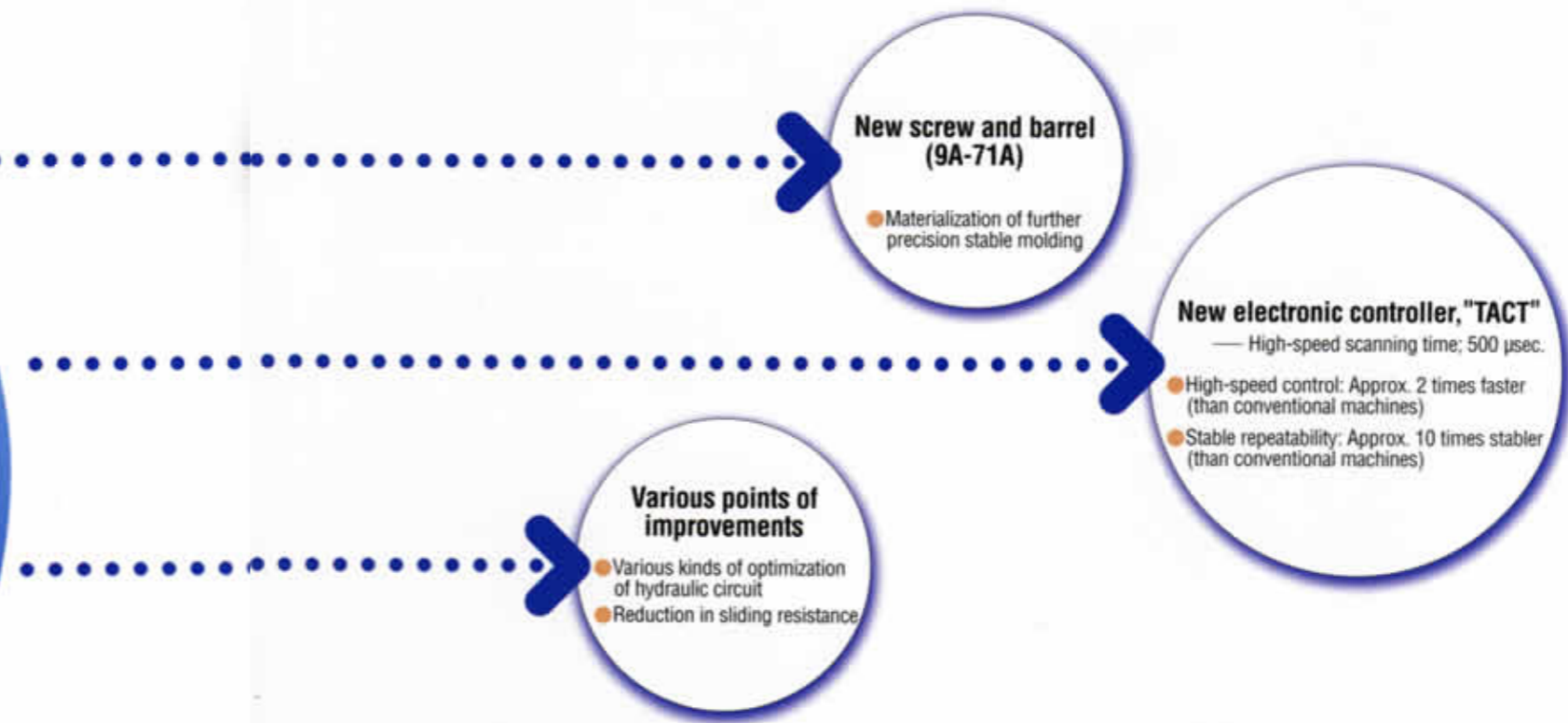
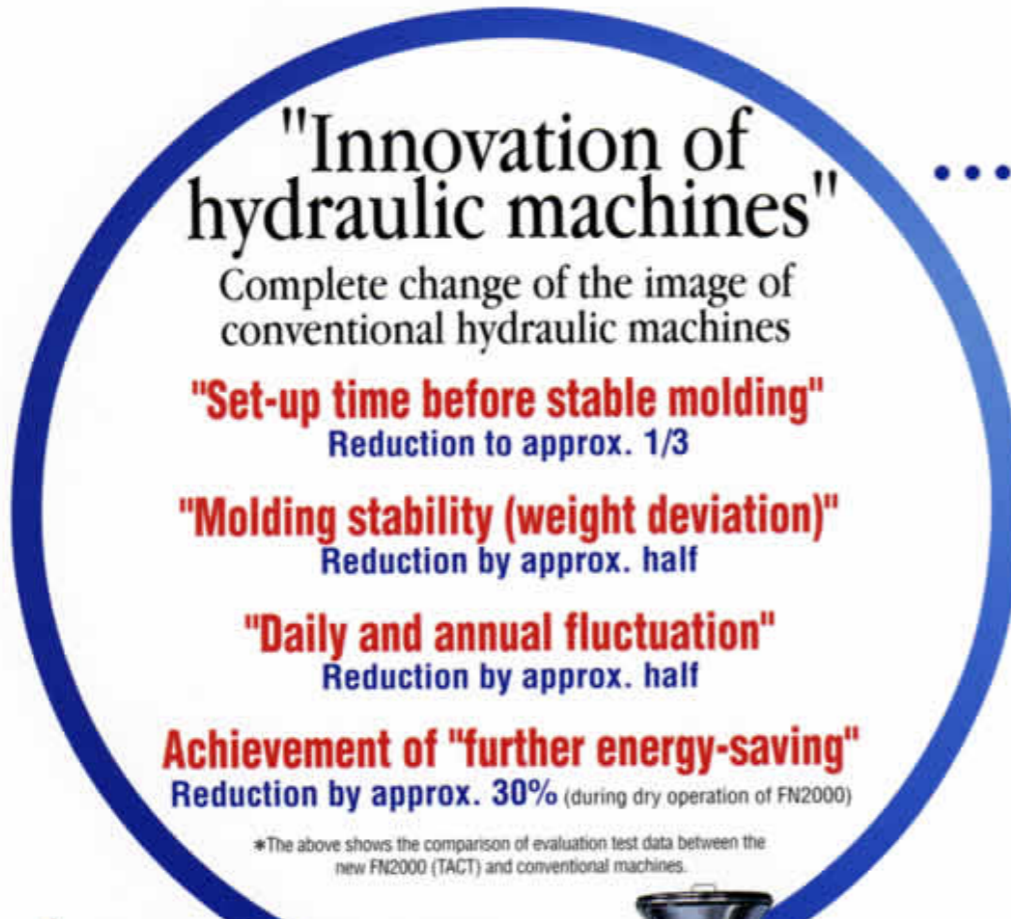


