



sinto FOUNDRY INTEGRATION

How to make a good foundry?



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Ref: Introduction of automatic molding machine, FDNX
Introduction of automatic molding machine, FBO-N

What problems do you have in your foundry?

1. What problems do you have in your foundry?

2/15

Production



- Molding **by hands**
- Capacity **shortage**
- Labor **shortage**

Quality



- **Improper** sand filling
- **Insufficient** mold hardness
- **Unstable sand properties**

Environment



- **Hot**
- **Dusty**
- **Sand on floor**

Safety(Hard work)



- Transfer of **heavy sand**
- **Bad posture** at molding work
- **Burn** by manual pour
- Transfer of **heavy metal**
- Take out of **heavy casting**

How to Improve?

Proposal for production

Labor reduction and Increased capacity

Automatic Molding Machine

Flaskless Molding Machine

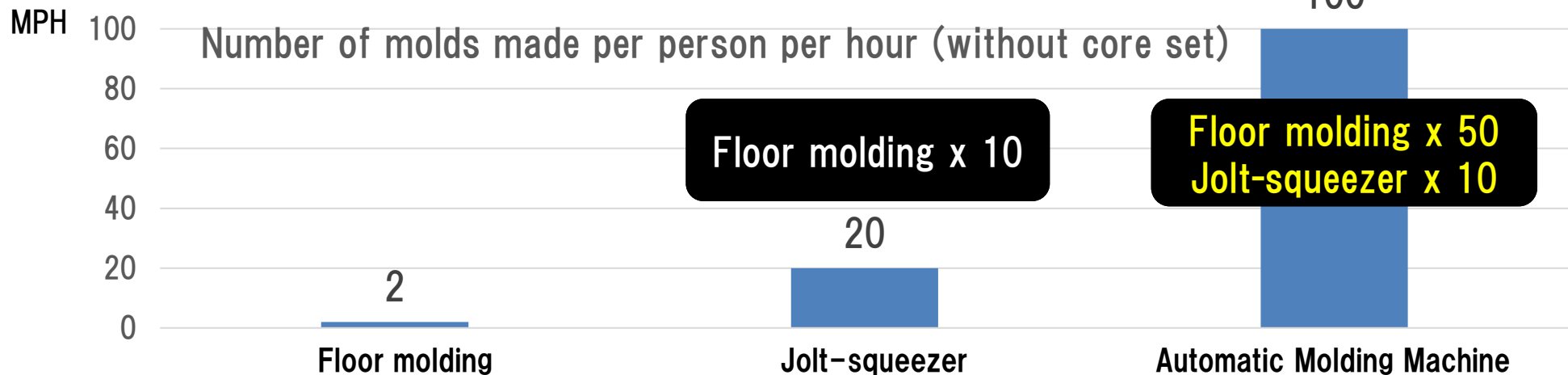
FDNX



Jolt-squeezer

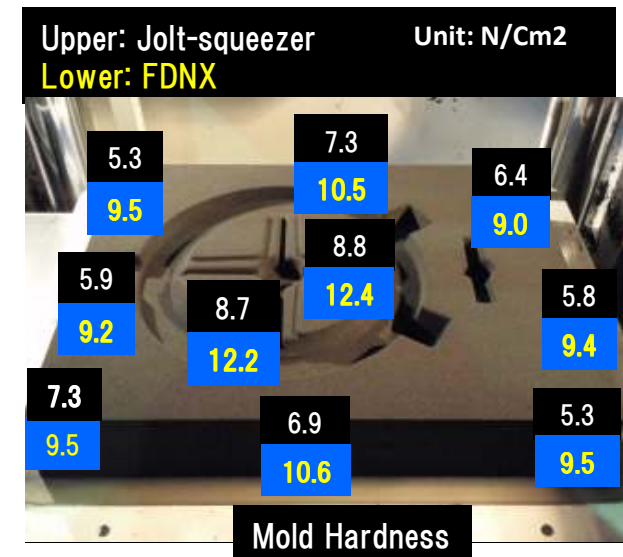


Floor molding



Proposal for quality

Molding process: **For uniform and good mold strength**



Sand mixing process:

