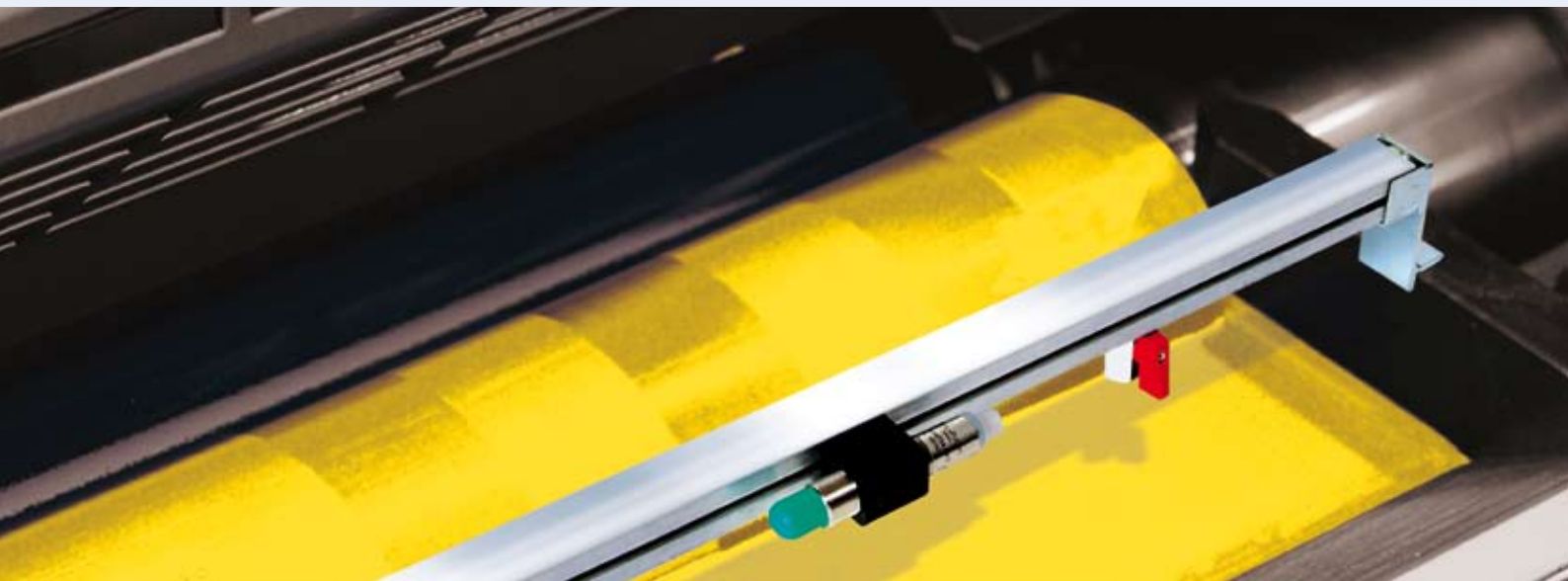




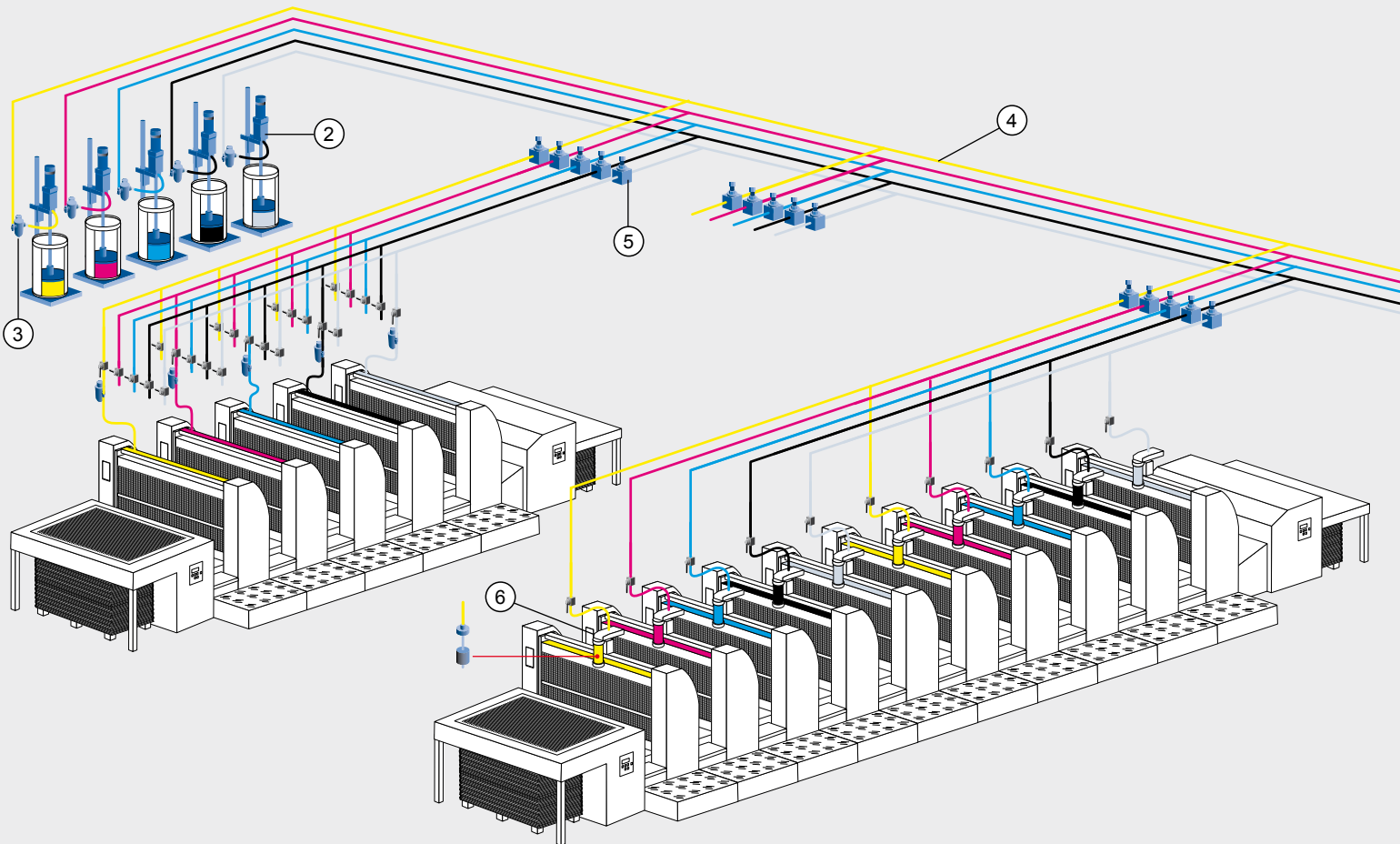
Ink Supply Systems for the Graphics Industry



**System solutions for supplying ink
to your press**

Ink supply During the Printing Process

Tailored system solutions for supplying ink to your press
increase the productivity of both your presses
and your company



