



SPAL
AUTOMOTIVE

COMPANY PROFILE



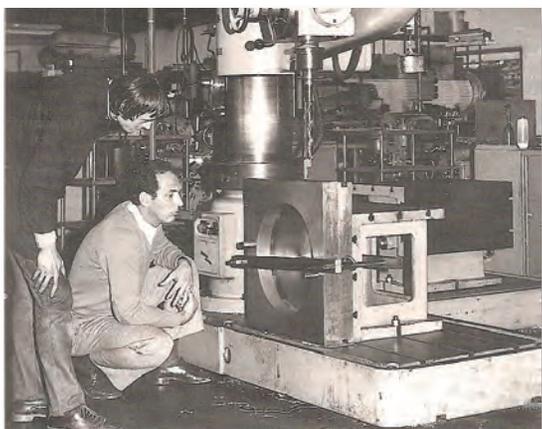


We always strive to perform at the highest standards possible.

We are convinced that quality, innovation and service are cornerstones that guide our culture while building our legacy. On these cornerstones SPAL has earned its credibility over the years, becoming an ideal partner to design, manufacture and market ventilation solutions in an expanding array of applications.

Alessandro Spaggiari
CEO / AD Spal Automotive

Shaping Air Since 1959



Heritage

1959

- Founded in Italy in 1959, SPAL is a second generation family run manufacturing group based in Correggio.

1970

- Originally specialising in plastic mould design and production, SPAL has invested over 40 years in the research and development of high quality axial fans and centrifugal blowers to meet standards demanded by the world's leading vehicle manufacturers.

2001

- Opening of the first SPAL subsidiary in Shanghai, China for the distribution and market of fans and blowers.

2004

- Opening US subsidiary in Des Moines, Iowa.

2005

- Opening Brazilian subsidiary in Sao Paulo, Brazil.

2006

- Opening Indian distribution facility in Noida, India.

2009

- Opening British subsidiary in Worcester, UK
- Opening Russian subsidiary in Saint-Petersburg, Russia.
- The SPAL group with over 800 employees world-wide celebrates its 50th anniversary.

2009

- Starting production of Brushless fans

2011

- Opening Japanese subsidiary based in Tokyo, Japan

2014 - 2015

- Construction of new building of 16.000 m² for Brushless production

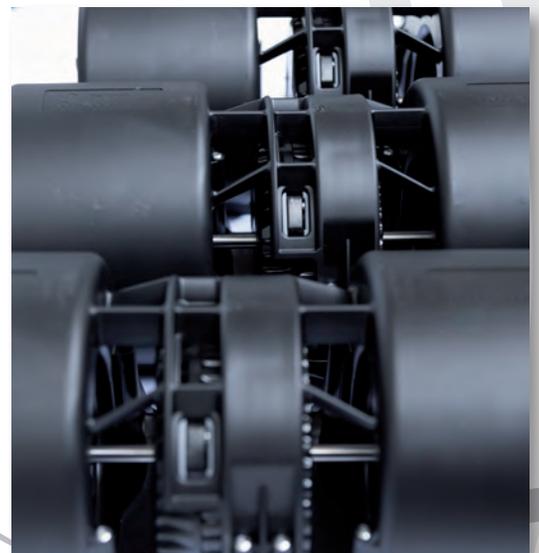


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Brush & Brushless Technologies

- SPAL Automotive designs and manufactures a range of sealed high performance **Axial Fans** and **Centrifugal Blowers, 12 & 24V d.c.**
- Suitable for applications including engine, oil and battery cooling, SPAL products are equipped for use in the automotive, motorsport, bus & coach, off-road construction & industrial, agricultural and truck.
- SPAL is at the forefront of Brushless motor technology and has developed a range of fans and blowers with smart capabilities for reliable managed performance and long life operation.
- The SPAL production facility in Correggio, Italy, spans an area of 66,000m² accommodating over 500 employees serving the engineering, research & development, and manufacturing departments.

