

# MENEGOTTI TECHNICAL MANUAL HIGH FREQUENCY IMMERSION VIBRATOR

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## Attention:

Before operate **Menegotti equipment**, read this **technical manual**, itself will inform and instruct the operator about the operation.  
By the way, you avoid possible working accidents and early maintenance on at the equipment.



**MENEGOTTI**  
NORTH AMERICA 

## Congratulations, on purchasing a Menegotti product!

With the highest quality, designed and built especially to serve you with technology to suit your needs.

This manual was written to provide you with the information and instructions necessary for the use and maintenance of our equipment, as well as to present you with data relating to its technical characteristics.

Before you put your equipment into operation for the first time, carefully read the information contained herein.

The durability of your equipment depends only on the way it is treated during service (operation) and its satisfactory performance is the result of your careful work, carried out regularly.

Menegotti is prepared to offer you all the necessary technical assistance, as well as to meet your needs for spare parts.

Welcome, you are now a part of the great Menegotti "client family".

MENEGOTTI After Sales and  
Technical Assistance departments.

**Caution:** For best convenience, keep this manual in a appropriate place where it can be consulted when necessary.

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# Menegotti Group

Menegotti is reference in the development of solutions in machines and tools for the Construction machinery, Handling and Lawn | Garden Segments.

A Brazilian company, present in more than 40 countries, has its headquarters in Jaraguá do Sul, Santa Catarina, units in Brazil and in the United States.

With more than 80th years of history, it is in the fourth generation of consistent and successful family management.

National leader in sales of concrete and cement mixers, it stands out in the resale and rental market.

Through its Innovation Program, it fosters creativity and competitiveness, with disruptive actions and partnerships, aimed at continuous professional and business growth.

With an organizational culture that values and encourages its constant professional and personal development, Menegotti is active in sustainable projects, which make its purpose of contribute “to build a better and more sustainable world”, a reality.



## The Product

Immersion Vibrators are lightweight equipment that provides better ergonomics and operator portability. These equipments result in an excellent visual appearance for the concrete and have a superior performance when operating in high rotation.

The hose, connected to the motor, transmits the eccentric movement located inside the tip, producing a vibration to be applied to the concrete.

**Note: With the aim of constantly improving their equipment, Menegotti reserves the right to change the features of the product without notice.**

## General and Specific Safety Rules

 Warning! Read and understand all instructions.

**Keep these instructions for future reference**

The term “power tool” in the warnings refer to your mains operated (corded) power tool or battery operated (cordless) power tool.

### WORK AREA SAFETY

- A) Keep work area clean and well lit. Cluttered and dark areas invite accidents.
- B) Do not operate power tools in environments with explosive materials such as flammable liquids and gases. Power tools create sparks which may ignite the liquid or fumes.
- C) Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

### **ELECTRICAL SAFETY**

- A) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- B) Avoid body contact with earthed or grounded surfaces such as pipes, radiators, oven ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- C) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- D) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- E) When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- F) If operating a power tools in a damp location is unavoidable, use a residual current device (rcd) protected supply. Use of an rcd reduces the risk of electric shock.

### **PERSONAL SAFETY**

- A) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A lapse in concentration while operating power tools may result in serious personal injury.
- B) Use safety equipment. Always wear eye protection. Safety equipment such as a dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- C) Avoid accidental starting. Ensure the switch is in the off position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
- D) Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool result in personal injury.
- E) Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- F) Dress properly. Do not wear loose clothing or jewelery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelery or long hair can be caught in moving parts.
- G) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust related hazards.

### **TOOL USE AND CARE**

- A) Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- B) Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired
- C) Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

- D) Store power tools out of the reach of children and do not allow people unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
- E) Look after your power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- F) Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- G) Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from intended could result in a hazardous situation.

