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1 INTRODUCTION

µSterilDraft® is a mobile tool used for maintaining and clean and in an automatic rate, the pipe line and installation for cooling and dispensing beer and soft drinks in PREMIX and POSTMIX systems.

The technology used in µSterilDraft® cleans the installation through the pressure of alternating fluid action generated by a hydraulic pump. The flow rate is about 5.8 l/min and all the cycles time in automatic rate is 5 min 30 sec.

It can be used for all installation for cooling and dispensing beer and soft drinks and it is compatible with all types of coupling to connect to the circuit. µSterilDraft® equipment is easy to handle and offers information about the its function, the cycle and the operative phase through its running time from a supervising microchip.

The microchip together with the signaling LED's and control buttons from the front face of the µSterilDraft® equipment offere the possibility to choose a complete cycle of cleaning, to repeat certain phase or to change just some of the operations considered necessary.

Power supply is 220V / 50 Hz and it's elements are running at 24 VAC.

The use of µSterilDraft® will increase the period between two sanitation to 40 – 50 days, and will shorten the for any sanitation to 15 min.

In the moment that an installation its up and running we have to remember that in the couples and taps will circulate a beverages and for this it has to be as clean as possible to prevent any infection.

The maintain operation of the installation are:

Washing – it has to be done usually with water;

Sanitation – all the parts that are in contact with the alimentary liquid must be washed and sanitized.

µSterilDraft® system, through the washing and rinsing phases, by a mechanical action generated from a hydraulic pump eliminates solid residue without problems and without the need to dismount the taps.

The time between two cleanings is related by the sanitation system that has been used and the way it has been done.

There are some systems for sanitation:

1. Classical system - with casks
 - casks with water
 - casks with disinfect solution

By this way the liquid from the casks are running in the installation, by the pressure of CO2, which will assure a constant flow and a very limited mechanical action.

2. Ball system

This system use sponge balls. It has a good mechanical action and has the following disadvantage:

- The taps has to been dismount;
- It has to use a minimum 4 bar hydraulic pressure, which is not always possible;

3. **µSterilDraft®** System

It consists on an equipment named **µSterilDraft®** , which has its supply from a water source (it can be a bucket too, from where the water is sucked) and power supply 220V / 50 Hz.

With this system the liquids are running in installation by a hydraulic pump that gives to the liquid a pulsation pressure which creates locally a battering ram effect and drives away the soft residue and the harder one which are in the tubes.

The time between two cleanings is:

1. With the Classical system – after each 10-15 days;
2. With Ball system – after each 30-40 days;
3. With **µSterilDraft®** System – after each 40-50 days.

If every time when a cask is change, it rinsing with water, then the period can be extended to 70-80 days.

µSterilDraft® ADVANTAGE

The advantages of **µSterilDraft®** are:

A) Mechanical action

µSterilDraft® system in between rinsing and washing phases eliminate solid residues without any problems and without the need to dismount the taps.

B) Practical

The equipment is extremely light and easy to connect at the power supply and to the supply of water and disinfectant solution.

C) Adaptation

It use an original connecting system to any kind of couple, using an unique base plate where it can be mount to the corresponding fitting for the couple used for installation.

D) Automatic rate

The front command panel is design in a way that any technician will be able to choose any cycle he wants by the touch of a button. He can follow all the time the way that the equipment is working by watching the LED's on the panel.

All the phases are supervised by a microchip.

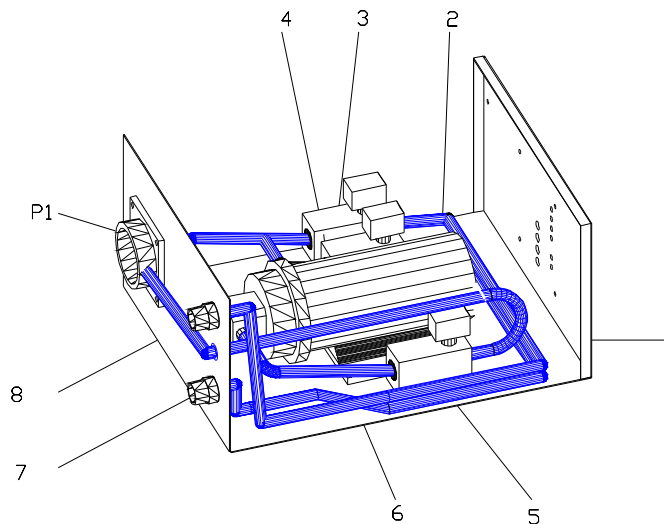
E) Short operating time

All the advantages by now indicate a reduced time used for washing and rinsing.

