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QUOTATION Nº: 000/00

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VIBRATORY TANDEM ROLLER, MARK PACLITE
MODEL VR1000

GENERAL CHARACTERISTICS:

. Total mass,	2.470 kg
. Classification UNE 115-435 (PV3)	
. Static linear load front drum	12,3 kg/cm
. Static linear load rear drum	12,3 kg/cm
. Drum width	1.000 mm
. Total width	1.100 mm

. Engine DEUTZ F2L-1011F. Output 21 kW (30 CV) at 3 000 r/min

EQUIPMENT:

. Hydrostatic transmission at both drums.
. High safety brakes of negative action.
. Vibration at both drums.
. Articulated.
. Water tank with capacity of 145 litres, equipped with automatic sprinkling system.
. Control panel cover.
. ROPS structure (foldable)
. Working lights
. Safety back alarm.
. CE marked.

UNITARY PRICE : CURRENCY

QTY: 1 units.

TOTAL : CURRENCY

PAYMENT:
WARRANTY:
DELIVERY TIME:
VALIDITY:

TECHNICAL SPECIFICATIONS OF THE ARTICULATED TANDEM VIBRATING ROLLERS,, MODEL PACLITE VR1000" WITH A TOTAL WEIGHT OF 2 470 KG IN SERVICE

1.- TECHNICAL DATA:

1.1.- IDENTIFICATION:

Make: PACLITE

Type: Vibratory articulated tandem roller

Model: VR1000X2

1.2.- GENERAL CHARACTERISTICS:

1.2.1.- Description:

Vibratory self-propelled tandem roller, with traction and vibration at both drums, articulated at centre. Is possible to vibrate with front drum only, disconnecting vibration at rear drum.

The articulation divide the compactor in two units of equal weight, and allows the oscillation over the longitudinal axle of the unit of both drums, therefore it adapt itself to the soil surface irregularities.

At each of the drums, it incorporates one eccentric shaft or vibrating axle, activated hydraulically.

The unit has been designed to work by variable dynamic pressure (optimal point of concordance). In this type of work, the finishing and surface sealing is perfect, therefore this unit is adequate although for soils or bitumen mixtures compaction.

The working frequency and the eccentric moment of the masses, has been established to obtain the higher performance of one unit with similar weight and characteristics.

The driving and operation of this unit is very simple, and it's made through an steering wheel, a traction lever and electrical switches for the rest of functions.

Equipped with rear and front working lights, flashing light and control panel protection cover.

This unit complies with the CE normative (ROPS safety structure, backwards alarm, etc….)

1.2.2.- **Engine:**

Make:	DEUTZ
Model:	F2L-1011F
Output (DIN 6270 B):	21 kW (30 CV) at 3000 r.p.m.
Cooling system:	Air
Injection system:	Bosch Pump
Starting motor, alternator y regulator:	Bosch

1.2.3.- **Steering:**

Hydraulic, continuous Orbitrol type, that assures smooth movement and direction precision.

1.2.4.- **Speeds:**

Progressives, variables, between 0 and 9 km/h at both sense of travelling. The speed and sense changes are made through one only lever.

1.2.5.- **Brakes:**

This unit have a triple barking system, which gives the maximum adequation to the higher exigencies of safety.

- SERVICE BRAKE: Hydrostatic of manual action through the traction lever.

- PARKING BRAKE: double braking system, the normal hydrostatic service brake and the emergency brake, activated automatically simultaneously when stopping the engine.

- EMERGENCY BRAKE: Multidisc of negative drive against any brake of hoses or diesel engine stop, or manual, by means of an special designed switch.

1.2.6.- **Inner turning radius:**

Minimum turning radius: 2.859 mm.

1.2.7.- **Transport data:**

Total length:	2.515 mm
Total width:	1.100 mm
Total height:	2.670 mm
Total weight:	2.470 kg

1.2.8.- **Working characteristics:**

Drum length:	1.000 mm
Drum diameter:	700 mm
Drum thickness:	13 mm
Weights::	
. front:	1.235 kg
. rear:	1.235 kg
Static linear loads:	
. front:	12,3 kg/cm
. rear:	12,3 kg/cm
Vibration frequency:	50 Hz.
Nominal amplitude (UNE 115-435):	0,31 mm.

1.2.9.- **Drive equipment:**

Hydrostatic transmission composed by variable flow pump, that supplies hydraulic oil to two hydraulic motors, slow high torque type, of radial pistons, coupled directly to the drums by means of rubber shock absorbers, allowing speed of displacement progressive forward and reverse.

1.2.10.- **Vibrating unit:**

Made of two eccentric axles, mounted inside of each drum cylinders. Each one is activated by one hydraulic motor of fix flow type, coupled to them elastically and easy to dismount. The hydromotors are fed by a fix flow pump.

1.2.11.- **Sprinkling system:**

The water of the tank, is pumped by means of pressure through one electrical pump to the diffusers installed at the sprinkling bars, located at each drum. In order to homogenize the water spraying, one scraper located at each drum makes the water being to contact all drum width.

1.2.12.- **Working data that defines the compactor:**

- Being tandem
- Having traction at both drums
- Static linear load 12,3 kg/at both drums VR1000
- Vibration:

. Working type: Concordance (variable dynamic pressure)
. Maximum frequency 55 Hz (3.000 r.p.m.)
. Vibration at front and rear drums at same time.

