

Industrial Machinery Business

November 5, 2012

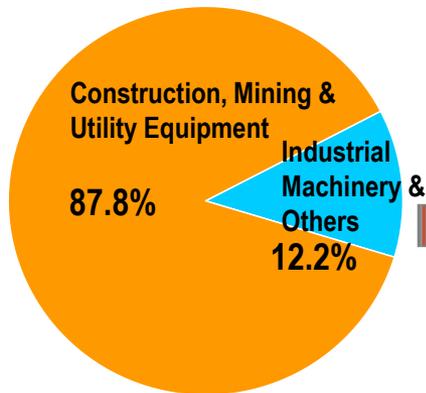
Tadashi Okada

**Senior Executive Officer, President of Industrial Machinery Division,
Komatsu Ltd.**

President, Komatsu Industries Corp.

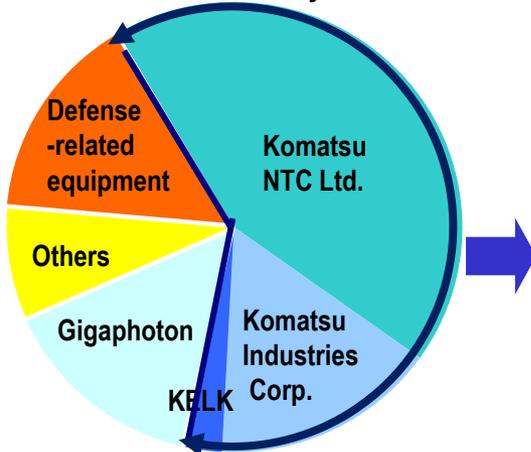
Komatsu Ltd.: Sales breakdown

Sales: 1,981.7 billion yen



Industrial Machinery & Others: Sales breakdown

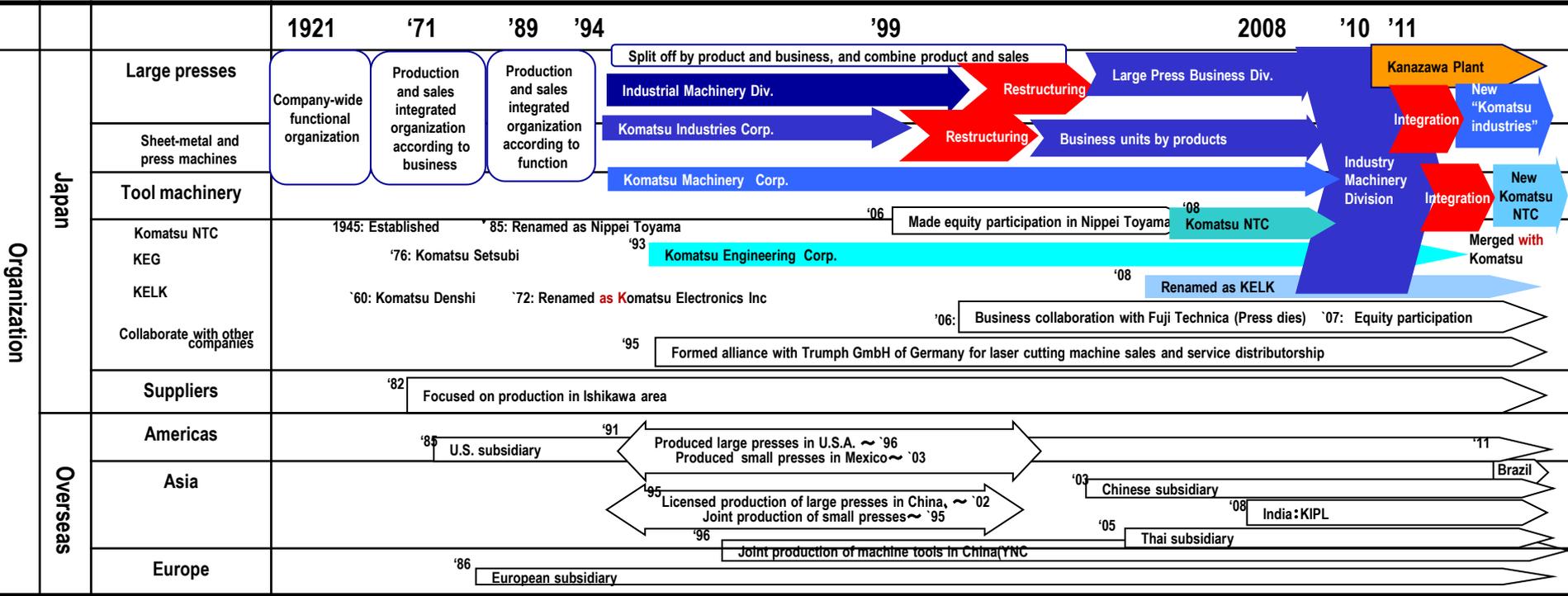
Sales: 251.1 billion yen



Industrial Machinery Business: Outline

Company	Location	Main products	Applications
