TAKACHI

Overlay Sheets with Embossed Push Buttons No Complete Die Cost Required!

Achieving results from just 1 piece without using a die!
Dramatically reducing initial costs with TAKACHI's proprietary new production method.

External dimension 99×53mm

1 type of embossing pattern, total 7 locations

● Previous Price (1 Sheet)

Initial cost	USD185.90
Sheet product cost	USD 60.80
Total cost	USD246.70

● New Method Price (1 Sheet)

Initial cost	USD 45.00
Sheet product cost	USD112.00
Total cost	USD157.00

36% reduction in total costs!

External dimension 70×70mm

1 type of embossing pattern, total 16 locations

● Previous Price (1 Sheet)

Initial cost	USD222.40
Sheet product cost	USD 68.90
Total cost	USD291.30

● New Method Price (1 Sheet)

Initial cost	USD 45.00
Sheet product cost	USD129.40
Total cost	USD174.40

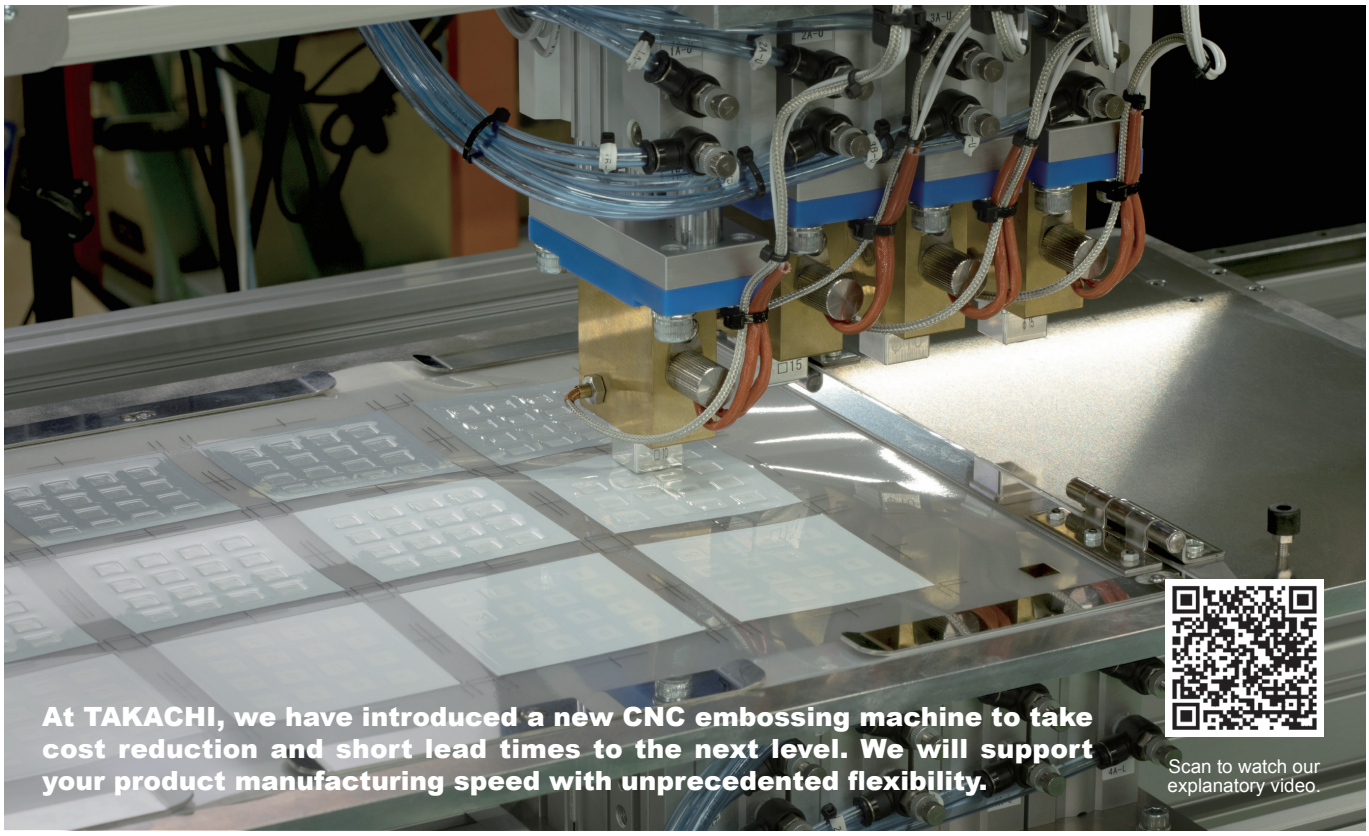
40% reduction in total costs!

*Calculations are based on 1USD=140JPY; rounded to the nearest ten cents.
*Prices as of October 2025.
*Prices are subject to change depending upon requirements.

Please see the following pages for more information.

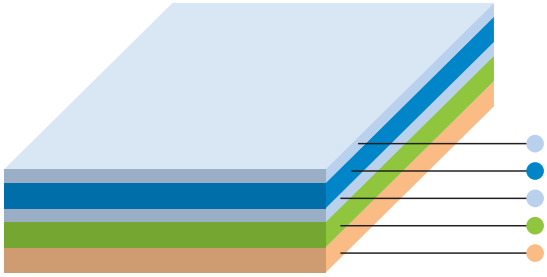
Digital printed overlay

Overlay Sheet for Boxes and Enclosures Introducing the New CNC Embossing Machine



Product Specifications

Technical Data
Operating temperature : 5°C ~ 35°C (Room temperature environment recommended)



Layer details

Layer		Material	Thickness
Protective layer		Polypropylene	0.040mm
Printed film layer		PET	0.188mm
Laminated film layer		PET	0.016mm
Double-sided tape layer	Standard	Acrylic	0.17 mm
	Waterproof	Acrylic	0.15 mm
Paper liner		Paper	-

*Remove the protective layer before using.

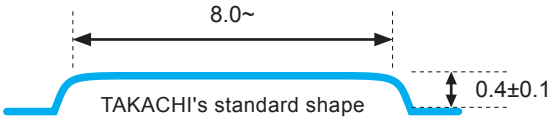
Embossing Process

Embossing process is the process of creating raised patterns on the overlay sheet by applying pressure with a die.
In addition to embossing using dies prepared with TAKACHI's proprietary method which can reduce the cost by half compared to standard dies, we now also offer CNC embossing process which eliminates the initial die costs.

CNC Embossing Details

Max. sheet size : 400×250mm
Size : Varies depending on TAKACHI's attachments.
Height : 0.4±0.1mm (reference value)
Shape : Round or Rectangular.
Min. distance : 5mm
(From edge of sheet & between two embossed shapes.)

Embossed Surface Details



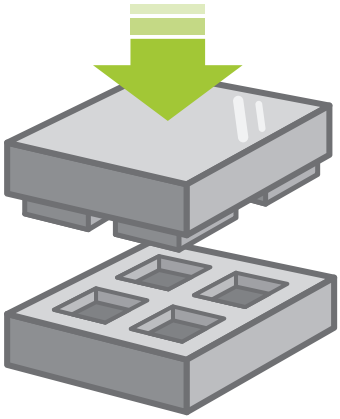
Feature 1 No Initial Cost Required for Ready-Made Shapes! Exceptional Low Cost Operation!

Until now, intial costs were a burden in embossing processes as complete dies must always be prepared. This was unsuitable for creating prototypes and small-volume production. At TAKACHI, we have adopted a proprietary processing method which does not require a complete die, which realizes production without initial costs.

