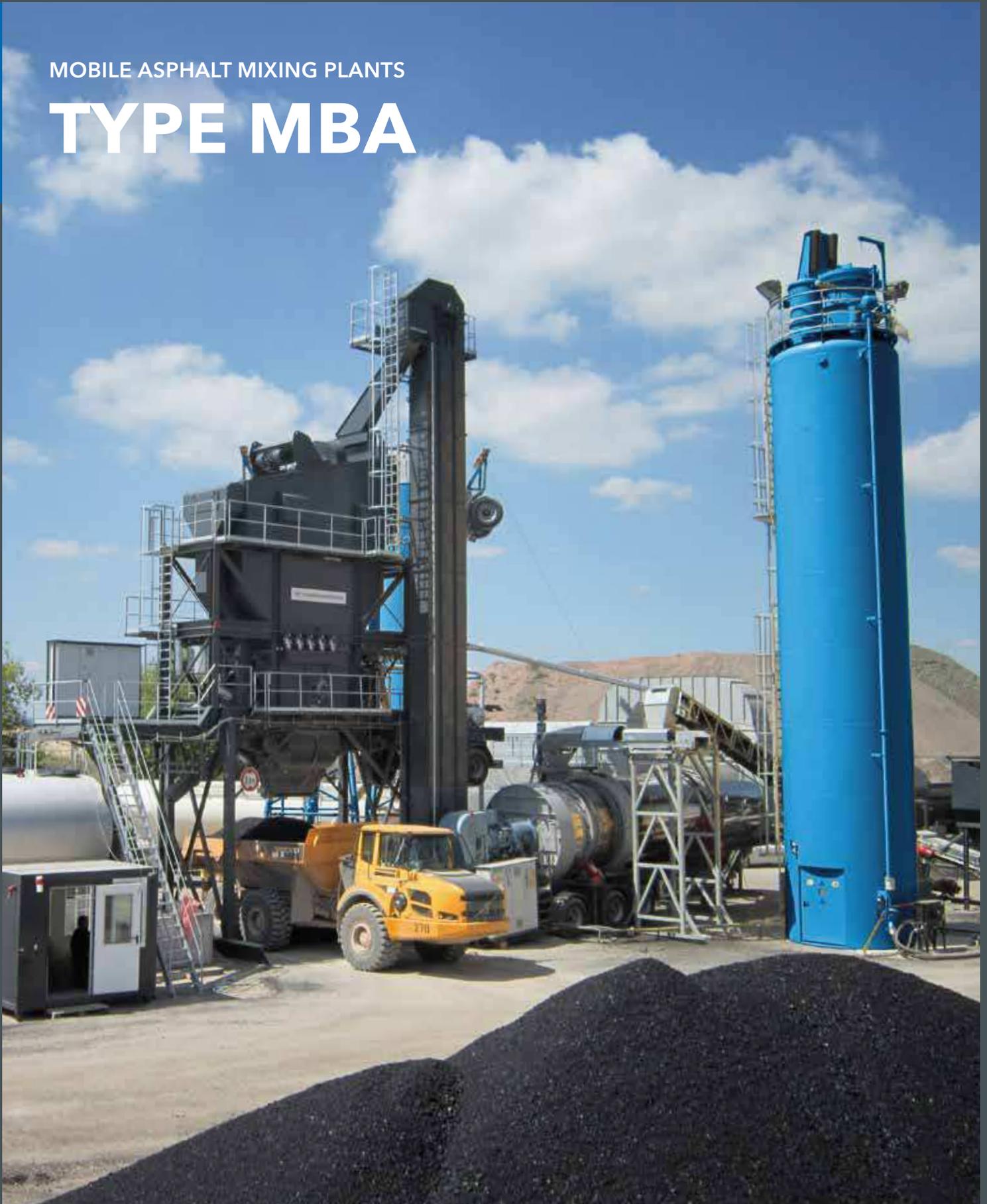




MOBILE ASPHALT MIXING PLANTS

# TYPE MBA





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#### **THE TOP 5 FACTS ABOUT MOBILE ASPHALT MIXING PLANTS (MBA)**

- > CAN BE IMPLEMENTED QUICKLY > COMPACT PLANT > MOBILE FOUNDATIONS
- > CAN BE EXPANDED ON A MODULAR BASIS > LOW LOGISTICS COSTS

Mobile asphalt mixing plants are ideal for construction sites with limited time frames as well as for regions without extensive plant availability. They are simply mounted on mobile steel foundations and move to the next construction sector together with the mobile construction site. Mobile mixing plants can be set up close to the construction site, which provides constantly high quality of the asphalt.



