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1. GENERAL INFORMATION

WARNING: Please read and understand perfectly the present instruction before using the machine.

SIMA S.A. thanks you for your trust in our products and for purchasing the HALCON 60 POWER TROWEL model

This manual provides you with the necessary instructions to start, use, maintain and in your case, repair of the present machine. All aspects as far as the safety and health of the users is concerned have been stated. Respecting all instructions and recommendations assures safety and low maintenance. As such, reading this manual carefully is compulsory for any person responsible for the use, maintenance or repair of this machine.

As such, reading this manual carefully is compulsory for any person responsible for the use, maintenance or repair of this machine.

It is recommended to have always this manual in an easily accessible place where the machine is being used.

2. GENERAL DESCRIPTION OF THE MACHINE

- The HALCON 60 POWER TROWEL models are intended to perform to functions: troweling + edging
- Special machine for small areas, both on edging and troweled areas, thanks to the protective ring of blades which allows us to approach the maximum allowed to the wall without the blades stumble on the wall.
- Allows Trowel through doors.
- HALCON 60 POWER TROWEL models are designed and constructed to smooth and finish horizontal surfaces of concrete through the rotary motion of four-bladed rectangular no-wear steel. The motion is transmitted through a gearbox driven by a gasoline engine or electric, according to versions, and progress over the area to try is manually controlled by a single operator.
- HALCON 60 POWER TROWEL models have a wheel-driven mechanism, which regulates the inclination of the blades at all times to suit the characteristics of the surface being treated, the wheel is located on the handlebar height driving machine and the scope of the operator thereby facilitating the control of the inclination of the blades.
- HALCON 60 models can be fitted with two types of blades in relation to the area to work, finishing blades when you need a blade finish and floats for the preparation or initial surface preparation work(float disk as well), these latest are mounted over the finishing blades.
- Transmission to generate the motion of the rotor is made by flexible belt and a clutch, the transmission is protected by a guard that prevents access to moving parts.
- Handlebar height adjustable to suit the operator and foldable on the engine which makes these models a light engine to be moved on vehicles.
- The machine has a suspension hook for transport or lifting by cranes.
- They have a Standard Security System with automatic shutdown, integrated on the handlebar.

Any other use given to this machine is considered inappropriate and may be dangerous, so is expressly prohibited.

2.1 PICTOGRAMS

Pictograms included in the machine entail the following:



**READ INSTRUCTIONS
MANUAL**



**USE HELMET AND EYE AND
AUDITIVE PROTECTION**



USE SAFETY GLOVES



USE SAFETY BOOTS

2.2 TRANSPORT

The machine is packed in the factory on a pallet, easy to lift with forklifts or hand pallet trucks. Due to its dimensions and weight (See the technical features table in this manual), it is possible to transport it in light vehicles.

When it is needed to transport the machine for too long distances by vehicles, cranes or other means of elevation, the latter should be safe.

By lifting the machine with cranes or hoists, normalised slings must be used. These are chosen en function of the required work load limit, the way of use and the nature of the load. The choice is correct if special norms of use are respected.

ATTENTION: To avoid any possible danger, stay away from elevated loads and be careful with their possible displacement during transport, whether during lifting or mooring. Therefore, it is essential to choose the correct slings and remain particularly vigilant in sensitive operations (elevation, coupling, mooring or discharging).

CAUTION: During transportation of the machine is never to be reversed nor support on either side, must be supported by its base.

3. ASSEMBLING INSTRUCTIONS

When you open the package you will find the body of the machine with the handle removed, an instruction manual and warranty. Petrol engine versions will also include an instruction manual of the engine itself.

HALCON60 model are delivery with a set of blades and float disc.

To mount the machine will be deployed the handlebar and put it in working position blocking the mechanism of rotation of the handlebar itself.

To mount the float disc will need to put this on a flat surface and place the machine with finishing blades mounted on the float blades, trying to place the four arms of the machine between the spaces between the elements incorporated on the float disc, once achieved this position will only be necessary to put the machine up and when the arms start moving automatically the disc will stay in proper position.

3.1 MACHINES WITH PETROL ENGINE.

HALCON models are supplied with engine oil and without fuel.

Manual must be read of the engine itself.

Avoid fuel linking on the machine filling the tank due can be dangerous or affects some element of it.

