EMB RAM

The Power of Centric Hit

faster • more efficient • more precise • safer • more reliable

PATENTIERTES SYSTEM

- **50%** MORE POWERFUL THAN ANY OTHER SIDE-GRIP RAM
- **40%** LESS GROUND SHOCK
- **30%** LOWER MAINTENANCE AND REPAIR COSTS
- **20%** LESS SOUND POLLUTION (NOISE)
- **10%** MORE VERSATILE IN APPLICATION

MADE IN BAVARIA GERMANY

EMB•RAM

EMB • RAM - MODELLÜBERSICHT

The **EMB • RAM** is available in a variety of models, sizes, and configurations to provide a customized solution for a wide range of pile types and requirements. It is suitable for steel sheet piles, round or rectangular beams, plastic or concrete planks, and wooden piles.

Thanks to its high flexibility and versatility, the **EMB • RAM** ensures efficient and precise ramming processes in a wide range of applications.

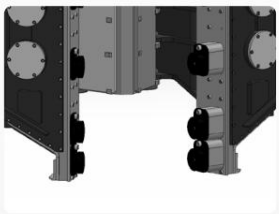
The **EMB • RAM** is suitable for various carriers, including excavators from 14 to 58 tons. It optimally utilizes the carrier's hydraulic power and lifting capacity for an efficient and powerful piling process. Designed for use with all wheeled and crawler excavators, as well as tracked vehicles, the **EMB • RAM** can be operated with the carrier's standard auxiliary hydraulics and via its hydraulic or electronic control system. This ensures precise handling and high operational reliability.

Thanks to **CENTRIC • HIT technology,** the **EMB • RAM** offers reliable performance under demanding conditions. Wide compatibility with various excavator types ensures maximum versatility and cost-effectiveness.

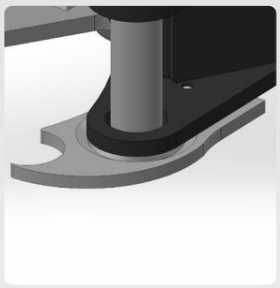
EMB • RAM - MODULARSYSTEM

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

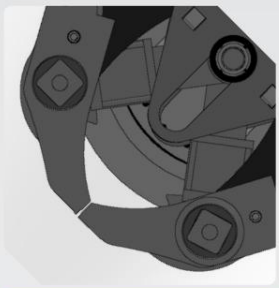
Thanks to the optimized design, the EMB • RAM can be quickly adapted to changing They adapt to operating conditions. This makes them an economical and future-proof solution for a wide variety of piling projects.



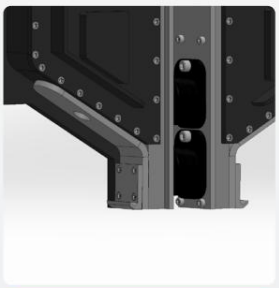
KLEMMBACKEN-VERLÄNGERUNG FÜR H-TRÄGER



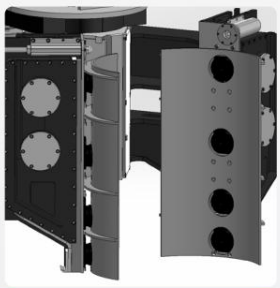
SPUNDBOHLEN - HACKEN



H-TRÄGER - HEBER



SPUNDBOHLEN - HEBER



ROHRPFAHLKLEMMEN (FÜR STAHL, GUSS, BETON, HOLZ)

TECHNISCHE DATEN

(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)	1680-1820	1790-2050	2350-2480	2480-2630	2790-3080	3180-3450
Height	(mm)	1980	1921	2018	2018	2022	2230
depth	(mm)	1372	1372	1458	1458	1685	1790
Width	(mm)	1875	1875	1875	1875	1993	2019
Hydraulic performance	(KW)	58	85	93	119	130	185
Max. oil flow carrier device	(l/min)	140	180	180	180	240	280
Nominal operating pressure	(bear)	250-280	250-280	250-280	250-280	250-280	250-280
Max. return pressure	(bear)	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8
Pressure setting carrier device	(bear)	320	320	320	320	320	320
Min. engine power carrier device	(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	880
Pan angle/tilt 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	800
Excavator class	(t)	14-19	20-24	25-29	30-34	35-42	43-55

Requirements for the carrier device can be found on www.emb-ram.com

CENTRIC • HIT

CENTRIC • HIT - TECHNOLOGY

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

This innovative technology ensures that the pile is precisely centered, transmitting vibrations directly to the pile without loss. The precise transmission of vibrations optimizes the piling process, maximizes overall performance, and increases energy efficiency.