# BENNINGHOVEN



BENNINGHOVEN GMBH & CO. KG

## **THE NEW MIXING CULTURE - MADE IN GERMANY.**

We have been specialising in the construction of asphalt mixing plants from as long ago as the 1960s. A company that started with gear wheels and machine tools in 1909 now supplies the leading technology for asphalt mixing plants. With more than 600 employees in Germany and abroad, you can come to us directly for everything - from planning and assembly through to commissioning.

BENNINGHOVEN GmbH & Co. KG is a member of the Wirtgen Group, an expanding, international group of companies in the construction equipment industry.

PLANT CONCEPT

# MOBILISES THE MASSES.

Thanks to the intelligent concept of the mobile asphalt mixing plant type MBA, construction sites can be handled flexibly and with efficiency. The plant can be set up or taken down within a very short time and is therefore quickly available at changing project sites.

All sections of this plant are already completely pre-wired and pre-piped at the factory, greatly facilitating handling on site. The concept covers capacities from 100–240 t/h and allows customers to commission the plant themselves using their own operating personnel.



// ASPHALT MIXING PLANT MBA

## // FLEXIBLE AND POWERFUL

The mobile asphalt mixing plants are simply mounted on mobile steel foundations which only require a compacted gravel surface for the entire setup area. The short installation time allows asphalt production to take place close to the construction site. The low logistics cost due to mobile transport on standard trailers, with road and TÜV approval, are a further advantage.

Mixers up to 3 t are used for the available capacities with mixing outputs up to 240 t/h. This flexibility allows homogeneous asphalt to be produced not only in large volumes but also in small batches without any problems.





PLANT COMPONENTS

## LIKE WINNING THE LOTTERY.

All that is required to transport and install a mobile asphalt mixing plant are six standard trucks. The TÜV and road approval allows the plant to be transported worldwide by road.

In principle the components of the MBA plant type are designed to be mobile, via the semi-trailer. The equipment consists of a dual-line braking system, parking brake, kingpins including height-adjustable supporting feet and a complete lighting system.

In addition to the high quality materials of the components, the wearing plates are also designed for a long

service life and precisely adapted to severe conditions such as hard stone and thermal loads.

This ensures constant functioning at all times and the plants can easily provide maximum performance.



// BURNER



PLANT COMPONENTS

## EQUAL RIGHTS FOR ALL: QUALITY.

// BURNER

BENNINGHOVEN is a world market leader when it comes to burners, and the only manufacturer of 4-fuel burners. The company's essential expertise enables it to develop unique burners with excellent characteristics:

- > Simple, modular design
- > Compact structure
- > Mobile burner for easier accessibility (e.g. for servicing)
- > Easy to maintain
- > Inspection doors on both sides
- > Easy to retrofit
- > Internal fan (exclusive at BENNINGHOVEN)
- > Long service life
- > Low wear
- > Highly efficient in terms of consumption
- > Minimum pollutant emissions thanks to state-of-the-art control technology

// DRYER DRUM

For the manufacture of asphalt, it is essential to remove the moisture from the base material to ensure bonding with the bitumen. At BENNINGHOVEN, each drum is subject to a 100% final inspection.

In order to attain optimum results, these come in various lengths, diameters or with a variety of installed components, which are suited to the particular circumstances such as the location, aggregates and material moisture. The dryer drum is compact, robust and easy to maintain.





#### // MIXER

The mixer is the key component of an asphalt mixing plant. Here, the mineral is mixed intensively with binder and filler to form a homogeneous mass. A mixing cycle, including the filling and emptying, takes 45 seconds. Due to the heavy burden with regard to wear, weight and power transmission, only the highest quality materials are installed in the mixer.

Whether it's a question of special wear plates to line the trough or mixing arms with arm protection, everything is manufactured based on the premise of optimum wear protection. This guarantees the durability of the plant and smooth processing.

