

NISSEI

CATALOG 1918

PNX-III · FNX-III

X-PUMP[®] EQUIPPED

HYBRID TYPE HIGH-PERFORMANCE INJECTION MOLDING MACHINES



PNX-III SERIES

PNX40 III

PNX60 III

FNX-III SERIES

FNX80 III

FNX110 III

FNX140 III

FNX180 III

FNX220 III

FNX280 III

FNX360 III

FNX460 III

Electric Servo Drive

“X-PUMP®” was invented with NISSEI's pioneering spirit ...
These “X-PUMP®” equipped PNX-III • FNX-III machines
redefine the concept of injection molding!

**Wide-Ranging Injection
Speed**

**Long-Lasting Stable
Operation of "Direct
Pressure Type" Clamping
Mechanism**

**The Ultimate Level of
Energy-Saving and
Reduction of Running Cost**

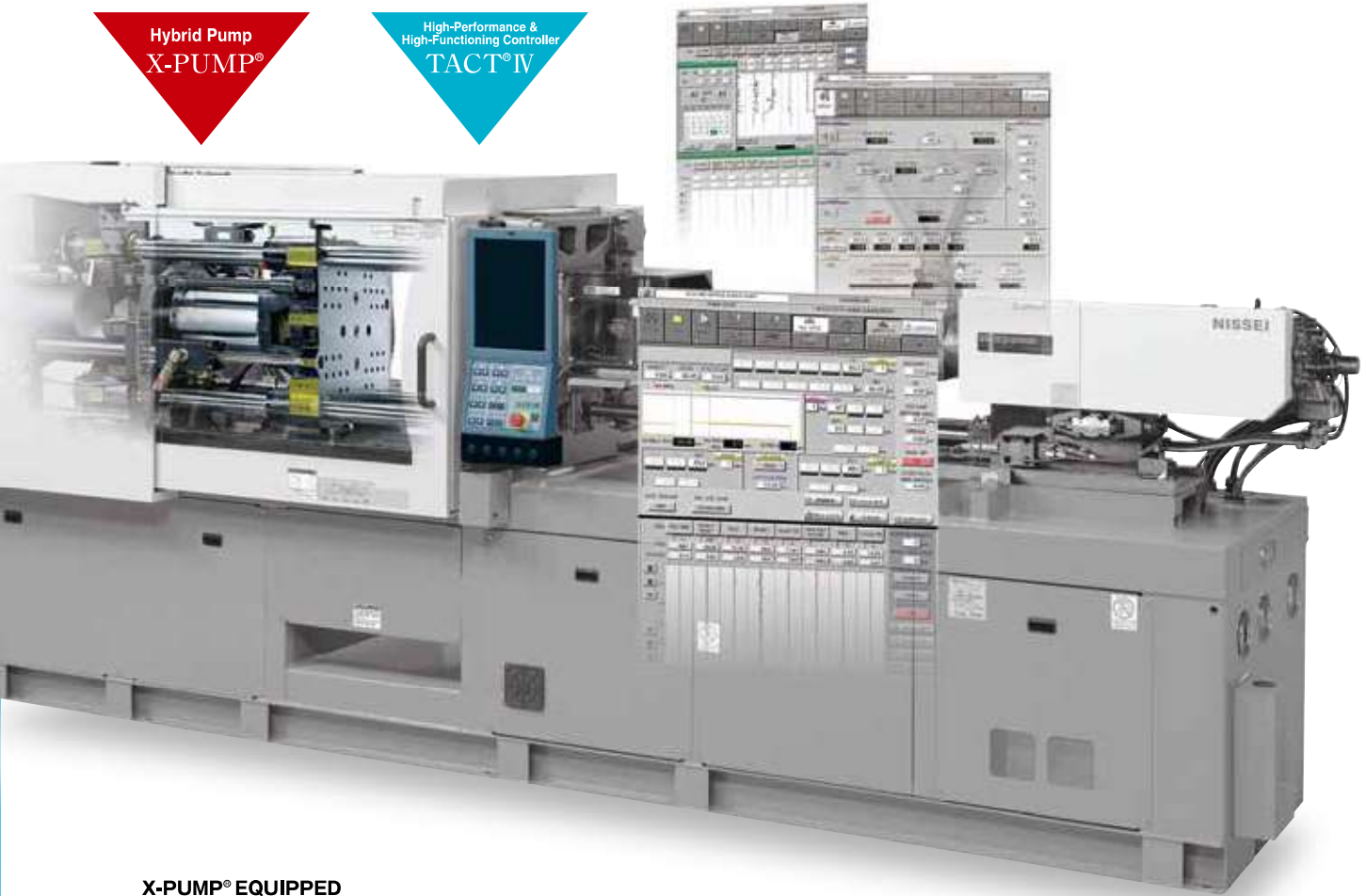
**Excellent
"Clean Operation"**

It is a fusion of hydraulic control and servomotor technology!

In spite of the rising popularity of electric injection molding machines in today's industry, NISSEI's original hybrid pump-equipped (X-PUMP®) PNX-III and FNX-III series were created by combining the advantages of both hydraulic and electric type machines. It offers outstanding well-balanced performance, enabling it to do a wide variety of molding from precision/thin-wall to thick-wall products. NISSEI hybrid type injection molding machines inherit the combination of hydraulic advantages (high-durability, low initial cost, low maintenance cost, and high-load injection capability), direct pressure clamping advantages (initial mold open linearity, contact pressure uniformity, and long stroke), and electric servomotor advantages (energy efficiency, high repeatability, high response, and low noise). It redefines the concept of hydraulic injection molding systems.

Hybrid Pump
X-PUMP®

High-Performance &
High-Functioning Controller
TACT® IV



X-PUMP® EQUIPPED
HYBRID TYPE HIGH-PERFORMANCE INJECTION MOLDING MACHINES

PNX-III · FNX-III SERIES

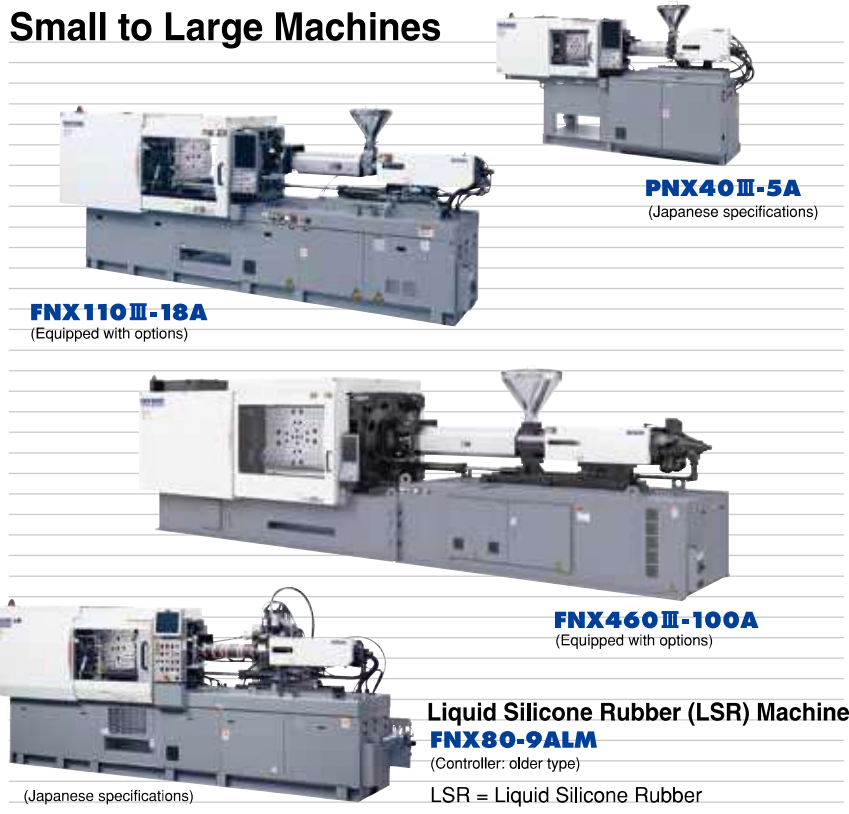
Versatile Lineup Ranging from Small to Large Machines

Large selections of machines, ranging from small 45 US tons to medium/large 501 US tons class clamping force, are available!

Clamping unit (clamping force)	Injection unit (Injection velocity)
PNX40 III 45 US tons	2A 21.7 in/s
PNX60 III 72 US tons	5A 11.8 in/s
FNX80 III 89 US tons	9A 11.8 in/s
FNX110 III 123 US tons	12A 9.8 in/s
FNX140 III 154 US tons	18A 7.9 in/s
FNX180 III 197 US tons	25A 7.1 in/s
FNX220 III 237 US tons	36A 5.9 in/s
FNX280 III 309 US tons	50A 5.5 in/s
FNX360 III 398 US tons	71A 4.3 in/s
FNX460 III 501 US tons	100A 5.3 in/s
	140A 4.3 in/s
	160A 5.1 in/s

— Standard combination

* FNX280 III-71A :4.4 in/s
FNX280 III-100A :4.2 in/s



Fusion of Hydraulic Control and Servomotor Drive Technologies

Intelligent Hybrid “X-PUMP® System”



Hybrid Type High-Performance

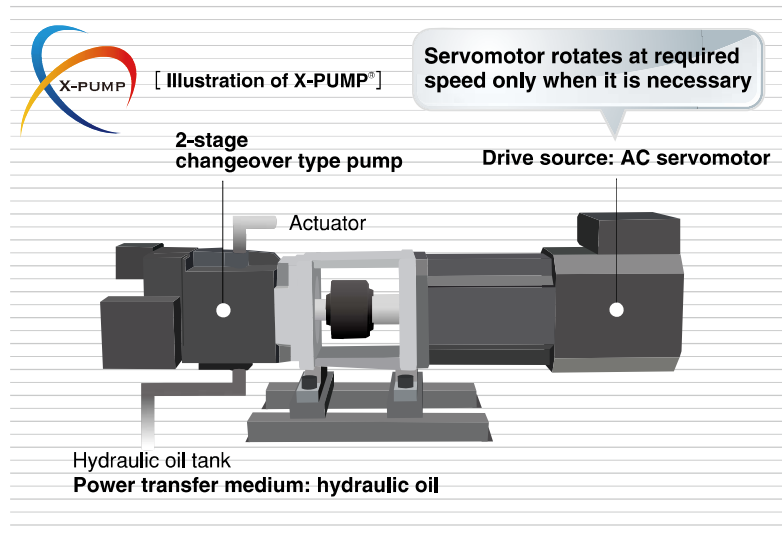
X-PUMP

The X-PUMP® System combines years of accumulated expertise in hydraulic and state-of-the-art servomotor drive technology. Since the servomotor rotates at the required speed only when necessary, the extremely efficient X-PUMP® achieves drastic energy-savings. Furthermore, with exceptional stability in injection repeatability and controllability in low velocity/pressure range, it makes possible the production of higher-precision and quality-molded products.

About X-PUMP® System

Hybrid pump system “X-PUMP” is a combination of 2-stage pump and electric servomotor. The servomotor rotates at required speed only when it is necessary to control the output volume and pressure of the hydraulic oil.

- ◎ Substantial energy-saving is possible since the motor is at rest during unloading. It stops idling after certain duration of inactivity.
- ◎ Injection control mode changeover permits wide-ranging injection from ultra low-speed to high-speed.
- ◎ Injection holding pressure control (pressure controlled state) can be sustained for a long period.

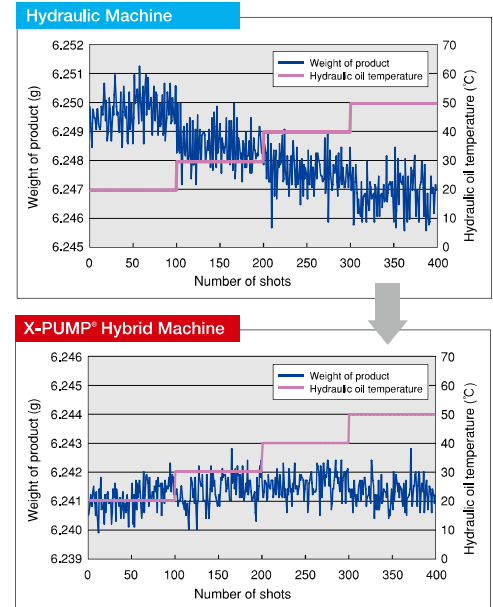


High-Tolerance in Oil Temperature Fluctuation

X-PUMP® equipped machines have a high tolerance for hydraulic temperature change, and the product weight deviations are half compared to the hydraulic machines.

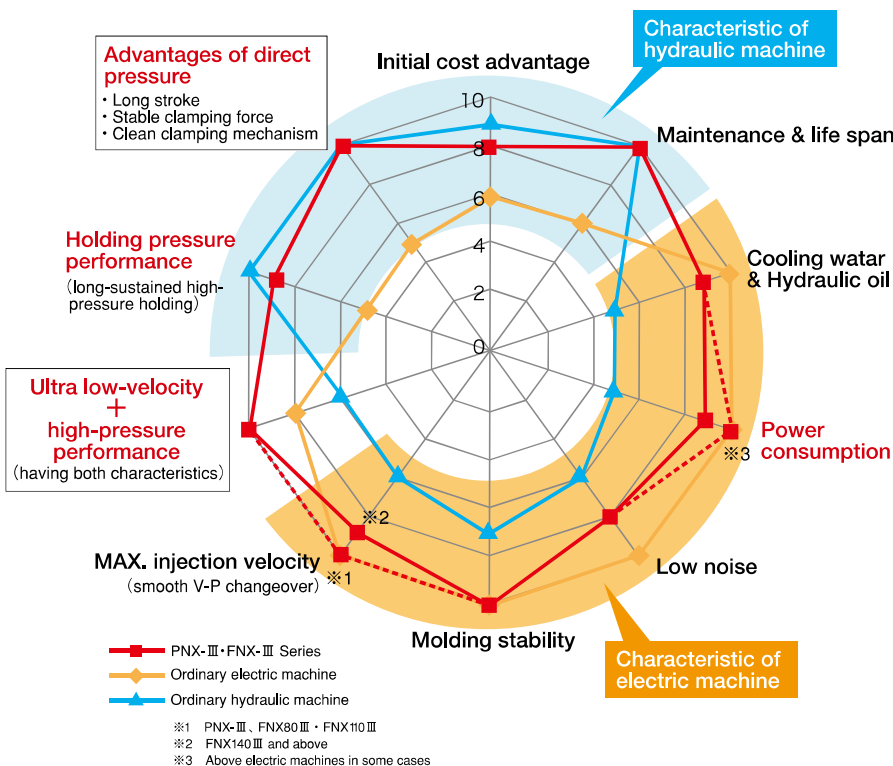
Hydraulic oil temperature and product weight (oil temp: 20 → 50°C)

We purposely raised hydraulic oil temperature from 20°C to 50°C during continuous molding operation and measured fluctuation in product weight.



Well-Balanced Performance... Possessing the Advantage of Electric and Hybrid Machines

Comprehensive Evaluation of X-PUMP® Hybrid Machines (Comparison diagram)



Performance that evolved from hydraulic type injection molding machine

- Electric machine level of energy saving
- Stable motions, minimized influence from oil temperature fluctuation (high tolerance in oil temperature fluctuation), and stable mold open/close positions
- Improved injection rise time response speed
- Stable injection in low-speed/low-pressure range
- Excellent mold protection functions and low mold clamping pressure controllability
- Improved molding stability by High-Precision Metering Control

Characteristics that excel electric type injection molding machine

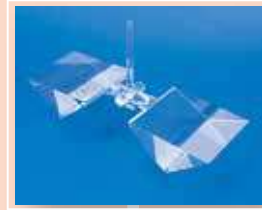
- Ideal for injection high-load molding (thick-wall molding, etc.)
- Excellent workability (mold change and maintenance) and easy molding condition setting
- Low equipment cost and maintenance cost
- No used grease collection necessary
- Long mold open/close stroke that is easy for deep cavity & hot runner molds
- Highly durable (long service life)
- Uniform contact pressure that minimizes the warpage of platen and is gentle to the mold (excellent for sustaining mold clamping under external disturbance factors, such as mold temperature and weight)
- Compact mechanism and space-saving

From thin-wall to thick-wall products,
it can handle a wide variety of molding projects!

Wide Application

X-PUMP® hybrid machine

High-load injection
performance



Ultra-low speed
performance



High cycle

Filling ability

Electric toggle machine

Why X-PUMP® Hybrid Machines are Versatile?

