

Machine Tool Business Operation

June 18, 2008



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Machine Tool Division

Product Portfolio

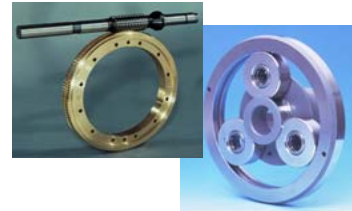
Precision cutting tools



Engine valves



Power transmissions



Gear cutting machines



Room temperature wafer bonding machines



Micro milling machines



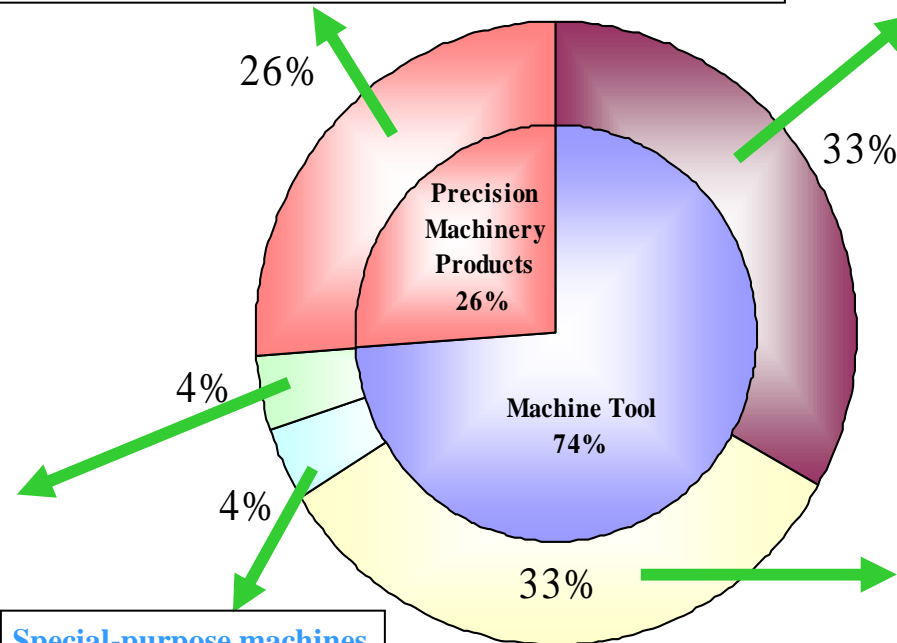
Special-purpose machines



Large machines



Machining centers

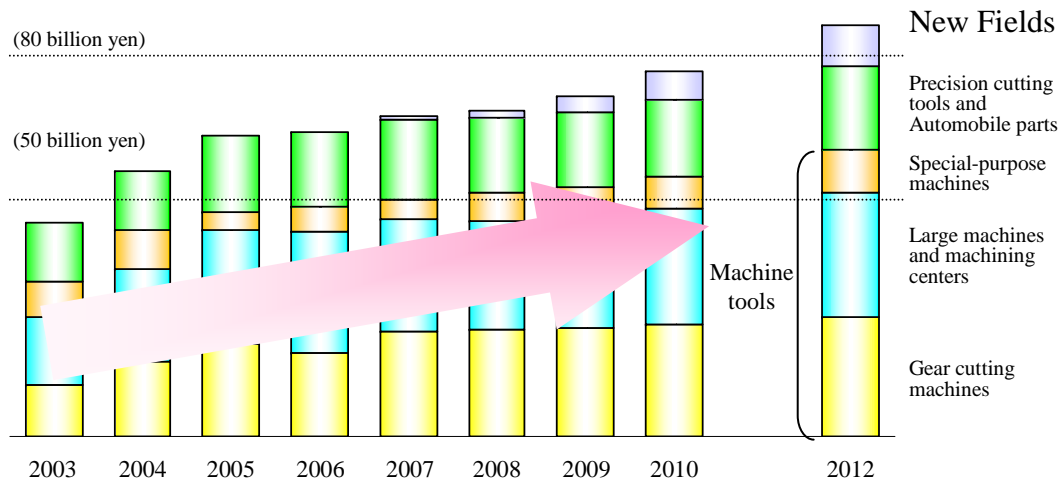


Direction of Business Expansion

Basic Policy of 2008 Midium-Term Business Plan

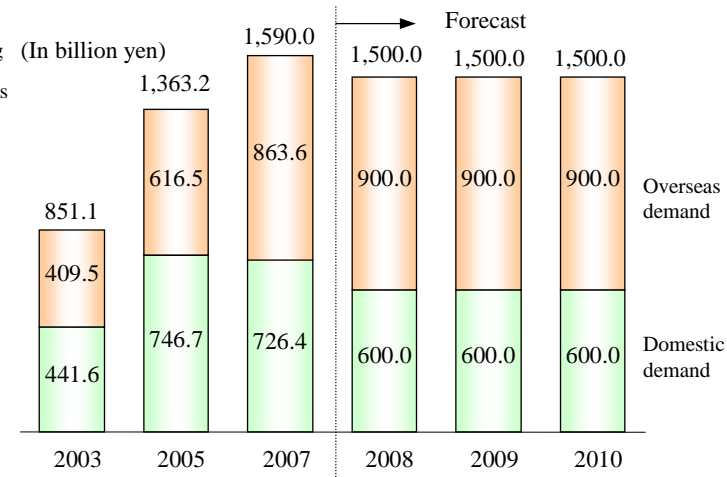
Overcome changes in the business environment
Achieve steady business expansion

