

# VACUUM EVAPORATORS SCRAPER SERIES



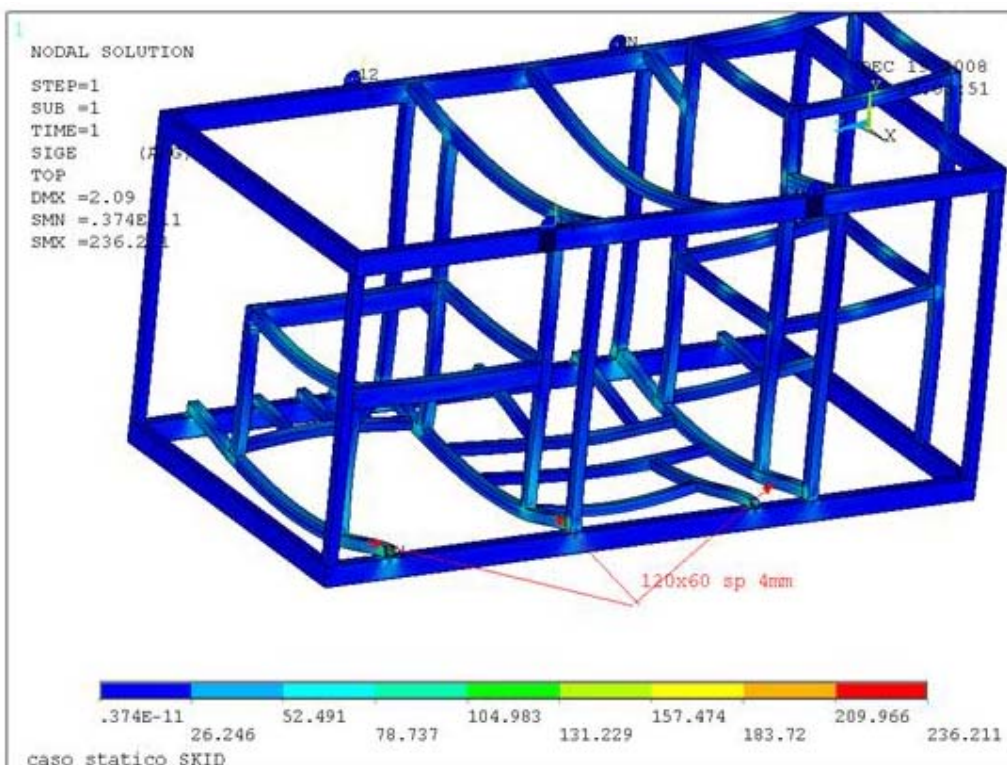
## APPLICATION SECTORS:

- Galvanic
- Photographic
- Mechanic
- Cosmetic
- Chemical
- Petrolchemical
- Pharmaceutical
- Oenological
- Dairy
- Olive oil



## ACCESSORIES AND SERVICES OFFERED:

- Conductivity meter
- Installation on site
- Start-up
- Maintenance
- Fan-speed control
- Distance control
- Measurement of production



# “Your Waste Water, Our Solution”

C&G Depurazione Industriale Srl has been operating since 1971 in the industrial wastewater treatment sector. The Know-how acquired from the design and construction of over 3000 plants, sold both in Italy and abroad, encourages our constant growth, research and innovation, and allows us to propose a complete and personalised service to our customers.

Countries where the C&G logo is already well known and appreciated are: Italy, France, Belgium, Spain, Holland, Slovakia, Slovenia, Poland, Turkey, Greece, Russia, Lebanon, UAE, USA, Mexico, Taiwan, China, India, Indonesia, Malaysia, Japan, Brazil and others.

C&G supplies equipment and support technologies to a wide range of production sectors, all however with a common objective: to improve the conditions of a particular liquid.

C&G offers a wide range of products, all conforming to existing guidelines of the EEC:

- VACUUM EVAPORATORS
- REVERSE OSMOSIS
- ULTRAFILTRATION
- ION EXCHANGE
- CHEMICAL–PHYSICAL TREATMENT
- WATER-SOFTENERS
- DEMINERALIZERS
- FILTERPRESS
- SPECIAL EQUIPMENT FOR GALVANIC INDUSTRY

The services offered by C&G include:

- Custom made, one-off solutions
- Analysis in our laboratory of your polluted waters
- Design, manufacture and installation
- Maintenance contracts
- On-line and on-site assistance



## General Working Description

The Scraper series of vacuum evaporators have vertical development with the boiling chamber in the lower part with outer shell, while the condensation chamber is positioned laterally with an internal heat exchanger.

The vacuum system guarantees minimum energy expenditure.

The presence of an internal scraper allows constant cleaning of the internal walls and amalgamation of the treated product.

The distance between the free surface of the effluent being treated and the collection plate guarantees the absence of drag out, and therefore a higher purity in the distillate.