Komatsu NTC Ltd.	Toyama Ishikawa	-Machine tools -Wire saws -Laser cutting machines	-Automobiles -Solar cells
Komatsu Industries Corp.	Ishikawa	-Metal forging and stamping presses -Sheet-metal machines -Welding robot system	-Automobile -Electric, building materials -Construction equipment
KELK	Kanagawa	-Semiconductor-manufacturing equipment -Thermomodules	-Electric devices -Telecommunication

History



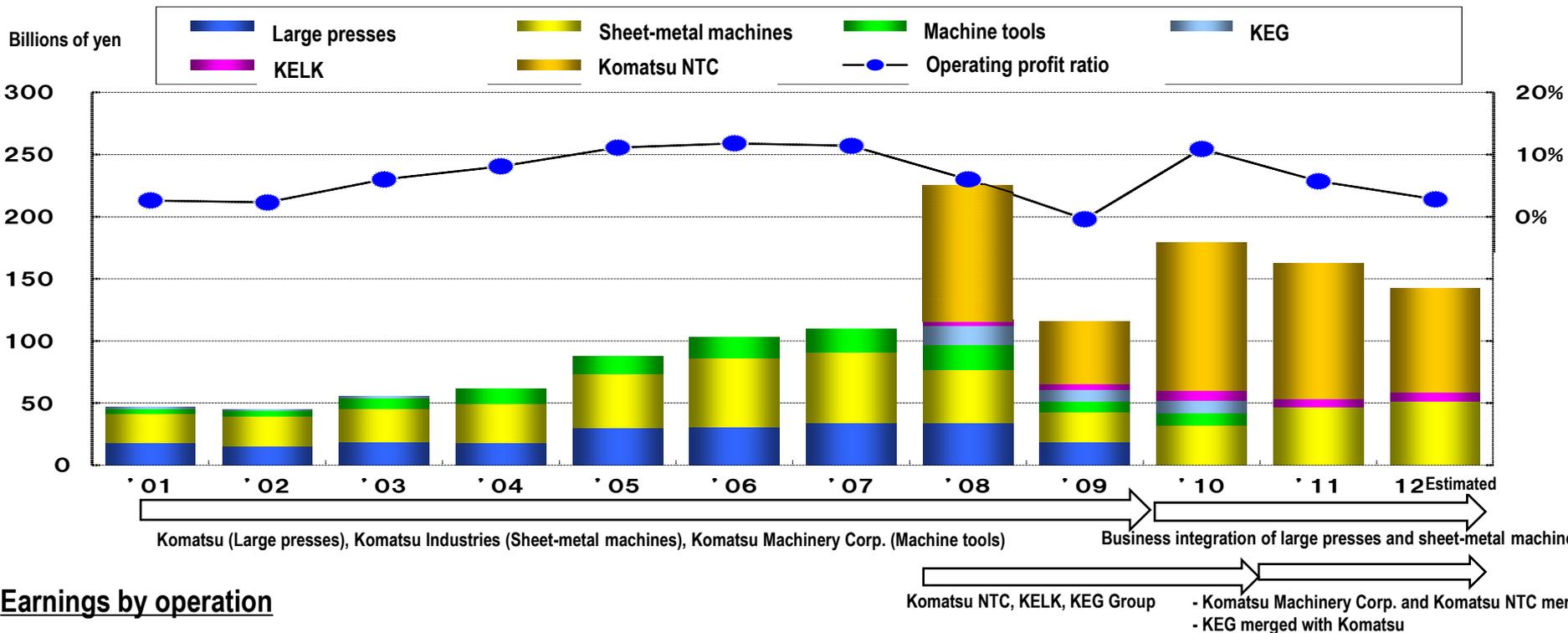


Komatsu's industrial machines are used in different processes of automobile manufacturing.

