



UTIFORM

Instruction book

Betriebsanleitung

Manuel d' instructions

INSTRUCCIONES



V1

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INTRODUCTION

Dear customer:

Please read carefully this instruction book before you start using your new **V1** machine, and you make familiar with its whole operation and handling process. This way you will avoid any mistakes when working with it as well as any possible damages or loss of material.

This machine is the result of the very latest technical developments and complies with all general standards and EC Regulations in force. You will notice the EC symbol on the machine, and will also find a Declaration of Consent attached to this instruction book.

Should the machine break down, or if you would like to make an order for spare parts or you wish to contact our Technical Department, please get in contact with the vendor or dealer directly.

In order to avoid breakdowns caused by faulty or bad quality spare or wearing parts, and so that you do not lose you right to the "Manufacturer's Guarantee", we recommend to use only original spare or wearing parts.

Please complete the details below in order for you to know the most important features of your machine and to have them always available to use them for any spare parts order. The details to be written down can be found on the machine name plate.

V1	
Machine number
Feeding Engine	Model..... Serial Nr.

We reserve our right to perform any technical changes to the machine for its improvement, even if it is not declared within this book.

The company UTIFORM wishes you all the success with your new machine.

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1 Description

V1 rendering machines for thick materials are strong, have a great performance and are easy to maintain, as they are subject to a minimum wear.

V1 rendering machines for thick materials are equipped either with re-adjustable and high-rendering worm pumps or with maintenance-free stators (as for instance 60/12). Their aim is to pump any kind of liquid or pasty transportable materials, as for instance:

Self-levelling mortars	Levelling pastes
Plastering mortars	Pastes
FIRE protection masses	Frothy concrete
FIRE-resistant mortars	Fine concrete
Fluid layers	Isolating mortars
Muds	Compensating pastes
Injection Mortars	Residual pastes
Pumpeable wall mortars	etc.

Transportable materials that are prone to disintegrating should not be supplied through worm pumps, due to the risk of solid material deposits within the transport hose and the materials deposit.

Pumps for thick materials are standard equipped with three-phase current (400 V. / 50Hz.) maintenance-free gearbox. The standard materials deposit has an approximate capacity of 140 litres and a favourable filling height (700 mm).

The machine frame is composed of a solid and reinforced structural steel trunk and is equipped with two big pneumatic wheels.

Pumps V1 for thick materials have their standard equipment together with a radio frequency remote control and with the possibility of incorporating a remote control with a 42 V. electric cable, under order. All this material can be provided by the company UTIFORM.

The self-levelling mortar or levelling paste already prepared and mixed can be directly poured into the receptacle or pumping vessel skip.

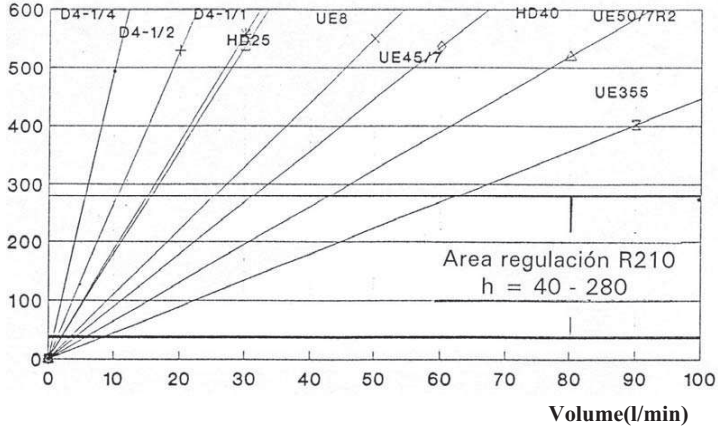
Normally this material is supplied by cement mixer lorries that come directly from the material plants, and therefore it becomes convenient and highly recommendable to assemble the vibrating grid as a protection against excessively granulated materials, preventing this way the worm stator deterioration.

Transport output of pump elements depending on the number of propulsion revolutions

$$Q_{\text{mortar}} = Q_{\text{th}} \times 0,7$$

(Q = output volume, th = ton per hour)

Number of revolutions (r.p.m.)



3 Safety

3.1 Correct use

This machine has been designed and built for a safe operation under the current technical standards. However, certain danger can emanate from the machine when making an inadequate use of it or when using it for a different purpose than the ones explained within the operation instructions.