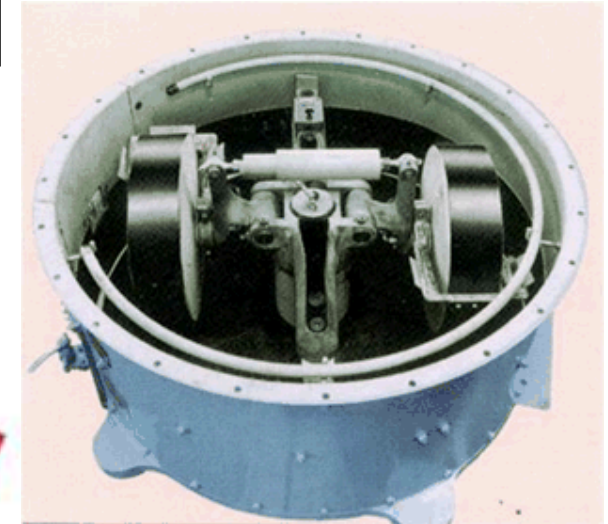
For preparing uniformly conditioned sand



**Sand mixing on
the floor (manual)**



**Semi-
automation**

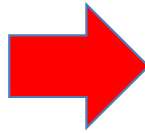


Sand rammer Moisture Tester

**Automatic mixer +
Sand tester**

Proposal for safety and mechanization

Transportation and collection of sand

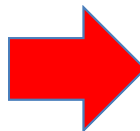


Belt conveyor

By single wheel cart

By Motor drive conveyor

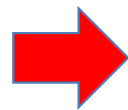
Stable metal pouring (Over 40kg weight)



By hand ladle (unstable, spill)

By geared ladle (stable, no spill)

Proposal for environment Hot temperature

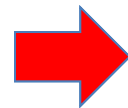


Spot cooler



Mist blower

Dust and sand



Shop vacuum



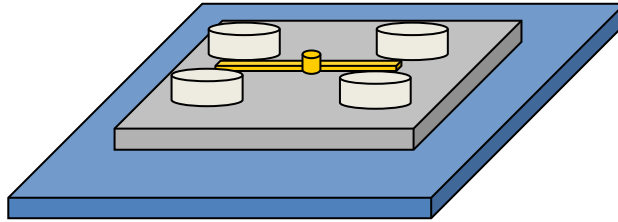


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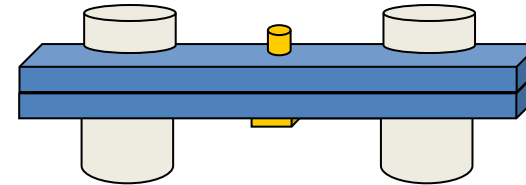
Automation is not difficult.

10/15

Existing pattern plate can be used.

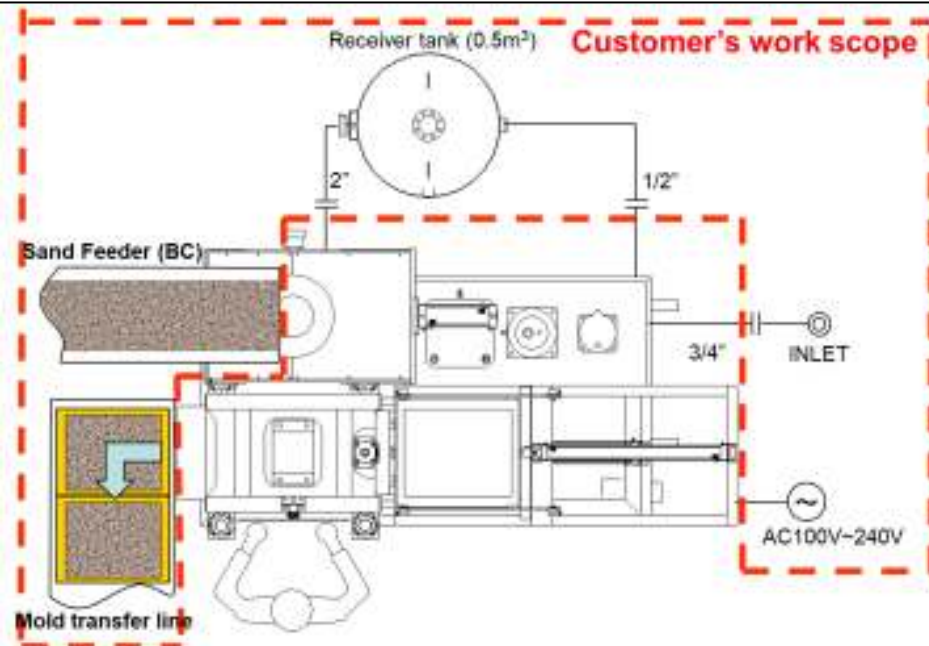


Match plate with auxiliary frame



Thick assembled match plate

Can immediately use by simple connection



Automatic Molding Machine, Model FDNX



Good quality castings made by molding machine

Intricate design casting



Casting with pocket



Mold with deep pocket and protrusion



Introduction of Automatic Molding Machine Model FDNX



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Horizontal Parting Aeration Sand Filling Flaskless Molding Machine

