OPEN TYPE MILK COOLING TANK
MILKER 50 – MILKER 2000
INSTRUCTION MANUAL

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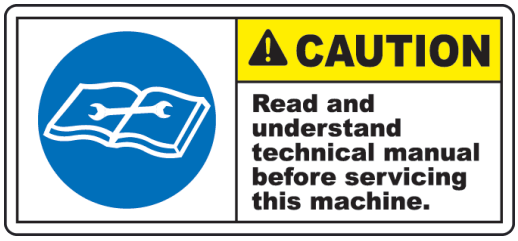

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1. Introduction

Having chosen the milk cooling tank of MILKER, you have chosen a perfect product, made by those who perfectly know the secrets of cooling and conserving milk. The milk cooling tank is constructed by using the most modern equipment and technology.
The milk refrigeration is performed by a stainless steel straight direct expansion evaporator plate, which is operated in an economical way with the maximum performance.

The materials that are used for the construction of the milk cooling tank are the most trustworthy at the European Trade Market and guarantee a long life and faultless operation of your milk cooling tank.
The controller is Italian Dixell type with a malfunction of less than 1%.
The motor of the stirrer is made in France by Sirem and its power is 90W/230V/30 rpm (in types of 50 ~ 1200 lit) and 120W/230V/30 rpm (in types of 1500 ~ 2500 lit).
The close type condensing unit is made by the most trusted material in the European market.

The base of the milk cooling tank has been designed for safe operation, easy maintenance and high aesthetics. The refriger-ating unit and the control panel are well protected from the external environmental conditions and from small animals and rodents entering the refrigerating unit.
It has to be mentioned that the entrance of small animals where the mechanisms are placed is a very serious problem and affects the milk tank's life duration. The rodents eat the cables and the insulation material of the piping as well as even total-ly destroy the refrigerating unit.

2. Safety Rules and General Instructions

During the design and construction of this machine everything has be done to make your job more efficient and secure. However, caution is of great importance. Prevention is better than regulation.
This machine is designed and constructed according to the Annex V directive 98/37 EU and the EN 292-1, EN 292-2, EN 294, EN 349, EN 418, EN 1672-1, EN 1672-2, EN 60204-1standards**.**

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important op-eration and maintenance (service) instructions in this manual. Upon seeing you are highly advised to pay attention to the warning and be careful of any accidents.
After this symbol an instruction follows.

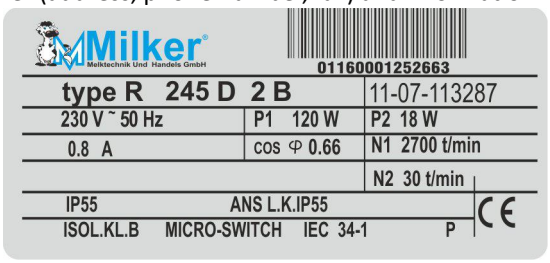
3. Product Introduction

ATTENTION! This manual is an integral part of the milk cooling tank and has to be kept in a safe place close to the milk cooling tank and make this known to other users. Do not expose this manual to rain or moisture.
Do not neglect to read this manual regardless of your previous experience. A few moments of careful reading will save you time and will prevent many problems. Read carefully the instructions, before the start-up of the machine, normal use, maintenance or other functions on the machine and follow exactly the following orders and warnings.

Place the stickers on the machine and replace immediately if they have been lost or are not readable. Only staff that is adequately trained and is responsible for using the machine should handle it. A trained person is adequately informed or can be supervised by another trained person in order to prevent or eliminate any risk of accident.

4. Labeling

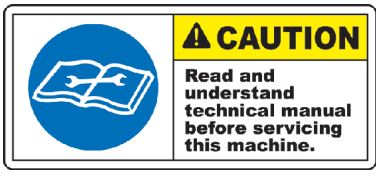
Label of manufacturer and machine technical specifications should be visible at all times it contains essential information about the manufacturer (address, phone number, fax) and information for the proper installation of the

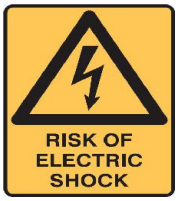


machine (the model, serial number, year of manufacture, refrigeration capacity in Watt, electrical power in Watt , voltage, refrigerant type and quantity) and the CE mark.

WARNING LABELS

The warning labels are to inform the operator of the machine or the equipment and about the remaining risks despite all the measures adopted.





Due to the nature of the product that the tank contains, hygiene rules should be applied. The following labels should be placed where all employees can see them.

 Wash your hands	The inscriptions (warning labels) should be affixed in a visible, easily legible and not removable spot on the machine or on to a data plate attached to the machine in such a way that it cannot be removed or become illegible during the lifetime of the machine in the working environment.
 Work with approbiate clothes	Keep them clean and replace them immediately when they become detached or damaged.
 Work with hat	

5. Installation instructions

5.1. Installation placement

The milk cooling tank can be installed indoors or outdoors It is very important for the milk cooling tank to be installed in **a well-ventilated place with a water supply**.
If the milk cooling tank is to be installed indoors, make sure that this place has sufficient ventilation openings. It is recommended that the milk cooling tank is placed in such a way that the condenser lies near an opening in order for the produced heat to be discarded.
If the milk cooling tank is to be installed outdoors, it must be placed under a roof so that it cannot be affected by weather conditions (rain, snow, etc).
It is also suggested to place the milk cooling tank on a flat surface made of concrete. The placement of the milk cooling milk tank on a surface that can be deformed or relinquished can result in inaccurate measurements.

5.2. Milk cooling tanklevelling

The leveling of the milk cooling tank is performed by the use of a hand spirit level. Open the lid of the tank and place the spirit level on the extremity of the edge of the tank, as shown in the below picture.
Adjust the footings at the base of the tank until complete planarity is succeeded.
It is very important to install the tank levelly so that the measurements can be accurate

5.3. Electrical connections

An authorized electrician must do the electrical installation that will feed the tank before the placement of the milk cooling tank.
If the milk tank is single-phase, it must be connected with electrical installation of 220V, 50Hz with separate ground conductor. If the milk cooling tank is 3 phase, it must be connected with electrical installation of 380V, 50Hz with a five polar cable (3 phases + neutral + ground conductor).
The crosscut of the cables must be in proportion with the electrical power of the milk cooling tank. See table 1 of the appendix in order to choose the type of the cable.

The cable must be straight, without coils (twisted extensions of electrical cable, etc).
The milk cooling tank must be feed with a separate electrical line that is secured with a fuse or a micro-automatic for electric motors at the electrical panel.

The feeding of two milk cooling tanks from the same fuse is totally forbidden.
The electrical connections of the milk cooling tanks of over or equal to 500 liters capacity must be inside the electrical panel, and the electrical line must be connected to an industrial type socket.

ATTENTION! For your protection, the milk cooling tank must be provided with an grounded protective conductor of suitable capacity to ensure the proper grounding of the machine.

After you have performed the electrical connection, measure the voltage loss in the cable by using a voltmeter. While the milk cooling tank is operating, the voltage loss must not be greater than 3% of the electrical circuit. (At a circuit of 220V, the voltmeter should measure at least 214V).

High voltage loss at the feeding cable can cause serious damage to the refrigerating mechanism, which is not covered by the guarantee.
NOTE

Wrong connections at the terminal blocks or the socket plugging can also cause voltage loss.

