ADDITIVE MANUFACTORING

COLD SPRAY

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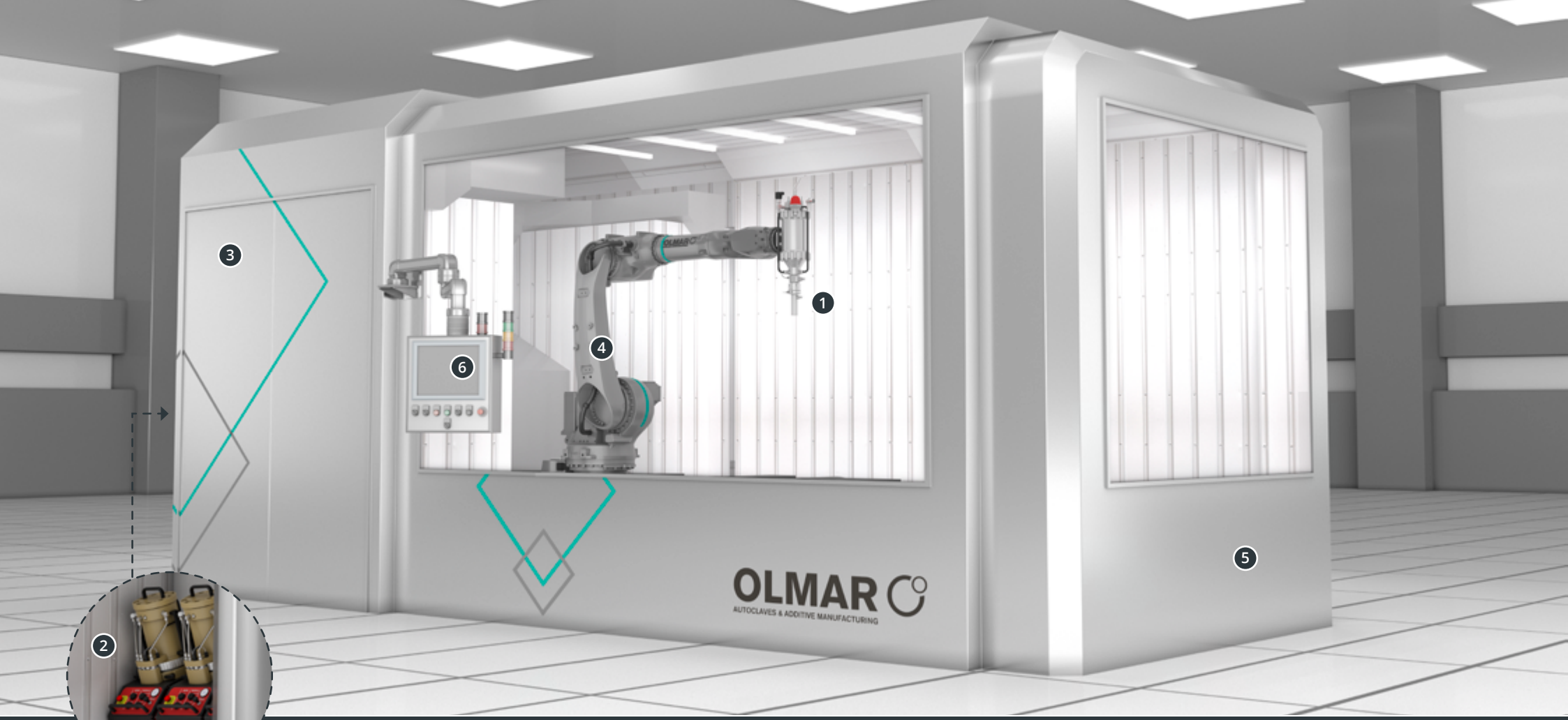
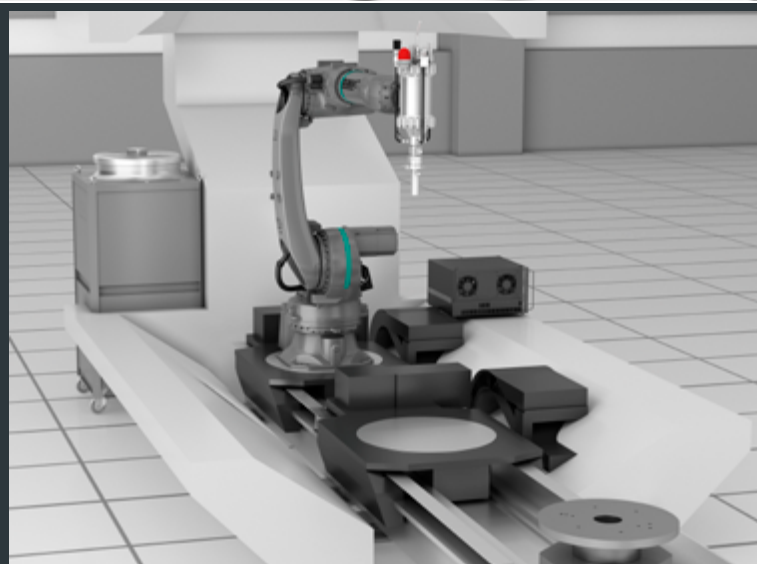
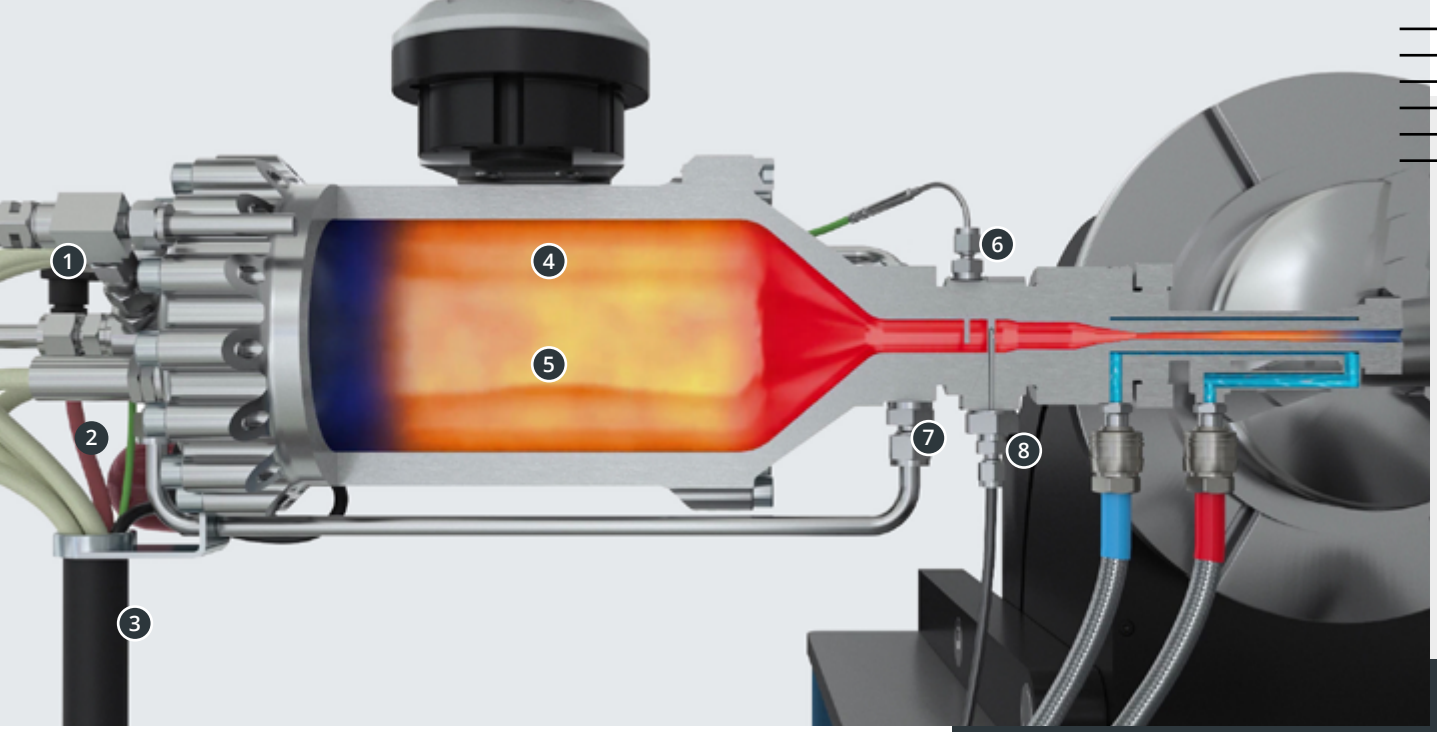


