


















Highlighted = most useful functions)


(*Functions will also work for Advanced nodes (i.e.. N10, N7, N5))

| SKILLCAD Base Functions | | |
|---|---|--|
| Module | Featured tools | Description |
|  Edit Via (OA) | Stretch * | Stretch standard Cadence via |
| | Stretch Enc * | Stretch via enclosure |
| | Set Params/Variants * | Edit Via params (cutClass, via variants) |
| | cutPattern * | Edit Via Pattern |
|  V-Editor | BusAdjust * | Adjust bus/net space/width |
| | BusGrow * | Add more bits (or shield lines) along the existing bus/net |
| | V-Stretch * | Stretch by V-Line |
| | V-Move | Move by V-Line |
| | BusTap | Create taps on bus by V-Line |
| | Bus Connect(BusJoint) * | Connect bus by order, net names |
| | Bridge * | Change layers for part of bus/net |
| | Distribute Bus | Evenly distribute bus in a range |
| | Align BusEnd * | Stretch/Align bus end with right path end spacing rule |
| | Bus continue | Continue connections |
| | BreakBus | Split bus with right path end spacing rule |
| | changeLayer | Change Metal layer and meanwhile update connected vias |
| | Detour | Make turns on bus |
| | Dent Corner | Convert 90-degree corners to 45 degree corners |
| | viaChain (* partially) | Create via arrays over multiple pins |
| | GateCont | Create gate contact by V-Line |
| | combRouter * | Pin to trunk Router |
| | Fix MinArea * | Fix minimum Area |
| | Taper Connect | Direct Pin to pin wedge connection |
| | Rounder Corner | Round Bus Corner |
| | River Router | Single layer pin to pin compact router |
| | rAdjustor | Adjust the resistance of a path |
| | Trim Bus Connect | Any angle bus connector |
| | SameL Connect | Same Length(Resistance) pin to pin connector |
|  StepRouter | Path Router | User guided single Path Router |
| | Bus Router | User guided Bus Router |
|  SegJumper | segJumper | New Interactive wire stitcher, allowing different widths, spaces, fan-in, fan-out, different layer, with integrated busContinue, busConnect and distributeBus features |
|  FreeJumper | Path Jumper | Interactive Path Stitcher |
| | Bus Jumper | Interactive Bus Stitcher |


| | | | |
|---|----------------|---|--|
|  | Shield Bus | ShieldBus Jumper * | left/right/middle/top/bottom shielding, allow layer jumping |
| | | Via Wall Shield * | left/right/middle/top/bottom shielding, and via MPP shielding |
|  | UniVia | Create Via | Create SKILLCAD UniVia(IC5) or standard via |
|  | MPP/Ring | Draw MPP | Create regular MPP |
| | | Draw Rect Ring | Create Rectangle guard ring |
| | | Draw Polygon Ring | Create Polygon guard ring |
| | | Change Mpps | Modify Mpps |
| | | Grow From Obj/layer | Create Ring By Sizing Selected Obj |
| | | Reshape Selected MPP | Reshape the selected Multipart Path |
|  | Fill Via | Draw Rect Via | Fill via in a rectangle region |
| | | Draw Polygon Via | Fill via in a polygon region |
| | | Fill selected regions (* Partially) | Fill via in selected regions |
| | | Fill Overlap by Click (* Partially) | Fill via in overlaps of specified two layers |
| | | Fill overlap of Any two layers By Click (* Partially) | Auto detect overlapping layers and fill proper uniVia |
| | | Fill Overlap of Same VXL net | Drop via on the overlap regions based on VXL net |
|  | LayerHandler | QueryLayer * | Get hierarchical Layer info under point/box/cellview |
| | | LayerSet * | Programmable Buttons to save/retrieve layer settings |
|  | Slot Functions | Draw SlotPath | Draw slot path (pcells) |
| | | Convert To Slot Path | Convert select path(s) to slot paths (pcells) |
| | | Copy Slot Holes | Create Slot From the slot on other Layer with offsets |
| | | Create Mesh | Create Mesh Shapes with Paths/Wires |
|  | GetNet | SelectNet | Select metals/vias of the net |
| | | ExtractNet | Hierarchically extract net to a separate cell view |
| | | HilightNet | Hierarchically highlight a net |
|  | Fill Functions | Advanced Fill (* Partially) | Coverage-aware Dummy Pattern Fill |
| | | Simple Fill (* Partially) | Fill Rectangular dummy shapes. |
| | | Check Density * | Check layer(s) density in a local region/window. Includes a new function to check areas created by Boolean operations. |
|  | Pin Functions | Pin Placer/Browser * | Browse pins/labels, auto place pins. |
| | | Align InstPins To Neighbor * | Place Pins in the editing instance with reference to the pins in the neighboring instances |
| | | Align InstPins To Top * | Place Pins in the editing instance with reference to the top level pins |
| | | Quick Label(Pin) * | Create Labels/pins one by one, by line or all in one click , import schematic pin names |
| | | Promote Pins * | Promote lower level pins to top level |
| | | Create Pin From Label * | Create shape pins from labels |
| | | Create Pin From Coord * | Generate pin placement from a text file with pin name, layer and coordinates information. |
| | | Expand Pin To Shape * | Expand Pin Fig to cover entire shape |
| | | Move pin to PAD Center * | Moves all pins within the pad layer to the Pad center |
| | | Align Distribute Pins * | Move/Align/sort pins (to prBoundary). Can also be used for objects. |
| | | Change Pin Size/Layer * | Change the size or layer of the selected pins |
| | | Rename Pin/Label * | Change bus pin/label names [] {} <> |
| | | Cover Pins by Metal Drawing * | Cover Pins by corresponding metal drawing |
| Placement | | Pattern Placer | Create pattern placement by clicking on the place holder array in the GUI. Handle dummy/abutment/guard ring. |

| | | | |
|---|------------------------|--|---|
|  | Label Functions | Quick Label(Pin) * | Create Labels/pins |
| | | Rename Pin/Label | Change bus pin/label names [] {} <> |
| | | Create Inst Label * | Create inst./cell name label on instances |
| | | Create Voltage Label | Create voltage info label on pins |
| | | Mask Label(Letter) * | Create Mask ID Physical labels |
|  | Kits | Calculate Area/perimeter * | Hierarchical area/perimeter calculator |
| | | Simple Net R | Calculate resistance for standard bus |
| | | Fix Offgrid * | Fix off grid shapes |
| | | Sky View * | Overall context view for all instances |
| | | Flip Within BBox * | MX/MY/R180 flip within original BBox |
| | | Swap Bit Lines (vias) | Swap vias/connections between two lines |
| | | Toggle Via CutClass | Change (cycle) Via CutClass(size) |
| | | Full Selection | Partial ->full, Full bus selection |
| | | Select Net Objs | Select objects by layer and net names |
| | | nCopy | copy selected objects "n" times |
| | | Manhattan Edge | Convert all edges(ellipse shapes) to Manhattan Shapes |
| | | Create Spiral | Create Spiral Shapes(inductor) |
| | | Formula Plotter | Creating shapes defined by equations |
| | | Fill Holes | Fill holes with certain area/width |
| | | Layer Generation | Create layers from objects, using Boolean functions |
| | | Cut Out Short * | Cut holes to remove short on a big piece(Power) metal |
| | | Cover Fig/Net | Cover shapes or entire net with specify lpp (or color pattern) |
| | | Grow Shapes | Grow shapes from a reference obj |
| | | Edge Grow | Create wires from selected edges of a shape |
| | | Line Distance * | Measure distances between two lines/edges |
| | | Sync Window View * | Zoom to the same layout location of two synchronized windows |
| | | Sync Schematic View * | Zoom to the same schematic location of two synchronized windows |
| | | Replace Part of Layer | |
| | | Copy From Background View | Copy/Move shapes from the background view |
| | | XOR Background View * | XOR a background view with the current view, displaying differences between the two |
| | | Chop Array | Chop Mosaic cells |
| | | Inductor Pin Checker | Check pins on each net (for inductor layout) |
| | | Create Arc Shapes | Create curved shapes (high voltage application) |
| | | Convert Shapes | Convert shapes between path/polygon/wire |

| MultiColor Functions (Temporarily Covered by SKILLCAD Base license) | | |
|---|----------------|--|
| Module | Featured tools | Description |
|  MultiColor Functions | Quick Color | Change/assign wire Colors by click or line |
| | nanoJumper | Create Wire and meanwhile assign color |

| NanoWire | | |
|--|--|---|
| Module | Featured tools | Description |
|  Track Functions | NanoTrack Router | Track Pattern based wire Stitcher |
| | Transition Connector | Track Pattern based Bus Connector |
| | View Patterns | Interactively view defined track patterns |
| | Push Bus to Tracks | Push/snap wires to tracks |
| | Fill Via By Click | Fill via on a metal overlap according to the via Configuration |
| | Fill Via By Box (same Net) | Fill via on all metal overlaps within a box area according to the via Configuration |

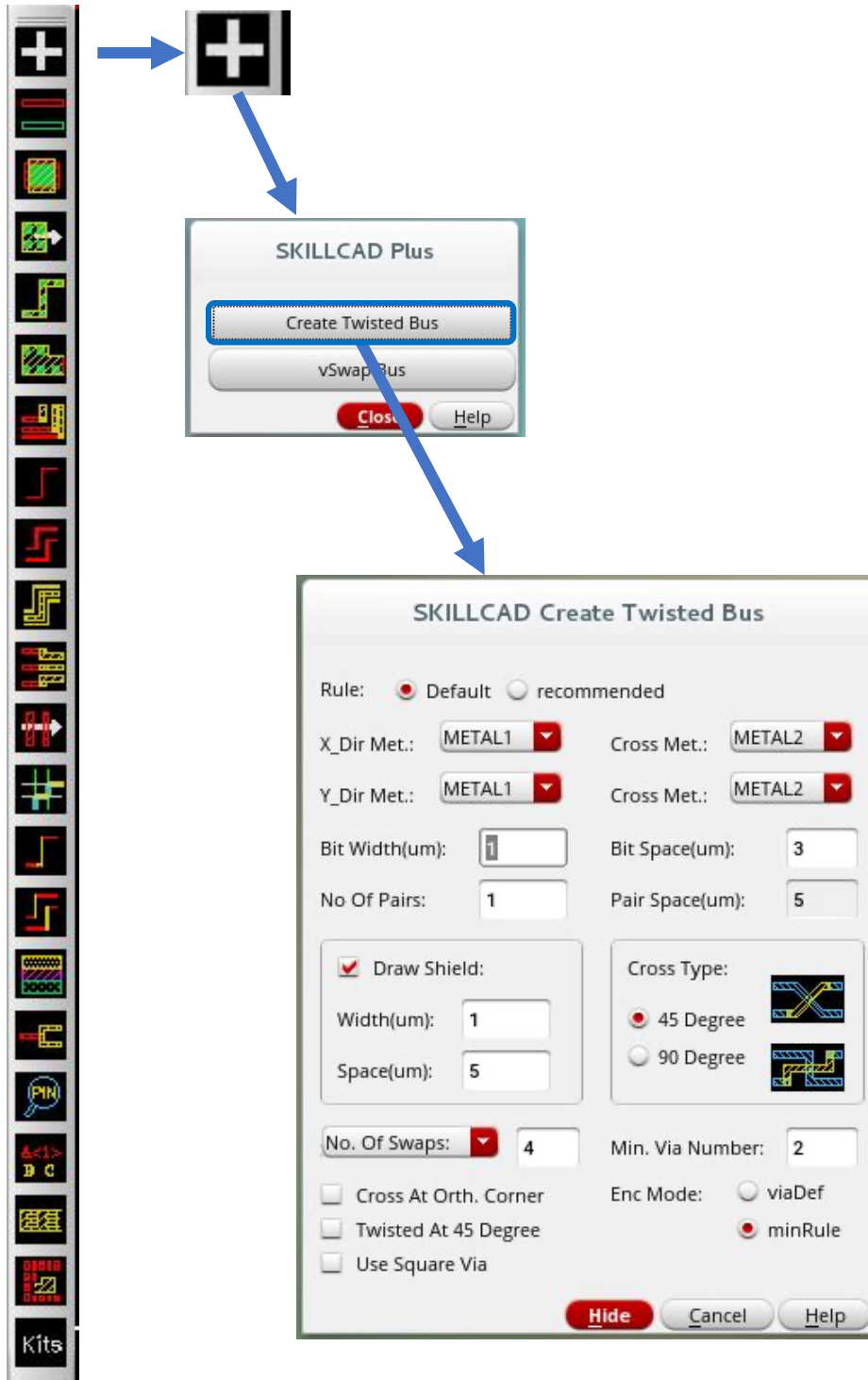
| rSolver | | |
|---------|-------------------------|---------------------------------------|
| Module | Featured tools | Description |
| rSolver | rSolver | Point to point resistance extraction. |

| TwistedBus | | |
|---|------------------------------------|--|
| Module | Featured tools | Description |
|  TwistedBus | Create Twisted Bus | Create Twisted Bus |
| | vSwap Bus | Create/insert a swap by drawing a line cross two wires |

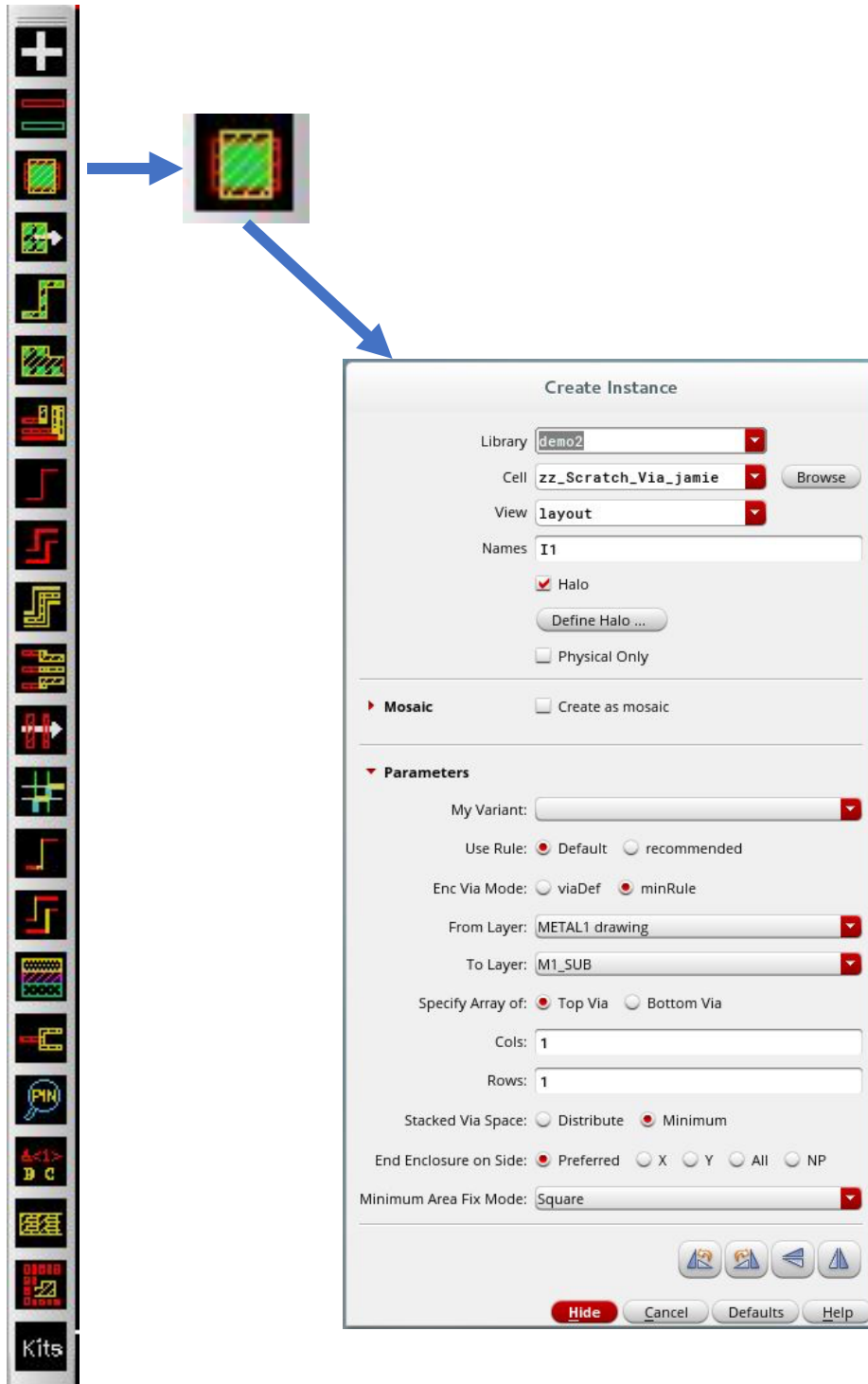
| SKILLCAD Setup | | |
|---|--|--|
| Module | Step | Description |
| Setup View the Complete Setup (start to finish) | Setup Technology Library | Select the technology library and set the grid and database units. |
| | Setup Routing Layers | Set up metal layer parameters. These are used in capacitance calculations. |
| | Setup Special Metals | Set up special metals, such as MIM cap. |
| | Setup LVS Labels and Pin Layers | Set up the layers for metal and pin labels. |
| | Setup Base Layers | Set up base layers, such as poly and diffusion. |
| | Setup Implant Groups | This setup is only needed when using Cadence IC5. |
| | Setup Equivalent Layers | Set up metal equivalent layers. This is used in the GetNet functions. |
| | Setup General Metal and Via Rules | Set up general metal rules, such as coupling capacitances, minimum default number of vias, etc. |
| | Setup Individual Metal Layer Rules | Set up metal rules, such as widths and spacings, and resistances. |
| | Setup Contact and Via Rules | Set up contact and via rules, and metal enclosure of vias rules. Also set up contact and via resistances. These are used in the rSolver and other resistance calculations. |
| | Setup Wire Configuration Rules (Nano Router) | Set up wire configuration rules. This is only necessary if you are using a track routing methodology. |
| | Setup Metal and Via Keepout Regions | Define layers to be used as keep out layers. |
| | Define Metal Direction and Via Costs | Define cost factors for metals and vias. This sets the preferred metal routing directions and is used by the step routing functions. |
| | Setup Metal Slotting Parameters | Set up parameters for metal slotting and metal mesh. |
| | Compiling The Setup File | Check and compile the Setup file. |
| | Customizing The Icon Bar | Select icons to appear on the icon bar. |

| User Preference Setup | | |
|-----------------------|---|--|
| Module | Step | Description |
| Preferences | Setting Up User Preferences | Set pop-up dialog box preferences, template file name, and select where the icon bar will appear in the layout window. |

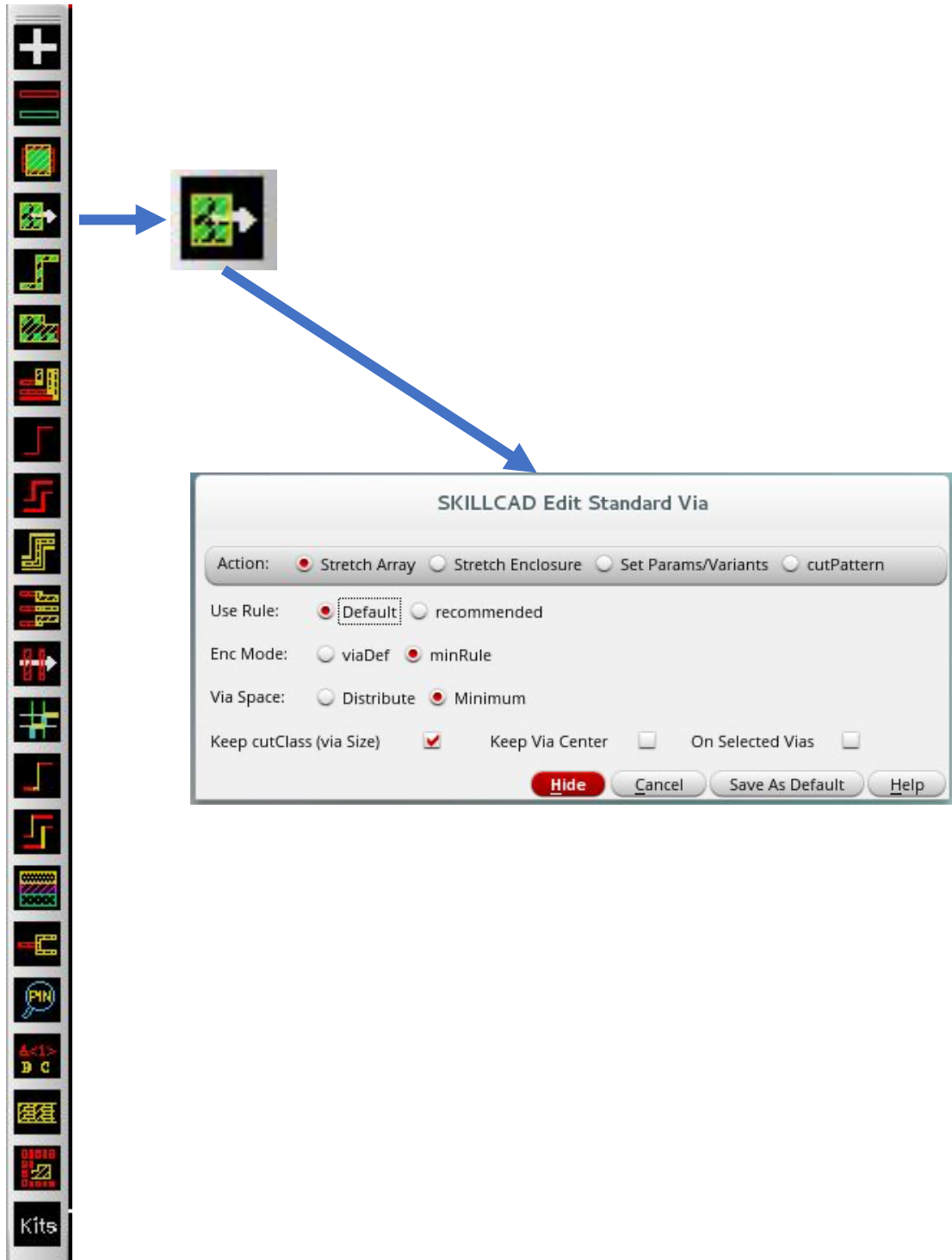
SKILLCAD Plus, Create Twisted Bus



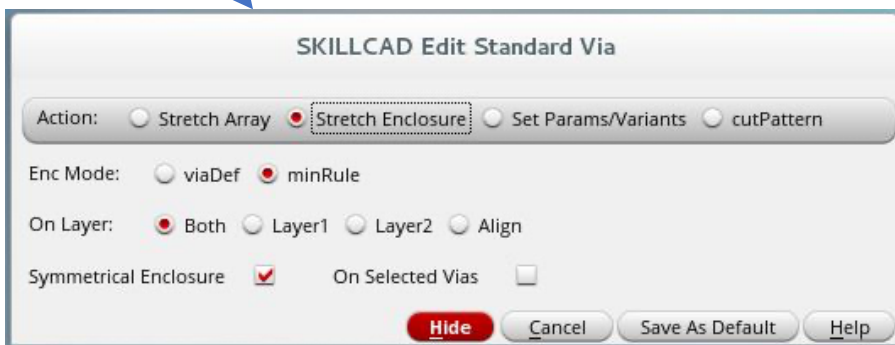
SKILLCAD Create Via



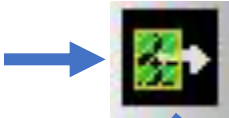
SKILLCAD Edit Standard Via



SKILLCAD Edit Standard Via, Stretch Enclosure



SKILLCAD Edit Standard Via, Set Params/Variants



SKILLCAD Edit Standard Via

Action: ☐ Stretch Array ☐ Stretch Enclosure ☒ **Set Params/Variants** ☐ cutPattern

Enc Mode: ☐ viaDef ☒ minRule

My Variant Name: Save Del

Reset Params To:

Via Columns: + Rows: +

Via Width(um): + Height: +

Via SpaceX(um): + SpaceY: +

Symmetrical Enclosure ☒

Layer1 Enc Left: + Right: +

Layer1 Enc Top: + Bottom: +

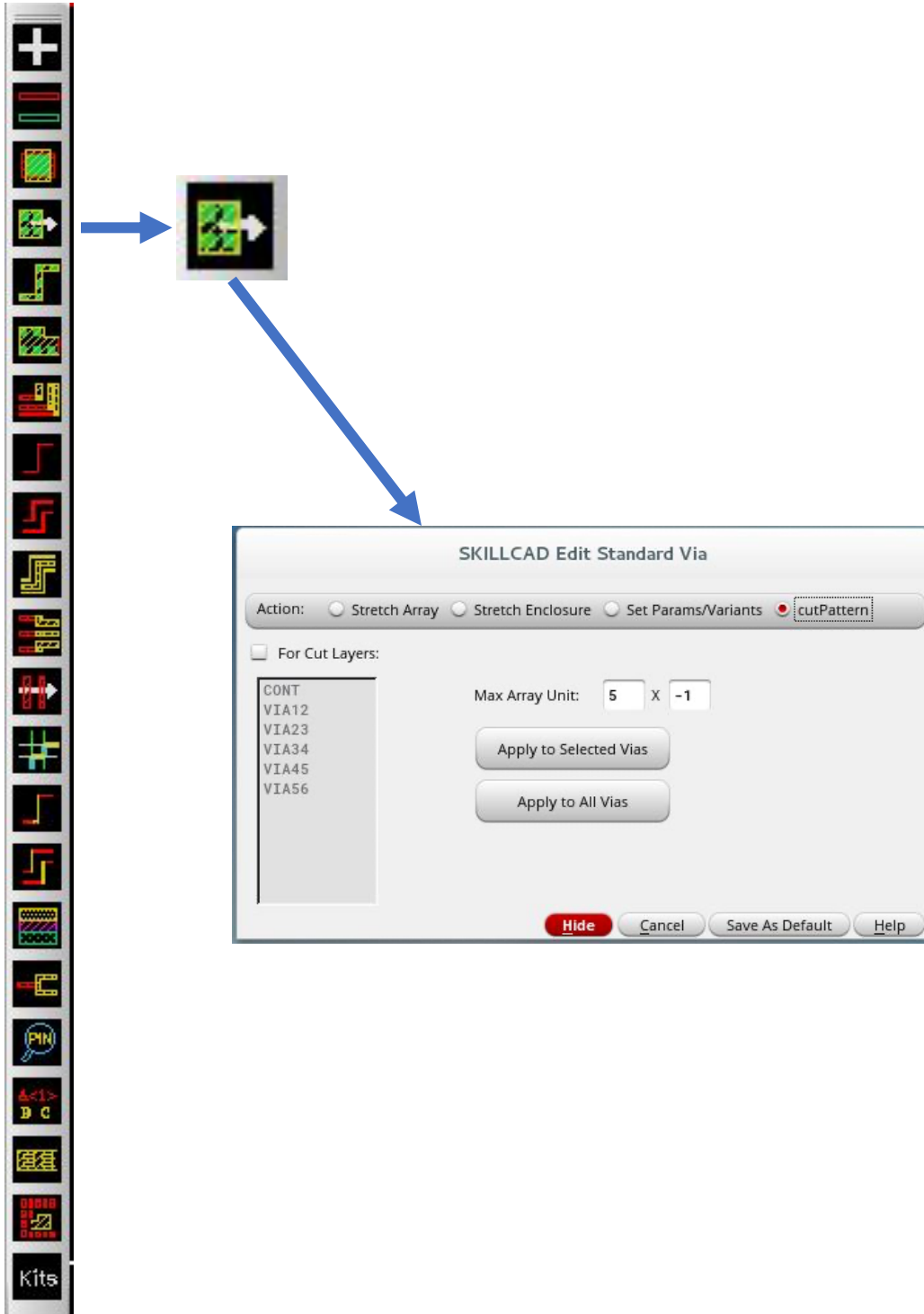
Layer2 Enc Left: + Right: +

Layer2 Enc Top: + Bottom: +

Imp1 Enc X: + Enc Y: +

Imp2 Enc X: + Enc Y: +

SKILLCAD Edit Standard Via, Cut Patterns



SKILLCAD Fill Via

SKILLCAD Fill Via in Area

Use Rule: ☒ Default ☐ recommended

Enc Mode: ☐ viaDef ☒ minRule Space: ☐ Distribute ☒ Minimum

☒ Align Metal Edge ☐ Flat Via in Polygon ☒ Group Via

End Enclosure Side: ☒ Preferred ☐ X ☐ Y ☐ All ☐ NP

Fix Min. Area: ☒ Ignore Invisible Layers

☒ Check same VXL net name when filling overlaps

☐ Outside Layer: By(um):

Commands Use "From" and "To" Layer Settings:

From: To:

Commands Auto-detect "From" and "To" Layers:

Fill all from and to layers, in a rectangular area.

Fill metal overlaps, by clicking on overlap.

Fill vias in a selected region.

Fill metal overlaps, by clicking on overlap; auto detect from and to layers.

Fill metal overlaps, on same VXL net, within a rectangular region.

Draw a polygonal via array.

Draw a rectangular via array.