ZERO initial die costs!

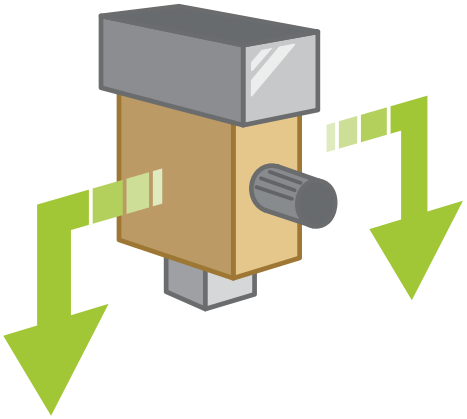
- **Production available from just 1 sheet**
- **Ideal for prototypes and high-mix, low-volume production**
- **Embossing process can be easily integrated in the development phase**

Conventional Method (Complete Die)



Requires dies to be prepared for each sheet design

CNC Embossing Machine



No dies required as it moves and presses automatically

CNC embossing process can be performed with embossing attachments available at TAKACHI.
No initial cost is required for embossing using the following embossing attachments.

List of Embossing Attachments Available at TAKACHI - CNC Embossing Available

Round shape	Rectangular shape				
ϕ8	□8(R1)	—	—	—	—
ϕ9	□9(R1)	—	—	—	—
ϕ10	□10(R1)	□10(R2)	□10(R3)	—	—
ϕ11	□11(R1)	□11(R2)	□11(R3)	—	—
ϕ12	□12(R1)	□12(R2)	□12(R3)	□12(R4)	—
ϕ13	□13(R1)	□13(R2)	□13(R3)	□13(R4)	□13(R5)
ϕ14	□14(R1)	□14(R2)	□14(R3)	□14(R4)	□14(R5)
ϕ15	□15(R1)	□15(R2)	□15(R3)	□15(R4)	□15(R5)

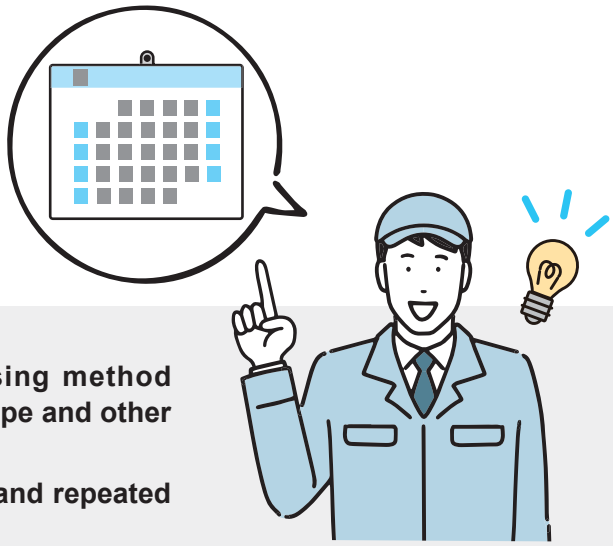
*Misalignment may become more noticeable when embossing exactly on a printed design.
*Minor cracks may be present on the outer edge when embossing.
*Clicking may feel different depending on the shape and size of the embossing.

Feature 2 Short Lead Time

As complete embossing die design and manufacturing is not required, lead time for new product designs can be reduced significantly compared to conventional methods.
Changes to designs can also be applied instantly, due to this method not requiring a complete die. This is the perfect solution for product development requiring speed.

Category	Processing lead time
New	10 working days
Repeated orders	8 working days

*Lead time is standard lead time. It may vary depending on the content, volume, order status at TAKACHI, etc.
*Data check days are not included in 'working days'.



We can propose the most suitable processing method based on the embossing dimensions, shape, type and other conditions.

Please consult us regarding mass-production and repeated orders.

Prototypes
Low volume

CNC embossing + Cutting plotter

[Feature] Complete embossing die cost not required (select embossing shape from TAKACHI's attachments).
Specializes in low-volume, high-mix orders.
[Lead time] New : from 10 working days Repeat : from 8 working days

Complete embossing die (TAKACHI's proprietary method) + Cutting plotter

[Feature] Embossing in various shapes is possible
*Complete embossing die manufacturing (TAKACHI's proprietary method) is required
[Lead time] New : from 17 working days Repeat : from 8 working days

Mass production
High volume

CNC embossing + Cutting die

[Feature] Complete embossing die cost not required (select embossing from TAKACHI's attachments)
*Complete dies are required for exterior shape cutting and double-sided tape pasting.
[Lead time] New : from 22 working days Repeat : from 20 working days

Complete embossing die + Cutting die

[Feature] Embossing of various shapes is possible, while keeping the product cost down
*Complete dies are required for embossing, exterior shape cutting and double-sided tape pasting.
[Lead time] New : from 27 working days Repeat : from 22 working days

Reference Price Example

External dimension

123 × 65mm

Embossing

2 types of embossing patterns, total 7 locations

Double-sided tape

Waterproof type

		CNC embossing + Cutting plotter				Conventional complete embossing die (TAKACHI's proprietary method) + Cutting plotter			
Production lot		1 pc	5 pcs	10 pcs	30 pcs	1 pc	5 pcs	10 pcs	30 pcs
Inkjet printing data processing fee		USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00
Complete embossing die production fee (TAKACHI's proprietary method)		USD 0.00	USD 0.00	USD 0.00	USD 0.00	USD151.10	USD151.10	USD151.10	USD 151.10
Sheet product cost	Unit price x qty	USD135.40 x 1 pc	USD 65.50 x 5 pcs	USD 53.30 x 10 pcs	USD 43.70 x 30 pcs	USD 76.50 x 1 pc	USD 47.20 x 5 pcs	USD 36.10 x 10 pcs	USD 30.10 x 30 pcs
	Total	USD135.40	USD327.50	USD533.00	USD1,311.00	USD 76.50	USD236.00	USD361.00	USD 903.00
Total cost		USD180.40	USD372.50	USD578.00	USD1,356.00	USD272.60	USD432.10	USD557.10	USD1,099.10
Per sheet		USD180.40	USD 74.50	USD 57.80	USD 45.20	USD272.60	USD 86.40	USD 55.70	USD 36.60

External dimension

151 × 116mm

Embossing

4 types of embossing patterns, total 14 locations

Double-sided tape

Standard type

		CNC embossing + Cutting plotter				Conventional complete embossing die (TAKACHI's proprietary method) + Cutting plotter			
Production lot		1 pc	5 pcs	10 pcs	30 pcs	1 pc	5 pcs	10 pcs	30 pcs
Inkjet printing data processing fee		USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00	USD 45.00
Complete embossing die production fee (TAKACHI's proprietary method)		USD 0.00	USD 0.00	USD 0.00	USD 0.00	USD286.20	USD286.20	USD286.20	USD 286.20
Sheet product cost	Unit price x qty	USD175.70 x 1 pc	USD 92.60 x 5 pcs	USD 74.20 x 10 pcs	USD 63.80 x 30 pcs	USD 86.20 x 1 pc	USD 57.80 x 5 pcs	USD 48.30 x 10 pcs	USD 40.80 x 30 pcs
	Total	USD175.70	USD463.00	USD742.00	USD1,914.00	USD 86.20	USD289.00	USD483.00	USD1,224.00
Total cost		USD220.70	USD508.00	USD787.00	USD1,959.00	USD417.40	USD620.20	USD814.20	USD1,555.20
Per sheet		USD220.70	USD101.60	USD 78.70	USD 65.30	USD417.40	USD124.00	USD 81.40	USD 51.80

*Costs will be for sheet product costs only for repeated orders.

