

Girovap

distiller-pro

User's Guide



Register your GIROVAP to
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techniques and recipes!



Thank you for purchasing **GIROVAP**, the professional reducing distiller designed and equipped for professional and gastronomic use for both food and beverages.

Conventional laboratory rotary evaporators are not intended for use in the kitchen or for cocktail making and thus don't meet their requirements. **GIROVAP** puts an end to all the usual inconveniences: the lack of power in the vacuum due to constant leaks, high price, difficult and fragile maintenance which have been a real nightmare for many professionals.

Enjoy a resistant, compact, productive and simple equipment. Discover new techniques in distillation, extraction, clarification and reduction at low temperatures.

GIROVAP welcomes you to the new era of gastronomic distillation.

The technical team of 100%Chef





READ this manual carefully

Understand how this device works and you will be able to operate it yourself without difficulty within a few minutes. It is not complicated, but it is worth the first day to understand how all its parts work. Take the time to complete a short training period and share your knowledge with your team.

Girovap is a device designed exclusively for professional and gastronomic use for both food and beverages. Its parts have been designed to withstand all the demands of professionals and can be immediately replaced or exchanged with many accessories and complements.

We recommend you do not throw away the packaging, since it has been designed for the best transport of the equipment, store for at

least one month the original packaging or if you can keep it to make any transport to your technical service for maintenance.

Install the equipment on a rigid and well supported table, this will avoid unnecessary vibrations and noise.

Leave at least 30 cm of free space around it.

Plug the machine and make sure that the voltage is appropriate. For your safety, choose an outlet with a ground connection.

Do not tamper with Girovap parts or components. It is essential to follow the instructions in this manual and not to exceed the capacity and safety limits described in this manual.

VERY IMPORTANT: Do not leave the appliance running unattended.



First use of girovap

After unpacking and installing all components it is essential to perform a first real distillation with water only. You can use running water and you will need at least 1 liter. The distillation has to be carried out at a water bath temperature of 65°C /149°F for a period of 60 minutes.

Residual particles from the coil may appear in the water of the first distillate. This is completely normal and only happens during the first distillate. Subsequently, wash by hand or in the dishwasher.

Equipment description

THERMAL BATH

A - Tank lined with thermal insulation Maximum load 6 liters

B - 600W resistor and perforated protective grid

C - Water level probe

CH – Protection bottom

D - Temperature probe, accuracy 1 °C

F - Drainage with automatic valve

REDUCER VESSEL

G - 3-liter glass with scale every 100 ml. Made of tempered borosilicate

Maximum capacity: liquids 2.5 liters, thick creams 1.8 liters

H - Rotating waterproof magnetic base

I - Mixing paddle

J - Cover with temperature probe, faucet and silicone vacuum seal

K - Vacuum regulator (tap with pin)

COOLING BATH

L - Thermally insulated tank with Erlenmeyer clamps for cup and coil clamping

M - Temperature probe, accuracy 1 °C / 33.8 °F

N- Drainage with automatic valve and drainage hose (BLUE)

COOLING BATH COMPONENTS

O - 2-liter collection cup with scale in ml. Made of tempered borosilicate

P - Cover with silicone vacuum seal and quick connections

Q - Stainless steel coil for condensation (3 meters) 8 mm Ø

R - Vacuum connection for reducing cup extraction

S - Cold Cup Connection

FRONT CHASSIS

T - Vacuum connection

U - Connection hose for vacuum pump

V - Pump switch. Manual position (I) Timer mode (II)

W - LCD display and keypad functions

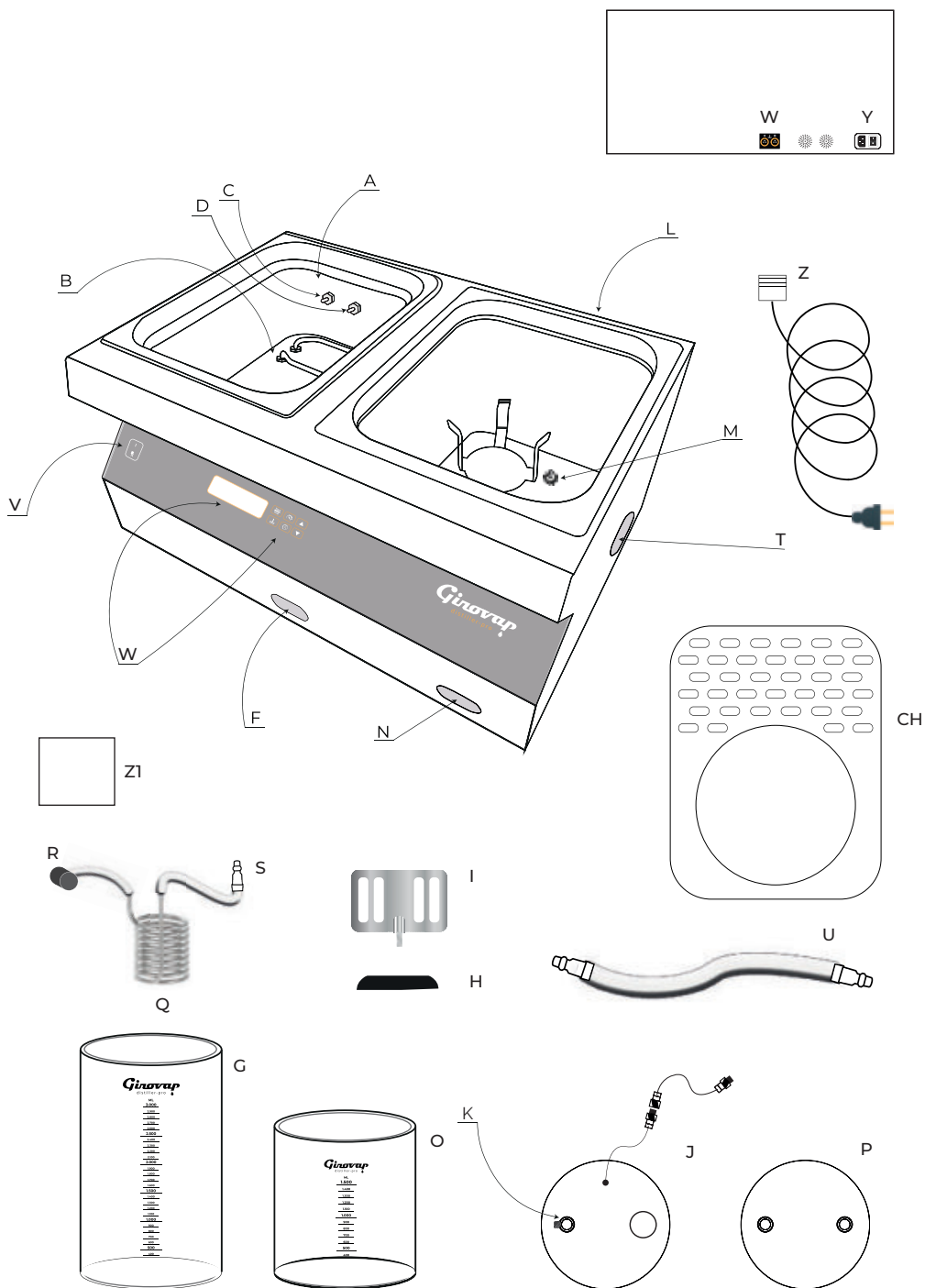
REAR CHASSIS

X - External probe connections

Y - Electrical connection, main switch and safety fuse

Z - Power cable

Z1 - Teflon sheet



Know which are the three parts of GIROVAP that make it totally different from laboratory Rotovapors

1 Membrane vacuum pump

Girovap is equipped with a double-bodied diaphragm vacuum pump that achieves a suction of 15 litres/minute. Thanks to its two independent heads, although joined by a patented system, it allows to reach a vacuum level comparable to the best piston and oil bath vacuum pumps. Girovap is equipped with an EAD pump that guarantees to reach -0.97

bar at room temperature. (Relative Pressure)
As it is a diaphragm pump, it does not require continuous maintenance.

