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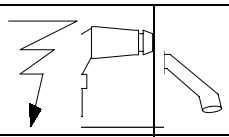
Cod: AM010127 – AM010129

INSTRUCCIONES BATIDORA DOSIFICADORA STARMIX 10 Y 20
INSTRUCTIONS MIXING AND INVESTING UNDER VACUUM MACHINES
MACHINE MELANGEUSE-BATTEUSE DU PLATRE SOUS VIDE

Hoja características	Characteristics sheet	Feuille de caractéristiques

Descripción:

Cod.	Mod.	Net (Kg)	Dimens. (cm)	Total (Kg)	Embal/Packing	
					Dimens. (cm)	Cod.
AM010127	STARMIX10	266	138*75*178	334	144*81*197	5J040081
AM010129	STARMIX20	405	150*70*175	510	198*103*220	5J040086

Suministros necesarios		Supplies needed		Suministres nécessaires		
				TUBS AIRE		DESAGÜE EMPTYING VIDANGE
Cod.	**III (Kw)**	**II (Kw)**	**ϕ (mm) - Q(lt/min)**	**ϕ (mm) - bar**	**ϕ (mm) - bar**	**ϕ (mm)**
Cod.	**III (Kw)**	**II (Kw)**	**ϕ (mm) - Q(lt/min)**	**ϕ (mm) - bar**		**ϕ (mm)**
(*)AM010127	0'55		12	6x4 5-6		50

(*) PRESA 16A 5POLOS

Otras características	Other characteristics	Autres caractéristiques

Cod.	Castellano	English	Français		
AM010127	**Bomba de vacío**	**Vacuum pump**	**Pompe vide**	**43 m3 /h**	**1'5Kw**
AM010127	**Capacidad revestimiento**	**Powder capacity**	**Capacité plâtre**	**20 Kg.**	
AM010129	**Bomba de vacío**	**Vacuum pump**	**Pompe vide**	**63 m3 /h**	**2 Kw**
AM010129	**Capacidad revestimiento**	**Powder capacity**	**Capacité plâtre**	**30 Kg**	

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AM0101271
INSTRUCTIONS MIXING AND INVESTING UNDER VACUUM MACHINES
COD. AM010127 ---AM010129

INSTALLATION

Connect the air rapid connection located in the rear part of the machine, to the compressor or pneumatic net. The connection has to be with a nylon hose 6 mm. x 4 mm.

Connect the water supply to the entrance connection at the machine, by means of a hose of 8mm. inside diameter and fastener, checking that the entrance tap is closed.

Air pressure necessary: 5 to 6 Bars .

Connect the electric wire to the power source checking that voltage on the machine and voltage on the main line are the same. If both are not the same, check connection voltage.

CHANGE OF VOLTAGE
With machine disconnected from main line, do as follows:
Adapt to **Fig 2A** connections in:
Motor connection box of
Mixer motor and Vacuum pump motor
Adapt to **Fig 2** connections in the main line connection box, to the machine.
Control Box substitute thermal relay of the vacuum pump F-1 inside Control box (**12 fig 1**) for another one of the needed amperes range (see amperes needed at the motor plate), fig.1and adjust the amperes to the value required by the motor.
Control Box **(12 fig 1)** substitute thermal relay F 2 of mixing motor **(1 Fig 1)** inside Control box **(12 fig 1)** for another one of the needed amperes range (see amperes needed at the motor plate), and adjust the amperes to the value required by the motor.

Change the position of the wires arriving to the transformer T1 inside Control Box **(12 fig 1)** as follows:
0-220 for 220 Volts
0-380 for 380 Volts.

SENSE OF ROTATION OF MIXING MOTOR

Sense of rotation has to be as shown by the arrow in the reducer 2 fig. 1
Check the sense of rotation of mixing motor:

With the General	Switch 27 fig. 1	ON
	Switch 63 fig. 1	ON (Pilot 62 lighted)
	Switch 46 fig. 1	ON

If sense of rotation is not correct, put OFF the above switches and change two of the three phases of the main line, and check again.

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CHECKING COMMANDS BEFORE STARTING TO WORK

1)	Main Switch **(27)**	**ON**
2)	Taps to empty the investment **(10)**	**CLOSED**
3)	Pump switch **(49)**	**ON**
4)	Vacuum lever **(13)**	**ISOLATING THE PUMP**
5)	Valve communicating both chambers **(28)**	**UP (pos A fig 6)**
6)	Air intake **(52)**	**ON AND OPENED**
7)	Release pressure valve **(3)**	**CLOSED**
8)	Water valve **(15)**	**CLOSED**
9)	Water valve **(26)**	**ON AND OPENED**
10)	Rest off commands	**OFF**
11)	Timers	
	Mixing time **(48 A)**	**SELECT TIME**
	Working time **(48B)**	**SELECT TIME**

WORKING STEPS

A- Place the upper tank (47 Fig1) in position Fig 3. To do this, switch up both pneumatic switches (45 fig 1) in order that the pneumatic cilinders take (16) take the set of cover number 5 and reducer 2 and motor fig 1. up. Then push lever 44 fig 1 to the right to move cam number 7 fig 1, raising tank 47 fig. 1, allowing to rotate it to position fig 3

B- Place the flasks in the lower tank (20 fig. 3) and place tank 47 back to the position fig 1, beingu sure that the flasks are right under the taps (10 fig 1), and change the flasks position if necessary. Can be advisable to mark the position wanted for the flasks on the bottom of the flasks tank, making easier further operations.

C- With upper tank (47) in position fig. 3, the taps (10) closed, and all commands of the machine in off position, pours most of the water in the upper tank (47). Then pour the investment.
Pour the rest of water but this time on the shaft (8) to clean it from traces of investment. Water-powder rate is normally 38 to 42 percent, according to the investment manufacturers.

VERY IMPORTANT. Do not rotate manually the mixing shaft (40) or the vanes. The slots of the shaft could not fit in the grooves of the nut at the reducer (2 fig. 1) and the lid of the upper tank could not be closed when acting the the 2 valves number 45. In case this happens will be necessary to mouve the vanes again until the shaft and grooves fit again.

D- Rotate the upper tank (47) in position fig. 1, being sure that stays against the limit (9 fig 3). Rotate the lever (7) to take down the upper tank (47) against the lower tank (20).

Switch at the same time both pneumatic switches (45) to lower the set lid (5+1+2) closing the upper tank.

Check that general switch (27) is ON, and switch ON number 63 fig. 1 lighting pilot number 62 fig 1.

Check that vacuum pump switch (49) is ON.

Check that valve 3 fig. 1, in closed and valve 28 fig. 1 in position vacuum in both tanks (pos A fig 6).
Open lever 13 (valve of general vacuum in the circuit), and check that the valve 15 fig. 1 is closed.

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Switch ON push-button 46 (mixer). Both tanks are under vacuum while in the mixing tank water and investment are being mixed very homogeneously, avoiding that air bubles are trapped in the mass, which can remain near the piece, causing the metal balls attached to the pieces.

A complete cycle requires a SETTING TIME. Manufacturers of investment stablish a SETTING TIME based on:

Ratio Water-Powder advised for every type of investment
Temperature of the mix

SETTING TIME is the adition of:

WORKING TIME (for instance 7 minutes)
RESTING TIME (for instance 2 minutes)

WORKING TIME is the adition of:

MIXING TIME (for instance 5 minutes)
VIBRATING TIME (for instance 2 minutes)

Machine with timer fitted allow:

- By timer 48A, to ring a bell when the mixing time is over.

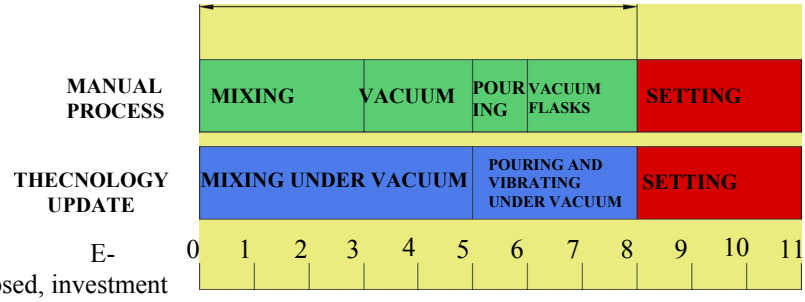
- By timer 48B, to stop vibration and when the working time is over. Vacuum is normally left working since the pump works better with the oil a bit warm.

VERY IMPORTANT. Follow recomendations of:

- Ratio Water-Powder
- Mass temperature (21 ºC)
- Mxing time
- Working time.

