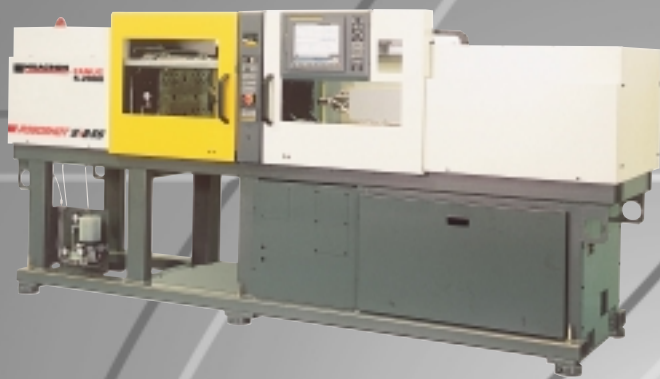


THE ALL-NEW *Si* SERIES

ROBOSHOT Si-B



ALL ELECTRIC
INJECTION
MOLDING
MACHINES

Si-B55



Si-B110

Si-B165



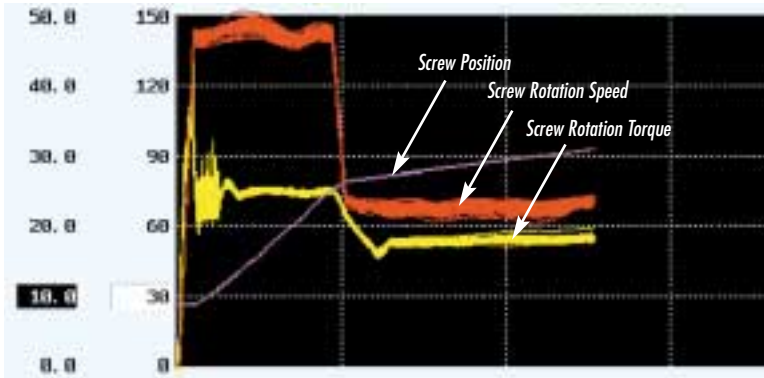
Featuring Advanced Artificial Intelligence (Ai) Molding Capabilities

 **MILACRON**
Plastics Technologies

PRECISION FRIENDLY HIGH SPEED MOLDING

Ai Metering Control

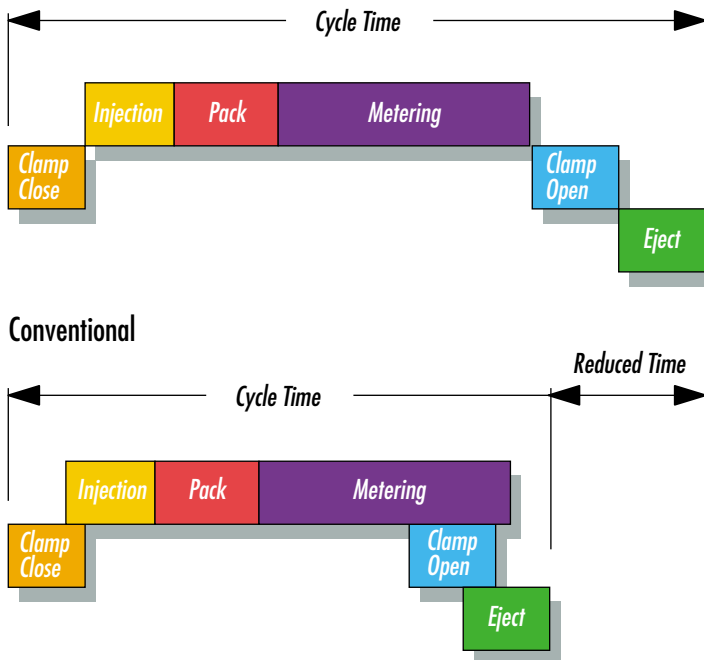
Enables optimum metering in more stable conditions



Ai metering control function enables consistent optimized metering times by controlling the screw RPM. Dramatic recovery time improvements can be obtained if variations are caused by poor material quality. When used in combination with Ai pressure profile trace control, superior parts in a more stable condition can be produced.

