

Compact Burner

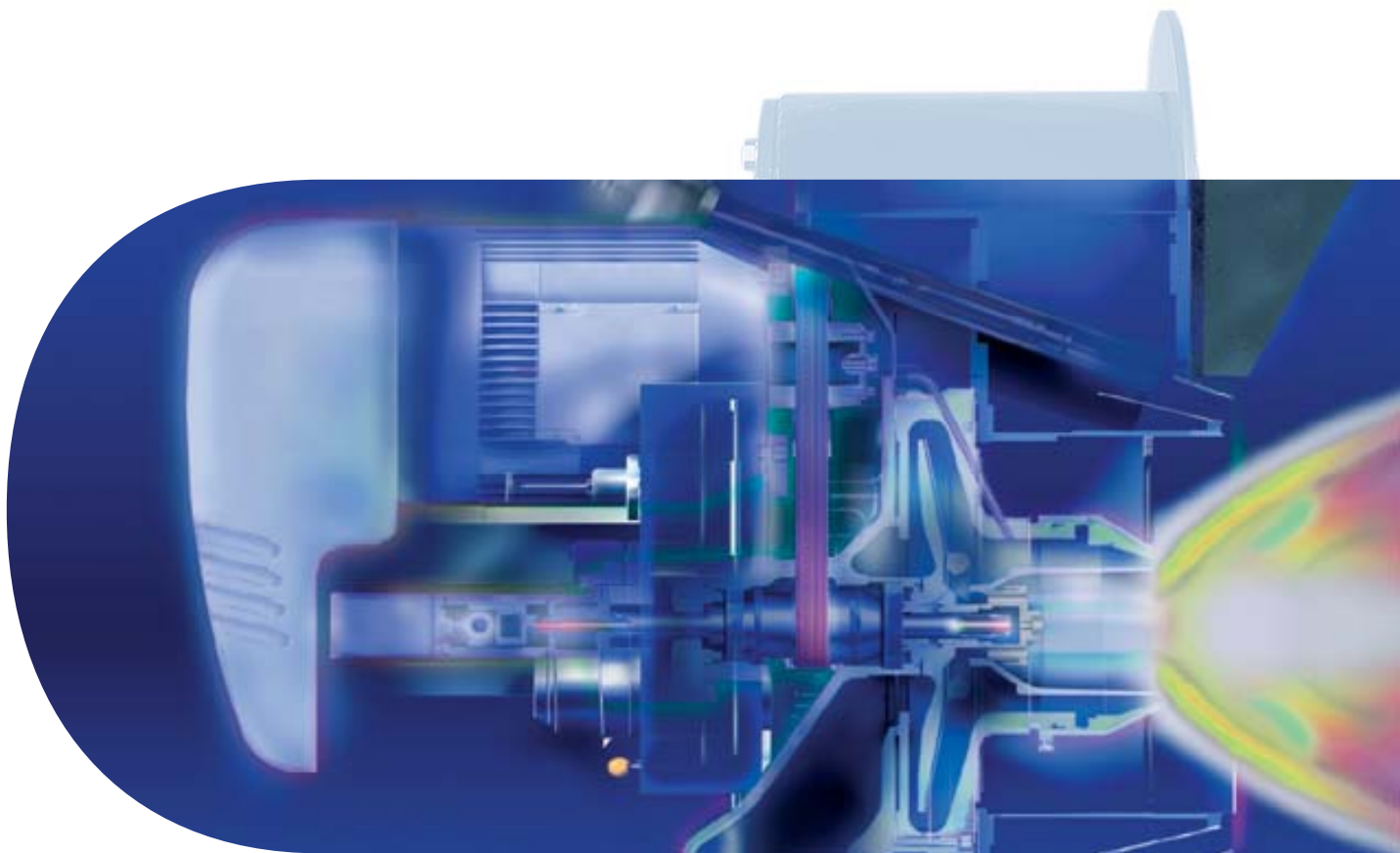
SKV-A

The new burner generation



SAACKE

Combustion and Energy Systems



- Progressive development of the rotary cup atomizer technology
- Standardised model type series
- Type-certified
- Economically convincing - environment-conscious
- Optimised high-performance fan, exactly tuned to the burner
- Comprehensive service

Progressive – the innovation for highest demands

During the more than 70 years of our company's history, SAACKE has developed the rotary cup atomizer technology to perfection.

