

NTN

**NTN**<sup>®</sup>

Make the world **NAMERAKA**

**Company  
Introduction**

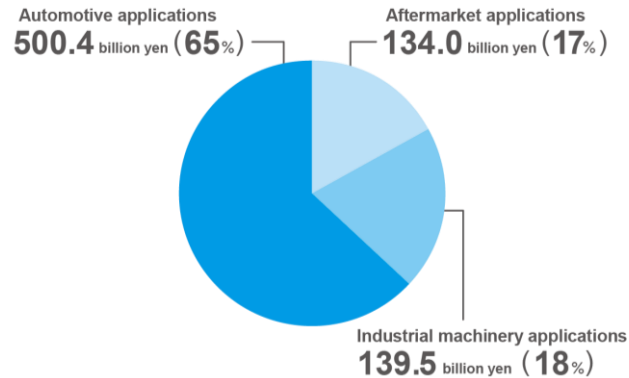
<b>Corporate name</b>	NTN Corporation
<b>Date founded</b>	March 1918
<b>Capital</b>	54.3 billion yen
<b>Head office</b>	Daibiru-Honkan Bldg., 3-6-32, Nakanoshima, Kita-Ku, Osaka 530-0005, Japan
<b>Representative</b>	Eiichi Ukai, Director Representative Executive Officer President, Executive Officer CEO (Chief Executive Officer)
<b>Number of employees</b>	5,647 (consolidated: 23,027) *as of the end of March 2023
<b>Fiscal term</b>	March
<b>Description of business</b>	Manufacture and sale of bearings, driveshafts, and precision equipment



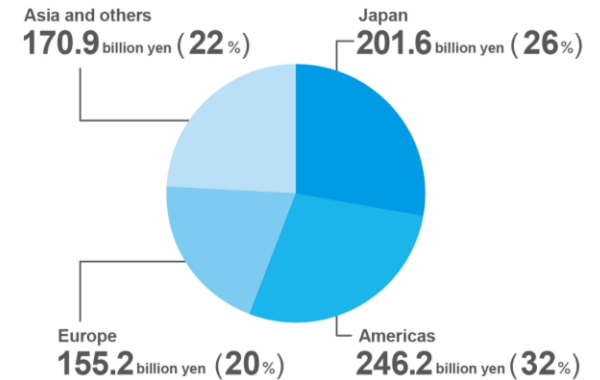
### Net Sales

**774.0**  
billion yen

### Net Sales by Business Sector

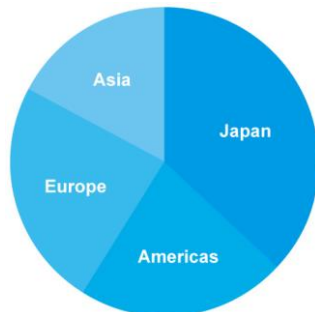


### Net Sales by Region



### Number of Employees

**23,027**



### Customer Satisfaction Survey

Either “Excellent” or “Good”  
Survey period: From October 2021 to September 2022

**88%**

#### Founders' Spirits



Noboru Niwa

“Frontier spirit”  
“Coexistence and  
co-prosperity spirit”



Jiro Nishizono



Corporate  
Philosophy

We shall contribute to international society through creating new technologies and developing new products

#### Group Vision





## Environment



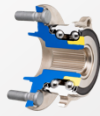
Bearings for wind turbines



Condition Monitoring System (CMS) for wind turbines [Wind Doctor™]



