MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools

# *Better than 3D-printed... MasterPrinted!*


INGERSOLL Machine Tools



CAMOZZI GROUP

# *MasterPrint Robotic*

**Program, Simulate, 3D Print and Mill with Ingersoll Machine Tools' new Robotic Additive Manufacturing Solution**

***MasterPrint Robotic*** is Ingersoll Machine Tools' new family of Additive Manufacturing Robots that provide your company with the ability to program, simulate, 3D print and mill wide-and-high composite parts in a single piece.

***MasterPrint Robotic*** has been designed, built and tested in the dedicated Development Center at the Ingersoll U.S. headquarters in Rockford, Illinois.

***MasterPrint Robotic*** is aimed both at the *fast prototyping* and *durable molds* manufacturing needs of the aerospace and naval sectors, but can serve a wider market, wherever printing cost effectively, quickly, reliably wide-and-high parts is a requirement.

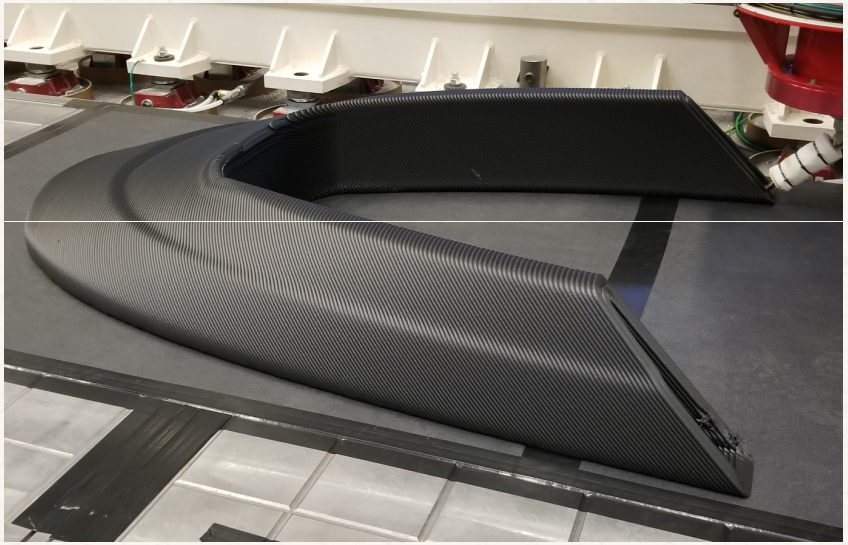
MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools

***MasterPrint Robotic*** **differentiates from the competitors' line-up through core-distinctive features that have made Ingersoll's products easily recognizable and greatly appreciated by the market**

1. ***Flexibility - to manufacture durable tools of complex geometry, with***

   a **family of variable-angle nozzles** to print at any orientation

   a **wide range of materials** to print with, starting from simple pellets: ABS, ULTEM/PEI, PPS/PEEK, PPSU-PESU, Nylon, Polycarbonate (PC), Polystyrene (HIPS) …



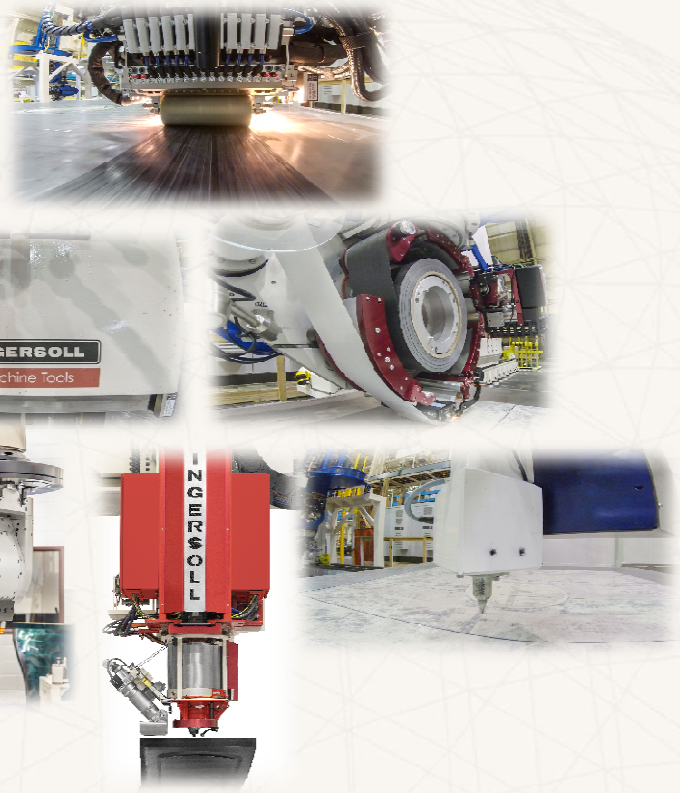
MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools

# *MasterPrint Robotic* 's core-distinctive features

## 2. *An Hybrid System - to expand and upgrade your equipment just with the tools you need*

**multiple modules** all exchanged with and handled by a single robotic positioner :

- 3D Printing
- milling
- fiber placing
- tape laying
- inspection
- trimming




INGERSOLL Machine Tools



CAMOZZI GROUP

# *MasterPrint Robotic* 's core-distinctive features

***3. Capacity - to manufacture wide and high parts in a single piece, using***

**extensive working volumes** starting from 6 m long, 1.5 m high, 1 m wide

**large flow extruders** of 150 – 300 - 500 lbs/h fed by equal size **dryer equipment**


# *MasterPrint Robotic* 's core-distinctive features

## *4. The Siemens 840D CNC*

the standard control for the manufacturing industry, well known by all your operators and maintenance crews:

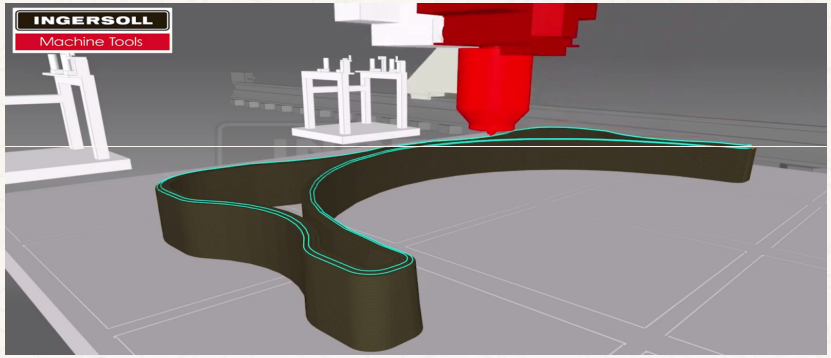
- Control direct and reverse kinematic
- Controls all 7 axes
- Controls all modules
- Manages safety guarding and Cartesian Monitoring

# *MasterPrint Robotic* ’s core-distinctive features

## *5. A Seamless programming environment*

a comprehensive SW suite to seamlessly program and simulate all manufacturing operations, covering:

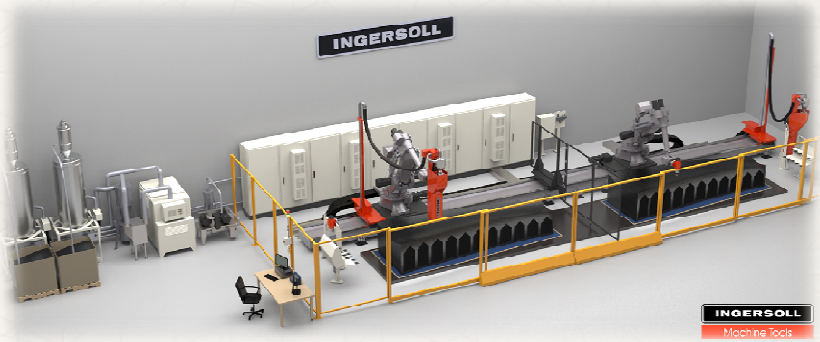
- Tool-path generation
- Post-processing
- Machine simulation
- NC Program creation



