ENARCO, S.A.

FRATASADORAS TIFON 600/900/1200 CON MOTOR ELÉCTRICO O DE GASOLINA

TIFON 600/900/1200 POWER TROWELS WITH ELECTRIC MOTOR OR PETROL ENGINE

TRUELLE TIFON 600/900/1200 AVEC MOTEUR ELECTRIQUE OU DE ESSENCE

es

en

fr

Manual de instrucciones
User's manual
Manuel d'instructions

MX-TIFON-1604

INDEX

en

1 INTRODUCTION

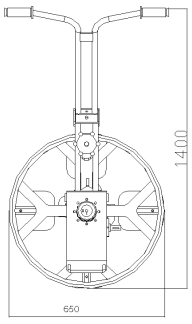
Thank you for trusting the **ENAR** brand.
For the maximum performance of the equipment, we recommend to read carefully the safety recommendations, maintenance, and usage listed in this manual.
Defective parts should be replaced immediately to avoid major problems.
The effective longevity of the equipment will increase if the manual instructions are followed.
We will be glad to help you with any comments or suggestions in reference to our equipment.

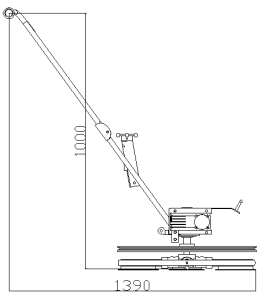
2 TECHNICAL SPECIFICATIONS

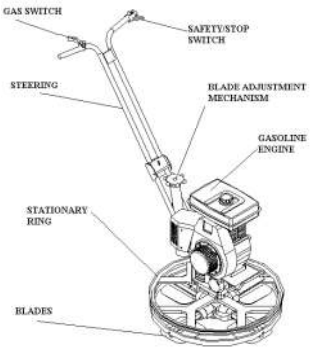
2.1 PETROL ENGINE MODELS

Model	WEIGTH (kg)	PETROL ENGINE	ENGINE POWER	DIMENSIONS (LxWxH) (mm)	MAXIMUM TORQUE (rpm)
TIFON 600 H	65	HONDA GX160	5,5 CV	1400 x 650 x 1000	115
TIFON 601	52	HONDA GX160	5,5 CV	1400 x 650 x 1000	120
TIFON 602	52	ENAR G160	5,5 CV	1400 x 650 x 1000	120
TIFON 603	52	HONDA GX160	5,5 CV	1400 x 650 x 1000	120
TIFON 604	52	ENAR G160	5,5 CV	1400 x 650 x 1000	120
TIFON 900 H	85	HONDA GX160	5,5 CV	2100 x 1250 x 1040	115
TIFON 900 HF	96	HONDA GX160	5,5 CV	2100 x 1250 x 1040	115
TIFON 900 HF20	96	HONDA GX200	5,8 CV	2100 x 1250 x 1040	115
TIFON 901	72,8	HONDA GX160	5,5 CV	2100 x 1250 x 1040	127
TIFON 903	72,8	HONDA GX160	5,5 CV	2100 x 1250 x 1040	127
TIFON 904	98	HONDA GX160	5,5 CV	2100 x 1250 x 1040	127
TIFON 905	72,8	ENAR G160	5,5 CV	2100 x 1250 x 1040	120
TIFON 906	72,8	ENAR G160	5,5 CV	2100 x 1250 x 1040	120
TIFON 907	83,5	HONDA GX270	9 CV	2100 x 1250 x 1040	120
TIFON 909	80,1	HONDA GX160	5,5 CV	2100 x 1250 x 1040	127
TIFON 910	80,1	ENAR G160	5,5 CV	2100 x 1250 x 1040	120
TIFON 911	80,1	HONDA GX160	5,5 CV	2100 x 1250 x 1040	120
TIFON 912	80,1	ENAR G160	5,5 CV	2100 x 1250 x 1040	120
TIFON 1200 H	117	HONDA GX270	9 CV	2100 x 1250 x 1040	115
TIFON 1200 HF	117	HONDA GX270	9 CV	2100 x 1250 x 1040	115
TIFON 1201	103,8	HONDA GX270	9 CV	2100 x 1250 x 1040	135
TIFON 1202	103,8	HONDA GX270	9 CV	2100 x 1250 x 1040	135
TIFON 1203	109,7	HONDA GX390	11,7 CV	2100 x 1250 x 1040	135

