

INK DOSING SYSTEMS TO OPTIMIZE YOUR SPOTCOLOR SUPPLY CHAIN



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How is the actual situation?

Manual Dosing

- Very time consuming
- Not very accurate
- Not repeatable nor traceable

- Purchasing of bigger quantities at the ink supplier
- Order placement in advance due to the delivery time
- Unflexible in quantities and order volume for certain production
 - High prices per kg
- Storage full of leftover spot colors



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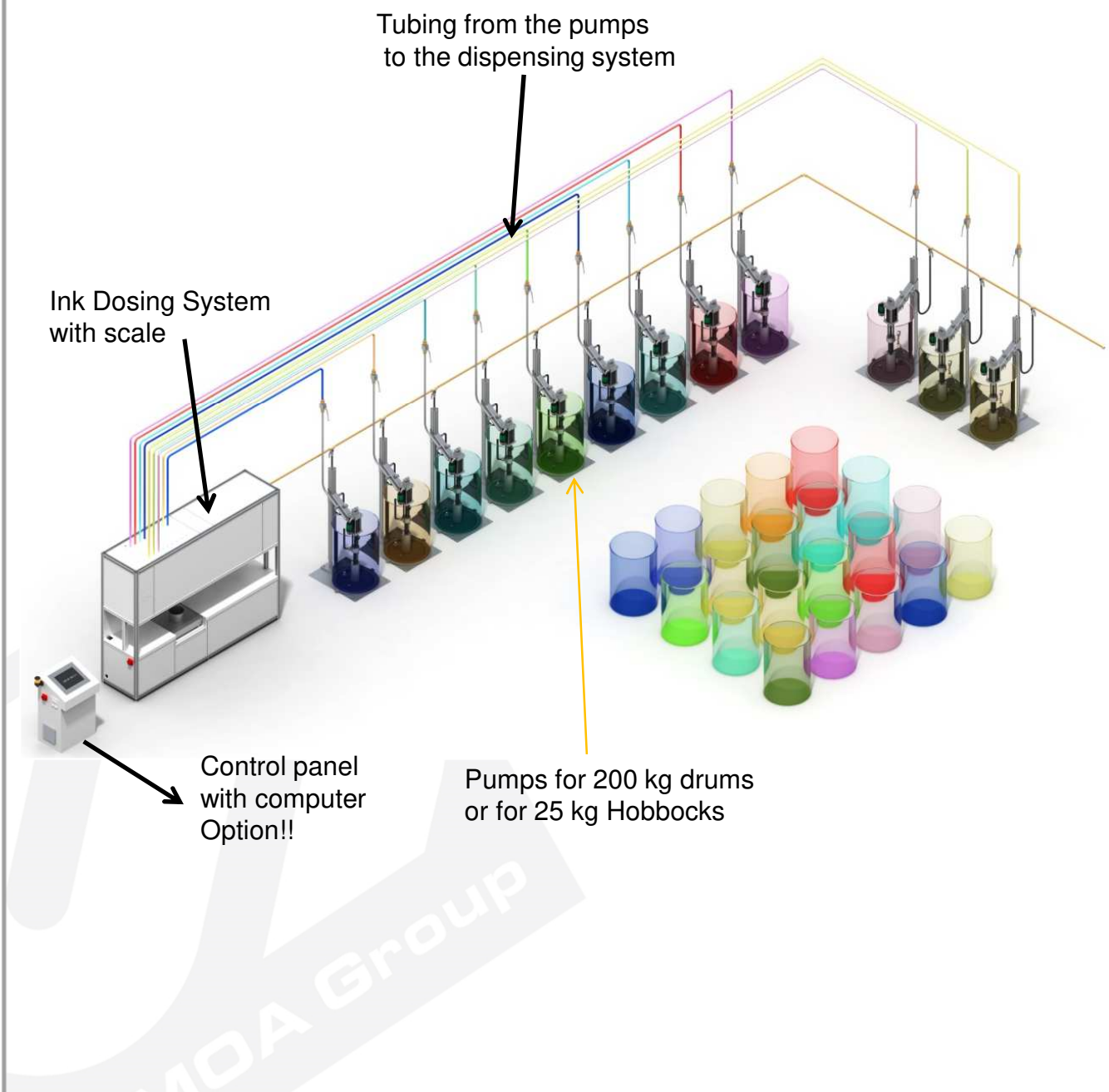
What can be a solution for all this disadvantages?

