EMB RAM

The Power of Centric Hit

NEXT GENERATION SIDE GRIP PILE DRIVERS



PATENTED SYSTEM

- 50 % MORE POWERFUL THAN ANY OTHER SIDE GRIP PILE DRIVER
- 40 % LESS GROUND VIBRATION
- 30 % LOWER MAINTENANCE AND REPAIR COSTS
- 20 % LESS SOUND POLLUTION (NOISE)
- 10 % MORE VERSATILE APPLICATIONS

MADE IN BAVARIA GERMANY

EMB•RAM - MODEL OVERVIEW

The **EMB • RAM** is available in a wide range of models, sizes, and configurations, providing a perfectly tailored solution for various pile types and requirements. It is suitable for steel sheet piles, round or rectangular beam profiles, as well as plastic or concrete piles and timber piles.

Thanks to its high flexibility and versatility, the **EMB • RAM** ensures efficient and precise piling operations across a wide range of applications.



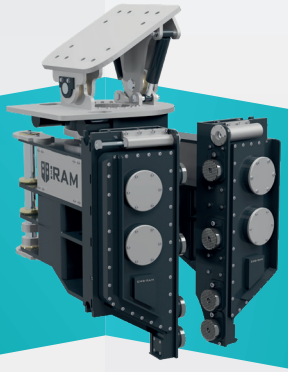
1600R



2100R



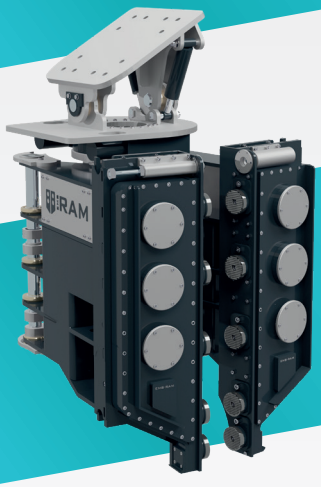
2700R



3000R



4000R



5000R

The Power of Centric Hit

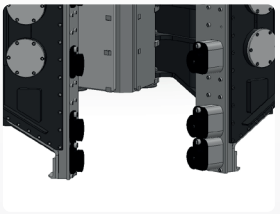
The **EMB • RAM** is compatible with a wide range of carrier machines, including excavators from 14 to 60 tons. It makes optimal use of the carrier machine's hydraulic power and lifting capacity to ensure an efficient and high-performance piling process. Designed for use with all wheeled and crawler excavators as well as rail-mounted machines, the **EMB • RAM** can be operated via the carrier machine's standard auxiliary hydraulics and its hydraulic or electronic control system. This ensures precise handling and a high level of operational safety.

Thanks to **CENTRIC • HIT technology**, the **EMB • RAM** delivers reliable performance even under demanding conditions. Its high compatibility with various excavator types guarantees maximum versatility and cost efficiency.

EMB•RAM - MODULAR SYSTEM

The **EMB • RAM** stands out with its innovative modular system, offering exceptional versatility and adaptability. Its flexible design makes it suitable for piles, pipes, and H-beams, increasing efficiency while reducing changeover times.

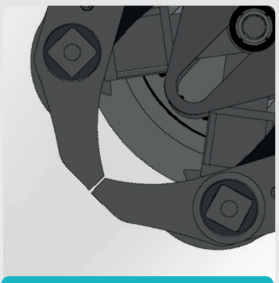
Thanks to its optimized design, the **EMB • RAM** can be quickly adapted to changing operating conditions. This makes it an economical and future-proof solution for a wide range of piling projects.



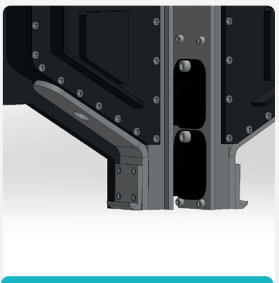
CLAMPING JAW EXTENSION FOR H-BEAMS



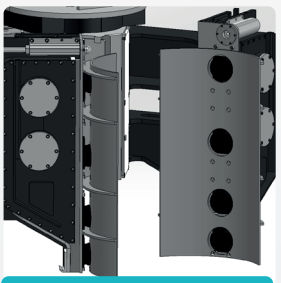
SHEET PILE HOOK



H-BEAM LIFTER



SHEET PILE LIFTER



PIPE PILE CLAMPS
(FOR STEEL, CAST IRON, CONCRETE, WOOD)