1.3.- ANALYSIS OF THE TECHNICAL DATA:

For being tandem: Uses its total weight to compact and, in consequence, obtains optimal results per total weight unit.

For having double transmission: Reduces the necessary tangential forces to a minimum for its movement. Does not roll up material.

For its load per cm. and working characteristics: Adapts itself perfectly both to soil compaction as to bituminous mixtures.

For its vibration: As all PACLITE compactors, gives the maximum possible output by its pressure and frequency.
Is able to work in Concordance, a world exclusive of PACLITE, which totally eliminates the necessity of pneumatic rollers in asphalt compaction.

Its dimensions and weight: united to its technical characteristics, make this Tandem:

. The perfect compactor for small jobs and repairs
. An easily transportable machine, with unsurpassable outputs within its weight class

For its triple braking system: owes the highest security quota that can be obtained.

2.- WORKING RECOMMENDATIONS:

2.1.- INTRODUCTION:

Although one does not consider essential to obtain a maximum output in small compactors, not therefore one has to forget that not taking advantage of all possibilities of the machine, always has an economic repercussion that can be that important, that the realisation of testing sections can be justified.

Without getting to this point, and risking an excessive generalisation, we herewith point out some basic recommendations that can help as starting point to obtain the optimum output of the machine.

2.2.- TYPES OF SOILS:

The VR1000, is the adequate machine for the compaction of:

- All kind of natural soils except very plastic ones
- Natural and artificial bases and sub-bases
- Cement-soils and gravel-cement
- Cold and hot bituminous mixtures

2.3.- SOIL COMPACTION IN GENERAL:

The optimum working speed and thickness of the layer which give us the maximum output, will depend on each case of the type of soil (its difficulty or easiness to compact), and the desired quality (density to be obtained).

As general norm, and under average conditions, the maximum outputs will be obtained with working speeds between 3 and 5 km/h, and layers between 15 and 25 cm.

When the soil is difficult to compact (very fractured arids of discontinuous granulemetry, with an elevated proportion of thick parts, etc.) or if the required quality degree is elevated, one must decrease the thickness of the layer, and work at lower speeds.

On the contrary, when one observes that one easily obtains the desired compaction, what happens with easily compactable soils, or when the required density is relatively low, one obtains higher outputs working with thicker layers.

2.4.- COMPACTION OF BITUMINOUS MIXTURES:

2.4.1.- Types of bituminous mixtures:

With the object of the difficulty of compaction, we herewith define three types of bituminous mixtures:

. Very difficult
. Of average difficulty
. Easily compactable

The inclusion of a determinate mixture within one of these three types is a priori difficult, and only the site experience can provide a correct criterion, nevertheless, the following norms can occur:
. The mixtures with mayor percentage of fractured arids, are more difficult to compact
. The mixtures with high contents of big size arids, are more difficult to compact
. The bitumen of minor viscosity or delivered on the site at higher temperatures, make mixtures easier to compact
. When the proportion of bitumen is higher, the resulting mixture will be easier to compact
. Big proportions of filler, make compaction more difficult as they act as a drying of the bitumen, increasing the viscosity of the mixture

. With nearly generality, the used mixtures on roads of big intensity and traffic load, present more compaction difficulties than the ones that are projected for minor important traffic loads

2.4.2.- **Working recommendations of bituminous mixtures:**

1.-) Working speed:

In the bituminous mixtures, rarely one can elect the thickness of the layer, which is explained in the project and almost never is excessive, but totally the contrary.

Thus the speed will be the only controllable fact:

. For easily compactable mixtures, and small layers 3-5 cm., one must work at the highest possible speed

. When the mixture is more difficult to compact, or the layers are superior, one normally obtains better outputs reducing speed until a minimum of 3 km/h, in very difficult cases. Nevertheless, the output differences never will be very accused, for which one does not have to worry to much about the speed, as due to mayor speeds, one can do more passes during the same period, for which the difference of compaction energy which is obtained in the mixture between a pass at mayor speed, and another one at higher speed, remains practically compensated

2.-) Execution of borders:

The borders always have to be compacted in the length, which means, without crossing them.

A good system consists in disposing nearly the entire width of the drums over the new pavement, and only at about 20 cm. surpassing the already compacted part, doing the necessary passes until obtaining the desired degree of compaction.

If there exist borders in two perpendicular ways, one has to compact at first the one with the shortest length, but proceeding on the contrary as before indicated, which means, that disposing only at about 20 cm. over the new pavement, doing the passes in a way that when starting each cycle one is paving each time a mayor surface of new pavement, until getting to approximately half the drum length.

3.-) Execution of free borders:

When there exists a free border, one has to avoid to draw up to it during the first passes, so that the mixture does not flow laterally, and only when the adjacent pavement is compacted, one can finish to do the passes close to the border, when nearly the entire compactor is resting over the precompacted pavement.

4.-) Changes of way and direction:

Changing of lane always must be done over compacted and already hardened pavement.

The corners and surfaces which enclose an obstacle or island, with very close bends, must be compacted by sweeping in fan-out, trying to steer as less as possible.

To change the direction, one has to stop vibration in order not to leave irreversible prints; we recommend to leave the vibration switch in automatic position in order to avoid forgetfulness.

The changes of speed must be realised progressively and with the mayor possible smoothness in order not to roll up the mixture.

One never has to stop the machine, not even for one instant, over the to be compacted pavement, except, logically, when doing the necessary changes of direction.