Electric Servo Drive
Injection Molding Machine

model | J550AD | J1000AD
J650AD | J1300AD
J850AD | J1800AD
J850ADW

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Printed in Japan  JIO-AR  JG  ME  C
Large Electric Servo Drive Injection Molding Machines Promotes Faster Cycles, Energy Savings, and High Performance

An industry pioneer, JSW has extensive experience in manufacturing large electric molding machines. The newly released, second-generation large electric servo drive molding machine promises to deliver measurable improvements in productivity, quality, and economy. This latest improvement retains our time proven toggle clamping unit, which for many years has delivered “faster cycle times” and “unparalleled energy savings.”

**Productivity**
- Increased Platen Speed
- Reduced Dry Cycle
- Improved Plasticizing Capability
- Extra Rigid Clamping Unit

**Environment**
- Reduced Power Consumption
- Reduced CO₂ Emissions
- Power Supply Regenerating Function
- Reduced Cooling Water, Hydraulic Oil, and Lubrication Oil Consumption

**Stability**
- SYSCOM3000
- Fast Servo Control Circuit
- HAVC Control
- Reverse Seal Control
- IWCS Control
- Clamp Force Feedback Control
- Injection Compression Molding
- Foaming Molding Control

Complying with safety regulations:
- EU safety regulations (CE Marking)
- Industrial machinery
- Industry safety rules (JMS K1001)
Faster Cycle Performance

Quicker dry cycle, substantially improving productivity

Rigid fast cycle toggle
JSW’s original high-rigidity fast cycle toggle mechanism, provides quicker dry cycle time.
- Dry cycle time is further reduced by improving the platens speed by 20%.
- Ejector speed has been improved to reduce product removal time.
- The speed of mold height adjustment has been improved to allow reduced setup time.
- The high-rigidity clamping unit achieves high-precision stabilized molding.
- The flat press platens structure, which exerts a clamping force evenly distributed over the mold surface, minimizes the wall-thickness fluctuation of molded products. (Pat. #4107509)

Substantially reduction in plasticizing time of new injection unit and new screw unit

New injection unit
The newly developed injection unit has been made smaller and lighter, improving injection acceleration and deceleration performance. Also, high injection power, heavy-duty drive provides robust injection and greater plasticizing capability.

New design screw
Improved High Meltor M screw with greater plasticizing and mixing performance is equipped as standard for 2300H or larger injection unit.

Substantially reduction in plasticizing time of new injection unit and new screw unit

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Phenomenal Energy Savings

Product improvement by 30%, power consumption reduced by 60%, and CO2 reduced 92t/year

Ex.1 Reduced cycle time and energy savings
AD Series provides industry-leading energy savings as well as substantial reduction in cycle time

Ex.2 Regenerated power supply in mold open/close
Through power supply regenerating function, approximately 8% of power supply is regenerated in mold open/close process.

Original Power Supply Regenerating Function (Energy Savings Technology)
The power supply regenerating function, which retrieves energy generated in injection or deceleration in mold open/close action as electric power, has been equipped from the previous series. Substantial energy savings are achieved through power supply regenerating function in all the processes.

Environmentally-friendly, substantially reducing cooling water, hydraulic oil, and lubrication oil
- Cooling water usage saving to 1/5 or less of the hydraulic machine
- Hydraulic oil usage saving to 1/30 or less of the hydraulic machine
- Lubricating grease usage reduced by 25% from the previous series by developing new JS1 Grease, superior in load bearing, adhesive property, and lubrication property
Use of a high-speed servo control circuit in the AD Series reduces scanning time to 1/16th of conventional controls and achieves an outstanding 62 micro seconds of scan time. It promotes product quality through a reduction in performance variation, such as holding pressure transfer positions.

The resolution of the load cell amplifier for the injection pressure has been intensified five fold for more accurate back pressure control which helps ensure stabilized precision molding.

Highly upgraded resolution of the injection pressure detector

The resolution of the load cell amplifier for the injection pressure has been intensified five fold for more accurate back pressure control which helps ensure stabilized precision molding.

Advanced Control System

The industry’s fastest class 62 micro second servo control circuit attains a new high in accuracy and stable quality levels

Use of a high-speed servo control circuit in the AD Series reduces scanning time to 1/16th of conventional controls and achieves an outstanding 62 micro seconds of scan time. It promotes product quality through a reduction in performance variation, such as holding pressure transfer positions.