#### // SCREENING

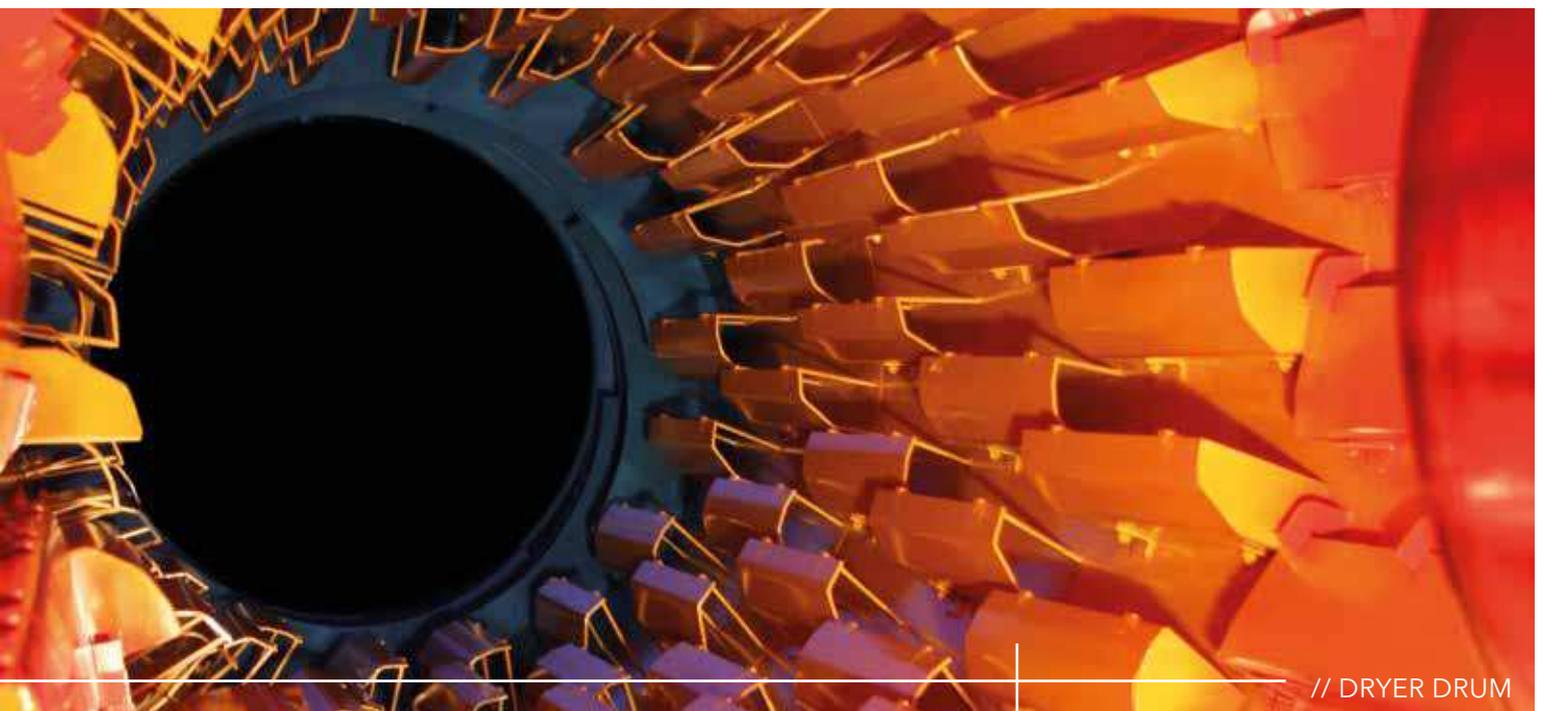
All mobile asphalt mixing plants feature 5-fold screening as standard. This enables standards and recipe requirements in the various countries around the world to be fulfilled without any problem.



#### // DUST COLLECTION SYSTEM

The BENNINGHOVEN dust collection system/filter is impressive thanks to its extremely compact structure and modular design. Quick installation is guaranteed thanks to the few simple interfaces.

The dust collection system is also easily accessible for inspection and maintenance; e.g. changing the filter bags is easy and can be carried out without any special tools. The vertical layout of the filter bags guarantees maximum utilisation of the surface area with efficient filter function. Thanks to their high-quality processing and heat resistance, the filter bags have a long service life. An innovative silencer system provides effective minimisation of the noise level.