EMB•RAM - TECHNICAL DATA

(All technical data may be changed by the manufacturer at any time without prior notice)

Model		1600R	2100R	2700R	3000R	4000R	5000R
Weight (without adapter)	(kg)	2.130	2.570	2.780	2.940	3.290	3.880
Height	(mm)	1.890	1.921	2.018	2.018	2.018	2.230
Depth	(mm)	1.372	1.372	1.458	1.458	1.458	1790
Width	(mm)	1.875	1.875	1.875	1.875	1.875	2.019
Hydraulic power	(KW)	69	108	108	108	136	185
Max. oil flow (carrier machine)	(l/min)	140	190	190	190	240	280
Nominal operating pressure	(bar)	250-280	250-280	250-280	250-280	250-280	250-280
Max. return pressure	(bar)	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8
Pressure setting (carrier machine)	(bar)	340	340	340	340	340	340
Min. engine power (carrier machine)	(KW)	85	125	145	180	200	310
Frequency	(1/min)	2300-3000	2300-3000	2300-3000	2300-3000	2300-3000	2300-3000
Max. centrifugal force	(kN)	500	600	650	770	820	930
Tilt / swivel angle	(°)	360 / +/-38	360 / +/-38	360 / +/-38	360 / +/-38	360 / +/-38	360 / +/-38
Drive method		vibration	vibration	vibration	vibration	vibration	vibration
Max. sheet pile length	(m)	16	16	16	16	16	16
Max. pipe diameter	(mm)	800	800	800	800	800	1200
Excavator class	(t)	14-19	20-24	23-29	30-34	35-48	43-60

Requirements for the carrier machine can be found at www.emb-ram.com

CENTRIC • HIT

CENTRIC • HIT - TECHNOLOGY

revolutionizes the piling process by making the driving of piles faster, more efficient, and more powerful.

This innovative technology ensures that the pile is gripped precisely in the center, allowing vibrations to be transmitted directly and without loss to the material. The precise transfer of vibrations optimizes the piling process, maximizes overall performance, and increases energy efficiency.



EMB • RAM - CONTROL SYSTEM



The **EMB • RAM CONTROL SYSTEM** continuously displays the Z-axis with precision, while the X and Y axes are clearly visible on the pile.

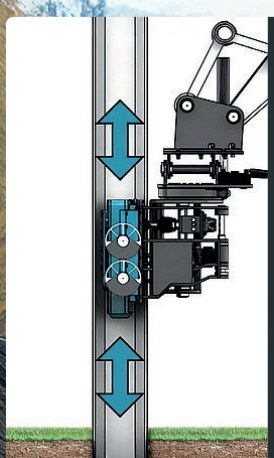
CONTROL SYSTEM

This visual guidance ensures maximum safety by enabling clear and accurate alignment, eliminating the need for personnel within the danger zone. At the same time, it ensures high efficiency by allowing the piling process to be carried out precisely and in a controlled manner.

When vibration is activated via the joystick, the **EMB • RAM CONTROL SYSTEM** automatically sets the bucket tilt cylinder or, depending on the selected mode, additionally the tilt cylinder into float position. This facilitates penetration of the pile and prevents "snaking lines," helping to reduce ground vibrations. A safety shut-off ensures that the float function is only activated when sufficient counterpressure is present, meaning the pile must clearly contact and be pressed into the ground.

CENTRIC•HIT TECHNOLOGY vs. COMPETITION

EMB•RAM CENTRIC•HIT - TECHNOLOGY



The **CENTRIC • HIT - TECHNOLOGY** technology ensures precise, centered transmission of vibrations to the pile. This maximizes energy efficiency, minimizes losses, and reduces ground vibrations, resulting in a highly powerful and effective piling process.



Low dynamic weight

The **CENTRIC • HIT - TECHNOLOGY** technology stands out with its exceptionally low dynamic weight—up to 50% less mass compared to conventional systems.

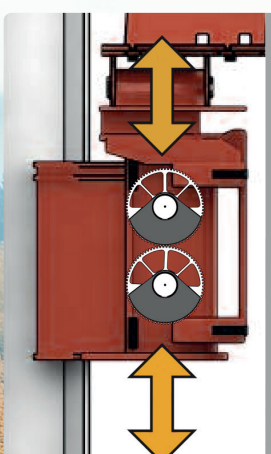
Since only the vibration housing is set into motion, this results in key advantages::

Higher performance: 50% less mass enables up to 50% higher performance.

