

**AGUJAS CON MOTOR INTERNO**  
**ELECTRIC VIBRATING POKERS**  
**AIGUILLES A MOTEUR INTERNE**  
**RÜTTELLANZEN MIT INNENMOTOR**  
**AGULHAS COM MOTOR INTERNO**



**Manual de instrucciones**  
**Instruction manual**  
**Manuel d'instructions**  
**Gebrauchsanweisungen**  
**Manual de Instruções**

M3 AFP- M38 AFP-M5 AFP-M6 AFP-M7 AFP-M8AFP  
MP3 AFP, MP38 AFP-MP5 AFP-MP6 AFP-MP7 AFP

es  
en  
fr  
de  
pt

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## 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 glad to help you with any comments or suggestions in reference to our equipment.

МАГАЗИН  
БАШ МАЙСТОРА®  
ПРОФЕСИОНАЛНИ РЕШЕНИЯ



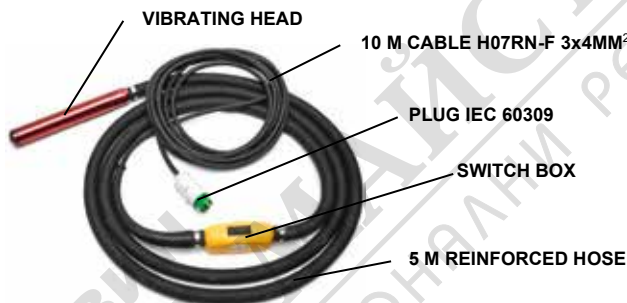
*ELECTRIC VIBRATING POKERS*

**M3 AFP - M38 AFP - M5 AFP - M6 AFP - M7 AFP - M8 AFP**  
**MP 3 AFP - MP38AFP - MP5 AFP - MP6 AFP - MP7 AFP**

## 2 VIBRATING POKERS CHARACTERISTICS

<b>MODEL</b>	<b>M3 AFP, M38AFP, M5AFP, M6AFP, M7AFP, M8AFP MP38AFP, MP5AFP, MP6AFP, MP7AFP</b>
<b>TYPE</b>	Vibrating poker with motor in head working at 42 V 3-200 Hz class III
<b>APPLICATION</b>	Compacting of concrete
<b>CONNECTION CABLE TO CONVERTER</b>	Standard: 10 m length, with plug CE type, type H07 3x4mm <sup>2</sup> For gun type (MP): 15 m length
<b>PROTECTION HOSE</b>	Standard: 5m length of rubber hose. 0,8m (MP)
<b>IP PROTECTION</b>	IP 67

### M3AFP, M38AFP, M5AFP, M6AFP, M7AFP, M8AFP



### MP3AFP, MP38AFP, MP5AFP, MP6AFP, MP7AFP



\*According to ISO5349, hanging the hose at 2m. of the poker and working unloaded the poker.

MODELO MODEL MODELE MODELL MODELO	Intensidad (Potencia) Consump. (Power) Intensité (Puissance) Stromstärke (Leistung) Intensidade (potência)	v.p.m	Fuerza centrífuga Force output Force centrifuge Fliehkraft Força centrífuga (Kg)	Capacidad de vibrado Compacting capacity Capacité de vibration Vibrationsleistung Capacidade vibratória	MxxAFP Aceleración Acceleration Accélération Beschleunigung Aceleração (m/s <sup>2</sup> ) *	MPxxAFP Aceleración Acceleration Accélération Beschleunigung Aceleração (m/s <sup>2</sup> ) *	DAMPER MxxAFP Aceleración Acceleration Accélération Beschleunigung Aceleração (m/s <sup>2</sup> ) *
M3 AFP	3,5 (200W)	12.000	120	12m <sup>3</sup> /h	1,33	0,91	0,31
M38 AFP	8 (580W)	12.000	175	20m <sup>3</sup> /h	1,73	1,18	0,34
M5 AFP	10,5 (850W)	12.000	375	30m <sup>3</sup> /h	2,34	2,02	0,46
M6 AFP	15 (1000W)	12.000	575	35m <sup>3</sup> /h	1,99	1,95	0,39
M7 AFP	22 (1600W)	12.000	720	40m <sup>3</sup> /h	2,43	2,44	0,49
M8 AFP	18 (1300W)	12.000	900	45m <sup>3</sup> /h	2,48	--	--

Uncertainty K=0,5 m/s<sup>2</sup>.

