Liquid Special Fuels

German National Parliament
„Deutscher Bundestag“ (Germany)

Bio-oils with varying heating value

Burner	2x SKVJ each with 1 MW
Fuel	biodiesel / rapeseed oil / LFO
Heating value	33 – 42 MJ/kg
Viscosity	2 – 5 cSt at burner

* since 2011 SKVJ-M

Reliable technology for maximum environmental standards

Renewable resources are an elementary element in the struggle against climate change. They are available in constant quality and with great security of supply and play an increasing role in the heat market. The firing system installed in the German Bundestag shows that firing with biogenic fuels functions reliably and thus makes a major contribution to climate protection.

The fundamental reconstruction of the Reichstag building from 1996 – 1999 not only resulted in the symbolic glass dome designed by architect Norman Foster. Rather, the planning also set technical and ecological standards: the entire energy concept of the historical building was optimized consistently and thus placed very high demands on the building services technology. Besides extensive thermal insulation, a solar power system on the roof and use of the subsoil as a heat store, the entire air conditioning system was redesigned.

Two SKVJ burners form the heart of the firing system. They transform rapeseed oil and biodiesel from Mecklenburg-Vorpommern into heat for the room heating system and service water – and meet the maximum demands of environmental protection and reliability.

The installed plant consists of two boilers that supply both saturated steam and hot water for the Reichstag building and a number of annexes.
The integrated and sustainable energy concept of the planners envisaged consistent use of renewable energy sources and use of fossil sources of energy only for emergencies and as igniting fuel. The firing system not only has to burn biogenic fuels with varying viscosity and different heating values. It also has to meet extremely high demands regarding the emission values and availability of the facility.

Innovative heating technology – proven burners

- Reliable combustion of biodiesel, bio-oils and light fuel oil (LFO)
- Low emission values
- Large control range for all fuels
- Integration into an intelligent heat concept
- High degree of availability, long service life typical of SAACKE
- Rugged technology

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SAACKE SKVJ for operation with bio-oils and RME

Compact solution for biogenic fuels: SKVJ (G)

With this proven solution SAACKE was awarded the contract for the project under difficult conditions, continues to meet the requirements – and is setting new standards.

One burner, all oils: SKVJ

The SKVJ is a proven monoblock burner with an output range from 0.5 to 8 MW. It is suitable for diverse heat generators and nearly all liquid fuels.
This burner functions according to the rotary cup atomizer principle in which the fuel is finely distributed from a rotating cup and is then broken down into tiny droplets in the core air flow. This makes the SKVJ a specialist for high-viscosity oils, but it also burns light fuel oil without any problem. It requires only a low fuel pressure and needs no atomizer medium.
The combination variant extends its area of application even more and burns natural gas, propane as well as biogenic gases cleanly and reliably.

Very special advantages of the SKVJ series are easy planning, installation and commissioning.
The burners are supplied completely premounted and can be put into operation within an extremely short time.
Even in hard continuous operation the burner is uncomplicated and characterized by a stable flame at all load stages. The design is based on the proven SAACKE rotary cup atomizers and is built for a very long service life with minimal maintenance expense.

Summary

The system installed in the Reichstag building impressively demonstrates that biogenic fuels can supply heat reliably, economically and, above all, cleanly. This means they are no longer merely a niche product, but a genuine alternative in the turbulent heat market. With the SKVJ, SAACKE offers a proven solution for nearly any fuel and many bio-oils. Furthermore, it burns all gaseous standard fuels as well, of course – reliably, efficiently and cleanly.

Technical data

Application	2x shell boiler, hot water generator 750 kW, saturated steam boiler 2 t/h
Burner model	SKVJ*
Burner output (max.)	1 MW (each boiler)
Biodiesel PME (5 cSt)	
Emission values	NO_x: < 200 mg/m³
Lower heating value (LHV)	33 – 37 MJ/kg
Control range	1:4
Light oil LFO	
Emission values	NO_x: < 200 mg/m³
Lower heating value (LHV)	42.7 MJ/kg
Control range	1:4

* since 2011 SKVJ-M

For further information, please visit: **www.saacke.com**

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