Its membrane and head system allows any humidity that may escape during distillation to escape. We have a video to help you maintain it for your technical service.

2 Distilling glass

Conventional Rotovapors have a glass where the main ingredient is put, this glass is called a flask. In the tabletop units, the capacity of the flask is usually between 2 liters and in very special cases they reach 3 liters. By rotating the product inside it to increase the evaporation area, manufacturers are limited to being half loaded, so its capacity is reduced to 50%.

Girovap cups do not rotate, so they can be loaded up to 75% of their real capacity.

Girovap can work with 2.5 liters of product in its 3-liter cup, or up to 3.5 liters in the 5-liter accessory cup. Its lid is totally hermetic, and since no vacuum sealing element is rotated,

there are no seals or small leaks due to the wear and tear of materials due to rotation, so the vacuum level will always be the same even after years. In addition, the vacuum level is always stable and by working without loss we can perform much more delicate distillations.

The lid itself has a temperature probe that measures the exact temperature of the steam and the product before it leaves the glass. Its control tap allows to regulate the vacuum level and can be used to introduce more liquid into the glass without interrupting the process. In addition, the interior of the cup allows for

the adjustment of axes for hanging baskets or the centering axis for solid products. But what perhaps makes it easier to work with

the Girovap is the 15 cm mouth, which makes it very easy to remove the product from its interior, as well as to clean it.

3 Magnetic rotation system

One of the most innovative parts of the Girovap, besides its impeccable pump, is its rotation system by which it generates a perfect homogenization of temperature with all kinds of ingredients, if not the possibility of generating a giant Vortex to increase the maximum evaporation surface. Moreover, its powerful traction together with different accessories allows working with semi-solid

ingredients. Moreover, with the static cups the product rotates thanks to the blade, so the whole product rotates at the same time regardless of its density or volume. Its blade allow working with a high degree of vacuum because when working with foaming products, the blades capture the foam, preventing it from escaping out of the chamber and into the harvesting area.



Keyboard functions

START // STOP

Starts or stops the heating system and swing motor. They do not intervene in the functions of the pump.

Thermometer

Only when the motor is stopped, first press the thermometer button and then the up or down arrow to set the water bath temperature. Select between 0°C/32°F and 100°C/212°F.

Rotation and speed

With the engine running, we can change the direction of rotation of the blade.

Clock

With the motor stopped we can press this key to enter programming mode and then change the parameters. With the motor running when pressing the key, we can see the programmed time and the remaining time, just for information purposes for a few seconds.

Up arrow

With the motor stopped, it increases the temperature value. With the engine stopped and after having pressed the CLOCK button, it increases the time value. With the motor running, it increases the speed of rotation. In the SYSTEM TEST function, they are used to move around the menu selection screen and configure some parameters.

Down arrow

With the motor stopped, the temperature value decreases. With the motor stopped and after having pressed the CLOCK button, the time value decreases. With the engine running, the speed of rotation decreases.

Orange button

This button has 3 positions Pressed in I, the pump acts manually. Pressed in position II, the pump operates in programming mode. In the middle position the pump is stopped.

Steam temperature sensor connection

Connect the probe to the back of the Girovap.
The probe with the red terminal is connected to the base ().

NOTE: You can always leave this cable connected to the base and simply disconnect it from its JACK connection near the cover, to facilitate washing.

The different temperature readings are connected directly, hot bath probe (D), cold bath probe (M).
As well as the water level probe (C).

The rear connection that indicates cold (AUX / ) is a complementary connection to make external measurements of other Girovap accessories.

Filling of the thermal bath

Fill the bucket (A) of the bain-marie with 6 litres of preferably hot water. Place the stirring paddle (H + I) inside the beaker (G) and slowly immerse it in the bath, centering it in the center of the perforated tray with the black bottom.

The beaker will be held by the magnetic force of the magnets. Under no circumstances should this be done with the motor running.
If you want to remove the stirring paddle from the beaker once it is installed in the tray, preferably lift the beaker from the tray first and then the magnet will be free and you can easily remove it.

Always in the STOP position Select the 

temperature using the keys  

Pressing it once will raise or lower the temperature from degree to degree.

Programmable temperature ranges from room temperature to 99°C / 210.2°F.

If Girovap is in operation you will not be able to change the bath temperature.

Set the water bath to heat by selecting the desired working temperature and pressing the START button. When Girovap is working, on the right side of the LCD display you will see a flashing movement with the symbol #

Use the keys   to completely stop the blade GIRO speed.

In general, the higher the temperature, the more steam we generate and the higher the production. Some products are more sensitive to high temperatures. We must seek a good balance between these two options Bath temperature and internal temperature of the Girovap cup.

Once we see that the temperature of the water is the same as the selected temperature, we will place the product inside the glass.

The glass has a printed scale that measures

the amount of product inside by counting the number of times the blade is in the glass.

Start the ROTATION at speed 2, so that the product can homogenize the temperature.

S	E	T	.	B	M		1	2	9	°	F		1	2	9	°	F
B	A	S	E		P	R	O	D	U	C	T			3	4	°	F
D	I	S	T	I	L	L	A	T	I	O	N			5	0	°	F
G	I	R	O		2			-	0	.	9	7		B	A	R	#

Assembly of the cold distillation bath

Place the coil (P) inside the small clip. Place the collector cup (Ñ) inside the larger diameter clip, exerting pressure until it is perfectly fixed at the bottom.

Fill the bath with flake ice or ice cubes, covering the coil and all possible spaces as much as possible. Always keep the bath filled with ice to improve results and prevent leakage of vapors or volatiles into the pump. Adding a couple of liters of cold water improves the transmission of cold. (SEE BRINE SECTION) Close the cold cup with the lid (O), start the vacuum pump in manual position (I), connect the quick coupling of the pump suction tube

to the connector of the lid, let a good vacuum level occur (about 10 seconds). The vacuum level can be seen on the display. (BAR)

Place the lid (J) on the cup (G). At the same time, we will connect the quick plug of the coil to the cover (O) and immediately or at the same time the black head (Q) to the cover (J). The black head must be centered in the central hole of the lid. Immediately observe how the vacuum level increases by decreasing the atmospheric pressure until it reaches -0.97 bar. If we observe that after about 2 minutes this vacuum level is not reached, check that the key (K) is completely closed and that the connections are perfectly connected. If

everything is correct, stop the rotation and check that the covers are perfectly closed and the seals are not bent.