SYSCOM3000 screen

Operation includes the condition setting screen, the touch panel screen, and the selector switches.

Condition setting screen

Touch panel screen

Selector switches

Easy Operation, Multiple Functions

New Controller SYSCOM3000

A vertically arranged large 15-inch TFT color LCD screen. The controller provides the operator with a clear view of molding parameters.

An illustration of the machine, in conjunction with operation mode keys and a touch screen ensures easy operation.

Languages are selectable from English, Chinese, and Japanese even during running. Other languages (Hangul, Spanish, and French) are optional.

Storage of molding conditions: 120 conditions can be stored in internal memory and 1,000 conditions in external USB memory.

Molding conditions, waveform data, or measurement data can be exported to USB memory, which makes editing and managing in a computer easy.

Password function has been added for security. Passwords can be set for each management level. (Option)

Upgraded Controller

Ex.3 Molding stability (Standard molding)

Product: Tray
Qty : 1
Resin : PP

<table>
<thead>
<tr>
<th>Product weight (g)</th>
<th>J650EL</th>
<th>J650AD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX</td>
<td>997.8</td>
<td>996.3</td>
</tr>
<tr>
<td>MIN</td>
<td>995.8</td>
<td>994.8</td>
</tr>
<tr>
<td>AVG</td>
<td>996.8</td>
<td>996.4</td>
</tr>
<tr>
<td>R/AVG (%)</td>
<td>0.201</td>
<td>0.151</td>
</tr>
<tr>
<td>σ</td>
<td>0.641</td>
<td>0.365</td>
</tr>
<tr>
<td>σ/R/AVG (%)</td>
<td>0.064</td>
<td>0.037</td>
</tr>
</tbody>
</table>

Variation in cushion

0.8
0.6
0.4
0.2
0

J650EL
J650AD

25% Improved
45% Improved

Variation in product weight

0.25
0.2
0.15
0.1
0.05
0

J650EL
J650AD

25% Improved
45% Improved

Dual Integrated Control system (D.I.C. system) for molding machine and product takeout robot

The product takeout robot can be operated from SYSCOM3000, and also the molding machine can be operated from the controller of the product takeout robot. Effective for reducing setup time.

Optional equipment
**JSW’ Original Control Enables Precision Molding**

**H AVC (High Accuracy Volume Control)**

Technology to stabilize injection pressure for every shot and product weights by reverse sealing after completion of weighting and performing high precision control of screw position. Effective for molding that requires higher level of precision stability than traditional stability control.

<table>
<thead>
<tr>
<th>Control action</th>
<th>Standard equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll-back action when reverse sealing</td>
<td>New</td>
</tr>
<tr>
<td>Re-back pressure action</td>
<td>New</td>
</tr>
<tr>
<td>Depressurizing action</td>
<td>New</td>
</tr>
</tbody>
</table>

**Reverse Seal Control**

Closure of the backflow prevention ring by rotating the screw in reverse direction for a certain amount to lower the pressure in the screw and at the tip. It is especially effective for low speed injection molding.

**Ex. 4 Product stability (Reverse seal)**

Molding machine: J650AD
Product: Tray
Qty: 1
Material: PP

**Injection Compression Molding**

JSW injection compression molding feature enables the mold position to be controlled to accuracies over 10 times that of direct-pressure molding.

**Clamp Force Feedback Control**

- Clamping force feedback effect (patent pending)
- Clamping force is always monitored with a sensor while molding and automatically corrected to the set value. Also, clamping force can be changed while molding observing the actual molding.

**Foaming Molding Control**

JSW’s unique high precision platen position control enables expanding foam molding incomparably stable compared with traditional method. The dedicated position sensor stabilizes product dimensions by directly detecting the position of the platen and performing feedback control.

**IWCS (Injection Weight and Cushion Stability) Control**

A patented control that stabilizes the density of the molten resin stored at the tip of the screw on every shot. This technology is effective in minimizing the variance in product weight. (Pat. # 3529771)

**Features**

- Excellent stability in repeated core back position control
- Relatively inexpensive equipment
- Post installable to existing machine

**Optional equipment**

**Standard equipment**
The photographs in this leaflet include options.

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The appearance and the specifications of the machine may be altered for improvement without notice. The photographic in this leaflet include options.