C6500/C6501/C5500/C5501 tips

This is a guide with a few hints and tips to get around some problems on the C6500 engine from Konica Minolta.

This guide is not created by or published for Konica Minolta. This is just a few pointers that I have found along the way servicing this machine on a regular basis.

I offer no warranty or liability for any information in this book. Basically if you follow something in this book and it effects your business or warranty of your machine I am not liable for damages. If you don't agree with this then don't read any further.

Contents of this book depend on the 'Process adjustment' setting being available on your machine. This might not be available in all regions. So if you don't recognise some screen shots in this book this has probably not been enabled.

Please don't contact me with regards to getting firmware, software or hardware as I can not supply any of these to you.

This book has not been designed for print to keep file size to a minimum.

Did someone give you this book? email me at u8ertech@gmail.com to get free updates

Jams from PF UNIT 16-10

The 16-10 jam code is activated by the double feed paper sensor. This sensor obviously stops the machine when it detects multiple sheets fed at once or maybe you are feeding envelopes. This feature can be turned off in the admin menu.

Utility

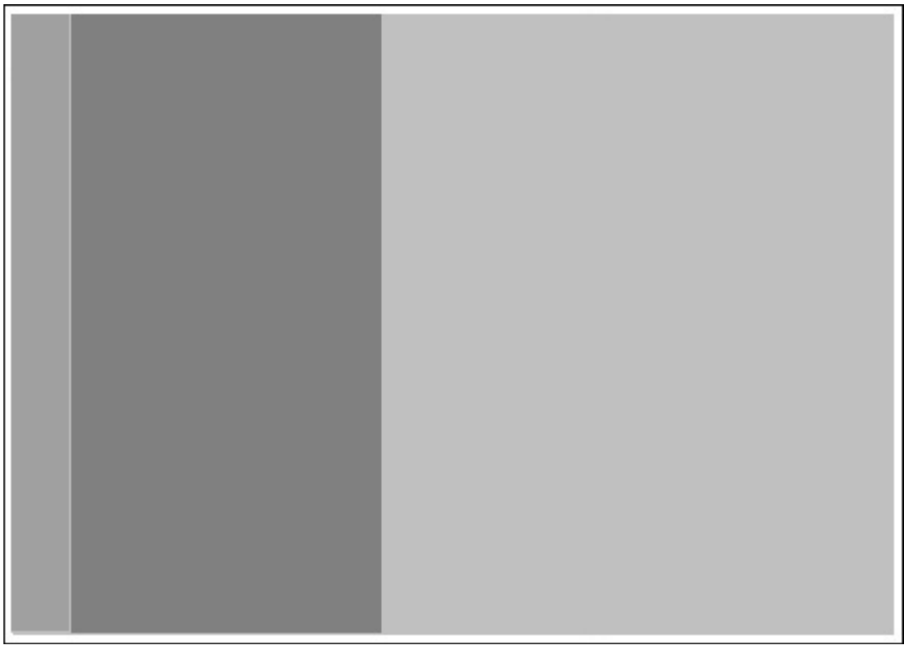
Machine Admin

Common Setting

Double feed sensor 'off'

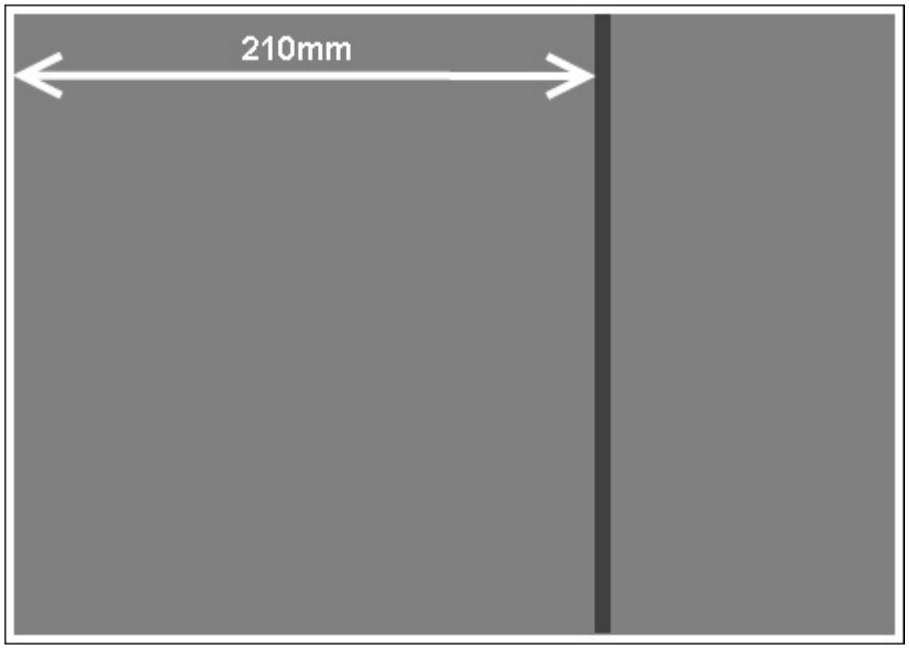
If this mode is not available your engine firmware is out of date.

Banding



This mainly happens on heavy stocks. An unusual dark banding an about a inch wide from the lead edge and another halfway across the page. This seems to be humidity related. To cure this adjust the separtion DC front back setting to a negative value.

Black band 210 mm



To prevent a black band from appearing when printing on thick stocks in b&w mode turn on thick black mode.

Utility

Machine Admin

Common Setting

Thick BK mode 'on'

If this mode is not available your engine firmware is out of date.

Activate DOT2 Screen

DOT2 screen is a much coarser screen than DOT1 and LINE1. For most situations you would probably use DOT1 or LINE1 but when faced with flat halftone that the engine may struggle with DOT2 screen will produce an excellent result. By default this is not activated in the machine.

