

Partner for a safe connection





# Quality-assured joining:

Components and assemblies for the automotive industry





For almost two decades, PTS has been specialized in exhaust systems and media-carrying components in the fields of prototype development, racing and series/small series production

The preferred materials are stainless steel or non-ferrous metals in the tube and sheet.



All PTS developments and products are used in passenger cars, commercial vehicles, air-, water- and rail vehicles.

PTS is ISO TS 16949 and ISO 9001:2015 certified and a partner of numerous OEMs and Tier 1 system suppliers.





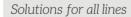
Our big three "E"s are as follows: Exhaust Systems, Exhaust Components and Exhaust Manifolds ... the list goes on and on when it comes to the process air of combustion engines that are used everywhere.

media-carrying components (pipes, lines) as well as holders and platforms, which are indisas all commercial vehicles.

#### We move industries

Let us proof this assertion.

The same applies to all other pensable in automobiles as well



- Brakes and fuels
- fuel cells
- Cooling technology
- air conditioning technology
- Navigation / control
- Steering system
- Battery

Also as compact and/or complete systems



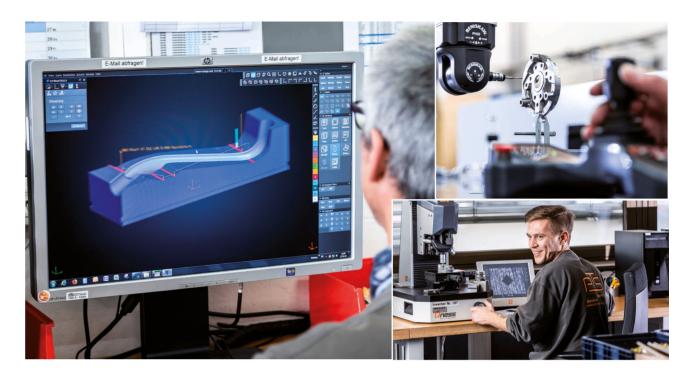




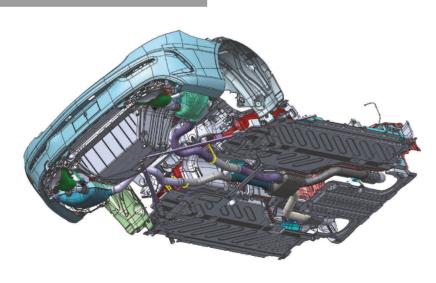


Intelligently managed exhaust gases and media





We bring your ideas to life



Consider us as your innovative service partner in vehicle development. Our engineering services will cover for you the areas of design, calculation/simulation, as well as services.

Be it in prototypes, small batches, series or vehicle conversion projects - every order and every work step at PTS is handled based on the established project management.

Within the scope of a complete project processing, all development works are carried out: PTS manufactures prototypes, carries out the necessary tests and documents all development results according to customer requirements.

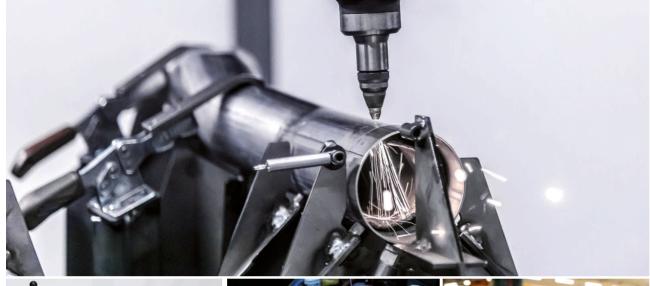
#### Engineering according to plan:

- Data management
- Package examinations
- Creation of 2D drawings
- Creation of 3D models

#### Stress tests and Endurance tests:

- Thermal stress and design optimization
- static loading / component optimization
- Simulation of the dynamic behavior of a complex controlled system (MATLAB)











Unique pieces win the race

PTS processes highly heat-resistant materials for exhaust elements in their vehicle construction. The same applies to highly strain-resistant materials for chassis parts in lightweight construction. PTS metal prototypes go directly "into the race" after production.

Complex exhaust systems are assembled into complete assemblies according to specifications.

#### Equipped for all industries

### High level of expertise in prototype development

Suitable printing, forming and trimming machines are just as indispensable for the ongoing manufacturing process as are the appropriate drawing presses or tube perforating systems.

Flexible 2D and 3D laser cutting processing is ideally suited for small to medium batch sizes, as well as for frequent component changes. PTS has state-of-the-art laser cutting technologies at its disposal and can achieve extremely productive and reliable high-quality results.



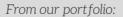
Precision as the rule for series production



Media-carrying components, subassemblies or complex exhaust systems are the main focus at PTS. Small series go into racing, larger series are manufactured by PTS for the automotive and commercial vehicle industry:

#### • Exhaust pipes

- Exhaust systems / Assemblies
- Assemblies for fuel cells
- Pipelines and pipeline assemblies



- Middle silencer
- End silencer
- Manifolds
- Oil tanks
- Exhaust embellishers
- Running boards
- Injection systems
- chassis parts
- Fuel lines







## Internal high-pressure forming and high-temperature insulation systems

for prototype and series components

Internal high-pressure forming is just one example of the professional technology used at PTS: Pre-formed tubes in a unit which remains closed during the forming process are created by means of an appropriately high internal pressure (medium: water-oil emulsion). The material is constantly tracked in the process, and the repeatability ensures the most precise results.

#### From one-offs to series:

Insulation systems must al-

ways meet the most individual as well as legal requirements. Exhaust pipes, catalytic converters, silencers, manifolds and exhaust gas turbochargers are provided with integral insulation and self-supporting shielding in thicknesses that range from "wafer-thin" to "solid", in order to meet the specific requirements of the respective application - to protect the adjacent components against the sometimes extreme temperatures and to channel them.











With approximately 200 employees on the fast track for almost 20 years.



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