Horizontal Parting Flaskless Molding Machine

Sinto products are designed with attention for safety and environmental quality concerns. Before using Sinto equipment, please read and understand the supplied Operation Manual and operate the equipment properly.
"Good castings depend on good molds" is the common saying among professional foundrymen worldwide for quite a long time. This saying carries more stringent and profound meaning today, because the requirements for the cast products are getting more and more severe. In fact, high quality molds in dimensions, hardness and strength are critical and indispensable for the production of high quality castings.

Under this circumstance, we, Sinto adhered to "Uniform mold sand filling" as one of the basics for the mass production of superior quality molds. This concept has been materialized by "Aeration Sand Filling" system. Aeration air at comparatively low pressure range fluidizes sand in sand tank and delivers it uniformly to every cavity and corner of pattern. The new molding machine series has been developed by combining the aeration sand filling with the most advanced molding technology.
**Point 1**
High speed production with core setting flexibility

High-speed type

FCMX series & FBOX series
Molding rate as fast as 200 molds/hr by FCMX (including 9 sec for core setting) or FBOX (with no core setting).

**Point 2**
Entry and standard model for small or medium volume production with high cost-performance

Entry & Standard type

FDNX series
Easy set-up.
Easy maintenance.
Start up and training program is available upon request.

**Point 3**
Large molds with lower cost system

Standard type

FBO series
Largest Flaskless mold 812.8×812.8 mm

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Line-up to answer the various needs of casting

<table>
<thead>
<tr>
<th>Type</th>
<th>High-speed type</th>
<th>High-speed type</th>
<th>Entry type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding Method</td>
<td>Aeration + Squeeze</td>
<td>Aeration + Squeeze</td>
<td>Aeration + Squeeze</td>
</tr>
<tr>
<td>Model</td>
<td>FCMX-I · II · III</td>
<td>FBOX-II · III · IV</td>
<td>FDNX-0 · I</td>
</tr>
<tr>
<td>Detailed information</td>
<td><a href="#">pages 7 &amp; 8</a></td>
<td><a href="#">pages 9 &amp; 10</a></td>
<td><a href="#">pages 11 &amp; 12</a></td>
</tr>
<tr>
<td>Features</td>
<td>High speed 2-station Highly accurate pattern draw &amp; molding closing</td>
<td>High speed single-station Highly accurate pattern draw &amp; molding closing</td>
<td>Single-station Ideal for switching from manual to automatic molding in a day</td>
</tr>
<tr>
<td>Mold size (mm)</td>
<td>Min 500×400 - Max 700×600</td>
<td>Min 450×350 - Max 700×600</td>
<td>450×350 · 500×400</td>
</tr>
<tr>
<td>Molding Rate (Max)</td>
<td>Up to 200 molds/hr including 9 seconds of core setting time</td>
<td>Up to 200 molds/hr with no core setting</td>
<td>Up to 100 molds/hr with no core setting</td>
</tr>
</tbody>
</table>

**Remarks:** The above specifications and dimensions are subject to change without notice.
“Mold Quality” and “Productivity” Enhanced by Sinto Technology.

By combining cutting edge mold making technology with Aeration Sand Filling, Sinto achieves a combination of mold quality and productivity. We are upgrading mold making technology to the next level.

**Aeration Improvement of Sand Filling**
- Reduction of sand inclusions
- Improved casting accuracy
- Responding to wide range of molding sand

**Higher Productivity**
- Molding Rate: up to 200 molds/hr (FCMX-FBOX)
- up to 100 molds/hr (FDNX)

**Improvement of Pattern Draw Accuracy**
- Reduced mold collapse defects
- Improved casting accuracy

**Making better castings**

**Prevention of Pattern Deformation**
- Improved accuracy
- Reduced mold collapse defects
- Possible to reuse existing thin patterns

**Strong Support for Operations, Maintenance and Safety**
- Fault display, interlock display, molding monitor, and safety verification software

**Pattern draw and pattern transferability** are achieved by protecting the pattern distortion from unbalanced squeeze pressures. (FCMX-FBOX)

**Pattern draw and pattern transferability** are achieved by protecting the pattern distortion from unbalanced squeeze pressures. (FCMX-FBOX)

**Squeeze pressure balance control**
- The pattern is well protected from adverse effect of offset load.
- The pressure difference between cope and drag during the squeeze process is constantly monitored and automatically controlled within the setup range of pressure difference.