Utility/Counter

Machine admin setting

System setting

Expert Adjustment

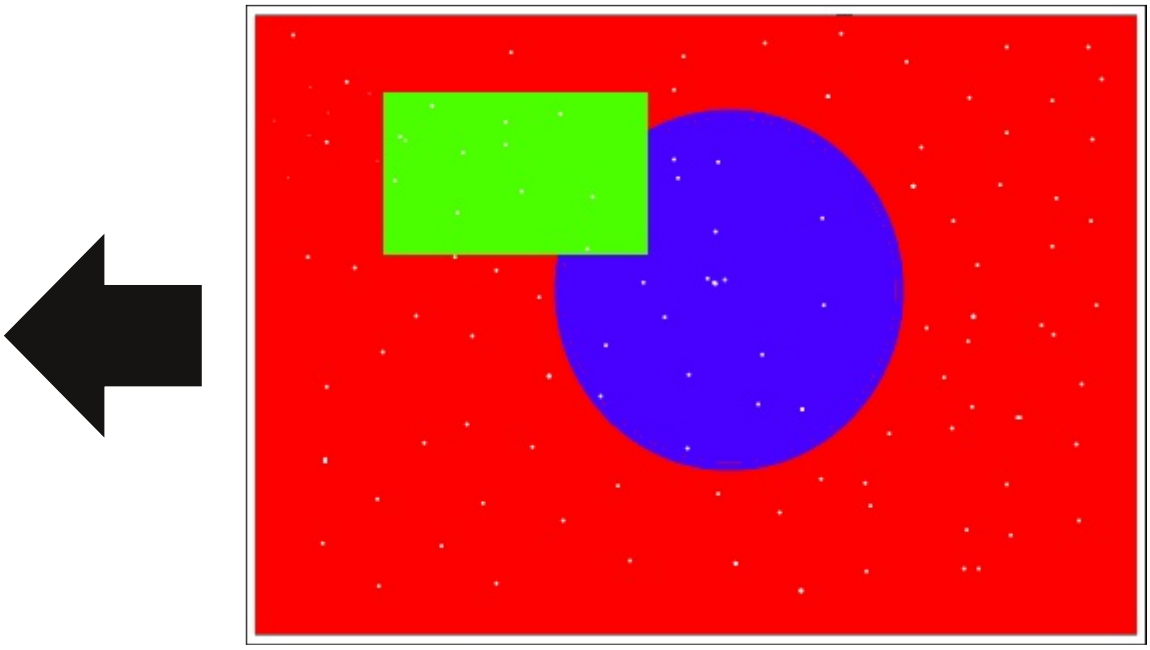
Quality Adjustment

Custom Screen

Set Dot pattern to TYPE2

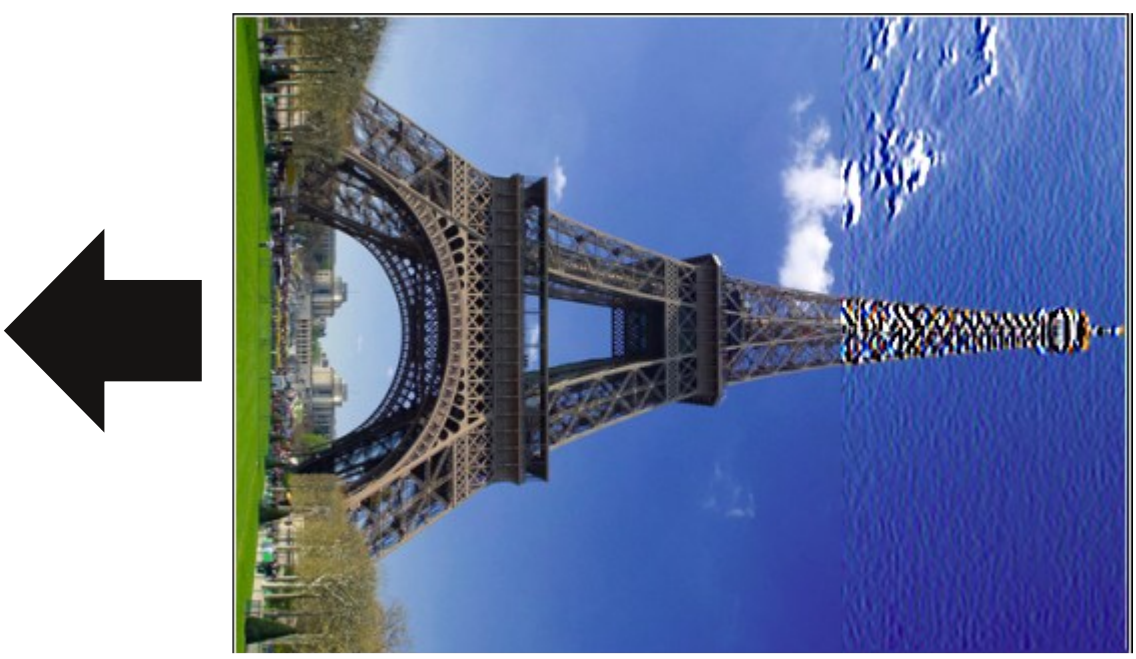
DOT1 and LINE1 screen are not affected by this change. You will have to chose DOT2 from your RIP to notice any difference.

White dots in solids



On some stocks white dots might appear in solid areas, this may only effect one side of the print. To avoid this adjust the 2nd transfer offset adjustment for each side until the effect disappears.

Unusual judders bluring

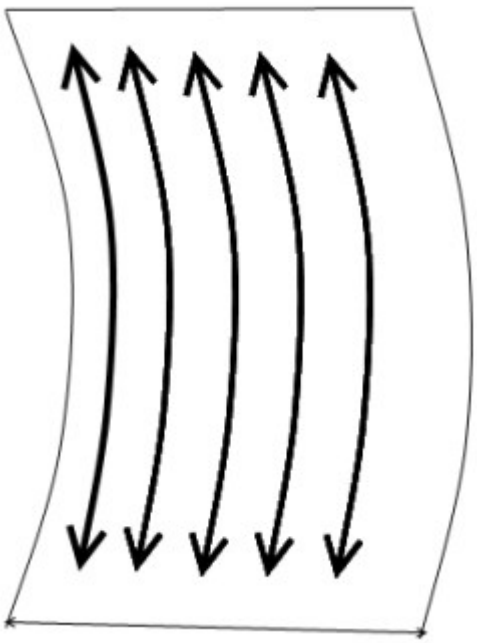


Unusual judders, blurs or streaks on the last third of a page usually means the stock is of the wrong grain. Current generation digital machines require heavy stocks be short grain for the best result. On the c6500 this means any stock over 200gsm. Stocks under 200gsm should be long grain.