- **Quick injection response**
- **Wide-ranging injection speed**
(ultra-low ~ high speed)
- **Stable control in ultra-low speed range**
(0.1mm/s~)
- **“Long-sustained + high-pressure” injection holding pressure performance**
- **High-rigidity straight-hydraulic clamping unit**
- **Excellent workability**
(mold change and settings)
- **Low equipment cost**
- **Low maintenance cost**
(long service life)
- **Low running cost**
(electric machine level of power consumption)
- **Long-lasting precision**
- **Compact**
- **Excellent “Clean Operation”**

Excellent straight-hydraulic clamping unit

(advantage of linear pressure)
(Initial mold open linearity, contact pressure uniformity, and long stroke)



**High response
Low residual stress**



Hydraulic servo machine


Long-Lasting Stable Operation of “Direct Pressure Type” Clamping Mechanism

- The advantages of direct pressure clamping include its long stroke, stable clamping force, simple mechanism, high-performance low pressure clamping, easy optimum (low) clamping force setting, easy mold change, long service life, etc.
- **Mold open/close stabilizer** is equipped, materializing improved precision in mold open stop position and slowdown changeover position as well as smooth mold open/close motions.
- Time-tested straight-hydraulic type clamping mechanism maintains parallelism for a long time.
- Clamping stroke is long, and it is effective for thick molds (hot runner, deep cavity, and three-plate).
- **Wide platen** permits to mount one class larger molds.
- **“Ultra-low speed mold open mode”** (for FNx80 III ~360 III) significantly improves low-speed stability during mold release (also effective for spring mold).
- **Mold clamping pressure rise confirmation sensor** is equipped, enabling it to set clamping force below 60%, which used to be an optional feature (configurable from 10% clamping force).
⇒ Recommending optimum (low) clamping force setting = gentle to the machine and mold.

Stable and Long-Sustained Holding Pressure Performance in Ultra-Low Injection Speed Range

Injection time: 600sec
* Fill time: 600sec (about 2min)
* Pressure holding time: (about 8min)

Stable in ultra-low speed injection range



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* May vary depending on the fill time, holding pressure, and cycle.

Injection velocity setting under 10mm/s was impossible for hydraulic machines. However, setting from 0.1mm/s is possible for X-PUMP® Hybrid Machines, which demonstrates great ability in ultra-low speed molding.

“X-PUMP®” was invented with NISSEI's pioneering spirit ...
 These “X-PUMP®” equipped PNX-III · FNX-III machines
 redefine the concept of injection molding!

Wide Application



FNX110 III-18A
 (Equipped with options)

High-Performance & High-Functioning Controller TACT® IV

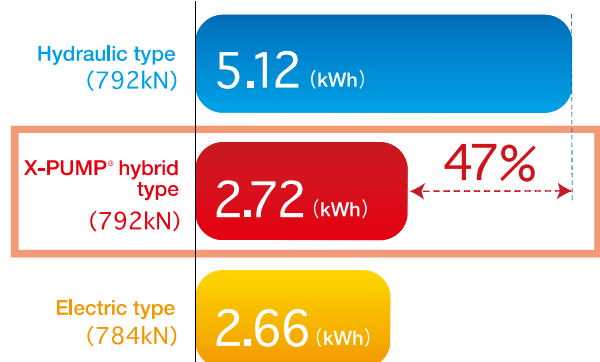


Larger screen, newly designed operation panel, convenient & user-friendly premium software are equipped to improve workability/operability, and the quality & production management functions have been reinforced.

The Ultimate Level of Energy-Saving and Reduction of Running Cost

Conventional type pump motor continuously rotates at fixed speed and wastes large amount of energy. Since the X-PUMP® System's servomotor rotates at required speed only when it is necessary, energy loss is minimum, and it is extremely efficient. Rise in hydraulic oil temperature also can be suppressed, and the amount of cooling water can be reduced. The amount of hydraulic oil required is up to 56% less than that of conventional machines.

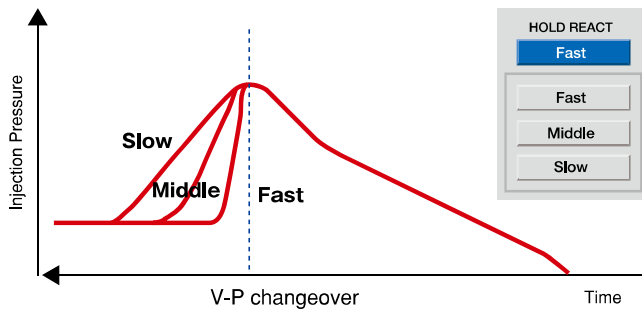
Comparison of power consumption (comparison with other NISSEI machines)



※ Actual power consumption may vary, depending on the molding condition, etc.

“Holding Pressure Response Control”

This is a function that permits fine adjustment of compression/decompression response during V-P changeover, which has strong influence on the quality of molded products. One of three modes can be selected, which materializes smooth compression/decompression of the hydraulic machine and rapid compression/decompression of the electric machine, contributing to reduce various types of molding defects.



Excellent “Clean Operation” in Clean Room under Class 10,000

Particle emission during continuous molding in an enclosed clean room is nearly the same as that of electric type injection molding machine.

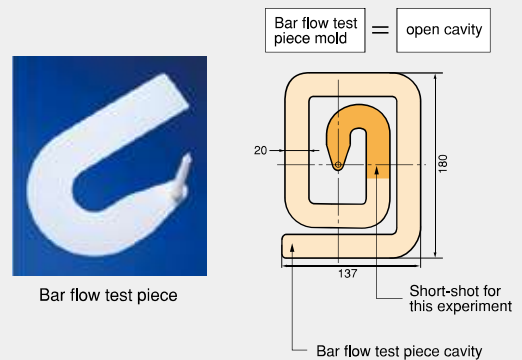
X-PUMP® Hybrid Machines do not create a mess from grease and liquefied grease's oil mist. In Class 10,000 clean room, those machines are operating under Class 3,000~4000 condition during normal production in some cases.



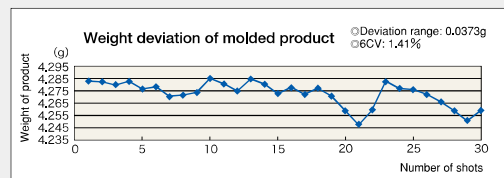
▲Excellent “Clean Operation” the same as that of electric type molding machine

High-Precision Metering Control “Pre Comp”

This is a high-precision metering control “Pre Comp” for X-PUMP® equipped machines. It can reduce the weight deviation of the products to 1/3.

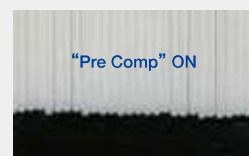
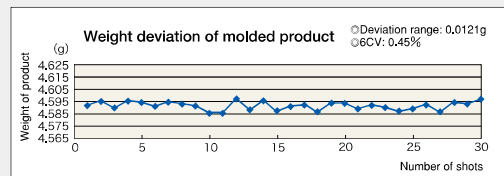


“Pre Comp” OFF



Range: 0.0373g

“Pre Comp” ON



Range: 0.0121g

Molded products (bar flow test pieces) juxtaposed to compare the flow lengths.

High-Performance & High-Functioning Controller TACT® IV



Evolution to a large vertical screen

- 15-inch LCD (large vertical screen)
- Vertical dual window display
- Touch and slide display

High-performance controller: man-machine interface

- 6-language display in Japanese, English, Chinese, Korean, Spanish, and Thai as a standard feature
- Setting entry with high-response and high-resolution touch panel

Newly added SET-UP mode

- Molding condition setting consolidated into one screen
- SET-UP mode added to the operation mode

Newly added Maintenance screen

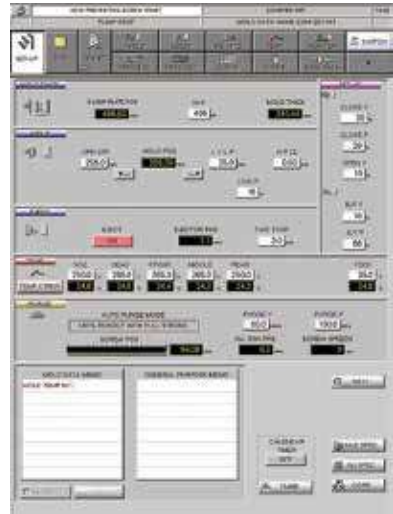
Scheduled maintenance and parts replacement period notifications

Flat operation panel

Flat sheet switch type operation panel

NEW SET-UP Mode/SET-UP Screen

Troublesome screen switching during setup has been eliminated. Setting related to molding setup is consolidated into one page. When SET-UP mode is selected, it automatically switches the screen.



△SET-UP screen

NEW Traceability Support

Date specified event and monitor data display became possible.

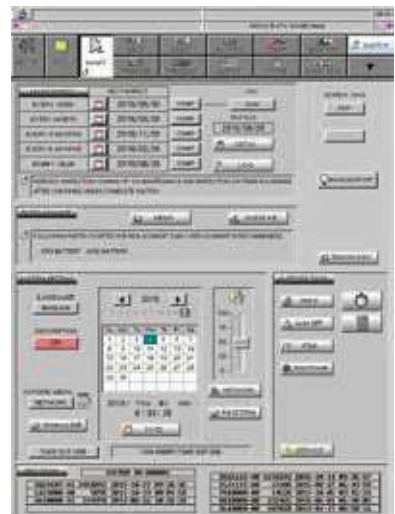
- ▶Molding condition (max. 500 conditions)
Saving waveform data and displaying image data are possible.
Molding condition and an image of its product can be managed together as a set.
- ▶Event/monitor data (max. 100,000 events)
It is helpful for maintenance and quality control (operation mode change, condition change, error, etc.).



△Calendar

NEW Enriched Maintenance Functions

TACT® IV can notify when recommended scheduled maintenance and consumable parts replacement time arrive, and its related notes can be entered. It can notify arbitrary messages, such as for mold, screw, lubrication, maintenance period, etc. on specified dates or shots.



△Newly added MAINT screen

NEW Easier to Use



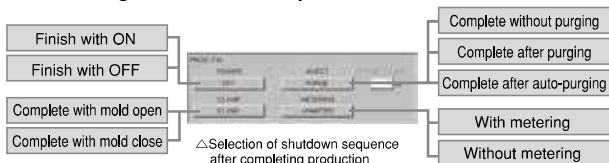
△Bright and easy-to-see vertical dual window display

The combination of two windows can be selected, such as mold trend data and molding condition windows. It meets the needs of the molding operators to minimize troublesome screen switching.

Materialize molding you desire... the new controller that pursues better operability and workability

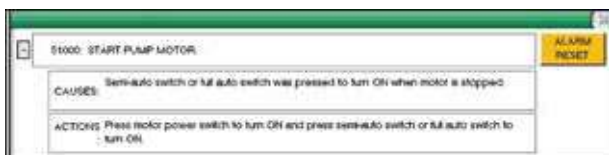
NEW Shutdown Sequence

A variety of finishing states after completing production is available. Operating power state and shutdown sequence for each driving unit can be freely selected.



NEW Descriptions of Errors

It displays the error messages and solutions.

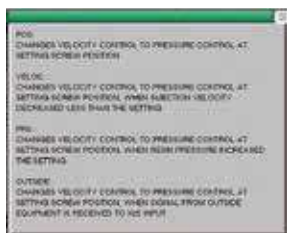


△Error message and its solution (touch [Error message] to show details)

NEW Descriptions of Adjusters

It displays easy-to-understand definitions of the technical terms used for the adjusters.

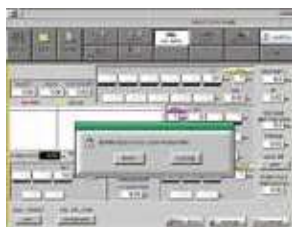
Description of changeover >



NEW Screen Lock and Adjuster Masking Functions OPTION

Adjusters that will be password protected can be selected.

Password & masking screen >



External Connections

[USB port] It can be connected to an external storage device (USB memory stick).

[LAN port] Connections to quality & production management software PQ Manager, molding data recorder/analyzer, and PC are possible.

Flexible Purging Function



△Auto purging mode

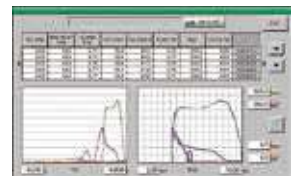
This makes troublesome material and color change more efficient. It materializes flexible purging operations, such as purging with a fixed cycle, purging with added back pressure, and force retreat purging.

Reinforced Quality Control Function (Product Pass/Fail Judgment Function)

- It can be arbitrarily selected from each molding monitoring category.
- Product pass/fail judgment by full-range monitoring of injection pressure waveform is materialized. It constantly monitors pressure during injection and compares it with a waveform of accepted shot, permitting pre force ejection of short shot and deformed products caused by pressure fluctuation, which could not be detected by injection peak pressure monitoring alone.
- The statistics of mold monitoring data can be applied to the product quality judgment function.
- The automatic scatter diagram analysis and waveform analysis support the digitalization of molding data.



△Correlation check/injection pressure monitoring



△Waveform comparison

Enriched Programming Function

Simple interface programs with auxiliary devices can freely be created on the screen. The program can be saved together with the molding data (ladder programming function). Various error input and signal output functions can be assigned to the four of input/output terminals (simple programming function).



△Ladder programming



△Simple programming

Setup Support Software "SET-UP Navigation" OPTION

Operations from removing mold to mass production preparation are divided into six steps, and this support function will guide you through each step. It educates inexperienced workers and reduce set-up time.



△Initial screen



△Mold installation (step 3)

[Standard Specifications]

▼ Clamping unit/mold

- 1 Mold protection (low-pressure clamping time monitor)
- 2 Mold protection error reconfirmation circuit (motion selection function upon the occurrence of abnormality)
- 3 Mold clamping halfway slowdown
- 4 Clamping pressure full-closed control
- 5 High-pressure clamping force display
- 6 5-speed mold opening velocity: initial ultra-slow mold opening (FNX80Ⅲ~360Ⅲ), initial mold opening, two-stage high-speed mold opening, and final mold opening.
- 7 4-speed mold opening velocity: initial mold opening, two-stage high-speed mold opening, and final mold opening (PNX-Ⅲ, and FNX460Ⅲ)
- 8 Mold opening pause
- 9 Mold opening pause Clamping compression molding CPN2 (initial clamping →injection→injection pause→secondary clamping)
- 10 Capture of mold position setting.
- 11 Mold open/close prediction control (improves precisions for mold open stop and low-pressure mold clamping changeover positions)
- 12 Multi-functional ejector (continuous, start timer, pause, 2-speed forward velocity, halfway change of forward velocity, and variable forward/backward stroke)
- 13 Ejector plate return confirmation (for circuit only)
- 14 Mold inside process by ejector function: MIPO (sequential operation)

▼ Injection unit

- 1 Injection process control: 6-speed, 3-pressure, and 3-limit pressure
- 2 V-P changeover: 4 modes (position, injection velocity, injection pressure, and external input signals)
- 3 Over packing prevention circuit
- 4 Decompression/decompression before metering
- 5 Back pressure and metering velocity: 3-stage
- 6 Injection start timer/metering start timer/nozzle backward start timer
- 7 Injection/metering full-closed control (injection velocity, pressure, metering rotation speed, and back pressure)
- 8 Barrel heat radiation and burn prevention cover
- 9 Automatic purge mode (with flexible purging function)
- 10 Purging cover (with interlock)
- 11 Screw cold start prevention (all-zone sequential type)
- 12 Nozzle and barrel heater simple disconnection alarm (detection by thermometers)
- 13 Nozzle and barrel temperature upper/lower limit alarm
- 14 Nozzle and barrel temperature PID control
- 15 Nozzle and barrel simultaneous heating
16. Material feeding port temperature control
- 17 Nozzle and barrel heater circuit: SSR control (optional for barrel 50A and above)
- 18 Nozzle and barrel heat retention circuit (forced and emergency heating)
- 19 Injection control changeover (control modes: standard and high-speed)
- 20 3-speed holding pressure response changeover (fast/middle/slow)
- 21 High-precision metering control "Pre Comp" (resin density stabilizer)
- 22 Material retention timer
- 23 Barrel temperature control: 5 zone
- 24 Digital metering rotation speed display
- 25 Screw forward safety circuit

▼ Molding system control/production management

- 1 TACT IV (15-inch LCD, dual window display, and sheet switch type operation panel)
- 2 Shot counter/free shot counter
- 3 Production management counter/production lot management counter
- 4 Monitor data display and output (max. 100,000 events)/statistical processing function/scatter diagram display
- 5 Monitor data pass/fail judgment function (batch data entry of the condition)
- 6 Injection waveform analysis and injection waveform pass/fail judgment function
- 7 Molding condition internal memory (up to 500 conditions)
- 8 Image file management of molding conditions (jpeg or bmp)
- 9 Product take-out robot interface
- 10 Calendar timer (hydraulic oil and barrel heating)
- 11 Operation history display (max. 100,000 events)
- 12 Molding support message
- 13 Multilingual display capability (English, Japanese, Chinese, Spanish, Korean, and Thai)
- 14 Hour meter (total operation time display)/clock function/calculator
- 15 Ladder programming function and I/O function assignment (4 I/O signals)