*Pay attention to this sign
in this chapter!*

3.2 Danger signs

Any operation needing special care and caution has been specifically marked:

This sign within the instruction book indicates every task that could involve certain danger for the life and health of a person when making an inadequate use of the machine parts. Please adhere to the operation instructions and work with special care. Furthermore, please respect the general safety indications and accident prevention measures referred to the construction field.



This sign is used for all operation tasks where the instruction book shall be read.



This sign is used for all operation tasks that could cause some danger to some object.

ATTENTION!

3.3 Safety operation indications

- The machine shall be controlled against visible damages before its start up. Special attention is to be paid to the electrical supply wires, connections, and couplings between the hose or tubes to transport material.



- Any work to the machine electrical board can only be performed by the skilled staff of the Technical Service or by an electricity expert, always under the technical electricity regulations, that is to say, low tension regulations.



- The connection to the supply system shall be protected through a protection switch for default current (electricity supplier for building sites).
- Before eliminating operation failures and before cleaning and maintaining it, the V1 machine main switch shall be turned off, its joint disconnected from the supply system and for a complete safety, the main switch shall be secured, when needed, with an utmost security padlock.
- Special attention is to be paid to the following points: **ATTENTION!**
 - The protective screen on top of the vessel skip or material deposit shall be firmly secured by the device made to that aim!
 - This security device acts directly over the automatic stop system of the main engine.
 - Please do not put your hand into the cone material outlet!
- When working with the materials pumping machine all general safety and accidents prevention regulations for the building sector shall be abided by.

3.4 Machine Safety Indications.

- The machines can be operated only by trained and trustworthy persons (heads of team) who have been designated by the manager and are instructed in the operation and maintenance of the same, and who are familiar with them.
- The machine is to be placed on a stable surface, and needs to be secured against involuntary movements.
- The machines with electric start up need to be connected to a special supply (normally the current distributor for building sites) as under regulations.
- When working at tall building sites, the machines need to be located either outside the danger areas or the said building sites need to be protected by protective roofs against falling objects.
- When the security devices of the machines fail, the operation of the machine needs to be interrupted until all failures are solved.

3.5 Personal protection equipment

- The employer shall make available the suitable means to protect the staff against noise, if the evaluation level at the workplace is higher than what it is established for the kind of place where it is located.
- The employees shall make use of the protection means against noises from an evaluation level of 90 dB (A).
- To eliminate obstructing elements, adequate protective glasses shall be worn. Protective glasses are glasses whose frame corresponds to the rule DIN 58 211, Part 2, and their security lens to the rule DIN 4647, Page 5.

3.6 Machine Security

Before starting the machine, all protection facilities need to be placed and ready to work correctly.

The pump VI meets all requirements of the European security measures for building machines, and to that aim all necessary security devices have been installed within the machine, both in the screen opening of the transport hopper and, optionally, in the vibrating grid.

At the materials transport hopper there is a security screen to prevent the introduction of any limb, and the subsequent danger to it. In the event the screen is opened for any reason, there is a security system (end of stroke), which acts immediately over the stop motion of the gearbox that transmits the rotation and functioning over the material feeding worm.



When using the vibrating hopper for excessively granulated materials, there is a security device that compels to disconnect the current plug of the vibrating hopper motor vibrator to be able to move it away from its correct position on top of the hopper.

When disconnecting the plug of the vibrating hopper at the electric board of the machine the rotation and functioning of the gearbox transmitting the material feeding worm rotation is stopped.



**Never touch through the
security screen!**

3.7 Special operation instructions

- The transporting pipes or hoses shall be secured in a way that the resulting forces are taken up by the adequate fixation points (hose hooks). This is specially applied to pipes or hoses which are quite elevated from the ground level.
- The transporting pipes or hoses shall be placed in a way that they cannot suffer any damage. In case of direction changes, the curvature circle cannot be smaller than six times the external diameter of the pipe.
- Use only high pressure hoses (40 bar nominal pressure) for original UTIFORM mortars with factory integrated couplings.
- Before starting the machine, make sure nobody is in danger because of its operation.
- When starting the machine, make sure the transporting pipe or hose has been sufficiently lubricated with what it is commonly known as lime washing, so that the material used can be easily pumped. Besides, no jams shall exist at the joints.
- Both at the activation or failure of the machine security devices, the operation of the same shall be stopped until the failure is found and repaired.
- Before opening the transporting pipe or hose systems or other components of the transporting system under pressure, make sure there is no pressure at all on the system.
- When obstructed, the machine shall immediately be disconnected to prevent a major obstruction. Generally, an obstruction within the mortar hose can be eliminated by introducing a water hose in the transporting direction and beating repeatedly on the engine hose until the material runs without difficulty.

