SLEEPER CHANGING MACHINE

Model **MRT2SR**

The ***Sleeper Changing Machine model MRT2SR*** is designed to ***insert and extract timber and concrete mono block or twin block sleepers***. All operations are carried out by ***one man only.*** The MRT2SR is fitted with a large windowed ergonomic closed cabin.

Thanks to its ***fast off-tracking device***, it is well suited to work on high density lines where available time intervals are very short. The unit is also ideal for sleeper renewal works in ***yards or on secondary lines.***

1. DESCRIPTION AND OPERATION

The MRT2SR is a fast working and efficient machine, handling all types of sleepers. It is easily off-tracked in only two minutes, without the need for any additional equipment; this makes the MRT2SR Sleeper Changer an absolutely outstanding machine in this field.

The MRT2SR can renew up to 40 sleepers per hour. In many countries, our experience has shown that it is advantageous to use two machines simultaneously one after the other. The first machine extracts the sleepers and the second inserts them. In this case the output is more than doubled.

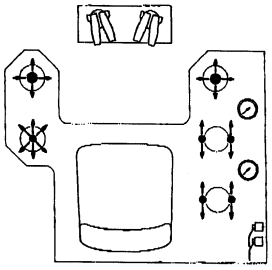
The double sleeper grips having twin articulation, make it the only machine of this type, able to precisely and safely handle the heaviest concrete sleepers, even those with variable trapezoidal section.

In conditions where the track is either super elevated or entrenched, the combination of the telescopic beam and the articulated sleeper grips, make it possible to handle the sleepers in most cases.

The cabin of MRT2SR located at the rear of the machine offers the operator great comfort and allows him to get efficient protection against outside conditions such as noise, dust and bad weather. Thanks to its large windscreens the cabin provides high visibility of both working area and for traveling.

Both the elevated position of the operator's seat (located slightly on the right and fitted on a base swiveling by 90° to the left when the machine runs backward) and the large windscreens all around, provide perfect vision of every sleeper renewal operation. Windshield wipers and an outside rearview mirror are provided to improve the operator's visibility.

The miniature joystick controls and pedals for the various functions are ergonomically located near the operator. All dials and warning lights are mounted on the control panel. In addition, for the operator's comfort, all lights for night works and safety controls are situated inside the cabin. The cabin is also fitted with a gas heating device.



The door is located at the rear of the machine for easy access to the driving cabin and an external step with handrail is provided.

All the operations are hydraulically controlled through levers conveniently placed in front of the operator. The hydraulic system is composed of a two-stage hydraulic pump driven by the Diesel engine, and a large capacity oil tank. A hand pump is provided for emergency off-tracking.

The frame of the MRT2SR is constituted with heavy duty welded steel channels and four forged steel wheels (four driving wheels).

The MRT2SR machine is self-propelled through two hydraulic motors driving one front and one rear wheel (set in diagonal). The hydraulic drive system can be disconnected, thus allowing the unit to be towed to and from the worksite.

The machine is provided with three braking devices:

- Hydraulic motor braking action;
- Hydro mechanical brakes;
- Emergency parking brake on a free wheel.

The electric system is mainly composed of:

- An alternator and two twin batteries;
- An electric starter for engine;
- Lighting for night works and warning device;
- Head lights and taillights – 2 points UIC;
- Control panel lighting.

The extractor and inserter head is mounted on a box-steel beam activated by one hydraulic ram for transverse movement and two rams for full vertical displacement. Two strokes are generally enough to extract a sleeper. The beam can be placed above and below the horizontal and the clamp can be pivoted independently upwards.

Hydraulically operated track lifting jacks enable to slightly raise the machine for better removal of sleepers with notches, sole-plates or Pandrol shoulders.

The turning sleeper clamping head allows the sleeper head to rotate by 2 x 90° and thus enabling to grip sleepers laying in whatever position along the track (either parallel or perpendicular to the track axis).

To change the operational direction of the machine, a turntable is introduced under the machine. A cone fitted underneath the machine is lowered onto the turntable to pivot the machine.

