

HYDRAULIC MODULAR BALLAST TAMPER

MODEL BRM 8 AC

The **Modular Hydraulic Ballast Tamper** model BRM 8 AC is an **evolutionary and self-contained** machine designed for tamping track and turnouts. It is controlled by a single operator and fitted with two **high efficiency ballast tamping units**.

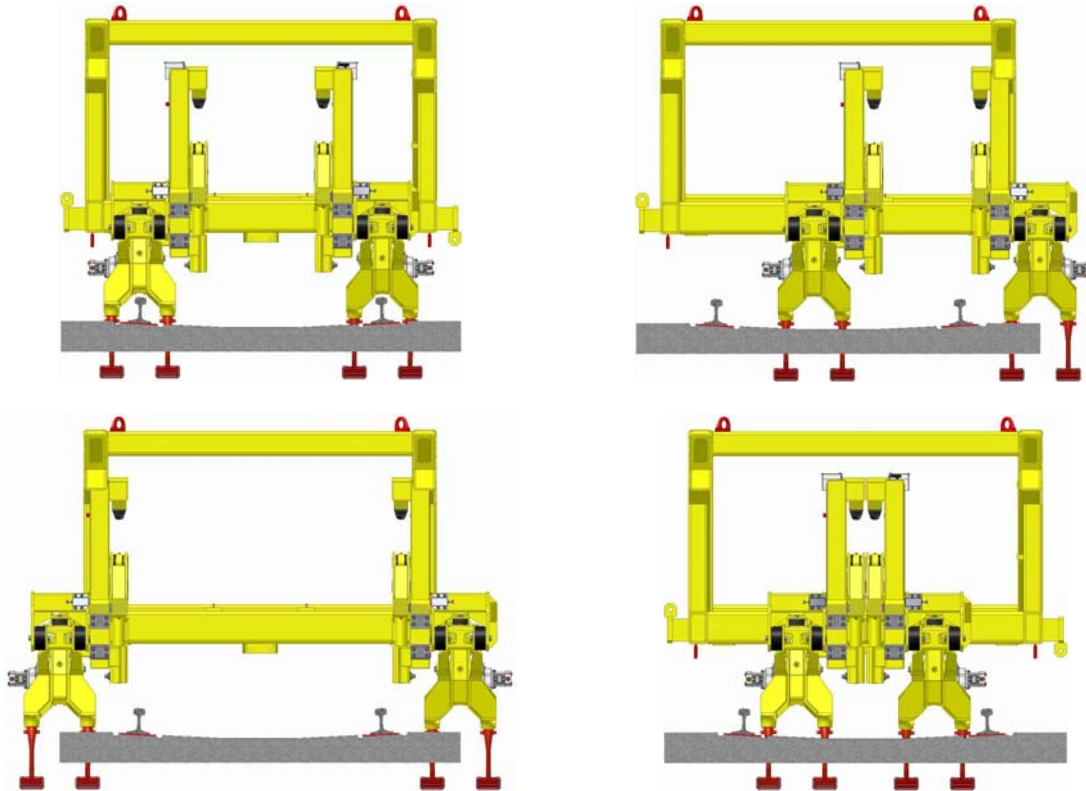


1. DESCRIPTION AND OPERATION

The ballast tamper model BRM 8 AC is designed for the efficient mechanical tamping of plain line and turnouts. Powerful tamping heads together with a tightening device under the sleeper ensure the optimum stabilization of the track.

1. DESCRIPTION AND OPERATION (Cont'd)

The BRM 8 AC can tamp with one head or both heads simultaneously. The position of the heads can be laterally adjusted by the operator as shown in the pictures hereunder. This facility, driven by a hydraulic ram, allows the machine to avoid track-side obstacles and enables it to work on turnouts where blades and check-rails must be avoided.