The compact burner SKV-A represents a new stage of development. The model series SKV-A makes use of the comprehensive know-how of the SAACKE engineers. With a large number of innovative components they successfully incorporate the environment-conscious and economic combustion technology.

The SKV-A is the standardised and type-approved rotary cup burner.

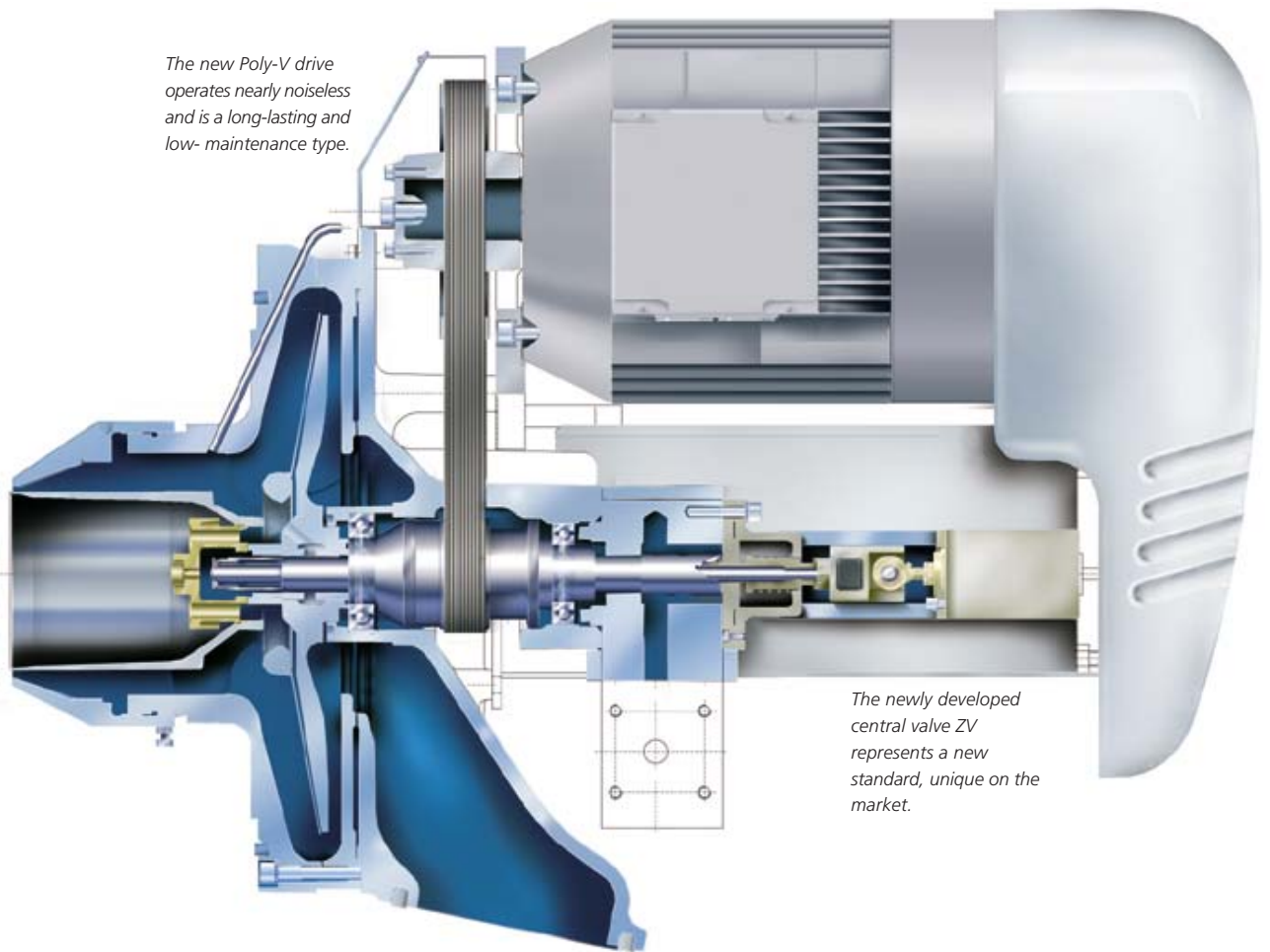
Its modular structure results in a flexibility that meets all user-specific technical requirements at a large degree. Adaptation to the individual plant conditions is really simple. The high-performance fan is an integral part of the SKV-A with various versions especially matched to the chosen burner.

