



Dennis Tanrikulu

GET ON BOARD... WITH NTN BEARINGS

With the price of energy continuing to escalate, people are searching for more efficient ways to commute to and from work. While many highways are still congested with commuters, more and more people are relying on mass transportation as an economical alternative. In the first 3 months of 2008, Americans took 2.6 billion trips on public transportation – a figure up 85 million from last year over the same time frame. With this increase in ridership should come an increase in replacement parts for both bus and rail applications.

Did you know that NTN is a major supplier to many local transit authorities? We do not sell directly to these organizations. We either sell replacement bearings through distribution or we sell directly to the axle or wheel end manufacturer. NTN is a major supplier of various taper sizes to most of the manufacturers producing axles and wheel ends for truck and bus applications. With many successful years of service, NTN-Bower® bearings are accepted as a proven brand in this market.

In addition to axles and wheel ends, NTN also has extensive experience in rail applications. In North America, we have been successful in doing business with Bombardier, Kawasaki and Alstom. However, NTN is also the bearing supplier for the high-speed bullet trains in Japan, while SNR bearings are used on the high-speed trains, or TGV, in France. The TGV is the world's fastest train that achieves speeds of approximately 357 MPH!

To better support these markets, NTN has recently promoted Joe Kahn to Market Manager, focusing on the bus and rail markets. Joe has been with NTN for over two years as an outside sales representative for our OEM group. His insight to this market will make him a valuable member to the Marketing team.

We're also excited to announce our participation in the APTA (American Public Transportation Association) Expo in San Diego this October. Come see us October 6-8th in booth #4810 and learn what NTN can do for you!



Best Regards,
Dennis Tanrikulu, VP Aftermarket Sales
NTN Bearing Corporation Of America

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BUS TRANSIT

THE WIDEST SELECTION OF BEARINGS SUPPORTING THE TRANSPORTATION MARKET

With bus ridership up over 2% in the first quarter of 2008 alone, bus fleets continue to grow. Transit authorities have the difficult task of balancing growing operating costs with shrinking budgets – yet bus maintenance remains a \$3.4 billion industry in the United States. That means uptime is more critical than ever and as maintenance intervals are stretched, transit authorities must partner with proven suppliers.

NTN-BCA® offers the widest selection of clutch release/pilot bearings available for transit applications. These original equipment angular contact bearings are available for service applications as stand-alone bearings and as assemblies that include the carrier. Assemblies allow for quicker installation, saving technicians time and money – and reducing potential installation errors.

NTN also serves the Bus Transit Industry by providing a full line of quality, American-made product with unsurpassed local availability. NTN-Bower® tapered roller bearings are OEM preferred for their case-carburized rollers and super-finished raceways. NTN's complete line of wheel bearings is unmatched in the industry, so end users can be assured that we have got their applications covered.

The strength of our U.S. manufacturing capability supports the transportation and industrial markets. Currently, we have nine manufacturing plants producing a variety of bearings. However, the bearings sold into this market are primarily produced by NTN at our Macomb, IL or Hamilton, AL facilities.

OUR STRENGTH: U.S. MANUFACTURING



MACOMB, IL: Produces case-carburized tapered roller bearings and cylindrical roller bearings used in a wide array of applications and industries, including off-highway construction equipment, agriculture and many others.



HAMILTON, AL: Produces case-carburized, medium-size tapered roller bearings that are used in wheel ends, transmissions, axles and other industrial applications.

These plants have undergone many changes since they were first acquired. NTN has invested heavily to support the needs of the market. Currently, the Macomb, IL facility is in the middle of a phased-in plant expansion. The Macomb plant now has over 700,000 sq. ft. of manufacturing space under one roof.

Both plants produce product under the Bower® brand name. It's a common misconception that the Bower® brand is still owned by Federal-Mogul, but since Bower's purchase from Federal-Mogul in the 1980's, NTN has been the exclusive manufacturer and distributor of Bower® brand tapered and cylindrical roller bearings. As we seek to increase our presence in the marketplace, NTN continues to work on strengthening our link to the Bower® name. With NTN, you are always assured you will receive a genuine Bower® bearing in every box.



