

Halftone Calibration

The Glunz & Jensen PlateWriter series is supplied with a sophisticated halftone calibration system to insure consistent halftone output.

The halftone calibration of an output device, such as a CTP device is referred to as linearization. When linearizing a CTP system, the rate at which halftone levels transition from white to black is redefined. This enables you to compensate for dot gain created by your printing press or from the varying amounts of dot gain which also can be attributed to different paper stock and ink combinations.

After linearization, your halftone output matches your computer application's specified halftone scale; or put in a different way; "when the press and the application's halftone scales are graphed, they form a straight line from white (0%) to black (100%). For example, if a 40% screen is specified in an application, a 40% screen is produced by the printing plate on press.

After linearization, for CMYK work you may wish to add back in "conventional Industry standard" dot gain - such as defined by Fogra or Gracol.

The Glunz & Jensen PlateWriter systems provide two solutions for adjusting your output to compensate for dot gain and to apply industry standard printing calibrations.

Firstly, each PlateWriter is supplied with a predefined press linearization curve to use for applying a linearization on the plate for your press.

Then there are a further 6 pre-built halftone compensations curves (programmed at Glunz & Jensen by development engineers). Any one of the 6 predetermined settings enables print shops or in-plants with no access to sophisticated densitometers the means of easily correcting and compensating their halftones in the event that the standard press-linearization curve does not give the desired result. The halftone compensation curves can easily be changed on the PlateWriter's through the RIP in a simple popup dialogue box. The available curves are shown in Figure1.

The final output is the proof of halftone correction. Figure 2 represents a halftone image before halftone correction, figure 3 after halftone correction.

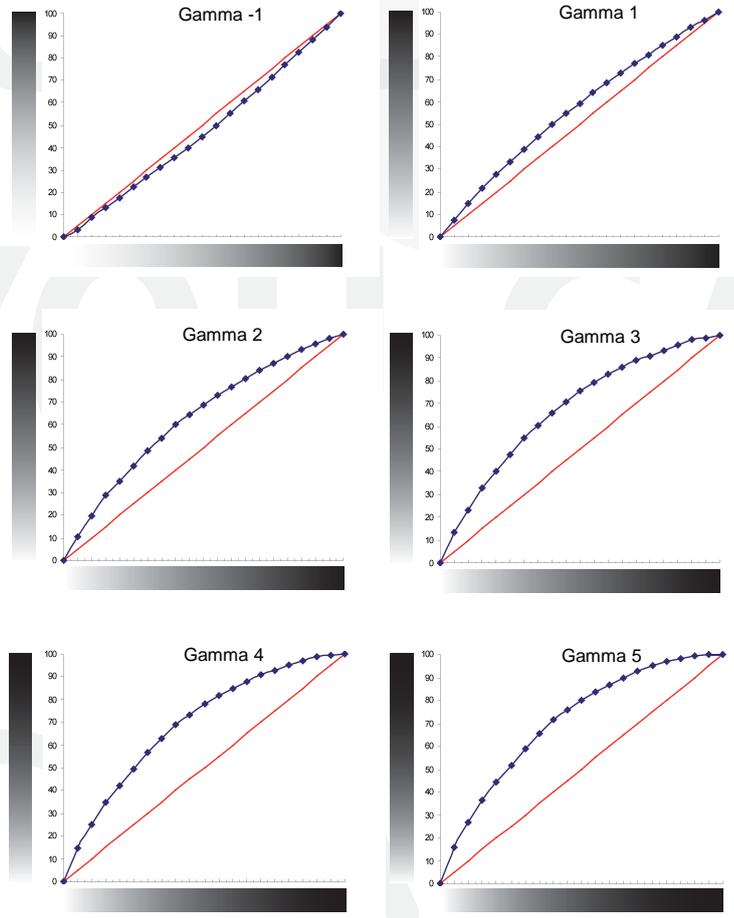


Figure1.

- Gamma -1: Lightens Press Linearised images
- Gamma 1: Applies a little gain for stronger images (Ideal for Spot colour work)
- Gamma 2: Default - European styled images
- Gamma 3: Stronger punch in images (US)
- Gamma 4: Heavy gain
- Gamma 5: Extra heavy gain



Figure 2



Figure 3

Halftone Calibration (Continued)

Choosing one of the pre-defined calibration curves made easy !