\*\*Test done without load at 1,5 m from the poker acc. to EN-ISO ń3744. K=2 B

MODELO MODEL MODELE MODELL MODELO	Peso Weight Poids Gewicht Peso (Kg) Mxx / MPxx	Diametro Diameter Diametre Durchmesser Diámetro (mm)	Longitud Length Longueur Länge Comprimento (mm)	Tensión-Frecuencia Voltage-Frequency Tension-Frequence Spannung-Frequenz Tensão-Frequência	Presión acústica Sound pressure Acoust. Pressure Schalldruckpegel Pressão acústica (dB A) **	Potencia Acust. Sound Power Acoust. Puissance Schallmactpegel Potência acústica (dB A) **
M38 AFP	10 / 6,5	30	353	200Hz- 42v 3~	71,5	77,7
M38 AFP	11 / 8	38	370	200Hz- 42v 3~	74,5	81
M5 AFP	13 / 10	50	365	200Hz- 42v 3~	77	83,5
M6 AFP	15 / 13	58	400	200Hz- 42v 3~	78,5	85
M7 AFP	17 / 16	66	412	200Hz- 42v 3~	80	86,5
M8 AFP	18 / -	75	385	200Hz- 42v 3~	80	86,5

\*\*\* For an effective compaction, use the converter with enough power for the power of the poker.

All the pokers include thermal protection motor.

All the tubes and caps are hardened to protect from hits.



### 3 USAGE CONDITIONS



#### WARNING!



Read and understand all instructions.

#### 3.1 WORK AREA



KEEP your work area clean and well lit.

DO NOT OPERATE power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.

KEEP bystanders, children, and visitors away while operating a power tool.

#### 3.2 ELECTRICAL SAFETY

GROUNDING TOOLS MUST BE PLUGGED INTO an outlet properly installed and grounded in accordance with all codes and ordinances.

NEVER REMOVE the grounding prong or modify the plug in any way.

DO NOT USE any adaptor plugs.

CHECK with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.

AVOID body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.

DON'T EXPOSE power tools to rain or wet conditions.

DO NOT ABUSE the cord.

NEVER USE the cord to carry the tool.

NEVER PULL the plug from an outlet.

KEEP cord away from heat, oil, sharp edges or moving parts.

REPLACE damaged cords immediately.

WHEN OPERATING a power tool outside, use an outdoor extension cord.

#### 3.3 PERSONAL SAFETY



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

DO NOT USE TOOL while tired or under the influence of drugs, alcohol, or medication.

DRESS PROPERLY.

DO NOT WEAR loose clothing or jewellery.

CONTAIN long hair. KEEP your hair, clothing, and gloves away from moving parts.

AVOID accidental starting.

BE SURE switch is off before plugging in.

REMOVE adjusting keys or switches before turning the tool on.

DO NOT overreach.

KEEP proper footing and balance at all times.

USE safety equipment.

Always WEAR eye protection.

#### 3.4 USE OF THE TOOL AND CARE



USE clamps or other practical way to secure and support the work piece to a stable platform.

DO NOT FORCE tool.

USE the correct tool for your application.

DO NOT USE tool if switch does not turn it on or off.

DISCONNECT the plug from the power source before making any adjustments, changing accessories, or storing the tool.

STORE idle tools out of reach of children and other untrained persons.

MAINTAIN tool with care.

CHECK for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using.

USE only accessories that are recommended by the manufacturer for your model.

### 3.5 SERVICE

Tool service **MUST BE PERFORMED** only by qualified repair personnel.

When servicing a tool, USE only identical replacement parts.

