

## AGFA Graphics

# Market info & Training course

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## When & How CTPP (Computer To Polyester Plate)

- Ideal system for all printers who want to expand capabilities by switching over from CTF / analog CTPP / Alu-CTP to a fast and affordable CtpP system
- Can be used on any HN or Red laser imagesetters (630nm till 670nm)
- Run length: up to 20.000 copies
- Target application: 2 and 4 up
- Resolution: screen ruling 175lpi / screen range on print 5 – 95%
- Available in two thicknesses: 0.13 and 0.20 mm
- Compatibility: printing of Alu & Poly on the same press
- Remark: polyester base is more liable to Stretch on press.

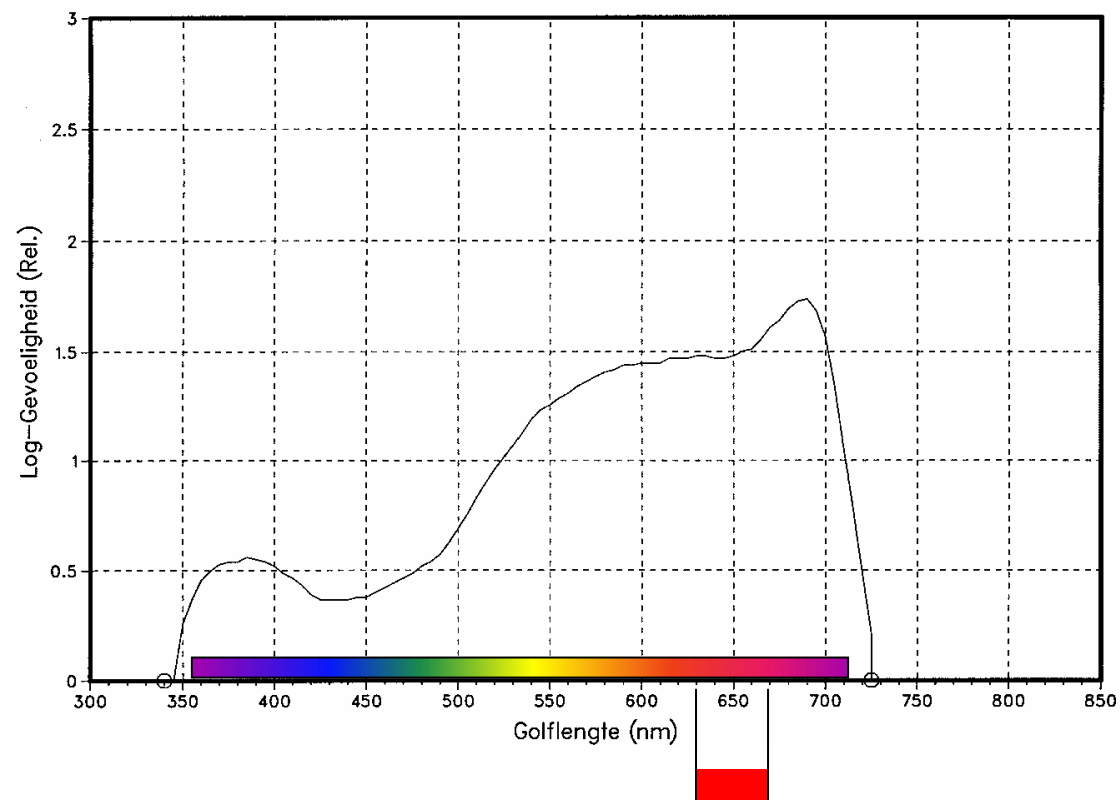
## Exposure

- Positive working plate → image setter in Negative mode
- The unexposed area is the printing area
- The entire surface of the plate has to be exposed
- Because we expose directly on a plate, the image must be 'readable'
- Plates can be exposed with imagesetters or platesetters equipped with a laser source between  $\lambda$  633 and 670 nm, being red laser diodes or Helium-Neon lasers.
- Minimum light output energy required is  $\sim 6 \text{ mJ/m}^2$  or  $0.6 \text{ } \mu\text{J/cm}^2$
- Minimum energy on the surface is  $\sim 3$  to  $4 \text{ mJ/m}^2$  or  $0.3$  to  $0.4 \text{ } \mu\text{J/cm}^2$ .