To obtain a much stronger mix, reducing or minizing cracking and splashing, and to obtain a better surface. Starmix helps a great deal to control those conditions.

SETTING TIME
Comparison of the old manual method with
the technology update
WORKING TIME



E- When mixing time is elapsed, investment is to be poured in the flasks. In order that the

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investment falls gently and uniformly in the flasks, the vacuum degree at the upper tank (47) can be slightly inferior to the one at the lower tank (20). This difference can to be obtained opening or leaving slightly opened the valve (3), limiting so the vacuum degree obtained in the upper tank (47).

F- Push (46) to stop the mixer. Open the taps (10) closing them soon as the flasks are filled. Push (53) to vibrate.Close valve (28) (Pos C fig 6)
It can be chosen to rotate valve (28) leaving air getting at the mixing chamber, or keeping it in position communicating both chambers.
Place valve (15) in position to allow water to get in, cleaning the cover of the tank (47), helping as well to clean the tank itself.
Switch ON the mixer (46).

VERY IMPORTANT. Check that due to hight water pressure the water accumulated in the mixing tank do no exceed half of the tank capacity, and if necessary reduce the flow by closing partially the valve 15. Do not forget to close valve 15 when cycle is over. If water fills completelly the tank could ger inside the reducer.

G - When working time elapsed:

- Switch OFF the mixer (46)
- Push (49) to stop the pump.
- Stop vibration (53) in case timer has not already stopped.
- Valve (28) in position air inlet in both chambers (pos B fig 6).
- Push (45) to act the pistons rising the cover.
- Rotate lever (44) to separate tanks (47) and (20).
- Rotate tank (47) to position fig. 3.
- Rotate lever (44) to connect tank (47) with sink (33).
- Open taps (10) to allow water going out through the sink, and complete cleaning with cleaning gun (55).
- Close taps (10).
- Valve (54) in position air in.
- Close (54).
- Rotate lever (44) to disconnect tank (47) and (33).
- Start a new process, or shut off the pump and the main switch.

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WHAT TO DO IN CASE OF

During operation of the machine, some problems can be experimented

Problem	Solution
IN CASE THAT REDUCER AND MIXING SHAFT DO NOT ROTATE	Steps: 1) By means of pneumatic switches (45) rise the upper lid (5) 2) Move the upper tank (47) to position Fig. 2 3) Check if reducer rotates without the shaft. If so, the problem is in the shaft cone 4) In this case .remove the cone, clean and if necessary change bearings and gaskets. 5) If the reducer does not rotate , check if thermal relay F2 in Control box (12) is disconnected. In the affirmative push reset. 6) If thermal relay is ON, remove the motor and see if rotates normally. 7) If the motor does not rotate, change or repair the motor. 8) It motor rotates, problem is the reducer (2). With a wooden piece introduced where the motor shaft was, check if the reducer rotates (it had to be smooth). 9) In the negative .remove the reducer, clean and if necessary change bearings and gaskets. It can be also necessary to change gears or the complete reducer. If some component of the reducer is substituted refill the oil. SEE TYPES OF OIL IN MAINTENANCE

Step/Fault	USUALLY CAUSED BY	CURED BY
Flashing or finning	Incorrect powder/water ratio. Too much water	Using correct amount of water (Specially important with vacuum investing machines)
Flashing or finning	Work time of investment not used up	Ensuring the work time is used up and slurry temperature is 20-22

Other flasing or finning	Work Cycle too long Investment beguinning to set while still under vaccum	Ensuring the work cycle is not too long and slurry temperatura is 20-22ºC
Other flasing or finning	Disturbing the flasks too soon	Leave the flasks for at least one hour

Bubbles, complete spheres	Investment too thick. Too little water	Use correct powder/water ratio
Bubbles, complete spheres	Vaccum pump/tank faulty	Ensure the equipment is regularly serviced and adequate for the task
Bubbles, complete spheres	Work cycle too long. Investment beguinning to set while still under vacuum	Ensuring the work cycle is not too long and the slurry temperature is 20-22 ºC

Water marking	Incorrect powder / water ratio. (too much water	Using correct amount of water- (Especially important with vacuum

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		investment machines)
Water marking	Work time of investment not used up	Ensuring the work time is used up and slurry temperature is 20-22 ºC

Too long time to raise the vacuum	The vacuum is not sealed	Check the sealing See Maintenance-Check the sealing
	The oil of the pump is dirty	Change the oil of the pump See Maintenance-Change of oil
	The filter of cartridge (43 fig. 5) gets too much solid investment	. See MAINTENANCE *TO CHANGE THE FILTER OF CARTRIDGE (43 FIG*

The oil of the pump gets dirty in a short time	There is investment inside difficult corners inside the pump	Petrol the pump. See Maintenance- Petrol the pump

mms. Dia. Cilindro Flask	**Componentes Components**	**Altura Heigth mm 50**	**Altura Heigth mm 75**	**Altura Heigth mm 100**	**Altura Heigth mm 125**	**Altura Heigth mm 150**	**Altura Heigth mm 175**	**Altura Heigth mm 200**
50	Polvo/Powder Gr	150	220	290				
	Agua/Water 38% cc	57	84	110				
	Agua/Water 40% cc	60	88	116				
75	Polvo/Powder Gr		510	680	850	910	1250	
	Agua/Water 38% cc		194	258	323	346	475	
	Agua/Water 40% cc		204	272	340	364	500	
100	Polvo/Powder Gr			1020	1300	1590	1820	2050
	Agua/Water 38% cc			388	494	604	692	779
	Agua/Water 40% cc			408	520	636	728	820
125	Polvo/Powder Gr				2160	2500	2950	3400
	Agua/Water 38% cc				821	959	1121	1292
	Agua/Water 40% cc				864	1000	1180	1360

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MAINTENANCE

INTERNATIONAL OILS TO BE USED (EVENTUALLY) ON GEARBOX FOR MIXING			*OILS BRANDS RECOMMENDED FOR BUSCH PUMPS R.5*
SHELL	OMALA	460	ARAL MONTANOL GM 100
MOBIL	MOBILGEAR	634	BP ENERGOL CS 100
EXON	SPARTAN CD	460	MOBIL VACUOLINE 100
B P	ENERGOL GR XP	460	SONOCO SUAVIS 100
CASTROL	ALFA SP	460	OPTIMOL ULTRA 100
CALTEX	MEROPA	460	SHELL TALPA G 100
H Q	BENDOL EP	460	TEXACO URSA P 100
AGIP	BLASIA	307	ISO VG 100
FINA	GIRAN	68	ARIES 100

- Grease point 32, once a day (SAI 10 or similar).
- Change the oil of the pump between: **Once a week to once a month**, depending of how many flasks are processed
- Check the oil of the gearbox once a week.
- Change the filter oil (39) of the pump between 12 months (Cod 1 A10069A)
- Change the filter aspiration (35) of the pump between 6 months (Cod 4NFILT639)

MAINTENANCE OF PUMP

CHANGING THE OIL OF THE PUMP

Pump has to be not working, but worm. Run for a while before changing the oil.

1. - Valve **(13)** CLOSED.

2. - Place a tray of about 8 cms high, and 2 or 3 litters capacity under the perforated sheet metal supporting the pump.

3. - Remove the cap **(64 fig 5)** and used oil will start to flow out..

4. - When no more oil if flowing our, switch the pump on **(49 fig 1)** during 10 to 15 seconds, to empty all the oil. Repeat it 7 or 8 times.

5. - Replace the cap **(64 fig 5)**

6. - Remove the filling cap **(65 fig 5)** and fill with clean oil up to half the viewer **(66 fig 5)** .

IMPORTANT

When pouring new oil to the pump, do not overcome the level (centre of the round plastic viewpoint) If overcome the inside filter gets oil, the oil excess will be removed from the scape and damage the filter.

Replace the cap **(65 Fig. 5)**. Pump is now ready to use.

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CHANGING AIR FILTER OF THE VACUUM PUMP (fig 5)

Change every 6 months, or before if you notice a lower efficiency in the pump exhausting capacity. With the pump not working do as follows:

1. - Loose the lid A pushing the closing system B up.
2. - Remove lid A.
3. - You will se then the cartridge C (Cod 4NFIL639)
4. - Remove the cartridge (not reusable)
5. - Fit the new cartridge.
6. - Replace cover A.
7. - Push closing system B down in order lid A is perfectly closed.