[Business scale]

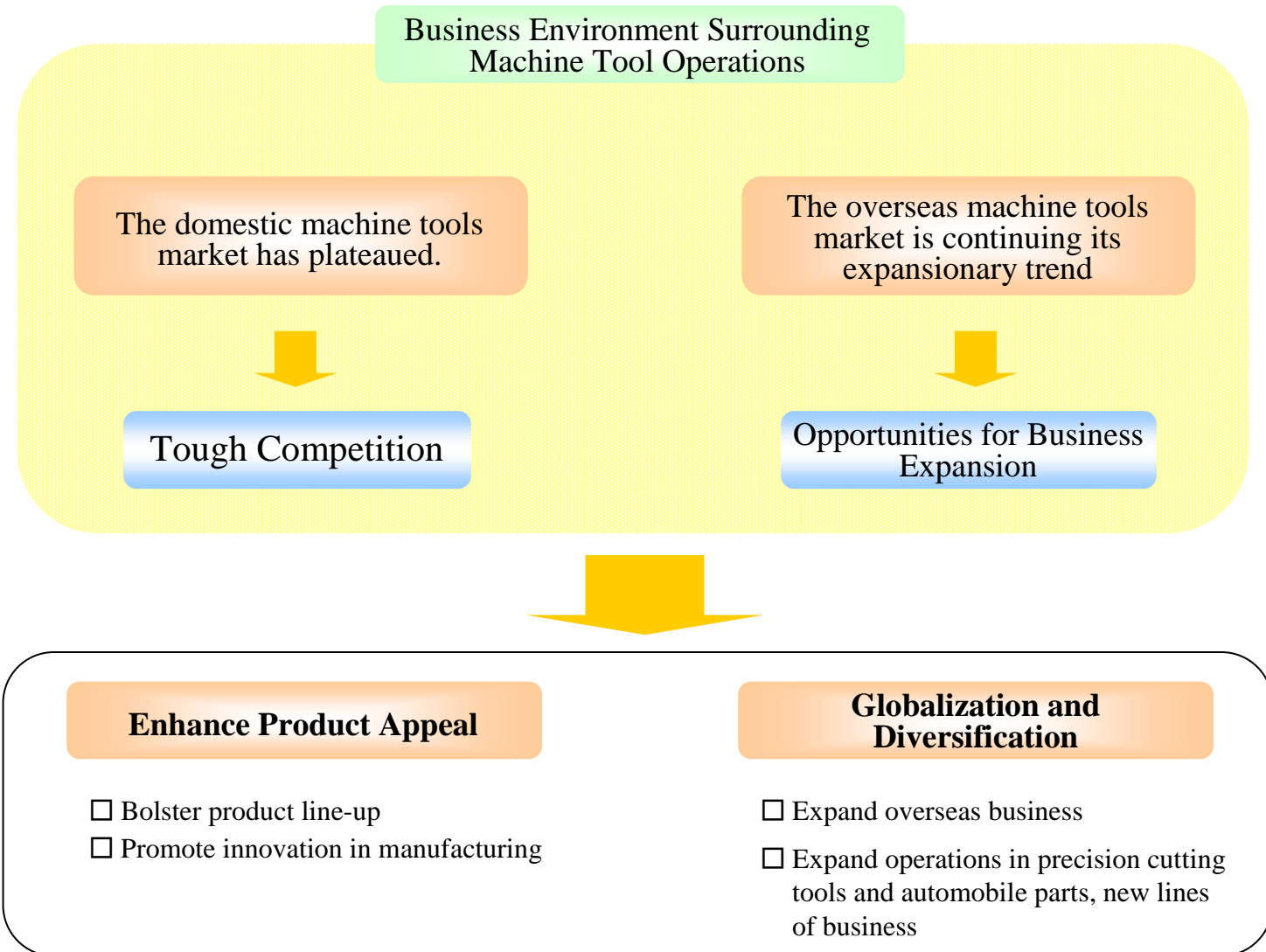


[Trends in machine tool orders]

(Results: Japan Machine Tool Builders' Association)



Direction of Business Expansion



Priority Initiatives

(1) Enhance Product Appeal: Bolster Product Line-up

Gear Cutting Machines



Gear Grinding Machines



Horizontal Boring Machines



Special-Purpose Machining Cells



**Adapting to
Market
Needs**

Large Gear Machines
(For construction equipment,
wind power generation)

Gear Finishing Machines
(For automotive gears)

**New-model Horizontal
Boring Machines**
(Expanded Line-up)

**Portal Machine Model
Changeover**
(Improved
Large Machine Series)

**Large Special-Purpose
Machines**
(5-axis machining center
for aircraft)

**Process Concentration
Cells**
(Short-line System)

Enhance Product Appeal: Bolster Product Line-up

1. Gear cutting machines

- Establish a leading position in the automotive field and move into the growing field of large gear machines.

