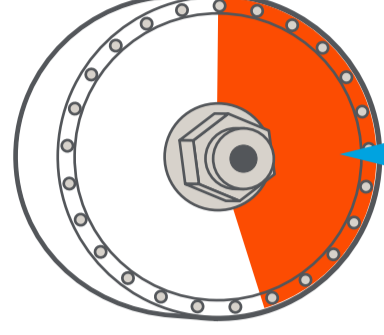
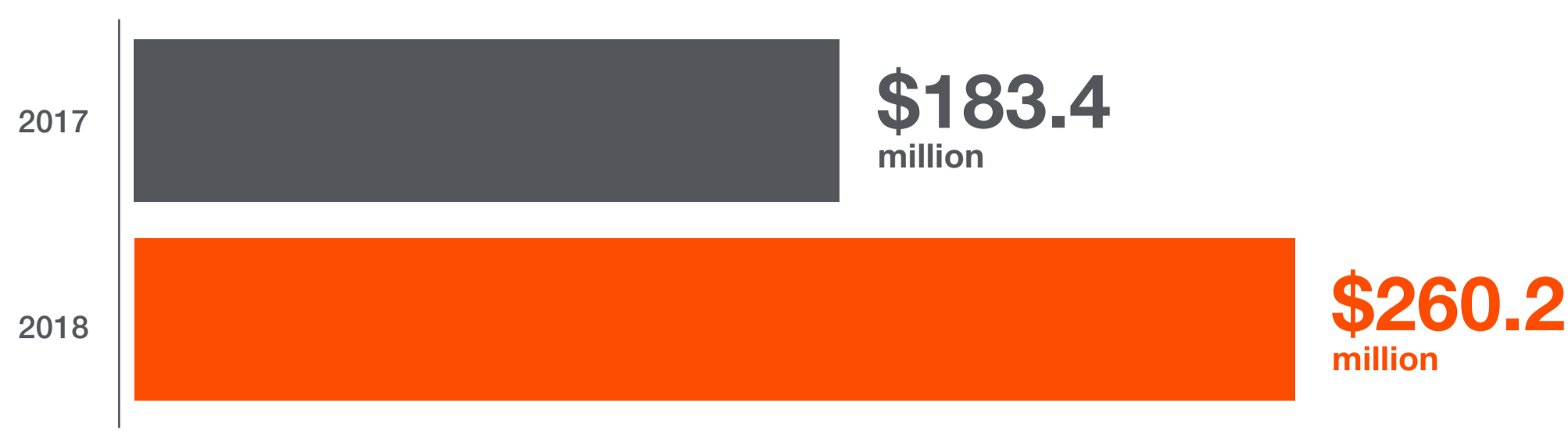


# Advancing what's possible: additive metals

Additive metals are the future of 3D printing and additive manufacturing, serving applications across a huge range of industries — with new techniques and applications being developed every day.

## Why additive metals?

### Annual revenue <sup>(1)</sup>



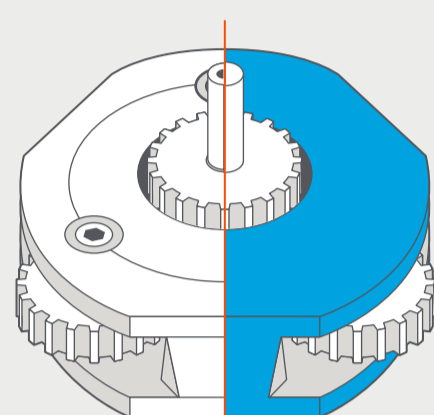
**45%**

NASA produced an additive metal rocket engine fuel pump, using 45% fewer parts than pumps made with conventional manufacturing.<sup>(2)</sup>

## Benefits of additive metals

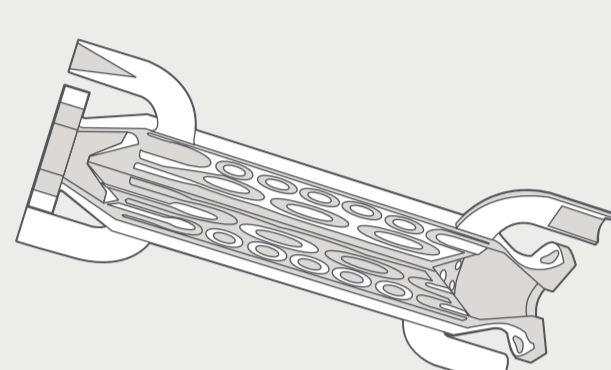
### Part / assembly consolidation

Reduce required parts and manufacturing costs by consolidating assemblies.



