JT AD SERIES
All Electric Servo Drive Vertical Type Injection Molding Machine

JSW
High Quality Compact Design.

JSW has produced a super-advanced all-electric vertical type injection molding machine - it is faster, more precise, and more compact. The JT-AD series machines have been evolving to match the needs of today and beyond: They display high productivity on in-line assembly. Using the advanced technologies that have been fostered for many years and are unique to JSW, we have achieved high-precision injection molding.

Productivity
Faster table rotation and mold open/close.

Faster Cycles

Molding quality
62 micro second high-speed servo control circuit that is among the fastest in the industry.

Algorithm Technology

Compact body
Low table height and smaller foot print.

Facilities Performance

Operability and visibility
Large 15-inch LCD color display.

Innovative & Friendly Operation

Handling a variety of products
Wide selection range of injection modules and injection capability, with flexible control.

Wide Range of Injection Units Performance

JT40RAD
JT20RAD~J220RAD
JT40AD
JT40AD·JT70AD·JT100AD
Low-Profile and Compact Design

This compact machine is easy to operate and suitable for in-line configuration.

Space saving
The machine width and installation space have been greatly reduced to make possible inclusion of the machine on the assembly line. JT40RAD has reduced machine width by 150 mm and installation space by 16%, when compared with conventional models.

Compact table
The mold securing height has been reduced to allow the assembly line to be lowered, making it easier for the operator. With a JT40RAD-55V, the table height is 894 mm (35.2 inch), 146 mm (5.75 inch) lower than on conventional machines; the machine height of 2850 mm (112.2 inch) is the most compact in the industry (including mounting pads).

Larger molds
Although the machine width is more compact, the outer diameter of the table is the same as that of conventional models. Optimizing the nozzle position makes it possible to mount larger molds, and the machine can also handle larger, more complex dies, such as sliding cores.

Mold accessible in three directions
A three-piece safety door is used. The door open/close area is smaller. This improves operability and ease of machine installation. A mold can be accessed from three directions - both sides of the machine and the operation side - and an open space is left on the opposite side from operation, so that a runner can be easily removed.
High-speed mold open/close and fast table rotation, improve productivity.

Faster cycles for mold open/close and rotary table rotation have been achieved.

Fast, smooth mold open/close operation is ensured

A clamping mechanism exclusively for vertical machine with high-capacitance servo motor shortens the mold open/close dry cycle by 21% (JT40RAD).

This redesign results in high-speed, smooth mold open/close operation and facilitates high-cycle molding.

High-performance servo motor & timing belt

Silent, high-speed table rotation - the best in the industry - has been achieved by using a high-performance servo motor and timing belt. A mechanical stopper is provided at the rotation stop to improve the stop accuracy during repetitive operation: This enables stable molding without any displacement of the inserted product. (The table rotates 180 degrees for reciprocated turning.)

Injection compression makes a wide variety of molding possible.

The injection compression molding function, unique to JSW, is equipped as standard: The injection compression controls the position of mold with accuracy more than 10 times that of direct-pressure molding machines, making possible a wide variety of molding.
62 micro second high-speed servo control circuit, the fastest in the industry, improves the product quality.

The marvelous 62 micro second high-speed servo control circuit results in both high precision and stable quality.

Use of 62 micro second high-speed servo control circuit in the “JT-AD Series” reduces scanning time to 1/8th of conventional controls. It promotes product quality through a reduction in performance variation, such as holding transfer pressures.

Molding machines: JT40RELE (conventional machine) vs JT40RA-50V
Molded product: Electronic parts
Resin: PA 6

The resolution of injection pressure detector has been greatly improved.

The resolution of the load cell amplifier for the injection pressure has been intensified five times for more accurate injection, holding and back pressure control which helps insure stabilized precision molding.

Large 15 inch LCD color monitor
Remarkably improved operability and visibility

Upgraded SYSCOM3000T.

