



**INDUSTRIAL**

— Scanning solutions for  
the automotive industry



**ARGES**

## — Innovative laser scan systems for the automotive industry

ARGES laser scan systems have been used successfully for many years in a wide variety of industrial applications around the world, for example in laser micromachining, fine machining and high power applications. A key area of application are **highly automated machining processes in the automobile sector** where ultra-high process reliability is required.

With a wide selection of scan heads and system configurations to choose from, we are able to design solutions that are optimally tailored to your needs. Thanks to our high level of **development expertise** and our **manufacturer-independent laser technology know-how**, we can also support you with **innovative custom solutions** for novel laser machining processes.

A further area of expertise is our **Laser Process Development** department, which can assist you from the initial start of your application project with extensive samples and test runs under near-production conditions. This guarantees the success of the comprehensive solution we provide, from system design right through to efficient integration of the process into your production environment.



Welding of innovative material combinations



Cutting of pre-painted chassis panels



Marking of interior components by deep engraving

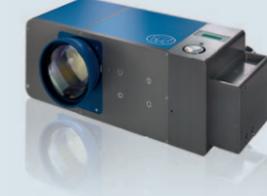
### — SELECTED SCAN HEADS IN OUR RANGE

 RHINO



A compact 2D scan head for a wide range of applications, for example surface processing.

 FIBER ELEPHANT



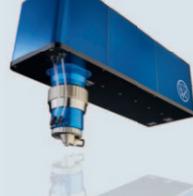
A versatile 3D scan head, for example for robot-assisted welding or cutting applications.

 TIGER



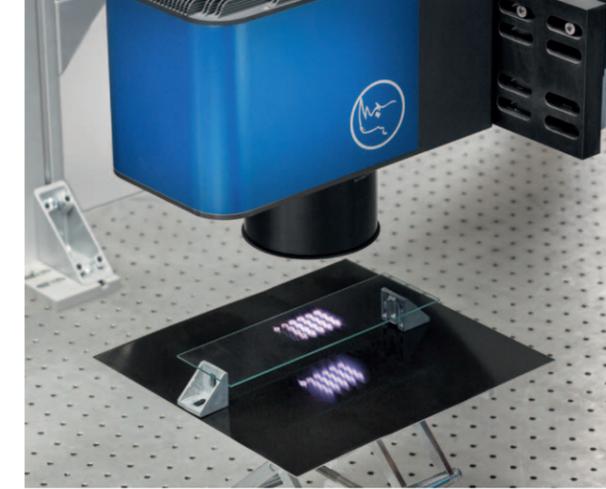
An innovative 3D scan head for precision processing in the mid to high kW range.

 PRECESSION ELEPHANT 2



A scan head for micro-drilling and cutting applications in the 25-700 µm range.

## — Application examples



### — MICRO-DRILLING

- Drilling of variable hole geometries into injection nozzles with hole diameters of 25-700 µm and aspect ratios of >12:1.

### — WELDING

- Robot-assisted welding of chassis components
- Fine welding of battery housings
- High precision welding of electronic contacts in hybrid or electric vehicle applications