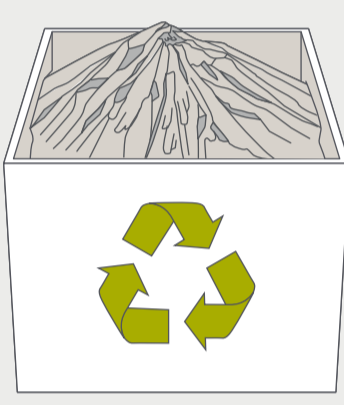
### Complex structures

Intricate metal parts previously difficult or impossible to produce with conventional manufacturing can be produced faster and more cost-effectively.



### Waste reduction

Only the required material is used to create a part. In powder-bed technologies, leftover powders can be reused.



### Weight reduction

Part consolidation and 3D printing's design freedom results in a lighter part.



## Available technologies

- Direct Metal Laser Sintering
- Selective Laser Melting
- Electron Beam Melting
- Direct Metal Laser Melting
- Laser Cusing

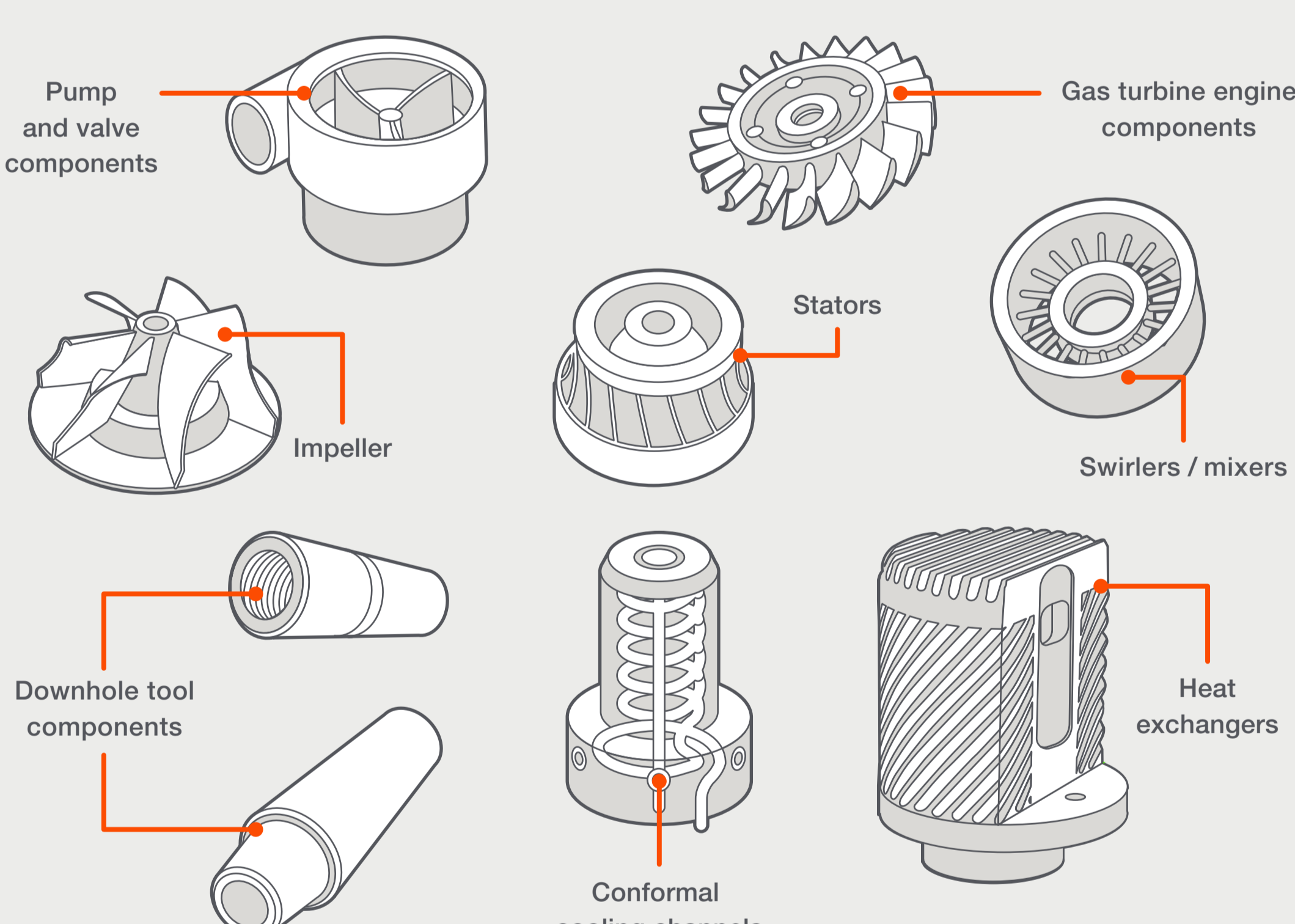
## Available materials

- Stainless Steel 17-4 PH
- Stainless Steel 316L
- Cobalt Chrome CoCrMo
- INCONEL® 625
- Aluminum AlSi10Mg
- Titanium Ti64
- INCONEL® 718
- MONEL® K500
- Copper C18150