Sheet-fed offset

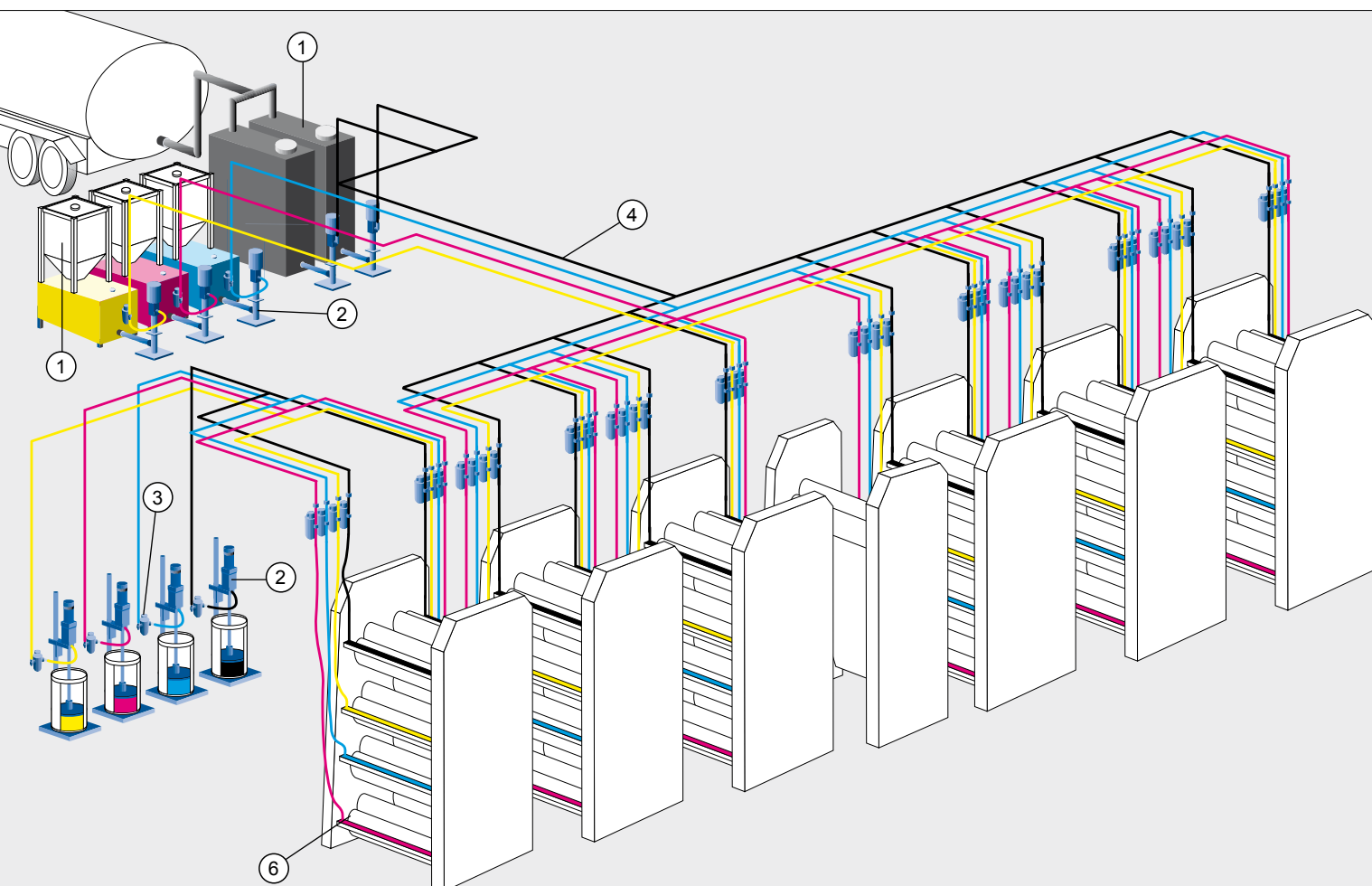
**Perfect concepts
for ink supply – the
summation of many years'
experience**

To automate and centralise ink supply at your printing facility – that is our job.

With our experience, we have tailored system solutions for every process. Whether the supply is from cartridges, tins, exchangeable containers or larger containers for tank systems – Lincoln has the solution.

The ink is supplied directly from the ink supplier's container to the presses or ink fountains respectively, without additional intervention.

**Lincoln systems are
custom-designed and built.
No two systems are identical.**



Web offset

Validated Environmental Information



VALIDATED
INFORMATION
Reg.Nr. D-153 00019

■ Ink supply systems are closed pump systems for the automatic feeding of printing inks. The closed system prevents any contact with the skin – especially important where UV inks are used, because these inks contain substances that may cause skin irritation.

■ Compared to manual ink fountain filling, automatic ink supply systems prevent possible soiling of the work-

place from ink spilling. Thus pollution at the workplace is reduced.

■ Ink supply systems allow filling from bulk containers of 200 kg and more instead of small tins. In addition, rectangular containers (from 300 kg) are obtainable as returnable drums. This significantly reduces the amount of waste from empty ink tins (hazardous waste).

