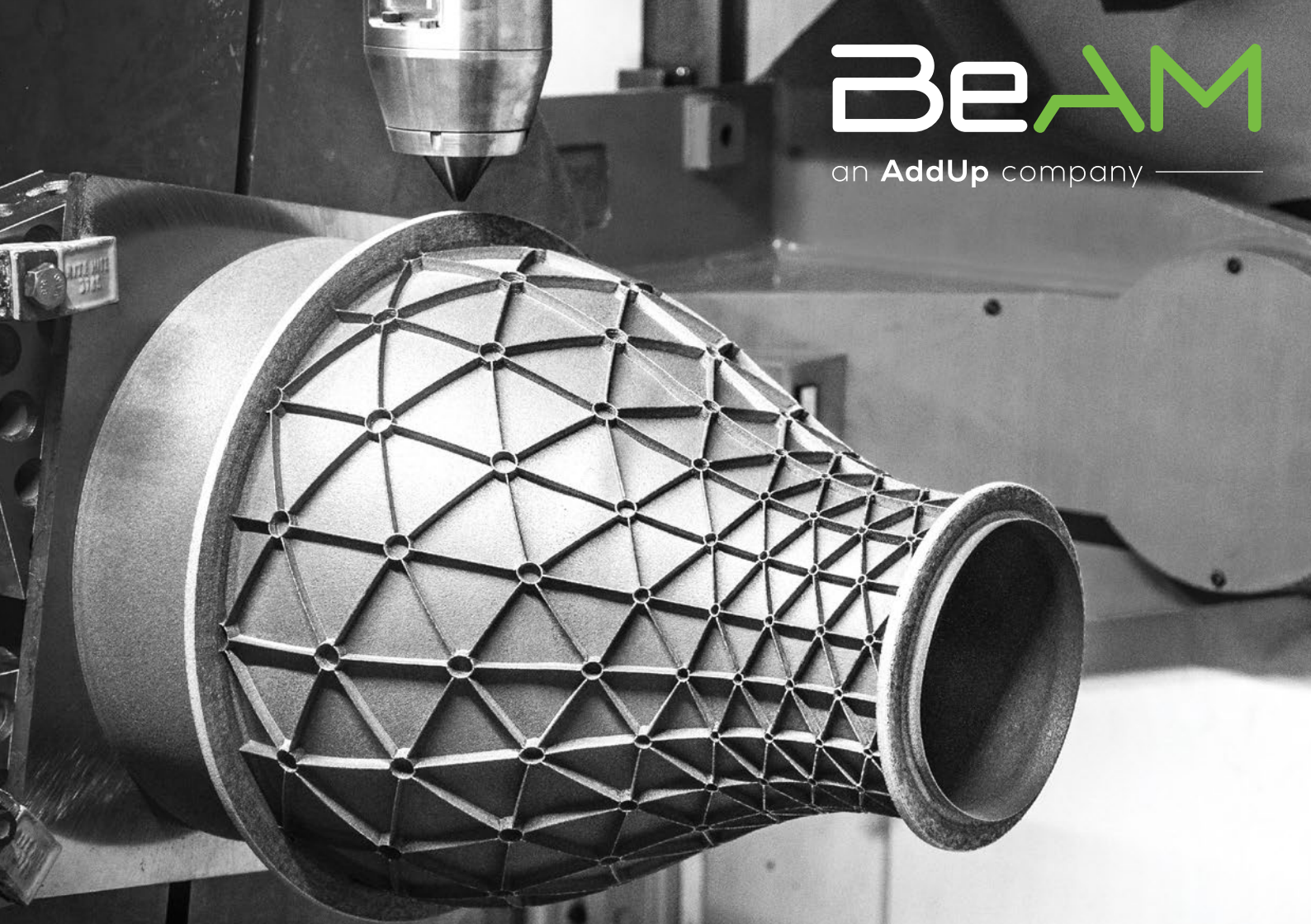