## SERVICE

- A) Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

## SPECIFIC SAFETY RULES

- For the proper operation of the motor, **MAKE SURE** that operators have been instructed in the proper management of this machine.
- The motor **MUST ONLY BE USED** in specific works and following the instructions of this manual.
- Before connecting the motor to the electrical system, **MAKE SURE** that the voltage and frequency coincide with the ones stated in the characteristics equipment plate, located besides the switch of the plastic housing.
- **ENSURE** that all frame screws are tight before starting work.
- **AVOID** the flattening of the cable by heavy machinery which could cause breakage.
- **DO NOT CONNECT** the flexible shaft to the motor when this is working.
- **DO NOT OPERATE** in the motor shaft when this is working and without transmission.
- **DON NOT WORK** with transmission or poker in bad conditions, the motor will overheat.
- **DO NOT WORK** with the plastic housing broken.
- **DO NOT PERMIT** untrained personnel to operate the motor or its connections.
- **MAINTAIN** free ventilation of air.
- **KEEP** the motor in a clean and dry area.
- **MAKE SURE** that the electrical cable has the proper section and in good condition.
- Before doing any type of repair, **DISCONNECT** the motor from the electrical system.
- When connecting to a generator, **MAKE SURE** that the outlet tension and frequency is stable, right, and has the proper power, (the converter's feeding voltage should not vary more than  $\pm 5\%$  as stated on the motor's plate).
- Proper protective equipment should be used because the acoustic power level of this machine is 92 dB and the acoustic pressure level is 85.5 dB.
- When finishing the job or when taking a break, the operator should unplug the motor from the electrical system, and lay it in a place where it can not fall or tip.

## PERSONAL PROTECTIVE EQUIPMENT

Use approved protective equipment. Operators and all other persons in the working area must wear protective equipment:

Helmet, hearing and eye protection, gloves and boots

## Usage Conditions

For your own safety, as protection for others, and to avoid damage to the equipment, read carefully the usage recommendations.

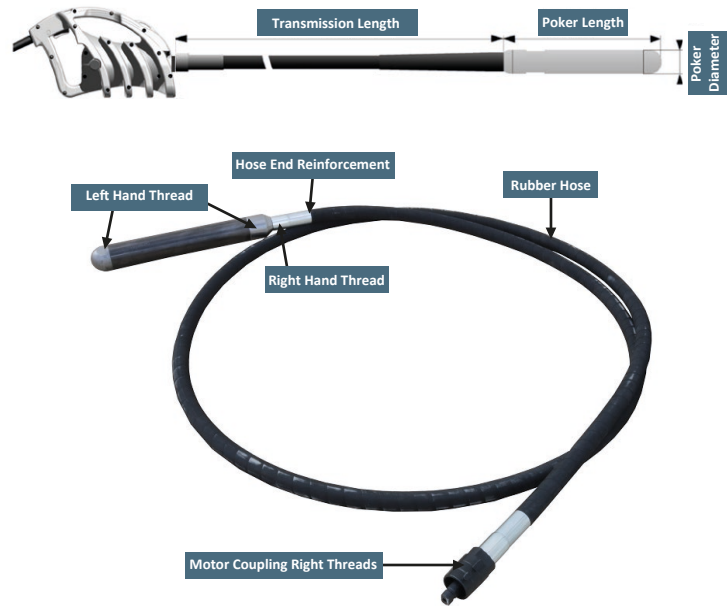
1. Before working, be sure that the hose joint nut is fastened to the motor (screwed to left).
2. Be sure the poker is well screwed to the flexible shaft (screwed to left).
3. Do not work with flexible shaft with big bends.
4. Do not overlubricate the shaft.
5. Do not keep working the poker out of the concrete more than 5 minutes.
6. Do not restrict the movement of the poker during the work.
7. Do not stop the poker inside the concrete.
8. Change the wear parts to avoid damage to the internal parts. (Check wearing table for the poker)
9. Do the maintenance with the types and quantities of recommended lubricants.
10. Proper protective equipment should be used because the acoustic power level of this machine is 92 dB (85,5 the pressure level).
11. Transmitted vibration to the operator does not exceed 2,5 m/s<sup>2</sup> of acceleration (1,45 m/s<sup>2</sup> measured value).