As many users do not have access to a densitometer we wanted to make selecting the right output from your iCTP device easy for you.

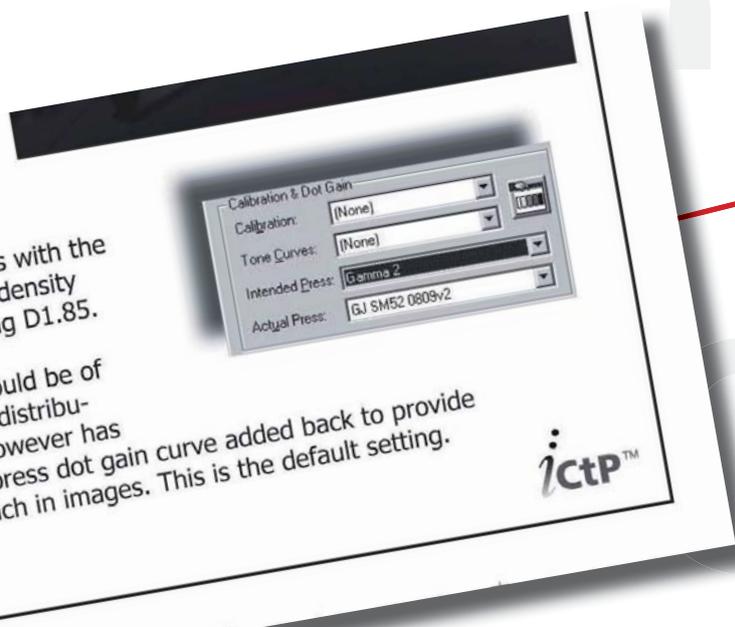
So, once you receive your Glunz & Jensen PlateWriter, you will find 2 jobs already RIP'ed for you and sitting in your RIP's output queue ready for you to print.

Simply set the Page size to the size of your plates, and output to your iCTP device.

Then, put the plate on press, run up your ink densities and take a look at the press sheets.

One job is Monochrome, to help you identify the best settings for your Mono / Spot colour work.

The second is 4 colours CMYK.



Each press sheet contains the 6 targets, each imaged with one of the 6 pre-built halftone compensations curves (programmed at Glunz & Jensen by development engineers).

Under each target is a screen shot of which calibration curves were used to achieve the result, and what the RIP settings should be.

In most cases one of the targets will meet your output requirements, but of course for advanced users or those seeking the ultimate accuracy through fingerprinting their press, then this is available by using the advanced densitometer support which is also included with your iCTP PlateWriter.

Please see the iCTP PlateWriter WhitePaper on Densitometer support

Advanced Densitometer support

However, for advanced users or printshops/in-plant printers with access to densitometers. The ultimate accuracy from your Glunz & Jensen PlateWriter system is available through the sophisticated Harlequin RIP calibration system which combined with the iCtP PlateWriter, enables users to fingerprint their own press / paper and ink combinations, then build their own Halftone Calibration curves through the use of a densitometer.

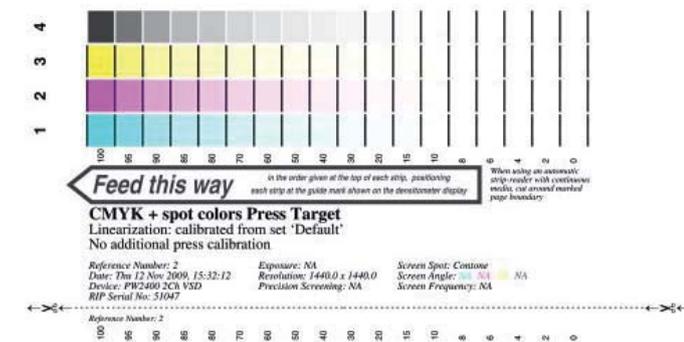
Presses can then be matched to industry standards, or existing printed matter can be used to create “target” or “Intended” output calibrations.

