ENGINE COOLING AND AIR-CONDITIONING
FOR COMMERCIAL VEHICLES AND INDUSTRY
The HAUGG COOLING GROUP – joint competence and know-how

HAUGG Kühlerfabrik, HAUGG Industriekühler and Schwarzwälder Metallwarenfabrik HAUGG are dynamic companies of the HAUGG Group. The group of companies bundles comprehensive industrial and branch competence in the process of removing heat. The group’s activity is focused on the development, production and sale of heat exchangers in different fields of application for utility vehicles and industry.

The companies of the HAUGG Group are cooling experts for construction and agricultural machinery, compressed air cooling, power stations and rail vehicles – based on a century of experience in the radiator industry.

OUR PHILOSOPHY

Firm principles – the base of a trusting business connection

For HAUGG progress has the meaning of performing the individual wishes and needs of the customers.

- Flexibility
- Quality
- Innovation

Fair prices, adaptable delivery times, professional implementation of all orders and comprehensive service are our goals. Technically highly efficient systems such as vacuum brazing furnaces and contemporary management give the possibility to achieve these goals. We build high-quality products and offer our customers comprehensive, specific solutions.
The HAUGG Group – Structure and Production Plants

www.haugg-group.com

Aachen/D
HAUGG Holding GmbH

Aachen/D
HAUGG Kühlerefabrik GmbH
• Cu/Ms Radiator modules

Triberg/D
Schwarzwälder-Metallwarenfabrik
HAUGG GmbH
• Sheet-metal processing
• Assembling

Sulz/D
HAUGG Industriekühler GmbH
• Alu-coolers

Marienheide/D
Metallwarenfabrik
HAUGG
• Blanked parts
• Deep drawings

Marketing Organisation

• HAUGG Cooling SRO
SK/CZ/HU/HR
HAUGG Cooling Systems – small sizes and large capacity range

The special merits of HAUGG Cooling Systems are small sizes, a large capacity range, low weights as well as a high internal pressure stability.

For light metal standard cooling systems, a plate and bar construction has been chosen for the core, being brazed according to a special flux-free vacuum brazing process. Flux-free means no corrosive residues on the product after brazing while the plate and bar design grants high pressure stability. 15 different basic cooling systems with numerous variations are available.

This allows us to select the optimum cooling system suitable to numerous applications at a reasonable price.

In total, the production programme encompasses:

- Complete cooling systems and cooling modules
- Charge air and water coolers for mobile and stationary applications
- Compressed air and combination coolers
- Oil coolers for hydraulic units, gears and vehicle engines
- Heat exchangers in aluminium, non-ferrous metal and steel
- Ventilation units with electric and hydraulic motors
- Radiator repair

Heat exchangers like evaporators, condensers, heaters and blowers make up our range of products for interior climate control.
HAUSS – about a century of experience in cooling

Machines are used in different climate zones of the planet. Moreover, loaders or hollow tippers, tractors, combine harvesters or seeding machines demand top cooling performance and no system clogging. For construction and agricultural machinery HAUSS develops complete cooling systems and modules, single components for engine cooling and interior air-conditioning components.

Thanks to our competence in the layout, design and construction of heat-exchangers and about a century of experience we provide expert solutions – also for extreme environmental conditions. Moreover, we strive to develop new solutions for future demands.
More stringent demands placed on cooler designs like low weight coupled with high power density and increased need of security, made the use of aluminium indispensable for heat exchangers.

To increase durability of the coolers HAUGG established cataphoretic painting. Comprehensive tests at Deutsche Bahn AG approved good resistance against all solvents.

The resulting high power density and the flexible dimensioning, facilitate a design that can be adapted to the respective operating conditions and installation criteria.

The methods used for calculating the design’s thermodynamic properties are based on extensive experiments. In addition, the design also benefits from experience gained from field installations.
Punching and deep drawing – tailor made

The large scope of production possibilities includes punching and deep drawing of all sorts of metals. Even highly complex deep drawn parts are manufactured according to drawings or samples with highest precision and efficiency.

Our products are installed in the electric, electronic and automotive industry, heating systems, instrumentation, cosmetics and medical industry etc.

Starting point of the production is a metal strip:

- copper
- brass
- bronze
- steel
- stainless steel
- aluminium

The eccentric presses have the capacity of forming parts out of metal strips up to 200 mm width and gauges up to 5 mm. On stage presses we start with discs in diameters of 80, 120 or 160 mm and strip gauges of up to 2 mm.
Thin sheet metal processing – from single parts to middle series

We supply metal parts, formed through punching, bending, drawing, pressing, moulding or CNC-manufactured. We achieve tolerances of ± 0.1 mm in welded constructions and are able to process all types of metals including

- steel,
- stainless steel,
- aluminium,
- brass,
- copper and
- materials that are metal coated including zinc.

We have the ability to process steel metal up to 6mm thickness and stainless steel up to 4mm.

Complete assemblies are manufactured, from single parts to middle series:

- linings of all kinds
- housing and doors
- control panels and tubular mountings
- hoods and frame covers

We supply manufacturers of kitchen appliances, automotive industry, mechanical engineering, electrical and electronic equipment manufacturers and the furniture industry.
**Innovation and quality – the driving forces of the HAUGG Group**

The success of the HAUGG Group is based on innovation and quality. With our management system we set the standard for an enterprisewide project and quality management. In 1997 HAUGG was the first manufacturer of coolers who switched the main production process to the environment-friendly, economical and increased quality vacuum brazing.

