

A JOHN DEERE COMPANY



WIRTGEN GROUP

Parts and More Compact Drum parts

CLOSE TO OUR CUSTOMERS

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ORIGINAL HAMM DRUM



ROLLING PROGRESS

Whereas in the 1800's horses pulled cast-iron rollers over roads, today hi-tech HAMM machines deliver optimal performance on asphalt. As you would expect from a premium product.

The high quality of the drum components, such as sprinkler system, scrapers and rubber buffers is an essential factor contributing to the high quality of the product.

MORE ADVANTAGES FOR CUSTOMERS

As a soil and asphalt compaction specialist, we not only provide appropriate machines to construction sites but we also offer an all-inclusive service. This also includes the comprehensive range of spare and wearing parts. The original HAMM components undergo elaborate and extensive quality tests and are individually adjusted to the machine type.

PERFORMANCE, SAFETY AND SERVICE

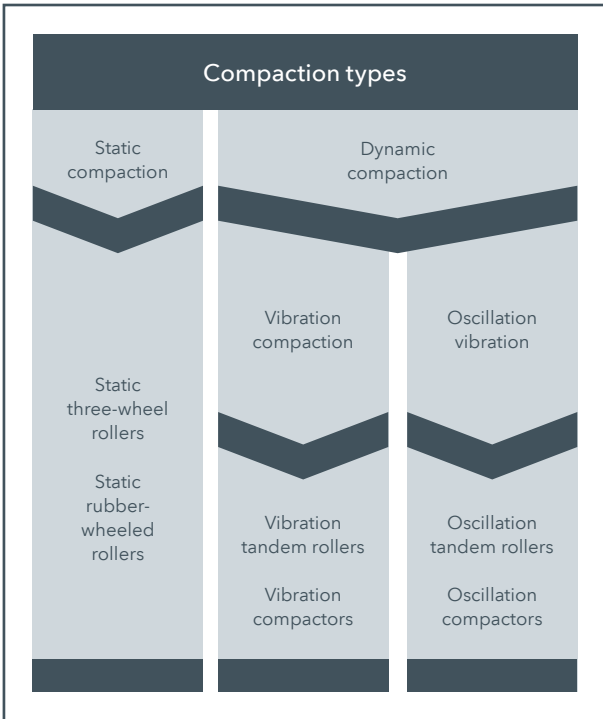
All construction sites are different and make different demands on man and machines. This is why HAMM rollers are rarely working under standard conditions. Original parts give you the best possible quality and a comprehensive range of services. They are the best spare parts available on the market.

Our original parts are produced strictly to manufacturer's specifications, are perfectly tuned to the machines and guarantee both safety and performance. Procurement lead times for genuine spare parts on both new and older machines are speedy. Moreover, we not only offer you our many years of experience but also comply with all applicable EU safety standards and environmental protection laws. The precisely fitting parts make your maintenance work easy and reduce assembly costs.

PARTS AND MORE COMPACT DRUM PARTS

This brochure provides basic information about the HAMM drum wearing parts.

PRINCIPLE OF COMPACTION



Aims of compaction

- > Reduce hollow spaces
- > Improve bearing capacity
- > High degree of evenness in longitudinal and transverse direction
- > High skid resistance
- > Maximal compaction result in the shortest possible time

STATIC COMPACTION

In the static compaction process, the weight of the roller effects a shear stress in the layer to be compacted. However, compaction will occur only if the shear stress applied comes close to the shearing strength of the mixed material, i.e. whenever plastic deformation occurs. The individual mineral grains move and are brought closer to each other. The extent of hollows is reduced and stability is increased.

