Blautherm® DUO

SCHEER
since1953

- » Energy-efficient DUO-block-construction with separate array for oil pump and air blower
- » Operation of burner possible, independent of ambient air
- » Energy-efficient
- » combustion performance in accordance with the German energy saving regulation
- » Applicable to every boiler, also suitable for overhead installation
- » Available in one- and two-stage modification
- » Can be quickly and easily adjusted to peak performance
- » Installation- and service-friendly bayonet lock
- » Blue-burner with a soot digit of 0.0 (beneath limit of detection), confirmed by the German Technical Control Board

Pure combustion

The blue heating oil flame of the **Blautherm® DUO** is virtually odour- and residue-free. The combustion procedure happens automatically, after the gasification of the heating oil is completed. This ensures soot digit of 0.0 during the combustion process - no burner burns cleaner!

Soot digit 0,0

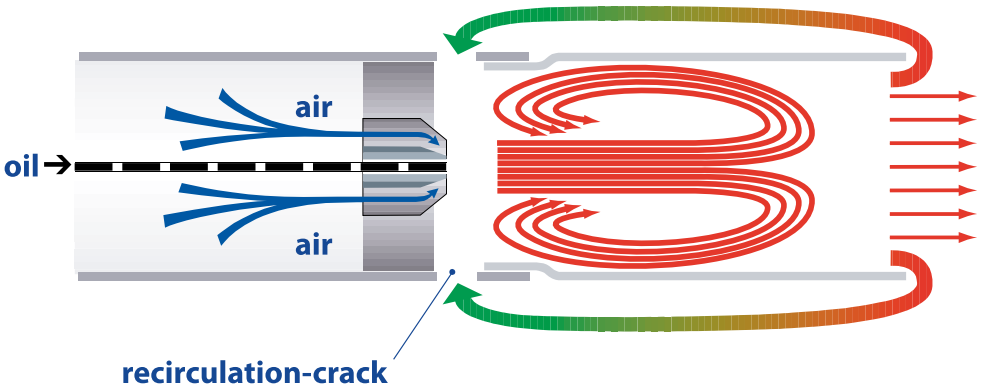
The ideal combustion is eco-friendly and causes very low emissions. It reduces the heating oil consumption and increases the effectiveness of the entire boiler plant. Soiling with soot does not occur.

This energy-efficient combustion system reduces heavy hydrocarbons and carbon monoxide in the exhaust fumes down to the detection limit. The modern
NOX modulation holds down the output of nitric oxide to an extremely low level, independent of the boiler plant. With the **Blautherm® DUO** legal limit values are not merely satisfied, but rather noticeably undershot. Among others, the **Blautherm® DUO** is certified with the “Blauer Engel” eco-label.

- Low operating noise
- Operation of burner possible, independent of ambient air
- Low fuel consumption
- Less CO2-emission
- Power consumption up to 30 percent less than with yellow flame burners
- Ideal for new buildings according to the German Electricity Conservation Act (EnEV)

NO_x-Modulation

The NO_x-modulation takes place through an internal recirculation of the exhaust fumes. The recirculation gap is adjusted continuously. A minimization of nitric oxide output is achieved due to the recirculation.



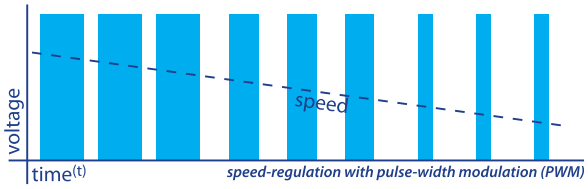
The service-friendly mixing cartridge

Mixture device, oil nozzle, oil preheater, ignition electrodes with pluggable connection cable and the complete optical IRD-flame control (infrared flicker light) form one compact physical unit, which can be arrested through the bayonet lock. Consequently, the usual service operations (nozzle exchange, check of the electrodes settings etc.) can be done quickly and easily, without dismantling the burner.