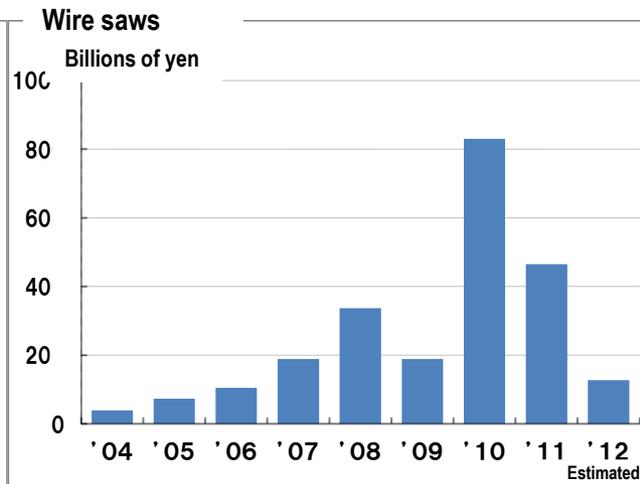
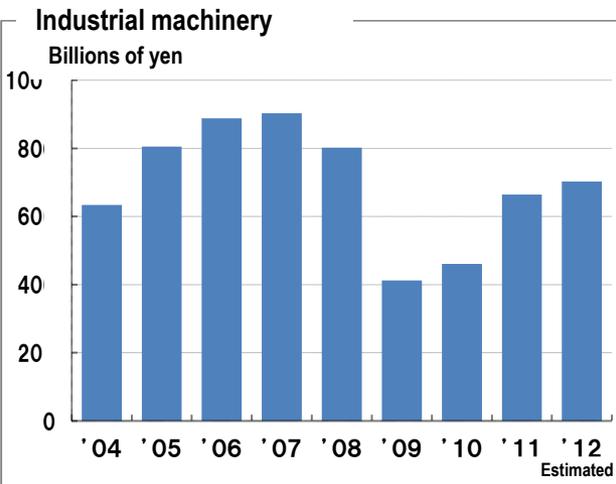
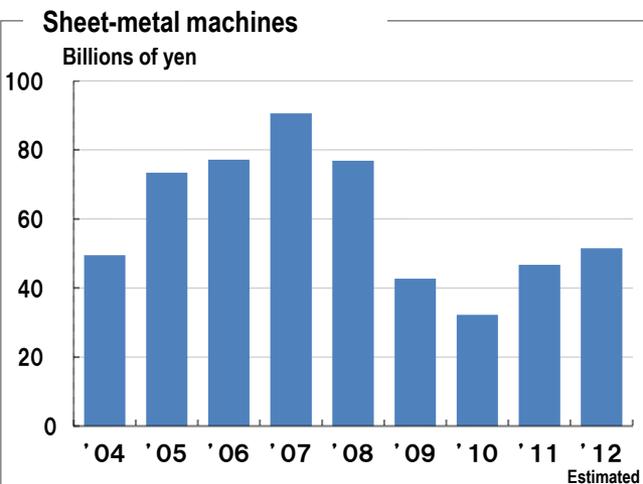
Customers	Application	Main products Market introduction			
Automobiles	Car body, interior panel 	Presses : Komatsu Industries Capacity:25ton  Small size : 1972~	Capacity:4000ton  1923~ 1956~69 Concentrate on large presses	3D laser cutting machine : Komatsu NTC  1981~	
	Engine Cylinder block head  Crankshaft 	Transfer machine: Komatsu NTC  1959~	Crankshaft millers: Komatsu NTC  1971~	Grinding machines: Komatsu NTC  1969~	
Semi conductors	Silicon wafers 	CZ silicon pulling equipment: Komatsu NTC  1984~	Wire saws : Komatsu NTC  1985~	Temperature control unit: KELK  1991~ DI-water heater: KELK  1992~	
Construction equipment, Electric appliances, Building materials	Sheet-metal parts  Machining parts 	Plasma cutting machine: Komatsu Industries  1989~	2D-laser cutting machine: Komatsu NTC  1983~	Machining center: Komatsu NTC  1961~	

