S-Max® Flex

Robotic sand 3D printer from ExOne

The S-Max Flex was developed to provide faster payback and easy integration into digital casting operations. The all-new additive robotic manufacturing system features an industrial robot with an end effector using advanced Single-Pass Jetting (SPJ) to binder jet into a telescoping job box. With a semi-automatic bulk depowdering station and flexible footprint, users can build complex mold and core designs for rapid casting within one day. An important tool for foundries and pattern shops, the S-Max Flex offers users ease-of-use while offering quality and scalability at an affordable price.

TECHNICAL DATA

Job box (L × W × H)	1,750 x 850 x 700 mm (68.9 x 33.5 x 27.6 in)
Build volume	1,000 l (35.3 ft^3)
Build rate*	73 l/h
Layer height**	0.4 mm
Dimensional accuracy***	+/- 0.5 mm, +/- 0.15% over 500 mm

External dimensions (L × W × H)	8.5 x 4.9 x 4.9 m (28 x 16 x 16 ft)
System weight	5,900 kg (13,007 lbs)
Binder system	Furan
Print media	Natural sand
Electrical requirements	480 V, 3 ph, 15 amps
Exhaust air	26 m^3/h
Base robot	Commercial industrial robot enabling a flexible layout

Specifications are subject to change without notice. Some data may be dependent on other factors such as material or utilization.

* Depending on layer height. ** Depending on material.

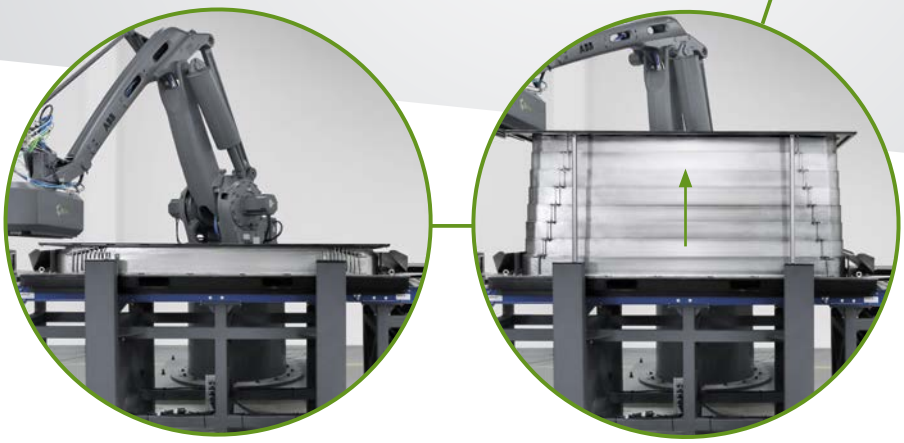
*** Depending on part size and geometry (0.1% of part size)

ExOne™

3D printing system

A Industrial robot
B Single Pass Jetting printhead
C Telescoping build box
D Build station
E Cleaning station
F Fluids cabinet
G Printer operator station
H Bulk sand conditioning hopper
I Depowdering station
J Depowdering bins
K Safety curtain (customer source)

Watch the telescoping job box in the video
www.exone.com/flexvideo



KEY BENEFITS

- Robust, user-friendly design
- Proven industrial robot arm with scalable architecture
- Single-Pass Jetting combines sand deposition, spreading, and binder jetting into each pass of the printhead for fast production speeds
- Titanium components ensure repeatable dimensional accuracy across a range of operating conditions
- Enhanced robot calibration process provides 100-micron accuracy in XYZ space
- Easy-install printhead mount design eliminates timely calibration and alignment for greater uptime and accuracy
- Environmental controls to ensure consistent material flow characteristics for reliable print performance
- Fabricate MFG software automates nesting of parts within the job box
- Turnkey system and safety solution configurable to different space requirements

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