# Technical Specifications

<b>Motor's Type</b>	Universal Single Phase
<b>Electric Insulation Type</b>	Double Insulation, IP 44
<b>Housing</b>	Polyamide 6.6 + 26% GF
<b>Max. Power</b>	2.25 HP
<b>Voltage</b>	115V 50/60Hz
<b>Loading Consumption</b>	15 A
<b>Unloaded Speed</b>	18.000 RPM
<b>Weight</b>	13 Lb (5.8Kg)
<b>Function</b>	Transmits rotation power to an internal vibrator by a flexible shaft
<b>Connection Type</b>	Oztec Type
<b>Plug</b>	NEMA 5-15

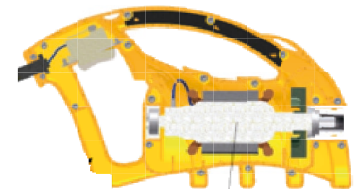
DESCRIPTION	WEIGHT
TRANSMISSION 7 ft	9 lbs
TRANSMISSION 10 ft	11 lbs
TRANSMISSION 13 ft	13 lbs

DESCRIPTION	CENTRIFUGAL FORCE	FREQUENCY	LENGTH	CAPACITY	WEIGHT
POKER 1" inch	192 lb	14000 VPM	14" inch	> 10 m <sup>3</sup> /h	1.7 lb
POKER 1 ¼" inch	460 lb	13750 VPM	15" inch	> 14 m <sup>3</sup> /h	3.7 lb
POKER 1 ½" inch	840 lb	13500 VPM	14" inch	> 17 m <sup>3</sup> /h	4.8 lb
POKER 1 ¾" inch	1210 lb	12500 VPM	14" inch	> 28 m <sup>3</sup> /h	7 lb
POKER 2 ¼" inch	1450 lb	12500 VPM	15" inch	> 35 m <sup>3</sup> /h	10 lb



The double insulation consists of a basic insulation plus an additional insulation:

- Basic insulation: It is a proper insulation of all electrical components (cable cover, stator insulating, etc...).
- Supplementary Insulation: This is done on the outer casing. It exceeds the protection tests.



# Inspection

**NOTE:** Perform a pre-use inspection of the machine at each shift start, operator change and after maintenance. Always follow the Safety Information contained in this Manual.

- 1) Before starting the job , check the correct working of all handling and safety devices;
- 2) Inspect regularly the good condition of the feeding cables;
- 3) Inspect regularly the good condition of the transmission. When the hose is broken, repair it or replace it to avoid damaging the shaft or the poker;
- 4) When notice wear parts, replace it;
- 5) If defects are found in the safety devices or other defects which could reduce the safe handling of the equipment, notify the proper person immediately.

# Operation and Maintenance

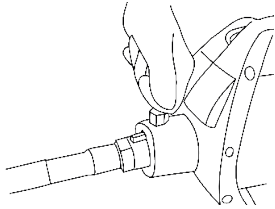
- 1) Select the appropriate type of vibrator according to: the dimensions of the supporting structures, the free space between the reinforcements and the consistency of the concrete.
- 2) Before starting, check that the vibrator is in good condition and works properly. Use the recommended protection and security systems.
- 3) It is recommendable to run the flexible and poker for 5 minutes the first time. The first minutes can work with shocks until the grease is shared along all the length.
- 4) Pour the concrete into the structure. It must be poured into the mold/forms as levelly as possible.
- 5) Insert the vibrator vertically into the concrete without moving it horizontally. Do not use the vibrator to drag concrete horizontally. The vibrator is introduced vertically at regular intervals, separated from each other by a distance of 8 to 10 times the diameter of the vibrator. Observe the concrete as it is vibrated to determine the vibrator's field of action. The field of action of each vibration point must overlap to avoid non-vibrated areas. The needle must penetrate approximately 10 cm into the previous layer to ensure good adhesion between the different layers. Do not vibrate for a long time between each layer to avoid cold joints. Do not force or push the vibrator into the concrete, it may get stuck in the reinforcement.



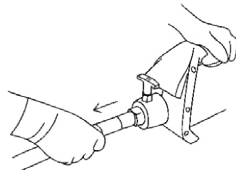
## Hose Connection

The motor was designed to couple the hose quickly and safely, thus making the equipment more manageable, facilitating its use.

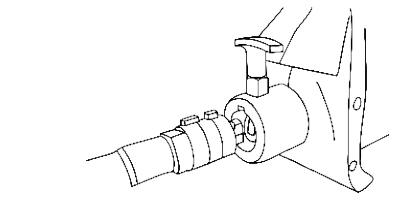
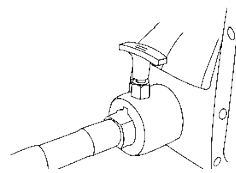
### Connection mode:



1) Align core coupler with the motor adapter.