- A vertically arranged large 15 inch TFT color LCD screen. The controller rotates to provide the operator with a clear view of molding parameters.
- An illustration of the machine and a touch screen insures easy operation.
- The independent injection conditions can be set to conform the delicate difference between two lower molds. (Rotary type specification)
- Languages are selectable from English, Chinese and Japanese even during running. Other languages (Korean and Spanish) are optional.
- Up to 120 molding conditions can be stored in internal memory; up to 1,000 conditions can be stored in external memory (USB memory).

SYSCOM3000T screens

A controller consists of the condition setting screen, mode keys screen and operation switches.

1. Condition setting screen
2. Touch panel screen
3. Selector switches
4. Convenient monitoring screens
A wide selection of injection units with versatile control modes promotes the product quality.

The low inertial injection (HI) specifications (*optional) and high-speed, high response injection (HS) specifications (*optional) have been added on the module system that is highly accepted in the industry. The module system enables selection of appropriate injection unit and covers diversified products including micro and thin-walled molding.

**Electric-driven soft-pack servo control**

This JSW unique control technology suppresses peak pressure immediately before switching the holding pressure in the injection process, keeping the machine pack at optimum pressure. It results in over-pack prevention in thin-wall molding. (PAT. # 1755588)

**Effects of soft-pack servo**

- Molding distortion reduced
- Burrs cleared
- Dispersion in weight of molded products reduced
- Clamping force reduced (low-pressure molding)
- Mold-friendly

**APC (Advanced Pressure Control)**

This JSW unique control technology suppresses overshoots or undershoots of resin pressure during the filling/holding pressure process, a dramatic upgrade of the tracking and responsibility for setting pressure. (PAT. # 3162829)

**Predicted control of metering**

To ensure smooth stops with optimum screw rotation and back pressure load at the screw rotation completion position, estimate control is located in the front of the screw rotation completion position. The screw rotation number can be reduced to the optimum without any loss in time, and back pressure can be decreased.

**Before-holding pressure deceleration control**

This control uses the estimate control to reduce the speed to the optimum holding pressure speed, from its position before the holding pressure transfer position. This decreases the inertia that is peculiar to electric injection molding machines and improves stability in holding pressure transfer process, which is essential for precision molding.
This efficient energy saving performance greatly reduces power consumption.

**Power consumption is 1/3 to 1/4 that of a hydraulic machine.**
**Cooling water amount is less than 1/5 that of a hydraulic machine.**

![Power Consumption Comparison Graph](image)

- **Hydraulic series**
- **Electric series**
- **JT46RAD**

Power consumption comparison graph showing the energy efficiency of the machine compared to traditional hydraulic systems.

**Promotion of maintainability.**

- **Polycarbonate safety door**
  A large polycarbonate (steel is also available) safety door that allows operators to clearly view the inside of the machine while it is in use. The status of both mold and molded product is easily visible, facilitating maintenance.

- **Automatic lubricating device**
  This automatically lubricates the injection and clamping devices to prevent any problem due to inadequate lubrication.

- **Highly endurable ball screw**
  Using a ball screw that maintains high accuracy improves endurance.

- **Air pressure inspection window**
  The window allows operators to easily check the supply status of factory air that is necessary for the safety device of the machine.

**NET100 system and LINK10 system**

This system performs both quality control and production control of injection molding machines. When the system is connected to the factory LAN, it will be possible to communicate data with the injection molding machines connected to the network. Depending on the number of machines connected to the network, the NET100 system can control up to 100 machines, and the LINK10 system can control up to 10 machines. *Optional*

**Remote management system**

Connecting the NET100 system or LINK10 system to the Internet will allow operators to monitor the molding status, display the controller screens, and change settings from anywhere in the world. This will greatly increase the efficiency of molding work. *Optional*
Specifications