The HAUGG Group is certified according to DIN ISO 9001-2008. Additionally in 2003 we obtained the approval for welding in rail-mounted vehicles according to DIN 6700 C2 and updated 2010 according to DIN EN 15085 CL1.

Since 2016 HAUGG has been using the environmentally-friendly energy management system DIN 50001. Both the development, production and assembly of heat exchangers, cooling modules and their components, as well as the production of sheet metal, punched and deep drawn parts, have optimized the processes and sustained the energy efficiency of the company to improve.

**The service network – flexible, fast and throughout Europe**

HAUGG Group’s service network is throughout Europe. We also take over spare parts or repair service for our customers.
CERTIFICATE

This is to certify that

HAUGG - Gruppe

Haugg Kühlerefikat GmbH
Rechling 45
52076 Aachen
Germany

with the organizational sites as listed in the annex;
has implemented and maintains a Quality Management System.

Scope:
Design, manufacturing and assembling of heat exchanger components - as well as sheet metal treatments, piping and components.

ISO 9001 : 2008

Certificate registration no.: 280306 GM 08
Valid from: 2015-10-14
Valid until: 2018-10-14
Date of certification: 2015-10-14

DQS GmbH

G. Blechschmidt
Managing Director

Accredited Body: DQS GmbH, August-Schmidt-Straße 21, 64293 Frankfurt am Main, Germany

CERTIFICATE

This is to certify that

Haugg Kühlerefikat GmbH
Rechling 45
52076 Aachen
Germany

with the organizational sites as listed in the annex;

has implemented and maintains an Energy Management System.

Scope:
Design, manufacturing and assembling of heat exchanger components and their components - as well as sheet metal treatments, punched and deep drawn parts.

through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 50001 : 2011

Certificate registration no.: 269395 EM 06
Valid from: 2016-11-20
Valid until: 2019-11-19
Date of certification: 2016-11-20

DQS GmbH

E. Goebel
Managing Director

Accredited Body: DQS GmbH, August-Schmidt-Straße 21, 64293 Frankfurt am Main, Germany
Certificate no.: TÜV SÜD/16095/C1/17/0A/2

Comments:

The welding coordinator Mr. Bernd Wolkenr is allowed to perform welder and welding operator qualification tests acc. to EN 287-1, EN ISO 9606-2 and EN 1418.

General regulations
according to EN 15085-2

Revocation of the Certificate

The national authority or the manufacturer certi may revoke the certificate if:
- there are justified doubts as to the proper execution of the standards,
- there are justified doubts as to the proper welding code standards,
- no recognized welding coordinator is available any for the required number of welders,
- no valid qualification test certificates for the welders are available,
- welders or welding operators without tested qualification of welding work under the stated standards,
- other conditions according to the stated standards are not provided,
- the manufacturer certification body was released an op
- the welding manufacturer supplies the wrong body.

The welding manufacturer shall acknowledge the revocation. The manufacturer certification body shall notify it in the event of a valid certificate is to be renewed, the renewal must body at least two months before the end of the period.

Distribution list:
1. Applicant
2. TÜV SÜD

TÜV SÜD Industrie Service GmbH
Bahnhostrasse 84-88
D-72172 Sulz / Neckar

CERTIFICATE
Welding of railway vehicles and components according to EN 15085-2

This is to certify that HAUGG-INDUSTRIEKÜHLER GmbH
is qualified to perform welding work within the range of certification:
Certification level CL1 according to EN 15085-2

Field of application:
- New build of rail vehicles and their components
- Wellhead facilities, ventilation units, supporting frames
- Design, purchase, and assembly

Range of certification

<table>
<thead>
<tr>
<th>Welding process</th>
<th>Material group according to EN ISO 15614-1</th>
<th>Dimensions</th>
<th>Comments</th>
</tr>
</thead>
</table>
| T1               | EN 10083-1 EN 10252-1 EN 10252-2 EN 10252-3 | ≥ 3, 10 mm  | EN, PW |}
| T2               | EN 10083-1 EN 10252-1 EN 10252-2 EN 10252-3 | ≥ 3, 10 mm  | -       |
| T3               | EN 10083-1 EN 10252-1 EN 10252-2 EN 10252-3 | ≥ 3, 10 mm  | -       |
| T4               | EN 10083-1 EN 10252-1 EN 10252-2 EN 10252-3 | ≥ 3, 10 mm  | -       |

Responsible welding coordinator: Bernd Wolkenr (WES) born: 05.11.1962
Deputy with equal rights: -
Deputy: Joachim Eisenack (WES) born: 21.07.1960
Comments: see reverse
Certificate no.: TÜV SÜD/15085/C1/17/0A/2
Valid: from 31.07.2013 to 31.06.2016
Issued on: 31.07.2013
Auditor: HAUGG
General regulations: see reverse

TÜV SÜD Industrie Service GmbH - Abteilung WQ/05 - Sulz / Neckar - Wagenweg 26 - 72172 Sulz / Neckar - Germany