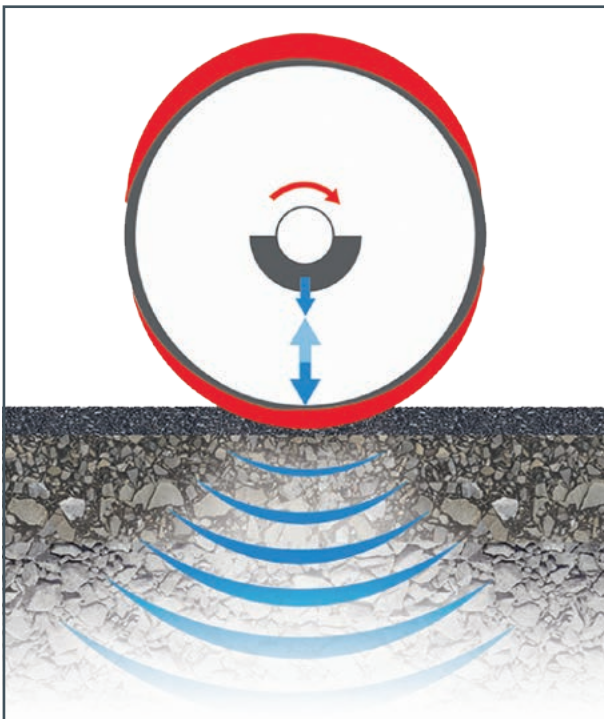
DYNAMIC COMPACTION

In the vibration and oscillation compaction process, the drum transmits forces in quick succession into the asphalt layer in the form of vibration. The individual particles of the asphalt layer are moved by the dynamic forces. This reduces the friction between the grains, so they can more easily move into a more favourable, i.e. dense, position.

ORIGINAL HAMM VIBRATION COMPACTION

Conventional **vibrating rollers** are equipped with a circular vibrator in the drum. Its fast rotation causes the drum to vibrate and transmit vertical forces into the ground.

Vibration can be used for almost any application case of earthwork and asphalt construction. You cannot imagine everyday work on the construction site without it and it yields the best compaction results.





ORIGINAL HAMM

OSCILLATION COMPACTION

Apart from vibration drums, HAMM also offers **oscillation drums**. In oscillation drums, masses rotating in the same direction create a moment around the drum axis. As the mass rotates, the moment changes its effective direction (forward and backward), creating an oscillating movement of the drum. This transmits shear forces into the soil.

MINIMAL OSCILLATION STRESSES EXERTED ON THE SURROUNDINGS

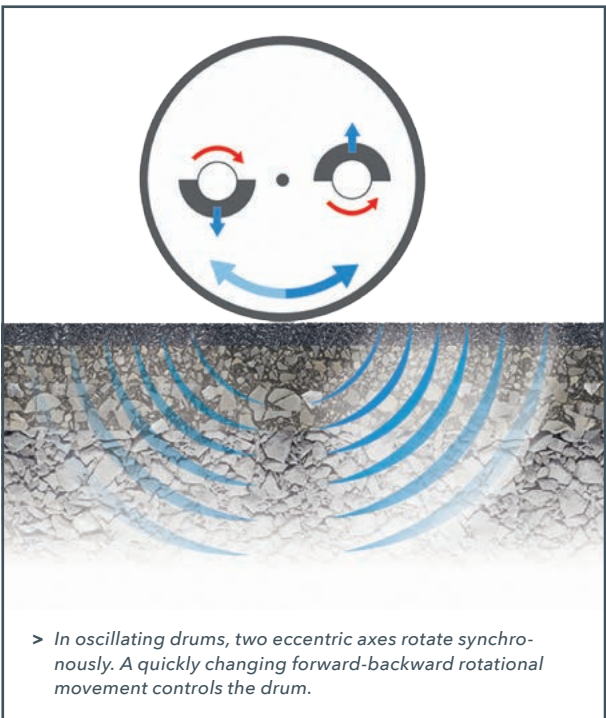
Oscillation generates clearly lower oscillation stresses. It only causes up to 10 percent of the stress exerted by vibrating compactors. Oscillating rollers do not use up their energy to create undesired vibration of the surroundings but transmit it purposefully into the material to be compacted - exactly where the energy is needed. Low vibration guarantees a

> *Vibration stress on the surroundings of an oscillation drum.*



longer service life of the machine and provides optimal driving comfort.