If the vacuum is correct, gradually increase the speed of the Girovap to the speed of GIRO 7. There are certain products that, when increasing the vacuum level, we observe that they start to boil without control. This false boiling is usually called reflux, since the product contains air bubbles, contains fibers or its density when released from the pressure increases in size and produces the so-called false boiling. We have to prevent the product from rising so high that it can be absorbed by the vacuum suction system. To do this we can

increase the speed of rotation and if it is not enough to violently release the vacuum level with the tap on the lid (K) as many times as necessary until this bubbling and explosion is completely leveled off. We can even leave the tap slightly open maintaining a medium vacuum level during the first minutes, work at -0.70 bar, once the refluxes are stabilized, close the tap and continue normally, until the maximum vacuum is reached.

Liquid or alcoholic products do not have this problem and usually boil when the temperature and vacuum level generate steam. Alcoholic products are more volatile than water so their boiling starts earlier (at lower temperature) than water-based products.

The distillation begins

After a short time, we will observe that the temperature of the product contained in the glass (G) starts to increase and begins to generate steam. The vapor will be absorbed by the pump suction and transported to the coil, cooled and condensed back to a liquid state, and finally led by the low pressure to the collecting vessel (O).

This product must be completely transparent and free of particles or color. If it has any kind of residue, we must quickly stop the equipment, clean the coil and the cup well and

start again. This may have happened because the suction force at some point has taken away part of the product from the beaker (G), or a good cleaning was not carried out on the previous distillate.

During the whole process we must control the cold level of the bath (L) and add ice if necessary.

The temperature of the cold bath should always be below 10°C / 50°F, although it is preferable to keep it between 1° - 3°C / 33,8° - 37,4°F

Partial opening of the system and restoration of the vacuum after a stop

Stop the rotation of the motor and the heating system by pressing the STOP button. To open the system, we must also stop the vacuum pump with the orange switch.

If we only want to open the cup (G):

Disconnect the quick connector connected to the cup (O) from the coil. In this way the cup (G) will be depressurized so that we can make any modification or repositioning of the blade. If you stop the vacuum pump during distillation and want to restart the vacuum again, you

must turn it on with the yellow switch, then disconnect for a moment the quick plug coming from the pump connected to the glass lid (O). The pump will automatically start up when a pressure drop is detected, then reconnect to the lid to continue distillation.

If you have the glass (O) in a vacuum and you want to depressurize it, you only need to connect any hose that has a free outlet. For example, the hose (T) as long as it is disconnected from the connection (S).

Full opening of the system at the end of the distillation

Stop the rotation of the engine and the heating system by pressing the STOP button. To open the system, we must also stop the vacuum pump with the yellow switch.

If we want to fully pressurize the cup circuit (G) and (O): open the tap (K) located on the

cup cover (G). By slowly opening the tap and re-pressurizing the cups, it will be possible to open them and, in the same way, recover any product that may have been left in the coil, as the pressure from the tap will push any liquid that may have been left in the circuit.

Incorporation of fluids inside the reducing cup or hot cup

There are preparations that require that during the process we can incorporate liquids inside the glass (G) or to add more product as well as to add other aromatic or thickening products during its reduction or distillation without the

need to stop or lose the vacuum level.

This must always be done with the vacuum pump running and connected to the circuit.

Connect a piece of hose to the vacuum regulation valve (K). Submerge the other end

inside the glass with the liquid to be added and slowly open the valve. Observe that thanks to the vacuum, the liquid will be absorbed into the

cup. Close and open repeatedly until you are sure that no drops or residues remain inside from the tube.

Thermal bath water level security system

Girovap has a probe that detects a possible fault or operating error. If by an oversight we turn on the heating resistance and the water does not cover the resistance, the level probe will indicate on the display a text and will emit a warning beep. For proper operation, the optimum water level should be between 5 and 6 liters. It is really important to change

the water in the bain-marie so as not to concentrate the level of lime in the water.

You can work with distilled water but never with deionized water as the water level probe will not detect the water. To speed up the working times it is better to add the previously heated water.

L O W L E V E L W A T E R

Temperature change

If we need to change to increase or decrease the temperature of the bath or distillation, we should stop the rotation with the STOP key, pulse () and then adjust the temperature value of the water bath with the keys.  

Press the START // STOP button again.

If you have worked with the timer system, reset the working times again. If you are working with the automatic mode, the STOP values will be reset to "0" again.

Selection and control of the temperature for a better result

Each product, depending on what we want to achieve, has certain characteristics when working. To do this we must know the boiling points and work with a table of pressures and temperatures that can serve as a guide (see page 16).

It is not the same to work with a fresh product such as a fruit puree, a hydrolysate (hydrosol), a sauce or broth, a lactic, or an alcoholic beverage, etc.

The products that we want to concentrate with watery base must be treated at a lower temperature so as not to alter their taste or color (fruit puree, delicate hydrosols). If it is a product with a high fat content, and what we want is to extract its watery part, we can put them at a medium temperature (meat or consommé broths, creams, sauces with a lactic base, herbal hydrolats) and if we re-distil or extract

alcohols we can work with a higher temperature. In addition, the higher the quantity of liquid, the higher the production.

To have an approximate idea about the temperature at which we should put the bath to distill a certain product we will follow this guideline. The difference between the bath and the vapor is usually 20 °C / 68 °F although this will depend on the amount of liquid or base product, the temperature of the cold bath but what is more important is the vacuum pressure we are working with but we can start by taking those 20 °C / 68 °F to get an average.

This table will give us a more exact idea of what we should put the water bath into if we want to obtain a steam at a certain temperature depending on the product. It also tells us the approximate amount of distillate or extraction we will get.

PARAMETERS: Distillation content 1 L -0.97 bar GIRO 6 Time 1 h Cup 3 LITRES

	°C BATH	°C VAPOR	°C COLD	ml/h		
H2O	75	40	2	600	HIGH	
H2O	65	36	1.5	400	MEDIUM	
H2O	55	31	1.5	320	LOW	
GIN 40%	75	40	2	800	HIGH	
GIN 40%	65	36	1.5	700	MEDIUM	
GIN 40%	55	31	1.5	600	LOW	

Let's understand now the difference between distilling a product based on water and alcohol. In order to start from an alcoholic base:

We will work with distillates with a reduced proportion of alcohol and never pure. As an example we will take as a base the Gin, a drink with 40% of Ethyl alcohol. Its boiling temperature with a vacuum of -0.97 bar is 18°C / 64.4°F.

This low temperature generates a low proportion of steam, and re-distilling at this temperature does not make much sense since the alcohol will not lose any of its qualities and surely if we increase the temperature we will accelerate the amount evaporated much reducing the working time. For the products with alcohol if we select a temperature in the bath of 75°C / 167°F, we will obtain a distillation temperature of the liquor of 37°C /

98.6°F reaching about 800 ml in one hour. However, in order to start from a watery base: Let's take an example in order to interpret the following table. The boiling point of water at real atmospheric pressure is 100°C whereas the evaporation temperature of a water-based product at -0.97 bar is 21.3°C / 70.34°F.

