

For New Technology Network



# Annual Report 2004

Year ended March 31, 2004



Displacement sensor



Load

**NTN Corporation**

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## Corporate Philosophy

Our contribution to the global community lies in our creation of new technologies and development of new products.

The directors and employees of NTN Group companies strictly adhere to rules of conduct and strive to be consistently fair and responsible in their business activities. Through these actions, NTN seeks to fulfill the NTN Group's responsibility to its shareholders, customers, local communities, and other stakeholders.

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## Profile

- NTN, a precision equipment manufacturer, ranks fifth in the world in bearing sales. Since its establishment in 1918, the Company has supplied many industries with products and technologies that have been essential to their development.
- NTN has also achieved notable growth in fields other than bearings. It holds the No. 2 global market share of constant-velocity joints (CVJs)—a key component for automobile drive-trains. In 2003, the Company celebrated the 40<sup>th</sup> anniversary of CVJ business with cumulative production surpassing 300 million units.
- NTN is a global organization, with more than one third of its approximately 12 thousand employees working overseas. Since 1961, NTN has been building a quint-lateral sales and production network encompassing Japan, the Americas, Europe, Asia, and China. In the fiscal year ended March 2003, overseas sales generated more than 50% of consolidated net sales for the first time.
- NTN is aggressively developing business in China, which is achieving notable economic growth. The Company already has four production bases, and is delivering on orders for bearings and CVJs. NTN proceeded with strengthening management of its operations in China in April 2004 by establishing a China Headquarters.
- Results have been steadily encouraging from the Company's structural reform plan, NTN Evolution for Worldwide Plan 21 (NEW Plan 21), under which the Company focused its full efforts on building a business entity independent of business scale. NTN has, in general, reached the original cost competitiveness targets set under the plan.

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- Based on the successes of our NEW Plan21, our long-term vision has several facets. First, we aim to establish a strong market presence capitalizing on our global No. 1 business and products that are unmatched by our competitors. Secondly, we will work to establish presence in the five major global markets, including Japan, the Americas, Europe, Asia and China. Thirdly, we will strive to become a global company that is capable of bringing out the best in people and that contributes to society. We started a new three-year business plan in April 2004. The plan, called "Rapid Advance 21," involves several different policies that emphasize "Value Creation."

**Notice:** This annual report contains forecasts and projections regarding NTN's future plans, strategies, and business results. Please note that actual business results may vary from the projections made herein by the Company.

# Financial Highlights

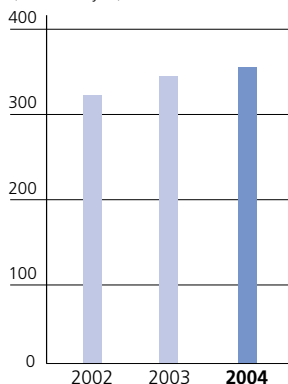
NTN Corporation and Consolidated Subsidiaries  
Years ended March 31

	Millions of yen except per share amounts			Thousands of U.S. dollars except per share amounts
	2004	2003	2002	2004
<b>FOR THE YEAR DATA</b>				
Net sales .....	<b>¥ 357,394</b>	¥ 342,745	¥ 324,339	<b>\$ 3,381,531</b>
Operating income .....	<b>24,709</b>	20,785	8,140	<b>233,787</b>
Income (loss) before income taxes and minority interests .....	<b>18,181</b>	6,198	(701)	<b>172,022</b>
Net income (loss) .....	<b>11,032</b>	2,657	(132)	<b>104,381</b>
<b>PER SHARE DATA</b>				
Shareholders' equity .....	<b>¥ 308.27</b>	¥ 291.82	¥ 299.27	<b>\$ 2.92</b>
Net income (loss)				
–Basic .....	<b>23.54</b>	5.70	(0.29)	<b>0.22</b>
–Diluted .....	<b>21.87</b>	5.51	–	<b>0.21</b>
Cash dividend .....	<b>5.50</b>	5.00	5.50	<b>0.05</b>
<b>AT YEAR-END DATA</b>				
Total assets .....	<b>¥ 460,341</b>	¥ 467,198	¥ 462,895	<b>\$ 4,355,578</b>
Shareholders' equity .....	<b>142,487</b>	134,928	138,532	<b>1,348,160</b>
Number of employees .....	<b>11,885</b>	11,810	11,989	<b>11,885</b>

Notes: U.S. dollar amount have been translated from yen, for convenience only, using the approximate exchange rate at March 31, 2004, which was U.S.\$1=¥105.69.

## Net sales

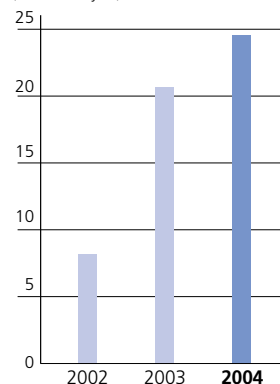
(Billions of yen)



Year ended March 31

## Operating income

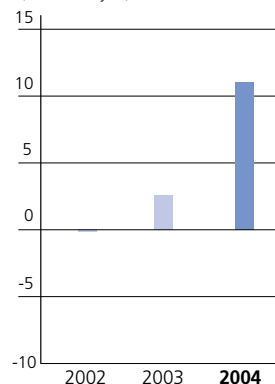
(Billions of yen)



Year ended March 31

## Net income (loss)

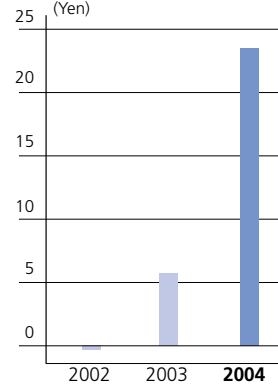
(Billions of yen)



Year ended March 31

## Net income (loss) per share–Basic

(Yen)



Year ended March 31

# To Our Shareholders



Yasunobu Suzuki  
*President*

## Overview of Fiscal 2003

Fiscal 2003, ended March 31, 2004, was the final year of NTN's structural reform plan, NEW Plan21. Working in unison company-wide, our structural reform activities yielded strong results and NTN posted growth in consolidated sales and profitability—with record highs for net sales and operating income.

Our sales in Japan benefited from increased sales to the general machinery industry and distributors as well as firm sales to the automotive industry. Among overseas sales, North American sales were reduced by the depreciation of the U.S. dollar against the yen, but sales to the automotive industry in Europe were strong and sales in general rose to China and to the ASEAN countries. Consolidated net sales, therefore, advanced ¥14.6 billion, or 4.3%, to ¥357.4 billion.

Consolidated operating income rose ¥3.9 billion, or 18.9%, to ¥24.7 billion. The improvement in profitability was supported by our pursuit of the goals of NEW Plan21 and higher levels of sales and production. After restructuring costs totaling ¥2.6 billion, including an extraordinary loss from reorganizing a U.S. subsidiary, consolidated net income still soared ¥8.4 billion, or 315.1%, to ¥11.0 billion from the previous year.

In view of its policy of maintaining a stable dividend and in consideration of its performance and dividend payout ratio, NTN increased its cash dividends. The Company added ¥0.50 per share to the year-end cash dividend, raising it to ¥3.00 per share. Including the interim cash dividend of ¥2.50 per share, total cash dividends for fiscal 2003 amounted to ¥5.50 per share.

## Results of NEW Plan21 Activities

During the two years since we started the NEW Plan 21 in April 2002, we have been striving to build a business entity that would not be affected by fluctuations in the scale of business. To this end, we undertook a fundamental strengthening of profit structure. We reduced costs by reorganizing and consolidating suppliers in Japan. We lowered proportion of personnel expenses to sales by introducing an early retirement program and other structural reforms. We cut our logistic costs by decreasing the number of distribution centers in Japan through network integration. By making substantial changes in areas that we had never addressed before, we substantially fortified profit structure. Our efforts to reduce outside procurement, personnel, logistic, and other expenses produced an aggregate cost benefit of ¥18.7 billion semiannually, greatly contributing to operating income growth.

At the same time, we clarified plans to keep us concentrated and selective in our investments for our next leap forward. Guided by these plans, we invested our business resources in strategic products, started up operations in China, and began a fundamental reorganization of our production on a global scale.

To strengthen our business development capabilities, we established a Global Account Manager (GAM) system to oversee sales efforts by customer group in the automotive industries and a Global Application Manager (GAM) system to oversee sales efforts by industrial group industries. These systems enhance on a global basis our ability to respond quickly to customers' needs and our internal development. Over the next three-year period, orders won through the GAM system will help increase

strategic product sales by more than ¥70.0 billion. What supported this increase in orders was the formation of a strategic product development team that unifies sales and technology efforts. The team resulted from the introduction of a product headquarters system. By setting up an around-the-clock product development organization, we have been able to speed up our strategic product development, resulting in more orders. We also took steps to strengthen our production equipment development to address the need for next-generation facilities that achieve greater efficiency in capital investment, space used, and compatibility with small-lot, multi-product production. We successfully developed a production line that costs 50% less, consumes one-third less energy, halves line length, and drastically reduces re-tooling time. We are starting to introduce the system to our volume production lines.

During the fiscal year under review, we commenced concrete measures to reorganize production globally. Our goal is to establish an optimal production network by individually allocating products and production bases to the most cost competitive region. Revising our production in each region around the world, including Japan, we will concentrate or shift product categories as necessary and also build new production bases and integrate or close existing bases. In fiscal 2003, we made the decision to reorganize of our Takarazuka Works in Japan, and started to move its products to other facilities. We also started construction of a model plant at NTN Mie Corporation that will represent state-of-the-art manufacturing in Japan.

In North America, we closed NTN-BCA Corp.'s Greensburg Plant, integrating the facilities into the Lititz Plant to improve efficiency. To increase the

production capacity, quality and cost competitiveness of our pre-processing work, such as forging, turning and heat treatment processes, we also established two joint ventures in the region.

Our full-scale entrance in the China market began at the same time as NEW Plan21. China's importance is shifting from that of a supply base for the world to that of the world's largest market. NTN is aggressively developing business strategies in response to the sharp increase in demand. Currently, the Company has four production bases operating in China, producing fluid dynamic bearing units, CVJs, axle units and needle roller bearings. And production volumes are rising. In addition, we have two projects under study with Changzhou Guangyang Bearing Co., Ltd., and Luoyang Bearings Corporation (Group). Including these projects, we expect our sales in China to quadruple over the next three years to approximately ¥25.0 billion.

## Positioning of Medium-Term Business Plan "Rapid Advance 21" and Fundamental Policy

On a consolidated basis, the overseas sales of the NTN Group generate more than 50% of net sales. We will increase our market presence to become a truly global company that is No. 1 in its industry with products that no other company can match. In recent years there has been significant realignment in the bearing industries of Europe and United States through mergers and acquisitions. This process continues, creating increasingly difficult business conditions. In response, the NTN Group intends to leverage its original products, technology, and business model to expand its Group power globally, increasing its presence in these markets.



Under NEW Plan21, we set to work transforming our business entity and strengthening our profit structure. During a two-year period, we implemented a variety of basic strategies to that end, and underwent speedy structural reforms. During the next three years, we will use the corporate structure established by NEW Plan21 as a base to further expand sales and profits. Aiming at the goals of our long-term vision in 2010, we have positioned the next three years as the period to make a "rapid advance" that will boost our corporate value.

Guided by our medium-term business plan "Rapid Advance 21", we will achieve that growth in corporate value. Our targets for the fiscal year ending March 2007 are to expand consolidated net sales to ¥450 billion and operating income to ¥42 billion and to increase operating margin to 9.3%. These targets represent a sales increase of almost ¥100 billion over three years. It includes growth in orders for our strategic products—CVJs, axle units and needle roller bearings—to the automotive industry. And it includes sales growth for precision bearings and large-scale bearings used in industrial machinery and fluid dynamic bearing units used in hard disk drives (HDDs). Sales to the automotive industry currently account for more than 60% of our sales. The technology used in these products is underpinned by technology developed for industrial machinery bearings to satisfy our demanding customers in that sector. In that sense, our record in dealing with the needs of a wide variety of customers in machine tools, construction machinery, rolling stock, steel manufacturing, plant repair, and maintenance is the foundation for our success. Over the next three years, we will be using our industry-leading technology to expand sales in the industrial machinery field as well.

The driving force behind increased operating margins will be higher productivity. Under NEW Plan21 we focused on our suppliers in reducing costs by lowering outside procurement prices or cutting logistics costs. Over the next three years under "Rapid Advance 21," our Group's focus will be on increasing productivity through improvements in manufacturing methods within the NTN Group. "Rapid Advance 21" seeks to build corporate value by having all our divisions—sales, development, design, procurement, manufacturing, logistics, and others—work together to change their ways of doing business with a focus on value creation.

### **Value Creation and Increasing our \*"MONOZUKURI" Competitiveness**

The purpose behind value creation at NTN is to achieve sustained growth. To do this, we will invest our business resources in strategic products globally and increase the competitiveness of our products, services, sales proposals, and quality. We are aiming to expand corporate value by having NTN Group employees in all divisions and departments create new value. To realize this goal, I have set specific themes for each of our business areas. In sales we are aiming for a "Innovation in Marketing & Sales." In development, design and procurement divisions, we are trying to make "design determine cost and quality." The goal in production is the "Ultimate Production Methods," while in logistics we are again seeking a "Logistics Innovation." In the research and technology (R&D) divisions, I have asked employees to be "sensitive to market changes," while the personnel department has been given the task of "personnel development." Among these themes, to increase our global presence, I have given special priority

to raising the level of competitiveness of our "MONOZUKURI." The starting point of "MONOZUKURI" is design. It follows, therefore, that we must perfect designs that produce profits, are easily to manufacture and are mistake-proof. On the floor of the manufacturing plant, employees must each return to the basics and revise their work procedures. The technology of our products, their prices, delivery times, and branding are all part of the competitiveness that our customers see. However, this competitiveness is supported by the productivity, quality of work, and production technology capabilities demonstrated on the plant floor. If we simply compare labor costs, Japan's costs are 30 times higher than those of China. However, by strengthening our original know-how and combining high skill levels and high productivity to create high-value-added production, we will make NTN a highly competitive, world leader in "MONOZUKURI." In April 2004, we began construction of facilities at NTN Mie Corporation. Here we will build a model plant for our ultra manufacturing system.

In our R&D activities, which are responsible for value creation to ensure the Company's future, we are proceeding with the development of new products for our core customers. For the automotive industry, we are developing products that are low cost and high performance. For the general machinery industry, we are developing products that are high speed, high precision, and environmentally friendly. At the same time, we are implementing intellectual asset strategies, strengthening our patent protection through a comprehensive web of patents for our products and technologies. We are also conducting basic research and development of essential technologies as well as R&D in the fields of next-generation

\* "MONOZUKURI" is a comprehensive concept of creating value at NTN as a manufacturing company, continuously adding value throughout the entire business process, including marketing, R&D, engineering, manufacturing and distribution. Monozukuri ensures an ever higher level of customer satisfaction promised by NTN's competitive advantages in quality, cost, delivery, development and service.

vehicles and advanced technologies. In the current fiscal year, we will raise our R&D expenditures from the approximately 3.5% invested in past years to about 4% of FY04 sales or ¥14.3 billion. This higher level of investment will be concentrated on strengthening our R&D organization and on speeding up the development process.

### Toward Sustained Growth

During the past two years, we have actively implemented the measures of NEW Plan21, strengthening our business entity and improving performance. Under the 3-year medium-term business plan “Rapid Advance 21,” we will take a giant stride forward in expanding corporate value by achieving growth in net sales and operating income as well as improving our capital efficiency by increasing NTN’s return on assets (ROA) and return on equity (ROE).

In April 2004, we underwent an organizational revision. The Management Planning Office was renamed the Management Planning Dept. and took over management of our investor relations (IR) operations, from Public Relations Dept. Through this, we aim to upgrade and accelerate disclosure to develop active IR activities under the guidance of top management. Amid the full-scale start to our operations in China, we reorganized the Office of General Manager—China Region into a China Headquarters. Strengthening our management functions, we will strive for balanced growth in our China operations.

Among our measures to reinforce corporate governance, we introduced an executive officer system. Under the executive officer system, the roles and responsibilities of executive officers in

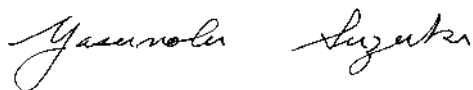
running operations will be further clarified to speed operation and improve efficiency.

To achieve sustained growth in the long term, we must fulfill our corporate responsibility to society—including our responsibility to the environment. At NTN we give top priority to preserving the environment. We are working to reduce the environmental impact of our business and to create a recycling society. We have also strengthened our compliance organization to ensure that we fulfill our responsibilities to our various stakeholders, such as shareholders, customers, and local communities.

As the Company’s top executive, I see my responsibility as continuing to move the Company toward its long-term vision and to maximize corporate value while continuing to return profits to shareholders. To that end, I will strengthen personnel development throughout the NTN Group to ensure that employees share a sense of urgency and are highly motivated. The employees of the NTN Group will redouble their efforts to increase productivity individually in their daily jobs and will systematically share their knowledge with others. With the spirit of “Try,” “Never Surrender” and “Complete the Task” that resides so deeply in our corporate DNA, we will overcome even the most difficult situations.

In carrying out these measures, we look forward to the continued support of our shareholders.

June 2004



Yasunobu Suzuki  
President

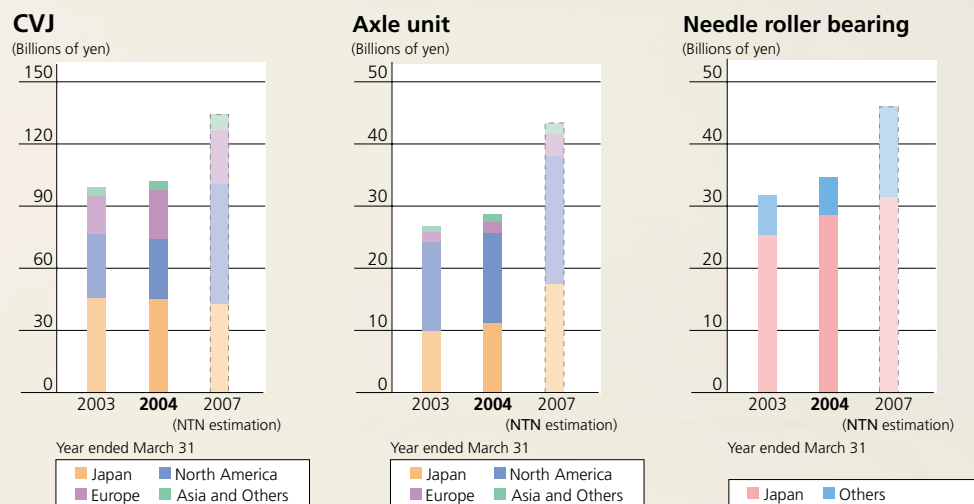
# Results of New Plan 21 Activities

Fiscal year 2003 was the final year of NTN's structural reform plan, NEW Plan21. Over a two-year period, we took steps to establish a business entity that would not be affected by fluctuations in the economy. Concrete results have begun to emerge, and NTN's corporate structure has been transformed.

## Strengthening Business Development Capabilities

Concurrent with the start of NEW Plan 21, we introduced a headquarters system and a Global Account Manager (GAM) system, working to expand sales of strategic products on a global basis. Thanks to the integration of our sales and engineering division under the headquarters system and the improved organizational capabilities realized under the GAM system, we were able to achieve a dramatic improvement in customer response time, which led to winning major orders. In particular, we concentrated our business resources on CVJs, axle units, and needle roller bearings, which are the major portion of our strategic products. Supported by our competitive new product lines, we are building a base from which to expand global market share.

### Trends in net sales



## Strengthening Profitability

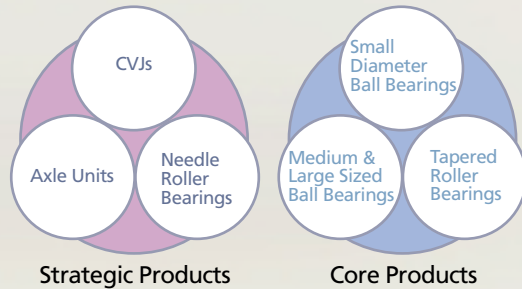
Strengthening profit structure was an important strategy in our drive to build a business entity that would not be influenced by fluctuations in the economy. As a result of our efforts over a two-year period to reduce outside procurement, personnel, and logistics expenses, we have substantially reached our original targets, and lower variable costs and fixed costs contributed to greater profitability. We reorganized and consolidated suppliers in Japan. Overseas, we expanded local procurement and increased in-house production. To reduce personnel costs, we implemented an early retirement program, restructuring our personnel cost structure. With logistics services, we revised pricing and implemented basic measures such as decreasing the number of distribution centers in Japan through network integration.

	Reduction in Outside Procurement Costs	Reduction in Personnel Costs	Reduction in Logistic Costs
<b>FY2002</b>	<ul style="list-style-type: none"> <li>Revised purchase costs.</li> <li>Localized procurement overseas and increased in-house production.</li> </ul>	<ul style="list-style-type: none"> <li>Initiated early retirement program.</li> <li>Returned substitutional portion of employees' Welfare Pension Fund Plan.</li> <li>Made salary cuts, bonus restrictions.</li> <li>Seconded and transferred employees to other companies, revised allowances.</li> </ul>	<ul style="list-style-type: none"> <li>Lowered transport prices and revised contracts and distribution routes.</li> <li>Revised business commission and packaging material costs.</li> </ul>
<b>FY2003</b>	<ul style="list-style-type: none"> <li>Reorganized and consolidated suppliers.</li> <li>Utilized component production in China.</li> <li>Localized procurement overseas and increased in-house production.</li> <li>Promoted VA and VE proposals.</li> </ul>	<ul style="list-style-type: none"> <li>Reformed personnel cost structure. (Targeted reduction in personnel expenses as a percentage of net sales.)</li> <li>Reduced number of employees through attrition.</li> <li>Thoroughly applied performance-based compensation and reward system.</li> <li>Restructured retirement benefits system.</li> </ul>	<ul style="list-style-type: none"> <li>Promoted greater outsourcing.</li> <li>Reduced the number of distribution centers in Japan through network integration.</li> </ul>



## Restructuring of Production Underway

NTN initiated global restructuring of its production network during the fiscal year. The plan is to build an optimal global production network based on the cost competitiveness in manufacturing process and product competitiveness in characteristics. Specifically, we have divided our product lines into strategic and core products. We are optimizing the global production network in both these categories by shifting and concentrating resources, closing and integrating bases, and building new bases as necessary.



Among strategic products, we increased the production capacity of CVJs by expanding production in North America and Europe and getting full-scale production underway in China. Aiming to manufacture axle units in the global centers of demand, we are setting up local production in various regions overseas. For needle roller bearings, we have restructured our production bases in Japan and are entering overseas markets. We are lowering costs by starting up full-blown production in North America and China.