Please be extra careful when clearing obstructions as there might be injury risk!

When clearing obstructions, take always into account that the mortar hose can be under pressure even when it is disconnected. Please pay attention to the hose manometer!

Please protect your eyes and face! Adequate protection glasses shall be worn!

Firstly, lighten the mortar hose under pressure by starting the pump reverse gear, to which aim the phase shift switch or reverser shall be connected in a different direction. Please look now at the mortar pressure manometer. Open the hose coupling while looking to a different direction and wearing the protection glasses. If for any reason pressure cannot evacuate, the hose coupling shall be secured with a building worker's rope, covering it with paper sacks. Then, the coupling levers can be started from a distance using a wire united to the coupling pins.

- No security / accidents protection device shall be altered or removed, and it shall be operated correctly.
- When cleaning or repairing the machine the main switch shall be turned off.
- Before starting the machine the following points shall be specially followed:
 - The protection screen on top of the wet mortar vessel shall be firmly screwed together.
 - All pump components shall be firmly screwed to the machine.
- The operation safety shall be checked any time the machine is started. As soon as any failure or a sign of it is detected, it shall be immediately eliminated, and if necessary the supervising staff shall be informed, or in the event of failure that may threaten the safety, the operation stopped.
- All accidents caused by the non-observance of the regulations for security and accidents prevention at work, or of the insurance company or by the law of the country where it is functioning or caused by negligence, the lawmaker shall make responsible to that person operating it or, in case it is not his/her responsibility because of the lack of training or of basic knowledge, then to the supervising staff.
- If needed, or at least once a year, an expert shall check the machine safety operating conditions. An expert is that person having a training and experience in the field, as well as sufficient knowledge about transport and mortar projection machines, and who is made familiar with the legal regulations for safety at work, accidents prevention regulations, instructions and generally accepted rules, so that the security conditions at work offered by the machine can be correctly assessed.

4 Technical Data

Machine.....	V1
Electric start up	400 V./50 Hz.
Feeding Engine Power	
- 1 Gear Version:	7.5 Kw. – 400 V.
- 2 Gear Version:	6.5 - 8 Kw. – 400 V.
Electric Power Connexion System.....	3P+N+T 32 A./6h.
Testing voltage.....	48 V./50 Hz.
Theoretical Output	8 to 10 m ³ /h. (*) (approx.)
Granulometry: 60/12.....	0 to 10-12 mm. (*) (approx.)
Transport distance	80 metres (*) (approx.)
Maximum operation pressure.....	10 to 30 bar
 Hopper Capacity	 150 litres (approx.)
 Loading height (without vibrating grid).....	 700 mm.
Length	2300 mm.
Width.....	700 mm.
Total Height	835 mm.
Weight.....	320 Kg. approx.

(*) Depending on the material, consistency and and worm dispenser.

4.1 Standard Equipment

- Self-adjustable 60/12 stator
- 60/12 Rotor
- Radio frequency remote control, with battery and charger.
- Standard feeding worm
- Accesories box (greasing gun, adjustment keys, cleaning balls, etc)
- 40 (20+20) metres of 50 mm mortar hose with couplings
- 25 metres of 5x4 mm² electric hose with a base.
- 1 EEC Conformity Certificate.
- 1 6 months Warranty.
- 1 Instructions book and a machine partsbook.

Options:

- | | |
|---|------------|
| - Complete vibrating grid | Ref. 46174 |
| - Electric remote control with on-off push botton (25 metres) | Ref. 39517 |
| - Electric remote control with on-off push botton (50 metres) | Ref. 39518 |

5 Installation and Starting-up

Put the solid materials pump in a horizontal position.