For the off-tracking operation (in two minutes), two retractable pneumatic wheels are used in conjunction with the ejector-inserter head to push or pull the machine on or off the track. The machine is then easily off-tracked without any additional equipment.

MRT2SR also comprises one fire extinguisher with support, one trailing rod and two pin couplers. MRT2SR also meets actual EEC standards with four emergency stops.

2. TECHNICAL DATA

- Track gauge: ..... 1 435 mm
- Output:
  - With one machine: ..... 40 sleepers/hour
  - With two machines (*one inserting, the other extracting*): ..... > 80 sleepers/hour
- Track wheel diameter: ..... 400 mm
- ***Diesel engine Hatz 3L41C***: ..... 49 hp (36 kW) at 2,300 rpm
- Fuel tank capacity: ..... 90 L
- Hydraulic flows: ..... 35 and 70 L/min

- Hydraulic oil tank capacity: ..... 220 L
- Traveling:
  - Maximum speed for traveling: ..... 30 kph
  - Maximum speed when towed: ..... 30 kph
- Two motorized wheels for ramps up to:..... 35‰
- Cabin with gas heating device (Airtop 2000):
- Alternator voltage: ..... 24 V
- Batteries voltage: ..... 24 V
- Ejector and inserter head:
  - Maximum stroke: ..... 1,300 mm (*gauge 1,435 mm*)
  - Extraction capacity: ..... 50 kN (*i.e. about 5 tonnes*)
  - Insertion capacity: ..... 35 kN (*i.e. about 3.5 tonnes*)
- Orientation of the beam supporting the traction ejector and inserter head:
  - Pivoting (*referring to the horizontal plan*): ..... ± 24°
  - Independent pivoting: ..... 18°
- Orientation of ejector and inserter head: ..... ± 90°
  (for sleepers parallel or perpendicular to track)
- Total power of lifting rams: ..... 18,500 daN (*i.e. about 18.5 t*)
- Stroke of lifting rams: ..... 600 mm
- Pneumatic wheels diameter: ..... 730 mm
- Colour:..... RAL1004
- Dimensions:
  - Length: ..... ≈ 3,720 mm
  - Width: ..... ≈ 2,700 mm
  - Height:..... ≈ 3,040 mm
- Dimensions of the cabin:
  - Length: ..... ≈ 1,930 mm
  - Width: ..... ≈ 1,950 mm
  - Height:..... ≈ 2,270 mm
- Mass: ..... ≈ 6,000 kg

3. ACCESSORIES AND OPTIONS

3.1. Hydraulic hammer “kicker” for short or bad condition sleepers, wooden or concrete sleepers

3.2. Airtop 3500 heating device with demisting of front and right lateral glasses (as option for this Airtop 3500, demisting of rear and left lateral glasses)

3.3. Air conditioning device

For the cabin – with this option the MRT2SR must be fitted with:

- A more powerful engine (Diesel engine Hatz 4L41C power 64 hp (47 kW) at 2,300 rpm, voltage 24 V in replacement of the engine Hatz 3L41C).
- A gas tank of 120 L.

3.4. Head lights and taillights – 3 points UIC

3.5. Swivelling ventilator for the cabin

3.6. Speed indicator

In kph.

3.7. Daily and total kilometres counter

3.8. Other gauges on request

3.9. Sea freight packing

3.10. Another colour than RAL1004

The technical specification of the equipment of the present offer strictly conforms to the Commercial/Financial quotation. The technical characteristics, including the conformity to the standards mentioned, the components, dimensions and access diagrams would have, prior to starting of execution and manufacturing of the equipment, to be approved by the customer as ‘’conforming to the particular specification and various track loading gauge(s)’’ of the network(s) on which the equipment to be delivered is to be operated.

All modifications and/or eventual technical alteration arising after the date of the offer could result to a review of the commercial offer.

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.

In case of any discrepancy between our offer and the attached documentation, the technical specification of our offer should be taken into consideration. Photographs may include options.

Masses and dimensions may vary ± 5%.