6. Operation principle

The milk cooling tank is especially designed and constructed for the refrigeration and the conservation of the milk, so that it ensures the perfect quality of the product. The refrigeration and the procedure has to take place right after the collection of the milk to minimize the possibility of vitiation or falsification of the milk during its transportation.

The milk cooling tank refrigerates the milk by using a refrigeration unit. The homogenous refrigeration is succeeded by an agitation paddle, which is rotated by an electro reducer. The insulated walls of the milk cooling tank keep the temperature stable for a sufficient period of time by reducing the thermal loss.

7. Description

The milk vessel tank is made of stainless steel 18/10 AISI 304. The tank vessel consists of two walls. Between them there is insulation material of environmental friendly polyurethane foam, which is inserted under controlled infusion. On lid of the tank and directly connected with the stirring motor, the agitation is adjusted. This agitation paddle is constructed of stainless steel and has two shaped ribs at both its diametrical sides. This shape has been chosen for the better and more equalized stirring of the product. Inside the tank are located a dipstick and a calibration chart.

The stirring motor and the control panel with the milk temperature controller are placed on the milk cooling tank lid. This controller is used as a thermostat, thermometer and a stirring state controller. The milk inlet of a Ø175 diameter is placed on the lid, too. A handle is placed on the front of the cover, which is used for opening the lid.

The valve of the milk inlet (DN50, Ø52) is located at the bottom of the tank (models IC 100-300LT). The base is made of stainless steel and can be completely dismantled. It consists of the upper and the bottom cover, four adjustable legs, four footing-bases and lateral covers. The base has been so designed that the tank can safely operate, be easy to

maintain, be fully protected from various weather conditions and the entrance of small animals and rodents in the refrigerating unit. This protection is succeeded by four stainless steel covers placed at the four sides of the base. These covers are perforated so that the heating produced by the condenser and the compressor can be easily emitted. Simultaneously, the holes have such small dimensions that actually prevent the entrance of small animals and rodents into the refrigerating unit. In models IC 400-2000LT the refrigerating unit is placed adjacent to the tank, also protected by perforated stainless steel covers.

The cover of the tank is also made of stainless steel. On the cover, a safety system can be adjusted so that it interrupts the operation of the stirring system motor in case the cover is opened. This system is called gravity switch. The gravity security system can be adjusted on the stirring electro-motor. When the cover of the tank opens, it is activated and interrupts the operation of the stirring electric motor. As soon as the cover is closed again, the stirring operation restarts.

8. Technical Specifications

8.1. General

CONSTRUCTION: Stainless steel 18/10, DIN 1.4301 (AISI 304) for inner and outer tank vessel.

TANK TYPE: Vertical type cylindrical tank, free standing, smooth inner sides, rounded angles, perfectly polished welding, ad-justable legs for uneven floors. Direct expansion bottom designed to ensure total drain of tank. The design of evaporator plates prevents milk freezing even at low milk volumes. Crash test at 60BAR. Function pressure: 30BAR. Fine insulation pre-cisely controlled infusion of high – density environment friendly polyurethane foam. 30rpm (90W) single-phase agitator mo-tor for IC 50 – 1200liters, 30rpm (120W) single-phase agitator motor for IC 1500 – 2000liters , stainless steel lid without any screws inside and one-piece agitator (without joints). Automatic stop of the agitation motor in case the lid opens. Milk inlet 180mm and stainless steel cover. Elevated parts (opening handle, stirring motor and electrical control panel) for easy cleaning. Milk outlet and milk cooling tank evaporator plate inclination according to the international standards (ISO 5708). Stainless steel springs for easy opening and closing of the milk cooling tank lid (for IC 200 – 2500 liters). Stainless steel dip-stick and standard calibration chart. IP55 panel for electric instrument (Applicable Standard: EN 60529/91, Applicable direc-tives: LVT 73/23/EEC). Stainless Steel Butterfly valve DN50, 52mm with one end nut, other threaded (male part), PVC cap and stainless steel chain. Perforated stainless steel condensing unit cover with removable sides for easy maintenance and for the condensing unit ventilation – protection (Patent No. : 1004080) for IC 50lt-1000lt.

CONDENSING UNIT: Close type condensing unit compressor by L'Unite Hermetique, coolant type R404A (full ecological). For the protection and the condensing unit's better performance have been mounted solenoid valve, high pressure switch, low pressure switch, high pressure switch for the second fun regulation (Models IC 1000-2500lt) on the refrigerating circuit.

INSULATION TYPE: INTERVOL RFN-24. Two components polyurethane rigid foam system. Blowing agent used is HCFC-141b (CFC – free system). Thickness: 45mm. Density: 40kg/m_3 (DIN53420). Compressive strength: 20kPa (DIN53421). Thermal con-ductivity, 24C: 0.023 W/m K (DIN18164).

PANEL FOR ELECTRIC INSTRUMENT: PROTECTION CLASS: IP 55 class-standard (Applicable Standard: EN 60529/91, Applicable directives: LVT 73/23/EEC). TYPE: Tank mounted.

MILK CONTROLLER - THERMOSTAT: OPERATING TEMPERATURE: +0 +60C. STORAGE TEMPERATURE: -30 +85C. POWER SUPPLY: 230V – 50Hz 10%. POWER ABSORPTION: 3VA max. MANUFACTURER: DIXELL SRL, ITALY. FUNCTION: When the compressor reaches the set point, it stops its function and the auto agitation of milk begins for 15minutes pause, 3 minutes agitation and so on until the milk temperature SET+ Hy when the compressor starts again. In case of probe failure , the out-put is according to parameter "COn" - Compressor ON time with faulty probe (range: 0 255min, val.15min) and "COF" " - Compressor OFF time with faulty probe (range: 0 255min, val.30min). Note: All of the milk controller parameters are ad-justable.

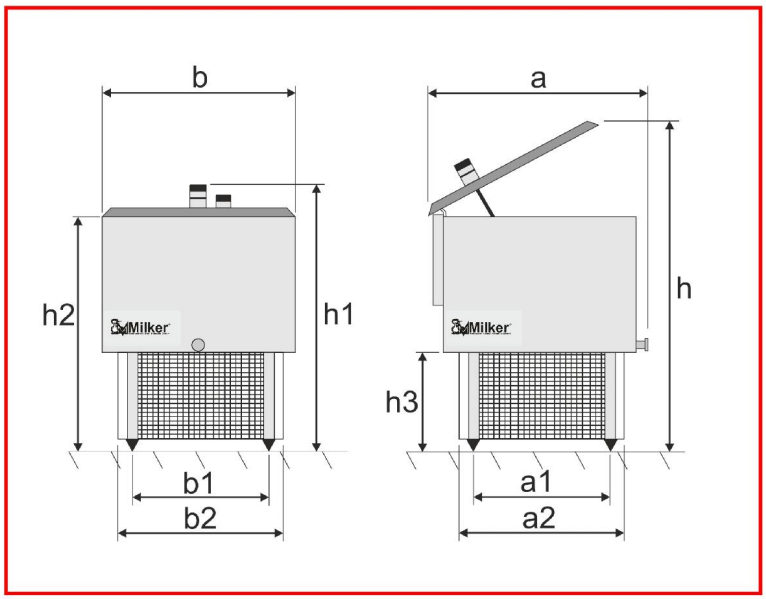
DIPSTICK: High precision stainless steel dipstick (AISI 304) for easy and direct volume reading in mm.

