

HQ Mortsel **Operator Manual** :Anapurna Mw **Document History Review Date Document Version** Changes April 6, 2010 Version 1.2



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2 Related Documents

- ⇒ How to Calibrate the :Anapurna MW
- ⇒ How to Shut Down Start up the :Anapurna MW
- ⇒ How to Maintain the :Anapurna MW
- ⇒ How to handle Media on the :Anapurna MW
- ⇒ Working with the Wasatch SoftRIP

3 Introduction

Congratulations on your purchase of the :Anapurna Mw

This UV curable Inkjet printer will print on most materials with a very high quality and quite a number of artistic effect possibilities. Such as:

⇒ Printing consistent colors on colored media.

- ⇒ Enhance the color brightness of the job
- ⇒ Day and Night applications on backlit materials

The :Anapuarna $M_W\,$ is a Hybrid Printer (Flatbed / Roll to Roll) that can handle a maximum output width of 1580 mm.

The :Anapurna M_w has the following features:

- Auto ON-OFF UV Lamp by output signal (Lamp shutter type)
- Auto head height control : Possible to 45mm thickness Media
- ⇒ High quality result via a number of already predefined configurations
 - o ISO / GRACOl High Density Backlit applications
 - o ISO / GRACOl Normal Density applications for non transparent applications
 - o ISO / GRACOL White Ink Applications
- Stable ink supplying system by pressure controller
- ⇒ Adjustable head jetting control
- Auto heating system/Auto ink supplying system/Auto media feeding system / Auto Capping system
- ⇒ Dimensions (L x W x H) 3700mm x 1520mm x 1600mm
- \Rightarrow Weight = 980 Kg

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Agfa strongly recommends to read this Operator manual carefully before operating the :Anapurna M_W . Follow carefully the safety instructions.

For safety reasons, Anapurna M_w requires permanent operator attendance

4 Description of parts

4.1 Front view



4.2 Right view



4.3 Left view



4.4 Rear view



4.5 Top view



5 Safety instructions

Be sure that you follow and understand all the instructions and warnings that are described in this manual when you are using the :Anapurna M_W . Working with an UV printer always implies that you must be aware of the harm that the UV radiation and the UV inks can cause.

5.1 Warning labels

The printer has labels that give simple explanations of operations that require particular care. Read and understand the contents of these labels thoroughly before performing your work.



5.2 Emergency switches

The :Anapurna M_w is equipped with two emergency switches:

one in the front and one in the back, both situated on the right side (home position) of the engine.

In case of emergency, pushing one of these switches will automatically shut down the printer.

The electrical circuit is turned off (lamps are switched off) and any movement of the shuttle will immediately cease.

5.3 Optical safety sensors

The :Anapurna M_W is an industrial inkjet printer with fast moving parts and you must be aware of the risk involved.

The :Anapurna M_W is equipped with optical sensors around the working path of the shuttle. On each of the four corners of the engine, there is a metal tower construction that contains two optical sensor assemblies each.

If the optical light path gets obstructed:

- ⇒ the shuttle will stop at its current position immediately and lifts till its highest position
- ⇒ the lamps will switch OFF
- ⇒ the control panel an error message will appear: "<<SYSTEM ERROR>> Safety Sensor".

In order to reset the :Anapurna Mw

 Press the [ESC] button multiple times. The engine will restart completely.
 Follow the instructions on the screen. (ex [F6] to exit when the system goes trough the service routine to upload new firmware.

When the safety sensor is activated, the print will be canceled and the actual job cannot be restored. After a Safety Error:

- ⇒ Head Gap needs to be performed
- ⇒ The job needs to be resend via AgfaRIP 2000

The safety sensors can be disabled by going into offline mode (press escape) and by pressing CLEANING / IP SET (F4). The F2 function will now show the SAFETY SENSOR function and by hitting F2, you can use the up button to toggle the value on or off and press enter.



CAUTION:

Agfa strongly advises against disabling the safety sensor since this increases the risk of getting your hands or other body parts caught between the moving parts of the engine.

Always make sure that the sensors are activated during production.



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5.4 Wing sensors

The shuttle of the :Anapurna M_W is equipped with wing sensors on both sides . These sensors will make the shuttle stop if any obstruction has been detected. The wing sensors will prevent that the shuttle will run into the media when it is not completely flat or when the head gap was not set properly.

When a wing sensor is activated, the shuttle will immediately stop, the lamps will be turned off and the shuttle will move to its highest position.

Press 'ESC' to reboot the printer.

The current print job will be aborted.

Once re-started, the job needs to be restarted from the beginning.

You can enable/disable the wing sensors in the same menu as the optical sensors settings, discussed above.



5.5 UV light

When working with UV light, the following safety precautions needs to be taken:

- → Avoid direct skin contact
- ⇒ Wear protective glasses when looking in the direction of the UV light.

The UV radiation that is generated when the UV lamps are on, can be harmful. Make sure that no body parts are directly exposed to the radiation. Skin burn and irritation will be the consequence when e.g. your hands have direct contact with the radiation.

Don't look directly into the UV light, this will damage your eye sight. If you need to look in the direction of the UV light, make sure that you wear protective glasses.

Detail of the UV light

UV lamps emit not only ultraviolet light, but also visible light, and wavelengths in the infrared spectrum.

In fact, all lamps emit approximately

- ⇒ 20% ultraviolet light (the part that creates curing is not visible; cold light);
- ⇒ 20% visible light (the inactive part that we see coming out of the lamp houses);
- ⇒ 60% infrared light (also an inactive part that is invisible and generates heat).

