

CJV300·150 Series

Cutting adjustment guide

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MIMAKI ENGINEERING CO. LTD.

Cutting-related adjustment

This is the adjustment items related to the operation of cutting alone

	Name		Production adjustment	Service	User
1	PEN STROKE	Adjust the stroke volume at each point of the cut line on the platen.	<input type="radio"/>	<input type="radio"/>	
2	PEN PRESS	Adjust the pen pressure.	<input type="radio"/>	<input type="radio"/>	
3	PEN LANDING	Adjust the landing adjustment (pen dropping pressure).	<input type="radio"/>	<input type="radio"/>	
4	400mm SQUARE	Draw the square of each side 400mm and compensate the mechanical error amount of movement.	<input type="radio"/>	<input type="radio"/>	

Print & Cut-related adjustment with Register mark

This is the adjustment items related to the deviation in the Print & Cut with register mark.

	Name	Content	Production adjustment	Service	User
1	PHOTO SENSOR: POSITION	Adjust the position deviation of the mark sensor and pen point (cutter). (Base adjustment)	<input type="radio"/>	<input type="radio"/>	
2	MARK DETECT:OFFSET X,Y	Enter the offset value, adjust the position deviation of the print and cut.		<input type="radio"/>	<input type="radio"/>

Print & Cut-related adjustment without Register mark (Include Cut&Print)

This is the adjustment items related to the deviation in the register mark without Print & Cut.

	Name	Content	Production adjustment	Service	User
1	400mm SQUARE	It is similar to "cutting-related adjustment".	<input type="radio"/>	<input type="radio"/>	
2	PRINT / CUT POS.	Adjust the deviation of the position of the print origin and cut origin. (Base adjustment)	<input type="radio"/>	<input type="radio"/>	
3	(Y) SCALE COMP.	Adjust for matching Y scale each in cutting and print.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	(X) SCALE COMP.	Adjust the "Media correction" in printer, and align the scale of the cut. (Automatically applied inside, so not required to adjust)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	PC ORIGIN OFFSET	Adjust the deviation of the position of the print origin and cut origin.		<input type="radio"/>	<input type="radio"/>

PEN STROKE

Cutting-related adjustment

Production	Service	User

Set the pen stroke value of the device. (Automatic adjustment)

Parameters	No.	Name	Unit
Stroke (Cut)	9 ~	Strk000	5 μ m

#ADJUST	(CUT)
PEN STROKE	[ENT]

PEN STROKE	
<LOOK	CHECK>

PEN STROKE	
STROKE = 4.85mm	

PEN STROKE	
1 = 4.85mm	

1. Remove the media.
2. Mount the cutter holder (without the blade) to the tool holder.
3. Choose "#ADJUST(CUT)>PEN STROKE".

Pinch roller pressure in all places is set to "MID", perform in the lowered clamp state.

4. Press [>] key and run the detection.
It will automatically detect.

- Pen stroke is within 5.0 ± 0.2 mm.
If it exceeds, adjust the head height.
- If the stroke range (the difference between the MIN and MAX) exceeds 1mm, displays an error.
"ABNORMAL STROKE"
- If the height of the MID is out of 5 ± 0.2 mm, displays an error. [MID RANGE ERROR]

5. After detection, press [<] key, and make sure the stroke value of each point.

PEN PRESSURE

Cutting-related adjustment

Production	Service	User

Measure the pressure of each point and adjust to move the cutting pressure as specified.

Pressure and stored location to implement the adjustment.

※Pressure parameters

Adjust pressure	0g	15g	30g	60g	100g	200g	400g	600g
Parameter No.※	0	14	1	2	3	4	5	6

#ADJUST (CUT)		
PEN PRESSURE [ENT]		

PEN PRESSURE START [ENT]		

PEN PRESSURE 0g = ***		

CAUTION: Pen stroke adjustment has been always done before this adjustment is performed.

