With decades of manufacturing experience and significant investment in research and product development, ExOne has pioneered the evolution of nontraditional manufacturing. This investment has yielded a new generation of rapid production technology in the field of additive manufacturing as well as advanced micromachining processes. ExOne is the optimal partner for any industrial manufacturer who is transitioning their manufacturing business to the digital age.

The Ultimate in Production Flexibility & Efficiency

The S-Max, suited for foundries and design facilities, creates complex sand casting cores and molds directly from CAD data, eliminating the need for a physical pattern to create a core or mold. The ability to cast in hours without hard tooling improves the entire casting process chain.

Flexible batch production
• Each part can be different (i.e. with serial numbers)
• Changes can be made quickly
• Small production lots
• No tools and storage necessary

High productivity
• Large Job Box
• High-speed printing
• Easy unloading
• Cores ready for immediate casting

High accuracy
Highly-accurate printing process guarantees highly-accurate cores

Suited for complex geometry
Greater design freedom

Varied casting applications
Suited for light metals, non-ferrous metals, cast iron and steel

TECHNICAL SPECIFICATIONS

Process cell including job box and roller conveyor

- Build volume: 1 x w x h 1800 x 1000 x 700 mm (70.9 x 39.37 x 27.56 in.)
- Build speed: 59,400 to 165,000 cm³/h (2,10 to 5,83 ft³/h)
- Layer thickness: 0.28 to 0.50 mm (0.011 to 0.0197 in.)
- Print resolution: X/Y 0.07 mm / 0.98 mm (0.003 in. / 0.038 in.)
- External dimensions: 1 x w x h 7000 x 3586 x 2860 mm (275.6 x 141.2 x 112.6 in.)
- Weight: 6500 kg (14 330 lbs)
- Electrical requirements: 400 V / 3 phases, max. 5 kW
- Data interface: STL

CONSUMABLE MATERIALS

FS001: ExOne casting media, silica sand for 0.28 mm layer thickness
FS003: ExOne casting media, silica sand for higher core permeability and higher layer thickness of 0.38 mm
FS005: ExOne casting media, silica sand for 0.50 mm layer thickness
FA001: ExOne Activator, matched to the chemistry and specifications of FS001, FS003 and FS005
FB001: ExOne Binder, furan resin system optimized for low gas emissions and high part strength
FC002: ExOne Cleaner, required for all automated and in-process maintenance operations, dissolves FB001
MI001: Magnesium Inhibitor, to be used with the Mg dosing unit (available as an option) in the sand mixer, inhibits mold reactivity with magnesium

All ExOne materials and delivery systems are designed and engineered for the ExOne process and equipment. The materials include ExOne binder and activator which are specially formulated to be used with ExOne sand.