**FOLLOW instructions in the Maintenance section of this manual.**

### 3.6 SPECIFIC SAFETY RULES

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



- 1.- Firstly read the instruction of the converter where you are going to connect the vibrating pokers.
- 2.- For the operation of the vibrating poker, make sure that operators have been instructed in the proper usage of the machine.
- 3.- The vibrating poker should only be used in the specific jobs for which it has been developed and under the instruction and safety recommendations of this manual.
- 4.- Be sure that the parts of the poker are tight before starting working.
- 5.- The vibrating poker plug should not be used to start or stop the equipment, use the switch.
- 6.- Protect the electrical cable against heat, oil, or sharp edges.
- 7.- Avoid the flattening of the cable by heavy machinery which could cause breakage.
- 8.- Check the electrical cable is with the proper section and it is in good condition. (See section 3.3.2)



- 9.- Do not work close to flammable liquids or in areas exposed to flammable gases.
- 10.-The vibrating poker should not be working out of concrete more than 5 minutes. Switch on before starting working and disconnecting them immediately after finishing the vibrating operation.
- 11.- Avoid the vibrating pokers are working in contact with hard object during a long period.
- 12.- Do not stop the vibrating poker inside the concrete.
- 13.- Do not permit untrained personnel to operate the vibrating poker or connections.
- 14.- Disconnect the vibrating poker from the converter before doing any operation.
- 15.- Change the external wear parts to avoid damage to the internal parts. (Table 1.3.2).
- 16.- Proper protective equipment **SHOULD BE USED** because the acoustic pressure of this machine can reach 80dB and acoustic power level 88 dB. (see table)
- 17.- The vibration that transmits to the operator does not exceed  $2,5 \text{ m/s}^2$  of acceleration. *Check table in vibrating poker characteristics*

**IN ADDITION, LOCAL COUNTRY ESTABLISHED ORDINANCES SHOULD BE RESPECTED.**

## 4 OPERATION AND MAINTENANCE

### 4.1 GETTING STARTED



Read item 3, USAGE CONDITIONS.

### 4.2 VIBRATING POKER CONNECTION TO CONVERTER

The poker has sockets to connect the vibrating pokers.

Firstly, connect the converter to the electrical supply; be sure that the connection is correct (specification and condition of cable according to standards of security). Then switch on the converter, connect the pokers and it will be available to switch on.

To disconnect, firstly switch off the vibrating pokers and then disconnect the converter with their switch and finally remove the converter plug of the electrical supply.

#### Connection possibilities:

The input current of the pokers connected in load shall not exceed the out current specified in the electrical characteristic table of the converter.

### 4.3 EXTENSION

Use three phase cables with the appropriate plugs.

Do not use damage or worn out cables.

Avoid heavy loads on cables.

Minimum sections according to VDE rules		
Line	Max. charge.	Max. fuse.
mm <sup>2</sup>	A	A
1	15	10
1,5	18	10/3 – 16/1
2,5	26	20
4	34	25
6	44	35
10	61	50
16	82	63
25	108	80

To determine the transversal section, follow the next recommendation:

The allowed heating according to VDE standard requires the transversal sections according to the working current (attached table).

i.e. For 20 A, according to the table for 26 A or less the section is 2,5 mm<sup>2</sup>.

Therefore, the section chosen will be 2,5 mm<sup>2</sup> minimum.

### 4.4 INSPECTION



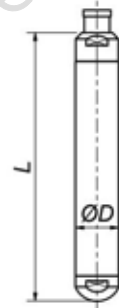
1. Before starting the job, check the correct working of all the handling and safety devices.
2. Inspect regularly the good conditions of the cables and the rubber housing. When a defect is detected, proceed to change to avoid bigger problems.
3. If defects are found in the safety devices or other defects, which could reduce the safe handling of the equipment, stop working and notify to the proper responsible person.

#### 4.5 REGULAR MAINTENANCE

1. Only an expert shall work on the electrical parts.
2. Disconnect the vibrating poker of the converter before doing any maintenance
3. In all maintenance operations, original parts will be used.
4. Every 24 months or 500 hours of working a lubrication of the bearings of the vibrating pokers is recommended. An expert should dismantle the vibrating poker. Clean with solvent the bearings and when this is dry fill in with the oil recommended (107512 spare part). If you note an excessive play in the bearings proceed to change it. When you reassemble place the sealant in all the threads (PTFE tape). It is important all the parts are tighten (200 to 400 Nm of torque) to avoid the water does not penetrate in the head. Finally, apply two weld spots to secure the parts do not loose. Test working 10 minutes on the air and check no leak of oil (no touch after the test it is very hot).
5. Always you change the switch be sure the bolts of the switch box are tighten and the box is watertight.
6. After maintenance jobs all the parts must be assembled correctly.
7. Every 24 months or more frequently, depending on the use, it is recommended an inspection be done by an authorised dealer.
8. 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.

