TRANSPORTABLE ASPHALT MIXING PLANTS

TYPE TBA
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.

Trendsetter for the highest demands.
The TBA plant type is the BENNINGHOVEN benchmark for a well thought-out asphalt mixing plant with the highest quality standard.

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.

Optimum configuration from the start.

Maximum flexibility and economic efficiency

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

The TBA plants are equipped with “RECYCLING+” and feature a particularly high recycling addition rate of up to 80% – an absolutely unique selling point in the segment of transportable asphalt mixing plants.

> Wide range of mixing capacities 160 - 320 t/h
> Hot bin section capacity 60 / 80 / 130 t in up to 7 bins
> Loading silo capacity 517 t in up to 7 bins
> Fast assembly (installation and dismantling)
> Modular expansion possible
> Transportable or stationary foundations - rapid implementation
> Pre-configuted interfaces
> Cold recycling up to 40 %
> Hot recycling up to 80 %
> NEW – recycling drum using counter-flow action with a hot-gas generator
> Retrofitting possible at any time
> Ergonomics concept
> Health and safety
> Maintenance concept
The TBA plants present themselves as impressive all-rounders. This is where maximum flexibility meets strong system performance.

Exploit the full potential

The TBA transportable asphalt mixing plant covers the performance range from 160 to 320 t/h and is suitable for semi-mobile and stationary use.

The large storage capacities of the hot bin section and mixed material loading silo offer real added value. The intermediate storage of the dried, heated and sorted virgin mineral is available in capacities of 60 t, 80 t and 130 t in 5, 6 or 7 bins. There is also an option of combining or separating sand and bypass, discharging oversize aggregate to the outside or collecting it in the final bin.

An integrated mixed material loading silo with dimensions from 42 to 517 t ensures a sufficient buffer while providing storage capacity for up to seven asphalt types (recipes). Thanks to the modular system, this can be expanded or retrofitted at any time.
Get going.

THE INTELLIGENT MODULAR SYSTEM

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

- All sections of this compact plant are already completely pre-wired and equipped with pipes at the factory, greatly facilitating handling on site. This allows easy relocation of the plant as well as easy release and connection of the components.

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

YOUR BENEFITS:

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

Transportable steel foundations increase your flexibility.
The TBA 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 TBA 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.
Looking to the future.

HIGH-TECH PLANT POWER

The compact TBA 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.

**320 t/h**
NOMINAL MIXING CAPACITY

**517 t**
LOADING SILO CAPACITY WITH EXTENSION

**80%**
POSSIBLE RECYCLING ADDITION RATE
Perfectly positioned.

THE TBA PLANT AT A GLANCE

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

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

Dust collection system
- Efficient filter function/dust collection
- Maximum use of space

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

Hot bin section
- 60 t/80 t/130 t in 5, 6 or 7 bins
- Sand/bypass together/separate

Asphalt transfer
- Direct transfer (42 t mixed material loading silo)
- Skip track (94 - 517 t mixed material loading silo)

Mixed material loading silo
- Storage or direct loading
- Various expansions
- Flexible positioning

Foundations
- Stationary concrete foundations
- Mobile steel foundations

Dryer drum with burner
- Optimum drying and heating of the virgin mineral
- Different versions of the drum depending on requirements

Screen unit
- 5-fold/6-fold screening
- Adapted to international standards and recipe requirements

Slewing crane
- 180°
- Lifting capacity 980 kg

Mixing tower
- Optimum wear protection
- Trouble-free process

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

Control cabin
- Control of the mixing process
- Recipe management

WEIGHING AND MIXING SECTION

- 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

YOUR BENEFITS:

- BENNINGHOVEN CONTROL SYSTEM BLS 3000
  - Flexible fuel change at the press of a button (individually or in combination)
  - Independent – flexible – cost-efficient
  - 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

ADDITION OPTIONS:

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

ADDITIONAL INFORMATION:

- Control systems brochure
- Retrofit brochure

BENNINGHOVEN BURNER EVO JET

- Large mixer geometry
- Pre-configured interfaces for adding recycling material, bags, foam bitumen, granulate, powder, fibre and adhesive
- Optimum fill level < 60%
- Key transfer system for high level of safety
- Use of the currently most cost-efficient fuel
- Optimum fill level < 60%
- 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

YOUR BENEFITS:

- Best asphaltic mixture quality
- Optimum fill level < 60%
Thought further.

