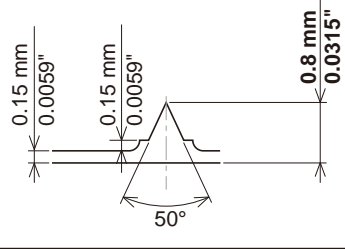


## 2-2 Specifications for the Upper and Lower Dies

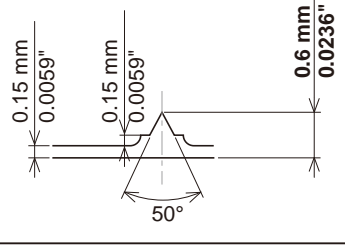
Prepare a flexible die. Place an order with the following specifications from a specialized supplier.

### 2-2-1 Specifications for the Upper Die

#### Without Creasing(Cutting Only)

Height of Cutting Blade	0.8 mm or 0.0315"	
Base Thickness	0.15 mm or 0.0059"	
Material Thickness	Max. 0.5 mm or 0.019"	

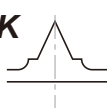
#### With Creasing

Height of Cutting Blade	0.6 mm or 0.0236"	
Base Thickness	0.15 mm or 0.0059"	
Height of Creasing Blade	See page 66.	
Material Thickness	0.3 mm or 0.011"	

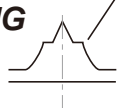


Important

**OK**  
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20201C1

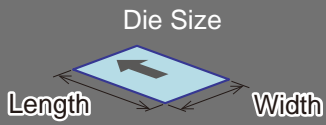


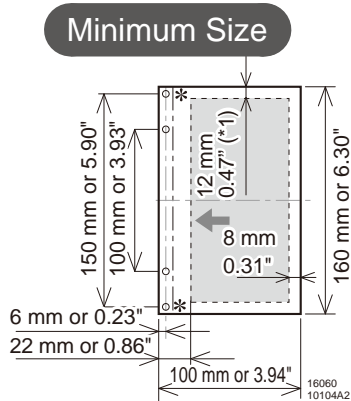
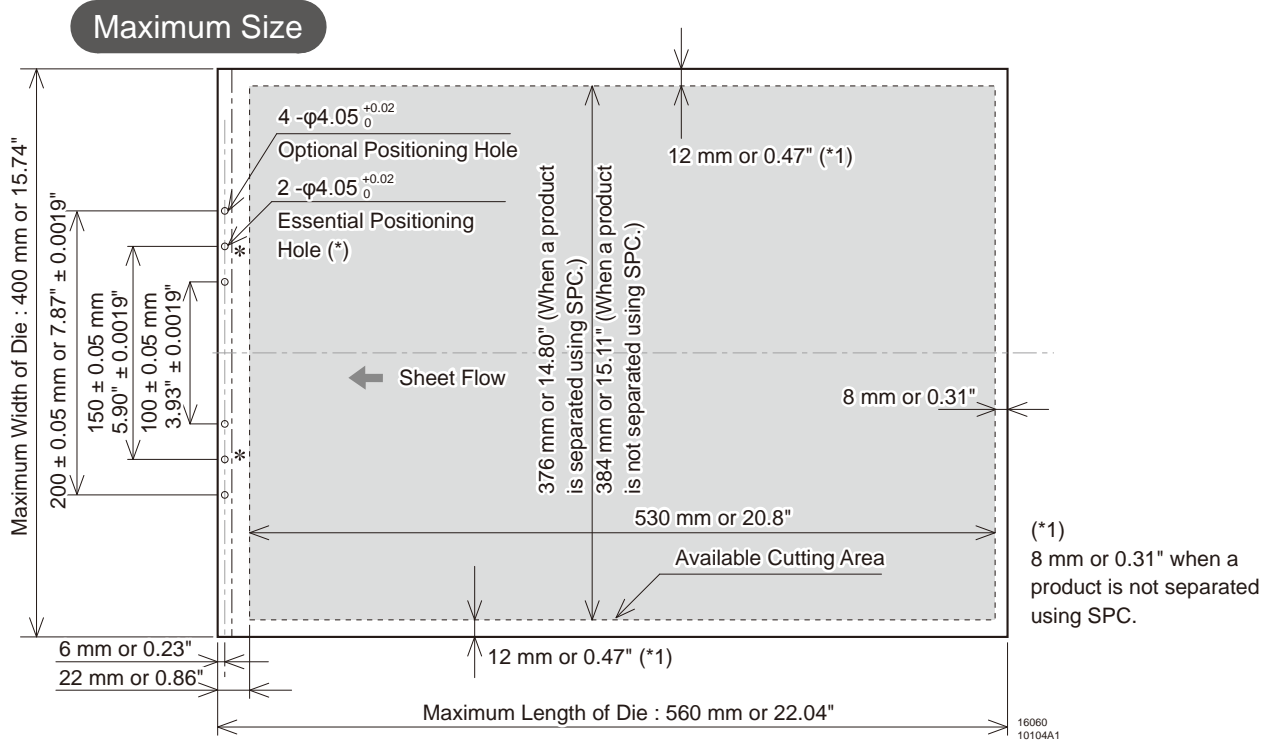
**NG**



If this part is too high, sheet may not be cut completely, or marked by this part.

