/ cup), two-row (back-to-back or face-to face), double-row (double cup or double cone) and four-row assemblies. NTN and Bower integrated offerings allow customers to optimize their TRB selection by customizing geometries and surfaces, ensuring the product delivered meets customer needs. Bower is a registered trademark of NTN-Bower Corporation, Macomb, Illinois.

TRUST THE QUALITY OF NTN TRBs

- Case-carburized steel
- Crowned rollers
- Super-finished rollers & raceways
- Products proudly made in USA and Japan
- Inch & metric in stock with flexible inventory

NTN Significantly Improves Production Output at Copper Tube Manufacturer by Redesigning Pilger Mill

A major manufacturer of copper tubing for refrigeration in industrial markets across North America was experiencing failures on the infeed carriage drive gearbox in their pilger miller. The frequent failures were causing over 400 hours of downtime per year at a rate of \$100 per hour. This also shortened maintenance cycles and reduced production speeds, causing a production bottleneck that was felt throughout the mill.

NTN's engineering and sales support team ran a comprehensive diagnosis of the application and identified that the infeed carriage was thrust loading into the gearbox, causing failures every three to four months and dramatically reducing the mill's profits.

The NTN Solution

NTN's team recommended replacing the fixed side bearing of the infeed

carriage screws from a spherical roller bearing to a tapered roller bearing mounted in a face-to-face arrangement. This solution is better suited to take thrust loads without transmitting them to the gearbox. An additional recommendation was also made to create four individual screws and two independent roll carriages to decrease the retraction time, minimize any "free" rocking and improve the continuous feeding of the tube.

The Result

The NTN solution allowed the mill to retract smoothly and reduce lag time in product transfer for continuous feeding of tube product, eliminating lost production time. The increased uptime and improved bearing life have resulted in over \$80,000 in savings the first year after implementation.



VALUE ADDED BREAKDOWN

INCREASED BEARING LIFE

\$40,600

UPTIME IMPROVEMENT

\$40,000

DOCUMENTED COST SAVINGS

\$80,600

**ANNUALIZED
COST SAVINGS
\$80,600**

High Speed
Deep Groove Ball
Bearings for EVs
and HEVs (Ultra-
high Speed Use
for Motor and
Gearboxes)



NTN Corporation Receives “CHO” MONODZUKURI Innovative Parts and Components Award

NTN Bearing Corporation of Canada is proud to announce that NTN Corporation has been conferred with the prestigious 2021 “CHO” MONODZUKURI Innovative Parts and Components Award. This award recognizes NTN's innovative development of High-Speed Deep Groove Ball Bearings for electric vehicle (EV) and hybrid electric vehicle (HEV) applications.

NTN's award winning [High-Speed Deep Groove Ball Bearings](#) are designed for ultra-high-speed applications in motors and gearboxes used in EVs and HEVs. To achieve the high speed rotational capabilities required by these applications, NTN

revised the materials used in the ball retainer for increased strength, and designed an improved pocket profile where the retainer and rolling elements have direct contact to minimize distortion caused by centrifugal forces. The developed products have identical package dimensions to conventional bearings, which enables them to be interchangeable. They are engineered to use grease or oil lubrication, depending on the application. In recent years, there has been an increased demand for oil lubrication, which has the advantage of cooling to compensate for heat generation, which improves efficiency.

NTN is guided by our corporate philosophy of contributing to international society by developing new technologies and products, and these High-Speed Deep Groove Ball Bearings for EVs and HEVs, embody that philosophy by advancing the future of mobility.

To develop these products, NTN relied on years of research and technology to minimize frictional energy loss and optimize internal bearings specifications. The development of these products contributes to the continued growth of EV and HEV technologies by supporting high-speed rotation with a dmn value* of 1.8 million (depending on conditions). The development of these technologies contributes to the realization of a decarbonized society, which is an important component of NTN's corporate “Nameraka” philosophy, which

promotes being eco-friendly for the good of all.

The “CHO” MONODZUKURI Innovative Parts and Components Award is awarded by the MONODZUKURI Nippon Conference and Nikkan Kogyo Shimbun, Ltd, for parts and materials that make significant contributions to the development of industry and society. The awardee is selected from manufacturers of parts and materials related to machinery, electronics and automobiles in fields related to the environment, health, biotechnology, medical equipment and everyday life.

* dmn value: An indicator that expresses the rotational performance of bearings and is calculated by multiplying the bearing pitch circle diameter (mm) by the rotational speed (min-1).



