



TRANSPORTABLE ASPHALT MIXING PLANTS
WITH TRANSPORT-OPTIMISED CONTAINER DIMENSIONS

TYPE ECO



BAUMA VERSION



HIGHEST QUALITY
STATE OF THE ART

Trendsetter for the highest demands.

State of the art! This is an approach that BENNINGHOVEN has followed for over a century. Through consistent further development, growing from a trade workshop to a globally active company, BENNINGHOVEN is a trendsetter in the field of asphalt mixing plants today. The opening of the world's most modern factory for asphalt mixing plants in summer 2018 was another milestone in our successful history. This allows us to offer our customers the best possible solutions when it comes to producing the highest quality asphalt in an economical process.

BENNINGHOVEN GmbH & Co. KG is a member of the expanding, worldwide active WIRTGEN GROUP which has been part of John Deere since late 2017.

BENNINGHOVEN GMBH & CO. KG

Globetrotter.

TRANSPORTABLE ASPHALT MIXING PLANTS IN CONTAINER DESIGN



The ECO plant type offers an impressive demonstration of the new BENNINGHOVEN product philosophy.



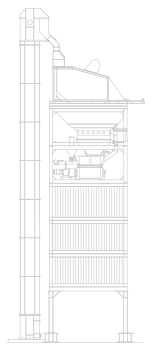
It's all in the mix

Asphalt mixing plants must be designed to provide all compounds in the right quantities and with the correct temperature, at the right time and in the right place. In addition to this, the processes must be safe, economical and environmentally friendly.

With our wide range of products and the large variety of options, any customer can find the right plant for their site, to meet all requirements and conditions.

Perfectly positioned at all times.

The powerful ECO plants guarantee optimum quality of the mixed materials and can be operated as stationary systems, but can also handle rapid location changes without problems.



TRANSPORT CONCEPT

- > Main components in transport-optimized container dimensions
- > Simplified, cost-efficient transport worldwide



PLUG & WORK

- > Fast assembly (installation and dismantling)
- > Modular expansion possible
- > Transportable or stationary foundations - rapid implementation
- > Pre-configured interfaces



RECYCLING*

- > Cold recycling up to 30 %
- > Middle ring dosing system 25 %
- > Dosing system into the mixer 30 %
- > Retrofitting possible at any time



HIGH-TECH PLANT POWER

- > Wide range of mixing capacities 100 - 320 t/h
- > Loading silo capacity 325 t in up to 7 bins



OPERATOR BENEFIT

- > Ergonomics concept
- > Health and safety
- > Maintenance concept

Saves time and money.

MAXIMUM MOBILITY AND FLEXIBILITY



The key advantage of the ECO plants is the design of the main components in transport-optimised container dimensions allowing easy transport by road, sea or rail.

YOUR BENEFITS:

- + Easy and cost-optimised transport worldwide
- + Uncomplicated loading
- + Substantial time savings



Easy transport worldwide

The transport-optimised container system allows easy and fast loading, transport, storage and unloading of goods. The transport-optimised shape and size allows transporting of goods using worldwide standardised and readily available transport means and therefore fast turnaround times.



COMPETITIVE ADVANTAGE
THANKS TO CLEVER LOGISTICS



TRANSPORT CONCEPT
WORLDWIDE

The uncomplicated handling allows the plant to be placed worldwide with maximum efficiency.



- Locations with an ECO plant
- Locations with up to 10 ECO plants
- Locations with more than 10 ECO plants

Quickly to work.

THE INTELLIGENT MODULAR SYSTEM



Transportable steel foundations increase your cost efficiency and your flexibility.

PLUG & WORK

Thanks to the intelligent modular system, the ECO asphalt mixing plant features easy assembly and fast readiness for operation.

All sections of this compact plant are already pre-wired and equipped with pipes at the factory, greatly facilitating handling on site. This allows fast and effective installation. The connections can also be dismantled within a short period of time, transported and reassembled at a new location. This added value becomes particularly evident at mobile construction sites and large temporary construction sites.

The plant can be installed either on mobile steel foundations or permanent concrete foundations.