Simultaneous Operation Of Composite Servos

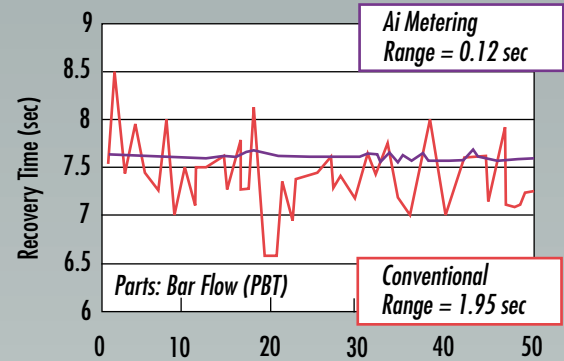
Enables precise high speed molding in more stable condition



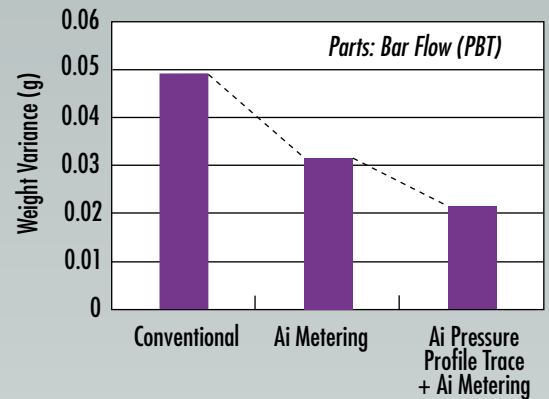
Simultaneous Operation of Composite Servos

By operating all servo motors simultaneously, all non-productive time is eliminated. The result is high precision, high speed molding. Because the processing time effecting part quality, such as injection and metering time, is not shortened—this contributes to higher speeds and higher precision parts. Power consumption is typically 1/4 to 1/3 that of conventional hydraulic machines—and cooling water is reduced considerably.