F) Lengthen the time between two cleanings to 40-50 days.

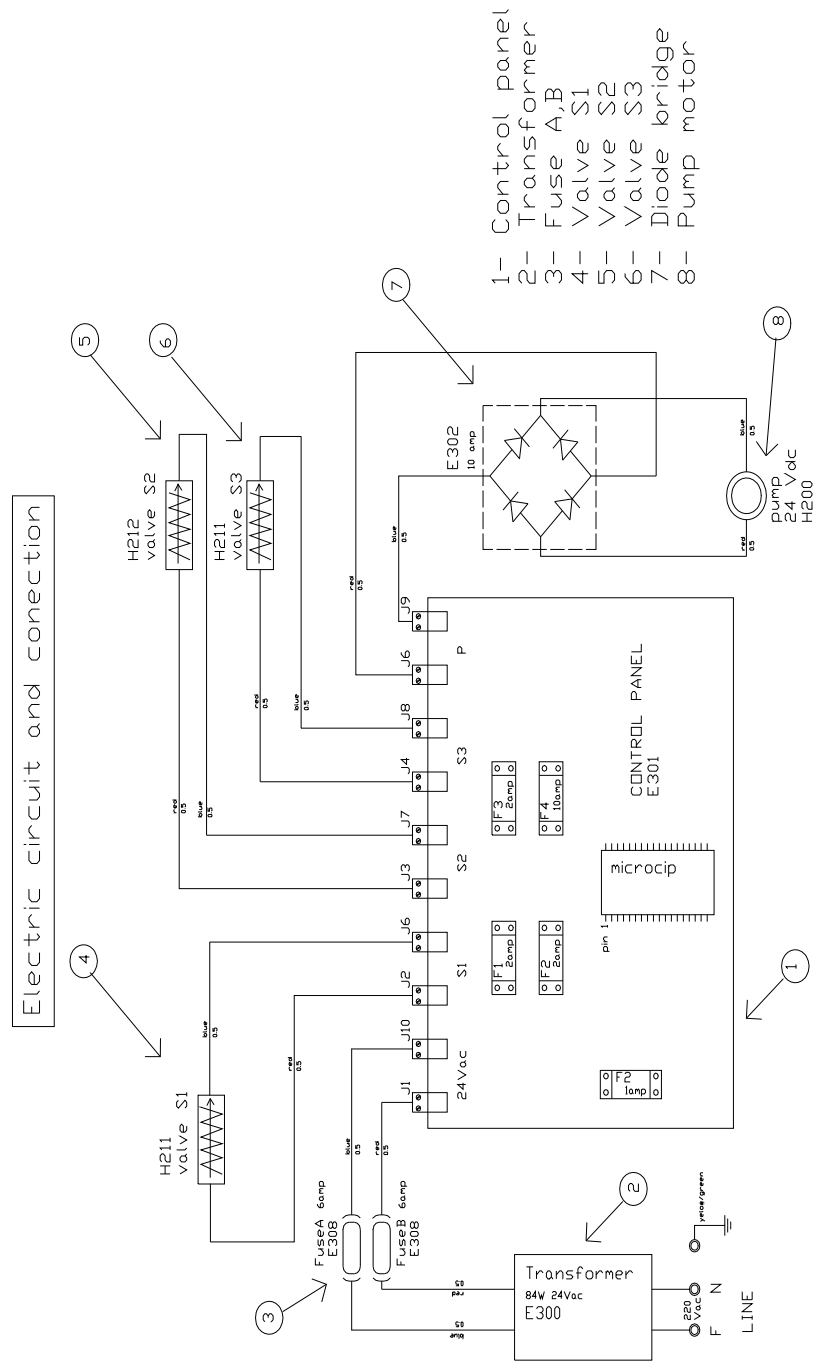
2 CONSTRUCTION AND FUNCTIONAL DESCRIPTION EQUIPMENT DESCRIPTION

The parts of the equipment are mounted in a stainless steel box 1. On the base of this box are mounted the volume pump and three valves which command the access of the water, the detergent and the evacuation of it to the installation which has to be cleaned.



