



FRIMEC®

www.frimecargentina.com.ar
frimec@frimecargentina.com.ar

Repuestos de Refrigeración para el Transporte

DISTRIBUIDOR



SOPLADORES CENTRIFUGOS

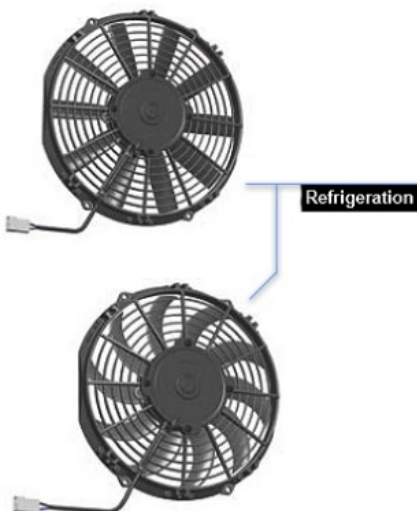


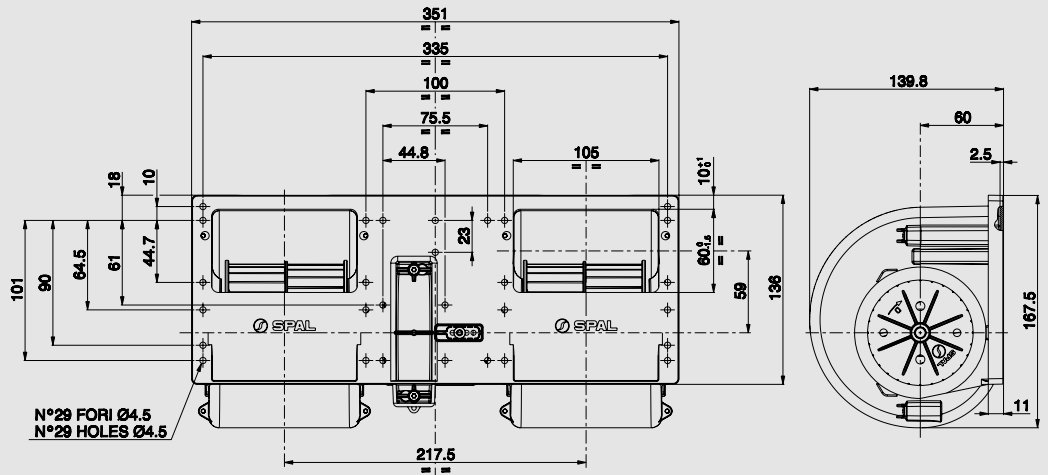
MODULO de MOTOR SELLADO GRADO PROTECCION Ip68

Protección completa contra penetración de polvo

Protección contra la penetración de agua, sumergiendolo por un período indefinido

Protección interna contra ruido electromagnético

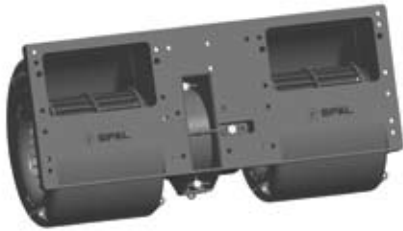




006

Suggested mounting torque: 3 +1/- 0 Nm with screw M4
Weight 2 Kg. approx.

Coppia di serraggio consigliata: 3 +1/- 0 Nm con vite M4
Peso 2 Kg. circa



PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

3 or 4 speed resistor
Resistenza a 3 o 4 velocità

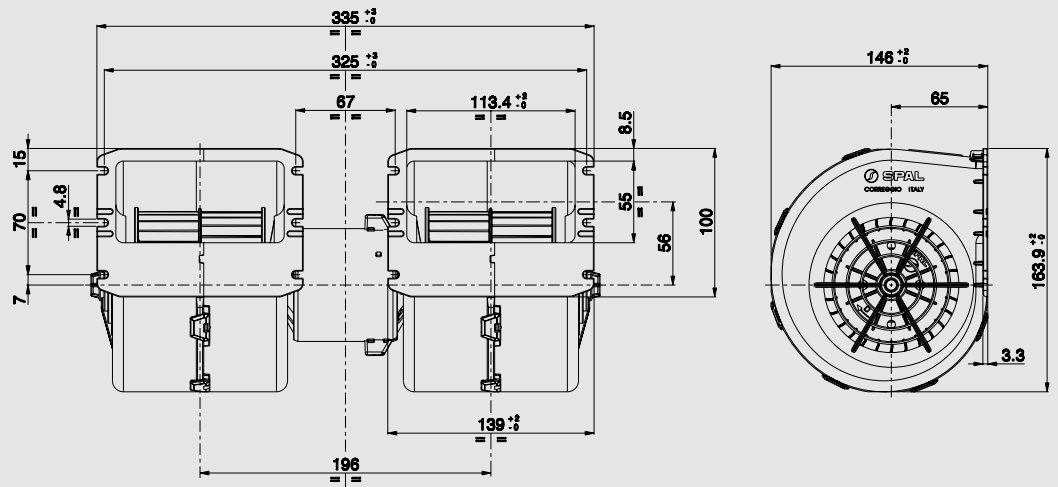


PERFORMANCE CHART
SCHEDA PRESTAZIONI

Static pressure Pressione statica mm H ₂ O	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Static pressure Pressione statica in H ₂ O
0	1160	12,7	684	0
10	1050	11,6	620	0,4
20	940	10,6	555	0,8
30	830	9,9	490	1,2
40	730	9,1	431	1,6
50	600	8,1	354	2,0
60	350	6,1	207	2,4
70	0	4,8	0	2,8

Test voltage 26 V d.c. - Tensione di prova 26 V c.c.

✓ = Available upon request
Disponibile su richiesta



009

Suggested mounting torque: 3 +1/- 0 Nm with screw M4
For mounting use wide-head screw or washer to fasten the unit
Weight 2 Kg. approx.