Model	Diameter(mm)	Length (mm)
M3 AFP	<b>28</b> (30)	<b>347</b> (353)
M38 AFP	<b>36,5</b> (38)	<b>365</b> (370)
M5 AFP	<b>48</b> (50)	<b>360</b> (365)
M6 AFP	<b>56</b> (58)	<b>395</b> (400)
M7 AFP	<b>63</b> (65)	<b>407</b> (412)
M8 AFP	<b>75</b> (73)	<b>380</b> (385)

- a. The minimum dimensions are bold printed
- b. The dimensions into brackets are the original dimensions
- c. Replace the housing when reach the minimum diameter
- d. Replace the cap when reach the minimum length



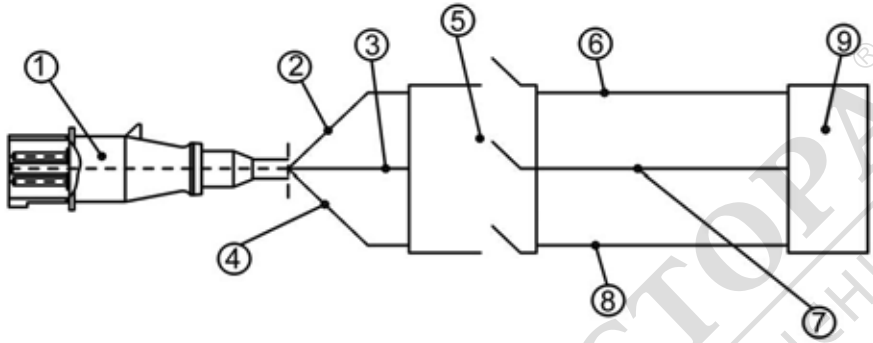
#### 4.6 STORAGE

Store the vibrating pokers in clean, dry and protected areas when it is not used for long periods.

#### 4.7 TRANSPORTATION

When transporting by vehicles, be sure the equipment is safe against slipping, overturning and blows.

## 5 LOCATING MALFUNCTIONS



- |                          |                          |
|--------------------------|--------------------------|
| 1. Three phase 32 A Plug | 6. Cable to motor 2,5mm2 |
| 2. Cable to switch 4mm2  | 7. Cable to motor 2,5mm2 |
| 3. Cable to switch 4mm2  | 8. Cable to motor 2,5mm2 |
| 4. Cable to switch 4mm2  | 9. Motor                 |
| 5. Switch                |                          |

PROBLEM	CAUSE/SOLUTION
The poker does not work	1. Verify the converter is working
	2. Check plug
	3. Check cable to switch
	4. Check switch
	5. Check connections
	6. Check motor
	7. The motor stopped due to overheating
The poker works but overheats	1. Check the output voltage and frequency of the converter
	2. Check the poker is working complete in the concrete
	3. Bearings are damaged or without lubrication
	4. Check extension cables
	5. Check none phase is cut
The poker is noisy	Check bearings

## 6 INSTRUCTIONS TO ORDER SPARE PARTS

### 6.1 INSTRUCTIONS TO ORDER SPARE PARTS

- All spare parts request must include PART CODE NUMBER AS STATED IN THE PART LIST. We recommend including ITEM'S MANUFACTURE NUMBER.
- The identification plate with manufacture and model number is located in the top part of the motor's plastic frame. The transmission and pokers have the manufacture number engraved outside.
- Let us to know the correct shipping instructions, including the wished route and the address and consignee's complete name.
- Do not return spare parts to the factory unless you have written permission from the factory.

## 6.2 WARRANTY CONDITIONS

Enarco S.A.U. for its products, it grants one year warranty from the date of purchase of the product subject to the following conditions:

1. In accordance with the conditions indicated here (No. 2-7), we will repair non-conformities in the product free of charge, if it is verified that they are a consequence of a defective component and/or manufacturing fault, and provided that the same is notified without delay after its appearance.