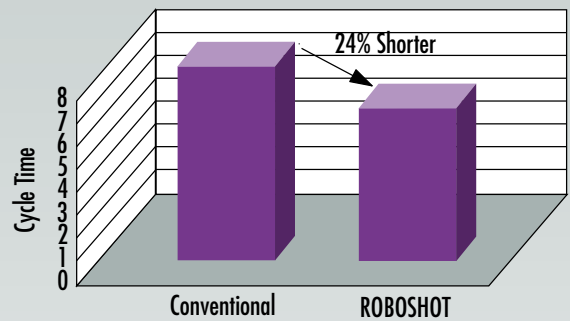
Comparison of Metering Time



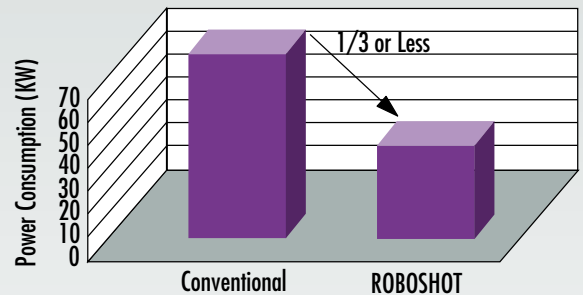
Comparison of Weight Variance



Comparison of Cycle Time Savings

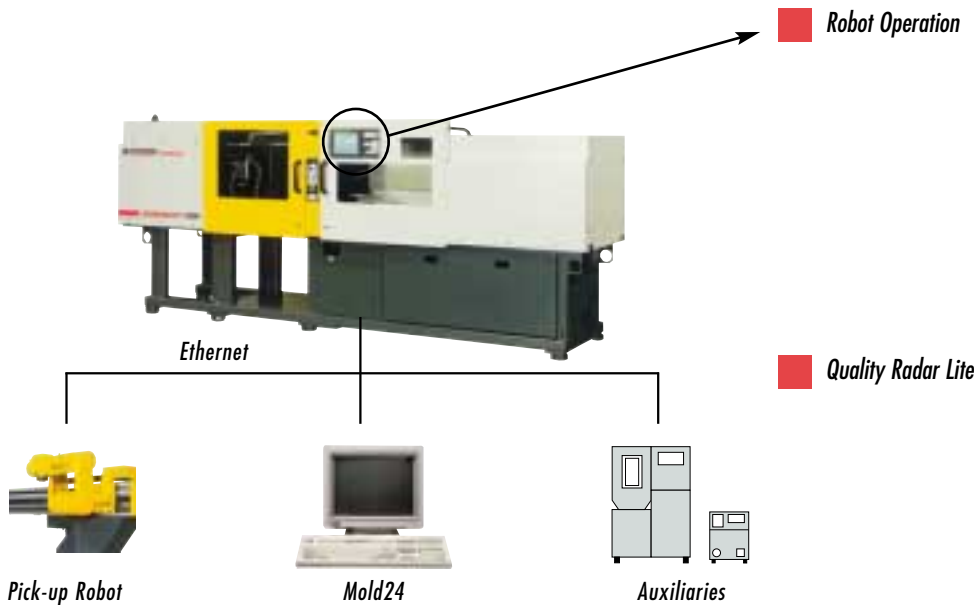


Comparison of Power Consumption Savings

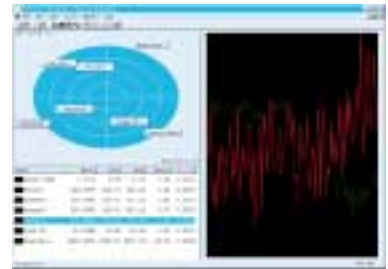


REPEATABILITY FRIENDLY MOLDING FUNCTIONS

Networking



Quality Radar Lite



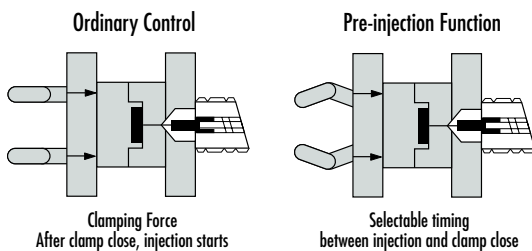
Networking is provided for integration of molding cells—Using the advanced ROBOSHOT control unit Series 180iS, all equipment and information required for molding—such as robots, the MOLD24i and peripheral devices—can be managed easily and efficiently. This makes it easy to integrate a molding cell system, thereby streamlining the molding function and the production facilities.

Auxiliary Unit Control

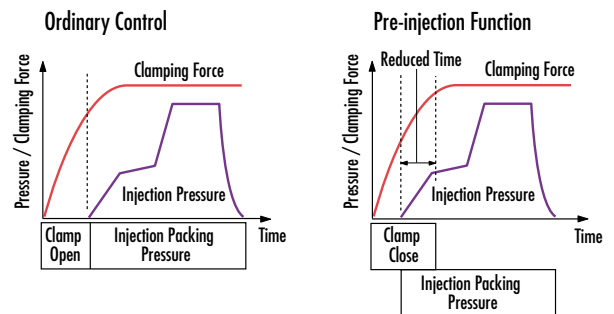


Optional Pre-injection Function Improves Part Quality and Reduces Cycle Time

Principles of Pre-Injection



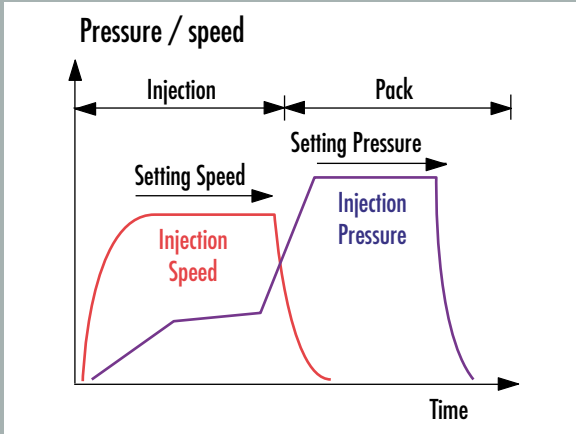
High Speed Molding



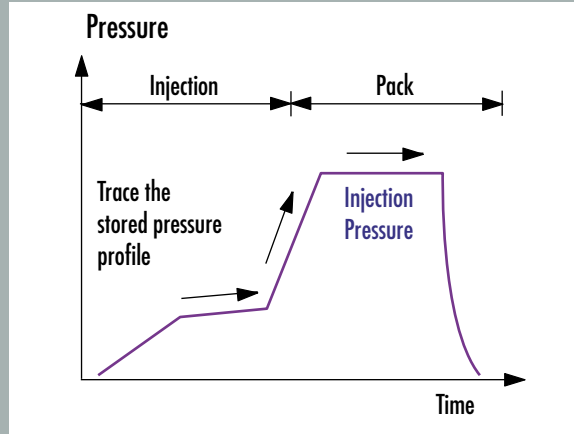
Gas Venting—Gas venting from mold is provided by minimizing clamping force. The gas venting function solves short shot and gas burn mark problems.

Two-step Clamping Force—Re-clamping force, just after filling mold, solves reproducible surface, warp and sink mark problems.

Ai Pressure Profile Trace Control Provides Stable Conditions For Superior Parts

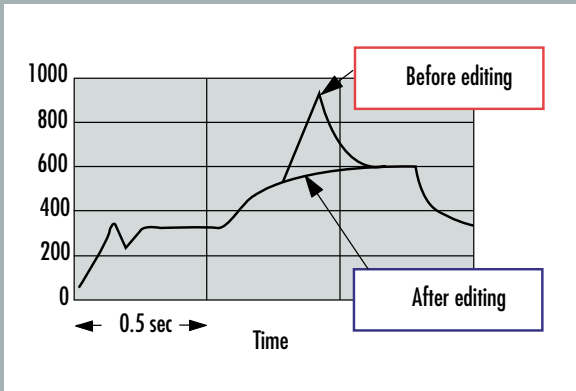


Conventional Control



Ai Pressure Profile Trace Control

Ai Pressure Trace Control—Ai pressure trace control captures the fill and pack pressure signature used to mold superior parts. It then reproduces the same signature curve with each shot providing consistent part quality and stability. The operator can also actively edit the curve and visually observe the actual fill speeds.