SKILLCAD Create Multi-Part Path (MPP)

The diagram illustrates the SKILLCAD Create MPP dialog box and its various options. The dialog box is titled "SKILLCAD Create MPP" and contains the following sections:

- Use Rule:** ☒ Default ☐ recommended
- Enc Mode:** ☐ viaDef ☒ minRule
- From:** METAL1 **draw** **To:** M1_SUB
- Specify:** ☒ Bottom Via ☐ Bottom Layer ☐ Top Via ☐ Top Layer
- Number of "CONT drawing":** 1
- "DIFF" Width(um):** 0.45
- ☐ Set Starting Enclosure(um): 0
- ☐ Set Ending Enclosure(um): 0 ☒ Fix MinWidth
- Via Space in Path Dir:** ☐ Distribute ☒ Min ☐ Specify: 0.25
- Via Space in Width Dir:** ☐ Distribute ☒ Min ☐ Specify: 0.25
- Grow/Ring Options:**
 - Grow From:** Boundary **POLY1 drawing**
 - Reference Edge of the Ring:** ☒ inner ☐ center ☐ outer
 - Grow By(um):** 0 ☐ Grow To Rectangle
- ☐ Save MPP as Cell Name(Prefix): Auto
- Buttons:**
 - Grow From Selected Objects
 - Draw Multipart Path
 - Draw Polygon Ring
 - Draw Rect Ring
 - Change Selected MPPs
 - Reshape Selected MPP
- Footer:** Close Save As Default Help

Arrows point from the following text boxes to the corresponding buttons in the dialog box:

- Creating an MPP. → Draw Multipart Path
- Creating a ring around existing shapes, instances. → Grow From Selected Objects
- Changing selected MPPs. → Change Selected MPPs
- Creating a ring, guard ring. → Draw Polygon Ring
- Reshaping an MPP/ring. → Reshape Selected MPP

A callout box titled "Reshaping an MPP/ring." contains the following links:

- [PDF Doc](#)
- [PowerPoint Doc](#)
- [Video](#)

SKILLCAD Creating a Metal Bus, (3 Ways)



PDF Doc

PowerPoint Doc

Video

[PDF Doc](#)

Word Doc

Video

[PDF Doc](#)

[Word Doc](#)

Video

SKILLCAD Continuing a Metal Bus, (3 Ways)



[PDF Doc](#)

[PowerPoint Doc](#)

[Video](#)

[PDF Doc](#)

[Word Doc](#)

[Video](#)

[PDF Doc](#)

[Word Doc](#)

[Video](#)

SKILLCAD Creating a Metal Path/Path Segment, (3 Ways)



[PDF Doc](#)

[PowerPoint Doc](#)

[Video](#)

[PDF Doc](#)

[Word Doc](#)

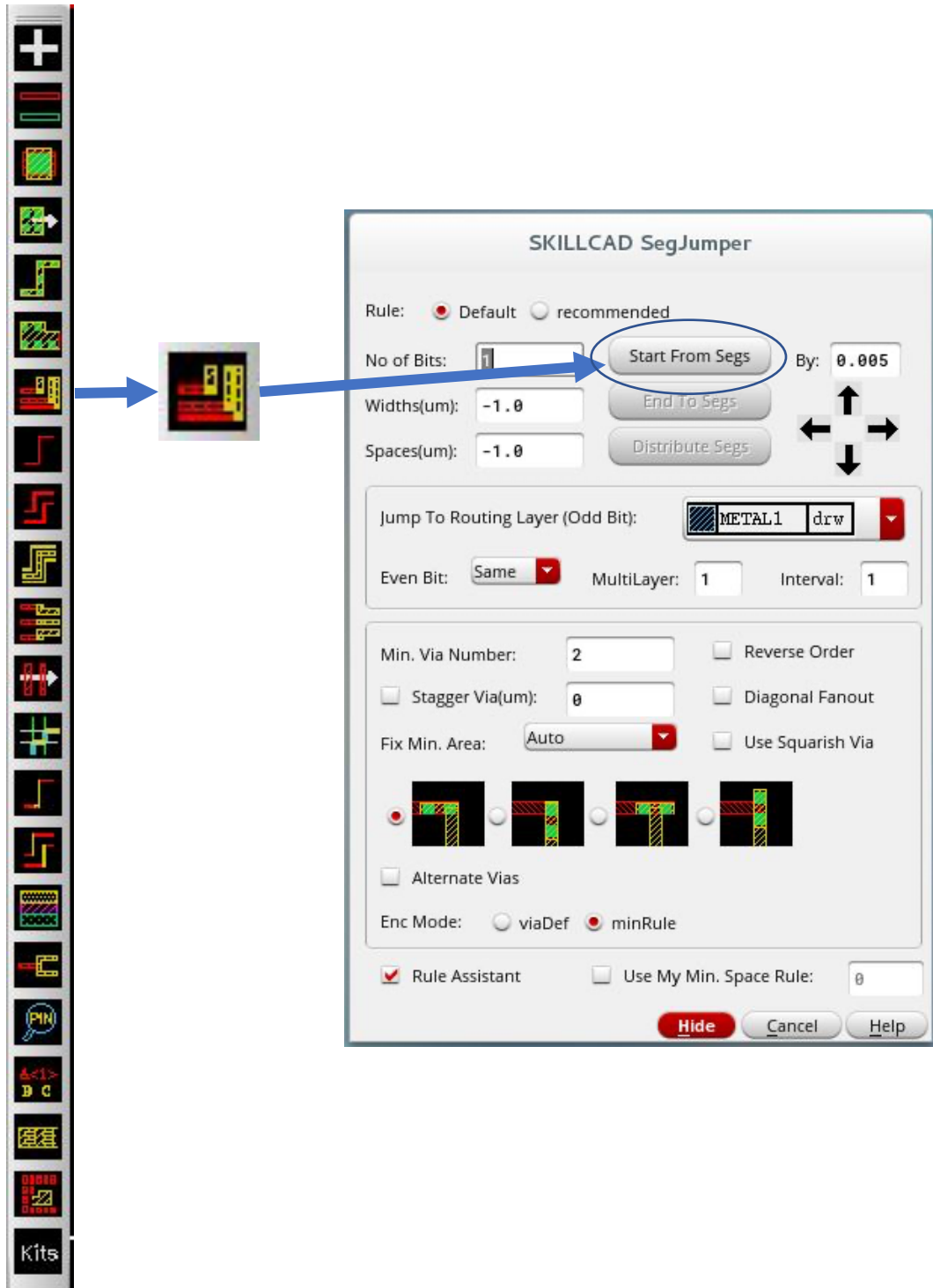
[Video](#)

[PDF Doc](#)

[Word Doc](#)

[Video](#)

SKILLCAD Continuing a Metal Path/Path Segment



SKILLCAD SegJumper, Various Functions

The diagram illustrates the SKILLCAD SegJumper dialog box and its various functions. The dialog box is titled "SKILLCAD SegJumper" and contains the following settings:

- Rule:** ☒ Default ☐ recommended
- No of Bits:** 16
- Widths(um):** 0.28
- Spaces(um):** 0.23
- Start From Segs** (button)
- End To Segs** (button)
- Distribute Segs** (button)
- By:** 0.005
- Jump To Routing Layer (Odd Bit):** METAL2
- Even Bit:** Same
- MultiLayer:** 1
- Interval:** 1
- Min. Via Number:** 2
- Stagger Via(um):** 0
- Fix Min. Area:** Auto
- Reverse Order** (checked)
- Diagonal Fanout** (checked)
- Use Squarish Via** (checked)
- Alternate Vias** (checked)
- Enc Mode:** ☐ viaDef ☒ minRule
- Rule Assistant** (checked)
- Use My Min. Space Rule:** 0

The functions listed on the left are:

- Distributing bus metals.
- Alternating bus metal layers.
- Staggering in-line vias.
- Reversing bus routing order at via corners.
- Fan out/in of bus routes.
- Alternating via directions at bus via corners.

SKILLCAD Path/Path Segments, Various Functions

SKILLCAD FreeJumper (Path)

Use Rule: ☒ Default ☐ recommended

Path Width Mode: ☐ Min Width ☒ Fixed Width ☐ Fixed Current

As Starting Path: ☒ Width(um): Current(mA):

Current Entry Layer: MultiLayers:

Next Click, Jump To: Layer Intervals:

Min. Via Number: Use Squarish Via Array ☐

Max. Stack Levels: Fix Min. Area:

Corner Via Align: ☒ ☐ ☐ ☐ ☐

Metal Enc Mode: ☐ viaDef ☒ minRule Align Via Metal To Path ☐

☐ Create Note Labels Along Path: Use VXL Net Name ☐

☐ Alert if Non-Preferred Dir Routing > (um) ☐ Swap Dir

☒ Convert Non-orthogonal Path to Polygon on Grid

☒ Extend Path at Layer Jumping ☐ Auto Pan Window

☒ Merge with Starting/Ending Path ☒ Align Starting/Ending to Center

☐ Probe The Drawing Net

☒ Rule Assistant ☐ Use My Min. Space Rule(um):

Metal Display: ☐ Current Level to

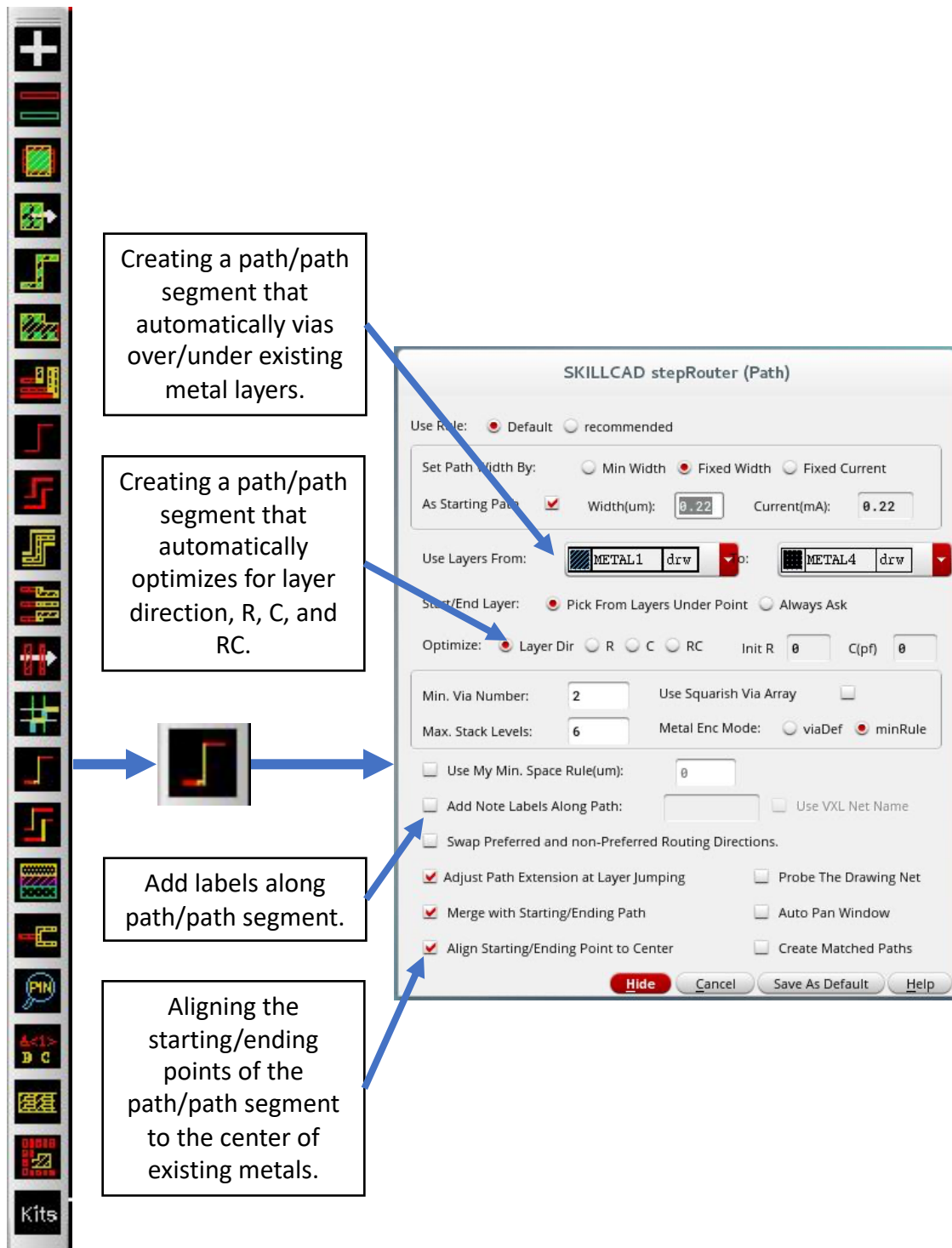
Creating labels along the path.

Convert a non-orthogonal path to a polygon, on grid.

Align the starting and ending path to the center of the existing metal.

Snap path/path segment to the center, between two existing shapes.

SKILLCAD Step Router Path/Path Segments, Various Functions



Creating a path/path segment that automatically vias over/under existing metal layers.

Creating a path/path segment that automatically optimizes for layer direction, R, C, and RC.

Add labels along path/path segment.

Aligning the starting/ending points of the path/path segment to the center of existing metals.

SKILLCAD stepRouter (Path)

Use Rule: ☒ Default ☐ recommended

Set Path Width By: ☐ Min Width ☒ Fixed Width ☐ Fixed Current

As Starting Path: ☒ Width(um): Current(mA):

Use Layers From: ☒ METAL1 ☐ drw ☐ METAL4 ☐ drw

Start/End Layer: ☒ Pick From Layers Under Point ☐ Always Ask

Optimize: ☒ Layer Dir ☐ R ☐ C ☐ RC Init R: C(pf):

Min. Via Number: Use Squarish Via Array: ☐

Max. Stack Levels: Metal Enc Mode: ☐ viaDef ☒ minRule

☐ Use My Min. Space Rule(um):

☐ Add Note Labels Along Path: ☐ Use VXL Net Name

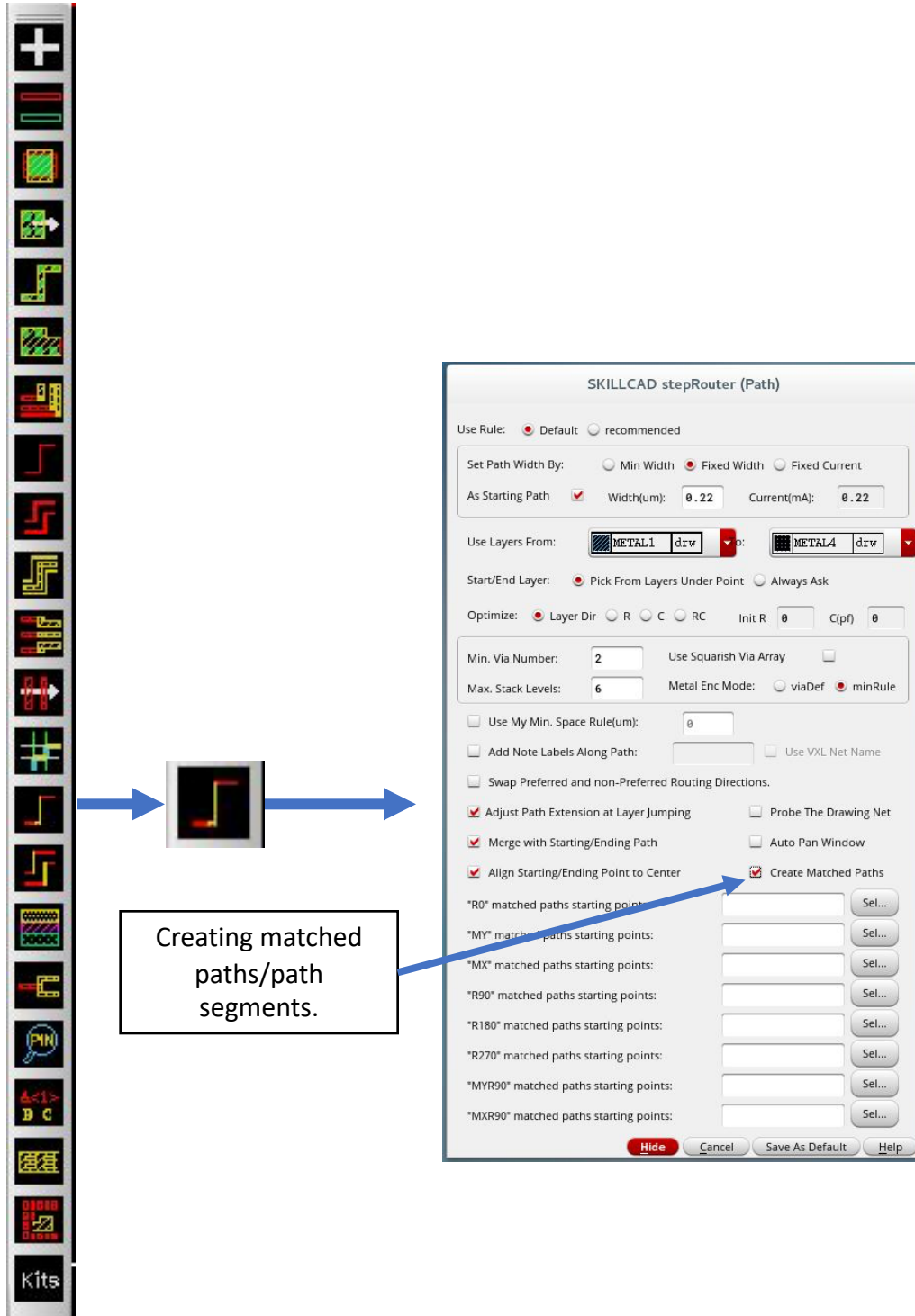
☐ Swap Preferred and non-Preferred Routing Directions.

☒ Adjust Path Extension at Layer Jumping ☐ Probe The Drawing Net

☒ Merge with Starting/Ending Path ☐ Auto Pan Window

☒ Align Starting/Ending Point to Center ☐ Create Matched Paths

SKILLCAD Step Router Path/Path Segments, Matched Paths



SKILLCAD stepRouter (Path)

Use Rule: ☒ Default ☐ recommended

Set Path Width By: ☐ Min Width ☒ Fixed Width ☐ Fixed Current

As Starting Path ☒ Width(um): 0.22 Current(mA): 0.22

Use Layers From: METAL1 drw METAL4 drw

Start/End Layer: ☒ Pick From Layers Under Point ☐ Always Ask

Optimize: ☒ Layer Dir ☐ R ☐ C ☐ RC Init R 0 C(pF) 0

Min. Via Number: 2 Use Squarish Via Array ☐

Max. Stack Levels: 6 Metal Enc Mode: ☐ viaDef ☒ minRule

☐ Use My Min. Space Rule(um): 0

☐ Add Note Labels Along Path: Use VXL Net Name

☐ Swap Preferred and non-Preferred Routing Directions.

☒ Adjust Path Extension at Layer Jumping ☐ Probe The Drawing Net

☒ Merge with Starting/Ending Path ☐ Auto Pan Window

☒ Align Starting/Ending Point to Center ☒ Create Matched Paths

R0 matched paths starting points: Sel...

MY matched paths starting points: Sel...

MX matched paths starting points: Sel...

R90 matched paths starting points: Sel...

R180 matched paths starting points: Sel...

R270 matched paths starting points: Sel...

MYR90 matched paths starting points: Sel...

MXR90 matched paths starting points: Sel...

Hide Cancel Save As Default Help

Creating matched paths/path segments.

SKILLCAD Step Router Bus, Various Functions

SKILLCAD stepRouter (Bus)

Use Rule: ☒ Default ☐ recommended

Set Path Width By: ☐ Min Width ☒ Fixed Width ☐ Fixed Current

Width(um): 0.22 Current(mA): 0.22

No. of Paths: 2 Pitch(um): 0.58

Use Layers From: METAL1 drw to METAL4 drw

Start/End Layer: ☒ Pick From Layers Under Point ☐ Always Ask

Optimize: ☒ Layer Dir ☐ R ☐ C ☐ RC Init R 0 C(pf) 0

Min. Via Number: 2 Use Squarish Via Array ☐

Max. Stack Levels: 6 Metal Enc Mode: ☐ viaDef ☒ minRule

☐ Use My Min. Space Rule(um): 0

☐ Add Note Labels Along Path: ?

☐ Swap Preferred and non-Preferred Routing Directions.

☒ Adjust Path Extension at Layer Jumping

☒ Merge with Starting/Ending Path ☐ Auto Pan Window

☒ Align Starting/Ending Point to Center ☐ Create Matched Paths

Hide **Cancel** **Save As Default** **Help**

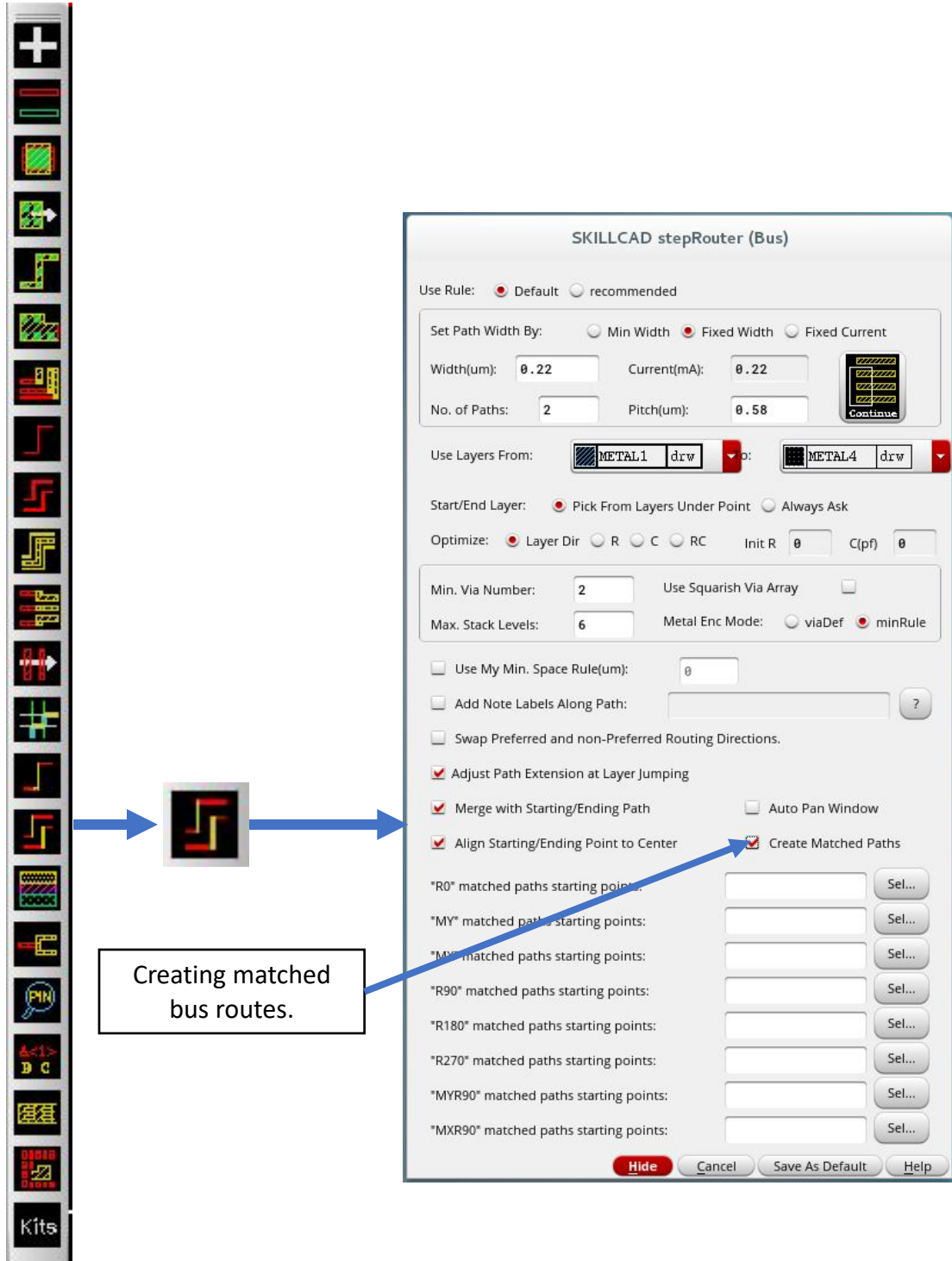
Creating a bus that automatically vias over/under existing metal layers.

Creating a bus that automatically optimizes for layer direction, R, C, and RC.

Add labels along the bus routes.

Aligning the starting/ending points of the bus to the center of existing metals.

SKILLCAD Step Router Bus, Matched Bus



SKILLCAD stepRouter (Bus)

Use Rule: ☒ Default ☐ recommended

Set Path Width By: ☐ Min Width ☒ Fixed Width ☐ Fixed Current

Width(um): 0.22 Current(mA): 0.22

No. of Paths: 2 Pitch(um): 0.58

Use Layers From: METAL1 drw b: METAL4 drw

Start/End Layer: ☒ Pick From Layers Under Point ☐ Always Ask

Optimize: ☒ Layer Dir ☐ R ☐ C ☐ RC Init R 0 C(pf) 0

Min. Via Number: 2 Use Squarish Via Array ☐

Max. Stack Levels: 6 Metal Enc Mode: ☐ viaDef ☒ minRule

☐ Use My Min. Space Rule(um): 0

☐ Add Note Labels Along Path: ?

☐ Swap Preferred and non-Preferred Routing Directions.

☒ Adjust Path Extension at Layer Jumping

☒ Merge with Starting/Ending Path ☐ Auto Pan Window

☒ Align Starting/Ending Point to Center ☒ Create Matched Paths

R0 matched paths starting points: Sel...

MY matched paths starting points: Sel...

MY matched paths starting points: Sel...

R90 matched paths starting points: Sel...

R180 matched paths starting points: Sel...

R270 matched paths starting points: Sel...

MYR90 matched paths starting points: Sel...

MXR90 matched paths starting points: Sel...

Hide Cancel Save As Default Help

Creating matched bus routes.

SKILLCAD Advanced Fill

Creating dummy fill.

Creating dummy fill, using a fill cell.

Creating dummy fill run sets.

Creating dummy fill in a defined area.

Creating dummy fill under a specified layer.

Creating dummy fill in a selected region.

SKILLCAD Fill Dummy

Advanced Fill

Simple Fill

Check Density

Close Help

SKILLCAD UniFill Form

Template: [] [Save] [Load]

Fill Dummy shape of Layer: [Select Layer...]

For the Coverage of Layer: [Select Layer...]

☐ Ignore Coverage: Min(%): 20 Max(%): 80

Filling Pattern Defined By: ☒ Run Set ☐ Cell

With Fixed: ☒ Width ☐ Height ☐ Width & Height

W(um): 2 Max W: 20 Space X(um): 0

H(um): 2 Max H: 20 Space Y(um): 0

Space to Existing Figs: 0 ☐ Exact Space

Keepout Layer/Area: [] []

[Add] [Del]

[Add Above Run Set] [Del Selected Run Set]

Run Sets: []

Fill Region: ☐ [Report Coverage]

☒ Cell Boundary Box Down Size By(um): 0

Box: [] []

☐ Under Layer: [Select Layer...]