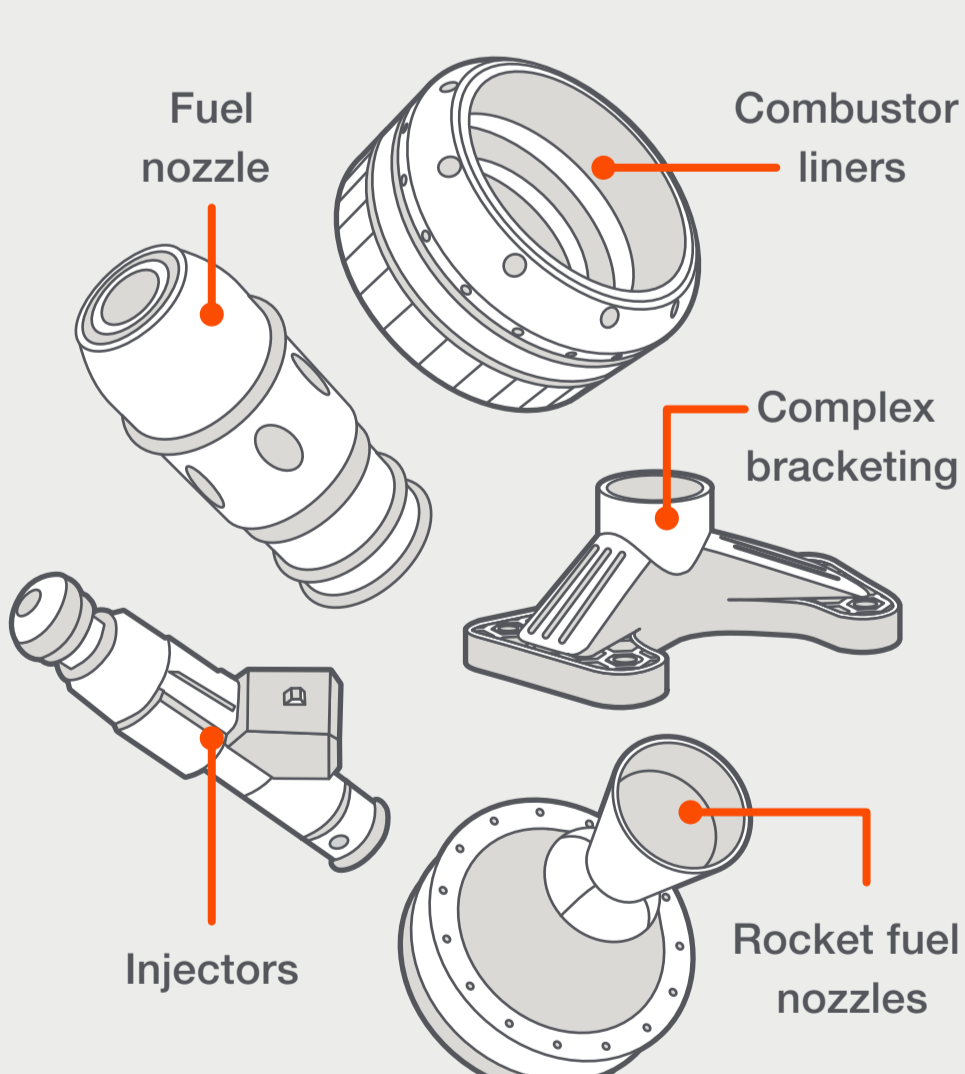
## Using additive metals

New applications are being developed every day, but here's a look at how additive metals are being used in a broad range of industries.

