

While thanking you for having chosen our machines, we advise you to read attentively the instructions given by this hand-book. These instructions will be surely useful to you for a long and untroubled work of the machine. We can here guarantee that our machines are built-up with the best materials coming from the best firms.

Furthermore our machines are submitted to the most severe overhauls on account of our good will to assist you in the best way.

MARK S.p.A.

AUTOMATIC PASTEURIZERS

TYPE

MIXMATIC

AUTOMATIC PASTEURIZERS MIXMATIC

The machine includes three systems :

- a - Electrical system FIG. 3
- b - Hydraulic system FIG. 2
- c - Refrigerating system FIG. 2

Each system includes the shut-off and control components.

The pasteurizer provides for :

- Warming up of mix^{*} by water heated to 176° - 185° F (80 - 85° C) by electrical elements.
- Pre-cooling of mix down to 104° ÷ 113° F (40 ÷ 45° C) by circulation of water at natural temperature (the more cold the mains water is, the more the mix temperature decreases).
- Final cooling of mix down to and holding at 36° ÷ 40° F (+ 2° ÷ + 4° C) by a compressor.

Now the mix has passed through the complete preparation cycle.

The pasteurizer is tested and shipped with all instruments properly set and ready for use.

INSTALLATION FIG. 1

Unpack the pasteurizer and place it on the pre-established place:

- 1) Connect the pasteurizer to the mains power line by means of cable (16 Fig. 2). Make sure that the mains voltage corresponds to that for which the unit is laid out.
Fit to the wall the main switch with fuses protecting the devices against short circuits. Connect the fourth cable (usually green yellow) to a good earth socket.
- 2) Connect the water delivery tube to tube identified by "INLET" (14 Fig. 2). The other tube must be extended up to the nearest drain.

The drain tube shall be of transparent plastic to visualize the water flow.

ATTENTION! If for some reason the plate "INLET" is not provided on the unit, remove the rear panel.
All tubes are then visible. The inlet tube is the one to which flow control valve (11 Fig. 2) is fitted.

The diameter of the tubes connecting the mains water line with the pasteurizer shall not be smaller than those of the tubes provided on the unit and shall not be throttled.

If a cock exists on the line, make sure that it is open, possibly remove the handwheel to prevent an involuntary closure.

The pasteurizer is provided with solenoid valve (3 Fig. 2), which automatically opens and closes the water when needed.

The MIXMATIC is now ready for use.

The first work cycle should be effected with the container filled with water instead of mix.

CONTROLS AT DISPOSITION OF THE UTILIZER - FIG. 1

- A) General switch (1) having three position: O - A - M.
Position A (first release), the machine is under voltage, thus it is ready for the beginning of the operating cycles.
On the second position M (second release), the switch cut-out the whole machine, leaving the only agitator moving.
This last condition permits to use the pasteurizer as a simple container complete with a mixer.
- B) Lever to fill the circuit with water (2).
- C) Push-button (3) for starting the heating cycle, that will be followed, automatically, by the pre-cooling, final cooling and preservation cycles.
- D) Switch (4) for the stop of the stirrer.
The stirrer begins operating automatically when putting the general switch (1) on position A (first release) and it has always to turn; we can have the stirrer cut-off, operating on the switch (4), only when in the vessel remains so little mix that the propeller works idling.

HOW TO USE THE MIXMATIC

After having installed the machine following the relevant description, make sure that a sufficient quantity of water is flowing and that the voltage is the same as that the machine is laid-out for.

At this point is necessary:

- 1) Make sure that the main switch (1) is on position (0).
- 2) Wash generously and disinfect the Mixmatic.
- 3) Fill the vessel with the product to be pasteurized.
- 4) Turn the main switch (1) on the first release (pos. A).
- 5) Operate on the lever (2) to have the circuit filled with water, and keep the lever under operation up to the moment the water comes out from the water drain continuously and without bubbles.

Depress the push-button (3) which gives the start to the heating cycle, and afterward, automatically, to the pre-cooling, cooling and preservation cycles.

To help the operator in his task, near each element on the control panel, there is a symbol of the apparatus which is controlled.