Mixture boxes and air bushing

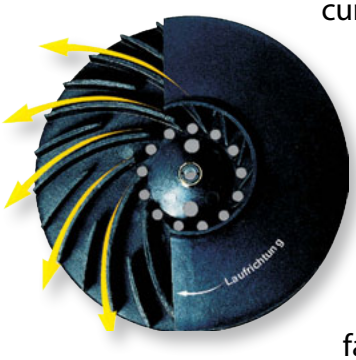
The mixture boxes and the air bushing form the mixing device of the **Blautherm® DUO**. Here, the blue flame is utilized with high energy-efficiency. The components produced by SCHEER are manufactured with an attention to precision. The mixing boxes are laser manufactured and the deep-drawn air bushings are calibrated with laser technology as well. This innovative construction ensures the low liability to potential spoiling.

FAN



The innovative concept of the air volume regulation through a rotation speed adjustment via an integrated governor has many advantages: The burner adjustment is very easy, a separated adjustment of primary and secondary air volumes is not necessary. The CO2-content is regulated only via a governor. Thus, only the air volume, required by the used amount of oil, is compressed and lifted. In this way, the fan power is reduced energy-efficiently. Compared to conventional solutions this procedure saves energy. The electronics integrated into the fan convert the 230-volt-alternating current (AC), provided by the automatic firing device, into a 24-volt-direct current (DC) voltage. At the same time the direct current (DC) voltage is clocked (pulsed), depending on the governor-position. The whole drive unit is suspended from the fan housing, vibration-cushioned and decoupled of the temperature. This ensures a very quiet operation.

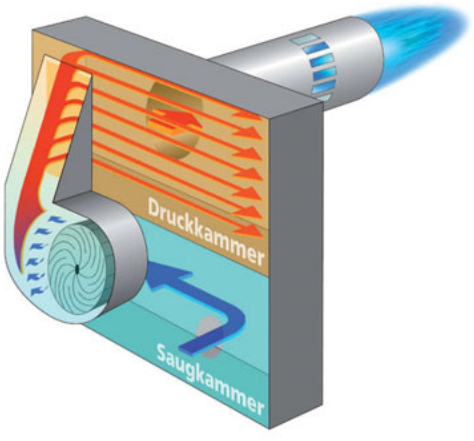
Fan wheel



The antistatic fan wheel contains very effective design details: the streamlined reverse curved guide blades yield a much higher degree of efficiency than conventional rotor-operated devices. The drive power and therefore the consumption can be reduced. The concentric air intake with pressure compensation makes the wheel insensitive to resistance caused by the suction. The backwards curving of the guide blades, as well as the antistatic material, prevents soiling and residual dust. The guide blades that are closed on both sides enable a steady compression enhancement with the increase in rotation speed. This balanced fan wheel is made of plastic to ensure that it is resistant to corrosion.

Suction and compression chamber

The space-saving flat burner housing has a separated suction and compression chamber. The suction chamber acts as suction damper and is low-noise. A separated connection to an air duct allows an ambient air independent ventilation. Here, air and exhaust heat exchanger, as for example of oil condensing boilers, can be connected to the suction chamber. The large-volume compression chamber acts as a buffer and pressure reservoir, thereby a continuous supply with combustion air is ensured. In addition, an acoustically pulse-free commissioning is facilitated. Noise and vibration is minimized.



A blue flame burner for all types of heating oil

» Extremely low emission values, verified by the eco- label “Blauer Engel”

» Compact DUO-block-construction enables separate controlling of the oil pump and airblower

» Optimal combustion to diminish consumption

» Modular construction simplifies maintenance and service

» Al-Mg_3-housing, durable and non-corrosive

» Electrical, self-adjusting warming of the heating oil for steady power expansion

» Optimized direct current (DC) blower with pulse-width modulation (PWM) speed regulation: the exact air volume which is needed is compressed and lifted

» AlSi-oxide ignition electrodes with long durability and excellent temperature resistance