This low temperature generates a low amount of vapor. Distilling at this temperature is not interesting either, unless we want to extract the water from the product for disposal and keep the concentration as natural as possible to preserve the aromatic parts and color, which are more sensitive to temperature.

In the following table, and as an example, we can see how, as the atmospheric pressure inside the container decreases, the evaporation point (boiling) of the water is generated at a lower temperature.



bar	°C	°F	bar	°C	°F
0	100	212	-0,4	86	186,8
-0,01	99,7	211,5	-0,41	85,6	186,1
-0,02	99,4	210,9	-0,42	85,1	185,2
-0,03	99,1	210,4	-0,43	84,7	184,5
-0,04	98,8	209,8	-0,44	84,2	183,6
-0,05	98,5	209,3	-0,45	83,7	182,7
-0,06	98,2	208,8	-0,46	83,2	181,8
-0,07	97,9	208,2	-0,47	82,8	181
-0,08	97,6	207,7	-0,48	82,3	180,1
-0,09	97,3	207,1	-0,49	81,8	179,2
-0,1	97	206,6	-0,5	81,3	178,3
-0,11	96,7	206,1	-0,51	80,7	177,3
-0,12	96,4	205,5	-0,52	80,2	176,4
-0,13	96,1	205	-0,53	79,7	175,5
-0,14	95,8	204,4	-0,54	79,1	174,4
-0,15	95,4	203,7	-0,55	78,6	173,5
-0,16	95,1	203,2	-0,56	78	172,4
-0,17	94,8	202,6	-0,57	77,4	171,3
-0,18	94,4	201,9	-0,58	76,8	170,2
-0,19	94,1	201,4	-0,59	76,2	169,2
-0,2	93,8	200,8	-0,6	75,6	168,1
-0,21	93,4	200,1	-0,61	75	167
-0,22	93,1	199,6	-0,62	74,4	165,9
-0,23	92,7	198,9	-0,63	73,7	164,7
-0,24	92,3	198,1	-0,64	73	163,4
-0,25	92	197,6	-0,65	72,3	162,1
-0,26	91,6	196,9	-0,66	71,6	160,9
-0,27	91,3	196,3	-0,67	70,9	159,6
-0,28	90,9	195,6	-0,68	70,2	158,4
-0,29	90,5	194,9	-0,69	69,4	156,9
-0,3	90,1	194,2	-0,7	68,6	155,5
-0,31	89,7	193,5	-0,71	67,8	154
-0,32	89,3	192,7	-0,72	67	152,6
-0,33	88,9	192	-0,73	66,1	151
-0,34	88,5	191,3	-0,74	65,2	149,4
-0,35	88,1	190,6	-0,75	64,3	147,7
-0,36	87,7	189,9	-0,76	63,4	146,1
-0,37	87,3	189,1	-0,77	62,4	144,3
-0,38	86,9	188,4	-0,78	61,4	142,5
-0,39	86,4	187,5	-0,79	60,3	140,5

Relation between atmospheric pressure and boiling temperature

<i>bar</i>	<i>°C</i>	<i>°F</i>	<i>bar</i>	<i>°C</i>	<i>°F</i>
-0,8	59,2	138,6	-0,9	44,3	111,7
-0,81	58	136,4	-0,91	42,1	107,8
-0,82	56,8	134,2	-0,92	39,7	103,5
-0,83	55,6	132,1	-0,93	37,1	98,8
-0,84	54,2	129,6	-0,94	34,1	93,4
-0,85	52,8	127	-0,95	30,6	87,1
-0,86	51,3	124,3	-0,96	26,4	79,5
-0,87	49,8	121,6	-0,97	-21,3	70,3
-0,88	48,1	118,6	-0,98	14,2	57,6
-0,89	46,2	115,2	-0,99	3	37,4

Relation between atmospheric pressure and boiling temperature

Once the pressure and temperature variations are understood, we will go on to describe the

main techniques in a basic way that can be useful for any professional.

Alcoholic re-distillation with the addition of flavors and aromas

If we re-distill a commercial alcohol, we will evaporate some of the alcohol with the most volatile aromas, and some of the water from the distillate itself. Once we stop the machine we will be able to observe that the remaining alcohol no longer contains almost no alcohol with only some gustatory residue.

The normal proportion is to stop the distillation of an alcohol once we have obtained 80% of the product.

This resulting 80% will have increased the percentage of alcohol. This increase in alcohol content will depend on the point at which we have stopped the re-distillation

process and the % alcohol volume of the product at the beginning. To have a much more exact idea you should measure the resultant with an alcoholmeter Item 30/0052 So we will have obtained a priori a distillate with a higher alcohol content, which obviously we will have to compensate later.

We should not suffer from unwanted methyl alcohols or alcohols as the initial product (commercial alcoholic beverages) no longer contains them by law, and in the re-distillation they could not be created.

In order to create and personalize new distillates, we must incorporate olfactory

elements or flavors to the alcohol. Once re-distilled, we will be able to incorporate nuances and flavors to the alcohol, obtaining a transparent liquor.

We will be able to add: fresh fruits, skins of fruits and vegetables, fresh herbs, spices, roots flowers, aromatic woods, skins of animal, etc. If we use fruits or fruit purees it is better to dehydrate them or better to use high quality lyophilized products.

It is essential that, in order to obtain a better final product, we put the alcohols in a rigid vacuum container ("Brick Vac" or "Click-it") or in sous-vide bags and thus achieve a good cold impregnation of the flavors and aromas after a few hours of rest. One formula to accelerate and increase the power of this marinade is to use an ultrasonic bath.

The infusions made with alcohol are called "Tinctures". Re-distil at product temperature between 35° - 40°C / 95° - 104°F and

maximum vacuum, making sure that the cold glass is always covered with ice to prevent the aromas from escaping.

If necessary, once the process is finished, measure with the alcoholmeter and balance the alcoholic graduation with an alcohol of lesser graduation, with distilled water or hydrolats.

The mixture obtained is truly a new and totally unique drink. It is very difficult to decipher your recipe so it is important that if you want to repeat it, follow a recipe booklet while methodically noting all the details.

It is important to take into account that when we re-distil 1 litre, the times, quantities and alcoholic graduation will be different if we do it with more quantity, depending on the amount of alcohol that we re-distil, for example 2 or 3 litres the recipe and times have to be different and adequate for each quantity, it is not valid to multiply the times to get the same product.

Breakdown and recomposition of alcohols

We can use and manage the distillation produced from some fermentation by separating harmful alcohols such as methanol (distillation cut-off) from ethanol thanks to its volatility difference of almost 14°C / 57.2°F.

These are the boiling points of the different alcohols at atmospheric pressure 1 bar (1 atm) and can be used as a guide to apply the vacuum so that we can perform this

separation or cut in the distillate and purify the quality of the alcohol.

Methanol boiling point (burning alcohol)
64.7°C / 148.46°F

Ethanol (ethyl alcohol) boiling point 78.37°C / 172°F

Ethanol weight 0.78 g Inflammation 13°C / 55,4°F

Extraction of alcohols (wines, liquors and perfumes)

This application of the Girovap serves to extract the alcohols from the drinks without affecting their organoleptic properties, for example, from a liquor or a sweet wine. As water and ethanol have different boiling points we can make a controlled distillation at low temperature with the intention of extracting pure alcohol and leaving the remaining product without alcohol.