Coppia di serraggio consigliata: 3 +1/- 0 Nm con vite M4
Per il fissaggio utilizzare viti a testa larga o rondella
Peso 2 Kg. circa



PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

Long life <i>Lunga durata</i>	✓
Low noise <i>Bassa rumorosità</i>	✓
3 or 4 speed resistor <i>Resistenza a 3 o 4 velocità</i>	✓
VLL version* <i>Versione VLL*</i>	✓

PERFORMANCE CHART
SCHEDA PRESTAZIONI

Static pressure <i>Pressione statica</i> mm H ₂ O	Airflow <i>Portata</i> m ³ /h	Current input <i>Corrente assorbita</i> A	Airflow <i>Portata</i> CFM	Static pressure <i>Pressione statica</i> in H ₂ O
0	1070	11,0	631	0
5	1020	10,6	602	0,2
10	980	10,2	578	0,4
15	930	9,9	549	0,6
20	870	9,5	513	0,8
25	820	9,2	484	1,0
30	770	8,8	454	1,2
35	710	8,4	419	1,4
40	650	8,0	384	1,6
45	580	7,5	342	1,8
50	470	6,7	277	2,0
55	230	5,4	136	2,2
65	0	4,6	0	2,6

Test voltage 26 V d.c. - Tensione di prova 26 V c.c.

✓ = Standard feature
Caratteristica standard

✓ = Available upon request
Disponibile su richiesta

* for OEM applications only
** per applicazioni OEM*

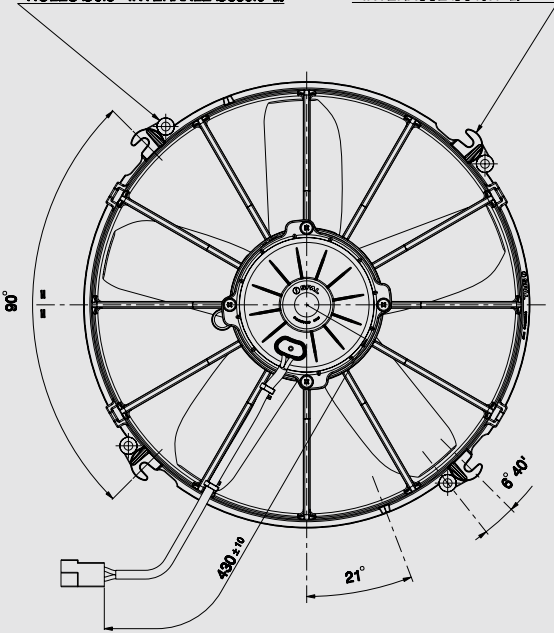
24V C.C. - D.C.

VA01-BP70/LL-36A
VA01-BP70/LL-36S

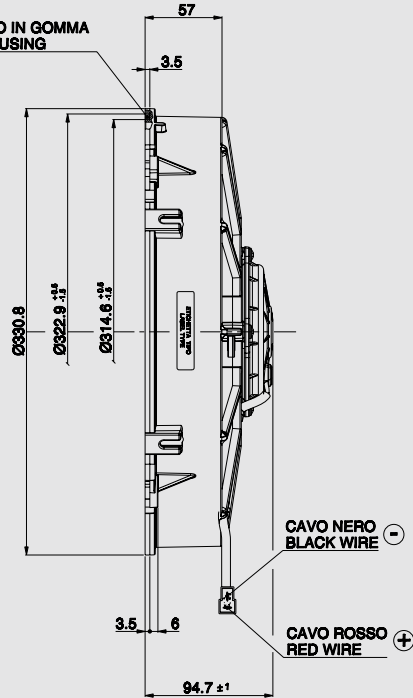


- N°4 BORCHIE - ALTEZZA H=7.5
FORI Ø6.5 - INTERASSE Ø336.9 ±.2
- N°4 BOSSES - HEIGHT H=7.5
HOLES Ø6.5 - INTERAXLE Ø336.9 ±.2

- N°4 GANCI PER PERNI Ø6
INTERASSE Ø340.1 ±.2
- N°4 HOOKS Ø6
INTERASSE Ø340.1 ±.2



SEDE PER ANELLO IN GOMMA
RUBBER RING HOUSING



AMP connector Code 180908
AMP terminal Code 42098-2
Suggested mounting torque: 3(+1/-0) Nm with screw M5
Weight 2.35 Kg. approx.

Connettore AMP Cod. 180908
Terminali AMP Cod. 42098-2
Coppia di serraggio consigliata: 3(+1/-0) Nm con vite M5
Peso 2,35 Kg. circa

Ø 305 mm

Ø 12"

suction / aspirante

blowing / soffiante

PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

Static pressure Pressione statica mm H ₂ O	suction / aspirante			blowing / soffiante			Static pressure Pressione statica inH ₂ O
	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	
0	2900	7,4	1711	2760	7,1	1628	0
5	2640	8,0	1558	2510	7,5	1481	0,2
10	2310	8,4	1363	2230	8,0	1316	0,4
15	1860	8,5	1097	1920	8,4	1133	0,6
20	1210	8,8	714	1470	8,6	867	0,8
25	900	9,2	531	1010	8,9	596	1
30	670	9,5	395	620	9,2	366	1,2
35	370	10,0	218	310	9,7	183	1,4
40	0	11,1	0	0	10,5	0	1,6

Waterproof motor, IP 68 Motore chiuso, IP 68	✓
Long life / Lunga durata	✓
VLL version* / Versione VLL*	✓
Waterproof connector Connettori a tenuta stagna	✓
Accessories: all the fixing kits Accessori: tutti i kit di fissaggio	✓