Before starting the engine check the oil level in the crankcase by placing the machine on a flat surface and the engine stopped, if necessary, fill to complete the level with the type of oil recommended by the engine manufacturer.

3.2 MONOPHASE ELECTRIC MOTOR

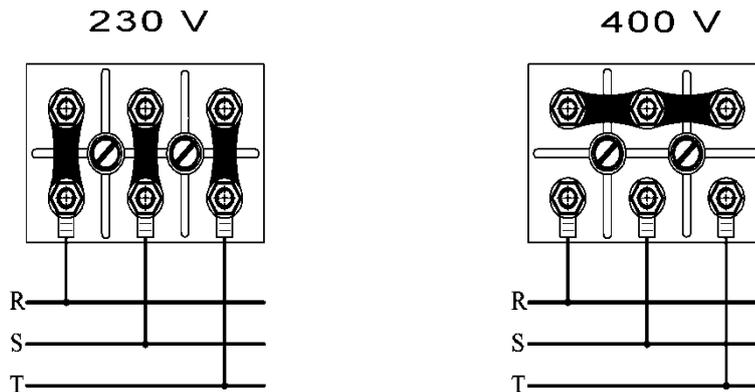
These models are supplied with one-phase 230 electric motor with switch sockets. The extension cord used must have a minimum area from 4x2, 5 mm² up to 25 meters length. For a greater distance it will be 4x4 mm². At one end is placed the extender or air base that includes the machine in endowment, and the other an air jack which is compatible with the output of the switchboard where you go to plug.

The single-phase electric motor models are set in factory to work at 230 V.

3.3 THREE PHASE ELECTRIC MOTOR

These models are supplied with three-phase 230/400V electric motor with switch sockets. The extension cord used must have a minimum area from 4x2, 5 mm² up to 25 meters length. For a greater distance it will be 4x4 mm². At one end is placed the extender or air base that includes the machine in endowment, and the other an air jack which is compatible with the output of the switchboard where you go to plug.

The three-phase electric motor models leave the factory are always connected to work at 400V. If necessary connect the machine to a supply voltage of 230V, we change the position of the flat in the motor terminal box, as shown in the figure below:



4. INSTRUCTIONS FOR SETTING AND USE.

ATTENTION: Must follow all safety recommendations outlined and comply with regulations for the prevention of occupational hazards of each place.

It must also be read specific instructions petrol engine (Instruction book's own engine).

4.1 START-UP. STARTING AND STOPPING PETROL ENGINE MODEL

- Security locks the handlebar lever **M, Fig.3** by pressing against the pipe and pressing the lock button. **During the start-up operation will be fixed** in this position even if you release the handlebar.
 - Check engine oil level. If it is below the minimum will not start.
 - Open the fuel valve engine.
 - Close the throttle. (Not necessary if the engine is hot or the temperature is high).
 - Place the handlebar lever gas **A, Fig.3** the beginning of his journey, during slight acceleration.
 - Turn the engine switch to the **ON** position.
 - Start the engine pulling the recoil starter handle.
 - Let the engine warm up at the low rpm and open the throttle. The machine would now be enabling to begin the work planned.
- To stop the engine, opening up the safety lever **M, Fig.3** pressing it against the tube without touching the block button. When you release the handle, the engine will stop. Put the motor switch to **OFF** and close the fuel valve.

For details on operations in the engine, see instruction book's own engine.

4.2 START-UP. STARTING AND STOPPING ELECTRIC MOTOR MODEL

For versions with electric motor, connect the extension cord to the switch outlet **A, Fig. 4** and the engine will start by pressing the green button.

To stop machine press the red button **B. Fig. 4.**

Note that the blades should rotate in the same direction as clockwise. If not so, it will exchange between it two phase wires at the air base from one end or in the air plug the other end of extension cable.

HALCON models, **NOT TO BE USED IN THE RAIN. ALWAYS WORK WITH GOOD LIGHT CONDITIONS.**

4.3 REGULATION OF THE BLADES

HALCON Power trowel has a mechanism that regulates the inclination of the blades at all times to suit the characteristics of the surface being treated. This mechanism is at the wheel **V, Fig.5** on the end of the handlebars and rotating it in either direction is obtained by varying inclination of the blades.

4.4 TROWELING PERFORMANCE

We recommend the use of different blades as they are to carry out preparatory (floating blades or floating disc) or finishing the surface to be treated.