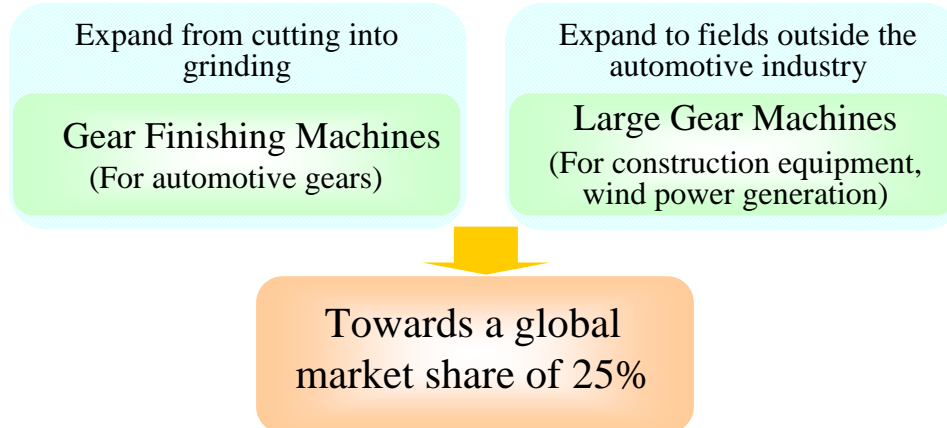


Product features

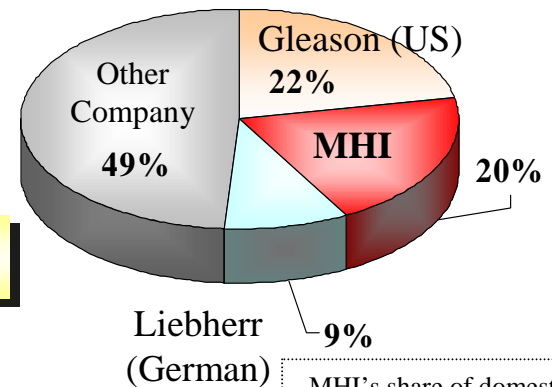
- Technical advantage over competition
 - Establishing completely dry cutting system
- Manufacturing a full line of gear cutting machines

Business expansion aimed at securing a leading global share

- Standardization of global specifications
- Bolstered product line-up



[Global market share (estimated)]

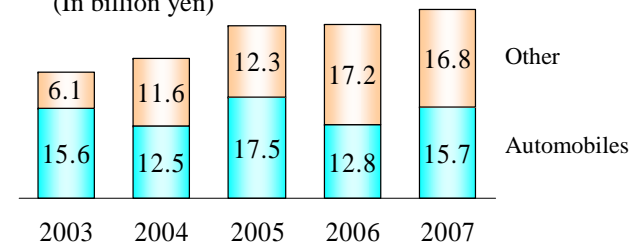


MHI's share of domestic market: over 50%

[Value of orders in the gear cutting machine industry]

(Japan Machine Tool Builders' Association statistics)

(In billion yen)



Enhance Product Appeal: Bolster Product Line-up

2. Large machines

- Establish brand through enhanced product appeal and overseas market penetration

Enhancing Product Appeal

- Enhanced overall strength in large workpiece machining
 - Switch line of portal machines to more sophisticated models
 - Enhance line-up of horizontal boring machines

High-rigidity, High-speed, High-precision

Take advantage of the increased demand for large machines through improvements to global infrastructure and capture strategic areas

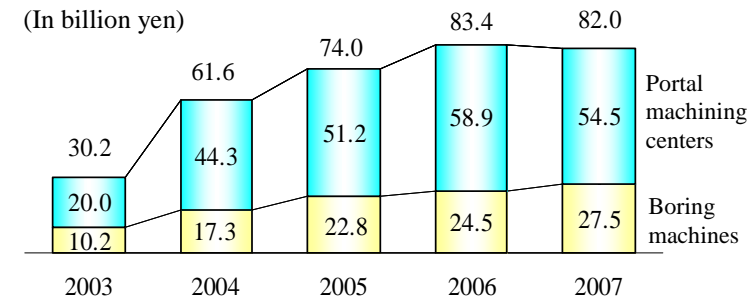
- Aimed at construction equipment, power systems, etc.
- China, India, South East Asia, North America

Towards a domestic market share of 30%

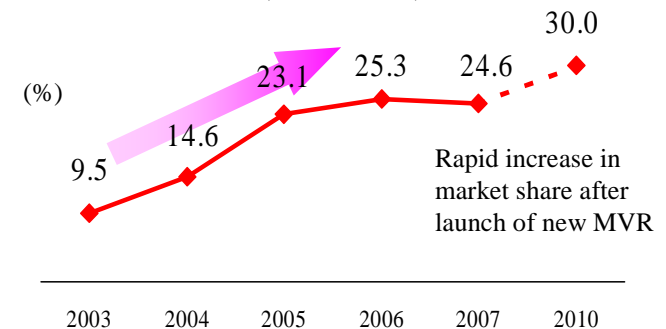


[Value of orders in the large machine industry]

(Japan Machine Tool Builders' Association statistics)



[Domestic share (estimated)]



Enhance Product Appeal: Bolster Product Line-up

3. Special-purpose machines

- Increase orders by developing process concentration cells and entering the large special-purpose machine market

Enhance competitiveness of process concentration cells

- Meet the wide range of needs of customers through standardization and modularization to realize improved cost competitiveness and reliability
- Establish a short-line system that incorporates a multifunctional cell with an improved level of centralized processing with peripheral equipment