CHANGE OF OIL PUMP EXTERNAL FILTER (39 fig 5)

Change every 12 months. With the pump not working do as follows:

1. - Unscrew (counter clockwise) filter **(39 Fig. 5)** using a chain wrench and remove the used filter (not reusable).
2. - Oil the gasket of the new filter and screw it using a chain wrench (clockwise) Tighten firmly.

CHANGE OF OIL PUMP INTERNAL FILTER (42 B FIG.5)

With pump stopped and cool.

1) Remove the four screws on the filter lid **(42 B Fig. 5)**, and the lid
2) Remove the lid gasket
3) Remove the internal filter (no reusable)
4) Fit a new filter, taking care of the position shown on the filter
5) Replace the gasket, the lid and the 4 screws.

PETROL THE PUMP

When the oil of the pumps gets dirty rapidly, the pump has to be cleaned thoroughly (petrol the pump)

Do it as follows:

1. - With the oil of the pump warm (let it work for a while) and stopped, remove the cover (**64 Fig. 5)** and empty out the oil. (SEE CHANGING THE OIL OF THE PUMP)

2 - Pour a mixture of oil (1/3) and gasoil (2/3) through the filling hole (**65 Fig. 5),** until the level of oil gets the middle of the plastic viewpoint **(66 Fig. 5)**. Put again the cap of said hole **(65 Fig. 5)**.

3. - Place the lever of the valve **(13 Fig. 1),** in position **CLOSED**

4. - Switch the pump ON **(48 Fig. 1)** and keep the pump working during 5 minutes.

5. - Stop de pump **(48 Fig. 1)** and pour the mixture out. (See paragraph 1)

6. - - Pour oil (1/3) through the filling hole (**65 Fig. 5),** until the level of oil gets the middle of the plastic viewpoint **(66 Fig. 5)**. Put again the cap of said hole. Switch the pump ON **(48 Fig. 1)** and keep the pump working during 5 minutes.

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7. - Empty the oil When no more oil is going out, place the lever of the valve **(13 Fig. 1),** in position **OPEN.** . - Switch again the pump ON **(48 Fig. 1)** and keep the pump working during 1 or 2 minutes. With the emptying cap **OFF** (**64 Fig. 5).** All dirtiness inside the pump will go out. Switch the pump **OFF,** and place the cap again.

8. - If through the round plastic viewpoint the oil looks still a bir milky, repeat the point 2 to 7.

9. - Pour clean oil through the filling hole **(65 Fig. 5)**, until the level of oil gets the middle of the plastic viewpoint **(66 Fig. 5)**. Put again the cap of said hole. The pump will be ready to work.

10. - Check the vacuum degree, which has to be substantially better.

WARNING

- If vacuum degree is not substantially better, and there is no locking in the machine, the problem is in the vacuum pump. NO PERSON WITHOUT EXPERIENCE HAS TO TRY TO REPAIR. Contact us and let us know model and serial number of the pump.

MAINTENANCE OF THE MACHINE (EXCEPT THE PUMP)

CHANGE OF REDUCER OIL
1 Check the level, throuhg (38 fig 1)
If necessary add oil for reducer (cod 2ACEP0460) through (38 A fig 3)
2 Check that oil of the reducer does not have water (milky colour) through (38 fig 1)
3 It there is water change oil immediately, emptying throug (38 fig 1)

SEALING CHECK

Do always with the pump worm. Let the pump work a few minutes before checking.

Checking all the circuit

With the machine in position of **fig 1**, do as follows:

1.- Valve **(15)**	CLOSED
2.- Valve **(3)**	CLOSED
3.- Valve **(28)** in positionn **A fig 6**	VACUUM IN BOTH CHAMBERS
4.- Valve **(13)**	OPEN
5.- Pouring valve **(10)**	CLOSED
6.- Timer **(48A)**	2/3 MINUTES
7.- Timer **(48B)**	0 MINUTES

A.- Switch pump ON **(49)** . After about 1 minuete, the maximum vacuum degree of 760mm is obtained and the vacuum gauge **(50)**.will show it.

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B.- Rotate lever of valve **(13)** to position CLOSED. Wait 30 seconds. If vacuum gauge **(50)** is showing same value and does not show loosing vacuum degree, sealing is good. Isolate vacuum pump.

8.- Valve **(28)** en position **B fig 6**	AIR PRESSURE IN
9.- Valve **(13)**	OPEN
10.- Pouring valves **(10)**	CLOSED
11.- Timer **(48A)**	WORKING TIME
12.- Timer **(48B)**	WORKING TIME

If vacuum loss has been noticed during operations A or B, do as follows:
Checking lower tank.

With the machine in position of **fig 1**, do as follows:

1.- Valve **(3)**	CLOSED
2.- Valve **(28)** in position **C fig 6**	VACUUM IN BOTH CHAMBERS
3.- Valve **(13)**	OPEN
4.- Taps **(10)**	CLOSED
5.- Timer **(48A)**	2/3 MINUTES
6.- Timer **(48B)**	0 MINUTES

A.- Switch pump ON **(49)** . After about 1 minuete, the maximum vacuum degree of 760mm is obtained and the vacuum gauge **(50)**.will show it.

B.- Rotate lever of valve **(13)** to position CLOSED. Wait 30 seconds. If vacuum gauge **(50)** is showing same value and does not show loosing vacuum degree, sealing is good. Isolate vacuum pump.

7.- Valve **(28)** in position **B fig 6**	AIR PRESSURE IN
8.- Valve **(13)**	OPEN
9.- Taps **(10)**	CLOSED
10.- Timer **(48A)**	WORKING TIME
11.- Temp **(48B)**	WORKING TIME

If vacuum loss has been noticed during operations A or B, check as follows:

a) Oil lever and quality of the oil .

b) Fittings and unions are not loose..

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c) Plastic hoses are perfectly fitted and fastened against the fittings.

d) That gaskets of the lower tank **(20)** (cod. 3RET30010) is OK. Change is necessary- See CHANGE OF TANKS GASKETS.

e) That teflon washers **(37)** of pouring valves **(10)** are well tightened.

Cheaking upper tank

With the machine in position of **fig 1**, do as follows:

1.- Valve **(15)**	CLOSED
2.- Valve **(3)**	CLOSED
3.- Valve **(28)** in position **A fig 6**	VACUUM IN BOTH CHAMBERS
4.- Valve **(13)**	OPEN
5.- Taps **(10)**	CLOSED
6.- Timer **(48A)**	2/3 MINUTES
7.- Timer **(48B)**	0 MINUTES

A.- Switch pump ON **(49)** . After about 1 minuete, the maximum vacuum degree of 760mm is obtained and the vacuum gauge **(50)**.will show it.

B.- Rotate lever of valve **(13)** to position CLOSED. Wait 30 seconds. If vacuum gauge **(50)** is showing same value and does not show loosing vacuum degree, sealing is good. Isolate vacuum pump.

8.- Valve **(28)** in position **B fig 6**	AIR PRESSURE IN
9.- Valve **(13)**	OPEN
10.- Taps **(10)**	CLOSED
11.- Timer **(48A)**	WORKING TIME
12.- Timer **(48B)**	WORKING TIME

If vacuum loss has been noticed during operations A or B, check as follows:

f) Oil lever and quality of the oil.

g) Fittings and unions of the valve 28 are not loose..

h) Plastic hoses are perfectly fitted and fastened against the fittings.

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i) That gaskets of the upper tank **(47)** (cod. 3RET30010) is OK. Change is necessary- See CHANGE OF TANKS GASKETS.

j) The sealing of the valve 3.

*CHANGE OF GASKETS IN THE UPPER TANK **(5 fig 3)***

Withe the machine in the position of figu 3, do as follows:

1.- Remove the faulty gasker.

2.- To remove the traces of the gasket, adhered at the slot, impregnate (using a cloth) the slot with alcohol or a soft solvent (as employed for cloro-caoutchouc paintings)

3.- Using a blunt screw driver, fine abrasive paper grit 320 or 400), or similar, remove all traces of gasket and leave the slot clean.

4.- Clean the lot with alcohol of soft solvernt.

5.- Cut the needed lenght of new gasket (Cód 3RET30010) and check that the gasket adapts well to the slots and there is no room for vacuum leaks. Remove the gasket from the slot.

6.- Fill a fine line of glue (CIANOCRILATE BASE) and at the same time replace the gasket in the center of the slot, and giving some pressure to the gasket against the slot. Do it until complet the diameter.

7.- Place the machine in position as per fig 1.

*CHANGE OF GASKETS IN THE LOWER TANK **(11 fig 3)***

With the machine in the position of fig. 3, do as follows:

1.- Remove the screws fixin the upper tank **(47 fig 3)** to the support **(18 fig 3)**.