*Initial costs can be reduced significantly if you provide design data which does not require editing by TAKACHI.

*Calculations based on 1USD=140JPY; rounded to the nearest ten cents.

*Prices as of October 2025.

TAKACHI

DIGITAL PRINTED OVERLAY

Layers

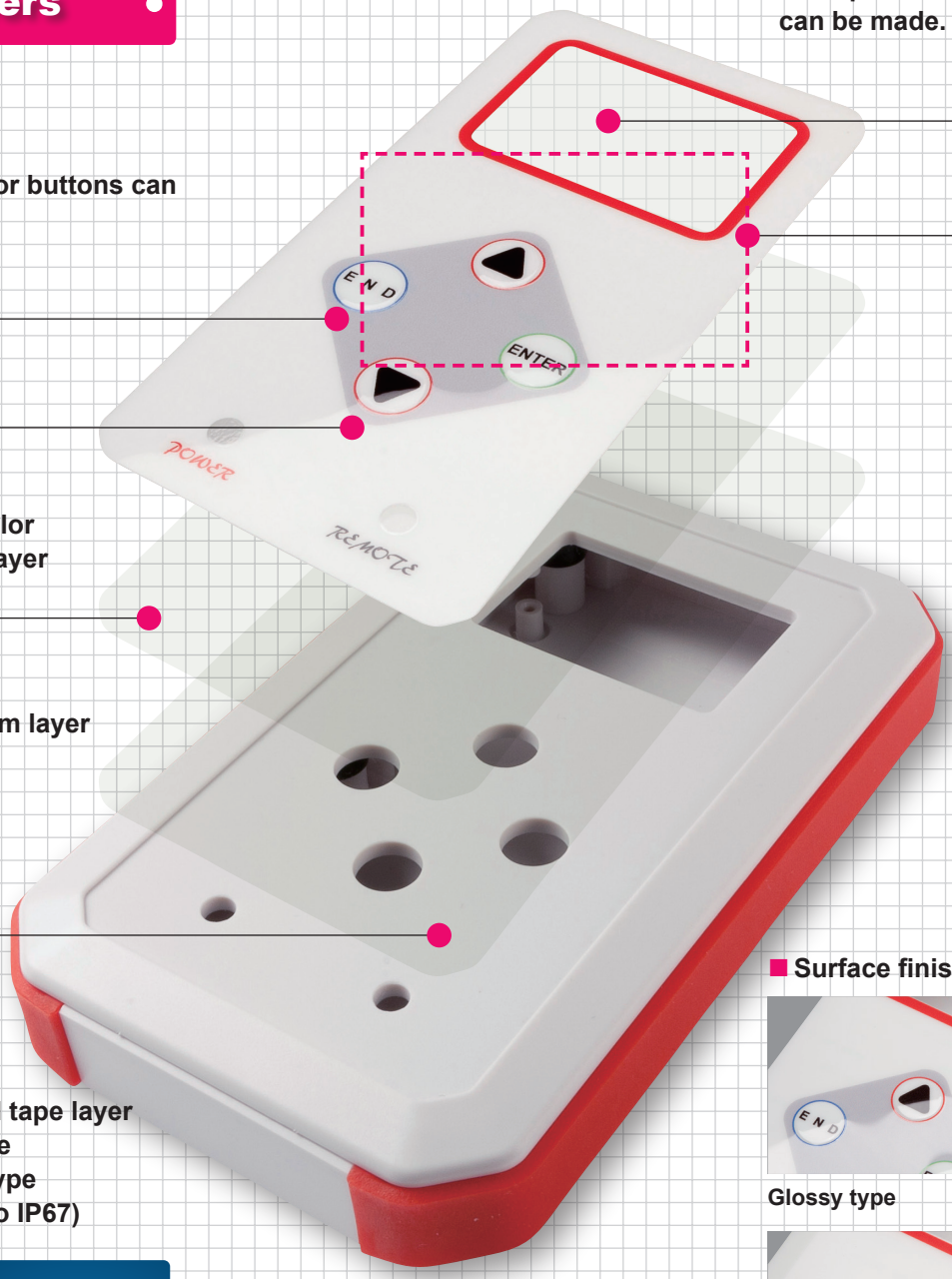
■ Transparent windows can be made.

■ Embossing for buttons can be formed.

■ Digital full color printed film layer

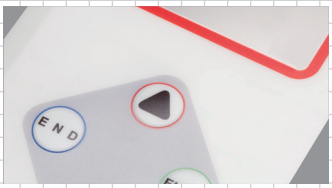
■ Laminated film layer

■ Double-sided tape layer
Standard type
Waterproof type
(Equivalent to IP67)



■ Surface finish

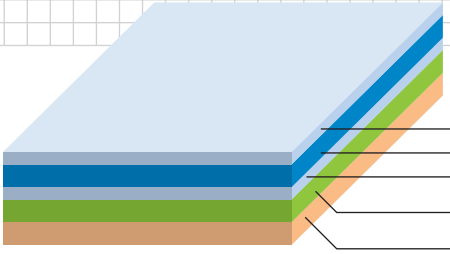
Glossy type



Matte type
Glossy type is recommended if transparent window is required.

Waterproof type is equivalent to IP67 protection class. IP67

Technical Data
Operating temperature : 5°C ~ 35°C (Indoor use recommended)



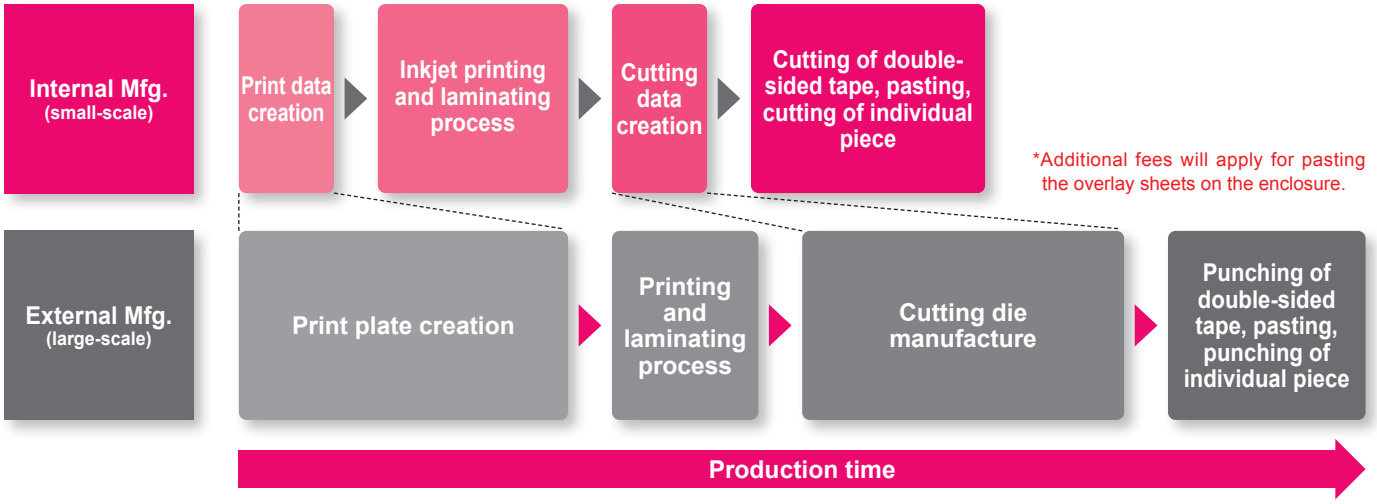
■ Layer details

Layer		Material	Thickness
Protective layer		Polypropylene	0.040mm
Printed film layer		PET	0.188mm
Laminated film layer		PET	0.016mm
Double-sided tape layer	Standard	Acrylic	0.17 mm
	Waterproof	Acrylic	0.15 mm
Paper liner		Paper	-