☐ Selected Regions

Area to Calculate Coverage: Grow Fill-Region by 0

☐ Use Tile Mode Square Tile Size(um): 20

☐ Excluding Layer Purposes: []

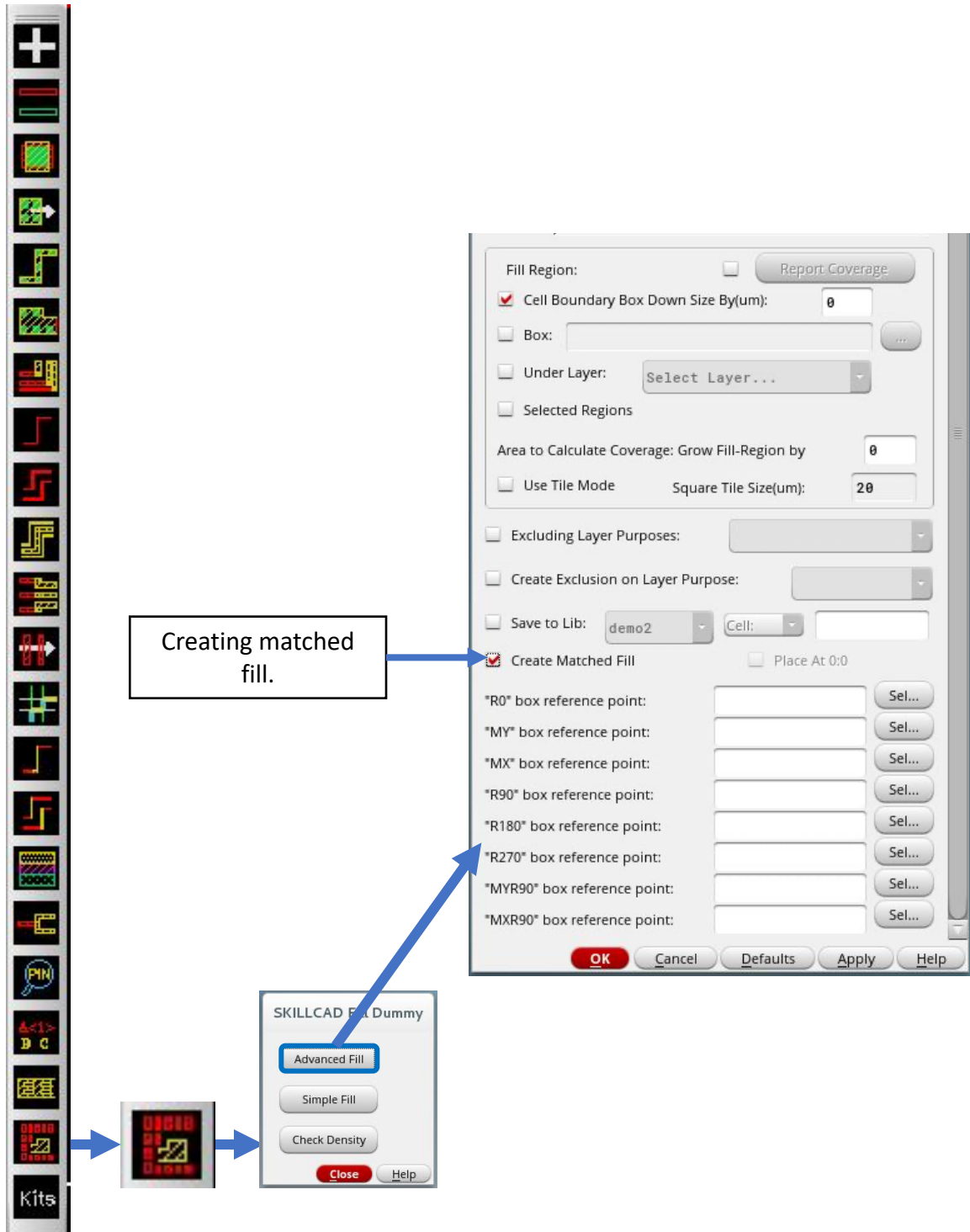
☐ Create Exclusion on Layer Purpose: []

☐ Save to Lib: demo2 Cell: []

☐ Create Matched Fill ☐ Place At 0:0

[OK] [Cancel] [Defaults] [Apply] [Help]

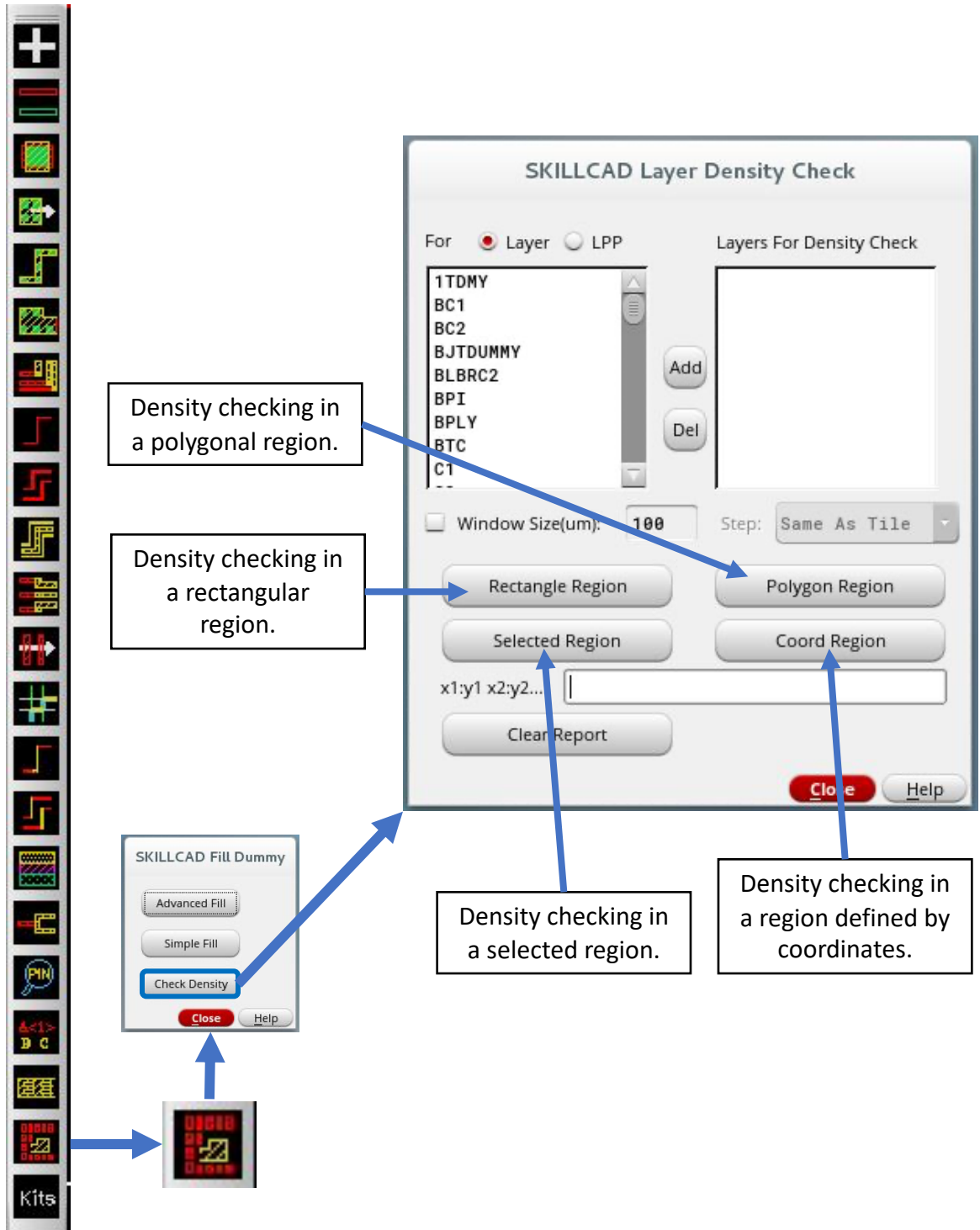
SKILLCAD Advanced Fill, Matched Fill



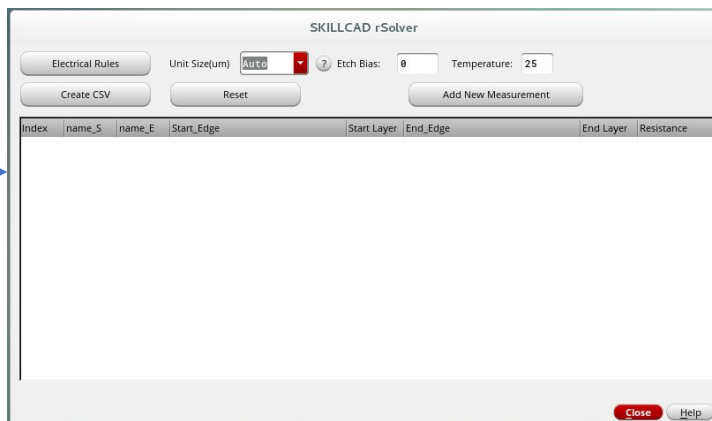
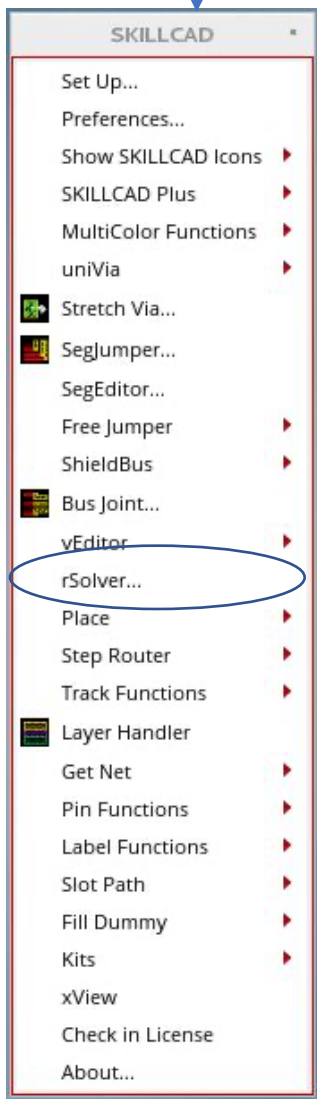
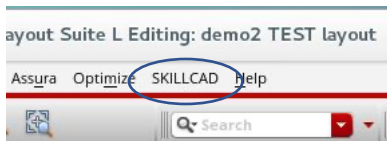
SKILLCAD Simple Fill