8.2. Power Specifications

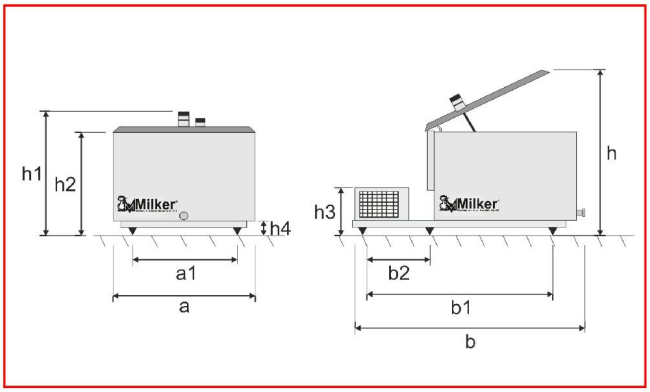
2 Milking

Tank Type	Max. capacity Liters	Voltage	Weight kg	Run current	Max. current	Max. power rate	Refrigeration capacity Watt	Refrigerant type	Fan cooled condensing unit type
MILKER 50 *1PH*	60	220V-240V 50Hz	40	2.2A	3A	636W	743W 3/8 Hp	R 404A	AEZ9440Z L' UNITE
MILKER 100 *1PH*	125	220V-240V 50Hz	60	3.76A	4.19A	756W	927W 3/7 Hp	R 404A	CAE4450Z L' UNITE
MILKER 200 *1PH*	230	220V-240V 50Hz	100	5.2A	7.1A	1299W	1972W 1 Hp	R 404A	CAJ9510Z L' UNITE
MILKER 300 *1PH*	332	220V-240V 50Hz	100	6.4A	10.1A	1683W	2485W 1 1/8 Hp	R 404A	CAJ9513Z L' UNITE
MILKER 400 *1PH*	434	220V-240V 50Hz	110	9.9A	14.4A	2507W	3756W 1 1/2 Hp	R 404A	CAJ4519Z L' UNITE
MILKER 400 *3PH*	434	*380V-400V 50Hz*	110	4A	4.8A	2453W	3756W 1 1/2 Hp	R 404A	TAJ4519Z L' UNITE
MILKER 500 *1PH*	523	220V-240V 50Hz	180	9.9A	15.4A	2507W	3756W 1 1/2 Hp	R 404A	CAJ4519Z L' UNITE
MILKER 500 *3PH*	523	*380V-400V 50Hz*	180	4A	4.8A	2453W	3756W 1 1/2 Hp	R 404A	TAJ4519Z L' UNITE
MILKER 650 *1PH*	650	220V-240V 50Hz	180	9.9A	15.4A	2758W	4361W 2 Hp	R 404A	CAJ4519Z L' UNITE
MILKER 650 *3PH*	650	*380V-400V 50Hz*	180	4A	4.8A	2742W	4361W 2 Hp	R 404A	TAJ4519Z L' UNITE
MILKER 800 *1PH*	850	220V-240V 50Hz	240	14.1A	26.3A	3501W	5706W 2 1/2 Hp	R 404A	FH4531Z L' UNITE
MILKER 800 *3PH*	850	*380V-400V 50Hz*	240	5.27A	8.1A	3388W	5706W 2.5 Hp	R 404A	TFH4531Z L' UNITE
MILKER 1000 *1PH*	1070	220V-240V 50Hz	270	19.8A	27A	4444W	7276W 3 Hp	R 404A	FH4540Z L' UNITE
MILKER 1000 *3PH*	1070	*380V-400V 50Hz*	270	7.52A	9.21A	4537W	7276W 3 Hp	R 404A	TFH 4540Z L' UNITE
MILKER 1200 *3PH*	1275	*380V-400V 50Hz*	277	7A	11.4A	4847W	7956W 4 Hp	R 404A	TAG4546Z L' UNITE
MILKER 1500 *3PH*	1518	*380V-400V 50Hz*	350	7.7A	12A	5514W	8958 4 1/2 Hp	R 404A	TAG4553Z L' UNITE
MILKER 2000 *3PH*	2030	*380V-400V 50Hz*	430	11.4A	18A	7834W	13123W 6 1/4Hp	R 404A	TAG4573Z L' UNITE

8.3. Main Dimensions



Tank Type	a	a1	a2	b	b1	b2	h	h1	h2	h3
MILKER 50	560	280	365	520	280	365	1350	1050	820	440
MILKER 100	720	330	400	680	410	490	1660	1190	980	420
MILKER 200	1000	530	610	880	530	610	1760	1220	990	420
MILKER 300	1100	530	600	980	530	610	1900	1250	1030	420



Tank Type	a	a1	b	b1	b2	h	h1	h2	h3	h4
MILKER 400	1080	630	1830	1250	-	1500	1030	870	670	180
MILKER 500	1080	630	1830	1380	-	1675	1210	975	675	180
MILKER 650	1080	630	1830	1380	-	1840	1372	1140	675	180
MILKER 800	1280	880	2140	1630	-	1740	1260	1030	735	180
MILKER 1000	1480	880	2350	1880	1140	1770	1210	980	735	180
MILKER 1250	1480	880	2350	1880	1140	1895	1335	1105	735	180
MILKER 1500	1480	880	2350	1880	1140	2080	1610	1270	735	180
MILKER 2000	1830	1130	2700	2290	1210	2190	1550	1285	710	180

8.4. Conditions of Measurement for the Performance of the Refrigerating Unit

- Ambient temperature: +32 ^{0}C
- Evaporator outlet and emission gas superheated: 32K
- Condensing temperature is +55 ^{0}C
- Evaporating temperature: 0 ^{0}C
- Temperature of refrigerant at condenser outlet is sub cooled within the condensing limits of the unit
- The technical characteristics of the refrigerating units are mentioned in the manufacturers catalogues

9. How to use the Tank

9.1. Cooling Controller

MILKER open type tanks are equipped with Dixell XR80CX controller specialized in controlling milk cooling and preservation processes.

Main characteristics:

- User friendly interface
- Accurate control
- Manual start of agitation
- All the parameters are fully configurable
- Current temperature always displayed on the screen
- Indication led for cooling and agitation operation

DIXELL XR80CX CONTROLLER

Exclusively the DIXELL controller XR80CX with which your milk tank is equipped performs the control of the refrigerating milk tank.

This controller is very flexible, and allows for the automatic operation of the tank with an ON/OFF switch.

The stirring operation is industrially regulated and the user should take no steps in order to operate it. The stirrer operates throughout the operation of the refrigerating process. When the refrigeration is completed, the refrigerating unit stops and the stirrer operates at mode of 3 minutes rotation and 15 minutes pause (the time periods are adjustable).

Always remember that you should:
Set the refrigerating milk tank in operation mode **as soon as the agitation paddle is covered with milk**. Do not turn the tank off as long as it contains milk.

Turn the milk cooling tank off when it does not contain milk.

Avoid opening the lid of the tank, as long as it is in operation because the stirrer stops and there is a risk of ice formation.