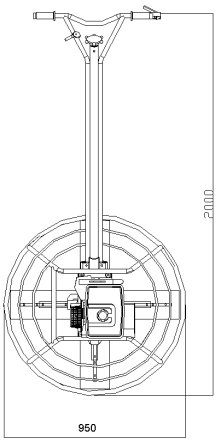
600 H

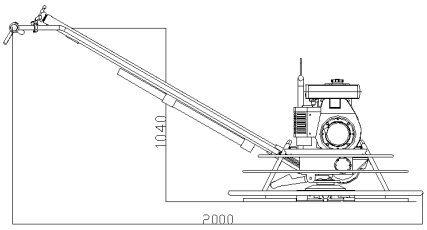






900 H


2000
950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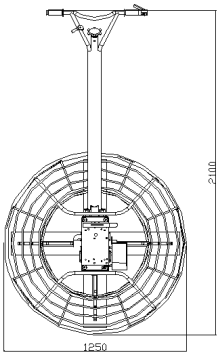
1200 H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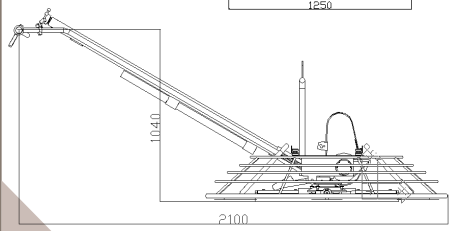
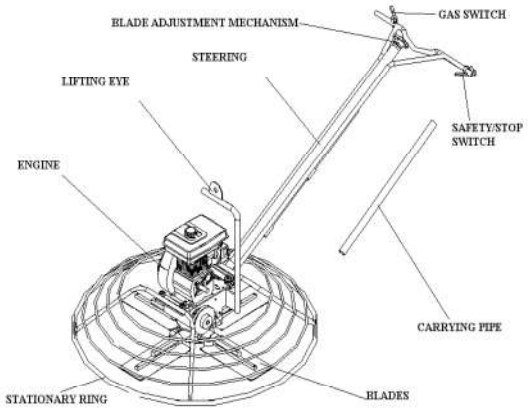
1250

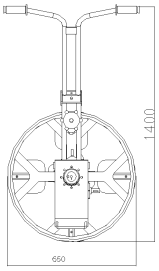

1040
2100

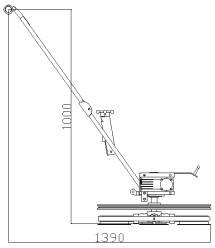

BLADE ADJUSTMENT MECHANISM
GAS SWITCH
STEERING
LIFTING EYE
SAFETY/STOP SWITCH
ENGINE
CARRYING PIPE
STATIONARY RING
BLADES

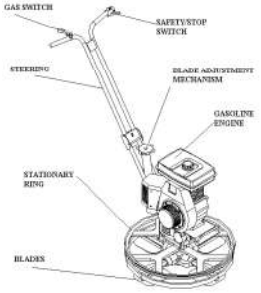
2.2 ELECTRIC MOTOR MODELS

Model	WEIGTH (KG)	ELECTRIC MOTOR (kW)	DIMENSIONS (LxWxH) (mm)	MAXIMUM TORQUE (rpm)
TIFON 600 E	65	2,2	1400 x 650 x 1000	115
TIFON 600 E3	62	2,2	1400 x 650 x 1000	115
TIFON 900 E	80	1,8-2,8	2100 x 950 x 1040	115
TIFON 900 EF	94	1,8-2,8	2100 x 950 x 1040	115
TIFON 1200 EF	107	2,6-3,1	2100 x1250 x 1040	115