// DRYER DRUM

## PLANT OVERVIEW MBA 1250/MBA 2000/MBA 3000

# HEAVY-DUTY MODELS.

## TECHNICAL DATA PLANT OVERVIEW MBA

	MBA 1250	MBA 2000	MBA 3000
Mixing capacity (t/h)	100	160	240
Drying capacity (t/h)	90	145	220
General information	All information is based on a material moisture level of 4%, Wind load: 25 m/s, horizontal gravitational acceleration: 0.4 m/s <sup>2</sup> , snow load: 0.85 kN/m <sup>2</sup>		
Installation types	Mobile steel foundations (set-up area must be suitable for ground loading of 350 kN/m <sup>2</sup> )		
<b>Cold feed system</b>			
Number of hoppers	Mobile 4-fold cold feed system	Mobile 5-fold cold feed system	
Capacity (m <sup>3</sup> )	8	8	8
Approach ramp	Yes (included in the delivery, on-site backfill min. 650 mm)		
Loading width (mm)	3,400	3,400	3,400
<b>Dryer drum</b>			
Type	MT 7.18 K	MT 8.22 K	MT 9.23 K
Drive rating (kW)	1 x 18,5	1 x 37	1 x 55
<b>Burner</b>			
Type (standard fuel oil)	EVO JET 2 FU ÖI	EVO JET 2 FU ÖI	EVO JET 3 FU ÖI
Rated heat output (kW)	11.9	11.9	19
Optional fuels	Natural gas, liquid gas, lignite - can be implemented as a combi-burner		
<b>Dust collection system</b>			
Output (Nm <sup>3</sup> /h)	28,000	42,000	58,000
<b>Screen/Hot bin section</b>			
Capacity (0-4 mm, t/h)	90	160	220
Screening	4-fold screening	5-fold screening	5-fold screening
Hot bin section	14 t in 4 bags (sand + bypass together)	30 t in 5 bags (sand + bypass together)	
<b>Mixing and weighing section</b>			
Mixer (kg)	1,250	2,000	3,000
Aggregate weigh hopper (kg capacity)	1,250	2,000	3,000
Filler weigh hopper (kg capacity)	125	200	300
Bitumen weigh hopper (kg capacity)	150	200	250
<b>Mixed material storage silo/filler silos</b>			
Mixed material storage silo total capacity	Mobile mixed material storage silo 50 t (1 chamber)		
Mixed material storage silo optional	90 t (2 chambers)		
Filler silos	Mobile reclaimed filler silo 50 m <sup>3</sup> , mobile imported filler silo 50 m <sup>3</sup>		
<b>Bitumen system</b>			
	General design mobile, with electric heating and 150 mm insulation		
Capacity	One bitumen tank 50 m <sup>3</sup> (mother tank)		
Capacity, subsidiary tank	Additional tanks 50 m <sup>3</sup> (optional)		