Strengthened efforts in the large special-purpose machine industry

Machining Technology
(Special-purpose machines)

+

Elemental Units
(Large machines)

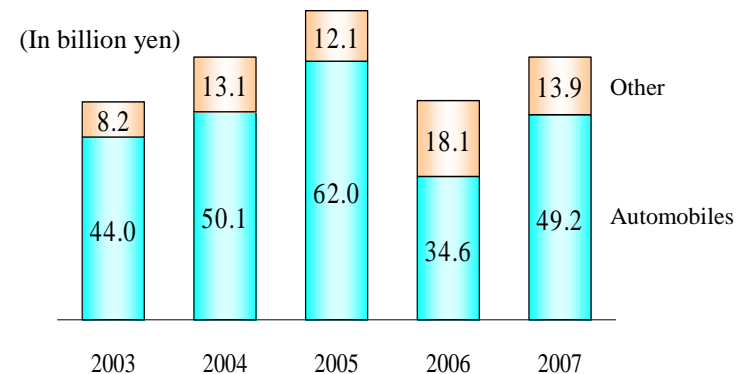
Large Special-Purpose Machines

(For construction equipment, power systems, aircraft)

- April 2008
Announcement of five-axis machining center for aircraft

[Value of orders in the special-purpose machine industry]

(Japan Machine Tool Builders' Association statistics)



- * Decline in 2006 due to reduced capital investment on behalf of domestic auto manufactures



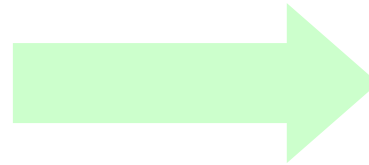
Priority Initiatives

(1) Promote Innovation in Manufacturing

Improved productivity and reliability by accelerating modularization and standardization

Modularization & Standardization

- Combine modules to meet customer needs



- Shorter lead-times
- Cost reductions
- Improved product reliability

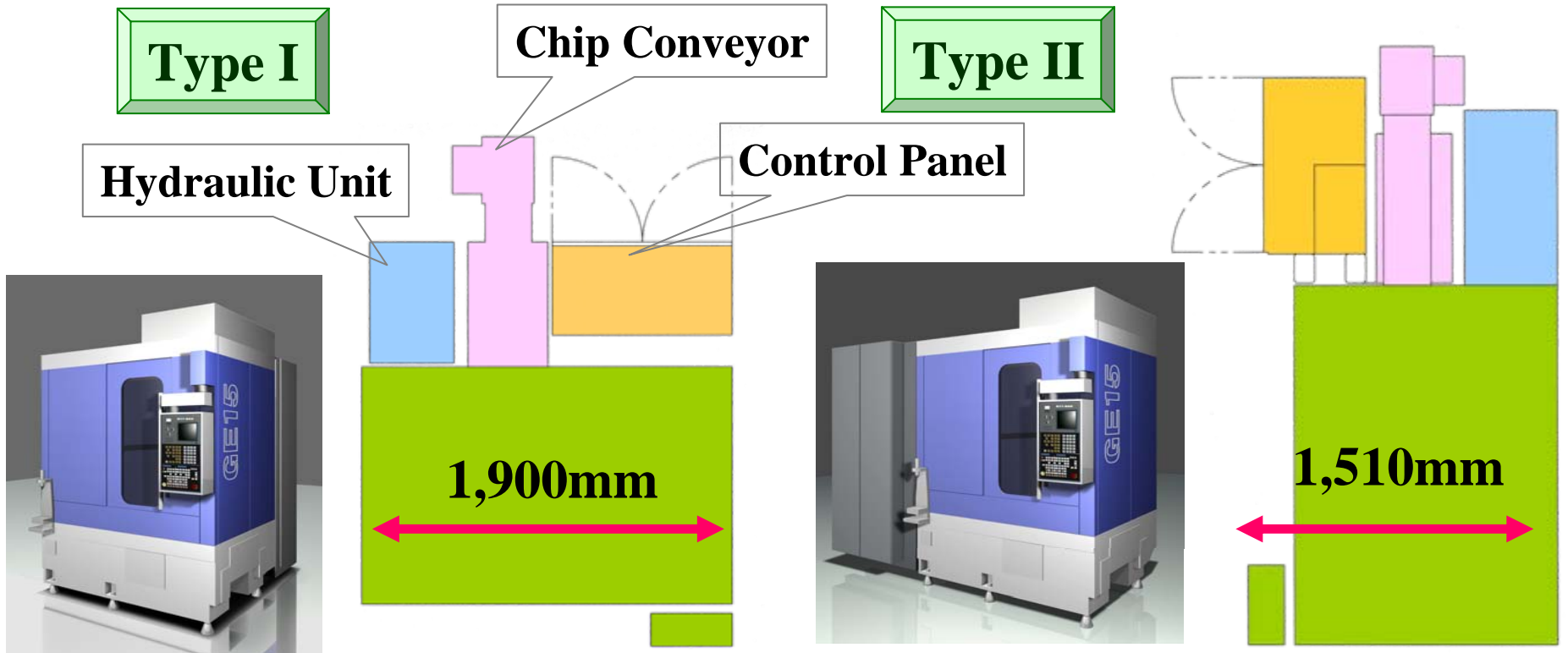
	Before 2004	2004	2005	2006	2007	2008 and onwards
Gear Cutting Machines	Gear Hobbing Machines	GE-15A 20A 25A 06A				Simultaneous development of Large Gear Cutting Machines
	Gear Shapers	SE-25A 15A				
	Gear Grinding Machine	ZE-15A 24A				
Large Machines	MVR Series	MVR25. 30 MVR35. 40			MVR45	
			MVR - Dx Series	MVR33/39D x		MVR43/49D x
				MHT Series	MHT1618. 1416	
Special-purpose Machines and Machining Cells		M-CM4A(H4050)			M-CM4B/5B	
			Jig, Tooling			