EMB • RAM - CONTROL SYSTEM

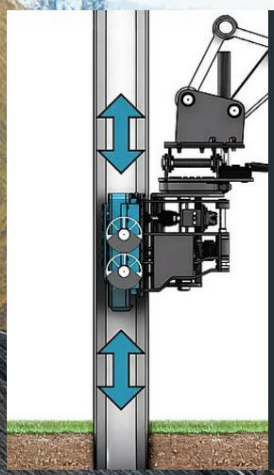
The **EMB • RAM CONTROL SYSTEM** precisely displays the Z-axis at all times, while the X and Y axes are clearly visible on the ramming material.

This visual indicator ensures maximum safety by enabling clear and precise alignment, eliminating the need for personnel in the danger zone. At the same time, it ensures high efficiency by ensuring the piling process is carried out precisely and in a controlled manner.

When vibration is activated on the joystick, the **EMB • RAM CONTROL SYSTEM** sets the bucket tilt cylinder or, depending on the mode, the tilt cylinder to the floating position. This facilitates penetration of the pile and prevents "snaking lines," thus reducing ground vibration. A safety cut-off ensures that the floating function is only activated when sufficient counterpressure is present, so the pile must clearly touch the ground and be pressed in.

CENTRIC • HIT - TECHNOLOGY vs. WETTBEWERB

EMB • RAM CENTRIC • HIT - TECHNOLOGY



The **CENTRIC • HIT - TECHNOLOGY** ensures precise, centric vibration transmission to the pile. This maximizes energy efficiency, minimizes losses, and reduces ground vibrations, ensuring a particularly powerful and effective piling process.

low dynamic Weight

The **CENTRIC • HIT - TECHNOLOGY** impresses with its particularly low dynamic weight – up to 50% less mass compared to conventional systems.

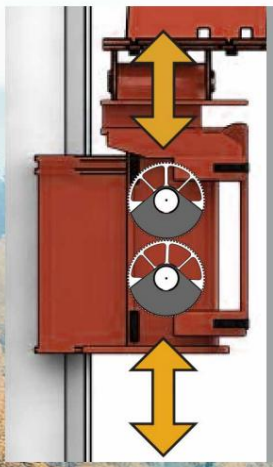
Since only the vibrating housing is set into vibration, there are decisive advantages:

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

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

This results in maximum energy efficiency, optimal power transmission and significantly reduced wear, which significantly improves the service life and cost-effectiveness of the system.

WETTBEWERB - HERKÖMMLICHE TECHNOLOGIE



In conventional systems, vibration occurs 80–90 cm outside the pile, resulting in up to 30% of energy being lost and significantly reducing the efficiency of the pile driving process.

Consequences of this inefficient vibration transmission:

- •Energy loss: The vibration is not completely transferred to the pile driving.
- •Snaking line effect: Uncontrolled vibrations cause ground vibrations and impair precision.
- •Material fatigue: Cracks in the arms are caused by high load peaks.
- •Component wear: Overloading the rubber dampers leads to premature damage.

heavy dynamic Weight

Conventional systems have a high dynamic weight because several heavy components are must be set in vibration:

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

Disadvantages:

- •Power loss: 50% less power due to unnecessary mass.
- •Increased energy consumption: Inefficient effort.
- •Higher component load: More wear and maintenance.
- •Inefficient vibration transmission: Difficulty in driving the pile.

This reduces piling performance while increasing operating costs and energy consumption.

VERGLEICH: DYNAMISCHES GEWICHT

When two cars have the same power, the lighter vehicle always wins, as less mass has to be moved and the energy is more efficiently converted into acceleration. This principle also applies to pile driving technology:

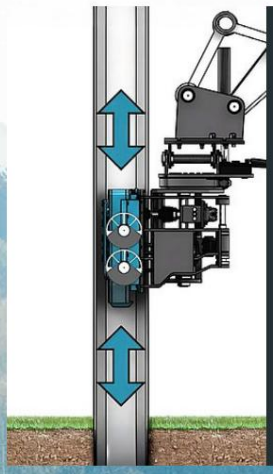
A lower dynamic weight leads to higher performance, better energy efficiency and reduced wear, as no unnecessary masses have to be accelerated.

EMB • RAM

The Power

CENTRIC•HIT - TECHNOLOGY vs. WETTBEWERB

EMB•RAM CENTRIC•HIT - TECHNOLOGY



LOW SHAKING OF THE PILED GRADUATION

Minimizing the shaking of the piles reduces noise and ground vibrations, thereby increasing efficiency and environmental compatibility.