YOUR BENEFITS:

- + Fast assembly (installation and dismantling) and relocation
- + Modular expansion possible
- + Pre-configured interfaces
- + Installation possible without concrete foundations





PLUG &
WORK

Just carry on.

OPTIMUM RELOCATIONS

The ECO plants master fast relocations without quality loss, providing a crucial advantage for large temporary construction sites.



Guaranteed reliability

Due to the high quality of the components, the plants can be assembled and dismantled as often as required without restrictions.

Despite frequent component movements, this does not cause any warping of the steel supports. This is achieved with a high-quality powder coating and clever designs based on the load classes (earthquake, wind loads, snow loads).

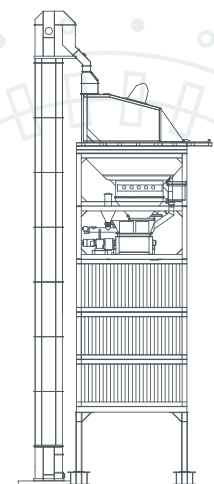
The ECO plants also stand for a high level of reliability and a strong performance without downtimes, which is especially important for prestige projects and large construction sites with very tight schedules.

YOUR BENEFITS:

- + Reliable performance
- + No downtimes
- + Reliable planning and fast handling



The optimum relocation process saves time and money.



Pure passion.

HIGH-TECH PLANT POWER

320 t/h

NOMINAL MIXING CAPACITY

325 t

LOADING SILO CAPACITY WITH EXTENSION

30 %

POSSIBLE RECYCLING ADDITION RATE



The compact ECO plants feature strong and reliable plant performance during operation. Optimum quality of the asphaltic mixture is always guaranteed with a mixing capacity of up to 320 t/h.

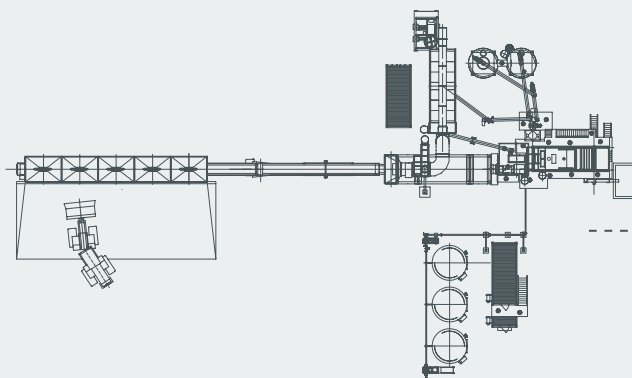




BENNINGHOVEN CONTROL SYSTEM BLS 3000

>> YOUR BENEFITS:

- + User-friendly, contemporary user interface
- + Fast training, flexible personnel management
- + Control and monitoring of the complete plant and mixing process
- + Realistic visualisation in real time
- + Energy monitoring, backup system for high operational reliability



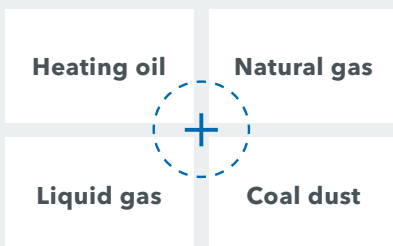
Additional information:
> Control systems brochure
> Retrofit brochure



BENNINGHOVEN BURNER EVO JET



Flexible fuel change at the press of a button (individually or in combination)



Independent - flexible - cost-efficient

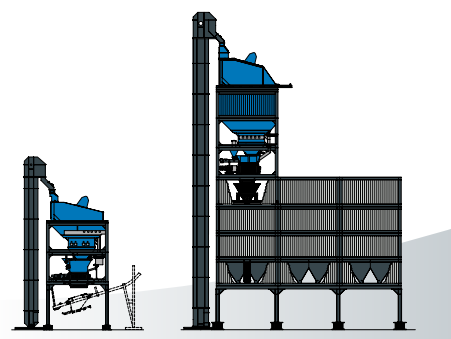
Raw-material shortage — Downtimes

>> YOUR BENEFITS:

- + Use of the currently most cost-efficient fuel
- + High efficiency in consumption (frequency-controlled)
- + Minimum pollutant emissions thanks to state-of-the-art control technology
- + Mobile burner for easier accessibility (e.g. for servicing)
- + Easy retrofitting

Perfectly positioned.

