

materialise

innovators you can count on



Materialise overview:



ESTABLISHED

1990 year

approx. 105 000 pcs per month

PRODUCTION CAPACITY

FOUNDER

Wilfried Vancraen

HEADQUARTER

Belgium, Lueven

PRESENCE

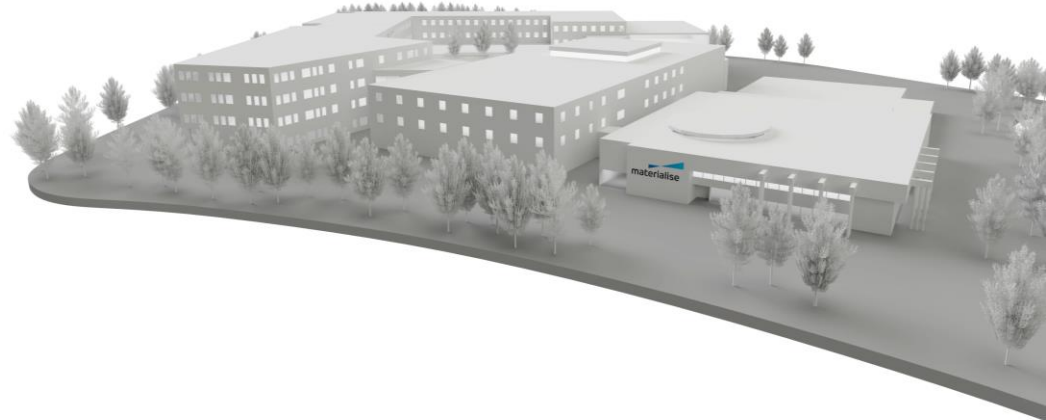
24 offices in 18 countries

PERSONNEL

+ 2 000 employees

MACHINES PARK

+ 180 machines



Materialise: A Global Presence

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- Offices
- Production Center
- Competence Center

Creating innovation and competitive advantage across industries



**Materialise
Software**



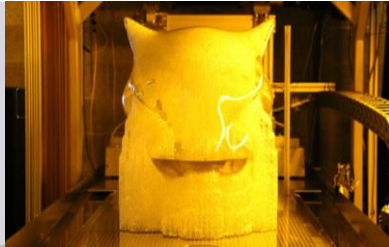
**Materialise
Manufacturing**



**Materialise
Medical**

3D Printing Technologies

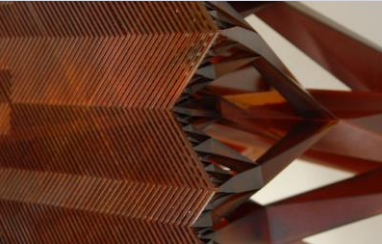
(Mammoth)
Stereolithography



PolyJet



Multi Jet Fusion



FDM



Vacuum Casting



Laser Sintering



(Z-Corp)
Colour Jet



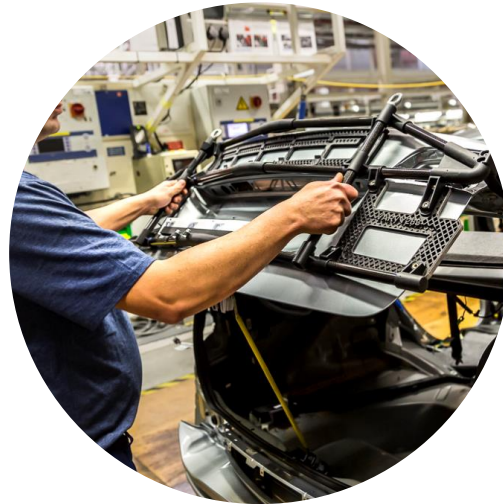
Metal 3D Printing

Market segmentations:

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Prototyping



Production
Lines Applications



End-use parts



Prototypes

With final finishing

Certified production for final products

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FDM

- ▶ ABS, PC, Ultem + 8
- ▶ 914 x 610 x 914 mm
- ▶ $\pm 0,2\%$, min $\pm 0,2$ mm



Vacuum Casting

- ▶ 50 materials, rubbers
- ▶ 1800 x 1200 x 1000 mm
- ▶ $\pm 0,3\%$, min $\pm 0,3$ mm



SLS/ MJF

- ▶ Poliamids
- ▶ 650 x 330 x 560 mm
- ▶ $\pm 0,3\%$, min $\pm 0,3$ mm



SLM

- ▶ AlSi10Mg, TiV4, In718A, S316L
- ▶ 500 x 380 x 295 mm
- ▶ $\pm 0,2\%$, min $\pm 0,2$ mm

Cable Twist Wheel

Fokker Elmo



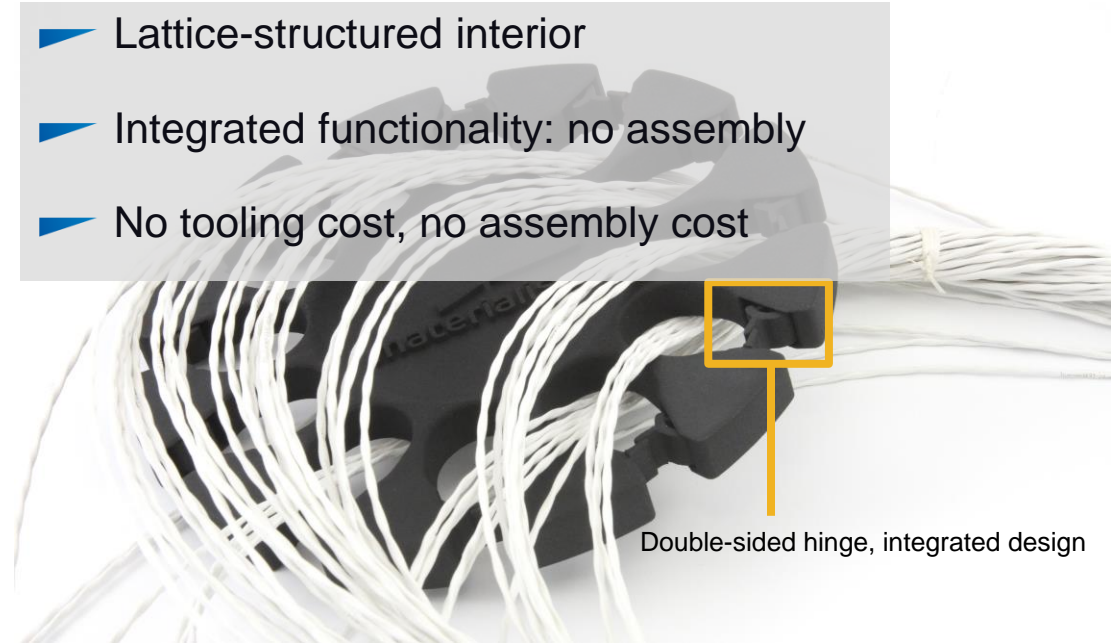
Redesigned for Additive Manufacturing

Challenge

- ▶ Weight-to-strength ratio
- ▶ Assembly of hinges
- ▶ High cost

Solution

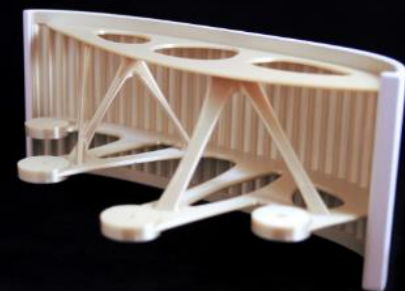
- ▶ Lattice-structured interior
- ▶ Integrated functionality: no assembly
- ▶ No tooling cost, no assembly cost