1. Mount the cutter holder (without the blade) to the tool holder.

Pinch roller pressure in all places is set to "MID", perform in the lowered clamp state.

2. Choose "#ADJUST(CUT)>PEN PRESSURE".

3. Press [ENTER].

Cutter head will move automatically to the adjust position.

4. Adjust each pressure.

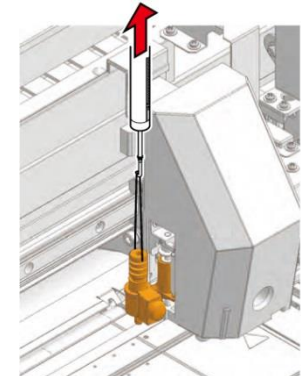
With a tension gauge as shown in the figure,

pull the cutter holder in the adjustment pressure. ※

Move up and down several times and enter a value when the cutter holder is lifted.

Press [ENTER] to the next pressure.

Change the value with [^][v] key.



※ In the case of 0g, make sure that the value is up by pressing the right key, and make adjustments by changing the value until reliably grounded from that position.

PEN LANDING

Cutting-related adjustment

Production	Service	User
●	●	

Adjust the landing adjustment (pen dropping pressure).

Usually do not need adjustment.

Parameters	No.	Name	Unit
Landing	15	Ld1_0_f	1 g

< When to adjust >

- Stroke adjustment and 0g, 15g manual adjustment have been performed, but the bounce at landing does not improve.
- Also if there is a caught in the middle of the stroke.

#ADJUST	(CUT)
Landing Adj	[ENT]

CAUTION:Pen press adjustment has been always performed before this adjustment.

1. Mount the cutter holder (without the blade) to the tool holder.
2. Choose "#ADJUST(CUT)>Landing Adj".

Landing Adj	
Pull Down Press	[ENT]

3. Press [ENTER] key.
Pen will start up/down automatically.

Landing Adj	
Pull Down Press =200g	

4. Press [^], [v] key to change the pressure.
Change the pressure and make sure that the cutter will not bounce.

400mm SQUARE

Cutting-related adjustment

Production	Service	User

Draw the square of 400mm each side and measure. Enter the error amount of movement as a correction value.

Parameter	No.	Name	Unit
System (cut)	0	COMP.A	0.1mm
"	1	COMP.B	0.1mm

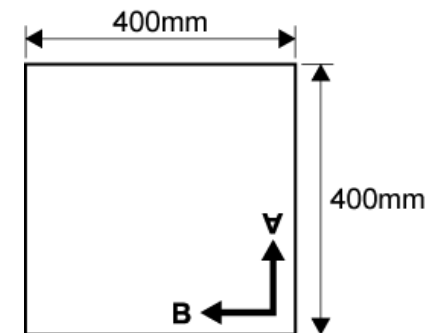
#ADJUST (CUT)	
400mmSQUARE [ENT]	

400mmSQUARE	
<CLEAR DRAW>	

400mmSQUARE	
dA = 0.0 dB = 0.0	

1. Set the pen in the tool holder.
2. Choose #ADJUST(CUT) > \$400mm SQUARE.
To suppress the influence of skew, take care the PR pressure and arrangement.