These are the boiling points of the different liquids at atmospheric pressure 1 bar

(1 atm) and can be used as a guide to apply the vacuum so that we can carry out this separation and use the remaining product in sauces, or halal and kosher dishes, alcohol-free cocktails, etc.

Although it can be extremely interesting to use it in ice cream.

Water boiling point 100°C / 237°F

Ethanol boiling point 78.37°C / 172°F

Hydrolat distillation

When we add a vegetable product with some proportion of water and we carry out a distillation we will obtain a very aromatic aqueous product called hydrolat (hydrosol).

To do this we must cut the products into small pieces or liquefy them with a Slow Juicer or grind them with a blender. Bear in mind that there are products that oxidize very easily after contact with air and that their particularities can change. Once cut or ground, vacuum seal the glass to delay oxidation.

This hydrolat contains aromatic elements, vegetative water of the food and, depending on the distilled product, essential oils.

Depending on the product and its percentage we will obtain a more or less aromatic product. It is key to achieve the maximum concentration so we recommend using a very small amount

of water. Just the right amount to facilitate evaporation and movement within the rotating glass.

Sometimes, when you want to work with very dense products that make it difficult to turn the blades, it is better to stop the rotation and perform the distillation while standing still. The steam is generated equally, somewhat slower but in the end the result is the same.

Some elements contain a small amount of essential oil that once distilled we can separate by decantation. Although it is true that the product is very good, the quantities obtained are small and sometimes it is not so much work. These hydrosols are a by-product that can be used to great effect. It is as if we have a palette of colors but with a sense of smell.

Food perfumes that we can incorporate into hundreds of recipes, savory, sweet or cocktail. Incorporating hydrolats or essences directly into alcohols is a practice that allows us to produce many different products in large

quantities and in a very short time (floral, botanical, essences). In addition, we will always be able to give unique touches to all the cocktails, water for the elaboration of ice, etc. all of them of form very quickly.

Reductions and cold concentrations

When distilling a product under vacuum, we will manage to extract the water in the first instance, concentrating the initial product to the point of obtaining a thick product.

When concentrating using a very low temperature, for example 30°C / 86°F we will reduce the percentage of water and we will also be able to observe that the colors will be much more alive and gustatory the flavors will be much more intense.

The lipids (fats), fibers, sugars, pigments will remain inside the product and only the volatile parts, that is some aromas and the water will be extracted by evaporation and depression. For example, from a fruit puree we can extract the water obtaining a highly concentrated product, with a high concentration of sugar almost like a jam.

In this type of reduction, certain interesting volatiles are usually lost during the first minutes of distillation.

These first vapors that are generated usually contain the most delicate aromatic parts. In order to recover them and add them to the base product, a two-phase distillation must be carried out. In the first phase, the purpose is to capture these volatiles, and in the second phase it is to extract the remaining water for disposal.

In the first phase we will start the distillation with a lower temperature in the bain-marie, about 10°C / 50°F less, making sure that the bain-marie is well charged with ice in order to avoid the leakage of these volatiles to the pump.

To do this, we can use the usual glass or acquire a 700 ml fractionating glass with which this operation is much easier.

After the first 5 minutes, disconnect the glass and remove and preserve any essences that may have been trapped in the glass. Then proceed with the normal reduction by increasing the temperature of the bath again by about 10°C / 50°F more. At the end of the process, add the essence to the reduction.

Extraction of water in marinated oils or fats

An oil or grease can be the element where we can use as a sponge and fix aromas that are difficult to trap with other methods. Ancient perfumery treats this technique as **enfleurage**.

It is based on putting flower petals between pressed layers of fat and then mixing that fat with alcohol and making a distillation. It is a somewhat delicate technique and of scarce

production, although we can reinvent taking advantage of it.

Separating the watery part of a fat is very easy without having to distil by decantation but if there is some kind of emulsion for example to have turbine some water containing a fat we can extract all its water (100%) although this was emulsified.

What products and in what state can we distill them?

Liquids, juices, creams, purees, relatively thick pastes. Solid products such as spices, roots, leaves, skins are best cut up or passed through a cutting machine, and add a certain amount of water or alcohol, depending on the use. (Between 50%) If the product has a lot of fiber it is better to use the mixing

accessory “Blade for solids with shaft” and do not put more than 1 kg. of product in the glass.

In the case of having to add more water it is preferable to make a concentration in a second distillation to improve the product.

Selection of language parameters (ESP- ENG) and temperature °C/°F

When starting the main switch, keep the START//STOP key pressed, the display will show LANGUAGE and TEMPERATURE SCALE. Use the keys   to select the language and type of scale °C / °F

according to interest. Once we have the selection on the screen, press START//STOP again.

This selection will be saved until the next modification.

Timekeeping

Girovap is designed to work independently, although we recommend always working under

the supervision of a technician. By pressing the key  we will enter the programming

mode, then the keys   will allow us to increase or decrease the programmed working time.

This time does not start until the selected temperature is the same as the bath reading. Then the time will decrease until reaching the minute "0" when the machine will stop, both the heating and the rotation. The pump will only stop if the orange button is pressed in position "II".

The remaining time will remain effective, even if the machine is stopped with the START // STOP button or the temperature is changed.

This remaining time will remain in the memory for only 3 minutes, in order to continue working with the remaining time, but if the programmed time is changed, the time will return to the start again. The pump will also work in programmed mode as long as it is started in position "II".

P	R	O	G	R	A	M	M	E	D	T	I	M	E	1	H	2	4
R	E	M	A	I	N	I	N	G	T	I	M	E	1	H	2	3	
G	I	R	O	9					I	N	V	E	R	T	O	F	F

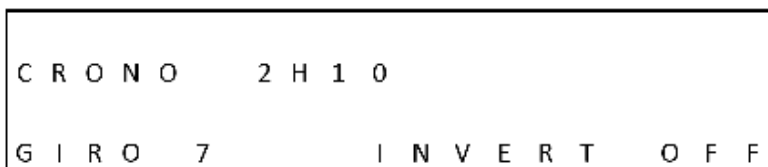
If you do not work in timer mode, i.e. manually by pressing the  key, you will see the CHRONO screen. The reflected time acts as a chronometer.

C	R	O	N	O	1	H	2	4
G	I	R	O	9				
				I	N	V	E	R
				T	O	F	F	

Speed of rotation and reversal of direction of rotation

When Girovap is in operation, we can modify the GIRO speed at any time by directly pressing the keys   .
Going from "0" to "9" is the maximum

speed, we recommend always starting from low speed or from "0" and increasing the GIRO speed according to the product to be treated.

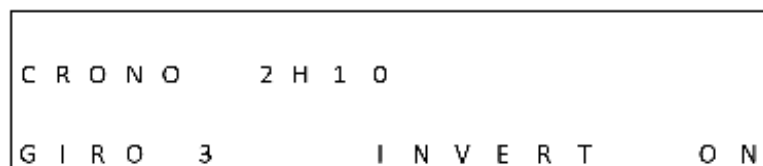


The change of rotation is an option designed to work with very dense products or those containing certain solids. These can become stuck or poorly positioned inside the vessel, regularly preventing the rotation of the fluids.