Economic criteria as well as its environment-friendly properties are features of the SKV-A burner. The low solids and NO_x values together with a high firing engineering efficiency make proof of the responsible use of natural resources.

With innovative and reliable products, comprehensive plant consultation and our global service network, SAACKE is the up-to-date and future-oriented partner in the industrial heat market.



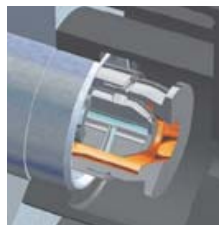
The standardised modularly assembled rotary cup burner realises new standards in the industrial firing technology and guarantees highest efficiency.



The new Poly-V drive operates nearly noiseless and is a long-lasting and low-maintenance type.

The newly developed central valve ZV represents a new standard, unique on the market.

The direct safety shut-off in the rotary atomising cup guarantees that there will be no further fuel flow after the burner is stopped.



- **Modular construction - universally applicable**
- **Optimally controllable progress of the combustion process**
- **Alternate combustion of heavy fuel oil, light oil and gas**
- **Automatic fuel change**
- **Single- or dual fuel burner**

Efficient – The engineering of the new burner generation

Rotary cup atomizer technology - the favoured process

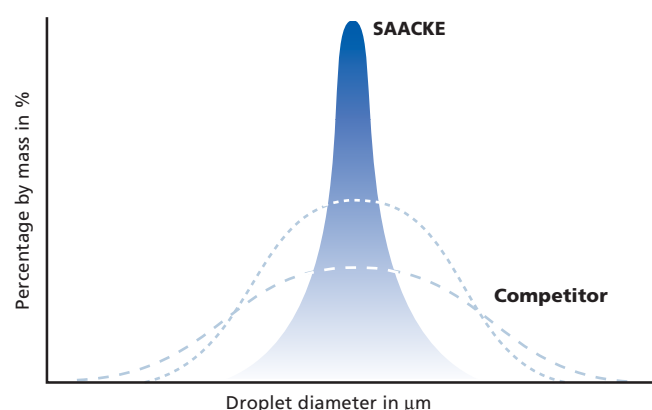
The SKV-A is a completely new development on the basis of the well-proved SAACKE rotary cup atomizer technology. It combines all advantages of an economic, operation-reliable and environmental-friendly combustion: large control range at low excess air ratio, highest combustion quality as well as insensibility for fuels of different quality and contamination. The innovative power of the SKV-A is based on the progressive matching of all components, forming a new overall concept.

Highest flexibility

Handling of the SKV-A burner can be compared with that of a monoblock burner. Even the standard version of the SKV-A can be universally used and adapted to the special individual operation condition.

The SKV-A is designed as single- or dual fuel burner for liquid and gaseous fuels. A fuel change can be initiated fully automatically from the central control room. The alternate combustion of heavy fuel oil, light oil or gas makes the user independent of any fluctuations on the fuel market and it is possible to choose the lowest price fuel at any time.

The newly developed Low-NO_x gas burner is an integral part of the register and can be matched to the different gases simply and quickly. It is a parallel flow burner with fuel staging that - due to its special primary gas feeding - guarantees high flame stability.



SKV-A: droplet spectrum

The homogenous finest droplet spectrum of the SKV-A guarantees burn-out up to the theoretical ash content.

The essential item - the new rotary cup atomizer

The new rotary cup atomizer is the central component of the SKV-A that brings the well-proved SAACKE rotary cup atomizer technology to a new dimension of performance. The rotary cup atomizer is equipped with a totally new drive system whose most important feature is its exceptional mechanical load factor - the precondition for the high rotary atomizing cup speed of 6500 rpm. The new concept Poly-V drive guarantees, in combination with the maintenance-free, with high-capacity EP-grease permanent-lubricated bearings - the SAACKE-typical reliability and long service life.

