SHOW YOUR COLORS

ECONOMIC • INNOVATIVE • HIGH QUALITY 100 %

EFFICIENT · POWERFUL · SECURE

COLOR MANAGEMENT BY DUO-TECHNIK

WE CREATE SOLUTIONS

DUO-TECHNIK

PRODUCTS FOR PRINT

BASIC INK KNOWLEDGE

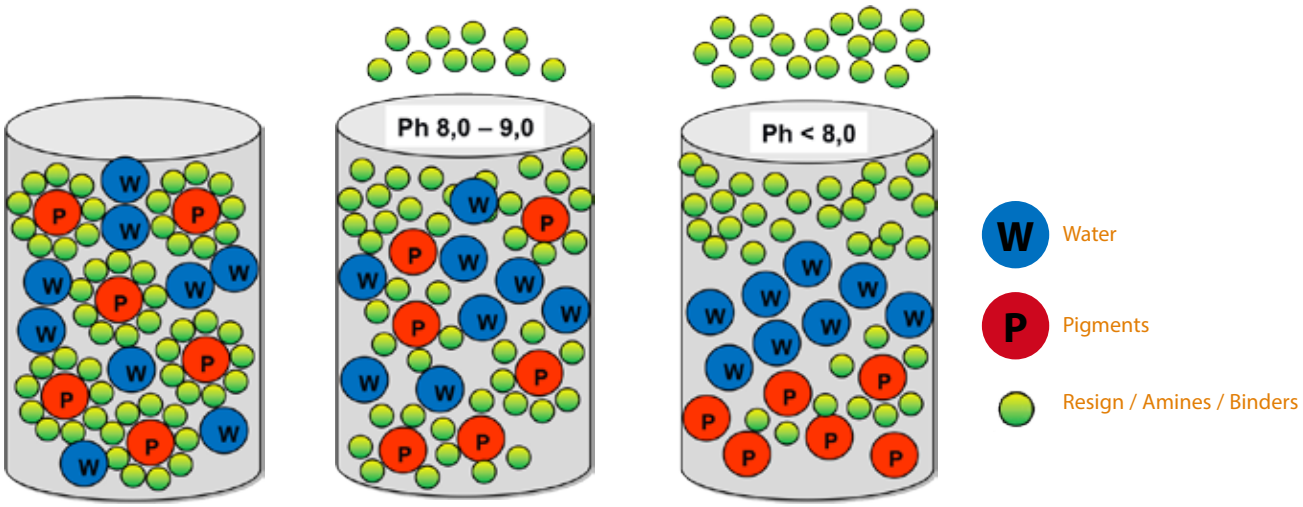
// water based inks/ varnishes are a mixture out of the following main components (water, pigments, resins, amines, binders)

// at pH of 9,0 – 9,5 the mixture is optimal for processing and printing

// heat or temperature increases the vaporization of the amines

// this changes the mixture, the viscosity and the density of the ink

➔ **Only with the right pH and the right temperature there is a good mixture**



// What happens to your printing process with a bad ink?

(1) Ink with a ph < 8,0

Your ink dries too fast on the plates. You have to stop every 1500-2000 sheets/h for cleaning the plates for 15 minutes. With an optimal mixture you can run 5000-6000 sheets/h without a stop for drying.

➔ you need to clean per hour only once instead of 3 –times

(2) Ink with a high viscosity

You've lost the most of the amines in the ink. The mixture is worse, you are losing the density of your ink and getting a bad quality.

➔ you need about 15% more pigments for the same printing, means 15% more of your expensive ink

➔ **Color Management saves a lot of money, stables your printing process & increases your quality**

OUR COLOR MANAGEMENT MODULS

// The right step for a stable printing process

(1) Viscosity measuring

With the right viscosity the converting of the inks are improved. Printing of inks with a higher viscosity leads to a higher ink consumption. Means ink is wasted (up to 15% p.a.) and the colour density is influenced.

We suggest:
for inks: 22-23 sec. Ford cup 4 | **for water based varnishes:** 20-21 sec. Ford cup 4

(2) PH

The adhesion of the ink onto the sheet will be improved with the correct pH-value. In addition the drying results will be improved, too. Basically, the pH-value should decline from printing unit 1 to the last printing unit. The pH-value of the first printing unit should be 9-9,5 and should be dropped by 0,2 per each further printing unit. However, it should never be lower than 8.

(3) Temperature

The ink temperature is influenced by the ambient temperature and the friction of the ink in the printing machine. With a fix temperature the change of viscosity and pH can be controlled and kept on a stable value. The temperature should be set between 20 and 22 °C.