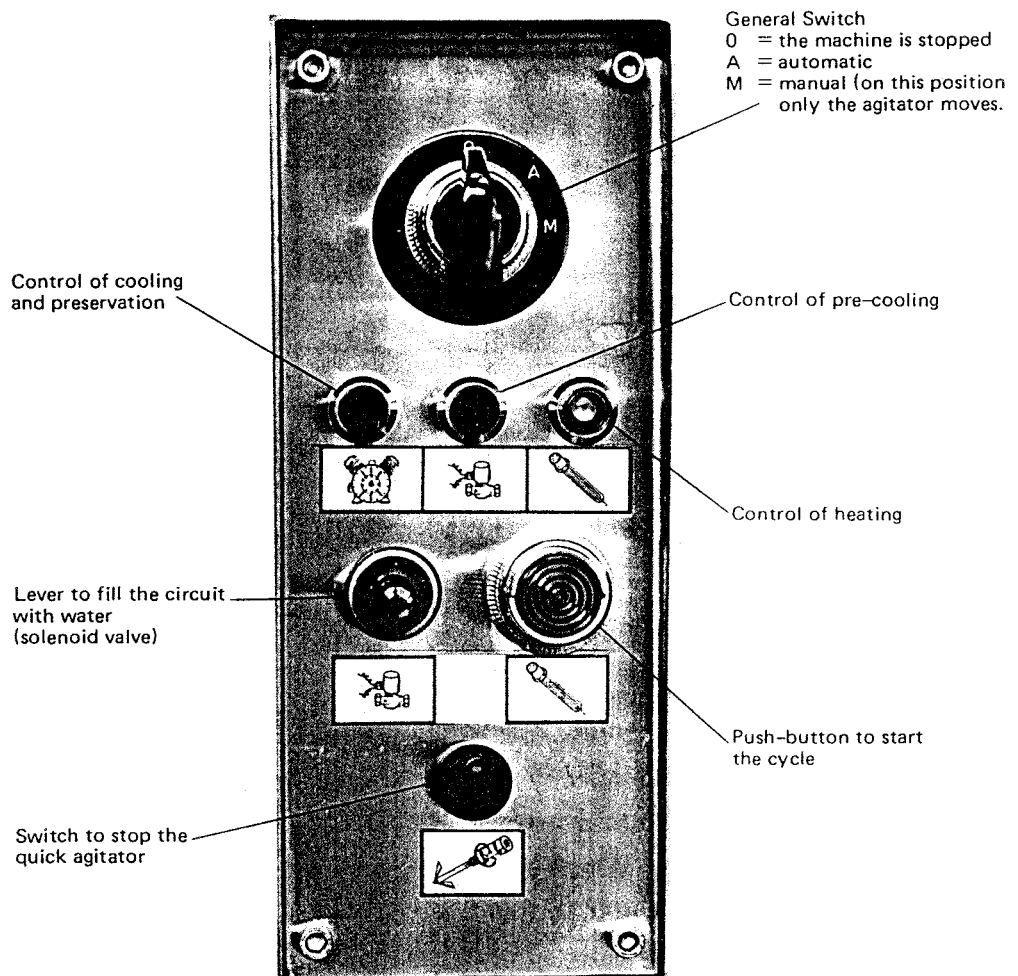
During all the cycles, the quick stirrer has to be maintained in motion; if it comes to a standstill, operate on the switch (4).

The control lamps 5 - 6 - 7 permit to control the succession of the different cycles.

Orange lamp (5) : heating up to 80°/85° C. (176°/185° F).

Green lamp (6) : pre-cooling up to +40 / +45° C. (104°/113° F);

Blue lamp (7) : final cooling and preservation at +2°/+4° C (36°/40° F).



During the use some operation may not be effected at the right moment or in the correct way.

The inconveniences and remedies are outlined hereafter.

INITIAL HEATING TIME TOO LONG – FIG. 2

This can be caused by :

- 1) Solenoid valve (3) when it fails to close, wherefore the water circulates at natural temperature.
- 2) Inefficiency of the electrical system.
- 3) Some resistance burnt out.

In case 1 make sure that, during the heating time, no water flows out from drain tube. During the mix heating, from the drain tube can come out only a very little water quantity mixed with steam, due to the expansion provoked by heating.

A continuous water flow from the drain tube means that the solenoid valve leaks; remove the valve and eliminate any impurity deposited on the valve seat.

The defective closure of the solenoid valve affects the efficiency both of heating and cooling. The efficiency of this valve is thus very important. Check it periodically.

In case 2 check whether current arrives to elements (8).

If the electrical system is efficient and points 1 and 2 are allright, some element has burnt-out and must be replaced.

If one resistance is burnt-out, the relevant protruding cap will be colder than the others.

To replace the resistance proceed as follows :

- a) Disconnect the wires from the terminals of the resistance.
- b) Screw the element off its seat.
- c) Fit the new element. Reconnect and insulate the terminals.

ATTENTION! When removing the element place a container beneath it to prevent the water from flooding the components located below.

In many machine's types, under the water inlet tube there is a plug (17) which permits the complete water outlet from the circuit, before a resistance being changed.

When replacing a resistance, before starting the heating process, fill-up the circuit with water, operating on lever (2). See USE, pag. 4.

Heating is controlled by thermostats (5).

Thermostat (5) switches off the heating and switches on the precooling.

It is properly set to switch off the heating when the mix temperature has attained $176^{\circ} \div 185^{\circ} \text{F}$ ($80^{\circ} \div 85^{\circ} \text{C}$).

In any case, once the thermostat is set - check the first heating cycle on thermometer (11 Fig. 1) and correct the position of the thermostat pointer, if the mix temperature is not the required one.

PRE-COOLING TIME TOO LONG - FIG. 2

This can be caused by :

- 1) Poor water supply.
- 2) Water flow in the line hindered by partially closed cocks or other obstacles.
- 3) Partially clogged water filter (12).
- 4) Failure of solenoid valve (3), which could remain partially or totally closed.

The inconveniences under points 1, 2 and 3 are merely of hydraulic nature and must be eliminated accordingly.

In case of failure of solenoid valve (3) check :

- a) The efficiency of the electrical line to the valve.
- b) The condition of the coil.