The BRM 8 AC ballast tamper is composed of the following subassemblies:

A main frame with hydrostatic transmission

The strengthened frame is made of tubular steel profiles assembled as a gantry. Both horizontal parts around this central gantry comprise the power unit on one side and the driving post on the other.

One of the major advantages of the modularity of the BRM 8 AC is its adaptation to different gauges (from 900 mm to 1,676 mm). Both track axles are changed according to the gauge in approximately two hours. A set of track axles, corresponding to the desired gauge, must be ordered to carry out the operation.

The frame is:

- Equipped with a **motorized axle** driven via a chain by a hydraulic motor. The axle is articulated in its centre to ensure safe passage over twisted track.
- Equipped with a **second fixed motorized axle**;

1. DESCRIPTION AND OPERATION (Cont'd)

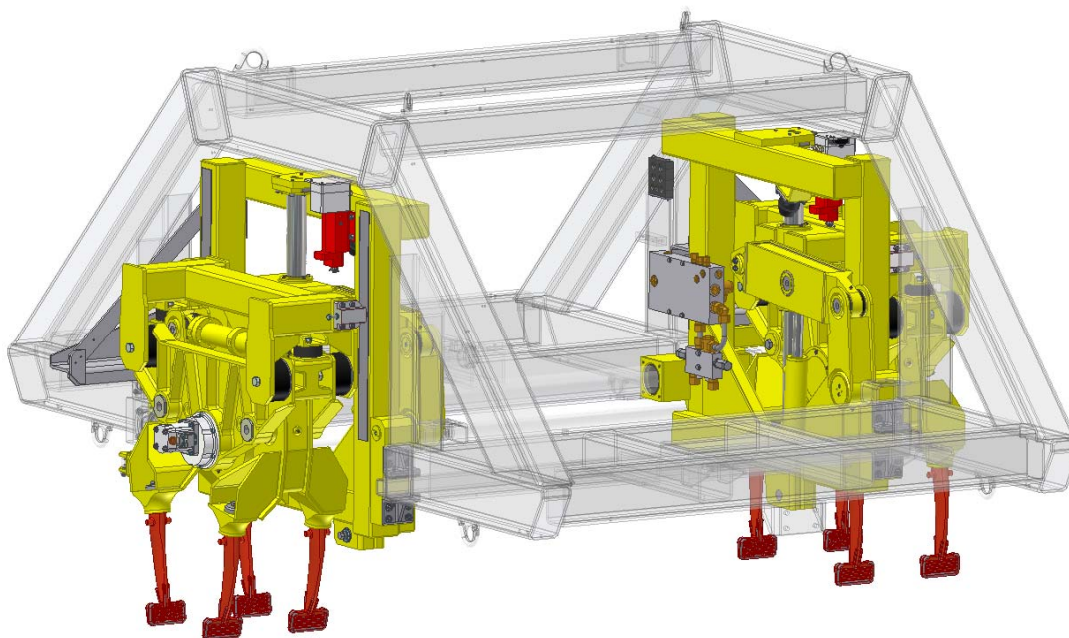
Both axles constitute the travelling system which ensures the contact of the four wheels with the rail. It also includes **four brakes with double shoes** (actuated by spring with hydraulic return) which ensure the braking and the immobilization of the machine on important slopes.

When driving the machine, the operator releases the brakes (by pressing the pedal). By releasing the pedal, the brakes are applied and thus the machine stops.

Two efficient tamping heads:

They enable:

- The lateral displacement of each tamping head for S&C tamping operations;
- The raising and lowering of each tamping head in the ballast;
- The adjustment, from driving post, of the lowering of tamping heads thanks to ultrasonic sensors;
- The lowering of tamping heads manually using the controls located in the driving post, or by an automatic cycle at the push of a button;
- The synchronized closing of the tamping tines. Each of the tamping heads is equipped with two pairs of tamping tines which are mounted in opposition and with an eccentric flywheel driven by heavy duty hydraulic motor which generates a fixed frequency elliptic vibration.
- The opening limitation of the tines for tamping single or jointed sleepers.



