

# PRIMA Solutions for Aerospace



### **Laser Drilling**

















### Engines: Combustion Chambers



#### PROCESS:

- Percussion Drilling, Trepan Drilling and cutting
- 10 100,000 holes for film cooling
- Cooling hole diameters from 0.3 1.2 mm
- Entrance angles from 45°-15° to the surface

#### MATERIAL:

1 – 3 mm thick Cobalt and Nickel based super alloy (Haynes, Hastelloy, Inconel, etc.) with thermal barrier coatings (TBC) on some parts

#### MACHINE: LASERDYNE 795







### Engines: Heat Shields



#### PROCESS:

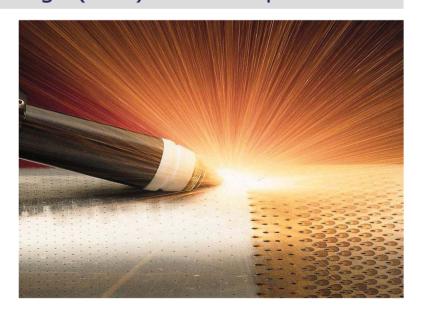
- Percussion drilling + <u>shaped holes</u>
- 100,000 holes for film cooling
- Cooling hole diameters from 0.3 1.5 mm
- Entrance angles from 15°-90° to the surface

#### MATERIAL:

1 – 3 mm thick Cobalt and Nickel based super alloy (Haynes, Hastelloy, Inconel, etc.) with thermal barrier coatings (TBC) on some parts

#### MACHINE:

LASERDYNE 795





#### **Fuel Cells**



#### PROCESS:

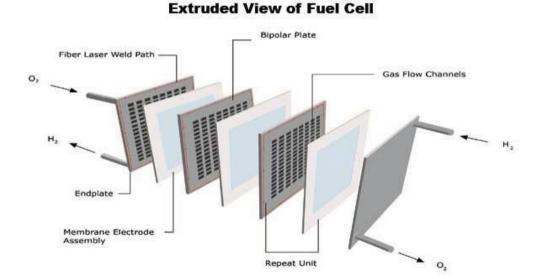
- Hydrogen Fuel Cell Welding, Drilling and Cutting
- Profile cutting of thin steel plates with no dross
- High speed drilling of 0.020 mm dia holes on thin steel plates
- Zero or low distortion stake welding (400 m! For an eco car) of thin steel

MATERIAL:

0.2 to 0.5 mm, steel plates

#### MACHINE:

**LASERDYNE** 





## Engines: Sound Abatement



PROCESS: Cutting and drilling of sound abatement covers

MACHINE: OPTIMO/RAPIDO





### Engines: Blades and Vanes



#### PROCESS:

- Percussion drilling & trepan drilling + <u>shaped holes</u>
- 150-500 holes for film cooling
- Cooling hole diameters from 0.3 1.2 mm
- Entrance angles from 45°-90° to the surface

#### MATERIAL:

1 – 3 mm thick Cobalt and Nickel based super alloy (Haynes, Hastelloy, Inconel, etc.) with thermal barrier coatings (TBC) on some parts

#### MACHINE:

LASERDYNE 450