#### Common Specifications

	Die Size	Max. 400 (W) x 560 (L) mm or 15.74 x 22.04"
		Min. 160 (W) x 100 (L) mm or 6.30" x 3.94"
	Holes for Positioning Pins	See next page.
	Reduction Percentage	99.4 %



Units: mm or inch

- Both essential positioning holes (marked \* above) are necessary for any size of die. Insert the pins on the upper roller into these holes to secure the upper die.
- Also add at least two of the four optional holes. Insert the two positioning pins into these holes when attaching the upper die.
- Design the shape of the cut product within the area shown in gray in the drawing above. Allow at least 8 mm or 0.314" margins at the top, bottom, and the left end.
- Allow at least a 22 mm or 0.866" margin at the right end. If you make this margin longer, the available cutting area will become shorter.
- The minimum size for the cut product is 50 mm (W) x 80 mm (L) or 1.968" x 3.149" when using the separator.
- As the upper die rolled on the cylinder cut the sheet, the image on the diagram should be reduced in the sheet transporting direction with the 99.4% (reduction ratio). See page 72 for die diagrams.

[Reference Data]

Magnet Cylinder Diameter of magnet  $\phi$  183.38  
 Diameter of bearer  $\phi$  184.78



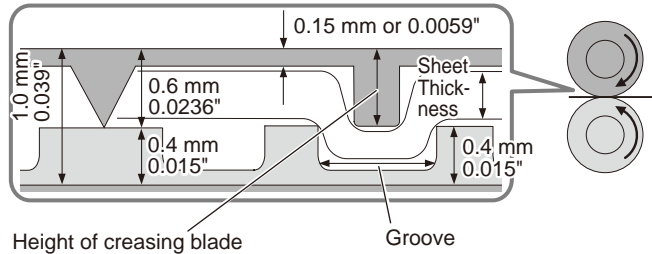
**NOTE**

The lifetime of upper die will vary depending on the quality of the sheets and the cutting shape. The blade on the die may be damaged if the machine is operated incorrectly. Keep a spare die if you will not have enough time to make a new one.

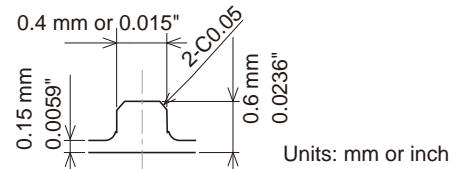
### Height of Creasing Blade

A creasing blade is not as high as a cutting blade. The proper height and width of the creasing blade depend on the creasing depth and the sheet thickness and softness.

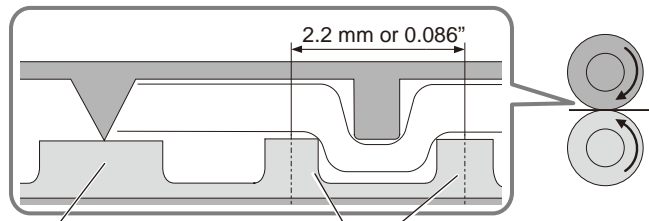
Depending on the type of printing, the printed material may crack during creasing. If this happens, use a lower creasing blade.