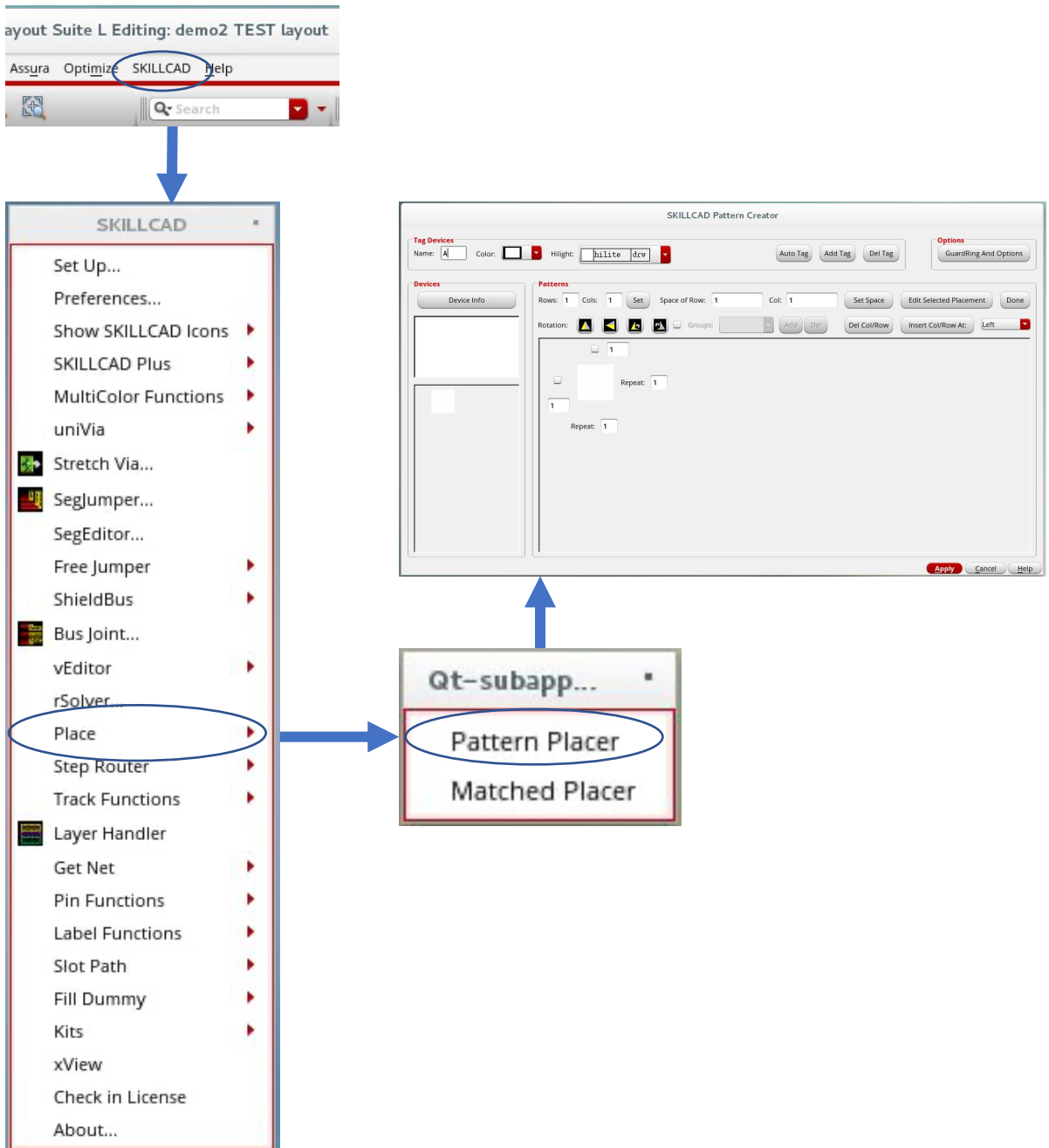
SKILLCAD Layer Density Check



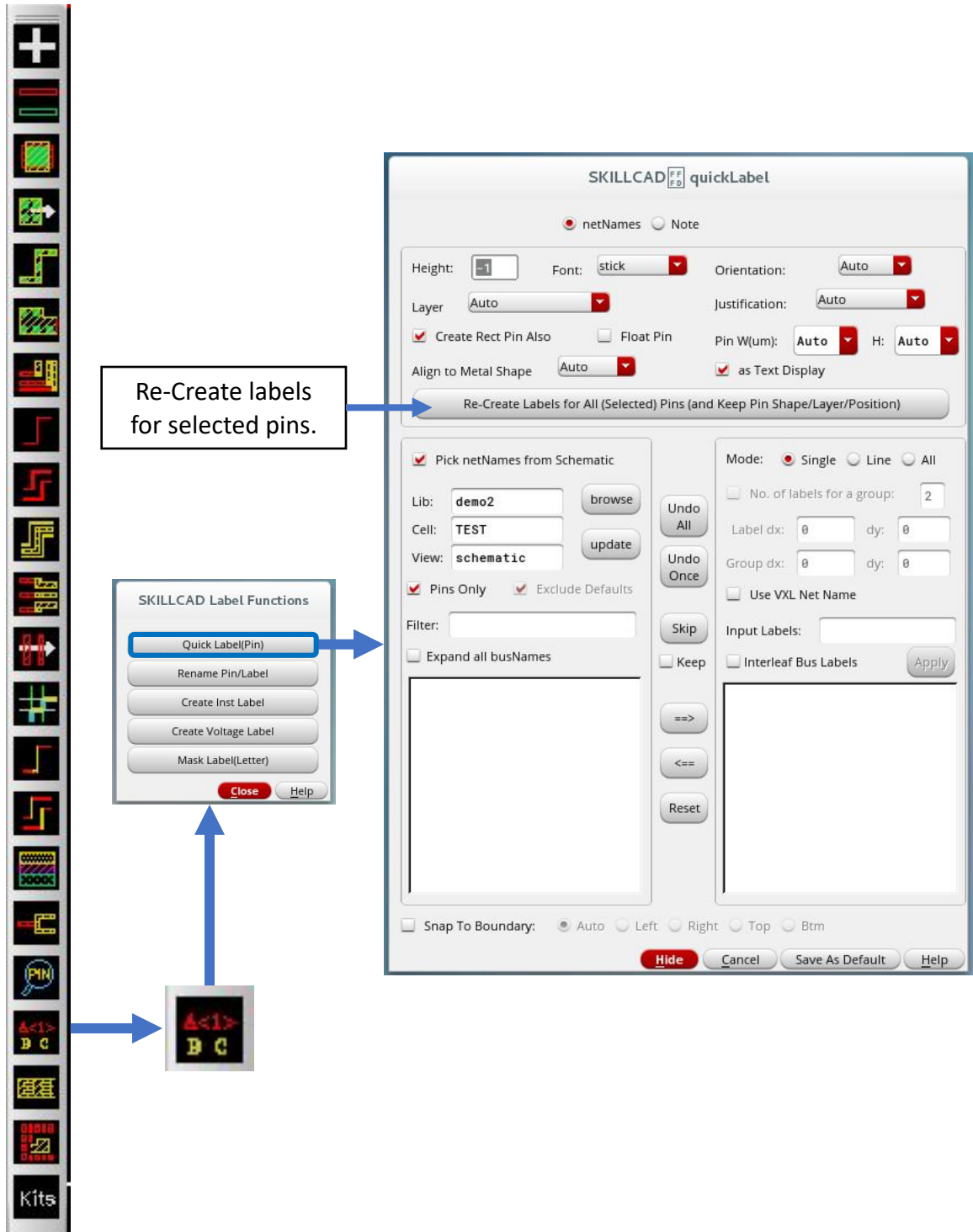
SKILLCAD rSolver



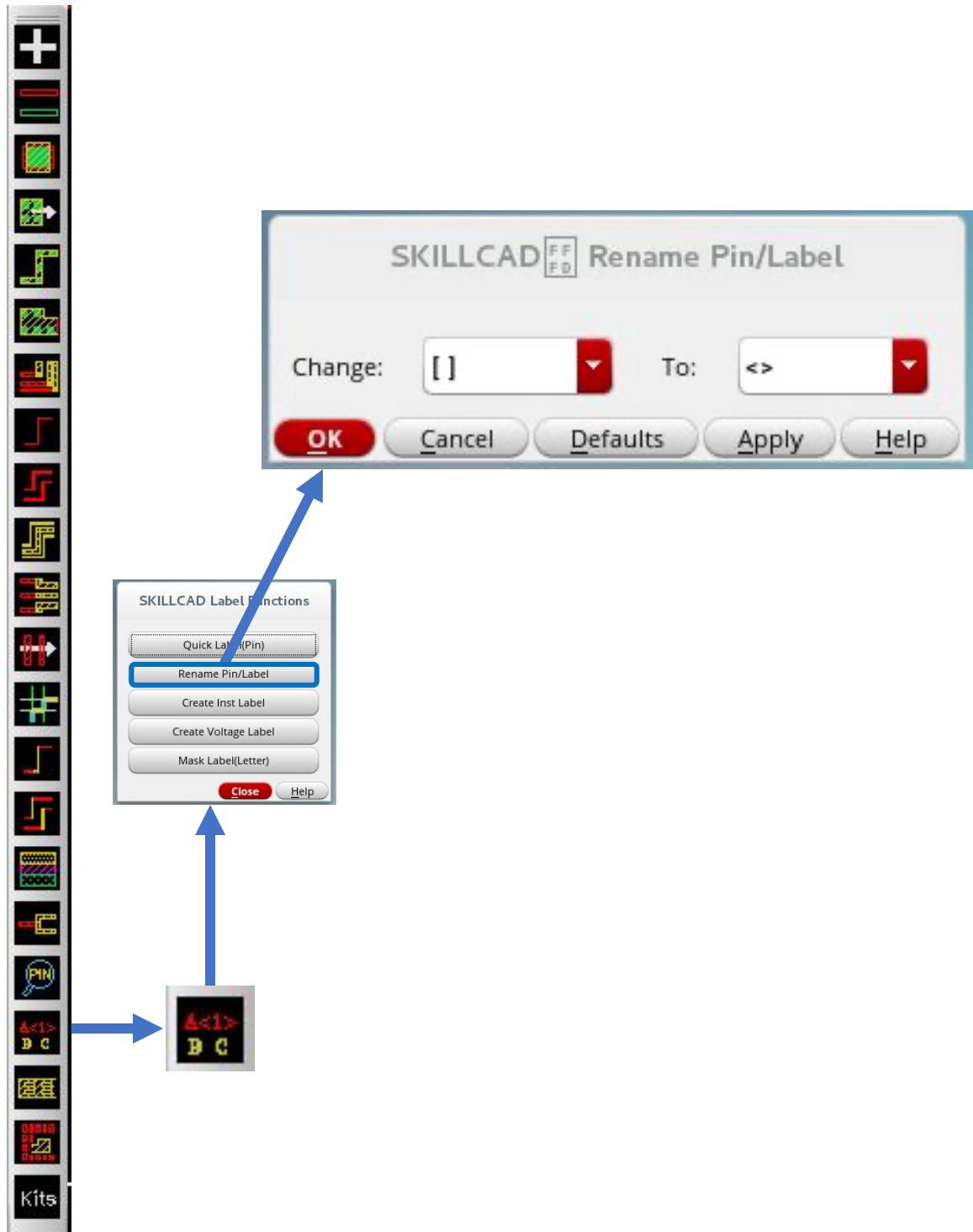
SKILLCAD Pattern Placer



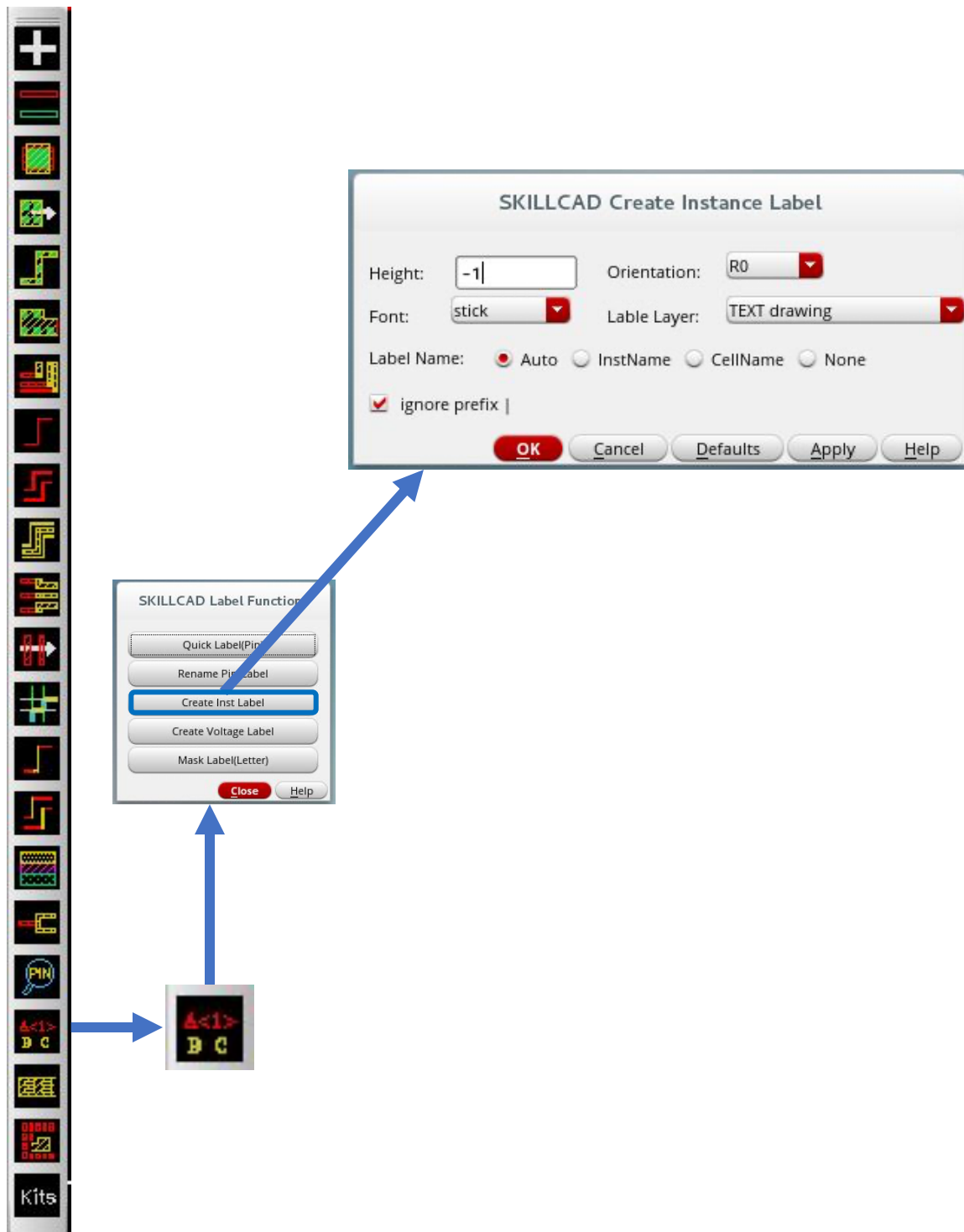
SKILLCAD Quick Label



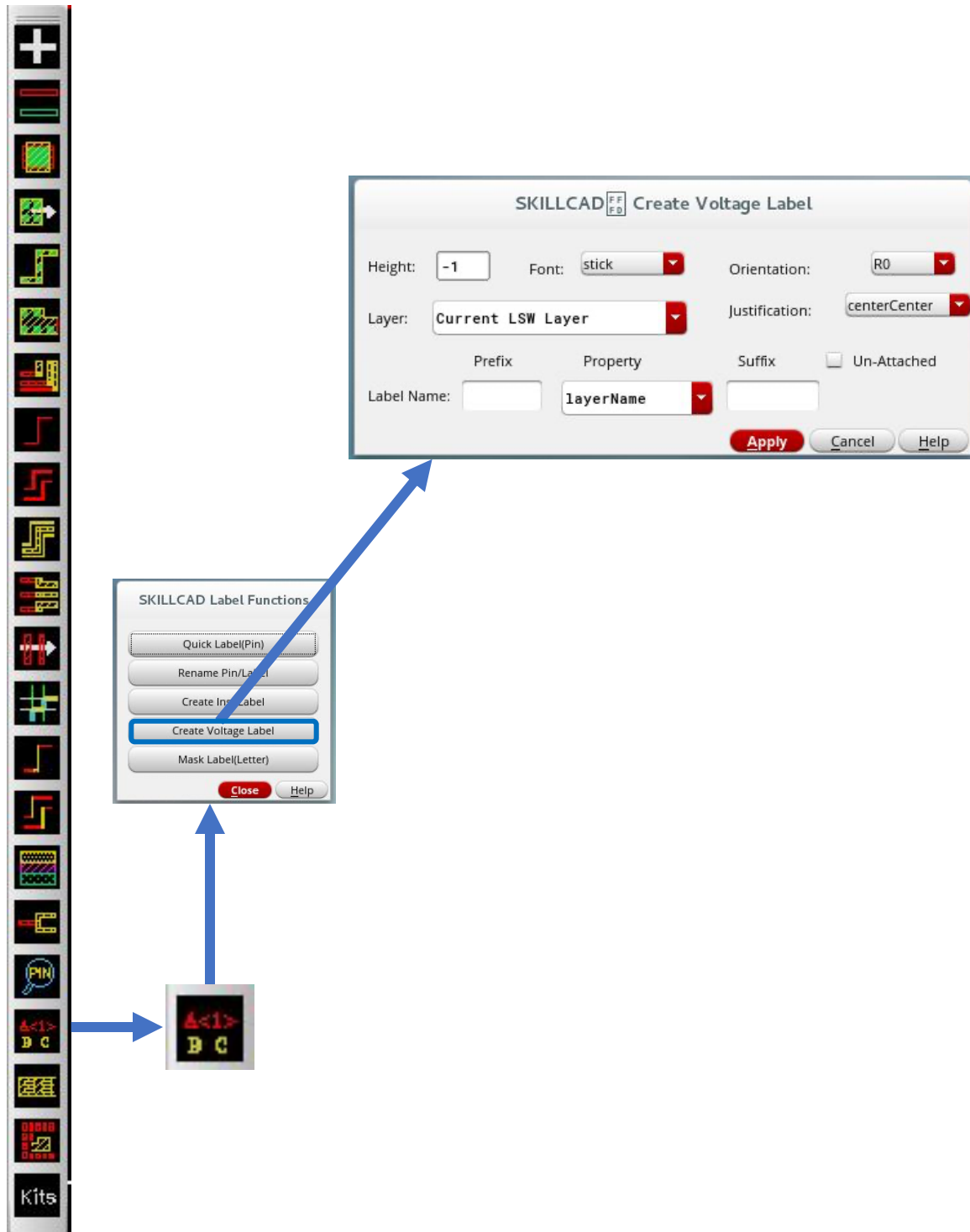
SKILLCAD Rename Pin/Label



SKILLCAD Create Instance Labels



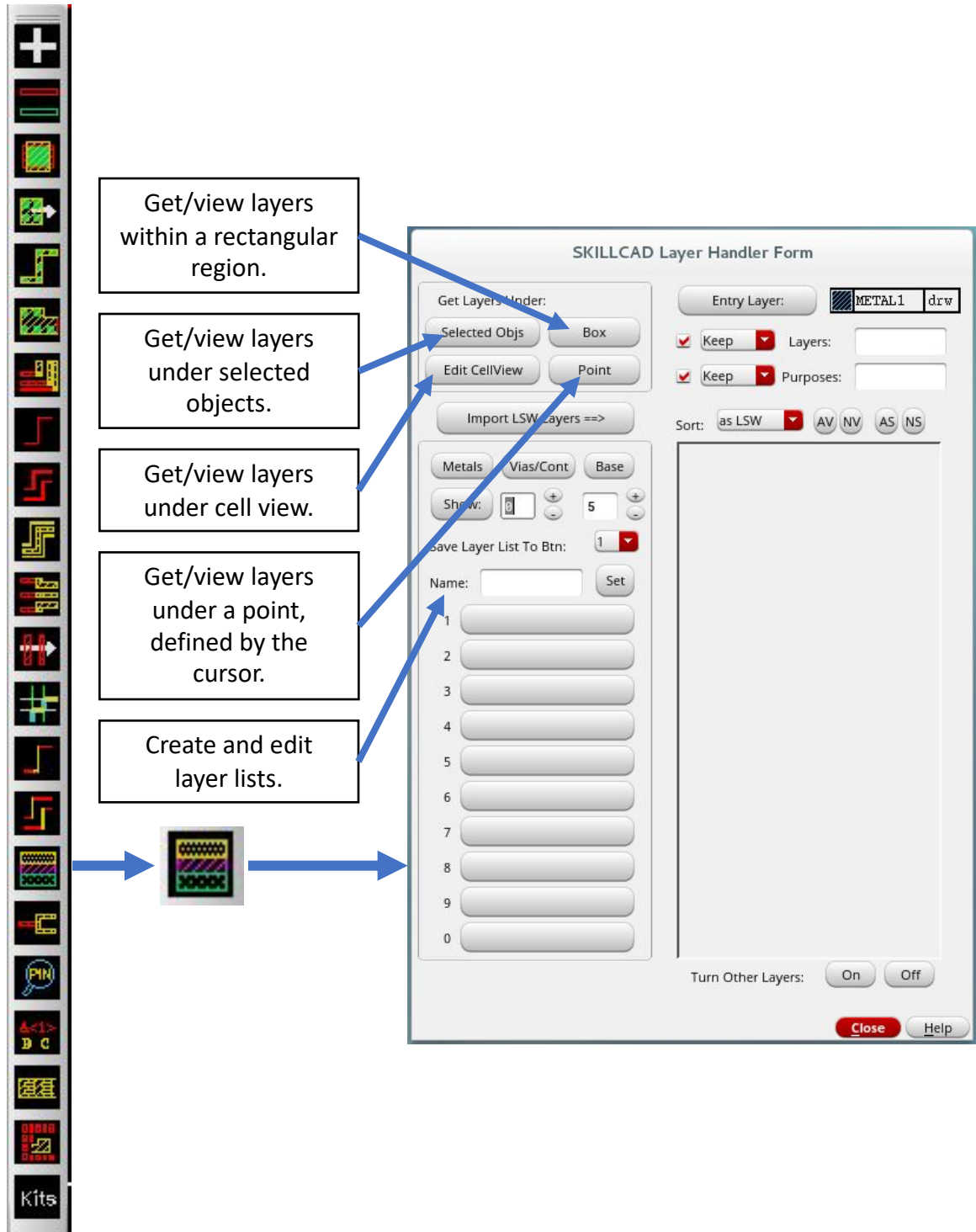
SKILLCAD Create Voltage Labels



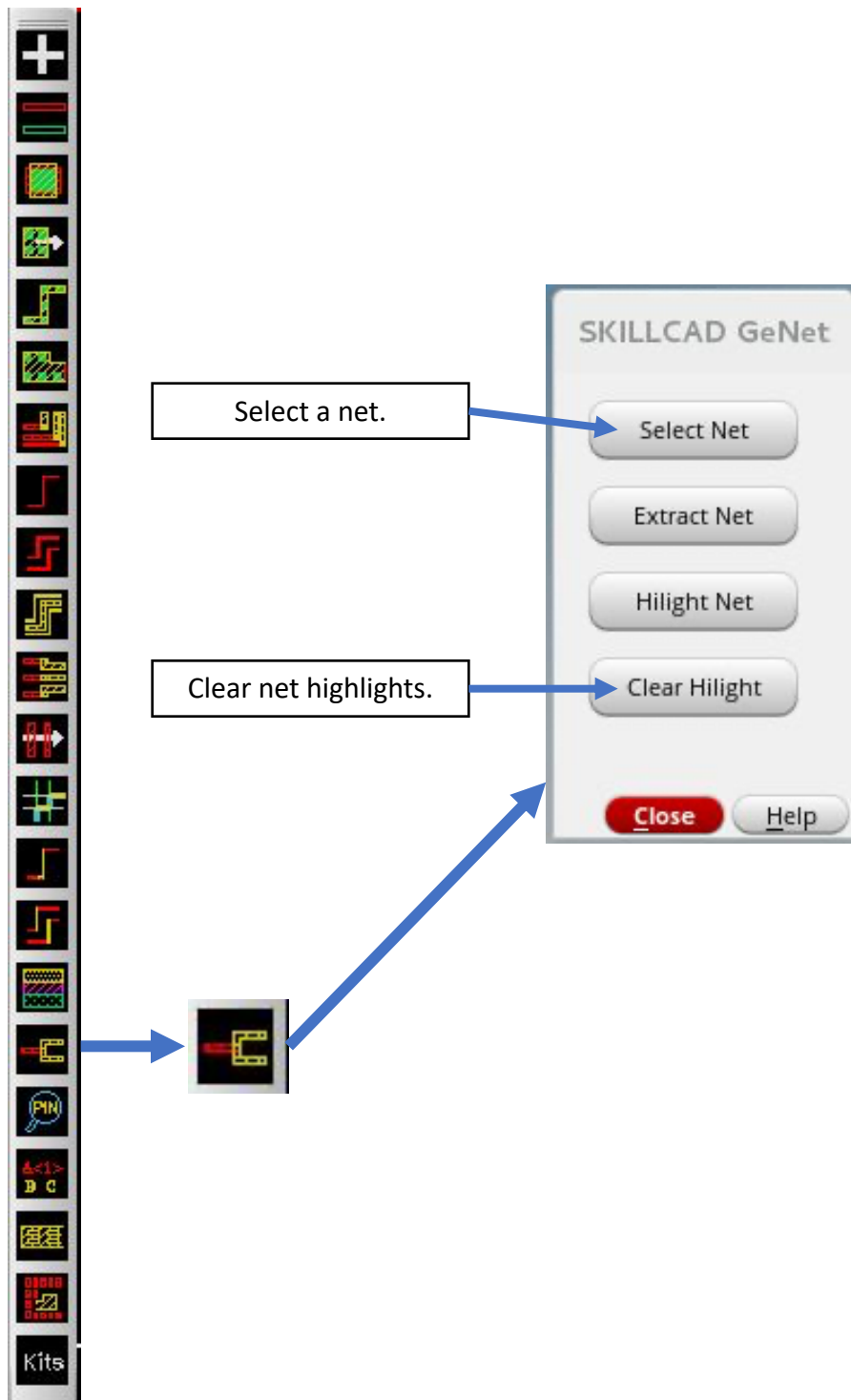
SKILLCAD Create Mask Labels



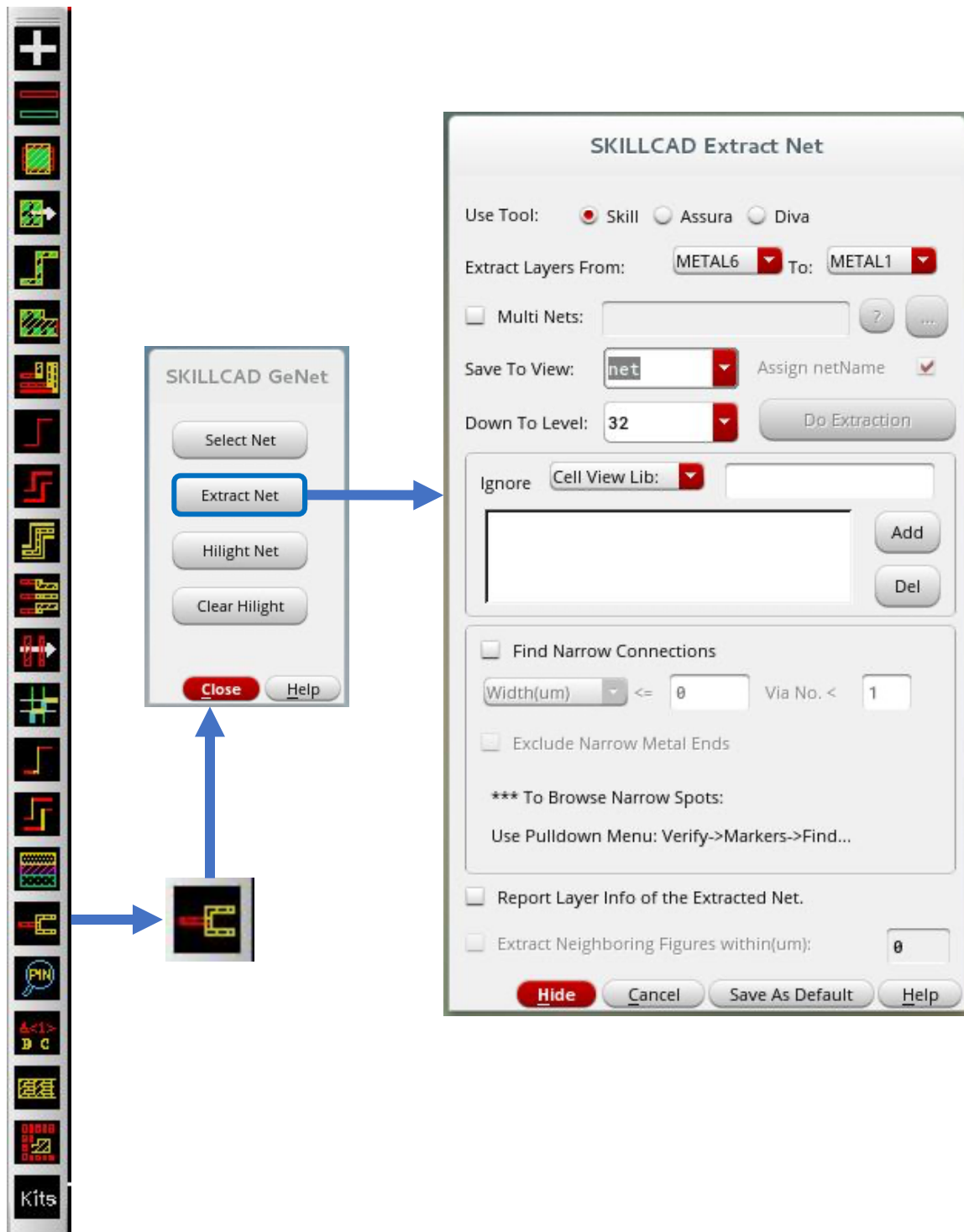
SKILLCAD Layer Handler



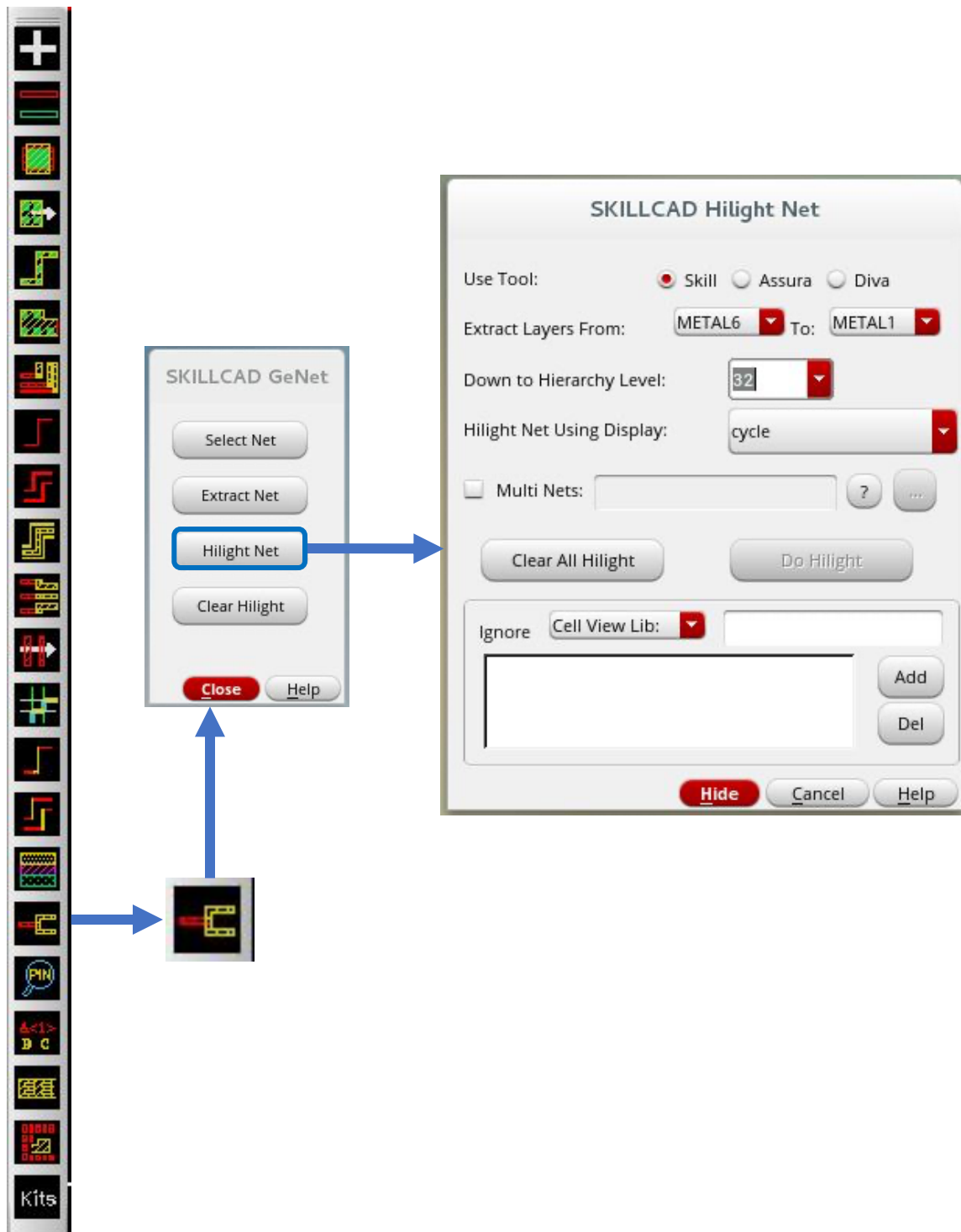
SKILLCAD Select Net, Clear Net Highlight



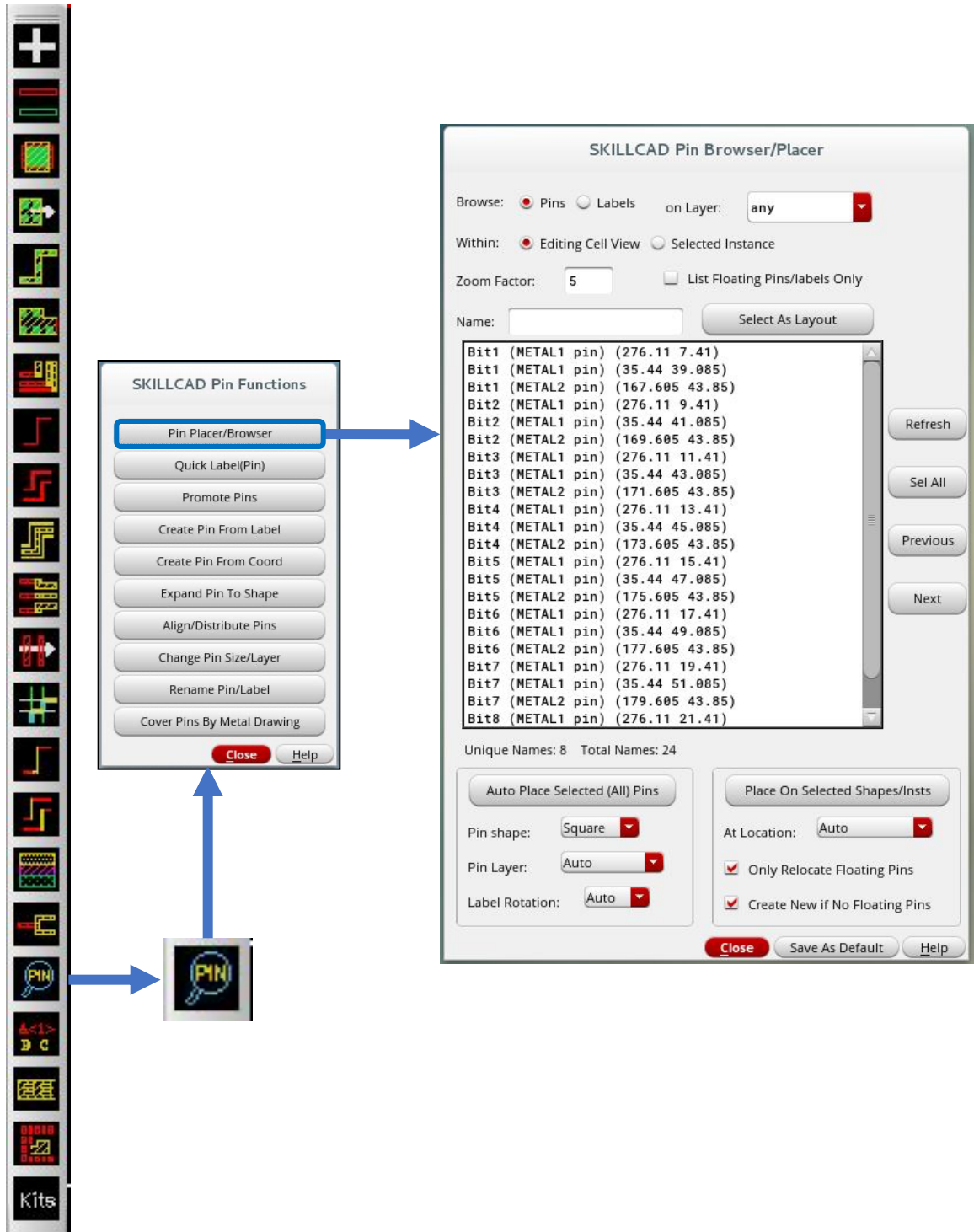
SKILLCAD Extracting a Net



SKILLCAD Highlighting a Net



SKILLCAD Pin Placer/Browser



SKILLCAD Pin Label

Set the pin label orientation.

Re-create labels for selected pins.

SKILLCAD Pin Functions

- Pin Placer/Browser
- Quick Label(Pin)**
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

SKILLCAD quickLabel

☒ netNames ☐ Note

Height: Font: Orientation: Auto

Layer: Auto Justification: Auto

☒ Create Rect Pin Also ☐ Float Pin Pin W(um): Auto H: Auto

Align to Metal Shape: Auto ☒ as Text Display

Re-Create Labels for All (Selected) Pins (and Keep Pin Shape/Layer/Position)

☒ Pick netNames from Schematic

Lib: demo2

Cell: TEST

View: schematic

☒ Pins Only ☒ Exclude Defaults

Filter:

☐ Expand all busNames

Mode: ☒ Single ☐ Line ☐ All

☐ No. of labels for a group: 2

Label dx: 0 dy: 0

Group dx: 0 dy: 0

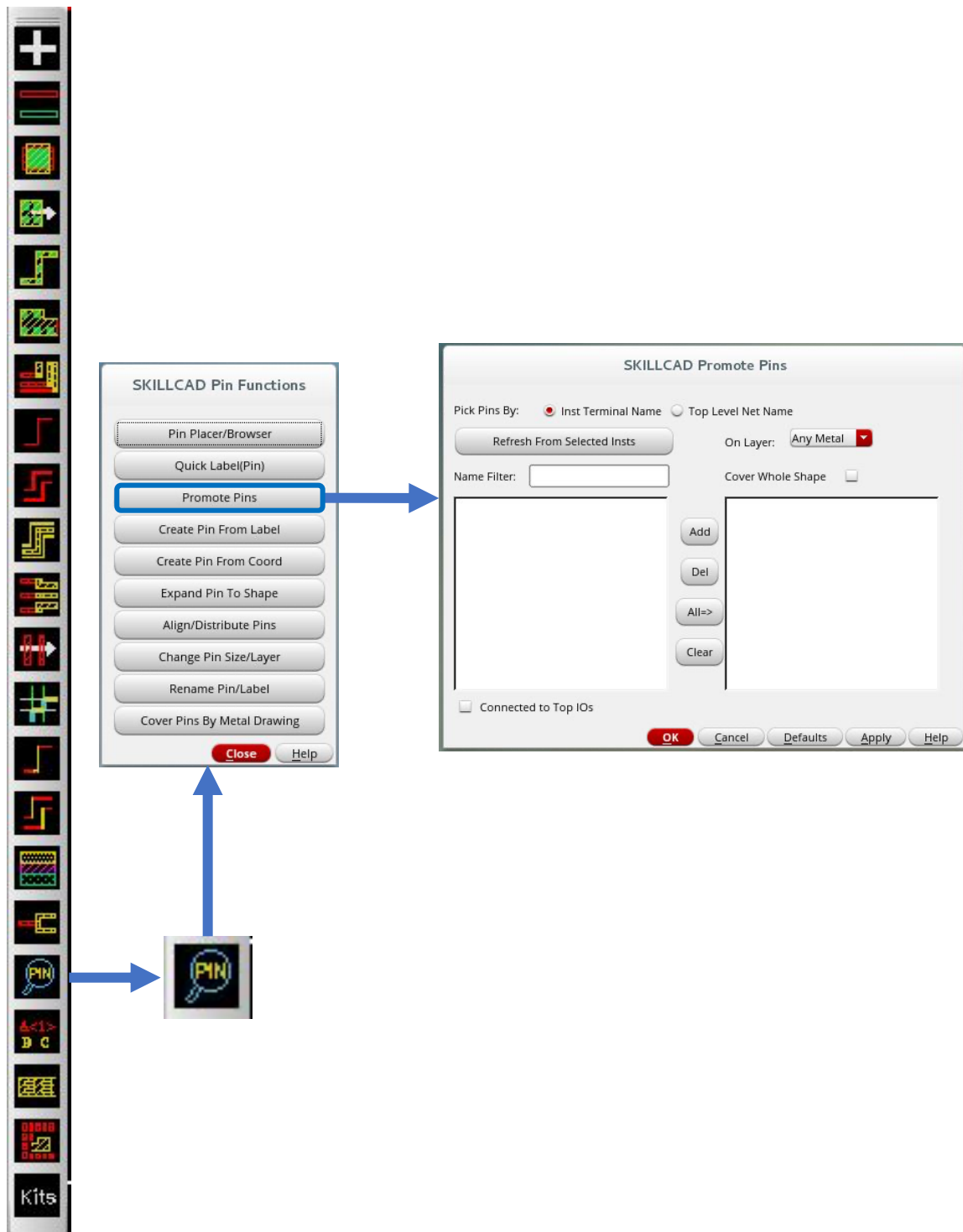
☐ Use VXL Net Name

Input Labels:

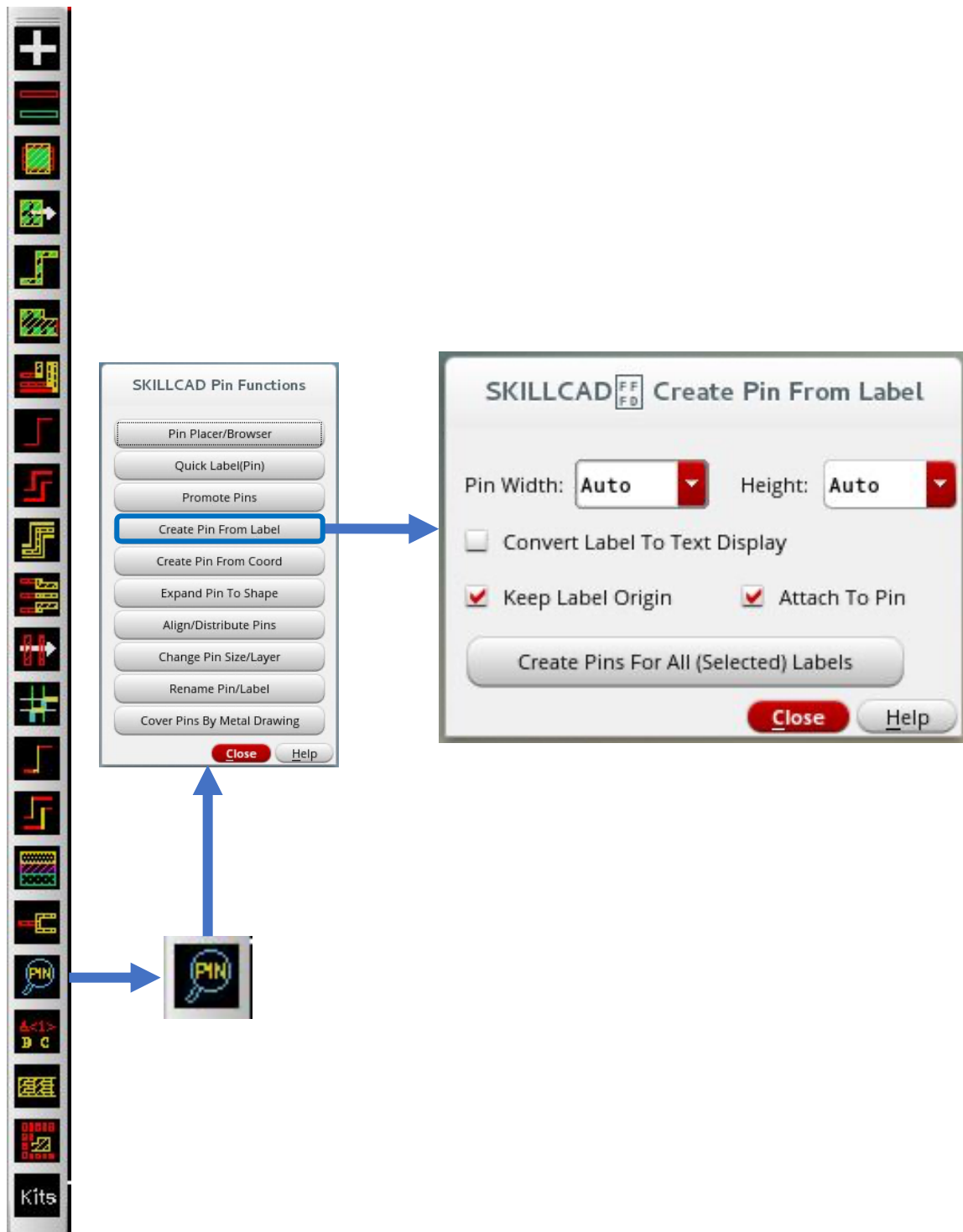
☐ Interleaf Bus Labels

☐ Snap To Boundary: ☒ Auto ☐ Left ☐ Right ☐ Top ☐ Btm

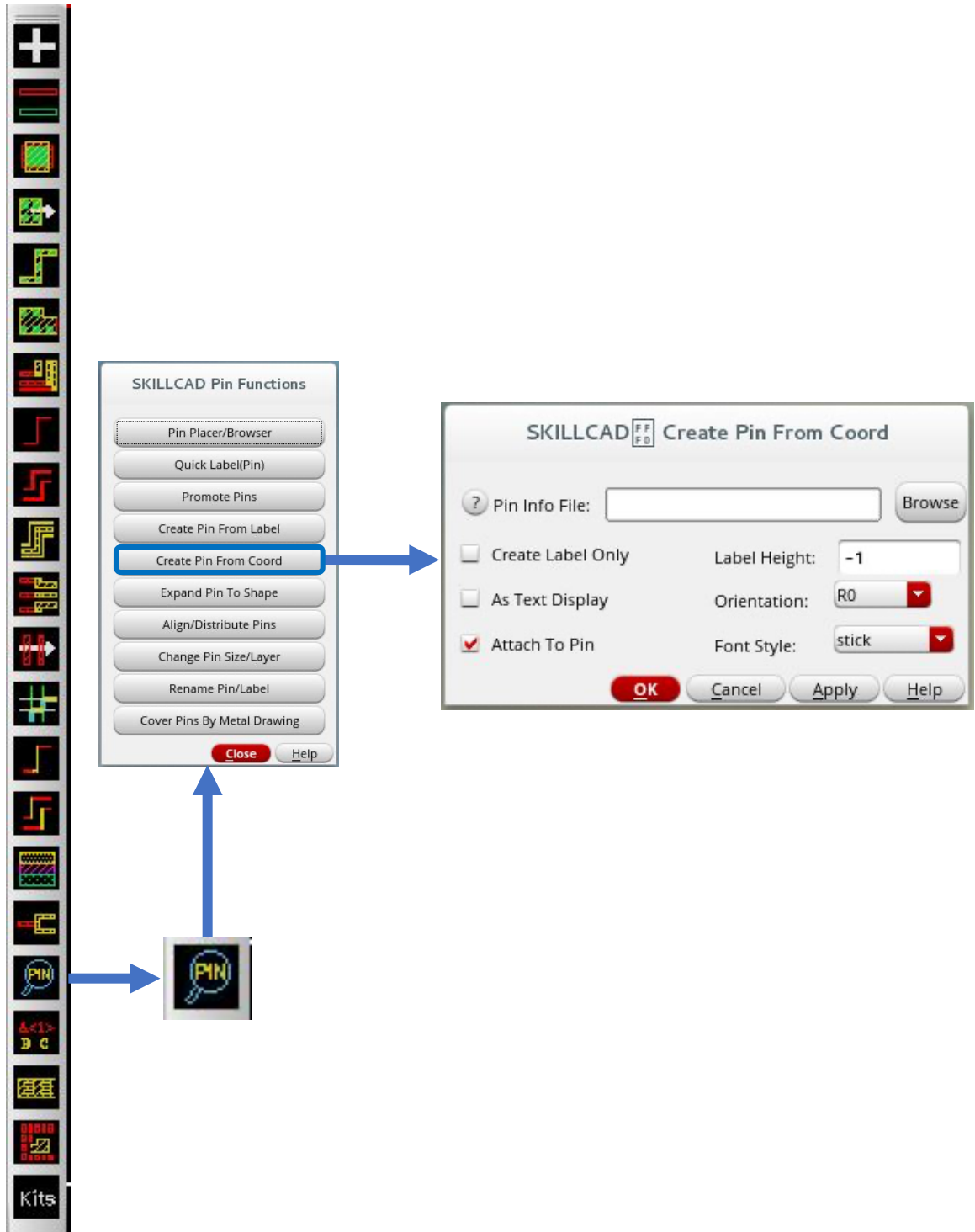
SKILLCAD Promote Pins



SKILLCAD Create Pin From Label



SKILLCAD Create Pin From Coordinates



SKILLCAD Expand Pin To Shape



SKILLCAD Align/Distribute Pins

The diagram illustrates the workflow for aligning and distributing pins in SKILLCAD. It shows the **SKILLCAD Pin Functions** menu and the **SKILLCAD Move/Align Pins** dialog box.