### — CUTTING

- Cutting of unpainted and painted chassis panels

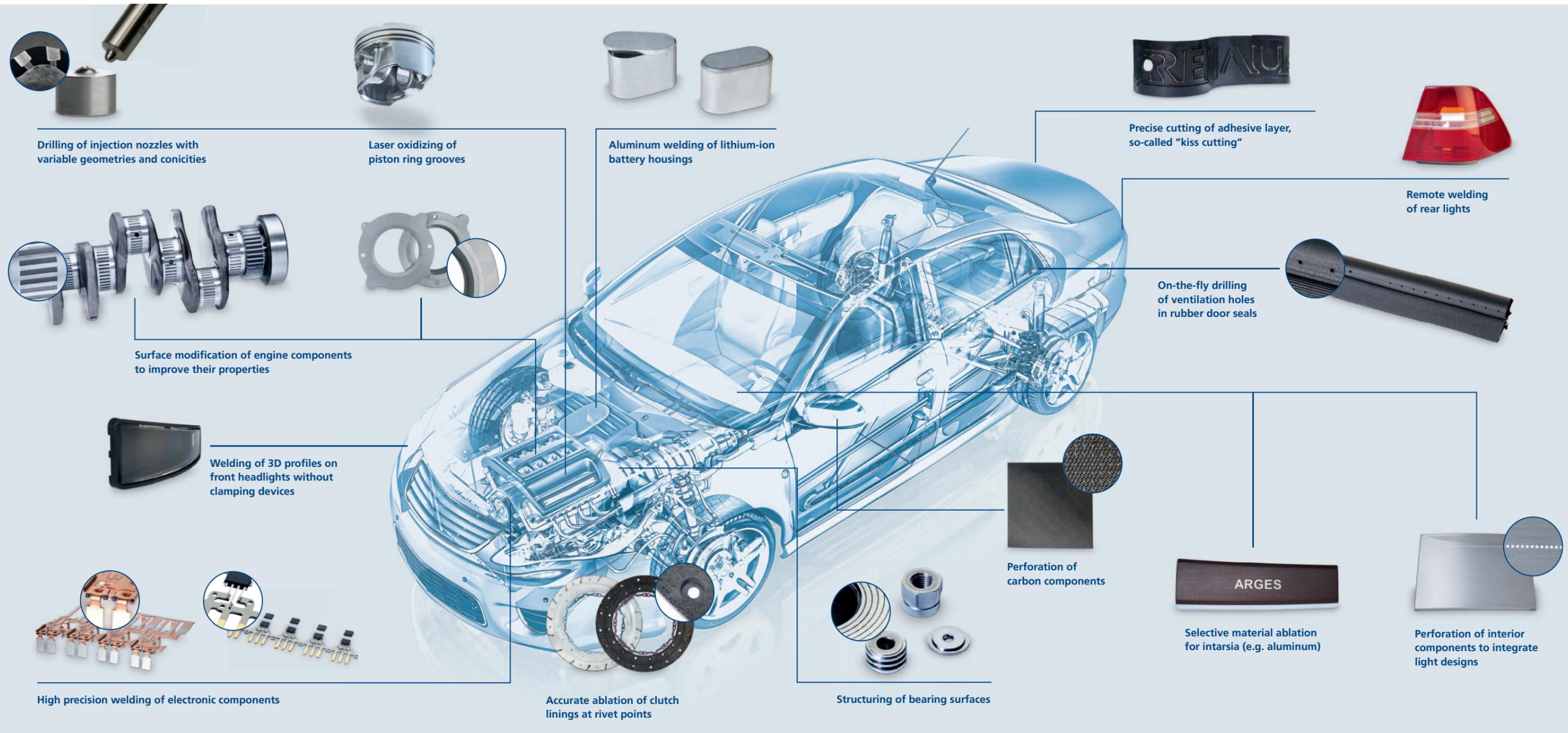
### — SURFACE STRUCTURING

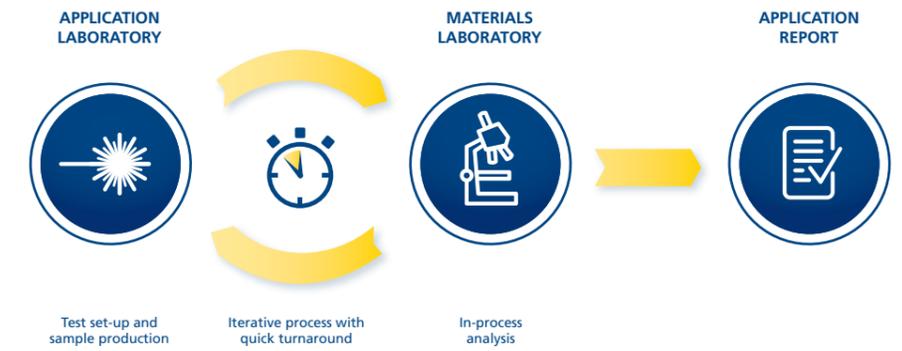
- Surface structuring of camshafts and bearings, e.g. to improve the frictional behavior of lubricants

### — MARKING

- Inscribing of variable data and codes for component identification
- Engraving of interior components made from aluminum, carbon or fine wood

## Our automotive expertise





## Tailor-made processing solutions

**ARGES** is a specialist in developing industrial laser materials processing solutions that are tailored to your needs. To optimally implement your requirements, we have at our disposal a comprehensively equipped **application laboratory** and **various demonstration rooms**.