Among our core products, we are outsourcing production of a portion of our general-purpose small diameter ball bearings to associated companies in China. Besides outsourcing production, we are concentrating manufacturing of products at our Iwata Works for Japan operations, in Canada for North American operations, and in Shanghai for China operations. Furthermore, along with restructuring the production network in Japan including Takarazuka Works, we are shifting tapered roller bearing production to North America.

## Enhancing Product and Equipment Development Capabilities

### ■ Product Development

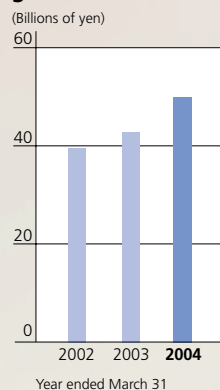
Over the past two years, our product development capabilities provided support for the GAM growth in orders achieved through our business development efforts. Differentiating our products by development speed, cost, and technology, our product development provided strong backup for sales of our strategic products. Leveraging leading edge analytical and other technologies and linking our global bases together, we created an around-the-clock development organization. As a result, the sales of new products increased and prototype lead-times decreased. Moreover, for the highly differentiated technology of our strategic products in particular—CVJs, axle units, needle roller bearings and fluid dynamic bearing units—we created an intellectual asset strategy to maintain our advantage over the competition.

### ■ Equipment Development

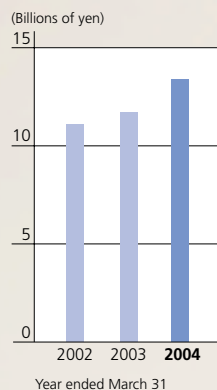
Strengthening equipment development capabilities also contributed largely to NEW Plan 21. In the 21<sup>st</sup> century, we will be required to pursue flexible manufacturing facilities that can handle multiple-product, small-lot manufacturing. We will achieve this goal by eliminating inflexibility and making efficient use of capital.

In the previous year, we completed a “model line” for the production of ball bearings that cuts capital investment and space used by half as well as reducing energy consumption and significantly shortening re-tooling time. We will be introducing the system in our ball bearing plants globally. We are currently in the process of expanding volume production of ball bearings horizontally across our production network and the same process is underway for a variety of other products. In the future, we will aim to establish production facilities in Japan that will be the base for our “MONOZUKURI.”

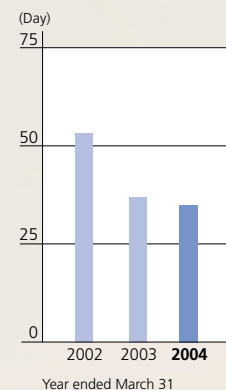
### New product sales growth



### R&D expenditures



### Prototype-making lead time

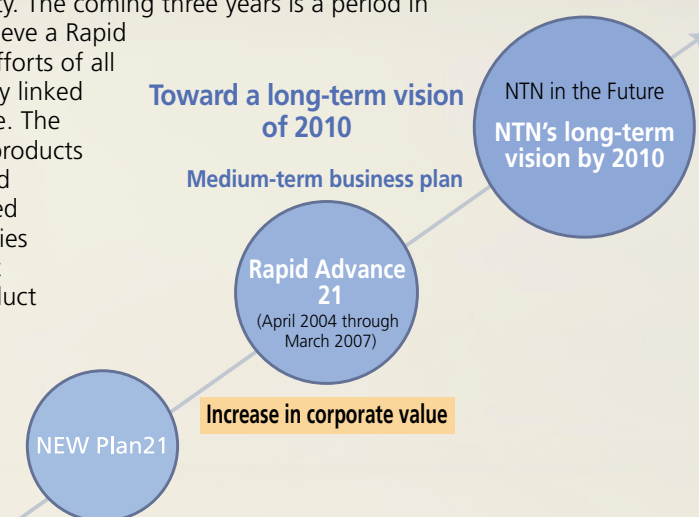


# Medium-Term Business Plan "Rapid Advance 21"

Based on the results of the NEW Plan 21, the medium-term business plan Rapid Advance 21 will increase corporate value and take a leap forward in business development over a three-year period.

## Rapid Advance 21 within NTN's Long-Term Vision

NTN's long-term vision is to improve market presence on a global basis by 2010. To achieve this long-term vision, it is essential to increase corporate value by boosting NTN's value to customer, shareholder, employee, and society. The coming three years is a period in which the company will achieve a Rapid Advance 21. To do so, the efforts of all employees have been directly linked to increasing corporate value. The increased sales of strategic products and the Company's improved profitability that was achieved through NEW Plan 21 activities will be utilized to implement individual strategies for product lines.



## Management Goals

Detailed management goals are shown below. Consolidated performance targets for the fiscal year 2006, ending March:31 2007 are to increase net sales by ¥100 billion, to ¥450 billion and expand operating income to ¥42 billion, lifting operating margin to the 9% level and achieving a substantial improvement in profitability. Capital investment over the three-year period will total ¥138 billion due to investment in increased production of CVJs, axle units, and other strategic products based on expected sales growth for these products. However, the Company will reduce overall capital investment by increasing asset efficiency through decreases in inventory and pursuit of investment efficiency.

Consolidated (Billions of yen)	FY2003 (Actual result)	FY2006 (Estimation)	Consolidated (Billions of yen)	FY2003 (Actual result)	FY2006 (Estimation)
Net sales	357.4	450	Capital expenditures ※	38.1	138
Operating income	24.7	42	Depreciation	24	31.5
Operating margin	6.9%	9.3%	Inventories	83.6	80
Recurring income	20.8	37	Inventory turnover (Times)	4.3	5.6
Net income	11	22	Interest-bearing debt	164.1	169
ROE	8.0%	12.0%	*Capital expenditure estimate for FY2006, is the total estimated amount for three years from FY2004. * Foreign exchange rates: FY2003: US\$1.-=¥113.- EURO1.-=¥133.- FY2006: US\$1.-=¥105.- EURO1.-=¥130.-		
ROA	2.4%	4.2%			

## Business Segment Strategies

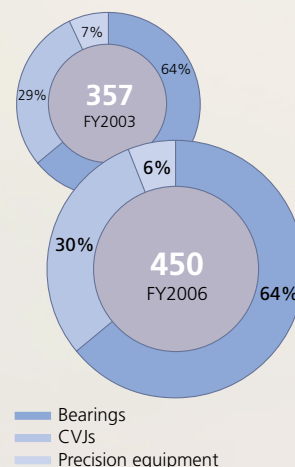
In the bearings segment, based on the results of NEW Plan 21, we will further increase concentration and selectivity, focusing our business resources on product groups with strong growth potential. For the next three years, in addition to sales of axle units and needle roller bearings to the automotive industry, sales of such products as industrial machinery bearings and fluid dynamic bearing units to other industries are also anticipated to grow substantially. We will accelerate the reorganization of production of core products, such as ball bearings and tapered roller bearings, making use of both in-house and outsourced production to attain a high-value-added manufacturing structure that will supply a price-competitive product mix.

Our efforts in the CVJ segment will focus on making us the No. 1 manufacturer globally. Continuing to lead the market in technology, the main source of our competitiveness, we will seek to accurately grasp the direction of trends in the global automotive industry. In response to market demand, we will supply modular and other new products.

In the precision equipment segment, leveraging NTN's technological advantages, we will expand business in frontier technology businesses, such as LCDs and PDPs.

### Sales by business segment

(Billions of yen)



## Regional Strategies

Our regional strategies are closely intertwined with our segment strategies. In Japan, the completion of our reorganization of production is one of our key pursuits. However, we also plan to establish a production system known as "MONOZUKURI" in Japan over the next three years. We will also be aiming to expand our sales of bearings for industrial machinery and other areas.

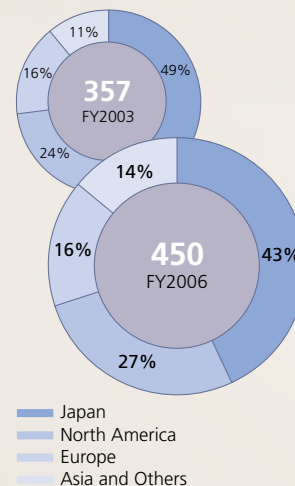
Because there is the potential to broaden our scope of sales in North America, we will pursue reorganization of production, greater local procurement and increased in-house production, seeking to establish a high-profit structure.

In Europe, most of our CVJ sales are to Renault. Over the next three-year, therefore, we will target sales expansion to other automobile manufacturers in the region. In addition, based on the premise of a revision of our production in Germany, we are considering establishing production bases in Central and Eastern Europe.

Our main concerns in Asia are to increase fluid dynamic bearing production at NTN Manufacturing (Thailand) Co., Ltd. and strengthen our presence in the potentially high-demand markets of China and India.

### Sales by region

(Billions of yen)

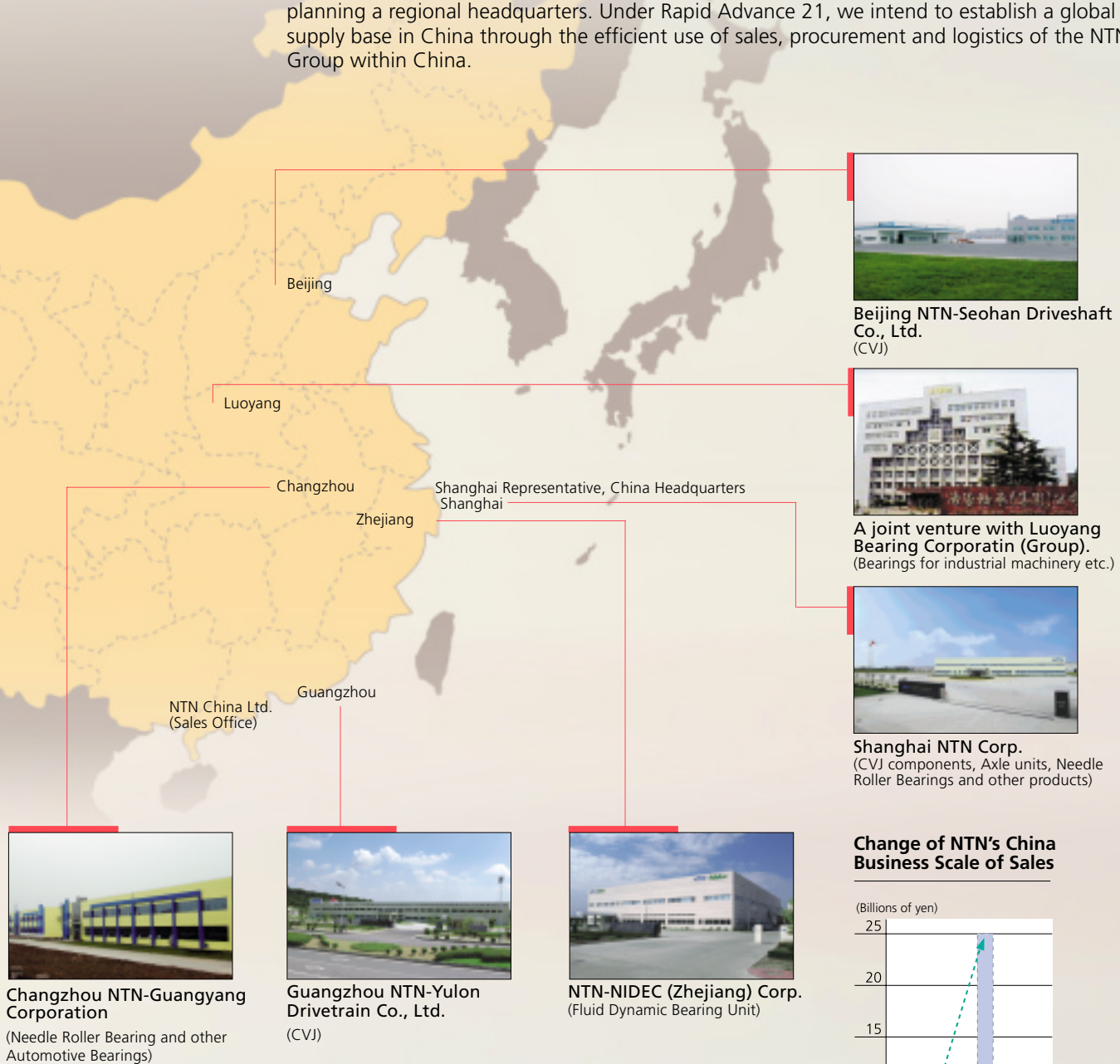




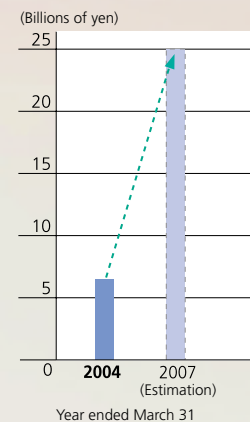
## Expanding Business in China

NTN began its full-scale entrance to the Chinese market at the same time as our NEW Plan 21 got under way. During the past two years, the Company has established a business expansion structure in China.

In addition to our own production bases that are successfully commencing operations, we have other projects, a newly established joint venture as Changzhou NTN-Guangyang Corporation and other joint venture under review with Luoyang Bearing Corporation (Group). These projects will position us in the local Chinese bearing markets for automobiles and industrial machinery. Because we will have to add more comprehensive capabilities as we expand in China, such as a regional sales and technical support network, we are already planning a regional headquarters. Under Rapid Advance 21, we intend to establish a global supply base in China through the efficient use of sales, procurement and logistics of the NTN Group within China.



### Change of NTN's China Business Scale of Sales



## Value Creation

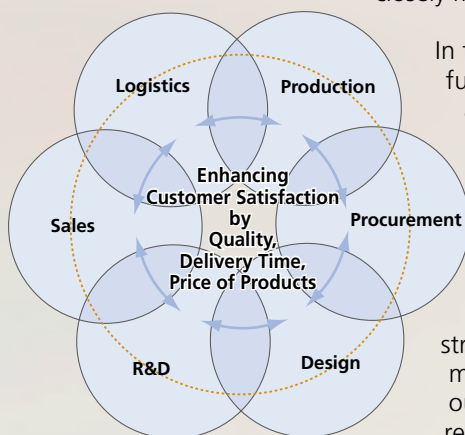
The key point of our Rapid Advance 21 is the concept of increasing corporate value. To achieve that goal we have to increase value creation for customers, through enhancing customer satisfaction by quality, delivery time and price of products.

We will transform the thinking of each of the business divisions in the NTN Group as well as their way of working.

- In our sales division, as Innovation in Marketing & Sales, we will increase our marketing activities and information gathering, by innovating an information management organization to support these efforts. Sales personnel will increase the power of their sales proposals through actively interacting with our technology and production divisions. These proposals deliver added product value to customers and improved product development lead-time.
- In our development, design, and procurement divisions, we will design products that are easy to manufacture from the perspective of "MONOZUKURI", increasing our capability to meet the requirements of customers—rapidly and at low cost. In procurement, while stressing design, we will employ two-way communications with suppliers to provide technological guidance in controlling cost. Moreover, we will also strengthen cost competitiveness by increasing local procurement and in-house production as we expand our overseas production over the next three years.
- In our production division, our goal is to pursue Ultimate Production Methods. Especially in terms of personnel, we plan to decrease our personnel expenses by tenaciously pursuing operating efficiency. With production equipment, we will improve capacity utilization rate by making the equipment compatible with multiple-product, small-lot processing while also designing it to need fewer workers. To build these Ultimate Production Methods, we established NTN Mie Corporation (NTN Mie) on April 1, 2004. NTN Mie will combine our proprietary technologies to become the world's leading bearing plant in terms of lead-time, cost, and quality. Utilizing production methods that adopt up-to-date concepts and a flexible job organization that can cope with a variety of employment methods and scales, NTN Mie will establish "MONOZUKURI" that makes highly productive use of people and machines.
- Our logistics division has already achieved cost reductions, mainly in Japan, under NEW Plan 21. Over the next three-years, we will construct an optimum distribution system within Japan, relocate the Takarazuka Export Delivery Center, and reorganize our overseas distribution network in Europe by closing and combining centers.
- The R&D division's three-year target is to apply its proprietary technologies to create top ranking or unique products. As part of this process, it will also speed up development and closely monitor market needs.



NTN Mie Corporation



In the automotive area, we will proceed with the development of an advanced function, low-cost CVJ and axle unit for drive systems. In the field of engines and auxiliary machine-related technology, we will work on the development of needle roller bearings and clutch units. The focus in the industrial machinery field will be faster, more accurate, environmentally-friendly rolling stock, machine tools, and wind power-related products. Among other areas, we will also concentrate on progress in technologies for next-generation vehicles and frontier technologies.

- Last but not least, relating to personnel, giving special emphasis to Personnel Assets Utilization, we will enhance the activation of personnel assets through strengthening personnel development worldwide, thoroughly emphasize performance-based evaluation and passing down of technical skills. We will also diversify our employment through the use of temporary workers and retired technicians and reviewing current employment formats.



# Bearings

Bearings are NTN's principal business, accounting for 64% of consolidated sales. Currently, NTN has a 26%\* share of Japan's bearing market and 8%\* of the global market.

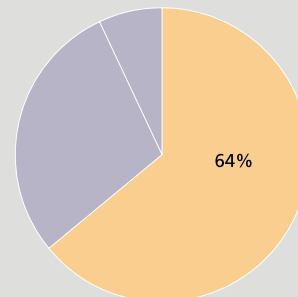
NTN began international expansion of its sales offices in the 1960s and followed with the development of a global manufacturing network a decade later. Today, NTN is using its expertise as a leading bearing manufacturer to create new value-added products and services to meet the needs of customers in a wide range of industries. NTN serves the core automotive industry as well as the machinery, semiconductor, medical, biotechnology, and IT industries.

In particular, demand is growing sharply for NTN's fluid dynamic bearing units, which are used in hard disk drives (HDDs).

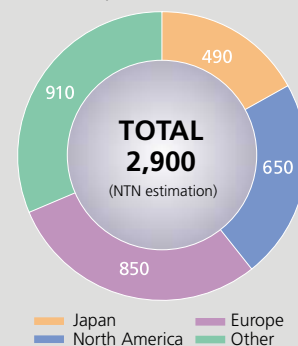
Manufactured from a sintered alloy developed by NTN's proprietary technology, these fluid dynamic bearing units are regarded highly by the market.

\*NTN Estimation

**Bearing sales ratio**  
(% of total sales)

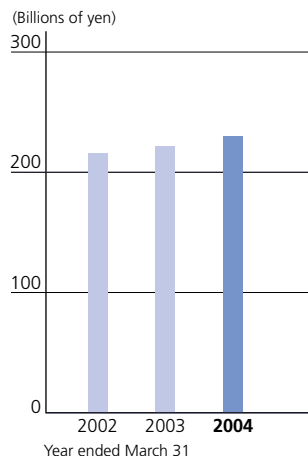


**Global bearing market**  
(Billions of yen)



# Review of Operations

## Bearing sales



## Major Products

- Ball bearings
- Roller bearings
  - Needle roller bearings
  - Tapered roller bearings
  - Cylindrical roller bearings
  - Spherical roller bearings
- Axle units
  - Hub bearings
- Bearing units
- Oil-impregnated sintered bearings
- Engineering plastics sliding bearings
- Other bearings

## Overview of Performance

During fiscal year 2003, bearing sales climbed ¥7.9 billion, or 3.6%, to ¥228.6 billion. Although the depreciation of the U.S. dollar had a negative impact on sales, increased sales to general machinery industry and to distributors in Japan coupled with sales growth in Europe, China and the ASEAN countries supported higher overall sales.

In Japan, sales of bearings for general machinery, such as construction machinery and machine tools, and to distributors increased, while automotive business also remained solid. As a result, sales advanced ¥4.4 billion, or 4.2%, to ¥109.1 billion. NTN is reorganizing its production bases, starting with ball bearings and tapered roller bearings. In addition, the Company is taking a whole new approach to “MONOZUKURI” in the pursuit of increased production efficiency. As a model factory for these efforts, we will begin operations in September at NTN Mie Corporation, a bearing company that will lead the world in quality and will be fully competitive with China in terms of costs and lead-times.

In North America, sales to the automotive industry recovered in the second half of the year, while sales for general machinery industry and distributors remained sluggish. The weak dollar had a substantial impact. Consequently, sales of bearings in North America declined ¥4.6 billion, or 7.5%, to ¥56.3 billion. NTN plans to increase production efficiency by closing NTN-BCA Corp.’s Greensburg Plant, integrating the operations into the Lititz Plant. On the other hand, the Company will expand production capacity for axle units, for which demand is increasing. In addition, NTN is increasing its sales to distributors including its business with specialty distributors.

In Europe, the strength of the Euro and sales of bearing to the automotive industry remained robust. As a result, sales rose ¥3.8 billion, or 13.9%, to ¥31.2 billion. As part of reorganizing global production, the Company is considering to establish production bases in Central and Eastern Europe.

Sales of bearings in Asia and other areas were favorable for electrical machinery, information-related equipment, and construction machinery. In addition, the start of mass-production of fluid dynamic bearing unit by NTN-Nidec (Zhejiang) Corporation contributed to sales growth. Overall, Asian sales advanced ¥4.3 billion, or 15.4%, to ¥32.0 billion. NTN Manufacturing (Thailand) Co., Ltd., a wholly owned NTN subsidiary that makes hydrodynamic bearings (the core part of fluid dynamic bearing units) has purchased additional land for construction of a new plant to expand production of hydrodynamic bearings in response to increased demand for fluid dynamic bearings.

NTN is also considering new joint venture businesses in China—the Company reached a basic agreement to begin specific studies with the goal of establishing joint ventures with two Chinese companies, Changzhou Guangyang Bearing Co., Ltd., and Luoyang Bearing Corporation (Group) during the fiscal year. In April, NTN set up China Headquarters to manage our business in China in a responsive and practical manner.

# Strategic Product

# Axle units

## Key Data

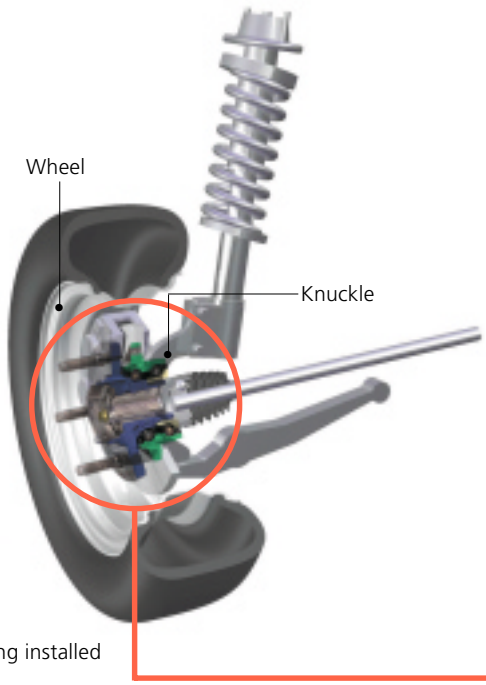
Sales contribution (consolidated basis)	Consolidated sales: ¥28.6 billion (rose 7.1% from the previous fiscal year) Bearing sales contribution: 13% Net sales contribution: 8% Proportion of overseas sales: 61%
Breakdown by industry	Automotive industry
Market shares (NTN estimation)	Japan: 26% Global: 11%
Strengths	<ul style="list-style-type: none"> <li>NTN is a manufacturer of both axles and CVJs. Leveraging this technological advantage, the Company had developed fourth generation hub joints and is leading the industry in modularization.</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>Expand sales through marketing activities that integrate production, sales, and engineering divisions based on NTN's Global Account Manager (GAM) system.</li> </ul>

## Hub Bearings and NTN

Attached to the wheels of automobiles, a hub bearing enables the wheels to turn while also bearing the weight of the vehicle body. Although extremely basic, the hub bearing plays an essential role in vehicle movement. Ordinarily, the greater the weight, the stronger the resistance to smooth rotation of the wheels. Therefore, a hub bearing's ability to simultaneously support a heavy load while achieving smooth wheel rotation has a strong influence on the running performance of the vehicle.