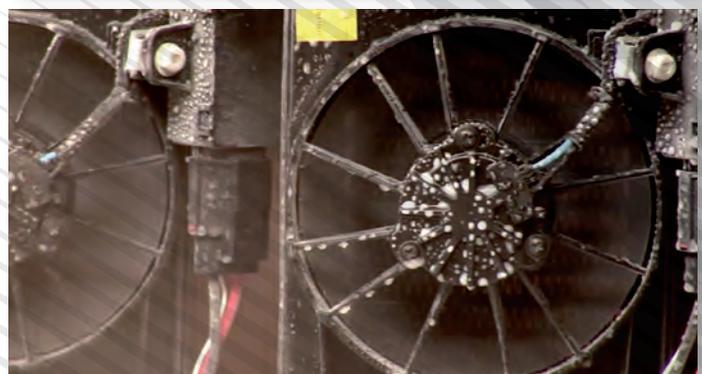
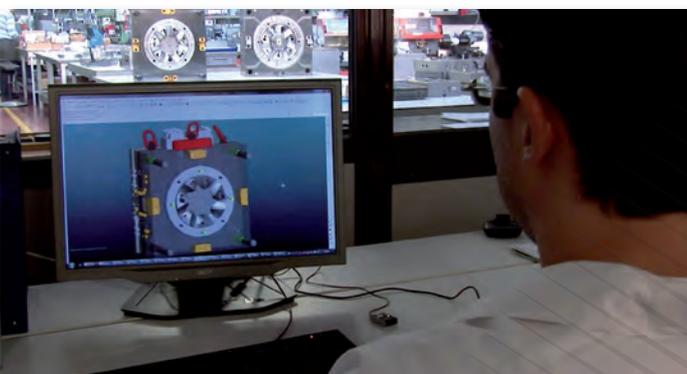
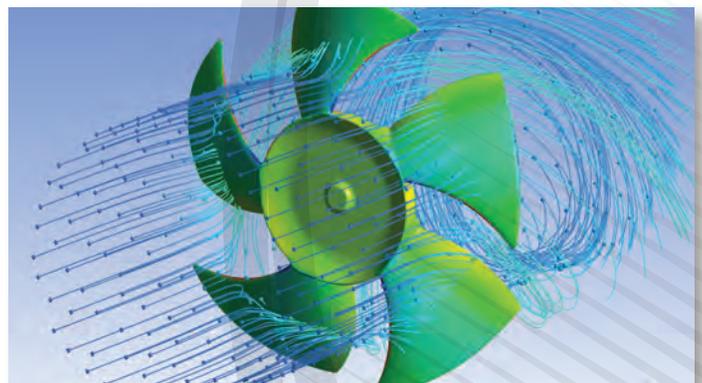
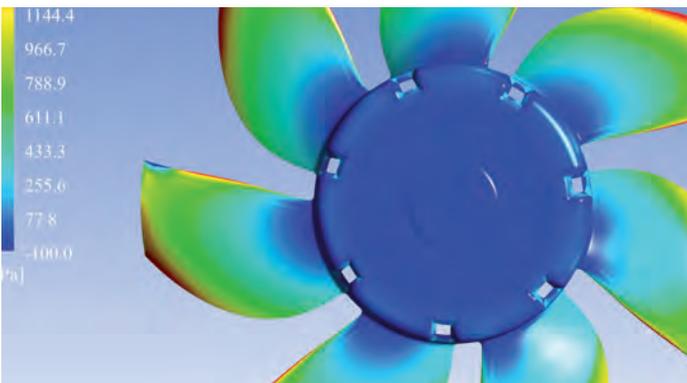
SPAL's high level of vertical integration allows it to exercise quality control over every single step of the manufacturing process enabling it to apply its own accreditation - the SPAL Quality Standard.