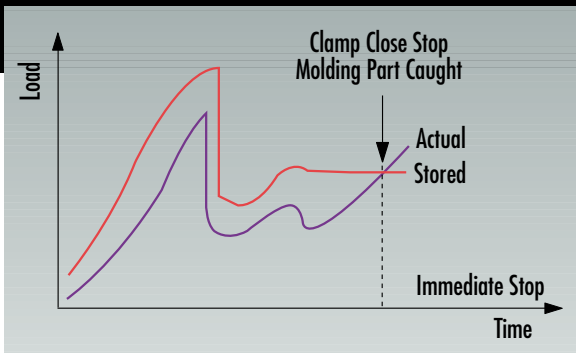


Pressure Profile Editing Function

Ai Ejector This function detects the molding parts separation force when it is ejected, and brings the ejection operation to an abrupt stop in event of an error. In addition to protecting the eject pin from breakage, it can be used to monitor the quality of moldings.



Ai Mold Protection Enables High Precision Mold Protection



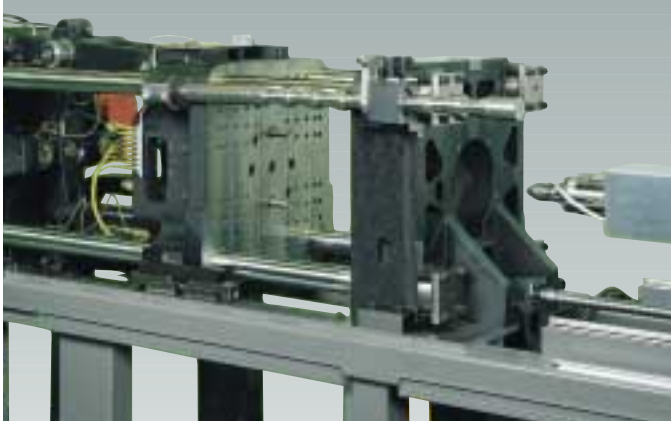
Ai Mold Protection —Allows for ultimate protection during mold close. ROBOSHOT's advanced servo technology captures the signature of the clamp motor load and detects a caught part immediately. Deviation from the stored signatures are then graphically displayed on screen.

Conventional Mold Protection

Ai Mold Protection

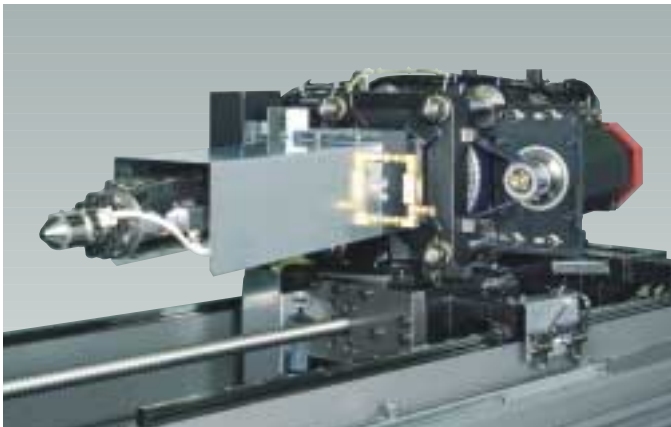


ROBOSHOT's high reliability and durable mechanical unit has been developed over years of experience and advanced FEM analysis technology. It has been combined with advanced, high performance CNC and servo motor technology. The combination offers an average of less than 0.02 service call per machine/month.



Reliable, Durable Mechanical Unit

5-point toggle mechanism—ROBOSHOT's new 5-point toggle mechanism is an ideal toggle mechanism offering the advantages of both the conventional 4-point toggle and the 5-point toggle. It has increased the speed of clamp open/close and has reduced machine footprint while maintaining high clamping force.



New Injection Mechanism

ROBOSHOT incorporates FANUC's advanced, compact, high-output Alpha i-Series servo motors. A newly designed injection mechanism reduces inertia to half that of most competitors. Lower inertia allows for a quick response, combined with excellent stability over the low-to-high-speed range and ensures the highest performance in a wide variety of thin-wall applications.