FDNX

Best suited for automation
from manual molding

Increased
productivity

Quality mold making

Better working
environment



Best suited for automation
from manual molding

Increased
productivity

Quality mold making

Better working
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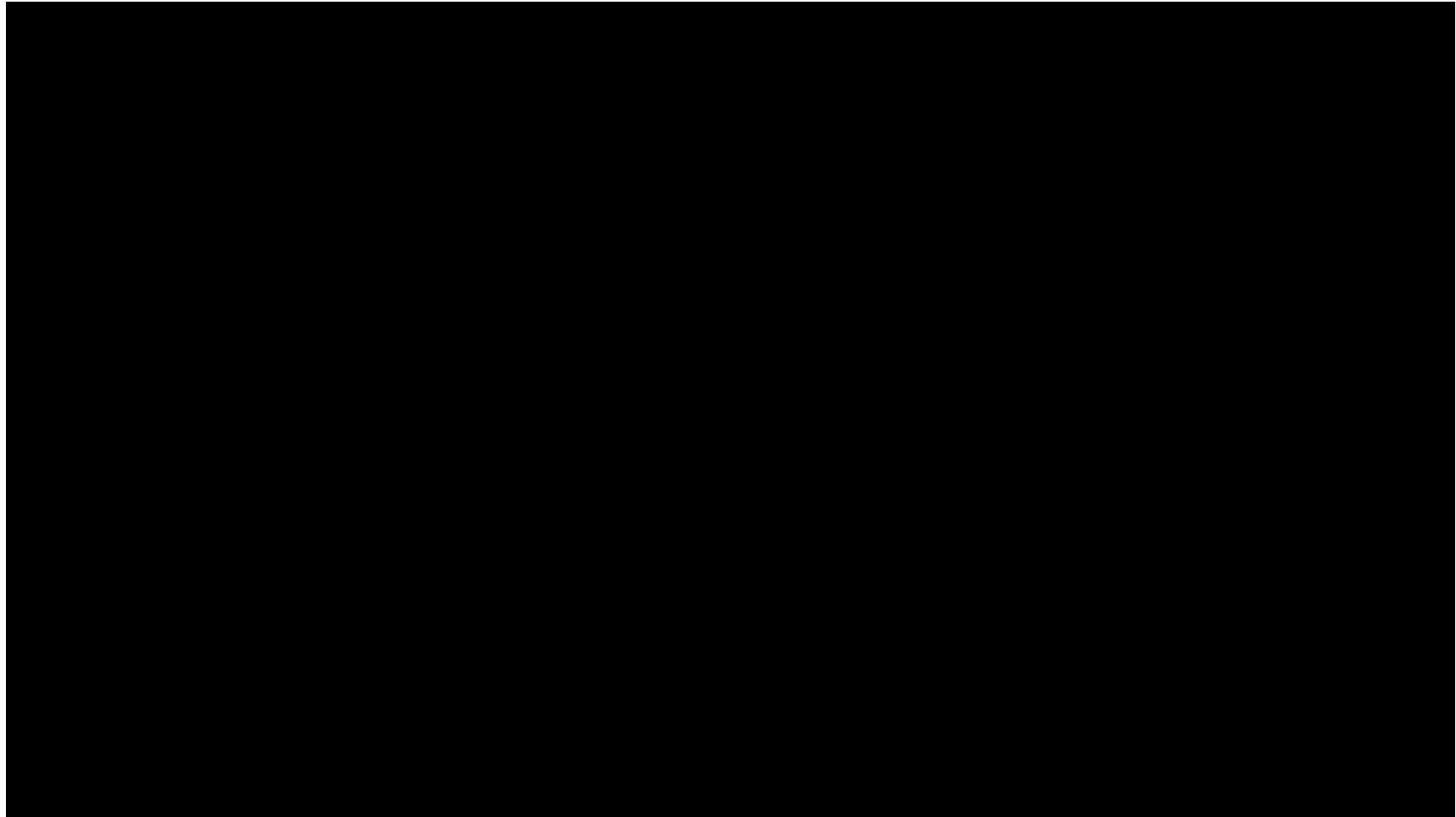