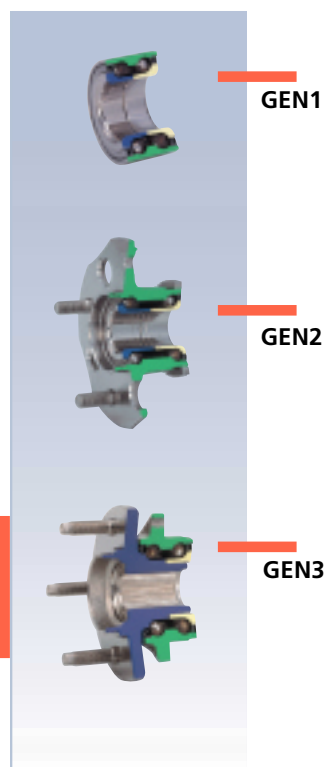
Hub bearings have evolved from first generation through to third generation hubs in pursuit of simplified assembly. Modularization is increasing with each generation, achieving lighter and more compact designs through reductions in the number of components.

## Global Production Bases for Axle Units



In addition to having a complete lineup of all types of hub bearings, from first generation through to third generation, NTN has set up a global supply network by establishing production bases in Japan, the United States, Europe, Asia and China. Through this network, NTN supplies hub bearings to the world's major automotive companies.

NTN was quick to begin the modularization process, and began mass-producing Japan's first third generation hub bearings in the early 1980s. The Company already has developed a fourth generation hubjoint by combining third generation hub bearings with CVJs in one unit, a distinctly NTN product made possible by the Company's command over hub bearing and CVJ manufacturing technologies.

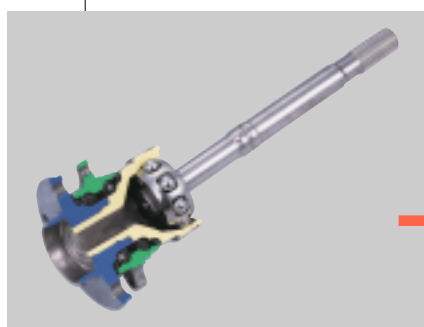


## New Product

### Super-Lightweight Gen3 Hub bearing for Minicars—World's Lightest

The use of simple-to-attach third generation hub bearings is spreading, mainly among compact vehicles. However, to encourage their greater use in compact cars and minicars, they need to be even lighter to improve fuel consumption and other factors.

To make this possible, NTN used newly developed high-strength carbon steel and special heat treatment technology and optimized the shape of the hub wheel flanges to create the ultimate lightweight hub bearing. Made for use in minicars and weighing in at one kilogram, which is 30% lighter than previous hub bearings, the third generation hub bearing for minicars is the world's lightest.



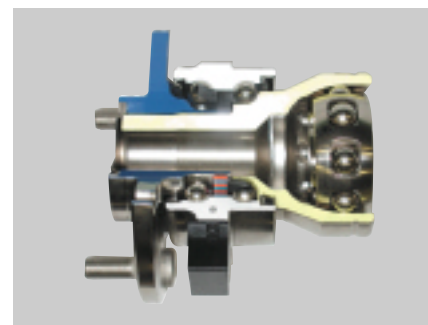
#### GEN4

Unifying third generation hub bearings with CVJs to achieve a lightweight and compact product

### Wireless Active ABS Sensor with Zero Speed Detection Capability

Automotive wheel speed sensors are used for anti-lock brakes and vehicle stability and traction control systems on low-friction road surfaces such as snow-covered road. For these applications, active ABS sensor with zero speed detection capability are typically used, but these sensors generally have expensive cable wiring harnesses and connectors.

NTN has developed a wireless system where not only the rotation signal from the sensor is wireless, but also the electrical power driving the sensor. The wireless active ABS sensor can detect wheel speed and direction of movement at extremely low speeds close to stop (zero speed). The new wireless system eliminates the problem of the cable wiring system being damaged or down by flying stones or freezing conditions. In addition, the sensor is housed in the hub bearing, making the wireless system even more compact.



# Strategic Product

# Needle Roller Bearings

## Key Data

Sales contribution (consolidated basis)	Consolidated sales: ¥34.6 billion (rose 9.1% from the previous fiscal year) Bearing sales contribution: 15% Net sales contribution: 10% Proportion of overseas sales: 18%
Breakdown by industry	Approx. 70% automotive industry and 30% others.
Market shares (NTN estimation)	Japan: 41% Global: 15%
Strengths	<ul style="list-style-type: none"> <li>• In-house manufacture of needle roller bearings, a structural component, makes NTN highly cost competitive.</li> <li>• The Company's wide array of needle roller bearing products find application in a diverse range of products, from automobiles to industrial machinery.</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>• To expand its share of overseas markets, NTN is increasing its share of local manufacturer markets using sales to the overseas production bases of Japanese companies as a base to build on.</li> <li>• The Company is also developing new products that take advantage of its material development, surface processing and other proprietary technology, and welding cage production technology capabilities.</li> </ul>

## Needle Roller Bearings and NTN

Needle roller bearings are classified as rolling bearings, and have relatively small diameter cylindrical, needle-like rolling elements. The outstanding feature of needle roller bearings is their high load-bearing capacity and rigidity relative to size. Needle roller bearings enable compact and light-weight designs for customers. They also serve as a ready replacement for journal bearings. Because of these special features, needle roller bearings are used in many applications for automobile transmissions and other parts where there are space conservation or high load-bearing capacity requirements.

NTN commenced production of needle roller bearings in 1962. Having operated as a compact unit encompassing production, sales, and technology, these operations have the full trust of their customers. NTN manufactures its own needle rollers and specializes in press-processed cages. Against the backdrop of this cost competitiveness and its strong technology, NTN has actively been developing a network of overseas production bases: Thailand in 1999, the United States in 2000, and China in July 2003.

## Global Production Bases for Needle Roller Bearings



Various needle roller bearings



New Product

### FA Needle Roller Bearings for Rocker Arm—Four Times Longer Service Life

As automotive engines produce higher output power and become more compact, demand has grown for longer service life and greater compactness in the needle roller bearings used in the rocker arms for engines.

To meet this market need, NTN used proprietary FA\* treatment to give needle roller bearings a service life that is four times that of conventional needle roller bearings. Under the same conditions of use, it is also possible to reduce bearing width and weight by 75%, resulting in lighter, more compact bearings.

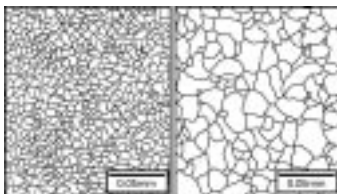


\* Fine Austenite Strengthening (FA) treatment is a special heat treatment method to produce ultra-fine austenite grains less than half size in conventional bearing steels. Focusing on the fact that reducing the grain size of steel gives it greater strength and durability, NTN has developed the world's first specialized heat treatment; FA treatment.

**Special Properties:**

- Useful rolling fatigue life...four times conventional product
- Low dimensional transformation with age...60% greater than conventional product
- High static fracture strength...1.2 times conventional product

**Grain Microstructure**



FA-Treated product      Conventional heat-treated product

### Expanding Fluid Dynamic Bearing Business

In March 2003, NTN-Nidec (Zhejiang) Corp., owned 60% by NTN and 40% by Nidec Corporation, began producing two million fluid dynamic bearing units a month in China. Anticipating a surge in demand, the company is planning to expand production to eight million units a month by March 2005. NTN Manufacturing (Thailand) Co., Ltd. (NMT), a wholly owned NTN subsidiary that makes sintered alloy hydrodynamic bearings, the core part of the fluid dynamic bearing unit, has purchased additional land for construction of a new plant for dynamic bearings and other parts. Through such measures, NTN is adding a production capacity to meet escalating demand.



Exterior of NTN-Nidec (Zhejiang) Corp.



Artist's conception of new factory at NMT

Demand is growing for fluid dynamic bearing units for application in personal computers, hard disk drive (HDD) video recorders, mobile devices, car navigation systems, mobile phones and other devices. Because of its proprietary sintered alloy hydrodynamic bearing technology, NTN is expanding its share of the fluid dynamic bearing units market. The Company is also aiming to establish its fluid dynamic bearing units as a global standard for compact HDDs of 2.5 inches or smaller along with that for the conventional 3.5-inch HDDs.

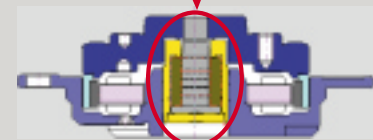
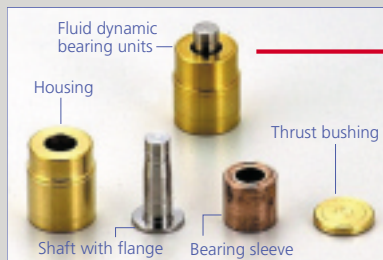
### Fluid Dynamic Bearing Unit Wins the Innovative Product Award at the First Annual Product Creation Awards

NTN's fluid dynamic bearing unit won the Innovative Product Award at the first Annual Production Creation Award sponsored by the Nikkan Kogyo Shimbun, Ltd. Demand for the product has risen sharply because of the need for greater running accuracy in line with the notable increase in the storage capacity of hard disks.



Plaque

NTN received the award because of its exceptionally high ratings in the selection process. These ratings were based on 1) creation of a bearing unit for HDD spindle motors that combines an FDB with a sintered bearing while conquering numerous technical problems, 2) an original product concept with proven results and economic benefits, and 3) a product that utilizes press forming of dynamic grooves to achieve lower processing costs.



Cross-section of HDD spindle motor

# Constant-Velocity Joints

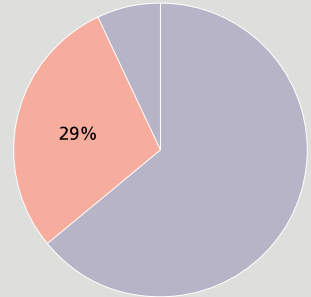
A strategic product with strong growth potential, constant-velocity joints (CVJs) currently generate 29% of consolidated sales. NTN currently holds 39%\* of Japan's market and 18%\* of the global market.

Starting CVJ production in Japan in 1963, NTN celebrated its 40<sup>th</sup> anniversary of CVJ business in 2003, reaching a cumulative production total of 300 million units. Aggressively expanding production worldwide in the 1990s, today NTN has firmly established a strong base of operations in response to the global sourcing needs of the automotive industry, major customers for CVJs. These operations are supported by a trilateral development system covering the three key regions of Japan, the Americas, and Europe. A quint-lateral production and sales network encompassing these three regions as well as China and other parts of Asia has also been formed.

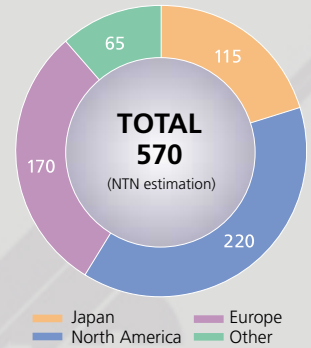
Based on its advanced technological expertise developed over the years, NTN has established a solid reputation as a leader in the CVJ sector.

\*NTN Estimation

**CVJ sales ratio**  
(% of total sales)

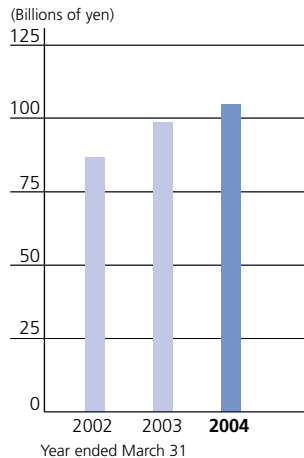


**Global CVJ market**  
(Billions of yen)



# Review of Operations

## CVJ sales



## Major Products

- Automotive CVJs (for halfshafts, propeller shafts and steering shafts)
- CVJs for industrial machinery

## Overview of Performance

Sales in both Japan and North America failed to show meaningful growth impacted by the weaker dollar and weaker sales prices reflecting intensified competition. However, sales growth to Renault in European markets and expanded sales in Asia supported a ¥4.1 billion, or 4.1%, increase in overall CVJ sales to ¥103.0 billion.

Affected by intensified competition and falling prices, sales in Japan edged down ¥0.4 billion, or 0.9%, to ¥45.1 billion.

In North America, the impact of the depreciation of the dollar resulted in a ¥1.9 billion, or 6.0%, decrease in regional sales to ¥29.1 billion. Currently, NTN's U.S. production base, NTN Driveshaft, Inc. (NDI), is adding to its facilities and expanding production capacity in response to increased demand for CVJs based on major orders by DaimlerChrysler and GM. Moreover, in conjunction with a Japanese partner, NTN has established two parts-processing joint ventures, setting up stable sources of quality and cost competitive forging, turning and heat treatment processing. By these measures, NTN is strengthening its North American business base and reinforcing its local sourcing organization to deal with the substantial increase in CVJ demand.

The impact of the appreciation of the Euro and to growth in sales to Renault SA contributed to a ¥6.3 billion, or 34%, surge in European sales, to ¥24.7 billion. Thanks to the efforts of Global Account Managers (GAMs), orders came from companies other than Renault. Conducting more precise sales activities to win orders, we are working to further expand sales in Europe.

Asian and other area sales climbed ¥0.1 billion, or 2.0%, to ¥4.1 billion. NTN is steadily expanding its CVJ production in China. In June 2003, Guangzhou NTN-Yulon Drivetrain Co., Ltd. (Guangzhou NTN), commenced mass-production while Beijing NTN-Seohan Driveshaft Co., Ltd. (Beijing NTN), a joint venture with a Korean manufacturer and the second production base in China, started production in March 2004. Shanghai NTN Corp. (Shanghai NTN) is producing and supplying CVJ components to Guangzhou NTN and Beijing NTN. Shanghai NTN is also planning to begin supplying CVJ components to NDI in North America and NTN Transmission Europe in Europe, becoming a supplier of components and semi-finished products to the NTN global network.

# Constant-Velocity Joints

## Key Data

Sales contribution (consolidated basis)	Consolidated sales: ¥103.0 billion (rose 4.1% from the previous fiscal year) Net sales contribution: 29% Proportion of overseas sales: 56%
Breakdown by industry	Automotive industry: 99% (Others: less than 1%)
Market shares	Japan: 39% Global: 18%
Strengths	<ul style="list-style-type: none"> <li>Proprietary technology allows NTN to stay ahead of its competitors in offering a lineup of lightweight, compact, and low vibration products.</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>Expand sales through marketing activities that integrate sales, technology, and production sections based on NTN's GAM system.</li> <li>The Company will also be seeking to expand sales by taking advantage of the increased use of propeller shaft CVJs in automobiles and its more diversified product lineup compared with competitors.</li> <li>NTN will optimize production, making use of its production bases in China. NTN's Chinese locations are expanding business to become global suppliers of components and semi-finished products and are also targeting demand in the automobile manufacturing market in China.</li> </ul>

## CVJs and NTN

Because CVJs can smoothly transmit engine torque at a constant velocity to the front wheels of an automobile, they are essential components in powering front-wheel drive vehicles.

In Japan, NTN brought its first fixed CVJs to market in 1963, following up by adding the DOJ, TJ, and other plunging CVJs to its lineup. Attaching fixed and plunging CVJs to a drive shaft, the Company started supplying these products to automotive manufacturers that were making front-wheel drive vehicles.

Taking advantage of the oil shock in 1973, sales of front-wheel drive vehicles began to climb because of their fuel efficiency and production of CVJs leaped. Furthermore, automotive manufacturers increased their use of CVJs in halfshafts for rear-wheel drive and in propeller shafts for 4WD vehicles to improve the ride. As CVJ demand expanded, NTN is proceeding with global business development by setting up a network of production bases covering Japan, United States, Europe, Asia, and China. In 2003, the Company celebrated the 40<sup>th</sup> anniversary of CVJ business and reached cumulative production of over 300 million units.

Because the function and quality of CVJs directly and indirectly affect the functioning of automobiles, we have kept up with trends in automobile technology and have carried out a variety of specific improvements. In recent years, there has been strong demand for developments that will reduce environmental impact, lighten component weight thereby contributing to greater automobile design freedom, achieve greater compactness and improve noise, vibration, and harshness (NVH).

NTN's E series (lightweight and compact type) and PTJ (ultra-low vibration type) fully address these

## Global Production Bases for CVJs





needs. Their reputation for improved functions is widely spread among our customers, and most new orders call for the use of these products.

**Lightweight and Compact E Series**

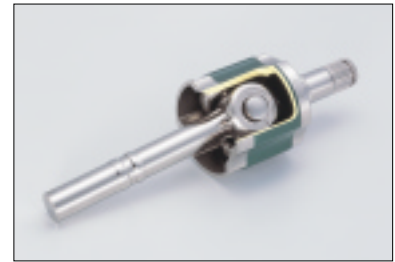
The EBJ developed by NTN uses smaller balls, but has eight balls compared with the conventional six balls type BJ. Using FEM analysis and other methods, this design enables the EBJ to maintain the same load-bearing capabilities as conventional products while being lighter and more compact. Compared with conventional BJ, it is 15% lighter, has a 7% smaller outer diameter, and a 30% higher torque transmission ratio. Developed based on the same concept, the EDJ, ETJ and other E series products are used extensively by customers demanding lighter and more compact products.



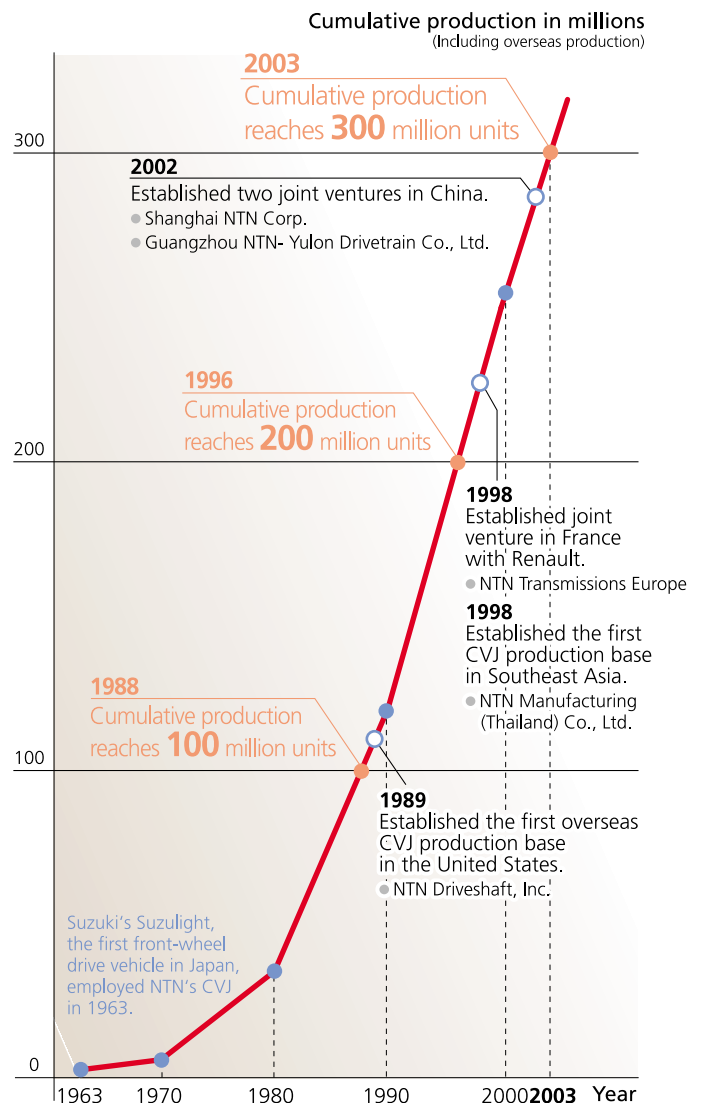
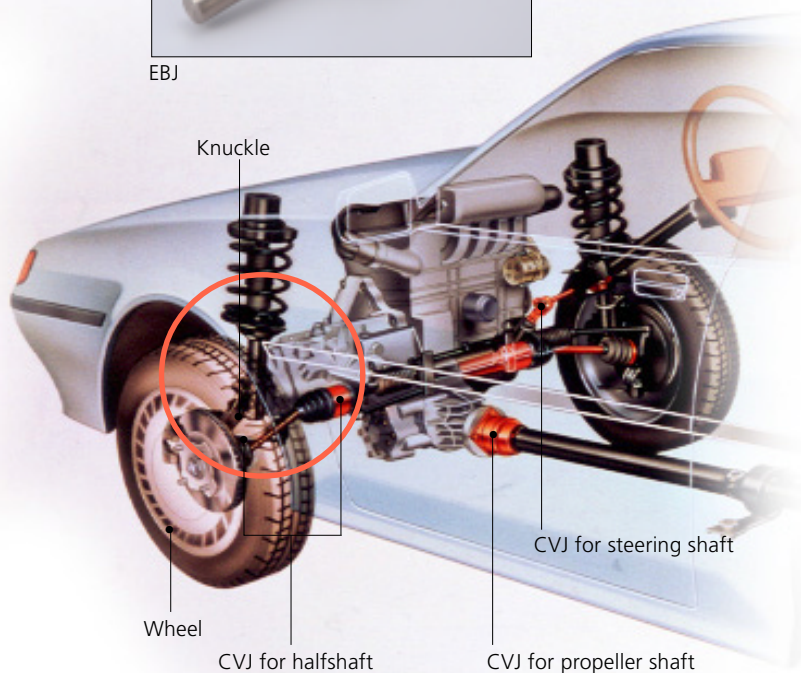
EBJ

**PTJ Offers Substantial Improvement in NVH**

Many NVH problems, such as automobile idling vibration and the horizontal vibration that occurs when the car first moves forward result from slide resistance and the induced thrust of the plunging CVJ on the gearbox side. The PTJ improves on the conventional induced-thrust-resistant product, the double roller type SFJ, by improving the contact conditions of the inner parts and stabilizing the position of the roller cassette to achieve a significant reduction in friction. In addition, the PTJ is 15% to 20% lighter than the SFJ.