Further more tone curves can be added to warm or cool colours. The level of sophistication provided is unmatched, providing iCtP users with complete control over their colour output.

How does iCtP’s advanced densitometer support work?

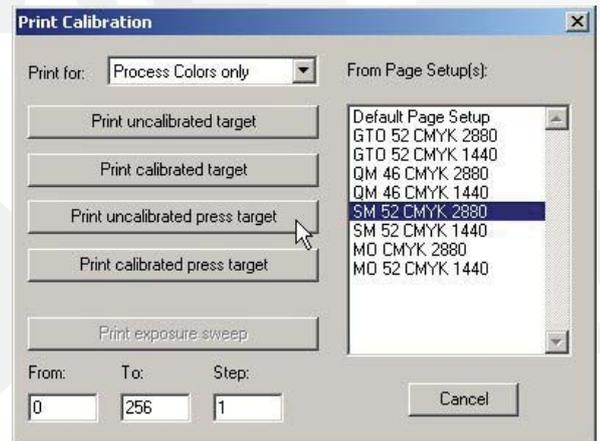
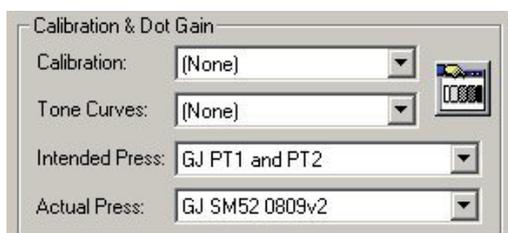
Using the advanced calibration system, you first need to determine your current output and provide a linearization. This can be done in two stages, first by linearizing the plate and then the press. Or you can simplify things by going straight to linearising your press.

To calibrate the PlateWriter to your own press, ink, paper combinations, a test plate is imaged using the iCtP RIP’s calibration manager. This test plate contains a series of halftone patches of ranging values.



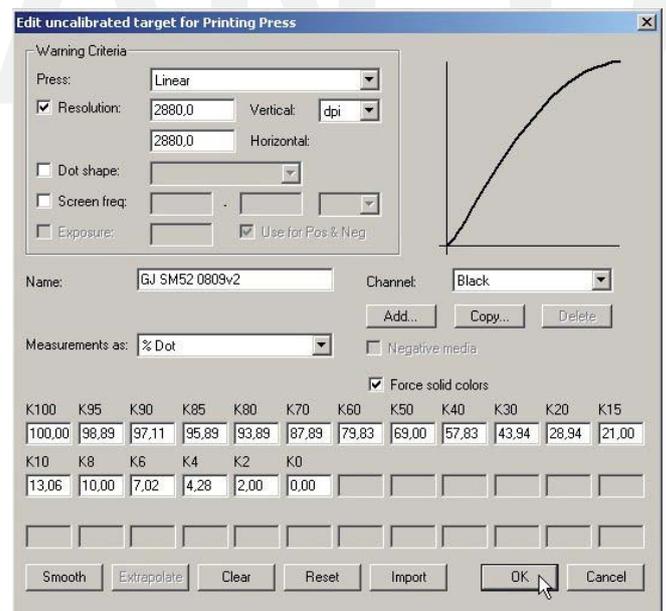
However it doesn't stop there. You can even match another printing press, or a specific printing standard. If you wish to match your existing output from your press - Hard copy originals / press sheets are used, The originals act as the “Target”, this creates a reference point that your system will match - referred to as the “Intended Press”. This information is measured in the same way as detailed above, then entered into the RIP Calibration manager window and saved as an Intended output curve.

Since multiple calibration curves can be stored, a variety of calibration curves can be created to match your printing environment changes.



A densitometer is then used to measure the dot area percentage of these patches. The patch numbers that correspond with the desired dot percentages are entered in the Calibration Data Entry Window in the PlateWriter RIP.

Once all of the data is entered, a calibration curve is created and saved to your RIP. This custom curve can then be used at imaging time to generate accurate halftone output on the media calibrated.



Rest assured, whether it is different media, ink, or changes in the press itself, your Glunz & Jensen PlateWriter can be fine tuned to produce the perfect output.