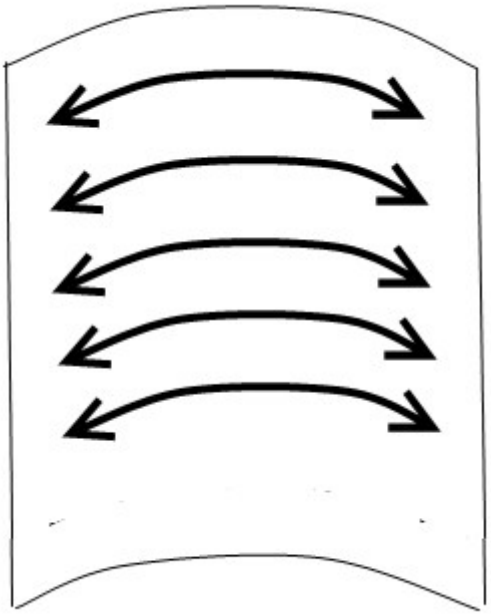
Short Grain

EASY to bend

HARD to bend



Feed direction

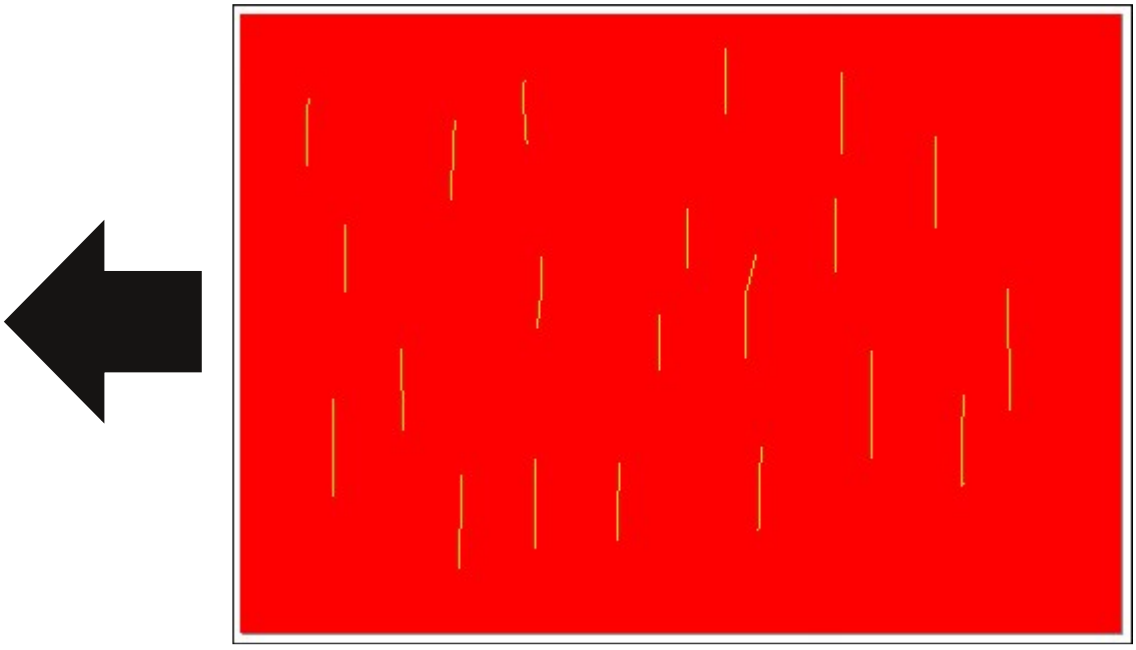


Long grain

HARD to bend

EASY to bend

Thin lines in solid colours



When printing at maximum density for example 100% Magenta and 100% Yellow you might see some random deletions or lines on the print. This is usually worse in an extremely dry enviroment. Adjust the front back density to counter this.

Utility/Counter

Machine admin setting

Expert Adjustment

Front/Back Density

Adjust affected colour +ve

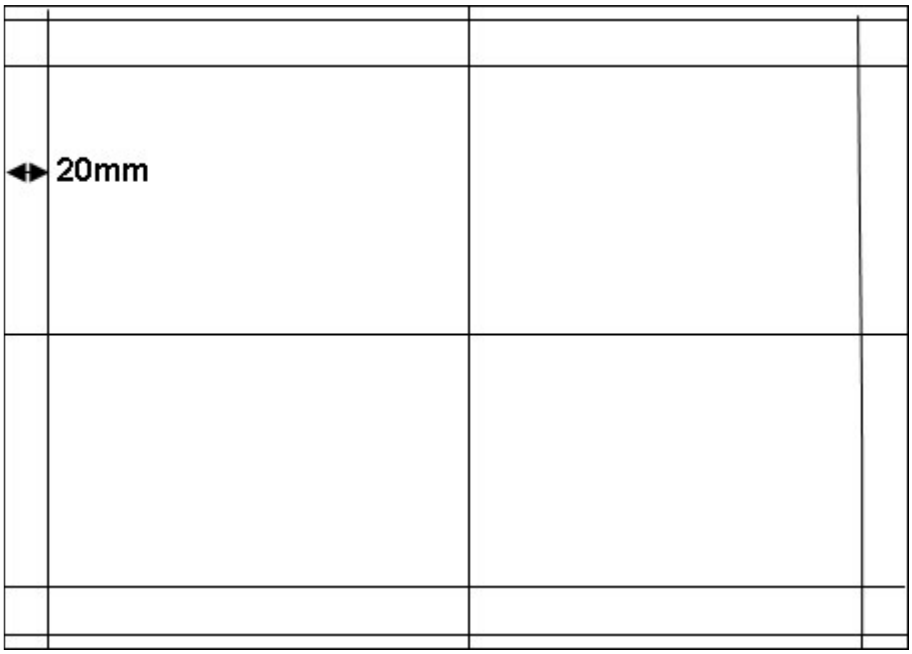
Registration

The c6500 has excellent registration. However it is only as good as the operator and the accuracy of your stock. If your stock is not cut square or is under/oversize then you have no chance of having good registration.

Adjusting registration

Before attempting to get good registration you need to make sure that the machine is printing within it's own specification first. Fortunately this is easy to adjust via the adjustment screen. It is important to get this correct first, as it is the foundation of good registration.

The 'Machine Screen' of your engine has an 'adjustment' button, press this and enter 'Machine adjustment' then 'restart timing'. This adjustment alters where the image starts to print on the page. Press copy on the top left of the screen and print off the test chart for a tray. Press utility to return to the adjustment screen. The adjustment chart is a set of lines that represent certain key timings within the machine. The key mark for this adjustment is the first line that runs parallel to the lead edge of the print. This must be 20mm from the edge of the paper. Perform for each tray.



The next adjustment is the centering adjustment. Exit the restart timing adjustment and enter the centering adjustment. Print the same chart again and adjust so the chart is perfectly in the centre on the sheet.

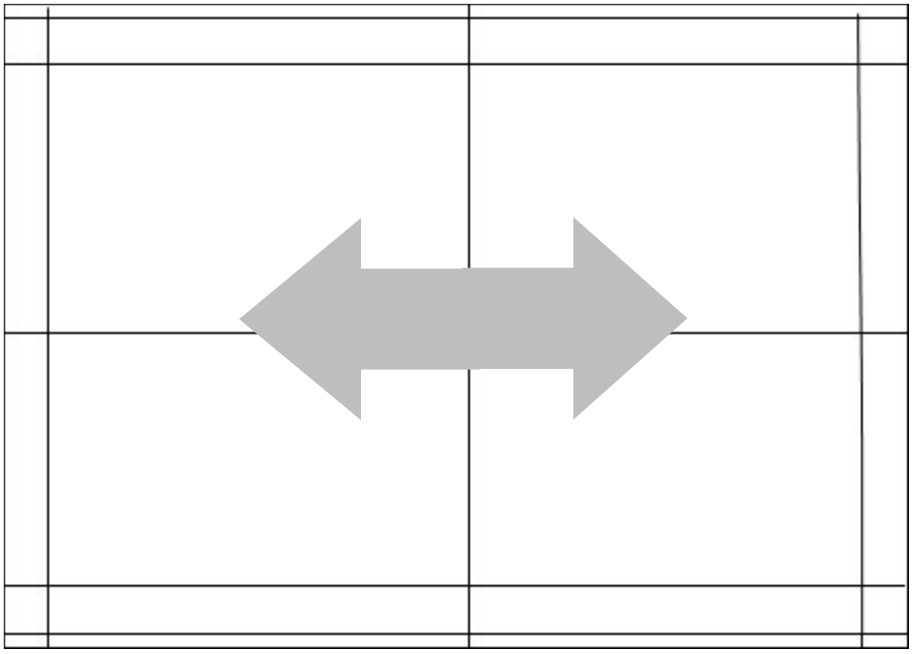
If you have performed this adjust correctly what ever you print to the adjusted tray should now be in registration.