PTJ





# Precision Equipment

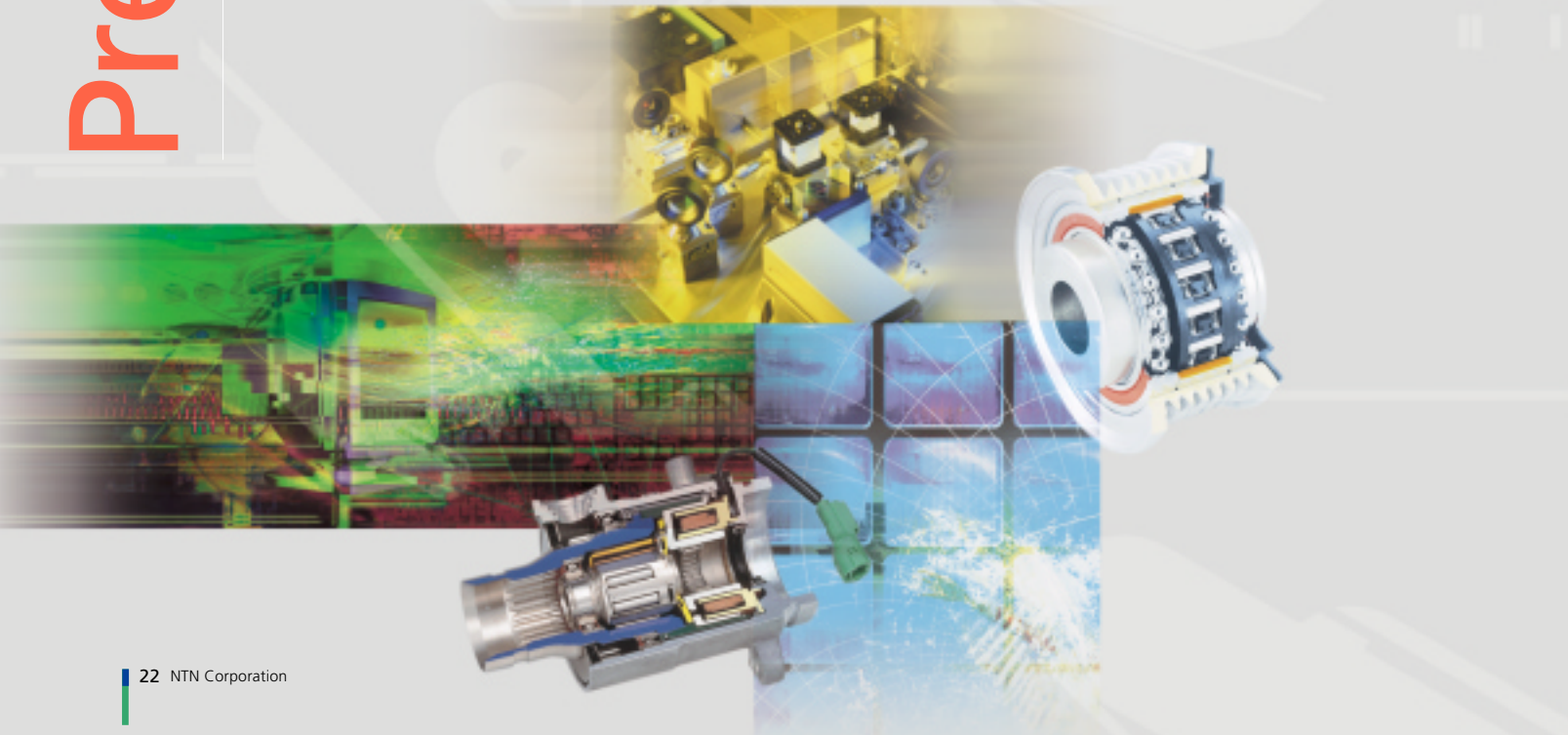
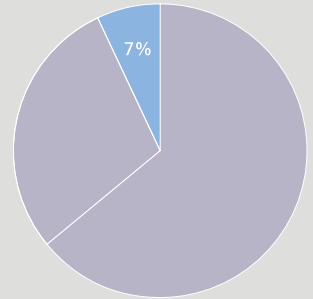
Accounting for 7% of consolidated net sales, the precision equipment business segment combines leading-edge technology products and products for special fields. Using highly sophisticated mechatronic technologies developed over the years, NTN supplies products with special features to this market.

We provide the IT industry with a range of mechatronic products, including our liquid crystal display (LCD) repair devices, which efficiently repair defects in LCDs. Our parts feeders automatically align various parts and feed them into production machinery. Of particular note is our surface mounted device (SMD) feeder, which enables high-speed alignment and feeding during the production process for microchips in mobile phones and other devices.

We supply the automobile industry with a variety of products, such as autotensioners, which automatically adjust the tension of the timing belt for engines. In addition, we offer a diverse lineup of clutch units, including mechanical clutch units (MCUs), which enable vehicles to be shifted easily and quickly between different drive-train systems.

**Precision equipment sales ratio**

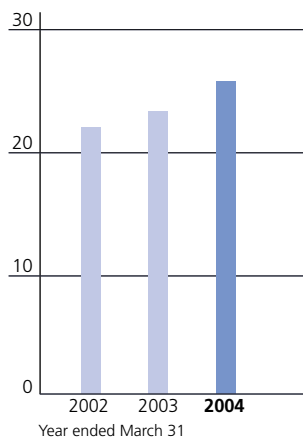
(% of total sales)



# Review of Operations

## Precision equipment sales

(Billions of yen)



## Major Products

- Auto-tensioners
- Clutches
- Parts feeders
- LCD repair devices
- Magnetic-bearing spindles
- Hydrostatic bearings
- XY tables
- Engineering plastics parts
- Machine equipment, etc.

## Overview of Performance

Supported by the sales of LCD repair devices and other new system products, sales in the precision equipment business segment climbed ¥2.6 billion, or 11.4%, from the previous fiscal year, to ¥25.8 billion.

NTN boasts a wide lineup of clutch products for everything from office equipment to automobiles. Because of the Company's recent focus on developing clutch systems for automobiles, sales of clutches have steadily grown. For mechatronic products, parts feeders, and other precision equipment supplied to the semiconductor, LCD, electronic devices, and other industries, NTN has set up a separate division to adapt flexibly to the rapid technological innovation and

fluctuating production levels of major customers. The Company also continues to successfully introduce new products in a timely fashion to the expanding liquid crystal and plasma display markets. Recent examples include the world's first system for repairing rib barrier defects in plasma display panels and the world's first system that can repair three types of defects in color filters for LCDs with one piece of equipment.

In its ball screws business, NTN has exited the general machinery market in order to concentrate its business resources on the most promising areas.

## Profile of Precision Equipment Strategic Product

# Clutches

## Key Data

Sales contribution (unconsolidated basis)	Unconsolidated sales: ¥4.2 billion Precision equipment sales contribution (unconsolidated): 16%
Breakdown by industry	Approximately 50% automotive and 50% industrial machinery
Strengths	<ul style="list-style-type: none"> <li>● A diverse product lineup, ranging from office equipment to automobiles.</li> <li>● Based on the diversity of its products and control technologies, such as mechanical and electromagnetic clutch units, NTN expects applications for its products and technologies to broaden.</li> </ul>
Strategies	<ul style="list-style-type: none"> <li>● Developing new products that combine NTN's clutch and control technologies, we expect sales expansion for our line of clutch products for automobiles.</li> </ul>

## New Product

## World's First 3-in-1 Multi-Repair System for Liquid Crystal Color Filter

This multi-repair system is a sophisticated "all-in-one" repair unit that combines the specialty color filter repair technologies of NTN and Takano Co., Ltd., to complete three types of procedures necessary to repair color filters for large-size liquid crystal displays (LCDs).

The expanding market for LCD televisions that use these large color filter substrates has increased the demand for repair devices to reduce fraction defects in the filters. These defects can be broadly grouped into three categories: "black defects" (unwanted black matrix pattern protrusion or adjacent filter discoloration), "white defect" (color loss in portion of black matrix or color filter) and "particle defects" (contamination). In the past, there was no single device that could repair all of these defects and several different devices had to be used depending on the type of defect. As color substrates become larger, the multiple pieces of repair equipment required cause problems, such as higher equipment costs, longer repair times, and the need for more floor space. This has created a demand for a system that incorporates all defect repair functions.



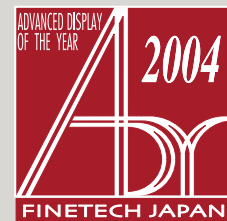
Multi-Repair System

To solve this problem, joint development work was done to combine NTN's ink coating and laser cutting technologies with Takano's tape polishing technology. The two companies have succeeded in developing a multi-repair system that repairs all three types of defects with just one unit.

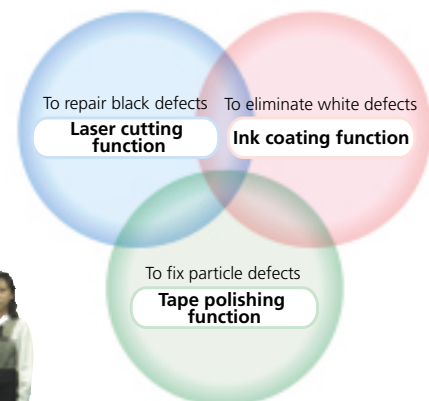
Able to handle large-sized color filter substrates up to the 7<sup>th</sup> generation size (1870 mm by 2200 mm), the unit not only handles ink coating, laser cutting, and tape polishing, but also measures defect height and incorporates defect review functions. Moreover, as a system, it demonstrates superior ease-of-use.

Compared with using conventional repair device, the multi-repair system costs half as much and accomplishes its tasks using 50% less space and total repair time. In addition, it is also possible to combine the device with defect inspection equipment.

NTN won the Grand Prize in the Display Testing Equipment category of "Advanced Display of the Year" sponsored by Finetech Japan exhibition



Finetech Japan (flat panel display production technology exhibition) is the world's largest exhibition of expert technologies relating to production equipment and expertise of flat panel displays including LCDs, plasma displays and organic electroluminescence displays.



# NTN's Technological Assets

## Medium-to-Long-Term Research and Development

NTN carries out medium-to-long-term research and development (R&D) programs in the direction of trends in leading-edge fields, such as in-wheel-motor-powered and fuel-cell vehicles, nanotechnology, and clean energy.

In our development of next-generation CVJs in the automotive field, we are pursuing optimum noise, vibration, and harshness (NVH) performance and functionalism, such as ultra-low vibration and ultra-high operating angles. We are also targeting advanced vehicle control, improved safety through the use of electric powered components, and increasing automobile capabilities through the development of "intelligent" hub bearings that incorporate high-performance sensors. In addition, for application in in-wheel-motor-powered, fuel-cell, and other next-generation vehicles, we are progressing with the development of axle units for in-wheel motors and actuator units for by-wire use.



In the industrial machinery field, we are developing products with high precision and speed and improved environmental friendliness in response to the technological needs of the growing machine tool, rolling stock, and wind-power generator markets.



Among development efforts in the precision equipment field, we are working on defect-repair equipment needed for the production of large-scale and high-definition flat panel displays (FPD).

In leading-edge technologies, we are proceeding with research into applications of the expected blockbuster technologies of the future, such as nanotechnology and microelectro mechanical systems (MEMS), for materials, precision equipment, and other NTN fields.





# Intellectual Assets Strategy

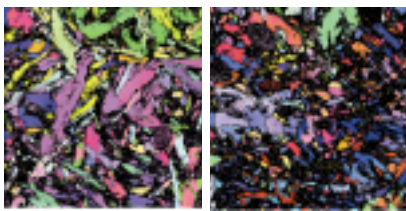
NTN's Engineering and R&D divisions put out a constant stream of new products and products that have been improved to meet customer needs. As part of this process, we have also developed many new technologies and acquired substantial know-how. We then patent these valuable intellectual properties and appropriately protect our rights as well as using them as business resources.

In particular, for original products and technologies that have the potential to be a source of earnings, we seek to build a comprehensive web of patents around the main patent, including peripheral and essential technologies, to achieve a dominant and proprietary position that competitors cannot assail.

## Examples of NTN Original Products and Technologies

### 1. Fine Austenite Strengthening Treatment Technology

NTN was the first in the world to develop a special heat treatment technology for its roller bearings, calling it Fine Austenite Strengthening (FA) treatment. The heat treatment reduces the grain size of the steel used in the bearing to less than half that of conventional bearings, strengthening its resistance to rolling fatigue and increasing service life. NTN's patent applications for FA treatment technologies, including the composition for roller bearings, the heat treatment method, the production equipment and system, and application technologies for each type of automotive and industrial machine bearings, total about 100 in Japan and around the world.



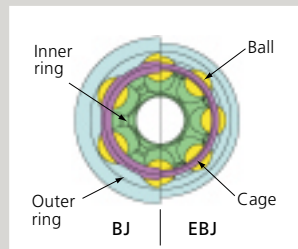
Treated by carbonitriding processing

Treated by Fine Austenite Strengthening (FA) processing

Distributive image of crystal azimuthal error by FE-SEM/EBSP measuring instrument

### 2. CVJ E Series

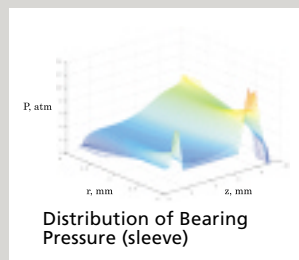
In our E series CVJs, the EBJ and EDJ use smaller balls, but have eight balls compared with the conventional six



balls types, maintaining the same capabilities and functions as the conventional type. The ETJ is an improved tripod joints which has more advantages in size and weight than the conventional design. In these joints, we have filed for approximately 120 patents in Japan and other countries, covering the basic structure, proportions, materials, manufacturing methods and other aspects.

### 3. Fluid Dynamic Bearings for HDD Motors

Utilizing oil-impregnated sintering technology, fluid dynamic bearings have a lot of advantages such as long service life, high quality and high reliability. Further they are excellent in mass-production because the herringbone shaped groove is formed by press processing. To protect this technology,



Distribution of Bearing Pressure (sleeve)

we have applied for a total of about 250 patents in Japan and abroad to acquire the rights to the herringbone shaped groove structure, the lubricating mechanism including lubricant, and the manufacturing method and other essential aspects.

## NTN's Essential Technologies

Essential technologies, such as tribology, and analytical and material technology, underpin the customers' confidence in and satisfaction with NTN's products.

### Tribology: lubricant and lubricant technology

The development of lubricants (such as greases that lubricate moving components) and lubricating technology is the history of the pursuit of solutions for the eternal issues in the industry: high speed and temperature, durability, and cost and the creation of special properties, such as low particulate generation, quietness, and electrical conductivity.

NTN carries out technology development aimed at providing solutions for the needs of the time.

NTN has developed proprietary, high-temperature, long-life grease that demonstrates superior performance in the servo-motor and other motor markets. The Company has also developed functional lubricating greases ahead of competitors. Some examples include an anti-brittle flaking grease for the rolling surface of bearings of auxiliary machines for automobiles developed, a low particulate generating grease for clean environments, and high-performance conductive grease for bearings used in office equipment. To lessen the environmental impact of its greases, NTN early on developed lead-free grease for its CVJs, the product that uses the most lubricant. For bearings used in food product machines or

printing presses, where grease leakage is unacceptable, NTN developed a solid lubricant, "Polylube", from which lubricant oils ooze out. For this new technology, the Japan Society of Tribologists awarded NTN its Technology Prize in 1999.

In lubricating technology, the leading-edge developments center on bearings for machine tools. Here, we already have low-temperature rise, ultra-high-speed lubrication technology based on an air-oil lubricant. We have made a further improvement to this technology, making it more environmentally friendly by developing an air-oil lubricant that reduces sound and conserves oil. We are also working on other environmentally friendly technologies, such as no-refill oil, non-spreading, and miniscule-volume lubricants.

### Analytical Technology

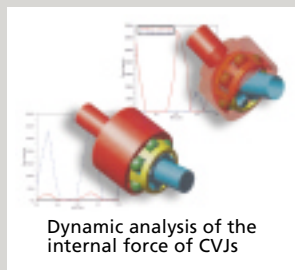
Analytical technology is an important tool at NTN. In response to endless demands for greater service life and rotation speeds, we develop improved products in various categories over short periods of time. Because of this deeply rooted connection with our R&D and design and manufacturing technologies, we need to continue to strengthen our analytical technology.

Our Technology Division combines the analytical technology developed at the Company over the years with our IT technology. In addition, the division has teams of technology experts in the analysis of structure, contact, dynamics, and heat. These are further divided up by product category to enable quick response to customer needs.

In the R&D Division, we develop software programs for tribology-related analysis, such as structural

analysis, elastohydrodynamic lubrication calculations, non-repetitive run-out (NRRO) analysis, and functional analysis of dynamic bearings for hard disk drives. This software provides theoretical support for functional design in the commercialization process.

At NTN, we especially concentrate on dynamics analysis. This field has application in the dynamic analysis of the internal force of CVJs, which is reflected in our product designs. Furthermore, we also supply dynamics analysis for CVJs developed by NTN to automotive manufacturers as a drive-system-related vibration analysis software. This software is contributing to the improvement of the driveline analysis of vehicles. In other areas, roller bearing analysis technology is used for a wide-range of processes, from behavior analysis of necessary parts for bearings to product design. As such, it is steadily evolving as a



Dynamic analysis of the internal force of CVJs



Example of FEM analysis of trunnion

alternative technology for actually testing. We adopt various analytical methods such as electromagnetic field analysis, thermodynamic analysis and others to apply analytical technology not only in mechanical field but in mechatronics, nanotechnology, and material development fields.

As a product development tool or as a tool for achieving application compatibility, or speeding up modular development, analysis technology is a strategic component of NTN's technology base.

### Material Technology

The quest for longer life bearing materials is the search for ways to minimize impurities in the steel used in their manufacture. Consequently, advances in this area have always followed with progress in steel-making technology. Because of the conditions

of use under which bearings must perform are growing steadily more severe, NTN has also developed its own proprietary new materials. To supply customers with long service life bearings, these new materials are combined with optimal heat treatment technology to achieve fully satisfactory performance specifications. As one example, in the past we achieved long service life bearings under the contaminated lubricant conditions. Now, we have developed materials for bearings that are treated at semi-high-temperatures to achieve long service life.

NTN's newly developed bearing materials with improved ease of processing received a Technology Development Award from the Japan Society for Technology of Plasticity in the current fiscal year.

NTN has focused its attention on using heat treatment technology to achieve long service life for its bearings. As a result of its efforts, the Company has succeeded in developing FA treatment technology, the world's first special heat treatment technology for bearings. The process utilizes a standard bearing material—high carbon chromium steel—that can be obtained anywhere, and is compatible with global bearing production methods.

Developing advanced bearing damage analysis and materials assessment technologies is also indispensable in achieving long service life. NTN developed X-ray failure analysis technology for this field many years ago. Moreover, the Company was the first bearing manufacturer to recognize that the characteristic separation of bearings was due to hydrogen embrittlement—found sometimes in the market even today—and to develop preventative measures.

# Corporate Social Responsibility

NTN aims for stable and sustainable growth to fulfill its responsibilities to shareholders, customers, suppliers, local communities, and all the other stakeholders.

NTN is committed to addressing environmental issues, complying with laws and regulations, and contributing to the society, as well as for providing technology and services.

## Corporate Governance

Against the backdrop of intensifying competition between companies based on global market principles, it has become increasingly important to develop and execute competitive business strategies in a timely manner. To position itself as a winner in this challenging competitive environment, NTN has formed a medium-term business strategy, Rapid Advance 21, to develop its business and increase corporate value. During fiscal year 2004, to achieve the goals of Rapid Advance 21, the Company introduced an executive officer system to accelerate management decisions and to pursue more nimble business development.

Under the executive officer system, the roles and responsibilities of executive officers in running operations will be further clarified to speed operations and improve efficiency.

Moreover, the board of directors' role in forming business strategy has been strengthened and the board has been slimmed down from 26 directors to 15 or less to enable rapid and highly strategic management decisions.

## Compliance

In December 1997, NTN first established a Corporate Ethics Committee to formulate its own code of ethics and encourage thorough compliance with these principles. On May 1, 2003, the NTN Group unveiled a new compliance organization to further strengthen compliance.

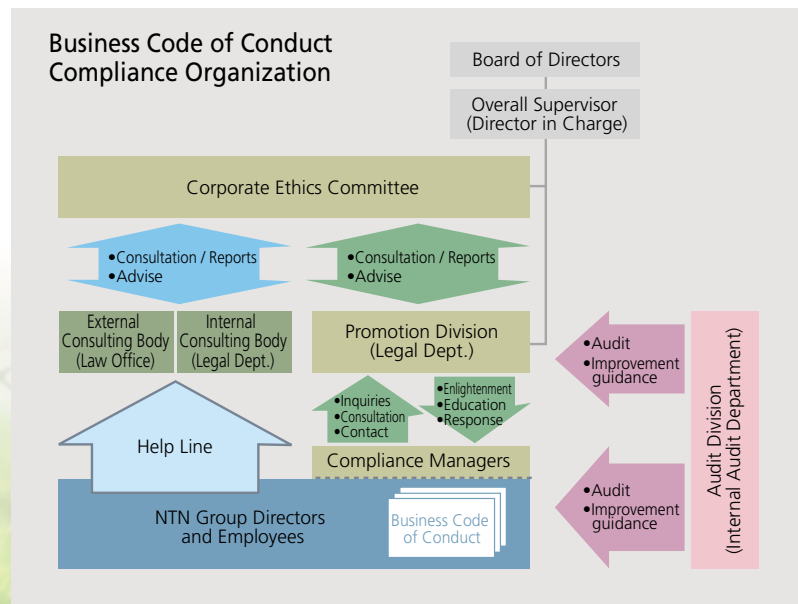
### New Compliance Organization

Under the new system, the Company has appointed the director in charge of the Legal Department as the coordinating executive for compliance activities and designated the Legal Department to promote corporate compliance. Within this organization, NTN has set up a group of 26 compliance managers to deal with inquiries from employees and provide in-house consulting services.

### Help Line Established

The Company introduced a Help Line to provide a route for direct inquiries, consultations, reports, and other contact with the Corporate Ethics Committee.

# Rapid Advance 21





## Activities

The Company is achieving compliance with laws, company regulations, and its code of ethics by ensuring that employees and officers of the Company share the same values based on a strong sense of ethics. Activities include the distribution of a Business Code of Conduct Guidebook to all employees and working to achieve accountability for its rules on a daily basis.

## Human Resource Training and Safety & Health in the Workplace

NTN implements a variety of programs to promote human resource training program and to provide an environment conducive to work. Among our human resource development programs, we have established various training programs that include business leader training, education in overseas university, and practical training in overseas offices. Our programs develop future candidates for top executive positions, employees with advanced expertise in technologies or other knowledge and employees who are globally-minded. We have also set up a "GINOU DOJO" special technical training school, where highly accomplished engineers can transfer their technology and skills to younger successors. In this way, NTN continues to upgrade the skills of the next generation of engineers through training programs and the transfer of technology.