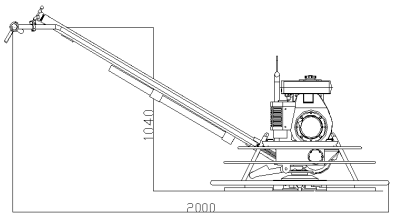
600 E

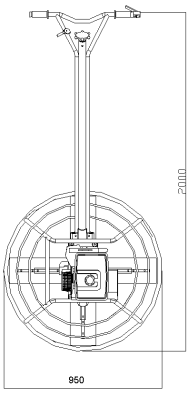


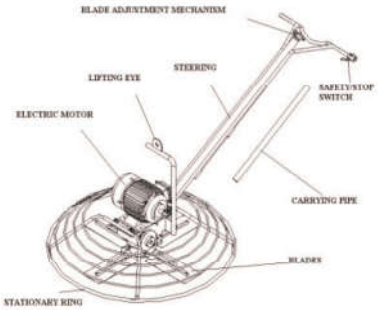




900 E







3 USAGE CONDITIONS

WARNING! READ AND UNDERSTAND EVERY INSTRUCTION.

GENERAL INSTRUCTIONS

Machine must be operated by **reliable operators who read and understand the operation manual of age above 18.**

Keep all unauthorized, untrained people and children out of the working area while the trowel is in operation.

Keep your working area **clean and well lit. Cluttered benches and dark areas** may cause accidents.

Know your working area! It is necessary to know possible obstacles, inclinations and underground utility lines.

Be observant of other workers, bystanders and other machinery placed in the working area.

Before starting the work, inspect **the machine thoroughly, check all safety devices, indicators and controls.**

Do not operate power tools in **explosive atmospheres**, such as in the presence of flammable **liquids, gases or dust.**

Do not work with a petrol engine in closed or poorly ventilated areas. **Concentrated exhaust fumes are dangerous to health.**

Never unattended the machine while the engine is running

Keep children and visitors away while operating a power tool.

Never start the petrol engine in **closed areas,** unless proper ventilation is ensured.

Do not abuse the cords. **Keep cords away** from heat, oil, sharp edges or moving parts.

Replace damaged cords immediately. Damaged cords **increase the risk of electric shock.**

Check the electrical cords for damage and worn. Damaged cords can result to **serious injuries**.

Keep the motor, switch and electrical cords dry.

Don't expose power tools to rain or wet conditions.

Never remove neutral grounding. Don't do any modification on the plug.

Always check the power supply before running the trowel. Using the wrong voltage supply will damage the motor.

Know the machine start up procedures. **Read the operator's manual**.

For the proper use of this equipment, please assure **that the operator has been correctly informed** of the content of this manual before using it.

SAFETY INSTRUCTIONS WHILE OPERATING THE MACHINE

Stay alert, watch what you are doing and use common sense when operating a power tool.

Do not use machines when **you are tired or under the influence of drugs, alcohol, or medication**.

Dress properly. Hard hat, heavy gloves, eye protection, ear protectors, safety shoes, dust mask or respirator are necessary

Do not wear loose clothes or jewelry. Loose clothes, jewelry, or long hair can be caught in moving parts.

Keep properly **fed and balanced at all times.**

Check all adjustments of the machine. Before start working, check the machine functions work properly.

Check the cracked, loosen, missing parts of the machine and replace them by a new one if necessary.

Do not operate the trowel if the steering is free.

Keep your hair, clothes and gloves away from moving parts.

Use safety equipment and check all safety devices before start the engine.

Hold the machine firmly.

Pay extra attention when operating the machine at the **edges of digs, holes, etc...** to avoid rolling over or falling down of the machine.

The operation of the machine may require walking backwards, so be aware of the **obstacles**.