Advantages: •Less noise emissions: Better working conditions - requirements, easier compliance with environmental regulations lay.

•Reduced ground vibrations: Reduced risk of damage to surrounding structures.

•Maximum energy efficiency: Targeted power transfer transmission without energy loss.

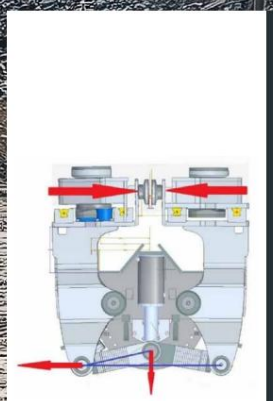
Result: A powerful, precise and environmentally - friendly ramming process.

Advantages of CENTRIC•HIT - TECHNOLOGY

No shaking of the pile material, which saves energy - losses and unwanted vibrations are avoided.

Low ground vibration, which protects surrounding structures and minimizes environmental impact.
Little noise, which improves working conditions - improved and noise emissions reduced.

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



The CENTRIC•HIT - advantages of the special Cylinder arrangement

Due to the special arrangement of the cylinder with corresponding deflection, the clamping
jaws have an extremely high clamping force that can be individually adjusted – up to 130 tons.

This results in the following advantages:

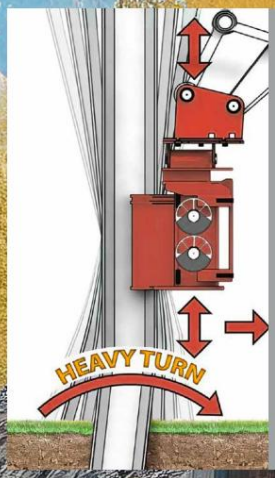
•Very good transmission of vibration to the Piling material > maximum efficiency and precise Propulsion

•No or little wear on the clamping baking > longer service life and lower replacement costs

•No damage to the pile > gentle but powerful clamping

•Low service costs > less maintenance wall and reduced operating costs

WETTBEWERB - HERKÖMMLICHE TECHNOLOGIE



LARGE SHAK-UP OF THE PILED GRADUATION

Disadvantages due to strong shaking of the pile material, Strong shaking significantly impairs the efficiency and cost-effectiveness of the piling process:

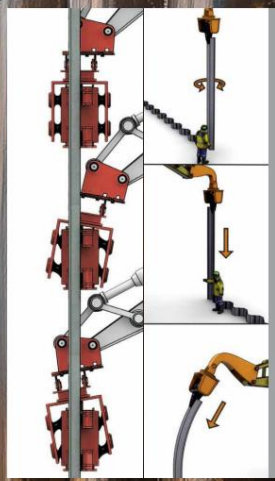
•High noise levels: Increased exposure and additional noise protection required.

•Strong ground vibrations: Risk of damage to surrounding structures.

•Increased energy loss: Vibration energy is lost puffs instead of promoting propulsion.

•Increasing maintenance costs: Faster wear of clamping jaws, hydraulic cylinders and damping elements.

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



Disadvantages of conventional technology:

•Strong shaking > energy losses, uncontrolled lated movements

•"Snaking lines" > uneven propulsion, increased ground vibrations

•Large ground shaking > risk for Structural damage

•High noise level > increased noise protection effort

•High friction in the locks > more Wear, fit problems

•Cracks in rubber dampers > Overload due to uncontrolled vibrations

•Heavy wear on clamping jaws > shorter life

•Damage to the pile drive > imprecise force application

Competition – Standard linkage of the cylinder

Due to the conventional linkage of the cylinders, only 50–60 tons of clamping force are possible.

This leads to several disadvantages:

•Less transmission of vibration to the Piling material > less power and higher energy - energy loss

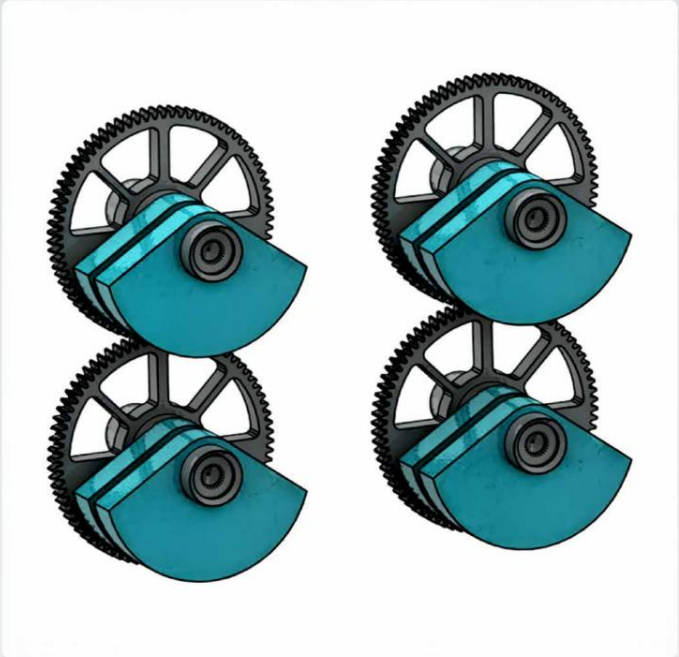
•High wear on the clamping jaws •Increased wear and shortened service life