// MBA 2000



**MBA 1250**

**MBA 2000**

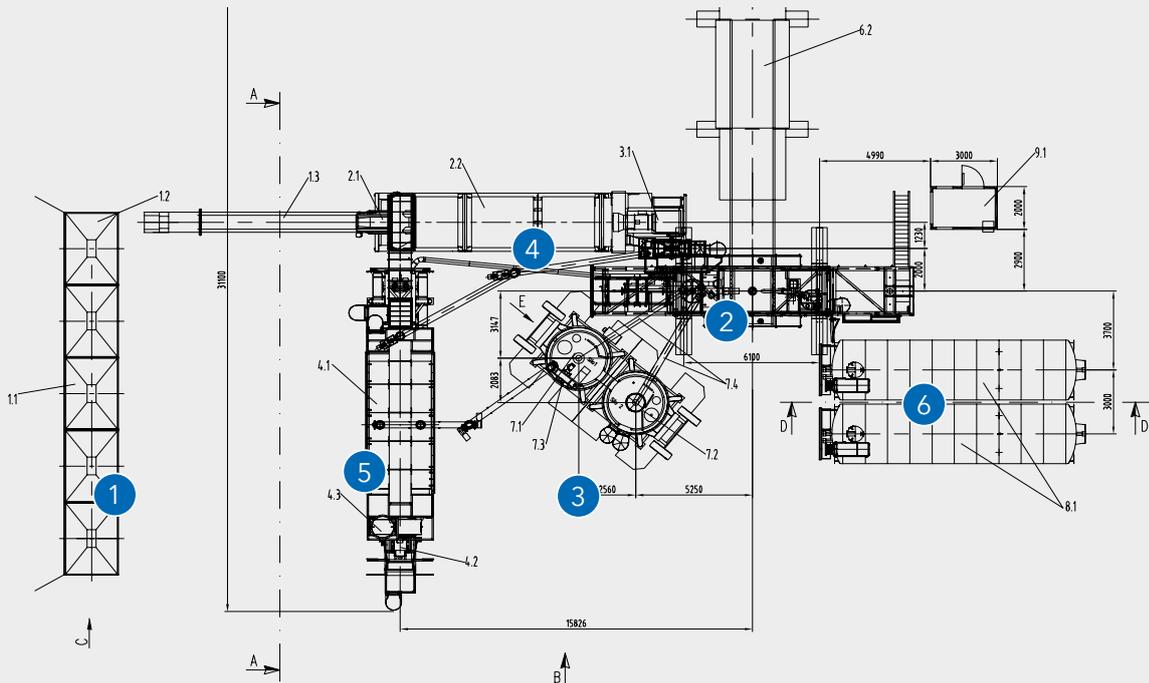
**MBA 3000**

Control			
	BENNINGHOVEN control system BLS 3000: switching and power element, air conditioning unit and low-voltage main distribution system		
Recycling dosing systems			
Middle ring dosing system	-	-	max. 25% RAP material



LAYOUT

**ALWAYS IN A GOOD POSITION.**





#### // VARIABLE INSTALLATION OPTIONS

All the components of a mobile asphalt mixing plant can be positioned differently in accordance with the local conditions.

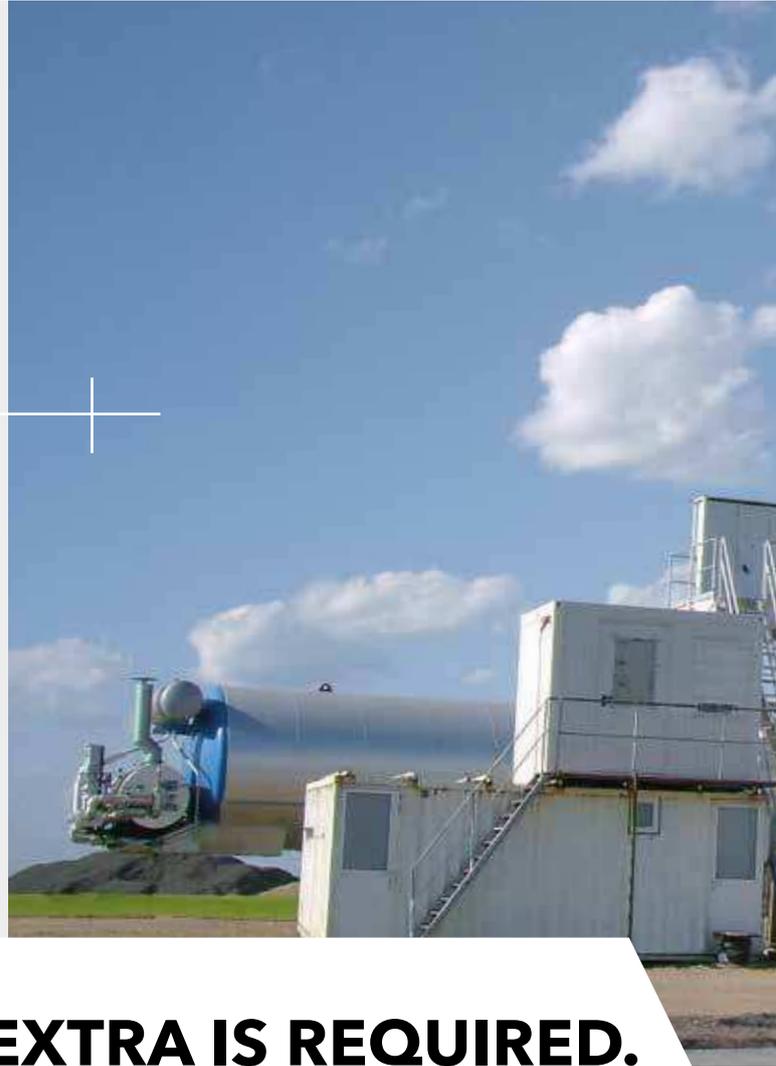
## BASIC LAYOUT

### // COMPONENTS

- 01 Cold feed system
- 02 Mixing tower
- 03 Filler silo
- 04 Dryer drum with burner
- 05 Dust collection system
- 06 Bitumen tanks



The colour scheme of the plants is implemented according to the BENNINGHOVEN standard and in accordance with customer requirements or legal, normative specifications. Weather-resistant and heat-resistant paint is therefore used.