** Network cable and limiters

Make sure that the main switch is disconnected. Then, extend the network cable up to 5x4 mm² (from the engine power of 7,5Kw, a network cable of 5x4 mm² is needed). The pumps for solid materials have been factory designed for a three-phase current of 400 V /50 Hz.

The building site electric supplier needs to be equipped with a switch against defective current as under the established regulations. The jack box shall have the following limiters depending on the pumping engine power:

from 2,2 Kw to 4,0 Kw =	16 A
from 5,5 Kw to 7,5 Kw =	25 A
from 9,2 Kw to 15,0 Kw =	35 A

** Checking the turn direction

Fill in the mortar hose until the worm headstock is completely covered. Start the main switch of the circuit board. Connecting shortly the operation button, check the pump engine turn direction. The engine shall turn in the arrow direction (over the engine fan) (to the left). If the direction of the turn is incorrect, turn the reversal switch on the circuit board to select another turn direction.

ATTENTION! The pump shall never work dry. A dry operation and a wrong turn direction cause damages beyond repair to the stator.

** Worm pump pressure

ATTENTION! Too small cross sections in the mortar hose and too high transport pressures on them cause a major wear in the pump elements or stator.

**Laying of the mortar hose

Only original UTIFORM hoses will be used, high pressure resistant, with factory-assembled couplings. Depending on their length and section, these hoses are supplied under our reference numbers 38120 up to 38130. These hoses adapt themselves to the recommendations and prescriptions related to mortar transporting machines.

The mortar machine is connected either to the pump vent or to the mortar pressure control device, and is to be laid by the shortest distance and without any folds up to the building place where the material will finally be applied.

When working on a scaffold or upper stages, the hoses shall be firmly fixed without any folds by using the hose belts as under the security regulations.

**** Mortar pressure control device with return key**

The security regulations for machines and mortar projection pumps state it is compulsory to keep on checking continuously the transport pressure by means of a pressure discharge device. To thaim aim, we recommend to install, between the pump and the mortar hose, our mortar pressure control device with return key:

For Dn 50 pump outlet = Ref. Nr. 39516

ATTENTION! Please pay special attention to the cleaning of the hose couplings and its joints, as dirty or leaking joints may cause a clogging within the hoses.

**** Pump V1 Remote Control**

There are two possibilities depending on the machine equipment:

a) Radio Frequency Remote Control.

This system is made of a signal emitter inside the circuit board, a manual receiver which will be handled by the user, an aerial on top of the hood and which should not be surrounded by any obstacles, and a battery charger to connect it to the conventional electricity supply .

This system is as simple as the on-off one, but placed in the mobile emitter used by the operator. The selector switch at the front side of the circuit board is to be previously placed in the “manual” position for the system to be operative at the machine, enabling this way the handling of the same from both remote control and from the circuit board taps.

When pressing the green “on” botton a led is switched on in the emitter and the machine starts working.

If the machine stops suddenly, it can be due to a loss of signal between emitter and receiver, and then the process needs to be started again.

This remote control has got a battery saving system that, when no signal is transmitted, makes the emitter led of the “0-paro” position stop blinking after a short time and come to an off-state that saves battery energy.

The battery inside the transmitter to be protected has a capacity or sufficient endurance for a working day.

We recommend charging the emitter after finishing the working day, so that it is ready for the following one. This is as simple as connecting the charger provided with the machine standard equipment to a one-phase network voltage of 220 V. and the other end to the lower part of the emitter made to that aim.

b) Electric cable remote control with “on-off” push-button.

This system is as simple as connecting the remote control provided by Utiform to the white electric base situated at the lower side of the circuit board. The selector at the front side of the circuit board in the remote control position, for which any manipulation from the said circuit board will be disabled. The machine will only be started through the “on-off” button at the remote control box.

Afterwards, the electric cable shall be extended alongside the mortar hose for the machine to operate.

**** Hose lubrication**

Cloggings inside the mortar hoses can always occur. Dry mortar hoses are more likely to suffer a clogging. For that reason it is recommended, before starting to work, to wet or lubricate them by pumping water from the mortar hopper to the hoses or by connecting them to a water pipe.