Efficient energy transfer:
No unnecessary masses need to be accelerated.

This leads to maximum energy efficiency, optimal power transmission, and significantly reduced wear, greatly improving the system's service life and cost-effectiveness.

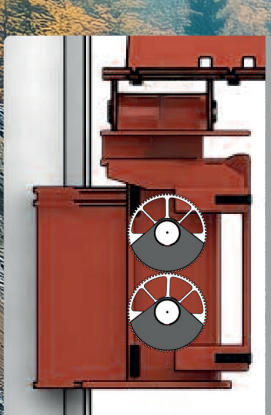
COMPETITION - CONVENTIONAL TECHNOLOGY



In conventional systems, vibration is generated 80–90 cm away from the pile, resulting in up to 30% energy loss and significantly reducing the efficiency of the piling process.

Consequences of this inefficient vibration transfer:

- Energy loss: The vibration is not fully transmitted to the pile.
- Snaking line effect: Uncontrolled oscillations cause ground vibrations and reduce precision.
- Material fatigue: Cracks develop in the arms due to high peak loads.
- Component wear: Overloading of rubber dampers leads to premature damage.



High dynamic weight

Conventional systems have a high dynamic weight, as multiple heavy components must be set into motion:

- Vibration housing
- Clamping arms with holder
- Hydraulic cylinders
- Hydraulic motors

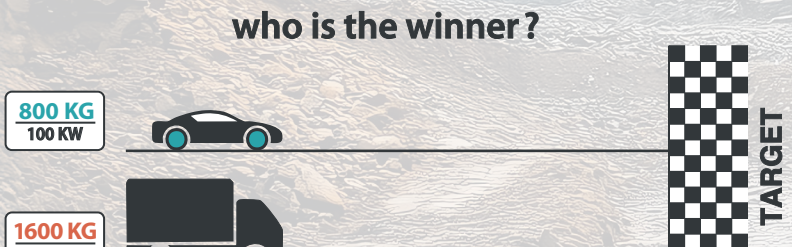
Disadvantages:

- Loss of performance: Up to 50% reduced performance due to unnecessary masses.
- Increased energy consumption: Inefficient use of power.
- Higher component stress: More wear and maintenance required.
- Inefficient vibration transfer: Reduced penetration of the pile.

As a result, piling performance decreases while operating costs and energy consumption increase.

COMPARISON: DYNAMIC WEIGHT

who is the winner?



With two cars of equal power, the lighter vehicle will always outperform the heavier one, as less mass needs to be moved and energy is converted into acceleration more efficiently. The same principle applies to piling technology:

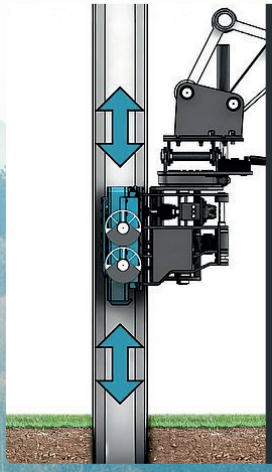
Lower dynamic weight results in higher performance, improved energy efficiency, and reduced wear, as no unnecessary masses need to be accelerated.

EMB•RAM

The Power

CENTRIC • HIT TECHNOLOGY vs. COMPETITION

EMB • RAM CENTRIC • HIT - TECHNOLOGY



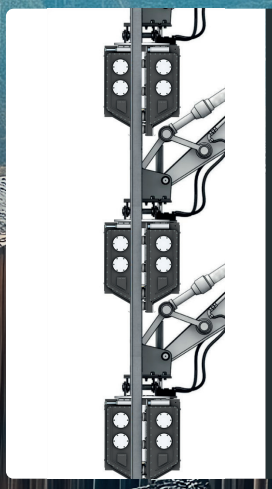
MINIMAL SHAKING OF THE PILE

Reduced shaking of the pile minimizes noise and ground vibrations, increasing both efficiency and environmental compatibility.

Advantages:

- Lower noise emissions: Improved working conditions and easier compliance with environmental regulations.
- Reduced ground vibrations: Lower risk of damage to surrounding structures.
- Maximum energy efficiency: Targeted force transmission without energy loss.