New!! FN Series

Evolving precision hydraulic injection molding machines

While inheriting the "reliability" and "ease-of-use" of the conventional FN machines, the new FN Series has been equipped with a new controller, TACT. Backed by NISSEI's overall hydraulic technology, the FN Series has been renewed.



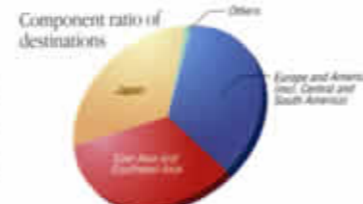
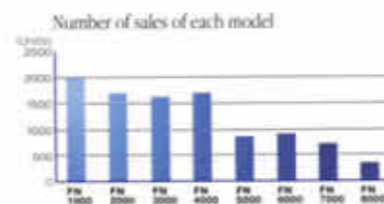
Features of FN machines (NISSEI hydraulic machines)

- "Long life"
- "Easy maintenance"
- "Ease of use"
- "Easy molding condition setting (smooth V-P changeover)"
- "No.1 energy-saving" (The top level of all hydraulic machines)
- "Extremely low frequency of hydraulic oil change"
- "Clean (Unlike toggle machines, there is no grease discharge)."
- Selection of one-rank higher "large-capacity injection unit" is possible. (FN1000~FN4000)

"Reliability and performance" of FN machines

Overwhelmingly large volume of sales: **Approx. 10,000 units**

Since the full-scale shipment of machines in April 1996, approx. 10,000 units have been sold (as of February 2005), suggesting the reliability of the machines.



NISSEI is particular about "Direct Pressure Clamping" system.

Mold-friendly

- Flat transmission of clamping pressure
- High-performance low-pressure clamping
- Long-term maintenance of parallelism
- Effective for thick molds (Hot runner, deep mold, etc.)

Visible clamping force

- It is possible to set low (optimum) clamping force.