SKILLCAD Pin Functions Menu:

- Pin Placer/Browser
- Quick Label(Pin)
- Promote Pins
- Create Pin From Label
- Create Pin From Coord
- Expand Pin To Shape
- Align/Distribute Pins** (highlighted)
- Change Pin Size/Layer
- Rename Pin/Label
- Cover Pins By Metal Drawing

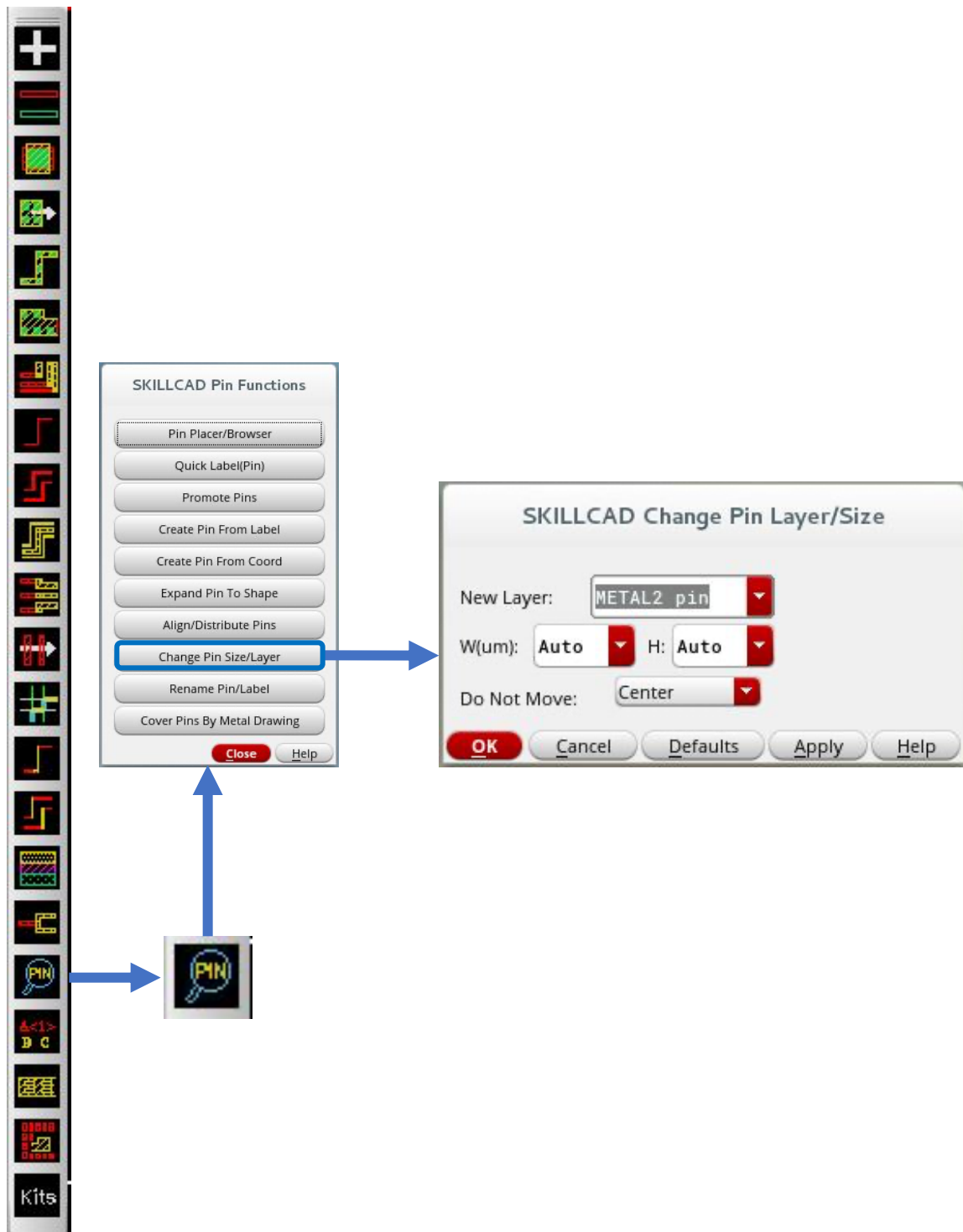
SKILLCAD Move/Align Pins Dialog Box:

- Expand Selection To All Bits of Bus** (button)
- Deselect Pins(Fig):**
 - Odd
 - Even
- Sort By Net Name** (button) - Annotated: "Sort pins by net name."
- Reverse Order** (button)
- Change To Layer:** METAL1 pin (dropdown)
- Align Selected:**
 - Left, Right, Top, Bottom (directional arrows)
 - Center (⊕)
- Move By:** 0.005 (input field)
- Snap To:**
 - ☒ prBoundary
 - ☐ Shape Edge
- Adjust:**
 - Pin Label ☒
 - Pin Size ☒
- Set Space:**
 - sp_x: 0 (input field)
 - sp_y: Align (dropdown)
- Distribute In:**
 - Current Range
 - New Range
- Close** (button)
- Help** (button)

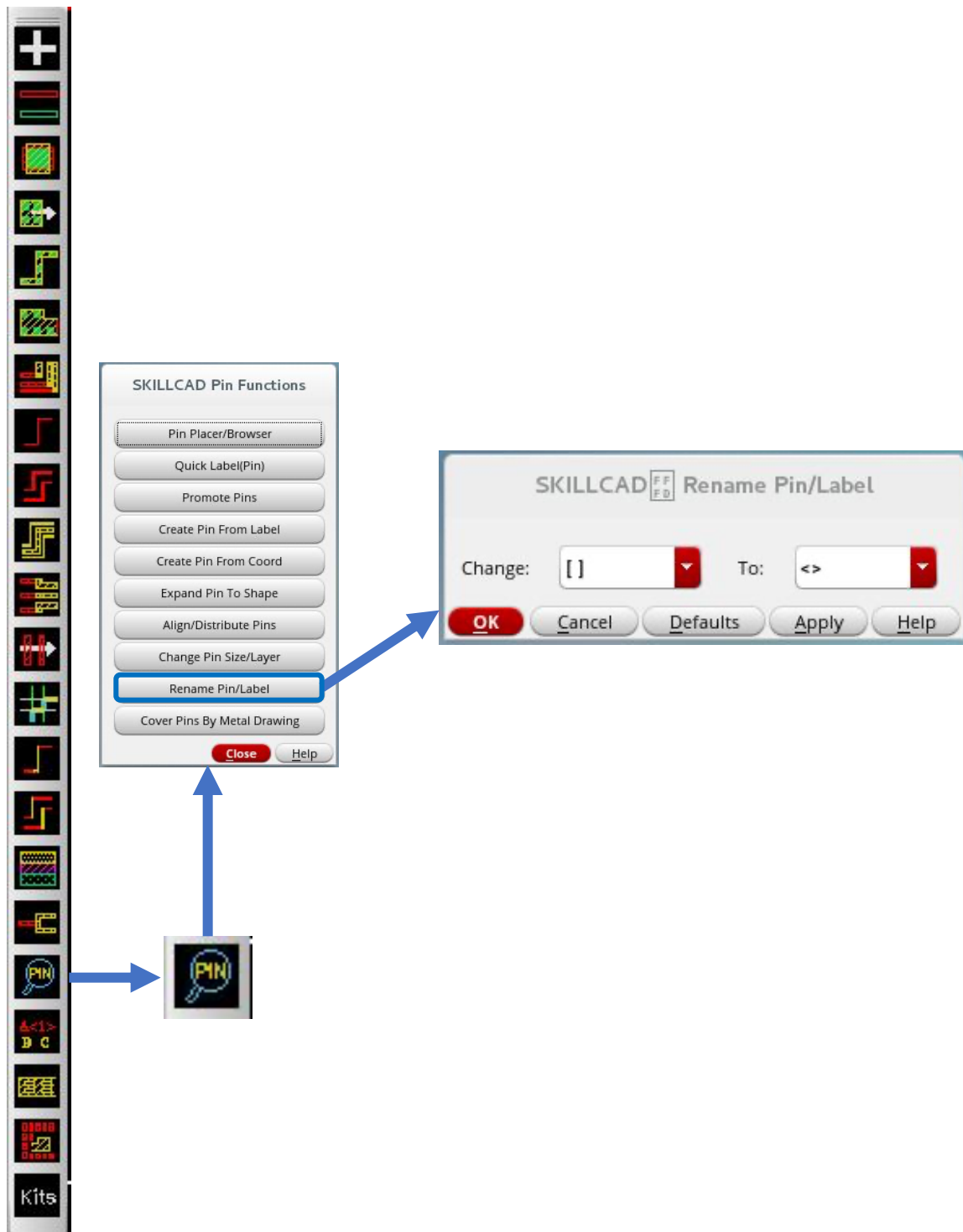
Annotations:

- "Align pins to prBoundary." (points to the **prBoundary** radio button)
- "Align pins to shape edge." (points to the **Shape Edge** radio button)
- "Distribute pins within a range." (points to the **Current Range** and **New Range** buttons)

SKILLCAD Change Pin Size/Layer



SKILLCAD Rename Pin/Label



SKILLCAD Cover Pins With Drawing Purpose



SKILLCAD Creating A Slotted Path



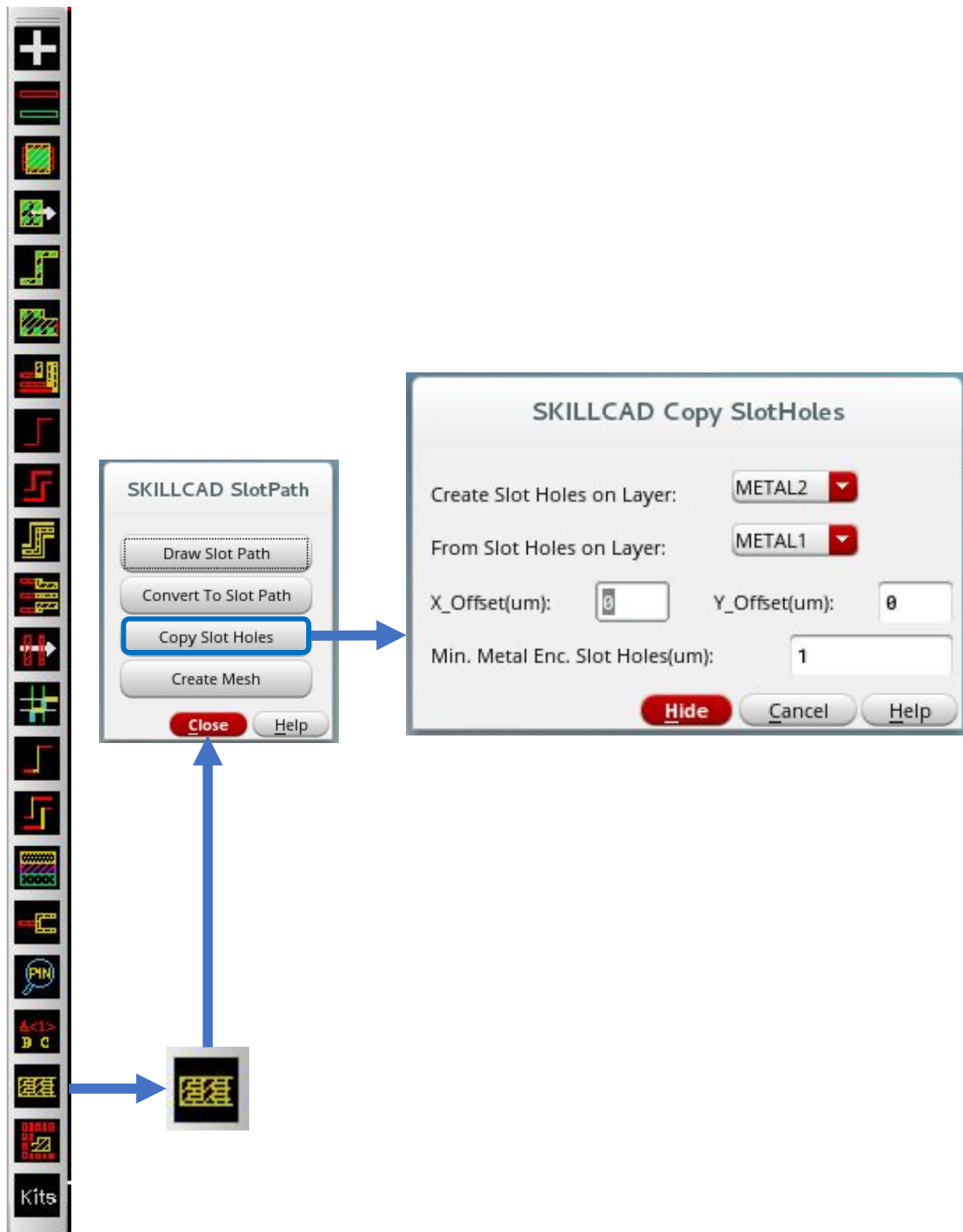
SKILLCAD Convert A Path To A Slotted Shape

The diagram illustrates the process of converting a path to a slotted shape in SKILLCAD. On the left is a vertical toolbar with various icons. A blue arrow points from a specific icon in the toolbar to a small preview window. From this preview window, another blue arrow points to the 'SKILLCAD SlotPath' dialog box. This dialog box contains several buttons: 'Draw Slot Path', 'Convert To Slot Path' (which is highlighted with a blue border and has a blue arrow pointing to the 'SKILLCAD Convert Path to SlotPath' dialog box), 'Copy Slot Holes', 'Create Mesh', 'Close', and 'Help'.

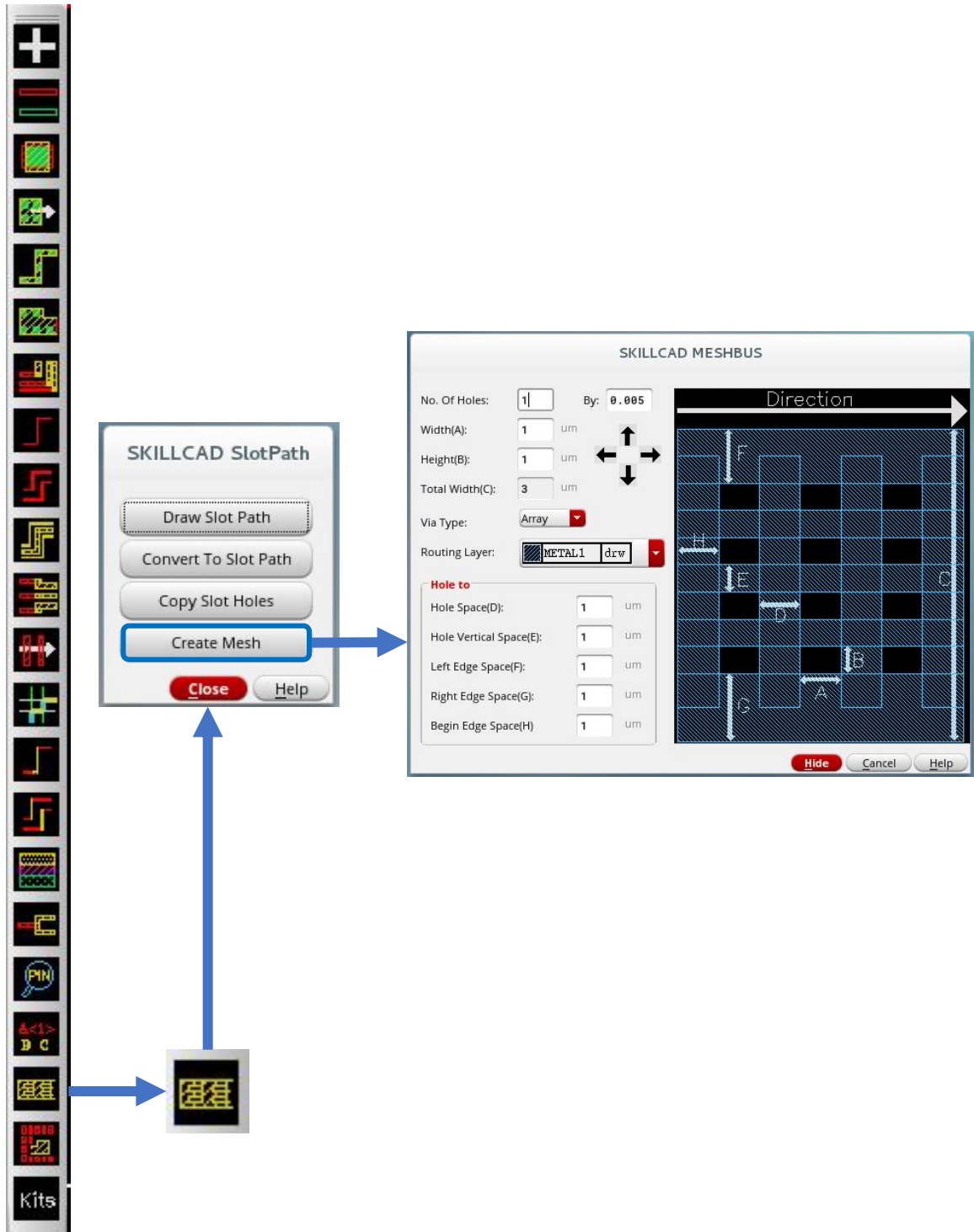
The 'SKILLCAD Convert Path to SlotPath' dialog box is shown on the right. It has a title bar and a main area with various settings. The 'Use Rule' section has 'Default' selected. The 'Use Corresponding Metal Slot Rules' checkbox is checked. The 'Use Slot Rules of Layer' dropdown is set to 'METAL1'. The 'Save as Group' checkbox is checked. The 'Snap to Grid' checkbox is checked. The 'Distribute(E,F)' checkbox is checked. The 'Modify Default Slot Rules' checkbox is unchecked. The 'Slot Mode' dropdown is set to 'Cut Holes on Metal'. The 'Slot Shape Layer' dropdown is set to 'Select Layer...'. The 'Min. Slot to Edge Space(A)' is 2 (um). The 'Min. Slot to End Space(B)' is 2 (um). The 'Exact Slot Width(C)' is 2 (um). The 'Exact Slot Length(D)' is 5 (um). The 'Min. Horizontal Space(E)' is 5 (um). The 'Min. Vertical Space(F)' is 5 (um). The 'Stagger Space(G)' is 3 (um). The 'Create Slot at Corner?' checkbox is checked. The 'Min Corner Slot Length(H)' is 2 (um). The 'Slot Side Edges' checkbox is unchecked. The 'Starting X(um)' is 'auto'. The 'Starting Y(um)' is 'auto'. On the right side of the dialog box is a preview of a slotted shape with dimensions labeled A, B, C, D, E, F, G, H, X, Y, and W. At the bottom of the dialog box are buttons for 'OK', 'Cancel', 'Apply', 'Save As Default', and 'Help'.

A blue arrow points from the 'Convert To Slot Path' button in the 'SKILLCAD SlotPath' dialog box to the 'SKILLCAD Convert Path to SlotPath' dialog box. Another blue arrow points from the 'SKILLCAD Convert Path to SlotPath' dialog box to a text box that says 'Change the default slot path rules.'