To lower the speed to any value between 1 and 3, press the key  the motor will stop

for one second, and will reverse the direction of the run. Once the uniform movement has been recovered, the operation can be repeated to recover the original direction (clockwise).

It is better to always work with this direction of rotation, the motor will wear out much less and we will extend its life.



If operation is stopped for any reason when you start again, the blade speed will start rotating progressively until it reaches the selected rotation speed.

Automatic screen change

Girovap when in operation in either timed mode or manual mode its display changes mode every 60 seconds alternating

information, in order to show all parameters (temperatures, pressure, speed, time, and gyro mode).

Minimum cold bath temperature control

Girovap has a sensor that warns in case the cold bath is above 10°C / 50°F. This temperature can cause volatiles to be lost

as they are not captured in the vessel and are absorbed by the vacuum pump. Girovap warns the user to immediately replace more

ice in the cold bath. This alarm does not interrupt any mechanical or programmed process. Girovap will continue to work normally. However, the warning will not disappear until the temperature drops below

10°C / 50°F. This temperature will be detected by the probe (M).

The alarm will sound with a sequential beep and the display will show this warning.

H I G H T E M P E R A T U R E
D I S T I L L A T I O N

TIP: THE THERMOMETER CAN MEASURE TEMPERATURES DOWN TO -10°C TO LOWER THE COLD TRAP AS MUCH AS POSSIBLE AND CAPTURE MORE VOLATILE ESSENCES. TO DO THIS, PLACE 2 KILOS OF ICE AND 150 GRAMS OF TABLE SALT DILUTED IN 1 LITRE OF WATER IN THE COLD BATH (BRINE).

Use of the thermal bath as sous vide

Many times we will have to make some kind of low temperature infusion, both in vacuum-packed bags and small pasteurizations in glass containers.

With Girovap we can use the thermal bath as if it were a “Sous Vide” bath even though it does not have water recirculation. This lack of recirculation causes the temperature to have certain tenths of a difference (1° to 5°C) / (33.8° to 41°F) depending on the part of the bath. If the preparation should not be so precise we can use it with complete confidence. If we require greater precision, we should put the FOAM KIT stone Ref. 50/0052 inside Item. This air compressor is enough

to generate a movement inside the water to homogenize the temperature.

To use this function, make sure that the ROTATION factor is set to 0.

Always in position STOP Select the temperature key  temperature with the help of the keys   to program the desired temperature. You can also set the working time, always in the STOP position, by pressing the  key and then using the keys   to set the required time. Now press the  button. The parameters of the selected temperature and bath temperature will always be present in the first line of the display.



Maintenance and cleaning

Cleaning is essential both for the conservation of the equipment and for the production of high quality and hygienic products. The cleaning of Girovap is extremely simple and fast after use, unlike laboratory equipment. Place all its components in a washing basket and ready for a new distillate. Although we advise you to read carefully these tips to keep your equipment in perfect condition for many years.

Remember that although we work under vacuum, the exhaustive cleaning of glasses, caps, gaskets, tubes and connections is essential after each work session.

All these parts can be washed in a dishwasher or glass washer, dried with a clean cloth. Although it is true that cleaning by hand ensures that it reaches all corners, it would be advisable to rinse with hot water with a sanitizing disinfectant, this will ensure safe cleaning.

If the equipment is not used frequently, we recommend cleaning it just before using it again.

The replacement of the silicone tubes is required every time we observe stains or odors that may contaminate the results.

Do not leave standing water in the bathrooms. Every day empty the cuvettes by connecting the drain hose with a blue sign (to the connections on the front of the unit). Subsequently dry with

an absorbent cloth and polish with an alcohol to remove any residues adhering to the stainless steel. From time to time, decalcify the hot bath (after about 100 hours of work) by adding 1 liter of water and 100 ml of vinegar, heat to 60°C / 140°F and leave for about 10 minutes. Drain and rinse under running water. You can also, if the heating element is somewhat dark, once the bath has been decalcified, use a scotch brite pad to polish the surface.

For a good operation of the pump, every time a decalcification is made, put the pump to work with the switch (U) in manual mode "I". Connect the hose (T) to the outlet (S) and let it work by absorbing ambient air during the cleaning of the equipment, for about 10 minutes. This will remove any moisture left on the membranes. Clean the glasses with vinegar. From time to time, wash the glasses with a water and vinegar bath to remove any traces of lime that might impair the transparency of the borosilicate glass.

It is not a malpractice to make from time to time a sanitization of the circuit. To do this, distil for about 30 minutes a bottle of gin at 75°C/ 167°F in a bain-marie and with the cold bath filled with ice at all times. Retrieve the distilled product and the rest that has been left in the hot glass and save it for another time.

For the rest of the equipment we recommend the use of alcohol and not to use abrasive cloths.



Problems and solutions

When the main switch is turned on, the display does not light up

- Check that the mains cable is well positioned inside the base and well connected to the wall socket.
- The fuse in the mains socket on the back (Y) is blown, there is a spare one in the same box. The fuse is 10 A.

It does not heat the water

- The water in the thermal bath is not heated. It may be that the selected temperature is below the temperature of the bath.
- It is not in START function.

Not enough vacuum is generated

To be able to check where the vacuum leak is occurring, we must start by reviewing the circuit from the beginning. Place a tube (T) at the outlet (S), put a finger on the tip and check that there is suction. Next, check the cup lid (O) to see that it has the gasket properly fitted. The lid must be well centered and flat and must not be tilted. Carry out the vacuum only in the cup (Ñ). Then check that the 2 tubes of the coil are well placed at the ends. Check that the nipple (Q) has its silicone seal. Close the tap (K) of the cover (J) completely and then place it on the cup (G) to check that its seal is well placed and in good condition. At the same time, connect the nipple to the cup and the quick connection of the coil to the free connection of the cover (O). If we detect a loss of vacuum in this second connection the problem will be in this element. Check that the edges of the cup are not broken. Check that the tubes do not have any cracks and are well attached to the terminals.

No distillate comes out of the coil into the cold glass

If after about 5 minutes you do not see liquid coming out of the coil, it may be for different reasons.

- The temperature is too low and no steam is generated. Raise the temperature of the bath by 5°C / 41°F until steam is generated.
- Check that the vacuum is maximum.
- A vacuum has been generated. Slightly open the tap (K) for 5 seconds, allowing a leak to occur. Close the tap.
- The coil has filled with vapor and the pump is not strong enough to remove the distillate from the coil. Remove the coil from the cold bath and place it upside down to help empty it manually, once empty return to normal position.

- The temperature of the bath is below 0°C /32°F and ice has been generated inside. Remove the coil from the bath for about 2 minutes following the normal distillation process so that the vapor will defrost the cap.

The blade does not turn

- Stop the rotation system with the START /STOP key again.
- Accelerate and slow down several times.
- The mass or product inside the cup is preventing the rotation. Unblock.
- There is product under the magnetic rotor that is preventing traction. Remove.
- Disconnect Girovap and reconnect with the main switch to make a restart.
- The gyro system, blade or accessory is not properly mounted. Reassemble.

The cup floats

- Squeeze the tweezers with your hand so that the tweezers press on the glass.