Sales by operation and operating profit ratio

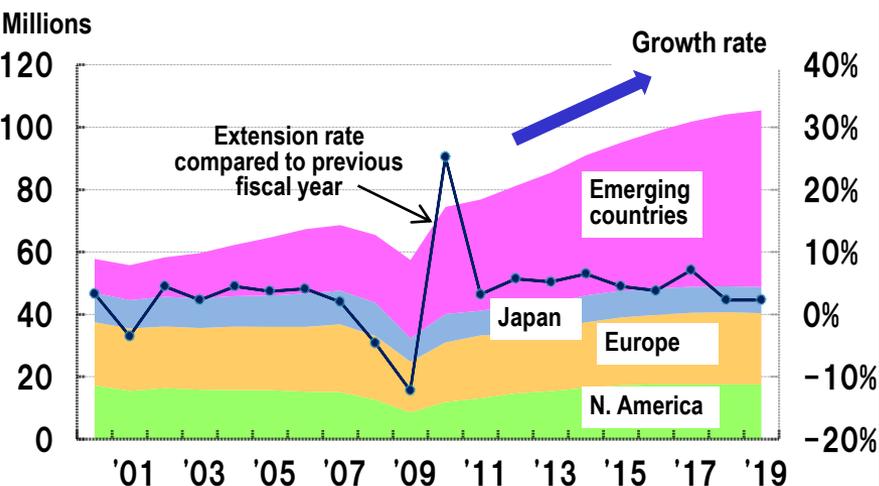
Estimated FY12 sales based on revised projection of Jul. 30, 2012



Earnings by operation



Automobile production (units) Source: HIS Automotive

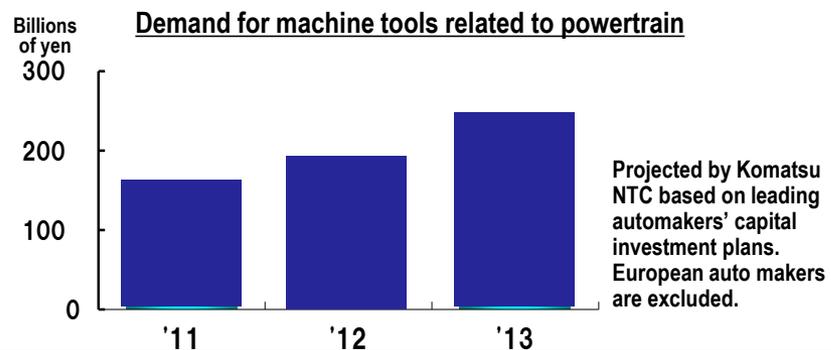


Japan, N. America & Europe: Shifting production in emerging countries. The production volume has increased an average of 5% per year. However, the rate of increase is declining.
 >> Investment in automobile manufacturing facilities is strong.

Industrial machinery market

Growth of eco-friendly cars: Downsized engines, Hybrid vehicles, Electric vehicles

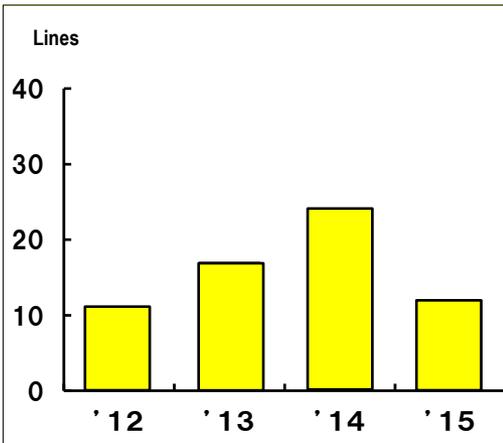
>>Increasing investment in facilities related to powertrain (engines, drives)