(4) Automatic viscosity adjustment (pH control)

Automatic adding of amines (or water) in small portions.
The adding of amines automatically controls your pH.

Dosage in small portions

// The temperature control, viscosity control and pH control are modular concepts.
➔ This means that you can decide which system is the right one for your needs and when you like to install which modul

COOL INKS LOOK AFTER THEMSELVES

// Stable temperature – stable mixture

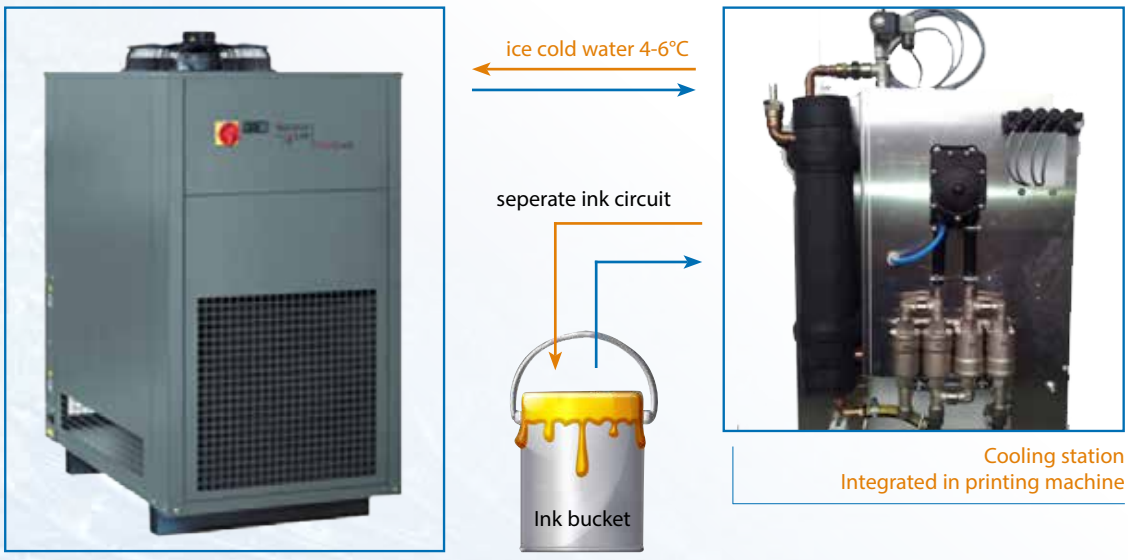
The ink temperature is influenced by the ambient temperature and the friction of the ink in the printing machine. The heating of the ink increases the process of vaporization of amines, means the pH drops, the viscosity and the density is changing.

With a fix temperature the change of viscosity and pH can be controlled and kept on a stable value. The temperature should be set between 20 and 22 °C. This ensures a stable process for about 2-3 hours.

// Our system is quick on temperature

With the Ink Cooling of Duo-Technik it is possible to bridge a temperature difference of 10 °C within 4 minutes. With our own ink circuit we furthermore reduce micro foam. The following technical details characterize our system:

- The Ink Cooling is working with ice water (4-6 °C)
- The cold water is pumped through an insulated heat exchanger in each printing unit until the aim temperature is reached
- With our separate ink circuit we achieve, that in a short period of time a lot of ink is pumped through the heat exchanger. This is the reason for the very quick temperature adjustment
- The whole system is connected to the cleaning cycle of the printing machine that no further manual cleaning has to be done



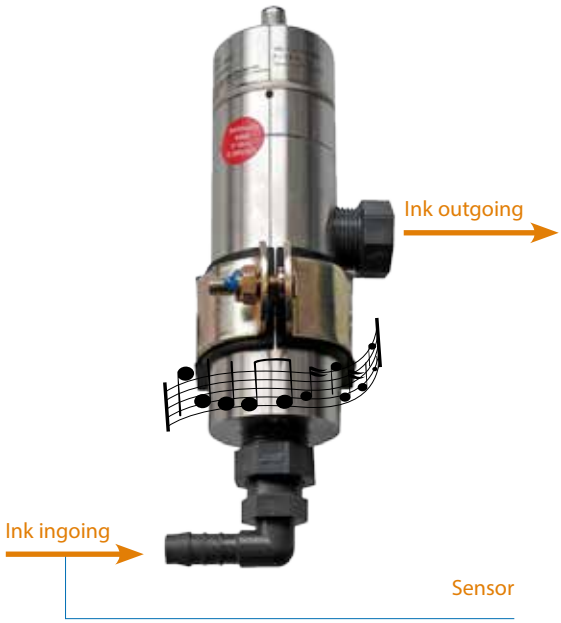
Central cooling unit

Cooling station
Integrated in printing machine

VISCOSITY MEASURING

// Measuring the viscosity is an indicator of what is happening in your ink. Viscosity tells you when you have to add a substitution

The viscosity is measured by a special Inline Sensor from the market leader. The Inline installation provides real time, dynamic viscosity measurements and adapts easily to manual or automatic wash-up systems. This crucial inline positioning enables the viscometer, to adapt to the varying press conditions intuitively, allowing the operator to relate his ink viscosity control to the actual printing results.