Short wavelength UV light exhibits more quantum properties than its visible and infrared counterparts. Ultraviolet light is arbitrarily broken down into three bands, according to its anecdotal effects.

- UV-A is the least harmful and most commonly found type of UV light, because it has the least energy. UV-A light is often called black light. Most photo therapy and tanning booths use UV-A lamps.
- UV-B is typically the most destructive form of UV light, because it has enough energy to damage biological tissues, yet not quite enough to be completely absorbed by the atmosphere. UV-B is known to cause skin cancer.
- Short wavelength UV-C is almost completely absorbed in air within a few hundred meters. When UV-C photons collide with oxygen atoms, the energy exchange causes the formation of ozone. Germicidal UV-C lamps are often used to purify air and water, because of their ability to kill bacteria.

5.6 UV inks

Make sure that you always use following safety measures when working with UV inks:

Wear protective gloves (single-use)

When contacted with skin, wash off immediately

Dispose uncured ink as chemical waste

UV inks are chemical products which contain some additives that can cause dermatitis. Dermatitis is a skin disease that can become irreversible when left untreated. It occurs when a substance penetrates the surface layer of the skin and provokes a reaction from the vulnerable skin beneath. Common symptoms include:

- ⇒ skin redness or soreness;
- \Rightarrow itching;
- \Rightarrow rash;
- ⇒ cracking or peeling.

The most commonly affected parts of the body are the fingers and the webs between the fingers, closely followed by the back of the hands.

It is very important to avoid skin contact with the UV inks. Use splash-resistant gloves when there is a risk of skin contact. Single-use nitrile gloves 0,2mm thick are acceptable. None the less, they only will give a short-term protection. Make sure that you dispose of single-use gloves every time you take them off. If you have skin contact, wash the ink off and rinse the skin with water and soap.

Dispose uncured ink as chemical waste and never mix solvent with UV ink waste. Cured UV ink don't contain any harmful products and can be disposed off as normal waste. If you spill a big puddle of ink, use an absorbent product like saw dust to clean. Little amounts of spilled ink can be cleaned using a cloth. Don't forget to treat the saw dust and cloths as chemical waste (uncured inks).

The shelf life of the :Anapurna M_W Ink:

see the label on the bottle

the expiry date:

➡ Storage:

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- Keep container tightly closed
- o Protect from direct sunlight
- Store on normal room temperature

Curing Process

Water based and solvent based inks will dry by evaporation and/or penetration, leaving the colorants into the media.

UV Curable ink will only harden out if UV light is exposed to the ink layer on the media.

The heat that is generated by the UV lamps do not influence the curing process. On non-absorbing media, this ink layer will lay on top of the substrate. On absorbing media the ink layer will partly penetrate the media, explaining the better adhesion on porous media.

The pigmented particles are dispersed in a monomer. This monomer will stay liquid and sits in a solution together with a photo initiator and synergist.

How does it work?

- ⇒ When UV light is added, the photo initiator will be activated and will create a free radical;
- ⇒ This free radical will be passed onto the synergist;
- From then the synergist will be active and will bind with the monomer;
- Now a chain reaction is started and the monomers will crosslink to each other, causing the ink film to get polymerized. The pigments are captured in this chain.

5.7 Extra information

MSDS-sheets (Material Safety Data Sheets) about Agfa UV inks and the pre-site survey document, explaining the re-commended working and installation conditions, are available through your local reseller and on www.agfa.com.

6 Operator panel



7 Making the first print

7.1 The :Anapurna M_W print Job

The :Anapurna M_W print job consists of 2 sets of files that are generated by the Wasatch SoftRIP.

- A printing file with the actual printer data (*.RTL)
- A Bitmap file to preview the image that will be printed.

In case of a white application, a second (*.RTL) file will be generated for the white.

7.1.1 Requirements to print your first job

A first job can be downloaded from the following location. <u>ftp://ana:purna@gs-ftp.agfa.be/05. Anapurna Mw/01. Operator Manual/MyFirstPrintJob.zip</u>

➡ Media:

Prepare some (rigid) media from 100 x 70 cm

⇒ AgfaRip 2000 M_W to send the print job to the printer

7.2 Starting the :Anapurna M_W

When the White Ink System is active the :Anapurna M_W will be kept on during night and the shuttle will be in its home position. (Go to 7.3)

In case the system was switched OFF overnight, perform the steps below to start the engine.

- Unlock the emergency switches: Turn the button clockwise to Unlock
 The emergency-switches are located at the right side of the engine. One at the back and one in the front.
- → Push the start button;
- ⇒ The :Anapurna M_w will be initialized.
- Press [ENTER] to switch the white system on. (See manual "How to Shut down / Start Up")
- Shuttle will move up / down and checks for its home position.
- ⇒ Operator panel will show the installed Firmware version.
- ⇒ The engine will go in Off line state.
- If necessary adjust the negative pressure for the color inks by turning the valve on the right side of the shuttle.

Make sure that you reach a value of -.037.

The value is displayed on the right side of the shuttle.

If necessary adjust the negative pressure for the white ink by turning the valve on the left side of the shuttle.
Make one that we have a size of a state of the shuttle.

Make sure that you reach a value of -.041. The value is displayed on the left side of the shuttle.

- ⇒ Verify that all the ink valves are set to the "I" position.
- Wait till the engine is completely warmed Up Sub Ink tanks temperature 40 °C, Base plate temperature 45 °C
- Perform a 'Prime' to check the nozzles.