Sheet-metal machines market

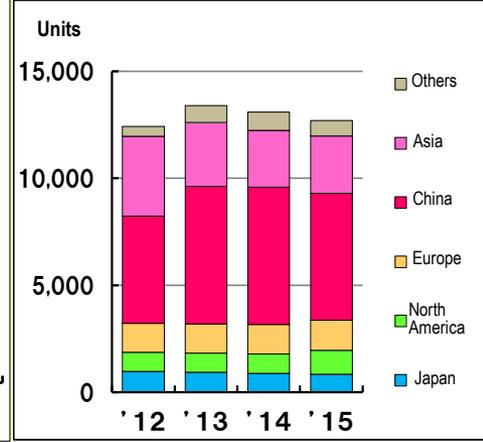
Estimated by Komatsu Industries

Demand for large tandem presses



Demand for Komatsu's target customers (based on available capital investment plans)

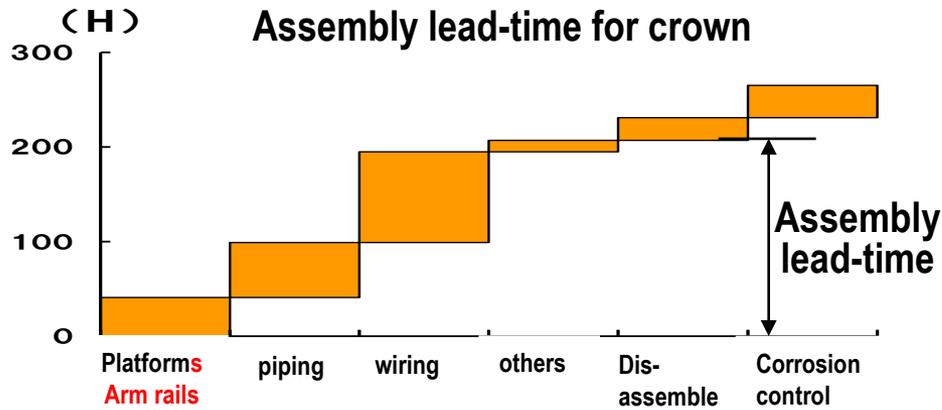
Demand for small to medium-sized presses by region



Note: Industrial products other than automobiles are calculated based on the percentages of added values of the manufacturing industry by business sector.
 Source: UNIDO(United Nations Industrial Development Organization)

Business	Sheet-metal and press machines	Machine tools	Wire saws	Semi conductors
<p>Strengthen the foundation of business.</p> <p>Change into a business that would generate income stably from highly fluctuating demand.</p>	<p>Standardize (by modularizing) and reduce order-to-shipment lead time.</p>			
	<p>Expand service business(aftermarket).</p>			
	<p>Continue to improve production and fixed costs.</p>			
<p>Further growth</p> <p>1. Product development & differentiation strategies</p> <p>2.Expansion of business domains</p> <p>3.Penetration into growth markets</p>	<p>Develop world’s leading DANOTSU products based on the key concepts of “Environment”, “ICT”, “Economy”, and “Safety”.</p>			
	<p>Differentiate key components.</p>			
	<p>Expand the range of applications of key technologies and products as well as business in the supply chain.</p>			
	<p>Offer proposals to improve customers’ productivity and preventive maintenance by using ICT.</p>		<p>Expand the range of applications of wire saws (LED substrates, etc.)</p>	<p>Launch thermoelectric generation business.</p>
	<p>Reinforce business in Chinese and Asian markets.</p>			

1.Target



Reduce assembly lead-time to half for the machines to be shipped in March 2013.

2.Measures



Standardize components.

final gears Servo motors

Standardize crown, upright, and bed.

crown
upright
bed

Improve design drawings of piping and wiring.

Engage in Kaizen activities in collaboration with production and procurement departments.

Built sub-assembly facility at the Kanazawa Plant

- Improved parts pick-ups
- Timely parts delivery

Integrate sales menus. Integrate specifications and options according to application.

Applying to small presses

Apply to large presses. Enhance sales menus to sell Komatsu standard machines.