If the coil is burnt-out, replace it.

ATTENTION! If the solenoid valve does not open or opens only partially, it affects the pre-cooling.

If the solenoid valve does not close completely, it remarkably affects the heating.

Thermostat (6) controls the pre-cooling. It determines the pre-cooling end and starts the final cooling.

Thermostat (6) must be set at a temperature exceeding by 50° F ab. (10° C) that of the water available for pre-cooling.

This is fundamental condition. If thermostat (6) is set at a temperature below that of the water, it will not react, and the final cooling will not start.

POOR EFFICIENCY OF THE REFRIGERATING SYSTEM - FIG. 2

This inconvenience can be caused by a defective closure of solenoid valve (3) wherefore water at natural temperature is circulating, which absorbs power from the compressor.

Other causes for poor efficiency can be :

- 1) Insufficient condensation
- 2) thermostatic valve (10) damaged or not correctly set
- 3) filter (13) of the circuit not clean
- 4) insufficient gas quantity into the system.

In case 1, check that all the line cocks are opened; that the water filter (12) is duly clean and that the regulating water valve (11) is correctly set.

If the regulating water valve is duly set, the water coming out from the outlet tube, the compressor running, has to be at $+ 30 \div + 35^{\circ} \text{C}$ ($86^{\circ} \div 95^{\circ} \text{F}$).

If the thermostatic valve (10) is not duly set, the refrigerating system will be noticeably affected.

Expansion valve (10) is set during the test in the manufacturer's factory. Normally, it does not need resetting.

However, if a resetting is necessary, the valve should be set at $23^{\circ} \div 14^{\circ} \text{F}$ ($-5^{\circ} \text{C} \div -10^{\circ} \text{C}$) on expansion when the mix temperature is $34^{\circ} \div 39^{\circ} \text{F}$ ($+ 2^{\circ} \div + 4^{\circ} \text{C}$).

The final cooling by the compressor is controlled by thermostat (9), which holds the mix temperature at about $34^{\circ} \div 39^{\circ} \text{F}$ ($+ 2^{\circ} \div + 4^{\circ} \text{C}$).

See the specifications of the pasteurizer on page 11.

Summing up, we note that the idraulic, frigorific and electric schemes have been obtained in a most simple and rational way: for that reason their control and regulation do not present great difficulties.

You have to keep in mind too, that these systems have been built with the best materials to be found on the market, and that their checking has to be executed by capable technicians, who can easily find out any possible trouble, without touching or damaging pieces and parts not concerning the working deficiency we are searching for.

MARK declines all responsibility in case of pieces damaged by inexperience, wrong use or wrong maintenance.

Considering the continuous evolving of the technical processes, measures and data given in this instruction hand-book can be varied without notice.

Weights and measures have only an indicative value, and do not involve any MARK engagement.