Mr. Takanobu Ozawa, President for NTN Americas Region & Mr. Toshinori Shiratori, Executive Officer for NTN Corporation Visit NTN Canada

NTN Canada was honoured to welcome Mr. Takanobu Ozawa, General Director & President for NTN Americas Region and Mr. Toshinori Shiratori, Executive Officer for NTN Corporation, for a tour of our headquarters, distribution center and bearing manufacturing facility in Mississauga. Mr. Ozawa and Mr. Shiratori participated in a Town Hall hosted by Mr. Paul Meo, the President and CEO of NTN Canada.





Both Mr. Ozawa and Mr. Shiratori also delivered presentations during the Town Hall introducing the importance of “SQCCD” as NTN’s Pillars for Organizational Effectiveness. The five pillars “SQCCD” consist of an acronym of Safety, Quality, Compliance, Cost and Delivery, all of which are integral to NTN’s growth and success through customer service excellence and the successful implementation of NTN’s “DRIVE NTN100” Phase 2 Medium-Term Management Plan. As part of the “SQCCD” management practice, employees were also introduced to the Bad News First measure, whereby getting the bad news out of the way shifts the focus immediately to the potential solution, whereby leaders can make informed decisions leading to improved outcomes.

During their visit, they had the opportunity to learn more about NTN’s unique portfolio of learning resources for the bearings industry, from TRIAGE Engineering Solutions powered by INSYNC Remote Diagnostics, which is used to connect bearing maintenance professionals to NTN engineers instantly, to the launch of the NTN Campus learning platform. They also toured the NTN UBE Technical Training Mobile Unit and NTN NASCAR Pitstop Challenge. It was quite a full program, in which our executives were fully updated about the possibilities in the field of digital transformation, integration of Assisted Reality into NTN’s training and support options, all the way to the roll out of NTN’s new mobile loyalty program app.



We thank everyone for attending this productive meeting and look forward to sharing more news on these exciting initiatives.

Promoting Transformation with “SQCCD”, NTN’s Pillars for Organizational Effectiveness

NTN’s President, Executive Officer and CEO, Mr. Eiichi Ukai, has recently introduced “SQCCD” as NTN’s Pillars for Organizational Effectiveness. The five pillars “SQCCD” consists of an acronym of Safety, Quality, Compliance, Cost and Delivery, that will be integral to NTN’s growth and success in support of the implementation of NTN’s Medium-Term Management Plan “DRIVE NTN100” Phase 2.

The “SQCCD” management pillars will be used across the NTN Group’s network of companies to build and manage teams, and to harness their ideas and creativity to deliver customer service excellence. “Safety” is the highest priority pillar and refers to NTN’s commitment to promoting a safe work environment with its employees, customers and business partners. NTN’s commitment to “Quality” reflects NTN’s high standards

for quality products, programs and customer service.

“Compliance” refers to NTN’s commitment to meet all laws and compliance standards including ESG priorities to help improve the environment and society, and its relationships with staff and customers.

“Cost” awareness is another key management pillar at NTN ensuring its cost and profitability structure create and deliver stakeholder value through NTN’s portfolio of bearing solutions. The final element, “Delivery”, refers to NTN’s commitment to work more diligently than ever to improve time, speed and flexibility as the organization strives to exceed customers’ needs and expectations.

NTN is committed to giving its customers the best possible service as the organization endeavors to build enduring industry partnerships to help customers achieve their goals and make their ambitions a reality.

SQCCD

At NTN, we feel privileged to serve our customers and we will strive to show it every day through our commitment to “SQCCD”.

DRIVE TRANSFORMATION

NTN100

PHASE 2



NTN Pillars



Safety

Promote a safe work environment with our employees, customers and business partners.



Quality

Maintain the highest quality of our products, our work and our people, all of which define our company.



Compliance

Meet all laws and compliance standards for our organization and ESG priorities to improve our environment and society.



Cost

Improve our cost and profitability to create stakeholder value.



Delivery Time

Improve our time, speed and flexibility to exceed our customers' needs.





ASK FOR A DEMO

NTN TRIAGE Engineering Solutions Powered by INSYNC Remote Diagnostics



NTN CANADA
trriage



INSYNC



FASTER DECISION MAKING:

Access to NTN's engineering expertise anywhere around the world 24/7 to enable faster decision making and bearing analysis.



INCREASED SAFETY:

Remote collaboration enables fewer personnel in the operational environment for increased workplace safety.



INCREASED EFFICIENCY:

Carry out bearing maintenance quicker and more cost effectively. NTN's TRIAGE Engineering Solutions powered by INSYNC Remote Diagnostics ensures any bearing maintenance issue can be fixed as efficiently as possible.



LOWER ENVIRONMENTAL IMPACT:

Environmentally-friendly products that include energy-saving bearings & recyclable components to reduce carbon footprint.



Stay Connected