**An automatic Ink Dosing System!
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How are this systems working



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Different size of Dosing Systems are available for normal Offset and UV Ink



Dosing System
up to 20 basic colors

Dosing System
up to 28 basic colors
with scale lift

The Dosing Systems

- PLC controlled dispensing head.
- Scale in different sizes available form 6 to 300 kg
- Scale lift
- Can size identification system available



Dosing System
up to 40 basic colors
with two scales



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Dosing valve head

The frame is moving linearly left-right and the dosing is taking place always on same spot



The number of the ink valves can be extended to the max. of 20, 28 or 40 valves



BETZ ColorMix BMS for UV-Ink!



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with

- Automatic can transport system
- Bar code reader to identify the formulation
- Automatic dispensing regarding to the bar code



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How the system works



The control system:

- Standard PC can be used and supplied by the customer
 - The existing database with formulations can be used
- Interface to a Gretag densitometer is available for customization
 - Interface with SAP is available

The following steps are necessary

- Choose type of color
- Input the requested amount and put a empty tin on the scale
- Push the start bottom



Dosing takes approx. 3 to 10 minutes depending on the volume and number of basic colors with an accuracy of 0,5 to 0,3 g

- Label printer can be connected
- Mixing protocol is made and will be stored
- Ink batches can be stored in the system and malfunctions can be identified.
- Remote connection for software updates and maintenance is available

Ink Mixer

The mixer are not products of Betz Technologies



(Biaxialmixer / Shaker)

The ink mixer:
After the dispensing of the ink
into the tin,
Mixing can be done
with a vibration or
Biaxial mixer - shaker

Vibration mixer



Ink can before mixing



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Software masks examples

The Software:

- Dosing software on CD provided
 - List of recipes can be uploaded on the System
 - Recipes can be modified manually
 - Mixing protocol will be provided
 - Consumption statistics
-
- Missing additives will be announced
and can be added manually

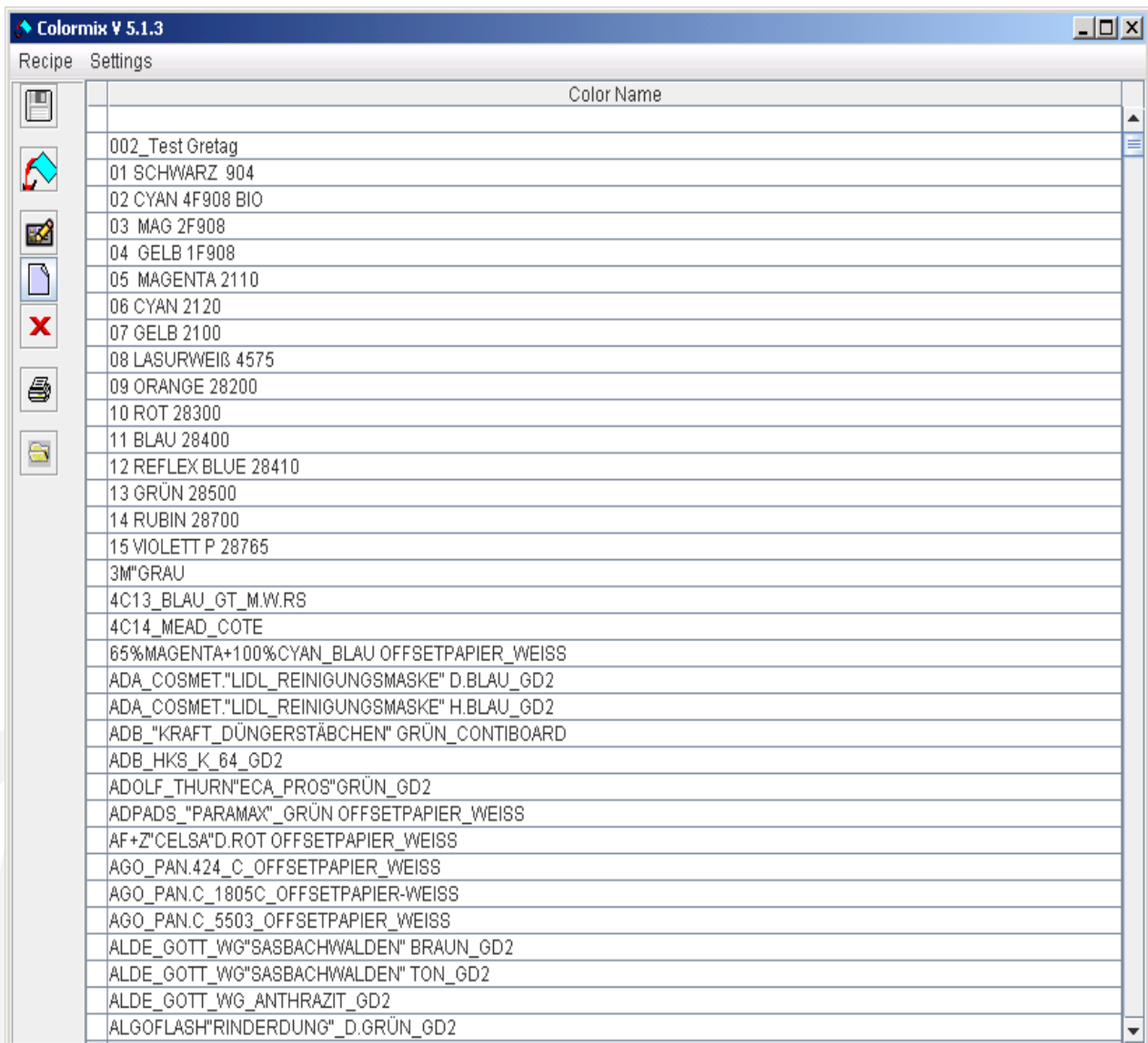
| Color Name | Value | Weight Calc... | Weight Real | Difference |
|------------|-------|----------------|-------------|------------|
|------------|-------|----------------|-------------|------------|



