

100%

HIGH-PERFORMANCE UNIVERSAL TAMPING MACHINES



MATISA



la passion du rail

**HIGH-PERFORMANCE UNIVERSAL
TAMPING MACHINES**

**B 66 UC
B 66 U**



The road to

100%
success

The reference for switches and crossings

For many years, the demanding networks trust the MATISA B 66 universal tamping machines. Achieving high-performance on plain line, these machines excel particularly when tamping switches and crossings. A large part of their excellent reputation comes from the ability to accurately correct the geometry, the ballast compaction quality and the swift and precise movements of the tools.

The range includes a conventional B 66 U and a continuous action B 66 UC tamping machines. The latter has a tamping shuttle giving a higher output in plain line.

A universal continuous double-head machine, with an even higher output, will be launched into the market in 2019. This will be the B 66 UC-D.

A new generation at your service

The B 66 tampers have recently received a significant technology upgrade. The optimisation improves comfort, flexibility of use, reduction of fuel consumption and maintenance costs even further.

In addition, these new generation machines can be equipped with ballast compaction tools for cribs and shoulders just behind the tamping units. This makes them particularly attractive.

Allow yourself to be seduced by the many qualities of these machines.



B 66 UC

Versatile, efficient, unique

The B 66 UC is a high-performance universal continuous action tamping machine designed for normal and high-speed lines.

In addition to the plain line, it can handle the heaviest switches and crossings, especially those with concrete sleepers.

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This machine has a tamping shuttle fitted with four tamping units and a lifting and slewing clamp. In addition to these tools, telescopic diverging track lifting devices can be used when handling heavy switches and crossings.

The very responsive shuttle allows a substantial output on plain line despite the fact that this is a single-head machine.

The longitudinal stroke of the tamping units is long enough to position the units in a way to easily and quickly tamp Y shaped sleepers.

Located in the centre of the machine, the tamping cabin provides an excellent visibility on the tools and the track.

Thanks to the machine's user-friendliness and its ergonomic controls, only two operators are needed to operate the B 66 UC to its full potential.



Fitted with two bogies only, the B 66 UC has a unique and very compact design for a continuous action universal tamper. The rear bogie ensures the tamping shuttle traction.



B 66 UC

Especially designed tools

The B 66 UC has the best suitable tools for handling switches and crossings. All tamping units are totally independent. Their lateral movement enables to wedge the diverging track up to 2,800 mm from the track axis, while the 560 mm longitudinal stroke eases the tamping of long sleepers.

Exclusive to MATISA tamping machines, the tamping tools can be overlaid in order to tamp narrow spaces.

Finally, the units benefit from MATISA's unique high frequency elliptical tamping technology to achieve unequalled compaction quality.

The lifting and slewing clamp with hooks and rollers is extremely compact; this favours better visibility of the track. Fishplates and welds can be avoided due to its long longitudinal movement, whereas the lateral movement of the front clamp attachment allows alignment of the clamp to the long sleepers. Very versatile and with a large lifting and slewing force, this clamp can easily correct the geometry of all types of switches and crossings.

The telescopic diverging track lifting device has a lateral reach of 3,320 mm from the track axis. Strongly built, their substantial lifting force allows an efficient wedging of the diverging track.

Additional tools for even further functionalities

To meet specific needs, additional tools are available, such as:

- > Switch, plain line or rail fastening cleaning brushes
- > Hopper for ballast storage
- > Sleeper end ballast compaction tools
- > Crib and shoulder ballast compaction tools
- > Railhead ballast removing ploughs
- > Ballast profiling ploughs



B 66 U

Simple and efficient

The B 66 U is a high-performance universal tamping machine primarily designed for handling switches and crossings.

The B 66 U is fitted with the same tools as the B 66 UC. Both machines have equivalent performance when handling switches and crossings. Economically, the B 66 U, without shuttle, is the perfect choice when switches and crossings tamping is more important than plain line tamping.