• Welds between clamping jaws and Piling material > Material adhesions and Impairment of function

•Damage to the piles > uneven Clamping force can cause deformation

•High service costs > increased maintenance effort and more frequent repairs

EMB•RAM EXZENTERMOMENT



High-frequency side-handle vibration hammer

(2300-3000 rpm / 38-50 Hz)

Specially designed for use with various carrier devices.

EXZENTERMOMENT

- Constant and efficient vibration due to fixed eccentric torque.
- Minimization of ground vibrations through extremely rapid acceleration and deceleration of the imbalance.
- Optimized energy transfer, as the natural frequency of the ground is quickly “passed through.”

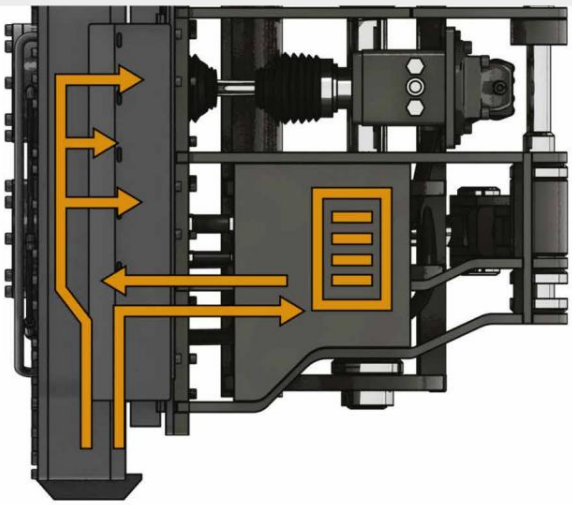
This technology makes the piling process more efficient and environmentally friendly.

EMB•RAM SCHMIERUNG

SCHMIERUNG

The sophisticated lubrication system for the **Vibra bearings,** inspired by racing, ensures optimal cooling and lubrication. Targeted lubricant supply reduces friction, extends bearing life, and minimizes wear.

The innovative cooling technology maintains stable operating temperatures and prevents overheating, even under heavy loads. This ensures consistently high system performance and reduces downtime.



WARTUNG & VERSCHLEISS

30% lower maintenance and repair costs.
Thanks to state-of-the-art technologies and optimized components, maintenance and repair costs are reduced by up to 30%. The high efficiency and durability of **EMB • RAM** side-handle attachment vibrators minimize wear and reduce the need for repairs. **CENTRIC • HIT TECHNOLOGY** reduces mechanical stress and uncontrolled vibrations through precise, centric power transmission, significantly reducing material wear.

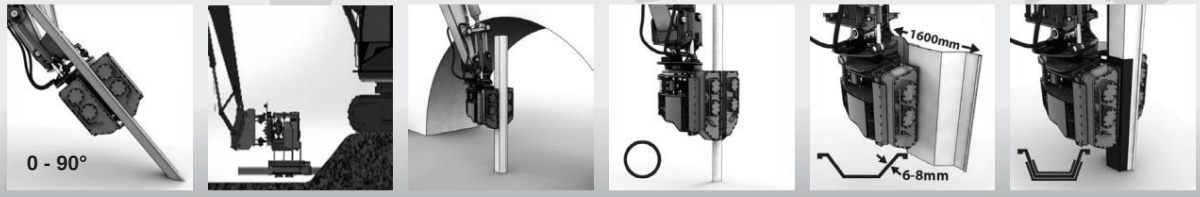
Das intelligente Schmiersystem gewährleistet eine optimale Schmierung und Kühlung zentraler Bauteile, verlängert die Lebensdauer der Maschine und senkt nachhaltig die Betriebskosten.

WARTUNG & VERSCHLEISS

EMB RAM

HÄNDLER GESUCHT

DEALER WANTED



MADE IN BAVARIA GERMANY

WITH THE EMB-RAM

NEW STANDARDS

SET!

EMB-RAM.COM

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EMB BAUMASCHINEN

04-2025

EMB•RAM