1. DESCRIPTION AND OPERATION (Cont'd)

A cabin with driving post:

- The operator's seat is located on a super elevated base providing perfect visibility whilst travelling and working. The cabin is fixed on the frame through elastic supports. The miniature joystick controls for the different functions are located on the armrests of the seat.
- Heating completes the operator's comfort;
- Cabin is also fitted with air conditioning system and demisting device;
- On the control panel a TFT screen contains all control instruments of the machine. A two-tone warning horn is also controlled from the cabin. All night lighting, work and safety controls are also situated in the cabin.



- Wide windscreens provide perfect vision of every tamping and traveling operation. Acoustic and vibration insulation of the cabin ensures acoustic levels inside the cabin to latest standards.
- Two additional retractable seats are adapted for travellers ;
- A large closed coffer is located under retractable seats.



1. DESCRIPTION AND OPERATION (Cont'd)

A hydraulic system with Diesel engine, mainly comprising of:

- A Diesel engine;
- A hydraulic two stage gear pump;
- Two variable flow pumps.

An efficient hydraulic system comprising of:

- Two hydraulic drive motors;
- Two heavy duty hydraulic motors to power the tamping head;
- Two rams to control the opening/closing of tamping tines;
- Two rams to control the lowering/lifting of tamping tines;
- Two slewing rams for tamping heads;
- Four brake opening rams.

The machine is provided with an emergency hydraulic power pack with petrol engine to ensure:

- The lifting of the tamping heads (mechanical lock in the high position);
- The opening of four shoes brakes with opened position lock with mechanical block screws.

The emergency power pack also ensures feeding of travelling circuit during towing of the machine.

An electrical equipment comprising:

- Four work lights;
- Four red marker lights;
- A two tone warning horn;
- A dead man brake;
- A forward drive pedal;
- A reverse drive pedal;
- A driving control pack;
- Two batteries providing 24 V power.

2. TECHNICAL DATA

– Track gauge on request:	from 900 to 1,676	mm
– Wheel diameter:	470	mm
– Diesel engine DEUTZ TCD 2012 L04 2Vm:	75	kW
– Wheelbase:	2 460	mm
– Minimum radius of curvature:	20	m

2. TECHNICAL DATA (Cont'd)

- Traveling speed:
 - On plain tracks: 40 kph (*maximum*)
 - On ramps: 25 kph (*up to 40‰*)
- Maximum gradient: 60 ‰
- Double shoe brake: 2 per axle
- Output (tamping mode): 360 sleepers per hour
- Opening of tines:
 - For single sleeper (*first position – with limiter*):
 - Opening: 600 mm
 - Gap when closed: 330 mm
 - For jointed sleepers (*second position – without limiter*):
 - Opening: 810 mm
 - Gap when closed: 330 mm
- Number of tines: 8 (*4 per head*)
- Tampers vibration frequency: 46 Hz (*2 760 rpm*)
- Hydraulic tank capacity: 250 L
- Machine autonomy in normal conditions use: > 16 hours
- Three stage hydraulic pump:
 - Variable flow pump in closed circuit (travel): 350 Bar
 - Variable flow pump in opened circuit (motions): 210 bar
 - Gear pump (vibrations): 160 bar
- Electric system:
 - Voltage: 24 V
 - Capacity: 115 A.h
- Dimensions:
 - Length: ≈ 4 200 mm
 - Width: ≈ 2 500 mm
 - Height: ≈ 2 855 mm
- Mass: ≈ 8 000 kg