Double-sided hinge, integrated design

Panel Airbus A350

Certified manufacturing and quality management



Fixtures



Casting
Patterns



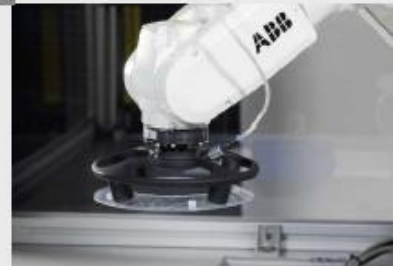
Vibratory
Feeders



Quality Control
Aids



Brackets



Jigs and
Working Aids



Nozzles



Grippers

Production area

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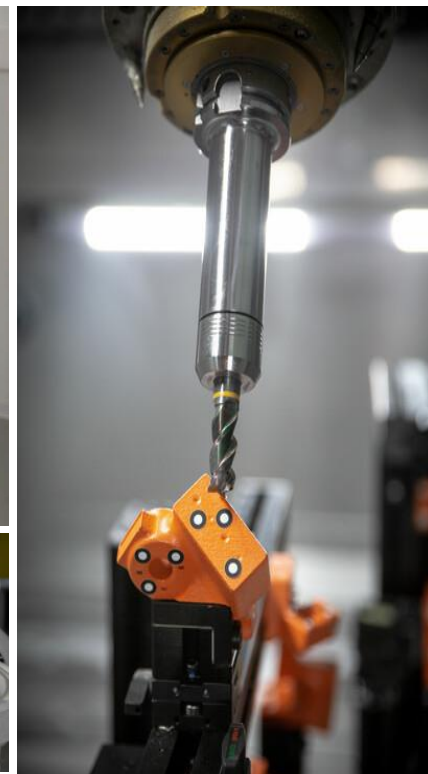
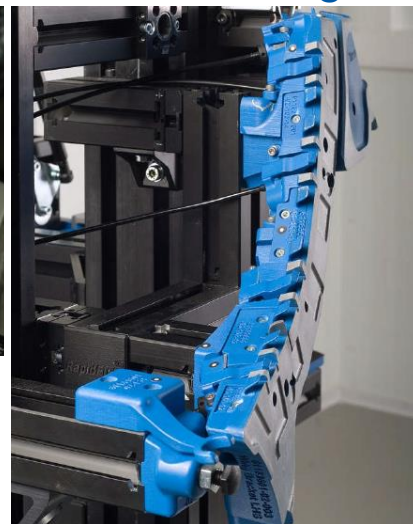
Amount of parts

Short series product up to 1000 PCS.



Geometry

Difficult geometries, hard to mill, specific product not from catalogue,



Datasheet			
Task-Sensor - Solidores3000			
	Units	ASTM#	Range
Density	g/cm ³		1.19 - 1.2
Tensile Modulus	MPa	D638M	2070 - 2285
Tensile Strength at Yield	MPa	D638M	60 - 66
Elongation at Yield	%	D638M	3.0
Elongation at Break	%	D638M	4.6 - 7.2
Flexural Modulus	MPa	D790M	1843 - 2017
Hardness	ShoreD	D2240	84
Notched Izod Impact	kJ/m	D256A	30 - 36
Water Absorption	%	D570-98	0.36 - 0.40
Glass Transition Temperature	°C	E1645-05a	40 - 48
Heat Deflection Temp (0.46MPa)	°C	D648 - 07B	53 - 57
Heat Deflection Temp (1.92MPa)	°C	D648 - 07B	49 - 57
Colour	Opaque Gray		

PREMIUM MATERIAL



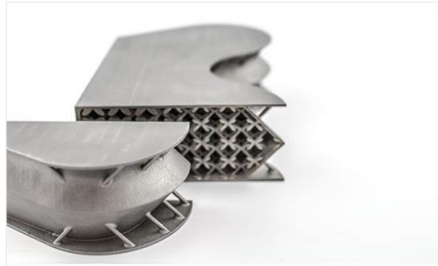
- ✓ Stiff
- ✓ Impact resistant
- ✓ Water resistant
- ✓ Durable
- ✓ Automotive body parts
- ✓ Machine covers
- ✓ Functional prototypes
- ✓ Durable concept models
- ✓ Robust scale models