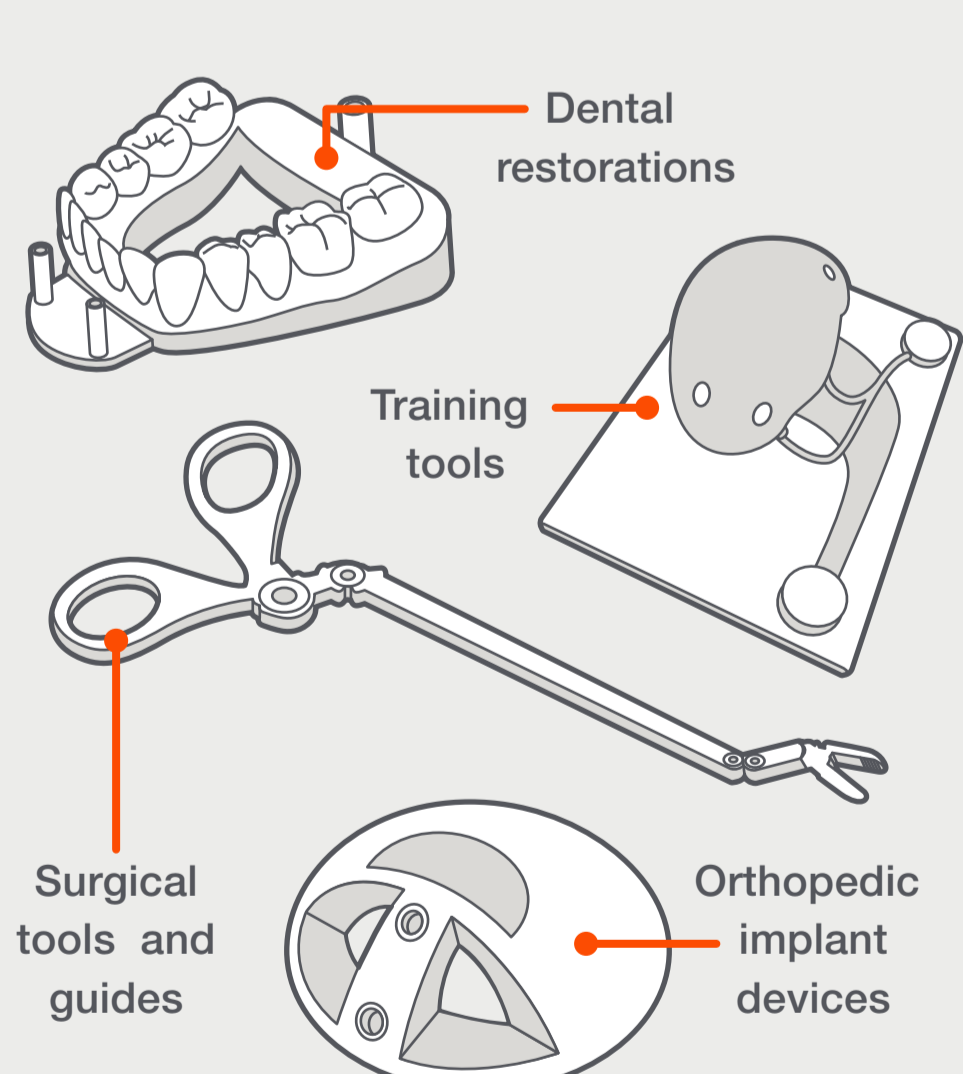
### Energy



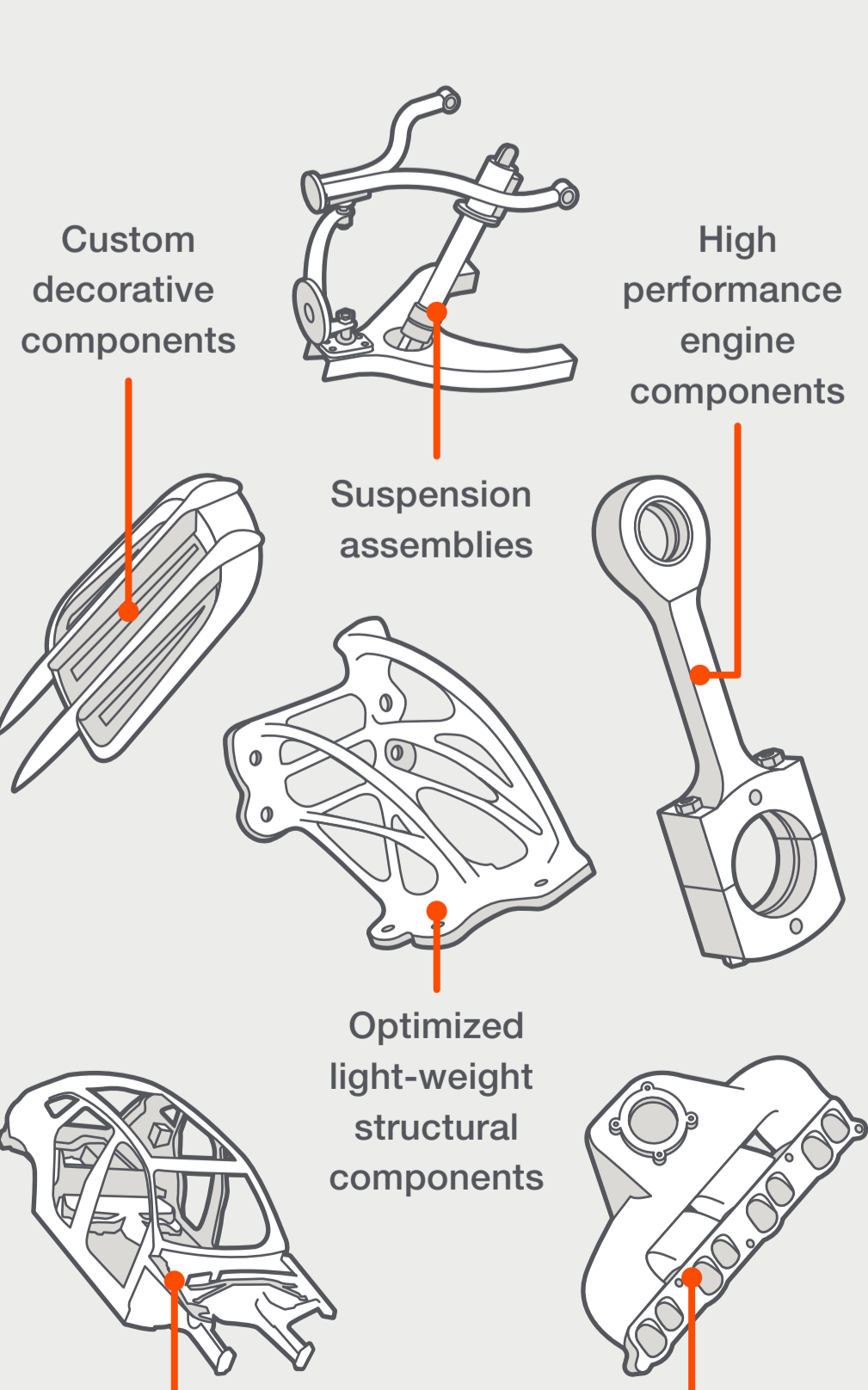