- 16 Signal recorder (analysis and data collection of motor signal or I/O signal waveforms)
- 17 Alarm function (display of arbitrary message for specific shot or time)
- 18 Display of error and its clearing method
- 19 Emergency power shut off (with delay timer)
- 20 Selection of production complete state (selection of mold, injection, metering, and operation power states when production is completed)
- 21 Remote maintenance function (remote control of TACT screen from PC possible)
- 22 Descriptions of adjusters
- 23 Selection of unit setting (injection pressure, injection velocity, injection position, metering speed, temperature, clamping force, and back pressure)
- 24 Setup mode (mold open/close & ejection by setup speed and injection & metering by purging speed)
- 25 Built-in LAN port (10/100BASE-TX) and USB port (x1)
- 26 Connection to PC/saving data to an external USB memory
- 27 Display of injection velocity and pressure waveforms
- 28 Cycle alarm
- 29 Idling stop
30. SPC function (molding machine process management by statistical method)
31. Air blow circuit x1 (FNX460Ⅲ only)
32. Hydraulic core pull circuit x1 (FNX460Ⅲ only)

▼ Cooling

- 1 Cooling water distribution valves: material feeding port x1, mold cooling x2 (FNX180Ⅲ and above x4), and oil cooler x1
- 2 Display of hydraulic oil temperature rise/hydraulic oil temperature
- 3 Oil temperature control
- 4 Hydraulic oil temperature upper/lower limit alarm
- 5 Low oil level alarm

▼ Operation safty

- 1 Alarm lamp
2. Alarm bell
- 3 Emergency stop button (operator side)
- 4 Mold clamping safety device (mechanical, electrical, and hydraulic types)
- 5 Safety door upper cover with interlock (PNX-Ⅲ and FNX80Ⅲ~140Ⅲ)
- 6 Safety door with clear wide cover (non-operator side) (FNX80Ⅲ~460Ⅲ)
7. Screen lock and adjuster masking function (password protection)

▼ Power

1. Main power breaker

▼ Maintenance, installation, and miscellaneous

- 1 Lubrication to clamping slide (oil cup) (PNX-Ⅲ, FNX80Ⅲ~360Ⅲ)
- 2 Manual centralized greasing and lubricating unit (to clamping slide and stationary platen slide) (FNX460Ⅲ)
- 3 Periodic inspection support function (display of scheduled inspection date)
- 4 Parts replacement support function (display of recommended parts replacement period)
5. Tools

[Optional Specifications]

- ▼ **Clamping unit/mold** ※May take longer ○Popular specification
- 1 Daylight extension ※
 - 2 Locating ring assembly (fixed type) or locating ring attachment (non-fixed type) ※
 - 3 Locating ring diameter change ※
 - ④ Insulation plate (material and thickness to be specified depending on the heat resistance temperature)
 - 5 Additional mold mounting bolt hole ※
 - 6 Additional T-slot plate/T-slot machining on a die plate ※
 - 7 Mold close pause
 - ⑧ Mold temperature control (without thermocouple)
 - 9 Mold temperature upper/lower limit alarm
 - 10 Mold heater disconnection alarm (monitoring of electrical current)
 - ⑩ Ejector plate return confirmation (for metal interface box)
 - 12 Mold automatic clamp (hydraulic, pneumatic, and magnetic types)
 - 13 Mold installation assist (SAT clamp and Easy Clamp)
 - 14 Mold positioning pin/block

▼ **Injection unit**

- ① Special-purpose nozzle, screw, screw tip, barrel, and barrel HD (consultation required)
- 2 Nozzle/barrel heater disconnection alarm (monitoring of electrical current)
- 3 Large-capacity rear barrel heater
- 4 Barrel insulation cover
- 5 Hydraulic shut off nozzle/spring shut off nozzle ※
- 6 2-point nozzle temperature control
- 7 Hopper/hopper slider
- 8 Hopper spacer (if a hopper dryer causes interference)
- 9 HAC heater (control of barrel temperature rise caused by shear heat)

▼ **Molding system control/production management**

- 1 Unscrewing circuit (consultation required)
- ② Air blow (PNX40III~FNX360III)
- 3 Hydraulic core pull (consultation required) (PNX40III~FNX360III)
- 4 Fixed chute or swing chute
- 5 Electrical current to the mold heater (calendar timer)
- 6 USB memory
- 7 Water alarm/air alarm
- 8 Material feeding device "Smart Feeder"
- 9 TACT-controlled material feeding device "Smart Feeder"
- 10 Setup support software "SET-UP Navigation"

▼ **Cooling**

- 1 Cooling water filter (Y-strainer)
- 2 Additional cooling water circuit
- 3 Cooling water circuit (with a return stop valve)
- 4 Cooling water circuit (with a flow checker)
- 5 Hydraulic oil purifier

▼ **Operation safety**

- 1 Alarm lamp with a stand
- 2 Rotating beacon (Patlite) or layered indicator lamp (signal tower)
- 3 Emergency stop button (non-operator side)
- 4 Safety door with clear wide cover (non-operator side) (PNX40III and 60III)
- 5 Safety door automatic open/close (FNX220III~460III) ※

▼ **Power**

- 1 Main power leakage breaker
- 2 AC outlet
- 3 Outlet circuit power shut-down

▼ **Maintenance, installation, and miscellaneous**

- 1 Manual centralized lubricating unit for clamping slide (FNXIII, FNX80III~360III)
- 2 Automatic centralized lubricating unit for clamping slide (FNX80III~360III)
- 3 Automatic centralized greasing unit for clamping slide (FNX460III)
- 4 Custom color paint
- 5 Chain block stand (PNX40III~FNX180III) ※
- ⑥ Mounting pad

●The delivery time for ※ specifications may take longer. Contact us for more details.

[Special-Order Equipment]

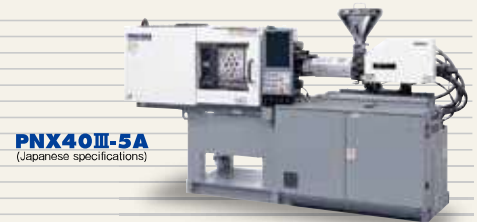
▼ **Injection unit**

- 1 Low-pressure molding application "N-SAPLI™"

*Handling of special-order equipment may vary depending on export destination and geographic location.

X-PUMP® EQUIPPED
HYBRID TYPE HIGH-PERFORMANCE INJECTION MOLDING MACHINES

PNX-III·FNX-III
SERIES



PNX-III · FNX-III SERIES | Performance Specifications

Model		PNX40III					
Specification item	Unit	2A		5A (Standard)			
Injection	Screw diameter	inch (mm)	A 0.63 (16)	B 0.75 (19)	A 0.87 (22)	B 1.02 (26)	BB 1.10 (28)
	Injection capacity	in ³ (oz)(cm ³)	0.79 (0.44) (13)	1.1 (0.6) (18)	2.1 (1.2) (35)	3.0 (1.6) (49)	3.5 (1.9) (57)
	Plasticizing capacity (PS)	lbs/h (kg/h)	15.4 (7)	24.3 (11)	35.3 (16)	50.7 (23)	70.5 (32)
	Injection pressure	psi (MPa)(kgf/cm ²)	39820 (274) (2800)	30930 (213) (2175)	40100 (276)(2820)	30290 (209)(2130)	26170 (180)(1840)
	Injection rate	in ³ /s (cm ³ /s)	6.7 (110)	9.5 (156)	7.0 (114)	9.7 (159)	11.2 (184)
	Injection velocity	in/s (mm/s)	21.7 (550)		11.8 (300)		
	Screw rotation speed	rpm	0~350		0~350		
	Nozzle touch force	US tons (kN) (tf)	1.7 (15) (1.5)		1.7 (15) (1.5)		
	Hopper capacity (optional)	Gal (L)	4.0 (15)		4.0 (15)		
	Clamping	Clamping force	US tons (kN) (tf)	45 (405) (41)		45 (405) (41)	
Clamping stroke		inch (mm)	11.8 (300)		11.8 (300)		
Min. mold thickness		inch (mm)	6.7 (170)		6.7 (170)		
Max. daylight opening		inch (mm)	18.5 (470)		18.5 (470)		
Tie bar clearance (H×V)		inch (mm)	12.2×12.2 (310×310)		12.2×12.2 (310×310)		
Die plate dimensions (H×V)		inch (mm)	17.7×17.7 (450×450)		17.7×17.7 (450×450)		
Min. mold dimensions (H×V)		inch (mm)	8.3×8.3 (210×210)		8.3×8.3 (210×210)		
Locating ring diameter		inch (mm)	4.0 (101.6)		4.0 (101.6)		
Ejector force		US tons (kN) (tf)	1.9 (17) (1.7)		1.9 (17) (1.7)		
Ejector stroke		inch (mm)	2.4 (60)		2.4 (60)		
Others	Pump motor	kW	7.5		7.5		
	Heater band capacity	kW	3.03	3.37	4.96	5.73	6.16
	Hydraulic oil quantity	Gal (L)	24 (90)		24 (90)		
	Machine dimensions (L×W×H)	inch (m)	121.5×38.6×64.8 (3.09×0.98×1.65)	121.5×38.6×64.8 (3.09×0.98×1.65)	125.6×38.6×64.8 (3.19×0.98×1.65)	127.2×38.6×64.8 (3.23×0.98×1.65)	128.7×38.6×64.8 (3.27×0.98×1.65)
	Floor dimensions (L×W)	inch (m)	91.5×28.0 (2.33×0.71)		91.5×28.0 (2.33×0.71)		
	Machine weight	lbs (t)	4850 (2.2)		4850 (2.2)		

Model		FNX110III								
Specification item	Unit	12A (Standard)				18A				
Injection	Screw diameter	inch (mm)	AA 1.10 (28)	A 1.26 (32)	B 1.42 (36)	C 1.57 (40)	AA 1.26 (32)	A 1.42 (36)	B 1.57 (40)	C 1.77 (45)
	Injection capacity	in ³ (oz)(cm ³)	4.7 (2.6)(77)	6.2 (3.4)(101)	7.7 (4.3)(127)	9.6 (5.3)(157)	7.1 (3.9)(117)	9.0 (4.9)(147)	11.1 (6.1)(182)	14.1 (7.7)(231)
	Plasticizing capacity (PS)	lbs/h (kg/h)	60 (27)	84 (38)	115 (52)	157 (71)	84 (38)	115 (52)	157 (71)	214 (97)
	Injection pressure	psi (MPa)(kgf/cm ²)	38470 (265)(2705)	32850 (226)(2310)	26020 (179)(1830)	21050 (145)(1480)	38470 (265)(2705)	32280 (222)(2270)	26170 (180)(1840)	20620 (142)(1450)
	Injection rate	in ³ /s (cm ³ /s)	9.4 (154)	12.3 (201)	15.5 (254)	19.2 (314)	9.8 (161)	12.4 (203)	15.3 (251)	19.4 (318)
	Injection velocity	in/s (mm/s)	9.8 (250)				7.9 (200)			
	Screw rotation speed	rpm	0~290				0~290			
	Nozzle touch force	US tons (kN) (tf)	3.4 (30) (3.1)				3.8 (34) (3.5)			
	Hopper capacity (optional)	Gal (L)	6.6 (25)				6.6 (25)			
	Clamping	Clamping force	US tons (kN) (tf)	123 (1100) (112)				123 (1100) (112)		
Clamping stroke		inch (mm)	20.5 (520)				20.5 (520)			
Min. mold thickness		inch (mm)	7.9 (200)				7.9 (200)			
Max. daylight opening		inch (mm)	28.3 (720)				28.3 (720)			
Tie bar clearance (H×V)		inch (mm)	18.1×18.1 (460×460)				18.1×18.1 (460×460)			
Die plate dimensions (H×V)		inch (mm)	25.5×25.5 (647×647)				25.5×25.5 (647×647)			
Min. mold dimensions (H×V)		inch (mm)	11.6×11.6 (295×295)				11.6×11.6 (295×295)			
Locating ring diameter		inch (mm)	4.0 (101.6)				4.0 (101.6)			
Ejector force		US tons (kN) (tf)	5.4 (48) (4.9)				5.4 (48) (4.9)			
Ejector stroke		inch (mm)	3.3 (85)				3.3 (85)			
Others	Pump motor	kW	15				15			
	Heater band capacity	kW	7.98	9.13		8.88	10.57			
	Hydraulic oil quantity	Gal (L)	74 (280)				74 (280)			
	Machine dimensions (L×W×H)	inch (m)	176.4×48.6×70.7 (4.48×1.24×1.80)				176.4×48.6×70.7 (4.48×1.24×1.80)	178.9×48.8×70.9 (4.55×1.24×1.80)		
	Floor dimensions (L×W)	inch (m)	160.2×35.4 (4.07×0.9)				160.2×35.4 (4.07×0.9)			
	Machine weight	lbs (t)	9700 (4.4)				9921 (4.5)			

● Actual plasticizing capacity may vary, depending on the molding conditions and materials used.

● Machine dimensions, floor dimensions, and machine weights are approximate values. The listed machine weights do not include the weights of optional equipments and hydraulic oils.

PNX60Ⅲ			FNX80Ⅲ								
5A (Standard)			9A (Standard)				12A				
A	B	BB	AA	A	B	C	AA	A	B	C	
0.87 (22)	1.02 (26)	1.10 (28)	1.02 (26)	1.10 (28)	1.26 (32)	1.42 (36)	1.10 (28)	1.26 (32)	1.42 (36)	1.57 (40)	
2.1 (1.2) (35)	3.0 (1.6) (49)	3.5 (1.9) (57)	3.6 (2.0)(59)	4.2 (2.3)(69)	5.5 (3.0)(90)	7.0(3.8)(114)	4.7(2.6)(77)	6.2(3.4)(101)	7.7(4.3)(127)	9.6(5.3)(157)	
35.3 (16)	50.7 (23)	70.5 (32)	42 (19)	62 (28)	88 (40)	119 (54)	60 (27)	84 (38)	115 (52)	157 (71)	
40100 (276)(2820)	30290 (209)(2130)	26170 (180)(1840)	38470 (265)(2705)	35410 (244)(2490)	27160 (187)(1910)	21330 (147)(1500)	38470 (265)(2705)	32850 (226)(2310)	26020 (179)(1830)	21050 (145)(1480)	
7.0 (114)	9.7 (159)	11.2 (184)	9.7 (159)	11.3 (185)	14.7 (241)	18.6 (305)	9.4 (154)	12.3 (201)	15.5 (254)	19.2 (314)	
11.8 (300)			11.8 (300)				9.8 (250)				
0~350			0~310				0~290				
1.7 (15) (1.5)			3.4 (30) (3.1)				3.4 (30) (3.1)				
4.0 (15)			6.6 (25)				6.6 (25)				
72 (641) (65)			89 (792) (81)				89 (792) (81)				
16.9 (430)			18.5 (470)				18.5 (470)				
6.7 (170)			7.9 (200)				7.9 (200)				
23.6 (600)			26.4 (670)				26.4 (670)				
12.8×12.8 (325×325)			16.5×16.5 (420×420)				16.5×16.5 (420×420)				
18.8×18.8 (478×478)			22.8×22.8 (580×580)				22.8×22.8 (580×580)				
9.3×9.3 (235×235)			10.6×10.6 (270×270)				10.6×10.6 (270×270)				
4.0 (101.6)			4.0 (101.6)				4.0 (101.6)				
3.0 (27) (2.8)			4.4 (39) (4)				4.4 (39) (4)				
2.8 (70)			3.0 (75)				3.0 (75)				
7.5			15				15				
4.96	5.73	6.16	7.22	8.36	9.26		7.98	9.13			
34 (130)			53 (200)				53 (200)				
135.2×40.0×69.1 (3.44×1.02×1.76)	136.8×40.0×69.1 (3.48×1.02×1.76)	137.8×40.0×69.1 (3.50×1.02×1.76)	165.9×46.3×67.9 (4.22×1.18×1.73)				165.9×46.3×67.9 (4.22×1.18×1.73)				
101.0×29.3 (2.57×0.75)			152.8×33.1 (3.88×0.84)				152.8×33.1 (3.88×0.84)				
6393 (2.9)			8157 (3.7)				8378 (3.8)				

FNX140Ⅲ						
25A (Standard)				36A		
AA	A	B	C	A	B	C
1.42 (36)	1.57 (40)	1.77 (45)	1.97 (50)	1.77 (45)	1.97 (50)	2.20 (56)
9.9 (5.5) (163)	12.3 (6.7) (201)	15.5 (8.5) (254)	19.2 (10.5) (314)	17.5 (9.6) (286)	21.5 (11.8) (353)	27.0 (14.8) (443)
106 (48)	146 (66)	198 (90)	267 (121)	181 (82)	243 (110)	331 (150)
36970 (255)(2600)	31780 (219)(2235)	25170 (173)(1770)	20340 (140)(1430)	30010 (207)(2110)	24390 (168)(1715)	19480 (134)(1370)
11.2 (183)	13.8 (226)	17.5 (286)	21.5 (353)	14.5 (238)	17.9 (294)	22.5 (369)
7.1 (180)				5.9 (150)		
0~265				0~240		
3.8 (34) (3.5)				3.8 (34) (3.5)		
11.9 (45)				11.9 (45)		
154 (1370) (140)				154 (1370) (140)		
23.6 (600)				23.6 (600)		
9.8 (250)				9.8 (250)		
33.5 (850)				33.5 (850)		
20.1×20.1 (510×510)				20.1×20.1 (510×510)		
28.7×28.7 (730×730)				28.7×28.7 (730×730)		
13.4×13.4 (340×340)				13.4×13.4 (340×340)		
4.0 (101.6)				4.0 (101.6)		
5.4 (48) (4.9)				5.4 (48) (4.9)		
3.5 (90)				3.5 (90)		
20				20		
10.54	13.01		15.53			
95 (360)				95 (360)		
199.8×51.4×73.8 (5.08×1.31×1.88)	201.4×51.4×73.8 (5.12×1.31×1.88)			211.2×51.4×73.8 (5.37×1.31×1.88)		
183.1×37.8 (4.65×0.96)				183.1×37.8 (4.65×0.96)		
12125 (5.5)				12346 (5.6)		

● Specifications are subject to change without notice due to continuous performance improvement.