Result: A high-performance, precise, and environmentally friendly piling process.



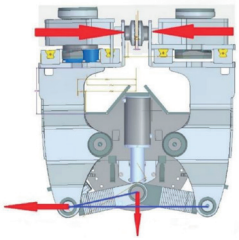
Advantages of CENTRIC • HIT - TECHNOLOGY

No shaking of the pile, preventing energy loss and unwanted vibrations.

Low ground vibration, protecting surrounding structures and minimizing environmental impact.

Low noise levels, improving working conditions and reducing noise emissions.

Low maintenance costs due to reduced wear on clamping jaws, hydraulic cylinders, and damping elements.



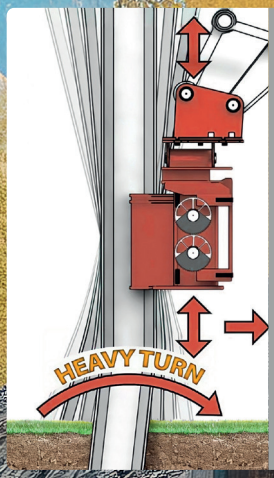
CENTRIC • HIT advantages of the special cylinder arrangement

The special arrangement of the cylinder, combined with an optimized deflection system, generates an extremely high clamping force at the clamping jaws, which can be individually adjusted—up to 130 tons.

This results in the following advantages:

- Excellent vibration transfer to the pile > maximum efficiency and precise penetration
- Little to no wear on the clamping jaws > longer service life and lower replacement costs
- No damage to the pile > gentle yet powerful clamping
- Low service costs > reduced maintenance effort and lower operating costs

COMPETITION - CONVENTIONAL TECHNOLOGY

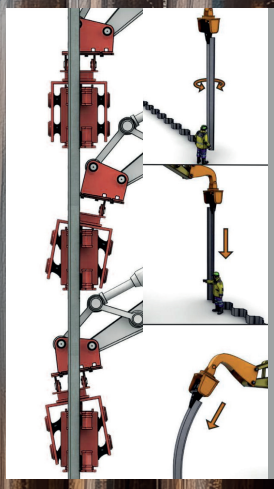


INTENSE SHAKING OF THE PILE

Disadvantages caused by excessive shaking of the pile: Strong shaking significantly reduces the efficiency and cost-effectiveness of the piling process:

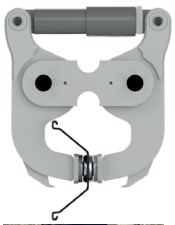
- High noise levels: Increased exposure and the need for additional noise protection.
- Severe ground vibrations: Risk of damage to surrounding structures.
- Increased energy loss: Vibration energy dissipates instead of supporting penetration.
- Rising maintenance costs: Faster wear of clamping jaws, hydraulic cylinders, and damping elements.

Result: Reduced efficiency, higher operating costs, and an uneconomical piling process.



Disadvantages of conventional technology:

- Excessive shaking > energy loss, uncontrolled movements
- "Snaking lines" > uneven penetration, increased ground vibrations
- Strong ground vibrations > risk of structural damage
- High noise levels > increased need for noise protection
- High friction in interlocks > more wear, fitting issues
- Cracks in rubber dampers > overload due to uncontrolled vibrations
- Heavy wear on clamping jaws > reduced service life
- Damage to the pile > imprecise force application







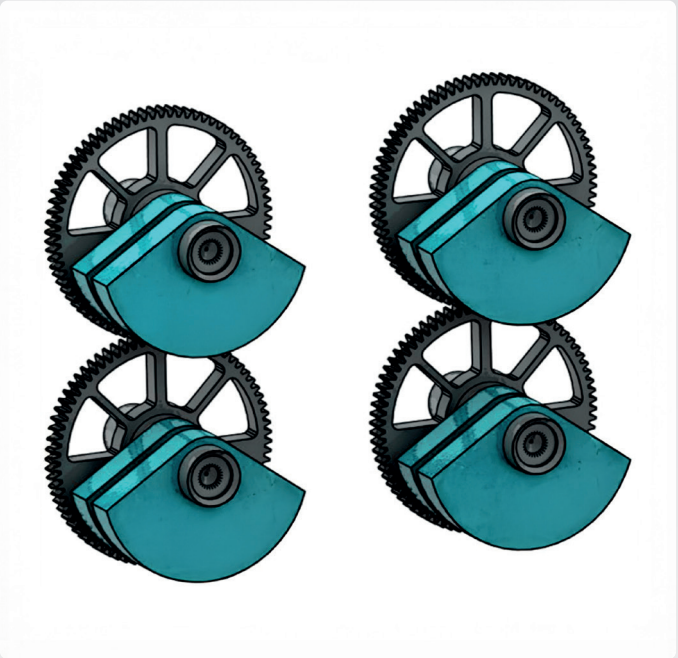
Competition – standard cylinder linkage

With conventional cylinder linkage, only 50–60 tons of clamping force can be achieved.