THE TBA VARIETY OF OPTIONS

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 TBA 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

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.

<table>
<thead>
<tr>
<th>Granulate dosing system</th>
<th>Powder / Granulate doing system</th>
<th>Manual bag dosing system</th>
<th>Liquide additive system</th>
<th>Foam bitumen system</th>
<th>Additional customer requests</th>
</tr>
</thead>
</table>

> 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
### Technical Data

#### Performance parameters

<table>
<thead>
<tr>
<th>TBA 2000</th>
<th>TBA 3000</th>
<th>TBA 4000</th>
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</thead>
<tbody>
<tr>
<td>Nominal mixing capacity (t/h)</td>
<td>160</td>
<td>240</td>
</tr>
<tr>
<td>Drying capacity (t/h)</td>
<td>145</td>
<td>220</td>
</tr>
</tbody>
</table>

#### General information

| Material moisture | 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 |

#### Feed ramp

| Loading width (mm) | 3,500 | 3,500 | 3,500 |
| Dryer drum | TT 8.22 | TT 9.23 | TT 11.26 |

#### Burner

| Type | EVO JET 2 | EVO JET 3 | EVO JET 4 |
| Burner output (MW) | 11.9 | 19.0 | 23.7 |
| Single fuel burner | Heating oil (EL - extra light) or natural gas or liquid gas or heavy oil |
| Single fuel burner | Combination of heating oil (EL - extra light), coal dust, natural gas, liquid gas, heavy oil |
| Triple fuel burner | Combination of coal dust, heating oil (EL - extra light), natural gas |

#### Dust collection system

| Output (Nm³/h) | 44,000 | 58,000 | 78,000 |

#### Screen unit

| Screening (x-fold) | 5 | 6 | 5 | 6 | 6 |
| Screen output (0.2 mm, t/h) | 160 | 160 | 240 | 240 | 320 |
| Total screen area (m²) | 25.5 | 30.6 | 38.5 | 46.2 | 48.3 |

#### Hot bin section

| Bin configuration | 130 t | 165 t | 194 t |
| 5-fold screening | 130-TA05-S/B comb., OA out | 130-TA06-S/B sep., OA out | 130-TA05-S/B comb., OA out |
| Bins | 5 | 5 | 5 |
| 6-fold screening | 130-TA06-S/B comb., OA out | 130-TA07-S/B comb., OA out | 130-TA06-S/B comb., OA out |
| Bins | 6 | 6 | 6 |

#### Weighing and mixing section

- **Mixer** (kg): 2,000 | 3,000 | 4,000 |
- **Mineral weigh hopper** (kg capacity): 3,000 | 3,000 | 4,000 |
- **Filler weigh hopper** (kg capacity): 600 | 600 | 600 |
- **Bitumen weigh hopper** (kg capacity): 350 | 350 | 350 |

#### Mixed material loading silos

<table>
<thead>
<tr>
<th>Type</th>
<th>Lowered/adjacent</th>
<th>1-chamber loading silo</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 t</td>
<td>5 t</td>
<td>94 t (2 x 43 t, 1 x 8 t (direct loading), 1 x 3 t (overflow))</td>
</tr>
</tbody>
</table>

#### Mixed material transfer

- **42 t mixed material loading silo** |

#### Filler system

- **Reclaimed filler silo** |
- **Option imported filler silo 1x** |
- **Option imported filler silo 2x** |

#### 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 or mixing nozzle |

#### Recycling feed systems

- **Middle ring dosing system**: 25 % RAP feed quantity |
- **Dosing system into the mixer**: 30 % RAP feed quantity |
- **Multivariable dosing system**: 40 % RAP feed quantity |
- **Parallel drum**: 70 % RAP feed quantity |
- **Recycling drum with hot-gas generator**: 80 % RAP feed quantity |

#### Other feed options

- **Granulate, powder, liquefied additive, foam bitumen, bag feed and fibre**
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

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**Economical and environmentally friendly**

In addition, the recycling components are adapted and integrated for retrofitting of existing systems from all manufacturers, according to individual customer requirements. With the TBA, you can choose from a large number of recycling systems for hot and cold feed, to suit your demands or normative and legislative requirements. 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.

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.