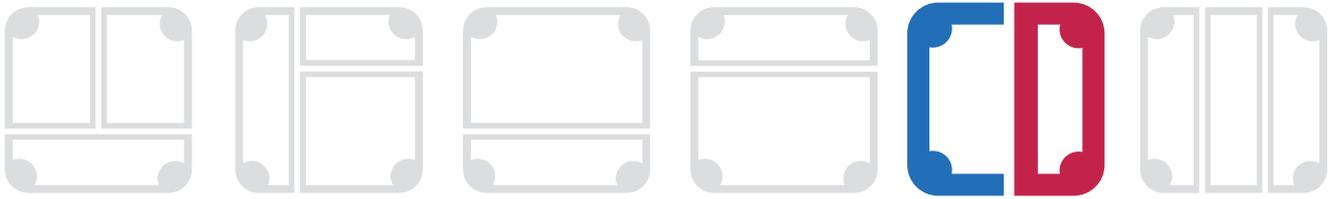


Case Designer - Manual

v 2.0.22



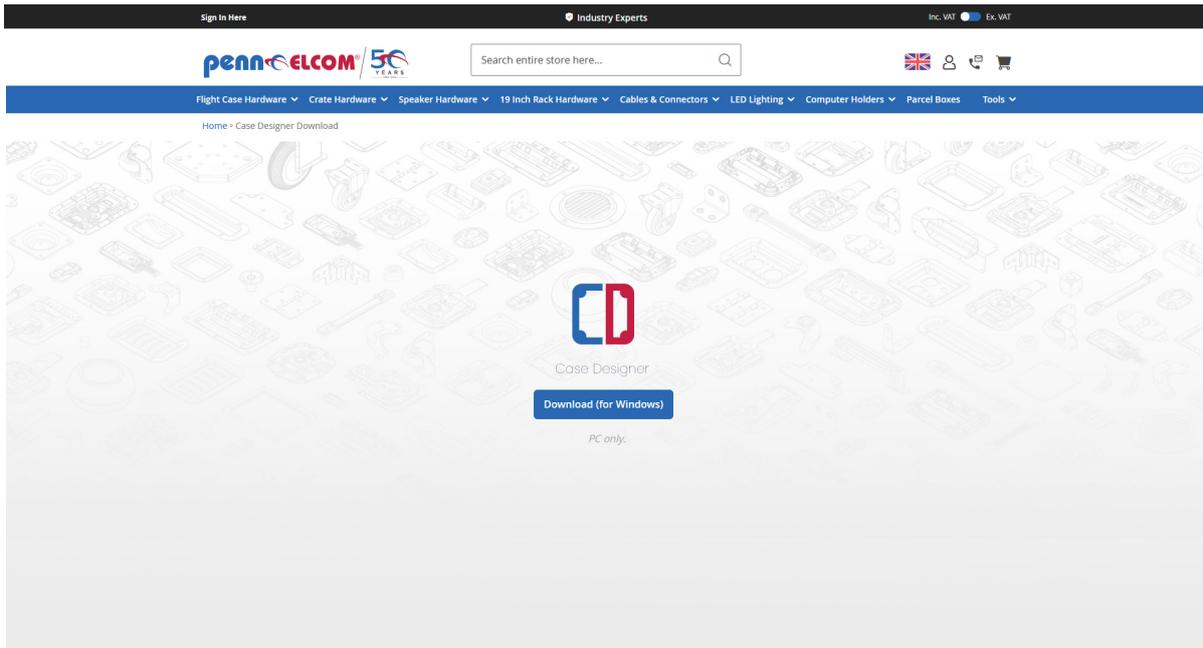
Case Designer

Case Designer - Manual

v 2.0.22

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Download the installation file via this link:
<https://www.penn-elcom.com/case-designer-download>

Pressing the blue button will start the download of the installer.



Note: The Case Designer is a Windows only product for now.



Minimal requirements:

- Windows 10 or newer (x64 only)
- x64-based processor
- 2Gb available disk space
- 2Gb available memory
- Internet connection (required for activation and updates)

Recommended hardware specs:

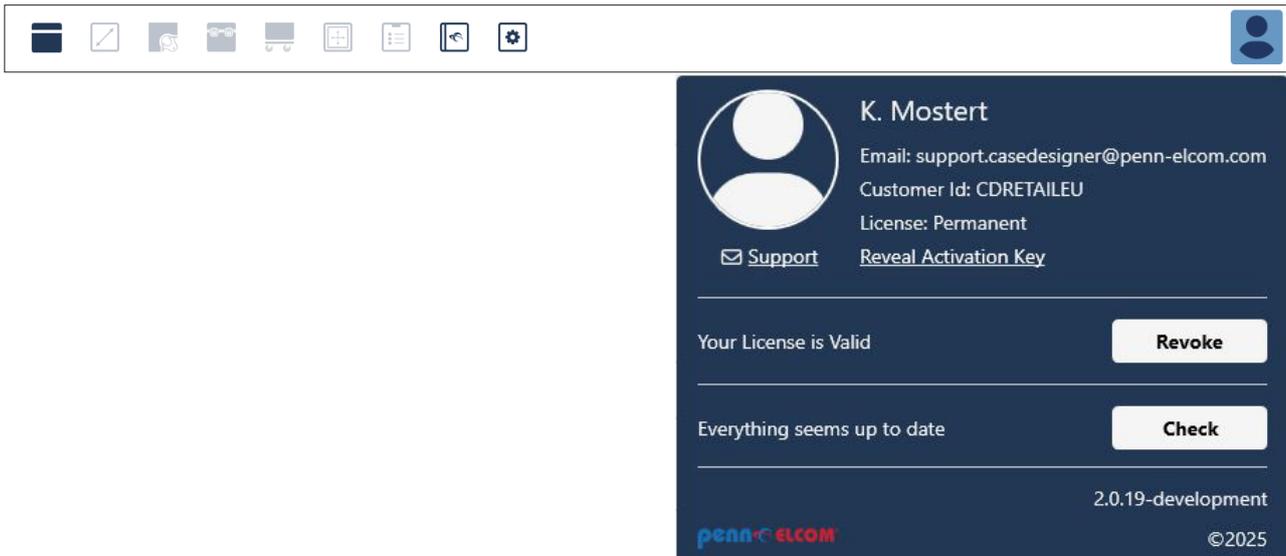
- Multi-core processor
- 4Gb available memory
- GPU processing power
- SSD
- Fast internet (reduces startup times)

The Installation process via the installer is straight forward:

Double click on the downloaded installer file and navigate through the screens as in any other software.

The user interface and layout of the Case Designer is icon based. If there is text the language is English.





When setting up your license (or to revoke it), open the account menu on the right. This menu can be accessed at all times. You can see which account is currently logged in (name & email) and also which pricelist is currently in use (here CDRETAILEU). If you see your Penn Elcom customer account id here, than you are using your specific prices for the calculation. Prices are updated once a day and can be manually overwritten on a per item basis (individually or in bulk) in the catalog. A manual entry will not be updated. Below the ID is your expiry date and you can reveal the licensekey, it is hidden in case you need to grab a screenshot without an exposed key. Below the account image is a shortcut to contact support.

