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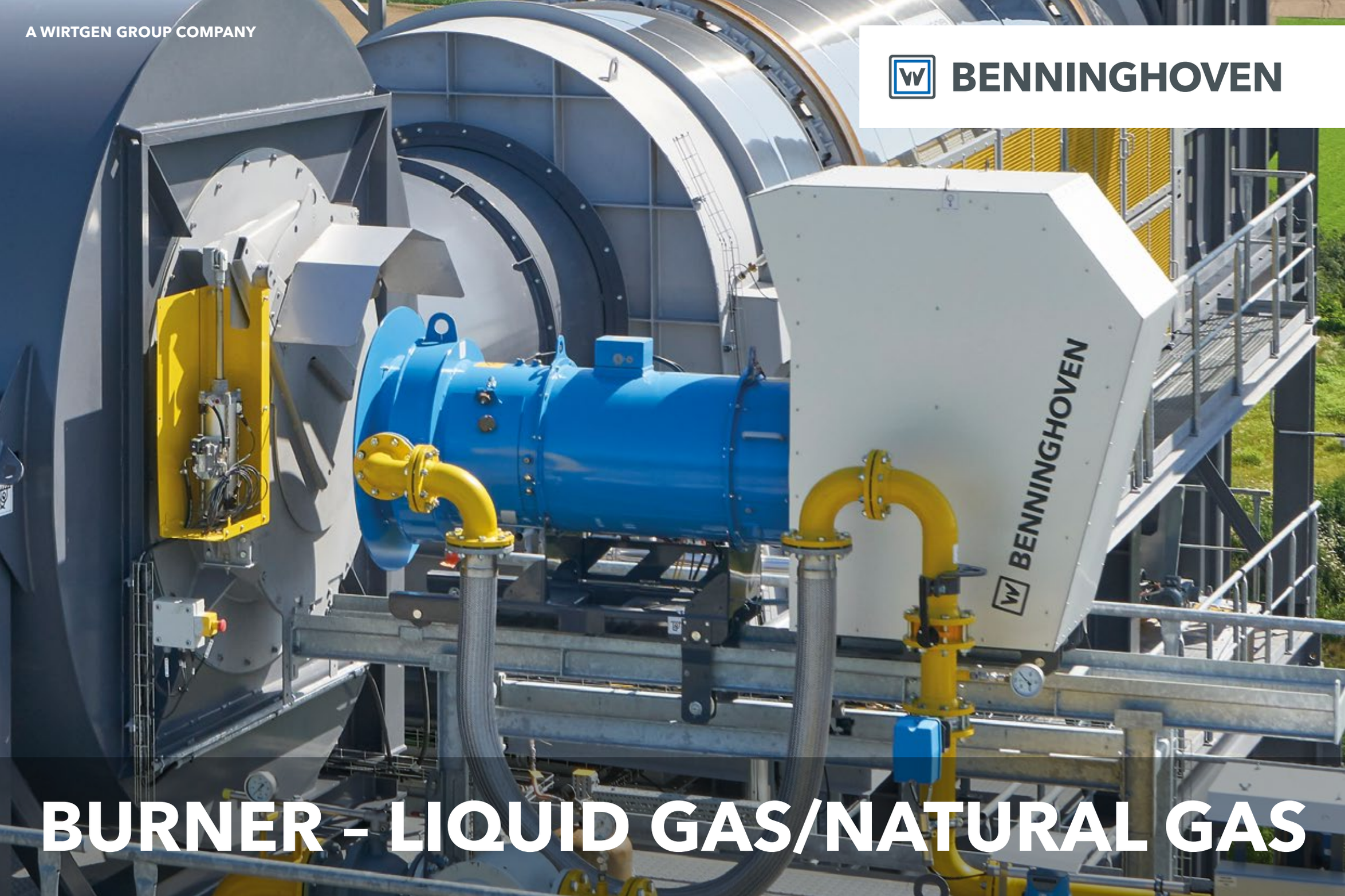
BENNINGHOVEN



BURNER – LIQUID GAS/NATURAL GAS

BURNING WITH PASSION.

BENNINGHOVEN EVO JET BURNER | FUEL: GAS

BENNINGHOVEN
70 YEARS
COMBUSTION TECHNOLOGY

EVO JET BURNER

Innovative burner technology

BENNINGHOVEN is a world market leader in burners for asphalt mixing plants and a manufacturer of multi-fuel burners with up to 4 fuels. The complete know-how and wealth of experience from over 70 years of burner competence support the development of unique burners with excellent properties.

