Machinery & Steel Structures
Business Operation

June 3, 2009

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Director, Executive Vice President,
General Manager,
Machinery & Steel Structures Headquarters
1. Business Situation
2. FY2008 Earnings & FY2009 Outlook
3. Special Measures for FY2009
4. Medium/Long-term Strategies
5. Strategies for Each Business
6. Initiatives toward New Businesses
7. Summary
1. Business Situation (1) Orders Received (consolidated)

- Dubai LRT (Phase I)
- Methanol plant for Saudi Arabia

- Polyethylene plant for Singapore
- PTA plant for Poland

- Dubai LRT (Phase II)
- Methanol plant for Brunei

- Fertilizer plant for Algeria
- Steel production machinery (hot rolling) for Brazil

Growth to come primarily from chemical plants (fertilizer, CO2 recovery) and steel production machinery (China, India)

<table>
<thead>
<tr>
<th>Year</th>
<th>Orders Received (JPY billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>515.8</td>
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<tr>
<td>2006</td>
<td>469.0</td>
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<tr>
<td>2007</td>
<td>557.3</td>
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<tr>
<td>2008</td>
<td>527.8</td>
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<tr>
<td>2009</td>
<td>420.0</td>
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<td>2010</td>
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<td>2012</td>
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</table>
1. Business Situation (2) Net Sales & Operating Income
(consolidated)

(JPY billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Sales</th>
<th>Operating Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>537.8</td>
<td>2.3</td>
</tr>
<tr>
<td>2006</td>
<td>469.0</td>
<td>2.9</td>
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<tr>
<td>2007</td>
<td>472.5</td>
<td>11.3</td>
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<tr>
<td>2008</td>
<td>542.2</td>
<td>31.6</td>
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<tr>
<td>2009</td>
<td>500.0</td>
<td>26.0</td>
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<tr>
<td>2010</td>
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<tr>
<td>2012</td>
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</tbody>
</table>

Efforts for additional raise

Business structure reforms

★ Lehman shock (⇒ Rapid shrinking of market)

Special measures
## 2. FY2008 Earnings & FY2009 Outlook (consolidated)

<table>
<thead>
<tr>
<th></th>
<th>FY2008 (actual)</th>
<th>FY2009 (“Challenge 09”)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orders Received</strong></td>
<td>527.8 JPY billion</td>
<td>420.0 JPY billion</td>
</tr>
<tr>
<td>• Fertilizer plant for Algeria (Algeria Oman Fertilizer Co.)</td>
<td></td>
<td>• Expectation of additional orders for chemical plants and steel production machine in the 2H</td>
</tr>
<tr>
<td>• Steel production (hot rolling) plant for Brazil (Usiminas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net Sales</strong></td>
<td>542.2 JPY billion</td>
<td>500.0 JPY billion</td>
</tr>
<tr>
<td>• Transportation system (Dubai LRT)</td>
<td></td>
<td>(Sales probability: near 80%)</td>
</tr>
<tr>
<td>• Chemical plant (methanol plant for Brunei)</td>
<td></td>
<td>• Efforts for additional raise:</td>
</tr>
<tr>
<td>• Steel production machinery (hot rolling facility for India, Taiwan etc)</td>
<td></td>
<td>⇒ After service and small-scale constructions</td>
</tr>
<tr>
<td><strong>Operating Profits</strong></td>
<td>31.6 JPY billion</td>
<td>26.0 JPY billion</td>
</tr>
<tr>
<td>• Improved profitability through strengthening of order-entry and construction management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Increased profits from group companies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See next page
3. Special Measures for FY2009

Profitability improvement

- Complete management of construction work at hand
- Standardization/sharing innovation (MD Project)
- Product reliability innovations (overall strengthening of quality control system)
- Supply chain innovations (joint purchasing, strengthening ties with overseas partners)
- Comprehensive cost reduction program

Security sales/orders

**Additional sales in FY2009**
- After-sale services (spare parts, etc.)
- Short-term small-scale construction (renovation)