Stepping in or tripping over such obstacles will cause the operator **to lose control of the machine and can result in injury.**

Be sure that **safety/stop switch** on your machine, is working properly. Ignition supply must be cut off at once in case of emergency.

Never disable or disconnect the safety devices.

Never fill the fuel tank while the engine is running, turn the engine off and allow it to cool before refuelling.

Never refuel near open flame or sparks, while smoking, and in poor ventilated areas.

Never overfill fuel tanks or fluid reservoirs. In the event of a fuel spill, do not attempt to start the engine until the fuel residue has been completely wiped up, and the area surrounding the engine is dry.

When you are going to leave the machine after termination or interruption of the work, **secure the machine from unauthorized use or accidental movement.**

TRANSPORTATION

When loading and transporting the machine, **fasten the machine with its lifting eye properly.**

Make sure the crossbars on the safety catches are in good condition if so equipped.

Never transport or hoist the machine when the pans are attached to the trowel.

Never hoist the trowel over areas where people are standing or working.

On a carrier, **secure the machine safely** to prevent its movement or its rolling over.

SERVICE

Service must be performed only by **qualified service technicians.**

In order your trowel operates safely and properly for a long period of time, periodic maintenance and occasional repairs are necessary.

Check the maintenance table to make the periodic maintenance.

Use genuine spare parts only. The manufacturer does not bear any responsibility for damages arising from use of non-original spare parts.

Do not remove while the trowel is hanging overhead. Always support the trowel securely on a flat, level surface before changing blades or pans.

Always use a safe, nonflammable, solvent when you clean parts. Do not use flammable fluids or fluids that give off harmful vapors.

Do not make any service or maintenance **without stopping the engine.**

SPECIFIC SAFETY RULES

Keep the rotating parts and stationary ring **clean.**

Pay extra care while operating the machine on **wet working surfaces. Wet surfaces** may cause **accidents.**

Do not use the trowel for any purpose different than its intended purposes or applications.

Always store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of reach of children.

The acoustic power level of this machine can reach 107,2dB (TIFON 600), 106,8dB (TIFON 900) and 107,2dB (TIFON 1200). Proper protective equipment must be used.

Vibration caused by machinery is a risk for health. The screed must always be handled using isolated gloves and all the necessary safety equipment. Besides, the user must rest each hour of effective work. The hand-arm vibration levels are 1,39m/s² (TIFON 600), 1,61m/s² (TIFON 900) and 0,88m/s² (TIFON 1200).

FURTHERMORE, THE OPERATOR IS COMPELLED TO RESPECT ADDITIONAL REGULATIONS ENFORCED

4 OPERATION AND MAINTENANCE

STARTING PROCEDURE

Electric models:

Insert the plug into its place.

Put the safety/stop switch on "ON" position.

TIFÓN 600 E: Just turn the switch to position "1".

TIFÓN 900 E: Turn the switch to position "1". If the machine does not start and just makes noise, that shows you selected the wrong direction of rotation. Stop the machine and turn the switch to position "1" on the opposite side. To increase the rotation speed of the blades turn the switch to position "2".

Petrol models:

Be sure the fuel **tank is full**. Use the recommended gasoline to run the engine from its instruction book.

Check the engine **oil levels**.

Turn the engine stop switch to the position **"ON".**

Open the fuel cock.

Set the speed control lever 1/3 of the way towards the high-speed position.

If the engine is warm or the ambient temperature is high, close the choke lever half way, or keep it open fully. If the engine is cold, or the ambient temperature is low, close the choke lever.

Pull the starter handle slowly until the resistance is felt. Return the handle to its original position and pull swiftly.

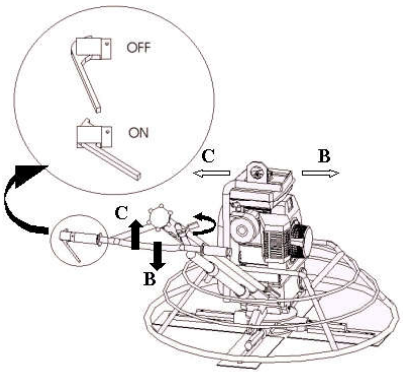
Allow a longer **warm-up period** in cold weather temperatures.