The oscillation system developed by HAMM is not based on complicated regulating mechanisms but solely uses the laws of physics. The amplitude value adjusts itself automatically to the stiffness of the subsoil material. This means that the amplitude continuously decreases as soil stiffness increases. The energy transmitted into the soil increases as the amplitude decreases.



ORIGINAL HAMM DRUM COMPONENTS

Highest compaction performance is characteristic of HAMM vibrating and oscillating drums.

The bearing parts and drums made of highly wear-resistant steels which are optimally adjusted to each other guarantee maximal service life at minimal maintenance costs.





ORIGINAL HAMM DRUM DESIGN EXTERNAL



Two types of drums exist that look different from the outside: smooth drum and padfoot drum.

SMOOTH DRUM

Smooth drums with their smooth surfaces are mainly used to create a flat and even surface such as an asphalt layer or the final grade in earth construction.



PADFOOT DRUM

Padfoot drums are used for earthworks and cold recycling. This drum type kneads and roughens the substrate. The padfeet enlarge the soil surface, so that wet soil can dry faster. Padfoot drums consist of smooth drums with welded-on trapeze-shaped studs.

ORIGINAL HAMM

DRUM DESIGN INTERNAL

VIBRATING DRUM

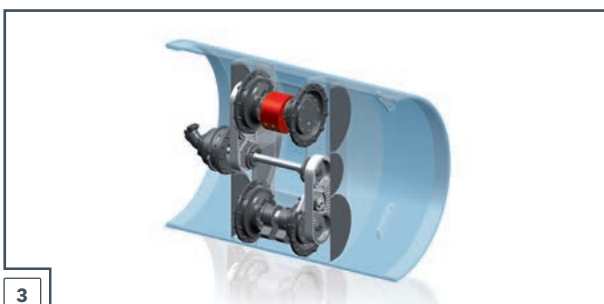
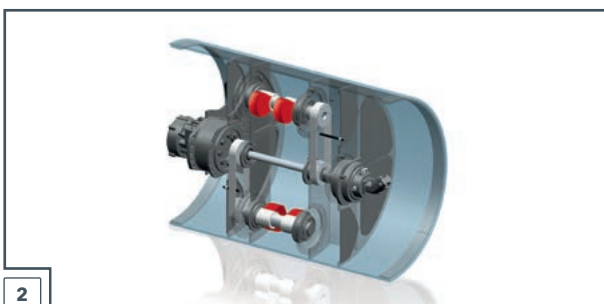
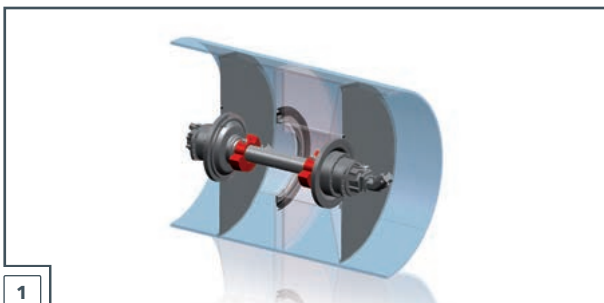
Rollers with smooth or padfoot drums for dynamic compaction are equipped with a vibration shaft. The shaft creates vibrating oscillations by means of an eccentric drive. The circular vibrator generates a vertical, sinusoidal force which is transmitted into the ground.

OSCILLATING DRUM

Up to four eccentric shafts (HD+ 120 and HD+ 140) with two imbalances each, offset by 180°, are rotating and create a forward-backward movement of the drum. The drum remains completely attached to the ground. With this kind of dynamic compaction, the road bed and the road surface can in many cases be compacted more quickly and achieve a higher degree of compaction. Considerably less oscillation stress is created in the surroundings of the machine and the risk of grain disintegration and overcompaction is minimised.