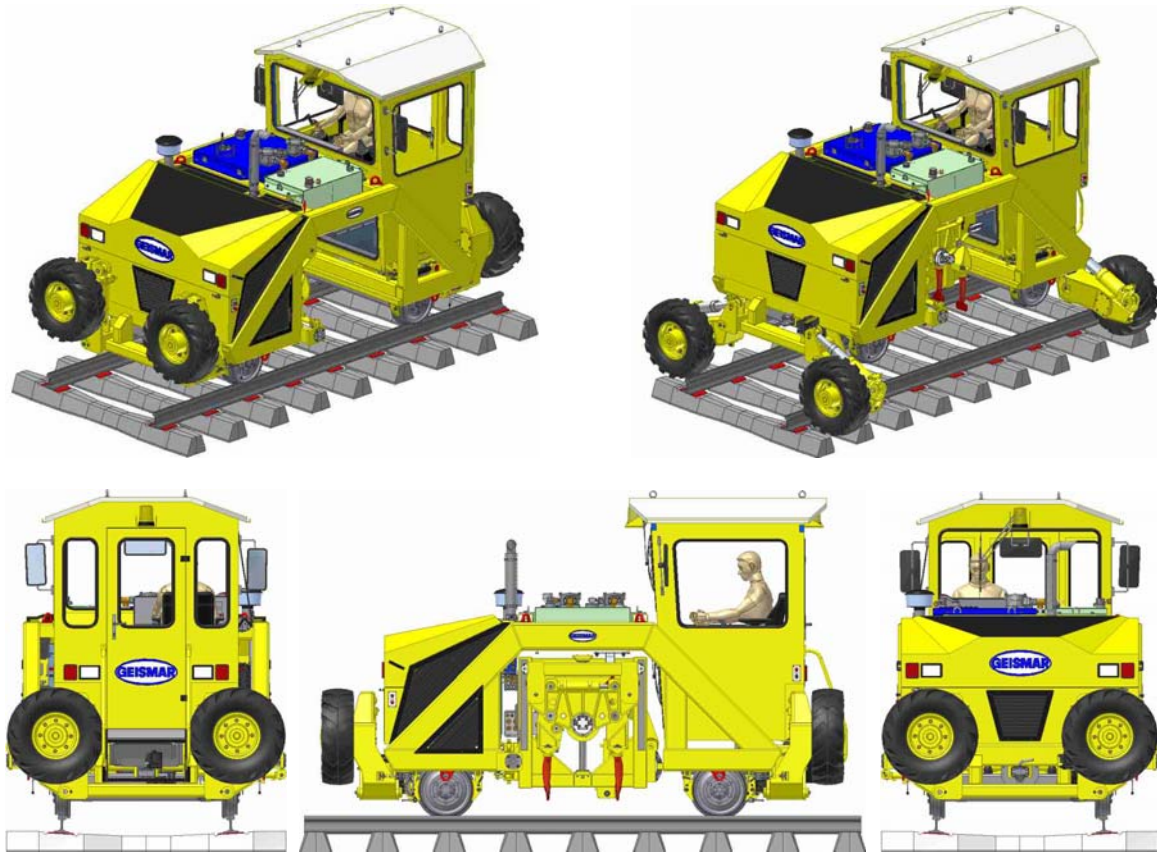
3. ACCESSORIES AND OPTIONS (at extra price)

- **An off-tracking system via retractable tyre wheels**

The integrated retractable off tracking system is self-contained and fast. It works via four tyre wheels which are hydraulically motorized. This device is an additional advantage to the BRM 8 AC for main lines and for limited networks or single track lines.

3. ACCESSORIES AND OPTIONS (at extra price – Cont'd)

- An off-tracking system via retractable tyre wheels (cont'd)



- Dimensions of the machine:

Length:	≈ 4 670	mm (with tyre wheel option)
Width:	≈ 2 500	mm
Height:	≈ 2 855	mm
- Mass:

	≈ 9 400	kg (with tyre wheel option)
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- **Off tracking system for loading upon truck or flat wagon thanks slewing beams**
 This equipment comprises two telescopic horizontal and vertical beams located at each end of BRM 8 AC. Each assembly is also fitted with two telescopic rams for load recovery. The whole is remote controlled and enables off-tracking in all safety even on canted grounds. Loading on flat wagon or truck is also done with this option.