If you want to take a sample of the milk while the stirring system is in the 15 minutes non-operating stage, push and hold the button-key to make it operate. With this procedure you can take a homogeneous sample.

During winter and if the temperature falls under 4oC, the milk cooling tank won't start. It is necessary to put hot milk in the tank and wait a few minutes until the refrigerating unit starts to operate.

9.2. Adjusting the Basic Parameter Values of the XR80CX

After the milk cooling tank is switched on, a dashed line is displayed on the controller's screen. Next, the temperature of the room where the milk cooling tank is installed is displayed.

1. First press the SET key-button together with the (▼) key for at least 7seconds
2. Led **Hy** is displayed.
3. Repeat step 2 pressing both keys for 7 sec. Led **Pr 2** will be displayed. Release the keys and **Hy** is displayed.
4. Press the SET key until the **Hy** temperature (2.0oC) is displayed.
5. By pressing the **SET** key again the **LS** is displayed.
6. Press the **SET** key, and then by pressing the (▲▼) keys you can set the minimum temperature.
7. **The temperature is already set to 1.0°C**
8. By pressing the **SET** key, the display blinks three times meaning that the temperature you set has been stored.
9. After this, the led **US** is displayed. Press the **SET** key, and then by pressing the (▲▼) keys you can set the maximum temperature. **The maximum temperature is already set to 5.0oC.**
10. By pressing the **SET** key, the display blinks three times meaning that the temperature you set has been stored.
11. Immediately after, the led **Ot** is displayed which calibrate the thermostat probe. Push the **SET** key once, and by pressing (▲▼) set the desirable temperature. Press the SET key again and the display blinks three times meaning that the temperature set has been stored. **The value of parameter is set to –0,5°C**

Soft start function

If at start up, or during the regulation process, the input signal value is higher than the "SrS+Hy", the controller starts the regulation considering as target temperature the parameter SrS. When the temperature reaches the SrS value the compressor stops. Then after the time set in parameter Srt, the controller starts the regulation based on the standard SET POINT.

How to reset the soft start parameters

In order to reset the values of the soft start parameters you have to follow the 5 first steps of the chapter "checking *the basic parameters values* ". Afterwards you have to press and release the SET key until you reach the parameter Srt. The value of this parameter is 0min. and if you wish to change it you have to press the arrows. After the calibrating of the parameter press the SET key, the display blinks 3 times which means that the value has been stored. After this the controller pass automatically to the parameter SrS which adjusts the temporary stop of the compressor, the value of this parameter is 15^{0}C and if wish to change it you have to press the arrows, after the calibrating you should press the SET key so as to store the new value.

To exit press the SET + ▲ or wait 15s without pressing a key.

How to see the Set Point

1Push and immediately release the SET key: The display will show the Set point value.

1Push and immediately release the SET key or wait for 3 seconds to display the probe value again.

How to change the Set Point

1. Push the SET key for more than 3 seconds to change the point Set value;
2. The value of the set point will be the displayed and the ❄ LED starts blinking.

3. To change the set value push **P** or **q** arrows.
4. To memorise the new set point value push the SET key again or wait for 15seconds.

How to start a manual agitation cycle

Push the Up (**P**) key for more than 3 seconds and the manual agitation cycle will start.

How to see the min temperature

1. Press and release the **q** key.
2. The **Lo** message will be displayed followed by the minimum temperature recorded.
3. By pressing the **q** key again or by waiting for 5seconds the normal display will be restored.

How to see the max temperature

1. Press and release the **P** key.
2. The Hi message will be displayed followed by the maximum temperature recorded.
3. By pressing the **P** key again or by waiting 5seconds the normal display will be restored.

How to change a parameter value

1. Enter the programming mode by pressing the SET and **q** key for 7s (and ❄ start blinking)
   Select the required parameter.
2. Press the SET key to display its value (❄ LED starts blinking)
3. Use (**Pq**) to change its value
4. Press SET to store the new value and move to the following parameter.
5. To exit press the SET + **P** or wait 15s without pressing a key.

How to lock the keyboard

1. Press and hold for more than 3seconds the (**Pq**) keys
2. The POF message will be displayed and the keyboard will be locked. At this point it will be possible to see only the set point or the MAX or MIN temperature stored.

If a key is pressed more than 3seconds the POF message will be displayed.

To unlock the keyboard

Keep pressed together for more than 3s the **Pq** keys.

Meaning of Led

❄ON: Compressor enabled.

❄Flashing: - Programming phase (flashing with) - Anti-short cycle delay enabled

ON: Agitator enabled

Flashing: Programming phase (flashing with ✱)

ALARM SIGNALS

EE: The instrument is provided with an internal check verifying memory integrity. The ALARM ''EE'' flashes when a failure in the internal memory is detected. In such case call the service.

P1: Probe alarm -P1- starts several seconds after the fault in the related probe. It automatically stops several seconds after the probe restarts normal operation. Check connections before replacing the probe. In case of fault in the thermostat probe, the starting and the stopping of the compressor are regulated thought parameters **Con** & **COF.**

HA: Maximum temperature alarm automatically stops as soon as the thermostat temperatures returns to normal and when defrosting stops.

LA: Minimum temperature alarm automatically stops as soon as the thermostat temperature returns to normal and when defrosting stops.

Label	Name	Range	Value
Set	*Set point*	LS-US	4,0
Hy	*Differential*	0,1-25,5°C / 1-255°F	2,0
LS	*Minimum set point*	-50°C – SET 58°F - SET	1.0°C
US	*Maximum set point*	SET – 150°C SET – 302°C	5.0°C
Ot	*Thermostat probe calibration*	-12°C – +12°C -120 - +120°C	- 0,5 °C
OdS	*Outputs delay at start up*	0 – 255 min	0
AC	*Anti-short cycle delay*	0 – 50 min	1
Con	*Compressor On time with faulty probe*	0 – 255 min	15
COF	*Compressor OFF time with faulty probe*	0 – 255 min	30
CF	*Temperature measurement units*	°C - °F	°C
rES	*Resolution*	In : dE	dE
AgC	*Agitator configuration*	EL = *with compressor* In = *independent*	EL
tIC	*Resolution for the Agt parameter*	nP = *minutes* Pb = *seconds*	nP
IAg	*Interval between agitation cycle*	1 – 120 min	15
Agt	*Length for agitation cycle*	0 – 255 min	3
APO	*First agitation cycle after start up*	n= *immediately* y= *after IAg*	Y

Label	Name	Range	Value
ALc	*Temperature alarms configuration*	rE – Ab	Ab
ALU	*Maximum temperature alarm*	ALL-150^{O}C ALL-302^{O}F	100
ALL	*Minimum temperature alarm*	-50.0^{O}C-ALU -58^{O}F-ALU	-50
ALd	*Temperature alarm delay*	0 – 255 min	15
dAo	*Delay of temperature alarm at start up*	0 – 23 h & 50 min	1,3
PbC	*Probe selection*	Ptc-ntc	ntc
Srt	*Initial regulation time*	0 – 59min	0
SrS	*Initial regulation Set point*	-55,0 ^{O}C – 150,0 ^{O}C	15
rEL	*Software release*	-	3,0
Ptb	*Map code*	-	2

10. Milk Cooling Tank Maintenence – Cleaning

The milk cooling tank has special maintenance and cleaning requirements. The machine is used for the refrigerating and the conservation of the milk, so it requires **daily** and efficient cleaning. The cleaning of the inside of the tank, which is in contact with the milk, as well as the external surface of the milk cooling tank, should be performed with hot water and a suitable smooth brush (picture 5).