SIMA SA manufactures different types of blades, preparatory (floating) and finishing. Floating blades are mounted paddles coupled on the finishing blades and taking into account the spin is in the sense of clockwise. To mount preparation (floating) blades is necessary for the Trowel has placed the finishing.

Gasoline-powered models, once started the engine, the operator grasp the handle by pressing the safety lever **M, Fig.3** until it is unlocked. Then, without releasing the lever, let accelerate slowly the motor acting on the gas lever **A, Fig 3**. When the acceleration reaches a certain point, the blades begin to rotate commencing the planned work.

In general, the acceleration is adequate with the maximum engine speed, allowing the clutch to work in optimal conditions. While moving the Trowel, the operator must act on the regulatory mechanism **V, Figure 5** to achieve the proper angle of the blades at all times.

WARNING: The stop lever is a main security component that works by stopping the engine automatically when it is released by a neglect or loss of control of the operator. As a result, you should be aware that once unlocked, and in normal working conditions, have to stay down on the handlebars.

When the concrete surface is too hard to be towelled, moisten it will be necessary to continue work in good condition.

electric motor models, once the engine running, the operator grasp the handlebar lever pressing the idler pulley until the movement is transmitted to the blades. Keeping the lever pressed was scheduled to start on work by acting on the wheel of regulation **V, Fig.5** when necessary to achieve the proper angle of the blades.

Releasing the lever will stop the blades while the engine is running.

Note that the blades should rotate in the same direction as clockwise. If not so, it will exchange between it two phase wires at the air base from one end or in the air plug the other end of extension cable.

4.5 SAFETY RECOMMENDATIONS

- For the first time use. The operator must extreme caution to the maximum until you gain some skill and know clearly the reactions of the machine.
- Before starting up the machine please read the instructions and make sure safety norms are respected. Learn how to stop the machine in a fast and safe way.
- Make sure to use this machine in perfect technical condition and fully operational.
- Do not operate the machine if you have not assembled all the protections and safeguards that have been designed.
- It is recommended to use safety glasses, safety boots, gloves etc. Please always use approved materials.

- Always use Individual Protection Equipment (IPE) in accordance with the type of work you are effectuating.
- Prohibit strangers to access the place of work of the machine.
- Work clothes are not supposed to have loose articles that can cling into movable parts of the machine.
- When moving the machine, always do so with the engine stopped.
- To use gasoline-powered machines, the workplace should always be well ventilated because the combustion gases emitted by the exhaust are toxic.
- Take care not to touch especially engine exhaust with the machine in operation as it reaches high temperatures can be maintained for several minutes after shutdown.
- Note also the safety recommendations by the engine manufacturer in his book of instructions. (Petrol engine).

SIMA, S.A. is not responsible for the consequences possibly generated but the inadequate use of the HALCON power trowel model.

5. MAINTENANCE

Maintenance operations should be performed by people who know the machine and its functioning.

The most basic are summarized below and some recommendations for implementation:

- Any machine handling should be done with the engine stopped and, if electrically powered machines, the power cord must be disconnected.
- Always consider the safety recommendations mentioned in this manual as well as appearing on the engine.
- Do not use pressurized water to clean circuits and electrical components.
- If the machine is not covered, cover it with waterproof material.
- Check the gearbox oil level through the viewfinder.
- **ATTENTION: the partial or total lack of oil in the gearboxes causes premature wear of its component parts. The oil to use in the gearbox must meet the following characteristics: Designation ISO VG 320 and CLP-320 according to DIN 51502.** If necessary replace oil, remove the filler cap located on the left side of the gearbox and fill to complete the recommended oil level with good quality and specific for treat bronze elements, for example, those listed below:

<u>FABRICANTE</u>	<u>REFERENCIA</u>
FUCHS RENOLIN -----	MP 320
CASTROL-----	ALPHA SP 320
BP-----	GRXP 320
MOBIL-----	MOBILGEAR 632
SHELL-----	OMALA-320
REPSOL-----	SUPERTAURO 320

- **For gasoline engines**, control the level of engine oil by placing the machine in a horizontal surface. Engines mounted on the HALCON Power Trowel, are alarmed by low oil level, so that when the level falls below the minimum the engine will stop and does not start until you have added enough oil. Use oil SAE 15W-40
Necessary maintenance operations on the engine are described in its own book of instructions, and the frequency with which to perform them. **It is necessary to comply with all maintenance operations specified in the instruction books of the engine.**
- Clean the machine as often as necessary, as the normal working process leads to an accumulation of dust and concrete. If water pressure is used careful not to direct it to the engine.