Overlay Sheet Production

Feature 1 Cutting die and print boards are not required

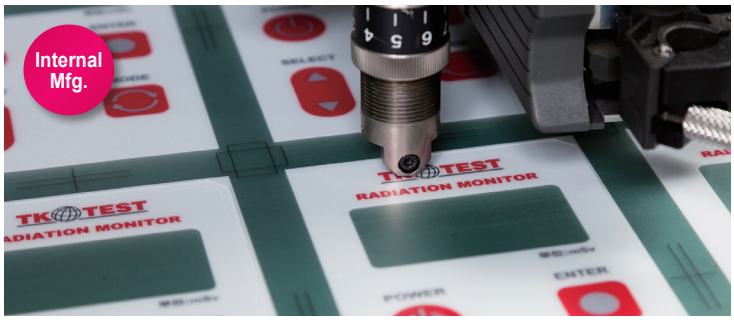
● Cost comparison



● Cutting plotter processing for cutting and creating cutouts on the overlay sheets and double-sided tape, instead of preparing cutting dies

Cutting die manufacturing cost from approx. USD357.00

Conventional method prepared cutting dies to punch out holes and cut the individual sheets.



Cutting plotter cost between approx. USD7.00 ~ 57.00 *Included in sheet price

By introducing a cutting plotter machine which processes cutting based on data, die manufacturing is no longer required.

● Inkjet printing adopted for printing - printing plate is not required

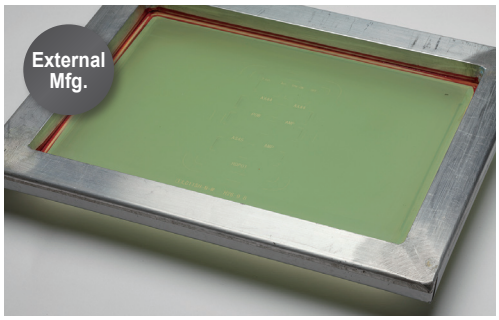
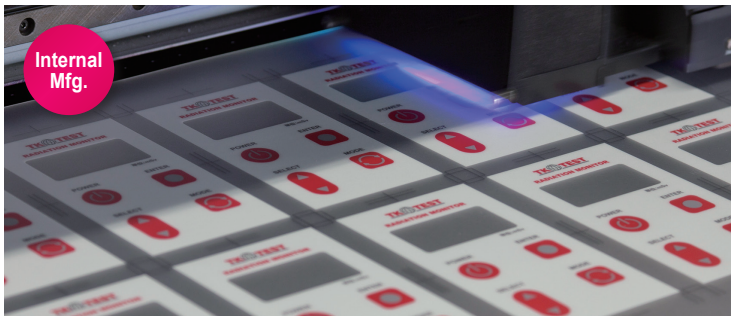


Plate fee from USD186.00

Conventional silk screen printing required print plates and printing was processed by color.



Data fee USD45.00 *For complete data

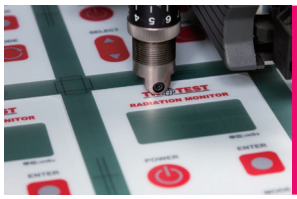
We have introduced an inkjet printer which can print directly based on printing data; therefore plate manufacturing is no longer required. Furthermore, multicolor printing cost is the same as single-color printing.

*1USD=140JPY; rounded to the nearest ten cents

Feature 2 Initial Costs

● 3 reasons behind realizing low cost

Reason 1



Overlay sheet and double-sided tape processing → Using the cutting plotter eliminates the need for die costs!

Reason 2

Printing onto overlay sheets → Printing plate costs not required thanks to inkjet printing!

Reason 3

Embossing process → Significantly reducing die costs with TAKACHI's proprietary die manufacturing method!

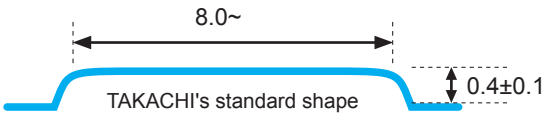
Feature 3 Embossing Process

Process of making raised patterns on the sheet by applying pressure with a die.
With TAKACHI's proprietary die manufacturing method and available dies, production is possible with approximately half the cost of using standard dies.

● Embossing Details

Size : from ϕ8mm
(Sizes smaller than ϕ8 will become hard to press; not recommended.)
Height : 0.4±0.1mm
Shape : Circles, Rectangles, and others.
(Shapes other than circles will have rounded corners.)
Min. distance : 5mm
(From edge of sheet and in between embossing locations.)

● Embossed surface details



*Cracks in the ink may occur with embossing processes.
*The height may vary when there are numerous embossing processes applied on the sheet.

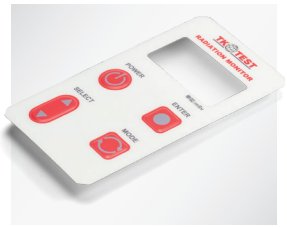
Feature 4 Short Lead Time

No embossing on overlay sheet

Category	Processing lead time
New	9 working days
Repeat	7 working days

Embossing applied on overlay sheet

Category	Processing lead time
New	17 working days
Repeat	8 working days



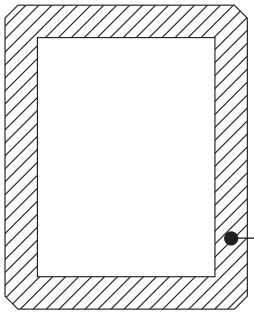
Comparison of lead times

Working days	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
TAKACHI lead time	Printing data / Cutting data		Sheet printing / double-sided tape processing / sheet cutting							
Standard lead time	Stencil creation / Cutting die creation					Sheet printing / double-sided tape processing / sheet punching				More than 10 days

*Lead time is standard lead time. It may vary depending on the details and volume.
*Data check days are not included in the lead time.

Feature 4 Waterproofing

With waterproof double-sided tape, the operation surface can be made waterproof.



Enclosure product no.:
WH145-20-N-BN

*This data is an example reference value; it is not guaranteed.

10mm margin from the edge is required for double-sided tape

Waterproof rating
No water ingress at 1m depth for 30 mins
IP67 equivalent

Recess processing

A recessed area is applied on a flat surface for pasting the overlay sheet.

Flat section on the enclosure

Recess processing

Pasting the overlay sheet

● Example reference price (no embossing)

Production lot		1 pc	5 pcs	10 pcs	30 pcs
Inkjet printing data processing cost		USD 45.00	USD 45.00	USD 45.00	USD 45.00
Sheet product cost	Unit price x qty	USD 47.20 x 1 pc	USD 36.70 x 5 pcs	USD 29.00 x 10 pcs	USD 24.40 x 30 pcs
	Total	USD 47.20	USD183.50	USD290.00	USD732.00
Total cost		USD 92.20	USD228.50	USD335.00	USD777.00
Per sheet		USD 92.20	USD 45.70	USD 33.50	USD 25.90

*For repeated orders, prices will only be for sheet product costs.