In the license window there is also a check if an update is available. There will be a yellow notification if there is one available. You can see the installed version number at the bottom of the window, here 2.0.19-dev . Licenses are subscription based and single seat licenses, so each license is valid for 1 (one) Windows device. If you are switching from a trial to a paid plan you might need to revoke your trial key and restart the Case Designer before you can enter your full license key.

➔ Workflow

The program is structured, so that you are building a case from left to right.



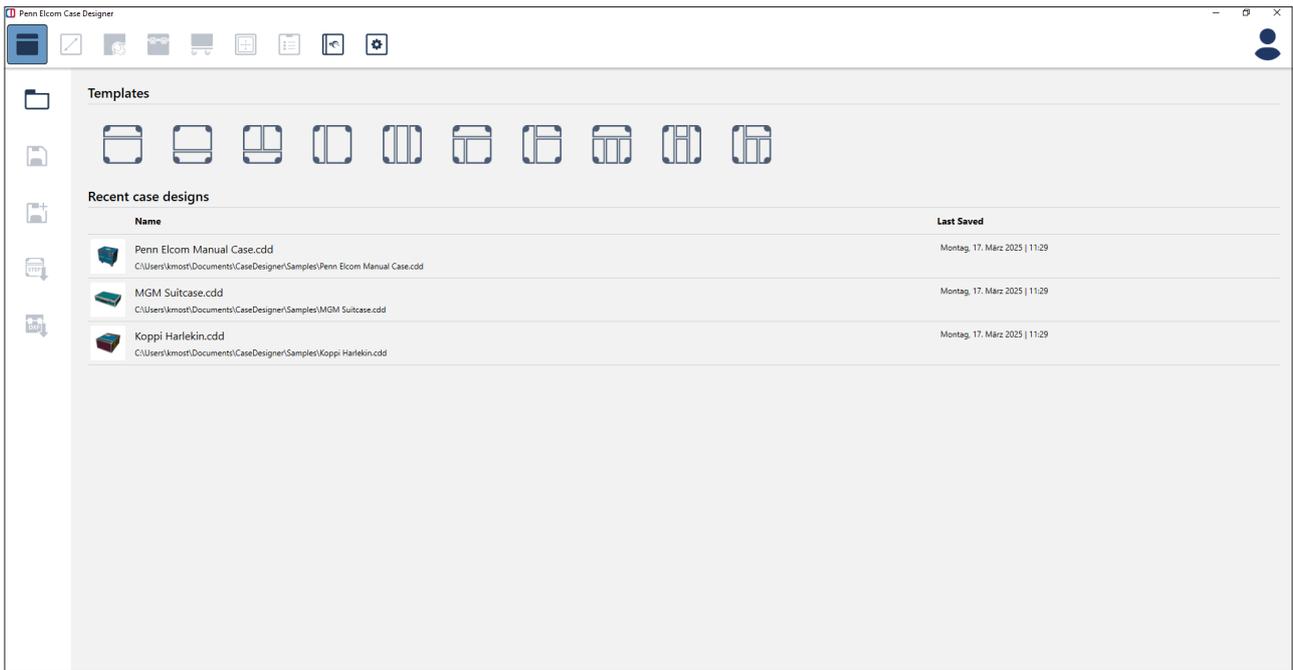
On the left you start with the template (via „Home“) which sets the buildtype/shape of the case, followed by „Dimensions“ where the measurements are set. This is followed by the „Base Material“ settings necessary to define the case cube. Hardware can be added in the „Hardware“ menu. „Wheels“ and wheelboard configurations are next and „Padding“ for interior is last.

The Design can then be exported to various „Reports“ to proceed with construction.

The „Catalog“ contains the Penn Elcom part range and own hardware if you add some. In the „Settings“ you can specify properties to your needs.

Of course you can access the menus in different orders once you opened a case.

Some menus might not be accessible if no case is opened. Home, Settings and the Catalog can be accessed at all times once a license is active. Also note that some hardware is only selectable in the specific menu where it can be changed or added.



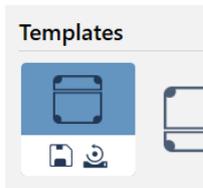
On the left hand side in the menu you can open a case from file (if you have one created)  save a case as an existing  or new  project. It is also possible to export the opened case as .step  or as .dxf  file from the Home menu.

Tip: You can also save via ctrl+s

For the example on the following pages a trunk case template is used, which is the left most icon.



Note: F = Front, B= Back, T=Top



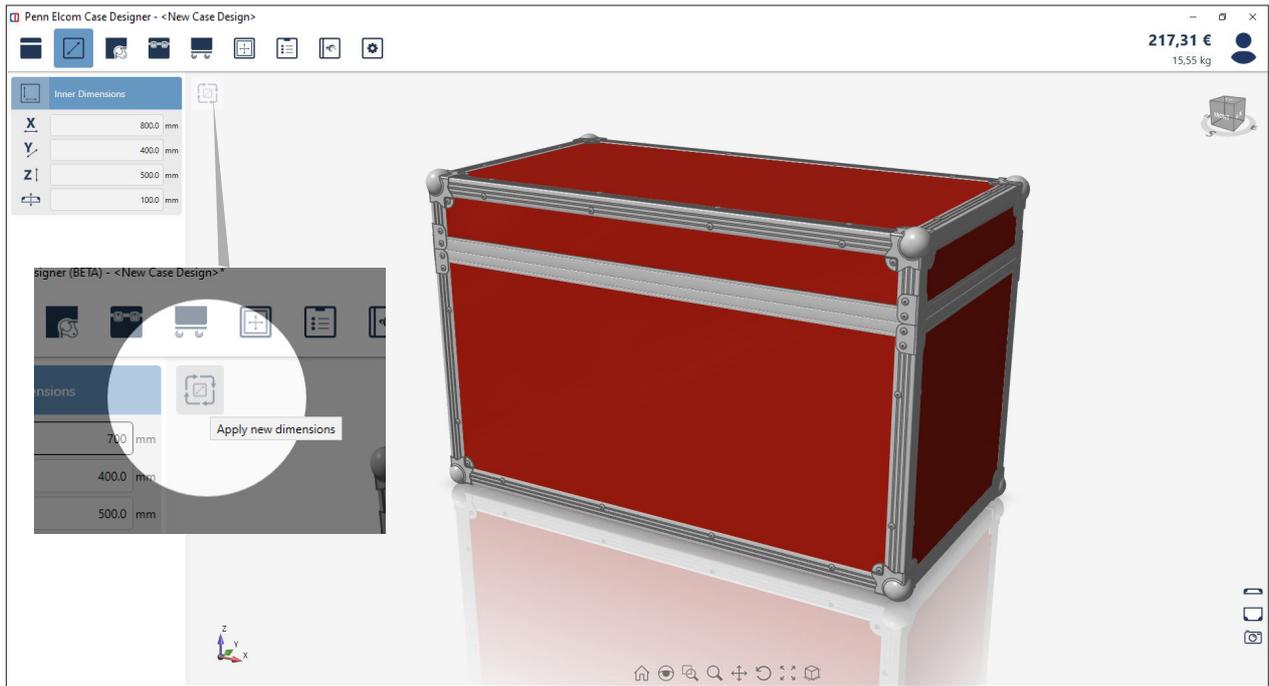
Tip: Once you have a case open, you can set this case configuration as default for this template (via save disc icon below the template icon on the home screen), so everytime you open this template your custom configuration is loaded, this can include dimensions & base material but also optionally hardware, padding and wheels. The right icon reverts back to the standard configuration

Recent projects can be found in the „Recent case designs“ section with their respective case preview thumbnail and file location. It is also possible to access the file location or delete the entry from the list via the icons on the right. To open a case from this list double click on it.