Increased productivity



Dramatically improves productivity
by automation from jolt & squeeze or hand molding

Increased productivity



Dramatically improves productivity
by automation from jolt & squeeze or hand molding

Increased productivity



Molding cycle (max) 100 molds/h

(Not including core set time, for FDNX-0)

Dramatically improves productivity
by automation from jolt & squeeze or hand molding

Best suited for automation
from manual molding

Increased productivity

Quality mold making

Better working
environment



Quality mold making

Aeration Sand Filling



Air consumption

In case of mold size of
610 x 508mm

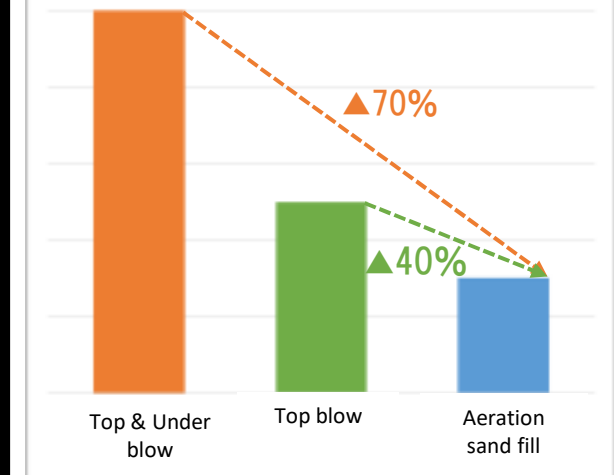


Image of aeration sand filling, FDNX introduces sand from side

Sand, fluidized by compressed air, is introduced and filled in,
under lower pressure than conventional blow system.

Quality mold making

Blow

Aeration

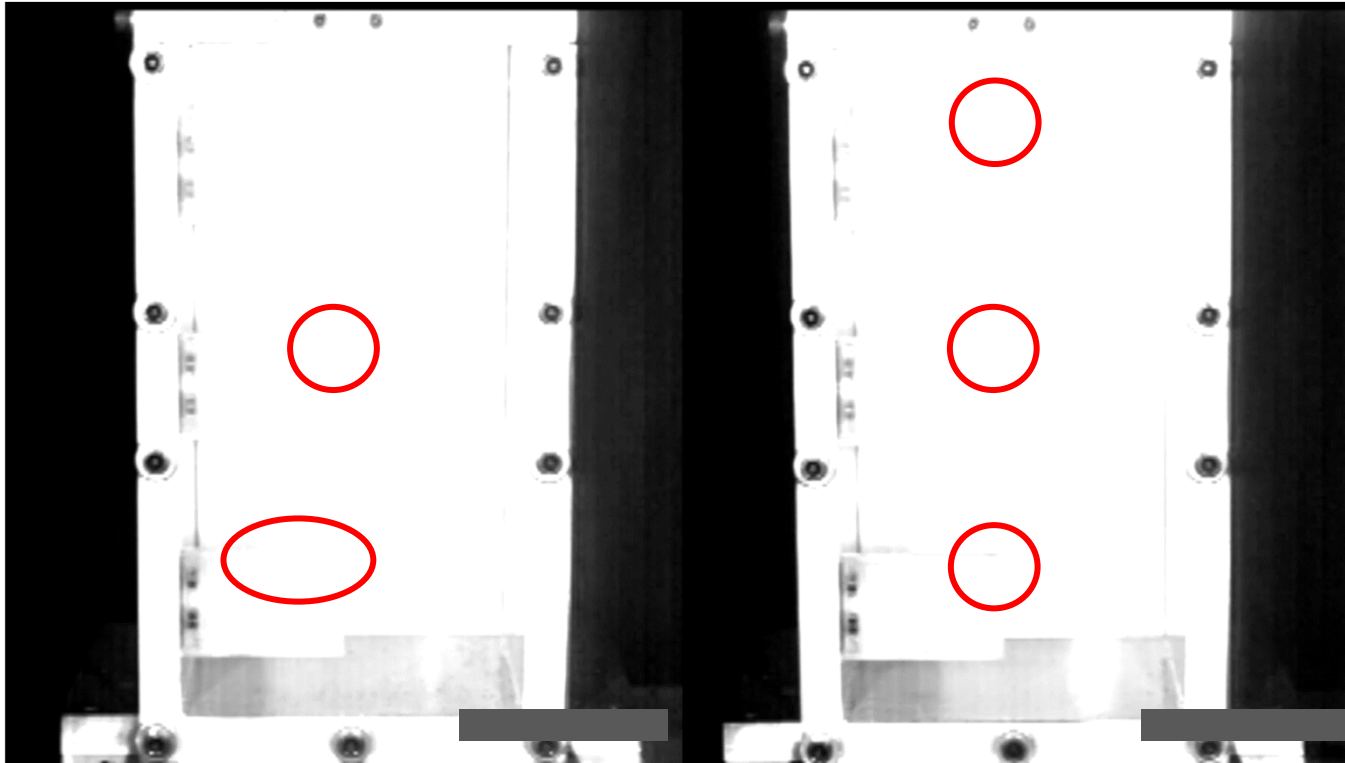
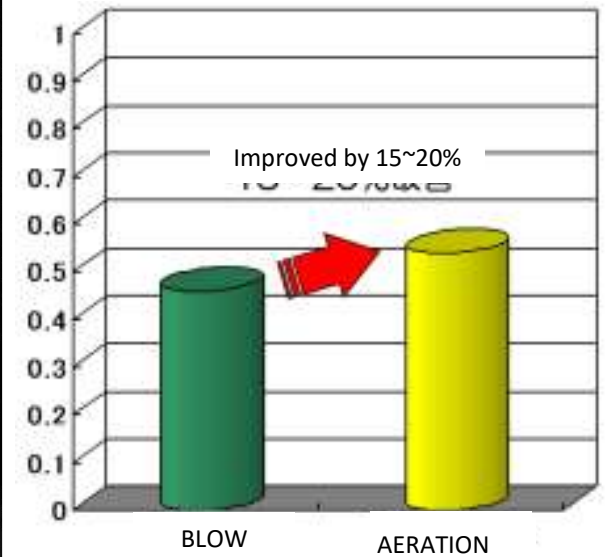