Maintaining the standard of high quality and reliable production

List of standard accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>KQ nozzle (No type)</td>
<td>Touch panel TFT color LCD controller</td>
</tr>
<tr>
<td>NE20Gfad (optional use accessory type)</td>
<td>Mold positioner (manual mover: 3D mover)</td>
</tr>
<tr>
<td>LSPI-2 screw (automatic resistance type)</td>
<td>Line lock and resetting conditional setting (manual type only)</td>
</tr>
<tr>
<td>HT screw head</td>
<td>USB port (front)</td>
</tr>
<tr>
<td>Screw chuck back</td>
<td>Self-diagnosis function</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>Overall setting screen</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>Help function</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>Pro-heat function</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>Compound action</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>Clock</td>
</tr>
<tr>
<td>Screw insertion device</td>
<td>At standard/unstandard operation selection</td>
</tr>
<tr>
<td>Nozzle retract select</td>
<td>Multi-language select (English/Linux/Chinese)</td>
</tr>
<tr>
<td>Chuck bracket select</td>
<td>Barreled temperature controller</td>
</tr>
<tr>
<td>Automatic greasing</td>
<td>Heat exchanger (manual mover)</td>
</tr>
<tr>
<td>Injection molding</td>
<td>Injection pressure sensor (IPM)</td>
</tr>
<tr>
<td>Heating transfer by heat exchanger (HS control)</td>
<td>Injection molding waveform monitor</td>
</tr>
<tr>
<td>Barrel temperature control (BSR)</td>
<td>Injection molding waveform storage</td>
</tr>
<tr>
<td>Shift plug set</td>
<td>Oil temperature waveform monitor</td>
</tr>
<tr>
<td>Injection pressure overheat alarm</td>
<td>Statistical graph</td>
</tr>
<tr>
<td>Injection pressure overheat alarm</td>
<td>Measurement value display</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Mold temperature display</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Grease lubrication heater alarm</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Fault alarm buzzer</td>
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<tr>
<td>Needle valve</td>
<td>Production monitor</td>
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<tr>
<td>Needle valve</td>
<td>Cumulative operating hour display</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Cycle monitor</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Mold condition upper/lower limit controller</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Inspection and maintenance</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Alarm history</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Set value history</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Siren fault alarm</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Cooling water closed circuit</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Accessibility manual/foreign matter</td>
</tr>
<tr>
<td>Needle valve</td>
<td>Accessory function in foreign matter</td>
</tr>
</tbody>
</table>

List of optional accessories

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long nozzle</td>
<td>Loose off-mold (pneumatic type)</td>
<td>H-Mate Mill screw</td>
</tr>
<tr>
<td>H-Mate Mill screw</td>
<td>Ultra precise/machining resistance screw barrel</td>
<td>BI size screw barrel</td>
</tr>
<tr>
<td>BI size screw barrel</td>
<td>Hopper thickness assistance sleeve</td>
<td>Barreled insertion cover</td>
</tr>
<tr>
<td>Barreled thickness assistance sleeve</td>
<td>Hopper</td>
<td>Hopper attachment tube</td>
</tr>
<tr>
<td>Hopper</td>
<td>Ceramic screw head</td>
<td>PCD screw head</td>
</tr>
<tr>
<td>PCD screw head</td>
<td>Module 1 rack down sized barrel</td>
<td>Residual heat alarm</td>
</tr>
<tr>
<td>Residual heat alarm</td>
<td>Low current injection (HR)</td>
<td>High-speed/high-precision injection (HR)</td>
</tr>
<tr>
<td>Low current injection (HR)</td>
<td>Standard injection (SV)</td>
<td>Weld type injection device</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Probes for insertion devices</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Air chamber</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Core pull strut (pneumatic type, hydraulically type)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Unclamp motor circuit</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Clamping</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Upper die ejector (hydraulically type)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Ejector 3 point operation (rotary type only)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Ejector die plate extension (rotary machine only)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Mold setup device (inside plate, outside plate)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Mold one-direction access (190 degrees, rotation, rotary type only)</td>
</tr>
<tr>
<td>Standard injection (SV)</td>
<td>Standard injection (SV)</td>
<td>Mold damper</td>
</tr>
</tbody>
</table>

Examples of attaching optional devices

Note 1: Applied for screw diameters of 16 mm or more.
Note 2: Consult individually for specifications.
Note 3: Material and sizes are compatible.
Note 4: An EJ injection barrel is equipped, note that both the nozzle size and the range of mold thickness used will be changed.
Note 5: Pneumatic type is used for operation rate string type.
Note 6: This unit is not compatible with 100 cc model. Prepare according to the injectable volume. (Note 2)
Note 7: One unit is equipped in standard.
Note 8: Pneumatic type is used for operation rate string type.
Note 9: The external encoder capacity is up to 1000 models. Prepare according to the unit size. (Note 2)

External appearance and specifications of this machine are subject to change without notice to make improvements.
Unauthorized reprint of this catalog is prohibited.
Photos shown in the catalog include those of optional devices.
THE JAPAN STEEL WORKS, LTD.