You can now test your registration. Print the chart again multiple times and make sure that the restart timing does not alter (image does not move) and the image also stays in the center of the sheet.

Registration cont'd

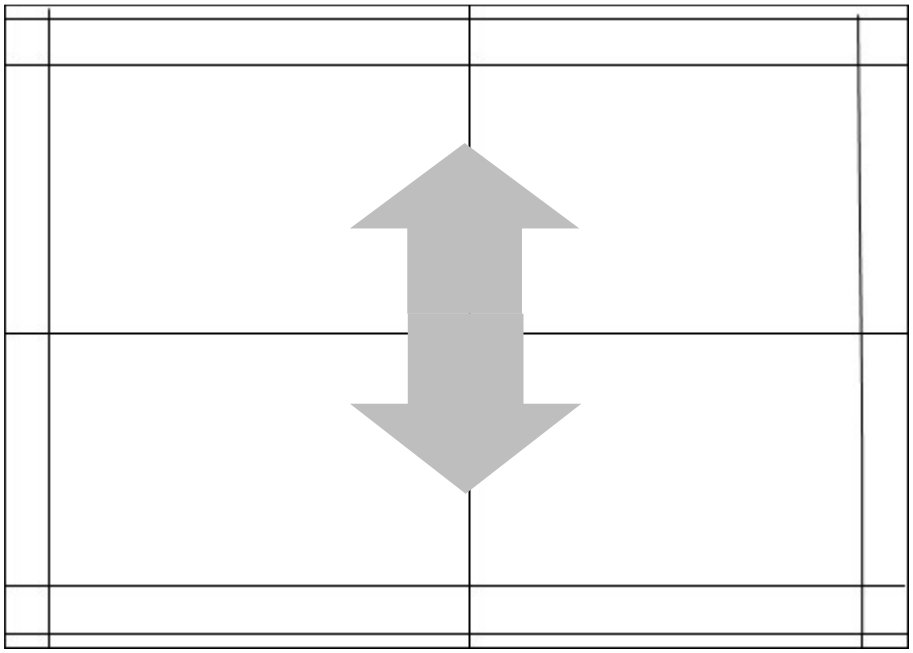
Should you find the registration moves there a few things to check or get checked.

Movement left to right.



The c6500 uses a loop system to insure good registration. This is made up of a large rubber roller and steel roller pressed against each other using springs. From the factory these springs are set to the lightest setting. At this setting the registration is not 100% effective especially on heavy stocks. There is no way of visually telling if the springs have been adjusted without disassembling the reg unit. If you have found after preforming the restart timing adjustment that the registration wanders more than 1mm you should probably have the unit checked out. This adjustment does not appear to be common knowledge. However even with this tension increased some stocks may wander but this is pretty uncommon.

Movement up and down



Registration cont'd

Up and down movement is probably the most common registration problem I hear of. If you are using a PF unit or LCT you probably strike this more often than someone that just uses a bypass tray or drawers. This is because the bulk feed units are equipped with a highly sensitive edge detection sensor to measure the edge of the fed sheet. If you have set you machine up correctly then you can expect perfect registration from these trays, unfortunately they are not tolerant to incorrect paper size of sloppy paper guide setting. So if you are having movement from a bulk tray usually within the region of 3-6mm run by the following checklist.

1. The paper guides are set correctly. Front and rear guides MUST be set to EXACTLY the same setting. DO NOT move only one guide.

2. The paper size you have set in the machine is actually the paper size you put in the machine. This may sound a bit obvious but people who cut down paper from larger sheets tend to be a bit trigger happy when it comes to trimming paper. If you have SRA3 paper set in the machine and your paper is actually 319x449 then expect registration problems, set as a custom size on the machine.

3. On the PF unit use the blue dial on the left hand side of the tray to set your paper guides correctly.

4. Perform the restart timing and centering adjustment.

5. Remove the paper from the tray and move each guide to a smaller size marked on the tray for example A5, do both guides reach the same mark by themselves? If not then the guides have almost certainly jumped a tooth and are out of sync with each other. Call a tech.

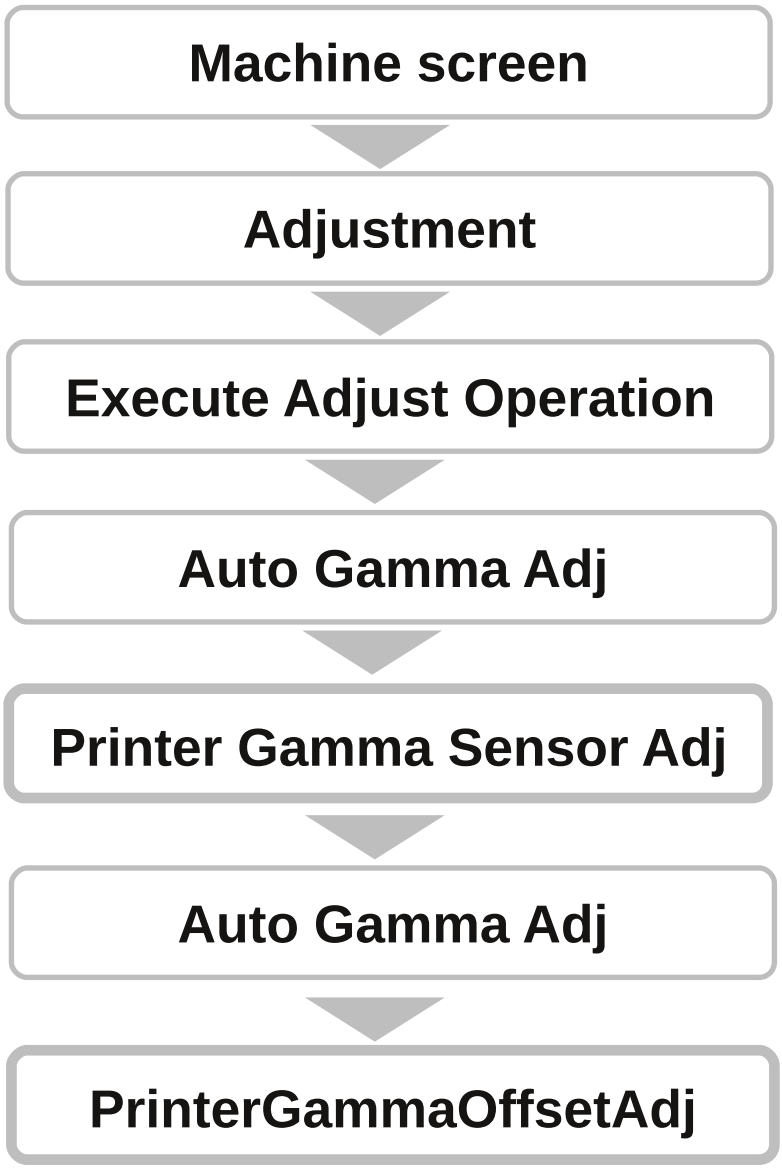
This does not mean that the bypass tray or drawers are more accurate, you will find these will wander (within specification) where as the PF or LU with stay completely static if you set the machine correctly.