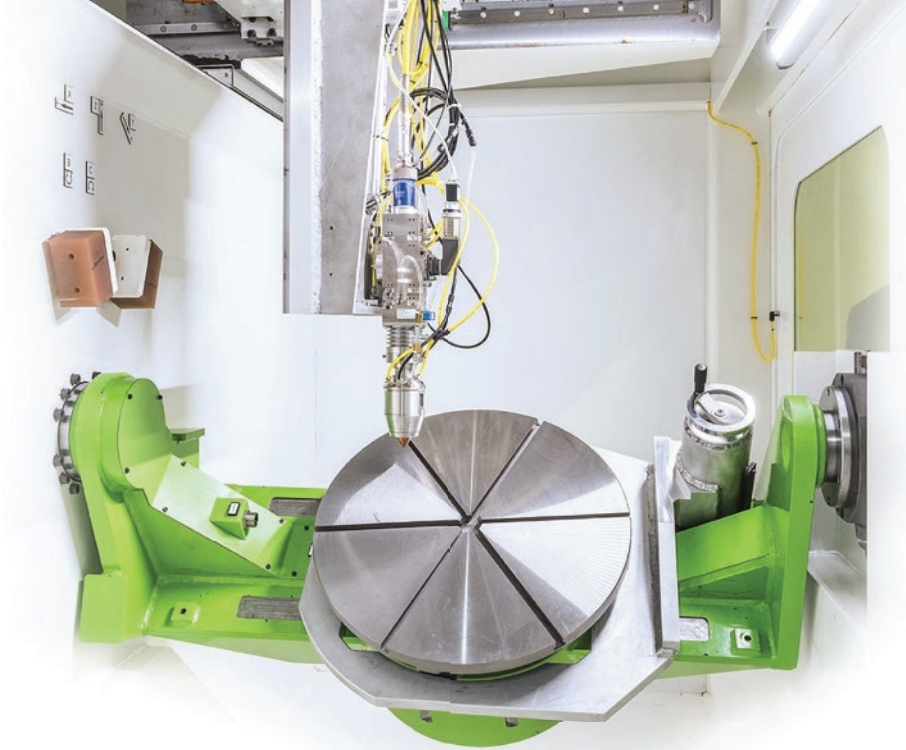