Do not drain the water from the baths

- If when connecting the drain hose the water does not come out of the hose this may be because the hose outlet is higher than the water level. Lower the height of the drain.
- Some debris may have clogged the drain. Connect the hose and blow out one end to remove any debris that is blocking the water outlet.

A LOW WATER warning appears

- Add hot water until the level sensor (C) is covered.

A warning appears on the HIGH TEMPERATURE COLD DISTILLATION display

- Add ice in the cold bath to help lower the temperature again to the maximum possible, if we see that it melts very quickly we will be distilling at a high temperature so the coil needs to dissipate more quickly.

If SYSTEM FAILURE 01 is displayed on the screen

Because the temperature of the water in the water bath is 10°C above the set temperature.

To reset the system:

- Stop the machine with the rear switch (X) Cool the water in the water bath by 10 degrees. Switch the machine on again with the rear switch (X).

If the error message is repeated, contact the technical service or 100%Chef.

Other problems

- If in spite of trying to solve these problems they persist, send an email of consultation explaining the problem or the bad function so that our technical department can recommend the best action.

email: orders@100x100chef.com

Tel. +34 934296340 9h - 13 h (Monday to Friday)



Warranty

This product has a one-year warranty: the warranty does not cover damage caused by improper use or by causes beyond the control of CSL.

Any manipulation of the equipment by personnel not authorized by CSL, automatically cancels the benefits of the guarantee.

No machine will be admitted for repair that is not properly cleaned and disinfected. No claim or repair will be admitted without the signed SAT service entry authorization sheet provided by your distributor.

CSL will: Repair or, at our option, replace any part of this appliance that proves to be defective. Repair or, at our option, replace any part of this appliance that proves to be defective, at CSL's expense for labor and material.

The consumer shall be responsible for bearing the cost of labor and replacement material caused by the consumer's misuse and negligence.

The consumer shall bear the cost of diagnosis when the causes are due to misuse or negligence, if the consumer does not accept the repair quotation.

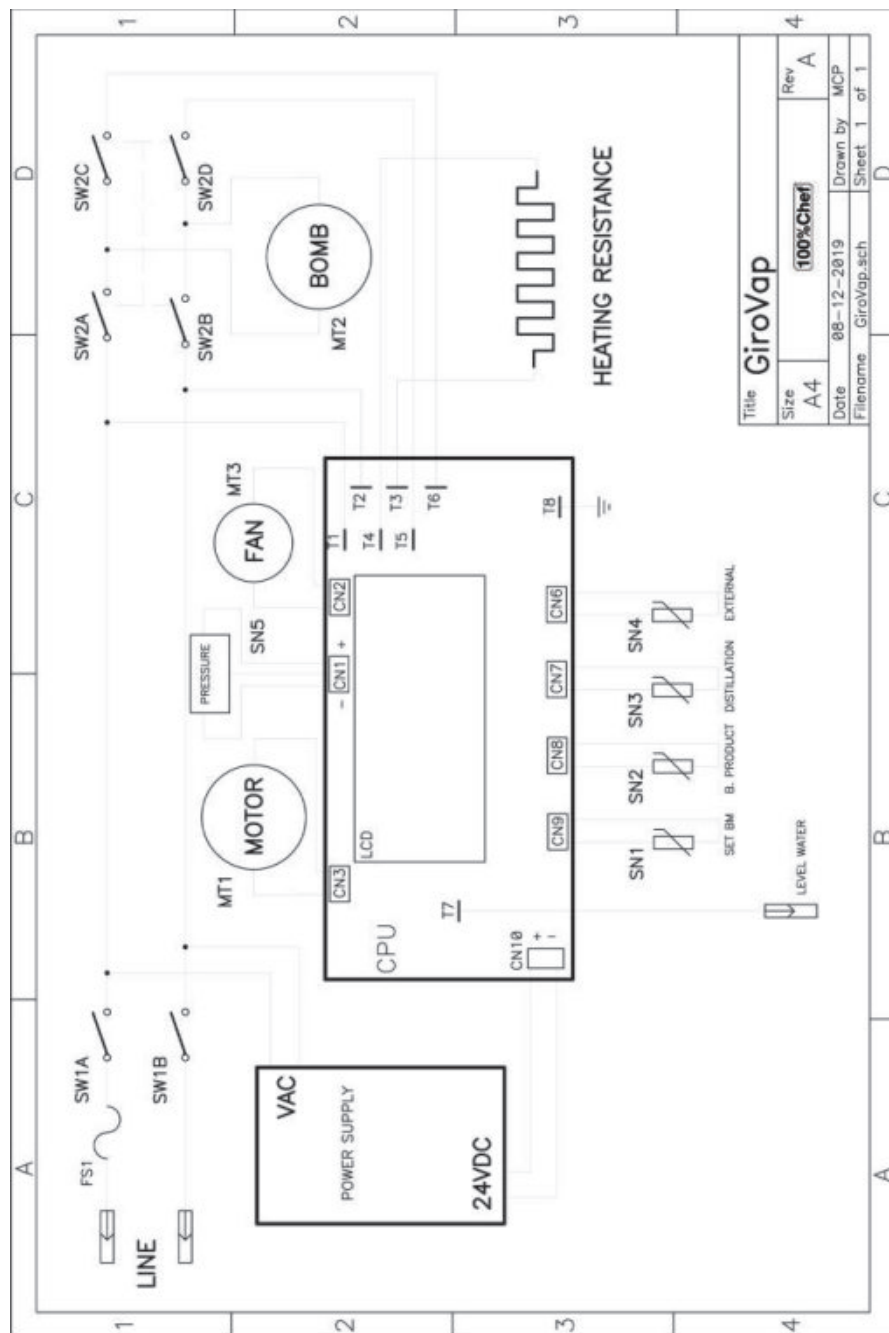
Whether within or outside the warranty period, any transportation costs necessary for the repair service, whether delivery and/or return of the appliance, shall be borne by the consumer.

**For any claim you can contact your distributor or via email
orders@100x100chef.com.**



Register your GIROVAP to
activate its warranty

Free access to
techniques and recipes!



Electric Diagram GIROVAP

STATEMENT OF CONFORMITY “CE”

Cocina Sin Límites, S.L., Declara que: | Déclare que: | Declare that: | Dichiaro che:

Código | Code | Code | Codice prodotto

GIROVAP

Modelo | Modèle | Type | Modello

DISTILLER PRO

Cumple las directivas siguientes: | Accomplit les directives suivantes:

Meet the following directives: | Soddisfa le seguenti direttive:

73/23/CEE

Seguridad eléctrica | Sécurité électrique | Electrical safety | Sulla sicurezza elettrica

89/336/CEE

Compatibilidad electromagnética | Compatibilité électromagnétique

Electromagnetical compatibility | Compatibilità elettromagnetica

Directiva 98/37/EC Regl. 852/2004/CE

Requisitos esenciales de seguridad y de salud relativos al diseño y fabricación de las máquinas y de los componentes de seguridad | Exigences essentielles de sécurité et de santé relatives à la conception et à la construction des machines et des composants de sécurité | Essential health and safety requirements relating to the design and construction of machinery and safety components | Requisiti essenziali di sicurezza e di salute relativi alla progettazione e alla costruzione delle macchine e dei componenti di sicurezza.