Materials SLM



Aluminum (AlSi₁₀Mg)

- > Good strength and thermal properties with low weight
- > Flexible post-processing possibilities
- > Lead time: 10 working days
- > Maximum part dimensions: 500 x 280 x 315 mm



Titanium (TiAl₆V₄)

- Excellent mechanical properties with very low specific weight
- Corrosion-resistant
- Lead time: 10 working days
- Maximum part dimensions: 245 x 245 x 270 mm



Stainless Steel (316L or 1.4404)

- > Excellent strength, high ductility & good thermal properties
- > Highly corrosion-resistant
- > Lead time: 10 working days
- > Maximum part dimensions: 250 x 250 x 280 mm



NEW

Inconel (IN718)

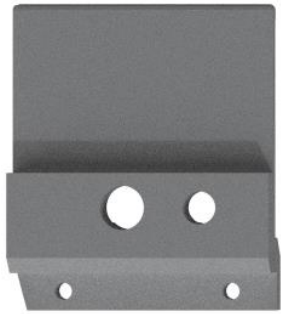
- Exceptional thermal resistance up to 700°C
- High yield, tensile and creep-rupture properties
- Long-duration strength at extreme temperatures
- Lead time: 10 working days
- Maximum part dimensions: 250 x 250 x 295 mm

Kick off: Suction Gripper

- ▶ Reduce costs
- ▶ Save weight
- ▶ Increase part lifetime



A design evolution: Suction Gripper



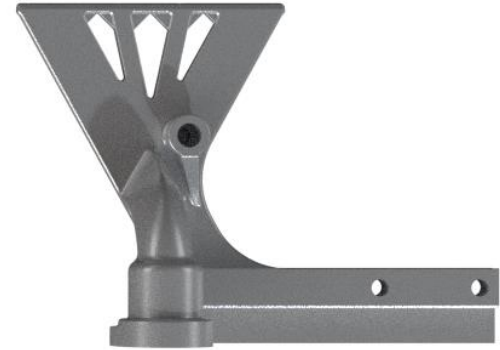
▶ € € € + assembly

▶ 237g



▶ € € + assembly

▶ 87g



▶ € + no assembly

▶ 60g

PHILIPS
Lighting

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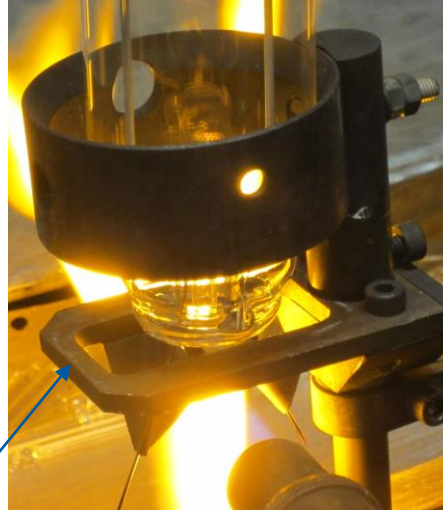


89 000 €/ yearly

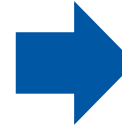
CASE STUDY

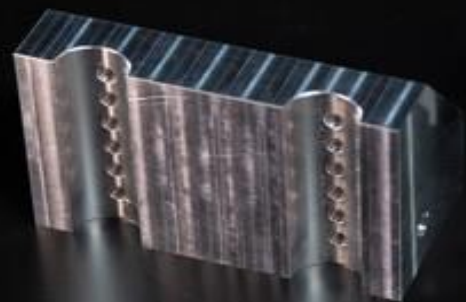
Kick off: Brackets for Philips

- ▶ Complex geometries
- ▶ Product specific components
- ▶ Redesign for 3D printing
- ▶ Manufactured in 1 piece
- ▶ Shortened lead time
- ▶ Affordable small series

