

WINES & GRAPE MUST

REDA
Food Processing Plants



**Must Concentration
Wine Dealcoholization**



REDA CONCENTRATORS

The best solution for the self-enrichment of grape must by means of cold evaporation

Often unfavorable weather conditions can lead to a lack of maturity of grapes in the vineyard or to a dilution of harvests due to excessive rains before or during collection. In these cases, the sugar content in the grapes will be insufficient and therefore the obtained wines will not reach the optimum alcohol content.

To solve this problem it is necessary to reduce some of the water from the must thus increasing the concentration of sugar in order to increase the potential alcohol content of the final wine to the desired value. The **enrichment of musts** by means of direct subtractive methods is the technique utilized to produce fine wines or grape must concentrated.

The concentrator that REDA proposes is specifically studied for these cases and involves the concentration of musts

at **low temperature under vacuum conditions**.

The unit evaporates, under high vacuum condition, virtually pure water at the temperature of **20/24°C**, leaving intact the **organoleptic characteristics** of the must and the balance between the various substances present in solution.

The technique has been successfully applied on white musts getting more fresh and fruity wines.

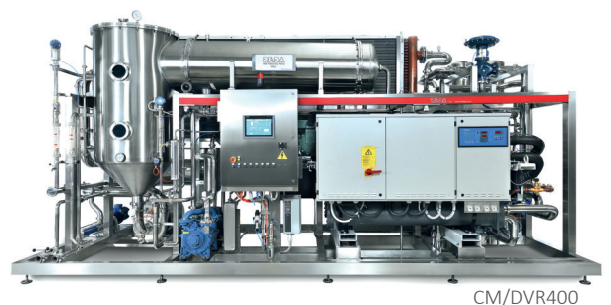
In the red musts, as well as the sugar enrichment, an increase of extractive substances is obtained also and by consequence, the wines will be **more complete**. This technique allows therefore to work on fine grapes by improving already important wines and valorizing the single batches, vineyards, crù. Wines achieves the desired flavours and structure.



Advantages

- **No thermal damage** to the product- low temperature concentration (20/24°C)
- Short permanence in the plant
- Obtain the deired **wine flavours** and **structure**
- Possibility to work on only a small part of the volume (ex. 20%). The concentrate is then added to the initial mass
- The must at the inlet, without skins and seeds, do **not require additional filtration**
- The musts during fermentation can also be concentrated, in the total absence of foams, thanks to the original system REDA
- Easy operation with **full automation** (even with self-diagnosis)
- The system is equipped with Chiller/Heat Pump for the production of hot and cold water (**no water consumption** during production): it works with only electric current
- The Chiller installed can be arranged to produce cold water up to -10°C to be used for other purposes
- This technology is admitted in the European Union (EC Regulation 822/87 art . 19)

	CM100	CM200	CM400	CM600	CM1000
Evaporated water in 1 hour (Lt)	100	200	400	600	1000
Evaporated water in 24 hours (l/h)	2400	4800	9600	14400	24000
Motor (kW)	25	60	95	150	220
Maximum must concentration	30-35° Baumé 60-67° Brix		with yields lower than nominal		
Water consumption	300 Lt (only for plant cleaning)				



REDA DEALCOHOLIZATION UNITS

The new solution of partial cold dealcoholization of wines

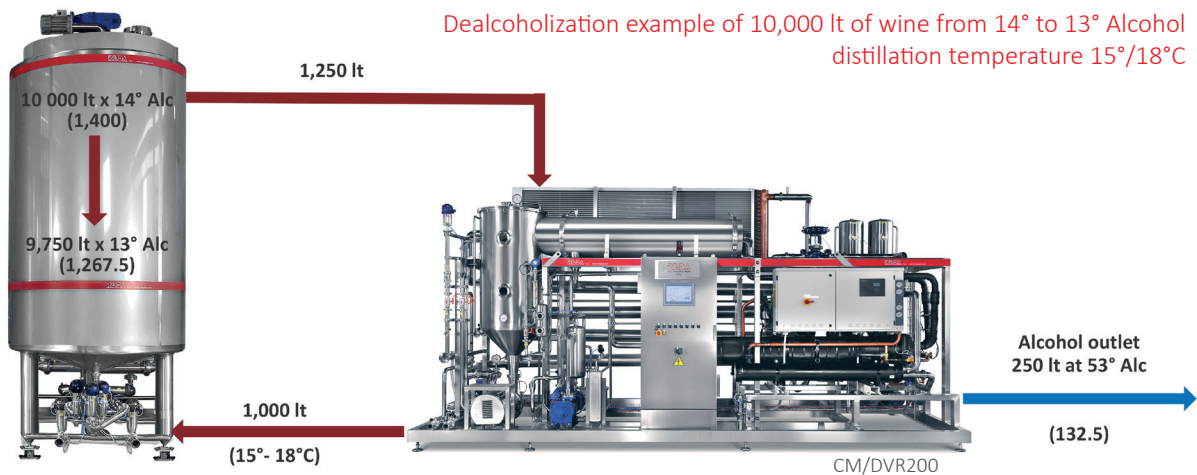
Recent market trends tend to require less alcoholic wines, not penalized by high alcohol content, which remain unchanged at the same time its sensory and typicity characteristics. To meet the needs of winemakers, REDA offers a very **flexible and efficient dealcoholization**.