The high speed realises an ideal droplet spectrum with the largest possible atomizing potential for optimum firing sequence. The result: a combustion that could not be more economic and low in pollutants, even when operating with super-heavy fuel oils. No other burner system is of comparatively efficient performance.

With the computer-optimised control cross-section the new ACR-system realises the synchronous operation of the control modules for air and fuel much better than conventional linear characteristics. The ACR is hysteresis-free and insensitive to dirt in the fuel oil.

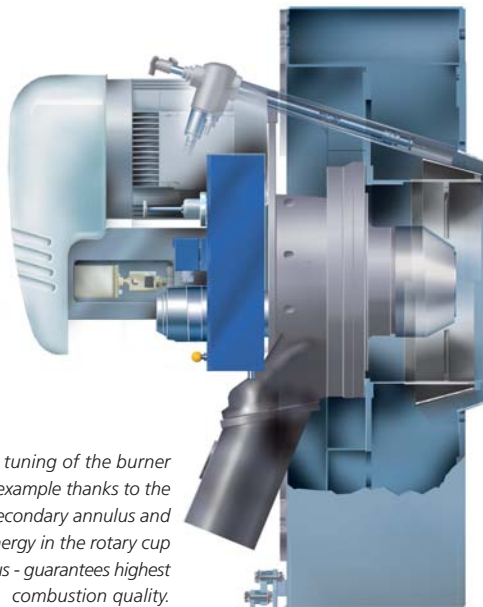


Oil block with the new ACR system

The oil block with the new ACR system, directly connected with the rotary cup atomizer, is a compact module that already integrates all components for heavy fuel oil or light oil operation. The oil block is equipped with an electric high-performance heating system that assures immediate readiness for heavy fuel oil operation even after a longer burner standstill. In addition, permanent oil circulation provides for a uniform temperature distribution - there will be no cold spots. Availability is thus always guaranteed.

SAACKE MEF water injection - Integration possible at any time

The oil block is - as a standard - configured for a SAACKE water injection MEF system, that can quickly be retro-fitted at any time without a problem. The new 3-nozzle technique for water injection provides for an important reduction of solids, especially in heavy fuel oils with a high content of asphaltenes. This procedure does not require further additives. MEF increases the efficiency and reduces operational costs.



The perfect tuning of the burner components - for example thanks to the novel adjustable secondary annulus and the high mixing energy in the rotary cup atomizer air annulus - guarantees highest combustion quality.

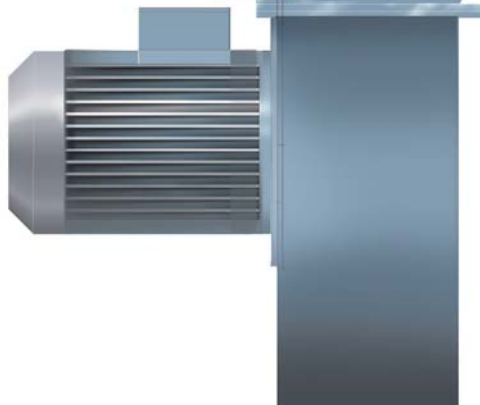
Central airbox and air distribution system

The innovative flow-optimised central airbox ensures a constant velocity profile that assures an exceptionally uniform mixing of combustion air and fuel - the pre-condition for optimum combustion. The hysteresis-compensating air control damper is integrated in the central airbox where optimum air distribution is guaranteed by the progressive damper characteristics.

Integrated high-capacity fan

The standard version of the SKV-A compact burner is equipped with a radial high-capacity fan. This fan with a maximum efficiency is perfectly tuned to the burner and can be delivered with high-effective sound absorbing equipment. The fan supplies the total amount of combustion air that is subsequently portioned into primary and secondary air in the burner. The primary air pressure that is required for a solids-lean combustion is generated - independently of the combustion air fan - in the impellor which is integrated into the rotary cup atomizer.