Dimensions



Set (inner) dimensions of case and lid height in the respective fields for width, depth and height on the menu on the left. To recalculate the changed values press the refresh icon next to the input fields: There will be several lids / parts of the case depending on the case template you selected. Same is true for the case icons on the lower right on the screen, where you can hide parts of the case eg here for the trunk case you can hide/show the lid or corpus individually or all together.



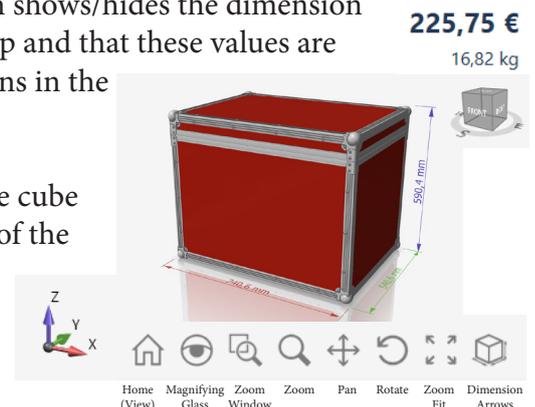
Below the case group icons there is access to a camera with which it is possible to take a snapshot of what is visible in the scene/3D space. The screenshot is copied to the clipboard with a white background and saved with no/transparent background in the snapshots folder within the Case Designer directory. Taking snapshots works at all stages of the build. *Tip: There is also a „snapshot report“ accessible via the reports menu, which exports a pdf containing images of all sides of the case in one document.*

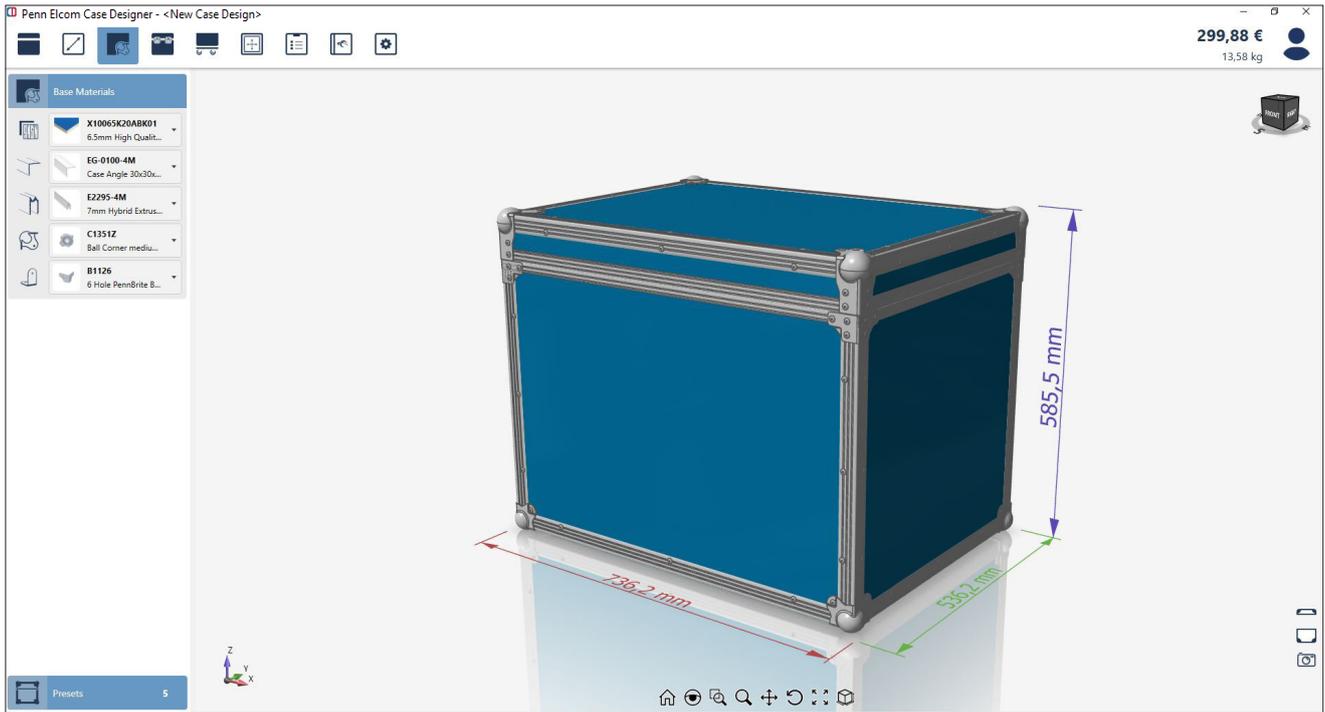
On the bottom middle in the 3D area there is a menu bar with various tools to highlight details of the case, to rotate or to zoom. The most right icon shows/hides the dimension arrows of the case in the scene. Note that the z-axis is pointing up and that these values are the outside dimensions including (ball-)corners. There are options in the settings menu to include the extrusion thickness as well.

The case can be freely rotated via the mouse, the 3D cube icon on the top right corner or the menu bar at the bottom. Above the cube icon is the constantly updating price and the weight calculation of the currently open case.



Note: For rack type cases there is a 19" option for standardized measurements. The exact value per unit can be defined in the settings menu.





Set base material such as panels , extrusions , , corners  and braces , which make up the basic case cube, via the dropdown on the left. If you are working with a rack case template there are some options to set rack strips as well. 

You can change individual parts by right click on a part in the 3D viewer, which opens a searchable list to change this part only, which is usefull for eg stackable corners or multicolored cases.

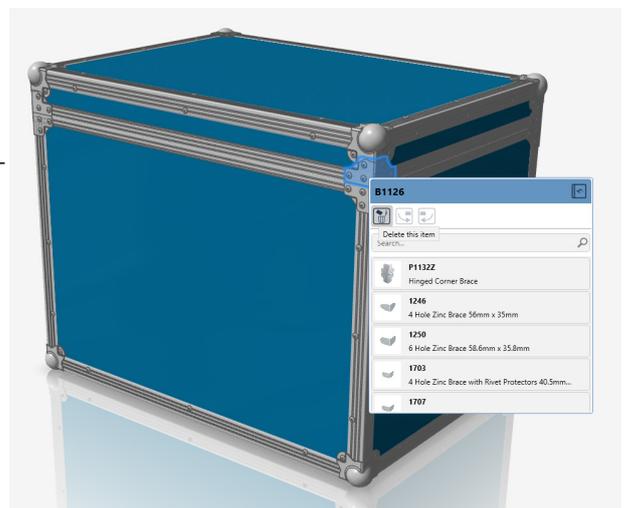
The selection in the left hand side menu is the master and will change all parts when updated, reversing individual changes.