● 1MPa = 10.2kgf/cm² ≒ 10kgf/cm², 1kN = 0.102tf ≒ 0.1tf

PNX-III · FNX-III SERIES | Performance Specifications

Model		FNX180III							
Specification item	Unit	25A				36A (Standard)			
		AA	A	B	C	A	B	C	
Injection	Screw diameter	inch (mm)	1.42 (36)	1.57 (40)	1.77 (45)	1.97 (50)	1.77 (45)	1.97 (50)	2.20 (56)
	Injection capacity	in ³ (oz)(cm ³)	9.9 (5.5)(163)	12.3 (6.7)(201)	15.5 (8.5)(254)	19.2 (10.5)(314)	17.5 (9.6) (286)	21.5 (11.8) (353)	27.0 (14.8) (443)
	Plasticizing capacity (PS)	lbs/h (kg/h)	106 (48)	146 (66)	198 (90)	267(121)	181 (82)	243 (110)	331 (150)
	Injection pressure	psi (MPa)(kgf/cm ²)	36970 (255)(2600)	31780 (219)(2235)	25170 (173)(1770)	20340 (140)(1430)	30010 (207)(2110)	24390 (168)(1715)	19480 (134)(1370)
	Injection rate	in ³ /s (cm ³ /s)	11.2 (183)	13.8 (226)	17.5 (286)	21.5 (353)	14.5 (238)	17.9 (294)	22.5 (369)
	Injection velocity	in/s (mm/s)	7.1 (180)				5.9 (150)		
	Screw rotation speed	rpm	0~265				0~240		
	Nozzle touch force	US tons (kN) (tf)	3.8 (34) (3.5)				3.8 (34) (3.5)		
	Hopper capacity (optional)	Gal (L)	11.9 (45)				11.9 (45)		
	Clamping	Clamping force	US tons (kN) (tf)	197 (1750) (179)				197 (1750) (179)	
Clamping stroke		inch (mm)	27.6 (700)				27.6 (700)		
Min. mold thickness		inch (mm)	9.8 (250)				9.8 (250)		
Max. daylight opening		inch (mm)	37.4 (950)				37.4 (950)		
Tie bar clearance (H×V)		inch (mm)	22.0×22.0 (560×560)				22.0×22.0 (560×560)		
Die plate dimensions (H×V)		inch (mm)	31.5×31.5 (800×800)				31.5×31.5 (800×800)		
Min. mold dimensions (H×V)		inch (mm)	14.8×14.8 (375×375)				14.8×14.8 (375×375)		
Locating ring diameter		inch (mm)	4.0 (101.6)				4.0 (101.6)		
Ejector force		US tons (kN) (tf)	7.8 (69) (7)				7.8 (69) (7)		
Ejector stroke		inch (mm)	4.3 (110)				4.3 (110)		
Others	Pump motor	kW	20				20		
	Heater band capacity	kW	10.54	13.01			15.53		
	Hydraulic oil quantity	Gal (L)	124 (470)				124 (470)		
	Machine dimensions (L×W×H)	inch (m)	221.9×54.9×86.6 (5.64×1.40×2.20)				224.6×54.9×86.6 (5.71×1.40×2.20)		
	Floor dimensions (L×W)	inch (m)	203.9×39.8 (5.18×1.01)				203.9×39.8 (5.18×1.01)		
	Machine weight	lbs (t)	15212 (6.9)				15653 (7.1)		

Model		FNX280III						
Specification item	Unit	71A (Standard)			100A			
		A	B	C	A	B	C	
Injection	Screw diameter	inch (mm)	2.20 (56)	2.48 (63)	2.80 (71)	2.48 (63)	2.80 (71)	3.15 (80)
	Injection capacity	in ³ (oz)(cm ³)	33.8 (18.6)(554)	42.8 (23.5)(701)	54.4 (29.9)(891)	48.5 (26.6)(795)	61.6 (33.8)(1010)	78.1 (42.9)(1280)
	Plasticizing capacity (PS)	lbs/h (kg/h)	276 (125)	368 (167)	518 (235)	357 (162)	503 (228)	699 (317)
	Injection pressure	psi (MPa)(kgf/cm ²)	28440 (196)(2000)	22470 (155)(1580)	17710 (122)(1245)	29790 (205)(2095)	23390 (161)(1645)	18490 (127)(1300)
	Injection rate	in ³ /s (cm ³ /s)	17 (279)	21.5 (353)	27.4 (449)	20.4 (334)	25.9 (424)	32.9 (539)
	Injection velocity	in/s (mm/s)	4.5 (113)			4.2 (107)		
	Screw rotation speed	rpm	0~200			0~190		
	Nozzle touch force	US tons (kN) (tf)	6.2 (55) (5.6)			6.2 (55) (5.6)		
	Hopper capacity (optional)	Gal (L)	23.8 (90)			23.8 (90)		
	Clamping	Clamping force	US tons (kN) (tf)	309 (2740) (280)			309 (2740) (280)	
Clamping stroke		inch (mm)	32.7 (830)			32.7 (830)		
Min. mold thickness		inch (mm)	12.6 (320)			12.6 (320)		
Max. daylight opening		inch (mm)	45.3 (1150)			45.3 (1150)		
Tie bar clearance (H×V)		inch (mm)	26.0×26.0 (660×660)			26.0×26.0 (660×660)		
Die plate dimensions (H×V)		inch (mm)	37.6×37.6 (955×955)			37.6×37.6 (955×955)		
Min. mold dimensions (H×V)		inch (mm)	18.3×18.3 (465×465)			18.3×18.3 (465×465)		
Locating ring diameter		inch (mm)	4.0 (101.6)			4.0 (101.6)		
Ejector force		US tons (kN) (tf)	9.8 (87) (8.9)			9.8 (87) (8.9)		
Ejector stroke		inch (mm)	5.1 (130)			5.1 (130)		
Others	Pump motor	kW	15+15			15+15		
	Heater band capacity	kW	21.98			28.19		
	Hydraulic oil quantity	Gal (L)	214 (810)			214 (810)		
	Machine dimensions (L×W×H)	inch (m)	268.5×62.0×86.6 (6.82×1.58×2.20)			278.9×62.0×86.6 (7.09×1.58×2.20)		
	Floor dimensions (L×W)	inch (m)	243.5×49.2 (6.19×1.25)			243.5×49.2 (6.19×1.25)		
	Machine weight	lbs (t)	25794 (11.7)			26676 (12.1)		

● Actual plasticizing capacity may vary, depending on the molding conditions and materials used.

● Machine dimensions, floor dimensions, and machine weights are approximate values. The listed machine weights do not include the weights of optional equipments and hydraulic oils.

FNX220Ⅲ						
50A (Standard)			71A			
A	B	C	A	B	C	
1.97 (50)	2.20 (56)	2.48 (63)	2.20 (56)	2.48 (63)	2.80 (71)	
24.5 (13.5) (402)	30.8 (16.9) (505)	39.0 (21.4) (639)	33.8 (18.6) (554)	42.8 (23.5) (701)	54.4 (29.9) (891)	
223 (101)	302 (137)	406 (184)	276 (125)	368 (167)	518 (235)	
28730 (198)(2020)	22900 (158)(1610)	18200 (125)(1280)	28440 (196)(2000)	22470 (155)(1580)	17710 (122)(1245)	
16.8 (275)	21.1 (345)	26.6 (436)	16.5 (271)	20.9 (343)	26.5 (435)	
	5.5 (140)			4.3 (110)		
	0~220			0~200		
	5.3 (47) (4.8)			6.2 (55) (5.6)		
	23.8 (90)			23.8 (90)		
	237 (2110) (215)			237 (2110) (215)		
	29.9 (760)			29.9 (760)		
	11.4 (290)			11.4 (290)		
	41.3 (1050)			41.3 (1050)		
	24.0×24.0 (610×610)			24.0×24.0 (610×610)		
	34.3×34.3 (870×870)			34.3×34.3 (870×870)		
	16.3×16.3 (415×415)			16.3×16.3 (415×415)		
	4.0 (101.6)			4.0 (101.6)		
	9.8 (87) (8.9)			9.8 (87) (8.9)		
	4.7 (120)			4.7 (120)		
	30			30		
	18.19			21.98		
	164 (620)			164 (620)		
	248.8×58.1×86.6 (6.32×1.48×2.20)			260.4×58.1×86.6 (6.62×1.48×2.20)		
	231.5×46.5 (5.88×1.18)			231.5×46.5 (5.88×1.18)		
	21385 (9.7)			22046 (10.0)		

FNX360Ⅲ						FNX460Ⅲ		
100A (Standard)			140A			160A (Standard)		
A	B	C	A	B	C	A	B	C
2.48 (63)	2.80 (71)	3.15 (80)	2.80 (71)	3.15 (80)	3.54 (90)	2.80 (71)	3.15 (80)	3.54 (90)
48.5 (26.6) (795)	61.6 (33.8) (1010)	78.1 (42.9) (1280)	67.7 (37.2) (1110)	86.0 (47.2) (1410)	108.6 (59.6) (1780)	77.5 (42.6) (1270)	98.2 (54.0) (1610)	123.9 (68.0) (2030)
357 (162)	503 (228)	699 (317)	448 (203)	626 (284)	851 (386)	441 (200)	604 (274)	838 (380)
29790 (205)(2095)	23390 (161)(1645)	18490 (127)(1300)	28390 (195)(1990)	22330 (154)(1570)	17710 (122)(1245)	28390 (195)(1990)	22330 (154)(1570)	17710 (122)(1245)
25.5 (417)	32.3 (530)	41.1 (673)	26.7 (437)	33.9 (555)	42.9 (703)	31.4 (515)	39.8 (653)	50.5 (827)
	5.3 (134)			4.3 (110)			5.1 (130)	
	0~190			0~170			0~180	
	6.2 (55) (5.6)			6.2 (55) (5.6)			6.6 (59) (6.0)	
	23.8 (90)			23.8 (90)			23.8 (90)	
	398 (3540) (361)			398 (3540) (361)			501 (4460) (455)	
	38.2 (970)			38.2 (970)			40.4 (1025)	
	13.8 (350)			13.8 (350)			14.8 (375)	
	52.0 (1320)			52.0 (1320)			55.1 (1400)	
	28.9×28.9 (735×735)			28.9×28.9 (735×735)			32.3×32.3 (820×820)	
	41.5×41.5 (1055×1055)			41.5×41.5 (1055×1055)			46.9×46.9 (1190×1190)	
	20.5×20.5 (520×520)			20.5×20.5 (520×520)			22.6×22.6 (575×575)	
	4.0 (101.6)			4.0 (101.6)			4.0 (101.6)	
	12.2 (109) (11.1)			12.2 (109) (11.1)			15.1 (134) (13.7)	
	5.9 (150)			5.9 (150)			6.3 (160)	
	20+20			20+20			30+30	
	28.38			36.22			35.62	
	259 (980)			259 (980)			359 (1360)	
	297.8×65.8×91.9 (7.57×1.67×2.34)			312.2×65.8×91.9 (7.93×1.67×2.34)			330.3×75.8×101.6 (8.39×1.93×2.58)	
	266.9×53.5 (6.78×1.36)			273.6×53.5 (6.95×1.36)			315.2×58.7 (8.01×1.49)	
	33290 (15.1)			34833 (15.8)			45636 (20.7)	

● Specifications are subject to change without notice due to continuous performance improvement.

● 1MPa = 10.2kgf/cm² ≒ 10kgf/cm², 1kN = 0.102tf ≒ 0.1tf

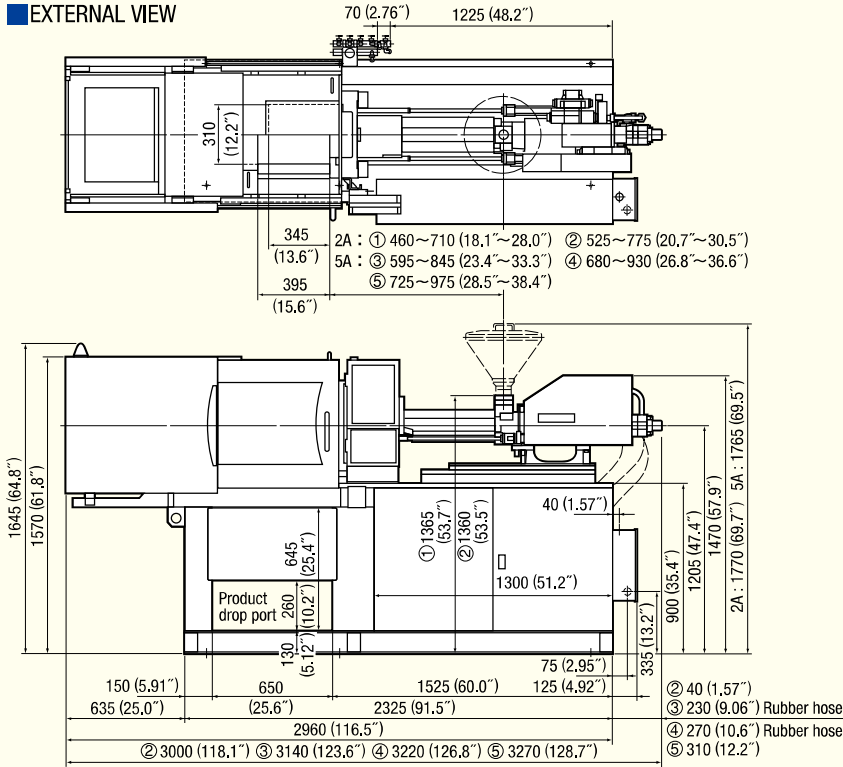
PNX-III SERIES

PNX40 III

Injection type : **2A** 【Screw diameter : ①φ16(0.63") ②φ19(0.75")】

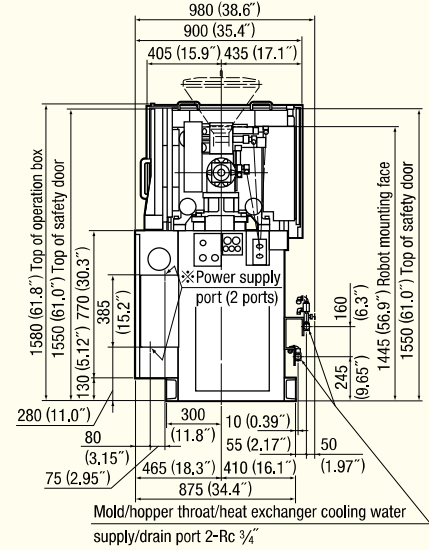
5A 【Screw diameter : ③φ22(0.87") ④φ26(1.02") ⑤φ28(1.10")】