Cumple las siguientes normas: | Accomplit les normes suivantes:

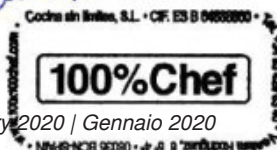
Meet the following standards: | Soddisfa le seguenti normative:

EN50081-1 | EN50082-1 | EN61010-1 | EN61326 | EN61010-2-020 | EN61010-2-041

EN1672-2

Angel Salvador Esplugas

General Manager



Enero 2020 | Janvier 2020 | January 2020 | Gennaio 2020

Recipes

HIDROLATES

INGREDIENT	QUANTITY	H2O	B.M	VAPOR °C	TIME
LIME PEEL		NO	55°C	35°C	1 H
ORANGE PEEL		NO	55°C	35°C	1 H
LEMON PEEL		NO	55°C	35°C	1 H
CUCUMBER PEEL		NO	55°C	35°C	1 H
COFFEE BEANS		YES	55°C	35°C	1 H
CITRONELLA		YES	55°C	35°C	1 H
BERGAMOT		NO	55°C	35°C	1 H
BAY LEAVES		YES	55°C	35°C	1 H
KAFFIR LEAVES		YES	55°C	35°C	1 H
ROSEMARY		YES	55°C	35°C	1 H
LEMON THYME		YES	55°C	35°C	1 H
OREGANO		YES	55°C	35°C	1 H
MINT		YES	55°C	35°C	1 H
BASIL		YES	55°C	35°C	1 H
LAVENDER		YES	55°C	35°C	1 H
DILL		YES	55°C	35°C	1 H
EUCALYPTUS		YES	55°C	35°C	1 H
CLOVE		YES	55°C	35°C	1 H
JUNIPER		YES	55°C	35°C	1 H
CURRY		YES	55°C	35°C	1 H
GINGER		YES	55°C	35°C	1 H
CINNAMON		YES	55°C	35°C	1 H
STAR ANISE		YES	55°C	35°C	1 H
FENNEL		NO	55°C	35°C	1 H
CELERY		NO	55°C	35°C	1 H
GREEN PEPPER f.		YES	55°C	35°C	1 H
CAPERS		NO	55°C	35°C	1 H
GREEN BELL PEPPER		NO	55°C	35°C	1 H
RED BELL PEPPER		NO	55°C	35°C	1 H
CHILLI PEPPER		NO	55°C	35°C	1 H

PRODUCT

All products must be absolutely fresh and their harvesting point must be optimal and in season. The result can vary a lot.

MIXTURES

If we combine several products we will obtain more complex flavors and aromas, apple and mint, thyme and orange peel.

TINCTURES

If we add alcohol (Vodka) instead of water we will get some flavored tinctures, these products will keep longer but will also be more volatile. Better if we let it marinate for a while. Recommended proportion 500 g product / 100 gr alcohol (except coffee).

ALCOHOL REDUCTIONS

INGREDIENT	QUANTITY	H2O	B.M	VAPOR °C	TIME
P. XIMENEZ	750 ML	NO	30°C	15°C	30'
ANIS	750 ML	NO	30°C	15°C	30'
COINTREAU	750 ML	NO	30°C	15°C	30'
BRANDY	750 ML	NO	30°C	15°C	30'
CAMPARI	750 ML	NO	30°C	15°C	30'
RED WINE	750 ML	NO	30°C	15°C	30'
RIESLING	750 ML	NO	30°C	15°C	30'
VERMOUTH	750 ML	NO	30°C	15°C	30'

CONCENTRATIONS

INGREDIENT	QUANTITY	H2O	B.M	VAPOR °C	TIME
MEAT JUICE	1 LITER	NO	55°C	35°C	1 H
MILK	1 LITER	NO	55°C	35°C	1 H
CREAM	1 LITER	NO	55°C	35°C	1 H
C. BOLETUS	1 LITER	NO	65°C	40°C	1 H
COCONUT MILK	1 LITER	NO	55°C	35°C	1 H
FRUIT PURÉE	1 LITER	NO	60°C	38°C	1 H
JUICE	1 LITER	NO	55°C	35°C	1 H

LOW TEMPERATURE COOKING

INGREDIENT	GIN	GR	VACUUM	B.M	TIME
CRYSANTHEMUM	1 LITER	22	MAX.	52°C	2 H
CUCUMBER PEEL	1 LITER	220	MAX.	52°C	2 H
EARL GREY TEA	1 LITER	22	MAX.	52°C	2 H
GRAPEFRUIT PEEL	1 LITER	50	MAX.	52°C	2 H
LEMON PEEL	1 LITER	22	MAX.	52°C	2 H
LAVENDER TEA	1 LITER	15	MAX.	52°C	2 H
ORANGE /CINNAMON	1 LITER	15/20	MAX.	52°C	2 H
BLACK TRUFFLE	1 LITER	10	MAX.	52°C	2 H

RE-DISTILLATIONS

INGREDIENT	QUANTITY	GR.	B.M	VAPOR °C	YIELD	TIME
KAFFIR LIME	1 LITER	10	55°C	35°C	700 ML	1 H
CORIANDER	1 LITER	50	55°C	35°C	700 ML	1 H
SHISO	1 LITER	50	55°C	35°C	700 ML	1 H
CITRONELLA	1 LITER	180	55°C	35°C	700 ML	1 H
PANDAN	1 LITER	40	55°C	35°C	700 ML	1 H
CHOCOLATE 70%	1 LITER	100	55°C	35°C	700 ML	1 H
GREEN PEPPER	1 LITER	40	55°C	35°C	700 ML	1 H
BASIL	1 LITER	22	55°C	35°C	700 ML	1 H



Accessories and complements

Already included with Girovap

- Vertical transparent polyethylene test tube 1 liter
- Polyethylene measuring jug 1 liter
- 0.5 ml graduated glass drippers and 120 ml bottle
- Glass bottles with thread 200 ml
- 1 Funnel

Daily use, measurement & experimenting with new techniques.

- Ref. 30/0051 Decanter, clamp and foot (500 ml)
- Ref. 30/0052 Alcoholmeter with test tube 100 ml
- Ref. 80/0025 External Connection for Vacuum Pro & Girovap
- Ref. 80/0091 CLICK- IT valves. Make the vacuum in any container with thread
- Ref. 30/0076 10 units 0,5 ml graduated glass drippers and 120 ml bottle
- Ref. 160/5003 24 Speakeasy flasks 200 ml
- Ref. 30/0081 5-litre graduated glass

Spare parts

- Ref. 30/0077 Silicone tube 4 meters
- Ref. 30/0079 Gaskets VA032 for Sucker
- Ref. 30/0078 2 Joints Ø 15 cm
- Ref. 30/0070 3-litre graduated glass (G)
- Ref. 30/0071 1.5-litre beaker, graduated (Ñ)
- Ref. 30/0073 Cover with complete probe and regulating tap (J)
- Ref. 30/0074 Collector cap with quick connectors (O)
- Ref. 30/0075 Pump hose with terminals (T)
- Ref. 30/0072 Complete coil (P)



[illegible]



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