- Be sure to remove the machine tools and devices used in each maintenance operation.
- Replace as soon as any electrical wire breaks or it shows any kind of cuts.
- If anomaly is found, checking the malfunctioning machine must be done by a qualified technician as soon as possible.

It is prohibited to independently make any change in some parts, components or characteristics of the machine. SIMA, S. A. shall in no case be responsible for the consequences that may derive from a breach of these recommendations.

5.1 REPLACING THE BELT

The transmission belt **T, Fig.7** is an item that wears out and deteriorates with the normal use of the machine and it must be replaced periodically. So we will withdraw the guard of the pulleys **P, Fig.7** loosening its screws and make those changes. This operation is not difficult because the engine is stopped and the belt tension is loosening.

5.2 BLADE REPLACEMENT

HALCON Power Trowel blades **P Fig.7** are made of special material that supports the continuous wear friction with the concrete, but since this is a highly abrasive material, it will inevitably wear in normal use and it will necessary replace them every so often.

In order to extend the maximum duration, blades are designed to turn 180 degrees in the horizontal plane, which is given the option to wear the two edges of the blade.

To get around them or replace them, shall be loosening the screws **T, Fig.7** that fix the blades to the hexagonal arms of the machine and make the corresponding change back to tighten the screws again. In case it is also necessary to replace the screws, we recommend using DIN 931 M8x40 of 8.8 qualities

6. SOLUTIONS TO MOST FREQUENT ANOMALIES

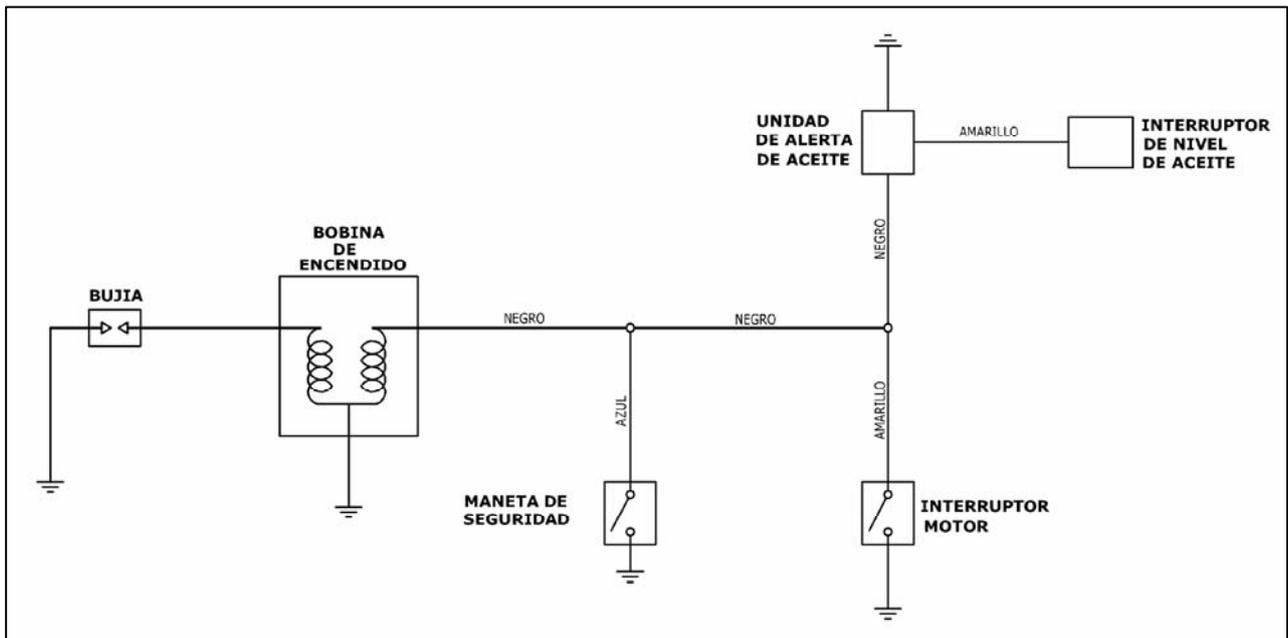
ANOMALY	CAUSE	SOLUTION
Petrol engine does not start.	Low oil level alert is on.	Add oil
	Fuel clock closed	Open fuel clock
	Motor switch in OFF position	Turn to ON position
	Safety handle open	Press and lock handlebar
Electrical motor does not start	Loss of electrical supply	Check the general electrical outlet. Revise the correct position of the differential and thermal. Verify perfect state of extension cable and correct fit on both extremities.
	Damaged switch	Replace
Gasoline engine does not accelerate	Petrol cable interlocked or loose	Revise lever and cable accelerator
	Engine problems	Revise by technician
Blades do not turn with the motor	Interlocked or damaged clutch.	Revise and replace if necessary
	Damaged belt	Replace
	Reducer interlocked or damaged	Replace damaged elements.
Machine bumps on the working surface	Dry concrete rests in the central plate.	Clean
	Blades irregular worn	Change
	Loose central plate	Tighten sufficiently
	Bended arms	Replace.