BeAM
an AddUp company

WHO WE ARE



BeAM an AddUp company

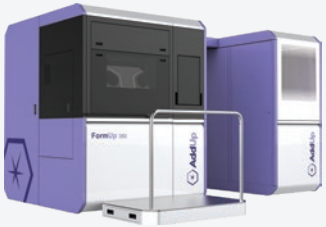
BeAM, an AddUp Company, is a pioneer in designing and
producing dedicated industrial DED additive manufacturing machines.
BeAM works closely with customers to develop and industrialize new methods of manufacturing
parts using DED to eliminate many challenges faced with traditional manufacturing.

AddUp
GLOBAL ADDITIVE SOLUTIONS

DED TECHNOLOGY

BeAM

LBM TECHNOLOGY



FormUp®

GROUP OFFER

Services	AddUp Think	Training Consulting
	AddUp Start	Metallurgy Part Design Process
	Systems	Machines AM Factory Customer Support

AddUp, created in April 2016, is a joint venture between Fives and Michelin. AddUp offers complete industrial metal AM solutions, from machine design, supply to services and part production consulting.

www.addupsolutions.com

OUR TECHNOLOGY

DIRECTED ENERGY DEPOSITION (DED)

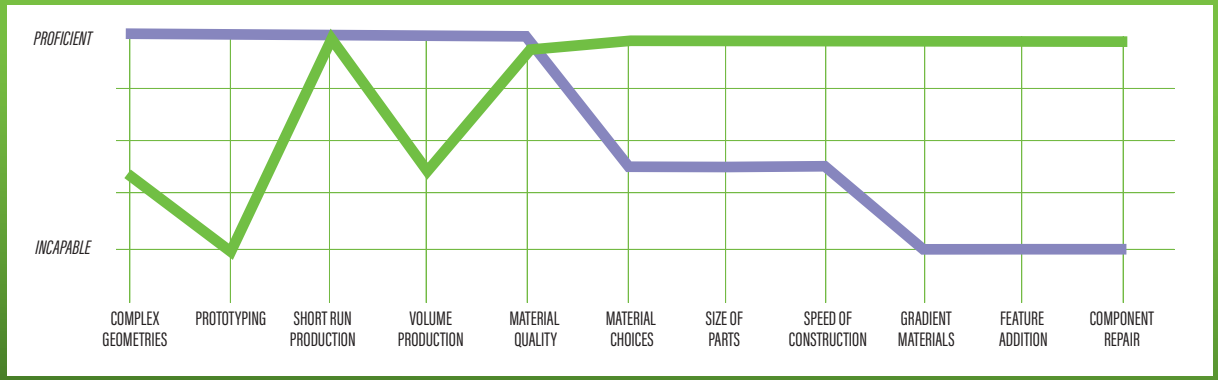
DED, also known as LMD, is an Additive Manufacturing process where focused thermal energy is used to fuse materials by melting them as they are deposited.

BeAM's process involves converging metallic powder through our nozzle to the focal point of the laser, creating a melt-pool laid down in a 5-axis configuration. This allows continuous freedom to build/repair components layer by layer without the need for support structures.

Utilizing traditional numerical controls and using ISO G-code gives our customers tools that their skilled workforce is already accustomed to.

RIGHT TOOL RIGHT JOB

NOT ALL ADDITIVE IS THE SAME



A PROVEN TECHNOLOGY THAT BLENDS INTO YOUR MANUFACTURING CHAIN

DED APPLICATIONS

FIX

- Previously un-repairable with traditional methods
- Extend life of parts
- Reduce lead time

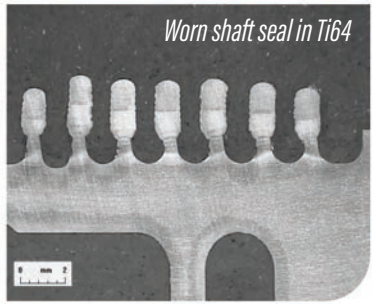
ADD

- Add to existing parts
- Multi-material applications
- Reduce machining time

FORM

- Reduce material waste on small and large parts
- Complex geometries
- Print less, machine less

REPAIR



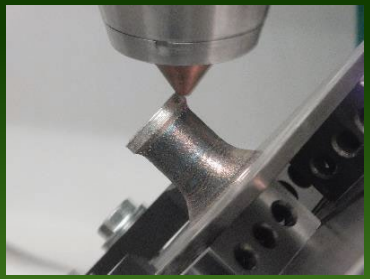
Worn shaft seal in Ti64

CASE STUDY

OEM-approved repair of turbine parts
Previously un-repairable with traditional methods
Over 1,500 components back in flight
Can be repaired 4 times before life cycle is complete

