

COMPACTING ASPHALT USING 360° TECHNOLOGY.

THE SOLUTION FOR EVERY JOB.



MILLIONS OF KILOMETRES BEAR OUR SIGNATURE.

You build the finest roads so we can all move forward faster. And to ensure that you can progress faster, we build the best machines. As a member of the leading international FAYAT group, we supply machines for all areas of road construction – from soil compactors to cold planers and recyclers, from asphalt rollers to road pavers. For over 60 years, the history of our company has been synonymous with the history of road construction.

With our accumulated know-how, we are an innovation driver that sets the pace for an entire industry. BOMAG has developed a huge number of technologies, from systems for measuring and controlling compaction, such as ECONOMIZER and ASPHALT MANAGER, to technologies for reducing operating costs, such as ECOMODE and the most effective

screed heating in the market: MAGMALIFE. We offer solutions for a wide range of applications.

Our global network of experts and partners in over 120 countries is there to support you, from the configuration of the machines to providing solutions for the most challenging of tasks.

We owe our innovative strength to our more than 2,500 employees worldwide, their commitment and their unique wealth of experience. A source of know-how which has propelled us to worldwide market leadership in this sector. The reason for this is our unconditional commitment to quality: in product development and production, in the qualification of our employees, and in a service that guarantees optimal on-site support.





BOMAG ASPHALT COMPACTION.

IT IS YOUR CHOICE.

Asphalt compaction is a job for specialists. And being one, you know that every job site is different. That's why BOMAG gives you the choice of three different compaction systems. Always the right technology – in one package. Because asphalt compaction is not a question of philosophy, but the right technology.

Which manufacturer offers three vibration systems to choose from? BOMAG. Because BOMAG knows what every specialist needs.

The conventional choice: DOUBLE VIBRATION.

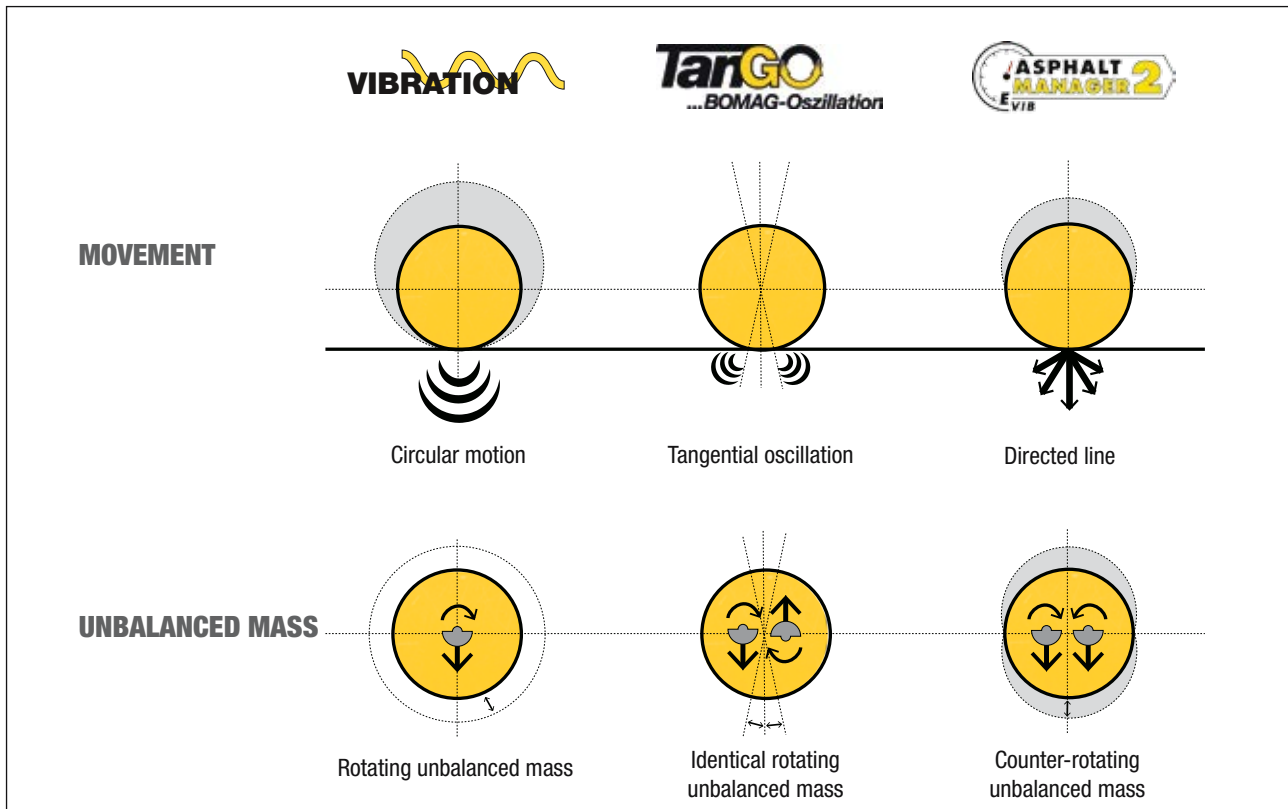
With two amplitudes and individually functioning drums, this technology covers a wide range of applications. The legendary BOMAG quality is a given and the equipment options are designed to match every type of job requirement.