One out of four cropmarks does not line up

This can be pretty common on lighter stocks especially when the stock is damp. The problem is the paper is stretching or shrinking on one side as it goes through the fuser. This is a characteristic of paper and you need to go back to the tree it came from to complain. However the c6500 has a built in feature to combat this called ‘Chart adjust’. Select a tray and then tray adjust, on this screen you will see a ‘chart adjustment’. This may seem a bit daunting to start with so you may want your tech to talk you through it. Effectively the engine will skew the image slighly to counter your problem, this only needs to be performed on the stock once as you can then store it in the engines paper catalogue to be recalled for later use. One thing to remember is that you are performing this adjustment on a low coverage print. If the sheet is soaked in toner then the crops may alter slightly but this adjustment gives you a good springboard.

Print quality setup procedure

There a few quality setup procedures you can perform. Singularly they will give you some benefit but if you perform all the procedures in the correct order you will get the most gains. Below is the procedure I use to setup a machine after a service.

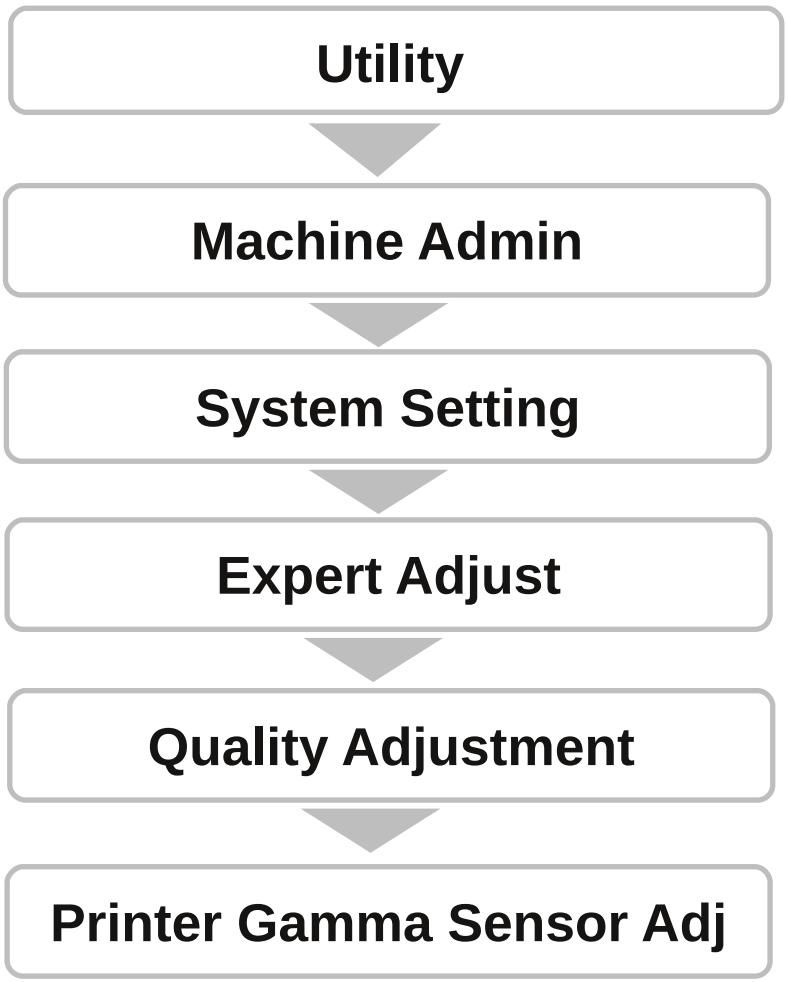


Printer Gamma Sensor Adj and PrinterGammaOffsetAdj are explained in this handbook. The second Auto Gamma Adj is just a repeat of the first Auto Gamma Adj.

Your next question is how often should I do this? Personally as an operator I would do this at least once a week, maybe every Monday morning. Also if I found a colour inconsistency.

Dmax Adjustment

The following procedure will make sure you are getting maximum density and colour balance from your machine.

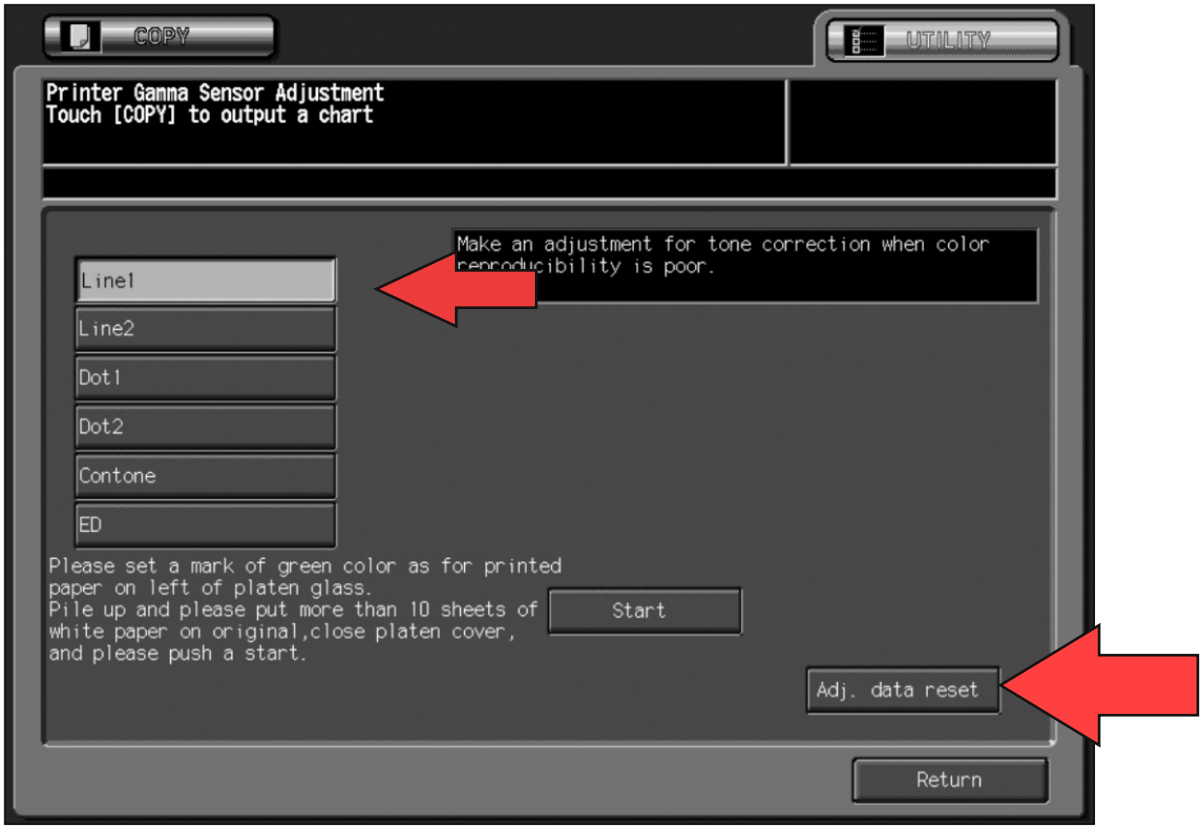


NOTE: There a few adjustments you can make in the quality adjustment screen. Don't be tempted! Only perform the adjustments that I recommend unless advised by your vendor.