Easy mold change

Wide Variation

Clamping unit (Clamping force)	Injection unit (Screw diameter)
FN 1000 792kN	12A 32, 36, 40mm
FN 2000 1100kN	18A 36, 40, 45mm
FN 3000 1370kN	25A 40, 45, 50mm
FN 4000 1750kN	36A 45, 50, 56mm
FN 5000 2110kN	50A 50, 56, 63mm
FN 6000 2740kN	71A 56, 63, 71mm
FN 7000 3540kN	100A 63, 71, 80mm
FN 8000 4460kN	140A 71, 80, 90mm
	160A 71, 80, 90mm
	210L 80, 90mm

New!! FN Series

Reaching high level of performance

Brushing up the "absolute reliance" further

New hydraulic oil heat-up function

- The new heating circuit ensures quicker start of molding operation. (FN1000-FN7000)



Stable "Direct Pressure Clamping" system

- Long-term maintenance of parallelism by original time-tested direct pressure clamping system
- Adoption of a pressure sensor for confirmation of the increase in the clamping pressure permits pressure setting at less than 60%, which has been an optional mechanism hitherto. (Clamping force 0% setting is also possible.) The "low (optimum) clamping force" setting is effective in extending the mold life, preventing gas leakage, and promoting energy-saving operation.
- The newly added "slow mold opening mode" (FN1000-FN7000) substantially improves the slow-speed stability during separation of products from molds. (Also effective for spring molds)
- Two-time or greater mold opening stop position accuracy
- MIP0 is provided as standard equipment (sequential operation). Ejector operation during clamping permits gate-cutting and local compression of products.

Bed with no surface irregularity

- High-rigidity, low bed frame
- The bed structure of the conventional FN machine with no surface irregularity at the front and back of the machine has been inherited, permitting flexible layout of utilities, conveyors, temperature controllers, and other units.



Renewal of external design

- Renewal of external design for better operability and workability
- Installation of upper cover to secure safety. (FN1000/FN2000)



Pursuit of "further energy-saving"

- In addition to the conventional NISSEI SSE system (extreme energy-saving), "complete reexamination of the pressure loss in the hydraulic circuit" has permitted further energy-saving by approx. 30% (FN2000/dry operation) in comparison with conventional machines.
- Reduction in the hydraulic oil contamination rate and long-term maintenance of clean status

New controller, "TACT"

- 12.1-inch color liquid crystal screen
- Tilting mechanism that changes the screen angle in accordance with the height of the operator
- Quick-response, high-resolution touch panel
- Inheritance of selector switch to ensure excellent operability
- Scanning time: 500 μsec. high-speed control
- A variety of molding programs provided as standard equipment (CPN2, MIP0, etc.)
- Six-language display system (English, Japanese, Chinese, Spanish, Korean, and Thai) provided as standard equipment
- Improvement of quality control function
- Ladder programming function open to users
- Storage of a maximum of 300 molding conditions in the internal memory
- Display of 1,000 cases of molding operation history
- LAN connector and USB connector provided as standard equipment



New FN Series



Higher-precision injection position detection

- Provided with high-precision encoder

Easier screw change

- The injection cover can be detached easily to permit screw change on the operation side. (Improved maintainability)

New injection unit

- High-speed scanning time: 500 μsec. High-speed control: Approx. 2 times faster (than conventional machines)
- Stable repeatability: Approx. 10 times stabler (than conventional machines)
- Use of conventional pipeless structure → Quick hydraulic response
- Setting the optimum barrel temperature control zone and temperature detection point to materialize ideal temperature distribution.
- The screw and barrel have been changed to "a new type" (9A-71A). Larger L/D improves the plasticizing performance. (Screw diameters A and B are common to NEX machines.)
- 5-zone control of nozzle and barrel temperatures (nozzle, front, middle, rear 1, and rear 2) + Display of hopper throat temperature on the screen
- Simultaneous temperature heat-up of nozzle and barrel
- 3-stage measuring process control (rotation speed and back pressure)



"Innovation of hydraulic machines"

"Set-up time before stable molding"
Reduction to approx. 1/3

"Molding stability (weight deviation)"
Reduction by approx. half

"Daily and annual fluctuation"
Reduction by approx. half

Achievement of "further energy-saving"
Reduction by approx. 30% (during dry operation of FN2000)

*The above shows the comparison of evaluation test data between the new FN2000 (TACT) and conventional machines.

- The swing type operation panel secures the working space for screw change. (FN1000-FN5000)



When the operation panel is turned