Thanks to the tamping cabin located in the centre of the machine, the visibility over the tools and the

track is excellent. Tamping of switches and crossings is easily carried out both on normal lines and on high-speed lines.

Thanks to the machine's user-friendliness and its ergonomic controls, only two operators are needed to operate the B 66 U to its full potential.



Both B 66 U and UC tamping units have a 560 mm longitudinal stroke; they can easily and quickly handle tracks with Y shaped sleepers as well as long sleepers.



ADVANCED TECHNOLOGIES

A comfortable and user-friendly workplace

The tamping cabin operator has a significant number of controls to deal with during the tamping process. These actions are no longer necessary in the new MATISA tamping machine workspace. The operator's tasks are simplified as a result of the machine settings being managed through a central control unit with a touch-screen display, the tools being positioned through multifunction joysticks as well as by many automated controls.

The front cabin operator also has very simple and intuitive touch-screen interface, both for the machine guiding computer and the machine manual guiding. This reduces the risk of hazardous actions. Efficient heating and air conditioning complement the workspace equipment. All these amenities contribute to maintain the operator and machine performance during the whole worksite.

Perfect visibility

The tamping cabin is generously dimensioned. The outstanding visibility through the large windows offers a real panoramic view, including over the diverging track lifting devices. The cabin is located in the centre of the machine. This position, as well as the compact tools favouring the visibility, improves operator comfort and concentration which reduces the risk of damage to track equipment.

The touch-screen allows setting the parameters of the machine. It also provides valuable information about the machine working cycles as well as assistance for troubleshooting.

The separated or coordinated tamping units' movement automatism facilitates the tool positioning and optimises the tamping machine performance.

The armrests are fitted with fast and accurate multifunction joysticks, thus easing the handling of the tamping units and the lifting-slewing clamp.



NEMO

For ultra-accurate measurement

MATISA tamping machines have been fitted with a relative optical measuring base for several decades. This is a MATISA's unique technology.

The latest generation of the "NEMO" optical measuring base is now fitted with LED lights as well as a high-tech and very accurate optical sensor.

The optical sensor automatically adjusts the light intensity to suit the worksite conditions, in particular in the presence of dust. It has constant self-diagnosis, ensuring very high accuracy and reliability.

The "NEMO" optical measuring base is particularly suited for universal machines. The absence of moving mechanical components and measuring wires, which could be hit or cut by tamping tools, ensures very high reliability.

Furthermore, vibrations, light reflection or wind gusts affect neither the reliability nor the accuracy of the "NEMO" base.



CATT and EMB

For a smooth guiding

The "CATT" guiding computer combines reliability, flexibility and user-friendliness. Its modular architecture can integrate numerous additional functionalities, whether for calculating rebuilt absolute measuring bases or for dealing with known or unknown geometries.

In addition to the touch-screen located in front cabin, a second interface can be added in the tamping cabin. The "EMB" manual guidance device is fitted with manual controls as well as a touch-screen for correcting and monitoring the geometry. User-friendly and intuitive, this interface also enables checking the machine working parameters set by the tamping operator.



Additional guiding devices

For one-off corrections

The "PDM" is an additional module of the CATT enabling to correct defects that are local, very short and with small wavelength.

This module is generally used on high-speed lines for one-off corrections on a few sleepers.

Absolute measuring bases to steer a steady course

- > The **absolute optical measuring base** positions the straight track in an absolute position
- > The **absolute laser measuring base** positions the straight track in an absolute position. Its additional laser enables to level the track curves in an absolute levelling position
- > The "MIRIS" is an additional module of the CATT. It is able to calculate a rebuilt absolute measuring base in order to correct long wavelength defects
- > The "MATS" is a new-generation absolute measuring base using a total station and an active prism for both straight and curved tracks
- > The "PALAS" is an absolute measuring base for both straight and curved tracks. The prisms installed during the shift on the overhead line structural equipment enable to geo-localise the track



CUSTOM-MADE TRAILERS

To enhance functionalities and space

The trailers coupled to the tamping machines provide numerous possibilities in terms of custom-made solutions.