EXTERNAL VIEW

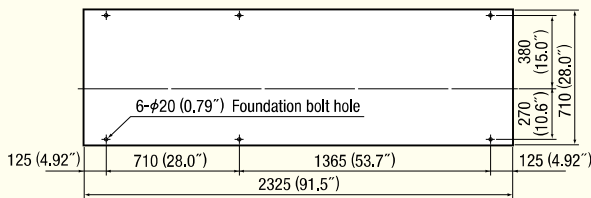


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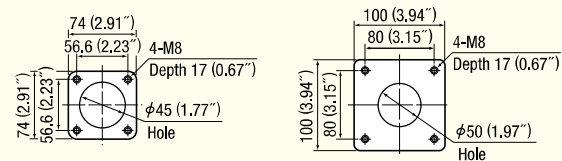
Injection type	3-phase AC power					
	230V 60Hz		5A			
Screw diameter	mm	① φ16	② φ19	③ φ22	④ φ26	⑤ φ28
	(in)	(0.63")	(0.75")	(0.87")	(1.02")	(1.10")
Pump motor	kW	7.5	7.5	7.5	7.5	7.5
Heater	kW	3.03	3.37	4.96	5.73	6.20
Control	kW	1.0	1.0	1.0	1.0	1.0
Total	kW	11.53	11.87	13.46	14.23	14.70
	kVA	15.83	16.17	17.76	18.53	19.00



FOUNDATION DIAGRAM

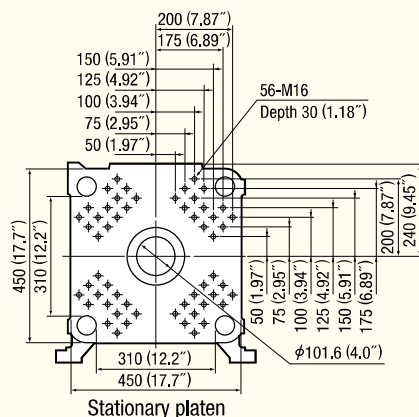
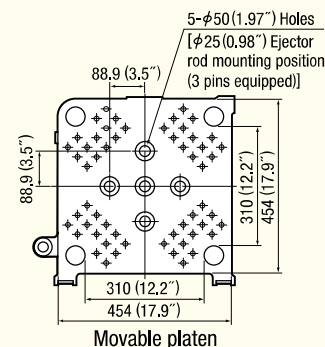
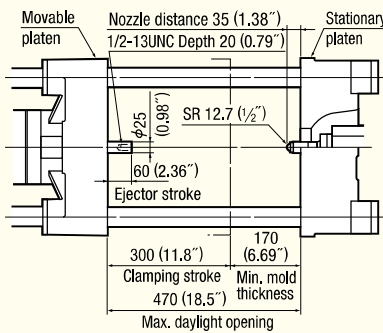


HOPPER FIXATION DIAGRAM

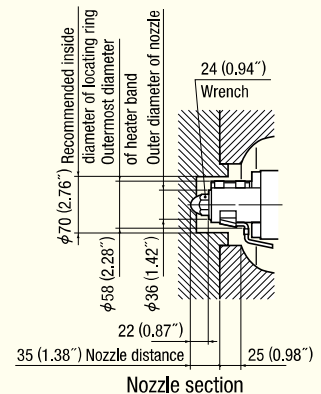
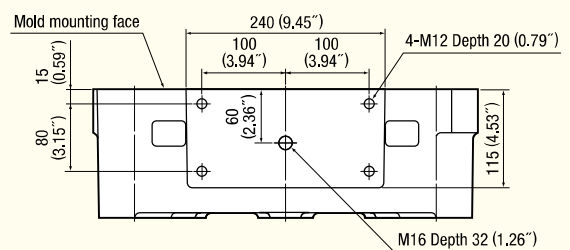


MOLD ATTACHMENT DIAGRAM

*The minimum mold dimensions of 210(8.27")×210(8.27") are required in order to achieve the maximum clamping force.

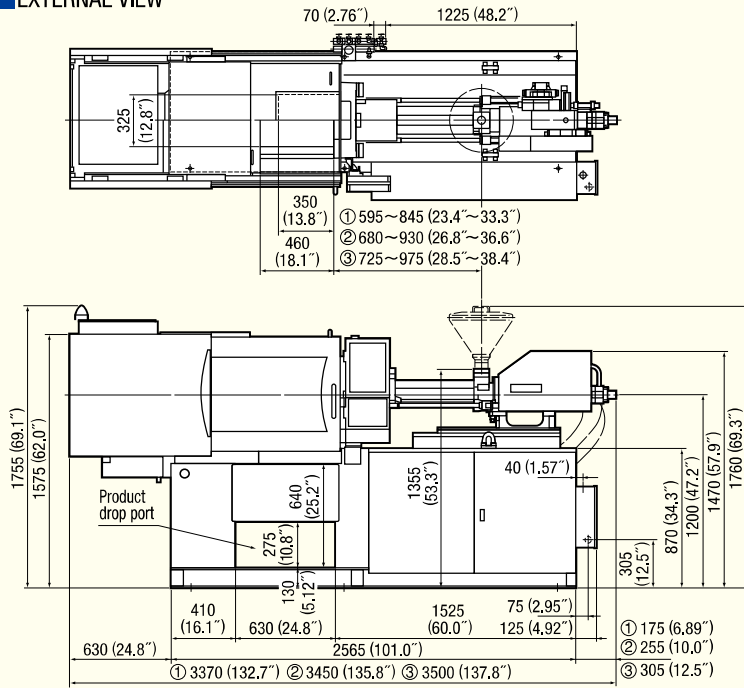


ROBOT FIXATION DIAGRAM



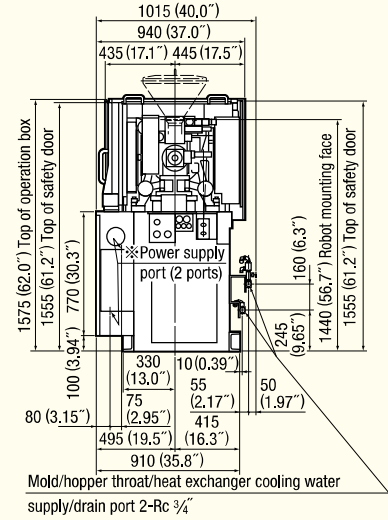
PNX-III SERIES PNX60 III-5A Injection type : [Screw diameter : ①φ22(0.87") ②φ26(1.02") ③φ28(1.10")]

EXTERNAL VIEW

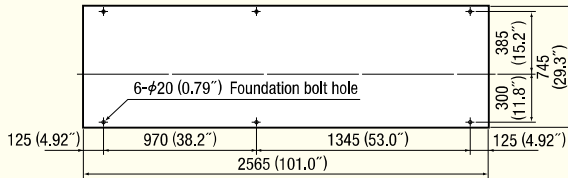


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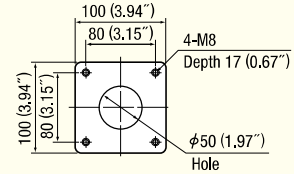
3-phase AC power			
230V 60Hz			
Injection type	5A		
Screw diameter mm (in)	①φ22 (0.87")	②φ26 (1.02")	③φ28 (1.10")
Pump motor kW	7.5	7.5	7.5
Heater kW	4.96	5.73	6.20
Control kW	1.0	1.0	1.0
Total kW	13.46	14.23	14.70
kVA	17.76	18.53	19.00



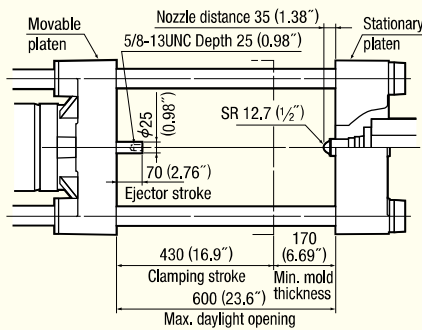
FOUNDATION DIAGRAM



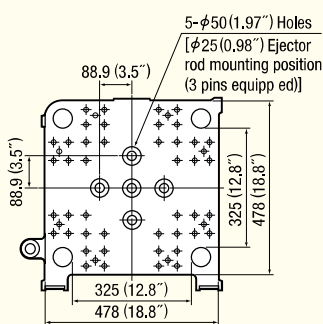
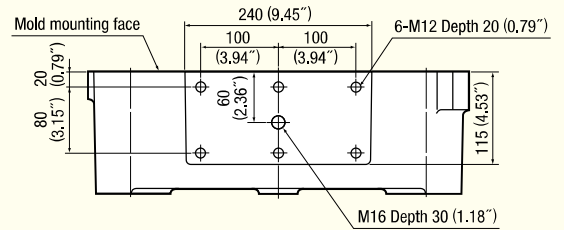
HOPPER FIXATION DIAGRAM



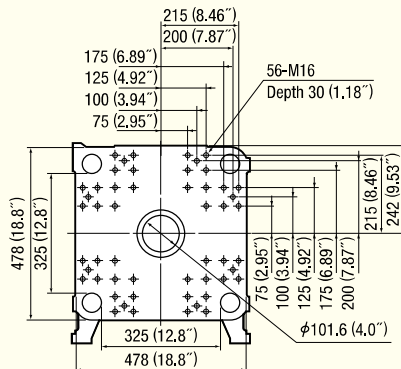
MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 235(9.25")×235(9.25") are required in order to achieve the maximum clamping force.



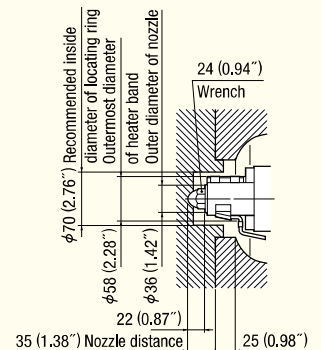
ROBOT FIXATION DIAGRAM



Movable platen

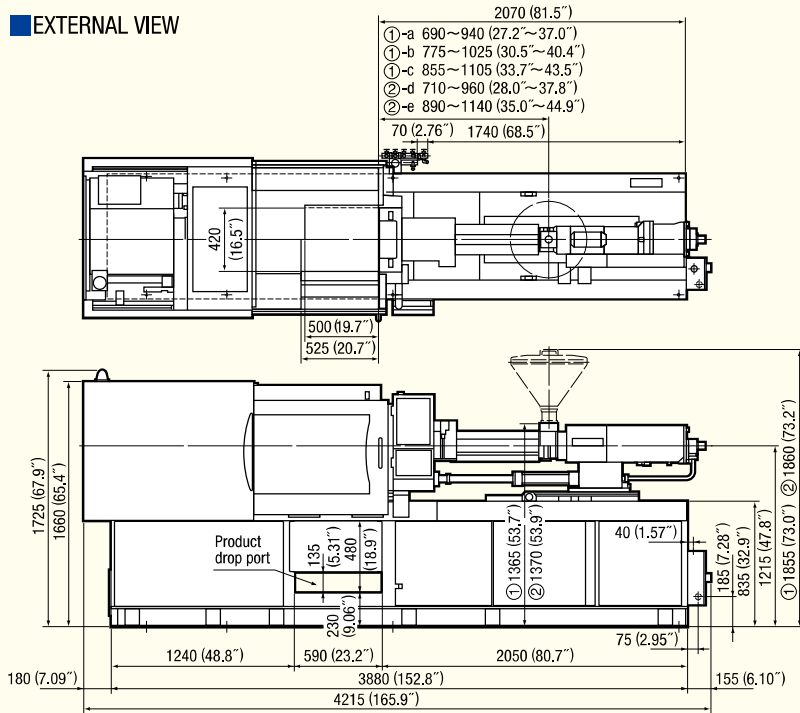


Stationary platen

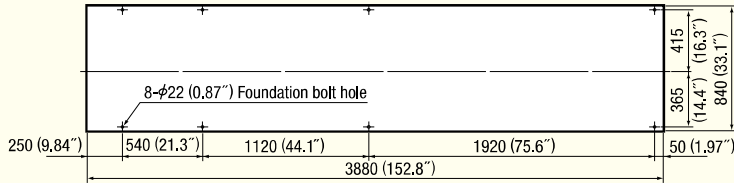


Nozzle section

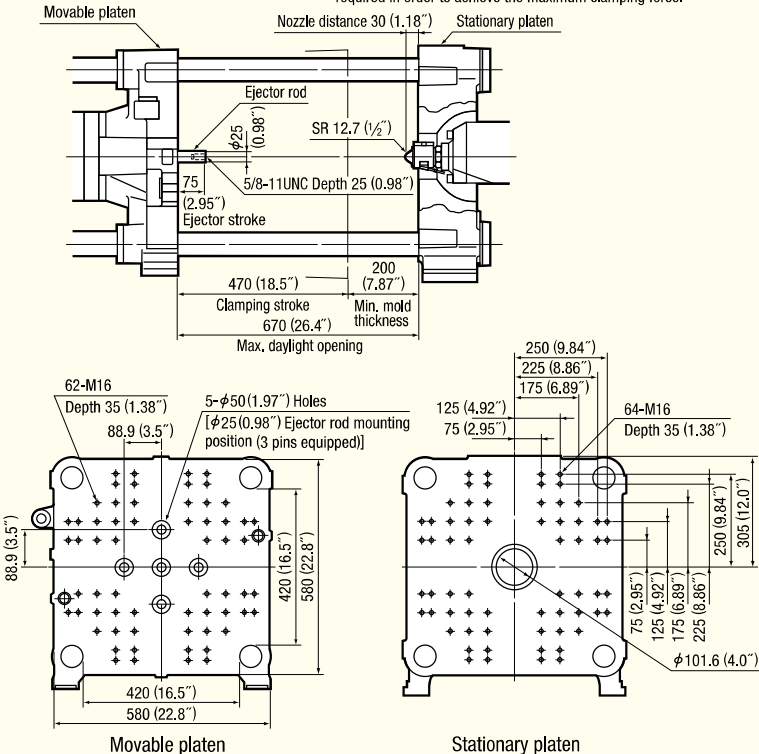
EXTERNAL VIEW



FOUNDATION DIAGRAM



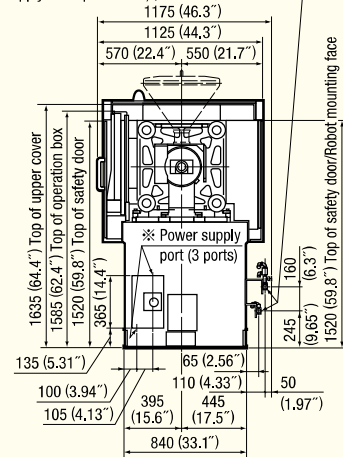
MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 270(10.6")×270(10.6") are required in order to achieve the maximum clamping force.



