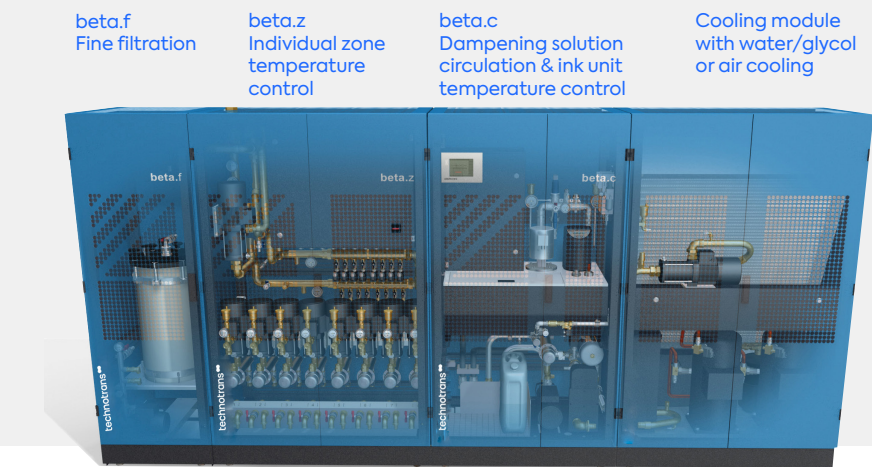


beta.line modular

Offset technology for professionals

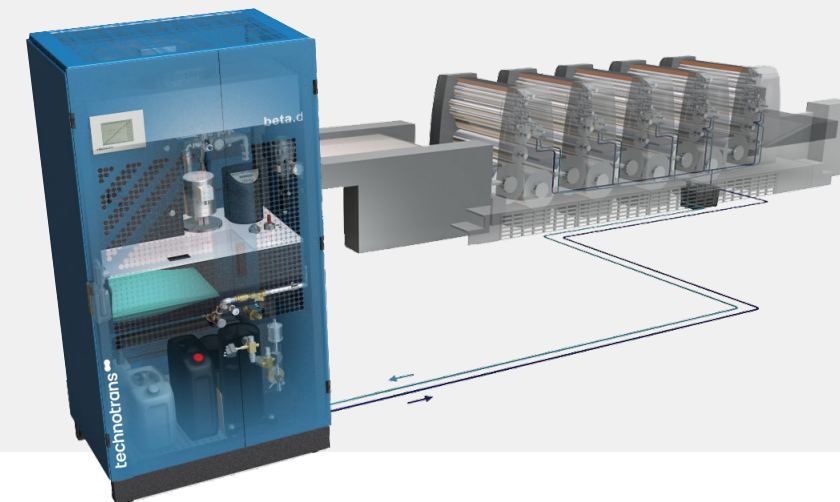




- All of the components of the beta.line can be operated from the main control unit
- from basic design to fully equipped

Benefits at a glance

- Highly flexible system configuration and options
- Significantly reduced space requirement
- unicontrol control system with interface for remote diagnostics via internet and control station connection
- Modular design enables you to upgrade and add functions at a later time (e.g. cooling tasks, filtration, temperature control)



- The **beta.d** module is available in an air-cooled version (fig.) or as a water/glycol-cooled variant.

Dampening solution circulation

The higher the quality demands, the more the demands for a reliable and stable production process increase.

technotrans has been a strong and reliable partner for printing press manufacturers and printing companies worldwide for more than 50 years. In order to meet the ever increasing demands, technotrans has set new market standards with the development of high-precision cooling systems.

Flexible design and options

With the modular design of the dampening solution circulation, ink unit temperature control, and filtration units, technotrans has effectively responded to the high demands in terms of individualised equipment and flexible periphery of medium to large-format sheet-fed offset presses.

Modules

beta.d

State-of-the-art dampening solution circulation technology: Equipped with cooling and filtration, alcohol and additive dosing, optional conductivity and pH measurement.

beta.c

indispensable as an integrated solution for professionals: Dampening solution circulation and ink unit temperature control all combined into one module – space-saving and efficient.