* for OEM applications only.
* per applicazioni OEM

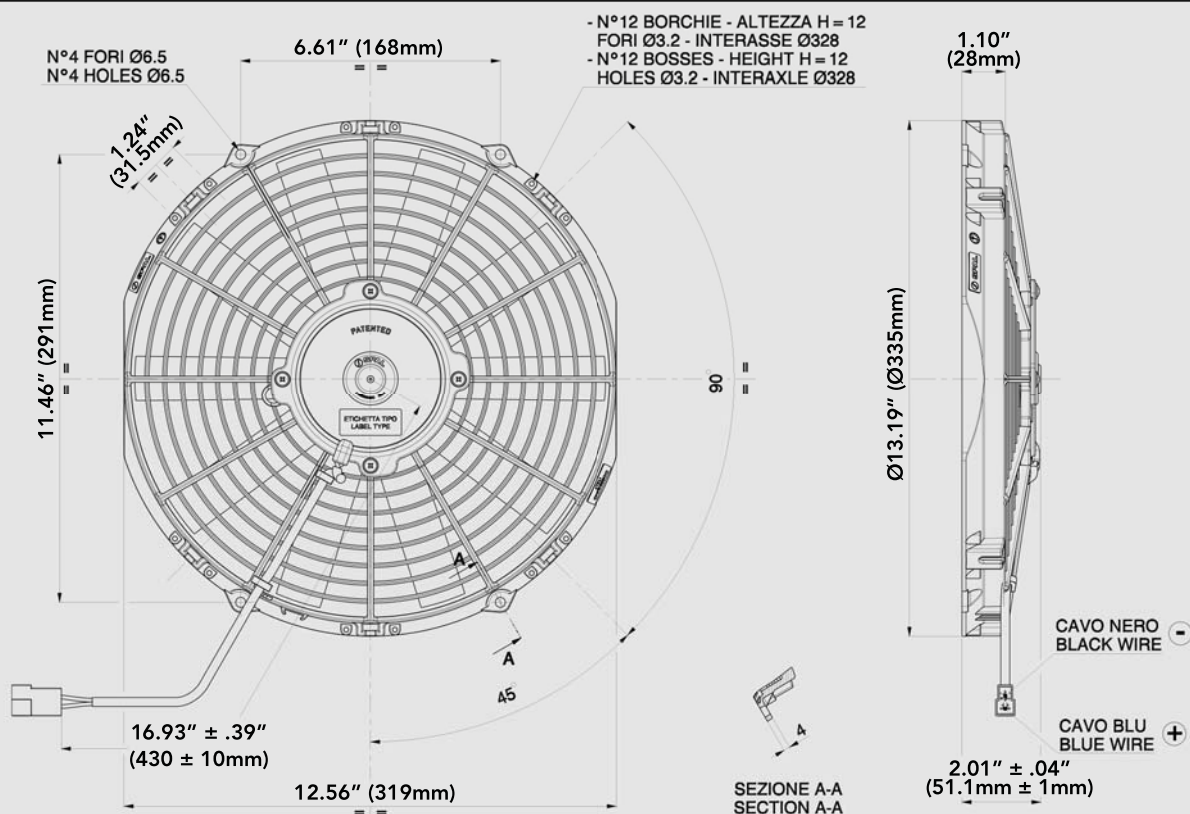
✓ = Standard feature
Caratteristiche standard

✓ = Available upon request
Disponibile su richiesta

Test voltage 26 V. D.C. - Tensione di prova 26 V. c.c.

12V C.C. - D.C.

VA10-AP9/C-25A
VA10-AP9/C-25S



AMP connector Code 180908
 AMP terminal Code 42098-2
 Suggested mounting torque: 3(+1/-0) Nm with screw M5
 Weight 1,1 Kg. approx.

Connettore AMP Cod. 180908
 Terminali AMP Cod. 42098-2
 Coppia di serraggio consigliata: 3(+1/-0) Nm con vite M5
 Peso 1,1 Kg. circa

Ø 305 mm

Ø 12"

suction / aspirante

blowing / soffiante

Static pressure Pressione statica mm H ₂ O	suction / aspirante			blowing / soffiante			Static pressure Pressione statica inH ₂ O
	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	
0	1470	6,9	867	1450	6,4	856	0
2,5	1260	7,3	743	1210	6,5	714	0,1
5	1070	7,5	631	1070	6,6	631	0,2
7,5	930	7,3	549	870	6,7	513	0,3
10	680	7,0	401	580	6,8	342	0,4
12,5	400	7,2	236	380	6,7	224	0,5
15	0	7,3	0	0	6,5	0	0,6

PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

Waterproof motor, IP 68 Motore chiuso, IP 68	✓
Long life / Lunga durata	✓
LL and VLL version* Versione LL e VLL*	✓
Waterproof connector Connettori a tenuta stagna	✓
Accessories: all the fixing kits Accessori: tutti i kit di fissaggio	✓

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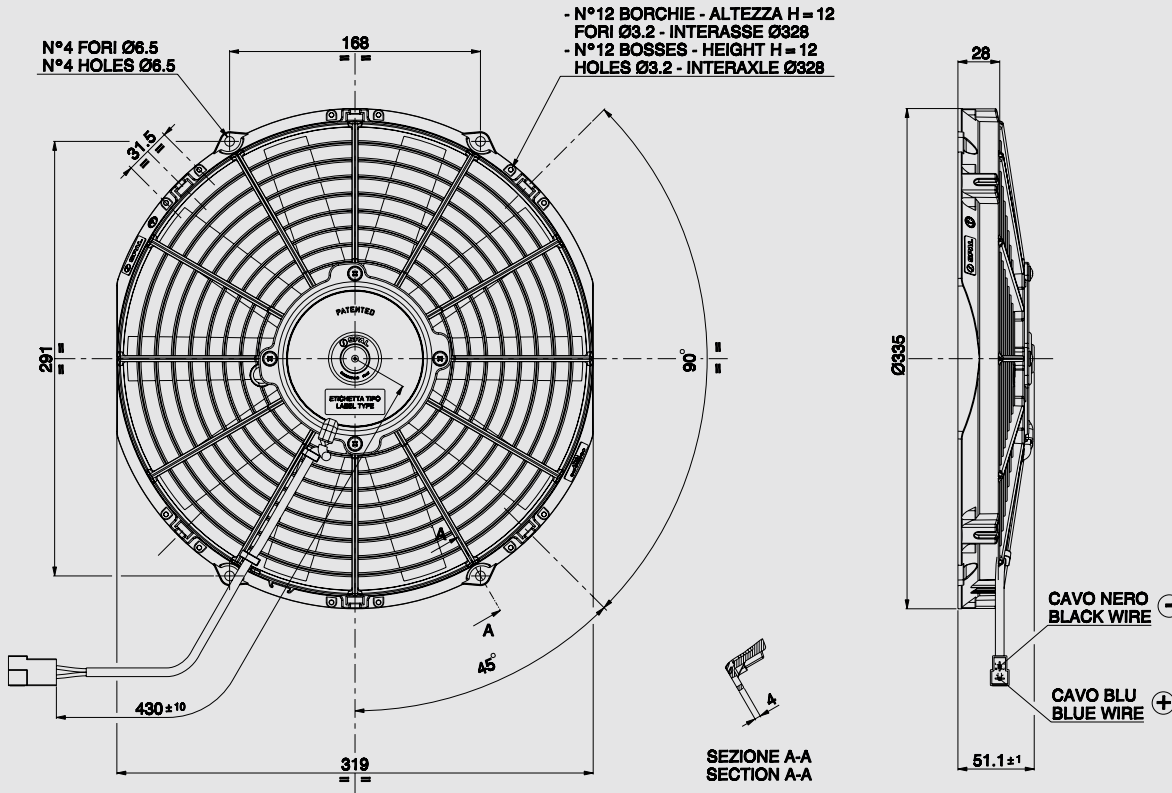
✓ = Standard feature
Caratteristiche standard