» Housing with separated suction and compression chamber for a scarcely audible and pulse free start

» Suitable for different varieties of boilers: even older boilers in good overall condition can be adjusted to peak performances with the **Blautherm® DUO**

» Also suitable for smaller boilers, starting from 8 kW

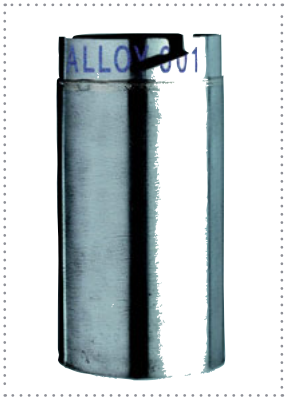
» Suitable for overhead installation

» Equipped with a burner pipe with premium steel alloy and excellent temperature resistance

Blautherm

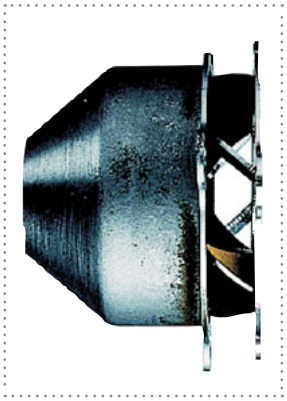
The

Alloy burner pipe



The flue acts as an independent combustion chamber. Therefore the **Blautherm® DUO** is applicable to all commercially available boilers. The alloy flue can be dismantled quickly, due to its bayonet lock. This simplifies the service.

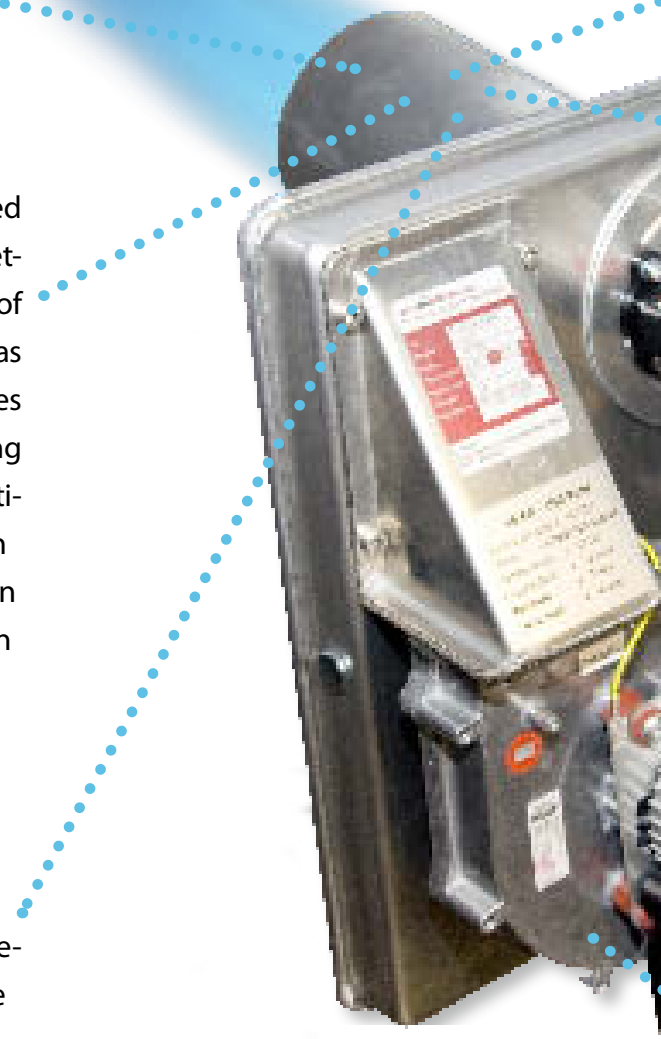
Mixture devices



There are four thoroughly synchronized mixing devices for the power range between 8 and 41 kW, which are made of premium stainless steel and realized as precision components. The mixing boxes are laser manufactured. This painstaking production ensures consistent combustion values of very high quality, which can be reproduced at any time. This is proven by the blue flame. The mixing device can be exchanged quickly and easily, in case other power ranges are chosen.