2.- Tilt the tank upside-down **(47 fig 3)** Let is resting against the sink..

3.- Follow the steps 1 a 6 of CHANGE OF GASKETS IN LOWER TANK.

4.- Tilt the tank again **(47 fig 3)** still resting against the sink.

5.- Fit again the screws fixing the tank **(47 fig 3)** to the support **(18 fig 3)**

6.- Place the machine in position as per fig 1.

VERY IMPORTANT:
- Do not use strong solvents which will turn opaque the traslucie metacrilate.
- Usu cianocrilate glue with much care. Do not touch with the hands. Follow carefully manufacturer instructions.

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TO CHANGE THE FILTER OF CARTRIDGE (43 FIG 5)

With the time, cartridge gets too much investment trapped and difficults vacuum action.

Needs to be substituted by a new one.

1 Remove screw (68 Fig. 5) in filter (30 Fig 5). Remove cup (41 Fig 5) with its O ring gasket.
2 Remove the filter of cartridge and rif a new one (43 Fig. 5)
3 Fit again screw (68 Fig 5). Check that O ring gasket is in correct position. Do it firmly to avoid leaking

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A0101271

Num.	Fig.	Descripción	*Description*	Description	Cod	Esq.Elec.
1	1	Motor	*Motor*	Moteur	4O0000040 (10) 4O0000045 (20)	
2	1	Reductor	*Reducer*	Reducteur	5K10RE001 (10) 5K20RE001 (20)	
3	1	Válvula de entrada de aire	Release pressure valve	Vanne d'entrée d'air	2A010129	
4	3	Racords de regulación SI Elevación lado izquierdo SD Elevación lado derecho BI Bajada lado izquierdo BD Bajada lado derecho	Device to adjust pneumatic cylinder pressure. SI. Device to rise left cylinder. SD. Device to rise right cylinder. BI. Device to lower left cylinder. BD. Device to lower right cylinder	Racords reglage SI.- Elevation cote gauche SD.- Elevation cote droit BI.- Descente cote gauche BD.- Descente cote droit	4NRRGR018 (10) 4NRRG0814 (20)	
5	1-3	Tapa cuba superior	Upper lid	Couvercle cuve superieure		
6	1	Rodamiento axial tipo 5.110	Bearing	Roulement axial type 5.110	4RBA05110	
7	1	Leva superior para levantar cuba superior	Upper cam to rise upper tank	Came superieure pour lever cuve super.	4LEVS0010 (10) 4LEVS0020 (20)	
8	1	Leva inferior para bajar cuba superior	Lower cam	Came inferieure pour descente cuve super	4LEVI0010 (10) 4LEVI0020 (20)	
9	3	Topes	Stop	Bouttoirs		
10	1	Grifos para vaciado	Taps to empty the investment	Robinets vidange platre	AM01012Y (10) AM01012X (20)	
11	3	Tapa cuba inferior	Lower lid	Couvercle inferieur		
12	1	Cuadro eléctrico	Control box	Boitier de commande		
13	1	Válvula paso general vacio	Vacuum lever	Vanne passage vide	5V0000014	
14	5	Bomba de vacío	Vacuum pump	Pompe a vide	1A010066 (10) 1A010064 (20)	
15	1	Válvula entrada agua cuba superior	Water inlet	Vanne entree d'eau a cuve superieure	2A010127	
16	1	Cilindros neumáticos	Pneumatic cylinder	Cylindres pneumatiques	4PNCI5081 (10) 4PNC70100 (20)	
17	1	Soportes cilindros	Support	Support cylindres		
18	3	Soporte y giro cuba superior sobre columna derecha	Connection of tank to column.	Support cuve superieure sur colonne droite		
19	1	Toma de entrada de agua de red	Water general intake	Prise d'entree d'eau du reseau		
20	3	Cuba inferior	Lower tank	Cuve inferieure		
21	3-5	Placa fijación soporte	Support plate	Flasque fixation support		
22	3	Columnas	Column.	Colonnes		
23	1	Puente para guía columnas y soporte del motoreductor	Column support	Pont pour guidage colonnes et support motoreducteur		
26	1	Grifo toma entrada toma red	Water valve	Robinet d'entree d'eau		
27	1	Interruptor general	Main switch	Interrupteur general.		
28	1	Válvula de 3 vias para: -vacio en las 2 cubas (posAfig.6) -vacio en cuba inferior (posCfig6) -entrada de aire (posB fig6)	Valve communicating both chambers or leaving air get inside: -Vacuum in both tanks (A fig 6) -Vacuum in lower tank.(C fig 6) - Air intake (B fig 6)	Vanne a 3 voies pour : -Vide aux deux cuves (PosA fig.6) -Vide a cuve inferieur(PosCfig.6) -Entree d'air (Pos.B fig.6)	2A010124	
29	4	Tubería conexión entre vías	Vacuum hose.	Tuyau d'union entre cuves	4ITUB1209 (10) 4ITUB1512 (20)	
30	5	Filtro retención revestimiento	Filter catching investment	Filtre retention vapeurs (platre)	4NFILT010	
31	4	Bastidor en acero inox.	Frame.	Bâti inox		
32	3	Puntos de engrase (diariamente SAE-10)	Greaser. (Oil every day SAE-30 or similar)	Huileur (huiler journalierement avec SAE-10 ou equivalent).	55500055	
33	1	Fregadero	Sink	Evier		
34	4	Tornillos hexagonales inox M 8x30mm	Screws M-8x30	Vix exagonaux inox M8x30mm		
35	5	Filtro aire aspiración bomba vacío	Filter	Filtre d'air pompe a vide	1A010069	
36	3	Cojinetes de bronce	Bronze bushing	Douilles en bronce pour coulisse des colonnes		
37	3	Arandelas en teflón	Washers	Rondelles en teflon	2A01012X	
38	1	Nivel aceite/vaciado aceite del reductor	Reducer oil level/emptying	Voyant niveau d'huile reducteur/vidange	4NRTM003A	
38A	3	Tapón llenado aceite del reductor	Reducer oil in	Bouchon remplissage huile	4NRTM0016	
39	5	Filtro exterior aceite	Oil filter vacuum pump	Filtre exterieur d'huile	1A010069B	

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40	3	Eje central	Mixing shaft	Broche cannele		
41	5	Envolvente contenedor cartucho filtro	Filter cartridge cup	Vase pour cartouche filtre		
42	5	Conexión de filtro a bomba	Connecting piece filter-pump	Branchement au filtre a pompe		
42B	5	Tapa filtro interior de la bomba vacio	Filter lid	Couvercle filtre interieur pompe a vide		
43	5	Cartucho filtro	Cartridge of filter	Cartouche filtre	4NFILTC10	
44	1	Palanca accionamiento levas separación cubas	Lever to raise mixing tank	Levier actionnement cammes separation cuves		
45	1	Válvulas de aire	Pneumatic switch	Vannes d'air	4NSPE4517	
46	1	Interruptor batido-mezcla	Mixing switch	Interrupteur (poussoir) battage/melange		
47	1-3	Cuba superior	Upper tank	Cuve superieure		
48A	1	Temporizador batido mezcla	Mixing timer	Temporisateur battage/melange	4JT000000	
48B	1	Temporizador tiempo total	Total timer	Temporisateur temps total	4JT000000	
49	1	Interruptor bomba de vacío	Pump switch	Interrupteur (poussoir) pompe a vide		
50	1-5	Vacuómetro	Vacuum gage	Gauge a vide	4PVACU001	
51	1	Manómetro	Manometer	Gauge de pression d'air.	4PNMA001	
52	1	Unidad de filtrado y entrada aire red	Air filter	Unite de filtrage d'air-huile (prise d'air)	4PNFH201	
53	1	Interruptor vibración	Vibrator switch	Interrupteur (poussoir) vibration		
54	4	Válvula entrada aire y agua para pistola 55	Air and water valve for gun	Vanne d'entree d'air et d'eau pour pistolets	2A010130	
55	4	Pistola limpieza	Cleaning gun	Pistolet nettoyage	4N0000000	
56	1	Regulador de presión	Pressure regulator	Regulateur de pression		
57	5	Tubo de vacío	Vacuum hose	Tuyau conduite vide	4S0000010	
57A	5	Tubo vacuómetro	Vacuum gauge hose	Tuyau conduite a gauge pression d'air	1Z040080	
58	1	Pilotos	Lights	Voyants lumineux		
59	1	Potenciómetro regulación vibración	Vibrator regulator	Potenciometre vibration		
60	1	STOP (Paro emergencia)	Emergency stop	STOP (Arret de surete)		
61	1	Sirena	Buzzer	Sonnerie		
62	1	Piloto maniobra	Start light	Voyant interrupteur manoeuvre		
63	1	Interruptor de maniobra	Start switch	Interrupteur manoeuvre		
64	5	Vaciado aceite bomba de vacío	Oil emptying cap	Bouchon vidange pompe a vide		
65	5	Tapón llenado aceite bomba vacío	Oil filling cap	Bouchon remplissage pompe a vide		
66	5	Nivel de aceite bomba vacio	Oil level vacuum pump	Niveau d'huile pompe a vide	4NRTM003B	
67	5	Vibrador	Vibrator	Vibrateur	5BATVI200 (10) 4V00GR320 (20)	
68	5	Tuerca filtro	Filter nut	Ecrou filtre		