7.3 Adjust the height of the shuttle (Head gap)

- For correct printing, the height of the shuttle must be calibrated according to the thickness of the used media.
 - This is done via the "HEAD GAP" procedure
- Place the Media in the middle of the vacuum transport table under the 2 "Red" dots marked on the shuttle rail
- Switch ON the vacuum
- On the Operator panel Press [CALIB] button and choose [F6] "Head Gap" to set the shuttle to the correct reference height as for the media.
 - Press the left arrow to move the shuttle to the center of the media. (e.g. 3 times)
- When the shuttle is in position, press [ENTER] the shuttle will lower itself to the reference height. This is a default value and is not the same as the actual head height.
- Press [ENTER] a second time to lower the shuttle to the head gap distance
- ⇒ Press [ENTER] a third time to move the shuttle back to the home position.
- ⇒ The "HEAD GAP" procedure is now completed.

7.4 Media placement for printing

For this first print we will not go in detail about the media placement. The different media placement methods will be explained later in this manual.

- ⇒ Lower the media set bar by turning the media set button.
- Place the media against the 'media set bar' and position it in the middle of the vacuum transport table.
- Position the left margin guide to the beginning of the media .
 Read the 'left margin' value from the scale on the inside of the 'media set bar' (Remark: left margin is the start point of the print seen from the Media feed direction.
 When standing in front of the :Anapurna Mw it is on the right side of the 'Media Set Bar')
- ➡ Turn the vacuum on and raise the media set bar (switch the media set button);
- ⇒ On the operator panel select [F6] Parameter and modify the following settings.
 - LEFT MARGIN : set the margin between the left of the media and the print begin.
 Value read from the 'media set bar' scale + a margin.
 Remark: Left margin value is read on the Media set bar ruler. Seen from the back of the engine.
 - NULL POINT :
 - YES to feed back the media from the media set bar position to the first print line position
 - NO to leave the media on its current position.
 - o TOP MARGIN: set the margin between the media begin and the actual print begin
 - Use $\leftarrow \rightarrow$ arrows to navigate through the parameters.
 - Use $\uparrow \downarrow$ arrows to change the value.
 - Press [ENTER] to EXIT with SAVING the modified parameters.
 - Press [ESC] to EXIT the menu without SAVING
- Switch ON the UV Lamps (Full Power)

7.5 Send the print job

A more detailed description on AgfaRip 2000 Mw can be found in Section 9 of this manual.

- \Rightarrow Double click the icon on the desktop to start the AgfaRip 2000 M_W.
- ⇒ Click [Browse] to select the *.rtl file.
- ⇒ If necessary the different modes to be printed can be overruled.
 - UV mode Set to High Normal
 - Print mode

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Select Color

Only the color layer will be printed

Press [Start] to send the file to the :Anapurna Mw.
 On the :Anapurna Mw next to the Operator Panel display, the green LED will start blinking.

D:\Manuals\MyFirstPrintJob_000.bmp	🙅 AgfaRIP 2000 Mw
	AgfaRIP 2000 Mw Color Color File Diffection UV Mode High Normal V Mode High Normal Direction UV Mode High Normal Direction UV Mode High Normal Direction UV Mode Color File Image: Direction UV Mode Color File Direction: Uni Size (mm): 0 White White White White UV Mode V Mode Imagin Direction Size (mm): Direction: Left Margin Imagin Direction: Left Margin Imagin Urite Color File Direction: Left Margin Imagin Direction: Left Margin Imagin
	Status SetUp SetUp SetUp
	Print All O Color O White O C/W Copy 1 Start Cancel Exit

- Press the [ONLINE] button on the Engine The lamps will warm up and the :Anapurna M_w will start printing.
- TIP : From the printed page, the two outer rows of pages can be folded and used as a quick reference guide

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The Print Job can be downloaded from the following location.

ftp://ana:purna@gs-ftp.agfa.be/05. Anapurna Mw/01. Operator Manual/MyFirstWhiteJob.zip

- Media: Prepare some Black rigid media from 100 x 70 cm
- Adjust the height of the shuttle (Head Gap See 7.3)
- ⇒ Place the media for printing)See 7.4)
- ⇒ Double click the icon on the desktop to start the AgfaRip 2000 MW .
- Click [Browse] to select the *.rtl file.
 The white part of the print job will be loaded automatically
- ⇒ If necessary the different modes to be printed can be overruled.
 - UV mode
 - Set to High Normal
 - Double Strike. Each dot will be printed twice enforce the image
 - Print mode
 - Select All
 - The White and color layer will be printed in te same print run

D:\Manuals\MyFirstWhiteJob_000.bmp	🙅 AgfaRIP 2000 Mw
<image/>	Color Color File D:\Manuals\MyFirstWhiteJob_000.rtl UV Mode High Normal Direction BI RIP File Information File Mode : Color File[Double] Size (mm) : 980 × 665 Quality : Q4 Pass (720 × 720) Top Margin (mm) : 0 Direction : Bi Left Margin (mm) : 0 White White White File D:\Manuals\MyFirstWhiteJob_000W.rtl Browse UV Mode High Normal Direction BI RIP File Information Size (mm) : 980 × 665 Color File (mm) : 0
	File Mode : White File[Double] Size (mm) : 980 × 665 Quality : Q4 Pass (720 × 720) Top Margin (mm) : 0 Direction : Bi Left Margin (mm) : 0 Status 100% SetUp SetUp Print SetUp
	● All ○ Color ○ White ○ C/W Copy 1 Start Cancel Exit

- Press [Start] to send the file to the :Anapurna MW .
 On the :Anapurna MW next to the Operator Panel display, the green LED will start blinking.
- Press the [ONLINE] button on the Engine The lamps will warm up and the :Anapurna M_w will start printing.