- **Tested to the latest European safety standards**
- **ZV and ESV-A valves 100 % made by SAACKE**
- **No further oil flow after burner stop**
- **Processor-controlled flame monitoring**
- **Automatic safety sequence**



Self-checking – the best possible human and equipment protection

Safety shut-off valves for oil

The SKV-A represents a new safety standard in burner technology. One of the most innovative components is the central valve ZV. It is of fundamentally new design, long-term tested and type-certified. The sealing is located directly in the rotary atomising cup thus avoiding any further fuel flow after the burner is stopped. In heavy fuel oil design, the valve is heated up to the locking cone assuring immediate readiness for operation even after a long burner standstill. Post-purging with light oil or blowing-out of the oil transporting pipes is not required. Contrary to pre-controlled valves, the directly controlled ZV has no narrow control holes thus assuring the best possible safety even for operation of extra-heavy fuels under the hardest service conditions.

The safety shut-off valve ESV-A is based on the well-proven SAACKE-ESV-technology. This modular valve is also type-certified and - as the ZV valve - directly controlled showing all operational and safety features.

Microprocessor-controlled flame monitoring system

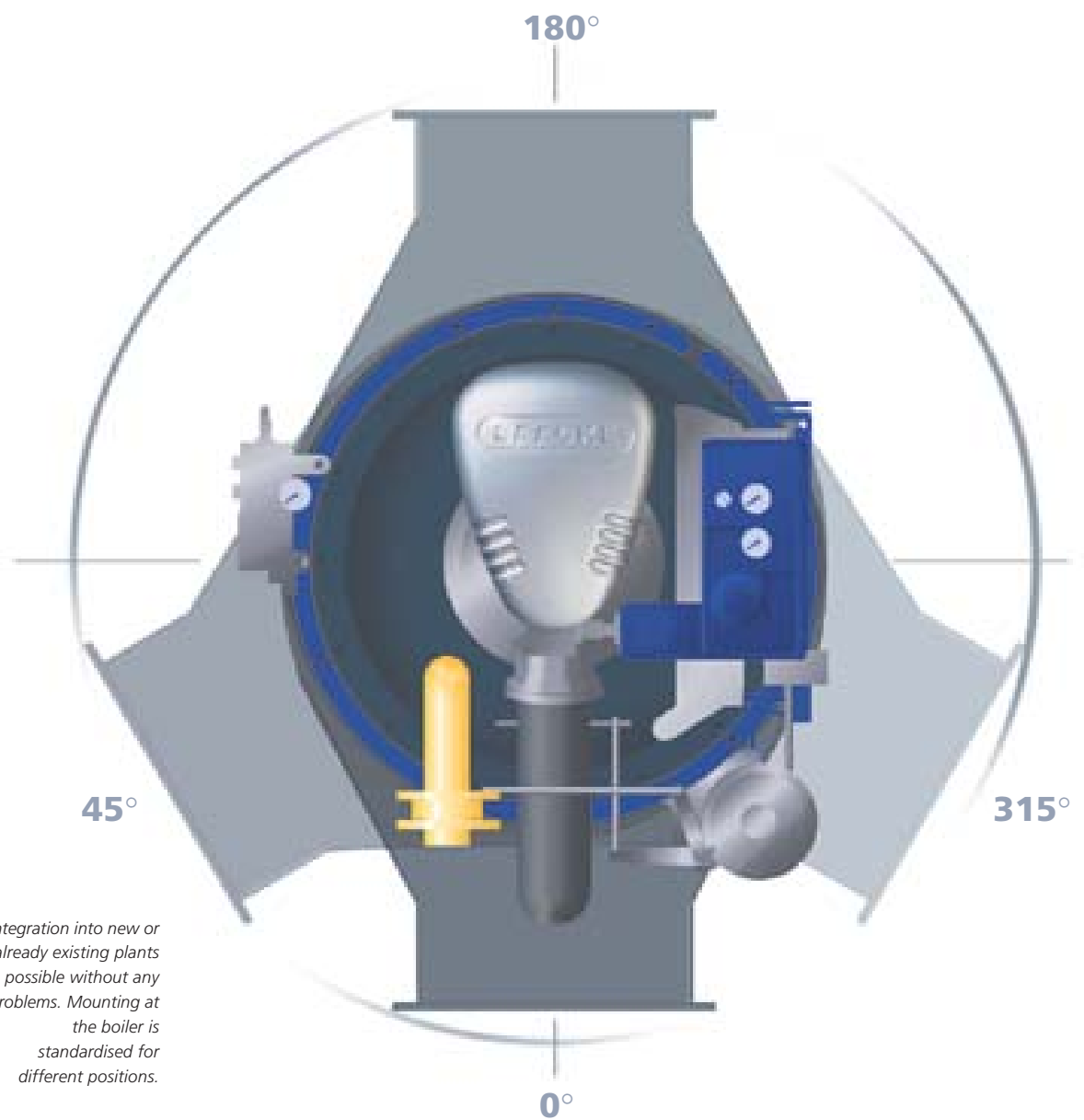
To a large degree, the safety concept of the SKV-A makes sure that possible operator's mistakes will not endanger the operational reliability of the plant. This is why the SKV-A is equipped with a microprocessor-controlled flame monitoring system that is approved for 72-hour operation without permanent supervision in compliance with the German guidelines TRD 604/72 h. In addition, this system is type-approved as per the latest European standards.