VIO DRUM

Depending on the position of the eccentric drives to each other (same phase or 180° offset phase), the compactor compacts by means of vibration or oscillation. Frequency and amplitude of both drums can be adjusted completely independent of each other (more flexibility and increased performance).



- 1 > *Vibrating drum*
- 2 > *Oscillating drum*
- 3 > *VIO drum*

ORIGINAL HAMM SCRAPER

In daily use on construction sites, the genuine HAMM scrapers guarantee the best compaction and surface quality thanks to clean drum surfaces.

The scrapers prevent dust and asphalt sticking to the drum and the tyres.

The scraper materials optimised by HAMM are wear-resistant at lowest operating costs.



SCRAPERS FOR RUBBER-WHEELED ROLLERS

Brushes are the standard type of scraper on rubber-wheeled rollers. If the machines are moved over sticky materials, plastic scrapers adjusted to the tyre shape are used.

PLASTIC SCRAPERS FOR ASPHALT ROLLERS

Flexible and long-life plastic scrapers made of materials perfect for use on asphalt are installed on asphalt machines.

The material properties of HAMM scrapers ensure optimal water distribution for optimal cleaning of the drum surfaces. This results in considerably reduced water consumption.



ORIGINAL HAMM WATER SPRINKLER UNIT

With the sprinkler components from our range, you are on the safe side: Reliable filtering and high-quality pumps, spray nozzles, seals and couplings guarantee trouble-free use on hot asphalt.

The nozzles and spraying beams are optimally arranged for each type of machine.

The **spray nozzles** are protected against wind and visible to the driver, so he can watch them during operation.



> Driver kits with original HAMM components are compact and save space. This means they can be carried around at all times and components such as worn spray nozzles are changed within minutes.



Electrical pressure sprinkling is ensured by one or two alternatively working **water pumps**. Only one pump is in use, while the other is on stand-by.

The **spraying beams** are a quick-change design to make adjusting and maintenance work even more efficient. When frost is threatening, they can easily be dismantled.

The **injection of antifreeze** enables working even at very low temperatures.

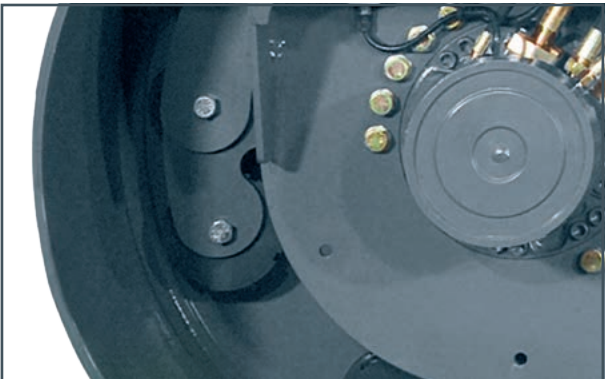
Each of the extremely water-saving **spray nozzles** is equipped with fine screens and installed in such a way that complete wetting of the drum is ensured in any situation. Everything is always in the driver's field of vision.

The **plastic water tanks** are integrated in the frame.

ORIGINAL HAMM RUBBER BUFFER

Rubber buffers prevent transmission of vibration from the drum to the machine to ensure that the operator can focus on his work without being distracted. This applies to vibrating and oscillating drums alike.

The most important suspension elements of the drums are the rubber buffers. Hardness and shape of the rubber buffers of HAMM drums are optimally adjusted to the roller type.



Due to the optimal hardness grade, the compaction energy can be optimally transmitted into the substrate. Incorrectly dimensioned rubber buffers can severely reduce compaction performance.



ORIGINAL HAMM PLANNED MAINTENANCE

The original parts which are optimally adjusted to each other guarantee maximised service life at minimal maintenance costs.