### Section View of the Creasing Blade



## 2-2-2 Specifications for the Lower Die

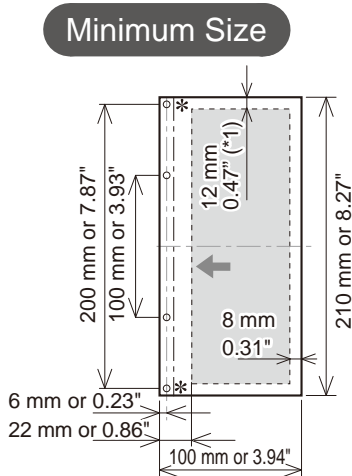
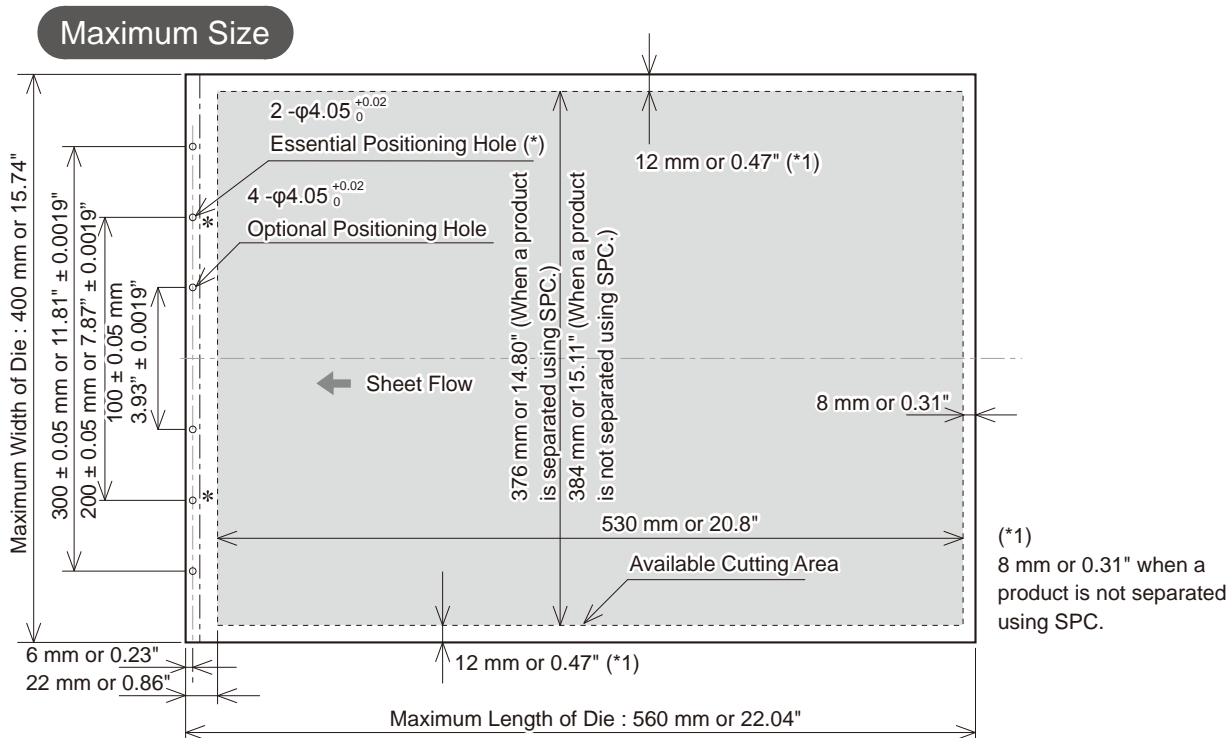


Make a flat blade to the position of the cutting blade.

Make a groove so that the creasing blade is inserted.

The groove width (2.2 mm or 0.086") on the lower blade depends on the creasing depth, sheet thickness and softness.

Die Size	Max. 400 (W) x 560 (L) mm or 15.74 x 22.04"	
	Min. 210 (W) x 100 (L) mm or 8.27" x 3.94"	
Holes for Positioning Pins	See next page.	
Reduction Percentage	99.81 %	
Plate Thickness	0.4 mm or 0.015"	
Height of Blade	0.4 mm or 0.015"	
Base Thickness	0.15 mm or 0.0059"	



Units: mm or inch

- Both essential positioning holes (marked \* above) are necessary for any size of die. Insert the pins on the lower roller into these holes to secure the lower die.
- Also add at least two of the four optional holes. Insert the two positioning pins into these holes when attaching the lower die.
- As the lower die rolled on the cylinder cut the sheet, the image on the diagram should be reduced in the sheet transporting direction with the 99.81% (reduction ratio). See page 72 for die diagrams.

[Reference Data]