Note: Panels can be switched with panels of the exact same thickness only.

On the bottom of the left hand side menu the base material configuration can be saved as preset for this case template  so frequently used configurations can be reloaded saving time and clicks. Presets can be updated and deleted as well.

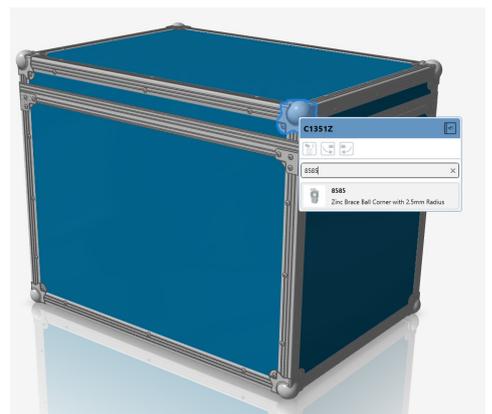


Note: You can select parts freely, there are no restrictions or checks if a panel fits for an extrusion. Keep that in mind when configuring the base material



For corners with integrated braces, like Penn Elcom's 8585, it is best to delete the top brace via individual selection and context menu first.

For hinged braces like B1132z, click the brace you want to replace on the case and select the hinged brace from the list. There is no need to delete a brace before as this will replace both braces.





Select hardware from the menu (by category) on the left. Click on the header to minimize or expand a category. This will activate the picking state highlighted in yellow. In this state as many components as needed can be placed on any side of the case.

To move the hardware (here Latch L944/537/10) to an exact position press the checkmark icon and then double click on the part. The case rotates to 2D mode and values in the position fields of the selected part can be entered, (accept via checkmark on the value field). To Exit the picking state press the large green checkmark icon on the top left.

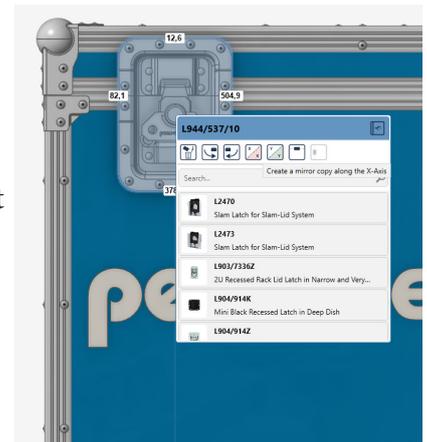
In 2D View there is an option to copy all parts on the visible face to the opposite site. This icon is located above the camera icon on bottom right.

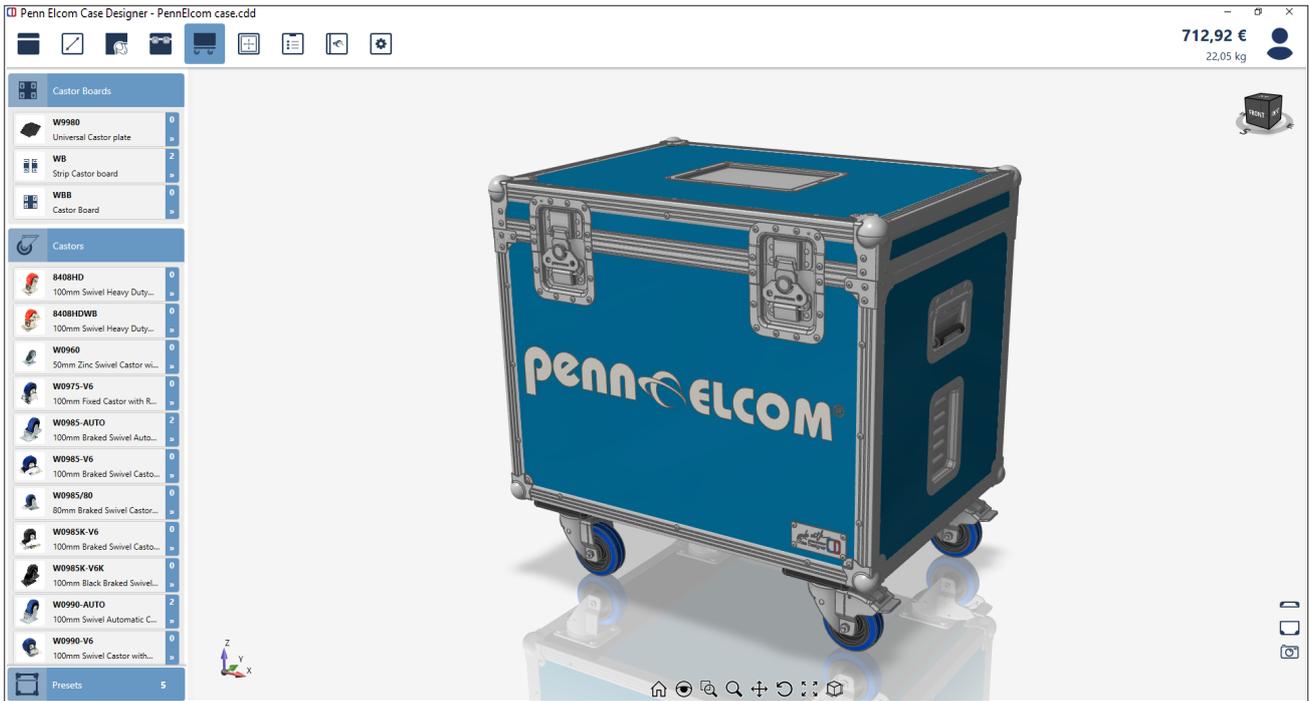


It is possible to select from Handles, Latches, Hinges, Dishes and Feet or search for a part ID. The Miscellaneous category holds custom parts like logo plates.



Some parts such as butterflies have a snapline to match the opening gap of the edge extrusion to the deviding line of the latch. There are some mirroring and copy options: when right clicking on a part it can be deleted, rotated, mirrored, copied or aligned. In the context menu there is also the part code visible and it is possible to replace the selected part at the exact position with a different one from the same category or similar part by selecting a different part from the scrollable list. It is also possible to view the part in the catalog (top right most icon).





There are several castor options. Swivel castors can only be placed on top of a plate, strip or board. To place a board option select it and then click on the face of the case where the wheels need to be placed. After a castor board option is placed the swivel castors appear in the list on the left. They can then be placed at highlighted positions.



It is possible to place wheels on several sides of the case, strips are limited to three strips per face. Similarly edge castors which are placed on the single angle extrusions are also limited to three per edge, and corner castors replace a corner.

Already placed wheels & boards can be individually switched out or deleted via the right click context menu. Corner castors & boards can also be rotated here.

Tip: You can save and load a wheel configuration as preset via the options on the bottom of the left hand side menu, this works in the same way as it does for base materials or padding.