Talking Bearing™



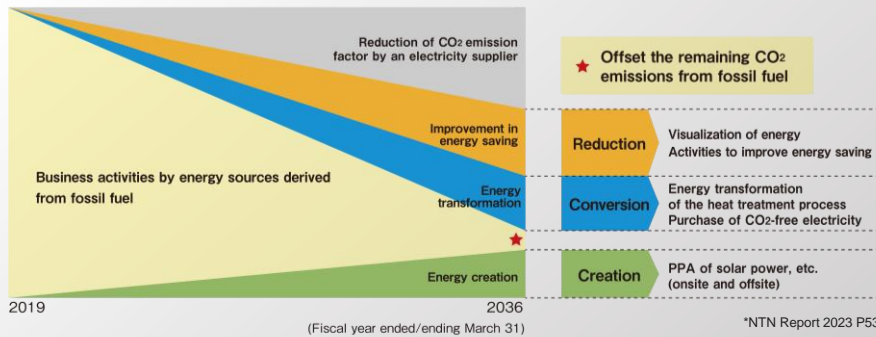
Low Friction Hub Bearing III

## Reducing CO<sub>2</sub> emissions in business activities



Roller Factory (NTN MIE CORP.)

### Carbon neutrality realization image



## Social



i-WRIST™ IWS series



N³ N-CUBE



Global QC Circle



NTN PROUD AWARD

## Governance

Thorough compliance



Stronger governance

1918

Started ball bearing research and manufacturing at Nishizono Ironworks (Uchibori, Kuwana-cho, Kuwana-gun, Mie Prefecture)



Noboru Niwa



Bearings of that time



Jiro Nishizono

1927

Established NTN Mfg. Co., Ltd. with capital of 50,000 yen



NTN's logo at that time

1937

Changed name to Toyo Bearing Mfg. Co., Ltd.



Company building

1954

Became the first Japanese machinery manufacturer to win the Deming Prize



Deming Prize medals

1963

Entered into a technical tie-up with Hardy Spicer Co., Ltd. in the U.K. and began production of driveshafts



First driveshaft model produced

1960s-1970s

Strengthened and expanded overseas sales and production



Mettmann Plant, Germany

1989

Changed name to NTN Corporation



Company building

2008

Made SNR ROULEMENTS a subsidiary



Company building

2018

Company's 100th anniversary



2020

Establishment of brand statement "Make the world NAMERAKA"



2023

The Company name of NTN-SNR ROULEMENTS S.A. changed to NTN Europe S.A.



NTN Europe S.A.

Head office relocation



Company building

# 212 Business Bases in 34 Countries

Sales: 118 bases in 34 countries Production: 72 bases in 14 countries R&D; 15 bases in 5 countries Other: 7 bases

## EUROPE

- 1 NTN Kugellagerfabrik (Deutschland) G.m.b.H.
- 2 NTN TRANSMISSIONS EUROPE
- 3 NTN Antriebstechnik G.m.b.H.
- 4 NTN Europe S.A.
- 5 NTN-SNR RULMENTI S.R.L.
- 6 SNR CEVENNES
- 7 ICSA INDUSTRIA CUSCINETTI S.P.A.
- 8 NTN Wälzlager(Europa) G.m.b.H.
- 9 SNR WÄLZLAGER GMBH
- 10 NTN Mettmann(Deutschland) GmbH
- 11 NTN TRANSMISSIONS EUROPE CREZANCY
- 12 NTN Europe Holdings SAS

## CHINA

- 1 Shanghai NTN Corp.
- 2 Guangzhou NTN-Yulon Drivetrain Co., Ltd.
- 3 NTN-RAB (Changzhou) Corp.
- 4 Shanghai Tung Pei Enterprise Co., Ltd.
- 5 TAIWAY Industry CO.,LTD.
- 6 TUNG PEI INDUSTRIAL CO., LTD.
- 7 Nanjing NTN Corp.
- 8 Xiangyang NTN-Yulon Drivetrain Co., Ltd.
- 9 NTN (CHINA) Investment Corp.
- 10 NTN China Technical Center

## ASIA & PACIFIC

- 1 NTN MANUFACTURING (THAILAND)CO.,LTD. Eastern Seaboard Automotive Products & Composite Material Products Plant
- 2 NTN NEI Manufacturing India Private LTD. Bawal Plant
- 3 NTN NEI Manufacturing India Private LTD. Chennai Plant
- 4 Seohan-NTN Bearing CO., LTD.
- 5 NTN MANUFACTURING (THAILAND) CO., LTD. Pinthong Automotive Products Plant
- 6 NTPT CO., LTD.
- 7 PT. TPI MANUFACTURING INDONESIA
- 8 PT. Astra NTN Driveshaft Indonesia