01 Unique burners with excellent properties

> Modular design with good retrofit options
> Compact and clearly structured design
> Easy maintenance
> Reliable performance
> Long service life, low wear
> Highly efficient consumption (frequency controlled)
> Minimum emissions output thanks to state-of-the-art control technology
> Inspection openings on both sides
> Movable burner for better accessibility
> Internal fan (exclusive to BENNINGHOVEN)
> Combination of in-house manufacturing and proven components from renowned manufacturers
> Everything from one source – engineered + made in Germany

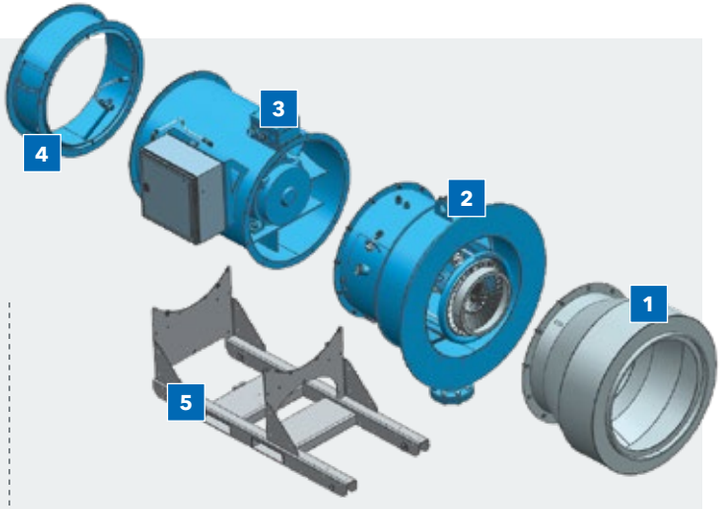
GAS BURNER

02 Advantages from efficiency

The BENNINGHOVEN gas burners can burn liquid gas already during the liquid phase, without first having to transform it into a gaseous state. This means that no additional periphery such as an evaporator is necessary and therefore no additional energy is required either.

Liquid gas burners and natural gas burners have the same mechanical structure. They differ only in their periphery, i.e. how the fuel is introduced into the burners.

03 Modular structure



1. Burner head
2. Burner chamber
3. Fan
4. Intake chamber
5. Chassis

04 Burner head

> The fuel is gasified in the burner head while being mixed with the oxygen and subsequent ignition.

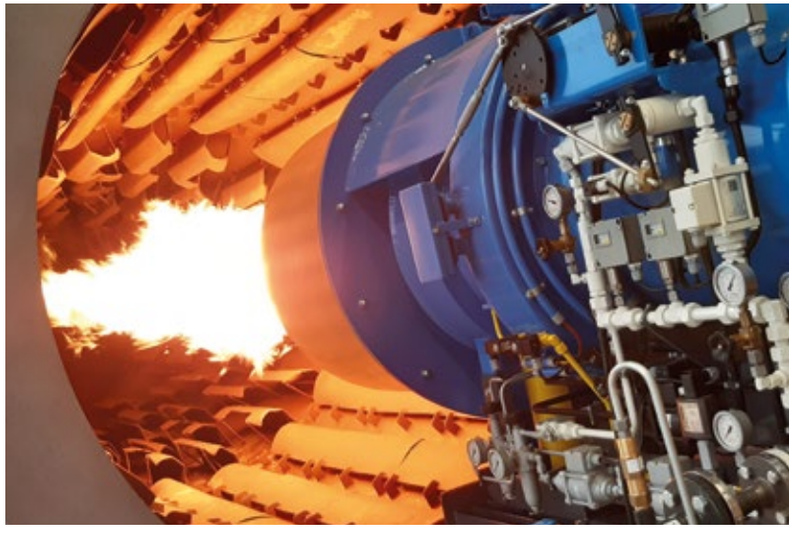
> The burner head is made of highly heat resistant material.

> The special geometry also determines the shape of the flame.

05 Burner fan

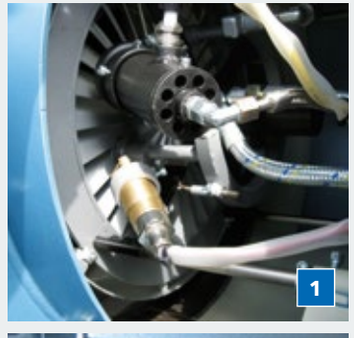
> Radial/axial fan (RAX) with internal drive motor

> Thanks to a speed control with frequency converter (FC), it generates a strongly air flow that allows for the best possible mixing effect with the respective fuel.