Presses

Small Servo presses (H1F)

- | | | |
|------------------------|-------------|-------|
| 1. Economic efficiency | Performance | + 30% |
| | Space | - 10% |
| | Electricity | - 42% |

2. Operability: More value-added by means of ICT

Digitalizing forming load and slide position and display them on the control panel monitor → **“Visualizing” veterans’ experience and intuition**

3. Support customers’ production: Offer Industrial machinery KOMTRAX as standard equipment.

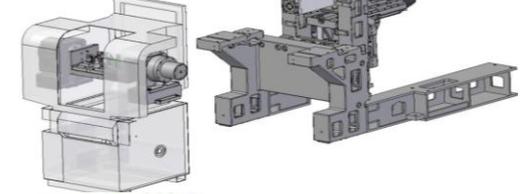
Cost reduction: -15%



Machine tools

Small machining center(N30Hi)

Compact machining space



Space: -60%
Energy: -70%

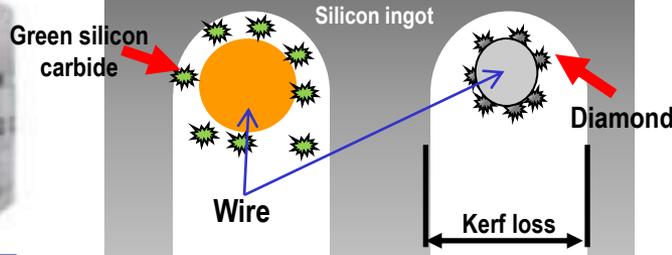
Compared to existing model (N300H)

Wire saws

Diamond wire saws for solar cells (PV500D)

Existing: Loose abrasive processing

New: Diamond wire saw



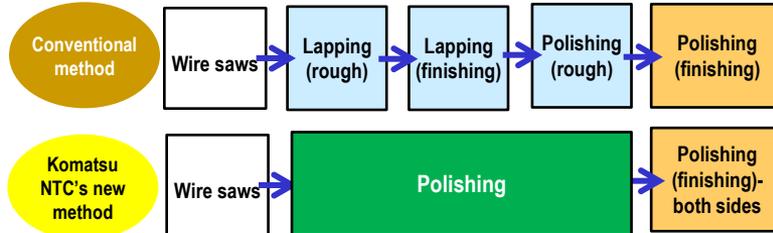
Process	Loose abrasive	Diamond
Wafer thickness*	100	56
Kerf loss*	100	67

* Coefficient value

1. Processing efficiency (vs. existing model)

- Material yield: 165%
- processing speed: 150%

Processing machine for LED with sapphire + Grinding machine



Processing machine for sapphire materials (SP300DI)



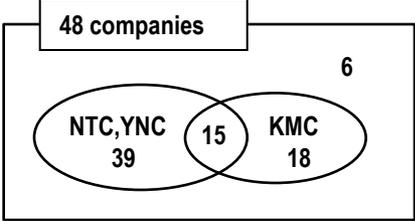
Processing time - 50%

Grinding machine (GCG15S)