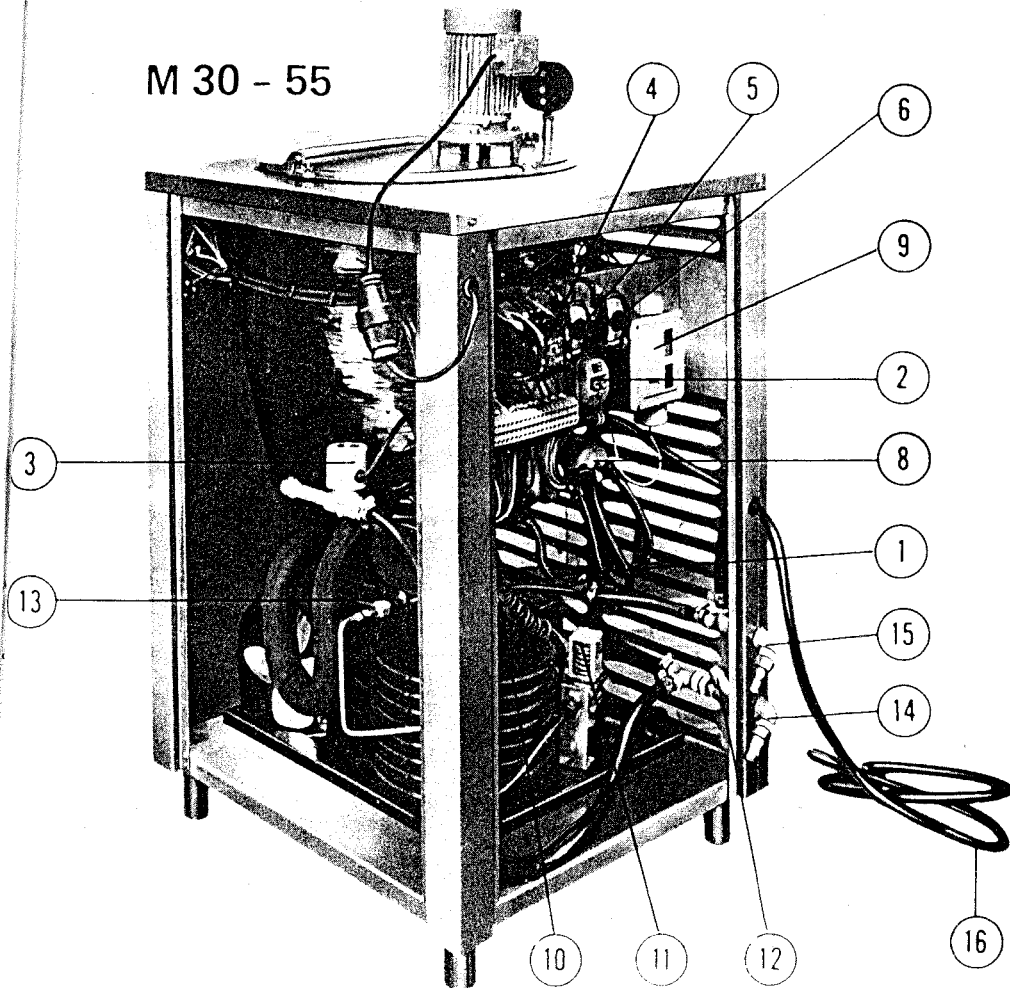
SPECIFICATIONS

	MIXMATIC 30	MIXMATIC 55	MIXMATIC 110
Capacity of container	Gals. 2 - 7 Lts. 10 - 30	6 - 12 25 - 55	9 - 24 40 - 110
Heating elements	2 x 2000 W.	3 x 2000W	3 x 3,500 W.
Stirrer motor	HP. 0,25	HP. 0,5	HP. 0,5
Total power	Kw. 4,5	Kw. 7,2	Kw. 12
Refrigerating gas	Freon 12	Freon 12	Freon 12
Quantity required	Lbs. 6,5 Kg. 3	6,5 Kg. 3	8 Kg. 3,5
Compressor motor	HP. 0,5	HP. 1	HP. 1,5
B.T.U./hour (14°-89° F)	BTU/H. 4,000	6,800	11.600
Frigories/hour (-10° +32°C)	1.000	1.700	2.900
Water required for condensation	Gals./h. 22 Lts./h. 100	Gals./h. 33 Lts./h. 150	Gals./h. 55 Lts./h. 250
Min. water pressure	P.S.I. 14 Atm. 1	14 1	14 1
Weight approx.	Lbs. 225 Kg. 102	295 134	419 190

DIMENSIONS			
A	940 (3' 1")	990 (3'3")	1160 (3'9" ³ / ₈ ")
B	560 (1'10")	620 (2'½")	680 (2'3")
C	660 (2'2")	710 (2'4")	810 (2'8")

WHEN ORDERING SPARE PARTS SPECIFY THE REFERENCE NUMBER ON THE ENCLOSED FIGURES 1 AND 2 AND THE DATA ON THE PLATE FITTED TO THE REAR OF THE UNIT.