**Squeeze pressure balance control**
- Regulates the difference in cope and drag squeezing speeds and forces. This gives the ability to run pattern plates with vastly different cope vs. drag profiles or thinner plates which may be deformed by squeeze force imbalances.

**Reduces volume of molding sand**
- Flexibly meet with variations of compactability. (FCMX-FBOX)

**Pattern draw accuracy**
- Pattern draw angle reduced by 1/2 compared to conventional model
- Mold matching accuracy: Conventional model ±0.3 mm (FCMX-FBOX)

**Mold height feedback control**
- After molding, height of mold is measured and the sand feeding volume for the next mold is optimized by feedback control. This maintains a constant mold height.
- Sinto’s Aeration system minimizes sand requirement, improves mold quality and accommodates variation of compactability.

**Flow Chart of Mold Height Feedback Control**
- Target Value of Mold Height
- Aeration time/pressure set value
- Squeeze Board Setting
- Molding
- Auto correction of aeration time/pressure
- Measuring of Mold Height and Judgment

**For Better Use of High Functions**
- Molding monitor and other various software

**Easy Maintenance (FCMX)**
- Accuracy of mold closing process is maintained over a long period.
- Maintenance of the molding flask is simplified thanks to the flask unit construction and it has become easier to remove flasks from the machine.
- Porous aeration filter reduces the frequency of filter cleaning.

**Display Function**
- Improved error detection and greater feedback.
- Explanations are indicated so that anyone can easily restore the proper condition of the machine.
- The cause of machine stoppage is easily detected by interlock display.

**Aeration Auto Correcting Function (FCMX-FBOX)**
- In case of minor irregularities in the aeration system, the machine performs small molding condition adjustments automatically so that the operation and efficiency are not affected.

**Diagnosing of molding machine by Molding Analysis Monitor (FCMX-FBOX)**
- Data, such as motion of actuators and variation of pneumatic and hydraulic pressure are collected, stored and displayed on monitor and utilized for diagnosing the operating condition of molding machine.
Horizontal Parting Flaskless Molding Machine

FCMX series

High speed with core setting time & Spacious working space

Molding Rate (MAX): 200 molds/hr
*Including 9 sec for core setting
FCMX-I and II

With aeration sand filling system

Aerating

With aeration sand filling system

FCMX series

Award of Japan
- 27th President’s Award for Outstanding Energy Saving Machinery by Japan Machinery Federation 2006
- Toyota Award 2007 by Japan Foundry Engineering Society
- Included in the category of preferential taxation for energy saving machines by Ministry of Economy, Trade & Industry
- Okochi Memorial Production Award by Okochi Memorial Foundation

- Excellent mold strength and accuracy have been realized with the use of “Aeration Sand Filling” and “Centered Supporting Mechanism”.
- The "squeeze pressure balance control" ensures stable molding by improving the pattern transferability and preventing pattern distortion.
- The "mold height feedback control" reduces the sand consumption and compensates for compactability variations.
- Environment-friendly and energy-saving. The noise level is as low as 75 dB (A).

Centered Supporting Mechanism with Double Guides
FCMX, without pins and bushes, achieves highly precise pattern draw and mold matching by supporting cope and drag flasks with robust guiding.

Molding System
- Aeration Sand Filling + Squeeze

Molding System
- Aeration Pressure
  - 1.0 MPa. 4 selectable stages

Power System
- Air & Oil (30 kW-Water cooled) Air & Oil (37 kW-Water cooled) Air & Oil (30 kW+30 kW-Water cooled)

Air Consumption
- 0.6 m³/mold

Operating Air Pressure
- 0.5-0.18 MPa

Squeeze Surface Pressure (Max)
- 0.05-0.18 MPa

Molding Rate (Max)"*1)
- 200 molds/hr
  - (Including 9 sec for core setting)

Molding System
- Aeration Sand Filling + Squeeze

Weight of Mold (Min-Max)
- 78 kg-121 kg

Receiver tank

Aeration tank nozzle (UHPE)

Recommended spare parts
- These are the spare parts we recommend keeping on hand as well as the consumables required for the first year of operation.