Using a variety of laser systems and **ARGES** scan heads, we prepare **samples** for you and determine the relevant process parameters for your application. To carry out our tests under near-production conditions, we have access to a variety of handling systems, for example a robot, which enables us to simulate applications such as **on-the-fly processing**.

After preparing sample workpieces, we examine the laser-machined samples in our in-house material testing laboratory to assess the quality of the processing. The laser machining parameters are then further refined, if necessary, to achieve the best possible results.

Having both an **application laboratory** and **materials laboratory in-house** gives us the ability to develop processes efficiently and precisely, in particular novel laser processes where an iterative approach is required.

Consequently, we are able to provide you with a **detailed report** on the achievable quality and processing times that is directly applicable to the later manufacturing process, and therefore provides **greatest possible planning and investment certainty**.



Preparation of test assemblies for your application project



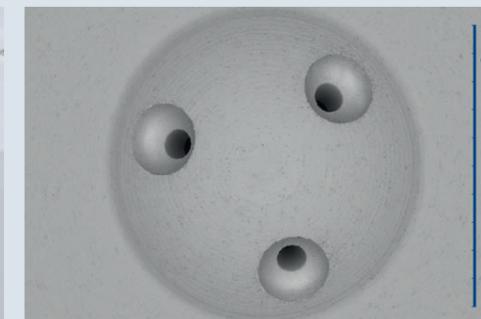
Production of samples and execution of test runs



Preparation of sections for material testing



Quality inspection using electron microscope and further measuring equipment



Evaluation and documentation of the results



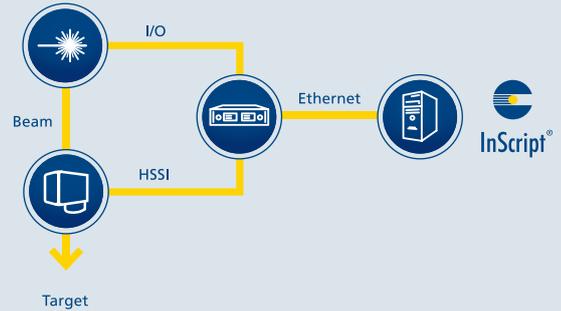
Discussion of results and next project steps



## Software and Controllers

### SYSTEM CONTROL

For the control of your laser scan system, we offer a comprehensive range of **ARGES SYSTEM CONTROLLERS (ASC)** together with the **ARGES InScript®** software. They manage the connected machines and devices and provide a user-friendly software interface for your laser scanning system.



### ARGES InScript® SOFTWARE

- Graphical user interface for easy configuration of laser jobs
- Teach-in function for fast and easy positioning of the laser beam
- Visualization of the laser job for editing and optimization
- Import and editing functions for bitmap and vector files
- Specially developed drivers for extended parameterization of many lasers
- Software library for integration of customer-developed software
- Script programming for advanced users



### ARGES SYSTEM CONTROLLER (ASC)

An **ARGES System Controller (ASC)** manages scan heads, lasers, sensors, actuators and other peripherals. It is an autonomously functioning device that does not require a host computer to carry out its processing tasks. It can be remotely operated, parameterized and diagnosed via Ethernet TCP/IP.

As an alternative control option, the **ARGES ControllerLib** provides a high degree of flexibility for precisely configuring the system to your requirements. The **ARGES System Controllers** in a 19" rack mount enclosure are available in various configurations that control either one or two scan heads. Special versions include an integrated laser.



Technical and constructional data are subject to change. Dated 06/2016