FOR SENSITIVE ROLLING TanGO.

TanGO oscillation from BOMAG is used wherever sensitive compaction is required. The highly wear resistant drums and a factory warranty of 8,000 operating hours always keep you on the safe side.

FOR MAXIMUM VERSATILITY: ASPHALT MANAGER.

Exclusively from BOMAG. This is a Manager that you really can trust. Just input the layer thickness and away you go. Work is now controlled and registered by the ASPHALT MANAGER: subsoil, degree of compaction, temperature, and control of the direction of vibration. The relaxed driver just concentrates on the rolling pattern and the other operators in a team operation.





MOVEMENT IS GOOD.

The dynamic movement of the drum applies additional forces to the material being compacted. This dynamic provides a faster increase in density and effective depth, and greater final density than with purely static rollers. Rule of thumb: $\frac{2}{3}$ of the compaction power is derived from the dynamics. However, these dynamic forces must suit the material, layer thickness, temperature, and environment. The transferred forces are dependent on the drum motion pattern.

But what does the drum movement actually look like? Circular vibration, well-known for decades, works with a ro-

tating unbalanced mass. As a result, the drum is forced to follow the unbalanced mass in any direction. Contrary to popular belief, the drum does not just oscillate up and down, but actually follows a circular motion.

In terms of oscillation, two unbalanced masses are arranged so that the drum oscillates back and forth around its axis. No forces are applied vertically to the surface.

The ASPHALT MANAGER generates purely linear oscillation. This linear direction can be adjusted smoothly between horizontal and vertical.

TWO PARAMETERS.

Two parameters are significant for defining the motion:

■ Amplitude

Half the oscillation displacement in mm. The greater the amplitude, the greater the depth effect. If the amplitude is too great, the material may be damaged.

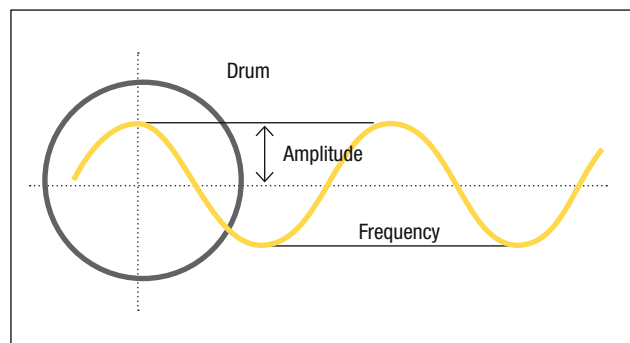
The Amplitude in mm alone is not the whole story: the effective direction is also very important. This is clearly demonstrated in the following examples: Nominal amplitude with the ASPHALT MANAGER is always constant. But the vertical factor determines the effect.

Machines with oscillation have a greater amplitude in mm than standard machines. However, as they only work horizontally, they are less effective.