Lincoln Environmental Statement
under www.lincolnindustrial.de/
Company/Environment

- ① Base and bulk containers
- ② Ink pumps
- ③ Ink filters
- ④ Tubing
- ⑤ Consumption measurement
- ⑥ Level control

Complete Pump Range for all Applications

Lincoln has decades of experience in the design and manufacture of pump systems for highly viscous media, e.g. offset inks. Lincoln pump systems have been used in the market with outstanding success for more than 30 years. Now they have been further enhanced especially for offset inks. They offer both robustness and reliability as well as simple maintenance and servicing. Based on this experience, Lincoln has now developed a revised range of pumps.

A distinction is made between:

- Pumps with hoist for 200 kg or 300 kg exchangeable drums
- Pumps for ink containers complete with pump foot stand
- Hydraulic ink pumps with foot stand + hydraulic aggregate for containers
- UV ink pumps for exchangeable and stationary containers

The performance of an ink pump is not dependent on the amount of ink transported per double stroke, but rather on the actual amount of ink supplied in a defined period of time. This is determined by the number of presses, their consumptions and levels of utilisation.

Features of the new ink pumps:

- Attractive modern design
- Robust construction
- Durable and reliable
- Simple maintenance and handling due to metric system
- Special sealing material to match the application concerned
- Pumps can be driven directly with 220 V
- Stroke frequency monitoring with possible simultaneous feed rate calculation
- Worldwide network of replacement parts dealers



*Lincoln
container pump
LIP 6CO/400*



*Lincoln
rectangular
container pump
LIP 6RC/400*



*Lincoln
drum pump
LIP 6FA/400*

Lincoln ink pumps, proven in thousands of applications at printing operations worldwide.

Accessories for all Ink Systems

Tubing

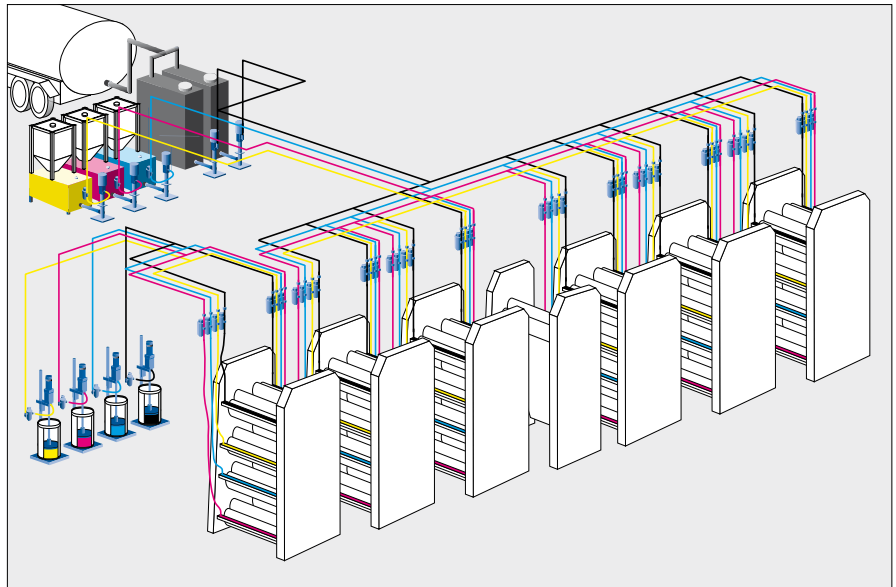
Tubing corresponding to the pressure loads concerned is installed to provide the necessary connection between the containers, pumps and presses. These systems are quick and easy to install and are flushed and cleaned at the time of installation. Different conditions and requirements are the criteria that determine the suitable diameter of tubing to be used.

Consumption measurement

Ink consumption measurement enables the ink consumption for each press to be recorded and displayed separately. Therefore the exact quantities of ink for each job are available and can be allocated directly to the individual jobs for calculation or costing purposes.

That means total cost accountability for each print job. Consumption recording is done via measuring heads integrated into the tubing at the press. A separate flowmeter is installed for each colour.

Consumption is shown on the control screen. If desired, this can be optionally integrated into the press control desk in combination with an additional line.



With certain prerequisites, it is also possible to connect it to an in-house network. In cases where the press is supplied with two different types of ink, the signals of the measuring heads are recorded and displayed separately.

Control and monitoring (alarms)

A distinction is made here between different levels of control comfort.