The circulation of the fluid in the equipment is done in flexible plastic pipes. The pipes make the connection between pump (2), valve (3, 4, 5), the access of the fluids in the equipment – by the detergent couple (7) and the water couple (8) – and the evacuation of it to the installation which should be cleaned, by couple P1. Couple P1 represents the pair part of couple P2, which is connected to the beer keg when the installation for cooling and dispensing beer is running. On the base of the box, on the front face of it, is located the electronic command center, which commands the pump 2, the valve for evacuation 5 and the valves for water 3 and detergent 4 access. Power supply is 220 V, the power will be transformed to 24 VAC by an electrical transformer.

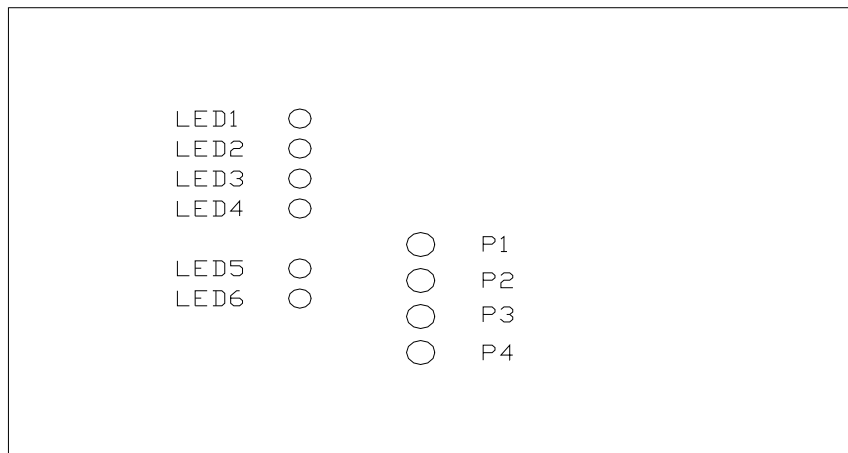
The electric drawing explain the functions and connection of the apparatus:



DESCRIPTION OF THE FRONT PANEL

LED's

1. **LED 1** – Green – “1st / 4th CYCLE”
This LED indicates the cycles 1 and 4 of the sanitation operation during which the tubes, couples and tapes are washed with water and the soft and hard residues are removed from the circuit.
2. **LED 2** – Green – “2nd CYCLE”
Indicates the entrance in function of the 2nd cycle, meaning the filling of the installation with disinfectant liquid.
3. **LED 3** – Green – “3rd CYCLE”
Indicates the entrance in the function of the 3rd cycle, meaning the cycle during which the disinfecting liquid finishes it's chemical action.



4. **LED 4** – Green – “All cycles”
Indicates the automatic functioning of all 4 cycles of the sanitation.
5. **LED 5** – Red - “PAUSE / ON”
At a continuous lighting of the LED indicates that µSterilDraft® is functioning.
When the LED has an intermittent lighting, that means that the equipment is paused during one of the cycles.

6. **LED 6** – Red – “BUSY / END”

At a continuous lighting of the LED with one of the green LED's indicating one of the cycles, means that the cycle indicates by the green LED is ended.

When the LED has an intermittent lighting that means that the equipment is paused during one of the cycles.

At a continuous lighting of the LED with one of the green LED's indicating one of the cycles, that means that the cycle indicated by the green LED has ended.

When the LED has an intermittent lighting with one of the green LED's that indicates one of the cycles has an intermittent lighting too, that means that the equipment is executing the cycle indicated by the green LED

BUTTONS

1. **P1** Button – “CHANGE CYCLE”

This button gives the possibility of selection or changing one of the cycles of sanitation.

2. **P2** Button – “START / RESUME”

This button has two functions:

A: **START** – starts one of the sanitation cycles selected with P1

B: **RESUME** – starts again a paused cycle

3. **P3** Button – “PAUSE / STOP”

This button stops a functioning cycle until it is started again by pressing P2 button.

ATTENTION

On the paused position the process time for the execution of the cycle functioning stops until the restart of the cycle.