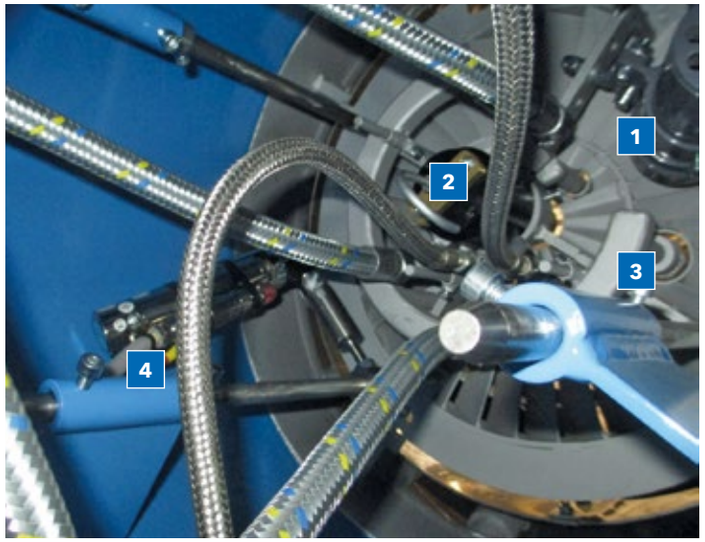
06 Ignition burner types

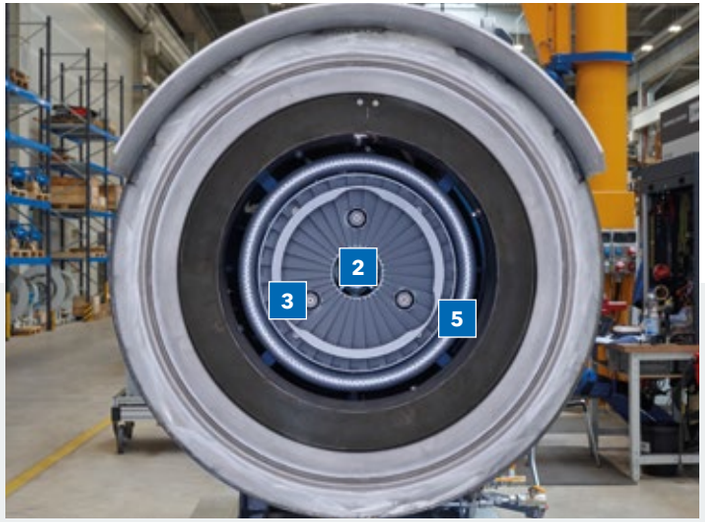
1. Pilot burner
2. Propane gas
3. Natural gas



GAS BURNER

07 Media supply





1. Pilot burner
2. Oil nozzle (as secondary fuel)
3. Liquid gas nozzle
4. Flame monitoring
5. Natural gas ring

LIQUID GAS

08 Fuel: liquid gas

Liquid gas, referred to as "associated gas", is generated during the extraction of crude oil or natural gas.
This associated gas used to be simply released into the atmosphere or burned in many cases. Today, more and more regions worldwide have banned burning, which has an additional positive impact on the increasing availability of liquid gas.

09 Burner periphery for liquid gas

> BENNINGHOVEN EVO JET 3 Brenner – installed on the dryer drum

> For optimum drying and heating of the virgin mineral or recycling material – fuelled by liquid gas

> The required admission pressure is 10 bar.

> Liquid gas is atomized with a nozzle system and ignited in the burner head with the pilot burner.

> To ensure the burner function, in particular for safety reasons, the burner is equipped with a gas safety section, with two safety shut-off valves, a main shut-off valve, a pressure gauge, etc.

> The burner itself is controlled with a volume valve in the gas line, which is actuated by a servomotor, and with the corresponding air volume through a frequency-controlled fan.

> Control range of 1:6

> Calorific value of liquid gas: 45,600 kJ/m³

NATURAL GAS

10 Burner periphery for natural gas

> BENNINGHOVEN EVO JET Brenner – installed on the dryer drum

> For optimum drying and heating of the virgin mineral or recycling material – fuelled by natural gas

> The required gas pressure is 300 mbar.

> The burner itself is controlled with a gas control valve on the gas safety section, which is actuated by a servomotor, and with the corresponding air volume through a frequency-controlled fan.

> Control range of 1:6

> Calorific value of natural gas: 31,800 kJ/m³

11 Supplementary equipment – gas pressure control

To ensure the burner function, but also for general safety, natural gas is fed to the burner through the gas safety section with the required pressure of 300 mbar and in the required volume.