2) Pull the black handle upwards and insert the coupler into the drive motor to the end and pull on the whip until the pin drops.



3) Connection is successful when the black handle drops back down to its original position.

## Connecting the Motor to the Electrical Network

- Turn off the engine switch (Position 0) before connecting to the mains.
- Only use two-way extension cords equipped with two-connector sockets, both female and male plugs.
- Do not use damaged or frayed cables.
- Avoid placing heavy loads on the cables.
- Reinforcement insulation has a very important and unique difference safety against Electrical discharge.

## Hose Connection to the Needle

The hoses are designed to fit the Tip, allowing the exchange of one Tip and another quickly and without any special tools.

### Connection mode

1. Clamp flexible shaft in a vice.
  2. Coat thread with Loctite 243 (figure 1) or equivalent to prevent water from entering.
  3. Place pipe thread seal on the thread of the flexible shaft.
  4. Place the vibrator head with the thread on the flexible shaft, while guiding the shaft core into the shaft core adapter of the vibrator head.
  5. Twist the head clockwise by hand and tighten with wrench tightly (figure 2).
- After maintenance, do not forget the "O" ring and the sealant.

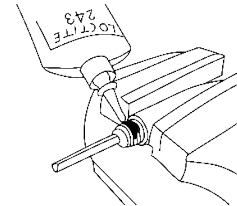


Figure 1.

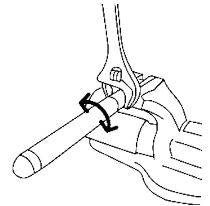


Figure 2.

## Equipment Maintenance

**NOTE:** Maintenance must be carried out by trained people

Guaranteed product operation depends on careful maintenance.

To ensure safety and extend the life of the product, never use it if there is any abnormality.

When overhauling the tool, use identical parts to replace them.

### Maintenance of Motor

- Make sure that the plug is disconnected during repairs.
- In all maintenance operations, original parts will be used.
- Every 100 hours carbon brushes should be inspected. They should be changed if effective length is less than 3/8".

### Changing brushes:

- 1) With a screwdriver remove the side cap of the housing, introducing the screwdriver between the cap and the housing and lever it (figure 1).
- 2) We find the brush retainer, this is a threaded part, with a screwdriver remove it, we can see the brush or (115 V), turn the motor and the brush goes out or introduce a thin tool to remove it.
- 3) To assemble introduce the new brush and thread the retainer and finally close the housing with the cap (figure 2).
- 4) After changing new brushes run the motor 10 minutes unloaded (without the shaft connected) to adjust the carbon to commutator.

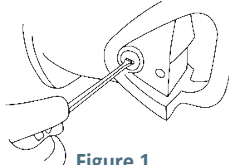


Figure 1.

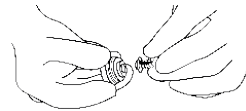


Figure 2.

- Clean the ventilation vents in the front and back part of the engine periodically to avoid overheating.
- Check that the filter is situated in the air intake, under the switch. If it is dirty, change it. To do this, press with both hands on the rear grating in the place where it says "PRESS", take out the grating and the filter and replace with another new one. Then mount the grating, firstly inserting the bottom into its guide and then the upper part whilst pressing the "PRESS" indications.
- After maintenance job and service, all safety devices should be assembled correctly.
- Tighten the bolts.
- Every 12 months or more frequently, depending on the usage conditions, it's recommended an inspection be done by an authorized dealer.
- Clean the filter on a regular basis or replace if necessary.