Mixing cartridge

Mixture device, nozzle, ignition, oil preheater, flame control and ignition cable are combined in one compact physical unit. A bayonet lock ensures fast and trouble-free service.



Comparison of SCHEER-oil burner (15kW)

n® DUO

e blue flame

Ignition electrode

Premium aluminium-silicon-oxide-insulators with anti-twist contours allow easy and secure ignition. Even during peak usage the built-in heating conductor wire ensures a clean and soft ignition.

NO_x-Modulation

The flame is "cooled down" by exhaust gas recirculation. This reduces the nitric oxide released into the environment dramatically. The recirculation rate can be adjusted continuously.

Fan with PWM

The novel DUO-block-construction for small burners leads to a new kind of adjustment of the combustion air. Through a pulse width modulation (PWM) the direct current (DC) motor is regulated by the rotation speed. That means: the governor configuration makes sure that exact the air volume which is needed is compressed and lifted, which is necessary for the oil-determined burner workload.

Wattage

The wattage of the **Blautherm® DUO** is distinctly lower than conventional burners. A specific electric motor for the propulsion of the oil pump, the PWN-regulated direct current (DV) motor and the air blower with reverse curved guide blades achieve a much higher total efficiency.

ectrical power consumption

67%

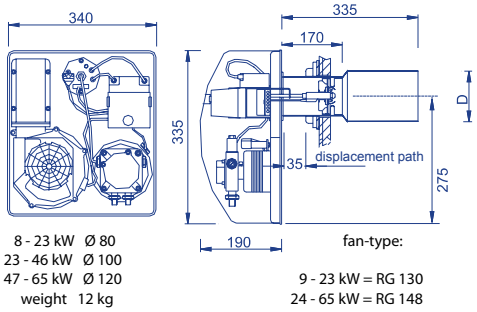
3%

%

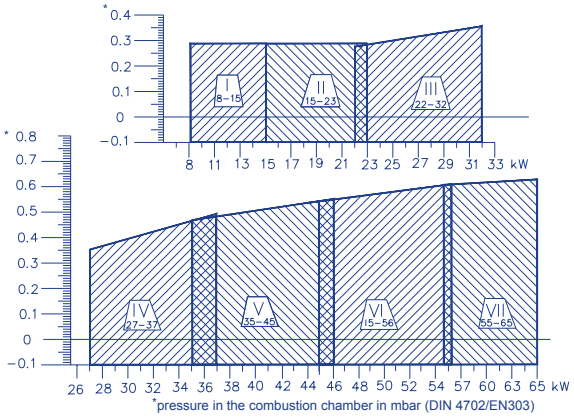
... my heat

THE BLUE FLAME

Often it is the existing heating systems that produce more harmful exhaust than necessary. The SCHEER-oil-burner **Blautherm® DUO** is an innovative contribution to climate protection. It provides for both the needs of the economy and ecology. The innovative construction of the **Blautherm® DUO** guarantees an environmentally-friendly solution and provides for a spontaneous gasification of the fuel oil. Thus, producing the energy-efficient and environmentally friendly blue flame.



8 - 23 kW Ø 80
23 - 46 kW Ø 100
47 - 65 kW Ø 120
weight 12 kg



Suitable for all usual heating-oil-qualities according to the German Institute for Standardisation (DIN 51603-1)

» For standard quality
» For premium quality
» Low-sulphur(≤50ppm)

*The power ratings refer to the 1st and 2nd burner stage, respectively.

We recommend the new low-sulphur heating-oil generation:

» Provides for a clean boiler
» No neutralisation of the condensation necessary
» Extreme reduction of sulphur dioxide (SO_2)
» Excellent storage characteristics
» Odour neutralized

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