Before every cleaning or maintenance job, ensure that the milk cooling tank has been properly disconnected from electricity.
Cleaning and the maintenance are performed after the machine has been unplugged from electricity.
Clean daily the external and internal surfaces of the tank.

10.1. Cleaning the Tank

After you have emptied the tank of milk, rinse it with cold water in order to clean the remains of milk. Then, clean the tank carefully with hot water at about 45°C and only use detergents used for foods.
Rinse the interior of the tank out with plenty of cold water and scrub it with a brush suitable for commissary until it is thoroughly cleaned.

After cleaning the tank, you have to dry it thoroughly by using an absorbent paper towel or special of cloth that does not leave thrum, which can cause infection or electric shock.
Cleaning the control panel has been performed by using a wet piece of cloth and after you have disconnected the machine from electricity.

10.2. Cleaning the Condenser of Refrigerating

It is an absolute necessity to clean the condenser of the refrigerating unit after scheduled periods of time, in order to have long-lasting and faultless operation of the milk cooling tank.
The cleaning of the condenser can be performed after you remove the lateral cover at the side of the condenser, by unscrewing the screws that keep the cover in place.

If the above procedure is possible, you can clean the condenser by using air under pressure. You can also clean the condenser by carefully using a brush in order to remove all the dust and the other garbage from its surface.

DO NOT USE WATER TO CLEAN THE CONDENSER!

11. Safety Measures

The milk cooling tank is fitted with safeguards at all its moving parts. The access to the interior of the electric panel requires the use of a screwdriver and is in accordance with the requirements for the safeguards of the directive 98/37/EK

The electric parts of the installation are adequately covered in order to be safe in use (ex: wires).
The surface of the milk cooling tank is smooth, continuous and such formed as to disable the milk access in small cracks, bacteria which can cause infection in the milk. Furthermore, the surfaces are cleanable and where needed easy to disinfect.

The inaccessible places are constructed in such a way so as to be easily cleanable.

The bearings are fitted at the out-of-food area. Their lubrication is performed by the use of special lubricant suitable for food.

Before maintenance or cleaning, make sure that the milk cooling tank has been disconnected from electricity.

Always remember: The right cleaning and maintenance of the machine makes your job more productive and safe.
Do not remove the signs from the machine.

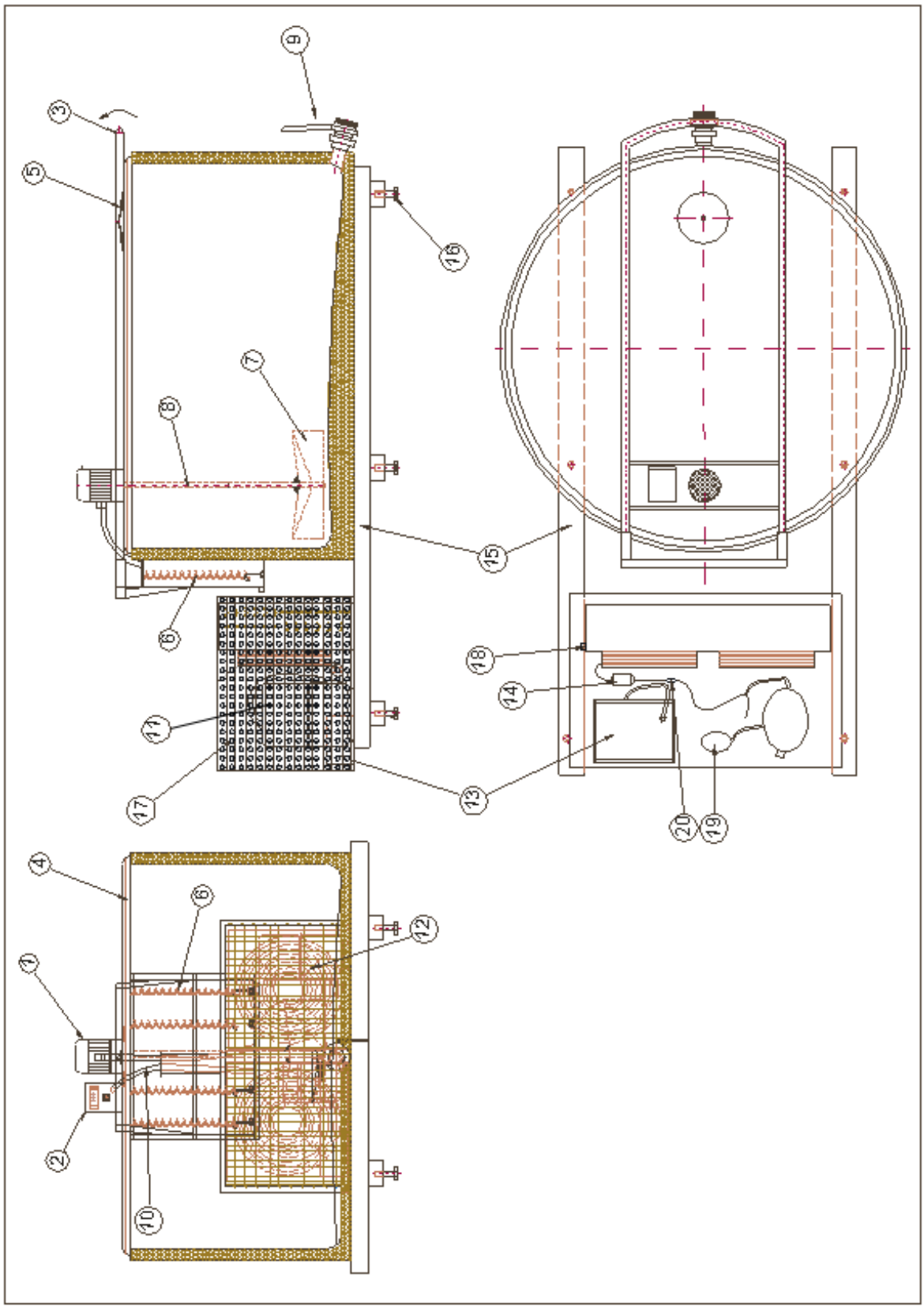
After your work is finished, cover the machine with a dustsheet in order to prevent the dust to collect on the tank or fall into the tank when opened. Place all the protective covers in place.