Magnet Cylinder Diameter of magnet  $\phi$  184.18

Diameter of bearer  $\phi$  184.78



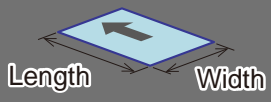
**NOTE**

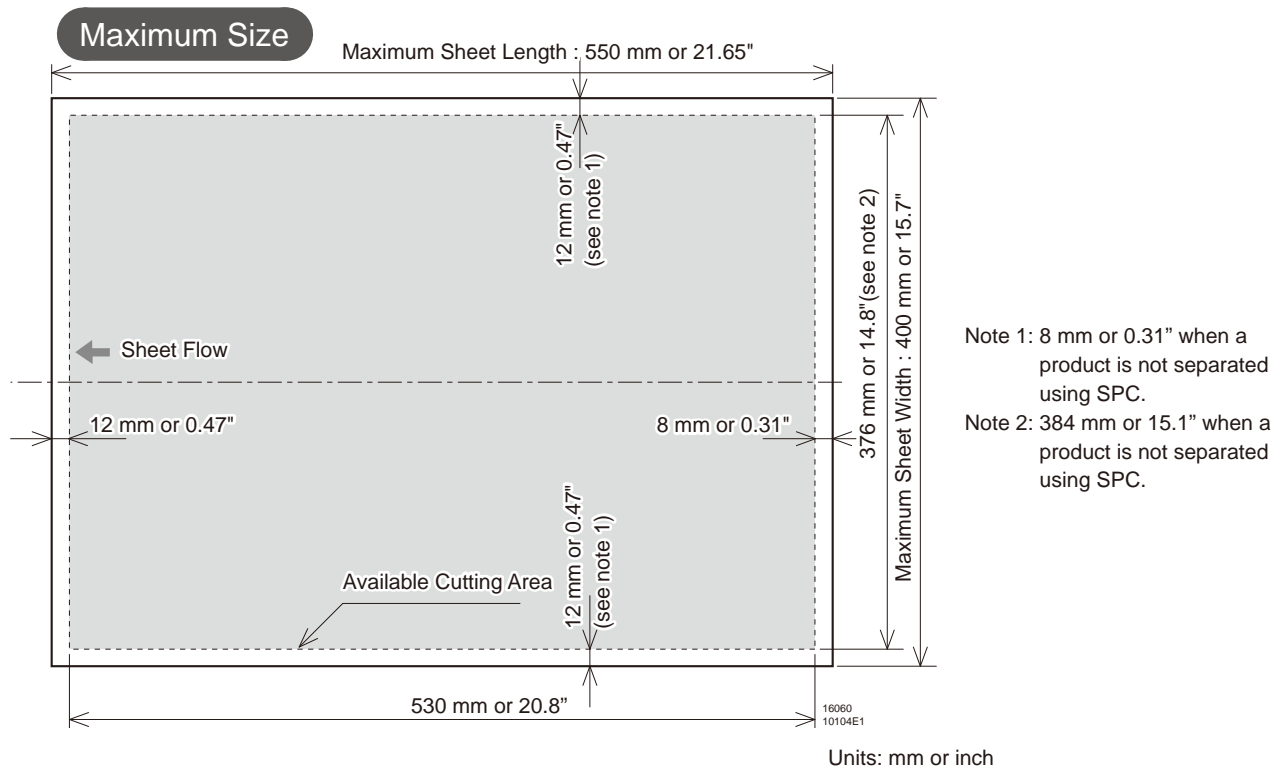
The lifetime of lower die will vary depending on the quality of the sheets and the cutting shape. The blade on the die may be damaged if the machine is operated incorrectly. Keep a spare die if you will not have enough time to make a new one.

### 2-2-3 Specification of Printing, Imposition and Nick Positions

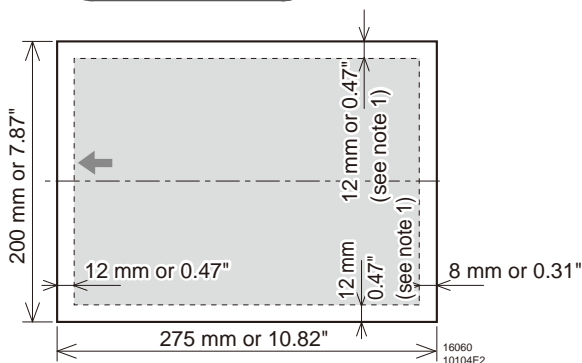
#### Printing

The printing should meet the following specifications:

	Sheet Size (Before processing)	Max. 400 (W) x 550 (L) mm or 15.74" x 21.65"
		Min. 200 (W) x 275 (L) mm or 7.88" x 10.83"
Available Material	Normal paper, Coated paper, Cardboard	
Material Thickness	127.9 to 400 gsm Die cutting: Max. 0.5 mm or 0.019" Creasing: Max. 0.3 mm or 0.011"	