8 Operating the :Anapurna Mw

8.1 Operator panel

8.1.1 Main Menu

 HOST
 *** ***
 P
 S7
 1600 mm tcp
 KCMYLcLmWS

 F1 > PRIME
 CLEANING<F4</td>
 CLEANING<F4</td>
 F2 > PRIME ALL
 SYSTEM SET <F5</td>

 F3> HOME COVER
 PARAMETER <F6</td>
 PARAMETER <F6</td>
 PARAMETER <F6</td>

The Operator panel display contains 2 major sections.

- The top middle section is the menu info bar. When On-line; the job info will be displayed. When Off-line; the menu name will be displayed.
 - {HOST / LOCAL} : Source of the used parameter values 0 {UNI / BI} Printing mode of the incoming data : 0 {4P / 8P} : Printing resolution of the incoming data 0 Indicates the Shuttle speed **{S7**} : 0 {tcp / TCP} Uppercase TCP indicates that data has been received. : 0 to verify eventual communication problems {KCMYLcLmWS} : Indicates the ink level for each color 0 (Black, Cyan, Magenta, Yellow, Light Cyan, Light Magenta, White, Solution) Uppercase = Ink level OK Lowercase = Refilling
- ⇒ The other section is used for Operating instructions.

F1 > PRIME



Prime prints a test chart to check the presence of the nozzles.

The test chart looks like a fence per print head. You can immediately see if one or more nozzles are missing. A combination of Color and White can be selected via.

- ➡ F1>PRIME ALL
- ➡ F2>PRIME COLOR
- ⇒ F5>PRIME WHITE

F2 > PRIME ALL

This will start a prime test for all color and white heads in one run.

F3> HOME COVER

By pressing F3, the home tray protection plate slide backwards. This gives an easy access underneath the print heads for maintenance purposes

F4 > CLEANING

=	== CLEANING ==
F1> HEAD UP/DOWN	NOZZLE TEST <f4< td=""></f4<>
F2> HOME COVER	

The cleaning menu contains functions for head cleaning.

- ➡ F1>HEAD UP / DOWN Moves the shuttle to the highest position.
- ➡ F2>HOME COVER Opens the cover underneath the shuttle for head maintenance.
- ➡ F4>NOZZLE TEST

F5>SYSTEM SET

		== SYSTEM SET ==	
	F1> IP SET		WHITE INK SYSTEM <f4< td=""></f4<>
	F2> SAFETY SENSOR		TAKE UP <f5< td=""></f5<>
	F3> UV LAMP/SHUTTER		F / W VERSION <f6< td=""></f6<>
×			

⇒ F1> IP SET

IP Address for TCP/IP communication.

- ⇒ F2>SAFETY SENSOR : Safety Sensor and Wing Sensor switches
- ⇒ F3> UV LAMP /SHUTTER

to SET and SHOW all information regarding the UV lamp settings.

$\left(\right)$	== UV LAMP / SHUTTER	==
	UV LAMP : MODE ON	OFF TIME(Min.) =50
	SHUTTER : MODE=NORMAL	$DELAY(ON \ / \ OFF) = 0 \ / \ 0$
	LAMP USE HOUR : LEFT = 234.3 RIGHT= 182.1	
`		

- UV LAMP MODE: to switch ON / OFF the UV Lamp
- SHUTTER MODE:

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NORMAL: Shutter will open for the lamp that is follow heads when printing. right lamp shutter will be open when printing from right to left and left lamp shutter will be opened when printing from right to left.

BOTH: the lamp shutters from both lamps will always be open in both printing directions.

- OFF TIME: time to wait before UV lamps or shut down automatically when the system is idle. A value can be set between "0" and "99" minutes
- o DELAY:

to set a distance in cm when the shutters will be opened before print begin and how long they need to remain open after the print end of each printing pass.

• LAMP USE: this is indicates the actual print hours of the lamps.

⇒ F4> WHITE INK SYSTEM

Menu to activate / de-activate the White Ink System

	== WHITE INK SSTEM ==	
WHITE INK SYSTEM	1 = ON	
,		CIRCULATION <f6< td=""></f6<>

⇒ F5> TAKE UP

To set & test the wind direction when working from Roll to Roll

<i>(</i>)
	== TAKE - UP ==	
MODE = AUT	DIRECTION = CW	
F2> FRONT C	W	REAR CW <f5< td=""></f5<>
F3> FRONT CO	CW	REAR CCW <f6< td=""></f6<>
<i>۱</i>		

➡ F6>PARAMETER

Show and modify the different print parameters. Use Left / Right Arrow to navigate between the different parameters.

Use Up / Down to modify the value.

