

S-Max[®] Flex



**User-friendly and
affordable 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 x W x H)	1,900 x 1,000 x 1,000 mm (74.8 x 39.3 x 39.3 in)	External dimensions (L x W x H)	8.5 x 4.9 x 4.9 m (28 x 16 x 16 ft)
Build volume	1,900 l (67 ft ³)	System weight	5,900 kg (13,007 lbs)
Build rate*	Up to 115 l/h	Binder system	Furan
Layer height**	0.28 to 0.5 mm (280 to 500 µm)	Print media	Natural sand
Dimensional accuracy***	+/- 0.5 mm (500 µm)	Electrical requirements	480V, 3 ph, 15 amps
Loss on ignition (LOI)**	1.1%	Exhaust air	26 m ³ /h
Reclaim	99%	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.

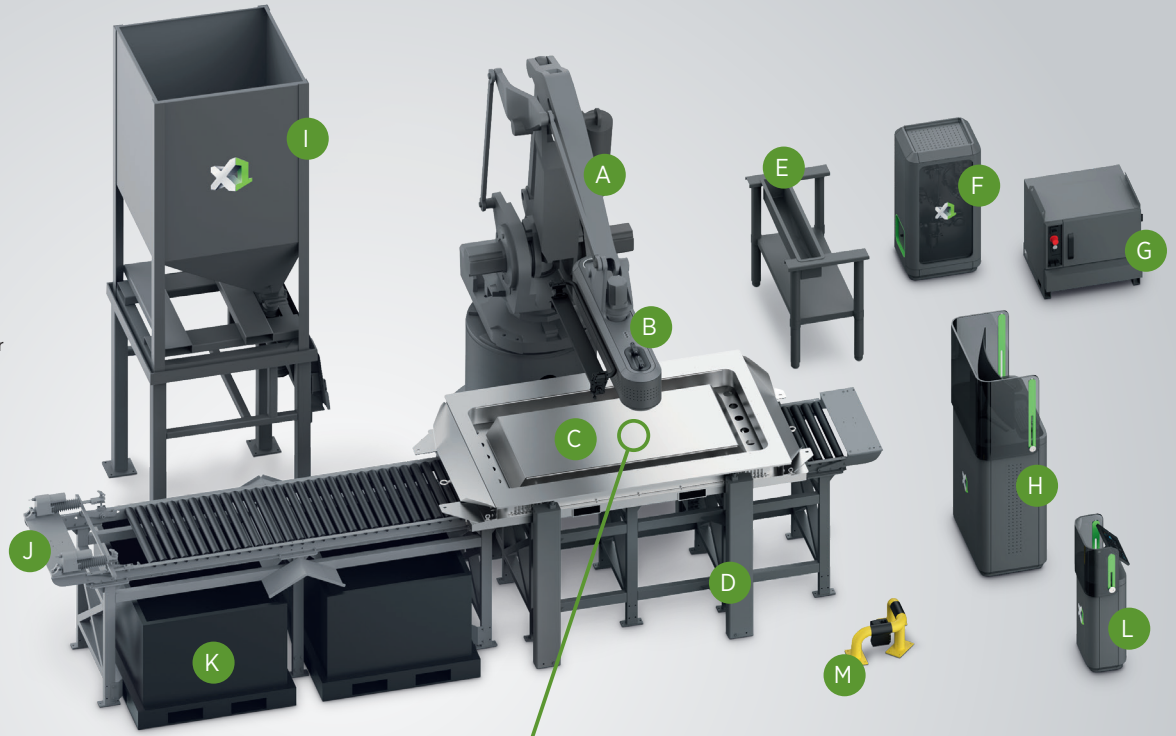
* Depending on layer height. ** Depending on material.

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

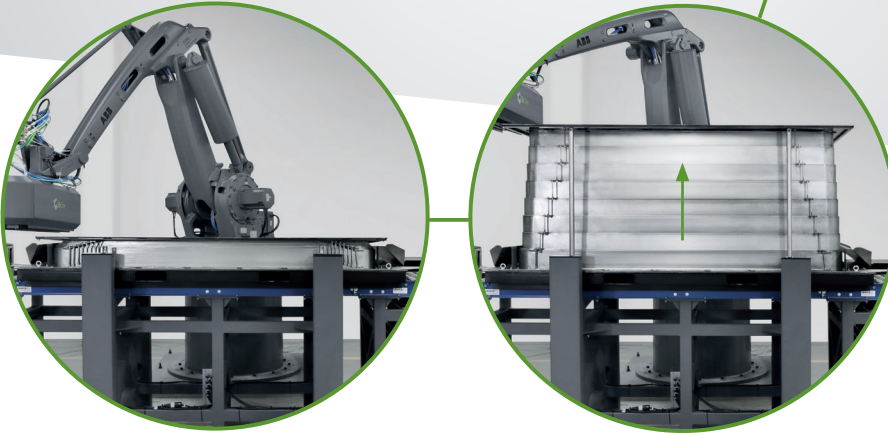


3D printing system

- A Industrial robot
- B Single Pass Jetting printhead
- C Telescoping build box
- D Build station
- E Cleaning station
- F Fluids cabinet
- G Robot controller
- H Printer operator station
- I Bulk sand conditioning hopper
- J Depowdering station
- K Depowdering bins
- L Ancillary operation station
- M Safety curtain



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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