REPAIR OF BLADES

-Less material waste
-Low heat input
-Less post-machining



Addition of features on tube in Inconel 625

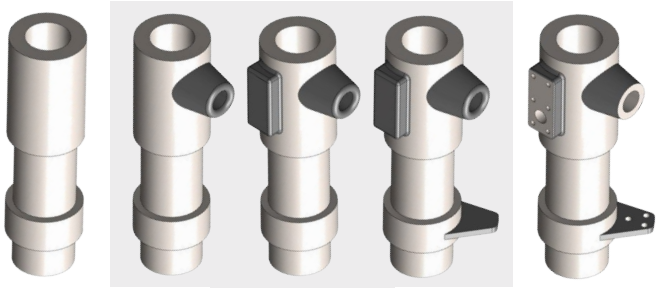
ADDITION OF FEATURES

PROCESS MIX

Use each manufacturing technique at its best to optimize cost, quality, and time

MULTI-MATERIAL APPLICATIONS

Add functions in another (compatible) material



SIMPLE MACHINED PART — **FEATURE ADDITION SEQUENCE** — **MINIMAL POST PROCESSING**

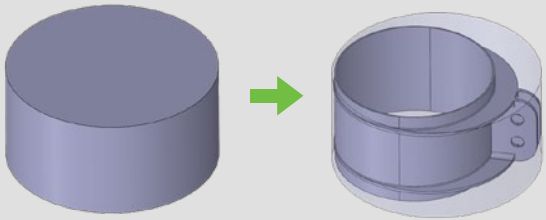
ADD TO EXISTING PARTS

REDUCE MACHINING TIME

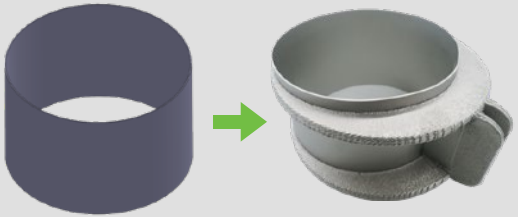
CONVENTIONAL / DED COMPARISON

HIGH LOADED RETAINER

CONVENTIONAL



DED



Material: Ti64
Build time: <2 hours

SAVE MATERIAL AND REDUCE BUY-TO-FLY RATIO FROM 9:1 TO 2:1

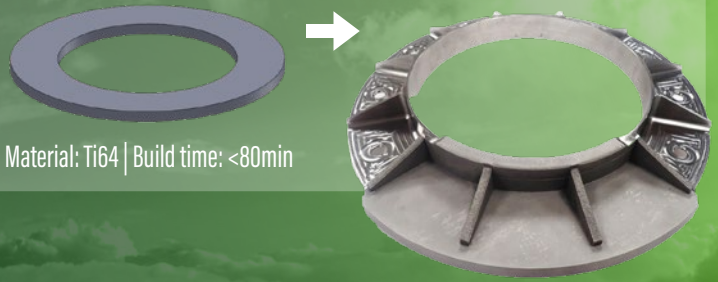
- Better repeatability than with manual welding processes
- Work under controlled atmosphere to ensure high material quality & safety
- Reduce machining cost - Easily fits in the manufacturing chain

AEROSPACE FLANGE

CONVENTIONAL

DED

After heat treatment + machining



Material: Ti64 | Build time: <80min

With courtesy of

PFW

NEAR NET SHAPE GEOMETRIES

LARGE DIMENSIONS, COMPLEX SHAPES
MULTI-MATERIAL BUILDS, MATERIAL GRADING

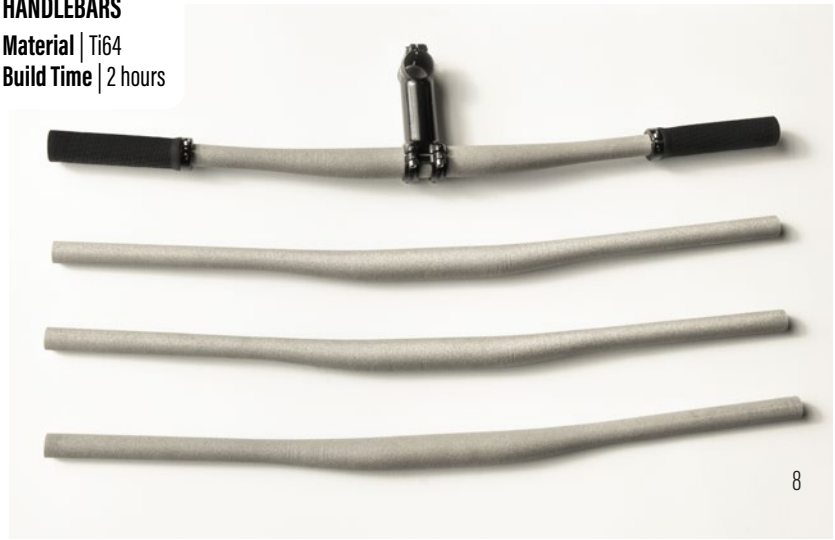
ISOGRID
Material | 316 SS
Build Time | 13 hours