Cooling modules

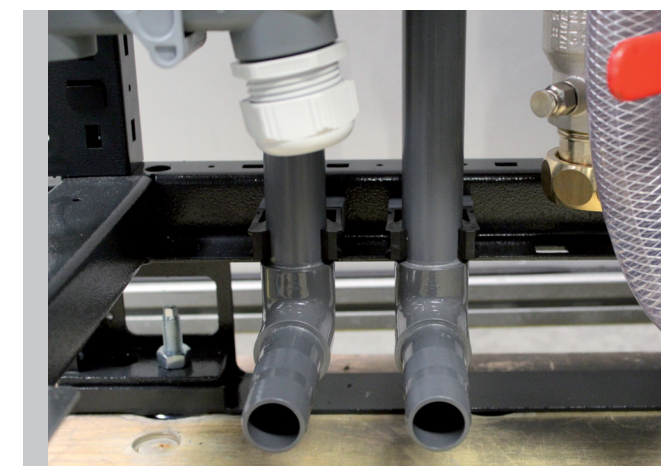
Powerful refrigeration units with digital scroll technology provide an optimum basis for the overall cooling concepts.

beta.z

With the multi-zone temperature control unit, technotrans provides a solution for successful waterless and conventional offset printing, even when under uncommon boundary conditions.

beta.f

A fine filtration unit which cleans continuously and efficiently in a bypass connection to the dampening solution tank of the circulator. Its two-stage filtration principle ensures a permanently clean dampening solution circuit – from the circulator to the dampening trays of the press.



- Pivot connections provide convenient flexibility for installation.



- The filter bag cleans effectively in tank: **softflow** – up to 300 % larger filter area compared to filter mat.

The tank

The tank is typically located in the centre. This improves ergonomics and serviceability. An intermediate tank with prefiltering function ensures a continuous dampening solution recirculation, thereby considerably reducing foaming problems.

The containers

The electrical switch box and the containers are integrated above or below the tank and thus easily accessible.

The integrated containers help to keep the press clean and prevent accidents or uncontrolled leakage.

The refrigeration units

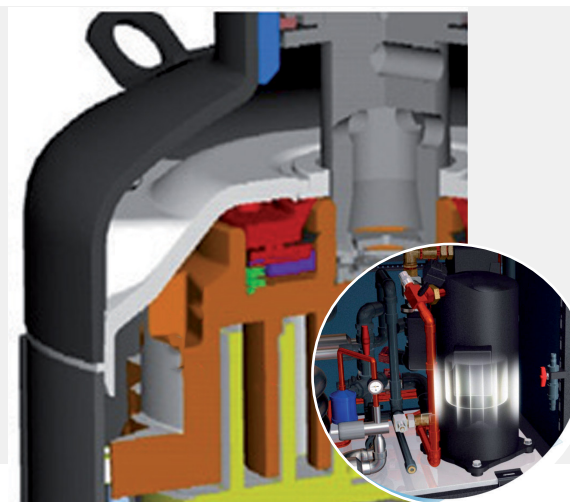
The air-cooled variant contains a compact refrigeration machine with compressor/evaporator below the tank. The condenser features a warm air exhaust in the upwards direction. On the water/glycol-cooled variant, the cooling unit is also located underneath the tank; the connections for the cooling water supply are routed upward.

beta.line offset technology for professionals

Based on the dampening solution module with comprehensive model range and state-of-the-art cooling technology.



- The beta.c combination unit is available in an air-cooled version (fig.) or as a water/glycol-cooled variant.



- Digital scroll technology – The new refrigeration unit with digital scroll. The compressor regulates the cooling power using pulse-width modulation as required.

- Continuously variable adjustment of the cooling power to the actual requirement
- The power consumption is reduced proportionally to the required cooling power
- Depending on the press, utilisation and partial load operation, the power consumption can be reduced by up to approximately 25%.
- The operating performance of digital scroll makes for improved control accuracy with the system in all load conditions

Combination unit

Dampening solution circulation and ink unit temperature control in one system. The space-saving, cost-effective solution. With five different capacities, the beta.c module can be adjusted optimally to different press sizes.

The combination unit has been the standard in medium and large-format sheet-fed offset presses for leading printing press manufacturers.

Basic beta.d module

The combination unit offers the same features as the beta.d: the centrally positioned tank, the integrated containers, the pivot connections and the intermediate tank with prefiltering function.

In addition to the considerable space savings of the water/glycol-cooled version, all the units can be set up variably, with the front or rear facing the press.

Comprehensive model range

The beta.c can be upgraded with numerous features, including a second integrated temperature control circuit, e.g. for separate ductor temperature control, or LED UV cooling.