7. TECHNICAL CHARACTERISTICS

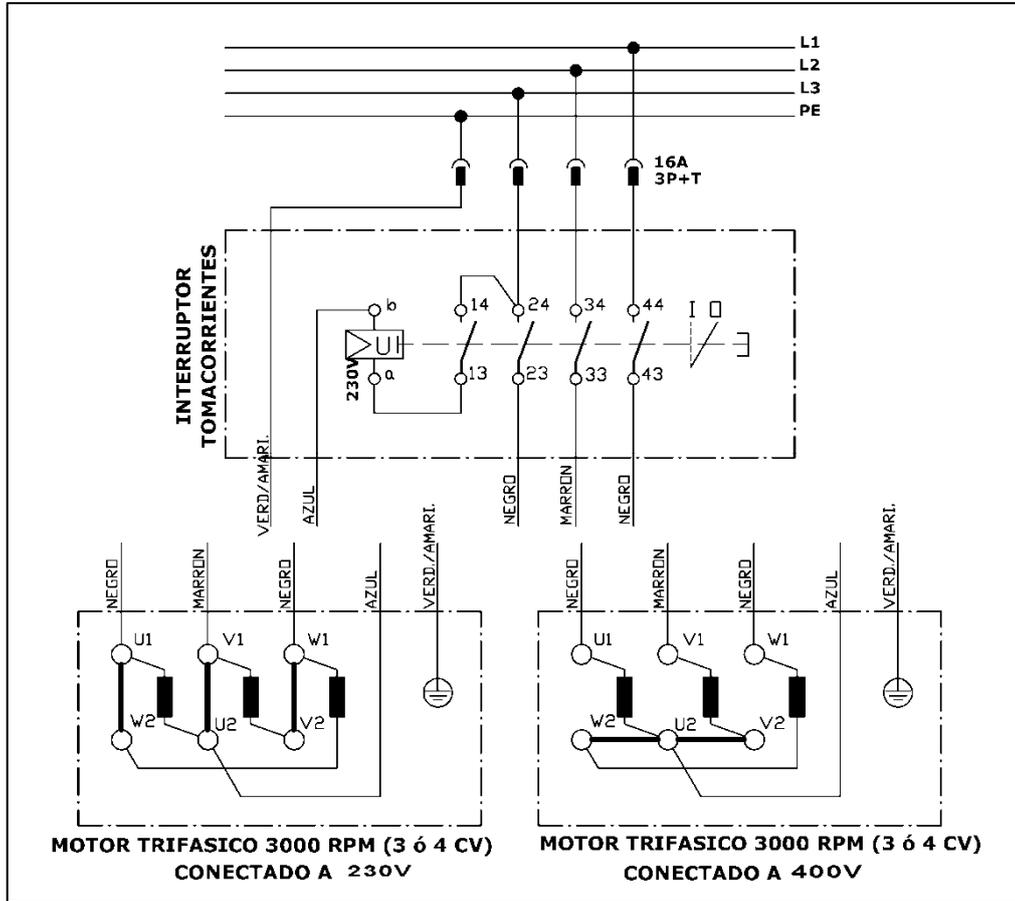
DATA	HALCÓN-65		
	G4H	E2 THREE.	E2 SINGLE.
ENGINE	HONDA GX120	THREEPHASE	SINGLEPHASE
FUEL TYPE	Gasolina	----	----
START-UP	Manual	Electric	Electric
MAXIMUM POWER	4HP/3KW	2HP/1,5KW	2HP/1,5KW
ENGINE MAXIMUM R.P.M	3600	2800	2800
BLADE MAXIMUM R.P.M	130	90	90
REGULATION BLADE ANGLE	Mechanical	Mechanical	Mechanical
Ø EXTERIOR RING	606	606	606
Ø DIAMETER DESCRIBED BY BLADES	600	600	600
DIMENSSIONS (L x W x H)mm.	1390 x 606 x 913		
WEIGHT Kg.	62	63	63