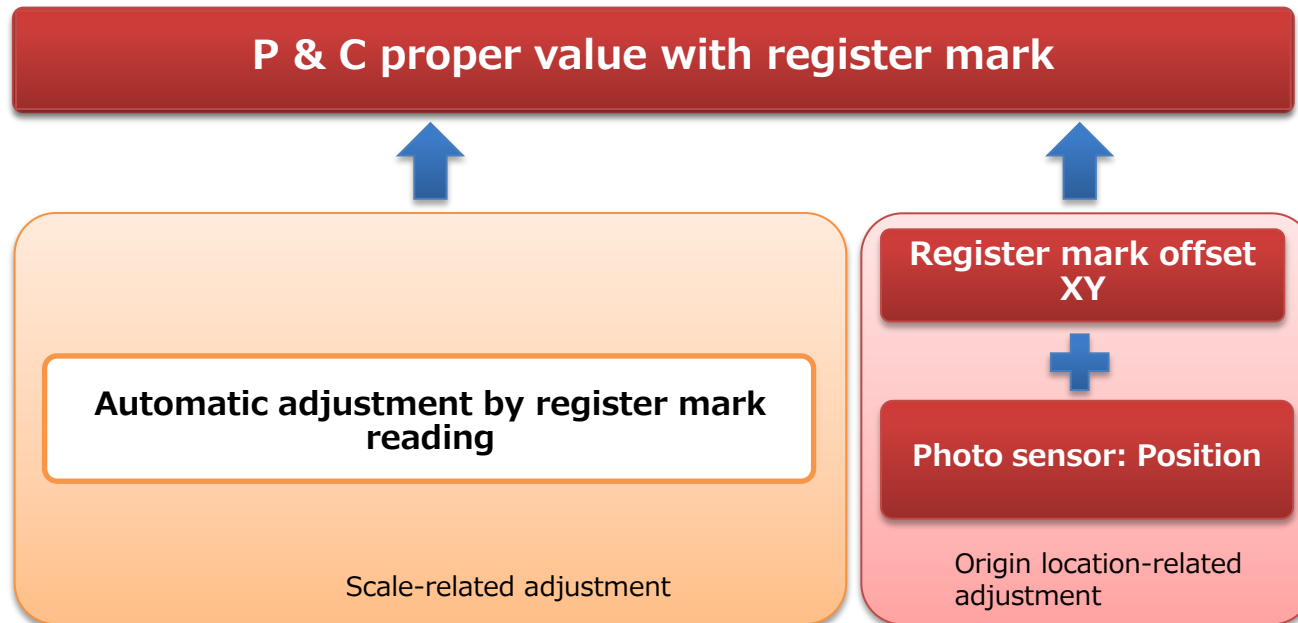
Fig 1



3. Press [>]key, perform the drawing.
Draw the pattern of Fig 1.
Press [<]key and adjusted value will be cleared.
If press [^]key here, the pattern is not drawn and migrate to the compensation value input screen.
4. Measure the length of A(X direction) and B(Y direction※) of the pattern and enter the difference to 400mm.
Example) If the measured is 390.5mm, input value = -9.5

※Y direction is most often 400mm even without adjustment.

Configuration of Print & Cut Adjustment with register mark

Print and Cut adjustment
with register mark

- **XY scale adjustment**
The compensation is performed by reading the register marks at the time of cutting, so there is no adjustment item.
 - **Origin position adjustment**
 - "Photo Sensor: position" is the base adjustment.
 - →If it is not adjusted or not appropriate value, the adjustment value at the register offset will increase.
- If the deviation is occurred, adjust the origin position in "SENSOR OFFSET X,Y"

PHOTO: SENSOR POSITION

Print&Cut adjustment
with register mark

Production	Service	User
●	●	

Correct the deviation of the pen point and the photo sensor for the mark detection. (Automatic correction)
Draw the register mark with a pen, read it and correct automatically by the sensor.
This will be the base adjustment of "SENSOR OFFSETX,Y" in the next page.

< When to adjust >

- If the value to be adjusted in the sensor offset XY is large.
→ potentially containing the incorrect value to the adjustment value. ※1

Parameter	No.	Name	Unit
System(Cut)	30	SENS.X	0.1mm
"	31	SENS.Y	0.1mm

#ADJUST	(CUT)
PHOTO SENSOR	[ENT]

1. Attach the ballpoint pen (※ 2 note) in the tool holder.
2. Choose #ADJUST(CUT) > PHOTO SENSOR > POSITION

PHOTO SENSOR
ADJUST: POSITION

3. Press [>]key and run the drawing.

Draw the pattern of Fig.1.