## OPTIONS

# WHEN THAT LITTLE BIT EXTRA IS REQUIRED.



### // STORAGE SILO

The mixed material storage silo is used to store the finished asphalt for up to 24 h and can store 50 or 90 t. The silo is positioned at the side of the mixing plant and filled via a skip.



### // RAP MATERIAL FEED OPTION

The MBA offers the option of feeding into the middle ring of the dryer drum. This allows the customer to add up to 25% RAP material, depending on the base material.





IMPRESSIONS

# BENNINGHOVEN AROUND THE WORLD.



// EGYPT



// BULGARIA



Mixing plants from BENNINGHOVEN are used all over the world. Via road, water, air and rail: Every plant always arrives safely at its location of use.



// GREENLAND



// NORWAY



CONTROL

# SUCCESS AT THE TOUCH OF A BUTTON.

The BLS 3000 control system features simple, intuitive operation, a very clear structure and perfectly realistic visualisation. All functions and operating elements of the process control system are displayed clearly in the computer animation and controlled with a mouse or keyboard.





## CONTROL

# SOPHISTICATED CONTROL.

### // MIXING PROCESSES AND DOCUMENTATION

All the plant's mixing processes can be freely selected, so the scales can be filled and the mineral, filler, bitumen and RAP material added to the mixer in any order. Continuous tare compensation is also integrated, and corrections can be made subsequently on the basis of previous mixtures. The uninterrupted power supply ensures operational safety.

### // RECIPES AND ORDERS

Via the control system, any number of recipes can be input and managed. Base parameters and pre-input can be changed during the mixing operation. Recipe selection and creation, accounting with daily, monthly and annual logs as well as parametrisation are all carried out via the user interface.

Order input is also possible in any quantity. Orders can even be divided into partial orders. In addition, customer orders may be interrupted and others given priority, whereby the remaining amount is stored and can be called up again if required.

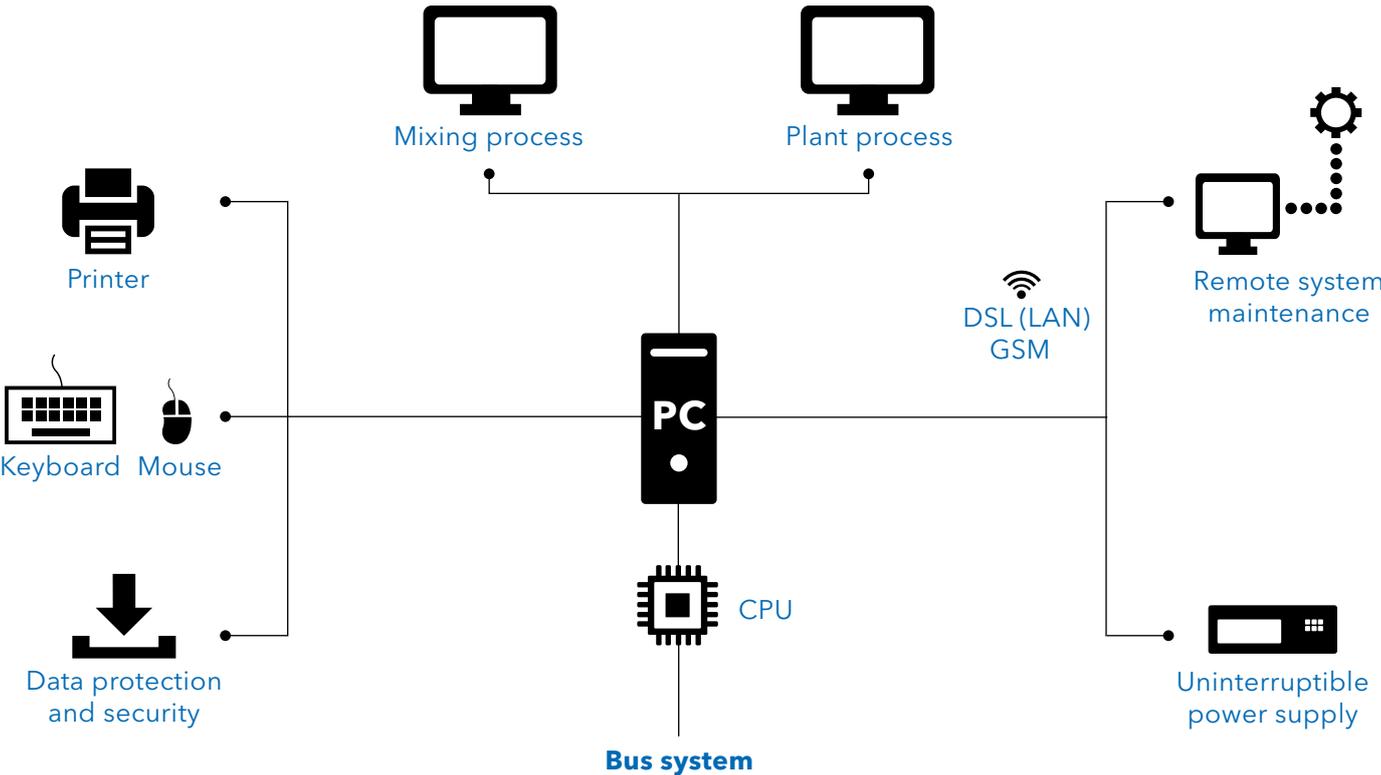
The control system for the entire mixing plant is documented in detail and monitored:

- > Statistical long term recording of individual components in a database
- > Documentation via printer or on the hard drive with data back-up
- > Batch record manager for evaluating and viewing the batch report with detailed search capability
- > Histogrammic analysis of components (graphical presentation of frequency distributions)

### // REMOTE SYSTEM

- > Remote maintenance - First Level Support
- > Connection to the plant's control system is possible at any time (following go-ahead from the customer/operator)
- > Diagnosis and support
- > Fault rectification on site with the customer's personnel
- > Cost-effective









## CUSTOMER SUPPORT AT BENNINGHOVEN

# RUNS LIKE CLOCKWORK.



### // TECHNICAL SUPPORT

- > Troubleshooting
- > Service interval consulting
- > Field service
- > Application consulting
- > Specialist staff-sharing in the event of holiday or illness



### // INFORMATION SYSTEMS

- > Telephone support
- > Troubleshooting via remote maintenance
- > Online support
- > Software updates
- > Replacement of old control elements



### // LOGISTICS

- > Transportation organisation and planning, up to 100 trucks/project
- > Assistance with approval procedures
- > Organisation of special transportation
- > Customs clearance



### // TRAINING

- > Safety briefing
- > Plant briefing
- > Operation
- > For service technicians
- > For plant personnel



### // SPARE PARTS

- > 24/7 via special courier service
- > Planning
- > Logistics
- > Creation of customer-specific spare parts packages



### // PREVENTION

- > Prevention and plant inspection
- > Individual spare parts consulting
- > Consulting on innovative wear protection to extend service life
- > Heat and energy optimisation for the plant
- > Perfectly prepared for the new season





## // RETROFITTING AT BENNINGHOVEN

When you consider that asphalt mixing plants have a service life or operating period of more than 40 years, during this period it is obvious that technology, requirements and standards will change and research findings will conquer the markets.

Accordingly, this creates the need for the asphalt mixing plants to remain in good condition, both internally and externally - by replacing components or general retrofitting of the plants. There are many reasons for this:

- > Normal wear
- > Upgrading to increase capacity
- > Environmental awareness and tighter emission laws

- > Reduction of the overall energy balance (e.g. use of heating media for drying, standby mode for units which are temporarily not being used)
- > Control system retrofitting, from console control to PC
- > Enabling RAP dosing
- > Attaining the status quo for plants
- > Improving efficiency

BENNINGHOVEN is able to retrofit components not just on its own plants but also on all third-party plants. As a technology leader, BENNINGHOVEN offers ideal solutions for optimising your mixing plants in many areas, e.g. burner technology, RAP systems or bitumen technology.



MORE THAN

107

YEARS OF CUSTOMER FOCUS

MORE THAN

600

MOTIVATED SPECIALISTS



// ASPHALT MIXING PLANT



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