## Defining the correct exposure

### Sensitivity curve

Hilger spectrogram SETPRINTPLUS36605043



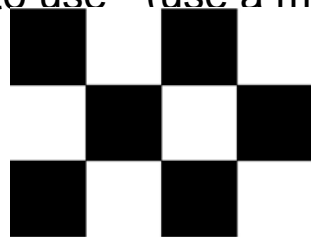
## Defining the correct exposure: = Very important

- \* Under exposure: can cause Toning on press of the non-image areas
- Over exposure: will burn out all fine characters and lines / loss of high lights!

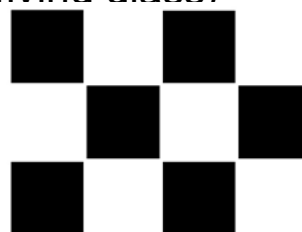
and reduce the Run length

### Method 1: Use the Internal test file of the image setter

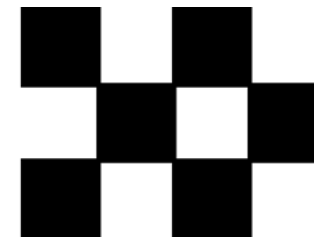
- Easy & quick : use a magnifying glass
- Visually check for the 50% dot at the resolution and screen ruling your customer wants to use - (use a magnifying glass)



Acceptable  
(checkerboard)



Unacceptable  
(underexposed)



Unacceptable  
(overexposed)

## Method 2 - Use the our Agfa Digicontrol wedge / 6.2.8 positive

- Agfa Digicontrol 6.2.8 Positive is available as an \*.eps file.
- **Check the 1, 2, 3, 4  $\mu$ -lines: → At the Right exposure level black/white lines have the same thickness. At that level a 50% dot = exact 50% dot on plate!**

ps: expose digicontrol wedge always on the right resolution.

- Agfa Digicontrol can be implemented in the gripper area on every plate:  
→ permanent exposure and batch to batch control.
- **Digicontrol wedge has One big advantages: you can see calibration effect**  
**Underside = Calibrated & Upperside = uncalibrated**  
see next slide