Press [<]key to clear the adjustment value.

If press [^]key here, migrate to the compensation value input screen without drawing.

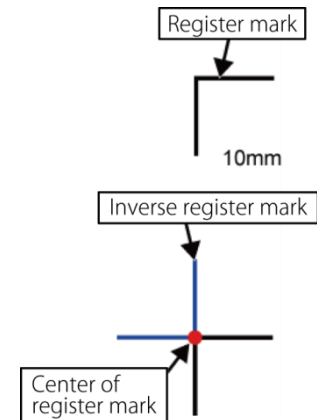


PHOTO SENSOR
X = 0.8 Y = 0.6

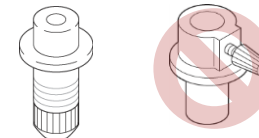
4. Make sure the register mark corner matches, the lines are plotted horizontally on a vertical straight line, and the pen point is moving in the center of the register mark.

If there is a deviation, please re-adjust. There is a possibility of the incorrect detection by the deflect of the media etc. ※1

※1 As a guide, ± 1.0 as normal

※2 Note: Use a pen holder without decentration.

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MARK SENSOR OFFSET X,Y (1)

Print&Cut adjustment
with register mark

Production	Service	User
	●	●

Enter the compensation value of deviation of the pen point and the photo sensor for the mark detection and adjust. Output a pattern from RL6, and then enter the compensation value to the machine.

< When to adjust >

- If the origin deviation is seen in a register mark with Print & Cut.

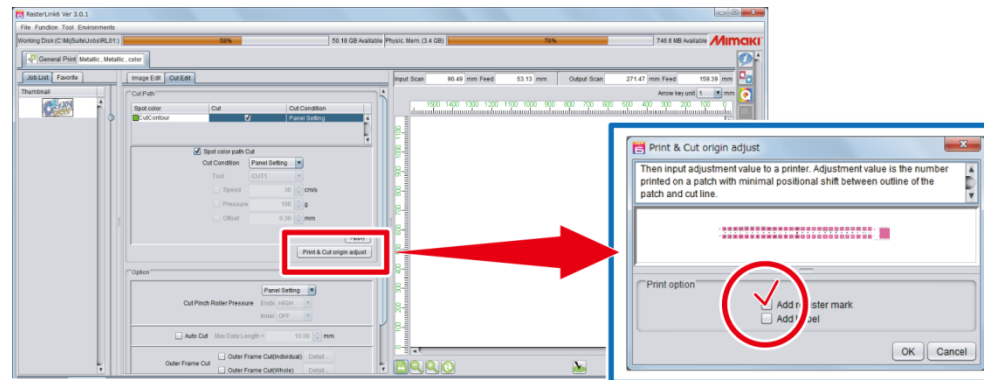
Parameter	No.	Name	Unit
Operation (cut)	34	TnbOfsX	0.01mm
"	35	TnbOfsY	0.01mm

REMOTE		
PRE	PRINT	POST
20/20	20/20	20/20
INK STATUS		
ADJUST	HEATER	LOCAL

This adjustment will make adjustment with the output of a pattern from RL6.

1. State the machine in "REMOTE".
2. Set the print and cut condition of the jobs you want to output at RasterLink 6.
3. Click [Print & Cut origin adjust] button in [CUT Edit] tab.

Check in "Add register mark".



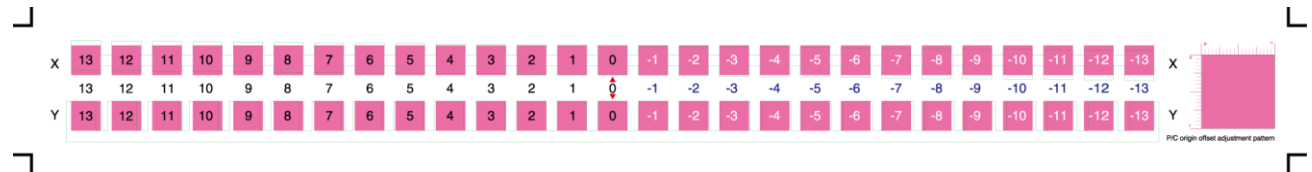
4. Click "OK", and then output an adjustment pattern in the same conditions in the job.