M 30 - 55



M 110

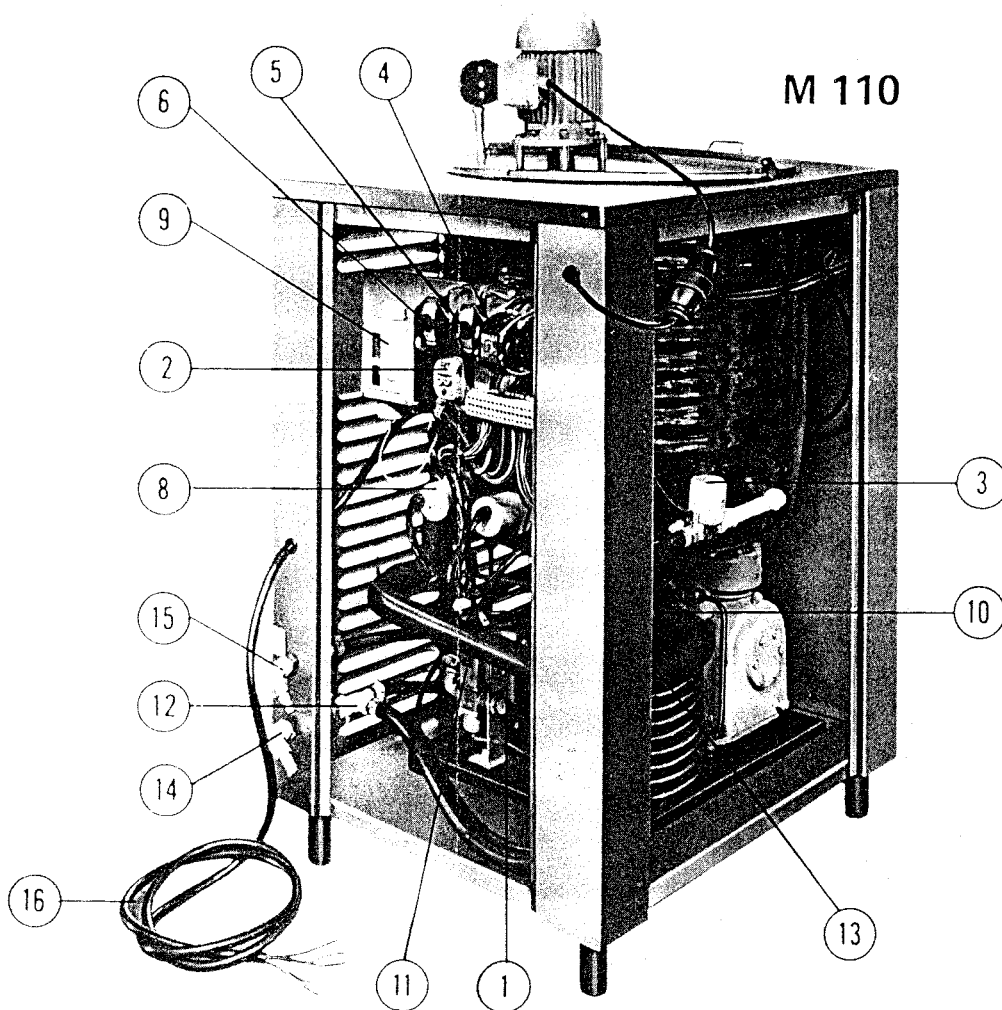


FIG. 2

FIG. 1

- 1) General switch having 3 positions (O - A - M)
- 2) Lever for filling the circuit with water
- 3) Push-button to start the cycle
- 4) Switch to stop the agitator
- 5) Control lamp for heating (orange)
- 6) Control lamp for pre-cooling (green)
- 7) Control lamp for cooling and preservation (blue)
- 8) Removable cover
- 9) Agitator motor
- 10) Cock for mix outlet
- 11) Control thermometer
- 12) Adjustable feet