F1 / F4 allow to LOAD /SAVE up to 9 different parameter sets

F1> LOAD	== PARAME	TER SET ==	SAVE <f4< th=""></f4<>
CONTROL = HOST	DIRECTIO	N = BI	PASS = Q4
C-SPEED = 7	F-SPEED = 1	UNIT =MM	WEEP =3
MARGIN (L=10	00 N-POINT=Y	T=0	R=MAX)



For a more detailed explanation on how to calibrate the :Anapurna M_W See Chapter 13.4 Calibrating the :Anapurna M_W

- ➡ F1>FEED ADJUST Modify the feed step for the belt transport (Chapter 13.4 Calibrating the :Anapurna Mw)
- F2> CARRIAGE RELEASE
 Shuttle will be set in a free position, so it can be moved freely for maintenance
- ➡ F3> FACTORY SETTING
 To enter the service menu. This menu may only be accessed by the service technician.
- ➡ F4> HOR/DIR ADJUST Enables a calibration menu to modify the horizontal and Bi-Directional Head adjustment. (Chapter 13.4 Calibrating the :Anapurna Mw)
- F5> WHITE REF White Ref is a value to correct the white 'feed back' for 'Post White' Applications
- ➡ F6> HEAD GAP Used to perform a height calibration of the used media. Needs to be performed at start up and each time a new media is loaded. (Chapter 13.4 Calibrating the :Anapurna M_w)

8.1.3 TEST Menu

: AN/	APURNA Mw	AGFA 🛷
ON-LINE F1 F2 F3 TEST	HOST *** *** P S7 1597mm tcp F1> PRIME F2> PRIME ALL F3> HOME COVER CALIB	KCMYLcLmWS CLEANING <f4 SYSTEM SET <f5 PARAMETER <f6 F6 + SELECT</f6 </f5 </f4
CAPPING	PAUSE ENTER	BUTTON -

\bigcap	==	TEST ==
F1>PRIM	E	BELT TEST <f4< th=""></f4<>
F2> PRIN	NE 2	DIR TEST <f5< th=""></f5<>
		ACT TEST <f6< th=""></f6<>
\		

⇒ F1> PRIME

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Prime prints a color test chart to check the presence of the nozzles.

- F2> PRIME 2 Prime 2 prints a more advanced color test chart to check the presence of the nozzles.
- F4> BELT TEST
 Test to feed the belt in a continuous mode to verify if the Media transport belt runs steady.
 This test is also used for Belt Adjustment. (see Maintenance section)
- F5> DIR TEST
 Prints a 'line pattern' for each color to verify the Bi-directional alignment over the complete table width.
 Remark: Left margin needs to be set to "0"
- ➡ F6 > ACTUATOR TEST Test to open and close the UV Lamp shutters.

8.1.4 CAPPING Menu

: ANAPURNA Mw	AGFA 🐢
F1 HOST *** *** P S7 1597mm tcp F2 F1> PRIME F2> PRIME ALL F3> HOME COVER F3 TEST CALIB CAPPING PAUSE ENTER	CMYLcLmWS CLEANING <f4 SYSTEM SET <f5 PARAMETER <f6 F6 + SELECT BUTTON -</f6 </f5 </f4

→ Open the CAPPING COVER



Usually Capping is used in case the :Anapurna M_W is switched off for a longer period of time. Heads will be flushed with solution first.

In case the WHITE INK SYSTEM is still on, it needs to be switched OFF before continuing the CAPPING procedure.

For a more detailed procedure (see Shutting Down the :Anapurna M_W)



→ Press <ESC> to continue

Carriage will lift and move to the capping Position on the Left of the Engine.

== CAPPING ==	
< MOVE CARRIAGE >	
Wait	

⇒ Once Capping position is reached, the shuttle will go down.

== CAPPING ==	
Wait	

⇒ Now the system can be POWERED OFF safely in case the long stand still procedure has been performed.

== CAPPING ==		
	UNCAPPING <esc< td=""><td></td></esc<>	
Readv [POWER OFF]		

In case of UNCAPPING,
 Press <ESC> ; the shuttle will lift up again and following screen will appear.

	== PURGE ==	
F2> CAPPING		

⇒ Press <ESC> again to move the shuttle to its home position.

8.1.5 Operating the shuttle

The shuttle of the :Anapurna Mw contains the complete Ink Jetting mechanism.

This mechanism is a combination of an Electrical circuit to drive the heads and a pneumatic circuit to provide a stable under- / pressure for the inks

On the :Anapurna M_W there are 2 separated pneumatic circuits, one for the color ink circuit and 1 for the white ink circuit.

On the left and right side contain a valve to set the under pressure. Values can be read on the displays placed on the front of the shuttle.

The taps on the front of the shuttle are used to switch between INK or FLUSHING SOLUTION

PURGE Button is used to provide extra pressure in order to free up the nozzles



- 1. Purge Button for White Heads
- 2. Scale to indicate the Purge pressure value
- 3. Display to indicate the Under pressure value of the white heads
- 4. Solution Valve for the White Printing Heads
- 5. Ink Valves for the White Printing Heads
- 6. Purge Button for Color Heads
- 7. Scale to indicate the Purge pressure value
- 8. Display to indicate the Under pressure value of the color heads
- 9. Button to build pressure on the solution system
- 10. Solution Valve for the Color Printing Heads
- 11. Ink Valves for the Color Printing Heads

8.1.5.1 Under pressure system

The under pressure is used to stabilize the ink pressure to hold up the ink in the print head. Otherwise it should drip out of the heads due to gravity.

- ⇒ The under pressure can be adjusted with the wheel gauges left and right of the shuttle.
- ⇒ The white wheel gauge is used to adjust the under pressure
- ⇒ The Black wheel locks / unlocks the White Wheel gauge
- \Rightarrow The wheel gauge on the left of the shuttle is for the White ink System.
- ⇒ The wheel gauge on the right of the shuttle is for the Color ink System.