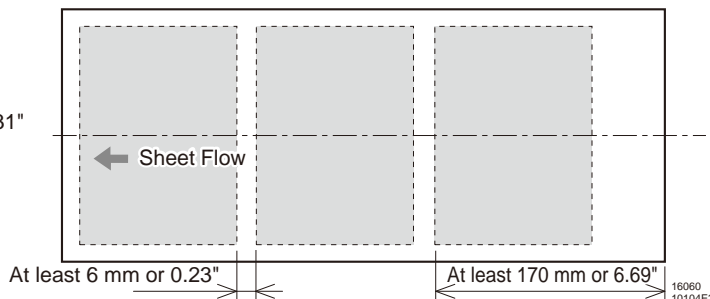


**Minimum Size**



**Limits for Repeat Die Cutting**

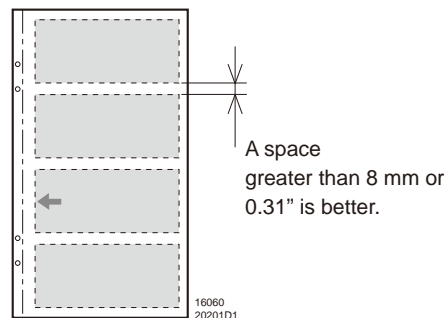
The necessary gripping width is 170 mm (6.69") or more. Allow at least 6 mm (0.23") of space between the cut patterns. If possible, allow more than 8mm (0.31") of space.



These limits are not applied if you enter the die size using the Setting screen. (See page 91 for details.)

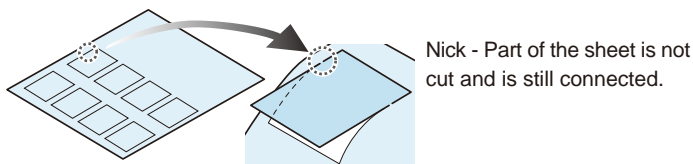
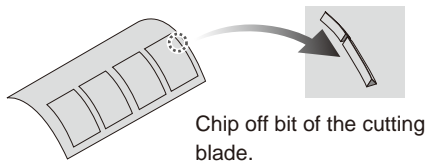
**Distance Between Repeated the Same Patterns**

If you will use the separator machine and separate the patterns that are cut using one die, the space between the patterns should be at least 6 mm or 0.23". A space of 8 mm or 0.31" is better.



**Nick Positions**

It is necessary to make nicks on the blade of the upper die so the cut product will not drop during cutting.



**Important**

The appropriate positions of the nicks depend on the product pattern, sheet quality, and the size of the waste material. Once the upper die is made, the nicks cannot be removed.



**Important**

If you will not be using the separator, be sure to place the nicks evenly. If the nicks are not placed evenly, pieces of cut product may catch each other and the sheets may not be delivered correctly.

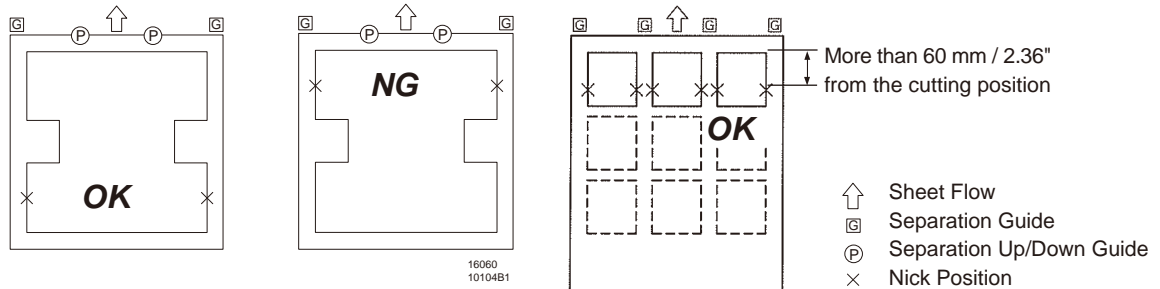


**Additional Information**

A nick can be added by grinding out a short section of the blade on the die using the optional hand router or nick punch.

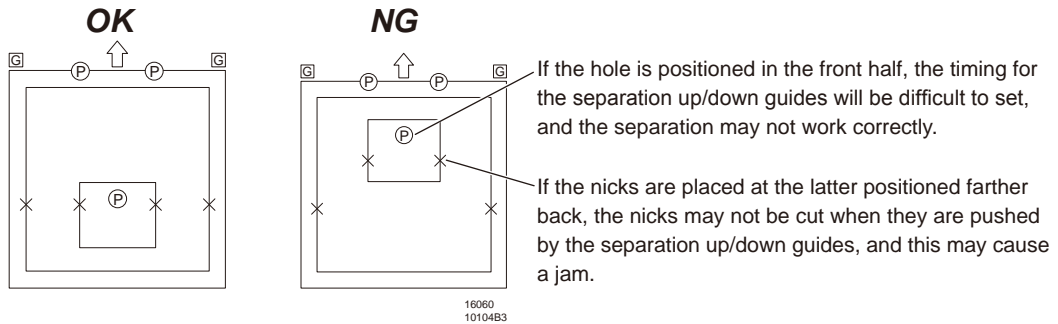
**Nick Positions When Using the Separator**

- Make the nicks around the tail of the cut product.