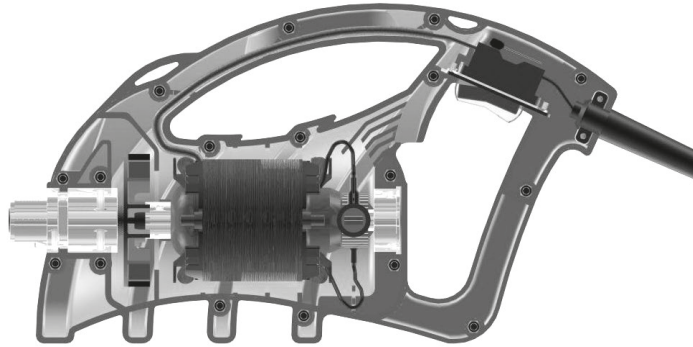
## Maintenance of Flexible Shaft and Pokers

- In all maintenance operations, original parts will be used.
- To check the wear of the poker controlling the outside diameter and length of the poker. Replace the housing or cap when the diameter or length in the least point is less than the specified in the table according to the model.
- A way to lubricate the shaft is to put some grease in the palm of your hand and run along the length of the shaft, coating it with a light layer of grease.
- Lubricate the shaft every 100 working hours. The recommended quantity is 0.2 oz/ft. Do not overlubricate, it could cause the grease penetrate into the poker.
- When the length of the shaft is long ( $\frac{1}{4}$ " longer than hose) it must be shortened ( before checking the dimension push the flexible completely inside.
- Use a lithium grease similar to the specified grease **Shell Gadus S3 V220C**.
- Do not clean the shaft with solvent.
- Every 300 hours of working is recommended to change the lubricant of the poker:
  - 1) To change the oil in the poker dismount the cap. Hold the housing on a vise and tap the cap with a hammer. This will help to break the seal and loosen the threads.
  - 2) Take out the old oil and fill the cavity of the cap with a light oil non-foaming SAE30 or equivalent.

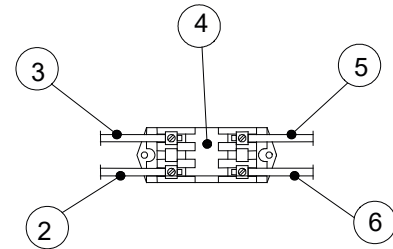
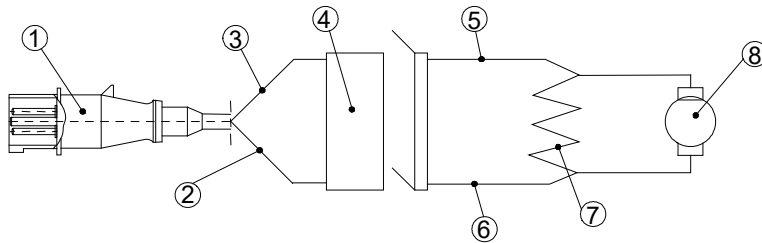
If you notice that the oil is thick and sticky and that transmission grease has penetrated, you will need to perform the following steps:

- Flush the parts with solvent and wipe all parts.
- Examine bearings, seals and hex drivers. If inspection reveals that grease of transmission has penetrated into the head, the oil seals need replacement.
- The purpose of the seals is to keep the oil of the head in, and the flexible shaft grease out. When the seals are dismounted it is recommended to change it.
- Fill the cavity of the cap with a light oil non-foaming SAE30 or equivalent.
- Apply sealant before assembling and fixing the O ring. Tighten and clean the excess sealant. It is important all the parts are tightened to avoid water and cement try to get into the head.
- After maintenance job and service, all the parts must be assembled correctly.
- Every 12 months or more frequently, depending on the usage conditions. It is recommended an inspection be done by an authorized dealer.

# Electrical Diagram



NO.	NAME
1	PLUG
2	SWITCH CABLE. 1.5 mm <sup>2</sup> SECTION
3	SWITCH CABLE. 1.5 mm <sup>2</sup> SECTION
4	SWITCH
5	MOTOR-SWITCH CABLE 1.5 mm <sup>2</sup> SECTION
6	MOTOR-SWITCH CABLE 1.5 mm <sup>2</sup> SECTION
7	ESTATOR MOTOR
8	CONNECTION TO BRUSHES