■ Frequency

The frequency dictates the number of oscillations per second in Hz. The frequency is set by the manufacturer to match the resonance frequency of the asphalt. In other words, it's not the case that higher frequency equals more compaction power. On the contrary: if the frequency is not within the resonance range, the effect of vibration diminishes.

The frequency also affects the potential working speed. With conventional vibration, the "impact spacing" is too large if the speed is too high, and 'waves' start forming.



Amplitude activity.

The centrifugal force in kN has no effect on compaction power at all. It only generates amplitude. This can also be seen in the AM and oscillation examples.

In oscillation, the force is never applied vertically to the material. It's all about the effective direction!

Additionally, it's not the case that centrifugal force adds to the static force and then affects the material. This can be demonstrated by a simple example calculation: A BW 161 AD-5 has a maximum centrifugal force of 95 kN per drum, corresponding to around 9.7 t. The axle load, however, only amounts to around 5 t. This means the roller would not even be able to keep the greater centrifugal forces on the ground. This is because the force of the unbalanced mass also points upwards every revolution. Consequently, the centrifugal force cannot be effective in the other direction, i.e. into the material.



TanGO.

THE TECHNOLOGY FOR SENSITIVE WORK.

TanGO is the best choice for jobs where sensitive compaction is needed.

SIMPLY SPECIAL.

With TanGO you can compact safely, e.g. on seams (hot to cold), on bridges, or near buildings. At the same time TanGO is extremely easy to operate: There is only one amplitude which is the optimum for any application.

ALWAYS CAREFUL.

BOMAG tandem rollers with TanGO always compact with care. The drum cannot bounce, because TanGO always works tangentially to the surface.

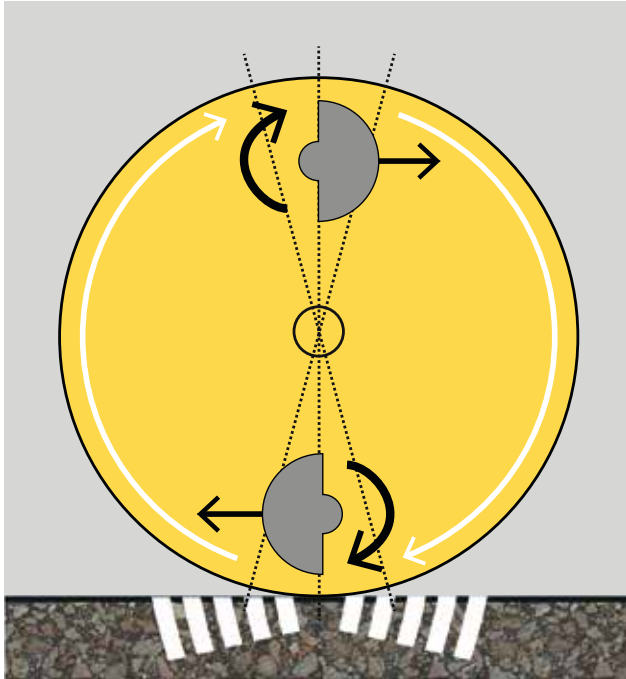
This has two advantages: On the one hand, the action does not cause aggregates to be crushed; on the other hand no waves are generated, even at higher working speeds.

The TanGO drum is at the rear of the machine so that the front vibratory drum, which is equipped with two-stage vibration, can be used to compact thicker layers or heavier mixes.

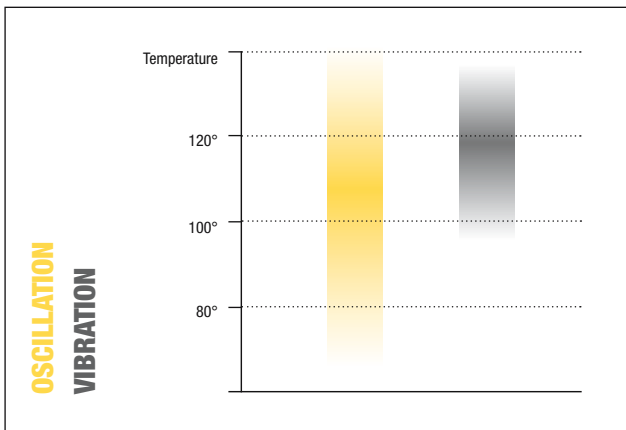


SO SIMPLE.