12. Malfunktion and Troubleshooting

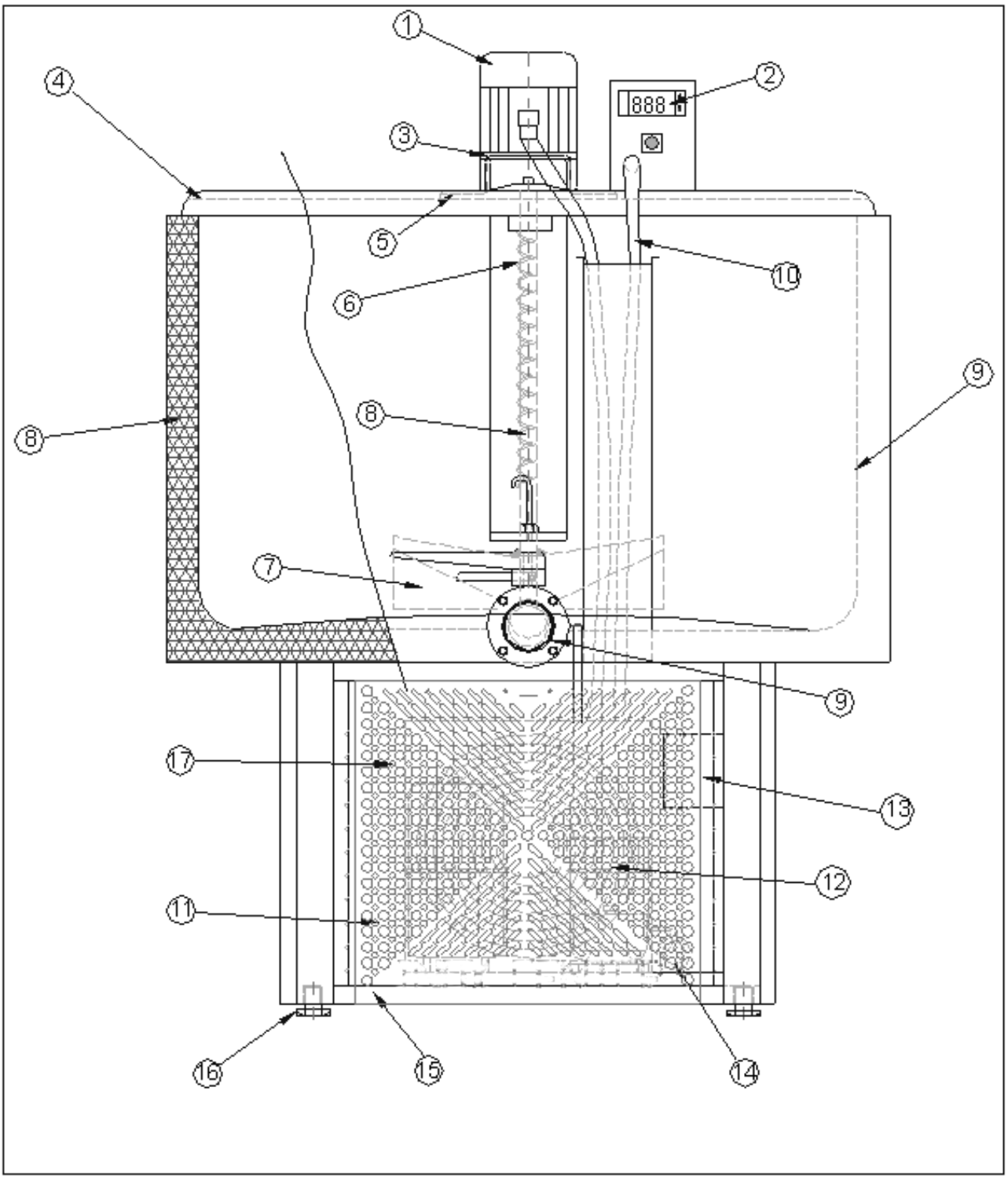
MALFUNCTION	POSSIBLE CAUSE	TROUBLESHOOTING
The device does not operate at all. There is no voltage at the control panel.	No voltage.	Check if the operation button is at ON position (lit lead). Check if there is voltage at the electric line that feeds the milk cooling tank. Check the fuse of the electric line that feeds the milk cooling tank. Check the electric connections at the electric panel and the socket of the tank. Check the connection terminal blocks. If the problem is not solved, contact authorized services.
The stirrer and the condenser ventilator work but the refrigerating compressor does not work.	The thermal fuse stopped operation probably due to loss of voltage or compressor failure.	Wait for 2 minutes until the thermal fuse permits operation again. If the problem occurs again, check the circuit voltage and the voltage loss at the unit. If there is sufficient voltage and the problem is not solved, contact authorized services.
In case any thermal protection fails, you should open the control panel and fix it (MILKER 400 – 2000).		

For any other problem, contact the service department of the company.

