



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 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.

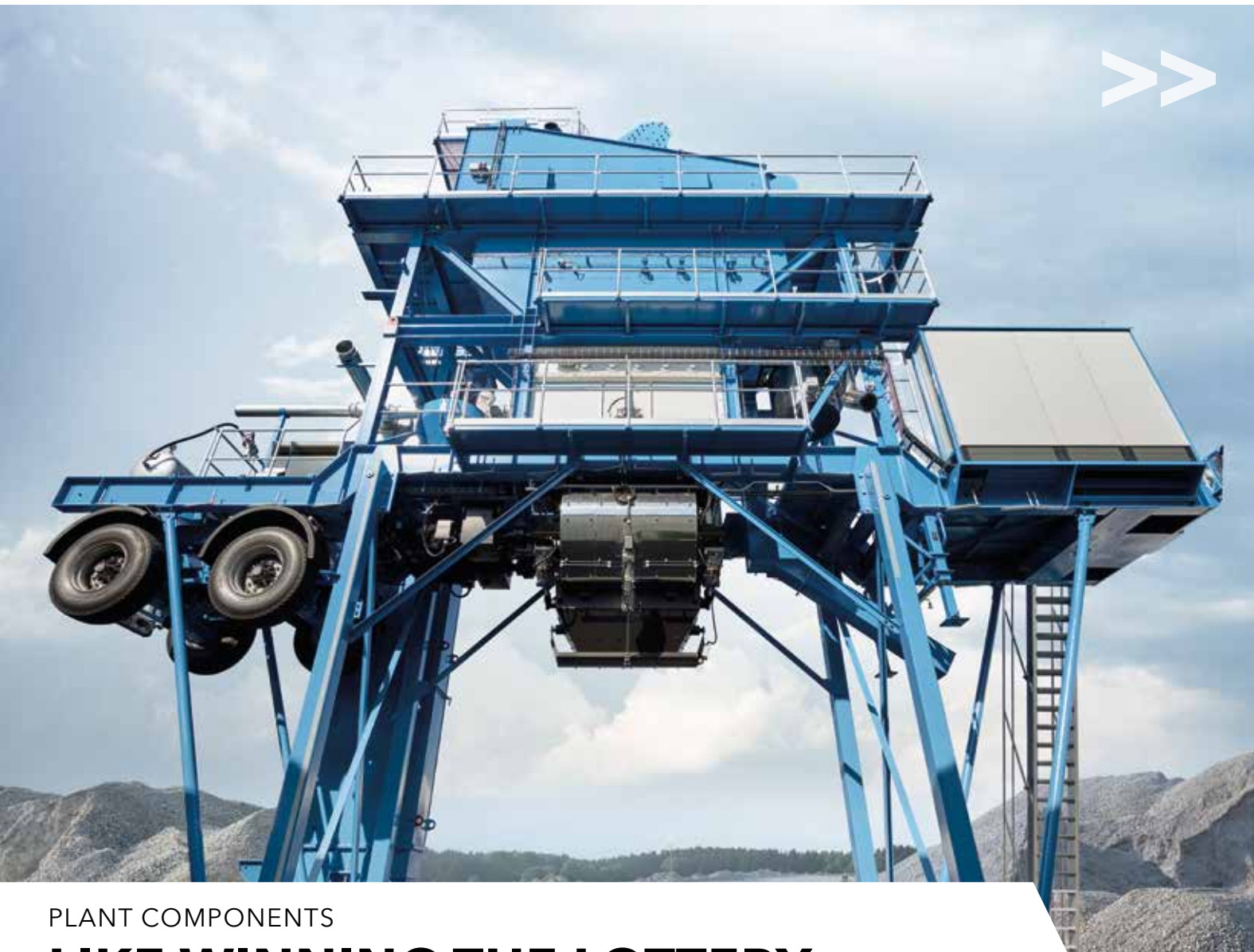
// SUSTAINABLE AND ECONOMICAL

Like all BENNINGHOVEN plants, the MBA features high-quality, low-maintenance components with a long service life which will meet any market and environmental requirements.

The thermal insulation of the components in the heated section is exemplary, as is the low energy consumption. This contributes to the optimisation of the environmental aspect and of health and safety while increasing cost efficiency.

// LAYOUT OF MOBILE ASPHALT MIXING PLANT

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



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.