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ELECTRIC SCHEMAS 1 AND 2

ELECTRIC SCHEMAS 1

H1 ON light
H2 Vacuum pump light
H3 Mixer light

H4 Vibrator light
K1T Mixing timer
Mode A. Regulate 4/5
Scale seconds from 0-12
K3T Total operation timer.
Mode A. Regulate 10
Scale seconds from 0-12

M1 Pressure gauge.
M2 Vacuum gauge
M3 Pneumatic switch
P Safety stop
R1 Vibrator adjuster
S1 Operation switch
S2 Vacuum pump push button
S3 Mixer push button
S4 Vibrator push button

ELECTRIC SCHEMA 2

1 Main line conections.
2 Vacuum pump conections.
3 Mixer conections.
4 Vibrator conections.
B1 Buzzer
F1 Vacuum pump thermic
F2 Mixer thermic
F3 Vibrator fuse
F4-F5 Operation fuses
H1 ON light
H2 Vacuum pump light
H3 Mixer light
H4 Vibrator light

K3-K4-K5 Operation relays
K1T Mixing timer
K2T Buzzer timer
K3T Total operation timer.
KM1 Vacuum pump contactor
KM2 Mixer contactor
K6 Vibrator
QO Main switch
R1 Vibrator adjuster
S1 Operation switch
S2 Vacuum pump push button
S3 Mixer push button
S4 Vibrator push button
T1 Transformer

REMARKS TO SCHEMA 3

Select voltage depending or tensio to use on transformer T1

Fuses F3, F4, F5 = 4 Amps crystal. Operation tension 110V CA.
Regulate thermal F1, F2 depending of the intensity of the motor to be used.

Reset the thermal pressing reset button.

Adjust buzzer time with timer K2T.