Storage tank

Report data analysis monitor PC

Machine Dimensions (mm)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCMX-I</td>
<td>5,100</td>
<td>2,940</td>
<td>2,000</td>
<td>655</td>
<td>1,395</td>
<td>505</td>
<td>610</td>
<td>3,196</td>
<td>300</td>
</tr>
<tr>
<td>FCMX-II</td>
<td>5,700</td>
<td>2,940</td>
<td>2,200</td>
<td>655</td>
<td>1,590</td>
<td>505</td>
<td>610</td>
<td>3,286</td>
<td>300</td>
</tr>
<tr>
<td>FCMX-III</td>
<td>6,140</td>
<td>3,700</td>
<td>2,840</td>
<td>990</td>
<td>1,990</td>
<td>655</td>
<td>735</td>
<td>3,850</td>
<td>440</td>
</tr>
</tbody>
</table>

1) Molding speed shown above stands for the fastest case with the mold thickness setting of Thick/Thick.

Remarks
- CE version is also available as an option.
- *Including 9 sec for core setting

Option
- Automatic pattern changer
- Magnet type sprue cup
- Aeration tank nozzle (UHPE)
- Receiver tank
- Molding analysis monitor software
- Cold climate specifications
- Hot climate specifications
- Recommended spare parts

- Air & Oil (30 kW-Water cooled) Air & Oil (37 kW-Water cooled)

- Air & Oil (30 kW+30 kW-Water cooled)

- 0.5-0.95 MPa

- 226 kg-315 kg

- 171 molds/hr
  - (21 sec/mold)

- 200 molds/hr
  - (18 sec/mold)

- 200 molds/hr
  - (18 sec/mold)

- 21 sec/mold
**Horizontal Parting Flaskless Molding Machine**

High speed & Wide working space

Molding Rate (MAX): 200 molds/hr  
*Excluding core setting time

**FBOX-II and III**

- Excellent mold strength and accuracy have been realized with the use of "Aeration Sand Filling" and "Accurate Drawing Mechanism".
- The "squeeze pressure balance control" ensures stable molding by improving the pattern transferability and preventing pattern distortion.
- The "mold height feedback control" reduces the sand consumption and compensates for compactability variations.
- Environment-friendly and energy-saving. The noise level is as low as 75 dB (A).

**Easy Maintenance and Less Downtime**

User friendly function (Operating touch panel)

Can easily change proportional valve speed or pressure setting values on the touch panel. Many functions useful for preventive maintenance are also available including warnings for part wear, notifications for locations needing inspection or inspection periods, and calibrating maintenance of molding machines.

### Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>FBOX-I</th>
<th>FBOX-II</th>
<th>FBOX-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width x Length (mm)</td>
<td>450×350</td>
<td>480×350 (15&quot;×14&quot;)</td>
<td>500×400</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>600×500</td>
<td>610×500 (24&quot;×20&quot;)</td>
<td>700×600</td>
</tr>
<tr>
<td>Molding System</td>
<td>Aeration Sand Filling + Squeeze</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding Rate (Max)</td>
<td>200 molds/hr (Excluding core setting time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Air Pressure</td>
<td>0.05-0.18 MPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Consumption</td>
<td>0.7 m³(N)/mold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight of Mold (Min-Max)</td>
<td>61 kg-148 kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks**

1. Molding speed shown above stands for the fastest case with the mold thickness setting of Thick/Thick.
2. The above specifications and dimensions are subject to change without notice.