If the nicks are placed around the top or within 60 mm / 2.36" of the cutting position, the cut pieces may be difficult to separate and cause jams.

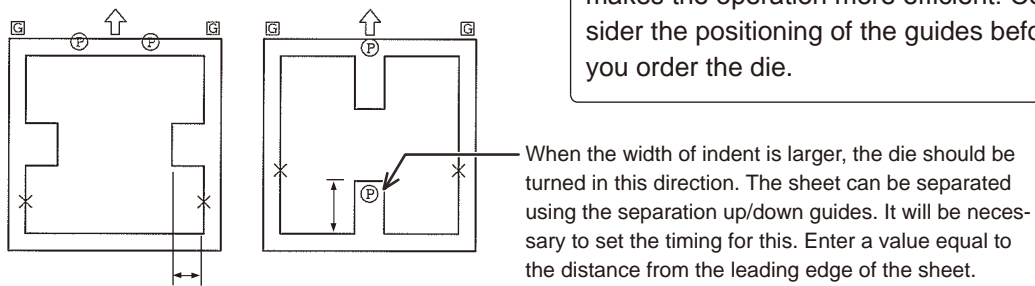
- If the cut piece includes a hole, position the hole in the rear half of the cut piece and make the nicks on the front half of the hole.



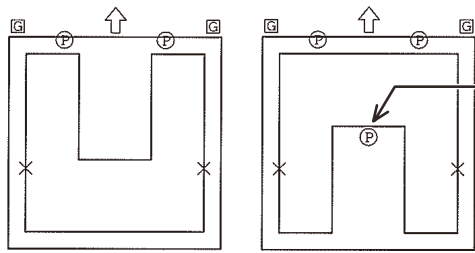
**Imposition When Using the Separator**

The cut pieces are easily separated by considering the imposition. See the following example:

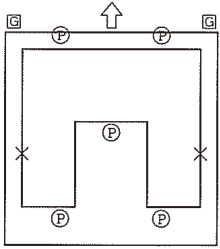
**NOTE**  
 Less use of the separation up/down guides reduces the time required for setup and makes the operation more efficient. Consider the positioning of the guides before you order the die.



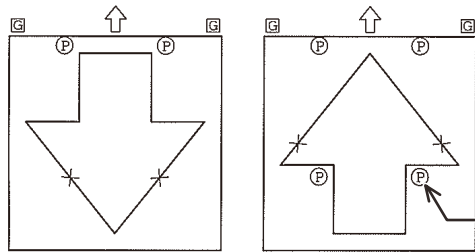
If the width of the indent is narrow, separation is possible if the sheets move in this direction.



If the indent faces in this direction, push it using the separation up/down guides. It will be necessary to set the timing for this. Enter a value equal to the distance from the leading edge of the sheet.

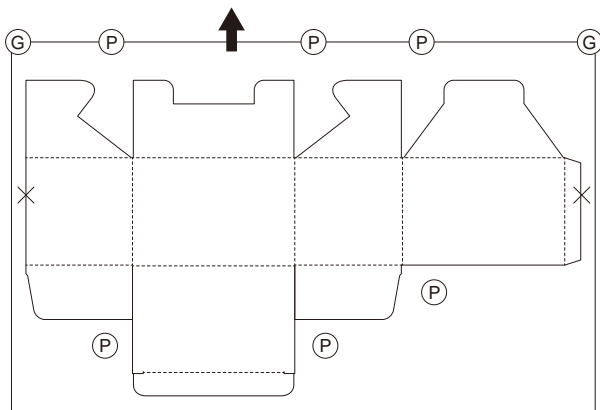
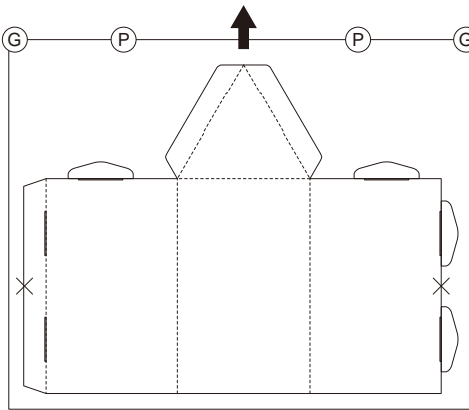
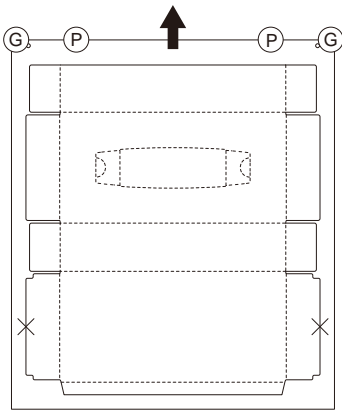


If the margin at the tail is wide, it will need to be pushed by the separation up/down guides.