8.1.5.2 Function of the ink valves

The inks will flow via a 3 way valve in the print heads. These valves will allow you to switch between ink or solution that has to run to the print head. They are used for cleaning the print heads or when you switch of the engine.

➡ When the valve is in horizontal position ("I"), ink can flow through. Solution, which is coming from the right (solution bar) is stopped.



When the valve is in vertical position ("S"), solution can flow through. Ink, which is coming from the top is stopped.



8.1.5.3 Operating the switches

In order to ease up the Media manipulation,

the :Anapurna M_W has all media related switches available on the Front and Back Side of the engine.





- UV LAMP (Front)
 To activate the Left and Right UV lamps on half or full power
 Agfa advises to set the switch always to 'Full' and to use the UV Lamp setting in AgfaRip to select the optimum UV power.
- VACUUM (Front & Back) To switch ON /OFF the vacuum to hold the media on the transport table.
- MEDIA SET BAR (Front & Back) Lowers the Media Set Bar to align Rigid Media to its begin position
- MEDIA TENSION (Front & Back) Lowers the media tension roller to provide a extra guidance of the media.
- CAPPING COVER (Front Only)
 Open / closes the capping station, used for parking the shuttle during a long stand still.

8.1.5.4 Ink refilling

The Ink door is located at the right side of your : Anapurna $M_{\rm W}$ The order of the ink bottles :



- ⇒ The Ink door Panel has 2 LED indicators
- The Red LED indicates Empty (Low on Ink) This signal goes together with a buzzer. The ink needs to be refilled before a new job can be started.
- The Green LED indicates Maximum level reached. This LED should never lit up, as there will be a risk of overfilling the ink The ink containers volume is 1.6 liter. Never add 2 bottles of ink.
- The Push button is used to bleed the filters from any air. For more info see Maintenance section – Bleeding the filters.

8.1.6 Media Handling

The :Anapurna M_w is an Hybrid printer system that can handle Roll media an Rigid Media.

8.1.6.1 Using Roll to Roll Media

For an accurate Roll to Roll media placement see Best Practices (How to Place Roll Media)

The Un-Winder Section (Back side of the engine)



Place the Roll Media

- ⇒ Place the Roll Media in the middle of the Un Winder roller
- Put the media over the Rubber roll bar and Silver Media guide roller to the Media transport belt with an even force on both sides.



- Align the paper to an equal distance of the side of the Media feed table (Front and Back)
- ⇒ Switch on the vacuum
- ⇒ Switch on the Un-winder Motor
- ⇒ Place the balance roller

The Balance roller is marked with a "DOT" to indicate the side that needs to point to the Feed sensor. (Shuttle Home position side of the engine)

The Winder Section (Front side of the Engine)



Attach the Roll Media to the Winder system

- ⇒ Remove the balance roller
- ⇒ Place a core onto the Winder roller.
- \Rightarrow Tape the media onto the core.
- ⇒ Feed the media a little till the balance roller can be put in place.
- Place the balance roller. Make sure the mark (dot) on the roller matches the mark (dot) on the frame. At the shuttle side of the Engine.
- ⇒ Switch on the Winder motor
 - In the Operator Panel [F5 System SET] the take up direction can be modified with [F5 Take UP]
- ⇒ Perform a Head Gap from the Operator Panel [CALIB] menu
- → Adjust the margins.

and

- In the Main Menu [F6 Parameter] the following parameters can be set.
 - Left Margin
 - N-Point = "N" for roll media
 - T = xx Value for Top Margin if required.
 - R = Right Margin is always set to MAX

F1> LOAD	== PARAME	ETER SET ==	SAVE <f4< th=""></f4<>
CONTROL = HOST	DIRECTION = BI		PASS = Q4
C-SPEED = 7	F-SPEED = 1	UNIT =MM	WEEP =3
MARGIN (L=1	00 N-POINT=N	T=0	R=MAX)

⇒ Now the engine is ready for printing on Roll to Roll media

Valve 1 Valve 2 Capping Vacuum 2 Rigid Media Um 1 Media Set bar Conveyor Belt

8.1.6.2 Using Rigid Media Top view of the :Anapurna Mw

Rigid media placement for Head Gap calibration

When using small Rigid Media, the media should be placed in the middle of the vacuum transport table underneath the 2 "Red" dots marked on the shuttle rail.

- ⇒ Switch ON the vacuum
- On the Operator panel
 Press [CALIB] button and choose [F6] "Head Gap" to set the shuttle to the correct reference height as for the media.
 Press the left arrow to move the shuttle to the center of the media. (e.g. 3 times)
- When the shuttle is in position, press [ENTER] the shuttle will lower itself to the reference height.
- This is a default value and is not the same as the actual head height.
- Press [ENTER] a second time to lower the shuttle to the head gap distance
- ⇒ Press [ENTER] a third time to move the shuttle back to the home position.
- ⇒ The "HEAD GAP" procedure is now completed.