A much better lubrication effect, and above all highly recommended by UTIFORM, is attained when using thick calcareous mud or liquid mortar lime washing, that shall be used specially as a lubricant when making coarse-grained mortars. In this case, the water from the material hopper is drained by opening the outlet at the lower part of the hopper. Once it is closed, approximately 2 buckets of lime washing are to be thrown to the mortar hopper to make them pump within the hose.

**** Mortar pumping**

Once the material hopper has been loaded with the mortar or material to be transported, the pump can be started using one of the two above mentioned remote control possibilities.

When the mortar hopper is almost empty after the pumping, and no more mortar is needed, the machine shall immediately be stopped, so that the stator never works empty, dry, nor that it draws air in, as its deterioration can be irreversible and losing any opportunity to claim under warranty.

**** Flow control (fit for machines with gear shifter)**

The V1 pumps for solid materials can be equipped, under order, with a maintenance-free gear shifter gearbox. Its advantage is that the output, due to the possibility of adjusting it without the staggering of the number of revolutions, is adapted perfectly to the transported material as well as to the work process. See "Worm pump outlets" diagram.

6 Work pauses

Generally, the machine operation can be interrupted at any time without any special measures if the mortar hopper or the hose are full, and provided that the mortar wrought time is not exceeded.

Before starting to work again, it is recommended to mix the mortar left with a trowel to avoid any future breakdowns and provide the mortar with renewed elasticity (mortar thixotropic material behaviour).

Mortar breakdowns often produce cloggings at the pump or stator, and with a thickened material we run the risk of a dry operation of the pump in the materials deposit due to tunnel formations.

The operation breaks between two mixing operations do not need the conveyor cleaning if following points are observed:

- During breaks at work, the wet mortar shall not thicken nor become wrought at the hopper, stator or hoses.
- If a break at work is made longer, it is recommended to make a last loose mix or to clean the machine.

7 Operation and maintenance

Please make sure that during all maintenance works, inspections and repairs carried out, the machine is not started up involuntarily.

The V1 machine has been designed to need the minimum maintenance care. However, we kindly ask you to follow the indications below step by step:

Both machine and hose shall be cleaned daily or before long work breaks as follows:

1. Pump until the mortar hopper is as empty as possible, but being careful that the pump does not work dry.
2. Evacuate hose pressure by opening the pressure discharging key at the pump outlet. Only after the mortar pressure manometer which is installed in the mortar hose shows no pressure at all, the mortar hose can be disconnected from the mortar pressure control device.

ATTENTION! Even when the machine is off, the mortar hose is under a high pressure, especially when there is a clogging. This is the reason why it is so necessary to evacuate pressure before disconnecting the hoses. To disconnect the hose couplers please wear protective glasses and look aside!

3. Clean the stator outlet with a lot of clear water and check if the manometer works correctly.
4. Open the drainage outlet of the mortar hopper and clean it thoroughly with clear water.
5. Close the drainage outlet and fill the mortar hopper with clear water. Then start the pump shortly until only clean water comes out of it.
6. Introduce the two rubber balls within the mortar hose and connect it to the machine outlet or to the water pipe. This way the wearing of the pump parts is reduced.
7. Start the pump or open the water tap. The water pushes the rubber balls as if it was a plunger and expels the mortar left at the hose. If needed, repeat this operation as many times as it is necessary until only clean water runs out of the hose.

ATTENTION! Never clean the hoses with water and without rubber balls, as the mortar cementing material is evacuated and there are sand rests at the hose that, when starting the machine again, cause important cloggings.

8. Impregnate the mortar deposit with an appropriate concrete solver or with a deshuttering liquid, as this way we avoid the mortar to get firmly adhered, and afterwards the machine can be cleaned only with water.

9. The circuit board shall always be dry and without dust inside. If it was not so, it can be vacuum cleaned but checking in advance that the plug is disconnected to the electricity supply.
10. Blowing with compressed air is not recommended, as the dust lifted is deposited afterwards on the connexion contacts and may spoil them or make them useless.

ATTENTION! These rubber components shall not get in contact with the deshuttering liquid!

Never spray the engine or the circuit board. Short circuit danger!

11. Grease daily with machine lubricants the lubrication connector at the engine flange until the grease brims over the mortar hopper joint. Check the joint attrition.

The plase to be greased is indicated by a signalling sticker.

VERY IMPORTANT!