Dmax Adjustment cont

Before starting the procedure you need to reset the current settings within the machine. If you don't do this the machine will make it's new readings based on the previous readings which may or may not have been correct.

Step 1. Select each screen then touch Adj. data reset. contone may not be available.

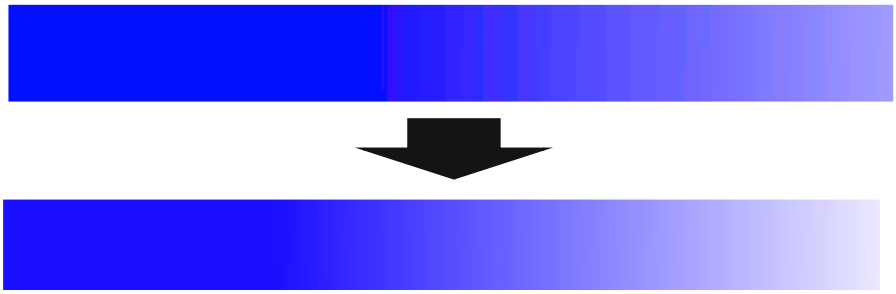


Step 2. Select line 1, select copy, print out the test chart on letter/a4 and place the test chart on the scanner glass with the green arrow to the left, place 10 sheets of paper behind the print and close the glass.

Step 3. Press utility to return you to the adjustment screen and press start. The machine should scan the chart and make a quick adjustment,

Step 4. Repeat steps 2 and 3 but select a different screen.

Smoother Gradations



Gradations can sometimes print a bit blocky or not as smooth as they appear on your screen. This can sometimes be down to the source file not being created particularly well or the RIP not processing the image efficiently.

This can also happen if the gamma offsets in the engine are not tuned correctly. The gamma offsets dictate the laser power when writing the image to the drums. Ultimately these need to be even and set to the correct level to give the rip the maximum spectrum of colour to print with. You can tune the offsets yourself in expert adjustment.

Utility

Machine Admin

System Setting

Expert Adjust

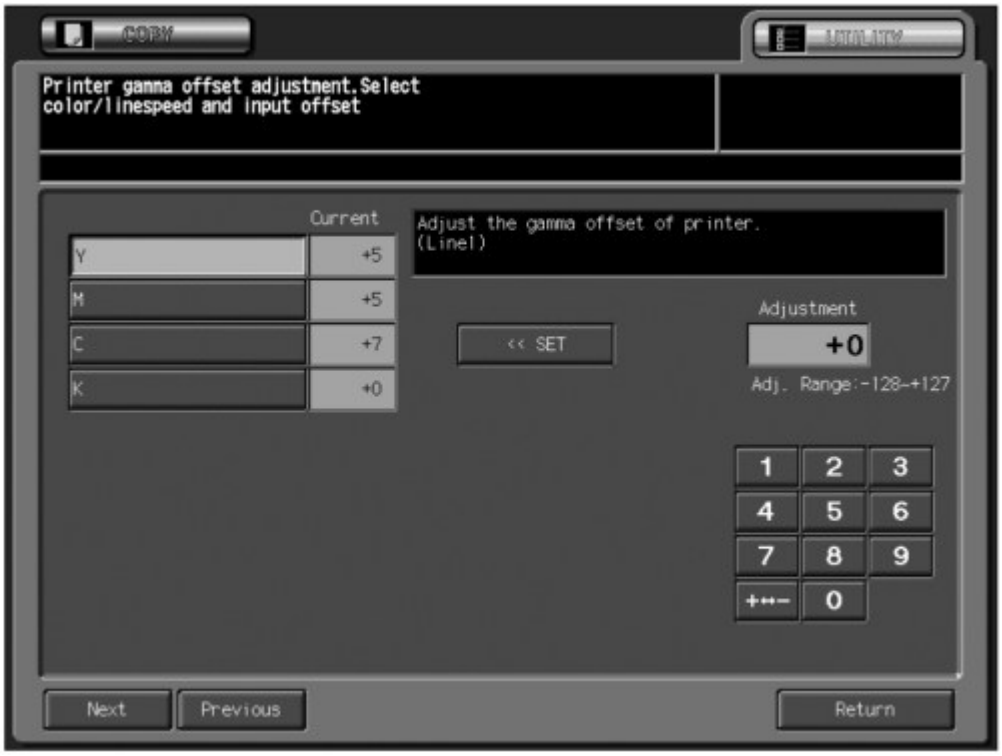
Quality Adjustment

PrinterGammaOffsetAdj

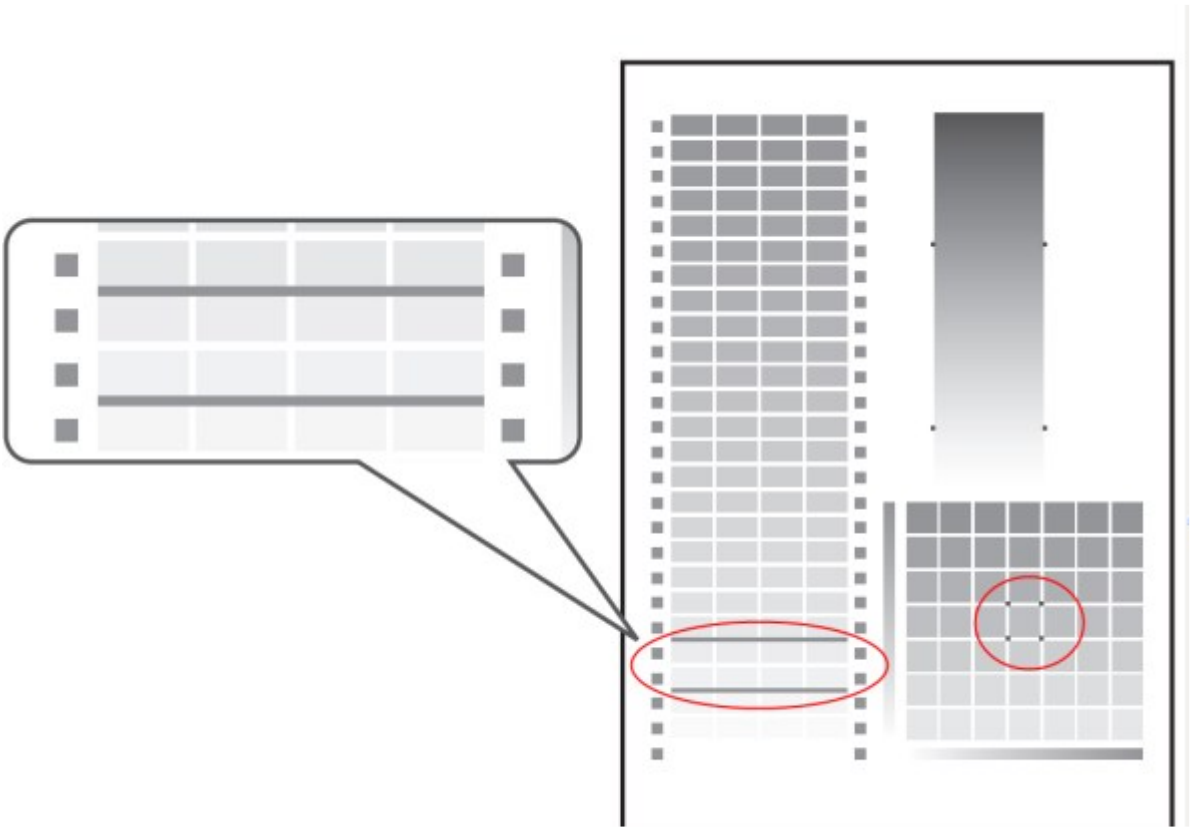
NOTE: Perform an auto gamma before attempting this adjustment.