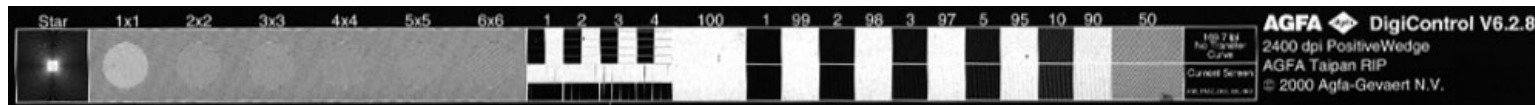
# Setprint Plus



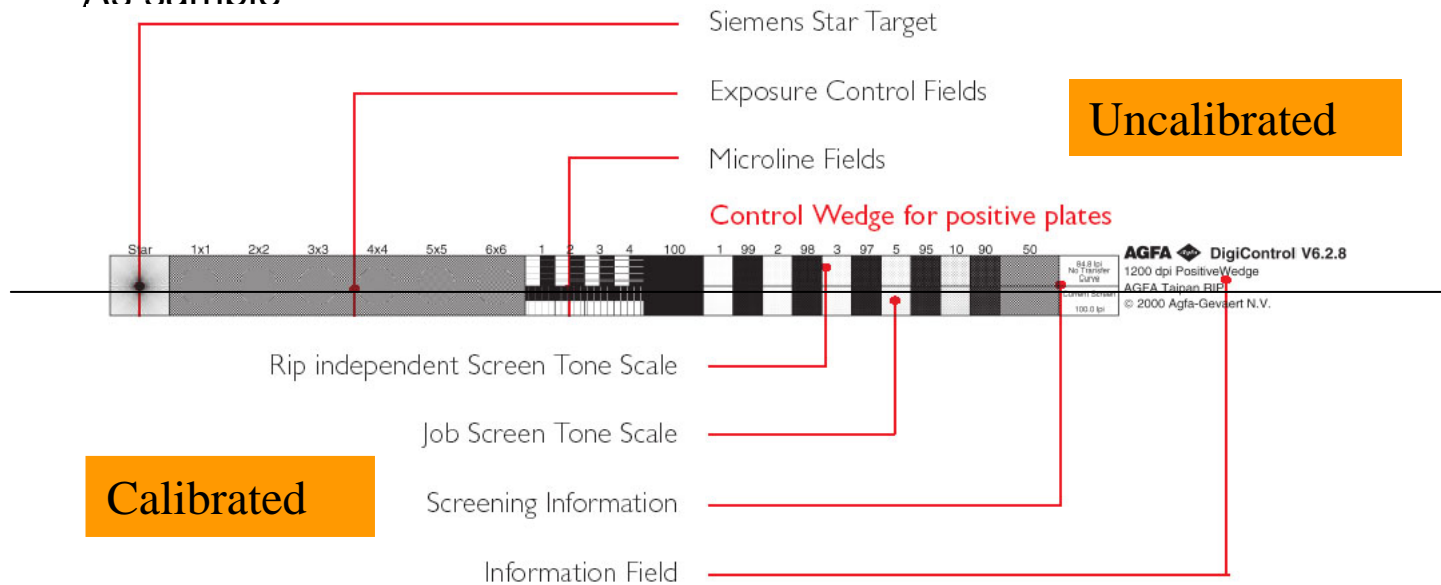
## Defining the correct exposure

### Digicontrol preview

- Exposed on Setprint - (black background)



- As sample



## Correct exposure: practical figures

- Exposure settings on the imagesetter at 'resolution exposure' :2400 dpi

Image setter	Nm	SetR0.20	Mitsubishi SDP-FRm175
Mitsubishi Eco 1630 III	635	200	145
Agfa Avantra 30	650	300	190
Printware Platestream 46	650	55	40
Eskographics DPX	670	500	430
Eskographics DPM	670	500	430

Remark: Mitsubishi has much higher speed than Setprint!! In practice exposure level has to be increased 30% till 50% in some imagers.

**Is Agfa strategy: → Lower speed of Setprint: but with a big counteroffer much sharper dots and better tone reproduction!**

- **Practical Dmax of Setprint is Lower than Mitsubishi SDP plate!!**
- \* **Dmax: Setprint = 1.27 / SDP = 1.36**
- \* **Visual: Setprint = grey black / SDP = deep Blue black.**
- **→ Don't overexpose Setprint in order to receive a visual deeper black. Setprint just looks more greyish**

## Calibration:

### Only Calibration of the high lights & shadows is significant!

#### Before you start calibrating:

1. Processor and chemistry must be in optimum condition.
2. Use right resolution & exposure setting

Trough experience we know that dot reproduction of Setprint plate is rather liniar:

→ Dot reprod. can shiffer a little bit dependant type / quality of the imagesetter, but grosso modo are all screen reprod. quite similar: → No relevant differences between Avantra / platestream / Eco 1630 / DPX / DPM.