Rigid media placement for printing

- \Rightarrow Lower the media set bar by turning the media set button.
- Place the media in the center of the vacuum table and align it with the 'Media Set Bar'
- Position the left margin guide to the beginning of the media .
 Read the 'left margin' value from the scale on the inside of the 'media set bar' (Remark: left margin is the start point of the print seen from the Media feed direction.
 When standing in front of the :Anapurna M_w it is on the right side of the 'Media Set Bar')
- ⇒ Turn the vacuum on and raise the media set bar (switch the media set button);
- \Rightarrow Adjust the margins.
 - In the Main Menu [F6 Parameter] the following parameters can be set.
 - Left Margin
 - N-Point = "Y" for roll media This will force a media 'back feed' to the first nozzle printing position
 - T = xx Value for Top Margin if required.
 - R = Right Margin is always set to MAX

F1> LOAD	== PARAMI	ETER SET ==	SAVE <f4< th=""></f4<>
CONTROL = HOST	DIRECTIO	N = BI	PASS = Q4
C-SPEED = 7	F-SPEED = 1	UNIT =MM	WEEP =3
MARGIN (L=10	0 N-POINT=Y	T=0	R=MAX)

⇒ The :Anapurna M_w is now ready for printing

9 Printing with AgfaRIP 2000 Mw

In order to keep optimum flexibility in sending the print job, all communication with the :Anapurna M_W is done via the AgfaRIP 2000 interface.

The AgfaRIP 2000 interface will send ' Engine Ready' print jobs to the :Anapurna Mw.

These print jobs consist of 2 files per application.

- ⇒ *.RTL files : contain the actual print data
- ⇒ *.BMP files : contain a small bitmap to indicate the job content that will be printed.

When using the White application, an extra *.RTL and *.BMP file will be created for white e.g.

- ➡ Daytona_8P_PreWhite_000.bmp
- ⇒ Daytona_8P_PreWhite_000.rtl
- ⇒ Daytona_8P_PreWhite_000W.bmp
- ⇒ Daytona_8P_PreWhite_000W.rtl

9.1 Using the AgfaRIP 2000 MW

Once a file has been ripped by the SoftRIP (e.g. Wasatch) the resulting *.RTL files can be opened with the AgfaRIP 2000 M_W

D:\Testfiles\RTL\Daytona_8P_PreWhite_000.bmp	🔹 AgfaRIP 2000 Mw
PRINTED ON :ANAPURNA MW PRIMITE RANGE damagnadication and and and and and and and and and an	Color Color File D:\Testfiles\RTL\Daytona_8P_PreWhite_000.rtl Browse UV Mode High Normal Direction UNI Double RIP File Information File Mode : Color File[Normal] Size (mm) : 295 × 259 Quality : 08 Pass (720 × 1440) Top Margin (mm) : 0 Direction : Uni Left Margin (mm) : 0 Left Margin (mm) : 0
	White White White File Difections Browse UV Mode High Normal Direction UNI Browse UV Mode High Normal Direction UNI Double Feed Back RIP File Information File Mode: White File[Normal] Size (mm): 295 × 259 Quality: 08 Pass (720 × 1440) Top Margin (mm): 0 Direction: Uni Left Margin (mm): 0 Direction: 0 Uni Left Margin (mm): 0
	Status Status & Control 100% SetUp Print O All O Color O White O C/W Copy 1 Start Cancel Exit

The AgfaRIP 2000 Mw contains tree main sections.

- A Section for settings and information regarding the Color part of the print job
- A Section for settings and information regarding the White part of the print job
- \Rightarrow A Section for controlling the print job.

9.1.1 Color Section

⇒ [Browse]

with the button the *.RTL color file can be opened.

When there is a *.RTL for the White job part available, this file will also be opened automatically.

- Specific settings for the 'Color' job part.
 - o UV Mode

several modes for UV power handling can be set here. These values will override the Engine Settings when 'CONTROL = HOST' has been set in the PARAMETER menu on the Operator Panel

 \circ Direction

UNI or BI direction modes can be set. These values are set by the *.RTL file and can be overridden when required. These values will override also the Engine Settings when 'CONTROL = HOST' has been set in the PARAMETER menu on the Operator Panel

 [] Double This option allows to print the dots twice on the same location. This value is set by the *.RTL file and can be overridden when required.

⇒ RIP File Information

- File Mode Shows the type of *.RTL File Color or White
- Quality Indicates the Print Quality in which the file has been RIPPED
- o Direction

Indicates the RIPPED Direction, will be overwritten by the 'Direction' Setting .

- Size Indicates the Size of the RIPPED Job.
- Margins Indicates the Margins of the RIPPED Job

9.1.2 White Section

The White Section contains the same options as in the Color Section.

➡ UV Mode

Is only applicable for White if the White job part is printed in a separate print RUN. Otherwise the UV settings for the Color part of the job will be used.

Direction

UNI or BI direction modes can be set.

These values are set by the *.RTL file and can be overridden when required. Is only applicable for White if the White job part is printed in a separate print RUN. Otherwise the settings for the Color part of the job will be used.

➡ [] Double

This option allows to print the dots twice on the same location. This value is set by the *.RTL file and can be overridden when required. Is only applicable for White if the White job part is printed in a separate print RUN. Otherwise the UV settings for the Color part of the job will be used.

➡ [] Feed Back

When printing the Print job in multiple print runs, this option will automatically feed the media to the first printing position.

e.g. In Post white Application

The color part of the job will be printed in a first print run. Then the media is fed back over the a distance identical to the length of the previous printed color job. Then the white path of the job will be printed.

9.1.3 UV Settings

- ➡ High Normal:
- ➡ High Both:
- ➡ High Reverse:
- ➡ High RevHalf
- ➡ Low Normal
- ➡ Low Both
- ➡ Low Reverse
- ➡ Low RevHalf
- ➡ Lamp Off

Shutter will open for the lamp that is follow heads when printing.
 right lamp shutter will be open when printing from right to left and left lamp shutter will be opened when printing from right to left.
 BOTH: the lamp shutters from both lamps will always be open in both printing directions.