✓ = Available upon request
Disponibile su richiesta

Test voltage 13 V. d.c. - Tensione di prova 13 V. c.c.

24V C.C. - D.C.

VA10-BP9/C-25A
VA10-BP9/C-25S



AMP connector Code 180908
 AMP terminal Code 42098-2
 Suggested mounting torque: 3(+1/-0) Nm with screw M5
 Weight 1.1 Kg. approx.

Connettore AMP Cod. 180908
 Terminali AMP Cod. 42098-2
 Coppia di serraggio consigliata: 3(+1/-0) Nm con vite M5
 Peso 1,1 Kg. circa

Ø 305 mm
 Ø 12"

suction / aspirante

blowing / soffiante

PRODUCT FEATURES
 CARATTERISTICHE PRODOTTO

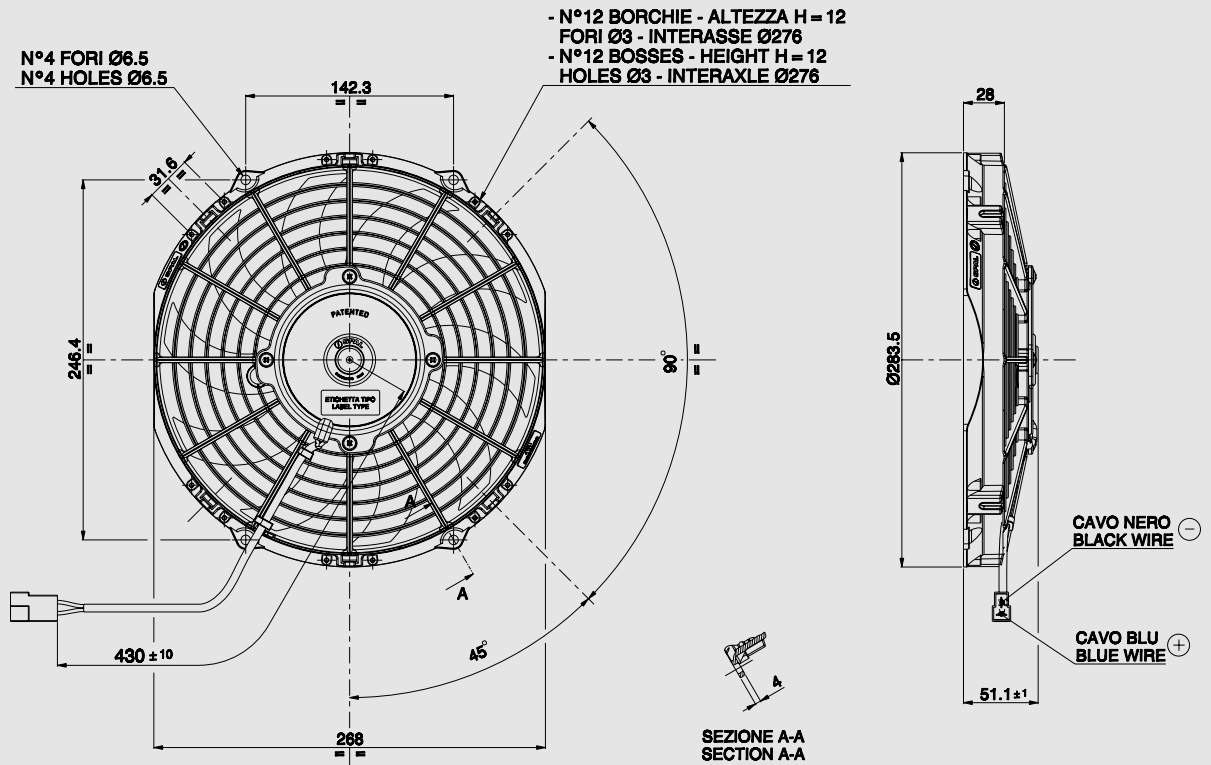
Static pressure Pressione statica mm H ₂ O	suction / aspirante			blowing / soffiante			Static pressure Pressione statica in H ₂ O
	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	
0	1560	3,5	920	1410	3,3	832	0
2,5	1350	3,8	797	1280	3,5	755	0,1
5	1140	3,8	673	1110	3,5	655	0,2
7,5	950	3,9	561	880	3,6	519	0,3
10	710	3,6	419	630	3,6	372	0,4
12,5	490	3,7	289	400	3,5	236	0,5
15	270	3,8	159	190	3,4	112	0,6
17,5	0	3,8	0	0	3,4	0	0,7

Waterproof motor, IP 68 Motore chiuso, IP 68	✓
Long life / Lunga durata	✓
LL and VLL version* Versione LL e VLL*	✓
Waterproof connector Connettori a tenuta stagna	✓
Accessories: all the fixing kits Accessori: tutti i kit di fissaggio	✓

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 Caratteristiche standard
 ✓ = Available upon request
 Disponibile su richiesta

Test voltage 26 V. D.C. - Tensione di prova 26 V. c.c.



Ø 255 mm

Ø 10"

AMP connector Code 180908
AMP terminal Code 42098-2
Suggested mounting torque: 3(+1/-0) Nm with screw M5
Weight 1,00 Kg. approx.