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Core Competence

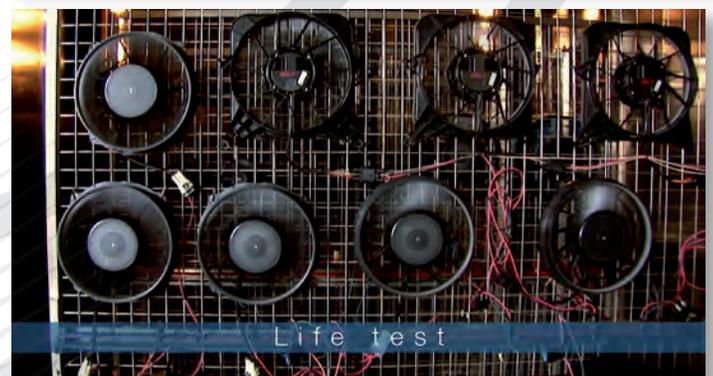
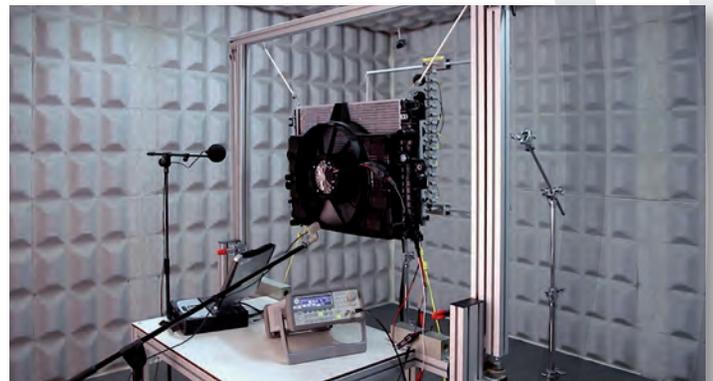
- SPAL utilizes in-house technical expertise to develop the most advanced products with an innate understanding of all aspects of Fluid dynamics, Thermodynamics, Electronics, Electro-magnetics and Mechanics.
- The Product Engineering department swiftly leads development for each new component of the fan or blower. This includes: Tooling design & production bringing to life our plastic injected parts, Performance blade dynamics study and creation, Drive motor design optimization & production all being fully integrated with proprietary electronics hardware and firmware.
- Testing & Validation: SPAL laboratories has the capability to test and perform in-house product validation based on Customers specification.



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Innovation

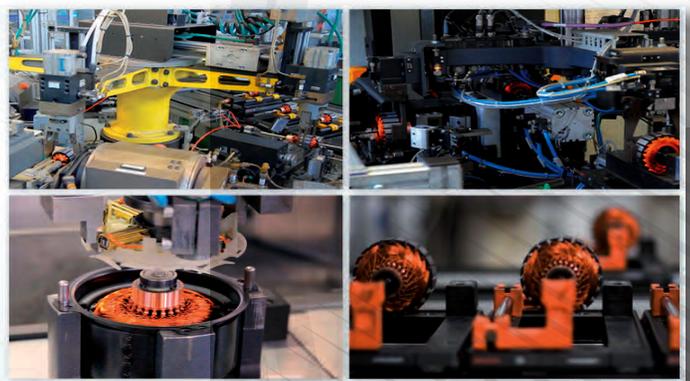
- The next advance in automotive technology is just around the corner and SPAL keeps pace with this through constant innovation.
- SPAL designers and engineers are engaged in continually refining products bespoke to clients requirements working closely with OEMs and seeing new ideas through from initial concept to finished form.
- In keeping with current environmental requirements, SPAL uses its expertise to produce products that meet emission standards, operate efficiently and reliably.
- Several fully-automated production lines are in operation with the capability to produce over 5 million fans and blowers each year.



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Process

- The entire production process from design to rapid prototyping to tooling, testing and manufacture is managed and controlled in-house.
- Our goal is to build high quality products for the market. We achieve it by constantly focusing on research & development and by supervising all areas of manufacturing process.



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The SPAL Strengths

TECHNICAL KNOWLEDGE

- Fluid-dynamics
- Thermodynamics
- Electronics
- Electro-magnetic
- Mechanical

IN-HOUSE TESTING AND VALIDATION EQUIPMENT

- Climatic chambers
- Thermal shock chamber
- Oven & hot test chambers
- Water & salt spray chamber
- Vibration test benches
- Vibration test bench in climatic chamber
- Airflow test chambers
- Anechoic chamber with spectrum analyzer
- Endurance test facility
- Motor torque test bench
- 3D tester
- Laser sintered prototype machine
- EMC test equipment