Promote Innovation in Manufacturing

Example of Gear Machine Modularization

Selectable layout tailored to needs
Standard Specification Compact Type I
Narrow Width Specification Simple Inline Type II

Gear Hobbing Machines: GE06A 15A 20A 25A
Gear Shapers: SE15A 25A
Gear Grinding Machines: ZE15A/24A

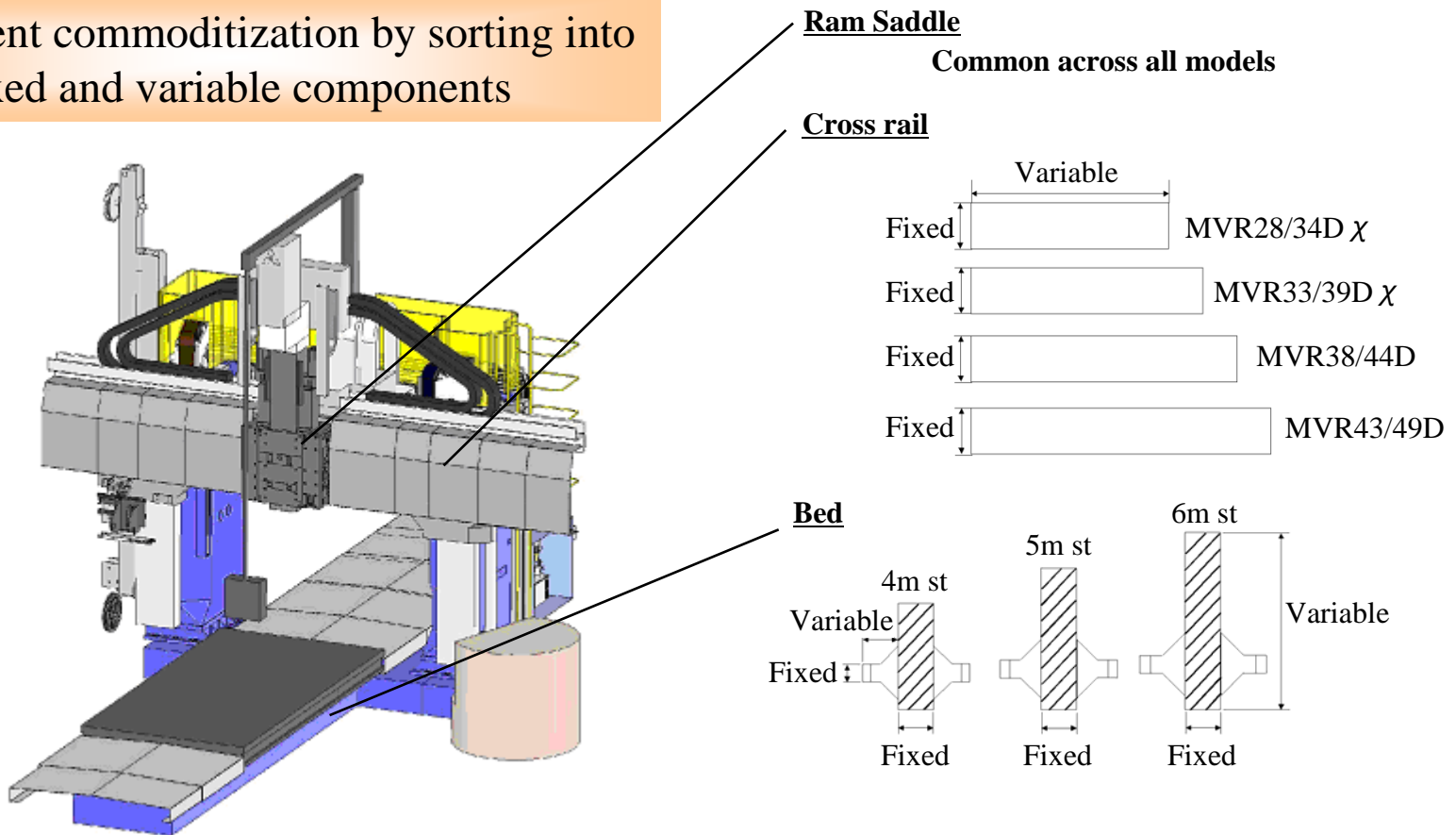


Promote Innovation in Manufacturing

Example of Large Machine Modularization

- MVR modularization towards the horizontal development of the MVR D χ series

Component commoditization by sorting into fixed and variable components



Promote Innovation in Manufacturing

- Enhancement of internal production capabilities through the upgrading and expansion of equipment for large component machining
 - Two five-face machining centers have been newly installed and upgraded, with continued upgrades and expansions underway
- Logistics improvements and expanded assembly space through layout changes
- Thorough kit placement through improvements to component arrangement
- Improvements to assembly production methods
 - Expanded block-assembly methods
Parallel assembly by unit
 - Shift to on-ground column assembly
Laid down assembly possible by eliminating all pipe and cable laying on the rear-side of columns.
- Deepening of modularization and standardization