### Option

- **Pattern changing station**
  - **Pattern changing area Monitor**
  - **Pattern changer safety light curtain**
  - **Pattern changer monitoring software**
- **Molding analysis monitor software**
- **Chiller setter**
- **Core setter**
- **Cold climate specifications**
  - **Chiller**
  - **Hydraulic unit heater**
- **Hot climate specifications**
  - **Air conditioning unit**
- **Recommended spare parts**
  - **Chiller**
  - **Core setter**

### Machine Dimensions (mm)

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBOX-I</td>
<td>2,074</td>
<td>2,996</td>
<td>3,425</td>
<td>375</td>
</tr>
<tr>
<td>FBOX-II</td>
<td>3,049</td>
<td>3,101</td>
<td>3,496</td>
<td>375</td>
</tr>
<tr>
<td>FBOX-III</td>
<td>4,275</td>
<td>3,781</td>
<td>4,665</td>
<td>550</td>
</tr>
</tbody>
</table>

### Optional accessories

- **Chiller**
- **Core setter**
- **Recommended spare parts**

### Recommended Spare Parts

1. Chiller
2. Core setter
3. Recommended spare parts are available on request or on the operation panel.

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**Spacious working space for core setting**

**Easy gate stick setting**

**With aeration sand filling system**

**Single station design**

**Proportional valve setting screen**

**Screw type**

**Aeration**

**Core setting**

**Mold stripping**

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**User friendly function (Operating touch panel)**

Can easily change proportional valve speed or pressure setting values on the touch panel. Many functions useful for preventive maintenance are also available including warnings for part wear, notifications for locations needing inspection or inspection periods, and calibrating maintenance of molding machines.

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**Remarks**

1. Molding speed shown above stands for the fastest case with the mold thickness setting of Thick/Thick.
2. The above specifications and dimensions are subject to change without notice.
Entry model
Simple and affordable

Molding Rate (MAX): 100 molds/hr
*Excluding core setting time

FDNX-0

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>FDNX-0</th>
<th>FDNX-L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width x Length (mm)</td>
<td>850×460</td>
<td>900×460</td>
</tr>
<tr>
<td>Height (mm)</td>
<td>Cope:150 Drag:150</td>
<td>Cope:180 Drag:180</td>
</tr>
<tr>
<td>Molding Rate (Max)</td>
<td>100 molds/hr (36 sec/mold)</td>
<td>90 molds/hr (40 sec/mold)</td>
</tr>
<tr>
<td>Squeeze Surface Pressure (Max)</td>
<td>0.7 MPa</td>
<td>4 selectable stage</td>
</tr>
<tr>
<td>Aeration Pressure</td>
<td>0.05-0.18 MPa</td>
<td>0.05-0.18 MPa</td>
</tr>
<tr>
<td>Power System</td>
<td>Air &amp; Air on Oil</td>
<td>Air &amp; Oil</td>
</tr>
<tr>
<td>Air Consumption</td>
<td>1.0 m³(N)/mold</td>
<td>1.5 m³(N)/mold</td>
</tr>
<tr>
<td>Operating Air Pressure</td>
<td>0.56±0.04 MPa</td>
<td>0.56±0.04 MPa</td>
</tr>
<tr>
<td>Weight of Mold</td>
<td>71 kg</td>
<td>108 kg</td>
</tr>
</tbody>
</table>

*1) Molding speed may vary depending on ambient temperature, compressed air source pressure and squeeze pressure.
*2) Total molding rate including 9 seconds for core setting (MAX) : FDNX-0 80 molds/hr FDNX-L 78 molds/hr
*3) Molding rate of CE version models : 90 molds/hr (FDNX-0), 80 molds/hr (FDNX-L)

Remarks
1) CE version is also available as an option.
2) The above specifications and dimensions are subject to change without notice.

Option
- Mold width x length option
  508x406(mm)(20"x16") for FDNX-0
  560x460(mm)(22"x18") for FDNX-L
- Mold height option
  Cope:120 Drag:120(mm) for FDNX-0
  Cope:150 Drag:150(mm) for FDNX-L
- Receiver tank
  Stable supply of compressed air
- Recommended spare parts
  These are the spare parts we recommend keeping on hand as well as the consumables required for the first year of operation.