The SKV-A has been certified and type-approved in the SAACKE research and development centre.

On the safe side

All control modules have been designed with fail-safe capabilities. That means that even in case of a possible wearing of safety-relevant components, the best possible human and equipment protection, is guaranteed. This is safety in detail.



- Simple projecting and planning
- Time- and cost saving installation and commissioning
- Clean and very low in solids combustion
- Maximum combustion engineering efficiency
- Lowest emission values
- SAACKE-typical long service life
- Use of the most cost-effective fuel

Safe investment – advantages in economy and environment protection

The SKV-A represents the latest state-of-the-art in technology. All modules of the compact burner have been developed according to the most modern design systematics, manufactured with the newest production equipment and are long-term tested. The SKV-A is type-certified as per very strict German guidelines. This avoids high individual approval fees and the commissioning time is clearly shortened.

Simple plant planning and ease of servicing

With the new burner generation, SAACKE gives engineers the highest possible planning assurance. The SKV-A has pre-determined capacity ranges, tested working fields and can be supplied optionally with a mechanical or electronic compound control system.

Ease of servicing is a further innovation of the SKV-A burner. The modular structure of the burner and the multifunctional swing-out module are examples of such features.

Only a few adjustments are required to connect the register with the rotary cup atomizer and to swing-out the two units commonly. This enables easy access to all components integrated in the burner and to the furnace.

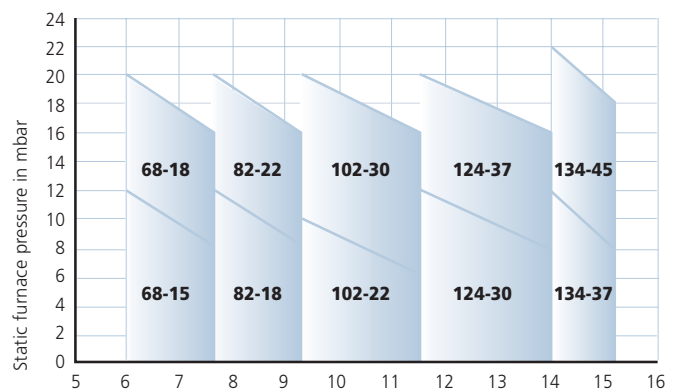
Best functionality

With this consistent product development, the SAACKE rotary cup atomizer technology has attained a new dimension. The result: clean, low solids combustion with excellent emission values and highest fuel engineering efficiency.

SKV-A	Burner capacity MW	Boiler capacity ca. t/hr	Heavy fuel oil throughput kg/hr	Light fuel oil throughput kg/hr	Natural gas throughput m3/hr
68-15 68-18	7,6	10	675	645	760
82-18 82-22	9,2	12	815	780	920
102-22 102-30	11,5	15	1020	970	1150
124-30 124-37	14,0	18	1240	1180	1400
134-37 134-45	15,2	20	1340	1275	1520