Connettore AMP Cod. 180908
Terminali AMP Cod. 42098-2
Coppia di serraggio consigliata: 3(+1/-0) Nm con vite M5
Peso 1,00 Kg. circa

PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

suction / aspirante

blowing / soffiante

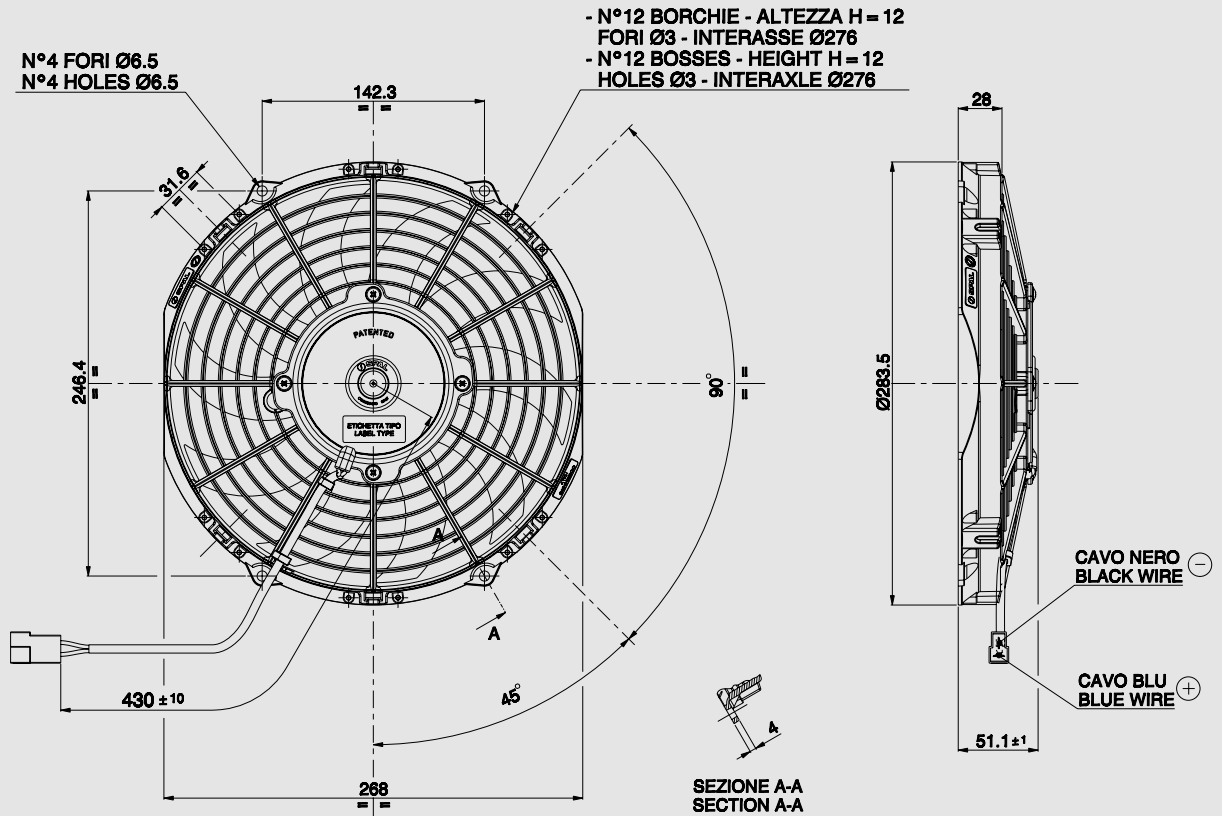
Waterproof motor, IP 68 Motore chiuso, IP 68	✓
Low noise / Bassa rumorosità	✓
Long life / Lunga durata	✓
LL and VLL version* Versione LL e VLL*	✓
Waterproof connector Connettori a tenuta stagna	✓
Accessories: all the fixing kits Accessori: tutti i kit di fissaggio	✓

Static pressure Pressione statica mm H ₂ O	suction / aspirante			blowing / soffiante			Static pressure Pressione statica inH ₂ O
	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	
0	1360	8,7	802	1430	7,6	844	0
2,5	1250	8,9	738	1320	7,8	779	0,1
5	1150	9,1	679	1220	8,1	720	0,2
7,5	1020	9,2	602	1090	8,4	643	0,3
10	780	8,9	460	950	8,5	561	0,4
12,5	480	8,7	283	760	8,5	448	0,5
15	380	8,7	224	580	8,3	342	0,6
17,5	280	9,0	165	390	8,0	230	0,7
20	120	8,7	71	130	7,5	77	0,8
25	0	9,0	0	0	8,1	0	1

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* per applicazioni OEM

✓ = Standard feature
Caratteristiche standard
✓ = Available upon request
Disponibile su richiesta

Test voltage 13 V. d.c. - Tensione di prova 13 V. c.c.



Ø 255 mm

Ø 10"

AMP connector Code 180908
AMP terminal Code 42098-2
Suggested mounting torque: 3(+1/-0) Nm with screw M5
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Connettore AMP Cod. 180908
Terminali AMP Cod. 42098-2
Coppia di serraggio consigliata: 3(+1/-0) Nm con vite M5
Peso 1,00 Kg. circa

PRODUCT FEATURES
CARATTERISTICHE PRODOTTO

suction / aspirante

blowing / soffiante

Waterproof motor, IP 68 Motore chiuso, IP 68	✓
Low noise / Bassa rumorosità	✓
Long life / Lunga durata	✓
LL and VLL version* Versione LL e VLL*	✓
Waterproof connector Connettori a tenuta stagna	✓
Accessories: all the fixing kits Accessori: tutti i kit di fissaggio	✓

Static pressure Pressione statica mm H ₂ O	suction / aspirante			blowing / soffiante			Static pressure Pressione statica mm H ₂ O
	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	Airflow Portata m ³ /h	Current input Corrente assorbita A	Airflow Portata CFM	
0	1300	3,9	767	1400	3,7	826	0
2,5	1220	3,9	720	1260	3,9	743	0,1
5	1070	4,0	631	1160	4,0	684	0,2
7,5	940	4,0	555	980	4,1	578	0,3
10	800	3,8	472	780	4,2	460	0,4
12,5	420	3,8	248	560	4,0	330	0,5
15	320	3,8	189	410	3,9	242	0,6
17,5	250	3,7	148	230	3,7	136	0,7
20	0	3,8	0	0	3,6	0	0,8

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Caratteristiche standard

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Disponibile su richiesta

Test voltage 26 V. D.C. - Tensione di prova 26 V. c.c.