13. Mechanical Drawings (Machine Parts)



MILKER 400 – 2000



MILKER 50 – 300

14. Electrical Data and Drawings

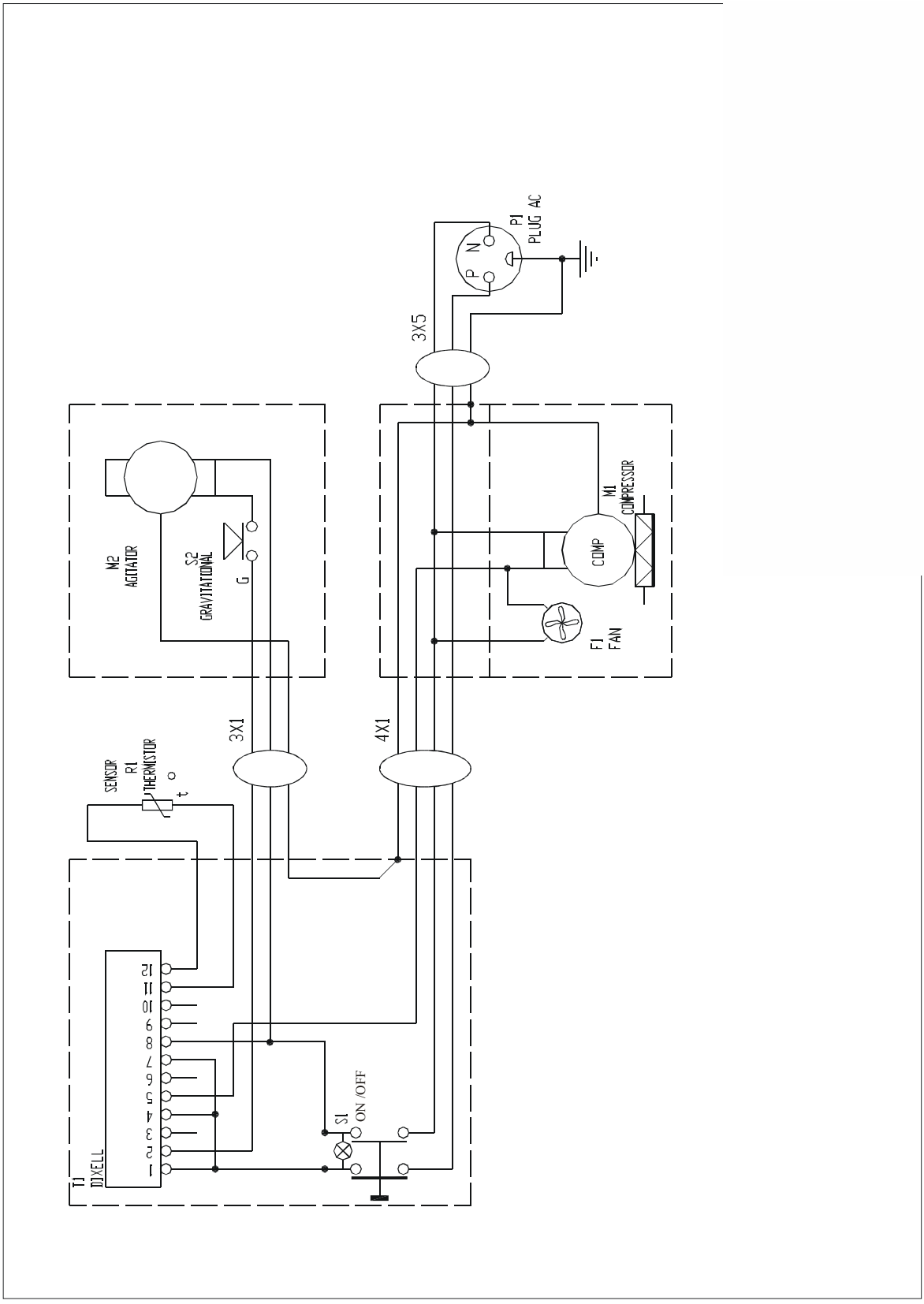
14.1. Electric Line Options Table

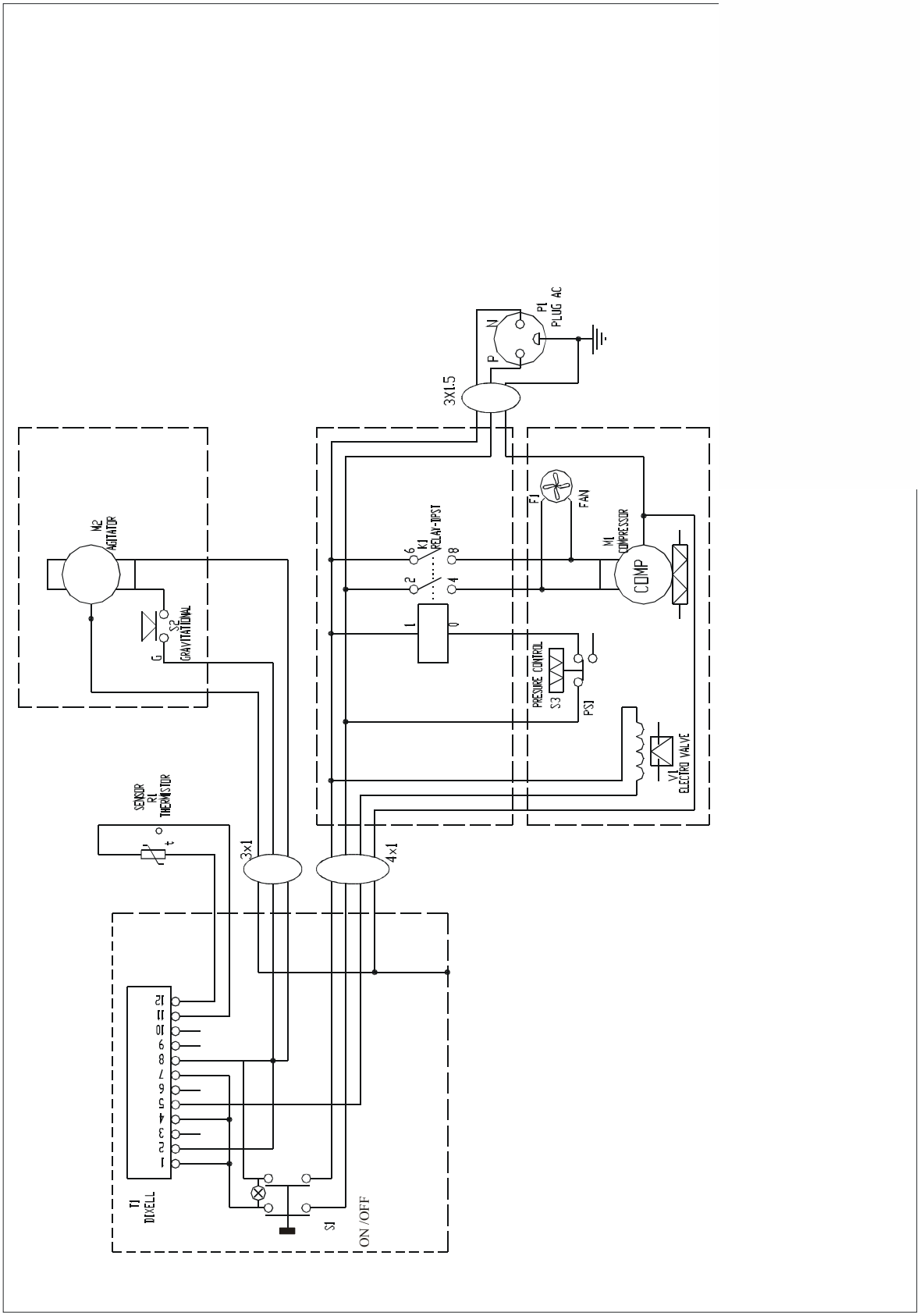
2 Milking

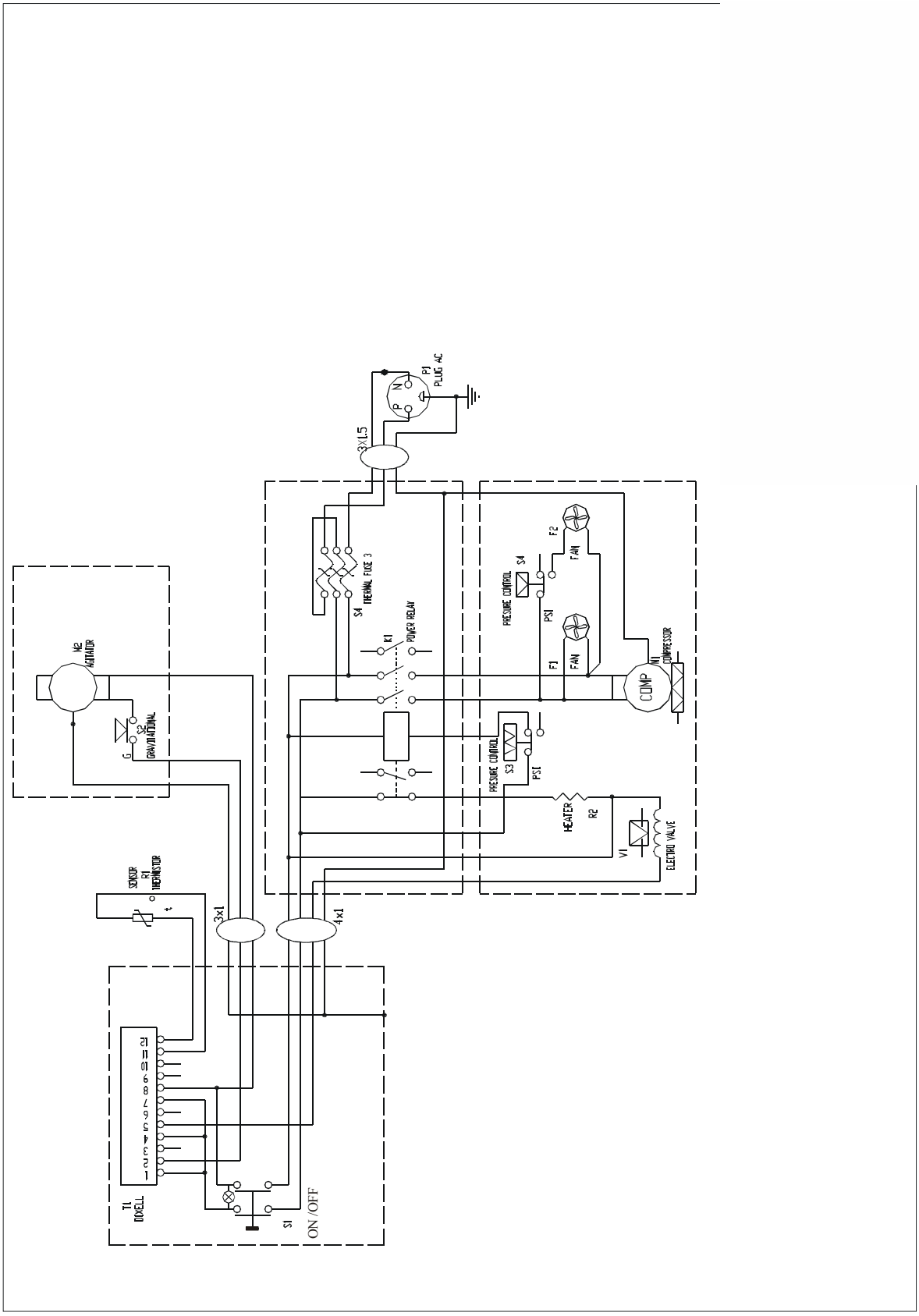
Type	Power	Fuse	Electrical line length	Cross sectional area
	W	A	m	mm2
MILKER 100	756W	10 K	25	1,5
			50	1,5
			75	1,5
			100	1,5
			125	2,5
			150	2,5
MILKER 200	1235W	10 K	25	1,5
			50	1,5
			75	1,5
			100	2,5
			125	2,5
			150	4
MILKER 300	1443W	10 K	25	1,5
			50	1,5
			75	2,5
			100	4
			125	4
			150	6
MILKER 400	2507W	16K	25	2,5
			50	2,5
			75	2,5
			100	4
			125	4
			150	4
MILKER 500	2507W	16 K	25	2,5
			50	2,5
			75	2,5
			100	4
			125	4
			150	4
MILKER 650	2764W	16K	25	2,5
			50	2,5
			75	2,5
			100	4
			125	4
			150	6