## CHINA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

## ASIA & PACIFIC

## JAPAN

- 1 KUWANA WORKS
- 2 IWATA WORKS
- 3 OKAYAMA WORKS
- 4 NAGANO WORKS
- 5 ENGINEERING PLASTICS WORKS
- 6 MIKUMO WORKS
- 7 KONGO WORKS
- 8 NTN MIE CORP.
- 9 NTN Advanced Materials Corporation.
- 10 HIKARI SEIKI INDUSTRY CO., LTD.
- 11 NTN CASTING CORP.
- 12 NTN BIZEN CORP.
- 13 NTN OMAEZAKI CORP.
- 14 NTN TADO CORP.
- 15 NTN KINAN CORP.
- 16 NTN KAMINA CORP.
- 17 NTN FUKUROI CORP.
- 18 NTN HAKUJI CORP.
- 19 NTN HODATSUSHIMZU CORP.
- 20 NTN SHIKA CORP.
- 21 NTN NOTO CORP.
- 22 Taira Forging Co.,Ltd.
- 23 NTN AKAIWA CORP.
- 24 NTN SALES JAPAN CORP.

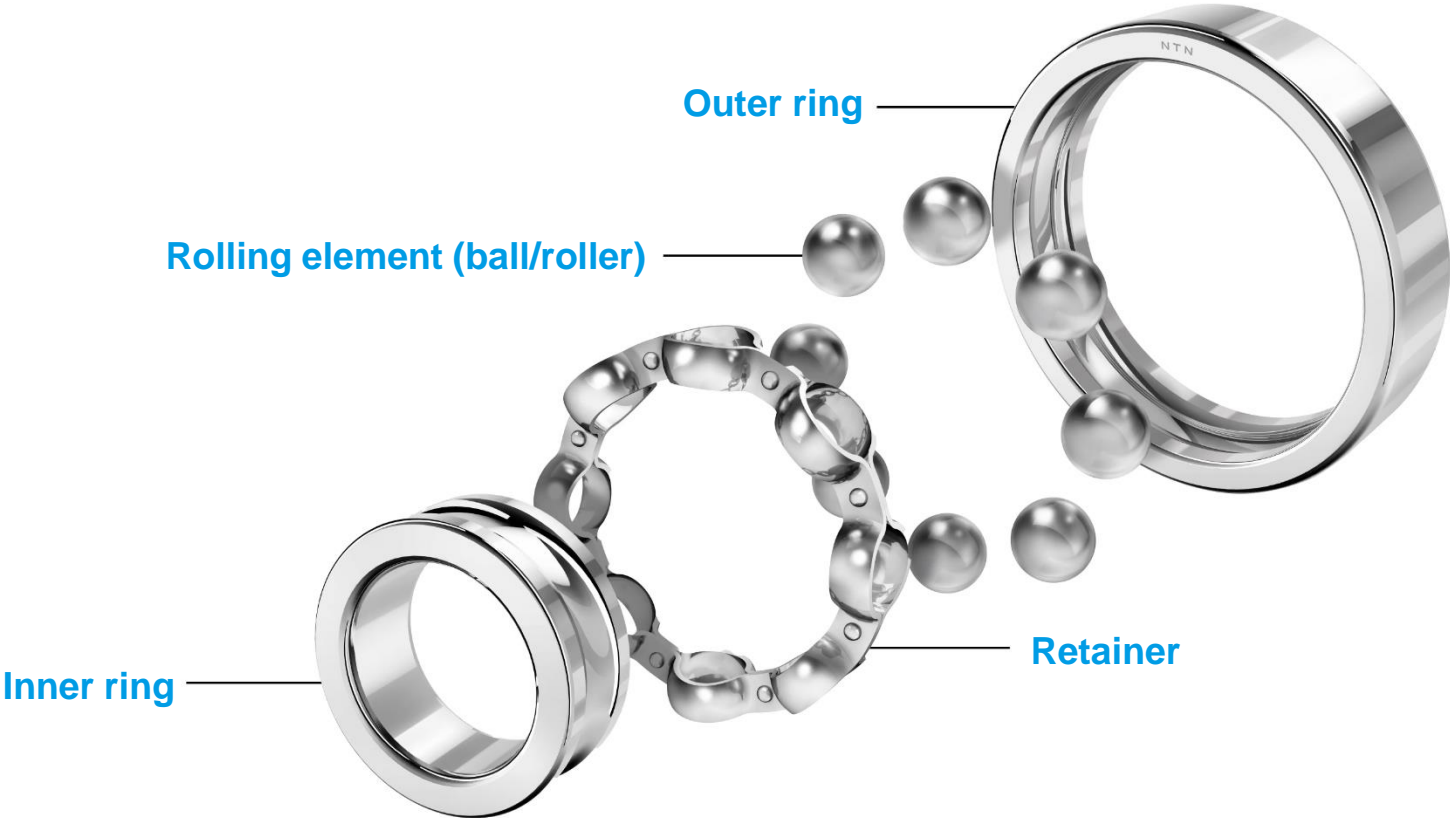
## AMERICAS

- 1 AMERICAN NTN BEARING MFG. CORP. Schiller Park Plant