Padding



Select a foam on the left and place it on the inside faces of the case by clicking on them. There is a toggle switch  on the top of the left menu which allows for extrusion overlap.

Placed foam can be replaced or deleted via the right click context menu. It is possible to add a different foam configuration for the lid and view the closed case with the buttons on the lower right which work as in the other screens.

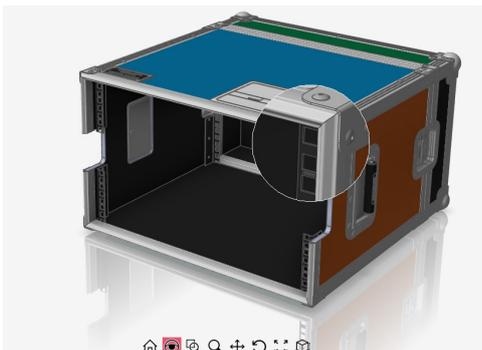
It is also possible again to load/define a foam configuration as preset at the bottom of the left hand side menu.

Parts such as hinges and butterflies which are placed across the opening line of the case are made invisible or shown as cutout only.

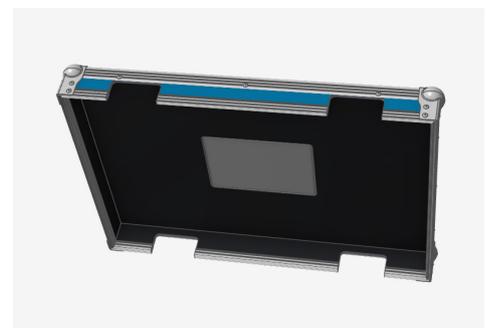


Note: The interior selection is currently limited to placing foam sheets (and rackstrips via Base Material for racks (below)). If you require a more complex interior you can export the created case as .step file via the Home screen and open it in a CAD software of your choice.

Future releases will improve on the interior capabilities of the Case Designer.



You can find this case in the sample files as „Koppi Harlekin“





Reports

Penn Elcom Case Designer - PennElcom case.cdd

712,92 €
22.05 kg

Calculation

DATE: 20-3-2025
PROJECT: Penn Elcom Manual Case.cdd
TOTAL PRICE: 712,92 €

MATERIALS	QUANTITY	PRICE	WASTE	TOTAL
X1006K20AEK01 6.5mm High Quality Birch Wood Panels with Sky Blue Textured PVC Laminite and Black Backing	2,04 m ²	72,069 €	10%	161,72 €
PENNELCOM_LO GO Custom Penn Elcom Logo	2 pcs	0,000 €	0%	0,00 €
H7149Z Heavy Duty Medium Recessed Handle	2 pcs	4,140 €	0%	8,28 €
D2116Z Large PennBrite Recessed Label Dish for Self-Adhesive Tour Labels	1 pcs	10,420 €	0%	10,42 €
D0536Z Large PennBrite Dish with Vertical Louvre Vents	2 pcs	3,490 €	0%	6,98 €
MADEWITH_CASEDESIGNER_LO GO_PLATE Custom Made With Logo Plate	1 pcs	0,000 €	0%	0,00 €
50_YEARS_PENNELCOM_LOGO_PLATE Custom 50 Years Penn Elcom Logo Plate	1 pcs	1,105 €	0%	1,10 €
EG-0100-4M Case Angle 30x30x1.5mm	6,33 m	4,360 €	10%	30,36 €
E2295-4M 7mm Hybrid Extrusion with Equal Legs and Gasket Grooves	4,14 m	6,930 €	10%	31,56 €
L944/537/10 Large Recessed MOL Latch in Shallow Dish with 27mm Offset	2 pcs	10,120 €	0%	20,24 €
8585 Zinc Brace Ball Corner with 2.5mm Radius	4 pcs	2,640 €	0%	10,56 €
D0554Z Large Lid Stay in 10mm Deep Dish	2 pcs	5,430 €	0%	10,86 €
B1126 6 Hole PennBrite Brace with Offset 51.5mm x 40mm	4 pcs	0,543 €	0%	2,17 €
C1351Z Ball Corner medium with Off	4 pcs	1,170 €	0%	4,68 €
WB Strip Castor board 514x120x15mm	0,12 m ²	15,000 €	10%	1,98 €
W0990-AUTO 100mm Swivel Automatic Castor with Rubber Blue Wheel	2 pcs	15,010 €	0%	30,02 €
W0985-AUTO 100mm Braked Swivel Automatic Castor with Rubber Blue Wheel	2 pcs	21,970 €	0%	43,94 €
SG-91510GE Grooved Rivet 5x10mm	246 pcs	0,040 €	0%	9,84 €
SG-9518 MB Hex Bolt Screw with Fixed Ring - 25mm Long	16 pcs	0,150 €	0%	2,40 €
Sub-Total				387,11 €
10% Purchase Markup				38,71 €
Sub-Total				425,82

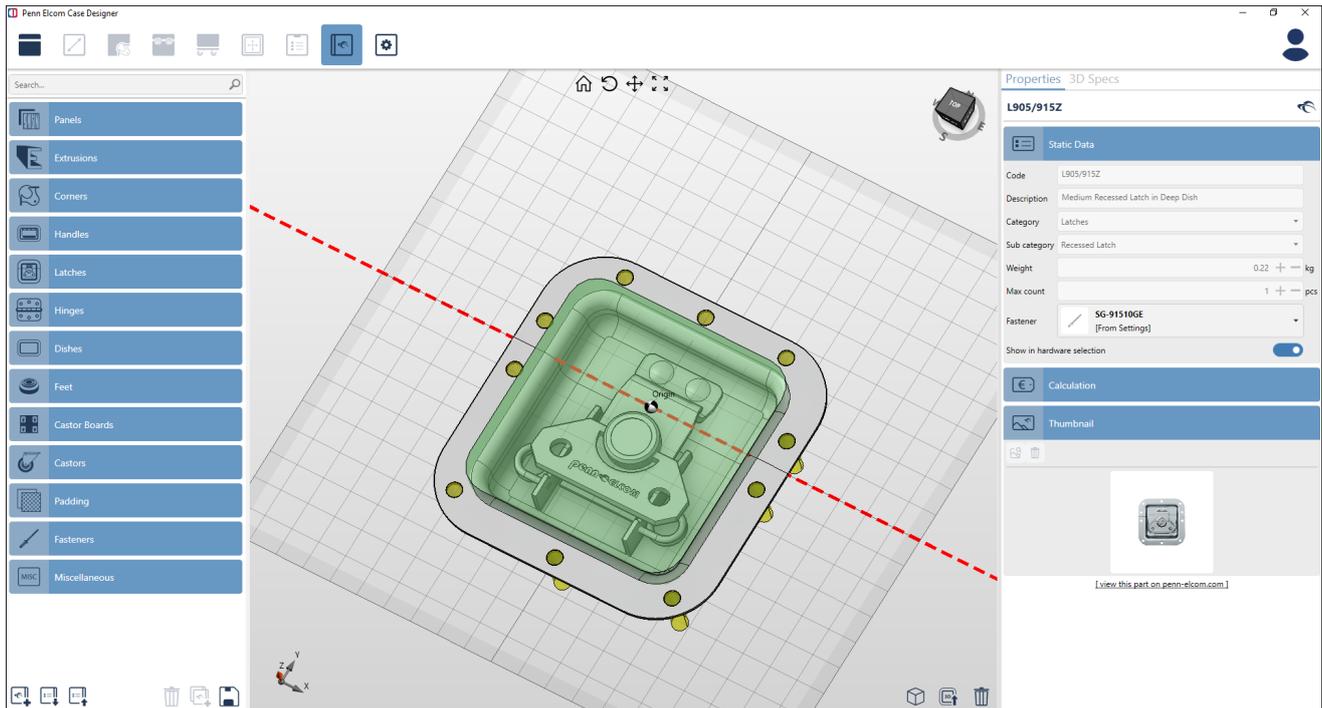
The Report menu provides documents which hold project specific information about the currently open case. These outputs help with the actual production. Each report can be printed directly or exported as .pdf , .xls or .doc via the top menu bar. The DXF report can also be exported as actual .dxf file to be used on the CNC machine . The dxf-file of the opened case can also be exported via the home screen.