SPAL
AUTOMOTIVE

COMPANY PROFILE



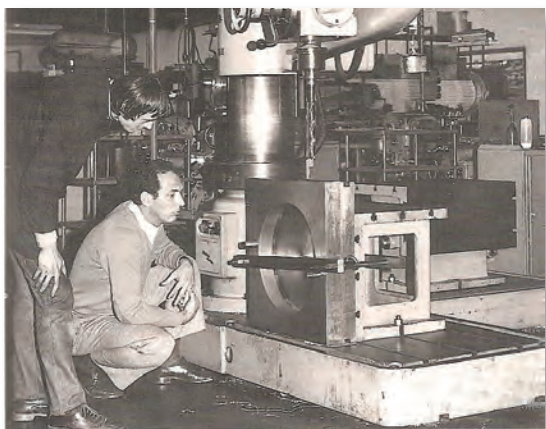


We always strive to perform at the highest standards possible.

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



Shaping Air Since 1959

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.

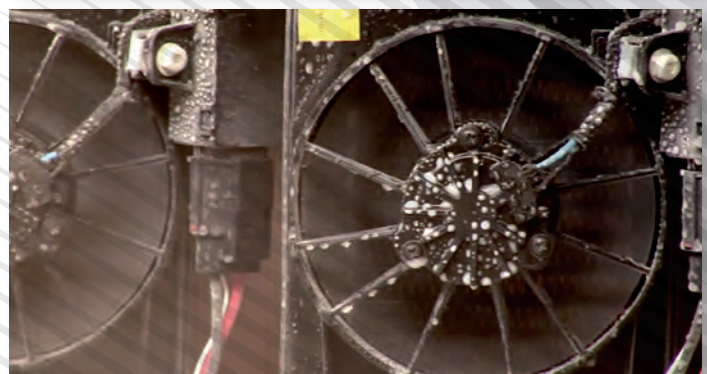
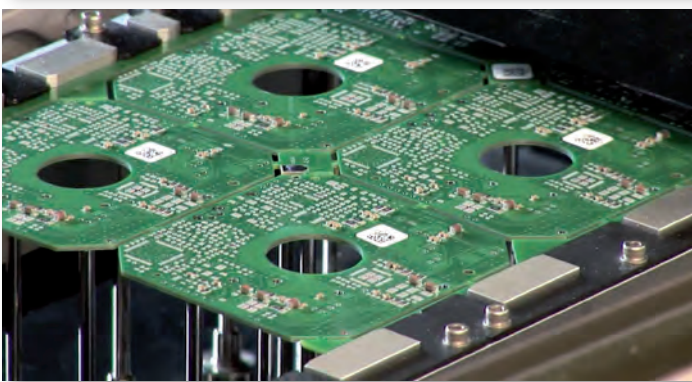
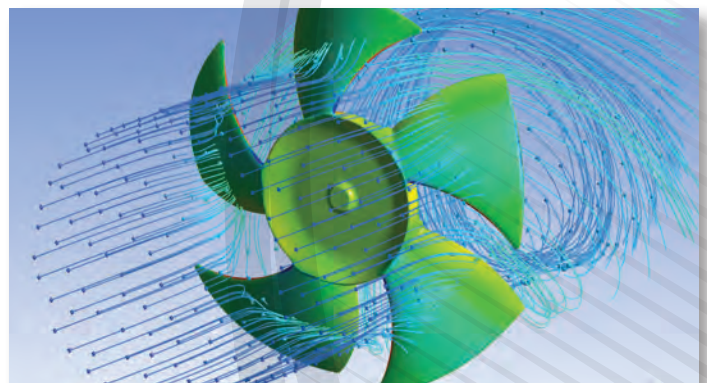
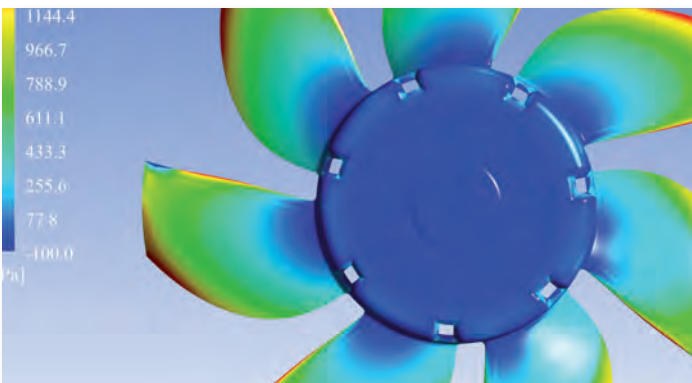
SPAL's high level of vertical integration allows it to exercise quality control over every single step of the manufacturing process enabling it to apply its own accreditation - the SPAL Quality Standard.



Shaping Air Since 1959

Core Competence

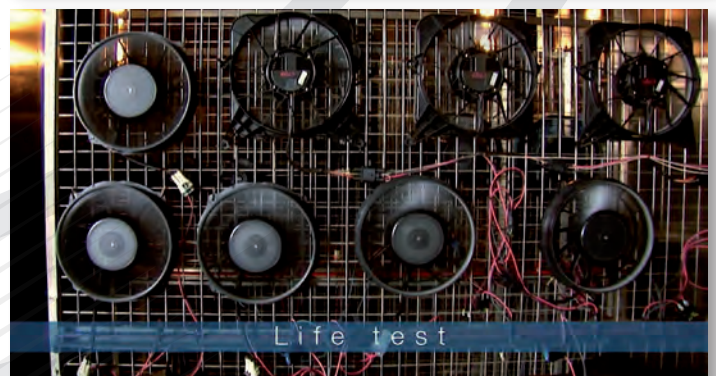
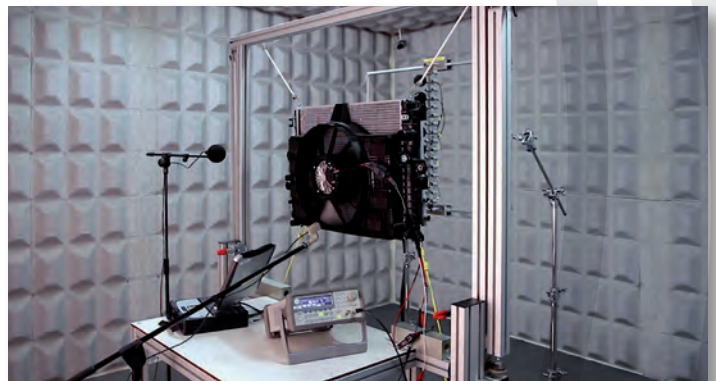
- SPAL utilizes in-house technical expertise to develop the most advanced products with an innate understanding of all aspects of Fluid dynamics, Thermodynamics, Electronics, Electro-magnetics and Mechanics.
- The Product Engineering department swiftly leads development for each new component of the 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.