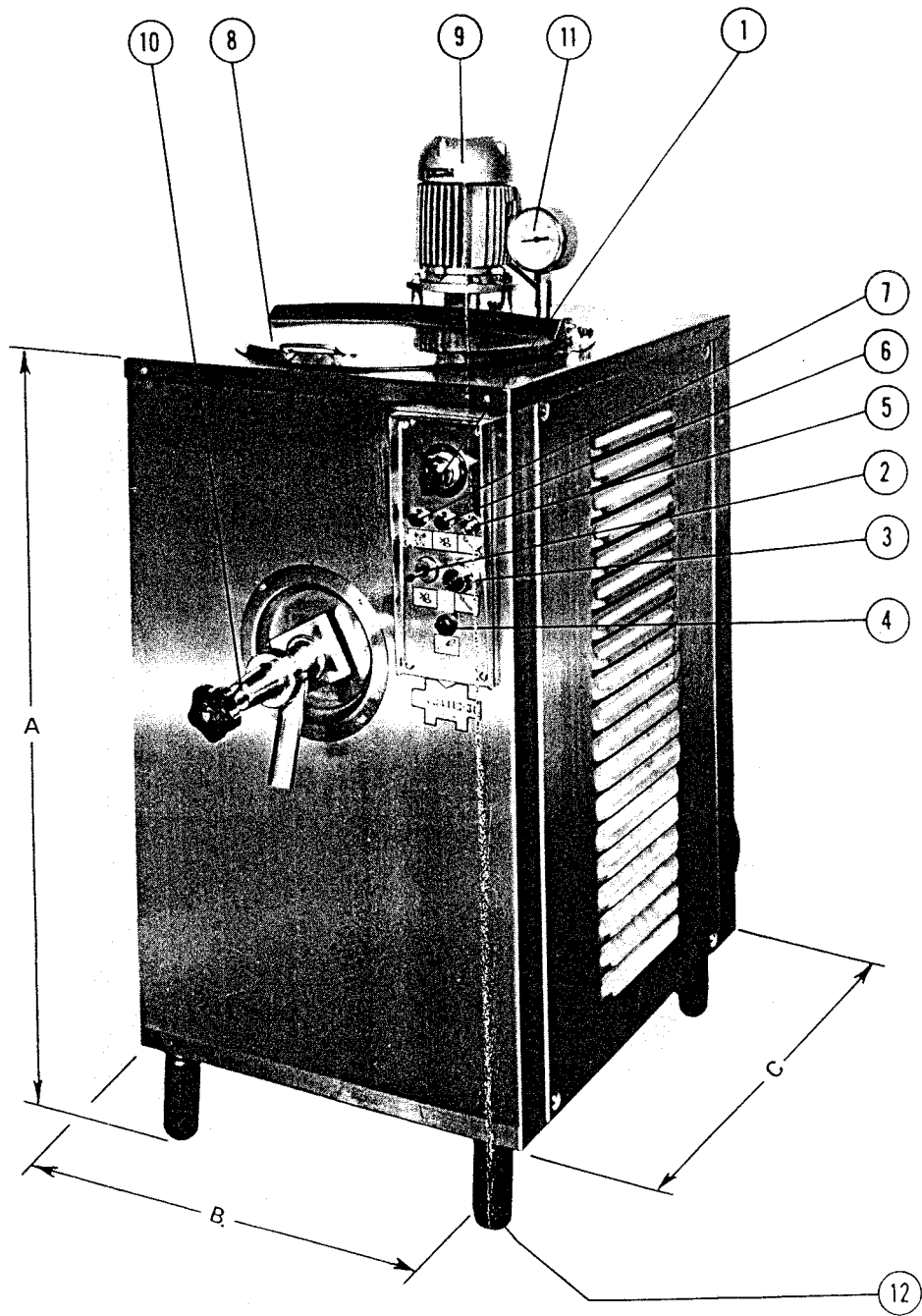
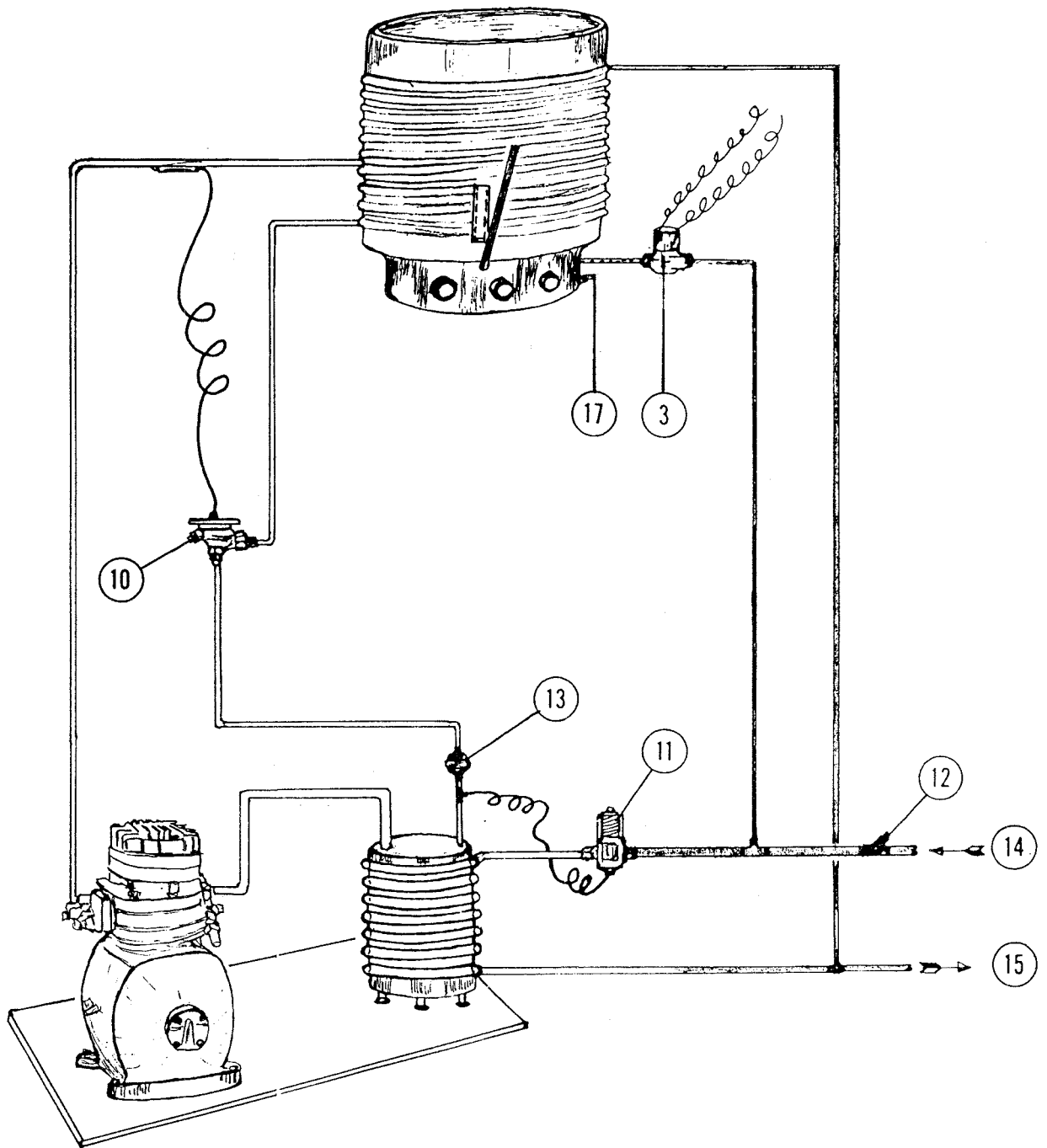
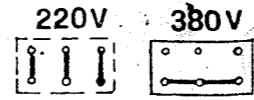