Module design on a
per-model basis



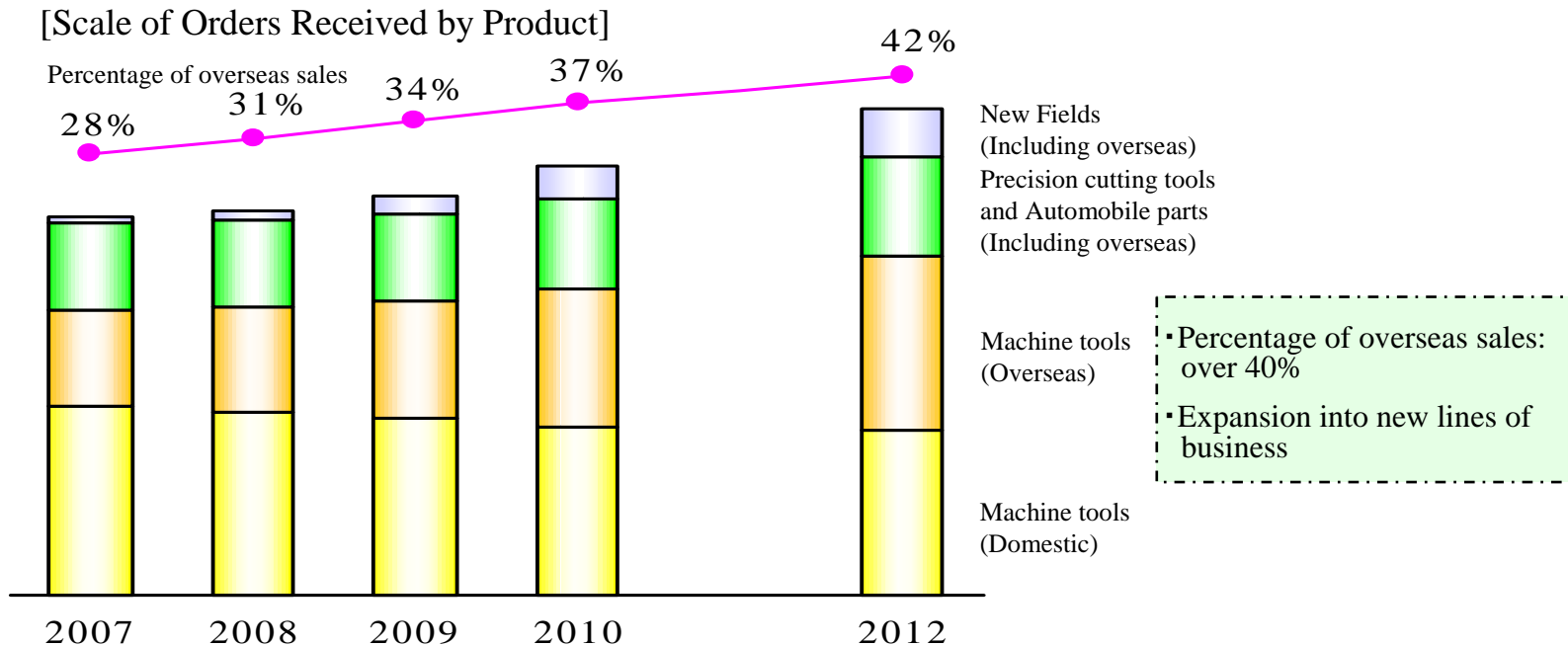
Module design
common across
models

- Expanded number of common units
- Standardization of equipments and components used

Priority Initiatives

(2) Globalization and Diversification

- ◇ Expansion of operations in overseas markets with different business cycle and precision cutting tools & automobile parts and new lines of business
 - Bolster sales force in growing overseas markets
 - Enhance service flexibility by strengthening our service framework
 - Entry into new lines of business and the development of products in new fields