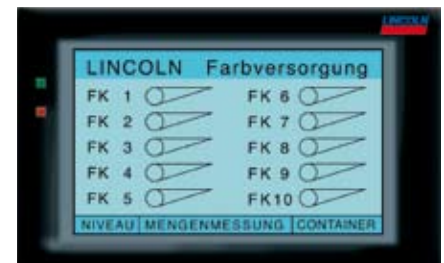
Simple control has no display and only offers standard control functions.

Comfortable control and monitoring works with compatible modules and therefore permits various levels of operating comfort.



Control

All system modules can be integrated into a network, i.e. the alarm message from the basic container then also appears on the display of the ink level control at the press desk. All displays are designed as touch screens and thus allow a very high level of operating comfort. Interfaces to in-house net-



works are prepared and can be integrated at any time.

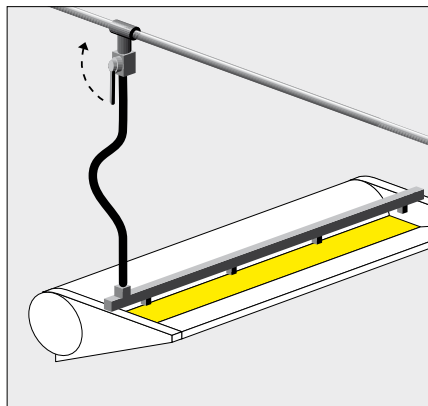
The visualisation of the tank systems is also realised via a colour touch screen. All relevant information is displayed in a well-organised and easily identifiable way at the central control cabinet. In principle, any customer wish can be implemented in such a control.

Ink Fountain Filling Options

The ink fountains in the press can be filled in different ways.

Manual systems

The ink fountains can be filled manually. For example, for this purpose a system using a hose reel is available. The operator takes the hose and outlet tap directly to the ink fountain and carries out the filling operation. The simplified



version would be a hose of a fixed length and shut-off tap with antidrip valve at the end.

Another variation is filling via an ink filling tube that is integrated into the ink fountain. The operator opens the ink feed via a ball valve and the ink flows directly into the ink fountain. In this case, the filling process is monitored by the operator.

Semi-automatic system

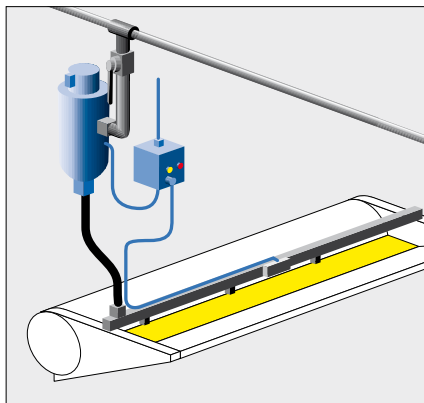
Here the filling is also performed by the printer. By pressing a button at the printing unit, the operator opens the ink valve and keeps it open until the desired level in the ink fountain has been reached.

The filling is done via an ink filling tube with an upstream ink valve that is integrated into the ink fountain. In this case, the operator also monitors the filling process.

Automatic system

The automatic version is certainly the most comfortable and best solution. A sensor monitors the ink level in the fountain. If the level drops below the set standard, the ink valve is opened and ink flows into the fountain.

An ink filling tube installed across the ink fountain with separately controllable outlet nozzles ensures the even distribution of the ink across the full width of the fountain. The operator can fill the ink fountain by hand at all times, but that is usually not necessary. In the event of a fault, e.g. minimum level alarm or overflow alarm, the system control emits an acoustic alarm signal.



Cartridge Systems

The 2 kg ink cartridge is firmly established as an innovative system especially for sheet-fed printing operations with low ink consumption and frequent colour change.

Whether pneumatic hand-held control handles or automatic compressing devices for dispensing: both systems offer a high degree of user-friendliness, working comfort and, last but not least, ink economies due to very small amounts of ink residue in the cartridge.