In TanGO compaction with two exciter shafts rotating in the same direction, torque is generated around the drum axis. The drum quickly keeps alternating its effective direction tangentially to its contact surface (forward and backwards). This means the surface is practically compacted with double frequency.



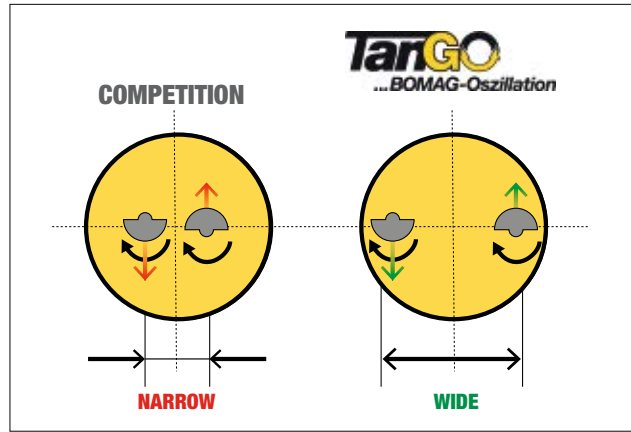
TanGO offers a longer rolling time window than standard machines. Dynamic compaction can also be carried out on cooler asphalt, because no aggregate is crushed.



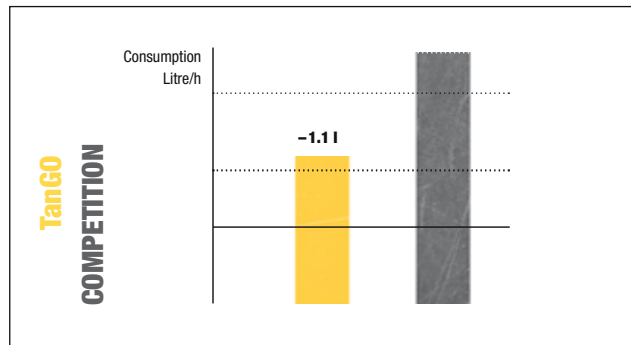
More flexibility with asphalt rolling temperatures.

THAT'S HOW IT IS.

TanGO stands for tangential oscillation. In contrast to conventional oscillation rollers, the unbalanced masses in TanGO are right at the edge, i.e. tangentially arranged to the circumference.



Greater leverage means the eccentric weights can be smaller. This clever use of physics means that TanGO requires considerably less output power than standard oscillation systems. An extensive field trial has verified the following: TanGO consumes on average 1.1 l/h less fuel than other oscillation rollers.

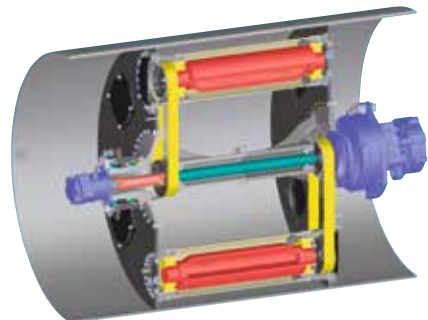




If it's oscillation, then it's TanGO.

EASY SERVICE.

- Maintenance-free, oil lubricated bearings
- No toothed belt replacement
- No re-lubrication



HIGHEST QUALITY.

Others talk about quality. BOMAG guarantees quality: The TanGO drum is made of high wear resistant fine grain steel. BOMAG can therefore guarantee a drum lifetime of at least 8,000 hours. Pretty impressive!