Image of aeration sand filling, FDNX introduces sand from side

Filling density in pocket by
primary sand fill



Sand is uniformly filled in narrow pockets,
contributing stable mold quality.

Best suited for automation
from manual molding

Increased productivity

Quality mold making

Better working
environment



Better working environment



Sand is filled under sealed space by cope and drag flasks,
eliminating spill and flying sand

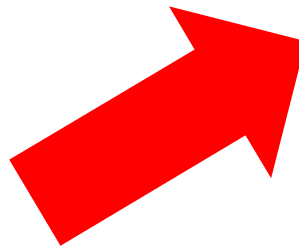
Better working environment

Jolt & Squeeze Molder

FDNX



90dB



Reduced noise
and vibration

72dB



Working environment is greatly improved by **reduced vibration and noise** compared to jolt type molding machine. ◦

Sequence of FDNX



Pattern shuttle-in

Flask set

Sand fill

Squeeze

Pattern draw

Pattern shuttle-out

Core set

Mold close

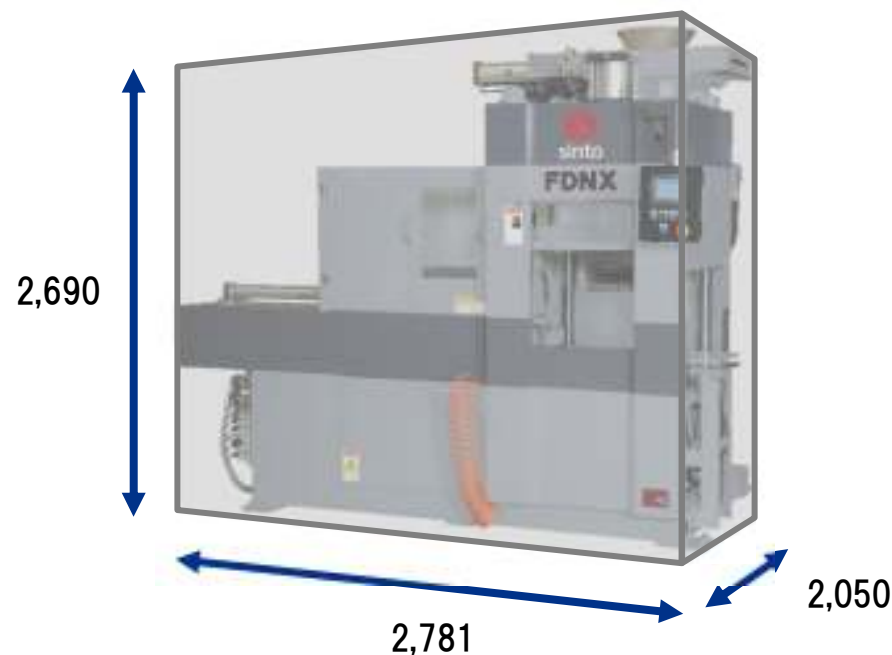
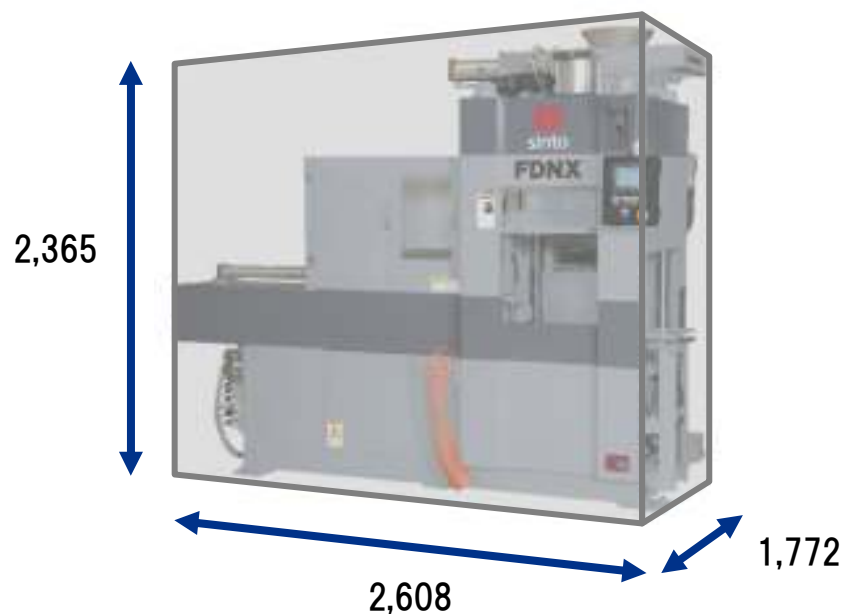
Flask strip

Machine and Mold size

FDNX-0

FDNX- I

(Unit: mm)



		FDNX-0	FDNX- I
Mold size	W x L	450 x 350	500 x 400