Control system and control station connection

The 7.0" unicontrol screen on the beta.c, just like with the beta.d, provides a colour, easy-to-use interface. Alongside functional displays for equipment components in the system diagram, a trend display provides the most important process data. An online help for operation, maintenance and service provides additional support for the control unit.

The beta.c also features a data interface to the control station connection and the option for a remote maintenance connection. Clean dampening solution circuit – from the circulator to the dampening pans of the press.

Digital scroll compressor technology

State-of-the-art technology allows the full utilization of savings potential without compromises in performance or operating safety.

In numerous refrigeration systems and in applications in the printing industry, the cooling load varies over a wide range which requires satisfactory power adaptation. This is where digital scroll technology excel.

The power regulation of digital scroll in ink unit temperature control covers a range from 10% to 100% of the cooling power. The compressor switches on and off less frequently. This way, not only the efficiency of the system, but also the service life of the components is increased.

State-of-the-art cooling technology

Thanks to the system which is split into the dampening solution circuit and the temperature control circuit, the internal cooling circuit (C circuit) is no longer required. This ensures direct and efficient cooling of the circuits. Environmentally friendly (R513A) refrigerant with a low GWP value (global warming potential) is used. Despite the low GWP, thanks to the refrigerant R513A, it is possible to use what is referred to as safety refrigerant (A1). A1 – Safety refrigerants are non-flammable, thus there are no increased safety requirements. In addition, the air-cooled condenser with mini-channel technology reduces the refrigerant quantity.

Equipment options

In conjunction with the measuring, control and dosing technology, both the beta.d and the beta.c can be equipped with different optional components which (depending on the requirement) provide a variety of features.

Dosing technology



fluidos

- Operation without external power
- Sturdy and maintenance-free
- Additives proportional to dosed water quantity
- Dual **fluidos** for dosing of a second additive



digidos.p

- Reproducible accuracy of 0.1 vol. %
- Setpoints defined using **multicom** or control station
- Logging of consumption data for water and additive
- High operational safety thanks to elastomer-free design

IPA measuring and control technology



alcocontrol

- Proven, sturdy design
- Density measurement using float system
- Inductive sensor for permanent logging of measured values
- Fully automated IPA control, including empty signal



alcosmart DSP

- Integrated detergent (A1/A2) detection
- Not affected by soiling or additives
- Low maintenance requirement thanks to fully automated zero point calibration
- IPA control of 0–15 vol. %, precise to within 0.5 vol. %

Dampening solution quality control

The conductivity is measured inductively with an accuracy of $\pm 50 \mu\text{S}$ in a range from 100–5000 μS . The calibration-free conductivity probe requires virtually no maintenance.

It can be used for optimal process monitoring at the following measuring points:

- In the fresh water inlet
- After the additive dosing
- In the press circuit

The pH measurement can be an important indicator for incorrect additive dosing or reactions from the print process, e.g. ink, paper or washing agent.

The uni.control display screen shows the most important operating parameters in the form of a continuous time trend.

Changes in the process are thus immediately identifiable – the trend display an excellent tool for permanent monitoring of dampening solution quality. Immediately identifiable – the trend display an excellent tool for permanent monitoring of dampening solution quality. Kühlsysteme Marktstandards gesetzt.





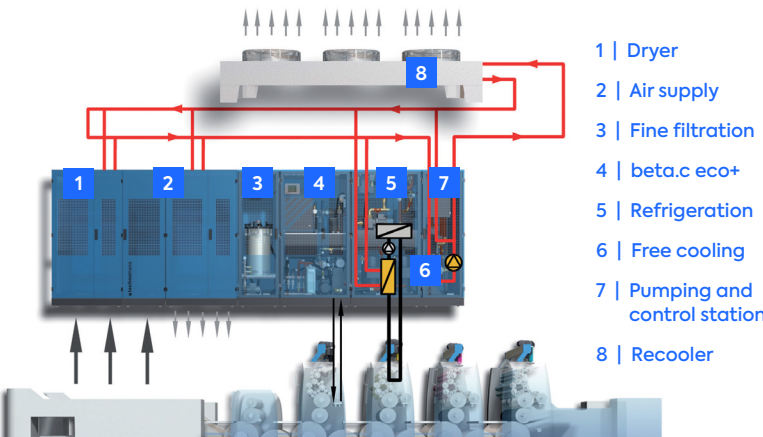
– The energy efficient variant of the combination unit **beta.c** fully meets requirements for a cost-efficient, stable and process-optimised production in modern offset printing.