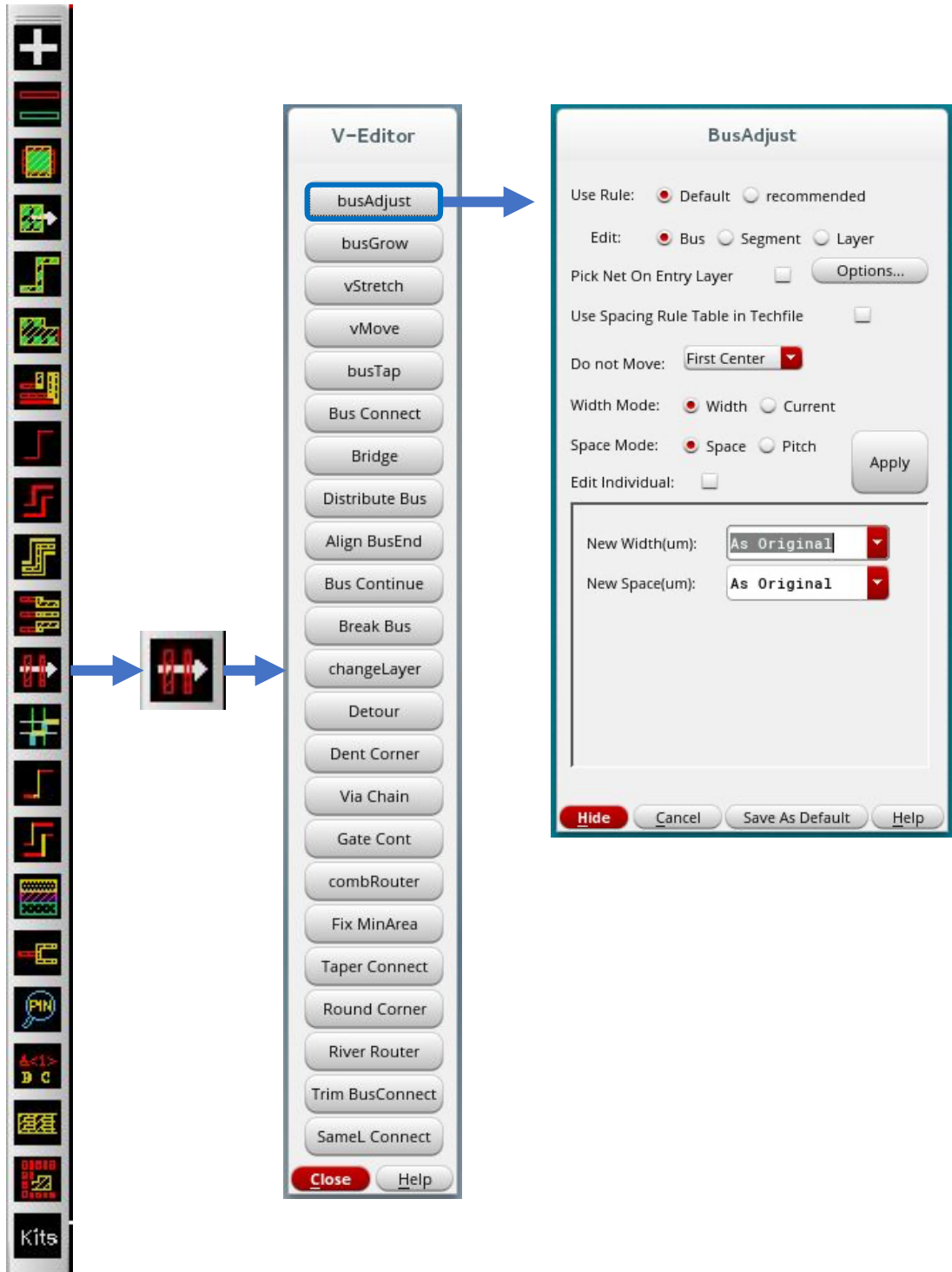
SKILLCAD Copy Slot Holes



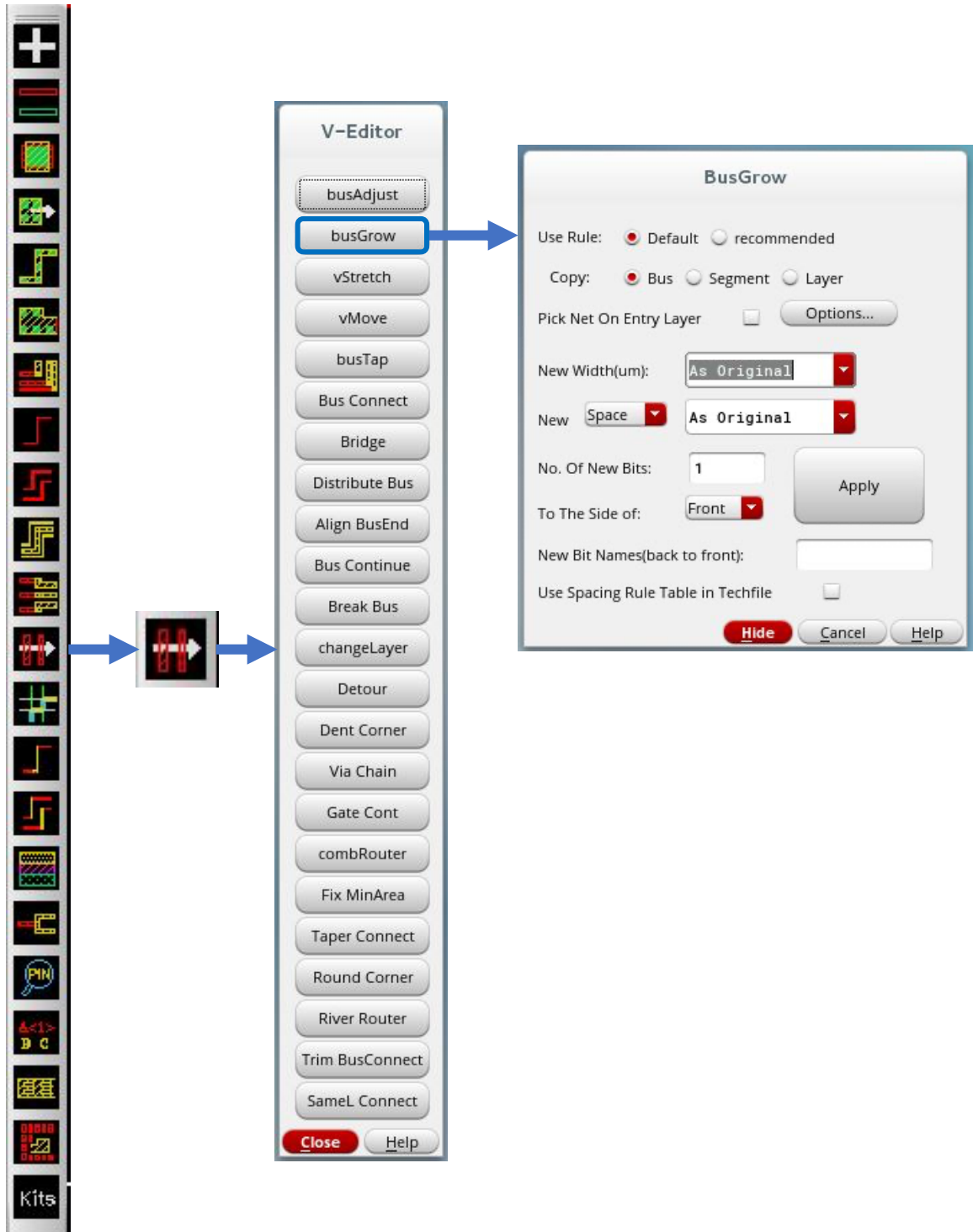
SKILLCAD Creating A Metal Mesh



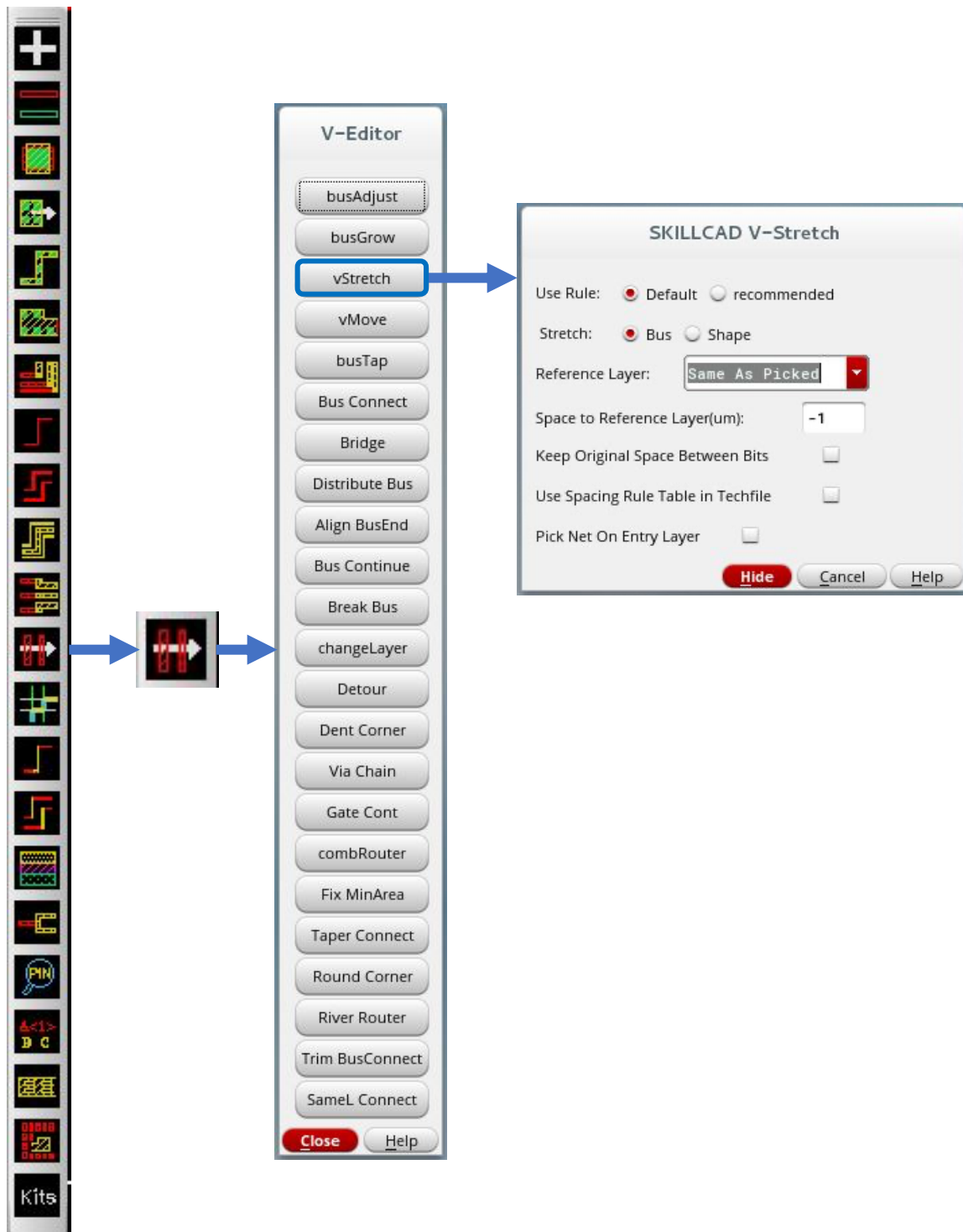
SKILLCAD V-Editor, Bus Adjust



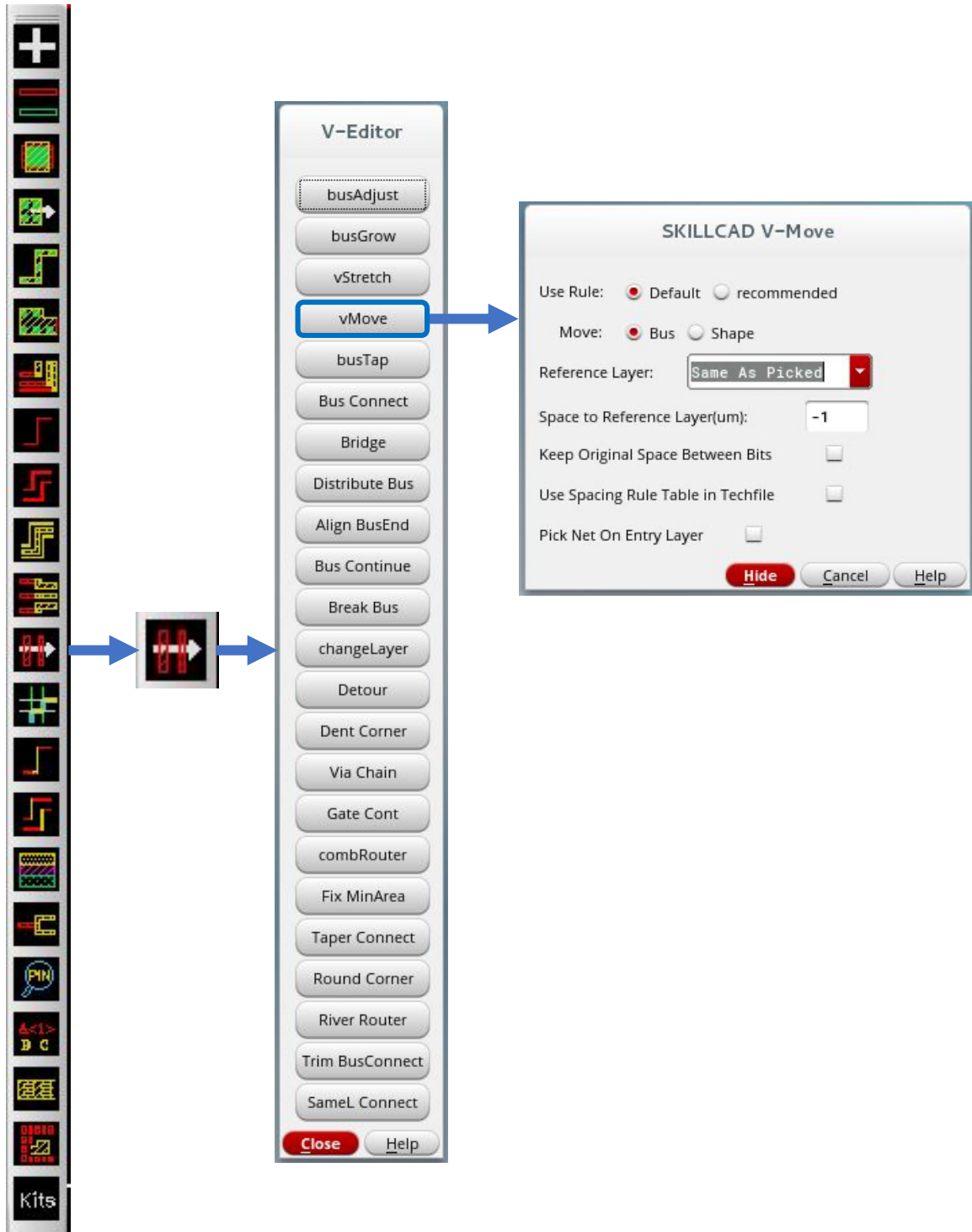
SKILLCAD V-Editor, Bus Grow



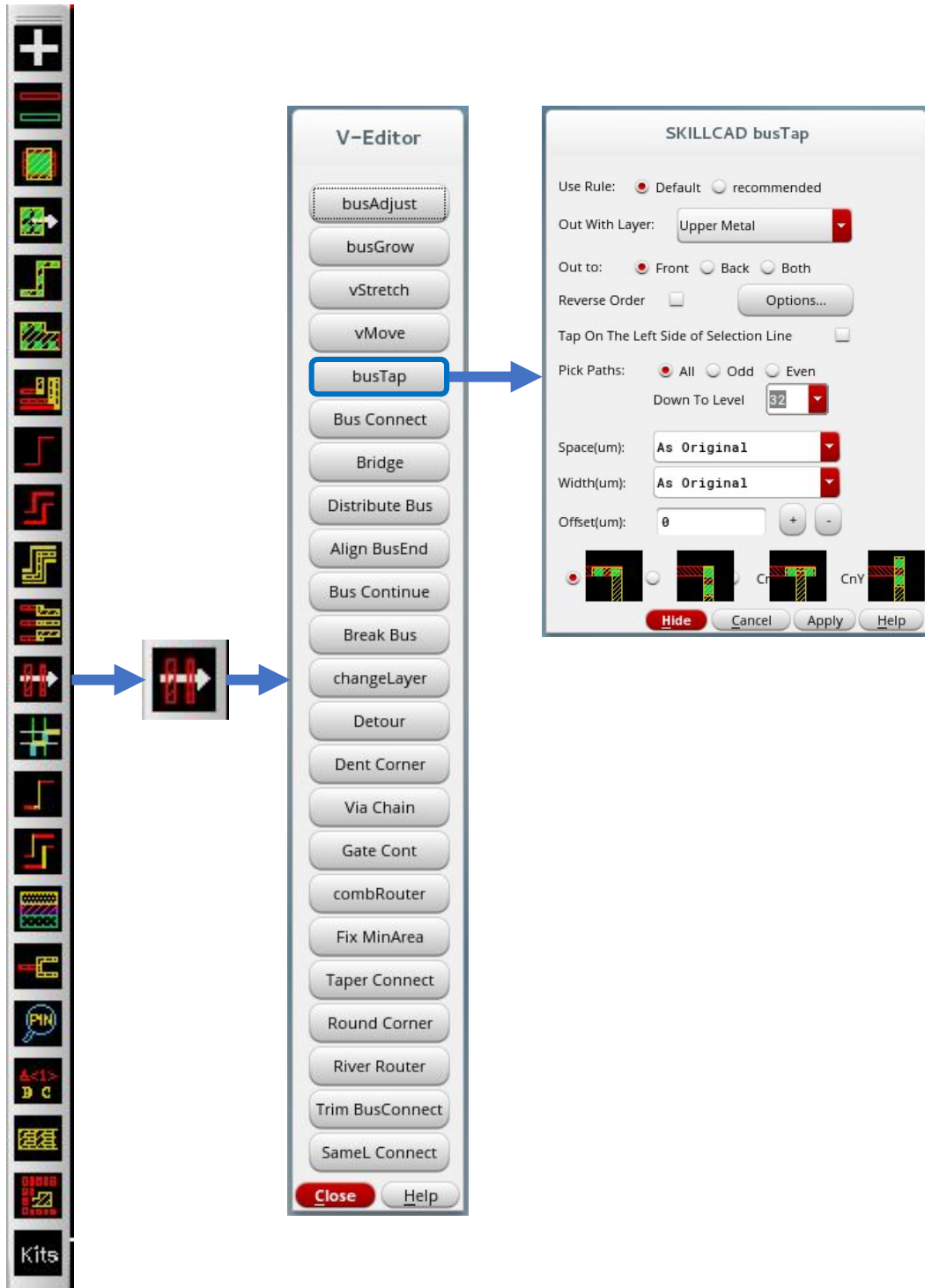
SKILLCAD V-Editor, V-Stretch



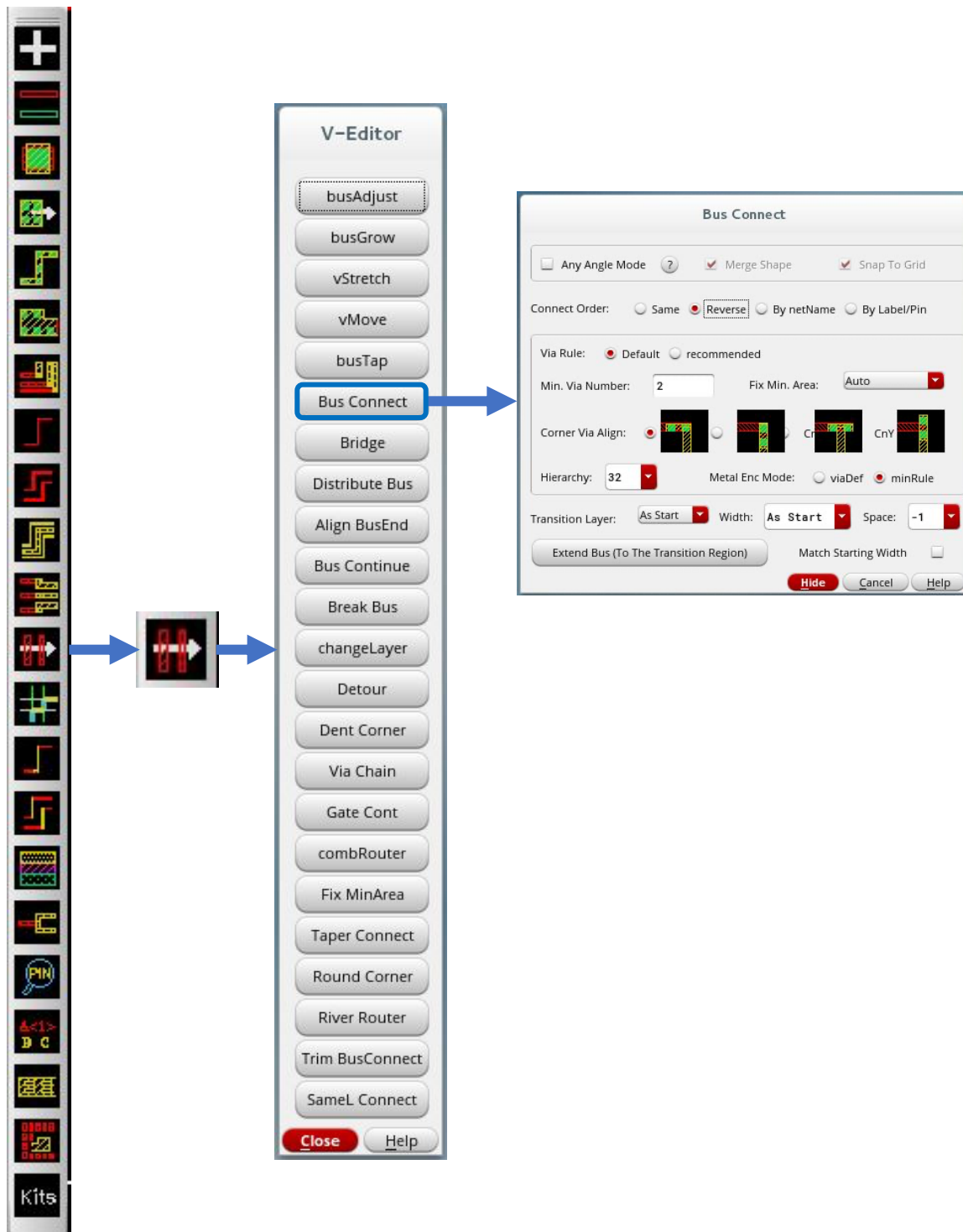
SKILLCAD V-Editor, V-Move



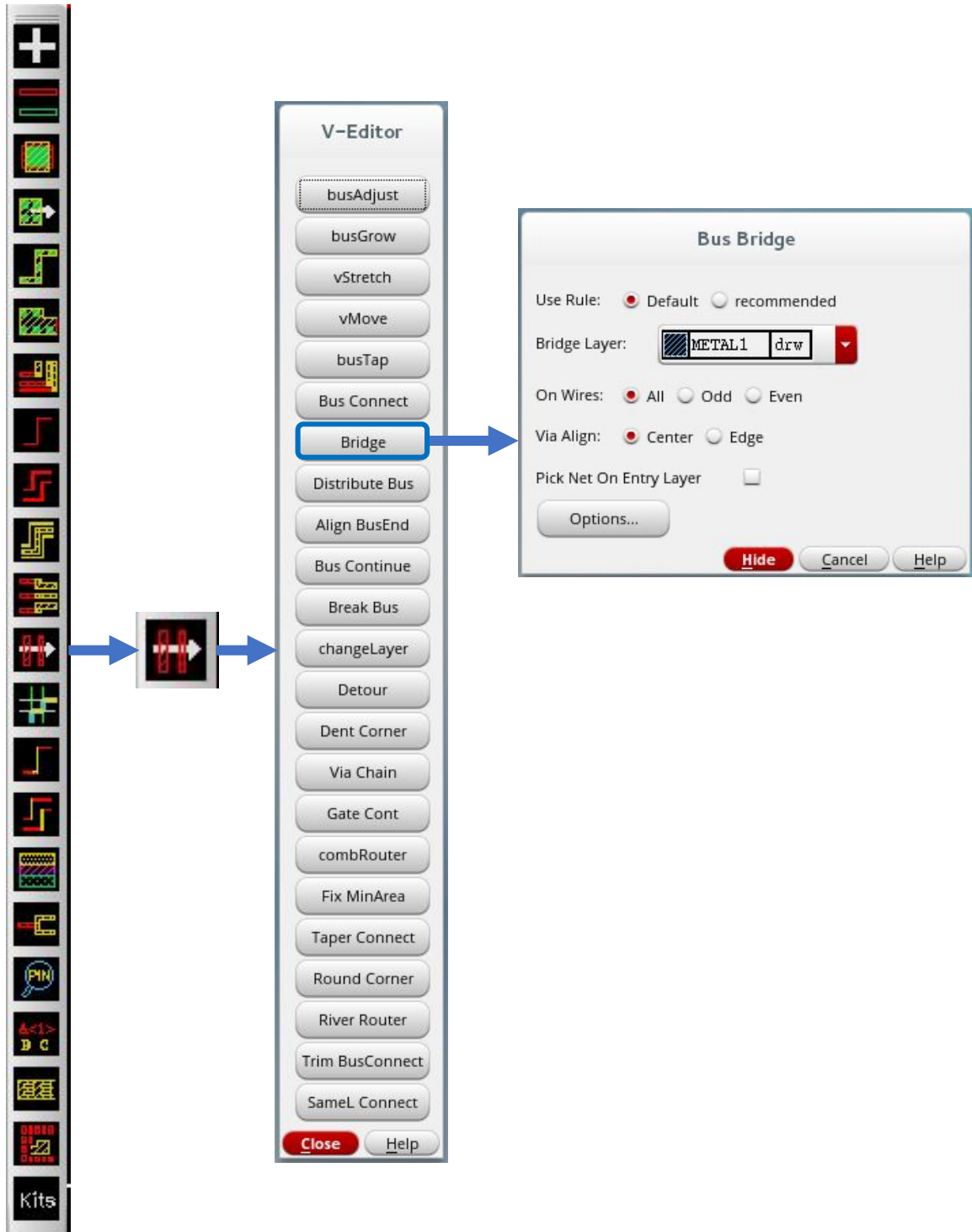
SKILLCAD V-Editor, Bus Tap



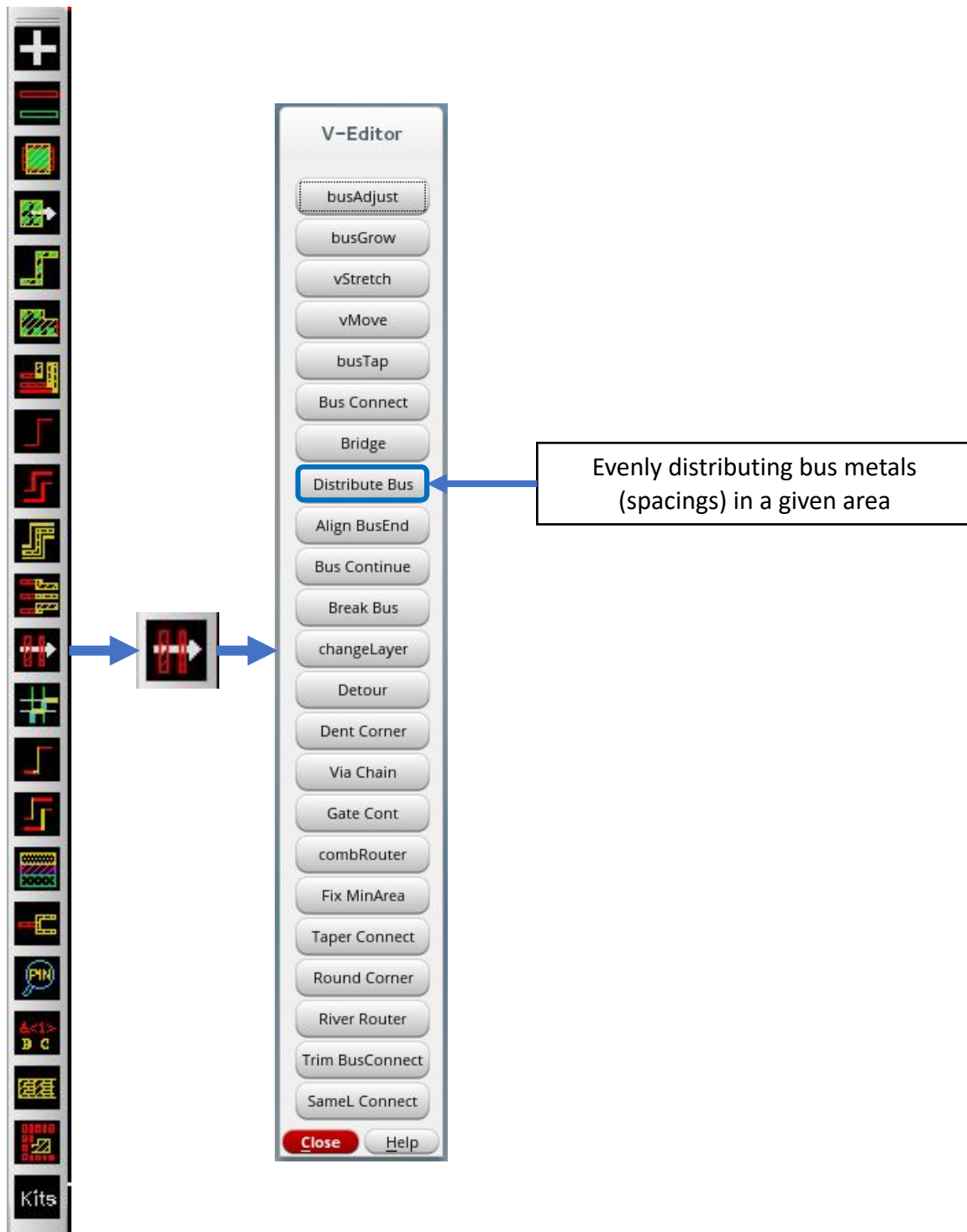
SKILLCAD V-Editor, Bus Connect



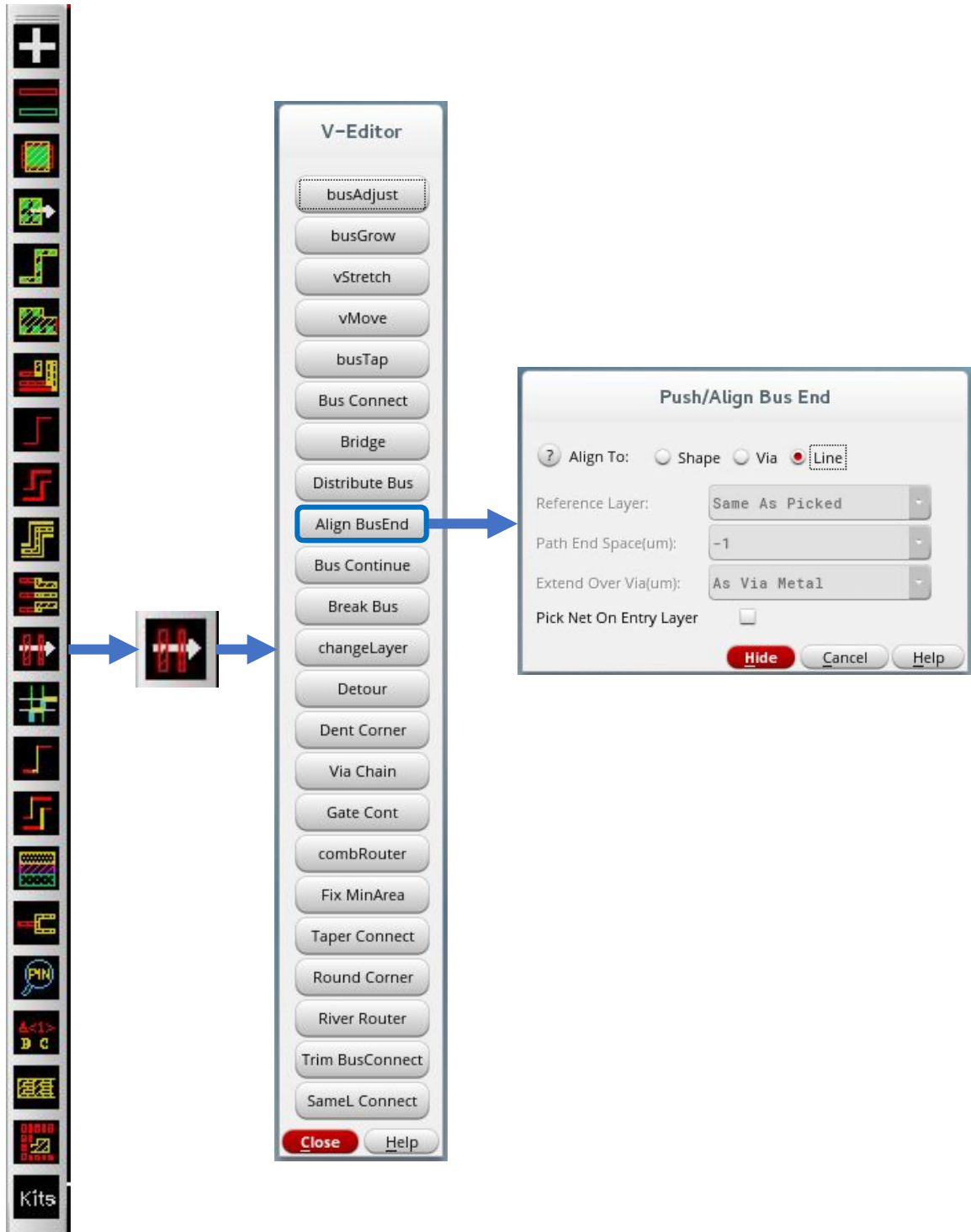
SKILLCAD V-Editor, Bus Bridge



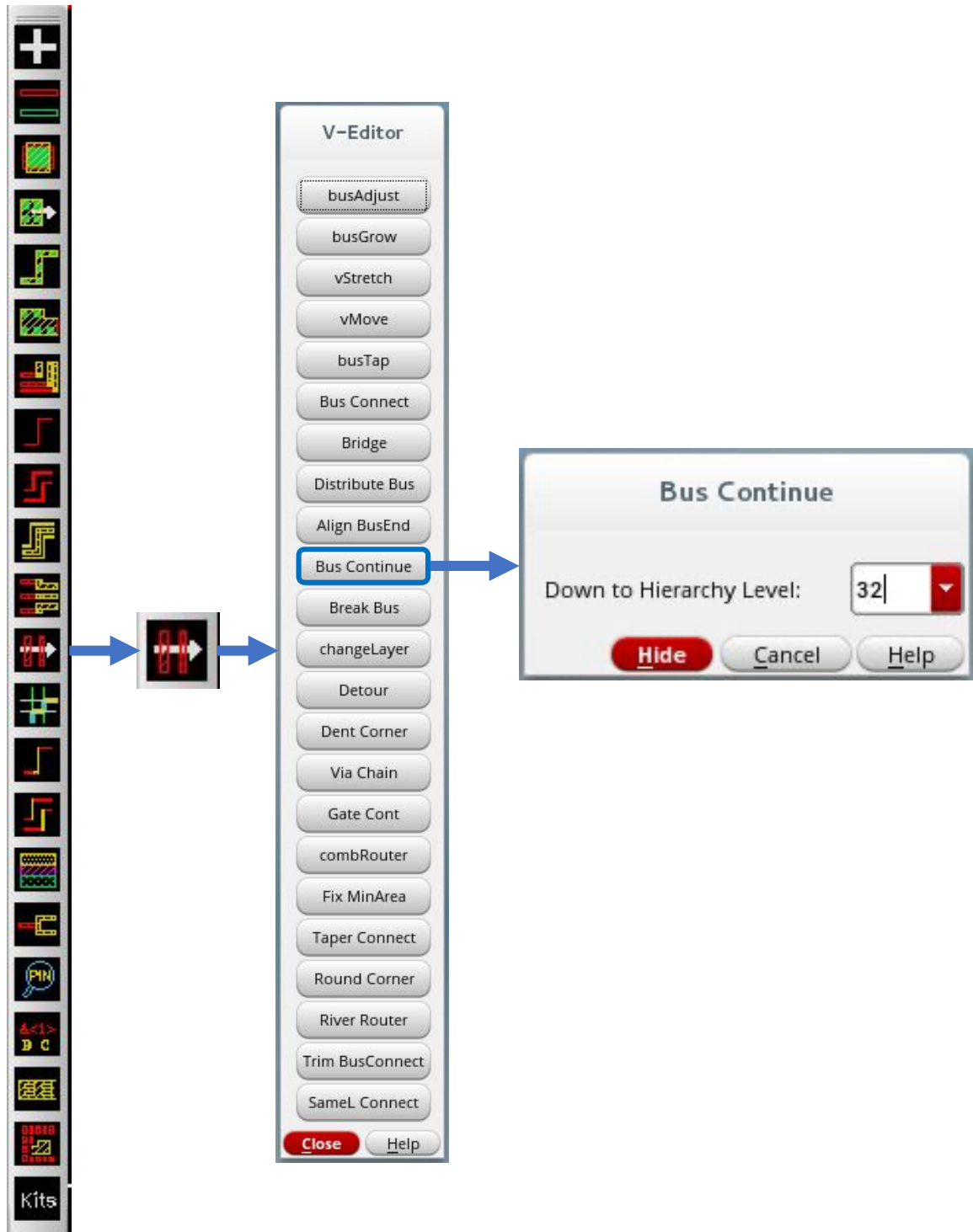