Shaping Air Since 1959

Innovation

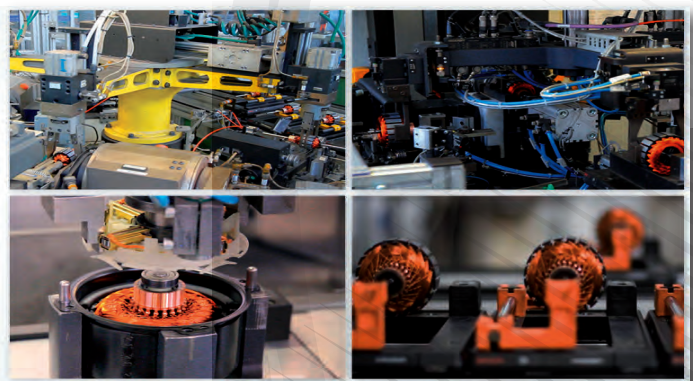
- The next advance in automotive technology is just around the corner and SPAL keeps pace with this through constant innovation.
- SPAL designers and engineers are engaged in continually refining products bespoke to clients requirements working closely with OEMs and seeing new ideas through from initial 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.



Shaping Air Since 1959

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.



Shaping Air Since 1959

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

Shaping Air Since 1959

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).



Shaping Air Since 1959

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

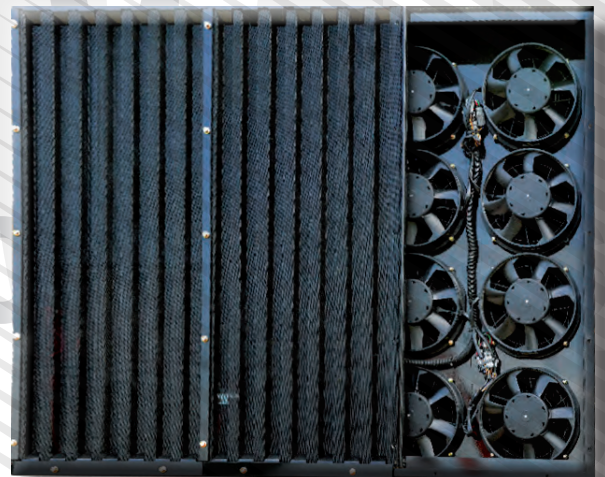
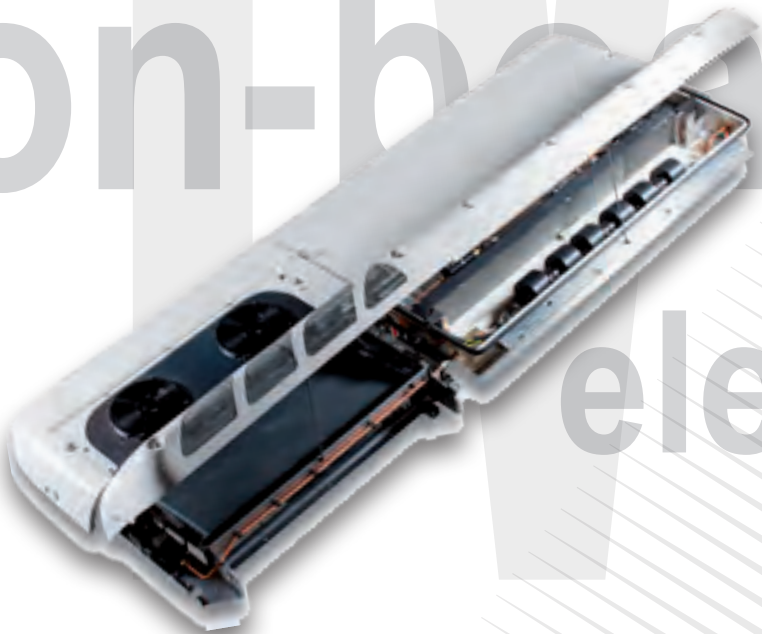
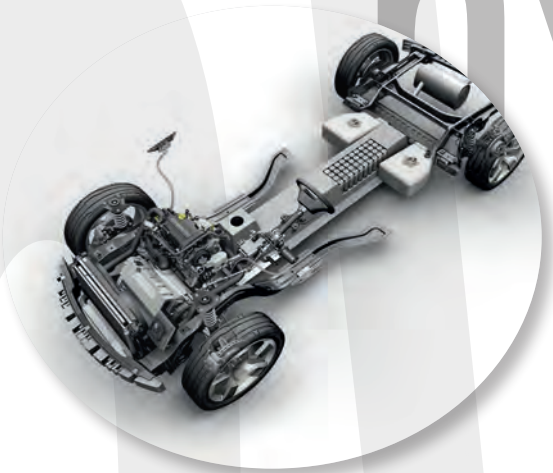
- SPAL USA (Des Moines - Iowa - USA) US Subsidiary
- SPAL CHINA (Shanghai -China) Chinese Subsidiary
- SPAL Automotive UK (Worcester- UK) UK Subsidiary
- SPAL do Brazil (Sao Paulo - Brazil) Brazilian Subsidiary
- SPAL RUS (Saint-Petersburg - Russia) Russian Subsidiary
- SPAL Japan K.K (Tokyo - Japan) 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**