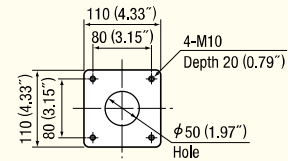
※

3-phase AC power						
230V 60Hz						
Injection type	① 9A			② 12A		
	a	b	c	d	e	
Screw diameter	mm φ26 (1.02")	φ28 (1.10")	φ32, 36 (1.26", 1.42")	φ28 (1.10")	φ32, 36, 40 (1.26", 1.42", 1.57")	
Pump motor	kW	15.0	15.0	15.0	15.0	
Heater	kW	7.22	8.36	9.26	7.98	9.13
Control	kW	1.0	1.0	1.0	1.0	1.0
Total	kW	23.22	24.36	25.26	23.98	25.13
	kVA	27.02	28.16	29.06	27.78	28.93

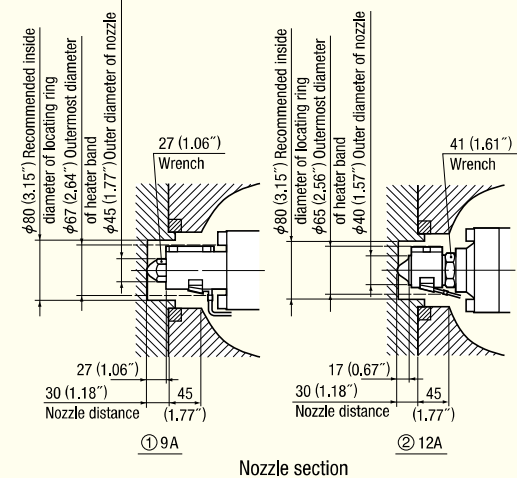
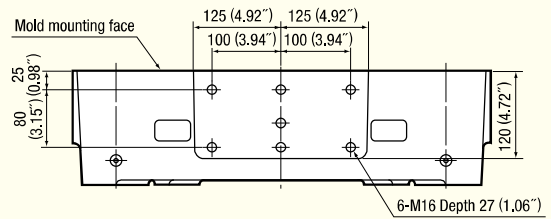
Mold/hopper throat/heat exchanger cooling water supply/drain port 2-Rc 3/4"



HOPPER FIXATION DIAGRAM

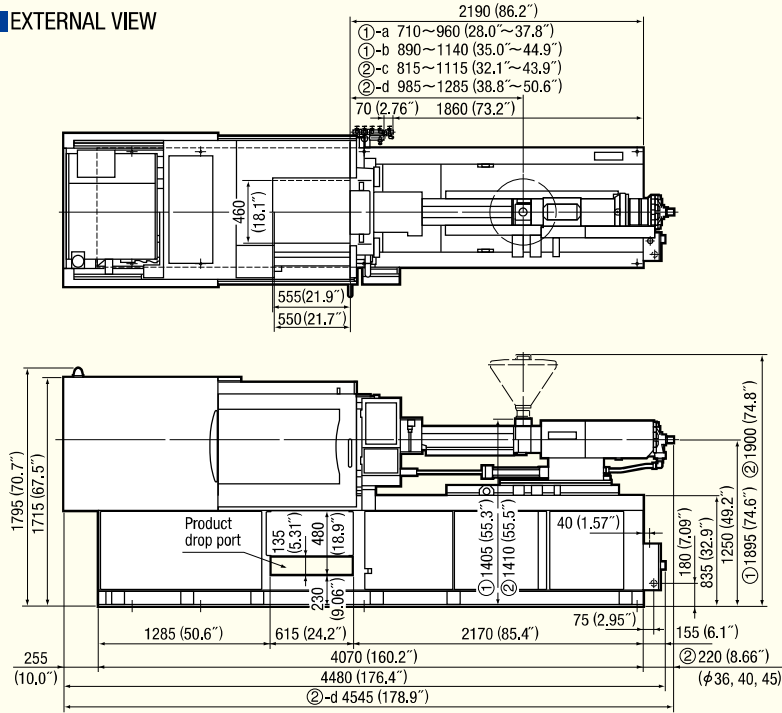


ROBOT FIXATION DIAGRAM



FNX-III SERIES FNX110 III Injection type : ① **12A** [Screw diameter : $\phi 28$ (1.10") / $\phi 32$ (1.26") / $\phi 36$ (1.42") / $\phi 40$ (1.57")]
 ② **18A** [Screw diameter : $\phi 32$ (1.26") / $\phi 36$ (1.42") / $\phi 40$ (1.57") / $\phi 45$ (1.77")]

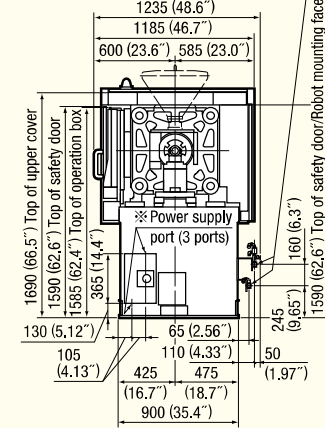
EXTERNAL VIEW



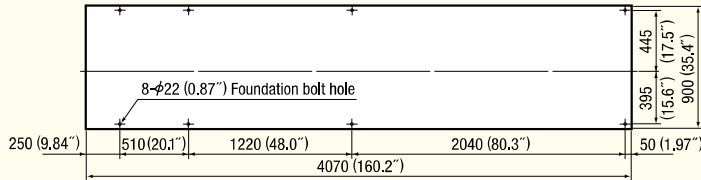
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3-phase AC power				
230V 60Hz				
Injection type	① 12A		② 18A	
	a	b	c	d
Screw diameter mm (in)	$\phi 28$ (1.10")	$\phi 32, 36, 40$ (1.26", 1.42", 1.57")	$\phi 32$ (1.26")	$\phi 36, 40, 45$ (1.42", 1.57", 1.77")
Pump motor kW	15.0	15.0	15.0	15.0
Heater kW	7.98	9.13	8.88	10.57
Control kW	1.0	1.0	1.0	1.0
Total kW	23.98	25.13	24.88	26.57
kVA	27.78	28.93	28.68	30.37

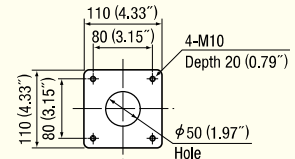
Mold/hopper throat/heat exchanger cooling water supply/drain port 2-Rc 3/4"



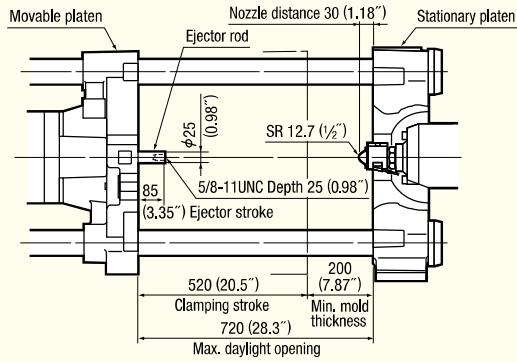
FOUNDATION DIAGRAM



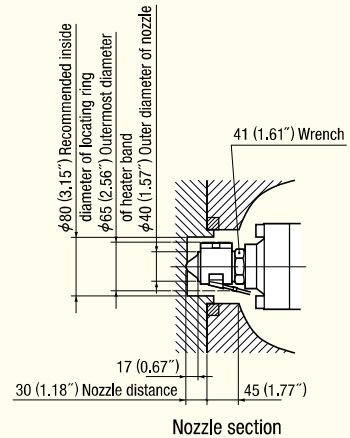
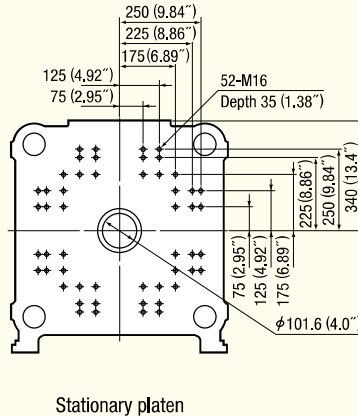
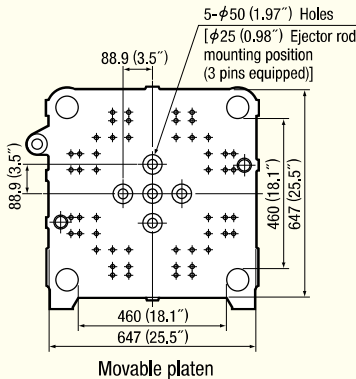
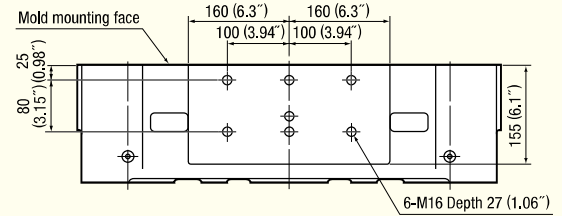
HOPPER FIXATION DIAGRAM



MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 295 (11.6") x 295 (11.6") are required in order to achieve the maximum clamping force.

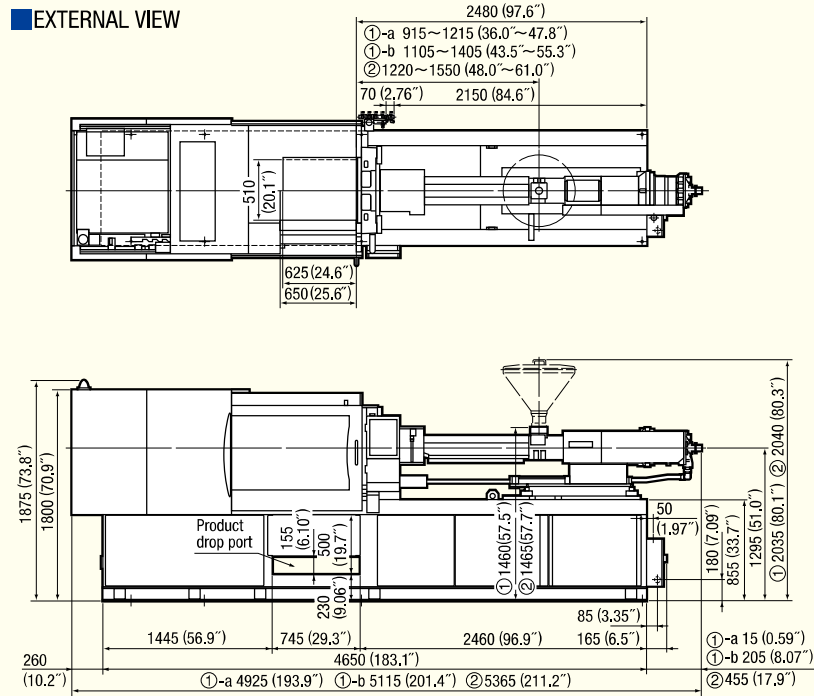


ROBOT FIXATION DIAGRAM

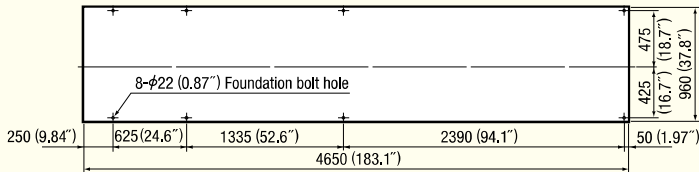


FNX-III SERIES **FNX140 III** Injection type : ① **25A** [Screw diameter : $\phi 36$ (1.42") / $\phi 40$ (1.57") / $\phi 45$ (1.77") / $\phi 50$ (1.97")]
 ② **36A** [Screw diameter : $\phi 45$ (1.77") / $\phi 50$ (1.97") / $\phi 56$ (2.20")]

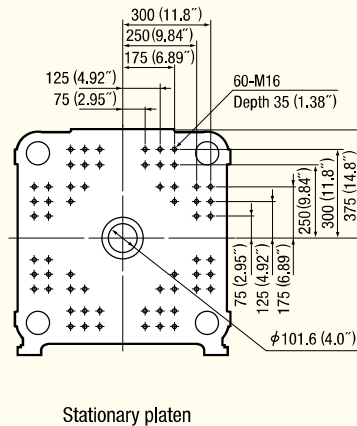
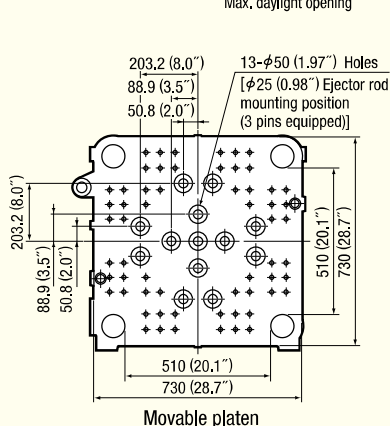
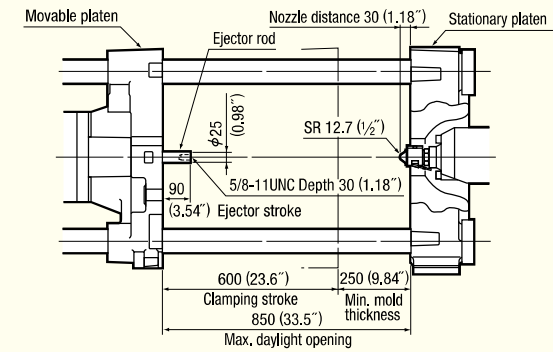
EXTERNAL VIEW



FOUNDATION DIAGRAM



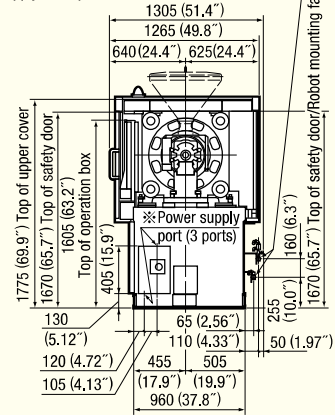
MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 340 (13.4") × 340 (13.4") are required in order to achieve the maximum clamping force.



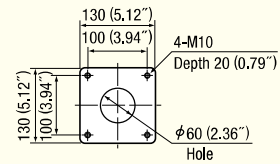
※

3-phase AC power			
230V 60Hz			
Injection type	① 25A		② 36A
	a	b	
Screw diameter mm (in)	$\phi 36$ (1.42")	$\phi 40, 45, 50$ (1.57", 1.77", 1.97")	$\phi 45, 50, 56$ (1.77", 1.97", 2.20")
Pump motor kW	20.0	20.0	20.0
Heater kW	10.54	13.01	15.53
Control kW	1.0	1.0	1.0
Total kW	31.54	34.01	36.53
kVA	39.54	42.01	44.53

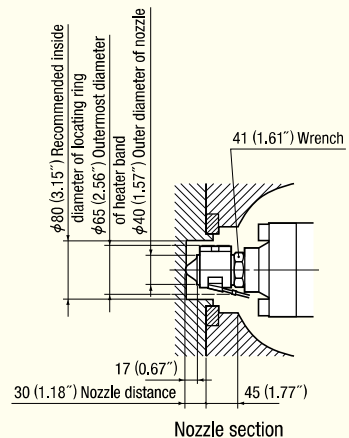
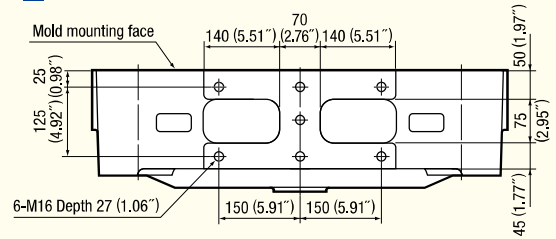
Mold/hopper throat/heat exchanger cooling water supply/drain port 2-Rc 3/4"



HOPPER FIXATION DIAGRAM

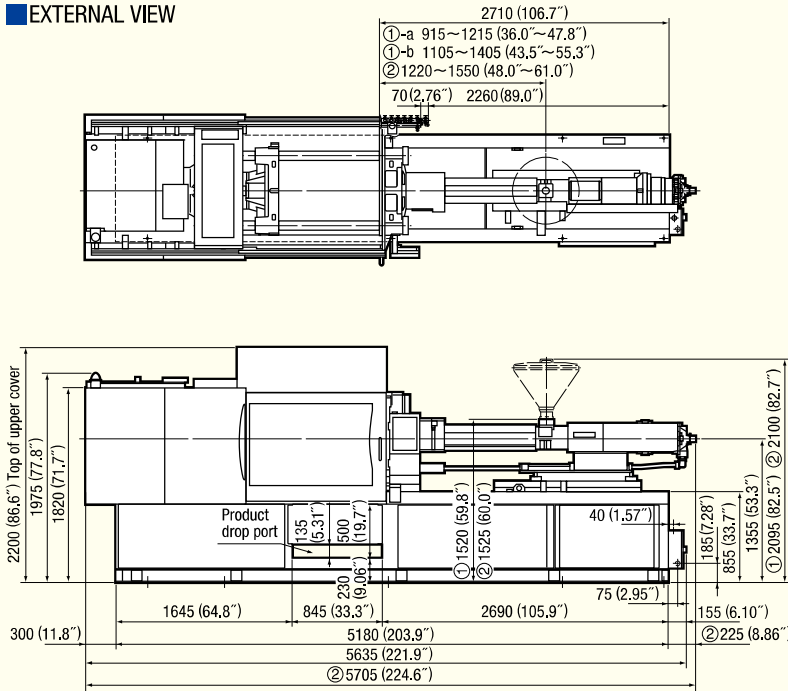


ROBOT FIXATION DIAGRAM



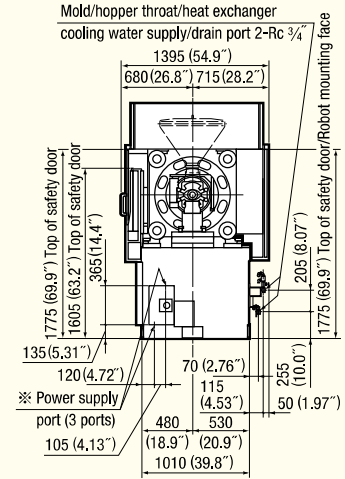
FNX-III SERIES FNX180 III Injection type : ① **25A** [Screw diameter : $\phi 36$ (1.42") / $\phi 40$ (1.57") / $\phi 45$ (1.77") / $\phi 50$ (1.97")]
 ② **36A** [Screw diameter : $\phi 45$ (1.77") / $\phi 50$ (1.97") / $\phi 56$ (2.20")]