Available reports are:

Calculation report sums up the price, The Bill of Materials which also includes the cutting list, a Snapshots file which combines a 3D view of the case with one 2D image of each side of the case in one document, and the DXF report visualizing the individual pieces of the case as paths for the CNC machine.

The collage shows four overlapping report preview windows from the software. The top-left window is the 'Calculation' report, showing a summary of the case's cost and a detailed table of materials. The middle-left window is the 'Materials' report, listing individual components and their quantities. The middle-right window is the 'Snapshots' report, featuring a 3D perspective view of a blue case on wheels. The bottom-right window is the 'DXF' report, displaying a 2D technical drawing of the case's net layout with various parts labeled with letters like A, B, C, D, E, F, G, H, I.

Note: Parameters for the information a report holds, like for calculation or the DXF layers, can be adjusted in the Settings menu.



The Case Designer gets shipped with a large, ready to use, library of parts of the Penn Elcom product range. In the catalog available hardware can be accessed and 3D models & metadata of parts can be edited individually or in bulk.

The parts are sorted into categories similar to the Penn Elcom website and to the selection screens within the Case Designer with a search option at the top.



Once a part is selected its properties are accessible on the right divided in two tabs „Properties“ and „3D Specs“.

The Properties tab displays the part code on top which is clickable and directs to the part on the Penn Elcom website. Below is meta data of the part (here Penn Elcom’s L905/915Z) divided into: Static Data, which holds descriptive information of the part, such as the ID, Description, Category etc; Calculation, which holds price & time calculation data, and the Thumbnail with another clickable link below to view the part on penn-elcom.com

The 3D Specs tab holds 3D model specific information such as the insertion point (position in space relative to its origin), drilling hole position for placing rivets, tool shape for the cutout (for recessed parts) which gets picked up in the .dxf output, and parent snapping which sets the position of the dividing line.

If the you want to exclude parts from being listed in the selection screens, uncheck the „show in hardware selection“ checkmark and press the disc icon on the bottom left to save your changes. It is also possible to do this edit in bulk. Next to the disc icon you can export the catalog as a table, edit for example column „ShowInSelectionLists“ to false in Excel, and reimport your changes.





Adding Hardware

The Penn Elcom part library is continuously expanded. If there is a Penn Elcom part you need missing or you notice some errors please reach out to support.casedesigner@penn-elcom.com

You can add custom or missing parts yourself, but they will not have live pricing or get updated when the part changes. Adding parts is currently limited to non scalable items only. Import a .step file of the part you want to add via the  icon bottom left, and click on the  icon in the middle of the scene to browse for your file.

You need at least an unique part code and a description to be able to save an entry via the disc icon on the bottom left.

Tip: To compare settings you can open several instances of the Case Designer which is especially usefull for multi-screen setups.

Custom Logo

Importing a custom logo plate is possible with some preparations. You will need a vector file of your logo which you can import in a CAD program such as Solidworks.

Open a new Adobe Illustrator file, place your logo on a new layer. Add a rectangular shape (or the shape you want your plate to be) in the exact measurements of the final plate. Place your logo in a layer on top of the plate and adjust its position on the plate.

Keep in mind you need some space for the rivets to prevent them overlapping your logo.

Select all and move the design so that the center matches the top left (see screenshot) corner of the Illustrator artboard which sets the origin to 0,0,0 (This is important for the origin eg place in 3D space). You can adjust the origin via the „insertion point“ setting within the Case Designer Catalog.

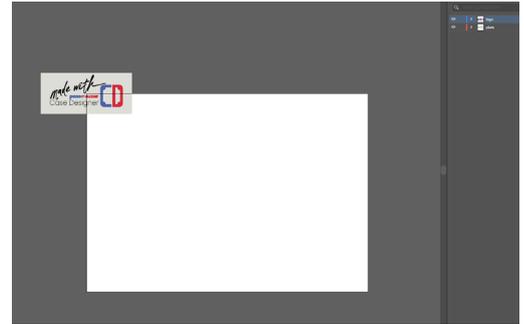
Save the file. Open Solidworks (or similar) drag the Illustrator file into the scene. Copy the sketch for each color your logo has. Select and delete Paths for each sketch so that you end up with sketches which contain shapes in the same color only. Here: 4 colors: black, blue, red for the logo and zinc for the plate, so four sketches in total.

Select the plate sketch first, expand 1mm in z-direction. Select other sketches expand 1.2mm in z and uncheck „merge results“ to keep the shapes independent.

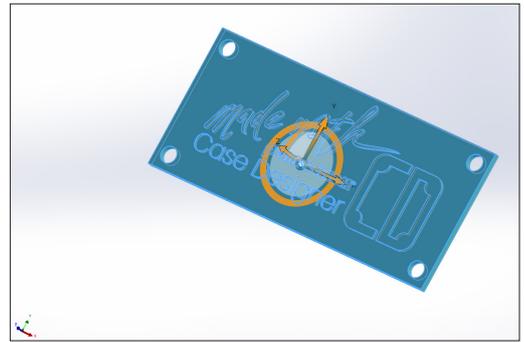
Color the different sketches. Zinc is RGB 221 each.

Export finished logo plate as .step AP214 to keep colors, open the Case Designer and import the logo plate as new part to the catalog (in catalog menu). Set the sub-category to miscellaneous. Enter an unique ID and description and press save. You can now select your logo on the Hardware menu in the Miscellaneous category.

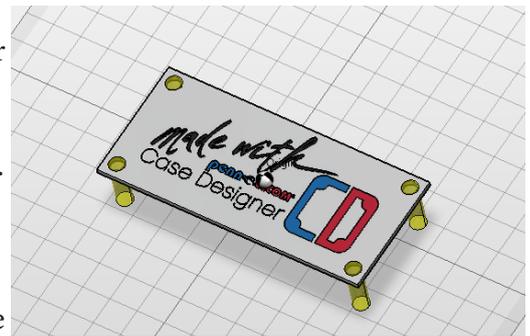
If you need help feel free to reach out.