In real terms:

- \* **High lights:** dots are too little (1 till 10%)
- \* Middle range: dots are OK (10 till 90%)
- \* **Shadow:** dots are closed (90 till 99%)

## Practical approach: Facts & Figures

- Dot reproduction is optimal if 3% - 97% calibrated dots are very clear and open on the plate (check 2-3% & 97-98% dots on the “underside” of the digicontrol wedge).
- If you Change over from Mits. to Setprint: → 90% cal. setting of Mitsubishi will be OK!  
Only if not: → install settings bellow:
- New start up: → install setting bellow it will improve tone reproduction

High lights						
Original dot	0%	2%	4%	6%	8%	10%
Plate / reprod Uncalibrated	0	0.8	2.8	5.4	7.6	9.8
Proposed Cal. setting	0	0.5	1.7	4.5	7	9.5

No calibration in between 10% - 90%

shadows						
Original dot	90%	92%	94%	96%	98%	100%
Plate / reprod Uncalibrated	92	94.5	96.7	99	100	100
Proposed Cal. setting	95	98	99	99.5	99.9	100

# Setprint Plus



## Chemicals

### First bath: Activator

- G5200b Setprint Plus activator
- Chemistry is ready-to-use and may not be diluted
- Alkaline: pH in the bottle >13

### Second bath: Stabiliser

- G5400b Setprint Plus stabiliser
- Chemistry is ready-to-use and may not be diluted
- Acid: pH in the bottle ~5,0



### Third bath: Water

- If a third bath is present - (like in most rapid access processors) - this bath must be filled up with tap water.
- A third bath or a rinse section is not essential !

## Processor settings

### **First bath: G5200b Activator**

- Temperature: 30°C - 86°F
- Speed: 20 seconds
- Replenishment rate: 120cc / m<sup>2</sup>
- Anti-oxydation: 1000cc / 24 hours

### **Second bath: G5400b Stabiliser**

- Temperature: 24°C - 75°F (room temperature)
- Speed: 20 seconds
- Replenishment rate: 120cc / m<sup>2</sup>
- Anti-oxydation: 1000cc / 24 hours

### **Dryer**

- Temperature: 45°C - 113°F

## Conversion to Setprint chemistry

### Conversion procedure

- Drain processor (eventually remove the filter)
- Fill up replenishment bottles with water and fill up the tanks with warm water
- Thoroughly clean the complete processor: Rollers, racks, tanks, replenishment pipes (!),...
- Refill with warm water and turn the processor on to intensively clean all pumps, pipes,...
- Drain the unit, eventually put a new filter in the filter house and fill with Setprint Plus chemistry: Start with the stabiliser section, afterwards fill up the activator bath. (some droplets of activator in the stabiliser are less worse than droplets of stabiliser in the activator).
- It's advisable to change the first filling after one week, because old chemistry can still be present into the pores of the transport rolls.

**!** Setprint Plus chemistry is very sensitive to contamination. A thorough cleaning is essential ! A negligent treatment will cause development unevenness and thus problems on press.

**Slightest residue of Mitsubishi chem. (SLM...) will harm working of our Chemistry!!!**

## Conversion to Setprint Plus chemistry - (continued)

### Chemistry lifetime

- Depending on the throughput the lifetime of the chemistry is 8m<sup>2</sup> per litre or two to three weeks, whatever comes first.

### How to recognize when chemistry get Exhausted:

- pH of the activator goes down. However this is difficult to measure.
- visual: Wavy pattern in the background of the material or background becomes really grey
- Color of the silverimage turns from bluish silver to a complete silverish color
- Ink acceptance got be slower
- Background starts toning on press.

## Prepare the plate to print

### Plate corrections

- It is not common to do corrections on the plate in a 'digital workflow'.
- Agfa has correction pens in the assortment to 'delete' or 'add' image on the plate surface.

### Delete image

- Best done on a dry plate.  
If the plate is on press, carefully remove the ink and let the plate dry.
- With the deletion pen: wipe a couple of times over the image you want to remove.
- The fluid will dissolve the metallic silver in the nuclei layer and will make the deleted area hydrophilic.
- Leave the fluid on the plate for about 30 seconds before you wipe it off.
- Wiping off is best done with a sponge with tap water. Avoid to wipe fluid onto other image areas.
- It's very well possible that you still see the image after removing the fluid.  
The image will not take ink anymore because the silver is removed.