Sensor installed

Substantial factors of the sensor are:

- Integration into the ink circuit with a bypass
- Usage of high grade materials (stainless steel)
- Maintenance free operation
- No rotating parts and no mechanical seals
- Continuous measurements, no time by time measuring
- Usable for water based and solvent inks
- Viscosity range 1 to 1.000 Centipoints (mPa*s)

Viscosity equipment on its own is not enough for a viscosity control system. With an intelligent software the measurements can be transformed to the main used units (for example Ford cup 4), the measures can be shown on a display, aim temperatures can be defined and an automatic adjustment with a resin can be controlled. The software is integrated in a center or decenter touch panel for the operation.

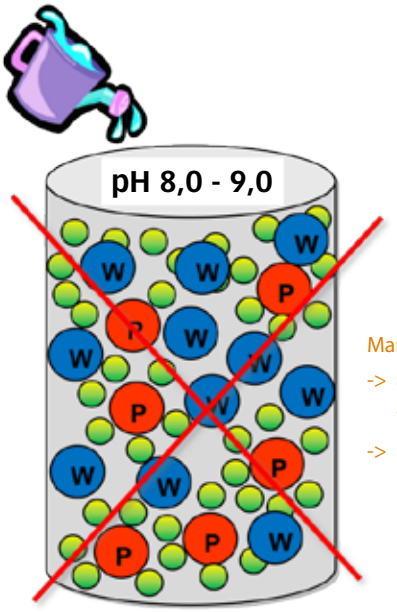
AUTOMATIC VISCOSITY ADJUSTMENT

// It is common to adjust the viscosity with an undefined volume of water

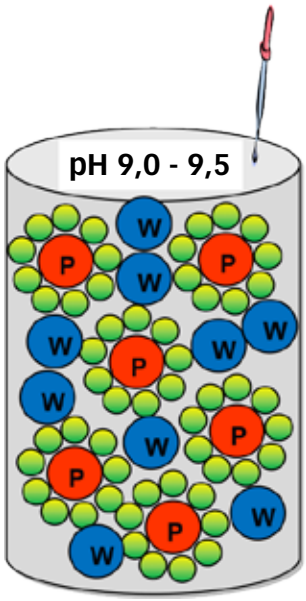
// This is wrong: water has a pH of 7 which reduces the pH of the ink even more

// The viscosity is shortly regulated but the density is changed and the ability of drying is reduced

// Our Automatic viscosity adjustment is adding small portions of amines with a pH of 10-11. With this a long term stable mixture can be ensured



Manuel adding of **water**
-> adding of undefined volume of water
-> losing of the pH



Automatic adding of **amines** in small portions
-> stable system

// Optimizing your ink viscosity has never been easier

This combination of all modules provides our unique operating system unsurpassed control of the inking process to deliver high precision printing and color consistency.

- Generates tight viscosity control to maintain professional process quality
- Leads to major ink and time-savings
- Includes maintenance free viscometers with no moving parts

This moduls are available in Single Station and Multi Station versions. Same reliability, same accuracy, it's a question of how many stations you wish to control.

PARTICLE FILTER

// What else can we do?

An in-line corrosion-resistant ink filter designed to remove contaminating particles. Powerful rare earth magnet fitted in a conical shaped cartridge to ensure efficient ink flow.

- Clean inks secure the processes
- Goodbye Contaminating Particles
- Welcome easy maintenance

// It is easy to handle.

Release the knob, pull out the cap, remove the strainer and just wipe down the magnetic cartridge - the contaminating particles will remain in the rag due to its dead zone.

NO TOOLS NOR FUSSING REQUIRED!

// Guaranteed Satisfaction

- No surge problems
- Increased anilox lasting quality
- Improved ink consistency
- Increased ink printing quality
- Stops ferrous particles from reaching your press
- Reduced ink clogging
- Fragment Free ink
- Increase press uptime
- Easy maintenance

YOU GOT THE BIG PICTURE

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COLOR MANAGEMENT BY DUO-TECHNIK

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