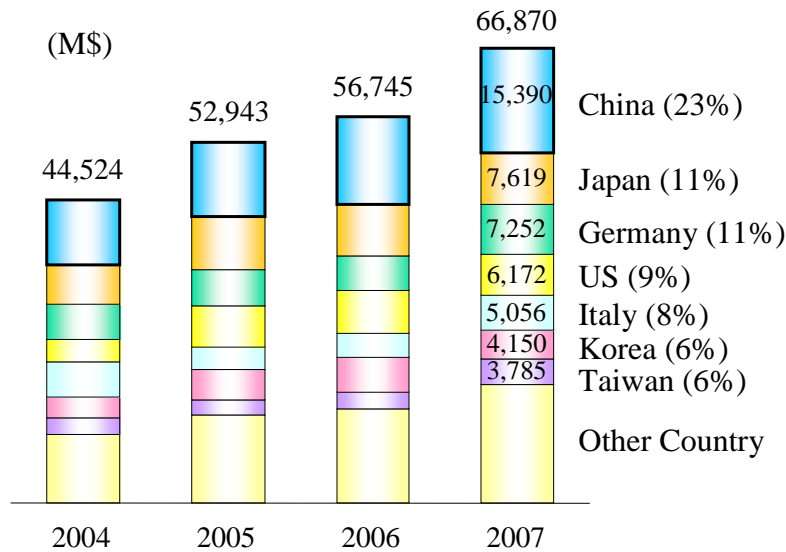


Expansion of Exports

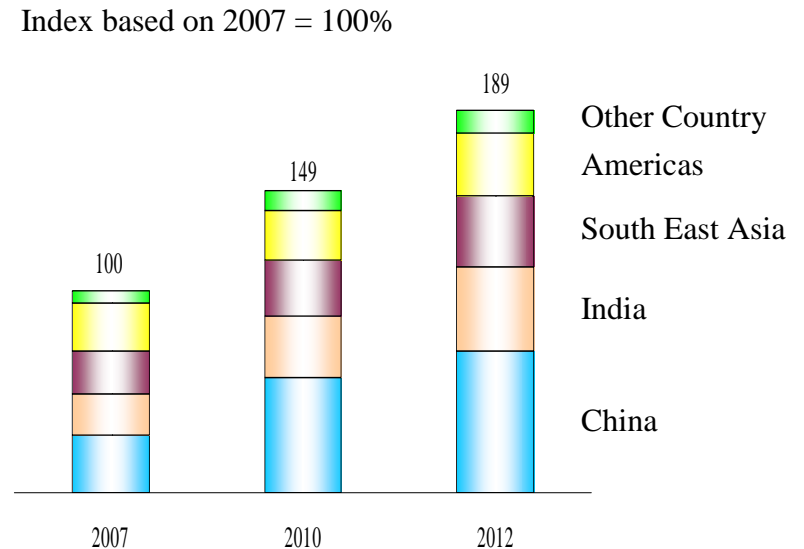
Enhancing export readiness through strengthening of overseas sales/service bases strategic sales activities

- Speed up capturing of markets in China, India, South East Asia and North America as key strategic regions.

[Worldwide machine tool markets]



[MHI Overseas Orders Received by Region]



Expansion of Exports

- Bolster sales force by increasing the number of overseas sales personnel and sales engineers
 - Bolster sales force by increasing employees at each operating base (by 1.7 times)
 - Short-term and continuous dispatch of sales engineers from Division to strategic regions
- Enhanced responsiveness through an augmentation of service staff and the development of a worldwide spare parts delivery system
 - National service staff augmentation (by 1.3 times)
 - Setup of spare parts depots and building of an online inventory search system
- Promotion of region-oriented sales through an enhanced distributor network
 - Increase the number of distributors in key regions (1.5 times increase)
- Utilize customers' factories for showrooms through strategic sales activities (No. of utilized factories: 3.5 times)
- Improve presence by more active PR through advertising, trade shows, seminars, etc.
- Standardization of global specifications
- Expand export outlets through alliances

Strengthening of Overseas Sales & Service Network

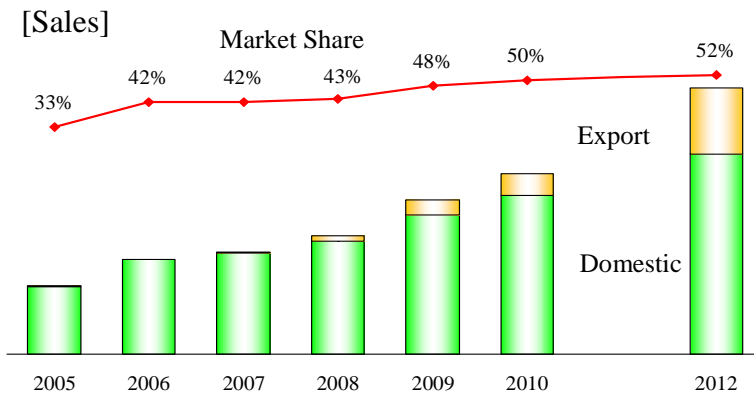
[Main Overseas Operating Bases]



Expansion of Precision Cutting Tools and Automobile Parts Business Overseas

[Mitsubishi Heavy Industries India Precision Tools, Ltd. (MHI-IPT)]

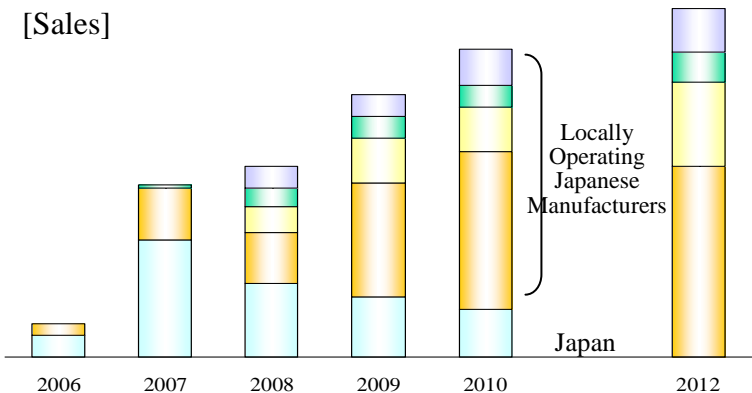
- Location: Ranipet, Tamil Nadu
- Acquisition completed in May 2005
- Manufacturing and sales of cutting tools