- 2 AMERICAN NTN BEARING MFG. CORP. Elgin Plant
- 3 NTN-BOWER CORP. Macomb Plant
- 4 NTN-BOWER CORP. Hamilton Plant
- 5 NTN DRIVESHAFT, INC.
- 6 NTN ROLAMENTOS DO BRASIL LTDA.
- 7 NTN Driveshaft do Brasil
- 8 NTN BEARING CORP. OF AMERICA
- 9 NTN BEARING CORP. OF CANADA LTD.
- 10 NTK PRECISION AXLE CORP.
- 11 ASAHI FORGE OF AMERICA CORP.
- 12 Seohan-NTN Driveshaft USA CORP.
- 13 NTA PRECISION AXLE CORP.
- 14 NTN MANUFACTURING DE MEXICO, S.A. DE C.V.
- 15 NTN DRIVESHAFT ANDERSON, INC.
- 16 NTN USA CORP.

- Headquarter
- Sales Office
- R&D Center
- Production Plant
- Investment Corporation

\*As of the end of June 2023

### Bearing Structure

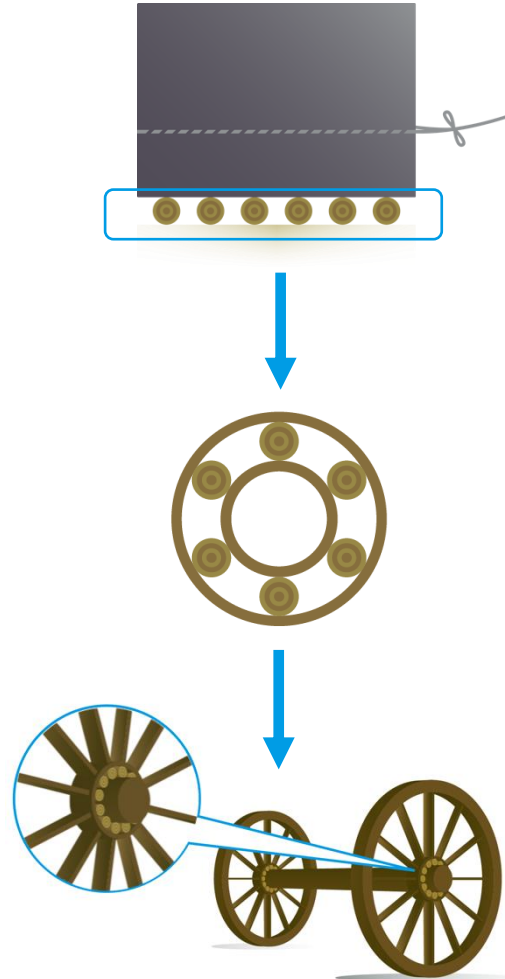




① Heavy Stones Were Carried by “Rollers.”