NEAR NET SHAPES

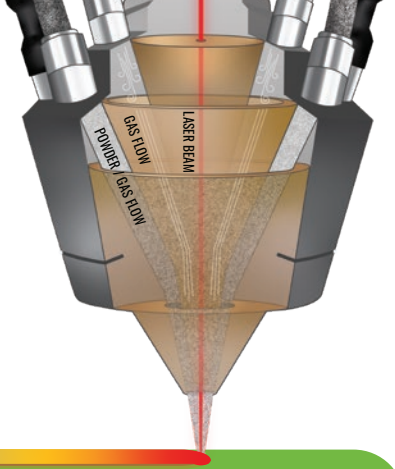
EXHAUST NOZZLE
Material | IN718
Build Time | 11 hours

DOME
Material | IN718
Build Time | 4 hours

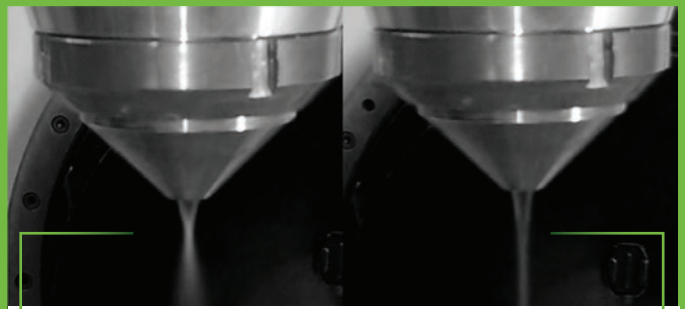
MOUNTAIN BIKE HANDLEBARS
Material | Ti64
Build Time | 2 hours



BeAM NOZZLES



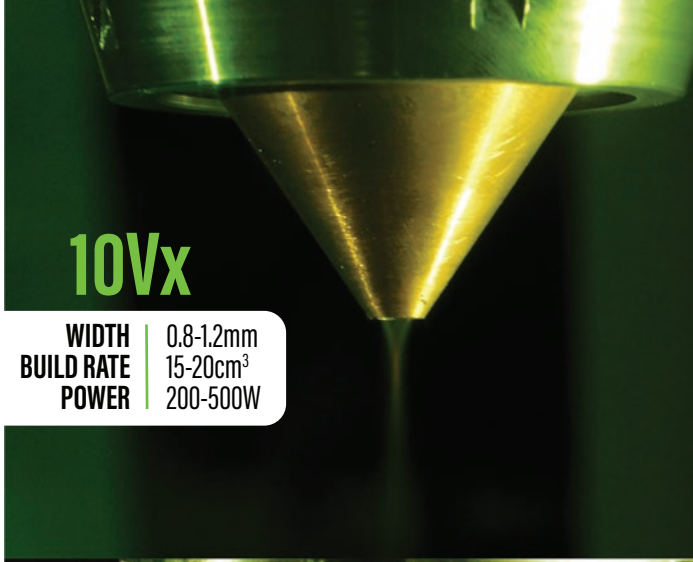
The BeAM Coaxial Difference



SINGLE GAS FLOW

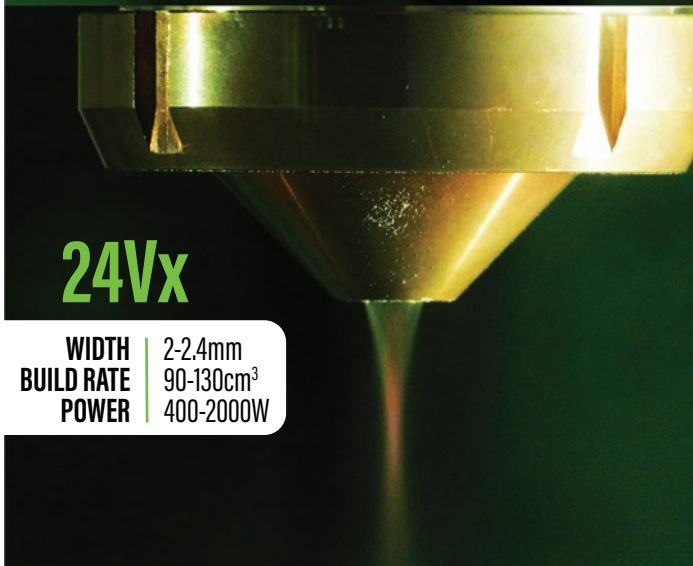
DUAL GAS FLOW

Our range of industrial coaxial deposition nozzles offer precise, different deposition width powered by high quality fiber laser sources of 500 W to 2 kW and a dual gas flow.