// COLD FEED SYSTEM

The 5-fold mobile cold feed system group is manufactured in a solid steel construction and guarantees simple assembly, cheap transport and user-friendly filling. The cold feed system group is equipped with a folding approach ramp, which is backfilled on site.



// MIXING TOWER

When assembling the mixing plant, the mixing unit is supplemented by two components, the hot bin section and the screen, offering a high mixing capacity and flexibility.



// FILLER SILO

The filler silo for reclaimed or imported filler features an outlet cone, emergency shut-off valve, injector loosening system and fill level display.



// DRYER DRUM

The drum tube, which is made of a thick-walled, solid steel construction, achieves maximum efficiency, very low exhaust gas temperatures and prevents temperature losses during the drying process thanks to special fittings.



// DUST COLLECTION SYSTEM

The dust collection system includes supporting feet for easy installation and implementation. The filter dust collection system is perfectly tailored to the mixing plant capacity. The vertical layout of the filter bags guarantees maximum utilisation of the surface area with efficient filter function.



// BITUMEN TANK

The binder tank in horizontal design, ready-piped with filling and dosing pump, is indirectly electrically heated and implemented with insulated container walls. Connection to the mixing tower is made via a heated, insulated and flexible hose.

// BURNER



PLANT COMPONENTS

EQUAL RIGHTS FOR ALL: QUALITY.

// BURNER

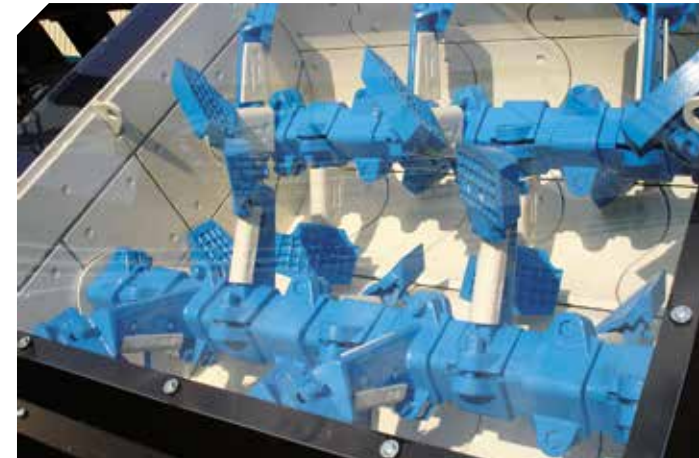
BENNINGHOVEN is a world market leader when it comes to burners, and the only manufacturer of 4-fuel burners. The company's essential expertise enables it to develop unique burners with excellent characteristics:

- > 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

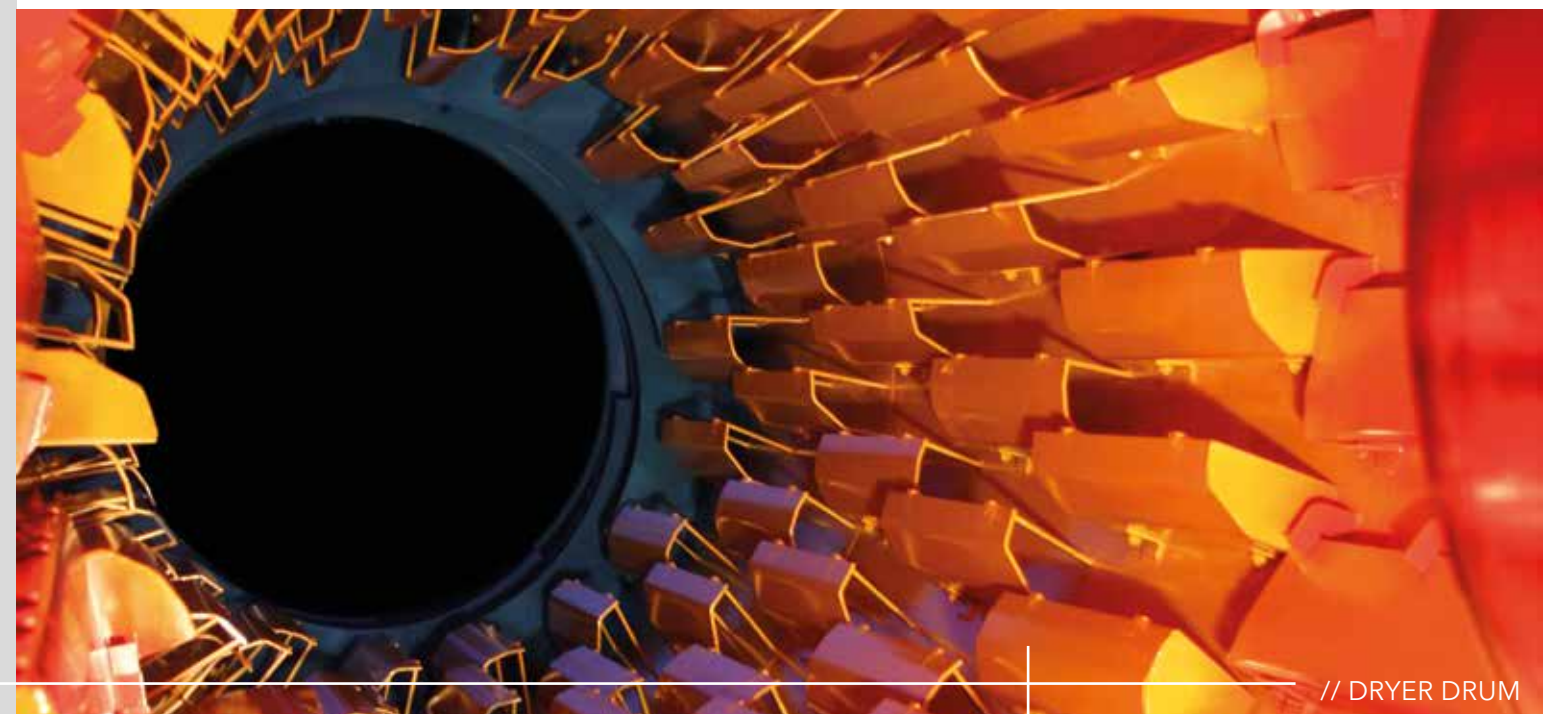
All mobile asphalt mixing plants feature 5-fold screening as standard. This enables standards and recipe requirements in the various countries around the world to be fulfilled without any problem.



// 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 2000/MBA 3000

HEAVY-DUTY MODELS.

TECHNICAL DATA PLANT OVERVIEW MBA		
	MBA 2000	MBA 3000
Mixing capacity (t/h)	160	240
Drying capacity (t/h)	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/s², snow load: 0.85 kN/m²	
Installation types	Mobile steel foundations (set-up area must be suitable for ground loading of 350 kN/m²)	
Cold feed system		
Number of hoppers	Mobile 5-fold cold feed system	
Capacity (m³)	8	8
Approach ramp	Yes (included in the delivery, on-site backfill min. 650 mm)	
Loading width (mm)	3,400	3,400
Dryer drum		
Type	MT 8.22 K	MT 9.23 K
Drive rating (kW)	1 x 37	1 x 55
Burner		
Type (standard fuel oil)	EVO JET 2 FU Öl	EVO JET 3 FU Öl
Rated heat output (kW)	11.9	19
Optional fuels	Natural gas, liquid gas, lignite - can be implemented as a combi-burner	
Dust collection system		
Output (Nm³/h)	42,000	58,000
Screen/Hot bin section		
Capacity (0-2 mm, t/h)	160	220
Screening	5-fold screening	
Hot bin section	30 t in 5 bags (sand + bypass together)	
Mixing and weighing section		
Mixer (kg)	2,000	3,000
Aggregate weigh hopper (kg capacity)	2,000	3,000
Filler weigh hopper (kg capacity)	200	300
Bitumen weigh hopper (kg capacity)	200	250
Mixed material storage silo/filler silos		
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 m³, mobile imported filler silo 50 m³	
Bitumen system		
	General design mobile, with electric heating and 150 mm insulation	
Capacity	Two bitumen tanks 50 m³ each (mother tank, subsidiary tank)	