SKILLCAD V-Editor, Distribute Bus



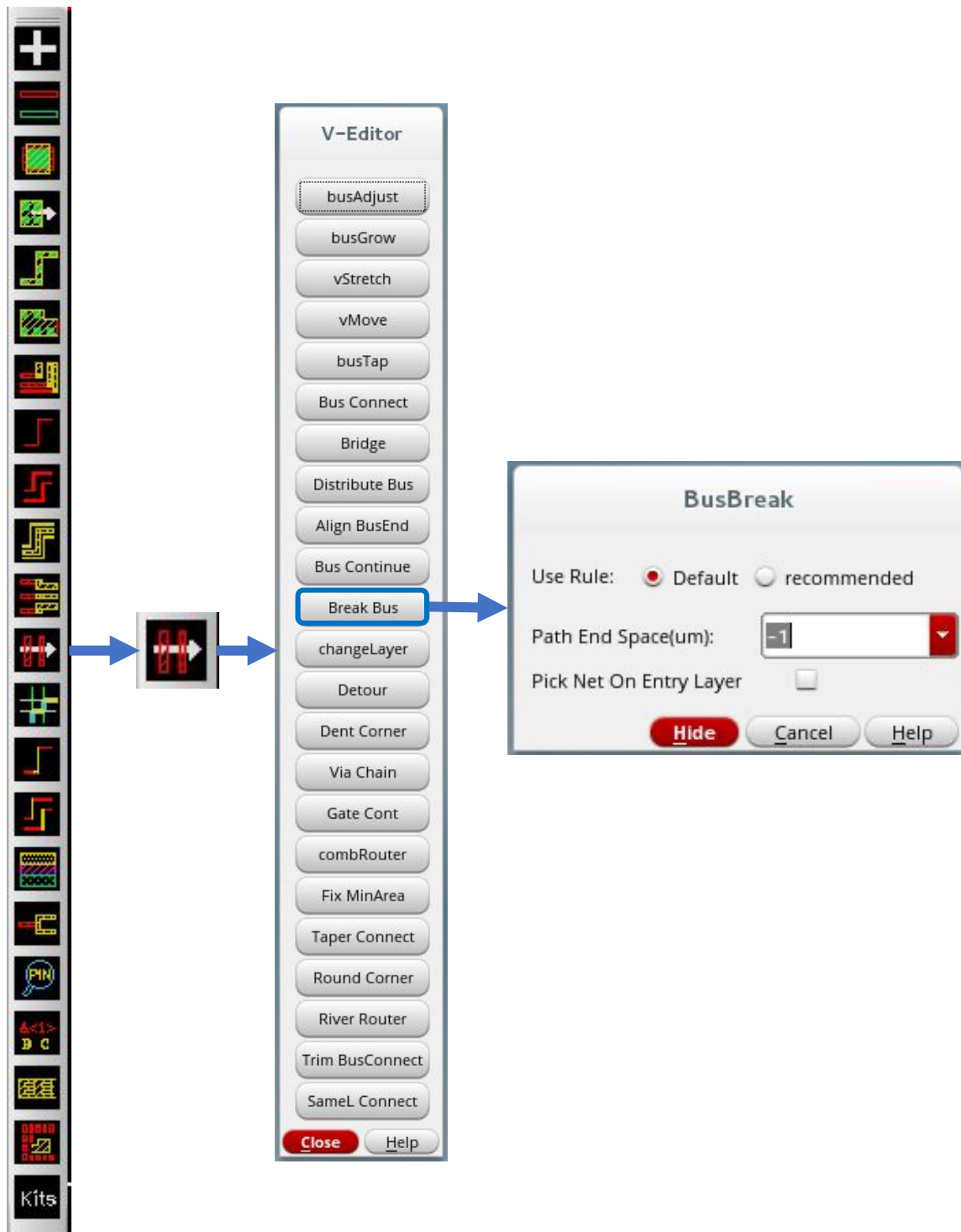
SKILLCAD V-Editor, Align Bus End



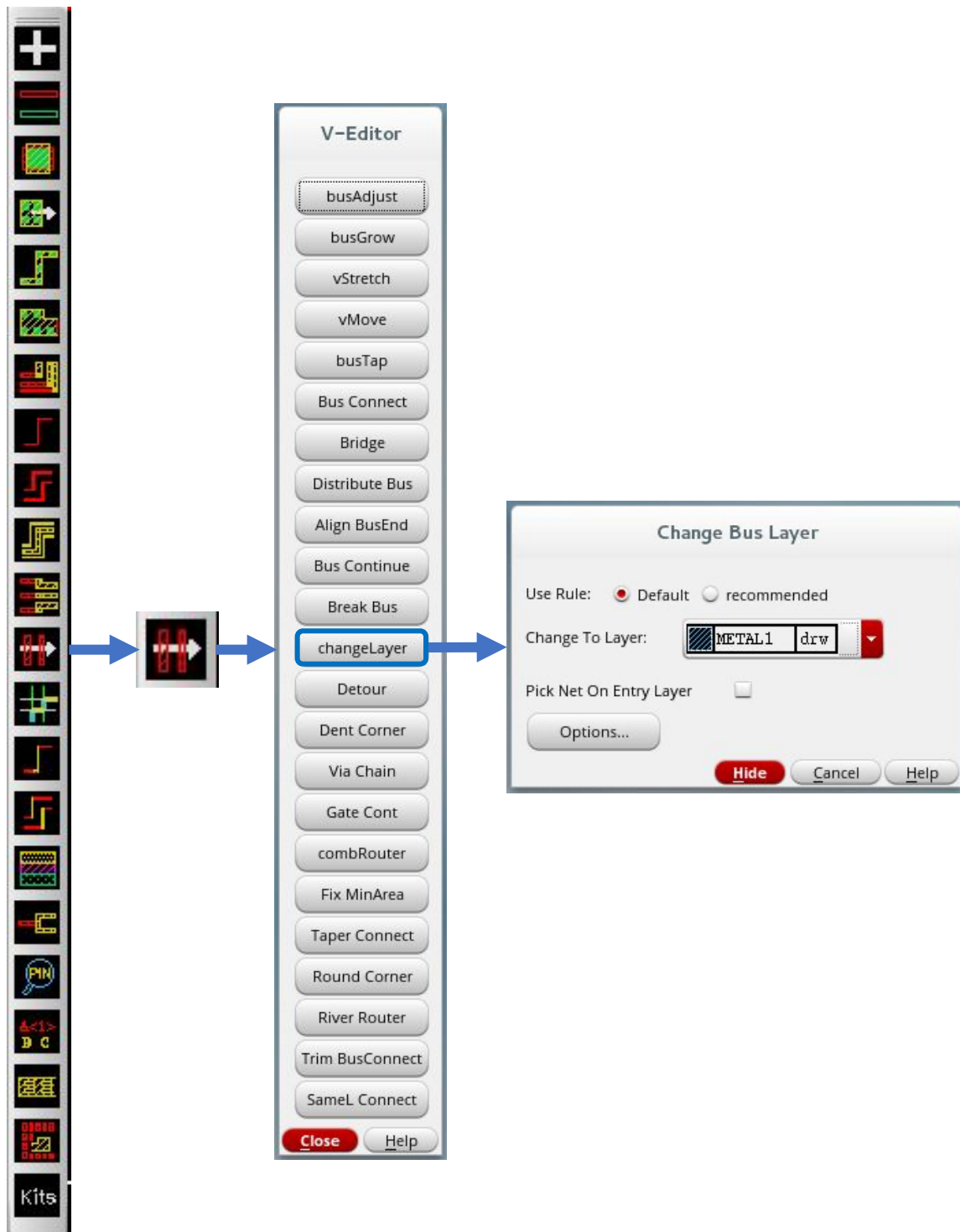
SKILLCAD V-Editor, Bus Continue



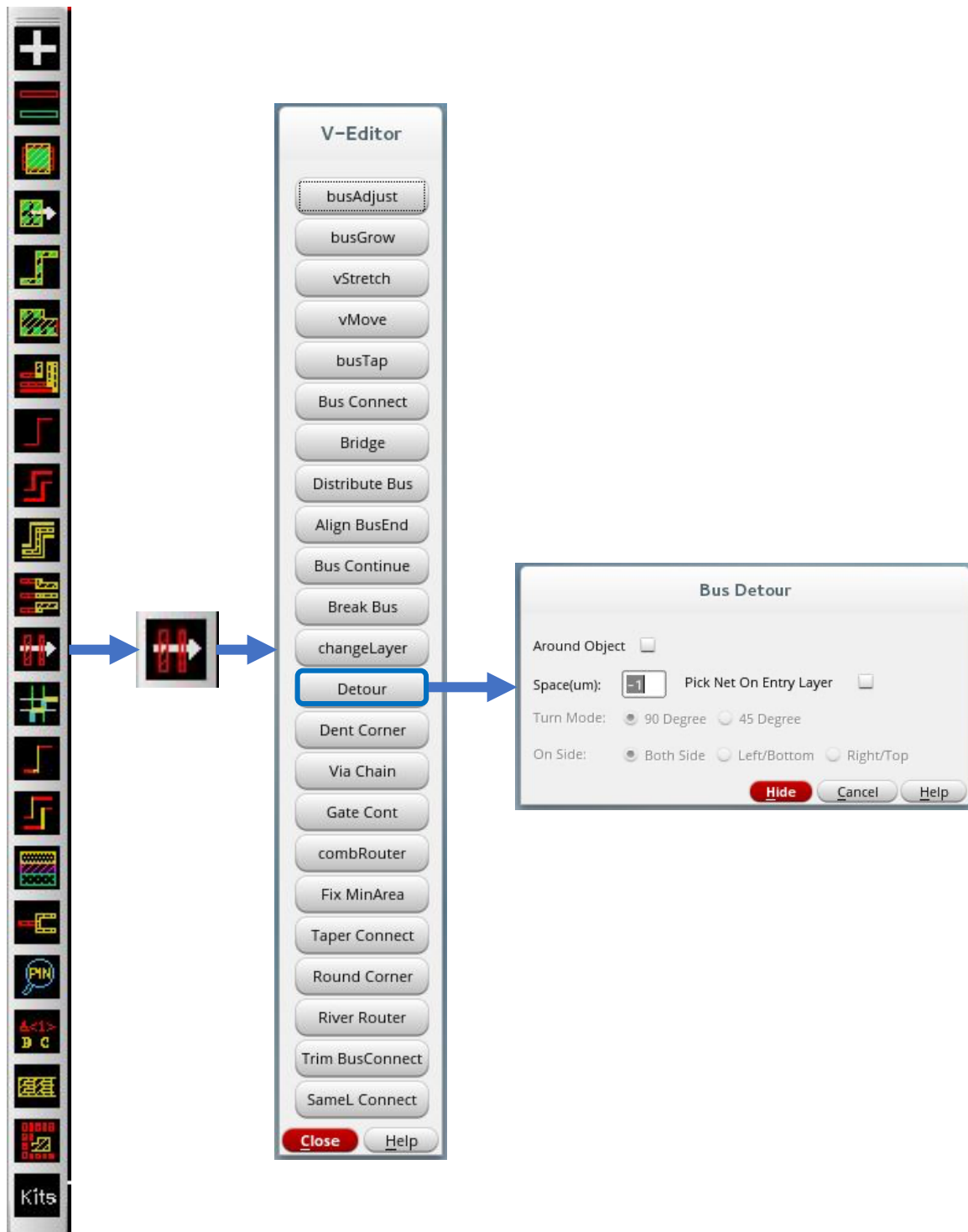
SKILLCAD V-Editor, Break Bus



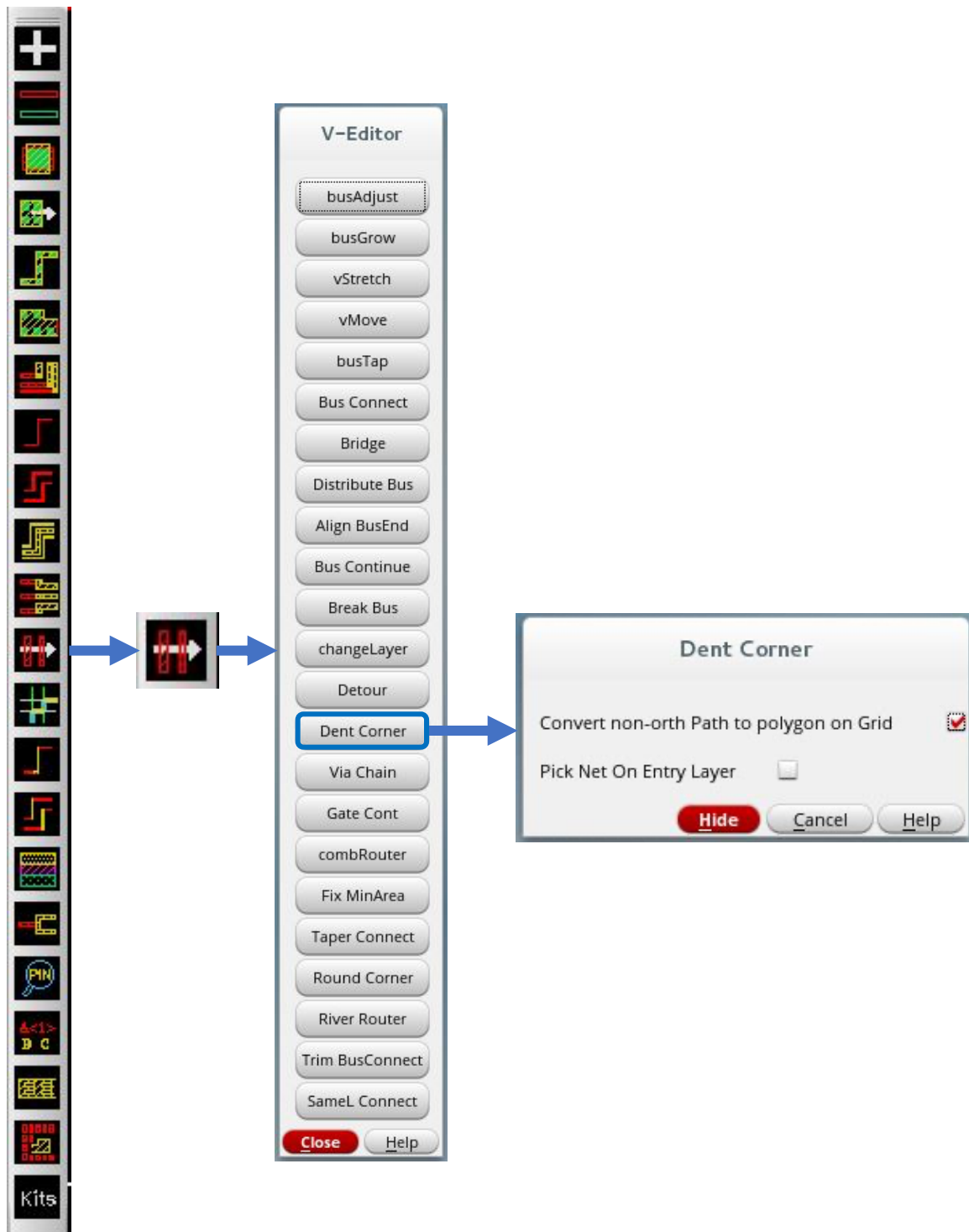
SKILLCAD V-Editor, Change Bus Layer



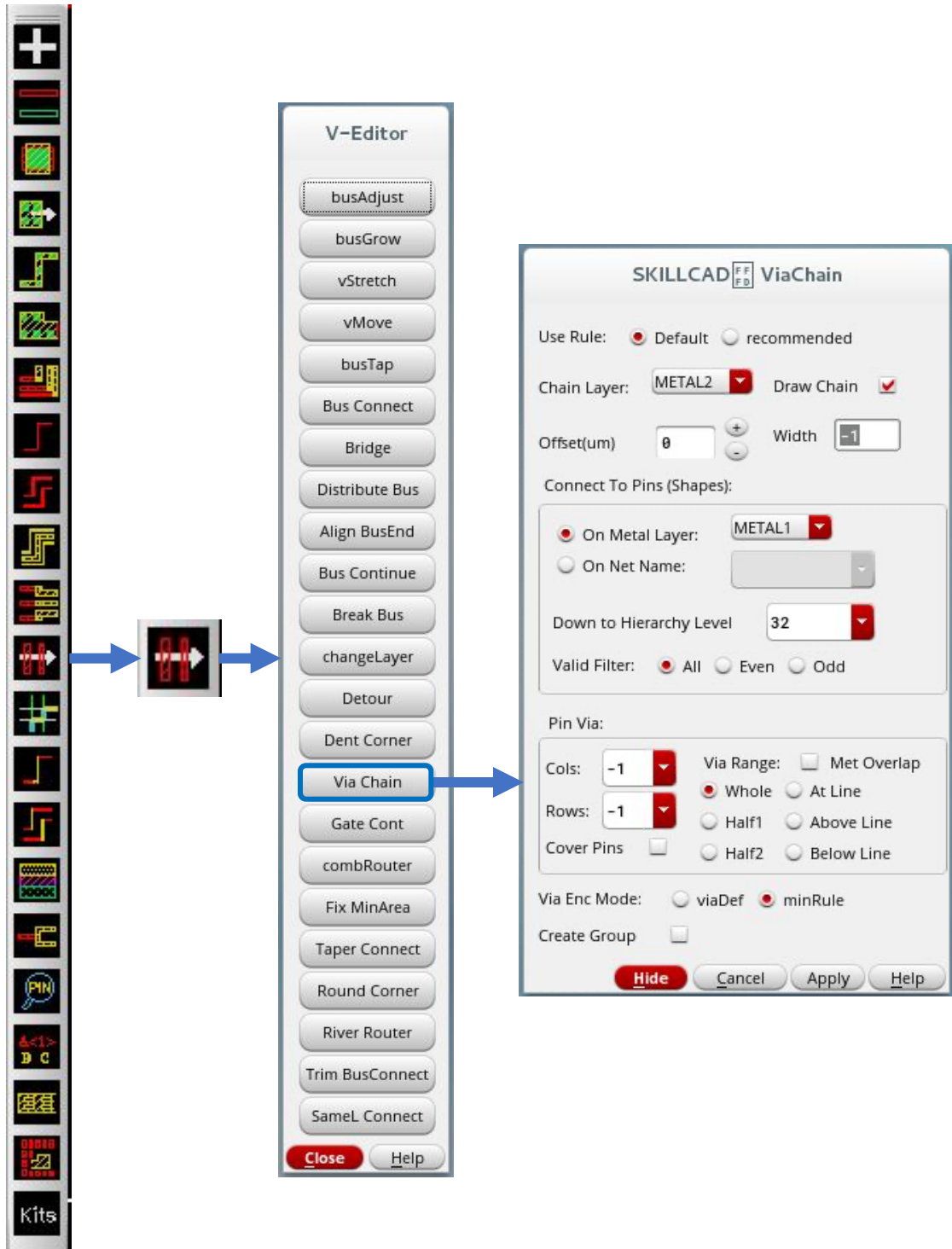
SKILLCAD V-Editor, Bus Detour



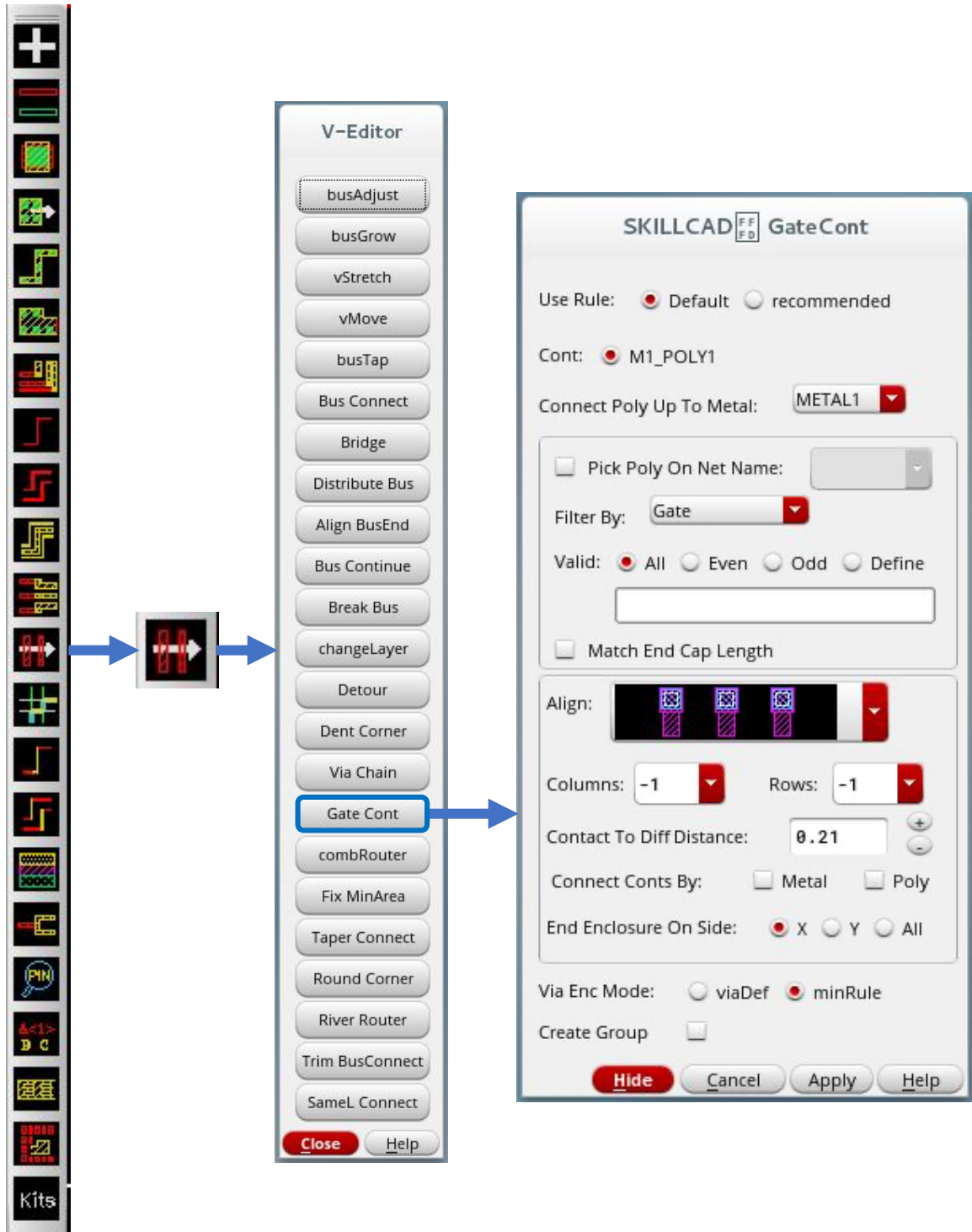
SKILLCAD V-Editor, Dent Corner



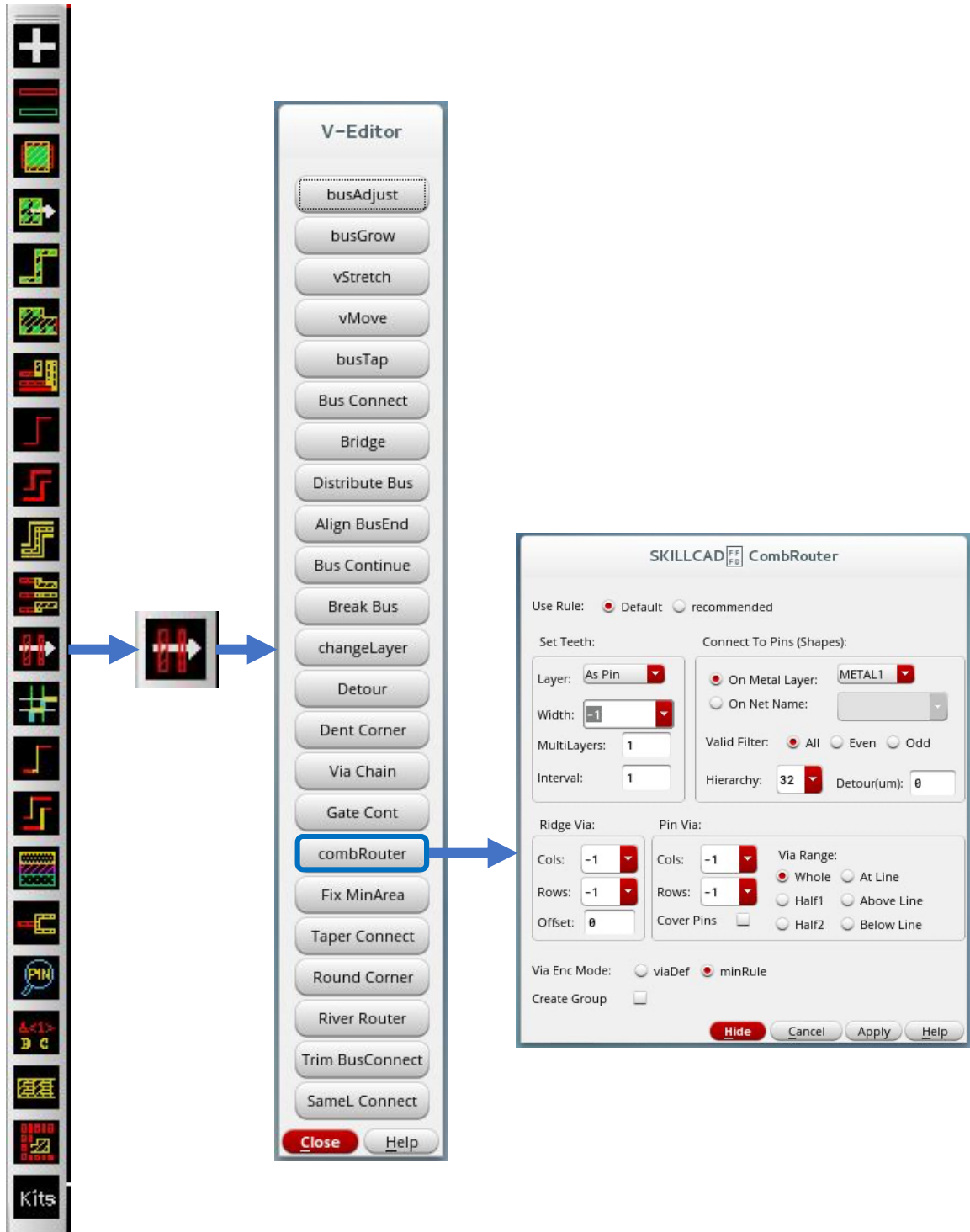
SKILLCAD V-Editor, Via Chain



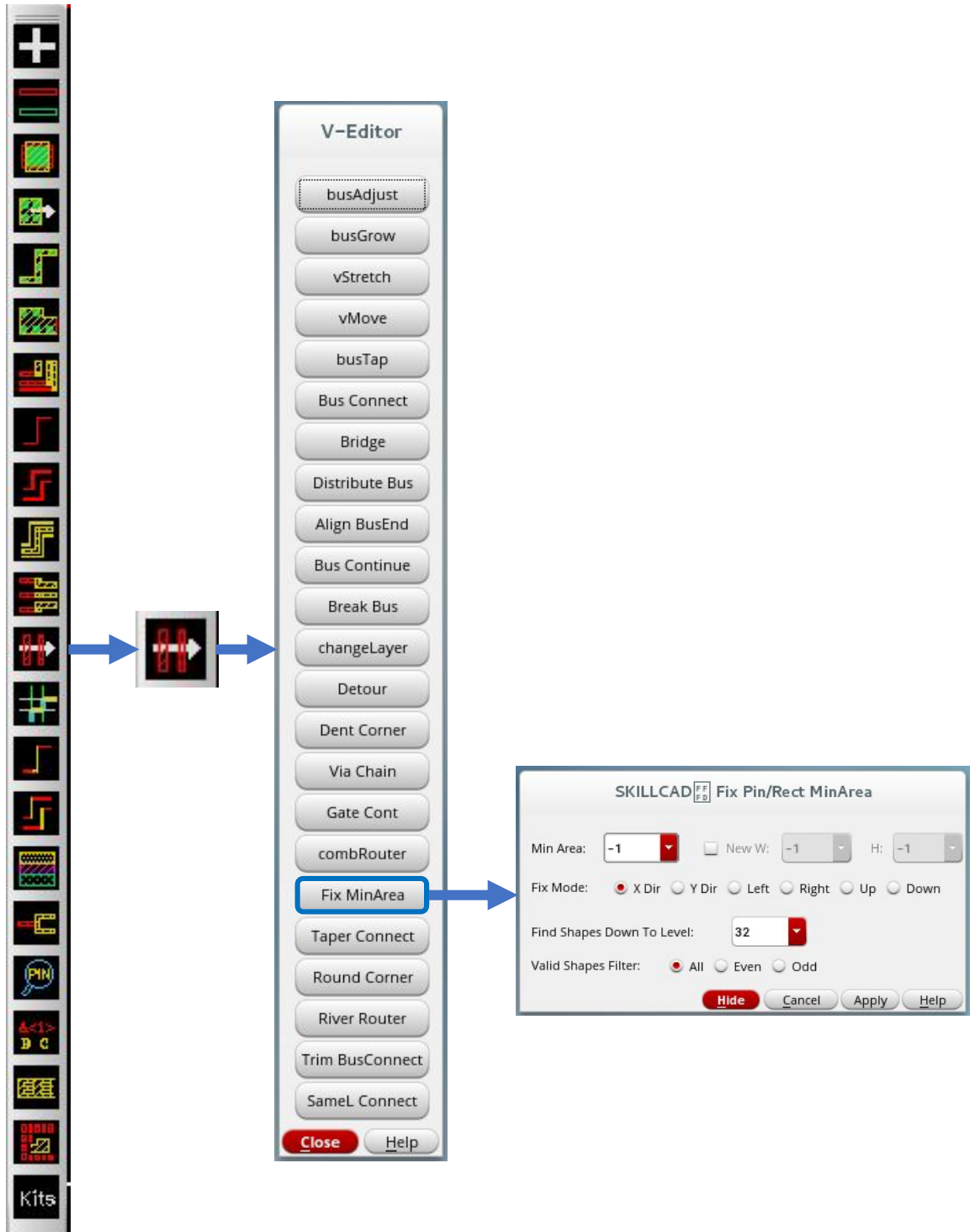
SKILLCAD V-Editor, Gate Contact



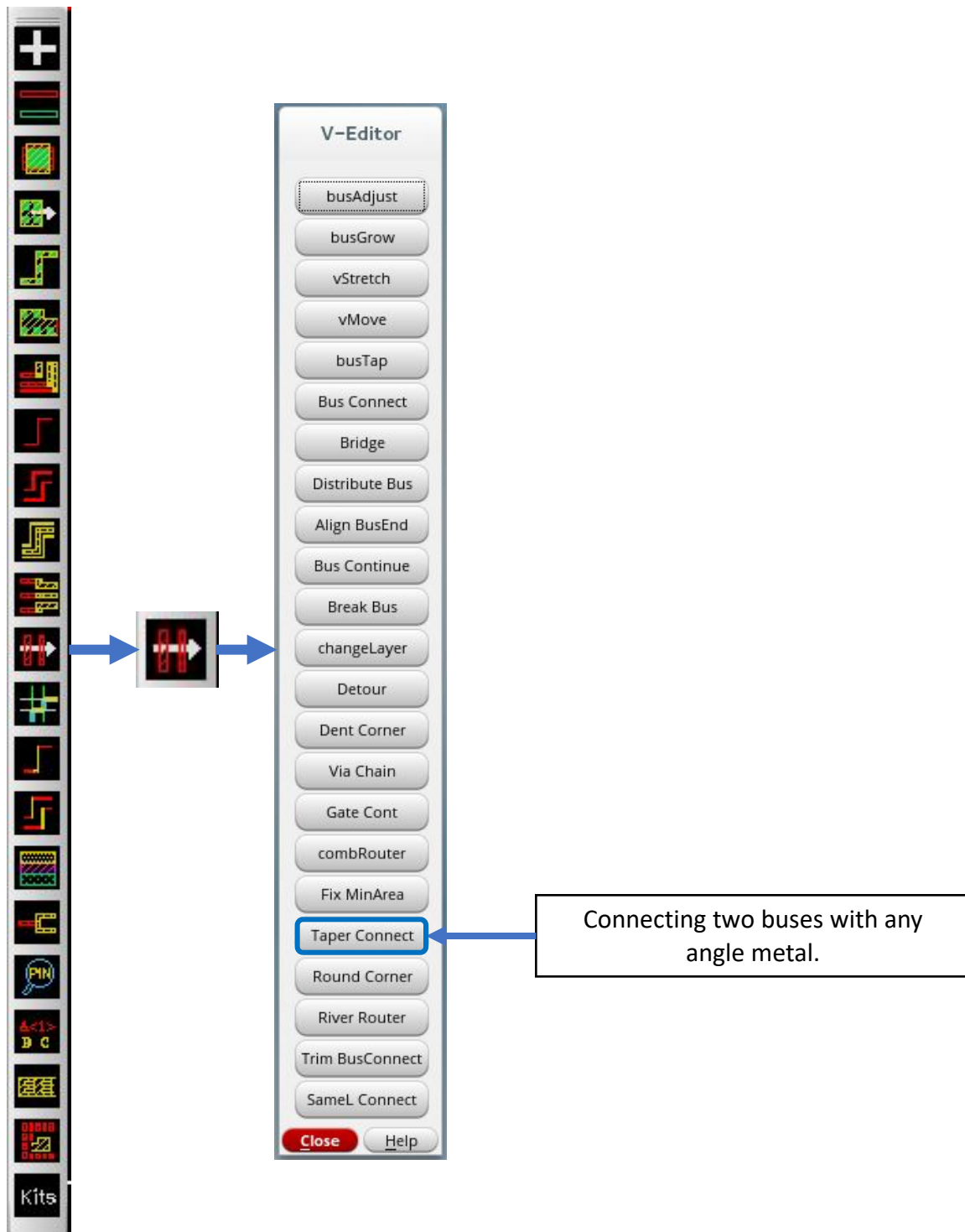
SKILLCAD V-Editor, Comb Router