10Vx

WIDTH	0.8-1.2mm
BUILD RATE	15-20cm^3
POWER	200-500W



24Vx

WIDTH	2-2.4mm
BUILD RATE	90-130cm^3
POWER	400-2000W

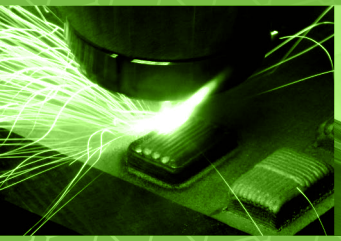
MACHINES

INDUSTRIAL | PRODUCTION READY | HIGH PERFORMANCE
5-Axis machines with Siemens 840D control | Operated by ISO G-Code
Controlled atmosphere | BeAM Nozzles | Touch Probe | Melt-Pool Monitoring

MODULO 250

R&D - SMALL PARTS | COMPACT | ECONOMICAL

Build volume: 400 x 250 x 300mm
500W fiber laser
10Vx deposition head
Powder feeder with up to 2 hoppers of 1.5L



MODULO 400

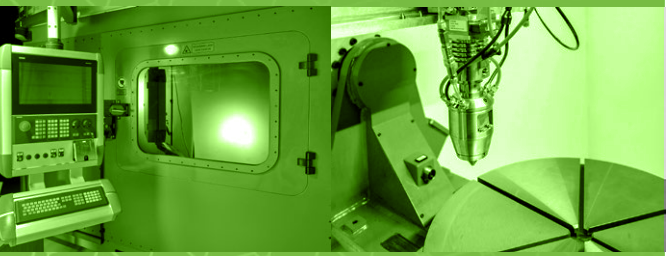
VERSATILE | PORTABLE | UPGRADABLE

Build volume: 650 x 400 x 400mm
500W to 2kW fiber laser
10Vx/24Vx deposition heads
Powder feeder with up to 5 hoppers of 1.5L

MAGIC 800

FLAGSHIP | LARGE CAPACITY | ADAPTABLE

Build volume: 1200 x 800 x 800mm
500W to 2kW fiber laser
10Vx/24Vx deposition heads
Powder feeder with up to 5 hoppers of 1.5L



WE ARE A PROUD MEMBER OF

AACHEN CENTER FOR ADDITIVE MANUFACTURING

Advanced Remanufacturing and Technology Centre
A*STAR

IRT SAINT EXUPERY

Mobility goes Additive

SOME CUSTOMERS

The University Of Sheffield.

MHPS
Mitsubishi Hitachi Power Systems

Carleton UNIVERSITY

isae SUPAERO
Institut Supérieur de l'Aéronautique et de l'Espace

OAK RIDGE National Laboratory

Empa
Materials Science and Technology

RUDN university

SAFRAN
AEROSPACE · DEFENCE · SECURITY

LAPRAS

ÉCOLE POLYTECHNIQUE
UNIVERSITÉ PARIS-SACLAY

voestalpine
ONE STEP AHEAD.

OPEN INNOVATION

We collaborate with R&D centres and universities to maintain our technological lead.
We also offer knowledge transfer to partners that wish to become regional DED experts.

With the support of Grand Est
ALSACE CHAMPAGNE-ARDENNE LORRAINE

CONNECT

- BeAM Machines
- BeAM_3DPrinting
- BeAM Machines
- www.beam-machines.com

NORTH AMERICA

usa@beam-machines.com
(513) 745-4510

EUROPE

contact@beam-machines.com
+33 388 608 750

SINGAPORE

singapore@beam-machines.com
+65 6909 9345