**Securing sales in FY2010 and beyond**
- Focus on areas with near-term demand
  - Infrastructure investments in line with fiscal policy
  - Investments in industrial infrastructure of emerging markets
  - Food security (population increase, economic development)
- Increased competitiveness (cost, sales, services)

**Profitability improvement**

- JPY 31.6 billion (Operating profits)

**Securing sales/orders**

- JPY 26.0 billion

**Positive factors**

- "Challenge 09"
- Efforts for additional raise
  - Additional sales/profits
  - Acceleration of improvement activities

**Major negative factors**

- Exchange rates
  - USD: @¥103⇒¥95
  - EUR: @¥145⇒¥125
- Sales
  - (JPY billion)
  - 542.2 ⇒500.0

**FY2008**

**FY2009 (outlook)**

**Exchange rates**

- USD: @¥103⇒¥95
- EUR: @¥145⇒¥125

**Sales**

- (JPY billion)
- 542.2 ⇒500.0

**Efforts for additional raise**

- Additional sales/profits
- Acceleration of improvement activities

**Increased competitiveness**

- (cost, sales, services)

**Exchange rates**

- USD: @¥103⇒¥95
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**Sales**

- (JPY billion)
- 542.2 ⇒500.0

**Efforts for additional raise**

- Additional sales/profits
- Acceleration of improvement activities

**Increased competitiveness**

- (cost, sales, services)
4. Medium/Long-term Strategies

(1) Business Domains & Formats

<table>
<thead>
<tr>
<th>Business Domain</th>
<th>Environment &amp; Chemical Plants</th>
<th>Transportation Systems &amp; Advanced Equipment</th>
<th>Machinery</th>
<th>Steel structures, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EPC</td>
<td>EPC, machinery &amp; vehicle manufacture, O&amp;M</td>
<td>Steelmaking machinery</td>
<td>Manufacture, etc.</td>
</tr>
<tr>
<td>Industry/distribution</td>
<td></td>
<td></td>
<td>Compressors</td>
<td>Manufacture, etc.</td>
</tr>
<tr>
<td></td>
<td>EPC: Engineering, procurement &amp; construction</td>
<td>(Singapore/Electronic Road Pricing)</td>
<td>Others</td>
<td>Manufacture, etc.</td>
</tr>
<tr>
<td></td>
<td>(2~3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry/distribution</td>
<td>steel plants</td>
<td>(2~3)</td>
<td>Compliance</td>
<td></td>
</tr>
<tr>
<td>Social infra-structure, etc.</td>
<td>EPC, operational &amp; maintenance</td>
<td>(4~5)</td>
<td>Material handling equipment</td>
<td></td>
</tr>
<tr>
<td>Environmental protection</td>
<td>Desulfurization plants</td>
<td>(2~3)</td>
<td>Medical equipment (N)</td>
<td></td>
</tr>
<tr>
<td>Energy (fuels)</td>
<td>EOR: Enhanced oil recovery</td>
<td>CO₂ compressors</td>
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<td></td>
<td>CO₂ compressors</td>
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</table>

( ) = global share ranking  (N) = next-generation product

Focus on energy (fuels) & environment areas
# 4. Medium/Long-term Strategies

## (2) Operational Structure Reform

<table>
<thead>
<tr>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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</thead>
<tbody>
<tr>
<td><strong>Strengthening of order-entry &amp; construction management</strong></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Minimization of profit-eroding work</strong> (number and scale)</td>
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<tr>
<td><strong>Higher level of management</strong> (earnings stabilization)</td>
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<tr>
<td><strong>Business restructuring</strong></td>
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<td></td>
<td></td>
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<tr>
<td>• Spin-off of bridge operations</td>
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<td></td>
<td></td>
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<tr>
<td>• Spin-off of waste treatment business</td>
<td></td>
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<tr>
<td>• Transfer of TMP* business</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>• Restructuring of small-scale businesses</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Creation of optimal business operations structure</strong></td>
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</tr>
</tbody>
</table>