Size : 124mm x 66mm (with standard type double-sided tape)

We may suggest to use die cutting method if the total price is lower, depending on the volume, size, processing shape, etc.

● Example reference price (with embossing)

Embossing die costs have been reduced significantly by introducing a proprietary embossing die manufacturing method.

Production lot		1 pc	5 pcs	10 pcs	30 pcs
Inkjet printing data processing cost		USD 45.00	USD 45.00	USD 45.00	USD 45.00
Embossing die cost (TAKACHI's proprietary method)		USD150.00	USD150.00	USD150.00	USD 150.00
Sheet product cost	Unit price x qty	USD 70.20 x 1 pc	USD 42.90 x 5 pcs	USD 33.10 x 10 pcs	USD 27.10 x 30 pcs
	Total	USD 70.20	USD214.50	USD331.00	USD 810.00
Total cost		USD265.20	USD409.50	USD526.00	USD1,005.00
Per sheet		USD265.20	USD 81.90	USD 52.60	USD 33.50

*For repeated orders, prices will only be for sheet product costs.

Size : 124mm x 66mm (with standard type double-sided tape)

We may suggest to use die cutting method if the total price is lower, depending on the volume, size, processing shape, etc.

● Example reference price (with embossing)

Embossing die costs have been reduced significantly by introducing a proprietary embossing die manufacturing method.

Production lot		1 pc	5 pcs	10 pcs	30 pcs
Inkjet printing data processing cost		USD 45.00	USD 45.00	USD 45.00	USD 45.00
Embossing die cost (TAKACHI's proprietary method)		USD292.90	USD292.90	USD292.90	USD 292.90
Sheet product cost	Unit price x qty	USD 95.90 x 1 pc	USD 68.40 x 5 pcs	USD 59.60 x 10 pcs	USD 52.00 x 30 pcs
	Total	USD 95.90	USD342.00	USD596.00	USD1,560.00
Total cost		USD433.80	USD679.90	USD933.90	USD1,897.90
Per sheet		USD433.80	USD136.00	USD 93.40	USD 63.30

*For repeated orders, prices will only be for sheet product costs.

Size : 206mm x 118mm (with standard type double-sided tape)

We may suggest to use die cutting method if the total price is lower, depending on the volume, size, processing shape, etc.

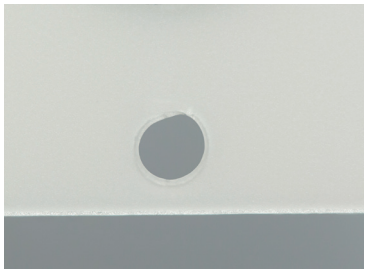
*1USD=140JPY; rounded to the nearest ten cents
*Prices as of October, 2025.

We may suggest to use cutting dies with lower product unit price for large-volume orders. Please see the table below when placing your order.

Item/Printing method			Cutting plotter (For small volumes & prototypes)	Cutting die (For large volumes & mass production)
Size / shape	Hole min.	Circle	ϕ5 or larger	ϕ1 or larger
		Rectangle	☐5 or larger	☐1.5 or larger
	Rectangular hole corner R		R1	R1
	Without embossing		564 x 385	564 x 385
	With embossing		450 x 300	450 x 300
	Distance between embossings		5mm or more	5mm or more
Cost	Initial cost		No die cost required	Cutting die cost is required
	1 pc		◎	x
	Up to 20 pcs		◎	x
	Up to 50 pcs		x	○
	Up to 100 pcs		x	◎
Standard lead time	New	Without embossing	9 days	27 days
		With embossing	17 days	27 days
	Repeated	Without embossing	7 days	22 days
		With embossing	8 days	22 days

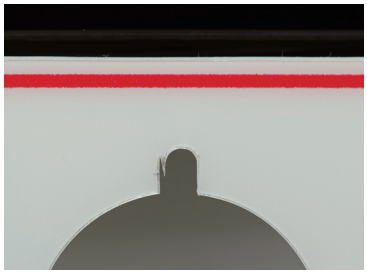
Cost and lead times are estimates. It may vary depending on volume and content.

Overlay Sheet Caution



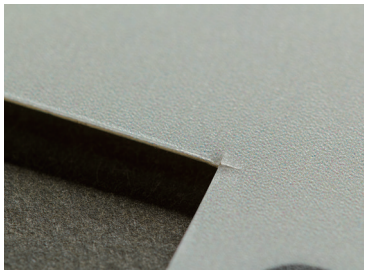
Min. circular hole : ϕ5 or larger
Min. rectangular hole : ☐5 or larger

Holes smaller than the above may result in distorted shapes.
(When using a cutting plotter)



5mm or more recommended

Small holes may result in hangnails.
(When using a cutting plotter)



Rectangular holes : standard corner R1

90° angle cutouts will result in overcutting.
(When using a cutting plotter)

Embossing spacing : 5mm or more
From edge of sheet : 5mm or more

If the distance between the embossing locations and from the edge of the sheet is too short, bending, etc. may occur.

OVERLAY SHEET EXAMPLES

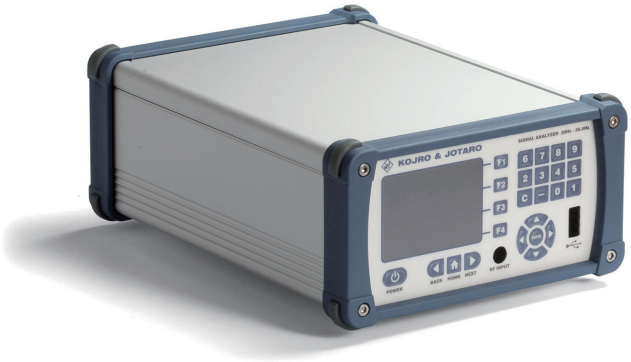
IP67 HAND-HELD ENCLOSURE
WH Series

PLASTIC ENCLOSURE with SILICONE PROTECTOR
TWS Series

HAND-HELD CASE with SHOCK-PROOF SILICONE COVER
LCT Series

IP68 / IP67 NETWORK PLASTIC BOX
WP Series

IP67 SLOPED PLASTIC ENCLOSURE
WSC Series



ALUMINIUM PANEL CASE with CORNER GUARD
EXP Series

IP68 ALUMINIUM ENCLOSURE with SILICONE PROTECTOR
AWP Series

HIGH-END DESIGN ALUMINIUM CASE
HD Series

IP68 FLANGED ALUMINIUM ENCLOSURE
AW Series

ALUMINIUM ENCLOSURE with CORNER GUARD
AUG Series

DESKTOP ENCLOSURE with STAND HANDLE
MSN Series

Cautionary Points When Providing Printing Data

Recommended data formats

Compatible Software: Adobe Illustrator (CS~CS6-CC)

.ai format	.eps format	.pdf format
		

Providing print-ready data can lower your initial costs significantly. "Print-ready" data refers to data which meet the following conditions and do not require any correction to be made by TAKACHI.