THE ECO PLANT AT A GLANCE



ECO 1250/2000/3000/4000

- > Highest manufacturing standards
- > Innovative technologies
- > Comprehensive customer support

Dust collection system

- > Efficient filter function/dust collection
- > Maximum use of space

Cold feed unit

- > 3/4/5/6-fold cold feed units with 12 m³ each
- > Precise pre-classification
- > Flexible installation

Bitumen system

- > Optimum stocking
- > Efficient heat insulation concept
- > Expanded options with intelligent BENNINGHOVEN technologies

Mixing tower

- > Optimum wear protection
- > Trouble-free process

Filler silo

- > Storage of reclaimed filler
- > Optional reclaimed filler loading (loading hose, loading fittings, filler water mixer)
- > Optional storage of imported filler

Slewing crane

- > 180°
- > Lifting capacity 500 kg

Screen unit

- > 4-fold or 5-fold screening

Hot bin section

- > 17 t
- > 55 t
- > in 4, 5 or 6 bins
- > Stocking of the prepared mineral according to size
- > Sand/bypass separate or combined
- > Oversize aggregate discharged to outside or into the last bin

Weighing and mixing section

- > Fast and precise weighing and feeding
- > Good accessibility
- > 1.25 t mixer = 100 t/h
- > 2 t mixer = 160 t/h
- > 3 t mixer = 240 t/h
- > 4 t mixer = 320 t/h

Asphalt transfer

- > Direct transfer (10 - 53 t mixed material loading silo)
- > Skip track (60 - 325 t mixed material loading silo)
- > Mixed material diverter chute (60 - 109 t mixed material loading silo)

Mixed material loading silo

- > Direct loading or storage
- > Various expansions
- > Flexible positioning
- > No mixed material loading silo
- > 53 t (1 chamber) to 325 t (7 chambers)

Foundations

- > Stationary concrete foundations
- > Mobile steel foundations

ADDITION OPTIONS:

- + Granulate dosing system
- + Powder / granulate dosing system
- + Manual bag dosing system
- + Liquide additive system
- + Foam bitumen system
- + RAP system

Control cabin

- > Control of the mixing process
- > Recipe management

Dryer drum with burner

- > Optimum drying and heating of the virgin mineral
- > Different versions of the drum depending on requirements

BENNINGHOVEN INNOVATION

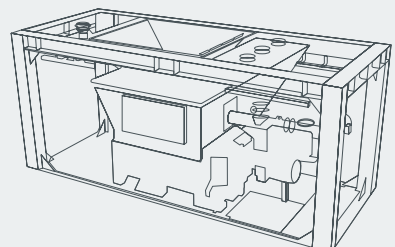
MIXED MATERIAL DIVERTER CHUTE



>> YOUR BENEFITS:

- + Innovative technology for asphalt transfer within the plant
- + New, more cost-efficient alternative to the skip track
- + Purely mechanical structure, particularly resistant to malfunctions
- + Worldwide functional reliability
- + Quick, strain-free positioning for silo selection
- + Active cross-mixing during material transfer minimises separation effects in the end product

Additional information:
> Highlights flyer mixed material diverter chute
> Highlights flyer weighing and mixing section



BENNINGHOVEN INNOVATION

WEIGHING AND MIXING SECTION



>> YOUR BENEFITS:

- + Large mixer geometry
- + Pre-configured interfaces for adding recycling material, bags, foam bitumen, granulate, powder, fibre and liquide additive
- + Optimum fill level (< 60%) - no overfilling
- + Highest quality materials for extreme loads
- + Optimum wear protection
- + Fault-free process
- + Key transfer system for high level of safety



Best asphaltic mixture quality

**Optimum
fill level < 60%**

Thought further.