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Software masks exsamples

Recipe list



The screenshot shows a software window titled "Colormix V 5.1.3" with a menu bar containing "Recipe" and "Settings". On the left side, there is a vertical toolbar with icons for file operations (save, print, delete), a color wheel, a palette, and a folder. The main area is a table with a single column labeled "Color Name".

| Color Name |
|--|
| 002_Test Gretag |
| 01 SCHWARZ 904 |
| 02 CYAN 4F908 BIO |
| 03 MAG 2F908 |
| 04 GELB 1F908 |
| 05 MAGENTA 2110 |
| 06 CYAN 2120 |
| 07 GELB 2100 |
| 08 LASURWEISS 4575 |
| 09 ORANGE 28200 |
| 10 ROT 28300 |
| 11 BLAU 28400 |
| 12 REFLEX BLUE 28410 |
| 13 GRÜN 28500 |
| 14 RUBIN 28700 |
| 15 VIOLETT P 28765 |
| 3M*GRAU |
| 4C13_BLAU_GT_M.W.R.S |
| 4C14_MEAD_COTE |
| 65%MAGENTA+100%CYAN_BLAU OFFSETPAPIER_WEISS |
| ADA_COSMET."LIDL_REINIGUNGSMASKE" D.BLAU_GD2 |
| ADA_COSMET."LIDL_REINIGUNGSMASKE" H.BLAU_GD2 |
| ADB_"KRAFT_DÜNGERSTÄBCHEN" GRÜN_CONTIBOARD |
| ADB_HKS_K_64_GD2 |
| ADOLF_THURN"ECA_PROS"GRÜN_GD2 |
| ADPADS_"PARAMAX"_GRÜN OFFSETPAPIER_WEISS |
| AF+Z"CELSA"D.ROT OFFSETPAPIER_WEISS |
| AGO_PAN.424_C_OFFSETPAPIER_WEISS |
| AGO_PAN.C_1805C_OFFSETPAPIER-WEISS |
| AGO_PAN.C_5503_OFFSETPAPIER_WEISS |
| ALDE_GOTT_WG"SASBACHWALDEN" BRAUN_GD2 |
| ALDE_GOTT_WG"SASBACHWALDEN" TON_GD2 |
| ALDE_GOTT_WG_ANTHRAZIT_GD2 |
| ALGOFLASH"RINDERDUNG"_D.GRÜN_GD2 |