MARK SENSOR OFFSET X,Y (2)

Print&Cut adjustment
with register mark

Production	Service	User
	●	●

The following pattern is output.



REMOTE		
PRE	PRINT	POST
20/20	20/20	20/20
INK STATUS		
ADJUST	HEATER	LOCAL

FEED COMP.	>
PC ORIGIN OFFSET	>
TP OFFSET	>

TP OFFSET	
OFFSET X	0.00mm
OFFSET Y	0.00mm

This is the same content as for Offset X,Y in "MENU>CUTTING>DETECT REGISTER MARK. But in this input screen it is always displayed 0.00mm even after adjustment.
Reason: To match the number of pattern with the input.

5. Press [FUNC1] (ADJUST), and then select the register mark offset.

When press [ENTER], the media will be automatically fed.

Peel off the cut portion of the adjustment pattern and check the position with no deviation.

6. Enter the adjustment value.

Cut line as a reference to "0", cut the position shifted by 0.1mm X, Y, respectively.



Expansion : X

In X, enter the number of the smallest shift in the top and bottom.

It's -4 in above, so enter -0.40mm.



Expansion : Y

In Y, enter the number of the smallest shift in the left and right.

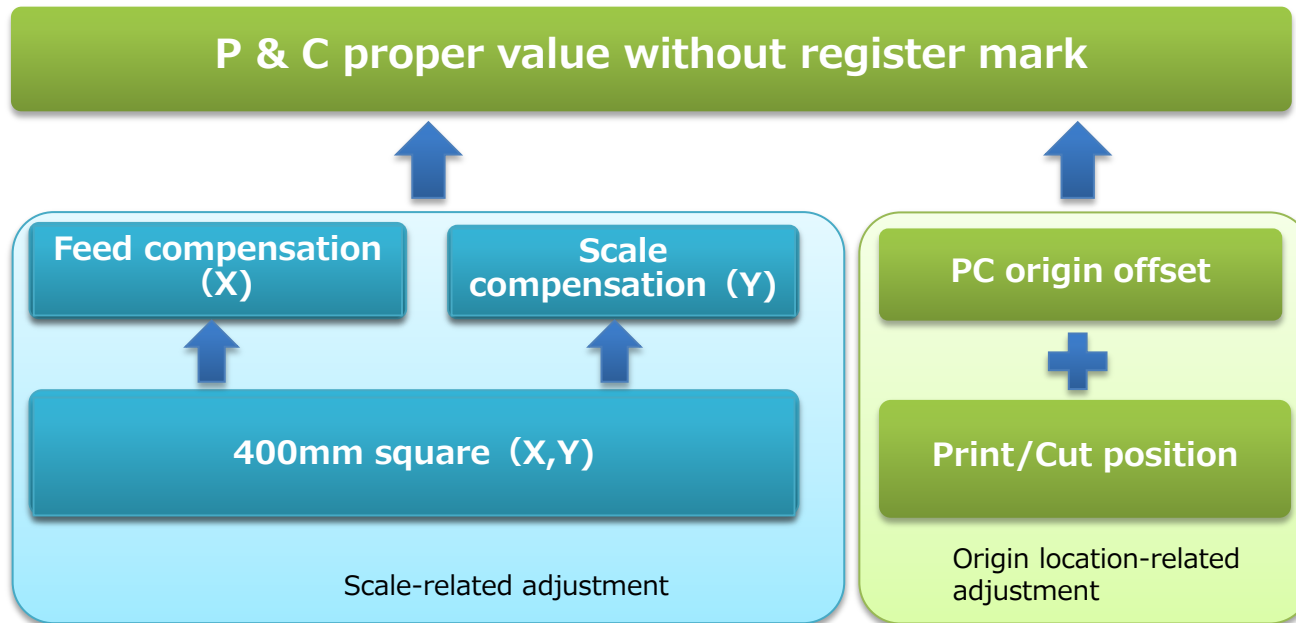
It's 2 in above, so enter 0.20mm.