OPERATION

Get into the operator's position behind the centre of the handle. Attain a good feet position and start the machine. (A)

Push handle down to move the machine right (B), **lift handle up** to move the machine left gently. (C)

The machine will remain stationary, it you do not apply any force up and/or down.



STOPPING THE MACHINE

Electric motor:

Put direction switch on “0” position and get the plug out.

Do not leave the machine before getting the plug out.

Petrol engine:

Never use the choke to stop the engine. Leave the machine run at an idle speed for 2-3 minutes to cool down

Move the Gas lever to minimum throttle.

Turn the button, which is on the gasoline engine, to the OFF position to stop the machine lastly.

BLADE ADJUSTMENT

The blade pitch control wheel is easy to reach for the operator. To adjust the pitch, just turn the wheel clockwise or anticlockwise, depending on the desired pitch position. During finishing, setting up/hardening may vary from area to area across the floor, so the pitch adjustment can be changed to suit accordingly while the machine is in operation. When transporting the trowel on a truck, always keep blades fully horizontal/flat on the floating disc.

MAINTENANCE TABLES

Power trowels with petrol engine:

	DAILY	***WEEKLY***
CLEAN THE MACHİNE BYE PRESSURIZED WATER	**X**	
CHECK THE BLADE PITCH ADJUSTMENT	**X**	
CHECK THE BLADE PITCH BOLTS AND CHECK OTHER BOLTS OF THE MACHINE, IF NECESSARY TIGHTEN THEM	**X**	**X**
CHECK ENGINE OIL LEVEL	**X**	
CLEAN AIR FILTER	**X**	
CHECK THE V-BELT TIGHTNESS		**X**
CHECK THE BLADES		**X**
CHANGE ENGINE OIL		**X**
PUT OIL TO THE GREASE FITTINGS		**X**

Power trowels with electric motor:

	DAILY	*WEEKLY*
CLEAN THE MACHINE BY PRESSURIZED WATER	X	
CHECK THE BLADE PITCH ADJUSTMENT	X	
CHECK THE BLADE PITCH BOLTS AND CHECK OTHER BOLTS OF THE MACHINE, IF NECESSARY TIGHTEN THEM	X	X
CHECK THE V-BELT TIGHTNESS		X
CHECK THE BLADES		X
PUT OIL TO THE GREASE FITTINGS		X

GEARBOX

Check the gearbox oil level before every operation; change the gearbox oil every year. On the side of the gearbox there is a plug. Use “SHELL TİVELA COMPOUNDS A (400gr)” gear oil or equivalent.

MACHINE CLEANING

Clean the machine after it has been used to prevent the collection of hardened cement. Hard concrete/cement paste is very difficult to remove. To clean it, use an old brush or hand brush.

CHANGE OF BLADES

Be careful when replacing old blades. Due to the way the blades wear, the old blades become very sharp, like a knife blade. As a safety precaution, use very heavy duty gloves during this operation to prevent the hands being cut. Remove bolts and lock washers on each trowel arm and remove the blades. Before installing new blades clean all concrete/cement from bottom and side of the trowel, be sure trowelling edge of the blade is behind the trowel arm. Install bolts and lock washers on each trowel arm and fasten securely.

TIGHTEN THE V BELTS

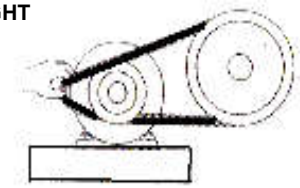
If you notice a loose on V belt, check the tightness.Especially in first using and V belt change.Check the V belt tightness after 8 hours later.Using your head finger push the V belt from its middle point.It must strech about 2cm.If it strechs more, it is loose.

For tightening; loose the motor fixing screws.(tiil motor moves away on the table) Loose the motor lock nut.Loose the screws, push the motor backward. Checking the V belt tighteness, do the same operations.Until tighteness of V belt is desired value, screw the motor luck nut, and then screw the motor fixing screws.