- December 2007: Delhi Service Base opened
- March 2008: Investment to double production capacity completed
- Capturing of the growing 4-wheel-car market
- Capturing of the key northern Indian market and increased market share in broaches
- Increased exports from entry into European markets

[Shenyang Aerospace Xinguang Mitsubishi Heavy Industries Engine Valves Co., Ltd. (Xinguang Mitsubishi Engine Valves)]

- Location: Shenyang, Liaoning
- Commenced in April 2006
- Manufacturing and sales of engine valves



- Establishing of a stable production system through enhanced manufacturing techniques
- Increasing orders by incorporating manufacturers, especially Japanese automobile manufacturers, from the development stages of new engines onwards.

Initiatives in Precision Cutting Tools and Automobile Parts, Products from New Lines of Business

1. Precision cutting tools and Automobile parts

Power transmissions

- Entry into the market for gearboxes

Expansion of the Large Gearboxes Market

(Aimed at wind turbine, large industrial machinery, etc.)



Utilization of Machine Tool Technology

- Machining technology, equipment development (gear machines)
- Large component assembly technologies (large machines)



[Example of Application]



- Entry into the general-purpose mass produced planetary roller reduction gear market
 - Aimed at cooling towers, copiers, medical devices, etc.
- Reliable quality and enhanced cost competitiveness by producing key components in-house through mass production methods

Initiatives in Precision Cutting Tools and Automobile Parts, Products from New Lines of Business

1. Precision cutting tools and Automobile parts

Precision cutting tools

- Accelerated development of new products
 - Next generation coating, cemented carbide tools
- Development and expansion of products with Indian tool manufacturers
 - Release large hobs on the Japanese market to expand orders received for construction equipment
- Capture the market for Japanese automobile manufacturers who are moving towards local procurement
 - Take advantage of the locality and win business from Company S by utilizing the Indian Service Base



Engine valves

- Bolster cost competitiveness by establishing the world's fastest line and halving cycle times
- Take a proposal-based business approach through in-house basic technologies to secure a position as the main supplier of key domestic users
 - Adapt to high added-value general purpose diesel with high-temperature material evaluation techniques



Initiatives in Precision Cutting Tools and Automobile Parts, Products from New Lines of Business

2. Products in New Fields

- Establish businesses for products in new fields

Room temperature wafer bonding machines

The world's first bonding machine operable at room temperatures, developed for use as a mass-production-enabled wafer bonding machine for use in electronic integrated circuits such as acceleration sensors.

- React to market changes to increase orders
 - Enhanced lineup through the development of up-sizing machines
 - Accumulated bonding process data
- Improved recognition through marketing efforts aimed at leading domestic and overseas companies



Micro Milling Machines μ V1

Milling machines for producing precision components in the likes of medical devices, precision molds and optical lenses. Work processes traditionally requiring hand finishing can now be precision machined.

- Establish industry position as a manufacturer of compact micro milling machines.
 - Achieve test-cut output that beats the competition
 - Increase added value by enhancing possible applications
- Enter the sub-micron market through a series of developments



Resource Planning

Securing human resources	Capital expenditure	Investment in R&D																														
<ul style="list-style-type: none"> <input type="checkbox"/> Secure the staff necessary for the business expansion <input type="checkbox"/> Enhancement of human resource development program so that employees can rapidly reach their full potential and become multi-skilled workers 	<ul style="list-style-type: none"> <input type="checkbox"/> Ongoing equipment upgrades to bolster internal production capabilities to support business expansion. <input type="checkbox"/> Continuous capital expenditure to streamline production <input type="checkbox"/> Continued active investment in MHI-IPT 	<ul style="list-style-type: none"> <input type="checkbox"/> Development of high added-value products to respond to market needs <input type="checkbox"/> Enhanced line-up of modularized products <input type="checkbox"/> Expansion of product lines in new fields 																														
<p>Changes in the number of employees (consolidated)</p> <p>(Persons)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Number of Employees</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>1,679</td> </tr> <tr> <td>2008</td> <td>1,764</td> </tr> <tr> <td>2010</td> <td>1,862</td> </tr> <tr> <td>2012</td> <td>2,010</td> </tr> </tbody> </table>	Year	Number of Employees	2007	1,679	2008	1,764	2010	1,862	2012	2,010	<p>Percentage of sales</p> <p>(In billion yen)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage of Sales</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>6.1%</td> </tr> <tr> <td>2008</td> <td>6.3%</td> </tr> <tr> <td>2010</td> <td>4.9%</td> </tr> <tr> <td>2012</td> <td>4.9%</td> </tr> </tbody> </table>	Year	Percentage of Sales	2007	6.1%	2008	6.3%	2010	4.9%	2012	4.9%	<p>Percentage of sales</p> <p>(In billion yen)</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage of Sales</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>1.0%</td> </tr> <tr> <td>2008</td> <td>1.7%</td> </tr> <tr> <td>2010</td> <td>2.2%</td> </tr> <tr> <td>2012</td> <td>2.5%</td> </tr> </tbody> </table>	Year	Percentage of Sales	2007	1.0%	2008	1.7%	2010	2.2%	2012	2.5%
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