If a corner faces in this direction, push the waste material here using a separation up/down guide. It will be necessary to set the timing for this. Enter a value equal to the distance from the leading edge of the sheet.

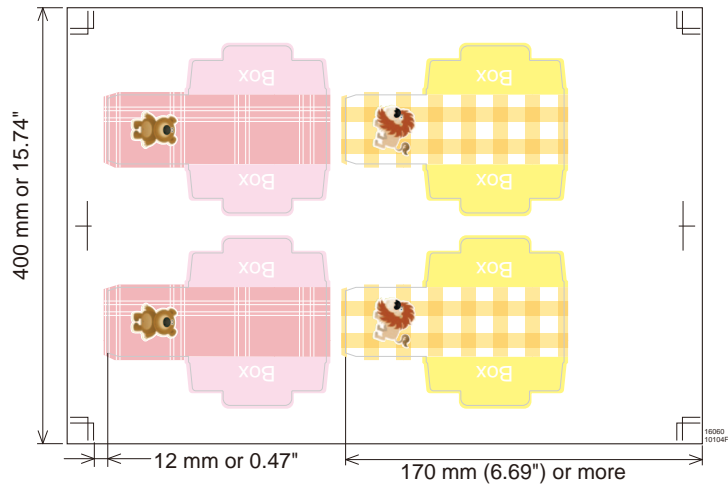
• Examples of cut product:



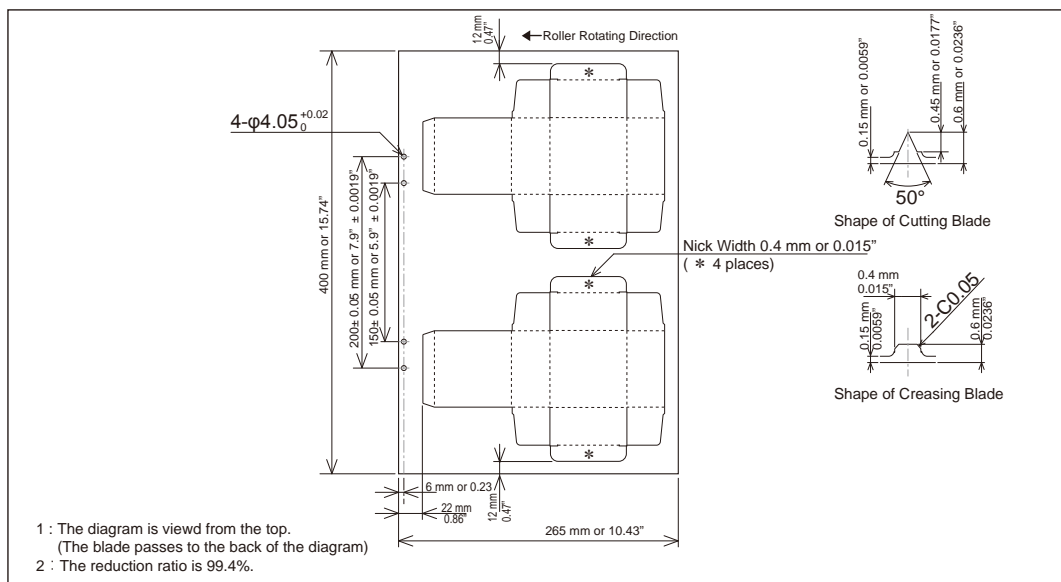
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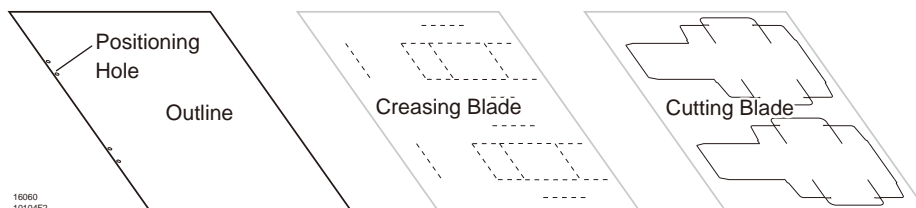
Examples of Printing and Die Diagrams: With Creasing