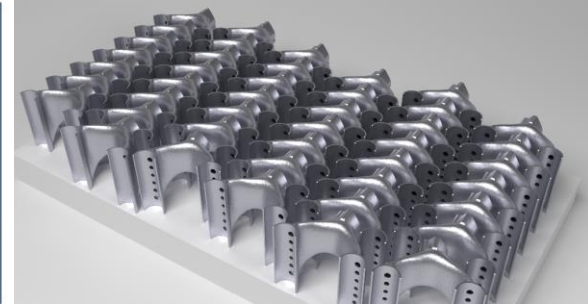
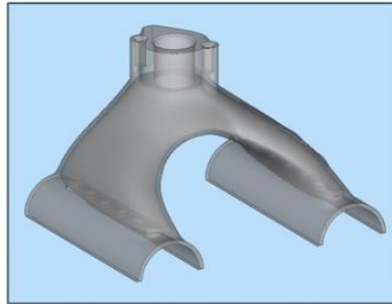
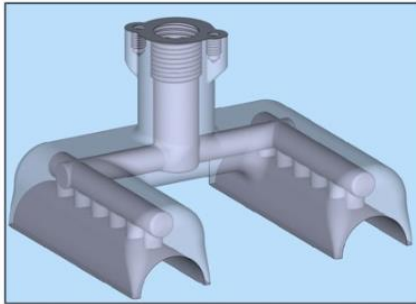
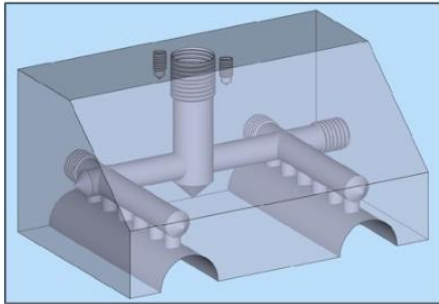


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A design evolution: Lipstick Gripper



	Volume [mm ³]	%	Price	%
Conventional Gripper	242.900	100	300€	100
Printed Gripper	50.590	-79	317€	+6
Redesigned Gripper	15.150	-94	150€	-50

Coatings & sealants



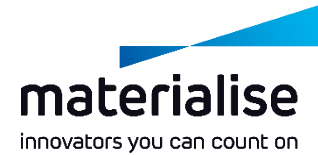
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- ▶ Fuel resistance
- ▶ Chemical resistance
- ▶ Water resistance
- ▶ Air-tighting
- ▶ Specified by customer

Additional layers

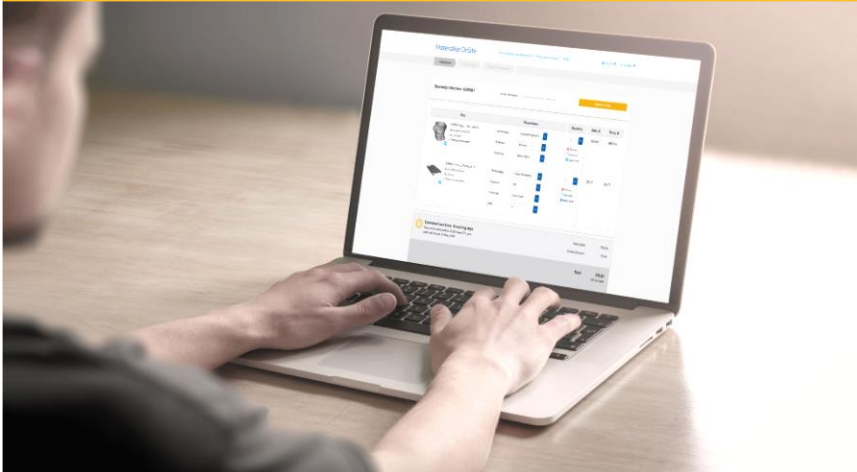


How we cooperate with customers:



Materialise OnSite

| www.materialise.com/onsite |



- Available 24/7
- Online quoting and ordering
- Fast line service
- Wide range of materials and finishings

Project Management Team

| projekty@materialise.com |



- Long-term and complex projects
- Co-creation approach
- Certified manufacturing
- Technical support



materialise manufacturing

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Thank you for your attention