- Aeration sand filling technology for producing high quality castings.
- Ready to use by just connecting power (100V AC-240V AC), compressed air, and sand supply.
- Low-noise working environment of 72dB(A).
- Ideal for switching from manual molding to automatic molding.

*Startup and training package is available upon request.

Before

A couple of automatic molding machines producing same number of molds

After

Dozens of jolt-squeezers making molds manually

With aeration sand filling system

Single station design

Molding & Core Setting & Mold Stripping

Height to mouth of sand supply hopper
Simple mechanism, Standard model with easy setup & easy operation

**Horizontal Parting Flaskless Molding Machine**

**FBO series • FBO-N series**

(Blow) (Aeration)

*Excluding core setting time*  
FBO-II+FBO-IN

**Molding Rate (MAX): 150 molds/hr**

- Top blow system of FBO does not require severe control of molding sand. The machine accepts tough property of sand with high compactability value.
- Blow pressure control system realizes uniform sand filling density in a mold. FBO is tolerable and less sensitive for a wide property range of molding sand, and is possible to offer a compatibility of easy sand control and high accuracy of mold to customers.
- Automatic drag shuttle mechanism allows safe and easy core setting in a comfortable posture.

- Unique mechanism of blow pressure control realizes uniform sand filling density.
- Most of matchplates used for conventional manual machines are applicable with no large modification.
- Compact size allows to use existing floor space efficiently.
- Safe and operator friendly posture for core setting with drag mold shuttle mechanism.

**Specifications**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBO-II</td>
<td>3,150</td>
<td>2,810(2,835)</td>
<td>2,890</td>
<td>945</td>
<td>1,190</td>
<td>1,140</td>
<td>375</td>
</tr>
<tr>
<td>FBO-R</td>
<td>3,690</td>
<td>2,960(2,835)</td>
<td>3,185</td>
<td>1,090</td>
<td>1,375</td>
<td>1,190</td>
<td>375</td>
</tr>
<tr>
<td>FBO-N</td>
<td>5,135</td>
<td>5,487</td>
<td>4,942</td>
<td>1,650</td>
<td>1,700</td>
<td>1,585</td>
<td>550</td>
</tr>
<tr>
<td>FBO-V</td>
<td>5,825</td>
<td>5,387</td>
<td>4,942</td>
<td>1,650</td>
<td>1,850</td>
<td>1,920</td>
<td>600</td>
</tr>
</tbody>
</table>

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**Remarks**

1) CE version is also available as an option.
2) The above specifications and dimensions are subject to change without notice.

<table>
<thead>
<tr>
<th>Machine Dimensions(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width x Length (mm)</td>
</tr>
<tr>
<td>400×300, 430×310</td>
</tr>
<tr>
<td>400×300, 450×350</td>
</tr>
<tr>
<td>500×400, 520×420</td>
</tr>
<tr>
<td>762×812.8 (30&quot;×32&quot;)</td>
</tr>
</tbody>
</table>

*1) Molding speed given here stands for fastest case with maximum setting of mold thickness and without core. If cores are set, the cycle time is prolonged for 6 sec. for drag shuttling + core setting time.
2) Molding speed given here stands for fastest case with maximum setting of mold thickness and without core. If cores are set, the cycle time is prolonged for 5 sec. for drag shuttling + core setting time.
3) Molding speed given here stands for fastest case with maximum setting of mold thickness and without core. If cores are set, the cycle time is prolonged for 2 sec. for drag shuttling + core setting time.

### Cold climate specifications

- **Cold climate specifications (Hydraulic unit heater)**
  Reduces heating time for hydraulic unit and operation.

### Hot climate specifications

- **Hot climate specifications (Operation panel air conditioner)**
  Prevents overheating inside the operation panel.

### Drag air blow-off

- **Drag air blow-off**
  Blows drag when drag is sliding. Prevents sand inclusion and improves casting quality.

### Pattern changing station

- **Pattern plate preheater**
  A heater attached above the match plate prevents sand sticking to match plate by maintaining temperature difference between plate and sand.

### Core setter

- **Core setter**
  Automatic setting of cores.
We offer the best foundry system including process selection, according to the customer's products, production volume and production system.