EXTERNAL VIEW

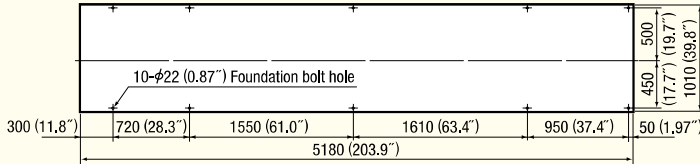


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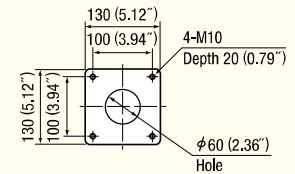
3-phase AC power			
230V 60Hz			
Injection type	① 25A		② 36A
	a	b	
Screw diameter mm (in)	$\phi 36$ (1.42")	$\phi 40, 45, 50$ (1.57", 1.77", 1.97")	$\phi 45, 50, 56$ (1.77", 1.97", 2.20")
Pump motor kW	20.0	20.0	20.0
Heater kW	10.54	13.01	15.53
Control kW	1.0	1.0	1.0
Total kW	31.54	34.01	36.53
kVA	39.54	42.01	44.53



FOUNDATION DIAGRAM

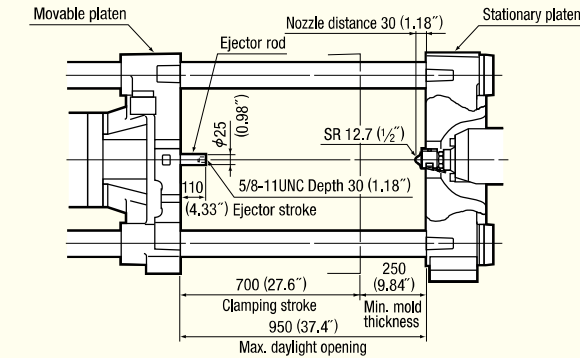


HOPPER FIXATION DIAGRAM

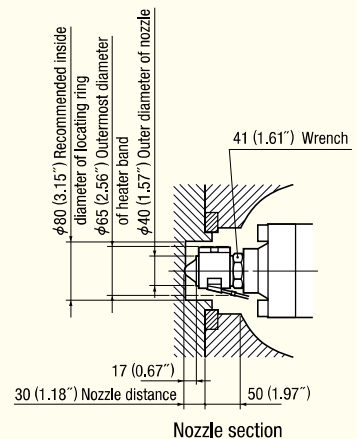
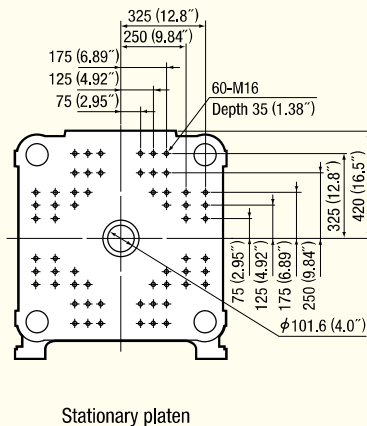
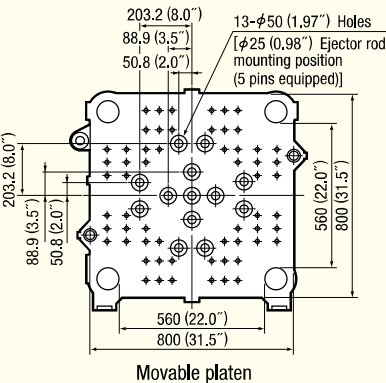
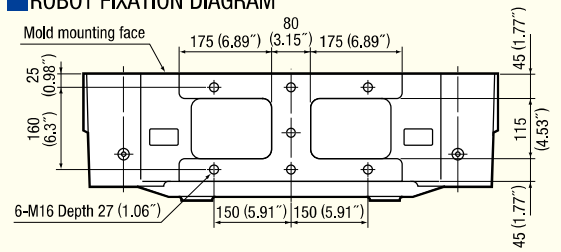


MOLD ATTACHMENT DIAGRAM

*The minimum mold dimensions of 375 (14.8") × 375 (14.8") are required in order to achieve the maximum clamping force.

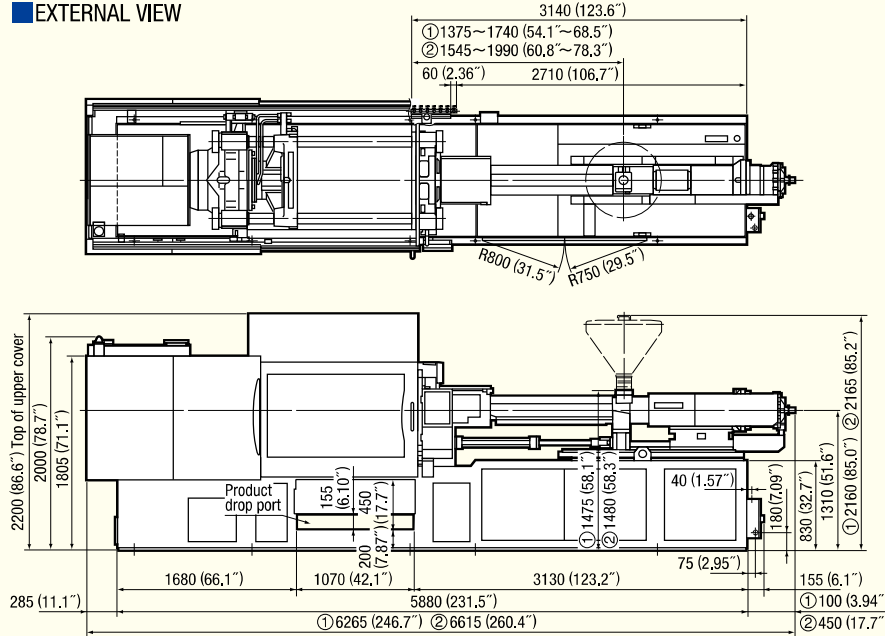


ROBOT FIXATION DIAGRAM



FNX-III SERIES FNX220 III Injection type : ① **50A** [Screw diameter : $\phi 50$ (1.97") / $\phi 56$ (2.20") / $\phi 63$ (2.48")]
 ② **71A** [Screw diameter : $\phi 56$ (2.20") / $\phi 63$ (2.48") / $\phi 71$ (2.80")]

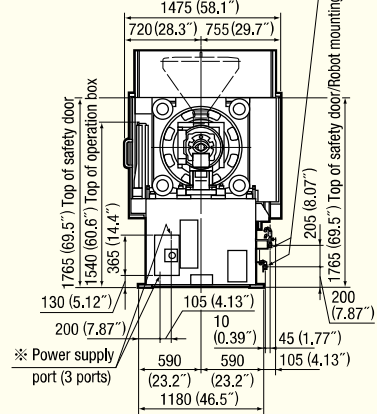
EXTERNAL VIEW



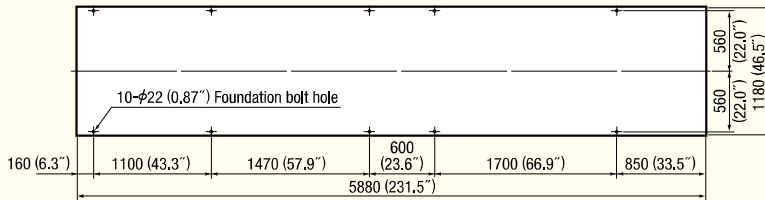
※

3-phase AC power		
230V 60Hz		
Injection type	① 50A	② 71A
Screw diameter	mm $\phi 50, 56, 63$ (in) (1.97", 2.20", 2.48")	$\phi 56, 63, 71$ (2.20", 2.48", 2.80")
Pump motor	kW 30.0	30.0
Heater	kW 18.19	21.98
Control	kW 1.0	1.0
Total	kW 49.19	52.98
	kVA 69.29	73.05

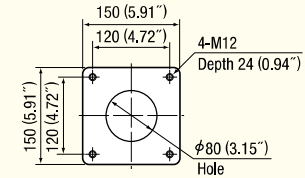
Mold/hopper throat/heat exchanger cooling water supply/drain port 2-Rc 3/4"



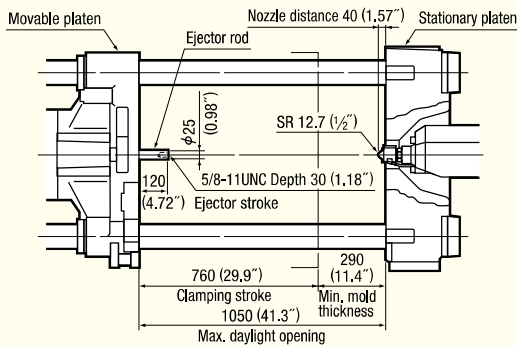
FOUNDATION DIAGRAM



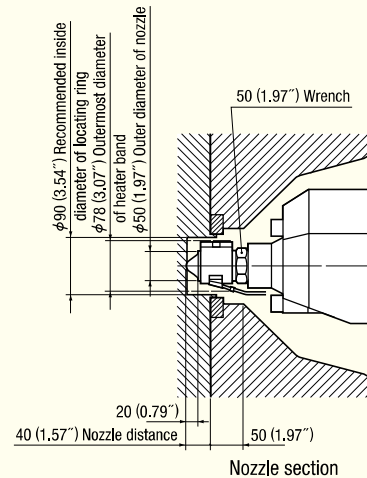
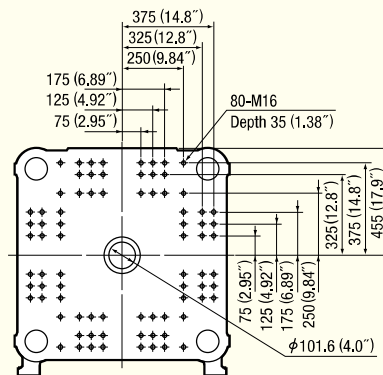
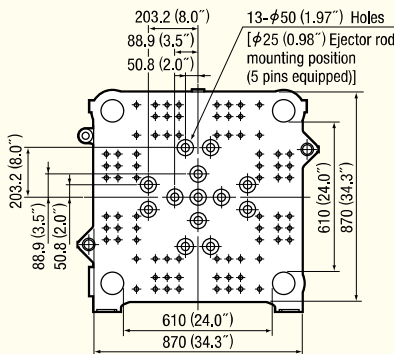
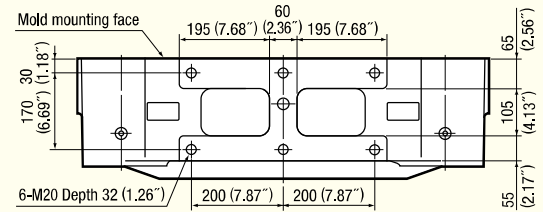
HOPPER FIXATION DIAGRAM



MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 415 (16.3") x 415 (16.3") are required in order to achieve the maximum clamping force.

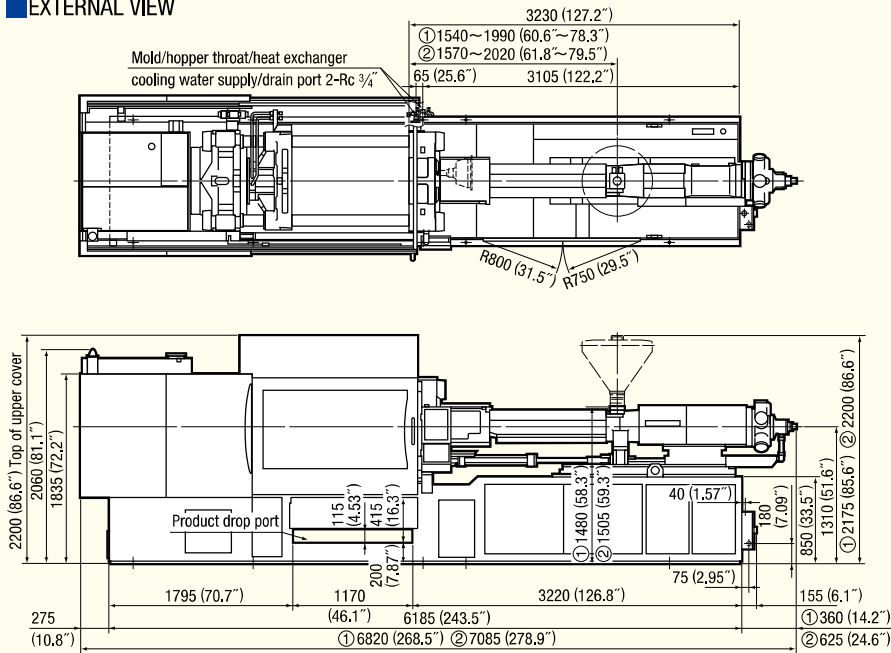


ROBOT FIXATION DIAGRAM



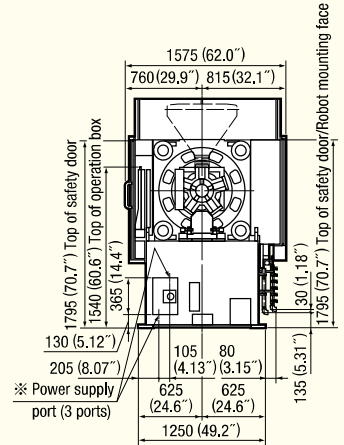
FNX-III SERIES FNX280 III Injection type : ① **71A** [Screw diameter : $\phi 56$ (2.20") / $\phi 63$ (2.48") / $\phi 71$ (2.80")]
 ② **100A** [Screw diameter : $\phi 63$ (2.48") / $\phi 71$ (2.80") / $\phi 80$ (3.15")]

EXTERNAL VIEW

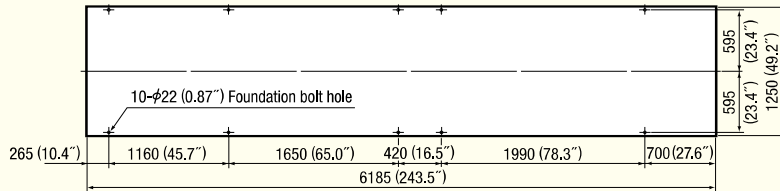


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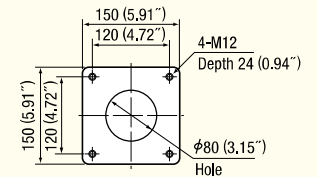
3-phase AC power		
230V 60Hz		
Injection type	① 71A	② 100A
Screw diameter mm (in)	$\phi 56, 63, 71$ (2.20", 2.48", 2.80")	$\phi 63, 71, 80$ (2.48", 2.80", 3.15")
Pump motor kW	15.0	15.0
Heater kW	21.98	28.19
Control kW	1.0	1.0
Total kW	52.98	59.19
kVA	60.58	66.79



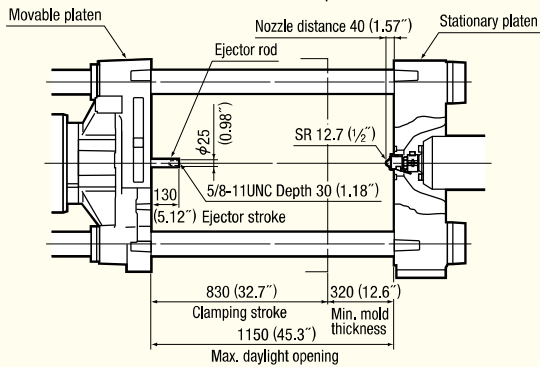
FOUNDATION DIAGRAM



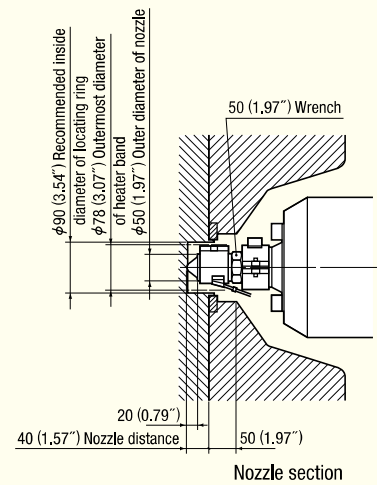
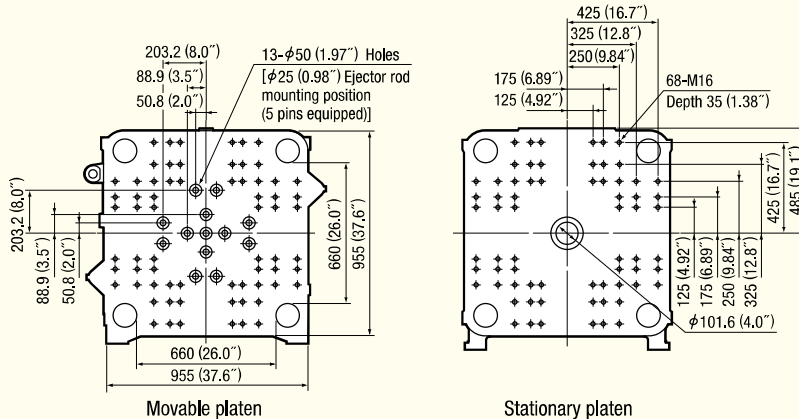
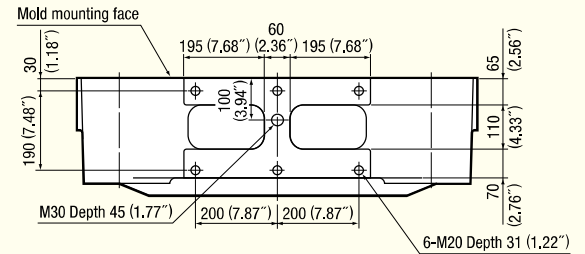
HOPPER FIXATION DIAGRAM



MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 465 (18.3") x 465 (18.3") are required in order to achieve the maximum clamping force.