② From Rollers to Bearings



③ The Use of Bearings Became Widespread during the Industrial Revolution.



Ball bearing



Roller bearing

## Outer ring



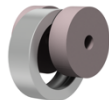
Forging



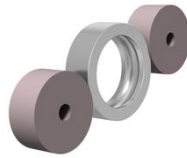
Turning



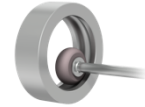
Heat treatment



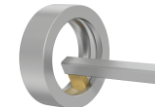
Width grinding



Outer diameter grinding



Groove grinding



Groove super finishing

## Inner ring



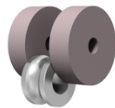
Forging



Turning



Heat treatment



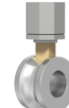
Width grinding



Groove grinding



Inner diameter grinding



Groove super finishing

## Steel ball



Stamping



Flushing



Heat treatment



Grinding



Lapping

## Assembly



Washing

Inspection

Rustproofing

Packaging/shipping

## Remote Technical Support Services



## NTN Portable Vibroscope



## Auto Parts



## Maintenance Tools



Self-centering hydraulic puller with arms



Induction heater



Technical service units





## Construction machinery

Applications for resource mining and civil engineering



## Gearboxes

Helping ensure high robot productivity



## Agricultural machinery

Helping ensure stable food production



## Wind turbines

Responding to growing demand for renewable energy



## Aerospace

Used for worldwide jet engine applications



## Rolling stock

Helping ensure the safety of the world's high-speed railways



## Machine tools

Helping ensure high machining precision



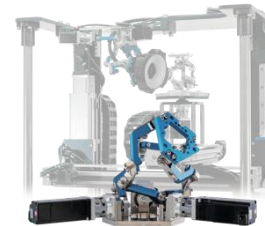
## Office equipment

Helping ensure precision operation of copiers/multifunctional printers



## Electronic devices

Used for hard disc drive and thin fan motor applications



## Robots

Realizing high-speed, high-performance visual inspection and space saving



Realizing continuous and stable parts picking



## Green energy products

Can be transported to the required location and generate/supply electricity



Contributing to disaster prevention and mitigation with the industry's highest level of quietness

## Various control systems



Precision screws

Actuators

## e-Axles, motors, reducers



Deep groove ball bearings

Tapered roller bearings

## Electric parking brakes

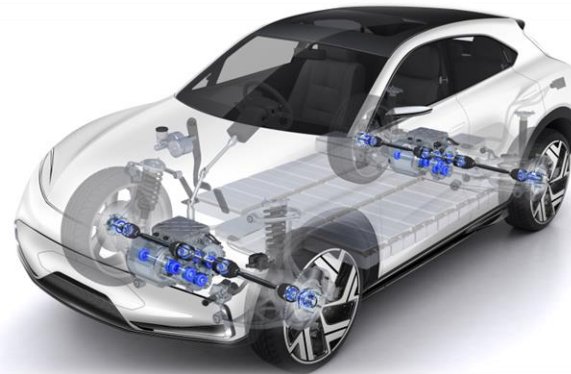


Thrust needle roller bearings

## Brakes



Ball Screw Drive Modules for Electric Hydraulic Brakes



## Seats



Clutches for seat lifters

## Steering components



Mechanical Clutch Units for Next-generation Steering Systems (MCU)

## Suspension systems



Hub bearings

Driveshafts



Ra-sHUB



sHUB

# Electric Vehicles/Electrification

**Drivetrain product line** developed for better energy transfer efficiency



**Low Friction Hub Bearing III**



**High Efficiency Fixed Type CVJ "CFJ"**



**Generation 4 Hub Joint**

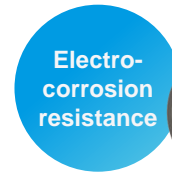
**Product line up for drive systems** designed to meet specific needs (e-Axles, etc.)