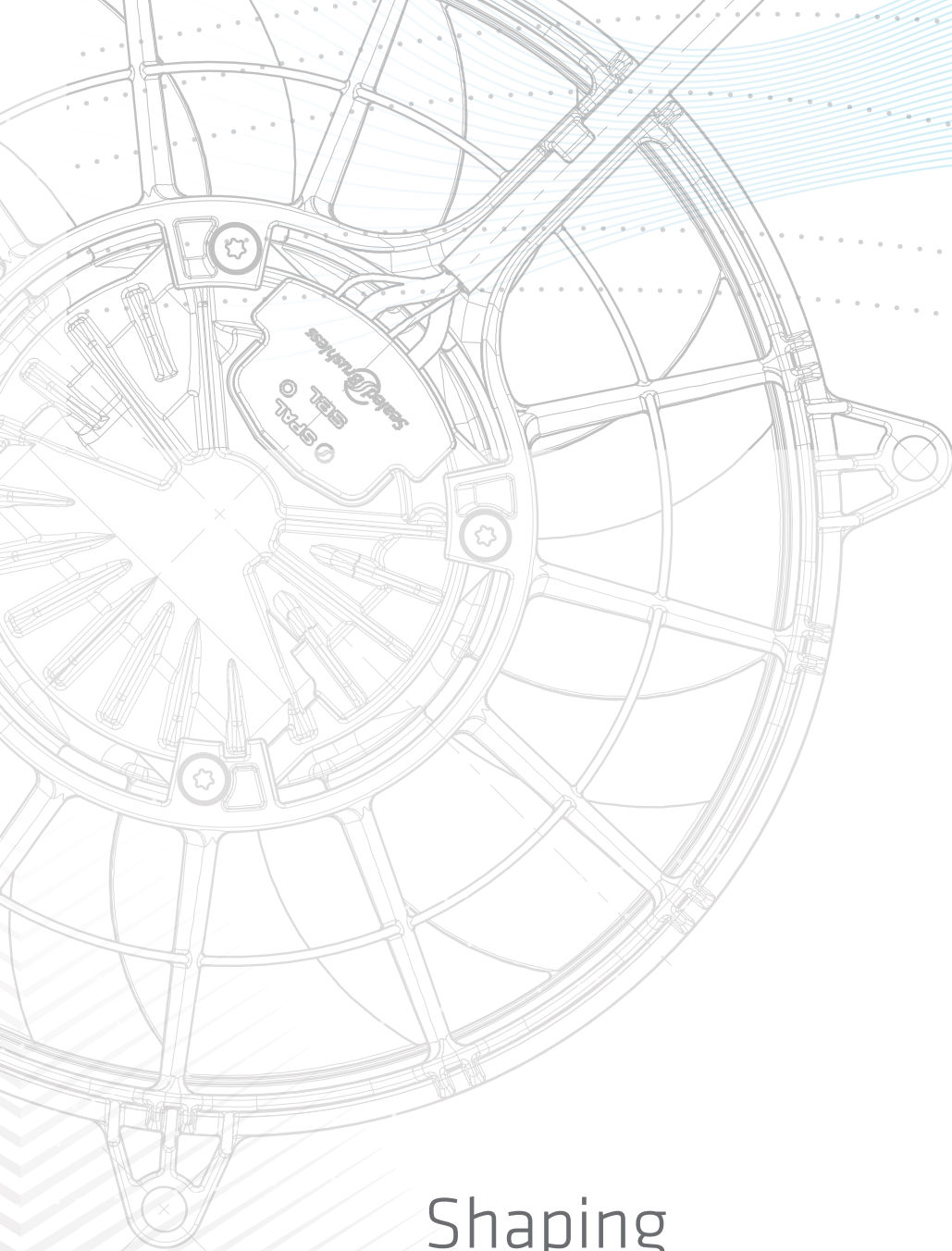


■ **Agricultural**

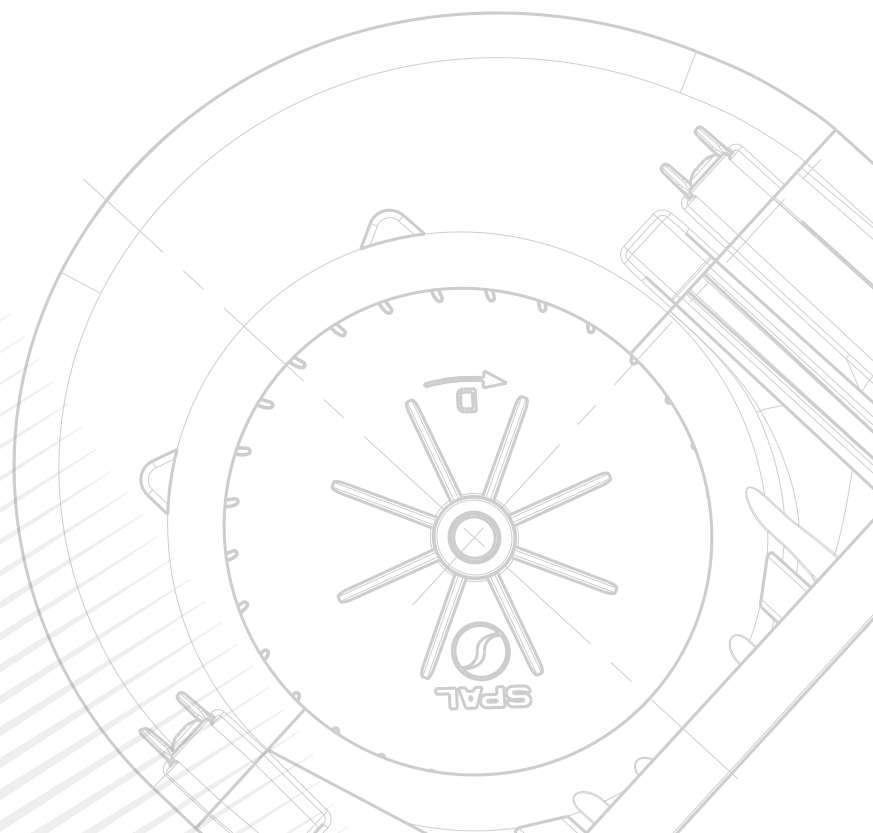


■ **Truck** Parking Cooling - Hybrid System Cooling





Shaping
Air Since 1959





● **HEADQUARTERS**
SPAL AUTOMOTIVE
Via per Carpi, 26/B
42015 Correggio RE - ITALY
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