3. ACCESSORIES AND OPTIONS (at extra price – Cont'd)

- Off tracking system for loading upon truck or flat wagon thanks slewing beams (cont'd)



- Dimensions of the machine:

Length:	≈ 4 500 mm	(with slewing beams option)
Width:	≈ 2 500 mm	
Height:	≈ 2 855 mm	
- Mass:

≈ 9 500 kg	(with slewing beams option)
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- **NDO Option**

The BRM 8 AC is equipped with:

- (1) One longitudinal and transversal levelling unit of the track type ULR, comprising:
 - Two levelling rams;
 - Two rail clamps;
 - On-tracking system for the ULR and measuring trolley;
 - Towing system of the ULR by BRM 8 AC.
- (2) A measuring trolley running on track, equipped with:
 - Two targets each mounted above one rail;
 - An electronic inclinometer;
 - On-tracking system for the measuring trolley.
- (3) A viewing system, VPK1300 type, equipped with a remote control system for longitudinal and transversal levelling (1).

3. ACCESSORIES AND OPTIONS (at extra price – Cont'd)

- **NDO Option (cont'd)**

- Dimensions of the machine:

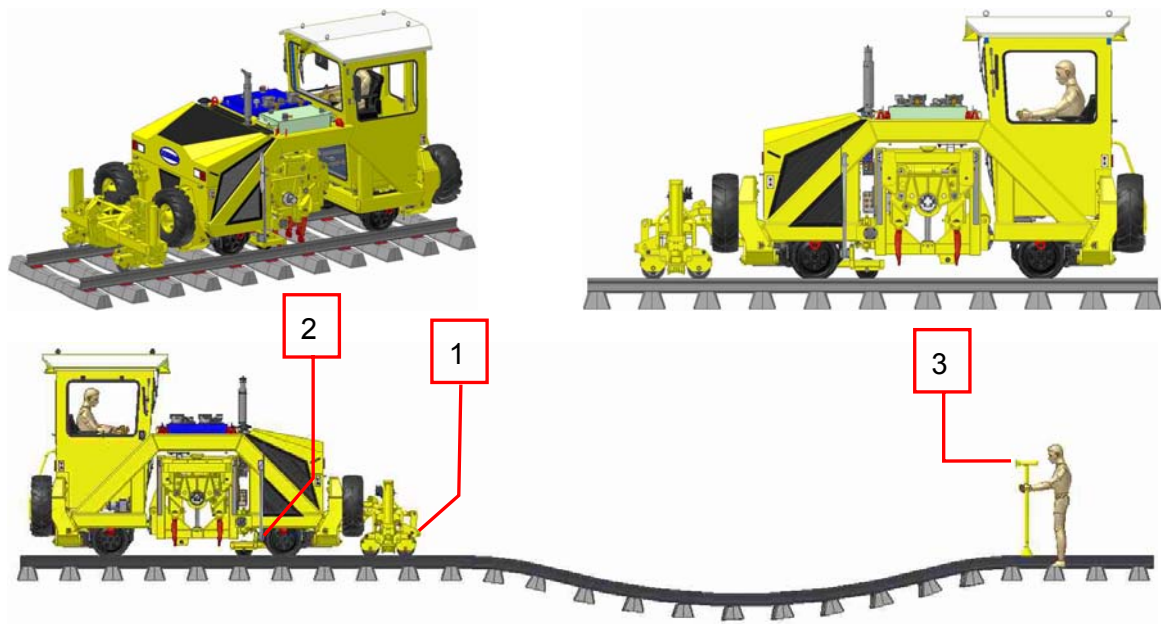
Length: $\approx 5\,400$ mm

Width: $\approx 2\,500$ mm

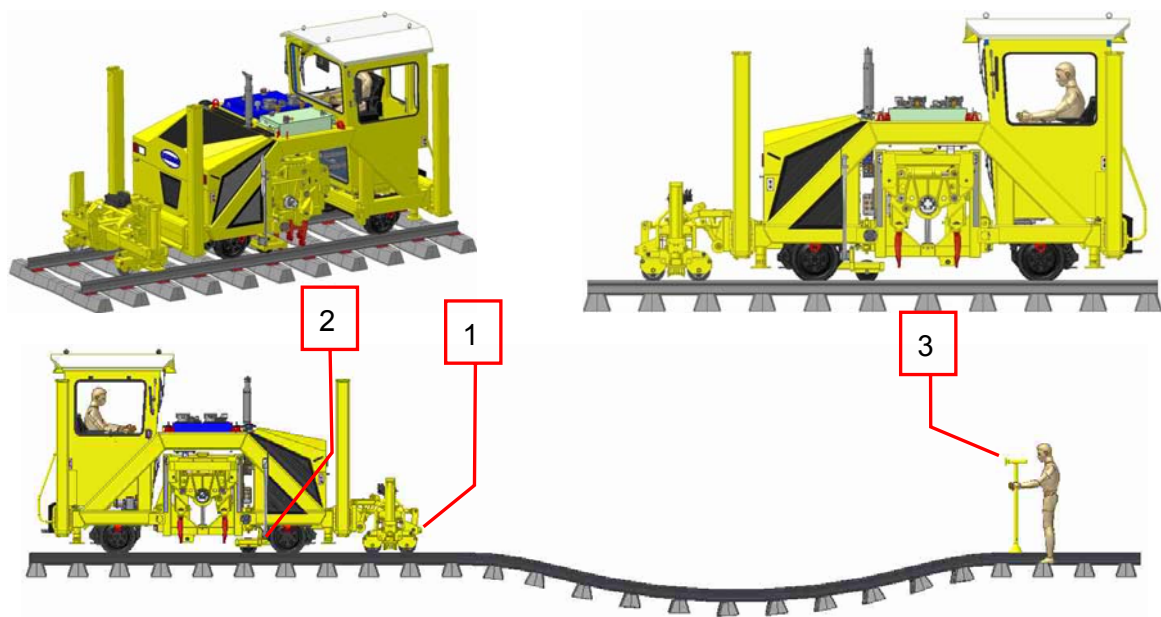
Height: $\approx 2\,855$ mm

- Mass: $\approx 10\,500$ kg

BRM 8 AC NDO with off tracking system via tyre wheels



BRM 8 AC NDO with off tracking system via slewing beams



3. ACCESSORIES AND OPTIONS (at extra price – Cont'd)

Operation of NDO system