Common Points for All Printing

- ☑ Files should be created and saved in .ai, .eps, or .pdf format. (*Designs included in the file using Adobe Acrobat comment function would not be processed.)
- ☑ Data should be created and saved in the original (1:1 scale) size.
- ☑ Data should include the outline of the enclosure to be printed. (*Cut and dimension lines should be saved on the separate layers.)
- ☑ Logos and marks should be created and saved as vector data. (*1)
- ☑ Make sure to indicate whether white color in the design should be printed or not. (*2)
- ☑ Text data should always be outlined. (*3)
- ☑ Data should be created and saved in CMYK color mode and in the actual color to be printed. (*4)
  (RGB color mode would be converted to CMYK color mode at TAKACHI before printing; this may cause a difference in appearance.)
- ☑ Spot colors should be converted to process colors.
  (Data provided with spot colors would be converted to process colors; this may cause a difference in appearance.)
- ☑ It may not be possible to replicate your image if transparent effects, etc. are applied.
- ☑ Use "Normal" setting in Blend Mode.
- ☑ Overprinting settings should not be used to avoid any potential issues.
- ☑ Hairlines (no line width settings - fill only lines) should not be used to avoid any potential issues.
- ☑ Unnecessary layers, points, blank text boxes, etc. should be deleted.
- ☑ Objects should not be hidden using the "Hide" settings.
- ☑ All elements should be unlocked.
- ☑ For designs which extend to the edge of enclosure or part to be printed, additional 3mm or more fill color should be applied to the top, bottom, left, and right edges.
- ☑ 0.2mm gap should be applied to designs that extend to the edge of a height difference on the enclosure.

Overlay Sheets

- ☑ Print design, transparent windows, cutouts (cut lines), embossing, etc. should be saved on the separate layers.

Laser Marking

- ☑ Clipping masks should not be used.
- ☑ Color setting should be in black only.
- ☑ Images (raster data) and effects such as drop shadow should not be used.

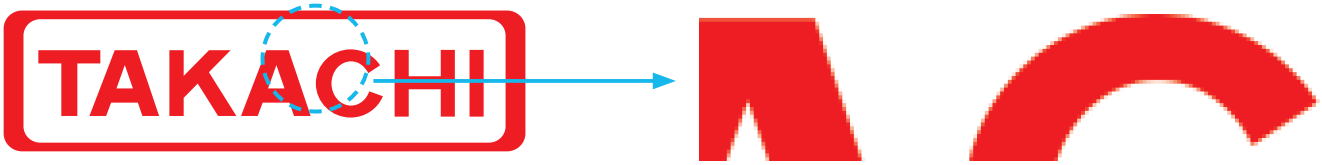
*In case of providing data meeting the conditions above is not feasible, or wishing to use hand drawn sketches, ask our sales representatives.

LOGOS and MARKS *1

Customization service may not be available when images (rastor data) are used.
Using vector data is recommended.

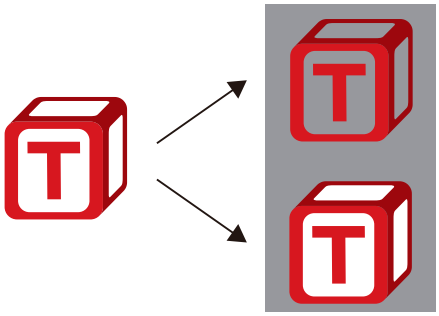
【Vector Data】Image clarity remains unchanged even when magnified.

【Raster Data】Image clarity drops (pixels become visible) when magnified.



*2

In case wishing to use a transparent background, do not put white color. For images that use white, the background should be filled with a different color, or the use of white color should be indicated in your drawings. It may potentially cause issues if areas which do not need to be printed are covered using white objects.



OUTLINING TEXT *3

Outlining text is a feature on Adobe Illustrator, etc. which converts text data into a vector.
It converts the outer edges of the text into paths and prevents unnecessary conversion of fonts.
If the font used in the design is unavailable at TAKACHI, it will be replaced with a similar or a random font.
Make sure that your text data is outlined to avoid this from happening.

TAKACHI

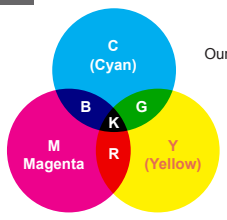
Text (Not outlined)

Outlined

PRINTING IN CMYK MODE *4

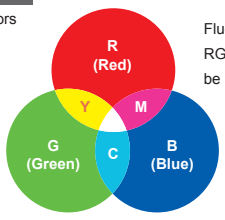
Printing is processed in CMYK + W color mode. Print files should be prepared in CMYK color mode.
If RGB color mode is used, print may become darker than the actual specified color when converted to CMYK color mode. (*Metallic colors such as gold and silver cannot be printed at TAKACHI. This may not be the case if the design uses a color gradient to replicate.)

CMYK Color
(Richromatic)

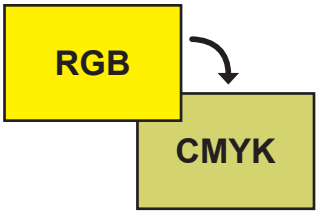


Our Color Mode

RGB Color
(3 primary colors of light)



Fluorescent colors in RGB color mode cannot be printed.



Difference in color due to the conversion (example)

TAKACHI

Printing Data Creation Guide

Inkjet Printing

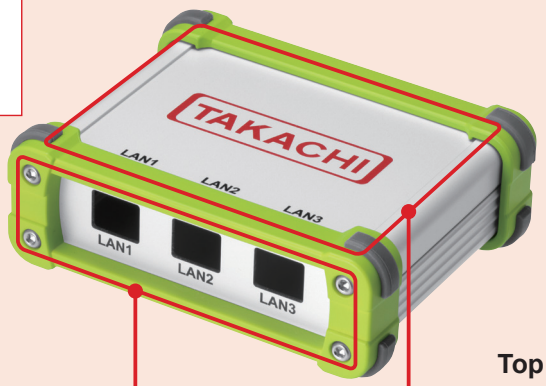
Recommended Data Formats

- .ai format
- .eps format
- .pdf format

Compatible Software: Adobe Illustrator (CS~CS6-CC~)
Providing print-ready data can lower initial costs significantly.
"Print-ready" data refers to data which do not require any editing to be made by TAKACHI.
(Refer to Custom-13~14 for further information.)

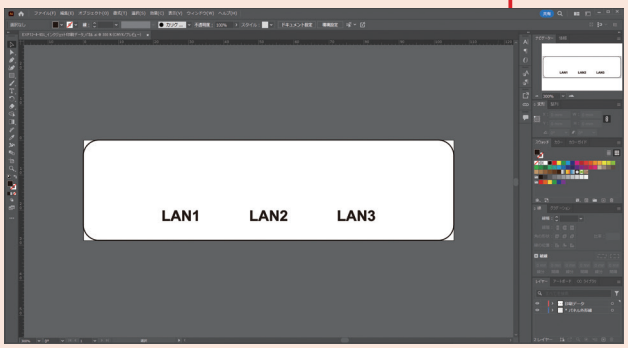
Printing Data

Printing data should only include **the print design** and **the shape of the enclosure component or the entire enclosure.**[*1]



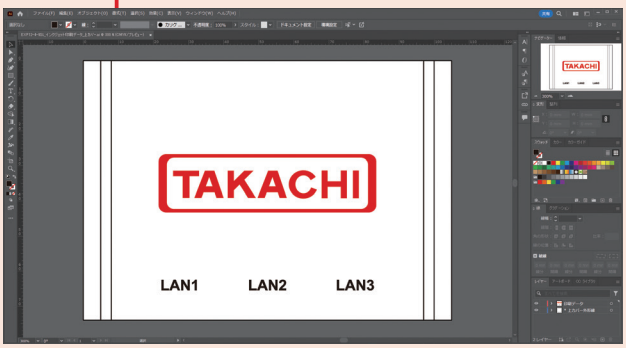
Panel Printing Data (sample)