## Plate Storage: **VERY IMPORTANT**

### After development

- **Plates can be stored for several days but only in the DARK!!**

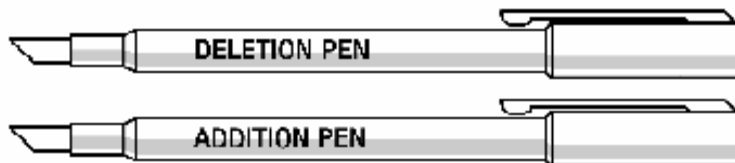
The silver image is rather sensitive to light (roomlight and daylight). Deterioration might set in after a few hours and shows itself in slower ink up, lower run length,...

Store the plates always emulsion down

## Prepare the plate to print

### Add image

- Best done on a dry plate  
If the plate is on press, carefully remove the ink and let the plate dry.
- With the addition pen: write on the plate where it is necessary.
- The tip of the pen is not very fine and can not be used to correct text.



## Plate mounting

### Manual loading

- Polyester is more flexible than aluminium, so polyester can be more difficult to hold in the plate clamp.
- Polyester may stretch, especially when pulled too tight by the tail clamp.
- Some care must be taken to ensure that only the appropriate force is applied when tightening the tail clamp.
- Once the plate is mounted, plate movement should be minimized.
- Pressure between plate and blanket should be kept to the press manufacturer's recommendations.
- In case Setprint Plus is used on presses that are equipped to print 0.30mm (0.012") plates only, the plate should be underpacked with a 0.10mm foil.

## Plate Start-up

### General

- Polyester plates need **more water (fountain) than aluminium plates.**
- It's important that the plate is wet enough before you start printing.
- Gelatine plates normally require a fountain containing 'silicium dioxyd ( $\text{SiO}_2$ )

### Small presses - conventional dampening unit

- Printers mostly put the plate on the plate cylinder and pre-wet the plates with a sponge and ready-made fountain solution.
- If the printer does not like to pre-wet the plate by hand, it is necessary to bring the dampening rollers in contact with the plate before the ink rollers make contact with the plate.
- **Once the plate looks 'glossy', the ink rollers can be brought in contact with the plate.**

## Plate Start-up - (continued)

### Film dampening unit

- Most presses have a dampening unit in contact with the ink unit (bridge roller) which means that also the dampening rollers are covered with ink.
- In these case alcohol (IPA) or an alcohol substitute will be used.
- During the automatic start-up procedure, the plate will immediately and completely be covered with an ink film.
- The goal is to put the dampening rollers in contact for a couple of revolutions before you start the automatic start-up procedure. Depending of the type of fountain, 15 to 20 revolutions will be enough to have a 'clean' start-up.
- **Once the plate looks 'glossy', the rollers can be brought in press**
- No real automatic "dry" start-up is possible with polyester plates !
- Polyester plates do not require (Arabic) gum to protect against oxydation !

## Plate Start-up / Fountain

### General

- Why fountain solution needs Silica or silicium dioxyd ( $\text{SiO}_2$ )
  - Setprint plate and especially the silver image is very hydrofobic (ink acceptive)  
With a fountain without silica (which is hydrophilic) the plate would take too much ink. In other wordes: ink / water balance would be unfavourable  
Plate should cause Toning on press or slow roll up (clean up)
  - IPA: Alcohol into fountain: decrease the surface tension which has a positive influence on the dampening of the plate / it decrease the viscosity of the ink / and keeps the system cool:  
IPA boost the whole system: latitude, ink / water balance, roll up, ink up.

## Fountains & additives.

### Use G648c & G671c our dedicated fountain solutions for Setprint

- Containing SiO<sub>2</sub>
- Agfa has two fountains in the assortment (pH = 6):
  - Agfa G648c (Glycol based): general fountain for all dampening units
  - Agfa G671c (Glycerine based): older formula & only for small presses.
- Concentration: depends on application, ink, press, paper, but we advice to use  
**G648c : 1 till max. 5%**
  - Start low; you can always concentrate.
- Not every aluminium fountain is compatibe with SiO<sub>2</sub> fountains !
  - ! Some fountains for aluminium plates work well with Setprint Plus !