The procedure is the same as of "PC ORIGIN OFFSET" in the adjustment without register mark, but the menu and values input (input units) are different.

If "Photo sensor position", which is the base adjustment, is adjusted correctly, the position of no deviation will be near "0".

If the adjustment value to be input exceeds ± 13 : adjusted value of "photo sensor position" is the anomaly.

Configuration of Print & Cut Adjustment without register mark

Print&Cut adjustment
without register mark


- XY scale adjustment**
 - “400mm square” is the base adjustment.
 - If it is not adjusted, deviation occurs even conducting scale correction.
 - In X-direction, the adjustment value of “feed compensation” of the print will be reflected in the scale of the cut. (This is processed internally so no need to adjust.)
 - Y direction will be corrected by “scale compensation”.
 - Origin position adjustment**
 - “PRINT/CUT POS.” is the base adjustment.
 - If it is not adjusted or the adjusted value is not appropriate value, the input value to PC origin offset will be large.
- Set to the origin position which matches with print condition in “PC ORIGIN OFFSET”.

400mm SQUARE

Print&Cut adjustment
without register mark

Production	Service	User
●	●	

Draw the square of each side 400mm, and measure. Enter the error amount of travel distance as a compensation value.
This is the same as "400mm SQUARE" in the item of "Cutting-related adjustment".

< When to adjust >

• In the feed direction, if the deviation, which is away from the origin, is generated.

Parameter	No.	Name	Unit
System(Cut)	0	COMP.A	0.1mm
"	1	COMP.B	0.1mm

#ADJUST (CUT)	
400mmSQUARE [ENT]	

400mmSQUARE	
CLEAR DRAW>	

400mmSQUARE	
dA = 0.0 dB = 0.0	

1. Attach the ballpoint pen in the tool holder.
2. Choose #ADJUST(CUT) > \$400mm SQUARE.

To suppress the influence of skew, take care the PR pressure and arrangement.

3. Press [>]key, perform the drawing.

Draw the pattern of Fig 1.

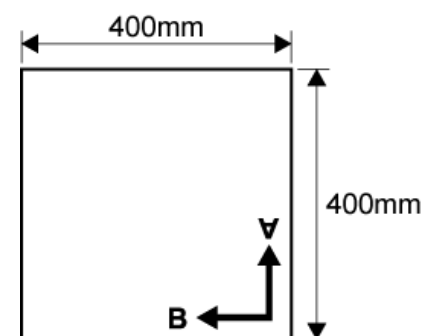
Press [<]key and adjusted value will be cleared.

If press [^]key here, the pattern is not drawn and migrate to the compensation value input screen.

4. Measure the length of A(X direction) and B(Y direction※) of the pattern and enter the difference to 400mm.

Example) If the measured is 390.5mm, input value = -9.5

Fig 1



※Y direction is most often 400mm even without adjustment.

PRINT/CUT POS.

Print&Cut adjustment
without register mark

Production	Service	User
●	●	

Compensate the deviation of the pen point(cutter) and print position. (Automatic correction)
Construct a register mark by each print and cut, and mark sensor reads the position.
It will be based of adjustment of the next page "PC ORIGIN OFFSET".

< When to adjust >

- If adjusted value of PC origin offset is large.
→ If this adjustment has been properly adjusted, the adjustment value of "PC ORIGIN OFFSET" fits within ± 10 .