Benefits at a glance

- The ink units can be cooled for up to 80% of the annual operating time using the free cooling function directly
- Digital scroll technology
- Speed-controlled temperature control circuit pump
- Considerably reduced energy requirement in addition when combined with beta.ps eco
- Reduced use of additives
- Logging of consumption data
- Optional dampening solution fine filtration

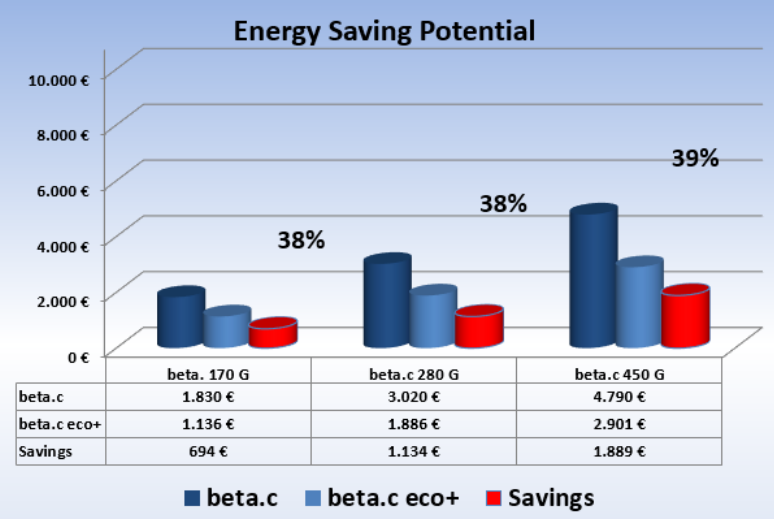
With the eco+ series of combination units from the beta.line, printing companies benefit from a number of special advantages. The first priority is to lower operating costs, and here the enormous savings in power consumption offer great potential. At the same time, precise dosing, accurate measuring and control technology and high-quality filtration also play a major role. Of importance here also is the requirement of offering users not only single components for certain functions but an integrated solution. The highlight of the beta.line eco+ is its enormously reduced energy requirement. With all the functions combined, this system almost halves fixed costs. Environmentally friendly printing and preservation of resources are decisive arguments.

Alongside the reduced energy requirement, the beta.c eco+ offers additional features. With its components, the unit covers the full range of parameters for IPA-reduced and IPA-free printing. The use of the alcosmart DSP makes for precise measurement in the gas phase and very precise control of the IPA content in the bandwidth of 0–15%. The digidos.p is used for dosing, with a repeatability accuracy of up to +/- 0.1 vol.% with consumption data logging for water and additives.



- The annual cooling capacity requirement in the temperature control circuit can be covered up to 80% by the integrated free cooling function without the additional energy consumption strain on the refrigeration unit.
- The efficient power control for the cooling water pump is also adjusted to the requirement, thus saving energy.

Energy saving potential



Sensible energy concept for central press cooling

Cooling of the ink units for up to 80% of the annual operating time using patented free cooling function

Benefit from drive power saving potential, particularly during partial load operation

Frequency-controlled temperature control circuit and cooling water pump. beta.ps eco highly efficient refrigeration unit thanks to the use of digital scroll technology

Conservation of resources in relation to consumables like water, IPA, additives and filter material

Reduced use of additives thanks to highly precise measuring and dosing systems. Process monitoring via logging of consumption data

Considerable reduction in costs for consumables and disposal

Extended dampening solution and filter service lives thanks to fine filtration beta.f

beta.z individual zone temperature control

Benefits at a glance

- Separate temperature control
- Perfect ink viscosity
- Heating function
- Optional temperature measurement
- Optional activation of press speed
- Optional water replenishment
- Atmospherically sealed system
- Individual connection to the press control station or external data remote control
- For retrofitting on existing combination units



- The **beta.z** individual zone temperature control meets high demands even in difficult framework conditions.

Individual zone temperature control units create stable production conditions for variety of ink viscosities.

Ideal for waterless and conventional offset printing at the highest level – in particular in difficult framework conditions, such as in IPA-free or IPA-reduced printing, or when using special inks, e.g. banknote and security printing.

How it works

The temperature in the ink temperature circuits is controlled by the return flow temperature of the associated ink units or – particularly in waterless offset printing – using an IR temperature sensor in the ink unit of the printing press for direct control of the ink roller surface temperature.