TanGO
...BOMAG-Oszillation

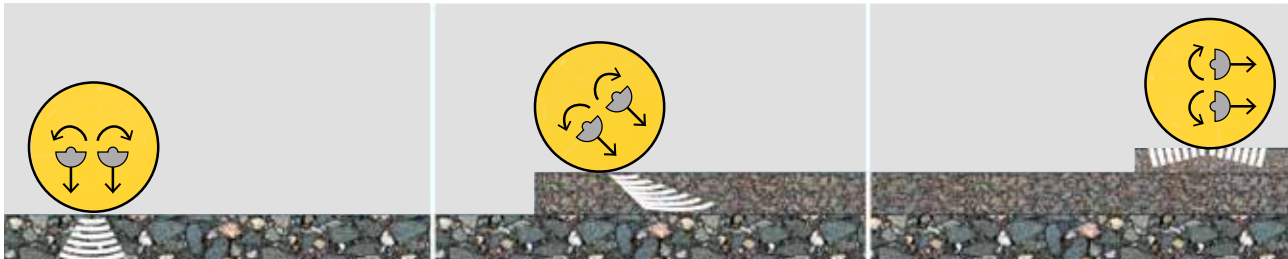
8.000 hours

Product life on TanGo drum

GUARANTEED

ASPHALT MANAGER.

INTELLIGENT AND FLEXIBLE.



As powerful as possible, as sensitive as necessary: always the right choice.

Different construction sites. Different surface layers. Different crews. The ASPHALT MANAGER (AM) was developed by BOMAG to make daily work easier. Because with the AM, any operator can produce optimum and, above all, economical compaction results at any time and on any subsoil.

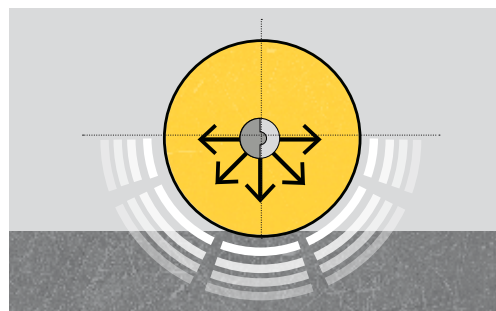
At the same time, ASPHALT MANAGER is easy to operate: the operator simply selects the layer thickness and the rest is automatically handled by the AM. No other system is as flexible as AM: With the variable amplitude, work can be both extremely effective and very sensitive.

On every application, the right force is applied in the right direction: as powerfully as possible, as sensitively as necessary. The quickest compaction is produced on difficult to compact materials in particular.

QUICKER AND MORE RELIABLE SAVINGS.

With AM, fewer passes are required, saving time and fuel. Towards the end of compaction and when the asphalt has cooled down, the amplitude is reduced, which automatically prevents the roller from crushing aggregates and drum bounce. All key parameters (stiffness, amplitude, temperature) and the end of compaction are permanently displayed for the driver. For work in sensitive areas, such as on bridges or seams, the amplitude can be switched to "oscillation". Also unique: AM automatically matches the direction of vibration to the travel direction. This prevents

the formation of ripples, because no bow wave is generated. At standstill AM automatically switches over to horizontal vibration. This prevents drums digging into material and, at the same time, very short response times are achieved when restarting rolling.



SMART COMPACTION.

The unique features of ASPHALT MANAGER:

- Linear directed oscillation with optimum effective force
- Infinitely adjustable amplitude
- Automatic control
- The operator chooses the layer thickness, the machine does the rest
- Simple to operate
- Temperature always in view
- End of compaction is signalled
 - E_{VIB} target reached
 - Amplitude is reduced

= optimum quality with minimum passes



Clearly structured display: Always all values clearly in sight. Layer thickness pre-selection at a touch of a button.

SMART CONTROL: AUTOMATIC MODE.

AM rollers permanently measure the current stiffness of the asphalt. Stiffness correlates with density. Rollers with AM are therefore a mobile test lab. They provide the perfect basis for comprehensive documentation with BOMAG BCM systems.