# *MasterPrint Robotic* *'s* core-distinctive features

## *5. Simplicity, Safety and Ergonomics*

**perimeter guarding** for total protection.
Safe, easy and convenient access to the workzone in *maintenance mode* with HT8 control pendant




**zone management**

single robot operating in multiple zones

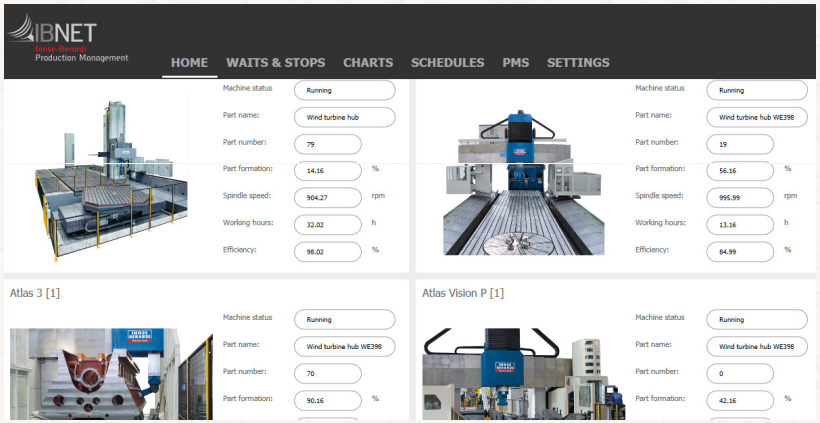
multiple robots sharing multiple zones

MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools

# *MasterPrint Robotic* 's core-distinctive features

remote process/equipment monitoring and pre-emptive maintenance with **Ingersoll IB-NET**

compliance with **U.S. and E.U. (CE) regulations and certifications**




INGERSOLL Machine Tools



CAMOZZI GROUP

# *MasterPrint Robotic* 's core-distinctive features

## *7. Pre Sale and Post Sale support*

### Pre-sale

test and characterize your print-material with our ***MasterPrint Robotic*** at Ingersoll Development Center

print and mill your part with ***MasterPrint Robotic*** at Ingersoll's Development Center

Let your operators and maintenance crews experience ***MasterPrint Robotic*** at Ingersoll's Development Center

### Post Sale

develop your 3D print process with ***MasterPrint Robotic*** at Ingersoll's Development Center before receiving your ***MasterPrint Robotic***

train your operators and maintenance crews with ***MasterPrint Robotic*** at Ingersoll's Development Center before receiving your ***MasterPrint Robotic***

develop the 3D print process of new parts on your new ***MasterPrint Robotic*** with the support and supervision of Ingersoll's Process Engineers at your site

MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools

# *Ingersoll Machine Tools Inc.*

Since its inception in 1891, ***Ingersoll Machine Tools Inc.*** has been an iconic name in the ***milling machines*** sector, serving successfully the defense and then the newborn aeronautics / aerospace industry.

During the 1990s Ingersoll pioneered the ***automatic fiber placement*** and the ***automatic tape laying*** technologies for composite manufacturing, and became one of the leaders for this market after its acquisition by the European holding ***Camozzi Group*** in 2003.

By 2015, the expertise, methodologies and techniques acquired in developing composite manufacturing served as an extraordinary and effective technological springboard that allowed Ingersoll to enter the ***additive manufacturing*** sector and to immediately diversify from the competition with its offer of ***wide-and-high additive manufacturing (WHAM) 3D printers*** that completes and complements its composite and subtractive products portfolio.

INGERSOLL Machine Tools



CAMOZZI GROUP

MASTERPRINT ROBOTIC BY INGERSOLL Machine Tools


***Ingersoll Machine Tools Inc.***

707 Fulton Ave

Rockford

61103 – Illinois

United States

+1 815 987 6000

Info@ingersoll.com

www.ingersoll.com

LinkedIn Page: Ingersoll Machine Tools

YouTube Channel: Ingersoll Machine Tools


INGERSOLL Machine Tools



CAMOZZI GROUP