V-BELTS INSTALLATION AND MAINTENANCE

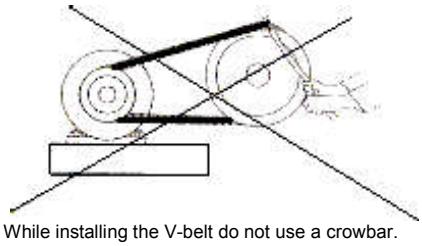
WHILE INSTALLING THE V-BELT:

RIGHT



Install the V-belt by closing the centre of pulleys to each other and tighten.

WRONG



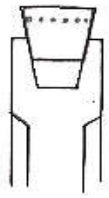
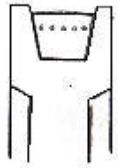
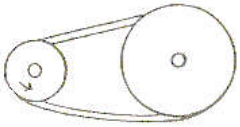
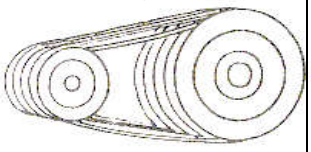
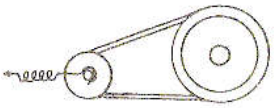
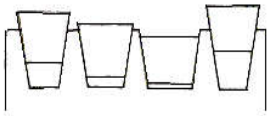
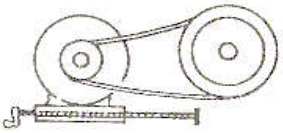
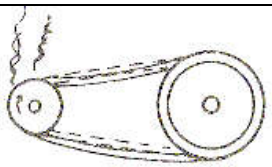
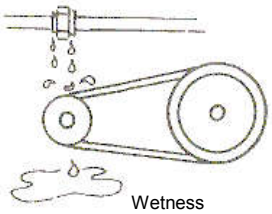
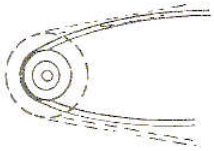
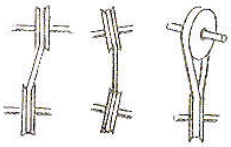
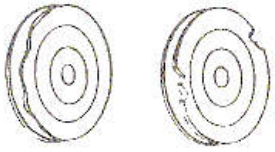
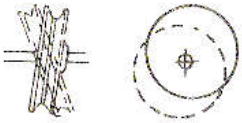
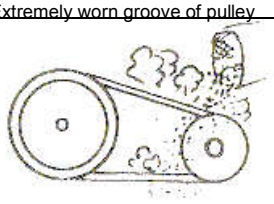
While installing the V-belt do not use a crowbar.

- Adjust the pulley edges with respect to pulley shafts and V-belt grooves to be on the same plane.
- Fix the unbalanced pulleys.
- V-belts lengths should be the same in multi-grooved pulleys.
- Change all V-belts at the same time in multi-grooved pulleys to prevent worn out.

TROUBLES AND REASONS APPEARING IN V-BELTS

PROBLEMS	CAUSES	REMEDIES
Ribbed belt breaking after a short period of time	-forcing the belt over pulley during installation. -ingress of foreign body -drive stalled	-use proper installation techniques -fit and effective guard -check for lubrication
Cuts and splits in the ribs	-ambient temperature is too high -abnormal belt slip -contamination by chemical	-Ensure good ventilating -check drive tension -protect the drive
Severe belt vibration	-too low belt tension	-re tension the drive
Excessive wear of ribs	-belt catching on protruding parts -too low belt tension	-remove protrusions -re tension the drive
Excessive noise	--contamination by oil, grease or chemicals	-protect the drive

FACTORS AFFECTING THE V-BELT LIFE AND POWER:

 Not fixed on to groove pulley	 Couching the bottom surface of the pulley	 Overloading
 Unequal length of belts	 High tightness	 Unequal machined pulley grooves
 Insufficient tightness	 Stretching	 Wetness
 Smaller pulley than required	 Incorrect axial alignment	 Extremely worn groove of pulley
 Broken edge pulleys	 Run out of pulley	 Dirt and dust

5 LOCATING MALFUNCTIONS

PROBLEM	CAUSES/SOLUTIONS
The motor doesn't work	Check the gas level.
	Check the gas admission key is open.
	Check the de choke position (gas).
	Check the power source (electric).
	Check the cables, the switch and the plug (electric).
The electric motor is overheating	Clean the air ventilation (inlet and outlet).
	Check the power supply type.

6 INSTRUCTIONS TO ORDER SPARE PARTS

6.1 INSTRUCTIONS TO ORDER SPARE PARTS

1.- Every spare parts order must include PART CODE NUMBER AS STATED IN THE PARTS LIST. We recommend including the MACHINE SERIAL NUMBER.

2.- The identification plate with serial and model number is located in the plate of the machine. It is located in the V-belt plastic cover.

3.- Let us to know the right shipping instructions, including the wished route, the address and the consignee complete name.

4.- Do not return the parts without authorisation, the return is done with freight prepaid.

6.2 INSTRUCTIONS TO REQUEST WARRANTIES

1.- The warranty is valid for 1 year after the purchasing of the machine, the warranty will cover parts with manufacturing defects. In any case the warranty will cover a malfunction due to improper usage of the equipment. The customer will always pay labour and shipping fees if the warranty is denied.

2.- In all warranty requests THE MACHINE MUST BE SENT TO ENARCO, S.A. or to an AUTHORIZED DEALER, always including the complete address and name of the consignee.

3.- The Technical Assistance Service will immediately notify to the customer if the warranty is accepted and, if requested, it will send a technical report.+

4.- The warranty will be void if any equipment has been previously handled by personnel outside of ENARCO, S.A. or not authorized by it.

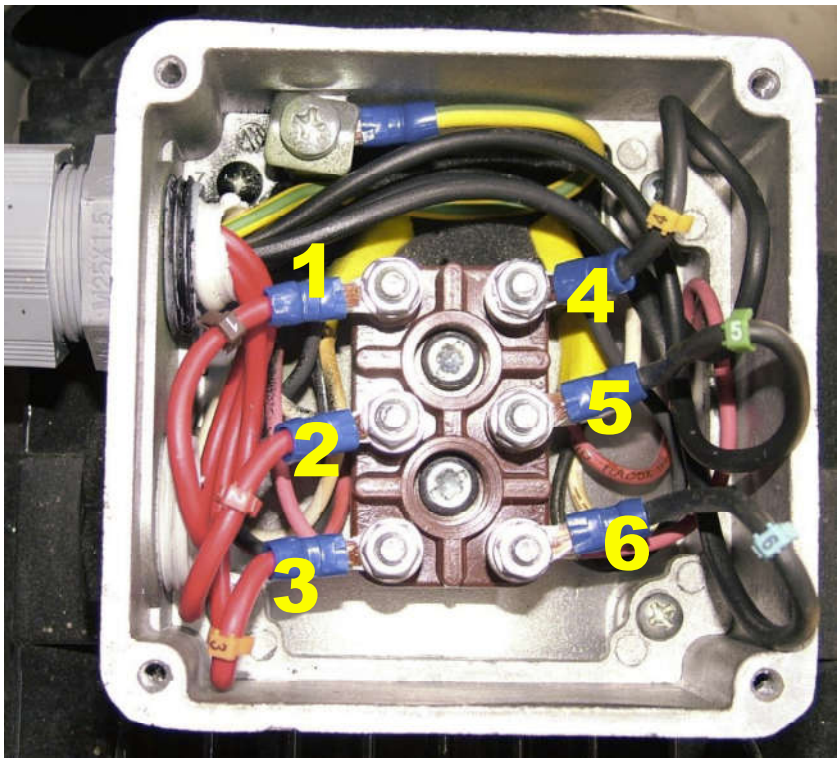
NB: ENARCO, S.A., reserves the right to modify any part of this manual without prior notice.