1. SPRAY GUN
2. POWDER FEEDERS
3. CONTROL UNITS RACK
4. KINEMATIC SOLUTION
5. ENCLOSURE BOOTH
6. CONTROL SYSTEM: SIEMENS PLC

APPLICATION SECTORS





1. Pressure sensor
2. Process gas
3. Power supply
4. Heating element
5. Heated high pressure chamber
6. Temperature sensor
7. Powder injection
8. Nozzle coofing

STRONGER, LIGHTER, FASTER

- Increased stiffness
- Less heat distortion
- Improved accuracy
- Weight reduction
- High Speed Manufacture
- Novel Metals
- Faster manufacturing time
- Superior performance to castings
- Less machining tan stock bar/rods
- Inconel 718 – high strength at high

COLD SPRAY TECHNOLOGY

- High speed projection of metallic powder particles (< 200°C).
- Combination of metal alloys.
- Development of new materials.
- Creation of new anti-corrosion coatings.
- Anti-wear coatings.
- Repairs of damaged / worn parts.
- Screeding of damaged areas.
- Generation of “Near Net Shape” parts.

MATERIALS

- Titanium and Titanium alloys, including Ti-Al6-4V, CP, and more,
- Steel and steel alloys. CrMo, S275, 174PH and more
- Stainless Steel alloys, 316L, 304, and more
- Copper
- Invar 36
- Nickel alloys
- Magnesium
- Aluminum alloys, 2xxx, 5xxxx, 6xxxx, 7xxxx

ADVANTAGES

- High deposition rates (up to 10Kg/h/feeder)
- Absence of inert atmosphere
- Combination of disimilar materials
- Any metal alloy allowed
- Low energy consumption and non-toxic waste
- Multicomponent position

DATA SHEET

SPECIFICATIONS	
Build Envelope	4500x4000x2000mm
Footprint	6000x3800x2800mm
Maximum Payload	875 Kg
SYSTEM TECHNICAL DATA	
Control	
Platform	SIEMENS
Interfacing	PROFINET, PROFIBUS, DEVICENET, ETHERCAT
Input Data	PROFINET, PROFIBUS, DEVICENET, ETHERCAT
Feedback Data	PROFINET, PROFIBUS, DEVICENET, ETHERCAT
PROCESS PARAMETERS REGULATORS	
Gas Flow	Tolerance +/- 0,5% Set Point
Chamber Temp	Tolerance +/- 3 9C
Powder Output	Tolerance +/- 0,5%
OPERATION	
Maximum Temperature	1100 9C
Maximum Operating pressure	S6 Bar
Material Change	20 min/less 1min if other feeders available
GENERAL MAINTENANCE	
Nozzle change	15 min
Heater change	45 min
POWDER FEEDER SYSTEM	
Operating Pressure	same as process
Feed Rate	Depend on material, number of feeders
Weight	
*Up to 4 Powder feeder configuration	

OVERALI SYSTEM FEATURES
Intuituve touch Panel interface
Protective. ATEX Booth
Integrated Dust extraction
Integratied Dust deaning
Integrated Powder feeder dean area
ROBOT SYSTEM
KUKA KRSOR2100 G AXIS Robot
KL100 Linear Track
KP1 VSO0 Rotary Table
SYSTEM ENCLOSURE
Insulated Composite panel Structure
Wide view area with Double Sheet p/us internal chamber
Wide Front and Side access included roo/ accesible.
Positive pressure pneumatic sealed system
EXTRACTION SYSTEM
Extractor
Velocity 2 m/s on the overall volume extrated
Filters
Collection Bin
xxx Kw fan Set plus starter and pulse controlle
VACUUM SYSTEM
Plug and play distributed sockets for deaning
70 mm High Vacumm to single connection Point
Vacuum Hose lenght and accesories on demand
Self deaning filters
4 Kw 470 m3/h

+ADVANTAGES

- Joining dissimilar materials
- Part consolidation
- No welding or heat-affected zones
- No welding or forming
- Large single piece
- 40% less material than billet
- Near net shape – minimal machining
- Up to 45% lighter than Steel alternative

SPRAY BOOTH

- Composite Aluminum-Foam-Aluminum panel construction.
- Telescopic Doors and Roof to easy part handling.
- Separate volumes for processing, material manipulation, maintenance and control.

1. Aluminium sheet
2. Core

R&D

- Development of process parameters for new materials.
- Test and technology demonstrators.
- Additive manufacturing on demand.
- Development of metal matrix composite materials.