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FIG. 1

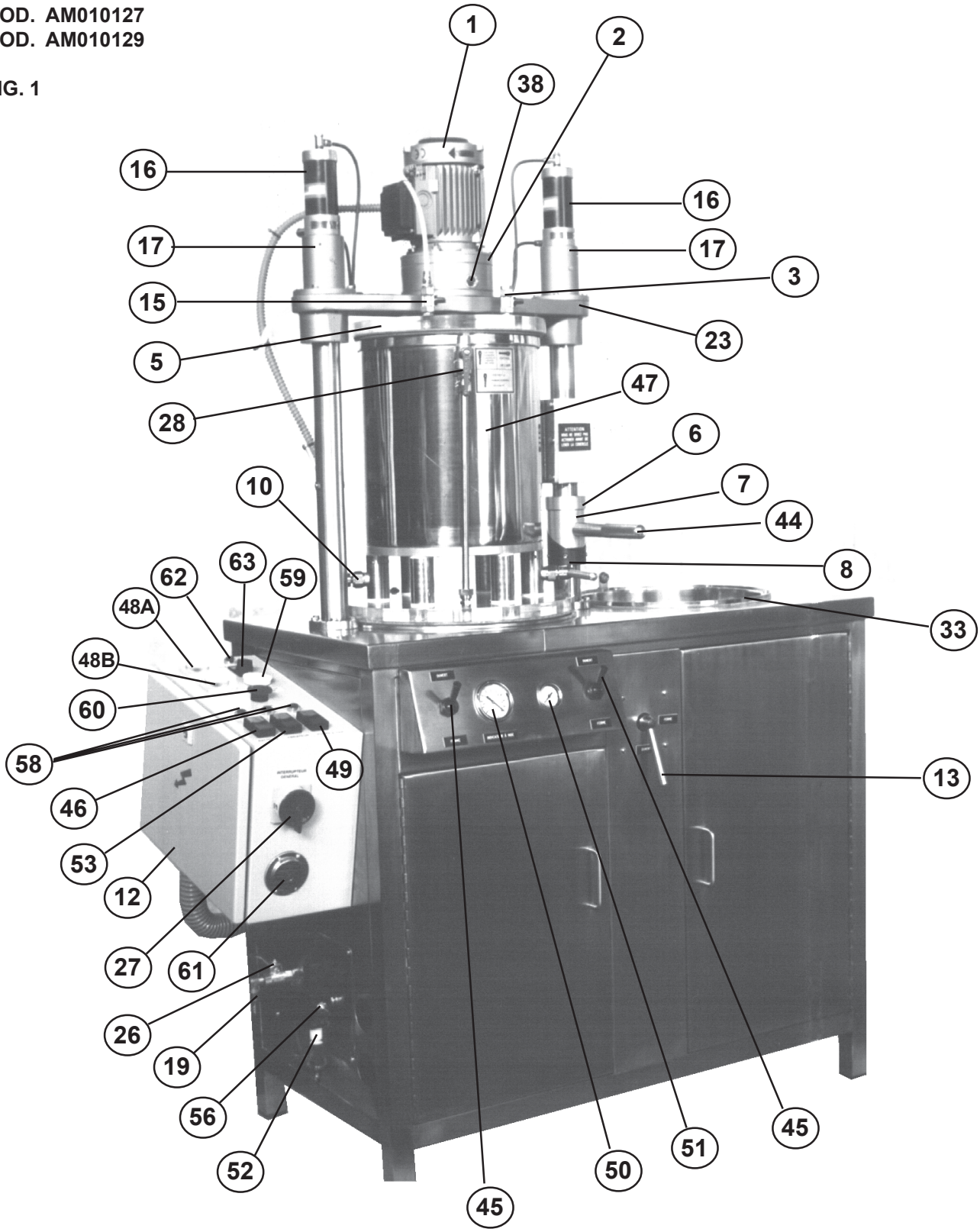

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FIG. 3

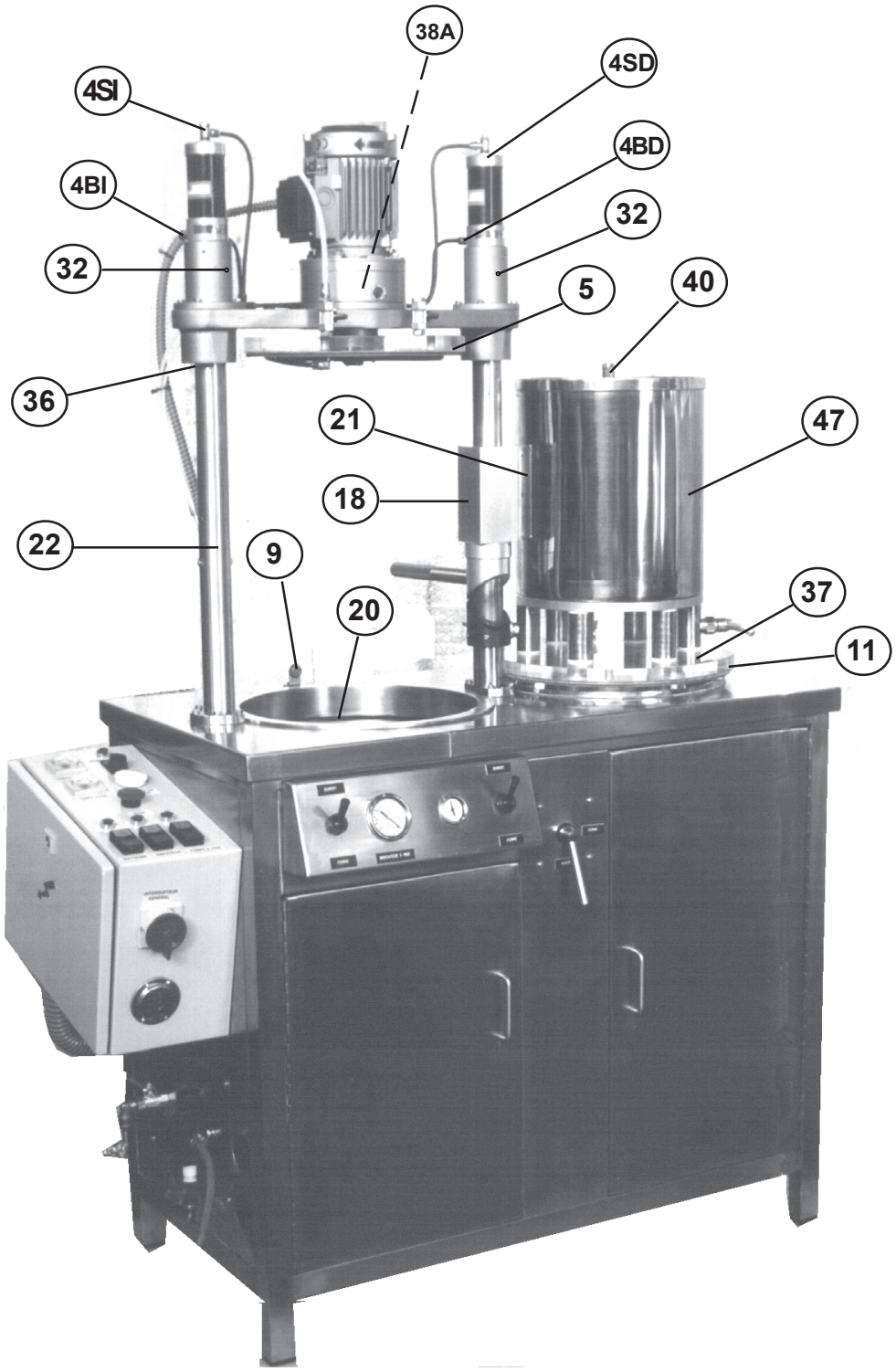

FIG. 2

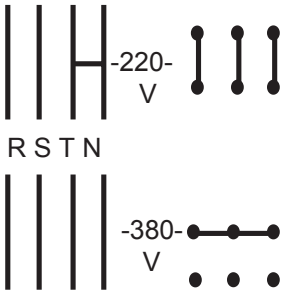

FIG. 2A

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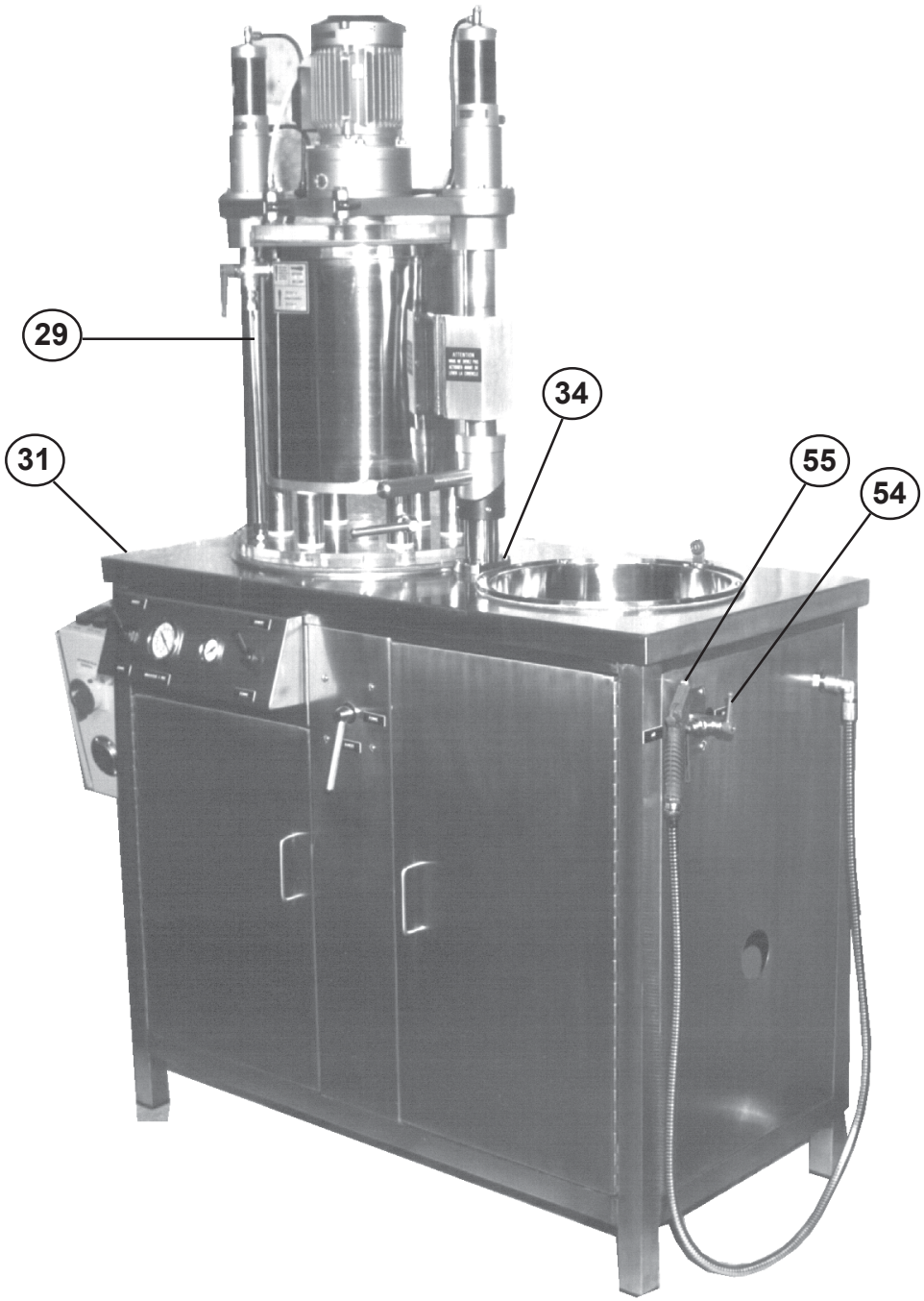
FIG. 4



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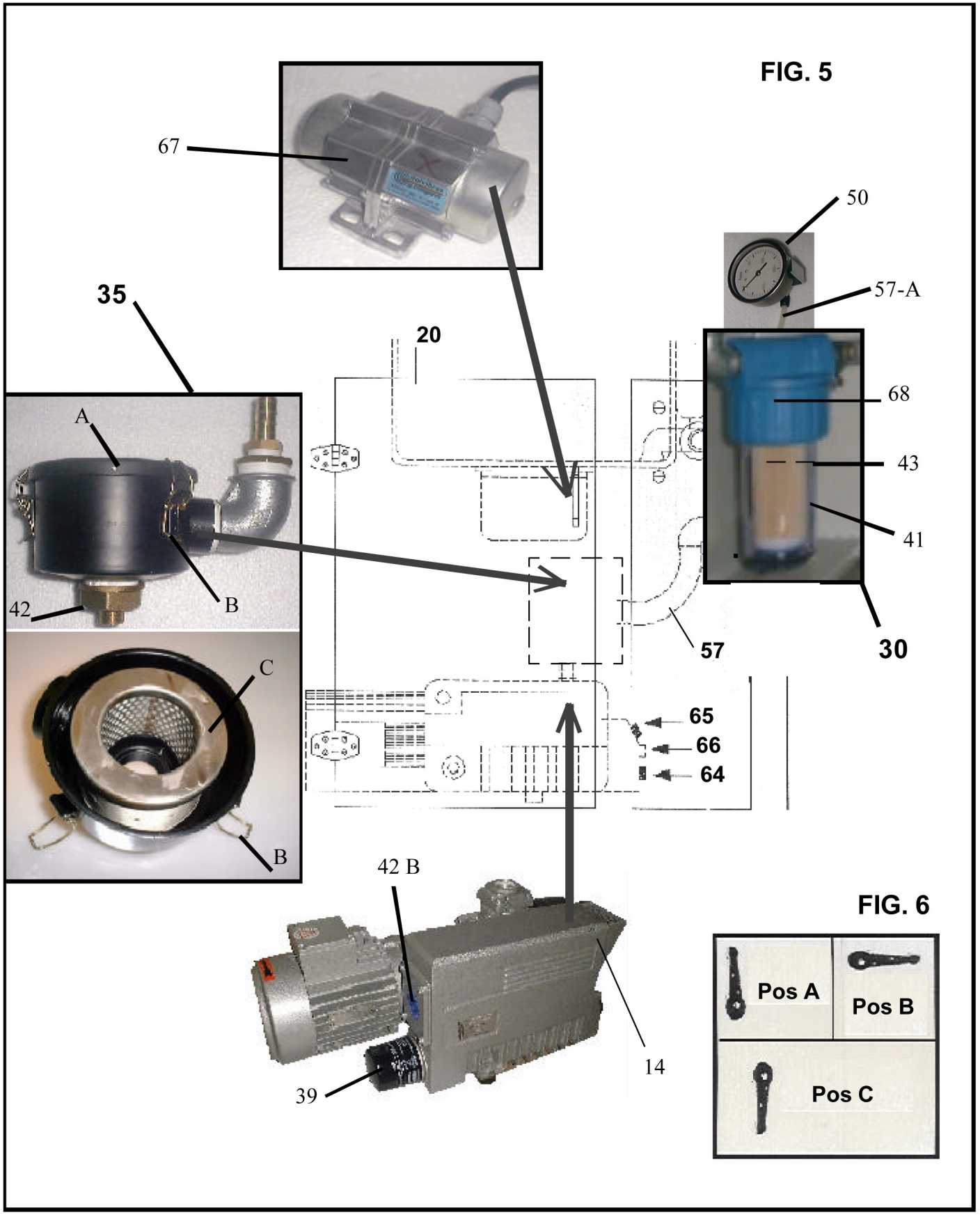