8. ELECTRICAL SCHEMES

HALCON-65-G4H

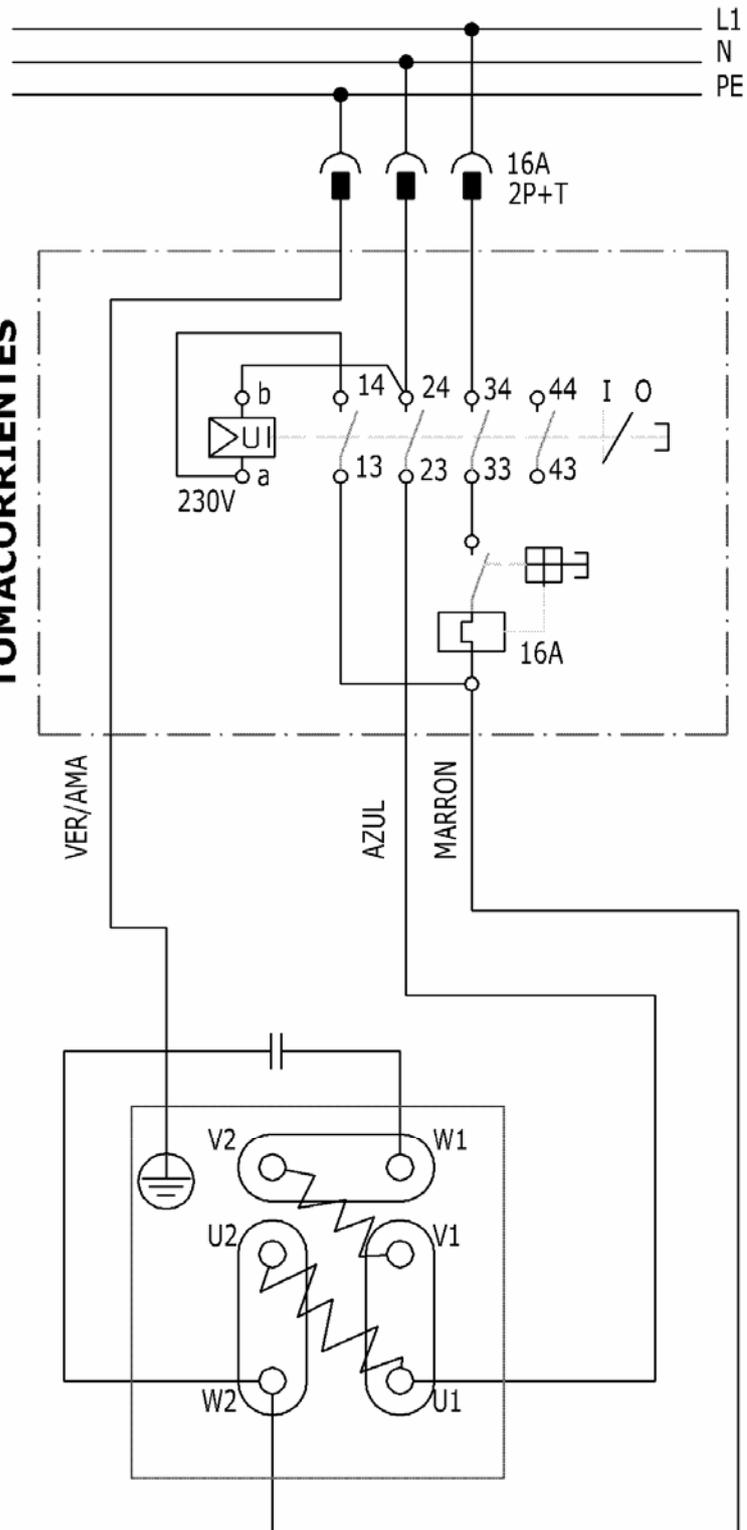


THREEPHASE HALCON-65-E2



SINGLEPHASE HALCON-65-E2

**INTERRUPTOR
TOMACORRIENTES**



MOTOR MONOFASICO 230V

9. WARRANTY

SIMA, S.A. the manufacturer of light machinery for construction possesses a net of technical services "SERVI-SIMA".