	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	-	25% RAP material

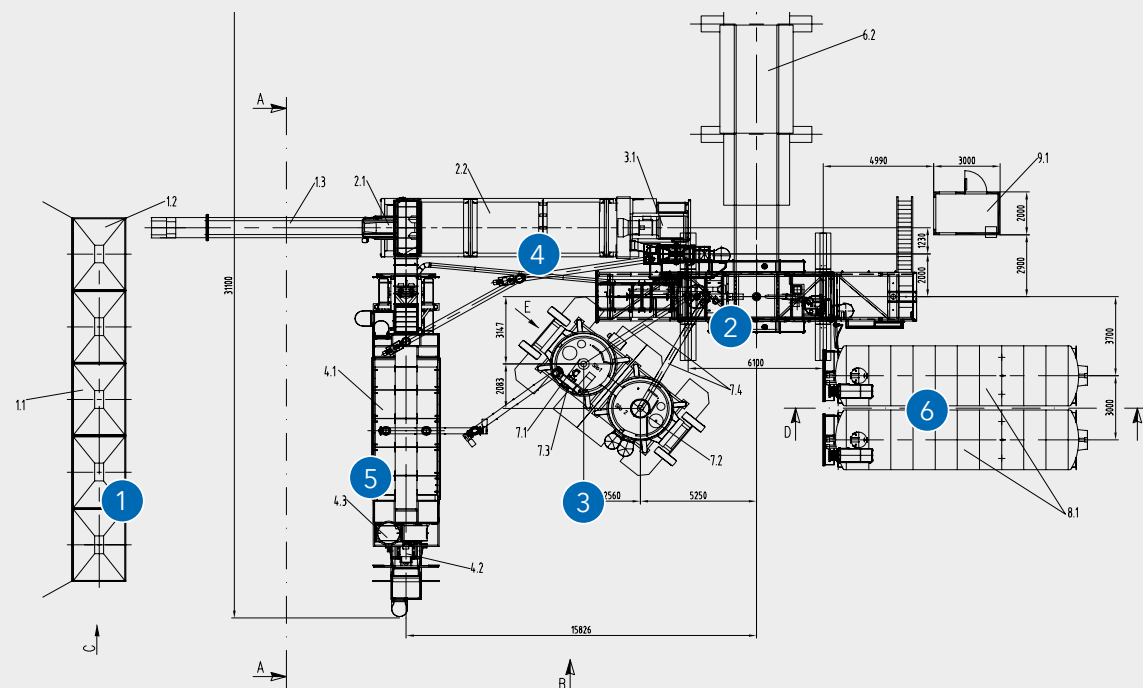


LAYOUT
ALWAYS IN A GOOD POSITION.



// 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.

// FUEL CHANGE

The customer has the option of operating his burner, which is responsible for drying and heating the base material, with different fuels. These combi-burners are capable of changing fuel at the touch of a button, guaranteeing independence and flexibility.

A combi-burner also has the advantage of eliminating downtimes for the plant due to a shortage of raw materials or delivery problems. In the event of price fluctuations for any particular fuel, the cheapest can always be selected.

// MORE OPTIONS

- > Liquide additive
- > Foam bitumen system
- > Filler loading set
- > Filler water mixer



// GRANULATE FEED SYSTEM

In order to optimise the properties of the asphalt, additives can be added to the asphaltic mixture. Here, BENNINGHOVEN offers the option of a single or double dosing system and dosing in container design with integrated craneway and enclosure.



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.

IMPRESSIONS

BENNINGHOVEN AROUND THE WORLD.



// EGYPT



// BULGARIA



// 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.

In addition to fully automatic mode, the control system also offers the option of a manual operating level. This allows the mixing operator to control all drives and valves separately. The real time representation of the

mixing process with graphical and alphanumerical monitoring of set values and actual values is displayed on the 24" monitor.



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 uninterruptible power supply ensures operational safety.

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)