THE ECO VARIETY OF OPTIONS

55 t

Expanded hot bin section

325 t

Maximum expanded loading silos

The well thought-out modular system allows expansions with additional components at any time.

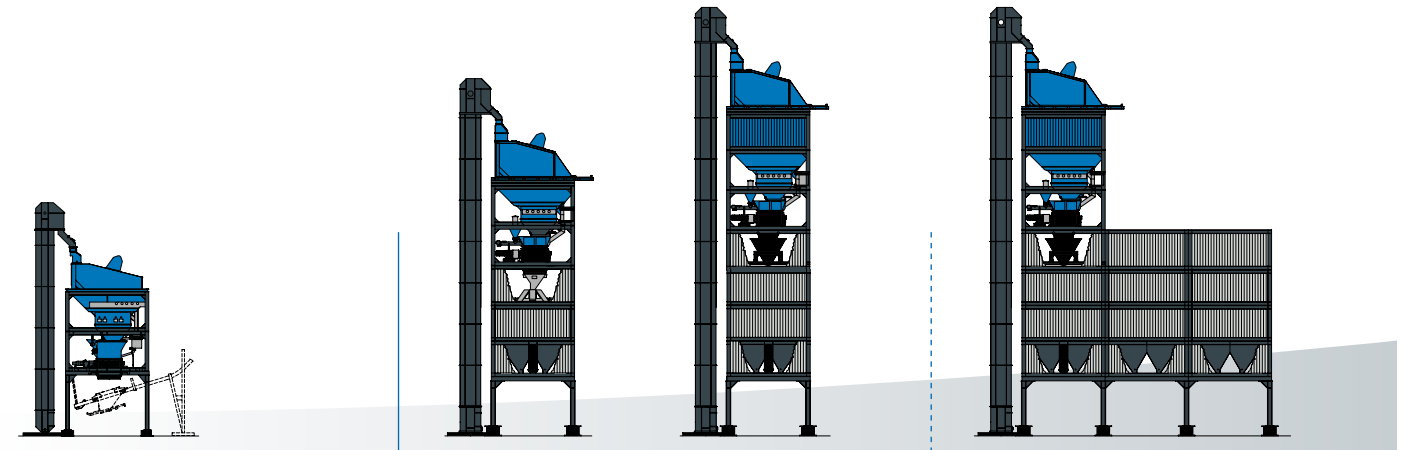


High level of flexibility and individual customisation

One great advantage of the ECO plants is the flexible expansion of the capacities of the loading silos and hot bin section. BENNINGHOVEN offers the right plant solution for any requirements profile.

YOUR BENEFITS:

- + Flexible expansion
- + Time-optimised loading of different recipes
- + Individual adaptation
- + Cost-efficient processes



- > Low investment costs
- > Direct loading
- > Market-focused recipe selection
- > Optional adjacent loading silo

- > Low investment costs
- > Market-focused recipe selection
- > Small batches with direct loading

- > High storage capacity and flexibility
- > Flexible expansion of the loading silo capacities
- > Flexible expansion of the hot bin section capacities
- > Time-optimised loading of different recipes
- > Small batches with direct loading



Asphalt optimization with feed systems

Additives can be introduced into the mixture to optimise the properties of the asphalt. BENNINGHOVEN offers the option of a single or double feed system.



- Granulate dosing system
- Powder / Granulate doing system
- Manual bag dosing system
- Liquide additive system
- Foam bitumen system
- Additional customer requests

A question of type.