Pushing this button after you pushed before only the P2 button will completely stop the cycle functioning, the equipment will execute a monocycle

4. **P4** Button – “ON / OFF”

This button starts or stops the equipment

POSTERIOR DESCRIPTION

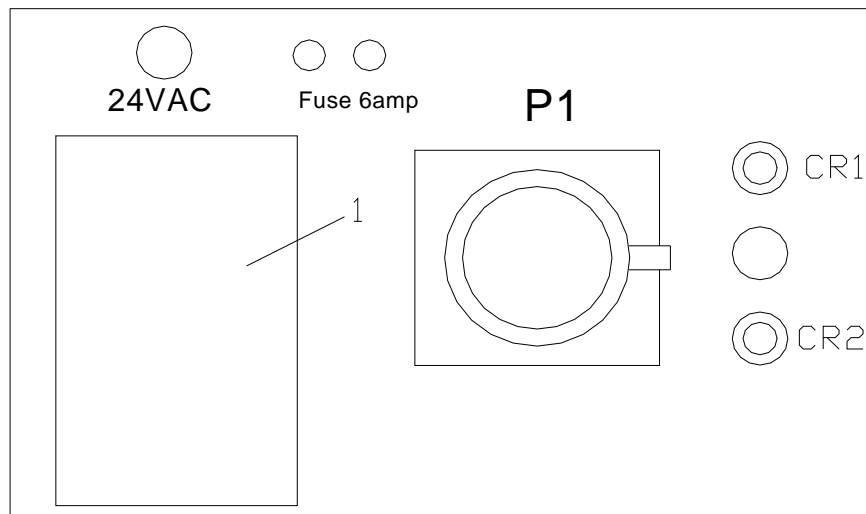
CR1 – Rapid connector – where you connect the water tube

CR2 – Rapid connector – where you connect the disinfectant solution

24 VAC – power supply cable

P1 - Couple P1 – on this couple, in relation with the keg couple used, it can be mounted any kind of fittings

1 - electrical transformer, 84W, 24 Vac;



3 . USER GUIDE

A complete sanitation cycle is composed of four major operations:

1. Eliminates the impurities and solid deposits from the circuit by mechanical action of water.
2. Eliminates the water and fills the circuit with detergent.
3. Maintains the detergent in the circuit.
4. Eliminates the detergent from the circuit and washes the circuit.

This automatic cycle is commanded by an electronic panel which is a part of the electric circuit of the equipment as shown in the scheme below.

Prepare Operation

1. Connecting the pipes to the recipients.
2. Connect the rapid connectors to the pipes from the recipients.
3. Fill one of the recipients.
4. Fill the second recipient with disinfect solution that is already at the concentration according to the producer's instructions.
5. Connect the water recipient by rapid connector to **CR1** connector of the equipment
6. Connect the disinfect recipient by rapid connector to **CR2** connector of the equipment
7. Screw the couple P1 of the µSterilDraft® the corresponding fitting for the couple tip use by the installation for cooling and dispensing beer.
8. Couple the Keg to the µSterilDraft® equipment by the fitting in P1
9. Input the power supply at 220V/50Hz

Attention: The power source must be grounded.

10. Press the P4 button "ON/OFF", and the result will be the continuous lighting of LED5 – "POWER ON" – and LED1 (washing) – "1/4 CYLCLE" - in continuous way.

Choosing the cycle

At this moment the µSterilDraft® equipment is ready to execute the cycle or the operation, which are chosen.

- A) By pressing **P1** button it is possible to choose any of the cycles. These cycles are:

1. Rinsing and eliminating the impurities from the installation
- 2/3. Disinfecting the installation with disinfect liquid;
2 - fills the installation with disinfect liquid

- 3 - the process stops at is waits for a chemical action of the disinfectant liquid inside the installation to take place.
- 4. Washing the installation, during which operation it eliminates the detergent and washes and rinses the installation thoroughly.

B) To activate the chosen cycle by **P1** it is necessary to activate the **P2** button (**START/RESUME**), and the effect will be the intermittent lighting of the LED corresponding to the chosen cycle, together with **LED6**.

C) For 2/3 cycle: when the cycle 1 is on, the **LED2** has intermittent lighting and **LED3** has continuous lighting. Also during cycle 2, **LED6** will have intermittent lighting.