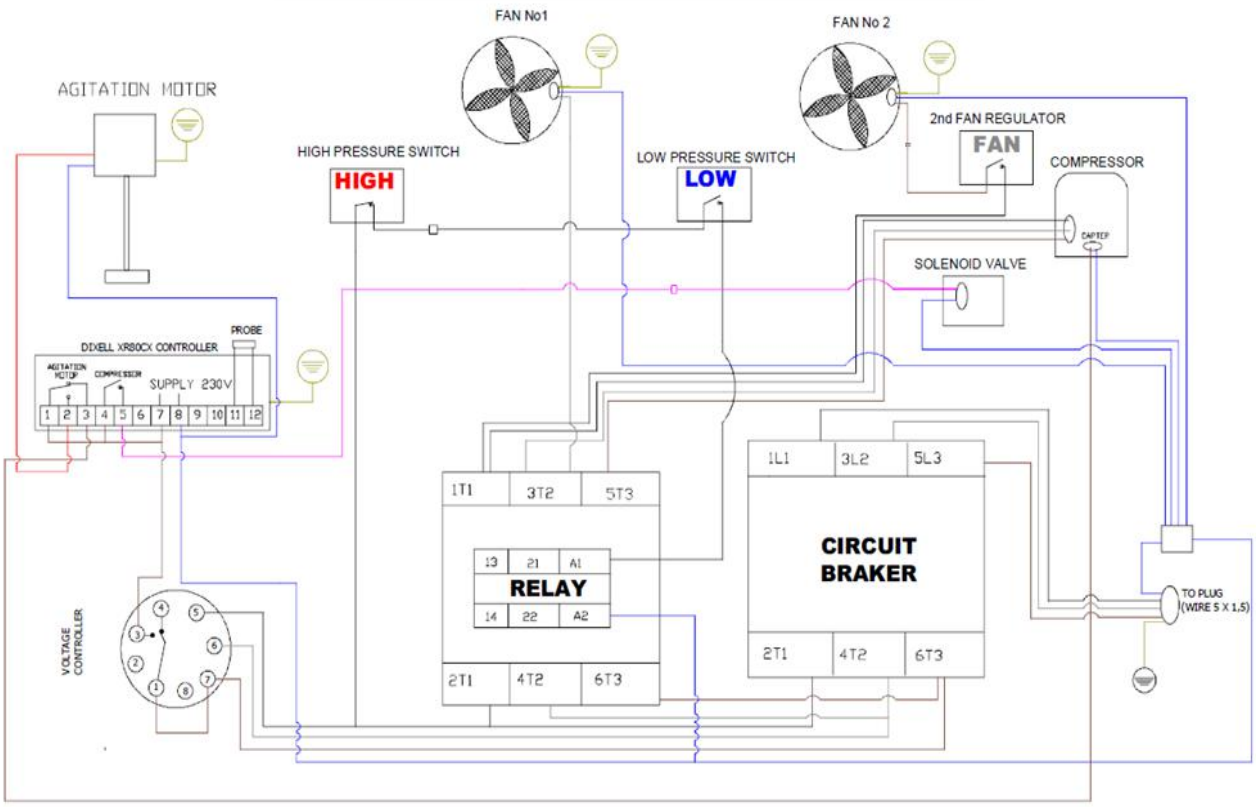
Type	Power	Fuse	Electrical line length	Cross sectional area
	W	A	m	mm2
MILKER 800	3563W	20 K	25	2,5
			50	2,5
		25 K	75	4
			100	4
			125	6
			150	6
MILKER 1000	4703W	25 K	25	2,5
		30 K	50	4
			75	4
			100	6
			125	6
			150	10
MILKER 1200	4588	3x16 K	25	5x2,5
		3x20 K	50	5x4
			75	5x4
			100	5x4
			125	5x6
			150	5x6
MILKER 1500	5344W	3x16 K	25	5x2,5
		3x20 K	50	5x4
			75	5x4
			100	5x4
			125	5x6
			150	5x6
MILKER 2000	7858W	3x20 K	25	5x2,5
		3x25 K	50	5x4
			75	5x4
			100	5x4
			125	5x6
			150	5x6

14.2. Electrical Drawings




P1
PLUG AC
N
P
3X1.5
M2
AGITATOR
S2
GRAVITATIONAL
G
K1
RELAY-DPST
6
8
2
4
1
0
F1
FAN
M1
COMPRESSOR
COMP
PRESSURE CONTROL
S3
PS1
V1
ELECTRO VALVE
SENSOR
R1
THERMISTOR
t
3x1
4x1
12
11
10
9
8
7
6
5
4
3
2
1
T1
DIXELL
S1
ON /OFF


P1
PLUG AC
N
P
3X1.5
F2
FAN
S4
PRESSURE CONTROL
PSI
F1
FAN
M1
COMPRESSOR
COMP
S4
THERMAL FUSE 3
K1
POWER RELAY
M2
ACTIVATOR
S2
GRAVITATIONAL
S3
PRESSURE CONTROL
PSI
HEATER
R2
V1
ELECTRO VALVE
SENSOR
RT
THERMISTOR
3x1
4x1
T1
DIXELL
S1
ON /OFF



Wiring Diagramm MILKER 400 – 2000 with Voltage Controller