URL http://www.jsw.co.jp/

Division Gate City Onseki-West Tower, 11-1, Osaki 1-chome, Shinagawa-ku,
Head Quarterly Tokyo 141-0032, Japan
Phone: +81-3-5745-2061 Fax: +81-3-5745-2089—84

JSW Plastics Machinery Inc.
Head Office: 555 South Promenade Ave., Unit 104, Corona, California 92879, U.S.A.
Phone: +1-951-898-0934 Fax: +1-951-898-0944
Chicago Office: 540 Capital Drive, Suite 130, Lake Zurich, Illinois 60047, U.S.A.
Phone: +1-847-550-0704 Fax: +1-847-550-0725
Detroit Office: 24301 Catherine Industrial Drive, Unit 118, Novi, Michigan 48375, U.S.A.
Phone: +1-248-449-5422 Fax: +1-248-446-6018

JSW Plastics Machinery (S) Pte Ltd
Head Office: 17 Guil Lane 629413 Singapore
Phone: +65-68614511 Fax: +65-68623166
Indonesia Office: Gedung Gajah Unit K.J. Dr. Sehatje No.111 RT.001/01, Kel. Tebet Barat, Kec. Tebet Jakarta 12810, Indonesia
Phone: +62-21-8370-2556 Fax: +62-21-829-8264

JSW Plastics Machinery (Philippines) Inc.
Unit 802 Alabang Business Tower, 1216 Acacia Avenue, Macrail Business Park Alabang Muntinlupa City Metro Manila 1771, Philippines
Phone: +63-2-478-2533 Fax: +63-2-478-2533

JSW Plastics Machinery (M) SDN. BHD.
D6-5-G, (Ground Floor), Block D6, Pusat Perdagangan Dana 1, Jalan Pju 1A/46, 47301, Petaing Jaya, Selangor Daru Ensk, Malaysia
Phone: +60-3-78426078 Fax: +60-3-78426078

JSW Plastics Machinery (T) Co., Ltd.
78/6 JST Building 4th Fl., Mco 7 King Kaew Road, Rachatewa, Bangpree, Samutprakarn 10540 Thailand
Phone: +66-2-738-5272 Fax: +66-2-738-5277

JSW Plastics Machinery Vietnam Ltd.
Room103, Techno-Center Thang Long Industrial Park Dong Anh District, Hanoi, Viet Nam
Phone: +84-4-3951-6383 Fax: +84-4-3951-6384

JSW Plastics Machinery (H.K.) Co., Ltd.
Room 907, Corporation Park, 11 On Lai Street, Shatin N.T., Hong Kong
Phone: +852-2648-0720 Fax: +852-2688-9204

JSW Injection Machine Maintenance (Shenzhen) Co., Ltd.
1F, Yiben Electronc & Business Industrial Park, No.1063 Chaguang Road, Xii Town, Nanshan District, Shenzhen City, Guangdong Province, 518055, People's Republic of China
Phone: +86-755-8602-0930 Fax: +86-755-8602-0934

JSW Machinery Trading (Shanghai) Co., Ltd.
28A, Strength Plaza, No.600-4, Tianshan Road, Shanghai, 200051, People's Republic of China
Phone: +86-21-5206-7031 Fax: +86-21-5206-7033

JSW Plastics Machinery (TAIWAN) Corp.
Head Office: 1F., No.21, Da-Hu 1st Road, Guishan Shiang Taoyouan Country 33373 Taiwan, R.O.C.
Phone: +886-3-396-2102 Fax: +886-3-396-2104
Tainan Branch: 1F., 7, No.689-78, Xiaodong Road, Yongkang City, Tainan Country 71062 Taiwan, R.O.C.
Phone: +886-6-311-4192 Fax: +886-6-311-4103

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