### Refrigerant circuit

The Scraper evaporator series are plants which use a heat-pump. There is a refrigerant circuit where high pressure is used to yield heat to the wastewater and bring it to boil, and low pressure is used to re-condense the distillate produced by removing the heat

The high pressure line passes within a shell placed outside the boiling chamber so that it does not interfere with the scraper itself.

### Vacuum circuit

A vacuum is created within the boiling chamber through the use of a liquid ring vacuum pump and an ejector.

This extraction system guarantees a residual pressure of 33 mbar inside the evaporator

### Distillate circuit

The discharge of the distillate is independent. There is an accumulation tank placed on the skid which is continuously discharged using an apposite centrifuge pump

### Concentrate circuit

This type of plant allows the process of concentration to be pushed further, until a dry solution is obtained which is no longer possible to extract using a pump.

Discharge of the concentrated product is manual using a manual ball valve on the base of the chamber, and helped by the movement of the scraper, which has a different design for this scope, near the discharge valve itself.

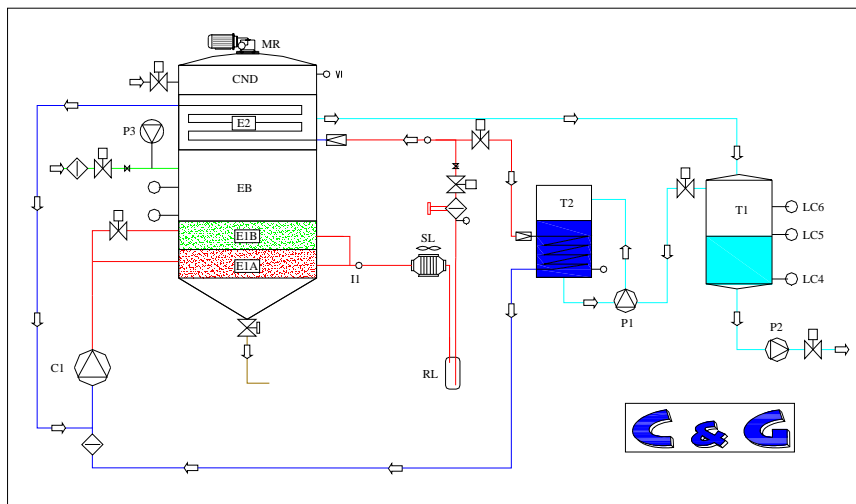
Possibility of installation of suitable automatic discharge pump following client request.

### Automation, alarms and control

C&G evaporators can work unattended and continuously 24/24 hours thanks to control through PLC.

The use of simple, logical software allows easy control and immediate set up of the working parameters.

The use of a synoptic (standard from model V-NT 1000 up) guarantees a rapid and intuitive global control of the working of the machine



## **C&G Scraper Series**

- C1 - Compressor
- SL - Subcooler
- EB - Boiling chamber
- E1A - Lower boiling heat exchanger
- E1B - Upper boiling heat exchanger
- E2 - Condensation heat exchanger
- P1 - Vacuum pump
- P2 - Distillate discharge pump
- P3 - Antifoam pump
- SL - Liquid separator

## **Scraper series**

| SCRAPER MODEL *  | l/h   | DIMENSIONS<br>LxDxH (mm) | CONSUMPTION<br>(W/l) |
|--|-------|--------------------------|----------------------|
| 500  | 20.83 | 2000x1500x2800           | 180-200              |
| 750  | 31.25 | 2000x1500x2800           | 180-200              |
| 1000   | 41.66 | 2550x1700x3250           | 180-200              |
| 1500   | 62.5  | 2700x1700x3250           | 180-200              |
| <b>All units by C &amp; G conforms "Machinery directives "2006/42/CE</b> |       |                          |                      |

\* Possibility of other dimensions to measure on request

| Component                           | Material                              |
|-------------------------------------|---------------------------------------|
| Boiling/condensation chamber        | Stainless steel AISI 316L (EN 1.4435) |
| Boiling chamber heat exchanger      | Stainless steel AISI 304 (EN 1.4301)  |
| Boiling chamber base <sup>1</sup>   | Stainless steel AISI 316L (EN 1.4435) |
| Condensation chamber heat exchanger | Stainless steel AISI 316L (EN 1.4435) |
| Vacuum pump liquid ring tank        | Stainless steel AISI 316L (EN 1.4435) |
| Distillate tank                     | Stainless steel AISI 316L (EN 1.4435) |
| De-superheater heat exchanger       | Pipes in Cu / Casing in Al            |
| Subcooler heat exchanger            | Pipes in Cu / Casing in Al            |
| Vacuum pump                         | Ghisa UNI 5007-69                     |
| Antifoam dosing pump                | PP                                    |
| Distillate discharge pump           | Stainless steel AISI 304 (EN 1.4301)  |
| Skid                                | Stainless steel AISI 304 (EN 1.4301)  |
| Piping                              | Copper / PVC <sup>2</sup>             |

1 - Possible to use special stainless steels

2 - Possible to use pipes in stainless steel or alternative plastic materials