This leads to several disadvantages:

- Reduced vibration transfer to the pile > lower performance and higher energy loss
- High wear on clamping jaws
- Increased wear and reduced service life
- Welding effects between clamping jaws and the pile > material adhesion and impaired functionality
- Damage to the pile > uneven clamping force can cause deformation
- High service costs > increased maintenance effort and more frequent repairs

EMB•RAM ECCENTRIC MOMENT



High-frequency side-grip vibratory pile driver
(2300-3000 rpm / 38-50 Hz)

Specifically designed for use with a wide range of carrier machines.

EXZENTERMOMENT

- Consistent and efficient vibration due to a fixed eccentric moment.
- Minimization of ground vibrations through extremely rapid start-up and braking of the unbalance.
- Optimized energy transfer, as the natural frequency of the soil is passed through quickly.

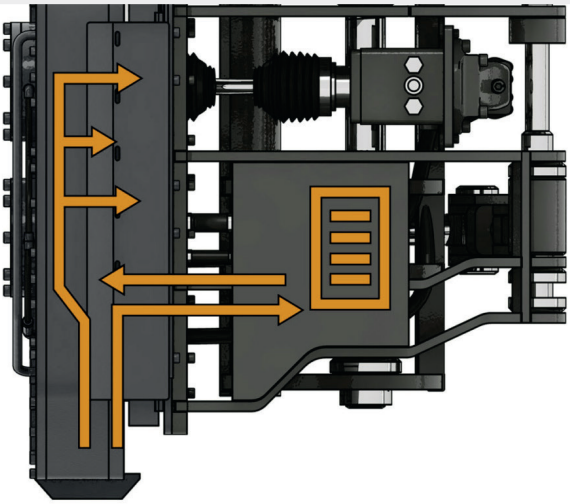
This technology makes the piling process more efficient and environmentally friendly.

EMB•RAM LUBRICATION

LUBRICATION

The advanced lubrication system for the vibration bearings, inspired by motorsport, ensures optimal cooling and lubrication.

Targeted lubricant supply reduces friction, extends bearing service life, and minimizes wear. The innovative cooling technology keeps operating temperatures stable and prevents overheating, even under high loads. As a result, system performance remains consistently high while downtime is reduced.



EMB•RAM MAINTENACE & WEAR

30% lower maintenance and repair costs.
Thanks to advanced technologies and optimized components, maintenance and repair costs are reduced by up to 30%. The high efficiency and durability of the **EMB • RAM** side-grip vibratory drivers minimize wear and reduce the need for repairs. **CENTRIC • HIT** technology lowers mechanical stress and uncontrolled vibrations through precise, centered force transmission, significantly reducing material wear.

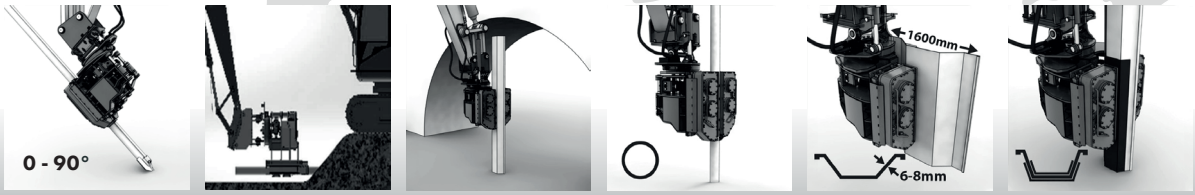
The intelligent lubrication system ensures optimal lubrication and cooling of key components, extends the machine's service life, and sustainably reduces operating costs.

MAINTENANCE & WEAR

EMB RAM

We are looking for distribution partners

DEALER WANTED



MADE IN BAVARIA GERMANY



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07-2025

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