	Height	Cope 150 Drag 150 (Option: Cope 120 Drag 120)	Cope 180 Drag 180 (Option: Cope 120 Drag 120)

Introduction of Automatic Molding Machine Model FBO-N



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Horizontal Parting Aeration Sand Filling Flaskless Molding Machine

FBO-N

Features

1. Stable molding and pattern draw mechanism
2. Simple and compact design

Excellent molding performance
(Aeration sand filling system)

Compact design

Energy saving

Low noise (75dB)

Easy pattern change

Pit-less design



Easy operation for everyone

Easy core set

Accept wide range of sand

Ergonomic design

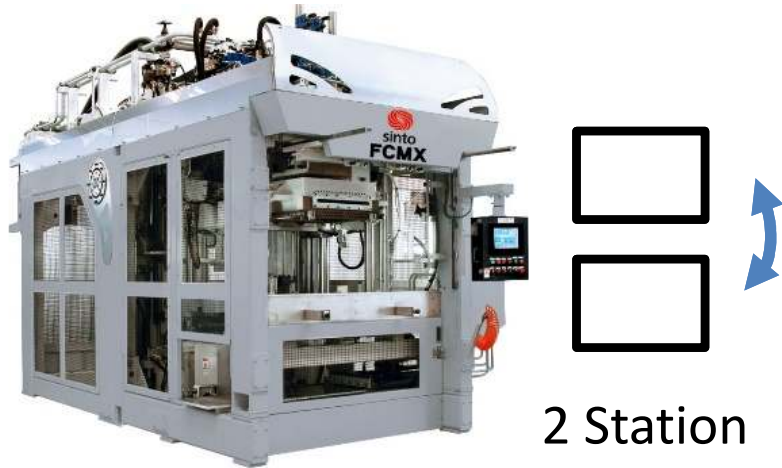
Wide mold size variation

Existing matchplate can be used

FCMX:

–High productivity molding with multi station–

FCMX(2ST)



	FCMX-I & II (2 Station type)	FCMX- III (2 Station type)
Molding speed	Maximum 200 molds/h	Maximum 171 molds/h
Number of station	1 molding station 1 core setting station	1 molding station 1 core setting station
Core setting time	9 sec .	9 sec.