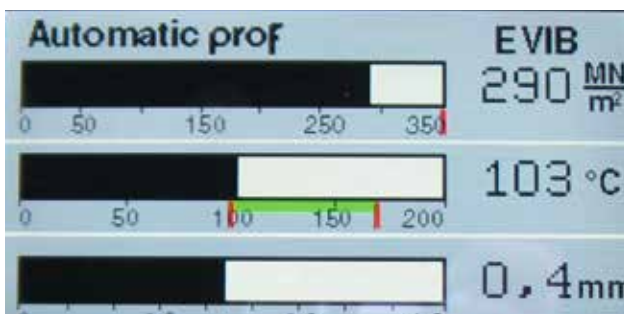
E_{VIB} measurement with AM rollers has two functions:

- **The driver sees compaction progress**

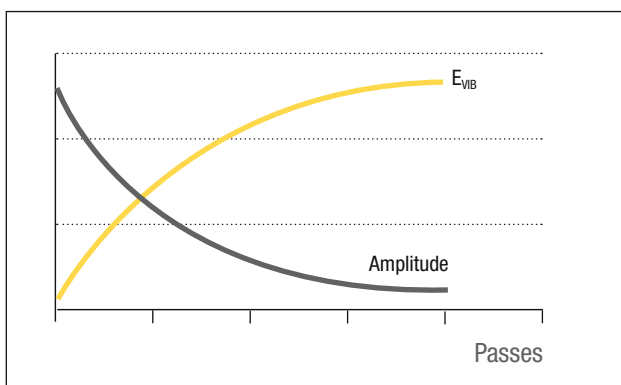
This means he knows when the optimum number of passes has been reached and where there are still soft spots.