[Print design + shape of the component (panel)]



Top Cover Printing Data (sample)

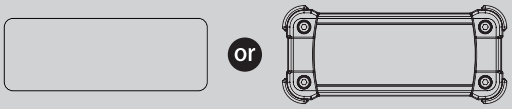
[Print design + shape of the component (top cover)]



- Outer edge dimensions should be created in original (1:1 scale) size.
- Print design and outer edge lines should be on separate layers.[*2]
- Print design should be created as vector data. (*Custom-13~14)
- All text should be outlined.(*Custom-13~14)
- Outer edge lines should not be outlined.
- Clearance of 0.2mm or more is required for height differences and tapered areas on the enclosure.
- Printing data layout should be arranged so that other components of the enclosure do not interfere with the print when assembled.[*3]
- Print color and design data color should match. However, this does not apply to white color.
- When using white in multi-color print design, either use a different background color or indicate the use of white color in the drawing.(*Custom-13~14)
- Note that colors can be applied to both fill areas and lines. (For example, if there are thin black lines remaining in the drawing, they will also be printed.)
- Any data which do not need to be printed - hidden data, layers, drafts, dimension lines, accessories - should be deleted.

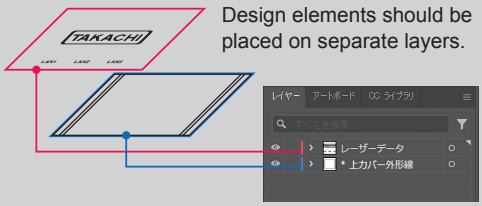
***1**

① Component shape ② Enclosure shape



Frame lines and artboards of the same size can also be used.

***2**



Design elements should be placed on separate layers.

***3**

Be careful of the possible overlap of other components of the enclosure and the printing design.

Recommended Data Formats

- .ai format
- .eps format
- .pdf format

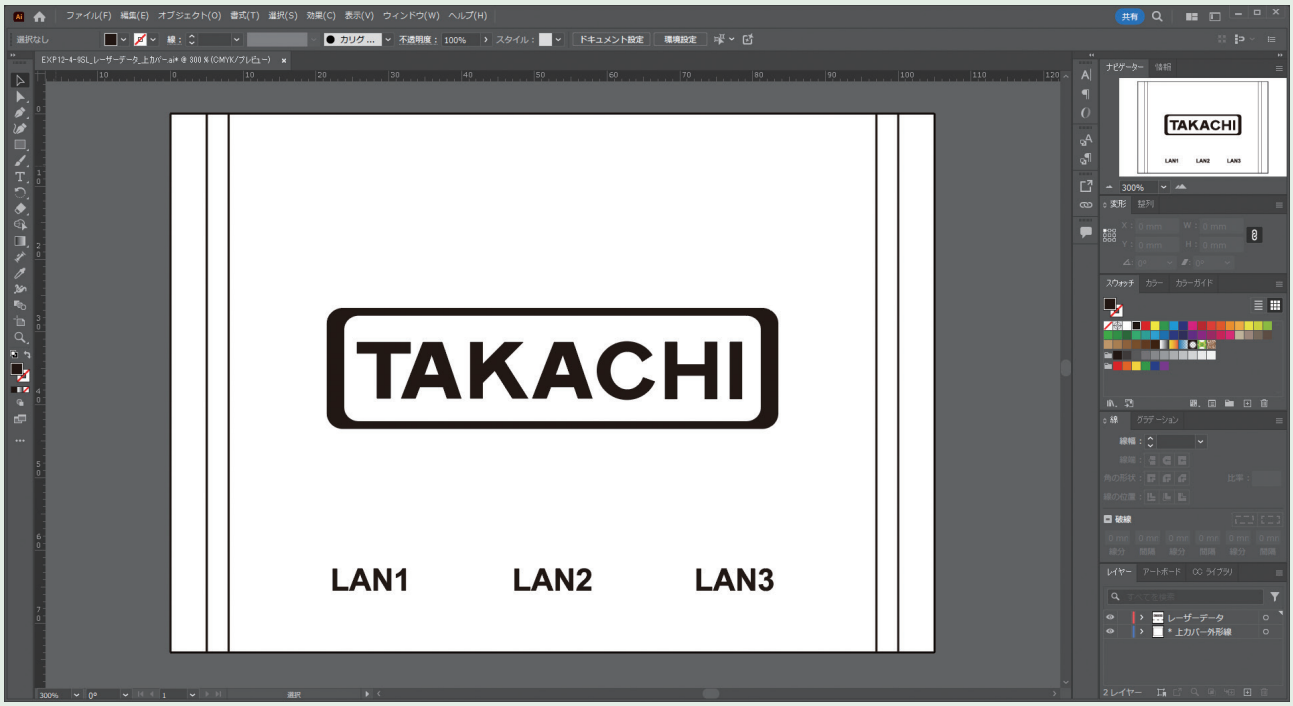
Compatible Software: Adobe Illustrator (CS~CS6-CC~)
Providing print-ready data can lower initial costs significantly.
"Print-ready" data refers to data which do not require any editing to be made by TAKACHI.
(Refer to Custom-13~14 for further information.)

Laser Marking

Laser Data

Laser data should only include **the laser marking design** and **the shape of the enclosure component or the entire enclosure.**[*1]

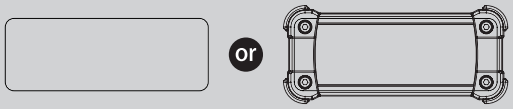
Laser Data (sample) [Laser marking design + outer edge of the enclosure]



- Outer edge dimensions should be created in original (1:1 scale) size.
- Print design and outer edge lines should be on separate layers.[*2]
- Print design should be created as vector data in black color.(*Custom-13~14)
- All text should be outlined.(*Custom-13)
- Outer edge lines should not be outlined.
- Clipping masks should not be used.
- Printing data layout should be arranged so that other components of the enclosure do not interfere with the print when assembled.[*3]
- Any data which do not need to be laser marked - hidden data, layers, drafts, dimension lines, accessories - should be deleted.

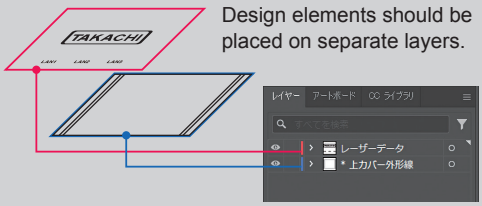
***1**

① Component shape or ② Enclosure shape



Frame lines and artboards of the same size can also be used.

***2**



Design elements should be placed on separate layers.

***3**

Be careful of the possible overlap of other components of the enclosure and the print design.