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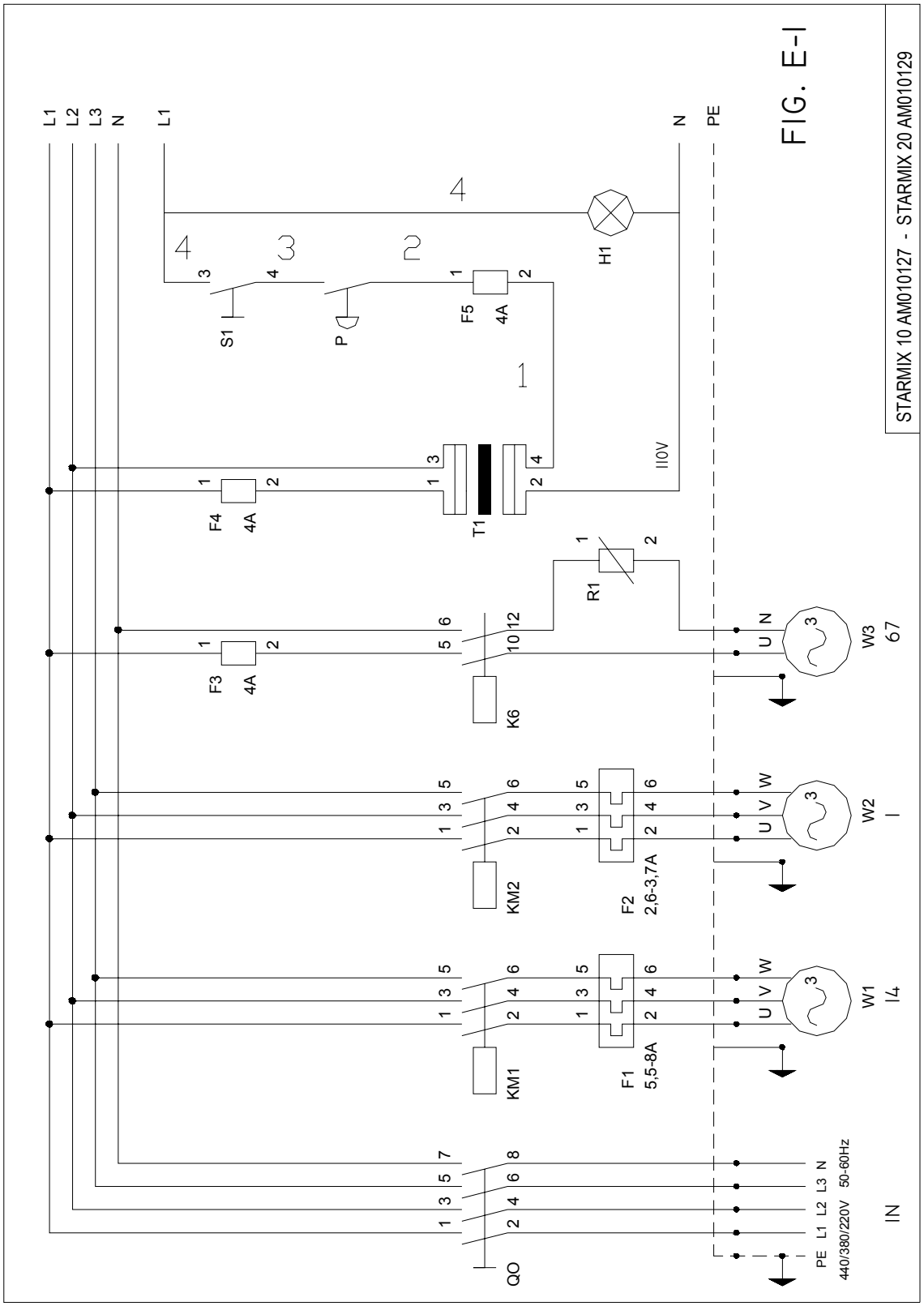

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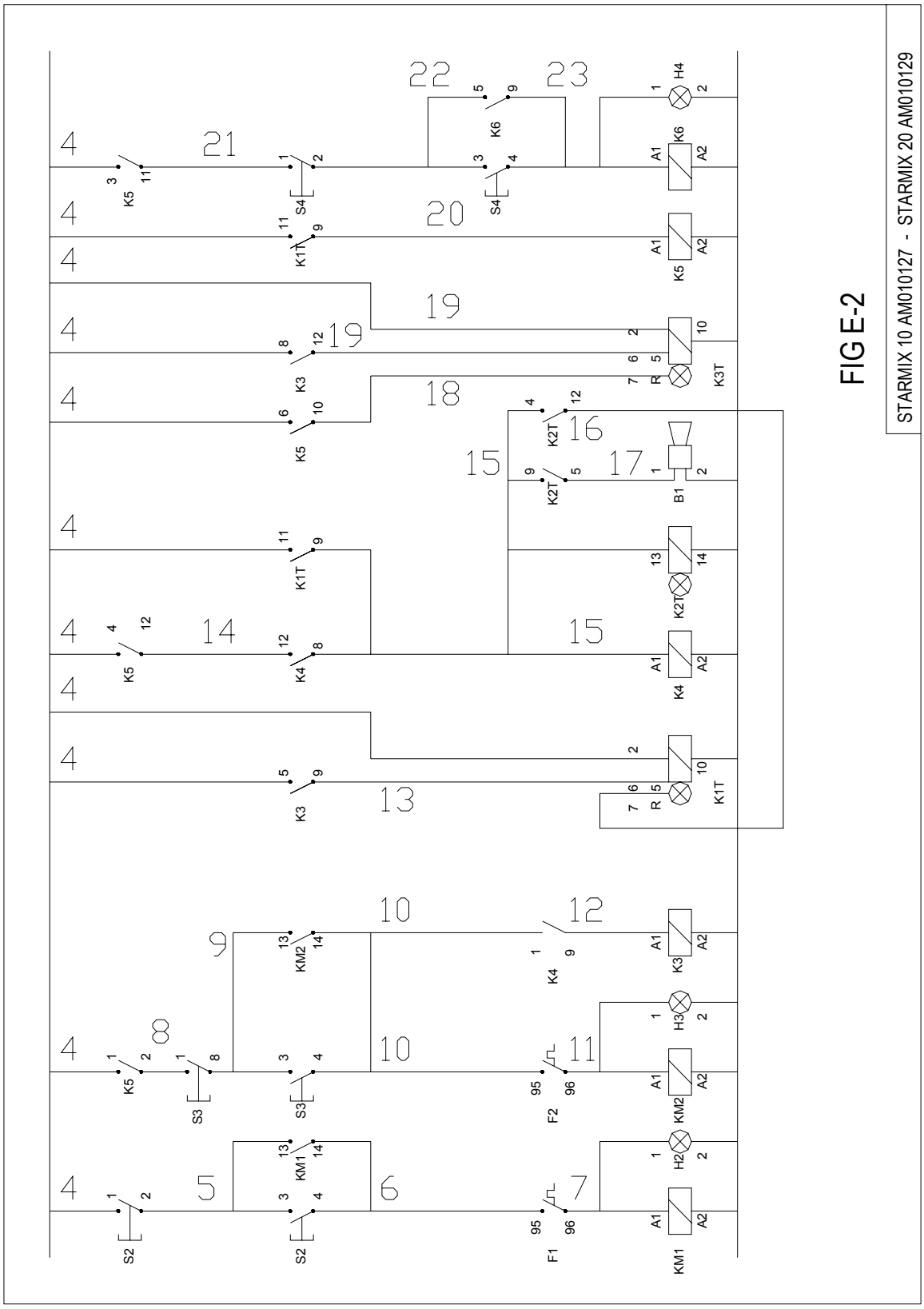