**High speed deep groove ball bearings for EVs and HEVs (Grease lubrication)**



**Creepless bearings**



**Bearing with Insulating Coating**



**Product line for electrical and control systems** providing both high response and high durability



**Integrated electric oil pumps**



**Rolling ball screws for Automobiles**



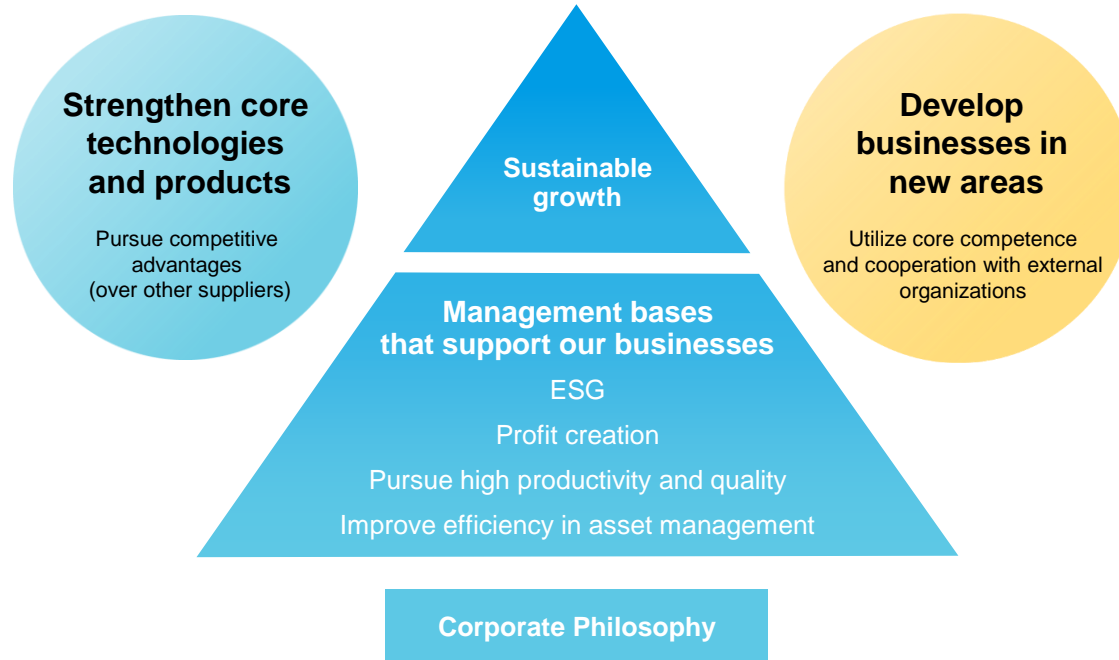
**Low-torque plastic bearings for electric water pumps**



**Mechanical Clutch Units for Next-generation Steering Systems (MCU)**

## Strategic Direction for R&D

Our Vision toward a New 100 Years  
10 year targets



We shall contribute to international society through creating new technologies and developing new products



Develop businesses in new areas  
Input of R&D resources into  
**6 target areas**

## Target Area

### Service/Solution



Talking Bearing™

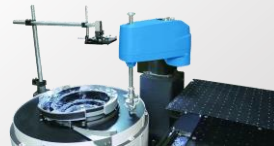


Bearing diagnostic application

### Robot-related Module



i-WRIST™ IWS series

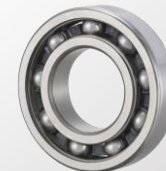


TRINITTE™  
cooperatively connected with a  
picking robot

### Next-generation Mobility Module



Bearing with  
Insulating Coating




Creepless bearings




### Target Area

**Renewable Energy-related**




DLC Coating Spherical Roller Bearing




Bus waiting area using "N³ N-CUBE"

**Hydrogen-related**




Hydrogen embrittlement-resistant radial bearing




Hydrogen embrittlement-resistant thrust bearing


**Life Science-related**



Microscopic coating applicator



Development of three-dimensional cell chip



Development of test kit



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