ECO – TECHNICAL DATA

	ECO 1250		ECO 2000		ECO 3000		ECO 4000	
Nominal mixing capacity (t/h)	100		160		240		320	
Drying capacity (t/h)	90		145		220		290	
General information	All information is based on a material moisture level of 4 %							
Foundations	Stationary concrete foundations/mobile steel foundations							
Cold feed unit								
Number of hoppers	3/4/5/6-fold cold feed unit							
Capacity (m³)	12		12		12		12	
Feed ramp	Optional							
Loading width (mm)	3,500		3,500		3,500		3,500	
Dryer drum								
Type	TT 8.20		TT 8.22		TT 9.23		TT 11.26	
Burner								
Type	EVO JET 2		EVO JET 2		EVO JET 3		EVO JET 4	
Optional fuels	Heating oil, natural gas, liquid gas, heavy oil, coal dust - available as combination burner							
Burner output (MW)	11.9		11.9		19		23.7	
Dust collection system								
Output (Nm³/h)	28,000		44,000		58,000		78,000	
Screen unit								
Screening	4-fold	5-fold	4-fold	5-fold	4-fold	5-fold	4-fold	5-fold
Screen output (0-4 mm, t/h)	90	90	160	160	200	220	240	270
Hot bin section								
17 t								
4-fold screening	17-TA4 S/B comb., OA out	17-TA5 S/B comb., OA in	17-TA4 S/B comb., OA out	17-TA5 S/B comb., OA in	55-TA4 S/B comb., OA out	55-TA5 S/B sep., OA out	17-TA4 S/B comb., OA out	17-TA5 S/B comb., OA in
Bins	4	5	4	5	4	5	4	5
5-fold screening	17-TA5 S/B comb., OA out	17-TA6 S/B comb., OA in	17-TA5 S/B comb., OA out	17-TA6 S/B comb., OA in	17-TA5 S/B comb., OA out	17-TA6 S/B comb., OA in	17-TA5 S/B comb., OA out	17-TA6 S/B comb., OA in
Bins	5	6	5	6	5	6	5	6
55 t	-		ECO 2000/3000/4000					
4-fold screening	-		55-TA4 S/B comb., OA out		55-TA5 S/B sep, OA out		55-TA5 S/B comb., OA in	
Bins	-		4		5		5	
5-fold screening	-		55-TA5 S/B S/B comb., OA out		55-TA6 S/B sep, OA out		55-TA6 S/B comb., OA in	
Bins	-		4		5		6	
Weighing and mixing section								
Mixer (kg)	1,250		2,000		3,000		4,000	
Mineral weigh hopper (kg capacity)	3,000		3,000		3,000		4,000	
Filler weigh hopper (kg capacity)	150		400		400		400	
Bitumen weigh hopper (kg capacity)	100		350		350		350	

	ECO 1250	ECO 2000	ECO 3000	ECO 4000
Mixed material loading silos				
Lowered/adjacent	0 t			
1-chamber loading silo	10/45/53 t			
2-chamber loading silo	-	60 t (2 x 26 t, 8 t direct loading) / 109 t (2 x 48 t, 13 t direct loading)		
4-chamber loading silo	-	120 t (2 x 26 t, 2 x 30 t, 8 t direct loading) / 217 t (2 x 48 t, 2 x 54 t, 13 t direct loading)		
6-chamber loading silo	-	180 t (2 x 26 t, 4 x 30 t, 8 t direct loading) / 325 t (2 x 48 t, 4 x 54 t, 13 t direct loading)		
Mixture transfer				
10 - 53 t mixed material loading silo	Direct draining of mixer in loading silo			
60 - 109 t mixed material loading silo	-	Mixed material diverter chute (only in the mixing tower, without vertical expansion)		
60 - 325 t mixed material loading silo	-	Skip track		
Filler system				
Option - reclaimed filler loading				
Reclaimed filler silo	30 m³ or 40 m³	40 m³ or 60 m³		
Option - imported filler silo 1	30 m³ or 40 m³	40 m³ or 60 m³		
Option - imported filler silo 2	30 m³ or 40 m³	40 m³ or 60 m³		
Bitumen system				
Tank version	Vertical, electrically heated			
Capacity (m³)	60 or 80 or 100			
Number of chambers	1 or 2*			
Insulation (mm)	200 or 300			
Mixing	Agitator/mixing nozzle			
Control system				
	BENNINGHOVEN control system BLS 3000: Control and power unit, A/C unit and low-voltage main distribution system			
Recycling feed systems				
Middle ring dosing system	-	-	25 % RAP addition	
Dosing system into the mixer	30 % RAP addition			
Other feed options				
	Powder, granulate, bag feed, liquide additive, foam bitumen			

* from 80 m² tanks with 2 chambers possible

Added value.