It is worthwhile to reach into our parts shelf. Reliable quality and long service life guarantee correct function for many more hours of operation.

i *To ensure optimal performance of the HAMM roller, it is vitally important that the drum components are regularly checked and replaced if necessary. Regular maintenance guarantees reduced machine downtime.*



ORIGINAL HAMM

ADJUSTMENT AND MAINTENANCE OF THE SPRINKLER UNIT

When operating the **water pump**, it is advisable to switch to the stand-by pump from time to time to prevent failure due to corrosion.

If frost is threatening, the water must be drained at the end of the work. The entire sprinkler beam can be dismantled easily and quickly due to the quick-action fastening system.

The function of the **water nozzles** should be checked every day. If a nozzle is clogged or unevenly spraying, it should be replaced in due time.





ORIGINAL HAMM EXCHANGE OF WEARING PARTS

Soiling, incorrect assembly mismatched parts from other suppliers affect not only the productivity of the machine but can destroy the entire drum.



WHAT IS WEAR?

Wear is produced by the pressure between two elements in contact (e.g. between scraper and drum) when there is relative movement. When this happens, small particles become detached from the surface of both elements.

HOW CAN WEAR BE AVOIDED?

Wear of drum components cannot be completely prevented but at best minimised.

Sufficient water supply is an important basic precondition to ensure rotation of the drum.

Increasing service life means:

- > Paying attention to thorough daily cleaning,
- > Regularly checking the drum so that action can be taken at the right time to counteract wear or damage to other components,
- > Undertaking regular maintenance and regularly checking the sprinkler system.

WEAR OF THE DRUM SCRAPERS



When the surfaces of the drums and tyres are no longer reliably cleaned, worn scrapers should be replaced.

To extend the service life of the scrapers, the highest degree of cleanness should be ensured, in particular on asphalt machines. Adhering materials should be removed regularly to ensure trouble-free function of the scrapers.

Bent scraper holders are often a reason why scrapers do not work perfectly. During the daily inspection, the scraper fastening elements should also be checked for damage.



1 > *Tyre damage caused by a worn scraper*

2 > *Worn scraper on a smooth drum*

3 > *Intact scraper*

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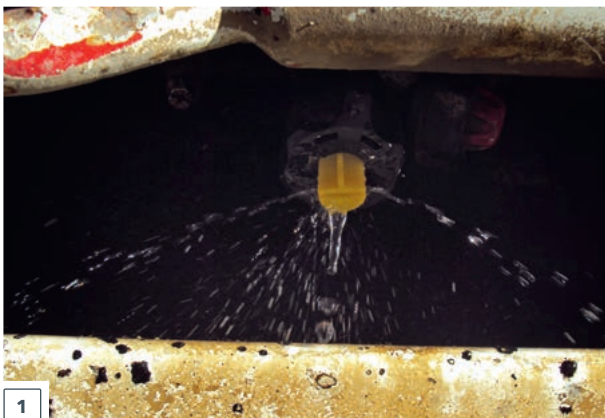
WEAR AT THE SPRINKLER UNIT

To ensure operativeness of the sprinkler unit at any time, only clean water should be used to prevent clogging of the water filters and unnecessary wear of pump and nozzles.

Regular cleaning of the sprinkler unit filters will prevent premature failure of the pump. If asphalt sticks to a nozzle, it should be cleaned or replaced immediately.



Please note that unapproved water admixtures and / or separating agents will destroy the pump diaphragm and the nozzles.



1 > *Clogged nozzles*

2 > *Intact nozzles*

ORIGINAL HAMM

DAMAGE TO AND MAINTENANCE OF THE RUBBER BUFFERS

The rubber buffers should be checked for cracks and overexpansion as part of the maintenance work.

A defective rubber buffer changed in good time prolongs the service life of the other buffers as the workload balance is maintained.

The service life is substantially dependent on the use of the machine. Extremely heavy-duty use for earthwork with constant jumping operation means premature wearing of the damping elements.



Always use the machine within operating specifications.

You will find further information on ordering the drum parts in the Parts and More catalogue or on the internet at www.partsandmore.net.



1 > *Torn rubber buffer*

2 > *Intact rubber buffers*

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