FIG. 1



MARIC



LEGENDA

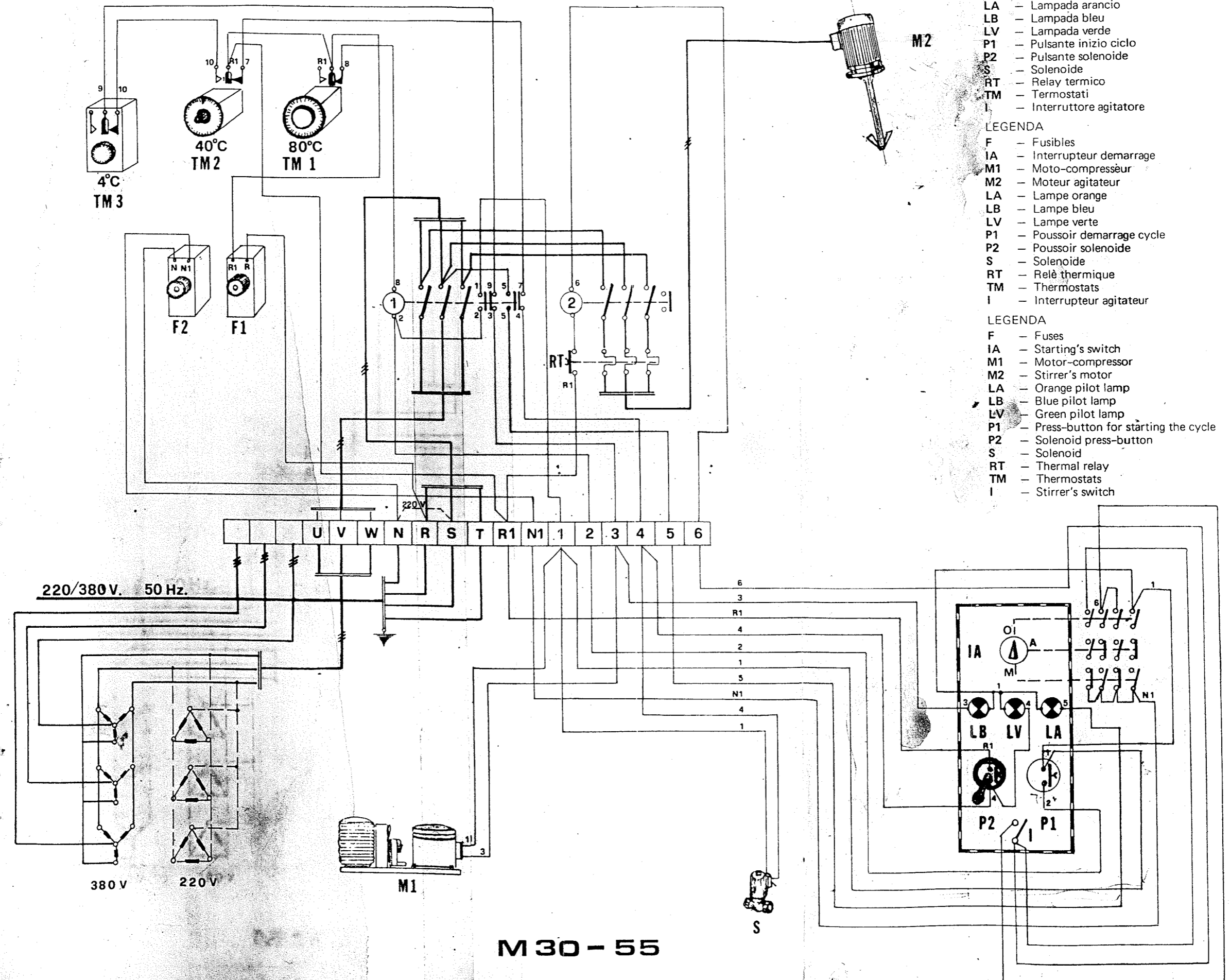
- F - Fusibili
- IA - Interruttore avviamento
- M1 - Moto-compressore
- M2 - Motore agitatore
- LA - Lampada arancio
- LB - Lampada bleu
- LV - Lampada verde
- P1 - Pulsante inizio ciclo
- P2 - Pulsante solenoide
- S - Solenoide
- RT - Relay termico
- TM - Termostati
- I - Interruttore agitatore

LEGENDA

- F - Fusibles
- IA - Interrupteur demarrage
- M1 - Moto-compresseur
- M2 - Moteur agitateur
- LA - Lampe orange
- LB - Lampe bleu
- LV - Lampe verte
- P1 - Poussoir demarrage cycle
- P2 - Poussoir solenoide
- S - Solenoide
- RT - Relè thermique
- TM - Thermostats
- I - Interrupteur agitateur

LEGENDA

- F - Fuses
- IA - Starting's switch
- M1 - Motor-compressor
- M2 - Stirrer's motor
- LA - Orange pilot lamp
- LB - Blue pilot lamp
- LV - Green pilot lamp
- P1 - Press-button for starting the cycle
- P2 - Solenoid press-button
- S - Solenoid
- RT - Thermal relay
- TM - Thermostats
- I - Stirrer's switch