1 Printing Data
2 Sheet Processing Drawing
2 types of data are required

Recommended Data Formats

- .ai format
- .eps format
- .pdf format

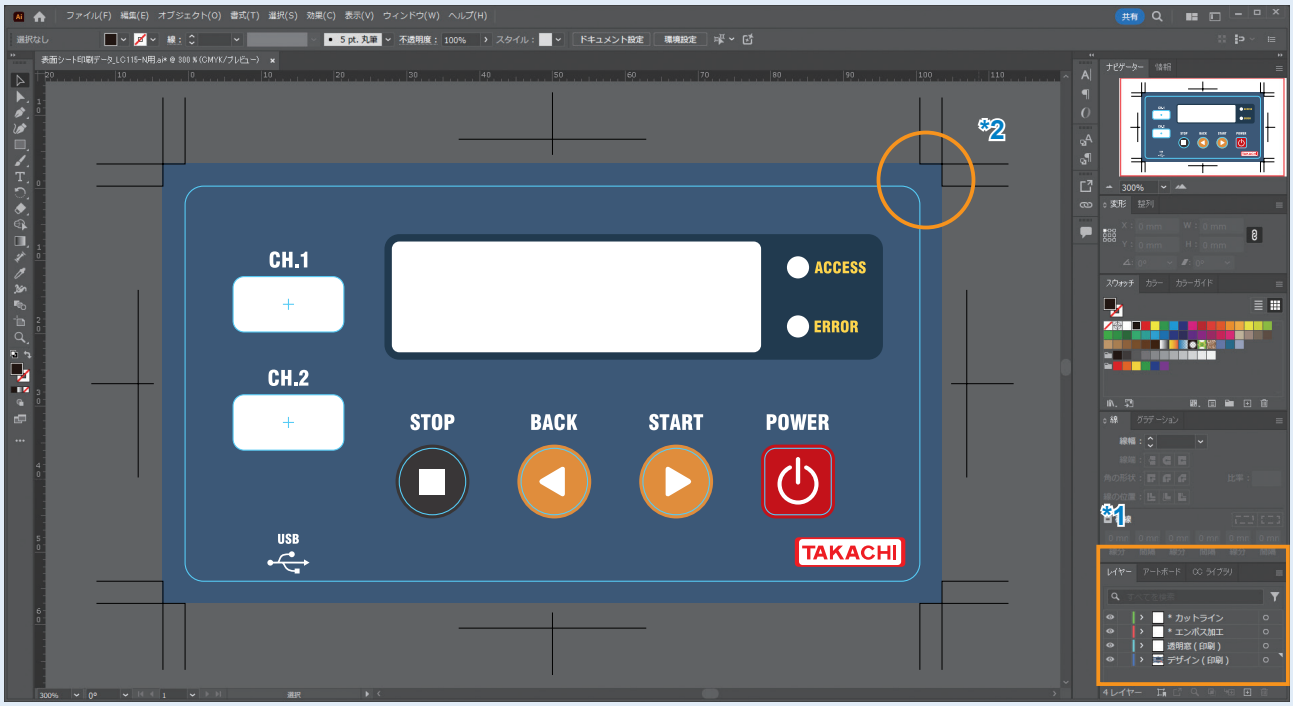
Compatible Software: Adobe Illustrator (CS~CS6-CC~)
Providing print-ready data can lower initial costs significantly.
"Print-ready" data refers to data which do not require any editing to be made by TAKACHI.
(Refer to Custom-13~14 for further information.)

Overlay Sheet

1 Printing Data

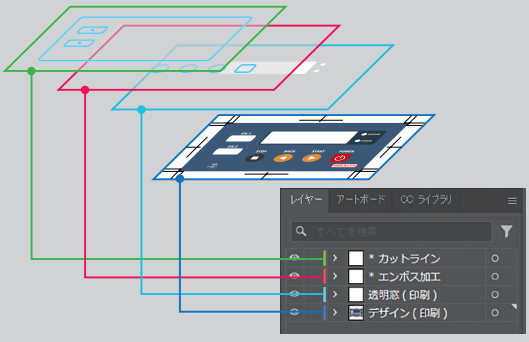
Print design and **sheet processing details (cut lines, windows, and embossing)** should be included in the printing data.

Printing Data (sample) [Sheet print design + processing details]

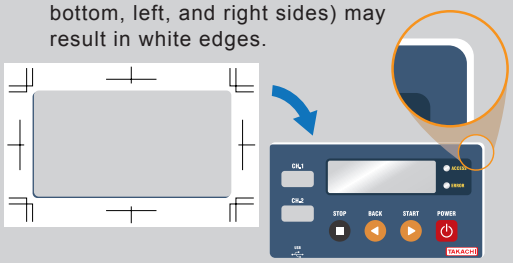


- Text should be outlined.(*Custom-13)
- Outer edge lines and processing details should be created as vector data and should not be outlined.
- Print design, transparent windows, cutouts (cut lines), embossing, etc. should each be placed on separate layers.*1
- Print color and design data color should match.
- Additional 3mm or more of base color fill should be applied to each sides (top, bottom, left, and right) from the cut line in your design.*2
- Any data which do not need to be laser marked - hidden data, layers, drafts, dimension lines, accessories - should be deleted.

*1 Separate layers should be used for each element.



*2 No additional fill color on the edges (top, bottom, left, and right sides) may result in white edges.

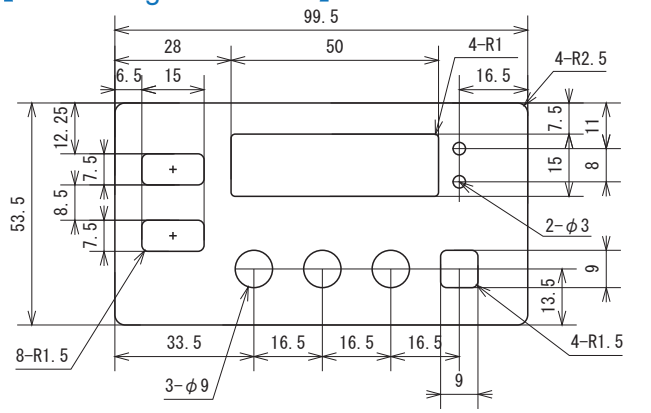


2 Sheet Processing Drawing

Make sure to clearly indicate the **sheet shape and processing dimensions**, as well as the **processing details** on your sheet processing drawing.

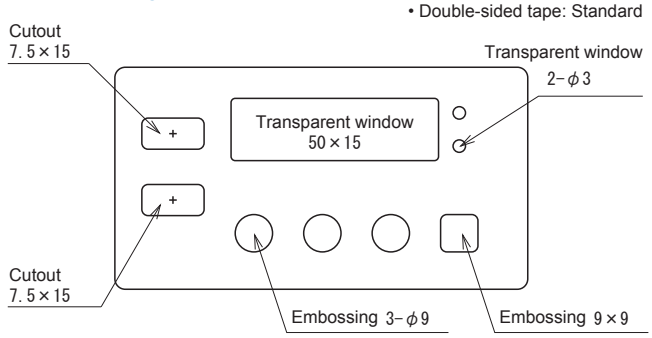
Sheet Processing Drawing (sample) [Sheet shape and processing dimensions + processing details]

【Processing dimensions】



【Processing instructions】

- Sheet type: Glossy
- Double-sided tape: Standard



- Make sure all processing positions and dimensions are accurate.
- Make sure to clearly indicate all processing instructions (transparent windows, cutouts (cut lines), embossing, etc.). (Processes without instructions will not be applied.)
- When pasting the overlay sheet on a TAKACHI product, ensure that clearance is applied (design being smaller than the product by 0.5mm or more*3). (*3 0.5mm is the standard clearance. This value will vary by product; please contact us if unsure.)
- Surface finish (glossy or matte) and double-sided tape type (standard or waterproof) should be specified.

Available processing dimensions vary by cutting process (CNC plotter cutting or press die cutting)
See Overlay-6 for further details.

Caution

Printing data + sheet processing drawing (single file)

Save data as a single file in one of the following formats.

AI EPS PDF

If printing data and sheet processing drawing are to be provided in a **single file**, please make sure that all elements are placed on separate layers, etc. and that print data and other additional information are not mixed.