An operator located at the viewing system type VPK 1300 – pos. 3 – is equipped with the remote control, he targets the sighting board fitted on the measuring trolley – pos. 2 – above the same rail.

The remote control enables the operator to directly drive levelling ram of the ULR – pos. 1 – above the same rail.

Second ram of ULR – pos. 1 – is directly controlled by the electronic inclinometer located on the measuring trolley – pos. 2 – it is aimed to correct transversal leveling of track in a automatic way.

The device ULR – pos. 2 – is composed of two leveling rams, one of which called “master” and driven by the operator located at the viewing post – pos. 3 – the other, called “slave” driven by the electronic inclinometer.

Desired cross level value is programmed from the driving post of the tamping machine on a liquid cristal screen.

This measuring system is only in aligned tracks.

- **Other engine models on request**
- **Electric insulation of railway wheels**

4. INFORMATION TO BE SUPPLIED IN CASE OF ORDER

In case of order, the client must specify:

- Track gauge;
- Rail type (grooved or flat bottom) ;
- Desired wheel profile;
- Clearance wheel gauge ;
- Travelling gauge;
- Electric insulation of railway wheels.

*We reserve the right to modify any equipment specification of the present offer to take into account the latest technical improvements and working conditions at the date of manufacturing.
Pictures and drawings may include some options and are not contractual.*