Logo Plate in Adobe Illustrator



Logo Plate in Solidworks



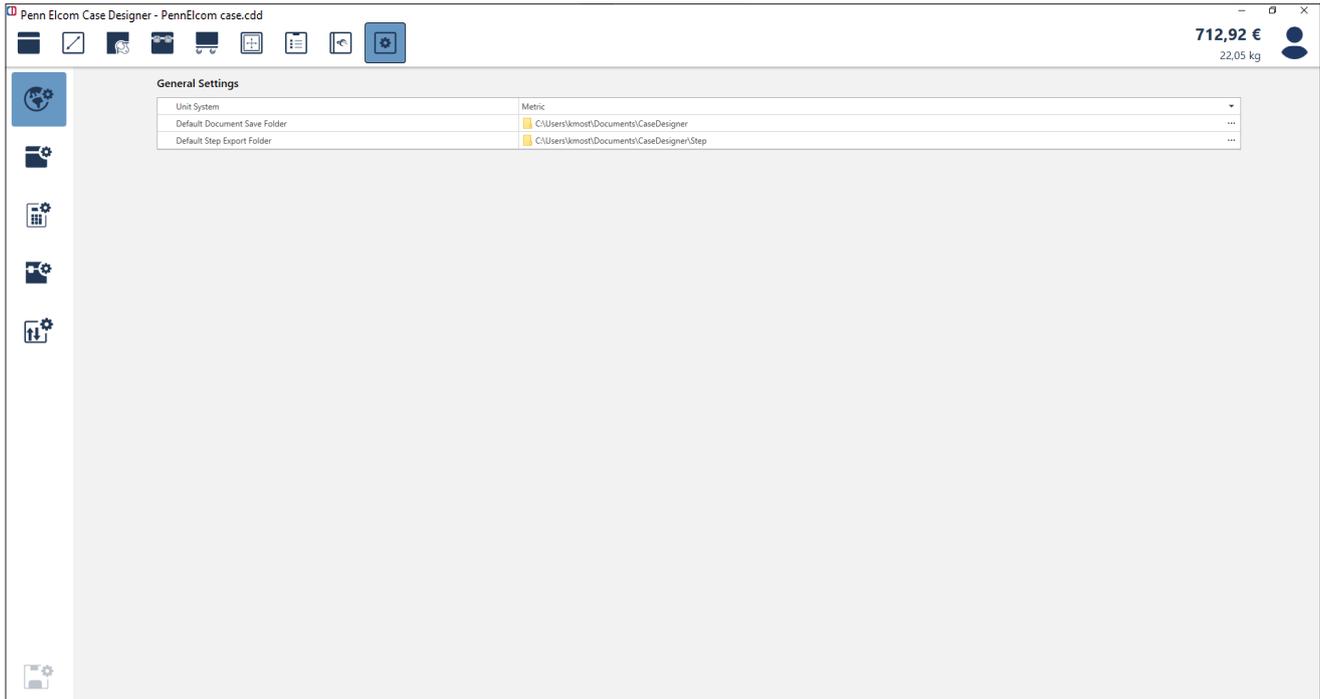
Logo Plate in Case Designer Catalog



Logo Plate on a finished case



Settings



Here it is possible to specify settings for the program and document outputs, including settings for construction, pricing and DXF, as well as global settings for the program. Save changes via the disk icon at the bottom of the left hand side menu: . The settings are saved locally on your computer if you want to work on the same data, set the path to a shared directory or export and import the settings to use them on a different computer.



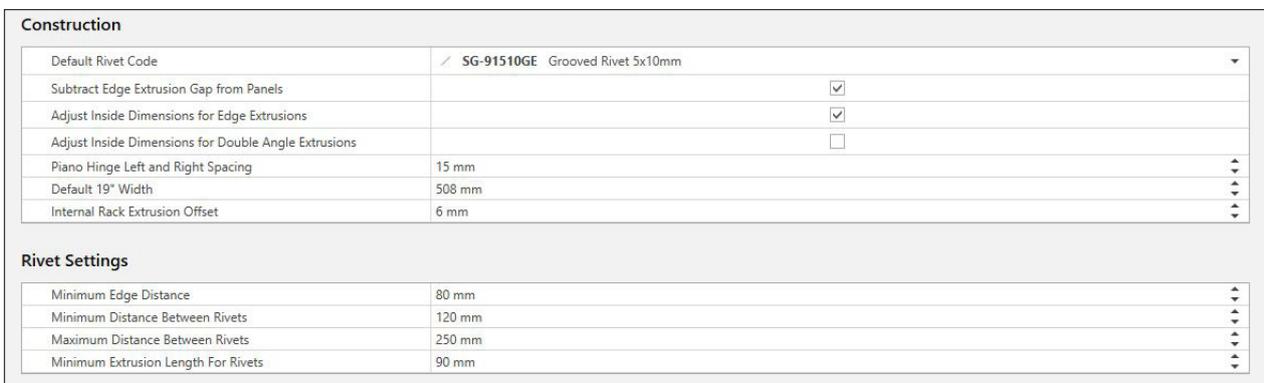
General Settings



Change measurement units from mm/inch or specify the default document & export folders.



Construction Settings



Specify construction preferences such as the default rivet & the amount of rivets on the extrusions, as well as the default 19" rack width and the position of the rack extrusions.

You can also specify if the extrusion thickness should be added to the interior dimensions you entered and if the panel gap should be taken into consideration. Also the left and right spacing of the Piano hinges can be set here.



Price Calculation Settings

Price Calculation Settings	
License Based Price Currency	€
Price Currency Symbol override	
Price Conversion Rate	1
Assembly Base Price	80,00 €
Material Purchase Markup	10 %
Material Markup	10 %
General Markup	30 %
Machining Hourly rate	36,00 €
Assembly Hourly rate	35,00 €
Waste Percentage Calculation Unit Length	10 %
Waste Percentage Calculation Unit Surface	10 %

Set the markups for the price calculation including assembly costs and machining rates also including waste. These values influence the output of the Calculation report in the report menu. The currency gets transmitted automatically from your Penn Elcom account, if you need a local conversion, you can set the rate and symbol here. Note that the other values you enter here are seen as in the correct currency and are not converted.

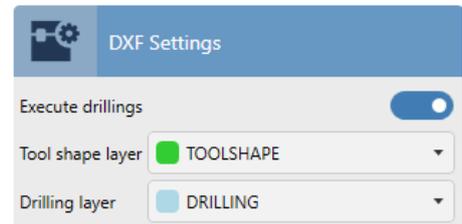


DXF Settings

DXF Generation Settings	
DXF Layers	
Default Routing Layer	ROUTING
Default Tool Shape Layer	TOOLSHAPE
Default Drilling Layer	DRILLING
Execute Drillings	<input checked="" type="checkbox"/>
Default Drilling Diameter	5,5
Dxf Export View	Inside
Default Dxf Export Folder	C:\Users\kmost\Documents\CaseDesigner\Dxf

Here you can specify properties of the DXF output such as drilling diameter and the default export folder as well as the layering of the overall path. There are three layers set up as default dividing the dxf into the routing (red) layer which contains the paths of the panel shapes, the toolshape (green) which contains the cutouts of recessed parts such as dishes and a drilling layer (light blue) which contains the drilling holes for the rivets. You can add custom layers and also adjust the existing once eg change colors and such. Each part is individually sorted to a layer in the Catalogs 3D-Specs tab.