The gas safety section is equipped as per DIN EN 746 with a gas filter, dual safety valve with leak monitoring, gas pressure sensor, gas flow regulating unit, butterfly valve, pressure gauge, expansion joint and gas pressure regulator (1 – 4 bar, upstream line pressure protection of max. 5 bar, intake pressure at the valve safety section must be stated bindingly).

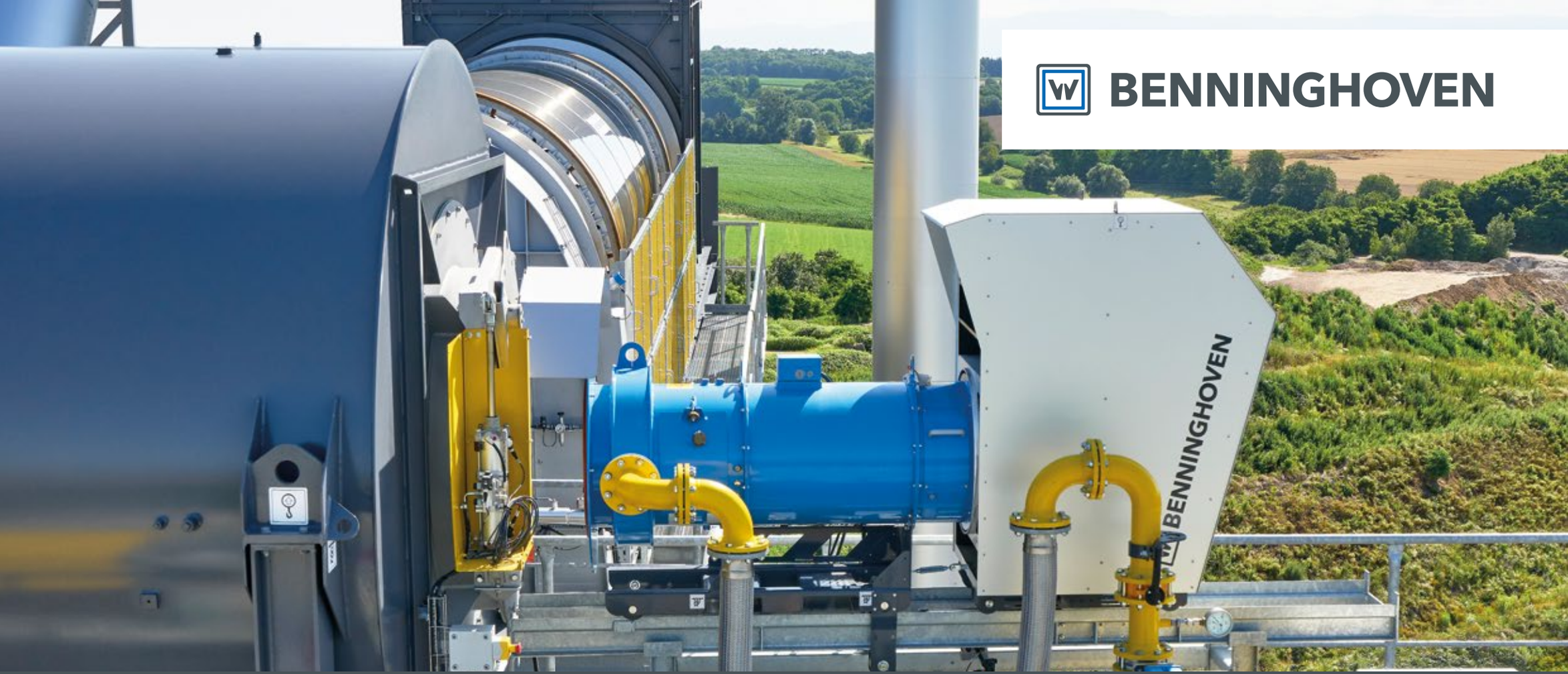
BENNINGHOVEN
SUSTAINABILITY

Fuels of the future

When it comes to operating asphalt mixing plants in the most environmentally friendly and sustainable way possible, burner technology combined with a choice of fuels offers the greatest potential.

Many markets are phasing out coal as a fuel, while systems running on oil are subject to increasingly more stringent regulations and restrictions.

These were all good reasons for BENNINGHOVEN to further develop the EVO JET multi-fuel burner for additional, more promising fuels: biomass to liquid and wood dust. When it comes to modernising existing systems and optimising them economically and ecologically, the EVO JET burner is therefore the number one choice as a retrofit solution.



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