This technology guarantees the respect of the structure and the organoleptic characteristics of treated wine. Thanks to the experience in the field of under vacuum controlled evaporation, was developed a special technique

of **fractional distillation at low temperature**, which allows the partial or total dealcoholization of the wines.

The treatment consists in a fast distillation of the wine to be treated at **+15/16°C**, with extraction of Alcohol with gradations up to 50/60° Alcohol. The system ensures **recovery of the aromatic fractions** and therefore no loss in terms of perfumes.

The application of this technique is particularly recommended during fermentation: in this way the wines so treated will immediately find a perfect balance and will be not disturbed anymore.



Application

The process consists of a rapid fully automated cold distillation at a temperature of +15/16°C in one passage. The alcohol extraction may be partial, both for few degrees (1/2° alcohol) or with higher gradations up to 50/60° alcohol.

The dealcoholization may reach values up to 0.15/0.25° of alcohol residues. Then, the alcohol-free wine may be used as a base to prepare other beverages enriched with sugar, spices, juices, CO₂ etc. In this case it will be necessary to halve the initial mass of the wine in order to obtain an evaporated with average of 20/24° alcohol. With the addition of aroma recovery and a further section for the reconcentration of alcohol, it is possible to take the evaporated from 20/24° to 40/45° alcohol.

This technique of fractional distillation at a very low temperature may find special applications also in Distilleries (distillation of residues from the distillation, evaporation of water from fusel alcohol, etcetera) and in the aromas extraction industry and vegetable hydroalcoholic extracts (equipments in accordance with ATEX standards).

Advantages

- Possibility to treat only a small part of the volume (ex. 10/20%)
- No risk of thermal degradation or wine oxidation thanks to very **low temperatures** (+15/18°C) and to the **fast passage of the product** in the vacuum circuit
- No loss of aromatic fractions
- Possibility of re-concentration of the extracted alcohol
- **No need of pre-treatment or pre-filtration**
- Wines after fermentation can be also treated (in the presence of CO₂) with total absence of foams
- Possibility to **operate also as a classic concentrator** for the self-enrichment of grape must

THE EUROPEAN NORMATIVE

- The partial dealcoholization of wines is admitted up to -2° Alcohol and it is regulated by Directive no.CE 606/2009.
- The technique of partial dealcoholization of wines under vacuum is the only method admitted since ever by the Code of the International Organization of Wine OIV.

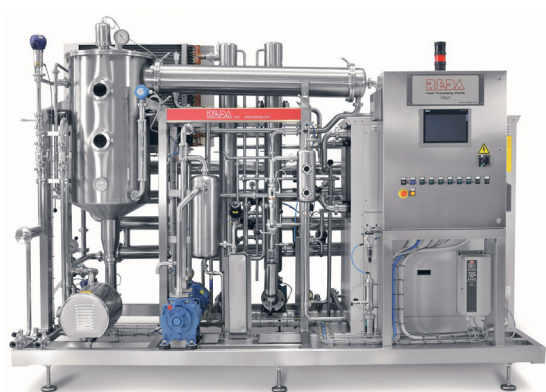
TECHNICAL DATAS

CONCENTRATORS

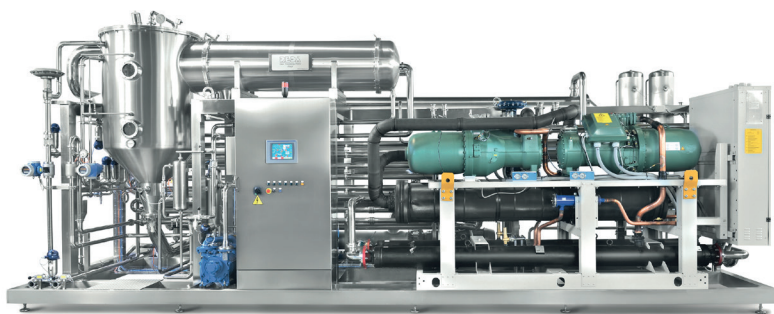
		CM100	CM200	CM400	CM600	CM1000	
Evaporated water (20/24°C) in 1 hour	l/h	100	200	400	600	1000	Finned coil (separate)
Installed power	kW	25	60	95	150	220	
Sound pressure	dB (A)	70	72	75	78	78	
Dimensions (l x w x h)	cm	350 x 180 h = 245	450 x 200 h = 260	600 x 230 h = 280	630 x 240 h = 300	800 x 240 h = 300	490 x 95 h = 150
Net weight	kg	2000	2500	3600	5500	9500	550

DEALCOHOLISERS

		DVR100	DVR200	DVR400	DVR600	DVR1000	
Distilled Alcohol (50° Alc.) in 1 hour (15°/18°C)	l/h	100	200	400	600	1000	Finned coil (separate)
Dealcoholated wine (-2° Alc.) in 1 hour	l/h	2500	5000	10 000	15 000	25 000	
Installed power	kw	25	60	95	150	220	
Sound pressure	dB (A)	70	72	75	78	78	
Dimensions (l x w x h)	cm	350 x 180 h = 245	450 x 200 h = 260	600 x 230 h = 280	630 x 240 h = 300	800 x 240 h = 300	490 x 95 h = 150
Net weight	kg	2000	2500	3600	5500	9500	550



CM/DVR100



CM/DVR1000

Remark:

The technical data, drawings and pictures contained in this brochure are indicative and not binding. We reserves the right to change specifications of the product without prior notice or liability to third parties.