

EVOLUTION

SOLVENT DISTILLATION UNIT



FEATURES



UP TO 7.000 LITERS/DAY



AUTOMATIC OPERATION



VACUUM DISTILLATION



ATEX CERTIFICATION



DIGITAL PROGRAMMING



SELF-CLEANING SYSTEM



CONTAINMENT TANK



DISCHARGE THROUGH VALVE

WHY CHOOSE CIEMME



OVER 40 YEARS OF HISTORY

The first company in Italy registered with the Chamber of Commerce (16 March 1982) for the production of solvent distillers.

"Rely on our experience. We will be able to provide you with the state-of-the-art technical solution that suits your needs."



MAXIMUM BUSINESS RELIABILITY

Certification of RATING 1 as the highest financial reliability of the company. This allows us to be referenced in the most important industrial groups in the world that we have supplied with mutual satisfaction.

"We will continue to provide you with maximum support over time. Day by day."



MORE SAFETY AND CONTROLS

We install up to 11 more controls and safety devices than required by regulations to ensure maximum process reliability and risk prevention.

"Safety is our priority. Our equipment can operate in complete autonomy even if they are not supervised."



5 YEAR WARRANTY

We are the only solvent distiller manufacturer that offers its customers a 5-year warranty with simple and clear conditions.

"The reliability of our systems is not just in words, but through a concrete and unique warranty."



RCT AND RCO INSURANCE INCLUDED

With a cumulative insured of € 50.000.000, in the event of unforeseen events, we guarantee coverage with the best insurance companies on the market.

"Whatever happens at the distillation unit, we will be by your side to support you."



FEATURES

The solvents used in the industrial printing sectors must be treated through a distillation process with the following characteristics:

- Integrated fire protection system to treat solvents contaminated by nitrocellulose-based inks.
- Vacuum generator that allows to reduce the distillation temperature, limiting the risk of generating an exothermic reaction due to **nitrocellulose**¹.
- High-performance vapour condenser, air-cooled (built on a Ciemme design) or water-cooled in order to ensure high yields and constant productivity in any environmental condition.
- Digital temperature controller with PT100 measuring probes and PID system to avoid thermal drift.
- Optimisation of the cycle time by reading the vapours or by timer.
- Boiling chamber equipped with internal cleaning system using ATEX II 1/2G.
- certified doctor **blade**².
- Recirculation pump for diathermic oil that allows to cool the residue before unloading to avoid the emission of vapours and discharge the sludge at the temperature suitable for IBCs.
- Designed system for controlling of foams and volatile particles.
- Management of the distillation cycle via **PLC**³.

The PLC allows to manage the start of several consecutive cycles.

- Implementation with a control and management system of the distillation cycle dedicated to industry 4.0.
- Storage tanks for dirty and distilled solvent, also stackable, with the possibility of direct connection with printing machines and/or with washing systems for automatic solvent management.
- Containment tank for any accidental overflow and in compliance with environmental and safety standards.

Technical notes

¹ **Nitrocellulose** can react by self-ignition when the temperature exceeds 125°C. Thanks to the vacuum generator, it is possible to reduce the boiling temperature in order to carry out the distillation cycle safely.

In the event of excessive residue concentration or malfunction, there is a double safety feature that checks the temperature of the vapours leaving the boiling chamber by working on two temperature levels:

- The first level, if reached, puts in safety the machine and activates the cooling cycle of the diathermic oil;
- The second level, if reached, activates the opening of the safety valve to introduce water into the boiling chamber and stop the exothermic reaction.

² The rotating doctor **blade** inside the distillation tank allows to:

- increase efficiency and heat exchange;
- avoid the residue accumulations on the bottom and on the walls;
- facilitate the evaporation of the solvent during the final phase of the cycle;
- facilitate the discharge of sludge at the end of the distillation cycle.

³ The treated mixtures are often composed of various solvents with different boiling points. To ensure correct distillation, different temperature and time sets are set, managed automatically by the **PLC**.