Additional functionalities can be added to the trailer to meet the intended use:

- > Track geometry recording base
- > Switch or a plain line brush
- > Ballast storage hopper
- > Rail fastening cleaning brushes
- > Ballast profiling ploughs
- > Ballast sprinkling device

Additional equipment can be added to the trailer for enhanced comfort and space:

- > Extra fuel capacity
- > Auxiliary power unit
- > Workshop compartment including storage facilities
- > Rear driving cabin including a social compartment



Rail fastening cleaning brushes

Technical features

Basic equipment	B 66 UC	B 66 U
Frame on 2 bogies	•	•
Tamping shuttle	•	—
UIC continuous and automatic brake	•	•
Parking brakes	•	•
UIC couplers	•	•
CATERPILLAR® engine	•	•
Hydrostatic circuits for machine drive	•	•
Hydraulic circuits for tools and accessories	•	•
Pneumatic circuits for direct brake and accessories	•	•
24 V DC electrical circuits	•	•
Air-conditioned front and rear cabins	•	•
Air-conditioned tamping cabin	•	•
Combined tamping unit type	C 2,800 mm	C 2,800 mm
Type C combined lifting and slewing clamp	•	•
Synchronised telescopic diverging track lifting devices	•	•
Human-machine interface with joysticks and touch-screens	•	•
“NEMO” relative optical measuring base	•	•
“CATT” guiding computer	•	•
Driving mode lighting	•	•
Working mode lighting	•	•
Power unit fire detection device	•	•

Main additional equipment	B 66 UC	B 66 U
1 axle trailer	—	x
2 axle trailer	x	x
Additional driven axle	x	x
400 V AC auxiliary power unit	x	x
Workshop compartment on trailer	x	x
Rear driving cabin with social compartment	x	x
Combined clamp with a swivelling lifting frame	x	x
Telescopic diverging track lifting devices with swivelling heads	x	x
Railhead ballast removing ploughs	x	x
Ballast compaction tools	x	x
Ballast profiling ploughs	x	x
Switch, plain line, rail fastenings cleaning brushes	x	x
Ballast storage hopper	x	x
Absolute measuring bases	x	x
Geometry recording base	x	x
Electro-hydraulic equipment for machine emergency pack away	x	x

Technical data	B 66 UC	B 66 U
Kinematic gauge	UIC 505-1	UIC 505-1
Track gauges	1,435-1,676 mm	1,435-1,676 mm
Minimum radius in working mode	150 m	150 m
Minimum radius in self-propelled mode	90 m	90 m
Minimum radius in convoy	150 m ¹⁾	150 m ¹⁾
Travelling speed in self-propelled mode	100 km/h	100 km/h
Travelling speed in convoy	100 km/h	100 km/h
Bogie wheelbase	15,600 mm	14,000 mm
Engine power	563 kW	563 kW
Driven axles in self-propelled mode	2	2
Driven axles in working mode	4	2
Basic fuel tank capacity	2,500 l	2,000 l
Tamping tools	16	16
Tamping tool vibration frequency	42 Hz	42 Hz
Tamping tool lateral reach ²⁾	2,800 mm	2,800 mm
Tamping unit longitudinal stroke	560 mm	560 mm
Combined clamp lifting stroke	150 mm	150 mm
Combined clamp lining stroke	± 200 mm	± 200 mm
Combined clamp lifting force	2 x 125 kN	2 x 125 kN
Combined clamp slewing force	150 kN	150 kN
Combined clamp longitudinal stroke	760 mm	760 mm
Combined clamp front attachment lateral stroke	± 180 mm	± 180 mm
Diverging track lifting device lateral reach	3,320 mm	3,320 mm
Diverging track lifting device lifting force	120 kN	120 kN
Plain line output with 1 insertion ³⁾	920 m/h	680 m/h
Treatment time for a simple switch ³⁾	20-25 min	20-25 min

1) 125 m in France
2) From the track axis
3) Depending on worksite conditions and machine settings

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Subsidiaries and a network of agents

100%

at your service

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