7 ELECTRIC SCHEME (TIFON 900E)

Power trowel TIFON 900 E is served with the handle disassembled from the machine. So, the customer must assemble it to the machine and also connect the power cables to the motor. The assembly of the handle is easy, just place the handle base in the bolts placed in the side the gearbox. Then, put the washers and the nuts and tighten them firmly.

To connect the power cables to the motor these stops must be followed:

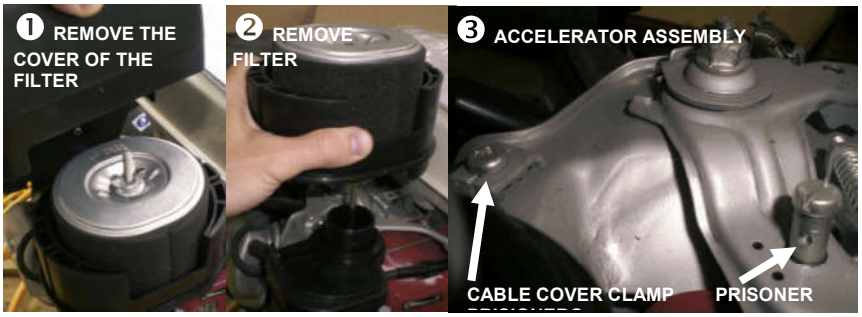
- Remove the cover of the connections box.
- Remove the gland seal of the connection box and the inner cap.
- Insert the power cables into the connections box. **In this step is very important to avoid that the small plastic parts with numbers get lost. These numbers will help to connect the cables.**
- Connect the cables following the scheme of the picture:



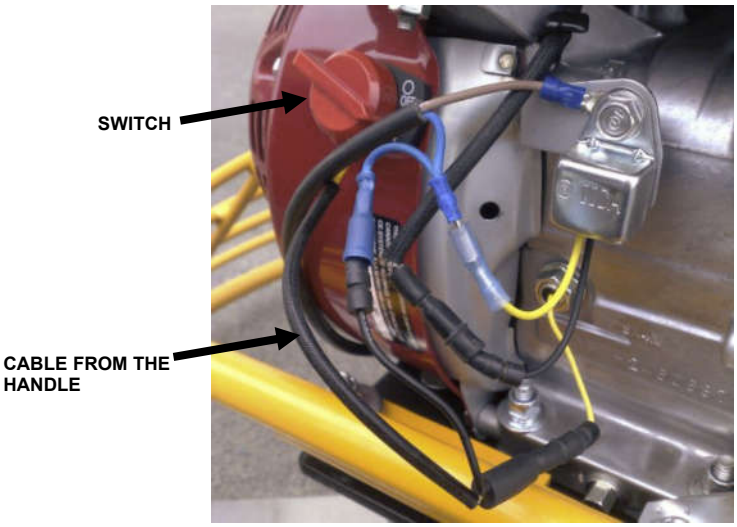
- Finally, put the connections box cover in its place.

8 ASSEMBLY OF THE ACCELERATOR AND CONNECTION OF THE "DEAD MAN" SAFETY SYSTEM (TIFÓN 900H AND TIFÓN 1200H)

Power trowels TIFÓN 900H and TIFÓN1200H are supplied with the accelerator and the "dead man" safety system disassembled, so they must be assembled and connected before working. To do this, firstly it is necessary to connect the accelerator cable to the engine. Remove the cover of the filter and then remove the filter. Fix the accelerator cable cover with its clamp (as shown in the picture below) and put the accelerator cable into the prisoner of the engine:



Once the accelerator is assembled, connect the "dead man" safety system as shown in the picture:



To check the "dead man" safety system works correctly, start the engine with the lever of the safety system pulled. Once the machine is working, release the lever; the machine must stop working. If the machine doesn't stop working, check again the connections of the safety system.