To provide an environment conducive to work, we strive to maintain the safety and health of employees in the workplace as well as creating an environment that is easy to work in. Aiming for zero accidents, we have introduced a preventative-type safety policy based on newly introduced risk assessment methods and a policy to avoid recurrence of accidents. To prevent psychological illness, we have

appointed counselors and set up mental health activities centered on employee education. Furthermore, we support both the working and home life of our employees, having established an early time-off program for child rearing and nursing needs as well as a shorter working hours program.

## Social Contribution Activities

One of the resolutions in our business code of conduct is to make a positive contribution to society. In addition to contributing to society through our corporate activities, we support social-contribution, cultural, educational, and sports activities. The offices and plants of the NTN Group throughout the world actively participate in activities that contribute to society. Examples include making donations to charitable organizations, dispatching staff to assist with disaster relief or other community activities, and supporting educational, cultural, and sports events. During the fiscal year, as one of those activities, we helped young engineers achieve their dreams by providing our products free to a university motor sports club, which won the overall championship at the 1<sup>st</sup> Student Formula SAE Competition of Japan.

We also have systems that allow employees to take time off work to participate in volunteer activities in their own communities or participate in the new bone marrow transplant volunteer program in Japan.



NTN has been included in the SRI index, FTSE4 Good Global Index as of the fiscal year ending March 2005.



The 1st Student Formula SAE Competition of Japan (NTN)



March of Dimes WalkAmerica (NDI, Indiana, U.S.A.)



"Business for the Bay" a Significant Achievement Award in Environmental Excellence (NTN-BCA, Pennsylvania, U.S.A.)



Participation in the employment forum (NTE, France)



# Environmental Activities

The 21<sup>st</sup> century is said to be the environmental century, and governments, corporations, and people are working on all fronts to find solutions to environmental problems to save the earth's irreplaceable environment.

At NTN, environmental activities receive the highest priority. We dedicate ourselves through our daily business activities to reducing the environmental impact of our operations and to helping convert our world into a recycling-oriented society. Through these efforts, we are working to create an environment that is beneficial to the earth.

## Achieving Zero-Waste

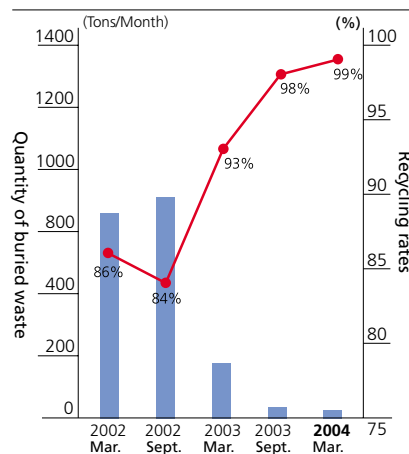
We upgraded one of our environmental protection activities from its previous industrial waste reduction theme, setting a goal of zero-waste that was reached in September 2003. The Company's proprietary grinding swarf briquetter contributed significantly to this achievement. By solidifying and making reusable grinding swarf, which is produced in the process of grinding bearings and was previously difficult to collect and recycle, this equipment has substantially increased the recycling of grinding swarf and coolant.

We have successfully raised the recycling rate further by developing a sales route for the grinding swarf briquettes to steel manufacturers to improve recycling of natural resources. In addition to our grinding swarf measures, we are also promoting recycling through the use of sludge from our anhydrous processing plants

in roadbed construction and the recycling of used grinding stones. By finding applications for all of our industrial waste, we have achieved a recycling rate of 98%.

Now, we are strengthening our efforts to achieve a 98% or greater recycling rate throughout the NTN Group, including overseas companies. Through our subsidiary, Unitop Corporation, we intend to further preserve the environment by popularizing the use of the grinding swarf solidification system that contributed greatly to our achievement of zero-waste.

## Change of Recycling Rates and Quantity of Buried Waste



\*At NTN, we have defined a recycling rate of 98% or greater to be "zero-waste."

## Strengthening our Environmental Management Organization

Pursuing environmental protection activities throughout our Group, we have already received ISO 14001 environmental management certification for 12 plants in Japan (group registration based on multi-site method) and for 8 plants overseas. To boost our environmental management organization on a global basis, we have also begun the certification process for new operations commencing overseas.

To strengthen and expand the environmental management organizations of our business partners as well, we have requested that the parts manufacturers and suppliers that associate with us gain ISO 14001 certification. In addition, we are supporting their environmental management certification efforts by providing them with certification consulting services and other assistance. Sharing goals for waste reduction and energy conservation, this type of environmental management organization that encompasses business partners is the first of its kind in our industry.

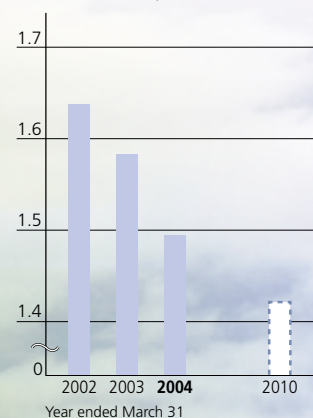
## Reduction of Global Warming

As part of its efforts to reduce global warming, NTN has formed a plan targeting a company-wide 20% reduction in its carbon dioxide emission rate from its March 1998 year-end levels by the fiscal year ending March 2011. During the fiscal year under review, we targeted a 12% reduction in carbon emissions in comparison with March 1998 and achieved a 14% reduction.

In other areas, through the use of cogeneration facilities, which boast high efficiency energy generation, we are supplying our operations with a low-transmission loss supply of electric power and recycling of a portion of exhaust heat for use in heating.

## Change of Energy Consumption Fundamental Unit

(Ton-CO<sub>2</sub>/Millions of yen)



# Five-year Summary of Selected Financial Data

NTN Corporation and Consolidated Subsidiaries  
Years ended March 31

	<i>(Millions of yen except per share amount)</i>					<i>(Thousands of U.S. dollars except per share amount)</i>
	<b>2004</b>	2003	2002	2001	2000	<b>2004</b>
<b>FOR THE YEAR DATA</b>						
Net sales .....	<b>¥ 357,394</b>	¥ 342,745	¥ 324,339	¥ 340,551	¥ 326,474	<b>\$ 3,381,531</b>
Operating income .....	<b>24,709</b>	20,785	8,140	14,335	9,675	<b>233,787</b>
Income (loss) before income taxes* .....	<b>18,181</b>	6,198	(701)	6,888	(41,822)	<b>172,022</b>
Net income (loss) .....	<b>11,032</b>	2,657	(132)	4,289	(24,677)	<b>104,381</b>
Capital expenditures .....	<b>38,092</b>	25,264	21,088	24,123	26,013	<b>360,413</b>
Depreciation .....	<b>23,979</b>	23,838	24,400	23,402	24,122	<b>226,880</b>
R&D expenditures .....	<b>13,543</b>	12,255	11,706	10,618	9,779	<b>128,139</b>
<b>AT YEAR-END DATA</b>						
Total assets .....	<b>¥ 460,341</b>	¥ 467,198	¥ 462,895	¥ 478,945	¥ 494,677	<b>\$ 4,355,578</b>
Shareholders' equity .....	<b>142,487</b>	134,928	138,532	138,625	143,874	<b>1,348,160</b>
Number of employees .....	<b>11,885</b>	11,810	11,989	12,619	12,770	<b>11,885</b>
<b>PER SHARE DATA</b>						
Shareholders' equity .....	<b>¥ 308.27</b>	¥ 291.82	¥ 299.27	¥ 299.44	¥ 310.77	<b>\$ 2.92</b>
Net income (loss)						
–Basic .....	<b>23.54</b>	5.70	(0.29)	9.26	(53.30)	<b>0.22</b>
–Diluted .....	<b>21.87</b>	5.51	-	8.78	-	<b>0.21</b>
Cash dividends .....	<b>5.50</b>	5.00	5.50	6.00	6.50	<b>0.05</b>
<b>OTHER INFORMATION</b>						
Net income (loss)/Total assets (ROA) .....	<b>2.4%</b>	0.6%	(0.03%)	0.9%	(5.0%)	<b>2.4%</b>
Net income (loss)/Shareholders' equity (ROE) .....	<b>8.0%</b>	1.9%	(0.1%)	3.0%	(15.6%)	<b>8.0%</b>
Shareholders' equity ratio .....	<b>31.0%</b>	28.9%	29.9%	28.9%	29.1%	<b>31.0%</b>

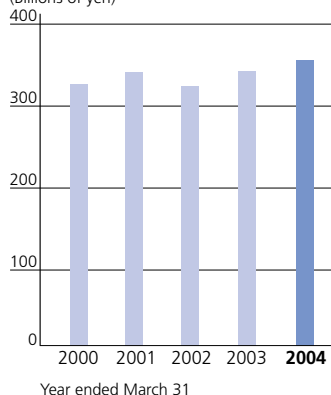
\* Income (loss) before income taxes and minority interests

	<i>Millions of yen</i>					<i>Thousands of U.S. dollars</i>
	<b>2004</b>	2003	2002	2001	2000	<b>2004</b>
<b>SEGMENT INFORMATION</b>						
By business						
Bearings .....	<b>¥ 228,615</b>	¥ 220,685	¥ 215,558	¥ 230,017	¥ 224,819	<b>\$ 2,163,071</b>
CVJs .....	<b>102,959</b>	98,875	86,785	86,318	81,382	<b>974,160</b>
Precision equipment .....	<b>25,820</b>	23,185	21,996	24,216	20,273	<b>244,299</b>
By region						
Japan .....	<b>¥ 176,202</b>	¥ 170,010	¥ 169,080	¥ 195,134	¥ 183,936	<b>\$ 1,667,159</b>
North America .....	<b>86,084</b>	92,696	87,774	85,925	86,399	<b>814,495</b>
Europe .....	<b>58,243</b>	47,871	38,748	30,449	27,602	<b>551,074</b>
Asia and other areas .....	<b>36,865</b>	32,168	28,737	29,043	28,537	<b>348,803</b>

Notes: 1) U.S. dollar amounts have been translated from yen, for convenience only, using the approximate exchange rate at March 31, 2004, which was U.S.\$1=¥105.69.

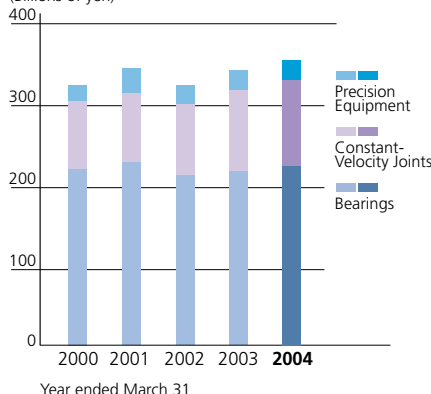
## Net sales

(Billions of yen)



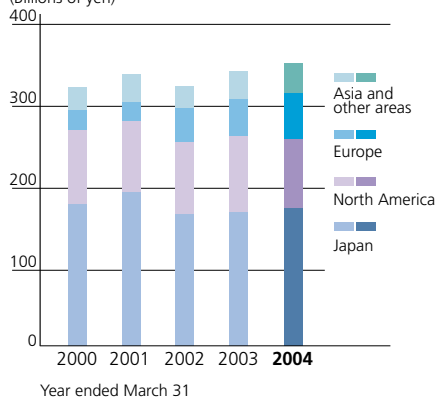
## Sales by business segment

(Billions of yen)



## Sales by region

(Billions of yen)



## Scope of Consolidation

As of March 31, 2004, NTN had 32 consolidated subsidiaries, including 9 domestic and 23 overseas subsidiaries. There were a total of five affiliates (overseas) that were accounted for by the equity method. The following were the changes in the scope of consolidation for the fiscal year under review.

- Consolidated (1 company added):
  - NTK Precision Axle Corp. (newly established)
- Equity method (2 companies added)
  - Beijing NTN-Seohan Driveshaft Co., Ltd. (newly established)
  - Asahi Forge of America Corp. (new investment)
- (1 company removed)
  - Société Nouvelle de Transmissions du Mans (Sold)

## Sales and Income

### Sales Performance

Consolidated net sales for the fiscal year ended March 31, 2004 amounted to ¥357,394 million, increasing ¥14,649 million, or 4.3% from the previous fiscal year. Consolidated net sales increase would have been to ¥16,928 million, excluding ¥2,279 million currency impact. Overseas sales totaled ¥181,192 million, rising ¥8,457 million, or 4.9% year-on-year. Overall, overseas sales contributed 50.7% of net sales, edging up 0.3% from the prior fiscal year. Overseas sales contributions by region were North America, 24.1%; Europe, 16.3%; and Asia and others, 10.3%.

### Sales by Business Segment

Regarding bearing business in Japan, sales for general machinery industry and for distributors increased, while automotive business also remained solid. Sales also increased to auto manufacturers in Europe, China, and the ASEAN countries. On the other hand, in North America, in addition to the impact of currency adjustments due to the weakening of the dollar, sales to the general machinery industry and distributors declined. Overall, however, sales of bearings increased ¥7,930 million, or 3.6%, to ¥228,615 million.

Constant-velocity joint (CVJ) sales rose ¥4,084 million, or 4.1%, to ¥102,959 million. Against the backdrop of the impact of currency adjustments due to the weakening of the dollar and price declines caused by intensified competition, sales struggled in Japan and North America. In Europe, however, sales to Renault increased substantially and the start up of mass-production by Guangzhou NTN-Yulon Drivetrain Co., Ltd., in China also contributed to the overall growth in CVJ sales.

Sales in the precision equipment segment were boosted by an increase in sales of liquid crystal repair devices and other systems. Sales climbed ¥2,635 million, or 11.4%, to ¥25,820 million.

### Sales by Region

In Japan, sales for general machinery such as construction machinery and machine tools increased, as did sales to distributors. Among automotive products, sale of CVJs showed sluggish growth, but bearing sales were robust. As a result, overall sales in Japan advanced ¥6,192 million, or 3.6%, to ¥176,202 million.

There was a recovery in the North American automobile market in the second half, but sales to general machinery industry and distributors were flat. In addition, the negative impact of the weakening U.S. dollar was a significant factor in the ¥6,612 million, or 7.1%, decline in North American sales, to ¥86,084 million.

European sales jumped ¥10,372 million, or 21.7%, to ¥58,243 million. The increase could be attributed to the appreciation of the Euro, a substantial increase in sales of CVJs, and solid sales of bearings to auto manufacturers.

In Asia and other areas, sales to auto manufacturers in ASEAN countries continued to be robust and the start up of mass-production by NTN-Nidec (Zhejiang) Corp. in China also contributed to sales growth. Overall sales in Asia and other areas rose ¥4,697 million, or 14.6%, to ¥36,865 million.

### ■ Cost of Sales and Selling, General and Administrative Expenses

Cost of sales amounted to ¥282,594 million, and the percentage of cost to overall sales improved 0.5% to 79.1%. This improvement was principally achieved through revisions in vendor prices and lower variable costs due reorganizing and consolidating suppliers, improvement in VAVE and personnel expenses reduction (achieved through the implementation of an early retirement program and productivity gains). These areas, which were specifically targeted under the Company's business structural reform programs, NEW Plan21, contributed to overall cost reductions.

Selling, general, and administrative expenses amounted to ¥50,091 million, and the percentage of cost to overall sales improved 0.3% to 14.0%. The improvement can be attributed to reduced personnel and other costs due to NEW Plan 21.

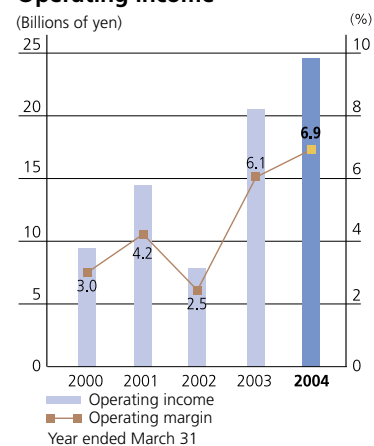
### ■ Income

Operating income climbed ¥3,924 million, or 18.9%, compared with the previous fiscal year, to ¥24,709 million. Operating margin edged up 0.8%, to 6.9% due to improvements in the ratios of selling, general and administrative expenses and cost of sales to net sales.

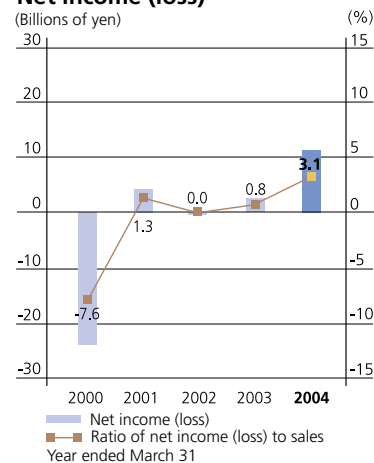
Other non-operating income and expenses amounted to a net expense of ¥6,528 million. Non-operating income totaled ¥863 million and included ¥569 million in equity in earnings of affiliates and ¥294 million in interest and dividend income. Non-operating expenses totaled ¥7,391 million. Among the major expense items were a ¥2,792 million interest paid, a ¥2,596 million in restructuring costs that included a ¥2,119 million loss on reorganization of production at a U.S subsidiary and a ¥477 million subsidiary reconciliation loss. In addition, interest paid, net of interest and dividends received, decreased ¥369 million. In the previous fiscal year, other non-operating income and expenses amounted to a net expense of ¥14,587 million due to a ¥14,485 million gain on return of substitutional portion of employees' Welfare Pension Fund Plan, ¥11,399 million in restructuring costs that included a ¥10,988 million provision of a reserve for the employees' early retirement program, a ¥411 million loss on the liquidation of a subsidiary, a ¥5,944 million for reserve provision for product defect compensation, and a ¥2,564 million loss on devaluation of investments in securities. In comparison, therefore, other non-operating income and expenses increased by ¥8,059 million during fiscal year 2003.

As a result, the Company reported income before income taxes and minority interests of ¥18,181 million, up ¥11,983 million from the previous year. Consolidated net income amounted to ¥11,032 million, increasing ¥8,375 million year-on-year. Net income per share for the fiscal year was ¥23.54 and cash dividends of ¥5.50 per share were declared.

#### Operating income



#### Net income (loss)





## R&D and Capital Expenditures

### ■ Research and Development

In line with its NEW Plan 21, the Company concentrated its business resources on strategic products—including CVJs, axle units, needle roller bearings, precision bearings, aerospace bearings, and automobile clutches—during fiscal 2003. In addition, the Company worked to shorten development times by pursuing an R&D structure that operates around the clock. Reflecting these efforts, R&D expenditures for the fiscal year increased ¥1,287 million, or 10.5%, to ¥13,543 million, representing 3.8% of consolidated net sales. The breakdown of R&D expenses by business segment was ¥7,688 million for bearings, up ¥777 million year-on-year; ¥4,760 million for CVJs, up ¥555 million; and ¥1,094 million for precision equipment, down ¥45 million from the prior fiscal year.

### ■ Capital Expenditures

Capital expenditures for the fiscal year were primarily focused on increasing production capacity, implementing labor savings and rationalization, maintaining and upgrading present facilities, enhancing the safety of those facilities, and new product R&D. In total, capital expenditures increased ¥12,828 million, or 50.8%, from the prior fiscal year to ¥38,092 million.

A total of ¥23,601 million was invested in the bearing segment, an increase of ¥9,046 million from the previous fiscal year. Expenditures were made for the expansion of hub bearing manufacturing facilities at American NTN Bearing Mfg. Corp. and for buildings, plant, and equipment at NTN-Nidec (Zhejiang) Corp. and Shanghai NTN Corp. Facilities at the parent company's Iwata Works' Needle Roller Bearing Plant and Kuwana Works also received investment.

In the CVJ segment, the Company increased its capital expenditures by ¥3,383 million, to ¥13,629 million. Major allocations included the expansion of manufacturing facilities at NTN Transmissions Europe and NTN Driveshaft, Inc. as well as facilities at the CVJ plants at NTN's Iwata Works.

Capital investment in precision equipment amounted to ¥861 million, up ¥399 million from the prior fiscal year. Funds were principally invested in manufacturing-related areas at the Company's Nagano Works.

All expenditures were funded with internally generated funds. Depreciation in the fiscal year under review amounted to ¥23,979 million, up ¥141 million year-on-year.

## Financial Position and Cash Flows

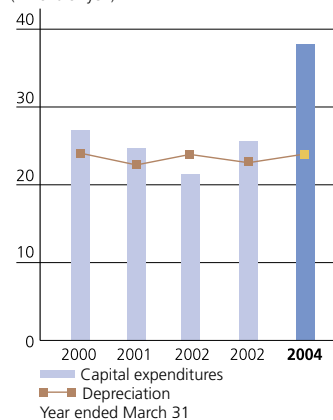
### ■ Financial Position

As of March 31, 2004, total assets amounted to ¥460,341 million, dropping ¥6,857 million from the previous year. The turnover ratio of total assets rose slightly from the previous fiscal year, increasing 0.05, to 0.78.

Total current assets at year-end amounted to ¥235,071 million, decreasing ¥11,369 million. Significant year-on-year changes are as follows: Inventories, for which cost reduction measures are proceeding with high priority, declined ¥9,164 million. Excluding the effect of ¥2,168 million in currency translations, inventory fell ¥6,995 million on a real basis. Cash and cash equivalents decreased ¥8,082 million, while notes and accounts receivable increased ¥4,734 million, reflecting sales growth. The inventory turnover ratio for the year improved 0.58 from the previous year to 4.28.

### Capital expenditures and depreciation

(Billions of yen)



Current liabilities at year-end were ¥169,685 million, decreasing ¥67,619 million. Major changes included a ¥50,000 million decrease in the current portion of unsecured bonds and a ¥10,988 million decrease in reserve for employees' early retirement program, which was implemented in May 2003. As a result, net working capital, excluding the current portion of long-term debt, increased ¥6,250 million to ¥65,386 million, and the liquidity ratio, excluding the current portion of long-term debt, increased 6.9% from the previous year to 138.5%.

Interest-bearing debt increased ¥2,645 million during the fiscal year. Excluding the effect of ¥4,575 million in currency translation adjustments, interest-bearing debt actually expanded ¥7,220 million. During the fiscal year, the Company redeemed a ¥50,000 million straight bond and made a ¥30,000 million straight bond issue and a ¥30,000 million Euro Yen Zero Coupon Convertible Bonds issue. The Company plans to apply these funds to capital investments in preparation for increased production in the current fiscal year and beyond. The interest-bearing debt-to-total assets ratio rose 1.0%, to 35.6%.

During the fiscal year, shareholders' equity increased ¥7,559 million, to ¥142,487 million. Major items included a ¥8,610 million advance in retained earnings, a ¥4,102 million increase in net unrealized holding gains on securities, and a ¥5,074 million decline in translation adjustments. The shareholders' equity ratio rose 2.1% from the previous fiscal year, to 31.0%. The shareholders' equity ratio on a market value basis was 52.8%, climbing 6.3% from the prior fiscal year. Based on shares outstanding at the end of the fiscal year, shareholders' equity per share amounted to ¥308.27, an increase of ¥16.45 per share year-on-year.