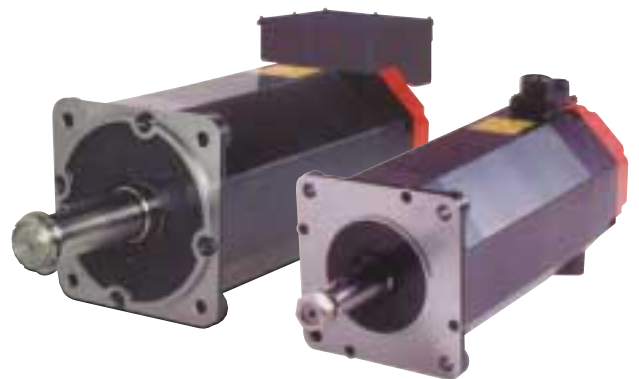
Advanced, High Performance Control System

Advanced CNC series 180is and newly developed high-speed control board (AI control board) together achieve control in 1/10,000 second units. This enables high precision injection control for ultra precision molding. Stable molding performance is improved, reducing peak injection pressure variations.



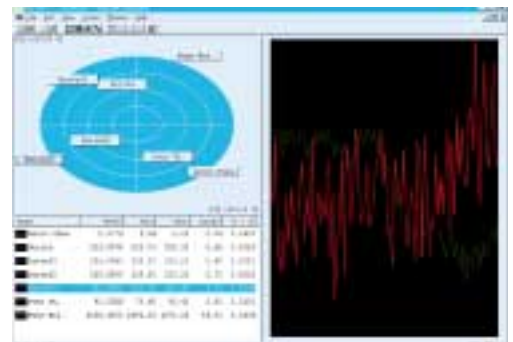
AC Servo Motor

With the adoption of advanced intelligent power elements, the servo amplifier Alpha i-series that drives the servo motor has reduced the loss by about 10% from that of conventional ones. The Alpha i-series servo motor is FANUC's advanced AC servo motor that is compact with low inertia and high output. With its excellent acceleration performance, the motor achieves high response in the injection process and cycle reduction in the clamping and ejection processes.



Quality Radar Lite

Instant analysis for molding data of up to 300,000 shots (over 30 items) provides visual charting variations. SPC calculations, Histograms, Trend Charting and Relationship Correlation calculations are provided to determine and maintain optimum molding conditions. Downloaded data to a Flash memory card can be imported into MS-Excel TM.



HIGHER PRODUCTIVITY OPTIONS

Enables Molding In Stable Conditions



*Feed throat thermometer
Standard on all units*



*Closed-loop feed throat
temperature control
Standard on all units*

Easy Connection To Peripheral Devices



230VAC and 110VAC external outlets



A Variety Of Options Supporting All Models



Air ejector available on all models.

FANUC Robot SR Mate Series

The pickup robot offers productivity friendly operation from the ROBOSHOT control screen—The FANUC Robot SR Mate series robots are part-pickup robots with a traveling axis uniquely combined with an articulated arm. In addition to picking up ordinary parts, the robot also provides precise insert molding, gate cutting and palletizing by taking advantage of the high degree of freedom of the robot wrist.



Robot SR Mate 100i

For Injection Molding Machines of clamping force 500 to 1000kN



Robot SR Mate 200i

For ROBOSHOT i Series Injection Molding Machines of clamp tonnage 165 to 330.

ROBOSHOT Si-B

Your Single-Source Technology Supplier

- **All-Electric Injection Molding Machines**
- **Multi-Color/Material Injection Molding Machines**
- **High Technology Injection Molding Machines**
- **PET Pellet-To-Product Packaging Solutions**
- **Structural Foam/Web Gas Assist**
- **Vertical Insert Injection Molding Machines**
- **Consumer and Industrial Blow Molding Machines**
- **Mold Technology, Systems and Supplies**
- **MRO Products and Supplies**
- **Independent Service Provider Network**
- **Rebuilt and Retrofitted Machines**
- **Peripheral Auxiliary Equipment**
- **After-Sale Technology, Service and Parts**
- **Conical Twin Screw Extrusion Systems**
- **Parallel Twin Screw Extrusion Systems**
- **Single Screw Extrusion Systems**
- **Wood Fiber/Plastic Composite Extrusion Systems**
- **Sheet Extrusion Systems**
- **New and Rebuilt Extrusion Screws**

All specifications reflect average values based on typical machine layouts. Actual figures will vary depending on final machine configuration. If you require more specific data, consult a certified installation print for your particular machine. Performance specifications are based on theoretical data. Due to continual improvements, specifications are subject to change without notice.

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