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Software masks exsamples

Set up of the basic colors

| Color Name | Valve Number | Charge | Price |
|-----------------------|--------------|--------|-------|
| 01 Cyan 4F908 | 13 | | 0,00 |
| 01 Gelb 1F908 | 15 | | 0,00 |
| 01 Mag 2F908 | 14 | | 0,00 |
| 904 Schwarz | 7 | | 0,00 |
| B 28400 ID 43 | 5 | | 0,00 |
| B 28410 (Reflex Blue) | 12 | | 0,00 |
| Farbe 1 manuell | -1 | | 1,00 |
| Farbe 2 manuell | -1 | | 2,00 |
| Intensiv CYAN B 2120 | 8 | | 0,00 |
| Intensiv GELB G 2100 | 10 | | 0,00 |
| Intensiv MAG P 2110 | 9 | | 0,00 |
| O 28200 ID 21 | 1 | | 0,00 |
| P 28700 ID 35 | 3 | | 0,00 |
| P 28765 ID 42 | 4 | | 0,00 |
| R 28300 ID 32 | 2 | | 0,00 |
| Transparent White | 11 | | 0,00 |
| V 28500 ID 50 | 6 | | 0,00 |

Dosing protocol

Mischprotokoll

Farbname: **PMS 349 C**
 Kommission:
 Kundennummer: **B 0220 3 0023**
 Kunde: **Bare**
 Seriennummer:
 Goodscode:
 Goodsname:
 Methodcode:
 Methodname:
 Papiernummer:
 Papier:
 Datum Mischvorgang: **16.04.2003**

| Farbname | Berechnete Menge | Restlo Menge | Charge | Preis |
|----------|------------------|--------------|----------|-------|
| B-53420 | 0,2324 | 0,2340 | 90136628 | 0,00 |
| G-53110 | 0,2140 | 0,2150 | 90152904 | 0,00 |
| S-53900 | 0,0527 | 0,0525 | 90990931 | 0,00 |
| Summe | 0,5000 | 0,5015 | | 0,00 |



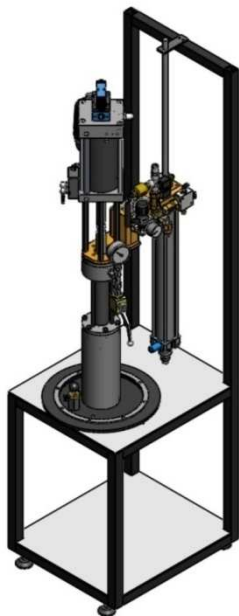
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The Pumps for the Dosing System

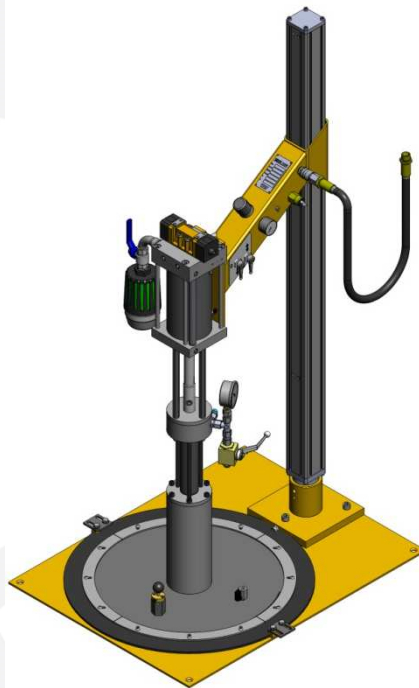
The pumps are the well proven pneumatic pumps, either for 25 kg Hobbock pail cans or standard 200 kg drums. For the ColorMix application we have an additional valve which is controlling the pumping pressure. At the beginning we pump with high pressure and at the end, to be able to pulsate, with low pressure

- 30 years of experience in pump manufacturing
- different pump sizes available for 200 kg drums or 25 kg Hobbocks
- Solution available to convert a pump for 25 kg Hobbocks into a 200 kg pump
- Alarm will be released with an empty drum

Pneumatic ink pump
for 25 kg pail cans
P100/113-25H/M



Pneumatic ink pump
for 200 kg drums
P100/113-2L/M



Pneumatic ink pump
for 200 kg drums
P200/329-2/L/DH/20/M



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Dosing Pumpstation examples



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Customer to provide:

- Space for the installation with fixed conditions and more than 25° C.
- Compressed air for the pumps and the dispensing system
- Dispensing computer with printer if requested
- Intranet (Internet) connection for remote help and updates

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What is the Benefit of the Dosing System for you:

- Very flexible production of all spot colors yourself.
Available just in time with the right amount
- Lower purchasing costs due to bigger volumes of
the base colors
 - Timesaving due to the automatic dispensing
- Very accurate, repeatable and traceable reduction
- Less leftover of inks and therefore less stock and
disposal costs
 - Therefore ROI in a very short time !!!

**Betz Ink Supply Systems
for Dosing System**



Installation and maintenance via our experienced service and assembly team



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