Note: Shareholders' equity ratio on a market value basis = market value of shares/total assets

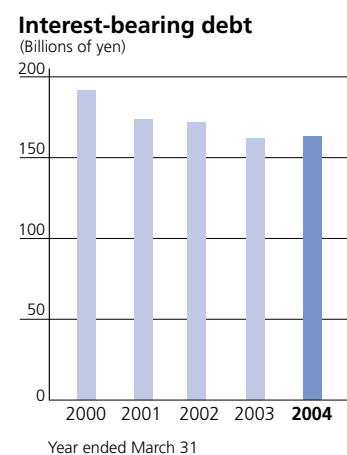
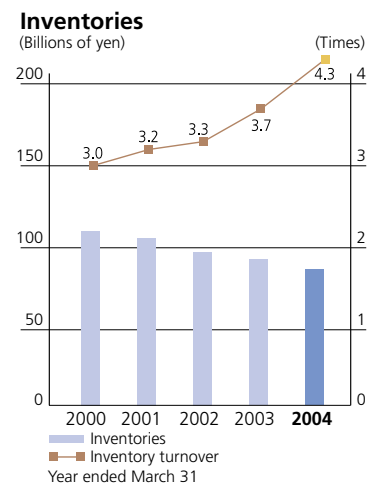
## ■ Cash Flows

For the fiscal year ended March 2004, net cash provided by operating activities amounted to ¥21,142 million, decreasing ¥27,279 million from the previous fiscal year. This decline can be mainly attributed to a special charge of ¥20,446 million in severance payments under the early retirement program.

From this net cash, the Company made expenditures of ¥36,414 million in payments for property, plant and equipment among net cash used in investing activities totaling ¥34,990 million, which were up ¥10,903 million year-on-year. In financing activities, the Company made bond redemptions totaling ¥50,000 million and earned ¥59,758 million in proceeds from bond issues. Net cash used in financing activities, therefore, amounted to ¥6,044 million, up ¥15,969 million from the previous fiscal year.

Currency adjustments reduced cash and cash equivalents by ¥328 million. As a result, cash and cash equivalents at end of the year totaled ¥42,158 million, down ¥8,082 million, from the prior fiscal year.

Excluding the severance payments under the early retirement program, net cash provided by operating activities was ¥41,588 million and net cash used in investing activities was ¥34,990 million. The difference—free cash flow—amounted to ¥6,598 million. In addition, excluding the severance payments under the early retirement program, the proportion of net cash provided by operating activities to net sales was 11.6%, declining 2.5% from the previous fiscal year.



# Consolidated Balance Sheets

NTN Corporation and Consolidated Subsidiaries  
March 31, 2004 and 2003

	2004	2003	2004
	<i>(Millions of yen)</i>		<i>(Thousands of U.S. dollars) (Note 1)</i>
<b>Assets</b>			
Current assets:			
Cash and cash equivalents <i>(Note 3)</i> .....	¥ 42,158	¥ 50,240	\$ 398,884
Short-term investments .....	66	256	624
Trade receivables:			
Notes .....	18,568	17,843	175,684
Accounts .....	72,864	68,859	689,412
Allowance for doubtful accounts .....	(399)	(403)	(3,775)
	<b>91,033</b>	86,299	<b>861,321</b>
Inventories <i>(Note 4)</i> .....	83,565	92,729	790,661
Deferred income taxes <i>(Note 14)</i> .....	7,850	9,961	74,274
Other current assets .....	10,399	6,955	98,392
Total current assets .....	<b>235,071</b>	246,440	<b>2,224,156</b>
Property, plant and equipment <i>(Note 5)</i> :			
Land .....	23,792	22,095	225,111
Buildings and structures .....	109,756	109,091	1,038,471
Machinery, equipment and vehicles .....	427,992	429,469	4,049,503
Construction in progress .....	13,877	8,299	131,299
	<b>575,417</b>	568,954	<b>5,444,384</b>
Less accumulated depreciation .....	<b>(394,283)</b>	(393,036)	<b>(3,730,561)</b>
Property, plant and equipment, net .....	<b>181,134</b>	175,918	<b>1,713,823</b>
Investments and other assets:			
Investment securities <i>(Note 3)</i> .....	14,317	8,926	135,462
Investments in unconsolidated subsidiaries and affiliates .....	7,434	7,928	70,338
Deferred income taxes <i>(Note 14)</i> .....	17,409	23,385	164,718
Other assets .....	4,976	4,601	47,081
Total investments and other assets .....	<b>44,136</b>	44,840	<b>417,599</b>
Total assets .....	<b>¥ 460,341</b>	¥ 467,198	<b>\$ 4,355,578</b>

	2004	2003	2004
	<i>(Millions of yen)</i>		<i>(Thousands of U.S. dollars) (Note 1)</i>
<b>Liabilities, minority interests and shareholders' equity</b>			
Current liabilities:			
Short-term bank loans <i>(Note 5)</i> .....	¥ 71,362	¥ 81,071	\$ 675,201
Current portion of long-term debt <i>(Note 5)</i> .....	1,224	50,953	11,581
Trade payables:			
Notes .....	28,231	27,052	267,111
Accounts .....	39,773	39,712	376,318
	<b>68,004</b>	66,764	<b>643,429</b>
Accrued income taxes <i>(Note 14)</i> .....	3,171	2,067	30,003
Deferred income taxes <i>(Note 14)</i> .....	13	13	123
Reserve for employees' early retirement incentive plans <i>(Note 13)</i> .....	-	10,988	-
Other current liabilities .....	25,911	25,448	245,160
Total current liabilities .....	<b>169,685</b>	237,304	<b>1,605,497</b>
Long-term liabilities:			
Long-term debt <i>(Note 5)</i> .....	91,505	29,422	865,787
Accrued retirement benefits for employees <i>(Note 6)</i> .....	46,305	53,646	438,121
Accrued retirement benefits for directors and statutory auditors .....	450	519	4,258
Reserve for product defect compensation .....	2,657	4,500	25,140
Deferred income taxes <i>(Note 14)</i> .....	2,093	2,863	19,803
Other long-term liabilities .....	1,669	1,866	15,791
Total long-term liabilities .....	<b>144,679</b>	92,816	<b>1,368,900</b>
Minority interests .....	3,490	2,150	33,021
Contingent liabilities <i>(Note 8)</i>			
Shareholders' equity <i>(Notes 7 and 17)</i> :			
Common stock .....			
Authorized – 800,000,000 shares .....			
Issued– 463,056,775 shares at March 31, 2004 and 2003 ..	39,599	39,599	374,671
Capital surplus .....	52,623	52,622	497,900
Retained earnings .....	59,332	50,722	561,378
Net unrealized holding gain on securities <i>(Note 14)</i> .....	4,967	865	46,996
Translation adjustments .....	(13,683)	(8,609)	(129,464)
	<b>142,838</b>	135,199	<b>1,351,481</b>
Treasury stock, at cost; 834,186 shares in 2004 and 681,313 shares in 2003 .....	(351)	(271)	(3,321)
Net shareholders' equity .....	<b>142,487</b>	134,928	<b>1,348,160</b>
Total liabilities, minority interests and shareholders' equity .....	¥ 460,341	¥ 467,198	\$ 4,355,578

See accompanying notes to the consolidated financial statements.



# Consolidated Statements of Income

NTN Corporation and Consolidated Subsidiaries  
Years ended March 31, 2004 and 2003

	2004	2003	2004
	<i>(Millions of yen)</i>		<i>(Thousands of U.S. dollars) (Note 1)</i>
Net sales .....	¥ 357,394	¥ 342,745	\$ 3,381,531
Cost of sales (Note 12) .....	282,594	272,748	2,673,801
Gross profit .....	74,800	69,997	707,730
Selling, general and administrative expenses (Note 12) .....	50,091	49,212	473,943
Operating income .....	24,709	20,785	233,787
Other income (expenses):			
Interest and dividend income .....	294	326	2,782
Interest expense .....	(2,792)	(3,193)	(26,417)
Equity in earnings of affiliates .....	569	431	5,384
Gain on return of substitutional portion of employees' Welfare Pension Fund Plans (Note 6) .....	-	14,485	-
Restructuring costs (Note 13) .....	(2,596)	(11,399)	(24,562)
Provision for reserve for product defect compensation .....	-	(5,944)	-
Loss on devaluation of investment securities .....	-	(2,564)	-
Other, net .....	(2,003)	(6,729)	(18,952)
Income before income taxes and minority interests .....	18,181	6,198	172,022
Income taxes (Note 14):			
Current .....	3,021	4,259	28,583
Deferred .....	3,948	(1,046)	37,355
Income before minority interests .....	6,969	3,213	65,938
Minority interests in subsidiaries .....	11,212	2,985	106,084
Net income .....	(180)	(328)	(1,703)
Net income .....	¥ 11,032	¥ 2,657	\$ 104,381

See accompanying notes to the consolidated financial statements.

# Consolidated Statements of Shareholder's Equity

NTN Corporation and Consolidated Subsidiaries  
Years ended March 31, 2004 and 2003

	2004	2003	2004
	<i>(Millions of yen)</i>		<i>(Thousands of U.S. dollars) (Note 1)</i>
<b>Common stock:</b>			
Balance at beginning and end of the year .....	¥ 39,599	¥ 39,599	\$ 374,671
<b>Capital surplus:</b>			
Balance at beginning of the year .....	¥ 52,622	¥ 52,622	\$ 497,890
Gain on sales of treasury stock .....	1	-	10
Balance at end of the year .....	¥ 52,623	¥ 52,622	\$ 497,900
<b>Retained earnings:</b>			
Balance at beginning of the year .....	¥ 50,722	¥ 50,409	\$ 479,913
Increase in retained earnings resulting from merger with an affiliate not accounted for by the equity method ....	-	2	-
Decrease in retained earnings resulting from merger with an unconsolidated subsidiary .....	(89)	-	(842)
Net income .....	11,032	2,657	104,381
Appropriations:			
Cash dividends .....	(2,311)	(2,314)	(21,866)
Bonuses to directors and statutory auditors .....	(22)	(26)	(208)
Loss on sales of treasury stock .....	-	(6)	-
Balance at end of the year .....	¥ 59,332	¥ 50,722	\$ 561,378
<b>Net unrealized holding gain on securities:</b>			
Balance at beginning of the year .....	¥ 865	¥ 1,425	\$ 8,184
Net change during the year .....	4,102	(560)	38,812
Balance at end of the year .....	¥ 4,967	¥ 865	\$ 46,996
<b>Translation adjustments:</b>			
Balance at beginning of the year .....	¥ (8,609)	¥ (5,435)	\$ (81,455)
Net change during the year .....	(5,074)	(3,174)	(48,009)
Balance at end of the year .....	¥ (13,683)	¥ (8,609)	\$ (129,464)

See accompanying notes to the consolidated financial statements.

# Consolidated Statements of Cash Flows

NTN Corporation and Consolidated Subsidiaries  
Years ended March 31, 2004 and 2003

	2004	2003	2004
	<i>(Millions of yen)</i>		<i>(Thousands of U.S. dollars) (Note 1)</i>
<b>Cash flows from operating activities:</b>			
Income before income taxes and minority interests .....	¥ 18,181	¥ 6,198	\$ 172,022
Adjustments for:			
Depreciation and amortization .....	23,979	23,838	226,880
Amortization of consolidation adjustments .....	(1,057)	–	(10,001)
Increase in allowance for doubtful accounts .....	32	244	303
Decrease in accrued retirement benefits for employees .....	(7,164)	(13,387)	(67,783)
Payments of employees' retirement benefits under employees' early retirement incentive plans .....	20,446	–	193,453
(Decrease) increase in accrued retirement benefits for directors and statutory auditors .....	(69)	28	(653)
(Decrease) increase in reserve for employees' early retirement incentive plans .....	(10,988)	10,988	(103,964)
(Decrease) increase in reserve for product defect compensation .....	(1,843)	4,500	(17,438)
Interest and dividend income .....	(294)	(326)	(2,782)
Interest expense .....	2,792	3,193	26,417
Translation adjustments and foreign exchange loss, net .....	648	491	6,131
Equity in earnings of affiliates .....	(569)	(431)	(5,384)
Loss on devaluation of investment securities .....	–	2,564	–
Increase in trade receivables .....	(7,262)	(3,606)	(68,710)
Decrease in inventories .....	7,192	4,197	68,048
Increase in trade payables .....	1,503	12,604	14,221
Payments of bonuses to directors and statutory auditors .....	(22)	(28)	(208)
Other .....	138	2,454	1,305
Subtotal .....	45,643	53,521	431,857
Interest and dividend income received .....	953	945	9,017
Interest expense paid .....	(2,921)	(3,231)	(27,637)
Payments of employees' retirement benefits under employees' early retirement incentive plans .....	(20,446)	–	(193,453)
Income taxes paid .....	(2,087)	(2,814)	(19,746)
Net cash provided by operating activities .....	21,142	48,421	200,038
<b>Cash flows from investing activities:</b>			
Decrease (increase) in short-term investments .....	¥ 190	¥ (154)	\$ 1,798
Purchases of property, plant and equipment .....	(36,414)	(24,821)	(344,536)
Purchases of other assets .....	(712)	(1,297)	(6,737)
Proceeds from sales of investment securities and other .....	1,645	2,051	15,564
Other .....	301	134	2,848
Net cash used in investing activities .....	(34,990)	(24,087)	(331,063)
<b>Cash flows from financing activities:</b>			
Decrease in short-term bank loans, net .....	(5,965)	(8,265)	(56,439)
Proceeds from long-term loans .....	4,362	3,655	41,272
Repayment of long-term loans, including current portion .....	(1,140)	(3,732)	(10,786)
Issuance of bonds .....	59,758	–	565,408
Redemption of bonds .....	(50,000)	–	(473,082)
Issuance of common stock assigned to minority shareholders of consolidated subsidiaries .....	1,384	996	13,095
Cash dividends paid .....	(2,311)	(2,314)	(21,866)
Other .....	(44)	(265)	(416)
Net cash provided by (used in) financing activities .....	6,044	(9,925)	57,186
Effect of exchange rate changes on cash and cash equivalents .....	(328)	(272)	(3,103)
Net (decrease) increase in cash and cash equivalents .....	(8,132)	14,137	(76,942)
Cash and cash equivalents at beginning of the year .....	50,240	36,072	475,353
Increase in cash and cash equivalents resulting from merger with an affiliate not accounted for by the equity method .....	–	31	–
Increase in cash and cash equivalents resulting from merger with an unconsolidated subsidiary .....	50	–	473
Cash and cash equivalents at end of the year .....	¥ 42,158	¥ 50,240	\$ 398,884

# Notes to the Consolidated Financial Statements

NTN Corporation and Consolidated Subsidiaries  
March 31, 2004

## 1. Basis of Preparation

The accompanying consolidated financial statements of NTN Corporation (the "Company") and consolidated subsidiaries are prepared on the basis of accounting principles generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards, and are compiled from the consolidated financial statements prepared by the Company as required by the Securities and Exchange Law of Japan.

The translation of yen amounts into U.S. dollar is included solely for the convenience of readers outside Japan and has been made at ¥105.69 = U.S.\$1.00, the exchange rate prevailing on March 31, 2004. This translation should not be construed as a representation that yen can be converted into U.S. dollars at the above or any other rate.

## 2. Summary of Significant Accounting Policies

### (a) Principles of consolidation

The accompanying consolidated financial statements include the accounts of the Company and the significant companies which it controls directly or indirectly. Companies over which the Company exercises significant influence in terms of their operating and financial policies have been included in the consolidated financial statements on an equity basis. The assets and liabilities of the newly consolidated subsidiaries are stated at fair value as of their respective dates of acquisition.

The financial statements of certain consolidated subsidiaries whose fiscal year end is December 31 have been included in consolidation on the basis of a full fiscal year closing on March 31 for consolidation purposes.

The differences between the cost and the underlying net equity in the net assets at the dates of acquisition of the consolidated subsidiaries and companies accounted for by the equity method are amortized by the straight-line method over the appropriate periods.

### (b) Foreign currency translation

Monetary assets and liabilities denominated in foreign currencies are translated into yen at the rate of exchange in effect at the balance sheet date. Revenues and expenses are translated at the rates of exchange prevailing when the transactions were made.

Assets and liabilities of overseas subsidiaries and affiliates are translated into yen at the exchange rates in effect on the respective balance sheet date, and shareholders' equity is translated at the respective historical rates. Revenue and expenses are translated at the average rates of exchange for the respective years. Differences arising from translation are reflected in shareholders' equity (presented as "Translation adjustments") and minority interests in the consolidated balance sheets.

### (c) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand, deposits with banks withdrawable on demand, and short-term investments which are readily convertible to cash subject to an insignificant risk of any change in their value and which were purchased with an original maturity of three months or less.

### (d) Allowance for doubtful accounts

The allowance for doubtful accounts is computed based on the actual ratio of bad debts in the past and an estimate of certain uncollectible amounts determined after an analysis of specific individual receivables.

### (e) Short-term investments and investment securities

The accounting standard for financial instruments requires that securities be classified into three categories: trading, held-to-maturity or other securities. Trading securities are carried at fair value and held-to-maturity debt securities are carried at amortized cost. Marketable securities classified as other securities are carried at fair value with any changes in unrealized holding gain or loss, net of the applicable income taxes, included directly in shareholders' equity. Cost of securities sold is determined by the moving average method. Non-marketable securities classified as other securities are carried at cost based on the moving average method.

### (f) Inventories

Inventories are principally stated at cost determined by the average method.

### (g) Property, plant and equipment

Property, plant and equipment are stated at cost. Depreciation is computed at rates based on the estimated useful lives of assets by the declining-balance method, except for the buildings and assets of overseas consolidated subsidiaries to which the straight-line method is principally applied.

The principal estimated useful lives are as follows:

Buildings and structures	10 to 50 years
Machinery, equipment and vehicles	5 to 12 years

### (h) Reserve for employees' early retirement incentive plans

The Company and certain domestic subsidiaries have introduced employees' early retirement incentive plans. During March 2003, 781 employees applied to join these plans and applications were closed. The Company and certain domestic subsidiaries provided a reserve for the expected payment of additional retirement benefits to these 781 employees and the related expenses at an estimated amount.



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**(i) Accrued retirement benefits for employees**

Accrued retirement benefits for employees have been provided principally at an amount calculated based on the retirement benefit obligation and the fair value of the pension plan assets, as adjusted for net unrecognized actuarial gain or loss, and unrecognized prior service cost. The estimated benefit is attributed to each period by the straight-line method over the estimated years of service of the eligible employees.

Prior service cost is amortized in the year in which the gain or loss is recognized primarily by the straight-line method over the estimated average remaining years of service of the eligible employees (principally 15 years).

Net unrecognized actuarial gain or loss is amortized commencing the year following the year in which the gain or loss was recognized primarily by the straight-line method over the estimated average remaining years of service of the eligible employees (principally 15 years).

**(j) Accrued retirement benefits for directors and statutory auditors**

Subject to approval at the shareholders' meeting, directors and statutory auditors of the Company are entitled to lump-sum payments under unfunded retirement benefit plans. The provision for retirement benefits for directors and statutory auditors has been made at an estimated amount based on the Company's internal regulations.

**(k) Reserve for product defect compensation**

During the year ended March 31, 2003, the Company encountered serious problems involving significant deficiencies in the quality of certain of its products. The Company has provided a reserve for product defect compensation at an estimated amount in order to cover the anticipated compensation.

**(l) Leases**

Finance leases other than those which transfer the ownership of the leased property to the lessee are accounted for as operating leases.

**(m) Research and development costs and computer software**

Research and development costs are charged to income when incurred.

Expenditures relating to computer software developed for internal use are charged to income when incurred, except if the software is expected to contribute to the generation of income or to cost savings. Such expenditures are capitalized as assets and are amortized by the straight-line method over their estimated useful life, generally a 5-year period.

**(n) Income taxes**

Deferred income taxes are provided for temporary differences between the balances of assets and liabilities reported for financial purposes and the corresponding balances for tax reporting purposes.

**(o) Derivative financial instruments and hedging activities**

All derivatives are stated at fair value with any changes in fair value included in net income for the period in which they arise, except for derivatives which meet the criteria for deferral hedge accounting under which realized gain or loss is deferred as an asset or a liability. Receivables and payables hedged by forward foreign exchange contracts which meet certain conditions are translated at the corresponding foreign exchange contract rates.

**(p) Appropriation of retained earnings**

Under the Commercial Code of Japan, the appropriation of retained earnings with respect to a given financial period is made by resolution of the shareholders at a general meeting held subsequent to the close of the financial period. The accounts for the period do not reflect such appropriations.

### 3. Securities

(a) Information regarding marketable securities classified as other securities at March 31, 2004 and 2003 is summarized as follows:

	<i>Millions of yen</i>						<i>Thousands of U.S. dollars</i>		
	<b>2004</b>			2003			<b>2004</b>		
	Acquisition costs	Carrying value	Unrealized gain (loss)	Acquisition costs	Carrying value	Unrealized gain (loss)	Acquisition costs	Carrying value	Unrealized gain (loss)
Securities whose carrying value exceeds their acquisition costs:									
Equity securities .....	¥ 5,132	¥ 13,454	¥ 8,322	¥ 2,954	¥ 4,774	¥ 1,820	\$ 48,557	\$ 127,297	\$ 78,740
Subtotal .....	<b>5,132</b>	<b>13,454</b>	<b>8,322</b>	2,954	4,774	1,820	<b>48,557</b>	<b>127,297</b>	<b>78,740</b>
Securities whose carrying value does not exceed their acquisition costs:									
Equity securities .....	388	361	(27)	4,006	3,642	(364)	3,671	3,416	(255)
Other .....	42	25	(17)	42	28	(14)	398	236	(162)
Subtotal .....	<b>430</b>	<b>386</b>	<b>(44)</b>	4,048	3,670	(378)	<b>4,069</b>	<b>3,652</b>	<b>(417)</b>
Total .....	¥ 5,562	¥ 13,840	¥ 8,278	¥ 7,002	¥ 8,444	¥ 1,442	\$ 52,626	\$ 130,949	\$ 78,323

(b) The carrying value of non-marketable other securities at March 31, 2004 and 2003 is summarized as follows:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	<b>2004</b>	2003	<b>2004</b>
Cash and cash equivalents:			
Money management funds .....	¥ 6,996	¥ 6,998	\$ 66,194
Investment securities:			
Unlisted equity securities .....	477	482	4,513
	¥ 7,473	¥ 7,480	\$ 70,707

### 4. Inventories

Inventories at March 31, 2004 and 2003 consisted of the following:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	<b>2004</b>	2003	<b>2004</b>
Finished goods .....	¥ 44,763	¥ 50,997	\$ 423,531
Work in process and raw materials .....	38,802	41,732	367,130
	¥ 83,565	¥ 92,729	\$ 790,661

## 5. Short-term Bank Loans and Long-term Debt

Short-term bank loans principally represent short-term notes with average annual interest rates of 1.41% and 1.58% at March 31, 2004 and 2003, respectively.