Nesting is done within the software of you CNC machine.



Import/Export

Import and export settings	
Export all user data and settings.	<input type="button" value="EXPORT"/>
Import all user data and settings. (Requires restart)	<input type="button" value="IMPORT"/>

It is possible to import or export your changes eg settings and listed hardware. This is especially useful when working with several people / several licenses of the Case Designer.

Be careful though as importing a setting file will overwrite your own preferences.

Settings in general are stored locally only.

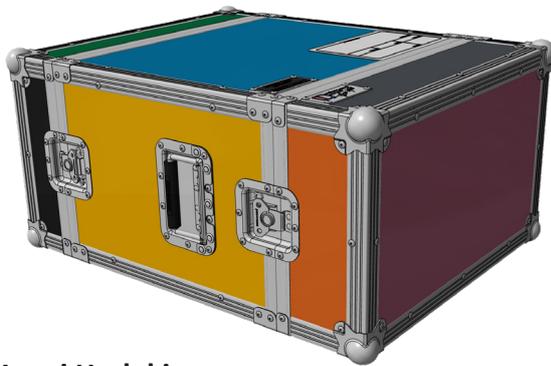


Sample cases created with the Case Designer.

You will find this case in the „Recent case design“ section in the Home menu upon install or in the Samples folder in the Case Designer directory.

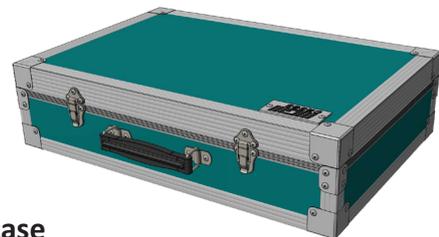
Penn Elcom Manual Case

A Trunk case with latches, Logo and Castor wheel strips



Koppi Harlekin

A Double Door Rack with different colored panels & tour label.



MGM Suitcase

A Trunk with lid/base extrusions, flat corners, locks and briefcase handle.

Credit where credit is due:

Koppi Cases and MGM Cases were the case companies of Klaus Koppenhöfer, developer of the previous Case Designer software and Thomas Mostert, former Managing Director of the German Penn Elcom GmbH, before they started working for Penn.

Both had major influence on the perception of the Case Designer and sample cases are a fitting place for an homage.

Feedback & Legal

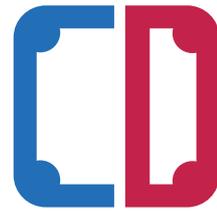
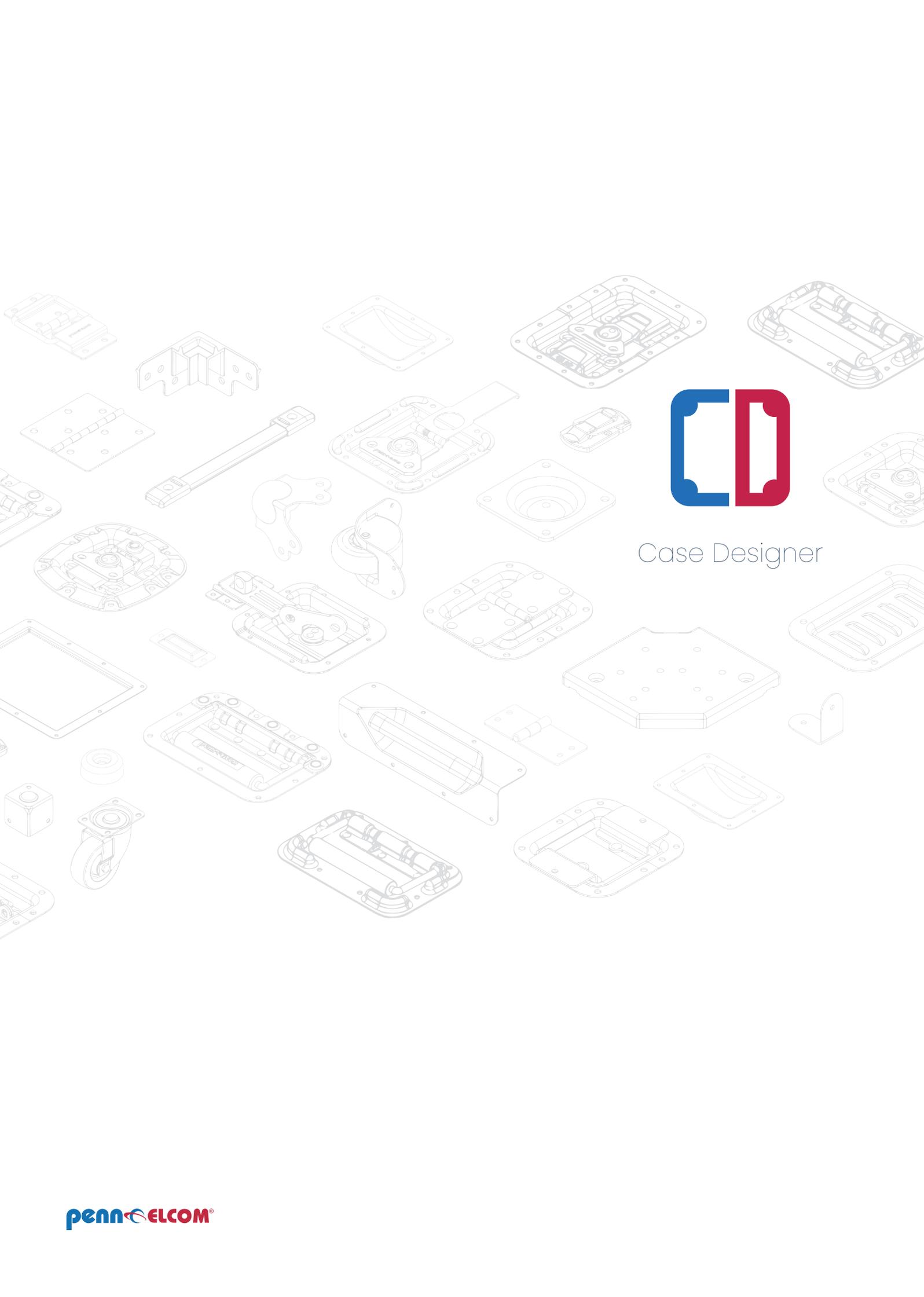
Legal:

As we strive for true information, Penn Elcom is not liable for errors or damages caused by using the Case Designer software. By licensing the Case Designer you have non exclusive and non transferable usage rights for the Penn Elcom hardware used within the Case Designer software. You may not make the 3D models & information of individual parts, or complete cases, accessible via your own distribution means or use them for production of hardware.

Contact:

If you have any questions, feedback, other suggestions or need help please contact us here:
support.casedesigner@penn-elcom.com

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Case Designer