*TMP*: turbo molecular pump (transferred to Shimadzu Corporation)
4. Medium/Long-term Strategies
(3) Concept for Optimal Business Operations Structure

- **Strengthening of business operations structure**
  - **Product businesses** (vertical consolidation)
    - Speedy business operations on the same level as overseas dedicated companies, run by management well-versed in the business
    - Slim organizational structure
      - Production line works serving as the core
  - **Comprehensive capability** (horizontal consolidation)
    - Concentration of business management support staff
    - Concentration of common line business (IT, civil engineering, etc.)
  - Supporting the management of business negotiation entry, and work output

- **Strengthening of business structures**
  - Quality stability (product + business)
  - Achievement of low cost
  - Strengthening of risk management
    - EPC, O&M corresponding to customer/area characteristics
    - Debt collection

- **Strengthening of global business expansion**
  - Manufacturing innovation activities
  - Slim structure + business concentration
4. Medium/Long-term Strategies
(4) Overall Strategy for Machinery & Steel Structures Business

General assessment

• Paring down the business into globally competitive, mature products, plus business in growing areas and next generation products; Securing overall business group stability through diversification.

• Maximized residual income in mature products business made possible by securing earnings in traditional markets (domestic, East Asian, etc.) and business expansion in the markets of the new economies, etc.

Strategy

• “Achievement and sustainment of high earnings” and “expansion of business scale” through the creation of the optimal business operating system*

* A system promoting the strengthening of individual product businesses and global expansion while simultaneously offering the advantages of diversified operations (stability, broad technological response capability, information network)
Distribution of plant deliveries

- **Oil, gas & petrochemical**: 288 plants (95%)
- **Desulfurization & CO2 recovery**: 213 plants (76%)
- **Transportation**: 23 plants (84%)
- **Steel production machinery**: ca 2,200 plants (86%)
- **Compressors**: ca 3,600 units (93%)
4. Medium/Long-term Strategies
(5) Global Business development - 2

Expansion of overseas business bases

- Environment & chemical plants
- Transportation & advanced equipment
- Machinery
- Steel products
5. Strategies for Each Business
(1) Environment & Chemical Plants - 1

[ Strengthening of chemical plant business ]

- **Focus on fertilizer plants**
  (population increase \(\Rightarrow\) increased food production \(\Rightarrow\) efficient fertilizer production)
  
  Plant scale enlargement = fewer accommodating EPC suppliers
  (MHI, Uhde [Germany], Saipem [Italy])

- **Focus on methanol plants**
  (development of emerging markets \(\Rightarrow\) increased demand as industrial material)
  (potential as material for alternative fuels, etc.)
  
  \(\Rightarrow\) Collaboration with Mitsubishi Gas Chemical (process owner)

- **Achieving high added value in fertilizer plant business**
  \(\Rightarrow\) accumulation of operating/maintenance expertise (investment into Middle East plants)

- **Strengthening of methanol plant business**
  \(\Rightarrow\) further differentiation of syngas technologies

[ Strengthening of environmental plant business ]

**Growth of air environment business**

- **Flue-gas denitration/dust collection equipment**
  \(\Rightarrow\) business model suited to countries heavily reliant on coal-fired plants (North America, China, etc.)
  \(\Rightarrow\) technology differentiation (mercury response capability, etc.) + cost competitiveness (MD, etc.)

- **CO2 recovery/EOR**
  \(\Rightarrow\) expanded sales to fertilizer plants (increased urea production)
  \(\Rightarrow\) large-scale demonstration plants for coal-fired plants (to Southern Company [US], etc.)