In other applications, or if other requirements have to be met, the system can also be used to control the feed flow temperature. As an option, the press speed can be used as an additional control variable, allowing an even more precise temperature control.

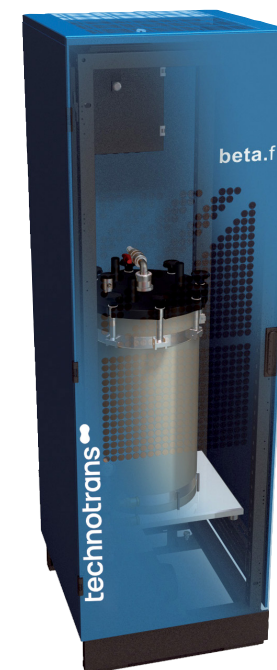
The entire system is designed as an atmospherically sealed system offering maximum protection against corrosion and algae. Small leaks, e.g. in the area of the rotary cylinder feed, are compensated for by an automatic water top-up device.

The beta.z can also be used as an individual unit. In this version, it is equipped with a heat exchanger to connect to a customer-provided cooling water supply.

beta.f dampening solution fine filtration

Benefits at a glance

- Compact and user-friendly system
- Pre- and depth filtration
- Ideal when using UV and special inks
- Optimum filtration quality and filter service life
- Longer dampening solution service life
- Reduced disposal costs
- Reduced consumables
- Reduced maintenance costs
- Continuous quality control
- Straightforward filter replacement
- Safe and efficient

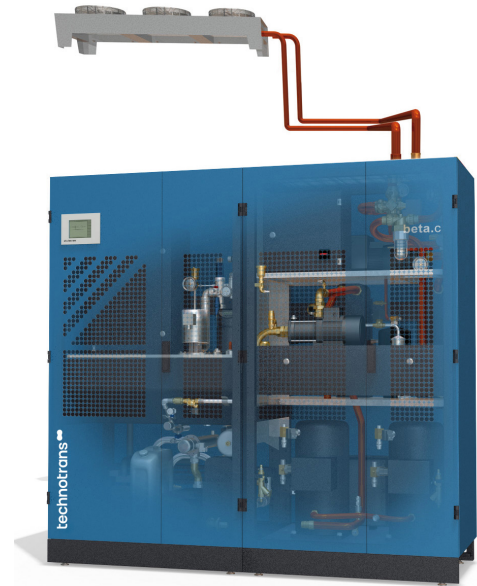


- Thanks to its simple bypass principle, the **beta.f** can be retrofitted easily on almost all dampening solution circulators.

Indispensable for alcohol-reduced and alcohol-free printing or special print applications (e.g. special inks, white varnish), which heavily contaminate the dampening solution. High press speeds result in more impurities in the dampening solution. Optimising the quality of the dampening solution considerably reduces costs for consumables, maintenance and disposal.

The compact beta.f relies on a two-step filtration method. The pre-filter system with its filter cartridges is used to thoroughly pre-clean the dampening solution and to relieve the strain on the main filter module. The main filter is used for intensive cleaning of the dampening solution using a powerful deep-bed filter. The quality of the filter modules is continuously monitored by integrated pressure sensors. The result is a continuous supply of perfectly decontaminated dampening solution, from the dampening solution tank to the dampening solution trays of the printing units.

when using the beta.f, the dampening solution replacement intervals can be greatly extended or replacement even becomes unnecessary, reducing costs for purchasing and disposal considerably. Thanks to the minimised cleaning requirement on the printing press, operating costs are reduced considerably whilst press availability is at a maximum.



- With air-cooled units, the exhaust heat can be discharged from the press room via the air hoods and air ducts (may require additional fans).

Cooling concepts

Customised to meet individual requirements, beta.line modular provides concepts for air-cooled or water/glycol-cooled units.

The cooling modules are available in different designs, depending on your power capacity – from 14 kW to 45 kW.

Water-cooled or glycol-cooled unit for connection to a central cooling system. Shown here with a directly assigned, external glycol cooler for free cooling and integrated cooling circuit pump and control system.

This compact system for the integrated cooling circuit pump is designed not only to supply the beta.c unit. In the proper configuration, it can also be used to supply additional peripheral units for the same press.

beta.line

- Solutions for your exhaust heat problems
- Options for remote installation
- Basics of central cooling systems

On request, we will be happy to send you detailed documentation on the subject of central recooling and exhaust heat disposal, or to provide you with consultation on site for your specific application.