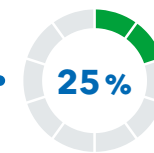
THE TBA RECYCLING SYSTEMS



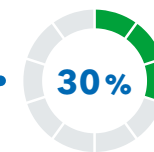
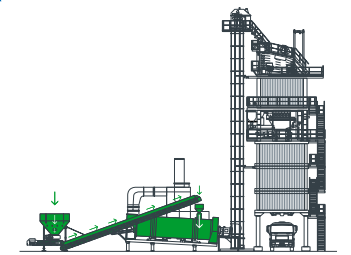
BENNINGHOVEN offers a wide range of products and services in the field of recycling feed systems.

YOUR BENEFITS:

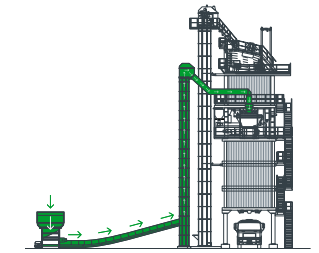
- + Environmentally friendly production
- + Multiple cost savings
- + Government grants
- + Easy retrofitting



Middle ring dosing system



Dosing system into the mixer



RECYCLING⁺



> Middle ring dosing system



> Dosing system into the mixer



Economical and environmentally friendly

In addition, the recycling components are adapted and integrated for the retrofitting of existing systems from all manufacturers according to individual customer requirements. For ECO plants, you can choose between middle ring dosing system or dosing system into the mixer.

This strengthens the environmental concept and reduces use of resources.

Always right in the middle.

THE ERGONOMICS, MAINTENANCE, AND HEALTH AND SAFETY CONCEPT



Very good accessibility to all areas thanks to 800 mm wide surrounding access/working platform

During the development of our systems, we attach great importance to user convenience and a high level of health and safety and functional reliability. The comprehensive and well thought-out concept offers the ideal preconditions for an integrated performance.



YOUR BENEFITS:

- + Easy handling on site with plug&work
- + Optimum illumination of the work and maintenance areas with LED technology
- + Large service openings ensure ergonomic access to the mixer for service and maintenance work
- + Safe access to all service and maintenance points (guard rails, ventilation openings, etc.)
- + Power and compressed air connection for tools and maintenance work
- + Central compressed air maintenance unit for oiler and separator, plus filter
- + Intuitive lubrication plan thanks to colour coding of the maintenance intervals (daily - weekly - monthly)
- + Service and assembly aids (defined attachment points)
- + Modular expansion of functions through bus system
- + Key transfer system for increased work safety

The best recipe: more than 100 years of experience.

BENNINGHOVEN CUSTOMER SUPPORT



Maximum customer focus

Our service does not only start when the order is signed or end with commissioning. The comprehensive customer support at BENNINGHOVEN already starts much earlier on in the preparation phase of a project.

Most importantly, this includes complete and competent support to help you find the best possible plant solution. We believe it is important to take into account technical as well as location-related requirements and to develop an appropriate logistics concept.

TECHNICAL SUPPORT:

- > Troubleshooting
- > Application consulting
- > Training
- > Operator days
- > Spare parts
- > Prevention and inspection
- > Energy optimisation
- > Retrofit

ENVIRONMENTAL REQUIREMENTS:

- > Topography
- > Industrial area/nature reserve
- > Municipal restrictions
- > Colours/housing



LOGISTICS CONCEPT:

- > Logistics paths/infrastructure on plant and mixing station
- > Ship and HGV loading
- > Transport planning
- > Links between transport and installation
- > Approval process

PLANT TECHNOLOGY:

- > Technical plant and operating descriptions
- > Installation and layout plans
- > Emissions measurement
- > Safety devices
- > Structural calculations
- > Advice on current standards



Our local contacts in the sales and service companies provide comprehensive support for all issues and queries relating to our products.

Among other things, 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 short response times and rapid solutions with a dense network of offices, their experienced service engineers and the additional support from our head factory.



BENNINGHOVEN



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