The automatic management of the distillation cycle allows to carry out, without the intervention or presence of an operator, the following tasks:

- loading of exhausted solvent to be treated
- starting of distillation
- sending of the distilled solvent to be reused in the production process
- discharging of sludge at the end of the cycle

SOLVENTS LIST

The most commonly used and treated solvents in the **industrial printing** sector are:

- Heptane
- Isopropanol
- Isobutanol
- Ethyl acetate
- Ethyl alcohol
- Ethanol
- n-Propyl acetate
- Methoxypropanol



FEATURES

The solvent used for the production of photopolymer plates must be treated through a distillation process with the following characteristics:

- Vacuum generator to reduce the distillation temperature, particularly useful for the new ecological solvents that have components with boiling points that can exceed 200°C.
- High-performance vapour condenser, air-cooled (built on a Ciemme design) or water-cooled in order to ensure high yields and constant productivity in any environmental condition.
- In case of chlorinated solvents, the machine is equipped with a stainless steel condenser to avoid corrosion.
- Digital temperature controller with PT100 measuring probes and PID system to avoid thermal drift.
- Optimisation of the cycle time by reading the vapours or by timer.
- Boiling chamber equipped with internal cleaning system using ATEX II 1/2G certified doctor **blade** ¹.
- Recirculation pump for diathermic oil that allows to cool the residue before unloading to avoid the emission of vapours and discharge the sludge at the temperature suitable for IBCs.
- Designed system for the control of **foams** ² and volatile particles.
- Management of the distillation cycle via **PLC** ³.
- The PLC allows to manage the start of several consecutive cycles.
- Implementation with a control and management system of the distillation cycle dedicated to industry 4.0.
- Storage tanks for dirty and distilled solvent, also stackable with the possibility of direct connection with machines for developing photopolymer plates for automatic solvent management.
- In addition to the storage tanks, there is the possibility of implementing a container dedicated to pre-heating the distilled solvent before its reuse.
- Containment tank for any accidental overflow and in compliance with environmental and safety standards.

Technical notes

¹ The rotating doctor **blade** inside the distillation tank allows to:

- increase efficiency and heat exchange;
- avoid the residue accumulations on the bottom and on the walls;
- facilitate the evaporation of the solvent during the final phase of the cycle;
- facilitate the discharge of sludge at the end of the distillation cycle.

² The solvents used for the production of photopolymer plates create **foams** and are particularly rich in volatile particles. The vapour outlet is connected to an appropriate device that avoids contamination of the distilled solvent.

³ The treated mixtures are often composed of various solvents with different boiling points. To ensure correct distillation, different temperature and time sets are set, managed automatically by the **PLC**. The automatic management of the distillation cycle allows to carry out, without the intervention or presence of an operator, the following tasks:

- loading of exhausted solvent to be treated
- starting of distillation
- sending of the distilled solvent to be reused in the production process
- discharging of sludge at the end of the cycle

SOLVENTS LIST

The most commonly used and treated solvents in the **photopolymer plate industry** are:

- Cyrel
- Flexosolv
- Nylosolv
- N-Butanol
- Perchlorethylene
- Polysolve



FEATURES

The solvents used in coating, painting and various industrial processes must be treated through a distillation process with the following characteristics:

- Vacuum generator to reduce the distillation temperature, particularly useful for high boiling or thermolabile solvents (which degrade at too high heating temperatures).
- High-performance vapour condenser, air-cooled (built on a Ciemme design) or water-cooled in order to ensure high yields and constant productivity in any environmental condition.
- In case of chlorinated or chemically aggressive solvents, the machine is equipped with a high performance stainless steel condenser to avoid corrosion.
- In cases where the solvent to be treated has an high presence of water, it is possible to introduce technical solutions that allow its reduction in the distilled solvent.
- Digital temperature controller with PT100 measuring probes and PID system to avoid thermal drift.
- Optimisation of the cycle time by reading the vapours or by timer.
- Boiling chamber equipped with internal cleaning system using ATEX II 1/2G certified doctor **blade**¹.
- Recirculation pump for diathermic oil that allows to cool the residue before unloading to avoid the emission of vapours and discharge the sludge at the temperature suitable for IBCs.
- Designed system for the control of **foams**² and volatile particles.
- Management of the distillation cycle via **PLC**³.
- The PLC allows to manage the start of several consecutive cycles.
- Implementation with a control and management system of the distillation cycle dedicated to industry 4.0.
- Storage tanks for dirty and distilled solvent, also stackable with the possibility of direct connection with the machines for the automatic management of the solvent.
- Containment tank for any accidental overflow and in compliance with environmental and safety standards.
- For those particular applications where a high quality and purity of the distilled solvent is required, it is possible to manufacture the machine with all the parts in contact with the solvent in stainless steel.