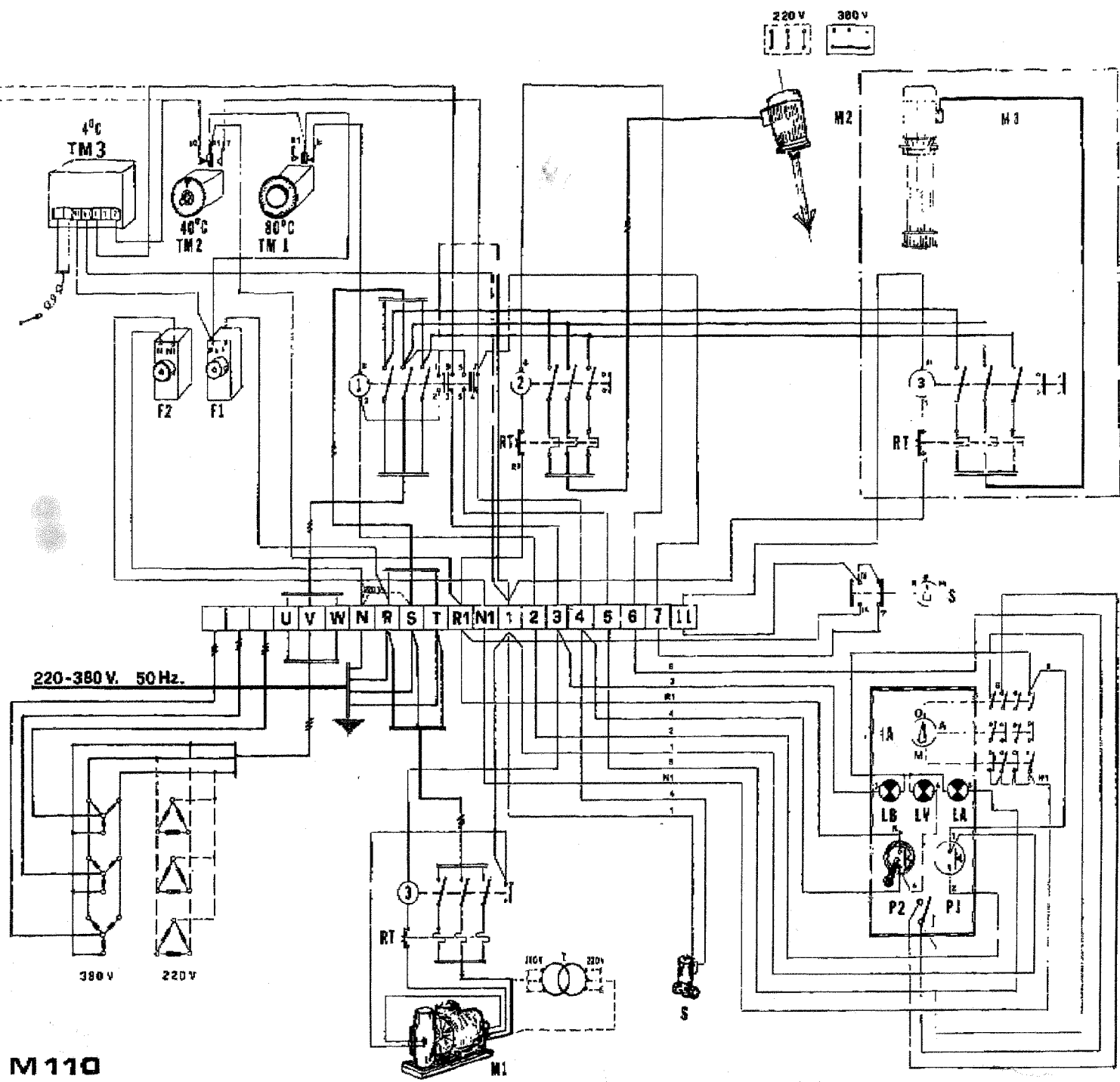


M30 - 55

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MARK

MIXMATIC
PASTEURISER
M110



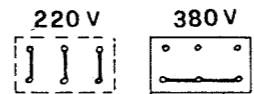
- LEGENDA
- F - Fusibili
 - IA - Interruttore avviamento
 - M1 - Moto-compressore
 - M2 - Motore agitatore
 - LA - Lampada arancio
 - LB - Lampada blu
 - LV - Lampada verde
 - P1 - Pulsante inizio ciclo
 - P2 - Pulsante solenoide
 - S - Solenoide
 - RT - Relay termico
 - TM - Termostato
 - I - Interruttore agitatore
 - M3 - Motore emulsionatore

- LEGENDA
- F - Fusibles
 - IA - Interrupteur demarrage
 - M1 - Moto-compresseur
 - M2 - Moteur agitateur
 - LA - Lampe orange
 - LB - Lampe bleu
 - LV - Lampe verte
 - P1 - Poussoir demarrage cycle
 - P2 - Poussoir solenoide
 - S - Solenoide
 - RT - Relé thermique
 - TM - Thermostat
 - I - Interrupteur agitateur
 - M3 - Moteur emulseur

- LEGENDA
- F - Fuses
 - IA - Starting's switch
 - M1 - Motor-compressor
 - M2 - Stirrer's motor
 - LA - Orange pilot lamp
 - LB - Blue pilot lamp
 - LV - Green pilot lamp
 - P1 - Press-button for starting the cycle
 - P2 - Solenoid press-button
 - S - Solenoid
 - RT - Thermal relay
 - TM - Thermostat
 - I - Stirrer's switch
 - M3 - Emulsifier motor

M110

MARK



LEGENDA

- F - Fusibili
- IA - Interruttore avviamento
- M1 - Moto-compressore
- M2 - Motore agitatore
- LA - Lampada arancio
- LB - Lampada bleu
- LV - Lampada verde
- P1 - Pulsante inizio ciclo
- P2 - Pulsante solenoide
- S - Solenoide
- RT - Relay termico
- TM - Termostati
- I - Interruttore agitatore

LEGENDA

- F - Fusibles
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