Parameter	No.	Name	Unit
Mecha(Cut)	28	P>CofsX	0.1mm
"	29	P>CofsY	0.1mm

#ADJUST (CUT)		
PRINT/CUT POS. [ENT]		

PRINT/CUT POS.		
ORIGIN SET [ENT]		

PRINT/CUT POS.		
X = 0.8 Y = 0.6		

1. Attach the ballpoint pen (※ 1 Caution) in the tool holder.

2. Choose "#ADJUST(CUT) >PRINT/CUT POS."

3. Set the position for drawing.

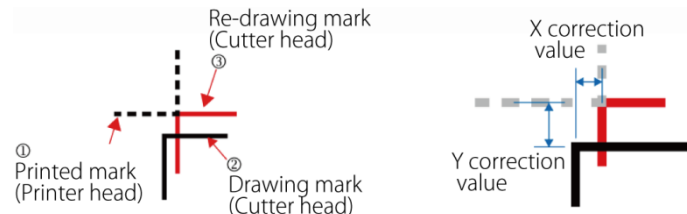
Move cutter head with [\wedge][\vee][\lt][\gt]key.

Set the position 40mm or more inside from media right edge.

4. Once the position is decided, press [ENTER]. Construction will begin.

Make sure that the corner of below Fig ① and ③ are consistent.

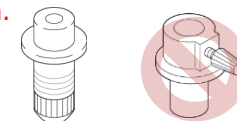
If there is a deviation, re-adjust it since there is a possibility that the detection was incorrect due to the deflection, etc. of the media ※ 2



※2 As a guide, ± 1.5 within normal

※2 Note: Use a pen holder without decentration.

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SCALE COMP.

Print&Cut adjustment
without register mark

Production	Service	User
●	●	●

Adjustment to match the scale used in each motor encoder(cutting) and linear encoder(print).
Adjust each 360 & 720dpi and 540dpi.

< When to adjust >

- At machine installation
- If the deviation amount of Y direction at the origin and at a position away from the origin are different.

Parameter	No.	Name	Unit
Quality(CUT)	65	SCL_Y_54	Magnification
"	66	SCL_Y_72	"

#ADJUST (CUT)
SCALE ADJUST [ENT]

1. Choose #ADJUST(Cut) >SCALE ADJUST.

SCALE ADJUST
: Y540dpi

2. Choose the resolution to make adjustments.

Need to adjust both 720dpi(※) and 540dpi.

※ adjusted value of 720dpi is common with 360dpi.

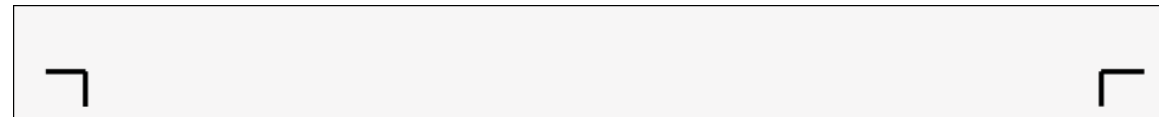
SCALE ADJUST
= 1300mm

3. Select the print width of register mark and press [ENTER] key.

Print the adjustment pattern, read the position (see below) with register mark sensor.

Print width is not changed basically, implement as it is.

Initial display value depends on the detected media width.



SCALE ADJUST
THEORETICAL ==***mm
MEASURE ==***mm
[ENT]

4. Press [ENTER]key and complete the adjustment.

Indicate theoretical value / actual value.

Save the automatic adjustment value with pressing ENTER.

PC ORIGIN OFFSET(1)

Print&Cut adjustment
without register mark

Production	Servicee	User
	●	●

Adjust the deviation of the position of the origin of the print and the origin of cut.
Output a pattern from RL6, and then enter the correction value to the machine.

< When to adjust >

- If this is the first time to conduct a Print & Cut without register mark.
Perform for each resolution (stored for each resolution and waveform)
- In Print & Cut without register mark, when the deviation of the origin position occurred.