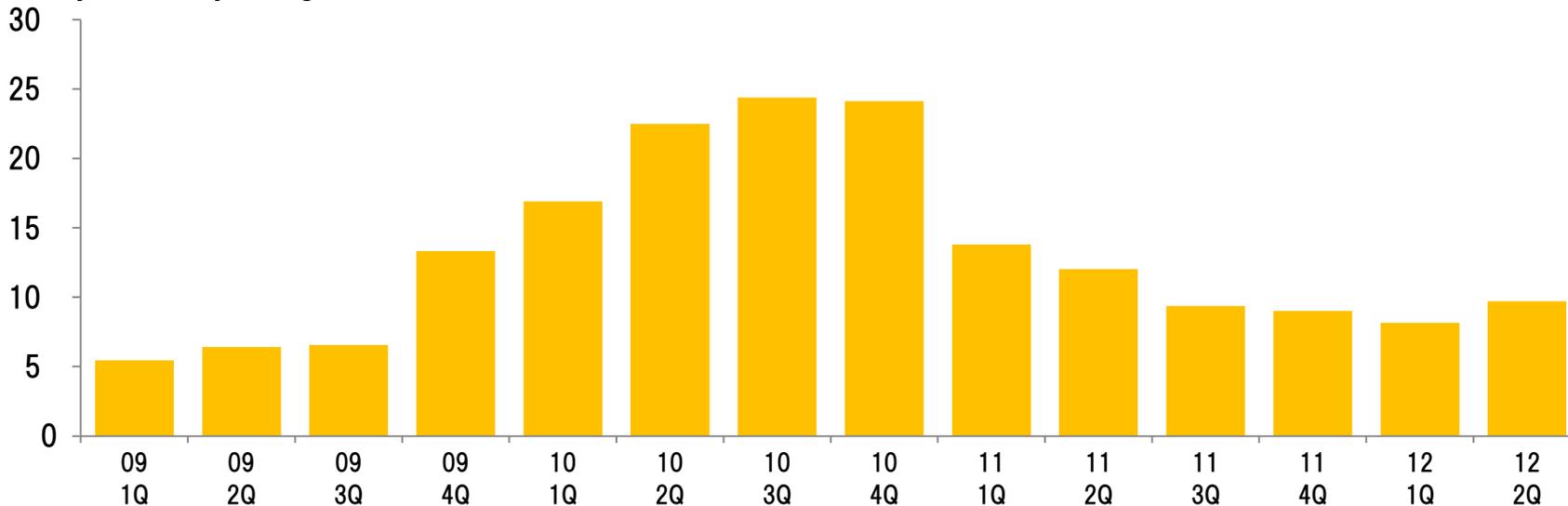
Reduced process (3→1 process)

-Production of high value-added products in China for Chinese and Asia markets with long-term growth potential.
-Reinforcement of production, sales, and service by utilizing synergy of our construction equipment plant (Changzhou) and existing NTC operation bases.

	Product	Production	Sales and service
<p>Press business</p>	<p>Servo presses Small presses</p>	<p>■ Began production at KCCM (Oct. 2011).</p>   <p>Plasma cutting machine (Began production in Apr.2011)</p>  <p>Small presses   Large press</p>	<p>■ Increase the number of employees at Chinese subsidiary (KIS).</p> <p>■ Win orders for customer-specific systems in collaboration with Chinese subsidiary (YNC).</p> <p>■ Strengthen sales promotion to customers of former Komatsu Machinery (currently Komatsu NTC) and former Komatsu NTC by taking advantage of each other's strengths.</p>
<p>Machine tool business</p>	<p>Full machining line for automobile engine parts</p>	<p>■ Strengthened production at Chinese subsidiary (YNC).</p> <p>■ Collaboration with production in Japan.</p>	 <p>Customer portfolio related to automobile production in China</p>
<p>Wire saws</p>	<p>Diamond wire saws</p>	<p>■ Production in Japan (Build-to-order production management → Parts production management)</p>	<p>■ Strengthen service operation at Chinese subsidiary.</p>

1.Orders received (monthly average)

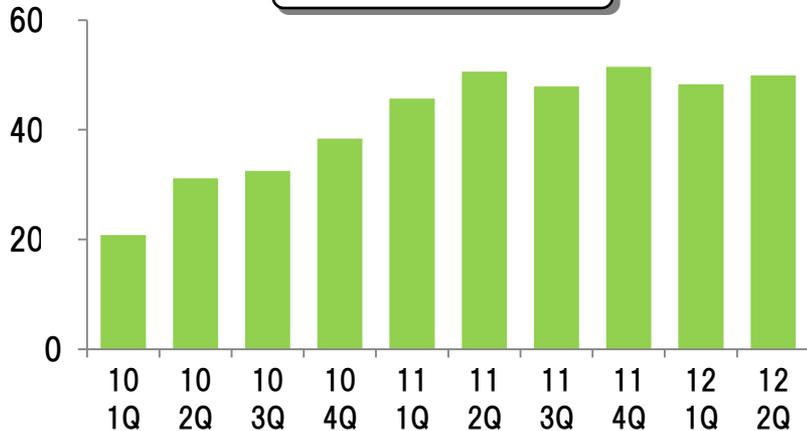
Billions of yen: Monthly average



2.Backlog orders for main products

Billions of yen

Presses



Billions of yen

Machine tools