Technical notes

¹ The rotating doctor **blade** inside the distillation tank allows to:

- increase efficiency and heat exchange;
- avoid the residue accumulations on the bottom and on the walls;
- facilitate the evaporation of the solvent during the final phase of the cycle;
- facilitate the discharge of sludge at the end of the distillation cycle.

² The solvents used in coating, painting and in the various industrial processes can create **foams** during the distillation cycle and have volatile particles inside them. The vapour outlet is connected to an appropriate device that avoids contamination of the distilled solvent.

³ The treated mixtures are often composed of various solvents with different boiling points. To ensure correct distillation, different temperature and time sets are set, managed automatically by the **PLC**.
The automatic management of the distillation cycle allows to carry out, without the intervention or presence of an operator, the following tasks:

- loading of exhausted solvent to be treated
- starting of distillation
- sending of the distilled solvent to be reused in the production process
- discharging of sludge at the end of the cycle

SOLVENTS LIST

The most commonly used and treated solvents in the **coating, painting and various industrial processes** are:

- | | | |
|----------------------------------|---------------------------------|--------------------------------------|
| • Butanone | • Isobutanol | • Toluene |
| • Butylglycol | • Isopropyl acetate | • White spirit |
| • Dichloromethane/Dichloroethane | • MEK/MIBK | • Acetone |
| • Perchlorethylene | • Methyl acetate/Propyl acetate | • Acrylic/Polyurethane/Epoxy thinner |
| • Cyclohexane | • N-butanol/N-butanone | • Nitro/Anti-fog thinner |
| • Ethanol/Isopropyl alcohol | • NMP | • White spirit |
| • Hydrocarbons | • Solvesso 100-150-200 | |



FEATURES

The solvents used in the production processes for the chemical and extraction sectors must be treated through a distillation process with the following characteristics:

- Vacuum generator to reduce the distillation temperature, particularly useful for high boiling or thermolabile solvents (which degrade at too high heating temperatures).
- High-performance vapour condenser, air-cooled (built on a Ciemme design) or water-cooled in order to ensure high yields and constant productivity in any environmental condition.
- In case of chlorinated or chemically aggressive solvents, the machine is equipped with a high performance stainless steel condenser to avoid corrosion.
- In cases where the solvent to be treated has an high presence of water, it is possible to introduce technical solutions that allow its reduction in the distilled solvent.
- Digital temperature controller with PT100 measuring probes and PID system to avoid thermal drift.
- Optimisation of the cycle time by reading the vapours or by timer.
- Boiling chamber equipped with internal cleaning system using ATEX II 1/2G certified doctor **blade** ¹.
- Recirculation pump for diathermic oil that allows to cool the residue before unloading to avoid the emission of vapours and discharge the sludge at the temperature suitable for IBCs.
- Designed system for the control of **foams** ² and volatile particles.
- Management of the distillation cycle via **PLC** ³.
- The PLC allows to manage the start of several consecutive cycles.
- Implementation with a control and management system of the distillation cycle dedicated to industry 4.0.
- Storage tanks for dirty and distilled solvent, also stackable with the possibility of direct connection with the machines for the automatic management of the solvent.
- Containment tank for any accidental overflow and in compliance with environmental and safety standards.
- For those particular applications where a high quality and purity of the distilled solvent is required, it is possible to manufacture the machine with all the parts in contact with the solvent in stainless steel.

Technical notes

¹ The rotating doctor **blade** inside the distillation tank allows to:

- increase efficiency and heat exchange;
- avoid the residue accumulations on the bottom and on the walls;
- facilitate the evaporation of the solvent during the final phase of the cycle;
- facilitate the discharge of sludge at the end of the distillation cycle.