### Aerospace



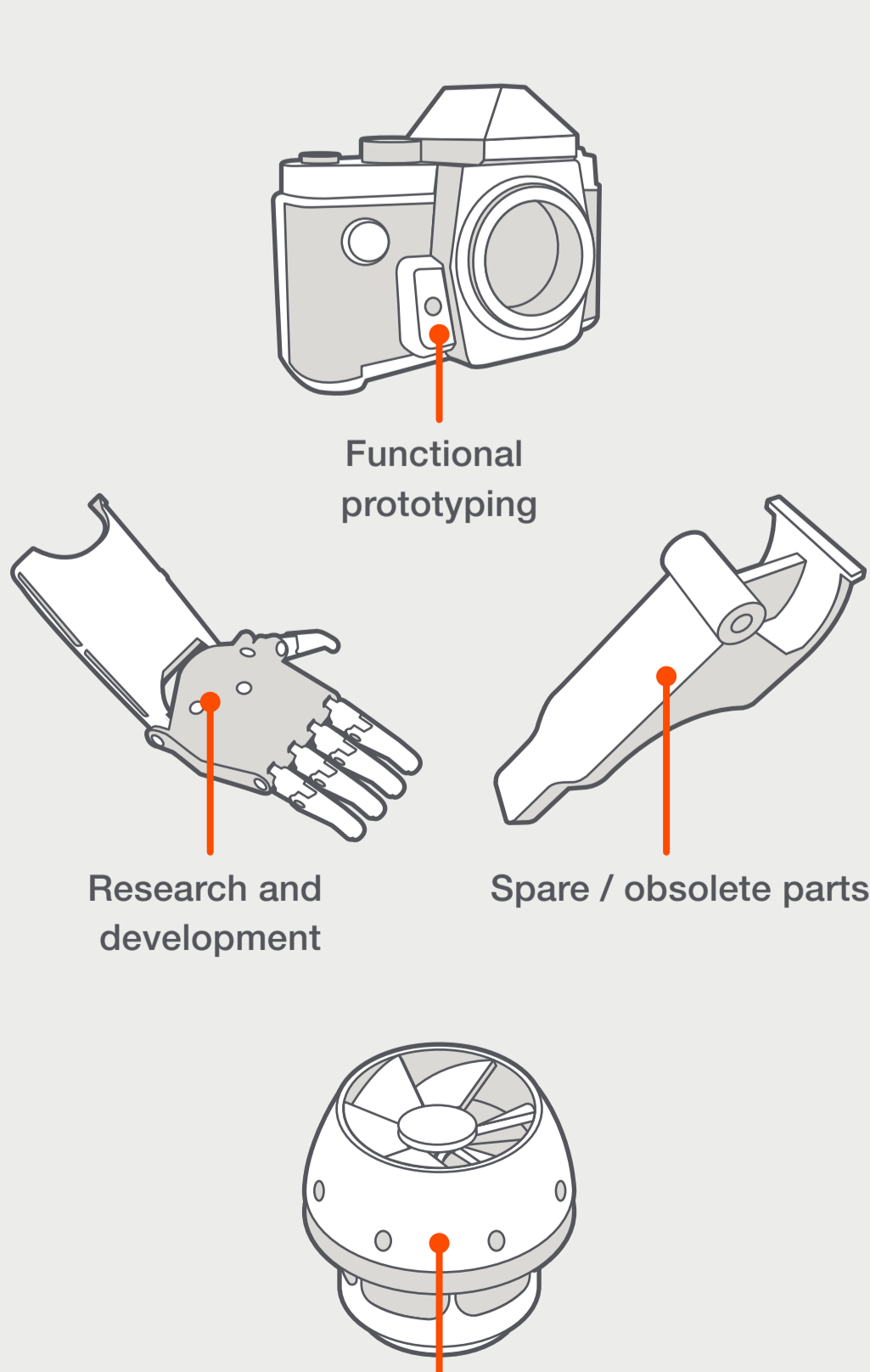
### Medical



### Automotive



### Across all industries



### ADDITIONAL SOURCES

1. Wohler's Report 2019 | 2. energy.gov | 3. nasa.gov