(1) Upper Die

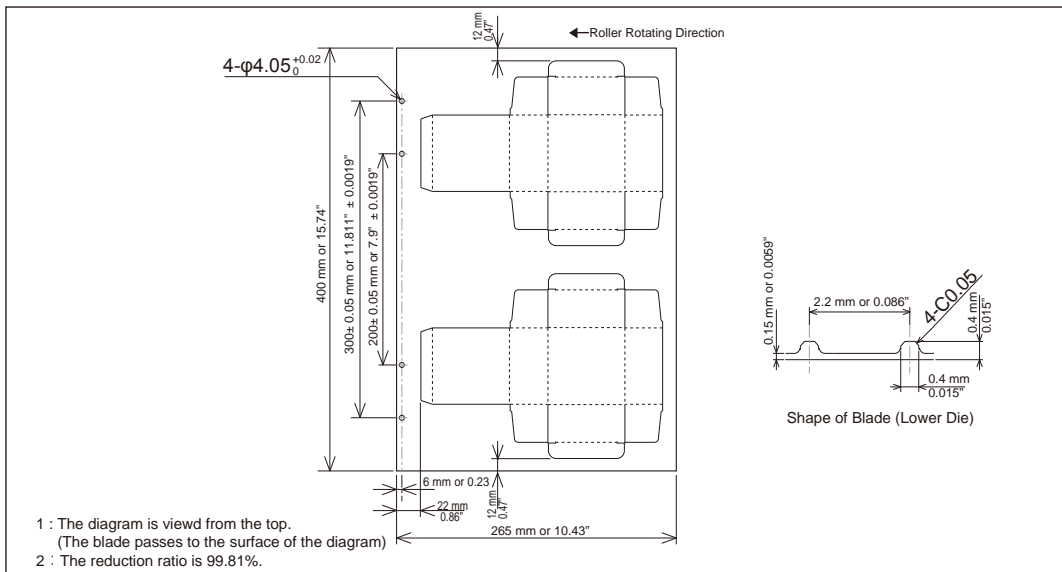


- Ask the specialized supplier about the data required.
- Draw the shape of the die as viewed from the top. (The blade will move toward to the back of the diagram)  
A note on the diagram should say that “the shape is viewed from the top.” and “the reduction ratio is 99.4%.”
- Create separate layers for cutting blade, creasing blade, and the outline of the sheet (including the positioning holes).

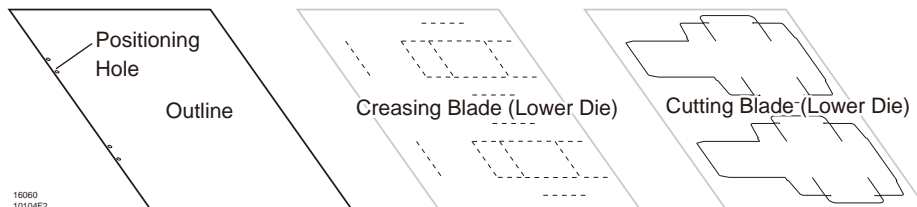


- If there are different heights of blades, create different layers for these.
- A note on the diagram should show the roller rotating direction.

(2) Lower Die

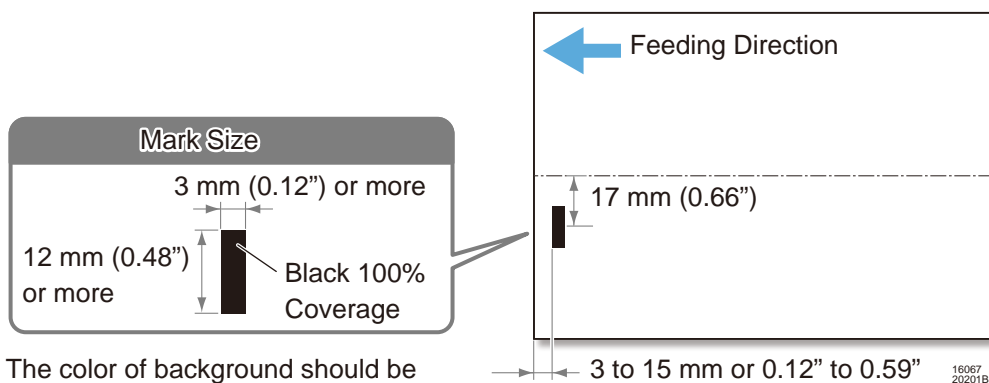


- Ask the specialized supplier about the data required.
- Draw the shape of the die as viewed from the top. (The blade will move toward to the surface of the diagram)  
A note on the diagram should say that “the shape is viewed from the top.” and “the reduction ratio is 99.81%.”
- Create separate layers for cutting blade, creasing blade, and the outline of the sheet (including the positioning holes).



- A note on the diagram should show the roller rotating direction.

Mark Specification of the Mark Sensor (Option)



The color of background should be as close to white as possible.