BOWER®

RAIL TRANSIT: TAPERED ROLLER BEARINGS

NTN supplies a large number of tapered roller bearings for gearbox, wheel, and journal applications, as well as ceramic-coated bearings for traction motor applications. As more and more commuters turn to public transportation, NTN is providing new and improved ways to assist local and worldwide rail transportation systems.

NTN has built its foundation in the rail market around tapered roller bearings for gearbox applications. NTN tapered roller bearings can be found in public transportation systems stretching from New York City to Queensland, Australia. These bearings are locally made at NTN-Bower® facilities and designed to support both axial and radial loads, as well as excess vibration produced by small and large gears. NTN's standard case-carburized steel offers a 40% longer bearing life, allowing NTN to compete amongst the best in the business.

NTN's diverse product line also allows us to provide insulated bearings, specifically designed for rail traction motors. These ceramic and resin coated bearings counteract damage caused by electrical currents in rail car motors. NTN offers insulated bearings in a wide variety of bore diameters, ranging from 50 to 160mm. These insulated bearings are widely used in traction motors of railway cars and are functionally superior to their standard counterparts.

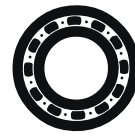
The unique knowledge and experience NTN has gained from railway motor and gearbox applications has contributed to the greatly improved reliability of the NTN and NTN-Bower® product line.

TRACTION MOTOR INSULATED BALL BEARINGS

NTN Part Number	OD (mm)	Bore (mm)	Width (mm)
7MC3-NU214	125	70	24
7MC3-NU314	150	70	35
7MC3-NU316	170	80	39
7MC3-NH318	190	90	43
7MC3-NH320	215	100	47
7MC3-NH322	240	110	50
7MC3-NU326	280	130	58
7MC3-NU330	320	150	65
7MC3-6311	120	55	29
7MC3-6312	130	60	31
7MC3-6316	170	80	39
7MC3-6324	260	120	55
7MC3-6230	270	150	45
7MC3-6330	320	150	65

GEARBOX TAPERED ROLLER BEARINGS

NTN Part Number	OD (mm)	Bore (mm)	Width (Inches)
87750/87111	11.1250	7.5000	1.8750
87737/87111	11.1250	7.3750	1.8750
655PW4VW2/652VW1	6.0000	2.7500	1.6250
67983/67920	11.1250	8.0000	1.8125
67985/67920	11.1250	8.1250	1.8125
LM545848VW1	-	9.2460	1.9375
LM545810	12.3750	-	1.4375
744VW1	-	2.8750	1.8375
742VW1	5.9090	-	1.4375
468/452D+ACB120	4.2500	2.0625	1.1542
JM738249/JM738210	10.2362	7.4803	1.7323
JM736149/JM736110	9.8425	7.0866	1.7717

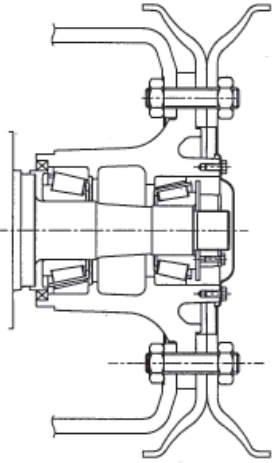


Dr. Pete's

C O R N E R

PETER LORENTZ
Sr. Product Analysis Engineer
NTN - Wheeling Test Lab

WHEEL END BEARINGS: COMMON FAILURES



Whether on a family vacation or a trip to the local grocery, take note of the number of trucks on the road. If you observe the number of wheels rotating furiously (and smoothly) as they carry goods to various destinations, you'll have an idea as to the number of wheel bearings providing reliable service throughout the day. It is the goal of every transportation end user to maximize bearing life, thus insuring vehicle uptime and continued productivity.