Long-term debt at March 31, 2004 and 2003 consisted of the following:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	<b>2004</b>	2003	<b>2004</b>
Loans from banks and other financial institutions, due through 2009, at an average annual interest rate of 3.0% .....	¥ <b>12,729</b>	¥ 10,375	\$ <b>120,438</b>
0.85% unsecured convertible bonds due 2004 .....	–	30,000	–
1.85% unsecured bonds due 2003 .....	–	20,000	–
2.14% unsecured bonds due 2006 .....	<b>10,000</b>	10,000	<b>94,616</b>
2.7% unsecured bonds due 2009 .....	<b>10,000</b>	10,000	<b>94,616</b>
0.48% unsecured bonds due 2008 .....	<b>10,000</b>	–	<b>94,616</b>
0.76% unsecured bonds due 2010 .....	<b>20,000</b>	–	<b>189,233</b>
Zero coupon unsecured convertible bonds due 2009 .....	<b>30,000</b>	–	<b>283,849</b>
	<b>92,729</b>	80,375	<b>877,368</b>
Less current portion .....	<b>(1,224)</b>	(50,953)	<b>(11,581)</b>
	¥ <b>91,505</b>	¥ 29,422	\$ <b>865,787</b>

The zero coupon unsecured convertible bonds are convertible at any time up to and including March 4, 2009 into shares of common stock of the Company at the conversion price of ¥740 (\$7.00) per share.

The assets pledged as collateral for short-term bank loans and long-term loans at March 31, 2004 were as follows:

	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
Land .....	¥ <b>1,058</b>	\$ <b>10,010</b>
Buildings and structures .....	<b>816</b>	<b>7,721</b>
Total .....	¥ <b>1,874</b>	\$ <b>17,731</b>

Short-term bank loans and long-term loans secured by such collateral at March 31, 2004 were as follows:

	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
Short-term bank loans .....	¥ <b>1,918</b>	\$ <b>18,147</b>
Long-term loans .....	<b>52</b>	<b>492</b>
Total .....	¥ <b>1,970</b>	\$ <b>18,639</b>

The assets pledged as a foundation mortgage at March 31, 2004 were as follows:

	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
Land .....	¥ <b>95</b>	\$ <b>899</b>
Buildings and structures .....	<b>174</b>	<b>1,646</b>
Machinery, equipment and vehicles .....	<b>75</b>	<b>710</b>
Total .....	¥ <b>344</b>	\$ <b>3,255</b>

Short-term bank loans and long-term loans secured by the foundation mortgage at March 31, 2004 were as follows:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>	
Short-term bank loans .....	¥	<b>44</b>	\$	<b>417</b>
Long-term loans .....		<b>33</b>		<b>312</b>
Total .....	¥	<b>77</b>	\$	<b>729</b>

The aggregate annual maturities of long-term debt subsequent to March 31, 2004 are summarized as follows:

<i>Year ending March 31,</i>	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>	
2005 .....	¥	<b>1,224</b>	\$	<b>11,581</b>
2006 .....		<b>8,641</b>		<b>81,758</b>
2007 .....		<b>11,889</b>		<b>112,489</b>
2008 .....		<b>819</b>		<b>7,749</b>
2009 .....		<b>40,156</b>		<b>379,941</b>
2010 and thereafter .....		<b>30,000</b>		<b>283,850</b>
	¥	<b>92,729</b>	\$	<b>877,368</b>

## 6. Accrued Retirement Benefits for Employees

The Company and its domestic consolidated subsidiaries have defined benefit plans, i.e., welfare pension fund plans ("WPFs"), tax-qualified pension plans and lump-sum payment plans, covering substantially all employees who are entitled to lump-sum or annuity payments, the amounts of which are determined by reference to their basic rates of pay, length of service, and the conditions under which termination occurs. Certain overseas consolidated subsidiaries also have defined benefit plans.

The following table sets forth the funded and accrued status of the plans, and the amounts recognized in the consolidated balance sheets at March 31, 2004 and 2003 for the Company's and the consolidated subsidiaries' defined benefit plans:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>	
	<b>2004</b>	2003	<b>2004</b>	
Retirement benefit obligation .....	¥ <b>(110,042)</b>	¥ (122,480)	\$ <b>(1,041,177)</b>	
Plan assets fair value .....	<b>48,930</b>	38,714	<b>462,958</b>	
Unfunded retirement benefit obligation .....	<b>(61,112)</b>	(83,766)	<b>(578,219)</b>	
Unrecognized actuarial loss .....	<b>18,043</b>	33,455	<b>170,716</b>	
Unrecognized prior service cost .....	<b>(3,236)</b>	(3,335)	<b>(30,618)</b>	
Accrued retirement benefits for employees .....	¥ <b>(46,305)</b>	¥ (53,646)	\$ <b>(438,121)</b>	

The components of retirement benefit expenses for the years ended March 31, 2004 and 2003 are outlined as follows:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>	
	<b>2004</b>	2003	<b>2004</b>	
Service cost .....	¥ <b>4,254</b>	¥ 5,307	\$ <b>40,250</b>	
Interest cost .....	<b>3,574</b>	6,096	<b>33,816</b>	
Expected return on plan assets .....	<b>(1,374)</b>	(3,232)	<b>(13,000)</b>	
Amortization:				
Actuarial loss .....	<b>2,272</b>	1,294	<b>21,496</b>	
Prior service cost .....	<b>(217)</b>	(465)	<b>(2,053)</b>	
Retirement benefit expenses .....	¥ <b>8,509</b>	¥ 9,000	\$ <b>80,509</b>	



Pursuant to the enactment of the Defined Benefit Corporate Pension Plan Law, the Company and certain domestic consolidated subsidiaries obtained approval from the Minister of Health, Labour and Welfare on February 17, 2003, for an exemption from future retirement benefit obligations with respect to the substitutional portion of the employee WFPF which the Company operates on behalf of the Japanese government. The Company and certain domestic consolidated subsidiaries accounted for the separation of the substitutional portion of the benefit obligation from the

corporate portion of the benefit obligation under its employee WFPF as of the date of approval of the exemption, assuming that the transfer to the Japanese government of the substitutional portion of the benefit obligation and the related pension plan assets had been completed as of that date. As a result, a gain of ¥14,485 million was recognized and recorded as "gain on return of substitutional portion of employees' Welfare Pension Fund Plans," a component of other income in the consolidated statement of income for the year ended March 31, 2003.

The assumptions used in accounting for the defined benefit plans for the years ended March 31, 2004 and 2003 are summarized as follows:

	2004	2003
Discount rate .....	<b>Principally 2.6%</b>	Principally 2.6%
Expected rate of return on plan assets .....	<b>Principally 4.0%</b>	Principally 4.0%

## 7. Shareholders' Equity

The Commercial Code of Japan (the "Code") provides that an amount equivalent to at least 10% of cash dividends paid and bonuses to directors and statutory auditors, and exactly 10% of interim cash dividends paid be appropriated to the legal reserve until the sum of additional paid-in capital and the legal reserve equals 25% of stated capital. The Code also provides that additional paid-in capital and the legal reserve are not available for dividends, but may be used to reduce or eliminate a capital deficit by resolution of the shareholders or may be transferred to common stock by resolution of the Board of Directors. The Code also stipulates that, to the extent that the sum of the additional paid-in capital account and the legal reserve exceeds 25% of the common stock account, the amount of any such excess is available for

appropriation by resolution of the shareholders. Additional paid-in capital and the legal reserve are included in capital surplus and retained earnings, respectively, in the accompanying consolidated balance sheets and statements of shareholders' equity. The legal reserve of the Company amounted to ¥8,639 million (\$81,739 thousand) at March 31, 2004 and 2003.

Effective April 1, 2002, the Company and its consolidated subsidiaries adopted a new accounting standard for treasury stock and the reversal of the legal reserves. The effect of the adoption of this standard on the consolidated results of their operations for the year ended March 31, 2003 was immaterial.

## 8. Contingent Liabilities

The contingent liabilities of the Company and its consolidated subsidiaries at March 31, 2004 were as follows:

	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
Trade notes receivable discounted with banks .....	<b>¥ 419</b>	<b>\$ 3,964</b>

## 9. Finance Leases Without Covenants Transferring Ownership of Properties to Lessees

### (a) Lessees' accounting

The following pro forma amounts represent the acquisition costs, accumulated depreciation and net book value of the leased assets at March 31, 2004 and 2003, which would have been reflected in the consolidated balance sheets if finance lease accounting had been applied to the finance leases currently accounted for as operating leases:

	<i>Millions of yen</i>						<i>Thousands of U.S. dollars</i>		
	<b>2004</b>			<b>2003</b>			<b>2004</b>		
	Acquisition costs	Accumulated depreciation	Net book value	Acquisition costs	Accumulated depreciation	Net book value	Acquisition costs	Accumulated depreciation	Net book value
Building and structures ....	¥ 2,639	¥ 1,435	¥ 1,204	¥ 2,638	¥ 1,316	¥ 1,322	\$ 24,969	\$ 13,577	\$ 11,392
Machinery, equipment and vehicles .....	718	466	252	1,576	1,245	331	6,793	4,409	2,384
Other assets .....	97	60	37	83	44	39	918	568	350
.....	¥ 3,454	¥ 1,961	¥ 1,493	¥ 4,297	¥ 2,605	¥ 1,692	\$ 32,680	\$ 18,554	\$ 14,126

Lease payments relating to finance leases accounted for as operating leases in the accompanying consolidated financial statements amounted to ¥336 million (\$3,179 thousand) and ¥552 million for the years ended March 31, 2004 and 2003, respectively. Depreciation of the leased assets computed by the straight-line method over the respective lease terms amounted to ¥336 million (\$3,179 thousand) and ¥552 million for the years ended March 31, 2004 and 2003, respectively.

Future minimum lease payments subsequent to March 31, 2004 for finance leases accounted for as operating leases are summarized as follows:

Year ending March 31,	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
2004 .....	¥ 247	\$ 2,337
2005 and thereafter .....	1,246	11,789
Total .....	¥ 1,493	\$ 14,126

The acquisition costs and future minimum lease payments under finance leases presented in the above tables include the imputed interest expense.

#### (b) Lessors' accounting

The following amounts represent the acquisition costs, accumulated depreciation and net book value of the leased assets relating to finance leases accounted for as operating leases at March 31, 2004 and 2003:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	<b>2004</b>	<b>2003</b>	<b>2004</b>
Machinery, equipment and vehicles			
Acquisition cost .....	¥ 69	¥ 69	\$ 653
Accumulated depreciation .....	(62)	(60)	(587)
Net book value .....	¥ 7	¥ 9	\$ 66

Lease income relating to finance leases accounted for as operating leases in the accompanying consolidated financial statements amounted to ¥7 million (\$66 thousand) and ¥6 million for the years ended March 31, 2004 and 2003, respectively. Depreciation of the assets leased under finance leases accounted for as operating leases amounted to ¥2 million (\$19 thousand) for the years ended March 31, 2004 and 2003.

Future minimum lease receipts subsequent to March 31, 2004 for finance leases accounted for as operating leases are summarized as follows:

Year ending March 31,	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
2004 .....	¥ 6	\$ 57
2005 and thereafter .....	11	104
Total .....	¥ 17	\$ 161

The imputed interest income is included in the above amounts.

## 10. Operating Leases

Future minimum lease payments subsequent to March 31, 2004 for noncancelable operating leases were as follows:

Year ending March 31,	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
2004 .....	¥ 157	\$ 1,486
2005 and thereafter .....	1,155	10,928
<b>Total .....</b>	<b>¥ 1,312</b>	<b>\$ 12,414</b>

## 11. Derivative Financial Instruments

Derivative financial instruments are utilized by the Company and its consolidated subsidiaries principally to reduce interest rate and foreign exchange rate risk, and consist of forward foreign exchange contracts, currency options, currency swaps, interest-rate options and interest-rate swaps. The Company and its consolidated subsidiaries do not hold or issue derivative financial instruments for speculative purposes.

The Company is exposed to certain market risk arising from its interest-rate swap agreements. The Company is also exposed to the risk of credit loss in the event of nonperformance by the counterparties with respect to interest-rate swap agreements; however, the Company does not anticipate nonperformance by any of these counterparties all of whom are financial institutions with high credit ratings.

The Company and its consolidated subsidiaries have established policies which include maximum upper limits and

reporting obligations for derivative transactions and comply fully with these guidelines. Derivative transactions are entered into by the Company's Finance Department and its subsidiaries. The Company carries out mutual supervision and monitoring of its derivative transactions in accordance with management policies and its consolidated subsidiaries apply the same approach. Each derivative transaction of the Company is reported to the director responsible when entered into. The consolidated subsidiaries are required to report the status of their derivatives positions to the Company on a monthly basis and are also required to consult with the Company when they enter into derivative transactions other than forward foreign exchange contracts.

At March 31, 2004 and 2003, all derivatives utilized by the Company and its consolidated subsidiaries met the criteria for deferral hedge accounting.

## 12. Research and Development Costs

Research and development costs included in cost of sales and selling, general and administrative expenses totaled ¥13,543 million (\$128,139 thousand) and ¥12,255 million for the years ended March 31, 2004 and 2003, respectively.

## 13. Restructuring Costs

Restructuring costs for the years ended March 31, 2004 and 2003 consisted of the following:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	<b>2004</b>	2003	<b>2004</b>
Loss on reorganization of manufacturing facilities at subsidiaries in the U.S.A. ....	¥ 2,119	¥ –	\$20,049
Loss on liquidation of subsidiaries .....	477	411	4,513
Provision of a reserve for employees' early retirement incentive plans .....	–	10,988	–
	<b>¥ 2,596</b>	¥ 11,399	<b>\$24,562</b>

## 14. Income Taxes

Income taxes applicable to the Company and its domestic subsidiaries comprise corporate tax, inhabitants' taxes and enterprise tax which, in the aggregate, resulted in a statutory tax rate of 41.3% for the years ended March 31, 2004 and 2003. Overseas subsidiaries are subject to the income taxes of the countries in which they operate.

The effective tax rates for the years ended March 31, 2004 and 2003 differ from the Company's statutory tax rate for the following reasons:

	2004	2003
Statutory tax rate .....	<b>41.3%</b>	41.3%
Permanent non-deductible expenses .....	<b>0.6</b>	1.5
Permanent non-taxable income .....	<b>(2.2)</b>	(6.2)
Elimination of dividend income .....	<b>4.3</b>	12.7
Equity in earnings of affiliates .....	<b>(1.3)</b>	(2.9)
Decrease in deferred tax assets resulting from a change in the statutory tax rate .....	<b>1.3</b>	7.4
Tax loss carryforwards of subsidiaries whose tax effect is not recognized .....	–	4.9
Other .....	<b>(5.7)</b>	(6.9)
Effective tax rates .....	<b>38.3%</b>	51.8 %

The tax effects of temporary differences which gave rise to significant portions of the deferred tax assets at March 31, 2004 and 2003 are presented below:

	<i>Millions of yen</i>		<i>Thousands of U.S. dollars</i>
	2004	2003	2004
Deferred tax assets:			
Accrued retirement benefits for employees .....	¥ 16,890	¥ 18,608	\$ 159,807
Inventories .....	1,587	2,254	15,016
Foreign tax credit carryforwards .....	931	–	8,809
Tax loss carryforwards .....	5,259	4,460	49,759
Reserve for employees' early retirement incentive plans .....	–	4,542	–
Reserve for product defect compensation .....	1,063	1,800	10,058
Accrued expenses .....	2,646	2,085	25,035
Loss on devaluation of investment securities .....	326	644	3,084
Unrealized holding loss on securities .....	–	151	–
Depreciation and amortization .....	180	–	1,703
Other .....	1,445	1,343	13,673
Total gross deferred tax assets .....	<b>30,327</b>	35,887	<b>286,944</b>
Less valuation allowance .....	<b>(285)</b>	(326)	<b>(2,697)</b>
Deferred tax assets .....	<b>30,042</b>	35,561	<b>284,247</b>
Deferred tax liabilities:			
Depreciation and amortization .....	<b>(2,959)</b>	(3,698)	<b>(27,997)</b>
Unrealized holding gain on securities .....	<b>(3,329)</b>	(728)	<b>(31,498)</b>
Reserve for deferred gain on property included in retained earnings .....	<b>(464)</b>	(481)	<b>(4,390)</b>
Other .....	<b>(137)</b>	(184)	<b>(1,296)</b>
Deferred tax liabilities .....	<b>(6,889)</b>	(5,091)	<b>(65,181)</b>
Net deferred tax assets .....	¥ 23,153	¥ 30,470	\$ 219,066

In accordance with a law on amendments to local tax laws, etc. announced on March 31, 2003, the Company and its domestic consolidated subsidiaries at March 31, 2003 applied a statutory tax rate of 40.0% to the calculation of deferred tax assets which are expected to be reversed on April 1, 2004 and

thereafter. The effect of this change in the statutory tax rate was to decrease deferred tax assets at March 31, 2003 and net income for the year then ended by ¥438 million and ¥457 million, respectively, and to increase net unrealized holding gain on securities at March 31, 2003 by ¥19 million.

## 15. Amounts Per Share

	<i>Yen</i>		<i>U.S. dollars</i>
	<b>2004</b>	2003	<b>2004</b>
Net income:			
Basic .....	¥ <b>23.54</b>	5.70	<b>\$ 0.22</b>
Diluted .....	<b>21.87</b>	5.51	<b>0.21</b>
Cash dividends applicable to the year .....	<b>5.50</b>	5.00	<b>0.05</b>
Net assets .....	<b>308.27</b>	291.82	<b>2.92</b>

Basic net income per share is computed based on the net income available for distribution to shareholders of common stock and the weighted-average number of shares of common stock outstanding during the year, and diluted net income per share is computed based on the net income available for distribution to the shareholders and the weighted-average number of shares of common stock outstanding during each year after giving effect to the dilutive potential of shares of common stock to be issued upon the conversion of convertible bonds.

The amount per share of net assets is computed based on net assets available for distribution to the shareholders and the number of shares of common stock outstanding at the year end.

Cash dividends per share represent the cash dividends proposed by the Board of Directors as applicable to the respective years together with the interim cash dividends paid.



## 16. Segment Information

### (1) Geographic Segment Information

Segment information by geographic area for the years ended March 31, 2004 and 2003 is summarized as follows:

<i>Millions of yen</i>							
<b>2004</b>							
	Japan	North America	Europe	Asia and other areas	Total	Elimination	Consolidated
External sales .....	¥ 188,170	¥ 86,002	¥ 58,492	¥ 24,730	¥ 357,394	¥ –	¥ 357,394
Intersegment sales ...	76,343	756	216	161	77,476	(77,476)	–
Total sales .....	264,513	86,758	58,708	24,891	434,870	(77,476)	357,394
Operating expenses ..	247,787	84,327	55,751	23,412	411,277	(78,592)	332,685
Operating income ....	¥ 16,726	¥ 2,431	¥ 2,957	¥ 1,479	¥ 23,593	¥ 1,116	¥ 24,709
Assets .....	¥ 333,781	¥ 87,867	¥ 48,707	¥ 24,391	¥ 494,746	¥ (34,405)	¥ 460,341
<i>Millions of yen</i>							
<b>2003</b>							
	Japan	North America	Europe	Asia and other areas	Total	Elimination	Consolidated
External sales .....	¥ 182,649	¥ 92,702	¥ 47,953	¥ 19,441	¥ 342,745	¥ –	¥ 342,745
Intersegment sales ...	67,030	264	75	8	67,377	(67,377)	–
Total sales .....	249,679	92,966	48,028	19,449	410,122	(67,377)	342,745
Operating expenses ..	236,877	88,867	46,681	17,563	389,988	(68,028)	321,960
Operating income ....	¥ 12,802	¥ 4,099	¥ 1,347	¥ 1,886	¥ 20,134	¥ 651	¥ 20,785
Assets .....	¥ 333,507	¥ 94,901	¥ 46,791	¥ 18,788	¥ 493,987	¥ (26,789)	¥ 467,198
<i>Thousands of U.S. dollars</i>							
<b>2004</b>							
	Japan	North America	Europe	Asia and other areas	Total	Elimination	Consolidated
External sales .....	\$ 1,780,396	\$ 813,719	\$ 553,430	\$ 233,986	\$ 3,381,531	\$ –	\$ 3,381,531
Intersegment sales ...	722,329	7,153	2,044	1,523	733,049	(733,049)	–
Total sales .....	2,502,725	820,872	555,474	235,509	4,114,580	(733,049)	3,381,531
Operating expenses ..	2,344,470	797,871	527,496	221,515	3,891,352	(743,608)	3,147,744
Operating income ....	\$ 158,255	\$ 23,001	\$ 27,978	\$ 13,994	\$ 223,228	\$ 10,559	\$ 233,787
Assets .....	\$ 3,158,113	\$ 831,365	\$ 460,848	\$ 230,779	\$ 4,681,105	\$ (325,527)	\$ 4,355,578

**(2) Overseas sales**

Overseas sales, which include export sales of the Company and its domestic consolidated subsidiaries and sales (other than exports to Japan) of the overseas consolidated subsidiaries, for the years ended March 31, 2004 and 2003 are summarized as follows:

	<i>Millions of yen</i>							
	<b>2004</b>				2003			
	North America	Europe	Asia and other areas	Total	North America	Europe	Asia and other areas	Total
Overseas sales	<b>¥ 86,084</b>	<b>¥ 58,243</b>	<b>¥ 36,865</b>	<b>¥ 181,192</b>	¥ 92,696	¥ 47,871	¥ 32,168	¥ 172,735
Consolidated net sales	–	–	–	<b>357,394</b>	–	–	–	342,745
Overseas sales as a percentage of consolidated sales	<b>24.1%</b>	<b>16.3%</b>	<b>10.3%</b>	<b>50.7%</b>	27.0%	14.0%	9.4%	50.4%

	<i>Thousands of U.S. dollars</i>			
	<b>2004</b>			
	North America	Europe	Asia and other areas	Total
Overseas sales	<b>\$ 814,495</b>	<b>\$ 551,074</b>	<b>\$ 348,803</b>	<b>\$ 1,714,372</b>
Consolidated net sales	–	–	–	<b>\$ 3,381,531</b>

**17. Subsequent Events**

The following appropriations of retained earnings of the Company, which have not been reflected in the accompanying consolidated financial statements for the year ended March 31, 2004, were approved at a shareholders' meeting held on June 29, 2004:

	<i>Millions of yen</i>	<i>Thousands of U.S. dollars</i>
Year-end cash dividends (¥3.0 = \$0.03 per share) .....	<b>¥ 1,387</b>	<b>\$ 13,123</b>
Bonuses to directors .....	<b>110</b>	<b>1,041</b>
Bonuses to statutory auditors .....	<b>10</b>	<b>95</b>

## Report of Independent Auditors

The Board of Directors  
NTN Corporation

We have audited the accompanying consolidated balance sheets of NTN Corporation and consolidated subsidiaries as of March 31, 2004 and 2003 and the related consolidated statements of income, shareholders' equity, and cash flows for the years then ended, all expressed in yen. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of NTN Corporation and consolidated subsidiaries at March 31, 2004 and 2003, and the consolidated results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in Japan.