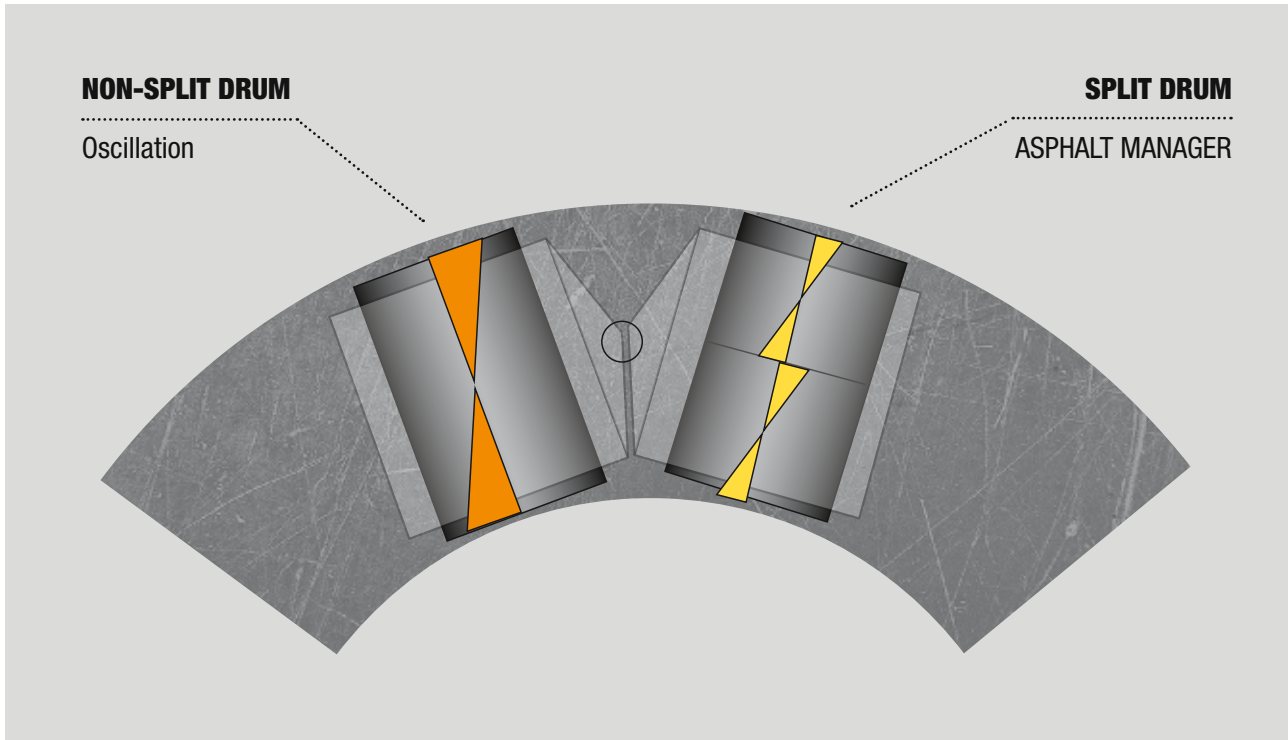
- **Amplitude control**

The E_{VIB} value is used to automatically control vertical amplitude. Before aggregate crushing and drum bounce occurs, the oscillation direction is changed further towards horizontal. This intelligent control has no other equal.



The amplitude control allows AM to achieve the fastest possible density increase. The temperature window and machines are used to best advantage.





Shearing forces compared.

ASPHALT MANAGER CAN DO A WHOLE LOT MORE.

In manual mode, the driver is able to operate an AM roller exactly the same way as an oscillation roller.



“Oscillation mode”

As with an oscillation roller, the drum only applies horizontal shearing forces, without any vertical amplitude. However, the driver can also select any other vibratory force.

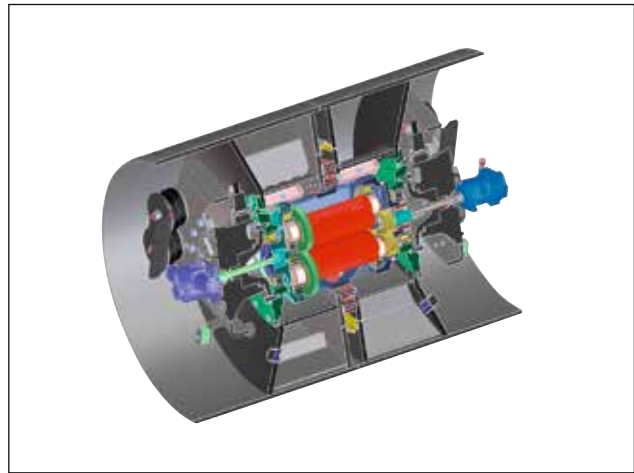
In other words, AM covers all application scenarios, even “just” oscillation. But AM can do a whole lot more and is smart. And it has another advantage: combining with split drums is easy. Oscillation on the other hand cannot be used in a split drum because of the design.

With AM, the measurement of compaction with E_{VIB} is already included as standard. And as AM covers the entire range of applications, the driver has useful feedback at all times.

Because of the design principle, pure oscillation on the other hand cannot be measured. This means compaction progress cannot be properly recorded and documented, or there are gaps in the data.

EASY SERVICE.

The AM drum has no toothed belts. As with every other exciter system, maintenance is minimal and only involves changing the exciter oil. In addition, this maintenance is only required every 1,000 hours; AM needs no other maintenance or calibration.



ALWAYS THE RIGHT CHOICE FOR YOUR APPLICATION.

| EXCITER SYSTEMS | CONVENTIONAL | FOR SENSITIVITY | THE FLEXIBLE CHOICE |
|-----------------------------------|----------------------|------------------|-------------------------------------|
| Arrangement | Drum at front + rear | Rear drum | Front drum |
| Active control? | No | No | Yes, automatic |
| Number of amplitudes | 2 | 1 | Gradual |
| Frequency range (Hz) | 35–70 | 40 | 45–55 |
| Joint compaction | – | + | ++ |
| Stiff bitumen and thick layers | + | – | ++ |
| Thin layers | – | + | ++ |
| Vibration affecting buildings | 0 | + | ++ |
| Compaction characteristic/ CCC | Yes, ECONOMIZER | No, not possible | Yes, E_{VIB} (MN/m ²) |
| Split drum | + | No, not possible | + |

SIDE BY SIDE ON THE ROAD TO SUCCESS.

Decades of experience, expertise and a focus on quality have made us who we are today: Pace setters in compaction technology. BOMAG: always a clear priority for customer care. That is why we continue to

offer 100 percent performance. With specific training courses, and individual on site support. Never standing still and keeping innovation coming. In partnership with you – a winning team.





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