Repairs under warranty made by SERVI-SIMA are subject to some strict condition to guaranty a high quality and service.

SIMA S. A. guarantees all its products against any manufacturing defect; to take into account the conditions stated in the attached document "WARRANTY CONDITIONS". The latter would cease in case of failure to comply with the established payment terms. SIMA S.A. reserves its right to bring modifications and changes to its products without prior notice.

10. SPARE PARTS

The spare parts for HALCON Power Trowel model, manufactured by SIMA, S.A. are to be found in the spare parts plan, attached to this manual.

To order any spare part, please contact our alter-sales service clearly indicating the serial number of the machine, **model, manufacturing number and year of manufacturing that show on the characteristics plate.**

11. ENVIRONMENT PROTECTION



Raw materials have to be collected instead of throwing away residuals. Instruments, accessories, fluids and packages have to be sent into specific places for ecological reutilisation. Plastic components are marked for selective recycling.



R.A.E.E. Residuals arising of electrical and electronic instruments have to be stored into specific places for selective collection.

12. DECLARATIONS ON NOISES

The acoustic level emitted by the MACHINE:

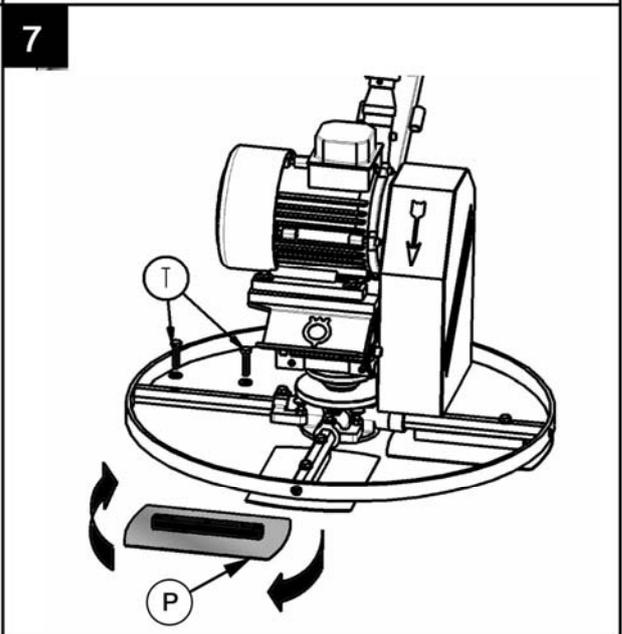
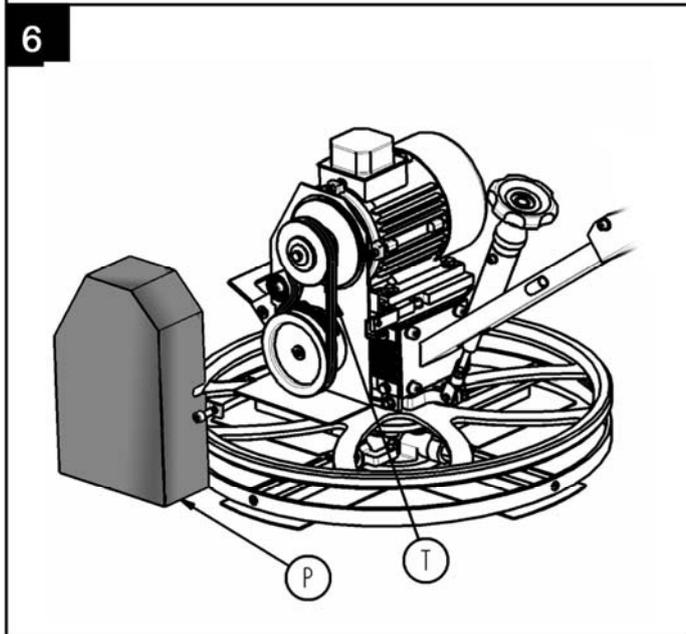
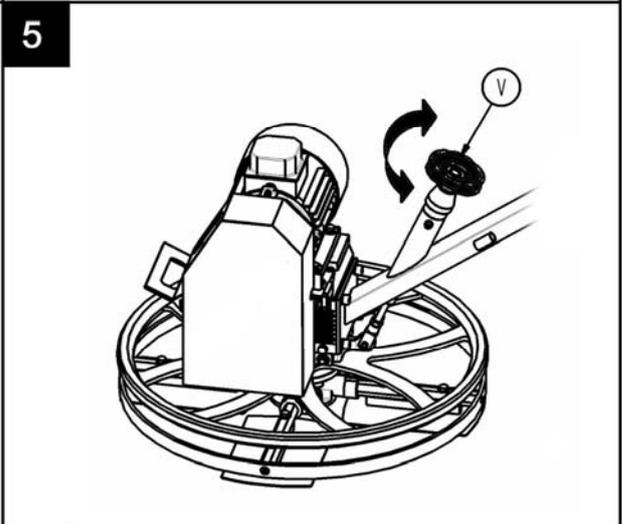
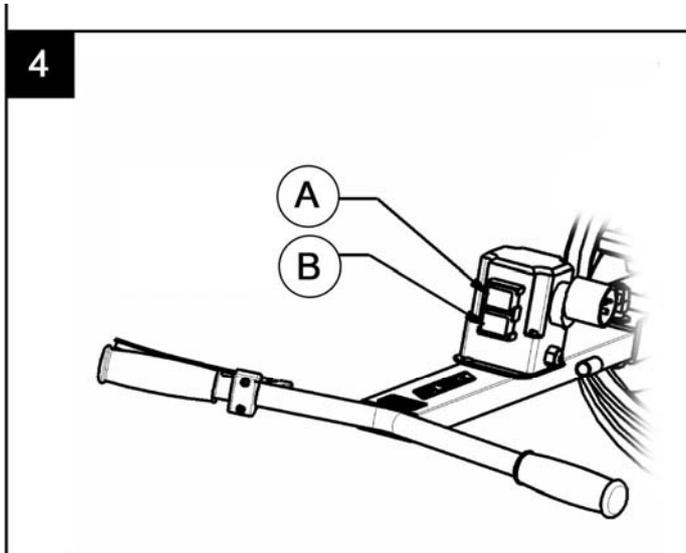
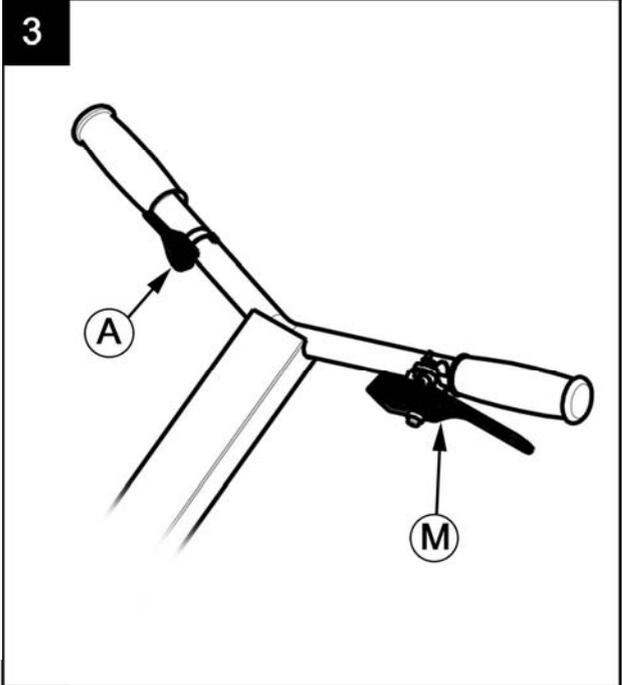
HALCON-65-G4H LWA (dBa) 104

HALCON-65-E2 LWA (dBa) 104

13. DECLARATIONS ON MECHANIAL VIBRATIONS

The level of vibrations transmitted to the hand-arm:

MODEL	LEFT HAND m/ s ²	RIGHT HAND m/ s ²
HALCON-65-G4H	0,79867090512	0,99340753457
HALCON-65-E2	0,79867090512	0,99340753457





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