**Waste treatment and other small/medium-scale plant EPC business**

- **Integration & strengthening of EPC oversight capability**
  (effective use of human resources)

- **Increased competitiveness of core facilities and components**
## 5. Strategies for Each Business  
(1) Environment & Chemical Plants - 2

[ Environmental/chemical plant business model ]

<table>
<thead>
<tr>
<th>Region</th>
<th>Business model</th>
<th>Type of contract, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td></td>
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<tr>
<td>Southeast Asia (excluding China)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle East, Latin America, Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe, Russia, Central Asia</td>
<td>Consortium</td>
<td>EP + SV or EPCm</td>
</tr>
<tr>
<td></td>
<td>(or subcontract)</td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>JV</td>
<td>Cost plus EPC, or EP + SV</td>
</tr>
<tr>
<td></td>
<td>(US construction/ engineering companies)</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>Alliance</td>
<td>EP + SV</td>
</tr>
</tbody>
</table>

Notes:  
EPC : Engineering Procurement Construction  
EPCm : Engineering Procurement Construction Management  
SV : Supervisor

**Distribution of plant deliveries**

- **Fertilizer/ammonia plant**
- **Methanol plant**
- **Flue gas desulfurization**
- **Other petrochemicals**
- **CO2 recovery**
5. Strategies for Each Business

(2) Transportation & Advanced Equipment -1

[ Strengthening of transportation systems business ]

Strengthening of base load products

- Air Brakes
  ⇒ Cost reduction and sales route expansion through shift to MD, equipment improvements, etc.
- Toll collection systems (ITS)
  ⇒ Acceleration of technology development

MD: Modular Design
In-vehicle ETC units

Strengthening of small/medium-scale transportation systems (APM, LRT)

- Strengthening of EPC capability
  ⇒ Strengthening of response capability tuned to each market (MHI in Southeast Asia and Middle East; collaboration in North America)
  ⇒ Differentiation through capabilities in PM and track construction
- Strengthening of control system response capability
  ⇒ Increase MHI production portion by integrating transportation and toll system control technology and personnel (added value + higher quality)

Achievement of stable business profitability + catch-up to 2 leaders (Bombardier, Siemens)

Strengthening of O&M business expansion

- North America
  ⇒ Crystal Mover Services (CMS)
    (Headquarters: Miami, with branches in Atlanta and Washington, DC.)
- Southeast Asia
  ⇒ Comprehensive servicing of plants delivered to Philippines and Singapore (local service companies already established)
5. Strategies for Each Business
(2) Transportation & Advanced Equipment - 2

[ Involvement in large-scale projects ]

EPC response capability by country/region

- Middle East & Vietnam: mainly chemical plant
- India: chemical plant + steel making machinery
- Brazil: steel making machinery + chemical plant

Achievement of response capability no other company can offer

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>USA</th>
<th>Vietnam</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
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<td>2010</td>
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<td>2012</td>
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<td>2014</td>
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<td>2016~</td>
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Strengthening and retaining response capability

- Effective retention of project management group
  ⇒ Establishment of system to mobilize PM group in the case of emergency for environmental/chemical plants and steel production machinery
- Civil engineering
  ⇒ Concentration of personnel, IT promotion and level enhancement
5. Strategies for Each Business
(3) Machinery (steel production machinery)

[Business status & medium/long-term strategy]

Worldwide raw steel production

1.34 billion ton

Order receipts of MHI Group

(Mitsubishi-Hitachi Metals Machinery, etc.)

**Strengthening response to countries newly generating steel demand**

**China** (currently 400-500 million t/y; approx. 4 times demand of Japan) (t/y = tons/year)
- Promoting modernization (scrapping of superannuated equipment; shifts to large-scale production, high quality) and plant nationalization as national strategy
  ⇒ Localization (Mitsubishi-Hitachi, Chinese subsidiary & Changzhou Baoling)

**India** (currently 40-50 million t/y ⇒ future 200-300 million t/y)
- Share encroachment of European competitors (based on Jindal/Tata track records)
- Establishment of service base (in preparation toward 2010 launch)

**Brazil** (currently 30 million t/y ⇒ future 100 million t/y)
- Achieving high added value from iron ore resources (strengthening of steel mills)
- Strengthening services to customers already taking deliveries: Usiminas, etc.