SKV-A: capacity sizes

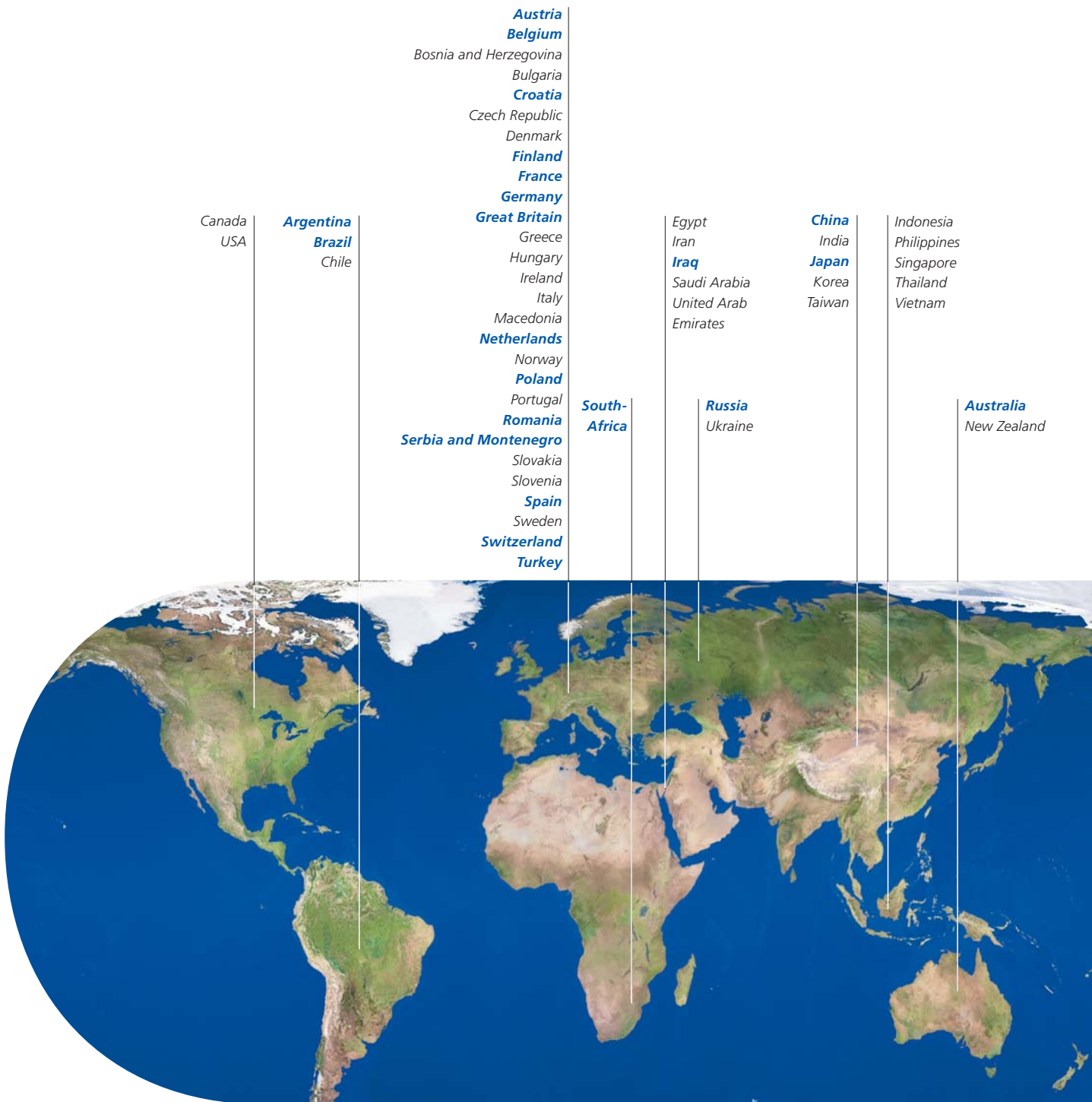
Natural Gas H



SKV-A: working fields

Burner capacity in MW

The result of the combination of the well-proven SAACKE quality with many innovative components is a series that gives new technological impulses to combustion engineering worldwide.



- Training at site and in the SAACKE premises
- 24-hour service hotline
- Diagnostics by Tele Support & Service
- SAACKE companies, factories and service stations worldwide in 22 countries
- Additional 70 SAACKE Contact Offices

Count on this Service

SAACKE production sites and service stations in 22 countries worldwide, additional 70 international SAACKE contact offices, supply of spare parts in 24-hour service, repair and replacement around the clock...
We help competently and immediately – wherever you need us.

Diagnostics via tight-knit, worldwide Tele Support & Service and extensive capacities in maintenance, repair and spare parts logistics enable us to ensure your burners' trouble-free operations long after assembly and commissioning at site.