**Automatic Line for FDNX series**

- Suitable molding machines: **FDNX**
- **e.g. Molding Machine: FDNX-0**
  - Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 450 x 350
  - Mold height (mm): 100-150
  - Primary cooling time: Approx. 18-30 min (30-60 molds)
  - Secondary cooling time: 13.8 min (23 molds) (Option)
  - Required volume of sand: Approx. 7.1 tons/hr.
  - Production capacity: Approx. 192 k/hour (Assumption)

**Manual Line (with Roller)**

- Suitable molding machines: **FDNX**
- **e.g. Molding Machine FDNX-0**
  - Max. Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 450 x 350
  - Mold height (mm): 100-150
  - Required volume of sand: Approx. 8 tons/hr.

**Automatic Line**

- Suitable molding machines: **FDNX**, **FCMX**, **FBOX**, **FBO(N)**
- **e.g. Molding Machine FCMX-Ⅱ**
  - Max. Molding Rate: 200 molds/hr. (18 sec/mold)
  - Mold size (mm): 550 x 450, 610 x 508 (24" x 20")
  - Mold height (mm): 130-200 (changeable)
  - Primary cooling time: Approx. 18-30 min (30-50 molds)
  - Secondary cooling time: 13.8 min (23 molds)
  - Required volume of sand: Approx. 38 tons/hr.

**New Line**

- Suitable molding machines: **FDNX**, **FCMX**, **FBOX**, **FBO(N)**
- **e.g. Molding Machine FDNX-0**
  - Max. Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 600 x 550
  - Mold height (mm): 150
  - Required volume of sand: Approx. 192 k/hour (Assumption)
  - Production capacity: Approx. 192 ton/month (Assumption)

**Conventional New Line**

- Suitable molding machines: **FDNX**, **FCMX**, **FBOX**, **FBO(N)**
- **e.g. Molding Machine FDNX-0**
  - Max. Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 600 x 550
  - Mold height (mm): 150
  - Required volume of sand: Approx. 192 k/hour (Assumption)

**Environment**

- Suitable molding machines: **FDNX**, **FCMX**, **FBOX**, **FBO(N)**
- **e.g. Molding Machine FDNX-0**
  - Max. Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 600 x 550
  - Mold height (mm): 150
  - Required volume of sand: Approx. 192 k/hour (Assumption)

**Foundry Integration**

- Suitable molding machines: **FDNX**, **FCMX**, **FBOX**, **FBO(N)**
- **e.g. Molding Machine FDNX-0**
  - Max. Molding Rate: 100 molds/hr. (36 sec/mold)
  - Mold size (mm): 600 x 550
  - Mold height (mm): 150
  - Required volume of sand: Approx. 192 k/hour (Assumption)
For the purpose of continuous production of high quality casting and reassuring customer's production operations...

Sinto supports customer's sustained manufacturing by attentive services.

Remote Support
Quick Recovery Assistance at time of machine problem

This program includes support from engineers knowledgeable about equipment for temporary action and recovery in case of emergent machine troubles during production.

Maintenance and monitoring Support
To Keep Equipment at Best Condition

This is a program to keep operation of equipment at its best condition. There are several functions and services available, such as diagnosis by "mechanical doctors", operation data analysis, and parts replacement timing announcement.

World-wide support from support centers in Japan and Germany, along with overseas support branches.

Quick parts supply
Avoid downtime of Manufacturing

Critical parts and consumables, which immediately lead to a line stop or failure when not available shall be kept as spares in stock at the customer’s facility and also at an overseas site close to the customer to permit immediate delivery.

Remote Support
Quick Recovery Assistance at time of machine problem

This program includes support from engineers knowledgeable about equipment for temporary action and recovery in case of emergent machine troubles during production.

Maintenance and monitoring Support
To Keep Equipment at Best Condition

This is a program to keep operation of equipment at its best condition. There are several functions and services available, such as diagnosis by "mechanical doctors", operation data analysis, and parts replacement timing announcement.

World-wide support from support centers in Japan and Germany, along with overseas support branches.

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