FULLY INTEGRATED PROCESSES

- Rapid prototyping
- Chemical Department
- Tool shop
- Moulding
- Motor design and production
- PCB In-house Production
- Electronics SMD
- Automated assembly process

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Global Footprint

- The SPAL team has an international presence with subsidiaries in 6 countries around the world.
- The location of subsidiaries has been carefully co-ordinated to optimise the distribution and marketing of SPAL products with customer service and distribution centres based close to key customers.
- As manufacturers and the market are demanding products to perform increasingly complex tasks and requesting highly integrated systems, SPAL is prepared to invest in the future and rise to the challenge.
- SPAL is open to accessing new markets such as exhaust technology and vehicle-heating systems with plans to pursue these opportunities energetically in mature markets such as Europe and United States as well as in emerging regions such as China, India and Russia.

Accreditation

- SPAL has TS16949 and ISO 9001 certification for quality system requirements for design, development, production, installation and servicing.
- SPAL's Environmental Management System is certified to UNI EN ISO14001:2004, and also meets the European Directive 2000/53/EC on end-of-life vehicles (ELV).



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● SPAL ITALY (Correggio - Italy) Headquarter: Design, R&D and Production

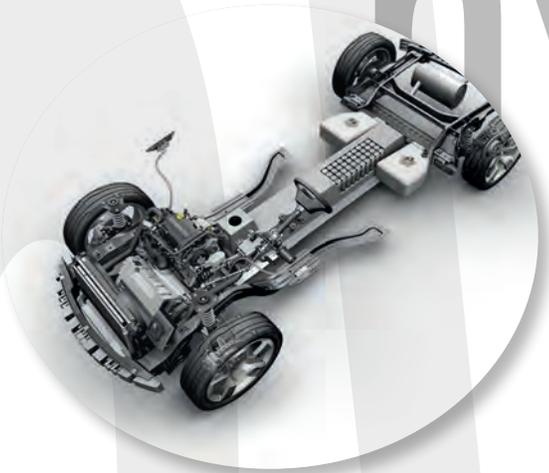
- SPAL USA (Des Moines - Iowa - USA) US Subsidiary
- SPAL CHINA (Shanghai -China) Chinese Subsidiary
- SPAL Automotive UK (Worcester- UK) UK Subsidiary
- SPAL do Brazil (Sao Paulo - Brazil) Brazilian Subsidiary
- SPAL RUS (Saint-Petersburg - Russia) Russian Subsidiary
- SPAL Japan K.K (Tokyo - Japan) Japanese Subsidiary
- PEE AAR Automotive Technologies (Delhi - India) Indian Distribution Facility
- Dedicated Area Managers covering Germany, Eastern Europe and Asian markets.