The U.S. dollar amounts in the accompanying consolidated financial statements with respect to the year ended March 31, 2004 are presented solely for convenience. Our audit also included the translation of yen amounts into U.S. dollar amounts and, in our opinion, such translation has been made on the basis described in Note 1.

June 29, 2004

*Ernst & Young ShinNihon*

# NTN Group Investment Holdings

As of March 31, 2004

<b>Consolidated Subsidiaries</b>	<i>Paid-in capital</i>	<i>Holding in percent</i>
NTN BEARING SERVICE CO., LTD. ....	¥450,000,000	100
KYOEI NTN CORP. ....	¥20,000,000	100
NTN KONGO CORP. ....	¥1,000,000,000	100
NTN ENGINEERING PLASTICS CORP. ....	¥100,000,000	100
NTN POWDER METAL CORP. ....	¥400,000,000	40[60]
NTN MIKUMO COMPANY LTD. ....	¥450,000,000	100
NTN CASTING CORP. ....	¥450,000,000	100
NTN KISHIWADA CORP. ....	¥20,000,000	100
NTN KINAN CORP. ....	¥450,000,000	100
NTN USA CORP. ....	US.\$97,820,000	100
NTN BEARING CORP. OF AMERICA ....	US.\$24,700,000	100(100)
NTN DRIVESHAFT, INC. ....	US.\$38,580,000	100(100)
AMERICAN NTN BEARING MFG. CORP. ....	US.\$24,330,000	100(100)
NTN-BOWER CORP. ....	US.\$67,000,000	100(100)
NTN-BCA CORP. ....	US.\$16,000,000	100(100)
NTK PRECISION AXLE CORP. ....	US.\$10,000,000	60(60)
NTN BEARING CORP. OF CANADA LTD. ....	CAN.\$20,100,000	100
NTN SUDAMERICANA, S.A. ....	US.\$700,000	100
NTN WÄLZLAGER (EUROPA) G.m.b.H. ....	EURO 14,500,000	100
NTN KUGELLAGERFABRIK (DEUTSCHLAND) G.m.b.H. ....	EURO 18,500,000	100
NTN BEARINGS (UK) LTD. ....	STG.£2,600,000	100(0.04)
NTN FRANCE S.A. ....	EURO 3,700,000	99.999(0.006)
NTN TRANSMISSIONS EUROPE ....	EURO 71,727,792	85
NTN BEARING-SINGAPORE (PTE) LTD. ....	S.\$36,000,000	100(0.969)
NTN CHINA LTD. ....	HK.\$2,500,000	100
NTN BEARING-THAILAND CO., LTD. ....	BAHT 600,000,000	100(99.999)
NTN MANUFACTURING (THAILAND) CO., LTD. ....	BAHT 611,000,000	99.999(99.999)
NTN BEARING-MALAYSIA SDN.BHD. ....	M.\$350,000	60(60)
NTN KOREA CO., LTD. ....	WON 500,000,000	100
SHANGHAI NTN CORP. ....	US.\$20,000,000	95
NTN-NIDEC (ZHEJIANG) CORP. ....	US.\$21,000,000	60
GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD. ....	US.\$10,000,000	60

## **Affiliated Companies Accounted for by the Equity Method**

TUNG PEI INDUSTRIAL CO., LTD. ....	NT.\$1,257,232,620	27.35
TAIWAY LTD. ....	NT.\$160,000,000	36.25
UNIDRIVE PTY. LTD. ....	A.\$5,000,000	40
BEIJING NTN-SEOHAN DRIVESHAFT CO., LTD. ....	US.\$5,000,000	40
ASAHI FORGE OF AMERICA CORP. ....	US.\$6,100,000	32.8(32.8)

(Notes)

1. NTN Corporation's share of voting rights in NTN POWDER METAL CORP. is less than 50%. As this company is substantially controlled by NTN Corporation, however, it is treated as a subsidiary.
2. Under "Holding in percent," the figure in parentheses indicates the percentage of indirectly owned, and is included as part of the total holding. The figure in brackets indicates the percentage owned by parties having close ties with the Company. It is not included in the ownership percentage.

# NTN's Global Network

As of June 29, 2004

## JAPAN

### ● Sales

#### **Automotive Sales Headquarters**

#### **Industrial Sales Headquarters**

6th Floor, TOC Bldg., 22-17  
Nishi-Gotanda 7-chome, Shinagawa-ku,  
Tokyo 141-0031, Japan  
Phone : +81-3-5487-2826  
Fax : +81-3-5487-2940

#### **Precision Equipment Division**

6th Floor, TOC Bldg., 22-17  
Nishi-Gotanda 7-chome, Shinagawa-ku,  
Tokyo 141-0031, Japan  
Phone : +81-3-5487-2867  
Fax : +81-3-5487-2713

#### **Fluid Dynamic Bearing Division**

101 Katsutaba, Kanie-cho, Ama-gun,  
Aichi 497-8541, Japan  
Phone : +81-567-95-5005  
Fax : +81-567-95-5939

#### **NTN BEARING SERVICE CO., LTD.**

3-1, 1-chome, Takanawa, Minato-ku,  
Tokyo 108-0074, Japan  
Phone : +81-3-3440-3321  
Fax : +81-3-3440-3334

#### **KYOEI NTN CORP.**

26-4, Hikawa-cho, Itabashi-ku, Tokyo  
173-0013, Japan  
Phone : +81-3-3963-2755  
Fax : +81-3-3963-2760

### ● Manufacturing

#### **Kuwana Works**

2454 Aza-Tsuchijima, Oaza-Higashikata,  
Kuwana, Mie 511-8678, Japan  
Phone : +81-594-24-1811  
Fax : +81-594-21-0840

#### **Iwata Works**

1578 Higashi-Kaizuka, Iwata, Shizuoka  
438-8510, Japan  
Phone : +81-538-37-8000  
Fax : +81-538-37-8009

#### **Okayama Works**

500-1 Hatakeda, Bizen, Okayama  
705-8510, Japan  
Phone : +81-869-66-6701  
Fax : +81-869-66-8101

#### **Takarazuka Works**

2-1 Toyo-cho, Takarazuka, Hyogo  
665-0032, Japan  
Phone : +81-797-71-1131  
Fax : +81-797-71-1818

#### **Nagano Works**

14017-11 Oaza-Nakaminowa,  
Minowa-machi, Kamiina-gun, Nagano  
399-4601, Japan  
Phone : +81-265-79-8888  
Fax : +81-265-79-8881

#### **NTN KONGO CORP.**

177 Kido-cho, Kawachinagano, Osaka  
586-0001, Japan  
Phone : +81-721-53-1317  
Fax : +81-721-54-6981

#### **NTN ENGINEERING PLASTICS CORP.**

970 Oaza Ano, Toin-cho, Inabe-gun,  
Mie 511-0243, Japan  
Phone : +81-594-76-7221  
Fax : +81-594-76-7244

#### **NTN POWDER METAL CORP.**

101 Katsutaba, Kanie-cho, Ama-gun,  
Aichi 497-8541, Japan  
Phone : +81-567-95-3913  
Fax : +81-567-95-6160

#### **NTN MIKUMO COMPANY LTD.**

750-1 Oaza-Onoe, Mikumo-cho,  
Ichishi-gun, Mie 515-2109, Japan  
Phone : +81-598-56-3311  
Fax : +81-598-56-7151

#### **NTN CASTING CORP.**

475-1, Nadabun-cho, Hirata, Shimane  
691-0003, Japan  
Phone : +81-853-63-3108  
Fax : +81-853-63-3463

#### **NTN KINAN CORP.**

2504-1 Ikuma, Kamitonda-cho,  
Nishimuro-gun, Wakayama 649-2103,  
Japan  
Phone : +81-739-47-1801  
Fax : +81-739-47-1829

#### **HIKARI SEIKI INDUSTRY CO., LTD.**

8 Motohigashikata, Sanmaiden-cho,  
Tenri, Nara 632-0046, Japan  
Phone : +81-743-66-0285  
Fax : +81-743-67-1512

## THE AMERICAS

### ● Holding Company

#### **NTN USA CORP.**

1600 E. Bishop Court, P.O. Box 7604,  
Mount Prospect, IL 60056-7604, U.S.A.  
Phone : +1-847-298-7500  
Fax : +1-847-294-1209

### ● Sales

#### **NTN BEARING CORP. OF AMERICA**

1600 E. Bishop Court, P.O. Box 7604,  
Mount Prospect, IL 60056-7604, U.S.A.  
Phone : +1-847-298-7500  
Fax : +1-847-699-9744

#### **NTN BEARING CORP. OF CANADA LTD.**

305 Courtneypark Drive West, Mississauga,  
Ontario, L5W 1Y4, Canada  
Phone : +1-905-564-2700  
Fax : +1-905-564-7749

#### **NTN SUDAMERICANA, S.A.**

World Trade Center Panama  
Calle 53 Este, Urbanización Marbella Piso  
NO.16, Oficina 1601 Apartado Postal  
832-0487, Panamá, Rep.de Panamá  
Phone : +507-269-4777  
Fax : +507-264-5592

#### **NTN DE MEXICO, S.A.**

Calle 22 No.2465, Esq, Calle 3,  
Zona Industrial, C.P. 44940 Guadalajara,  
Jalisco, México  
Phone : +52-33-3145-1490  
Fax : +52-33-3145-1594

#### **NTN DO BRASIL LTDA.**

Av. Moema, 94-9º Andar, Conj. 92 a 94  
Cep 04077-020, Indianópolis, São Paulo, SP,  
Brasil  
Phone : +55-11-5051-0600  
Fax : +55-11-5051-2807

### ● Manufacturing

#### **AMERICAN NTN BEARING MFG. CORP.**

##### **Elgin Plant**

1500 Holmes Road, Elgin, IL 60123,  
U.S.A.  
Phone : +1-847-741-4545  
Fax : +1-847-888-1226

##### **Schiller Park Plant**

9515 Winona Avenue, Schiller Park,  
IL 60176, U.S.A.  
Phone : +1-847-671-5450  
Fax : +1-708-681-5298



**NTN-BOWER CORP.****Macomb Plant**

711 North Bower Road, Macomb,  
IL 61455 U.S.A.  
Phone : +1-309-833-4541  
Fax : +1-309-837-7373

**Hamilton Plant**

2086 Military Street South,  
Hamilton, AL 35570, U.S.A.  
Phone : +1-205-921-2173  
Fax : +1-205-921-2059

**NTN DRIVESHAFT, INC.**

8251 South International Drive  
Columbus, IN 47201 U.S.A.  
Phone : +1-812-342-7000  
Fax : +1-812-342-1155

**NTN-BCA CORP.**

401 West Lincoln Avenue, Lititz,  
PA 17543-7020, U.S.A.  
Phone : +1-717-627-3623  
Fax : +1-717-627-2581

**NTK PRECISION AXLE CORP.**

741 South County Rd 200 West Rd  
Frankfort, IN 46041, U.S.A.  
Phone : +1-765-656-1000  
Fax : +1-765-656-1001

**ASAHI FORGE OF AMERICA CORP.**

5030 Corporate Way  
Richmond, KY 40475  
Phone : +1-859-626-4100  
Fax : +1-859-626-5611

**NTN BEARING MFG. CANADA**

A DIV. OF NTN BEARING CORP. OF  
CANADA LTD.

6740 Kitimat Road, Mississauga,  
Ontario, L5N 1M6, Canada  
Phone : +1-905-826-5500  
Fax : +1-905-821-3486

**EUROPE**

## ● Sales

**NTN WÄZLAGER (EUROPA) GmbH**

Max-Planck-Strasse 23, 40699 Erkrath,  
F.R. Germany  
Phone : +49-211-2508-0  
Fax : +49-211-2508400

**NTN BEARINGS (UK) LTD.**

Wellington Crescent, Fradley Park,  
Lichfield, Staffordshire, WS13 8RZ, U.K.  
Phone : +44-1543-445000  
Fax : +44-1543-445035

**NTN FRANCE S.A.**

Z.I.Sablère BP 338  
Schweighouse Sur Moder 67507  
Haguenau Cedex, France  
Phone : +33-3-88-53-2222  
Fax : +33-3-88-73-4695

## ● Manufacturing

**NTN KUGELLAGERFABRIK (DEUTSCHLAND) GmbH**

NTN Strasse 1-3, 40822 Mettmann,  
F.R. Germany  
Phone : +49-2104-1409-0  
Fax : +49-2104-13138

**NTN TRANSMISSIONS EUROPE**

Z.A. des Trémelières Communauté  
Urbaine du Mans 72704 Allonnes  
Cedex, France  
Phone : +33-2-43-83-9000  
Fax : +33-2-43-83-9030

**ASIA AND OTHER AREAS**

## ● Sales

**NTN BEARING-SINGAPORE (PTE) LTD.**

No.9 Clementi Loop Singapore 129812  
Phone : +65-64698066  
Fax : +65-64695400

**NTN CHINA LTD.**

Rm. 1914-1915, Park-in Commercial  
Centre, 56 Dundas Street, Mongkok,  
Kowloon, Hong Kong  
Phone : +852-2385-5097  
Fax : +852-2385-2138

**NTN BEARING-THAILAND CO., LTD**

12th Floor, Panjathani Tower, 127/15  
Nonsee Road, Chongnonsee Yannawa,  
Bangkok 10120, Thailand  
Phone : +66-2-681-0401  
Fax : +66-2-681-0408

**NTN BEARING-MALAYSIA SDN. BHD.**

Lot No. 764C, 4 1/2 Miles Jalan Kelang  
Lama, 58000 Kuala Lumpur, Malaysia  
Phone : +60-3-79817931  
Fax : +60-3-79814678

**NTN KOREA CO., LTD.**

10th Floor, Press Center, 25, Taepyeong-  
Ro 1-GA, Jung-Gu, Seoul 100-745,  
Korea  
Phone : +82-2-757-9005  
Fax : +82-2-779-4150

**NTN-CBC (AUSTRALIA) PTY. LTD.**

3, The Crescent, Kingsgrove, NSW 2208,  
LOCKED BAG 1800, Kingsgrove 1480.  
NSW Australia  
Phone : +61-2-9502-1833  
Fax : +62-2-9502-4013

## ● Manufacturing

**NTN MANUFACTURING (THAILAND) CO., LTD.**

111/2 Moo 4, Tambol Pluakdaeng, Amphur  
Pluakdaeng, Rayong 21140, Thailand  
Phone : +66-38-955-185  
Fax : +66-38-955-191

**SHANGHAI NTN CORP.**

No.666, Nanle Road, Songjiang Industrial  
Zone, Songjiang,  
Shanghai, China  
Phone : +86-21-5774-8666  
Fax : +86-21-5774-8555

**NTN-NIDEC (ZHEJIANG) CORP.**

No.600, Changsheng Road,  
Pinghu Economic Development Zone,  
Pinghu City, Zhejiang Province, China  
Phone : +86-573-5096688  
Fax : +86-573-5096767

**GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD.**

No.11 Jun Da Road, East District of  
Guangzhou Economic and Technological  
Development Zone,  
Guangzhou, Guangdong Province, China  
Phone : +86-20-8226-6458  
Fax : +86-20-8226-6937

**BEIJING NTN-SEOHAN DRIVESHAFT CO., LTD**

Beijing Opto-mechatronics Industrial Park  
(101111), China  
Phone : +86-10-69507492  
Fax : +86-10-69507492

**TUNG PEI INDUSTRIAL CO., LTD.**

10th Floor No.142, Chung Hsiao E.Rd.,  
Sec. 4, Taipei, Taiwan, R.O.C.  
Phone : +886-2-2741-7321  
Fax : +886-2-2741-6623

**TAIWAY LTD.**

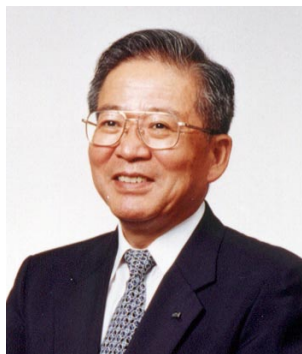
No.14, Kwang Fu Road, Hukou 303,  
Hsinchu, Taiwan, R.O.C.  
Phone : +886-3-5983601  
Fax : +886-3-5982787

**UNIDRIVE PTY. LTD.**

45-49 McNaughton Road, Clayton, Victoria  
3168 Australia  
Phone : +61-3-9542-4100  
Fax : +61-3-9544-8117

# Management

As of June 29, 2004



Yasunobu Suzuki  
● President



Naokazu Iyama  
● Deputy President

## Directors

● Yasunobu Suzuki *	President
● Naokazu Iyama *	Deputy President
● Hiroyuki Tomari	Managing Director
● Tadatoshi Kato	Managing Director
● Osamu Wakisaka	Managing Director
● Naohiko Fujimura	Director
● Kenji Okada	Director
● Hirotsugu Mori	Director
● Osamu Kato	Director
● Tatsuo Kondo	Director

\*Representative Directors

## Auditors

● Hideki Takeda	Standing Statutory Auditor
● Mitsunobu Matsuo	Standing Statutory Auditor
● Teruo Takashima	Statutory Auditor
● Tadao Kagono	Statutory Auditor

## Executive Officers

● Wasaburo Suganuma	Managing Executive Officer
● Katsuhiko Inoue	Executive Officer
● Katsuhiko Machiyama	Executive Officer
● Takeshi Yoshimura	Executive Officer
● Yoshikazu Fukumura	Executive Officer
● Makoto Onoda	Executive Officer
● Yasuo Fujioka	Executive Officer
● Akihiko Itou	Executive Officer
● Koji Sahashi	Executive Officer
● Tsugito Nakazeki	Executive Officer
● Mitsuhiro Tsutsumi	Executive Officer
● Hitoshi Inoue	Executive Officer
● Yukio Morita	Executive Officer
● Kazuhiro Shigeta	Executive Officer
● Tetsuji Gotou	Executive Officer

# Investor Information

## Head Office

NTN Corporation  
3-17 Kyomachi-bori 1-chome, Nishi-ku,  
Osaka 550-0003 Japan

## Investor Relations

Phone: +81-6-6449-3528  
Fax: +81-6-6443-3226  
E-mail: sysad@osa.ntn.co.jp

## NTN on Internet

NTN's Web site offers a variety of corporate and product information, including the latest annual report and financial results.  
<http://www.ntn.co.jp>

## Common Stock (As of March 31, 2004)

Authorized 800,000,000 shares  
Issued and outstanding 463,056,775 shares

## Number of Shareholders (As of March 31, 2004)

31,021

## Transfer Agent for Common Stock

UFJ Trust Bank Limited  
4-3, 1-chome, Marunouchi, Chiyoda-ku,  
Tokyo, 100-0005, Japan

## Stock Exchange Listings

Tokyo, Osaka stock exchanges (#6472)

## Independent Accountants

Ernst & Young ShinNihon

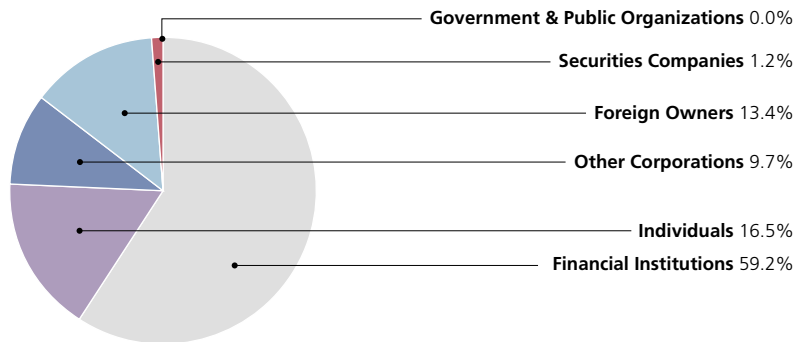
## General Meeting of Shareholders

The General Meeting of Shareholders was held on June 29, 2004 in Osaka

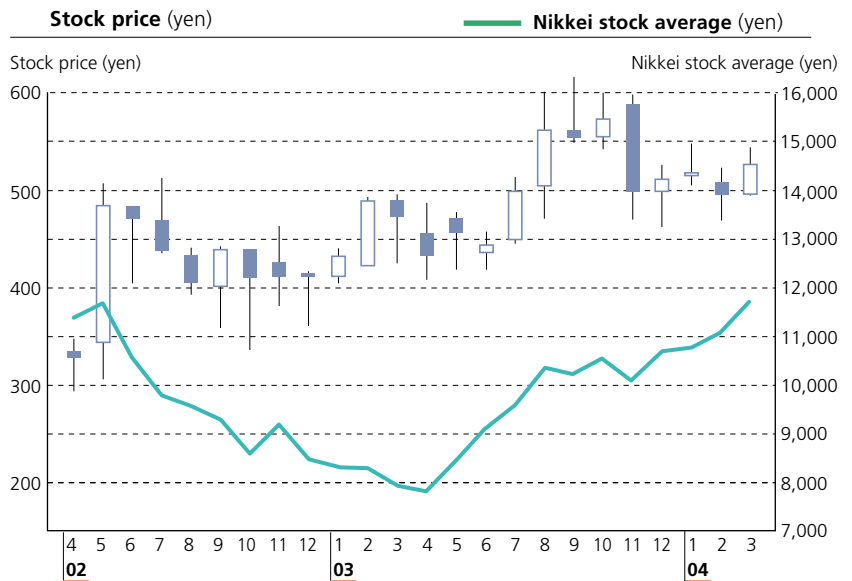
## Stock Price Range in Fiscal 2003

High: ¥615 (September 17, 2003)  
Low: ¥408 (May 22, 2003)

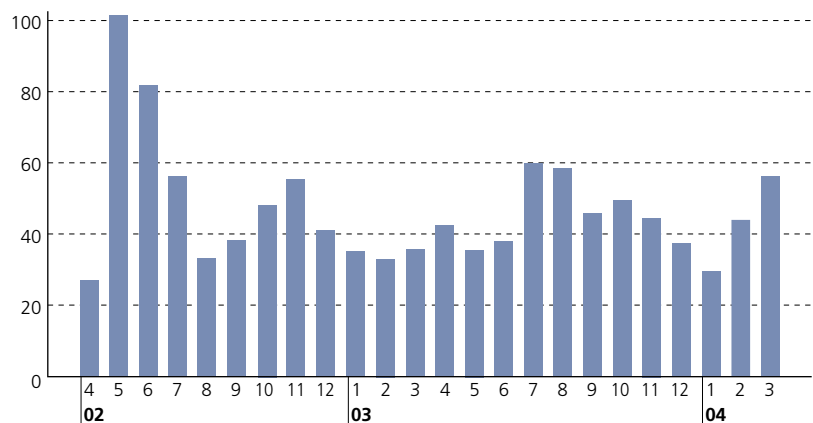
## Shareholders by Category

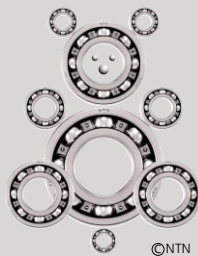


## Tokyo Stock Price Range



## Monthly volume traded (Million shares)





For New Technology Network



## **NTN Corporation**

### **Head Office**

3-17, 1-chome, Kyomachibori, Nishi-ku,  
Osaka 550-0003, Japan

**<http://www.ntn.co.jp>**