Parameter	Content	No.	Name	Unit
Quality(Cut)	540dpi/WF4	67,71	OGX_54W4,OGY_54W4	0.1mm
"	720dpi/WF3,5,6	68,72	OGX_72W3,OGY_72W3	0.1mm
"	360dpi/WF4	69,73	OGX_36W4,OGY_36W4	0.1mm
"	540dpi/WF3,5,6	70,74	OGX_54W6,OGY_54W6	0.1mm

REMOTE		
PRE	PRINT	POST
20/20	20/20	20/20
INK STATUS		
ADJUST	HEATER	LOCAL

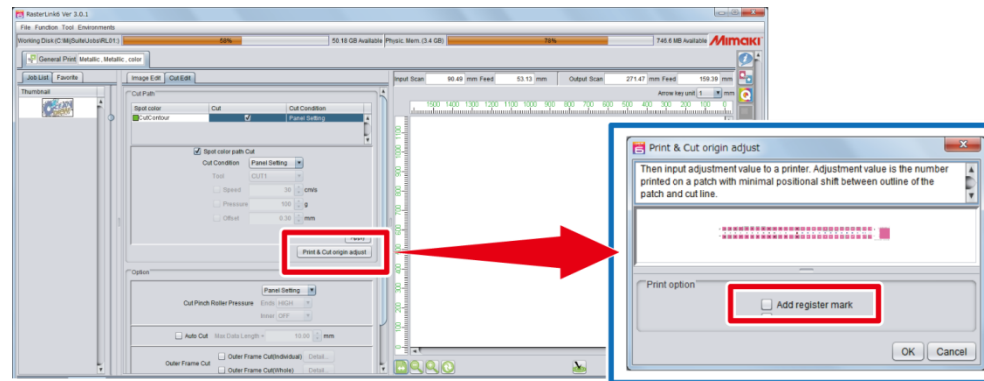
In this adjustment, adjust with the output of a pattern from RL6.

1. Set the machine to "REMOTE".

2. Set the print and cut conditions of the job you want to output with RasterLink6.

3. Click [Print & Cut origin adjust] button in [Cut Edit] tab.

Do not put a check in "Add register mark".



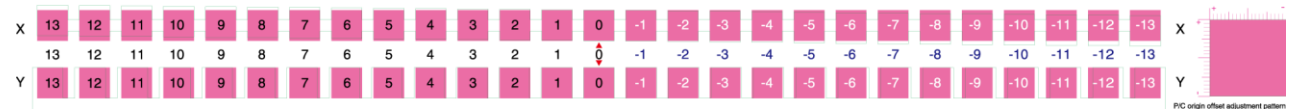
4. Click "OK", and then output an adjustment pattern in the same conditions as the job.

PC ORIGIN OFFSET(2)

Print&Cut adjustment
without register mark

Production	Service	User
●	●	●

The following pattern is output.



REMOTE		
PRE	PRINT	POST
20/20	20/20	20/20
INK STATUS		
ADJUST	HEATER	LOCAL

FEED COMP.	>
PC ORIGIN OFFSET	>
TP OFFSET	>

PC ORIGIN OFFSET		
540dpi WF4		
X		0
Y		0

5. Press [FUNC1](ADJUST), select PC ORIGIN OFFSET.

When press [ENTER], media will be automatically fed.

Peel off the cut portion of the adjustment pattern and check the position with no deviation.

6. Enter the adjustment value.

Cut line is referenced to "0". It is cut the position shifted by 0.1mm in both X and Y.



Expansion : X

In X, enter a number of the smallest shift in top and bottom.

Here it is -4, so enter -4.



Expansion : Y

In Y, enter a number of the smallest shift in left and right.

Here it is 2, so enter 2.

The procedure is the same as for the adjustment with register mark "Register Mark OFFSET XY", menus and values to enter are different.

If the adjustment value to be input exceeds ± 13 , the adjustment value of "PRINT/CUT POS." is abnormal.