- High: stands for full UV power and will switch the lamps to their maximum capacity.
- ⇒ Low: stands for half UV power and will switch the lamps to 50 % of the maximum capacity.
- ⇒ Normal: shutters of the trailing lamp will open.
- ⇒ Both: shutters of both lamps will open.
- ⇒ Reverse: shutters of the leading lamp will open
- RevHalf: The shutter of the leading lamp will only open once every four printed passes.

These settings always override the UV lamp button setting on the :Anapurna M_W , therefore, always turn the UV lamp switch on the Operator Panel to "FULL" Power.

9.1.4 Status Section

This section contains 3 sub sections

⇒ Set Up

to modify the IP Address and Port Number for the TCP/IP communication.

- Status a Progress bar indicates the status of the actual printing.
- → Print

to control number of copies and control the print job in different modes.

- I ALL when active, the white and color part of the job will be printed in one print run. This mode is also called 'PRE-WHITE' mode
- ➡ [] Color when active, only the color part of the job will be printed.
- I] White when active, only the white part of the job will be printed.
- ⇒ [] C/W

and

when active the color part will be printed in the first run and the white part will be printed in a second run.

If ' [] Feed Back' is enabled, the media will be fed back automatically. This mode is also called 'POST-WHITE' mode.

A combination of 'Pre-White' and 'Post-white' on a backlit material can be used to generate 'Day and Night' applications,

Model	ANAPURNA MY	N		~
Printer IP	192.168.	1.!	5 Port	5000
(m)				_

10 Appendix

10.1 Description of the White Ink System

The :Anapurna M_W has a completely separated ink system for white, with its own specific control and circulation system.

10.1.1 Mechanical parts:

The ink door has been extended with a large ink tank with mixer for white ink.



2 x 42 pl heads have been placed in the middle of the head base plate, just in front of the Magenta and Light Magenta Heads.



A separate solution bar has been added to clean the white heads

10.1.2 Operator Menus for White

Main Menu

HOST *** *** P	S 7	1600 mm	tcp
F1 > <i>PRIME</i>			<i>CLEANING</i> <f4</f
F2 > PRIME ALL			SYSTEM SET <f5< td=""></f5<>
F3> HOME COVER			PARAMETER <f6< td=""></f6<>

⇒ Prime Menu [F1]

a specific Prime test has been added to check the white nozzles.

== PRI/	ЛЕ ==
F1> PRIME ALL	
F2> PRIME COLOR	PRIME WHITE <f5< th=""></f5<>

➡ Cleaning [F4]

	== CLEANING ==	
F1>HEAD UP/ DOWN		NOZZLE TEST <f4< td=""></f4<>
F2> HOME COVER		

o Nozzle test [F4]

	==NOZZLE TEST ==	
F1> BLACK	ALL-COLOR <enter></enter>	MAGENTA <f4< th=""></f4<>
F2> CYAN	WHITE <pause></pause>	YELLOW <f5< th=""></f5<>
F3> L_CYAN		L_MAGENTA <f6< th=""></f6<>

⇒ System Set [F5]

	==SYSTEM SET==	
F1> IP SET		<i>WHITE INK SYSTEM</i> <f4< td=""></f4<>
F2> SAFETY SENSOR		TAKE UP <f5< td=""></f5<>
F3>UV LAMP / SHUTTER		F/W VERSION <f6< td=""></f6<>

White Ink System [F4]
 Use ARROW UP / DOWN to switch ON / OFF the White Ink System

	== WHITE INK SYSTEM ==	
WHITE INK SYSTEM = 0	DN	
		<i>CIRCULATION</i> <f6< th=""></f6<>

Circulation [F6] (*) 0

:

[1] Times [2] sec

Number of cycles that will be executed Countdown of the set cycle time

(*) Number of cycles and duration of each cycle is set by the service engineer

== WHITE INK SYSTEM ==	
[CIRCULATION]	
Wait [1] Times, [2] sec	

Parameter [F6] ⇒

0

0

			<u>````</u>
(F1> LOAD	== PARAMETER SET ==	SAVE <f4< td=""></f4<>
	CONTROL = HOST	DIRECTION = BI	PASS = Q4
	C-SPEED = 7	F-SPEED=1 UNIT = MM	WEEP = 3
	MARGIN (L =100	N-POINT =Y T = 0	R =MAX)
OAD :	to load a n	reviously saved parameter set	

- [F1] L 0 loau a piev iously saved para iete
 - [F4] SAVE : save a parameter set for later re-use [CONTROL] : HOST or LOCAL Control HOST => direction, pass and UV settings can be overwritten by sending system LOCAL => direction, pass and UV settings will be used as set in the parameter menu
- [DIRECTION] : UNI or BI (use Up/down to change) 0
- [PASS] : Q4 / Q8 (use Up/down to change) 0
- Shuttle speed (changing this speed requires a new calibration) [C-SPEED] : 0
- [F-SPEED]: Belt motor speed, always must be [1] 0
- [UNIT] : MM / INCH (use Up/down to change) 0
- [WEEP] : time in minutes to jet the white heads . Default = [3]0
- [MARGIN L] : Value for printing start. Left margin seen from the feed direction 0
- [N-POINT] : YES / NO If YES, media will be moved backward till first print position. 0
- Top margin : value of top margin [T] : 0
- Right margin ; margin after print. [R] : 0
 - This is set to max for safety reasons and belt protection.