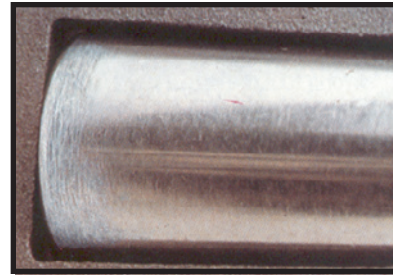
A proper wheel bearing installation technique and diligent preventative maintenance achieves uptime and maximum bearing life. The vast majority of wheel end failures is due to faulty adjustment of or changes in endplay. Therefore regular monitoring is necessary to assure continued operation. Whether endplay is excessive or insufficient, the adverse affects on bearings and adjacent seals can be serious and the wheel system should be disassembled and reviewed to determine the cause. Insufficient endplay will result in smearing or flaking at the large end of the tapered roller whereas excessive endplay will result in the same damage on the small end.



The best time to monitor endplay is during tire changes, brake jobs or lube checks/changes. Perform these endplay checks and adjustments per Technology and Maintenance Council Recommended Practice #618. Utilizing this proven method is the best way to achieve proper bearing setting and thus maximize bearing life in this application.

NTN's pioneering efforts in developing reliable bearings for the transportation industry have resulted in greater load carrying capability and longer bearing life. Continuous technical advances have minimized the concentration of stress caused by minor misalignment between the spindle and housing bore or changes in wheel endplay. Using high quality NTN Bower® heavy duty bearings along with proper bearing setting and maintenance techniques will optimize bearing life and eliminate truck down-time for the long haul.

BEARING ADJUSTMENT: TOO TIGHT

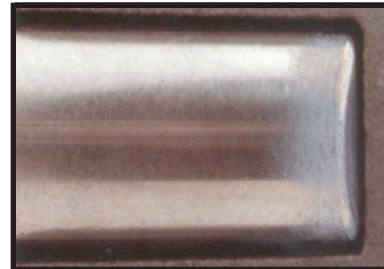


*Roller Smearing,
Large End*



*Roller Flaking,
Large End*

BEARING ADJUSTMENT: TOO LOOSE



*Roller Wear,
Small End*



*Roller Flaking,
Small End*



NTN[®] MVP

LINDA GREEN
DIRECTOR OF OPERATIONS

DEMAND is defined as “quantity of a commodity or service wanted at a specified price and time.”

The businesses that are most successful not only have great product, competitive prices and thorough distribution coverage, but also have best in class operations. This means delivering the right product, in the right quantity, on time when the customer needs it. NTN welcomes and introduces Linda Green, Director of Operations, whose experience in supply chain and operations will support improved delivery performance for its customers. Linda graduated from the University of Minnesota with a MBA in Operations, and has over 20 years of experience, including line operating positions in manufacturing, inventory, and logistics.

WE ASKED LINDA TO SHARE SOME **PERSONAL INSIGHT** ON THE FOLLOWING SUBJECTS...

Welcome to NTN. How will you insure that NTN has the right parts on the shelf when a distributor needs it?

It starts with the right inventory strategy. You need to work with sales to understand the customer requirements, work with the plants to insure product is delivered on time and work with the warehouse to have accurate picking and on time shipping to customer specifications. A lot of internal collaboration is needed to satisfy the customer.

How does NTN achieve excellence in supply chain management?

The core foundation is people. Our people must be organized, have the right skill set, and be motivated. We must use the right processes and metrics. We strive to create a continuous improvement environment.

What actions are being implemented to help NTN do all of the above?

We are improving our inventory mix by segmenting and analyzing demand by market. We are gathering our full transportation and logistics costs to negotiate better prices. We are revising our metrics to better communicate performance and measure improvement. The metrics we are implementing will gauge our fill rate, on time shipments, and logistics cost. We are improving our aftermarket forecast process, identifying special programs that need forecasting, and leveraging lost sales information to improve inventory and availability. We are working with our plants to revise and insure that the production schedule matches our demand. We will be reviewing customer order policies for all markets so that we consistently meet customer expectations.

NTN[®]

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