Recommended lubrication grease: multiuse grease type LÍTICA 2 EP or LÍTICA 3 EP.

All maintenance and lubrication works will only be made with the network plug disconnected, making sure that no unexpected connection occurs.

Check that the machine is free of voltage.

12. The protection screen and other security devices shall not be taken off or disconnected while the machine is operating. Any manipulation of this kind of devices may cause danger to the operator using the machine, undertaking at that very moment the responsibility of it.
13. The gearboxes shall be lubricated during all their service life. However, if grease overflows, grease MULTIPURPOSE or a similar lubricating substance is to be put on again. Tot his respect, it is necessary to pay attention and not exceed the prescribed amounts.
14. Check every 100 hours service the butt rubber joint attrition located inside the engine flange. Check the feeding worm attrition.
15. Clean off dust and mortar from the engine cooling fan.
16. When finished working, take out and coil the network cable.
17. Always fix the loose couplings when performing maintenance and repair works.
18. When the machine is operating, it is essential to keep the electric control unit closed.

8 Fittings

You can expand the range as well as improve its equipment handling by using the original V1 fittings.

You can find extra fittings and all necessary spare parts within our detailed prices, tools and spare parts catalogue.

Use only original spare parts and fitting for the purchased equipment!



The contents of this brochure or any of its parts shall not be copied, without our written consent. All technical details, drawings, etc. are protected by regulations related to company ownership rights.

We reserve our right to introduce technical changes.

9 EC Certificate

As under CE Directive about 98/37 CEE machines

Signature:

UTIFORM TECHNOLOGIES S.L.
Pol. Ind. Las Maromas, Esq. C/ Italia y Francia
 03160 ALMORADÍ (Alicante) ESPAÑA

declares under its own and exclusive responsibility, that the construction of the machine

Model : **V1**
 Machine number
 Description : **Electric worm pump continuously conveyor of special materials**

Complies with the essential requirements of the **R.D. 1435/92** (27-11-92) on Machinery Safety, which was amended by the **R.D. 56/95** (20-01-95) and the **R.D. 1215/97** (18-07-97) which established minimum health and safety provisions for employees' use of work equipment.

In addition, it abides by all provisions of the following EC directives:

98/37/EEC Directive (22-06-98) on the approximation of the member states legislations about machinery, which was amended by the directive 98/79 (27-10-98)

73/23/EEC Directive (19-02-73) on the approximation of the member states legislations about electric material used for certain voltage limits (low voltage), amended by the 93/68/EEC (22-07-93).

Directiva 89/336/CEE (19-02-73) on the approximation of the member states legislations regarding electromagnetic compatibility, which was amended by the directives 92/31/EEC and 93/68/EEC, and incorporated into the Spanish legislation by the **R.D. 444/1994** (11-03-94), and establishing the conformity evaluation procedures as well as the protection requirements related to electromagnetic compatibility between equipments, systems and installations, and which was amended by the **R.D. 1950/1995** (01-12-1995).

Harmonized rules specially applied (or parts of them):

EN 292-1	EN 292-2	EN-292-2/A1	EN-294
EN-418	EN-842	EN-60204-1	

The present declaration of consent shall be limited to the liability of the referenced product, in the event that the vendor or distributor on their own behalf and at their own risk, and without our express authorisation, carries out changes to the machine, makes a different use of them than what specified or works in a country out of the territory regulated by the EC 98/37 EEC rules, or in the event that unauthorised third parties repair the machine with assembly parts and wearing.

Almoradí, on

2006

Miguel Ángel Peco
Ing. Téc. Industrial

10.2 Spare part order form

UTIFORM TECHNOLOGIES, S. L.
Servicio Técnico – Post-venta
Pol. Ind. Las Maromas, Esq. C/ Francia – Irlanda
03160 – ALMORADI
Tel. + 34 96 570 29 82 Fax: + 34 96 570 29 83

Delivery Address.....

Town.....Province.....PC.....

Client.....

Name/nº.....

Company.....

Address.....Town.....PC.....

Telephone..... Fax.....

Type of dispatch NORMAL URGENT

Type of delivery Full delivery Partial delivery

Machine model: _____ Serial number _____

This order is in accordance with the current sales conditions of UTIFORM.

REFERENCE	DESCRIPTION	AMOUNT

Date:

Signature