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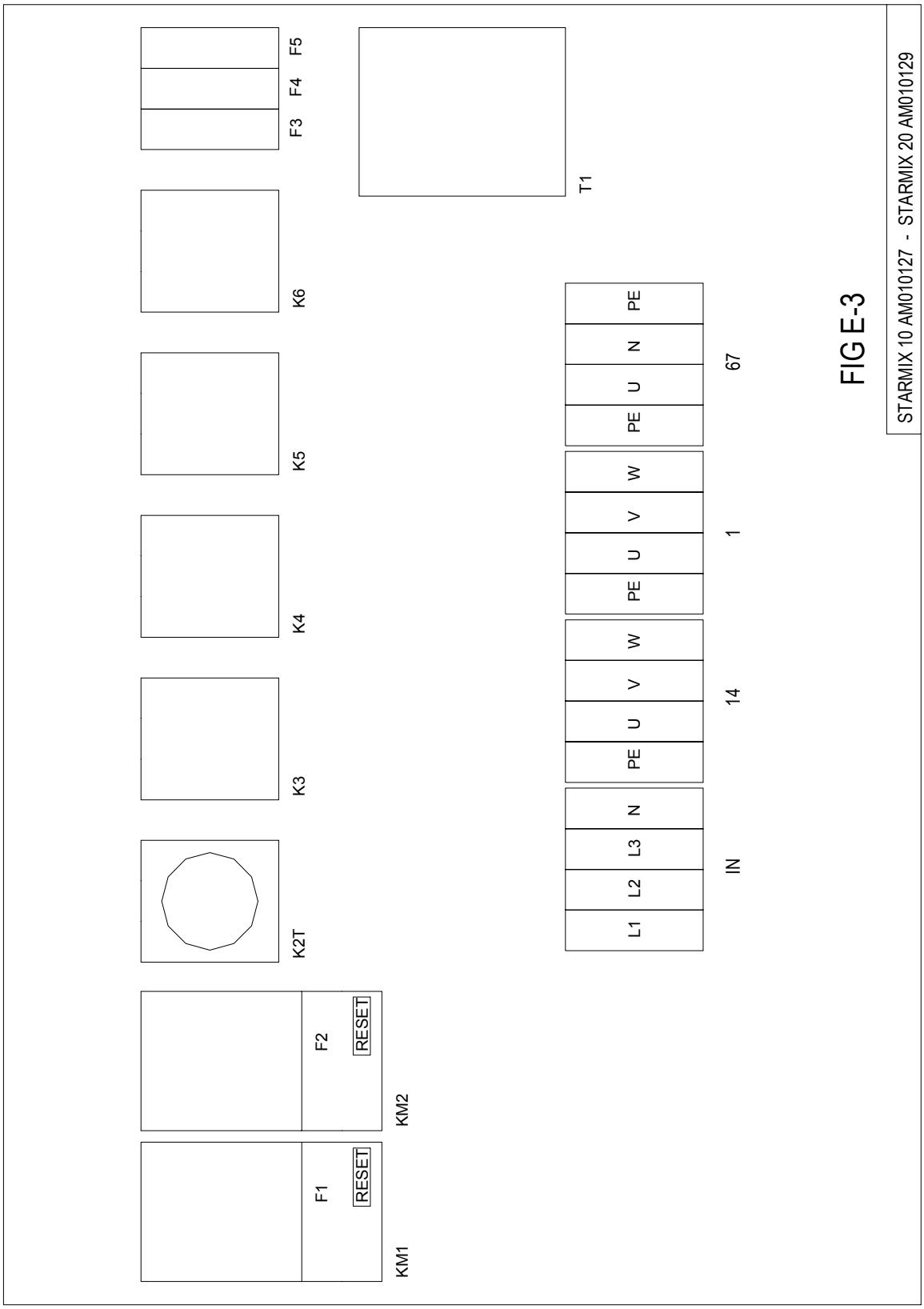

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Pongan especial atención a las señales de peligro adheridas a la máquina, y que son:
Special attention has to be given to the danger warnings in the machine which are:
Faite spécial attention aux avis de danger collés sur la machine, étant:

Señal-Signal-Avis	Peligro	Danger	Danger
VOLTAJE 	Puntos con voltaje, al sacar tapa o abrir puerta	Live points when removing the cover, or opening the door	Points avec voltage quand on enlève le couvercle où on ouvre la porte
	Mantenimiento: Desenchufar tomas Bloquear o retirar elementos de corte Detectar ausencia de tensión Poner a tierra y en cortacircuito Señalizar la zona de trabajo	Maintenance Unplug all connections Fix or remove all machine cutting tools Check no voltage Put to earth in short-circuit Put signal(s) in working area	Entretien: Enlevez les connections Bloquer ou retirez les ellements de coupe Vérifiez absence de voltage Posez en terre et coup-circuit. Signalisez la zone de travail
	Manos	Hands	Mains
	Precaución al bajar la tapa cuba mezcla	Be careful when mixing lid go down	Précaution quand la cuve de mélange descend
	No excedan la presión máxima de aire comprimido indicada en esta señal. Para el Mark IV y el alimentador es de 8 bar. Para programador de presiones es de 2 bar.	Don't exceed the maximum pressure of compressed air indicated in this sign. For the Mark IV and the feeder are of 8 bar. For programmer of pressures it is of 2 bars.	Ne dépassez pas la pression maximale d'air comprimé indiquée dans ce signe. Pour le Mark IV et le nourrisseur est de 8 bars. Pour programmeur de pressions c'est de 2 bars.
	- Tener cuidado con las falsas maniobras y las posibles salpicaduras de cera. En caso necesario apretar **"8" (Fig.4)**. selector que anula la presión de inyección de cera.		

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IMPORTANT NOTICE:
- Please read and follow carefully instructions in this manual

- The contained technical data in this manual refer to the moment of the writing. The manufacturer reserves the right to include technical modifications estimated as necessary or convenient, different to those described in this manual -
- In case of communications with factory, technical service or resale point It is requested to mention the characteristics of the machine and data in the label on the machine.

CONDITIONS OF SECURITY
To see chapter at the instructions: Dangers and Obligations
It is also recommended wisdom, especially during the starting, maintenance and/or repair.
Many accidents can be avoided observing the most elementary norms of security and recognising the situations potentially dangerous.
The warnings in this manual cannot be exhaustive although we attempt it. In not foreseen situations please contact directly with factory or authorised technical centre
RESPONSIBILITY
-the buyer should be careful in maintaining the machine in good state, without impurities neither strange bodies that can cause danger or in any event affect the good operation, and use the machine for the functions pointed out in this manual
-in the case in that procedures are used, work methods or technical labour different from those foreseen in the manual, it is extremely important to make sure that there are not dangers for the operator, third persons, or goods.
- Any modification in the machine should to be approved by factory

CONNECTION TO THE NET
Again it is requested they read the manual of instructions and its chapter Dangers and Obligations carefully before proceeding to connect the machine. If not carried out this way, the eventual consequences are of the author's responsibility.
Make sure that:

1) The data (voltage, frequency and capacity) match with the conditions of the machine reflected in the label or labels on the machine
2) The plug fitted matches with the intake of the installation. If the machine has already endowed the plug, check that it is the appropriate one
3) The electric installation is according to norms, with taking of earth, magneto thermal etc.
   As well as Neutral if the voltage is 380/420V

LOCATION Makes sure that:

1) The environment this dry and there is not dust excess
2) That the support place for the machine is resistant, and that the machine is levelled.
3) That the work height and position of the machine, is comfortable.

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AM010127 - AM010129

INSTRUCCIONES STARMIX 10-20
INSTRUCTIONS STARMIX 10-20
INSTRUCTION STARMIX 10-20

DOCUMENTOS DE INTERES
DOCUMENTS OF INTEREST
DOCUMENTS D'INTÉRÊT

REPUESTOS **SPARES** **RECHANGES**

COD.	PRODUCTO	PRODUCT	LE PRODUIT
3R000000	GRIFOS BATIDORAS	VALVE	ROBINET