Smoother Gradations cont

On this screen you are presented with a setting for each colour. Keep in mind that you need to adjust this for each screen you are using i.e DOT1, DOT2, LINE1, LINE2 the example screen below is adjusting LINE1.



Press ‘COPY’ on the top left of the screen and press start, the engine should produce a test chart similar to below

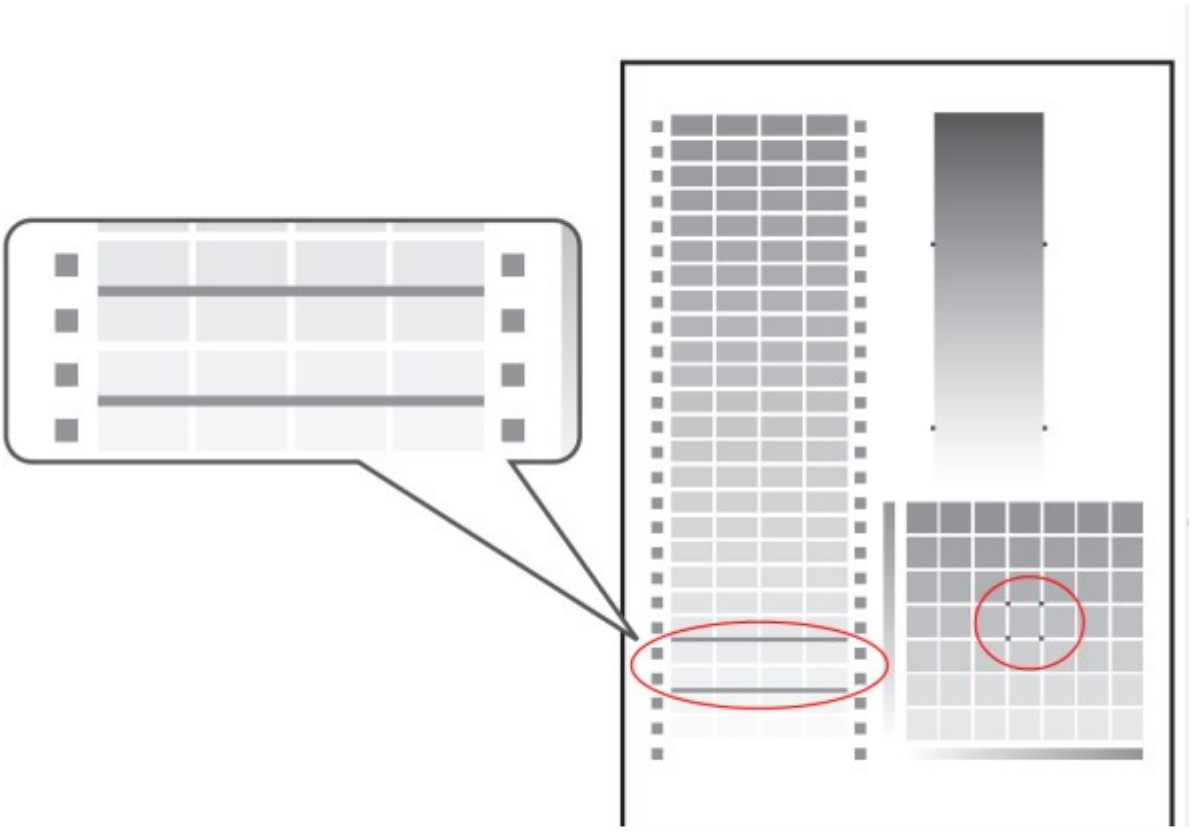


Smoother Gradations cont

The goal here is to get the colour steps between the two parallel lines and just slightly over, the critical part being that they are all even. Think of this setting as how broad a spectrum of colours your machine has to print with, the further away from the parallel lines the more compressed the colour space.

Adjust this by touching utility on the top right of the copy screen and adjust the values by selecting a colour, entering a value and pressing set. Press copy again and print another chart to see the difference. Repeat until you have offsets at the correct level. You should not have to adjust this much more than say +-10 or +-15.

The other reference mark is in the center of the 7x7 colour squares, The center square should be as neutral a colour as you can achieve. This can be a bit of a balancing act trying to get this neutral and the offsets at the correct level. If you find you need to chose one or the other to be correct chose the offsets.