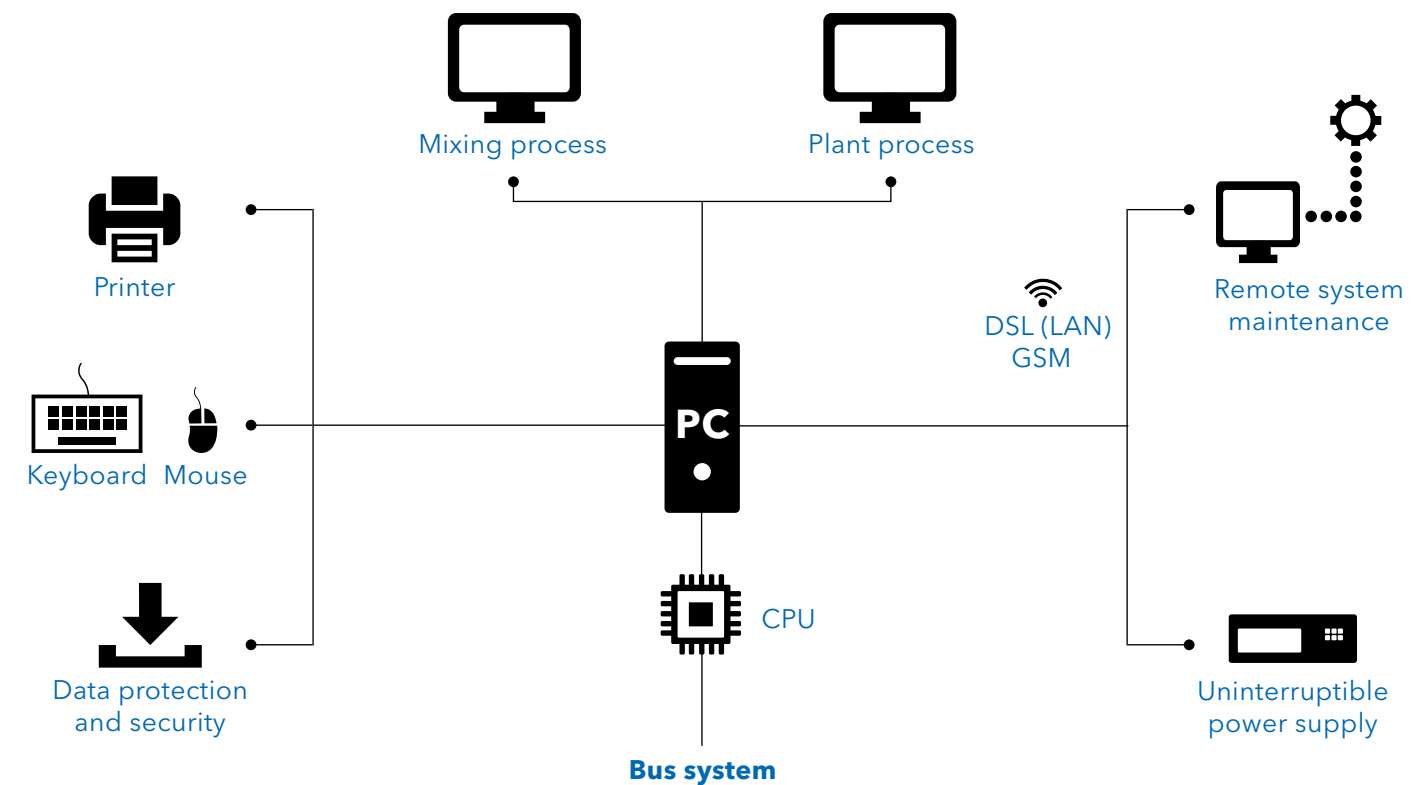
// RECIPES AND ORDERS

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.

// 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





// MIXING AND WEIGHING SECTION



// DUST COLLECTION SYSTEM

ASSEMBLY

**ARE YOU STILL INSTALLING
OR ALREADY MIXING?**

The plant can be set up and dismantled within a very short time; all sections of this plant are already completely internally pre-wired and pre-piped, which greatly facilitates handling on site.

Assembling a mobile asphalt mixing plant involves the very brief use of cranes, i.e. two 60 t cranes are required on site for maximally three days, whether you are setting up the mixing tower, the filler silos, the storage silo if appropriate, the stack and the exhaust lines, but also the various pipework.

This economic aspect is a very good reason to opt for this installation model. Thanks to the ingenious constructive concept and the pre-wired units, it will not take long at all for the customer to be ready for production again following relocation.

Positioning via hydraulic cylinders is possible for the mixing section.

The time frame from delivery through to commissioning the plant is only approx. two weeks.



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.

CUSTOMER SUPPORT

RIGHT NEXT TO OUR CUSTOMERS.

Our local contacts in sales and service companies provide comprehensive support for all issues and queries relating to our products. This includes diagnosis and technical support, ordering original spare parts and advice on using our products.

Rapid technical support is our top priority. We guarantee a short response time and rapid solutions thanks to a close-knit network of offices, their experienced service technicians and the additional support of our home factory.

Knowing exactly how to operate our plants is the key to using them successfully. To provide your employees with the specialist knowledge they need, BENNINGHOVEN offers a wide range of training courses at our main factory in Mülheim – or we can come to you.

We develop training courses specifically adapted to our customers' needs, which are then delivered by competent employees from our specialist departments.



MORE THAN

107

YEARS OF CUSTOMER FOCUS

MORE THAN

600

MOTIVATED SPECIALISTS



// ASPHALT MIXING PLANT



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