² The solvents used in the chemical and extraction sectors can create **foams** during the distillation cycle and have volatile particles inside them.

The vapour outlet is connected to an appropriate device that avoids contamination of the distilled solvent.

³ The treated mixtures are often composed of various solvents with different boiling points. To ensure correct distillation, different temperature and time sets are set, managed automatically by the **PLC**.

The automatic management of the distillation cycle allows to carry out, without the intervention or presence of an operator, the following tasks:

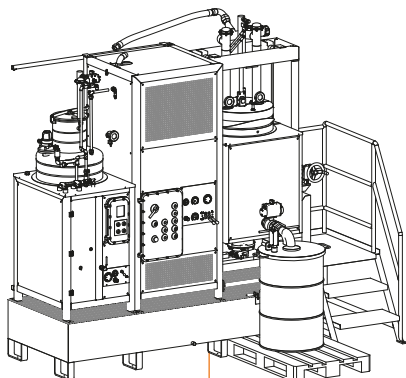
- loading of exhausted solvent to be treated
- starting of distillation
- sending of the distilled solvent to be reused in the production process
- discharging of sludge at the end of the cycle

SOLVENTS LIST

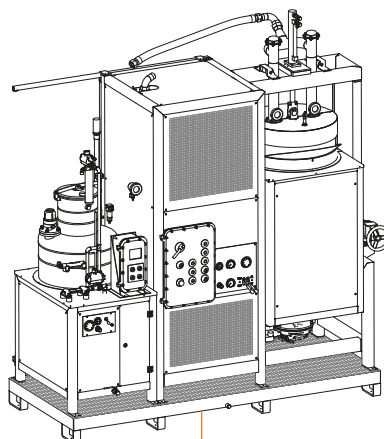
The most commonly used solvents in production processes for the **chemical and extraction** sectors are:

- Ethyl alcohol
- Methyl alcohol
- N-propyl alcohol
- Isobutyl alcohol
- Isopropyl alcohol
- Acetone
- Butyl alcohol
- Ethanol
- Etanolo

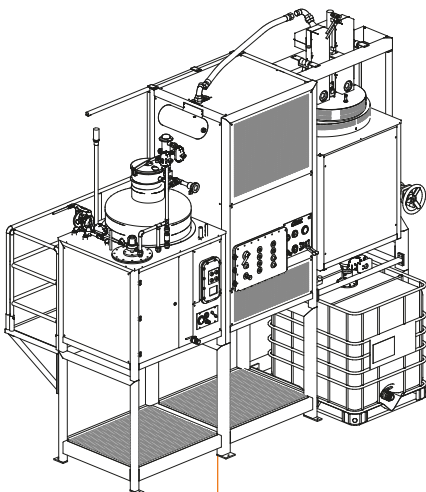
EVOLUTION



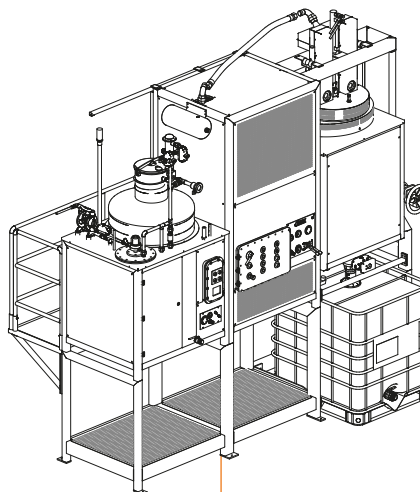
EV125



EV225



EV400



EV800

MODEL	EV125	EV225	EV400	EV800
Loading volume (lt)	120	210	400	800
Total boiling chamber volume (lt)	170	330	570	1.100
Supply voltage	400V/3 - 50Hz	400V/3 - 50Hz	400V/3 - 50Hz	400V/3 - 50Hz
Heating power (kw)	9,6	15	30/45	60
Oil quantity (lt)	60	99	185	350
Average daily productivity (lt)	100-450	200-900	400-3.000	800-7.000
Certification	ATEX II 2G	ATEX II 2G	ATEX II 2G	ATEX II 2G



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