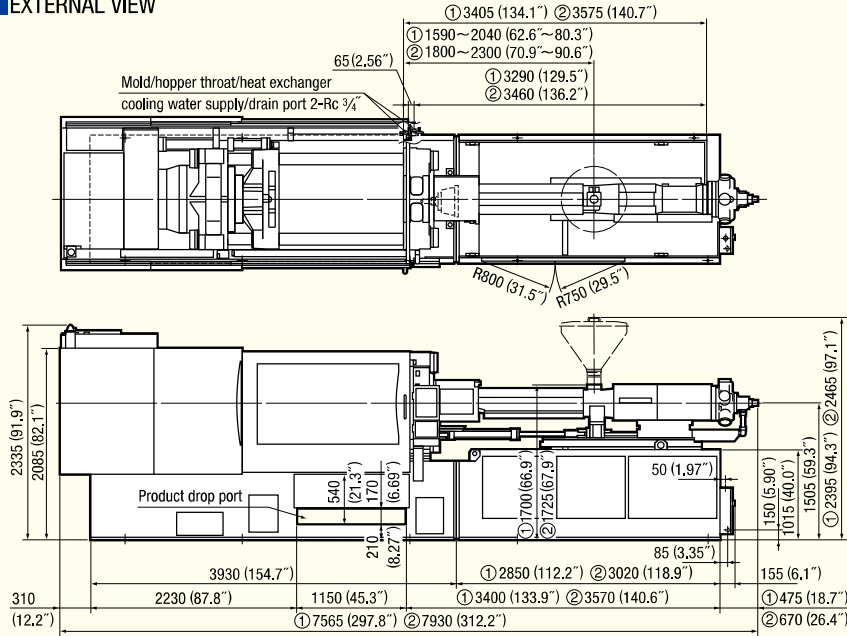


ROBOT FIXATION DIAGRAM



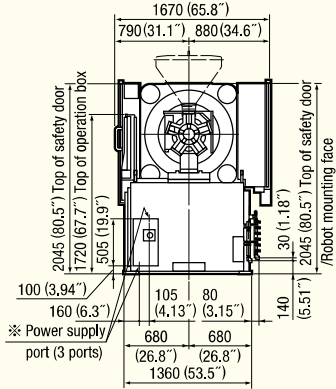
FNX-III SERIES FNX360 III Injection type : ① **100A** [Screw diameter : $\phi 63$ (2.48")/ $\phi 71$ (2.80")/ $\phi 80$ (3.15")]
 ② **140A** [Screw diameter : $\phi 71$ (2.80")/ $\phi 80$ (3.15")/ $\phi 90$ (3.54")]

EXTERNAL VIEW

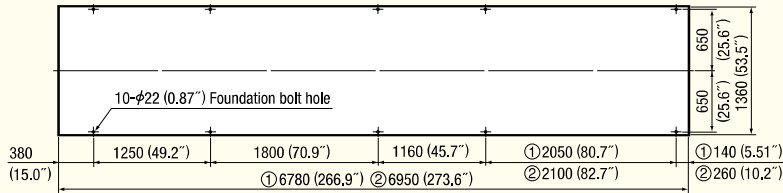


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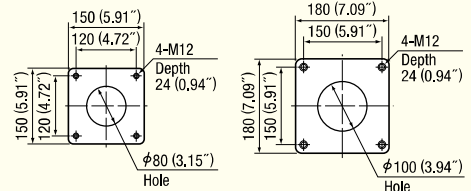
Injection type	3-phase AC power	
	230V 60Hz	
Screw diameter	① 100A mm $\phi 63, 71, 80$ (in) (2.48", 2.80", 3.15")	② 140A mm $\phi 71, 80, 90$ (in) (2.80", 3.15", 3.54")
Pump motor	20.0 kW	20.0 kW
Heater	28.38 kW	36.22 kW
Control	1.0 kW	1.0 kW
Total	69.38 kW 85.38 kVA	77.22 kW 93.22 kVA



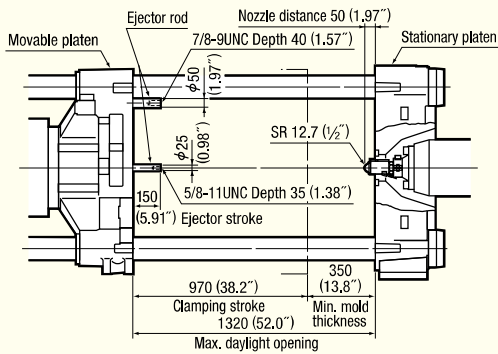
FOUNDATION DIAGRAM



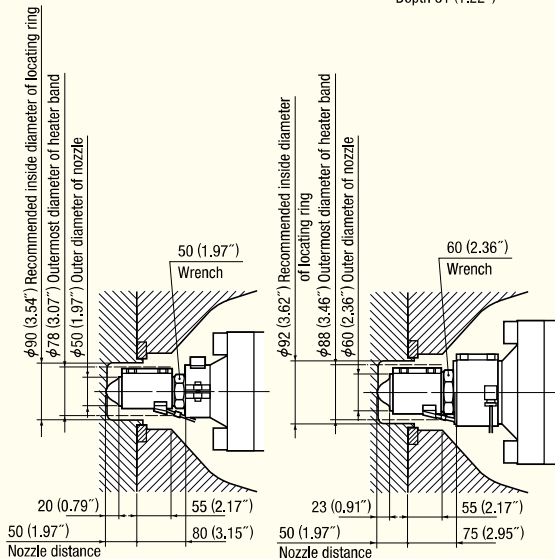
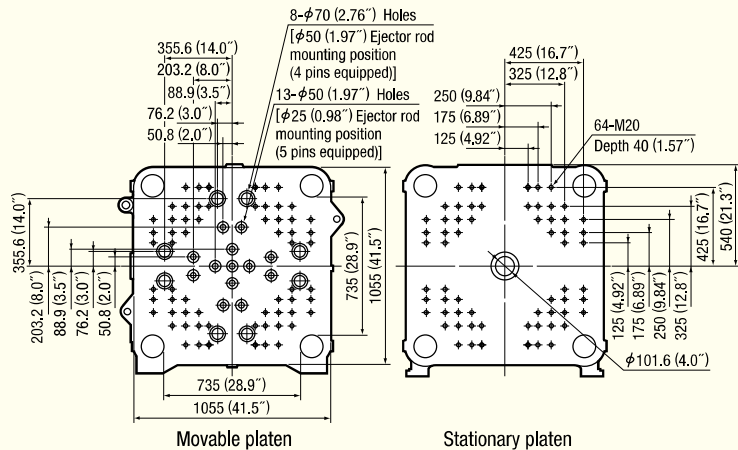
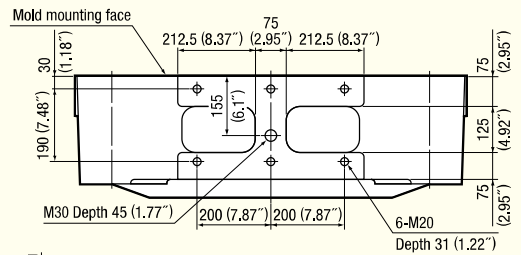
HOPPER FIXATION DIAGRAM



MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 520 (20.5") x 520 (20.5") are required in order to achieve the maximum clamping force.

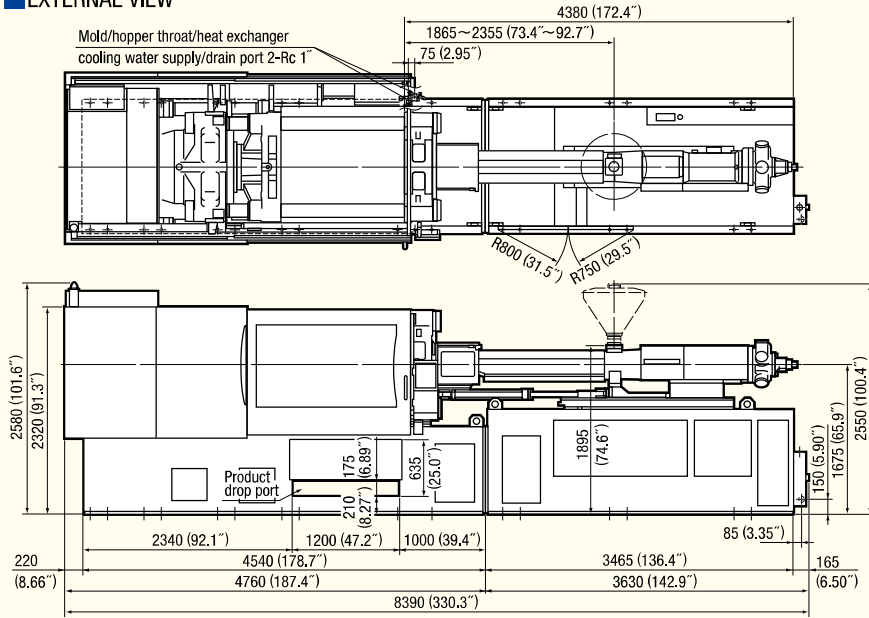


ROBOT FIXATION DIAGRAM



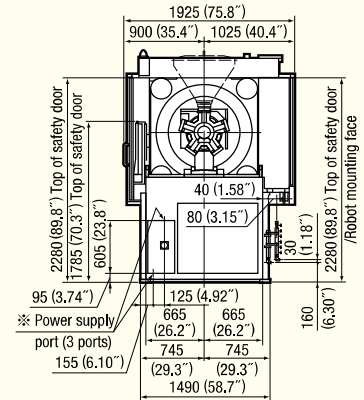
Nozzle section

EXTERNAL VIEW

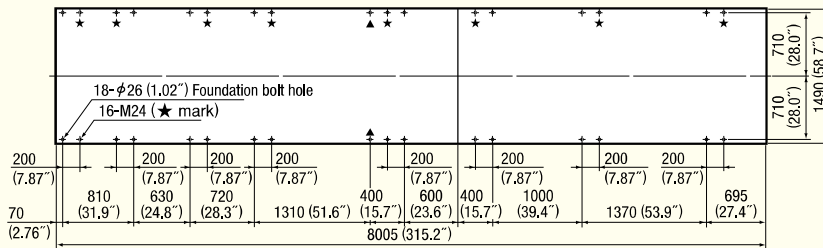


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3-phase AC power	
	230V 60Hz
Injection type	160A
Screw diameter	mm $\phi 71, 80, 90$ (in) (2.80", 3.15", 3.54")
Pump motor	kW 30.0
Heater	kW 35.62
Control	kW 1.0
Total	kW 96.62 kVA 136.82



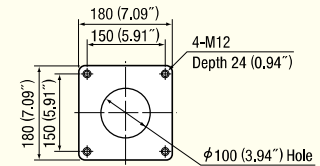
FOUNDATION DIAGRAM



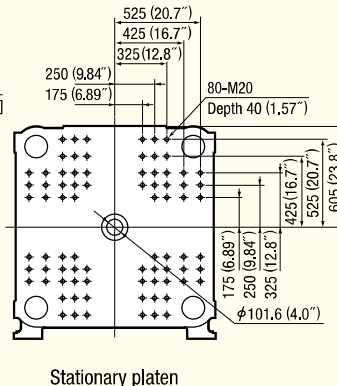
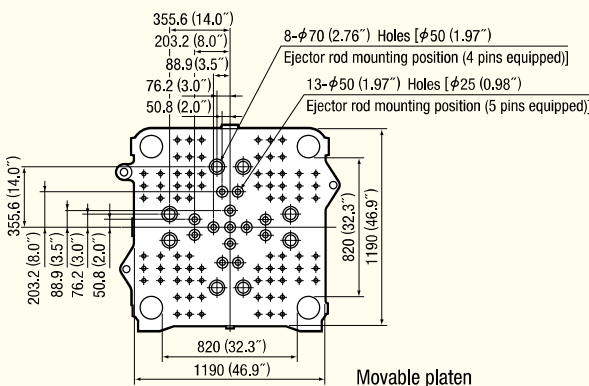
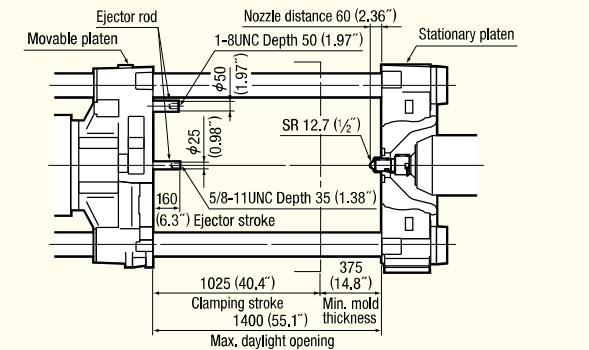
Installation Method	16-M24 (★ mark)	18-φ26 (1.02) Hole
Anchor bolt	Height adjustable screw used	16 spots, excluding 2 spots with ▲ mark
Vibration absorption pad	None	18 spots, including 2 spots with ▲ mark

* Use of anchor bolt is recommended.

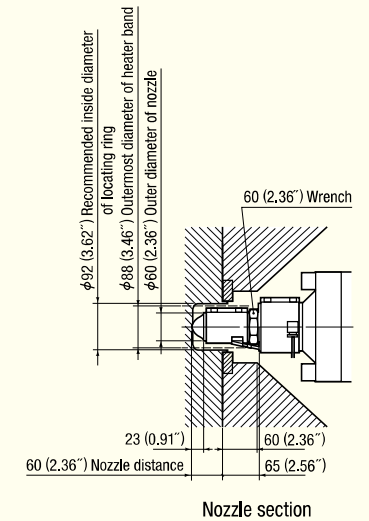
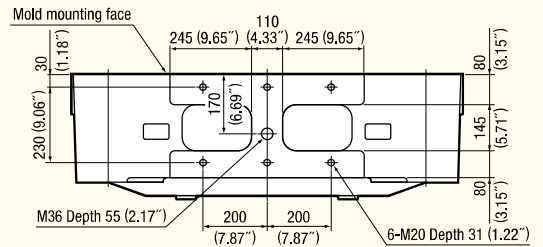
HOPPER FIXATION DIAGRAM



MOLD ATTACHMENT DIAGRAM *The minimum mold dimensions of 575 (22.6") × 575 (22.6") are required in order to achieve the maximum clamping force.



ROBOT FIXATION DIAGRAM





NISSEI AMERICA, INC.

CORPORATE HEADQUARTERS

LOS ANGELES / CALIFORNIA

ADD: 1480 North Hancock Street,
Anaheim, CA 92807
TEL: (714)693-3000 FAX: (714)693-7787
E-mail: info@nisseiamerica.com

CHICAGO OFFICE

CHICAGO / ILLINOIS

ADD: 721 Landmeier Road,
Elk Grove Village, IL 60007
TEL: (847)228-5000 FAX: (847)228-6700

NEW JERSEY OFFICE

JAMESBURG / NEW JERSEY

ADD: 1085 Cranbury South River Road,
Suite 7, Jamesburg, NJ 08831
TEL: (732)271-4885

ATLANTA OFFICE

ATLANTA / GEORGIA

ADD: 200 Cobb Parkway North, Suite 314,
Marietta, GA 30062
TEL: (770)421-0700

NEW ENGLAND TECHNICAL CENTER

AUBURN / MASSACHUSETTS

ADD: 4 Washington Street, Auburn MA 01501
TEL: (508)754-5600

FLORIDA OFFICE

TAMPA / FLORIDA

ADD: 13575 58th Street North #,
Clearwater, FL 33760
TEL: (727)773-8773

PENNSYLVANIA OFFICE

ERIE / PENNSYLVANIA

ADD: 2451 Palermo Circle, Erie,
PA 16506, U.S.A
TEL: (814)616-4913

Manufactured by

NISSEI PLASTIC INDUSTRIAL CO., LTD. HEAD OFFICE & FACTORY

2110 Minamijo, Sakaki-machi, Hanishina-gun,
Nagano-ken 389-0693, Japan