2. The warranty will not apply to damage resulting from improper use. Likewise, the guarantee will not apply to defects in the product caused by damage in transport for which we are not responsible.

The warranty will be void if repairs or interventions are carried out by persons not authorized by the manufacturer. The same will happen for machines in which the periodic maintenance recommended in the instruction manual has not been carried out.

3. The application of the guarantee means that defective components are repaired or replaced free of charge by components without faults. Consumables and wear parts are excluded from the warranty except in cases of excessive or premature wear not attributable to normal use of the machine.

The replaced components will become our property.

4. In the case of sealed original spare parts, returns will not be accepted once the seal is removed.

5. To exercise the rights derived from this warranty, you must contact our Technical Assistance Service. Therefore, the following contact options are available to the client:

- Telephone: (+34) 976 464 094
- Email: sat@enar.es

\*For Mexico, Colombia and Poland, please review the page (Contact Addresses) of the document.

In the event that the guarantee assessment is positive, Enarco will adopt the most convenient option:

- Carrying out the repair at ENARCO.
- Replacement with a new machine.
- Sending the defective part for repair to an authorized workshop.

Enarco will assume the shipping of machines or components in any of the above cases. Enarco will never assume downtime costs, rental costs for replacement equipment or other responsibilities for equipment failure during the warranty period.

If it is considered non-guarantee, it will be treated as a normal repair, issuing a quote for approval by the client. In this case, the round trip shipping costs will be borne by the customer, as well as the cost of the repair or the cost of preparing the estimate if the customer does not accept it.

6. Warranty repair of a machine does not extend the initial warranty period.

7. If for any reason any of the conditions for having a guarantee on a product conflict with any regulation of any country or locality, said condition will be nullified and the local regulation will prevail, but the rest of the conditions will remain in force.

*The different contact addresses for each market/country are detailed at the end of this manual.*

*ENARCO, S.A.U. reserves the right to modify any information in this manual without prior notice.*

## 7 RECOMENDATIONS OF USE

1. Choose the type of vibrator adequate to the dimensions of the structure to vibrate, the distance among the reinforcement and the slump cone. It is recommendable to have an additional concrete vibrator.
2. Before starting check that the concrete vibrator is in good use and it works correctly. Use the means of safety and protection.
3. Pour the concrete in the structure avoiding high heights. Try to pour levelled the concrete. The thickness of every layer should be less than 50 cm; it is recommendable between 30 and 50 cm.
4. Introduce the vibrator vertically in the concrete mass without moving it horizontally. Do not use the vibrator to push the concrete horizontally. The concrete vibrator should be introduced into the mass at regular intervals. The interval should be from 7 to 8 times the diameter of the poker. See the concrete in the process of vibrating to determine the field of action of the vibrator. This field should be overlapped to avoid areas without vibrating. To obtain an optimum compacting of the concrete, plunge it 10 cm into the precedent layer to assure a good adherence. The time in vibrating the different layers should not be big to avoid cold joints. Do not push or force the vibrator into the mass, it could be stuck in the reinforcements.
5. The time of vibration in each point depends on the type of the concrete, the size of the vibrator and other factors. This time can be from 5 to 15 seconds after the immersion in each point. The time is shorter for a fluid mass; a vibration in excess can produce segregation. It is considered the concrete to be well vibrated when the surface around the poker is shiny and compact and there is no more air bubbles, as well a change in the noise of the vibrator is produced. So much defects in structures are produced due to perform the vibration in an unmethodical way and in a hurry.
6. Do not push or force the vibrator against the reinforcement. Keep a distance of 7 cm minimum from the walls.
7. Always remove the poker vertically with movements upwards and downwards so the concrete fills the empty space again. Do not switch off until you stop the vibration completely. Se speed of removing is approximately 8 cm per second. When the vibrator is nearly out extract quickly to avoid shaking the surface.
8. In order to vibrate slabs, the poker has to be kept oblique so that the contact with mass is bigger and the compacting effect is better.
9. Do not keep the concrete vibrator out of the concrete during long periods. If you do not continue vibrating stop it.
10. Follow the maintenance instructions.



The concrete has to be carefully prepared to get the best effects of the vibration in terms of consistency and resistance.