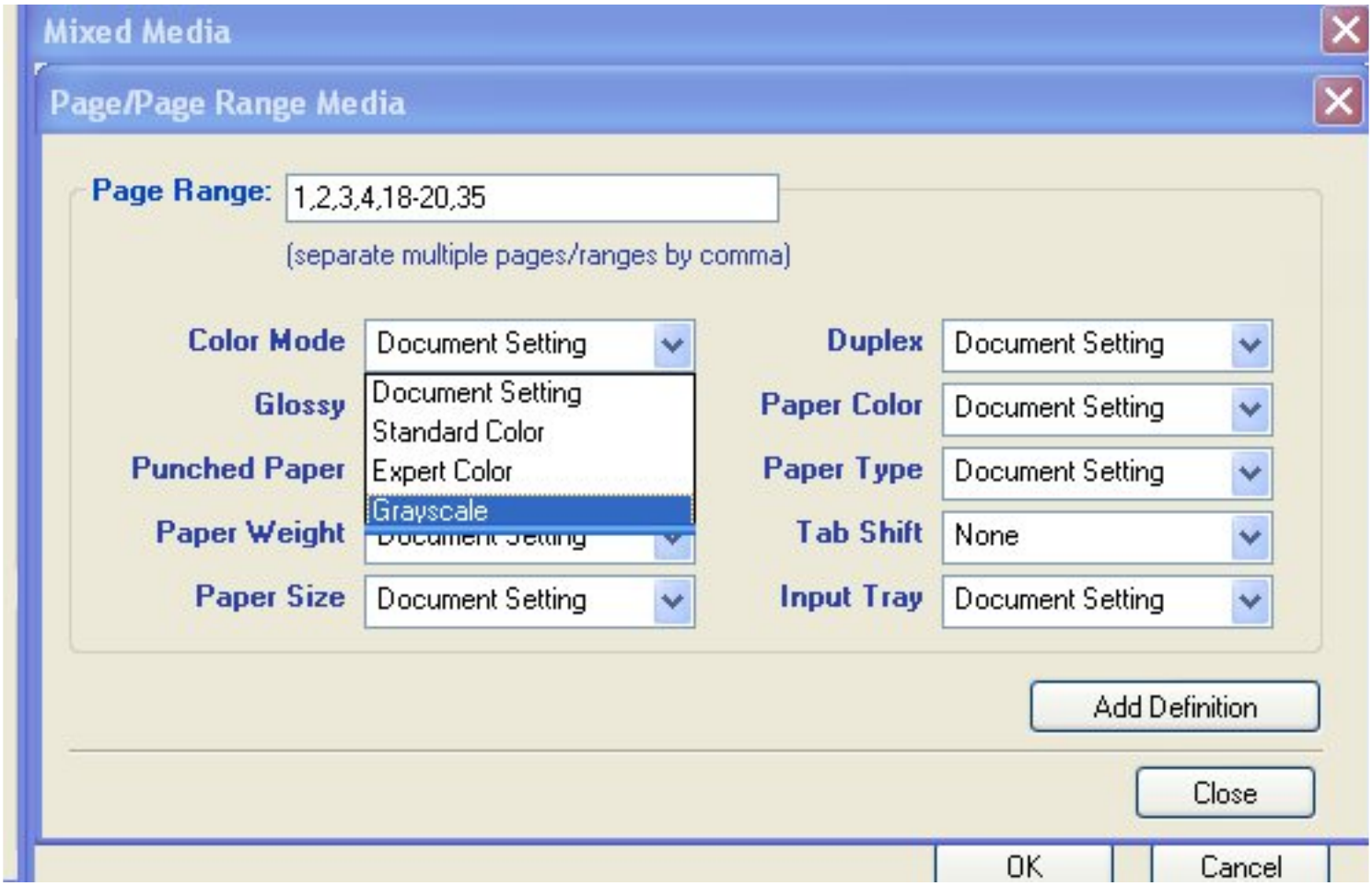
Once you have performed this adjustment do a calibration. The machine will perform an auto gamma at calibration time which may alter the offsets, this is completely normal. Unless the offsets have changed dramatically I wouldn't adjust them again.

You should try this adjustment when gradations are not smooth or you find halftones are not well balanced or have a colour bias.

Force b&w mode.

Some files can appear to be black and white but actually contain colour. This colour could be hidden in crop marks or even one dot on the page. Also applications like Word work in RGB so what may seem to be grey will actually be RGB grey or colour. To avoid nasty surprises at the end of the run you can force pages to print b&w whether they contain colour or not.

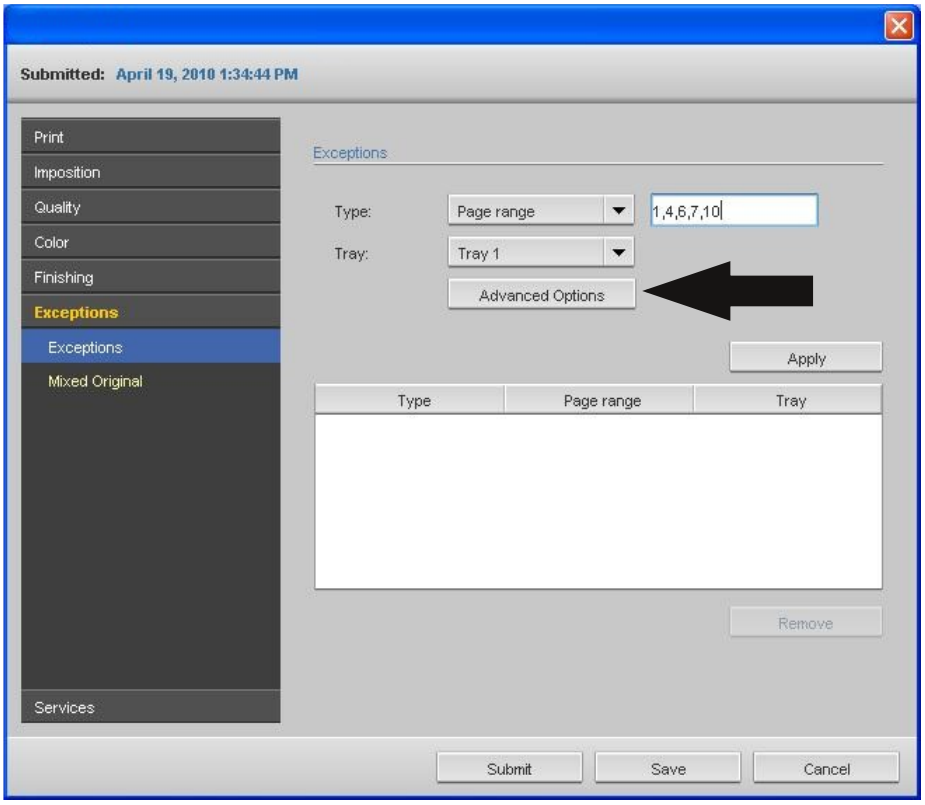
IC303/IC305/IC408



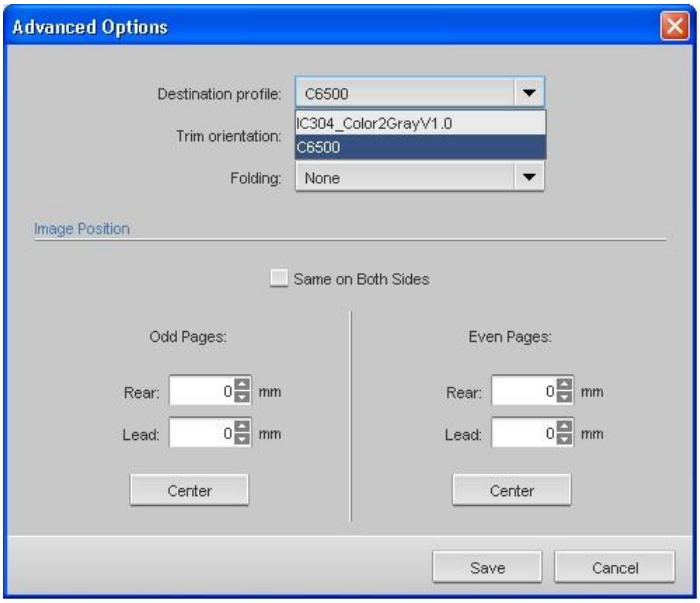
Under mixed media there is an option to select the colour mode. Enter your pages numbers and apply.

Force b&w mode cont.

IC304/IC304+ (Version 2.1)



In the job properties select exceptions and enter a page range then select Advanced Options



In Destination profile chose the 'color2gray' profile and save, This profile is NOT standard at install so you may have to ask your vendor to install it for you.