# Causes and Solutions

PROBLEM	CAUSE/SOLUTION
<b>The unit is not working</b>	1 - Make sure power is on
	2 - Carbon brushes defect
	3 - Defective switch
<b>The motor works but it overheats</b>	1 - Clean the air intake and output openings in the housing and/or change filter
	2 - Make sure nuts and bolts fixing outer housing are properly fixed
<b>The motor works slowly and it overheats</b>	1 - Verify voltage of electrical system
	2 - Check the cable specification
	3 - Defective poker or shaft
<b>The motor becomes too noisy</b>	1 - Defective carbon brushes
	2 - Defective bearings
	3 - The rotor might be touching the stator
	4 - Outer housing is broken or has loose bolts
<b>The motor works overload and overheats</b>	1 - Poker is overlubricated
	2 - Too much or not enough grease in the hose
	3 - Retention failure. Grease has leaked from the hose/transmission to the nipple or oil has been lost from the nipple.
	4 - Head movement is restricted
	5 - Transmission with extreme bends
	6 - Transmission in bad condition, broken hose
<b>Bearing failure</b>	1 - Not enough oil in the poker
	2 - The poker has been working out of the concrete during a long time
	3 - Water has penetrated
	4 - The housing has received strong stroke

## Equipment Transportation

When transporting by vehicles, ensure the motor is safe against slipping, overturning and blows.

## Equipment Storage

When the equipment has not been used for long periods of time, it should always be stored in a clean, dry, stable and protected area.

## Environmental Protection

Do not dispose of the machine in any trash, dispose of it in a suitable environment and contact the responsible institution for correct disposal. Preserving the environment is very important.

## Product Warranty

The warranty is not transferable under the conditions and within the prescribed period and will be valid from the date of purchase of the equipment, through presentation of the sales invoice to the first end consumer. At the time of delivery of the equipment, the customer must receive the information and technical guidelines for the equipment as per the content of this manual.

Therefore, defects caused by mistreatment, carelessness, negligence, recklessness or malpractice, are not covered by this warranty, nor are any repairs or alterations of any part and/or piece of equipment. Also not covered is any assembly of the parts by any party other than the factory itself or Technical Assistant, application outside the specification, mechanical or electrical overloads or phase failure, use in an environment for which it was not designed, incorrect voltages of frequencies, incorrect lubrication, damage caused by accidents of any kind, such as floods, strong winds, fires, landslides or resulting from transportation.

The removal or alteration of the serial numbers originally placed on the product void the warranty, which must be presented on the sales invoice and the Warranty Certificate for the equipment in question.

The warranty assumed is limited to the repair, spare parts or parts assembly of the set of parts, in which the review is conducted by an Authorized Menegotti Technical Assistant and authorized in advance by the Factory, to double check the existence of the manufacturing defect. This repair or exchange will be made by an Authorized Technical Assistant, with the buyer bearing the risks or costs of transportation to and from the Technical Assistant, with the labor and replaced parts being free, under the terms of this warranty.

This supersedes any other warranty, express or implied as well as any and all liability or responsibility of our company concerning the above product.

**MENEGOTTI After Sales and Technical Assistance departments.**

## Warranty Term

By the present CERTIFICATE provided from original purchaser, Menegotti guarantees this product against manufacturing defects, for a period of 12 (twelve) months, counted from the invoice issue date of the first final consumer. This equipment's warranty does not include components worn out by use, such as: bearings, steel cable, electrical plugs, gears and enginebreaking.

This warranty includes spare parts and repair against manufacturing defects duly verified by the factory or Authorized Technical Assistance. The warranty for this product will be void if it suffers damage caused by accidents, natural events, application outside the specification, or in the case of alterations or repairs by a person or workshop not authorized by Menegotti. The product freight charges, including the technical assistant or factory, are borne by the consumer. Menegotti has a wide network of Technical Assistants throughout the country.

If the equipment is purchased with the electric engine warranty covers defects arising from the internal engine manufacture. Not covered by warranty defects of: broken or crushed shell due to carelessness in transporting/or storage, energization of the motor coupling or out specification defects, general misuse and /or incorrect installation, overcharging due to lack or excess of phase and use of voltage out of the specification.

Aware of this term,

**Customer:** \_\_\_\_\_  
**Model:** \_\_\_\_\_ **Serial Number:** \_\_\_\_\_  
**City:** \_\_\_\_\_ **Date:** \_\_\_\_\_

\_\_\_\_\_  
*Customer*

\_\_\_\_\_  
*Menegotti Authorized Service*

# Menegotti GROUP

Solid values, *sustainable future.*

**MENEGOTTI**  
HANDLING

**MENEGOTTI**  
CONSTRUCTION

**MENEGOTTI**  
HOUSE & GARDEN



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