### Anti toning: G641AD

- Contains SiO<sub>2</sub> (silica): Toning appears when there is too much ink and too little water on the plate / Silica attracts water and recover the ink / water balance use max: 10ml/l

### Starter solution: G5900b

- Improves the hydrofobic capacity of the plate (ink acceptivity) and stimulates the smooth interaction between ink / water which results in a better ink up & roll up

# Setprint Plus



## Troubleshooting

## Background toning

### At start-up

- Plate is not wet enough before you start printing:
  - moisten by hand
  - let dampening rollers make contact for more revolutions before you start
- Add more SiO<sub>2</sub> fountain
- Fountain solution is not compatible with the plate or pH too high (norm= 5,5 à 6,5)

### During the run (> 500 copies)

- Plate needs more water
- Fountain solution is not compatible with the plate
- Plate is underexposed
- The printing ink is emulsified

## Poor Ink acceptance / Short run

### No or slow ink acceptance

- Underdevelopment (too cold / too fast)
- Plate not stored properly
- If the image is grey and unsharp, the cause is underexposure
- Fountain too strong (image is blinded by too high amount of fountain) or pH too low

### Low Runlength

- Plate is overexposed
- Pressure between plate and blanket cylinder is too high
- Plate is coming out of the clamps

## Streaks and scratches

### Streaks

- Verify development time, temperature, chemistry level, replenishment bottles,...
- Verify if the entry rollers of the activator section are dry
- Are the exit rollers free of chemistry
- Check if there is no pre-development
  - ! In an online configuration this could be caused before the entry rollers !

### Scratches

- Are all rollers free of dirt or chemical deposit ?
- Are all guides checked and in the correct position ?
- Rotate a plate 90° and put through the processor:
  - if scratches turn 90°, the cause is not the processor !

Also check material transport in imagesetter or check the take-up cassette

## Exposure

### Overexposure

- Gives almost the same picture as correct exposure
- Will result in low run length: the small dots (<5%) will disappear soon because they are almost invisible on the plate.

### Underexposure

- Wavy pattern in the plate background
- Unsharp image (only if far underexposed)
- Density of background too low
- Results in background toning if extremely underexposed

## Under- and over development

### **Over-development: temperature too high / time too long**

- Silver image becomes uneven
- Chemistry will exhaust faster.

This leads to problems during printing: background toning, poor ink-up, unevenness, low runlength

### **Under-development: temperature too low / time too short**

- Silver image gets fainter with lower Dmin.

Problems during printing are background toning, poor ink-up, low runlength

## Chemistry

### Exhausted chemistry

- Image will turn to yellow-silver instead of bluish-silver
- Dmax (density of the background) will decrease
- Wavy pattern in the background; flow of the chemistry will be visible (swirl marks)
- Results in poor ink acceptance and background toning

### Pre-development

- Causes streaks in the background with a lower density
- Results in streaks that will show up on the printed result

## Processor parameters

### Temperature

- Verify the temperature with a thermometer. Do not always rely on displays.

### pH

- Measure the pH in the processor and the replenishment tanks.
- pH of the activator <12 is unacceptable
- pH of the stabiliser >7 is unacceptable

### Replenishment

- Check replenishment rates :120 cc/m<sup>2</sup>

### Cleaning

- Regularly check all tanks and racks for chemical and sludge build-up.
- It's recommended to rebatch all chemistry and clean the unit every three to four weeks. This is dependent on the type of processor and on the material throughput.

# Setprint Plus



## Complaint handling

What do we need ?

### Label details

- Batch number: 71395018
- Article Number: 366P4
- Cutting No: 697 / E / 038



Import all information & decent problem description into our Powerhelp system  
Remark: One bad roll does not mean complete batch is bad.