D) During the automatic sanitation (**all cycles**) **LED4**, **LED6** and the one that corresponds to the cycle that is on, will be lightened as following:

CYCLE	NR. LED			LIGHTING
1	1	4	6	intermittent
2	2	4	6	intermittent
	1			continue
3	3	4	6	intermittent
	1	2		continue
4	1	2	6	intermittent
	2	3		fix

- E) During the execution of one of the cycles, the cycle can be temporarily interrupted by pressing **P3 (pause)**. After the break the cycle should start again from the moment it was stopped. (before the **P3** button was pressed).
- F) The **RESUME** button: after a break, if the continuation of the cycle is wanted, it is necessary to press the **RESUME** button. The LED will return its normal status after the resume button is pressed.
- G) **STOP**: in case of emergency situation when cycle should be stopped, it is necessary to press at the same time the **P3** button (pause/stop) and **P4** button (on/off)
- H) At the end of the execution of the cycle the LED's of the cycle will have continuous lighting an also will have **LED6**. From this moment it is possible to choose another cycle by pressing **P1** button (**Change Cycle**) cycle to be activated by pressing **P2** button.

Finishing operation

- a) press P4 button (on/off); the result will be the shutting off all of the LED's;
- b) close the column tap;
- c) unplug the μSterilDraft® equipment from the power supply;
- d) unplug the μSterilDraft® equipment from the disinfectant recipient by the rapid connector CR2;
- e) unplug the μSterilDraft® equipment from the water recipient by the rapid connector CR1;

4. DELIVERY ACCESORIES

DESCRIPTION	U.M.	<u>CANTITATY</u>
μSterilDraft®	PCS.	1
Coupling adapters (to be define by the client)	PCS.	1
<u>Rapid connectors</u>	PCS.	2

5. DEFLECTIONS AND INTERVENTIONS (TROUBLESHOOTING)

No.	Defections	Checking	Interventions
1.	Pressing the P4 button (on/off) and LED5 does not light	<ol style="list-style-type: none"> 1. Check if there is power in the power source 2. Control the fuses 3. Check the connection with the power source 	<ol style="list-style-type: none"> 1. Search for a power source which has power 2. -If they are burned , they will be replaced -If they burn again , check if the power is function well. -Call the technical service of S.C. NORAD S.R.L. 3. Check if : <ul style="list-style-type: none"> • the connection in the power source is not broken • the cables are well connected
2.	Pressing the P1 button (change cycle) and LED1 does not light.	<ol style="list-style-type: none"> 1. Press again the P1 button or check if there is any other LED lighten 2. Press again the P1 button and check if the LED's isn't lighten 	<ol style="list-style-type: none"> 1. -Press again , continuously until you select the cycle you want -Contact the technique service of S.C. NORAD S.R.L. to change the LED 2. -Call the technical service of S.C. NORAD S.R.L. to change the microchip

No.	Defections	Checking	Interventions
3.	<p>Pressing the P2 button (start)</p> <ul style="list-style-type: none"> • The LED of the selected cycle LED6 does not light • The LED are lighten , but the installation is not functioning 	<ol style="list-style-type: none"> 1. If the installation is functioning 2. If the connections are well made 3. If the connections are broken 4. If the tubes of the fluid circulation are broken or if the tubes system is strangulated 5. If the column tap is on 6. If the liquid gets out of the connection coupling base 	<ol style="list-style-type: none"> 1. –Call the technical service of S.C. NORAD S.R.L. , the main board has to be changed 2. –Disconnect the tubes from the reservoir and then connect them back 3. –replace the connections 4. –If the tubes are broken , they will be replaced 5. –Turn on the tap 6. –Disconnect the couple from the base and if there is any liquid getting out check the couple is functioning correctly or if it is not getting out any liquid, then check the tubes that make the connection with the base and notice if the connection is well made.

6. TECHNICAL CHARACTERISTICS

Application :	Can be used solutions based on chlorine or caustic soda (solution until 1:10)
Debits :	5.8 l/min.
Working pressure :	5.5-7 bar
Priming :	until 4 m
Cycling time :	6 min. 40 sec.
Voltage :	24 VAC
Weight :	3,5 kg.
Working mode :	intermittent
Dimensions :	320x160x260 mm