SAACKE's customers worldwide can rely on fast availability regarding repair and replacement of all SAACKE burners. SAACKE's service partnership includes at the same time – depending on the individual agreement – maintenance and operational optimisation of your burners, training of boiler room personnel, safety inspections according to TRD or complete boiler room management by our specialists.

In line with our burner systems, we offer a wide choice of services to choose from at any time, according to your special requirements.

Our service is geared to one aim: to secure the functioning of your burners for many years - economic, eco-friendly, reliable!



*Tele Support & Service
replaces external
servicing in many cases.*



SAACKE GmbH
Südweststrasse 13 · 28237 Bremen
GERMANY
Phone: +49 - 421 - 64 95 0
Fax: +49 - 421 - 64 95 224
E-Mail: info@saacke.de
www.saacke.com



SAACKE Service GmbH
Südweststrasse 13 · 28237 Bremen
GERMANY
Phone: +49 - 421 - 64 95 0
Fax: +49 - 421 - 64 95 244
E-Mail: service@saacke.de
www.saacke.com

SAACKE-Hotline: +49 - 421 - 64 95 201

SAACKE ROSSPLET S.A., ARGENTINA

Phone: +54 - 11 - 49 11 14 80, Fax: +54 - 11 - 49 12 30 41

SAACKE AUSTRALIA Pty. Ltd., AUSTRALIA

Phone: +61 - 2 - 96 36 77 77, Fax: +61 - 2 - 96 31 34 13

SAACKE Ges.m.b.H., AUSTRIA

Phone: +43 - 1 - 86 93 345, Fax: +43 - 1 - 86 93 34 530

SAACKE do Brazil, BRAZIL

Phone: +55 - 11 - 34 43 70 06, Fax: +55 - 11 - 34 43 66 01

SAACKE Finland, FINLAND

Phone: +358 - 9 - 3432637, Fax: +358 - 9 - 3432637

SAACKE S.A.R.L., FRANCE

Phone: +33 - 1 - 48 48 20 54, Fax: +33 - 1 - 48 47 73 66

SAACKE Ltd., GREAT BRITAIN

Phone: +44 - 23 - 92 38 31 11, Fax: +44 - 23 - 92 32 71 20

SAACKE JAPAN TRATEC Ltd., JAPAN

Phone: +81 - 3 - 33 39 12 11, Fax: +81 - 3 - 33 39 75 77

SAACKE Benelux, NETHERLANDS

Phone: +31 - 33 - 43 30 014, Fax: +31 - 33 - 43 30 016

SAACKE Polska Sp. z o.o., POLAND

Phone: +48 - 71 - 36 81 865, Fax: +48 - 71 - 36 08 929

**SAACKE Energy Systems (Shanghai) Co., Ltd., PR CHINA
Shanghai Office**

Phone: +86 - 21 - 64 72 68 22, Fax: +86 - 21 - 64 72 68 220

**SAACKE Energy Systems (Shanghai) Co., Ltd., PR CHINA
Beijing Office**

Phone: +86 - 10 - 85 86 27 17, Fax: +86 - 10 - 85 86 27 19

SAACKE Romania Representative Office, ROMANIA

Phone: +40 - 21 - 31 89 333, Fax: +40 - 21 - 31 89 354

SAACKE Russia Representative Office, RUSSIA

Phone: +7 - 495 - 78 93 117, Fax: +7 - 495 - 68 23 191

**SAACKE Belgrade Representative Office,
SERBIA AND MONTENEGRO**

Phone: +381 - 11 - 301 73 35, Fax: +381 - 11 - 301 73 36

SAACKE South Africa (Pty) Ltd., SOUTH AFRICA

Phone: +27 - 21 - 94 53 806, Fax: +27 - 21 - 94 53 808

SAACKE ESPAÑA, SPAIN

Phone: +34 - 976 - 25 87 51, Fax: +34 - 976 - 25 87 52

SAACKE AG, SWITZERLAND

Phone: +41 - 1 - 82 15 656, Fax: +41 - 1 - 82 15 644

SAACKE TURKEY LTD. Sti, TURKEY

Phone: +90 - 216 - 34 93 112, Fax: +90 - 216 - 33 03 778