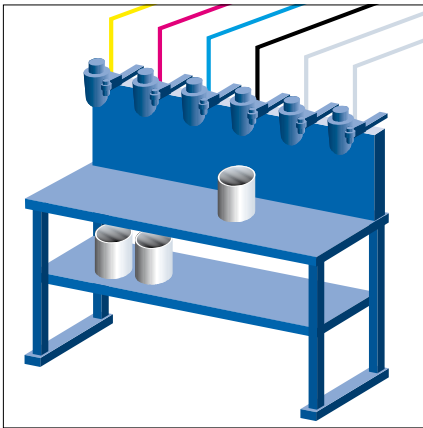


When emptying via the simple hand-held control handle, the compressed air is opened via a pushbutton and the ink squeezed out of the cartridge by the pressure. The operator distributes the ink directly during the dispensing process across the entire ink fountain. The other alternative is a dispensing system integrated into the printing unit. The emptying of the cartridge is also performed either at the push of a button or can be continuous. For continuous dispensing, the compressed air pressure is set such that a small amount of ink constantly runs into the ink fountain while the valve is open. Ink distribution is done via the rotating fountain roller.

Tap Stations, Mixing Stations, UV Ink Supply Systems

Tap stations

A further manual filling variation is offered by tap stations. The most commonly used colours are pumped from the containers to the tap stations at the presses. The operators there fill the corresponding small containers that are then used to transport the ink into the



fountain. Tap stations can be installed with semi-automatic or manual filling. To facilitate cleaning, the tap station is made mainly of stainless steel and offers sufficient shelf area for the ink tins to be filled.

Mixing stations

Packaging printing operations require an especially large number of special colours. In order to reduce the resulting vast quantities of residue inks and therefore the amount of required storage space, many printing operations have started to mix these special colours themselves.

The advantages are:

- Reduced storage
- Ink production to match jobs
- Inks available at short notice (no problem due to possible delayed delivery from the ink manufacturer)

These colour mixing systems are matched to the basic colour mixing systems and recipe software of the ink manufacturer concerned.

UV ink supply systems, special features and application

UV inks have up to now confronted all pump manufacturers with problems that are almost impossible to resolve. However, with intensive research & development work, Lincoln has succeeded in finding a way to handle even the highly-sensitive UV ink in ink supply systems. A special control of the pumping strokes, seals to match the ink including lubrication and a changed surface in the pump tube now permit the pumping of highly viscous UV ink. This process is immensely beneficial above all for the personnel working with UV ink, as it is especially important to avoid direct contact with the skin.

The options for UV ink supply are almost identical to the conventional systems and range from the pumping station with adjoining tap station, ink stirring in the fountain up to automatic ink fountain filling within the press. The ink supply system allows several presses to be supplied with ink from one pumping station.

This process is now patent protected.



Lincoln GmbH – Synergy and Competence



Lincoln has decades of experience in the manufacture of proven and reliable ink pumps and ink supply systems for the graphics industry.

At the heart of the ink supply programme are pumping systems for high-viscosity printing inks. Complemented by innovative system components, such as special ink valves or system controls, they are the ideal systems for supplying ink to printing presses. All levels of automation are covered, from the simple feeding system in the sheet-fed area to container systems for heatset presses, up to tank systems for the newspaper area.

Lincoln main locations and production facilities on three continents as well as Lincoln offices and official dealers in more than one hundred countries are available as contact partners worldwide.

They provide support not only in the design and commissioning of new systems, but are available also for rapid replacement parts supply and troubleshooting.



Our products:

- Ink supply systems for sheet-fed applications
- Ink supply systems for UV inks
- Ink supply systems for heatset rotary and newspaper presses – also for waterless coldset
- Ink tank systems
- Ink mixing and metering systems
- Service, maintenance and replacement parts for Lincoln ink pumps and existing ink supply systems

Lincoln – Automated Lubrication Systems for Presses

Lincoln is the worldwide leading manufacturer of centralised lubrication systems. Consequently, Lincoln naturally also offers high-quality lubrication systems for printing operations to reduce friction, wear and tear, and therefore repairs.

Our products in the area of central lubrication cover systems consulting and development, manufacture of standard components, such as pumps, lubricant distributors and controls, but also planning of customized lubrication systems for special applications. The installation and commissioning of Lincoln lubrication systems, product training, maintenance and service are carried out on-site at the customer's operation – worldwide.



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