our SOLUTIONS

battery cooling

in vac



on-board

elec

our Markets



■ **Car**



■ **Mobile Refrigeration**



■ **Bus & Coaches**



■ **Powersports**



■ **Construction**

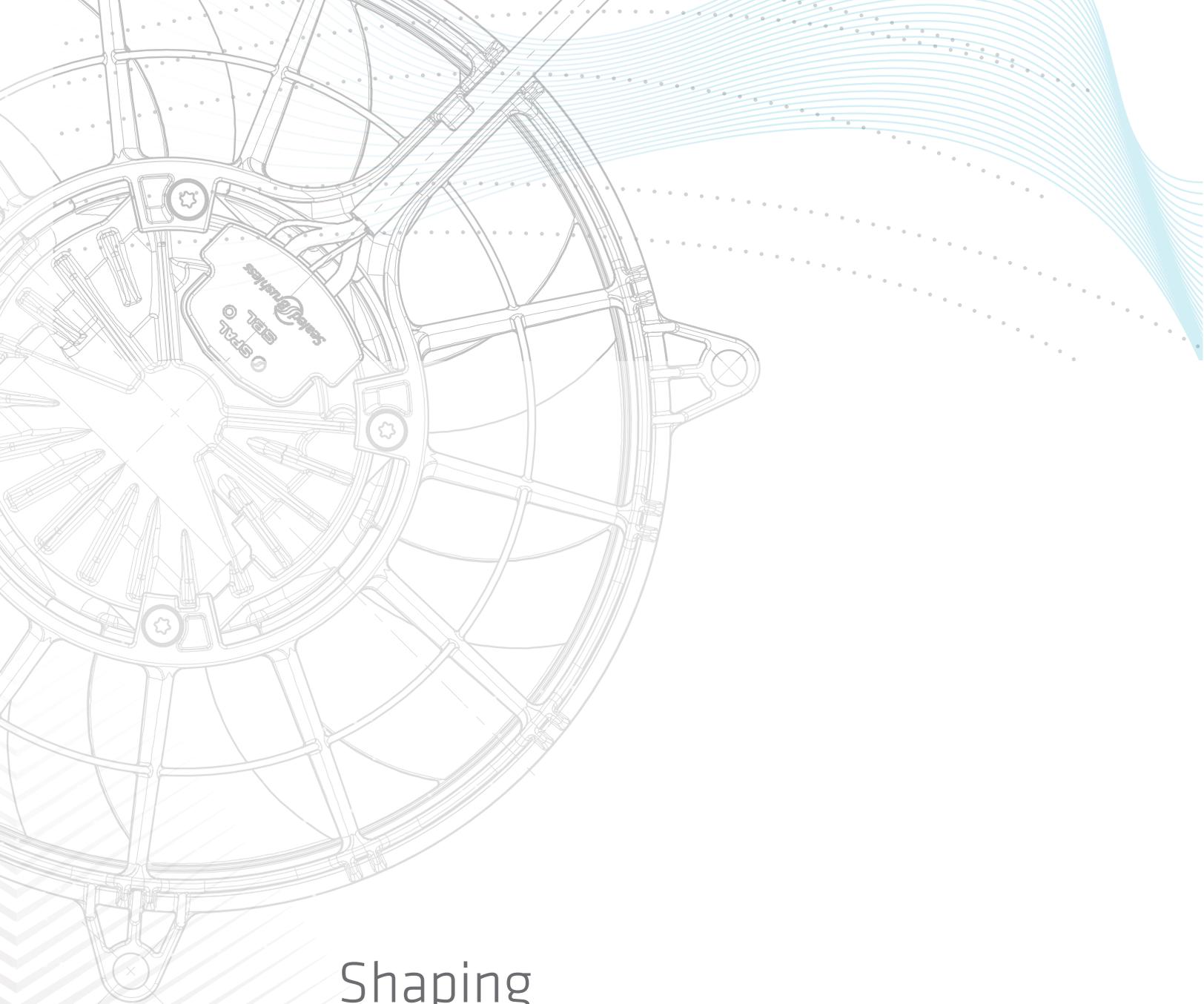


■ **Agricultural**

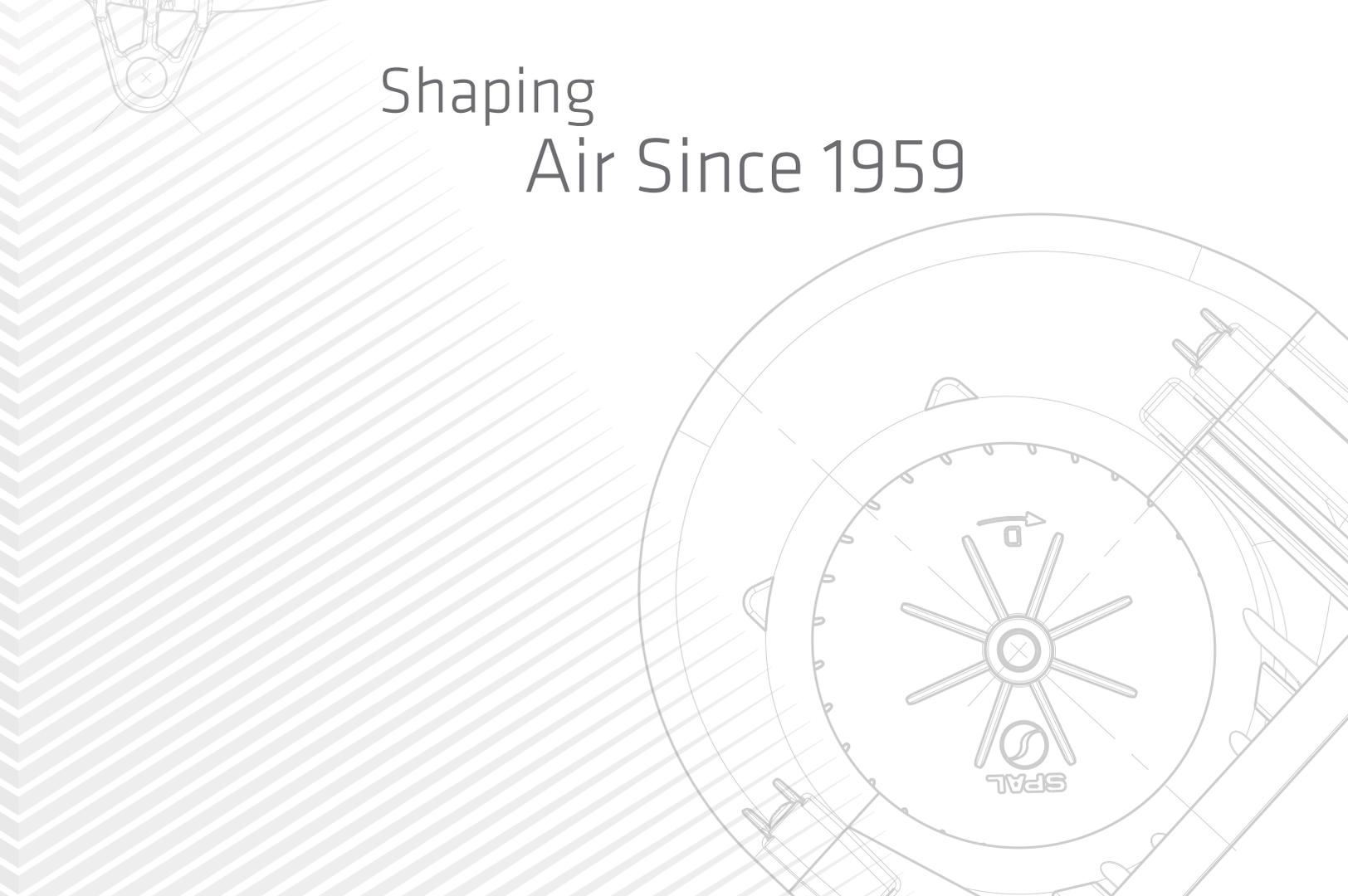


■ **Truck** Parking Cooling - Hybrid System Cooling





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● **HEADQUARTERS**
SPAL AUTOMOTIVE
Via per Carpi, 26/B
42015 Correggio RE - ITALY
Ph. +39 0522 731311
fax +39 0522 693611
www.spalautomotive.it
oem@spal.it

SPAL USA
1731 SE Oralabor Road
Ankeny, IA 50021 - USA
www.spalusa.com
info@spalusa.com

SPAL CHINA
No.343 Mei Gui North Road
Wai Gao Qiao Pilot Free Trade
Zone Shanghai - 200131
P.R.China
www.spal-china.com
sales@spal-china.com

SPAL DO BRASIL
R. Periperi, 158 - Socorro,
São Paulo, 04760-060 - BRASIL
www.spalbrasil.com
info@spalbrasil.com

SPAL AUTOMOTIVE UK
Unit 201, Great Western
Business Park, Tolladine Road
WR4 9PT Worcester - UK
www.spalautomotive.co.uk
sales@spalautomotive.co.uk

SPAL RUS LLC
Avenue Sofiyskaya 66, liter A.
192289 Sankt-Petersburg - RUSSIA
www.spalrus.com
info@spalrus.com

SPAL JAPAN K.K.
SHIMA Akasaka Building
4-1-1 Akasaka, Minato-ku,
Tokyo 107-0052, JAPAN
www.spalautomotive.com
info@spaljapan.com

**PEE AAR AUTOMOTIVE
TECHNOLOGIES LTD.**
B-42, Sector 63
Noida, 201301 (U.P.) - INDIA
md@peeear.com

GERMANY
info@spalgermany.com



www.spalautomotive.com