**Response to Japan/Korea/Taiwan & Europe/North America**
- Differentiation of energy-saving conversion technology
- Strengthening response to ultra-high-quality technology
5. Strategies for Each Business (3) Machinery (Compressors)

Global share: Aiming to enter Top 3

■Maintain superiority in ethylene/fertilizer areas
  • Strengthen response to weak euro (European competitors)
    ⇒ Cost reductions through shift to MD* and stronger SCM**

■Share expansion in natural gas transport area
  • Sales expansion of pipeline compressors
    ⇒ Focus on markets of Russia, Brazil
  • Sales expansion in LNG area
    ⇒ Make inroads into refrigeration compressors for small/medium-scale LNG

■Sales expansion in coal fuel, CO2 recovery/storage areas
  • Expanded sales of air and CO2 compressors
    ⇒ Strengthening sales expansion activities to North American/European engineering firms
    Strengthening of cost competitiveness (MD, SCM, etc.)

■Response to specialized operation by European competitors
  • Trimming of organization, acceleration of business activities (decisions), etc.

*MD: Modular design **SCM: Supply chain management
5. Strategies for Each Business
(4) Material Handling Machinery, Rubber Tire Machinery

**[Material Handling Machinery]**

- Maintain top share in iron & steel handling market
  (large-scale ladle cranes + coiler handling systems)
- Strengthening of differentiating technologies
  (fully automated port terminals, etc.)
- Achievement of high added value through this business area, including after-sale services
- Business diversification through alliances

**[Rubber Tire Machinery]**

- Maintain top global share in curing press business
  ⇒ Shifting from 3-pronged structure (Japan, North America, Europe) to the optimal business structure with China as the biggest market
  ⇒ Strengthening of differentiating technologies (unpressurized vulcanization, etc.)
5. Strategies for Each Business
(5) Material Handling Machinery, Rubber Tire Machinery

[Steel Structures]

Mitsubishi Heavy Industries Bridge & Steel Structures Engineering Co., Ltd.

• Strengthening of base in bridge operations
  ⇒ Response to Greater Tokyo Area, where demand is firm (new Chiba factory)
  ⇒ Strengthening of market response & cost competitiveness through alliances

• Focus on smokestack earthquake-resistance renovation work, etc.

• Strengthening of renovation and servicing of gas holders and tanks

Mitsubishi Heavy Industries Parking Co., Ltd.

• Response to decrease in new demand
  ⇒ Renovation proposals, inspection and other services

• Medium/long-range business diversification
### Organic ELs

**May 2008: Established Lumiotec Inc.**
- World’s first company exclusively dedicated to organic ELs for lighting applications
- MHI 51%; remainder owned by ROHM, Toppan Printing, etc.
- Shipments of panel samples to commence this autumn
- Targeting full-scale mass-production launch from FY2012, after confirming market and business viability

**Features**
- Brightness equivalent to fluorescent lighting
- Higher power efficiency than incandescent lighting
- Targeting 10,000-hr service life

Development to be accelerated through JV; target on securing a top position domestically and globally

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### Medical equipment

**Full-scale sales launched in FY2008**
- ⇒ 2 domestic deliveries completed, 1 overseas installation under way

  - Design concept: integration of diagnosis and treatment
  - Provision of accurate, fast, safe treatment
  - Targeting sales expansion through differentiating technology

**Features**
- World’s top-class radiation precision
- Easy positioning through linking of image-taking (diagnostic) function and radiation function
- Mechanical movements impose no burden on the patient
- Branding on strength of technological superiority
- Motion tracking function under development
- Higher profitability for the customer (hospitals) through realization of fast treatment

Winner of The Japan Society of Mechanical Engineers Medal and other awards

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*Work by designer Toshiyuki Kita first shown in Milan this April*
7. Summary

Short-term measures

• Steady implementation of special measures (FY2009 profit enhancement)

• Additional order receipts (secure profits and additional orders from FY2010)

• Acceleration of business structure reforms (promotion of the above 2 items)

Medium/long-term strategies

• Achievement of optimal business operation system

• Sustained achievement of high earnings

• Acceleration of global expansion

(2010 Business Plan)

• Plans for overall development following economic recovery

• Medium/long-range vision for each product business area