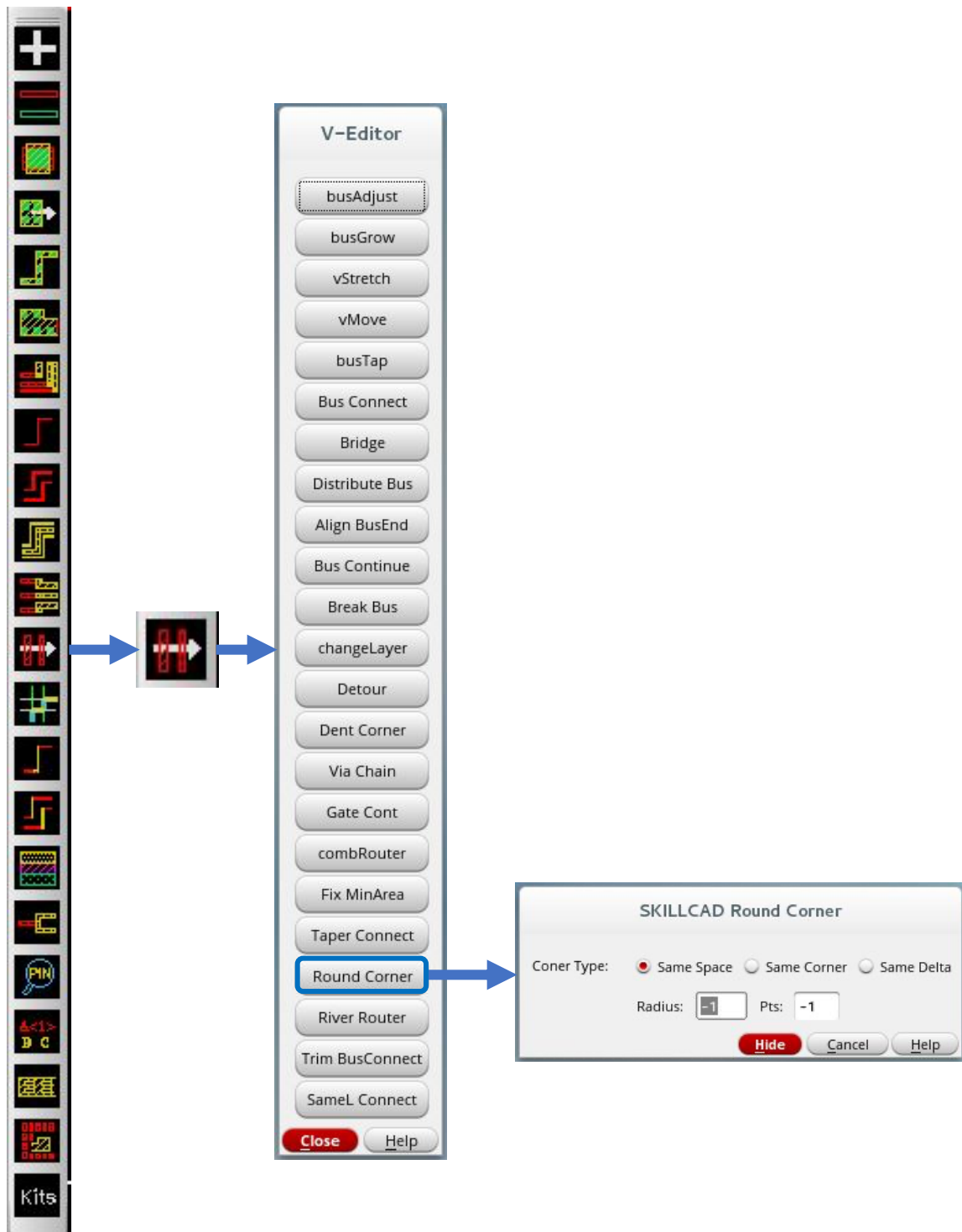
SKILLCAD V-Editor, Fix Minimum Area



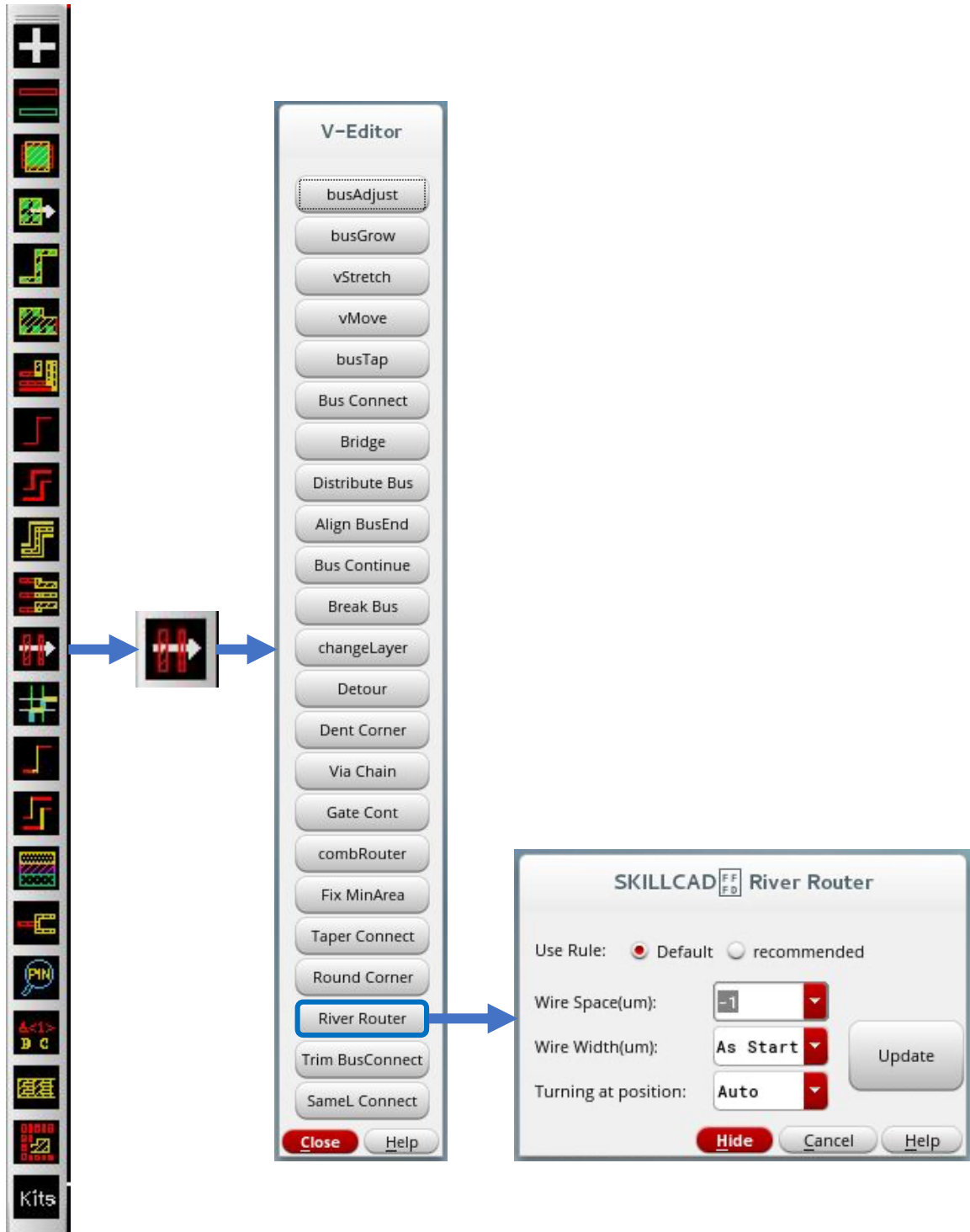
SKILLCAD V-Editor, Taper Connect



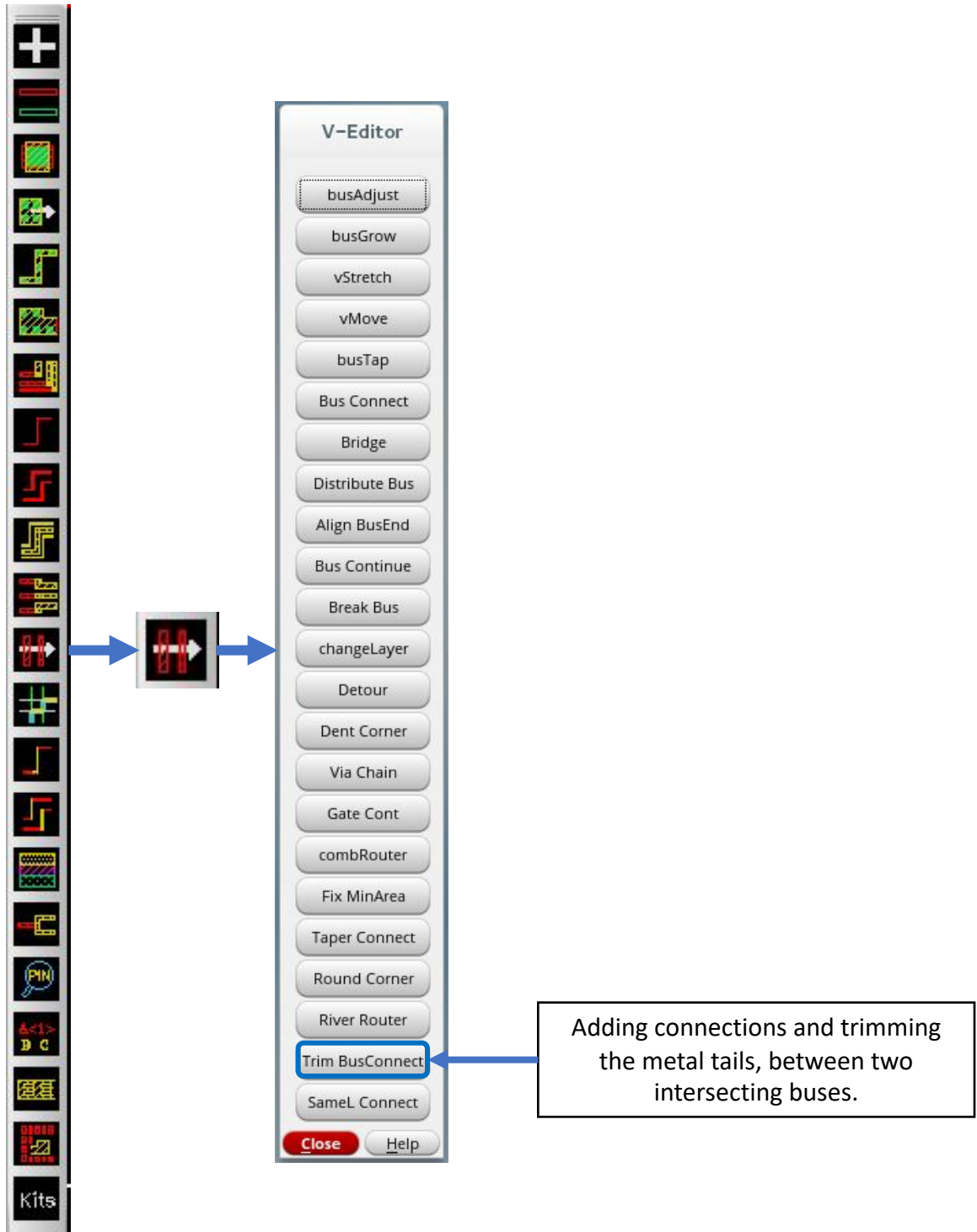
SKILLCAD V-Editor, Round Corner



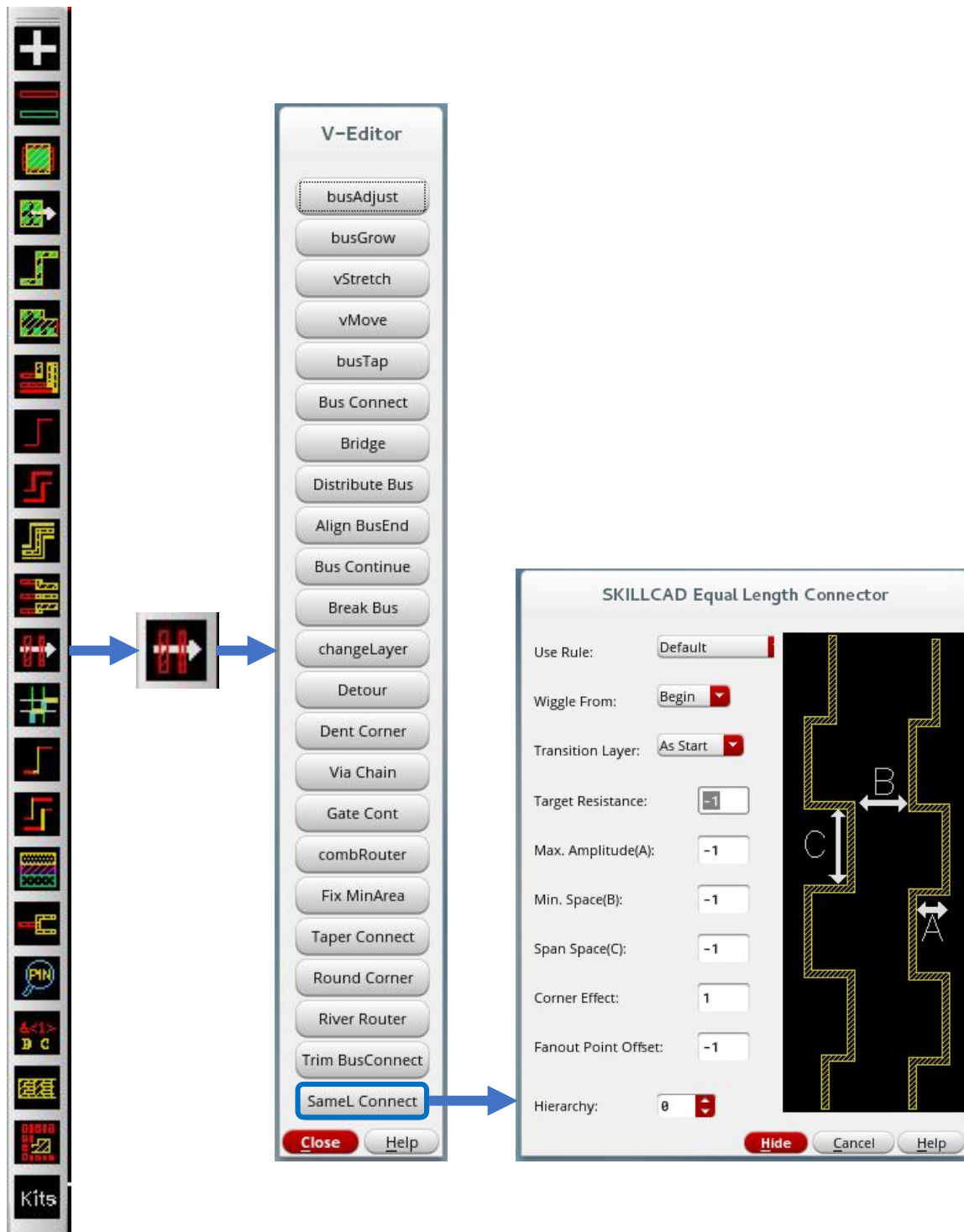
SKILLCAD V-Editor, River Router



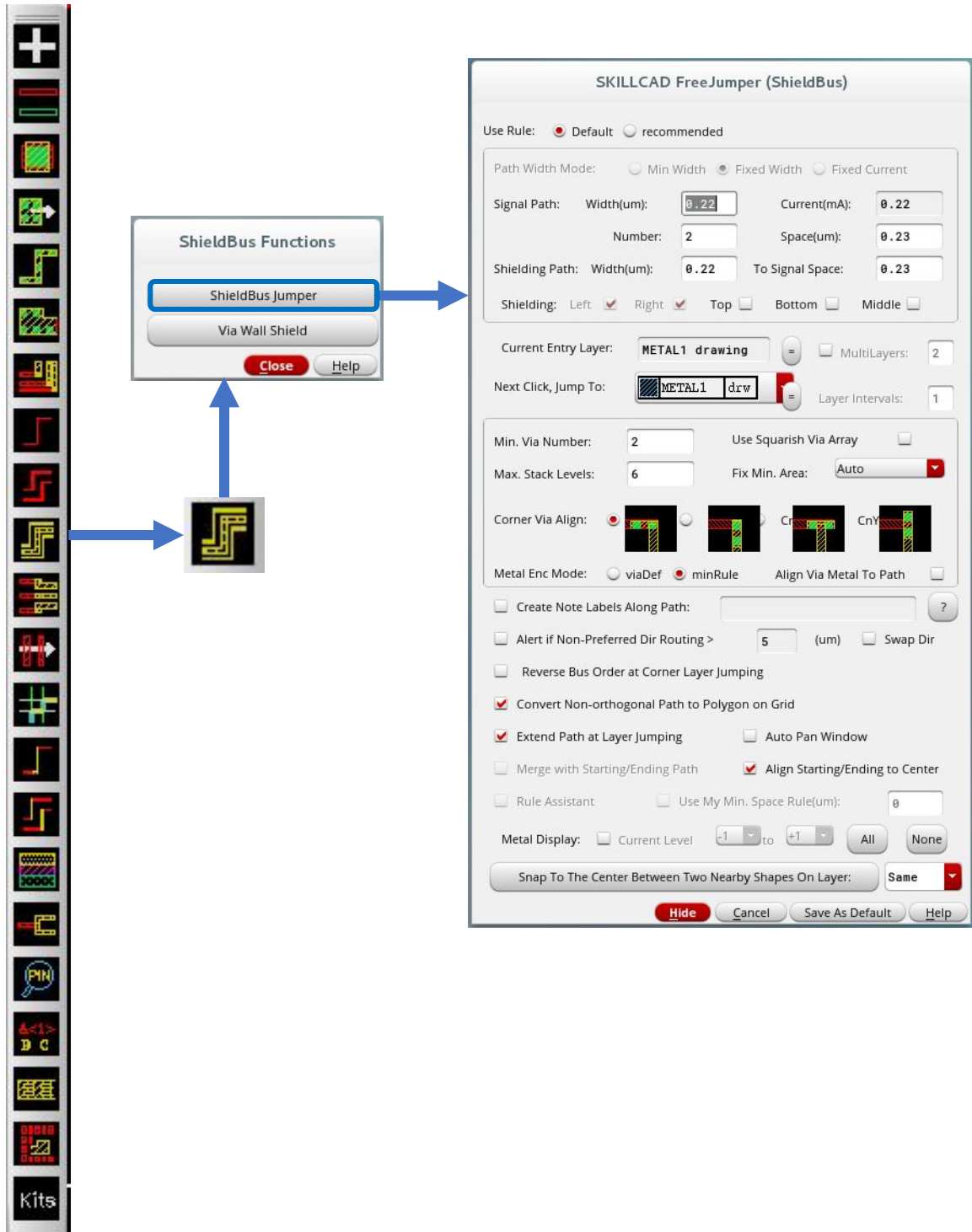
SKILLCAD V-Editor, Trim Bus Connect



SKILLCAD V-Editor, Equal Length Connector



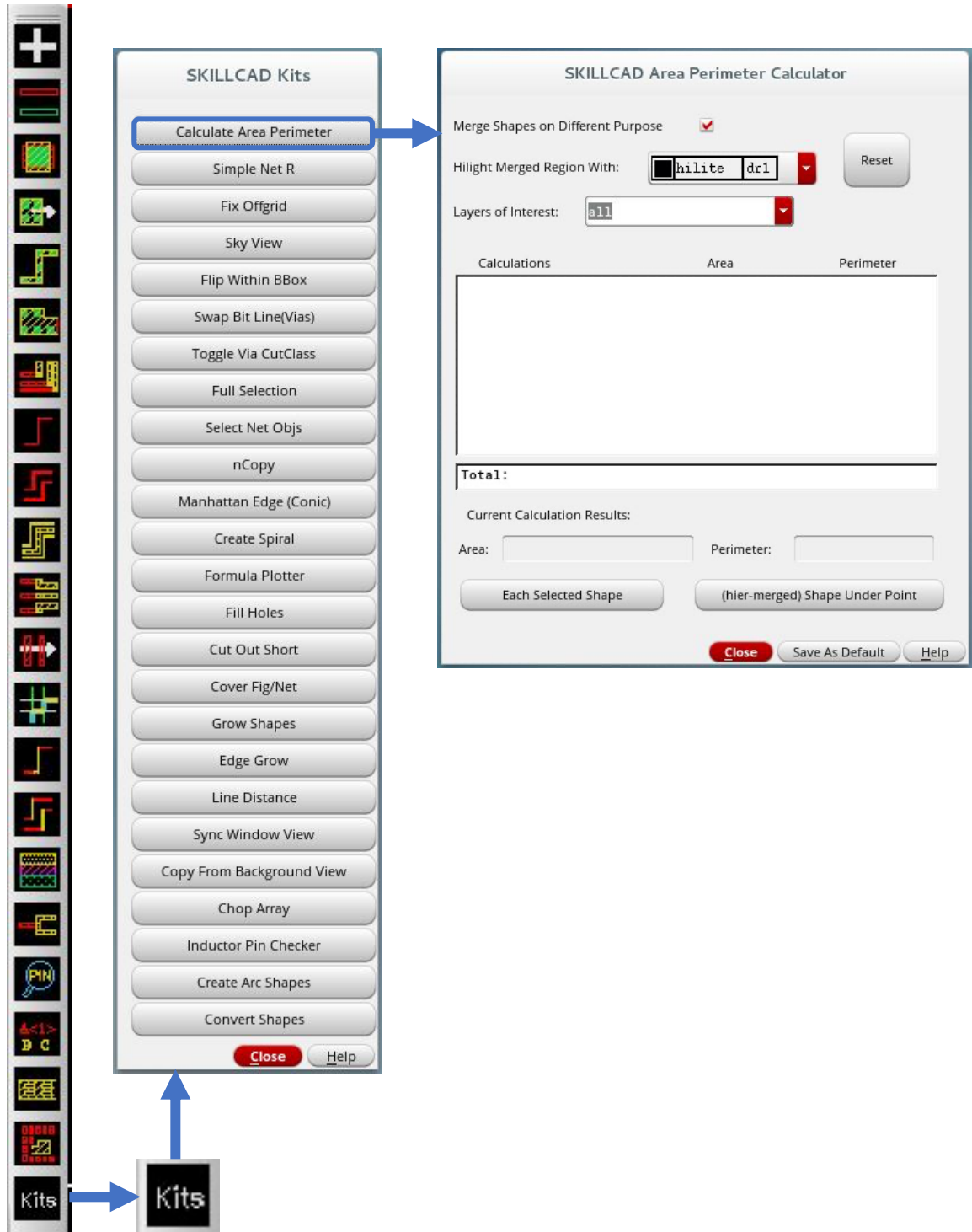
SKILLCAD Create A Shielded Bus



SKILLCAD Create A Via Wall Shield



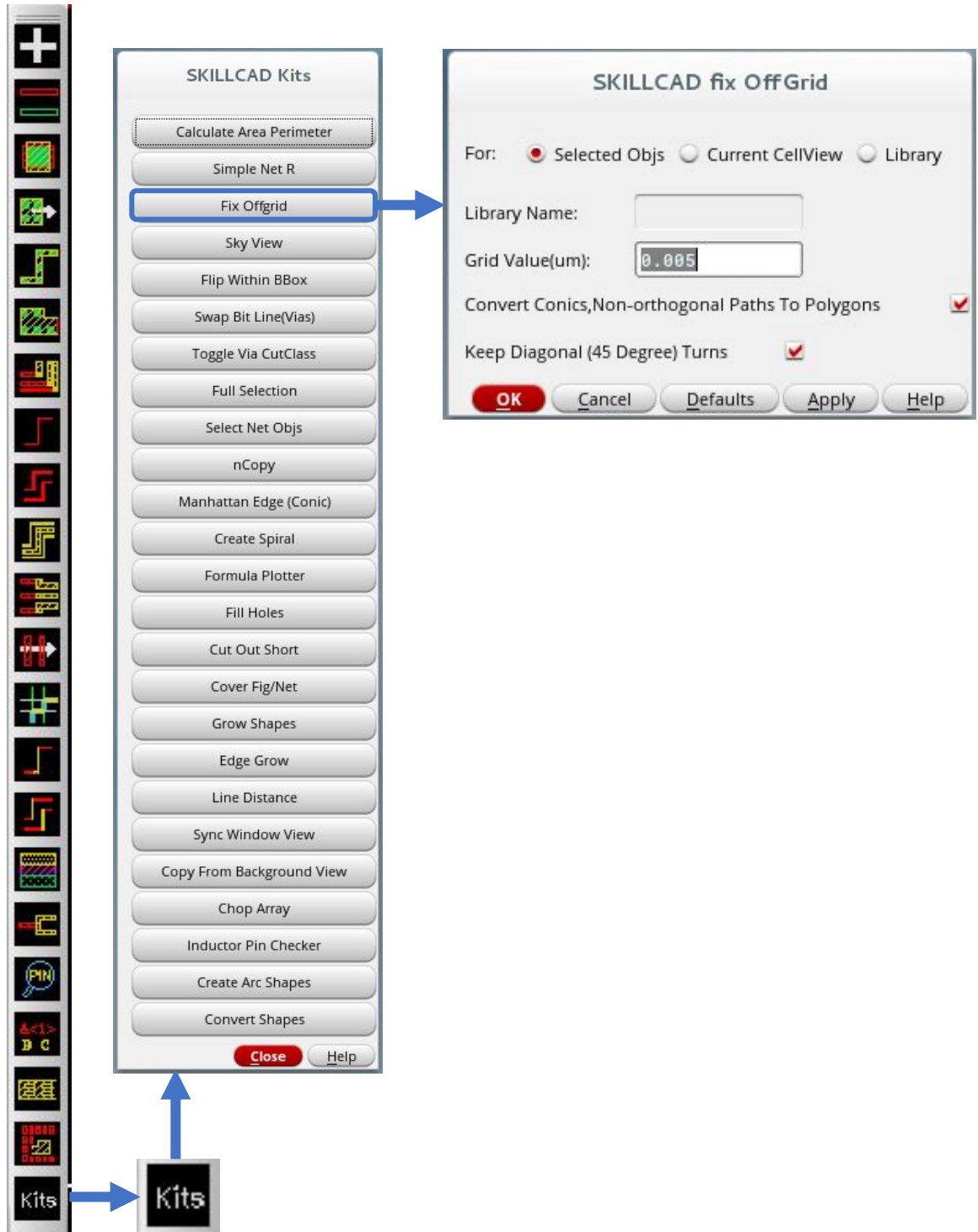
SKILLCAD Kits, Area/Perimeter Calculator



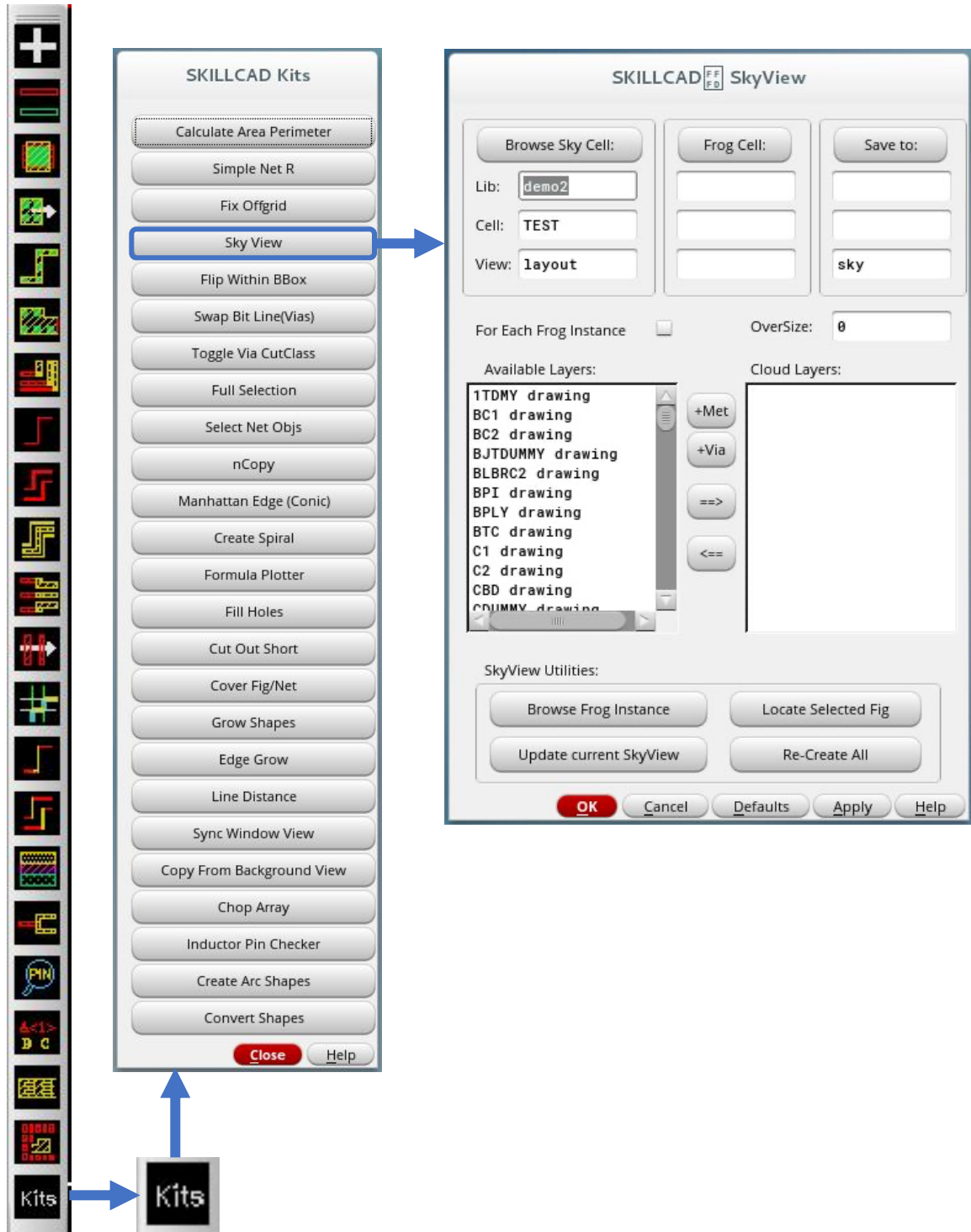
SKILLCAD Kits, Simple Net Resistance



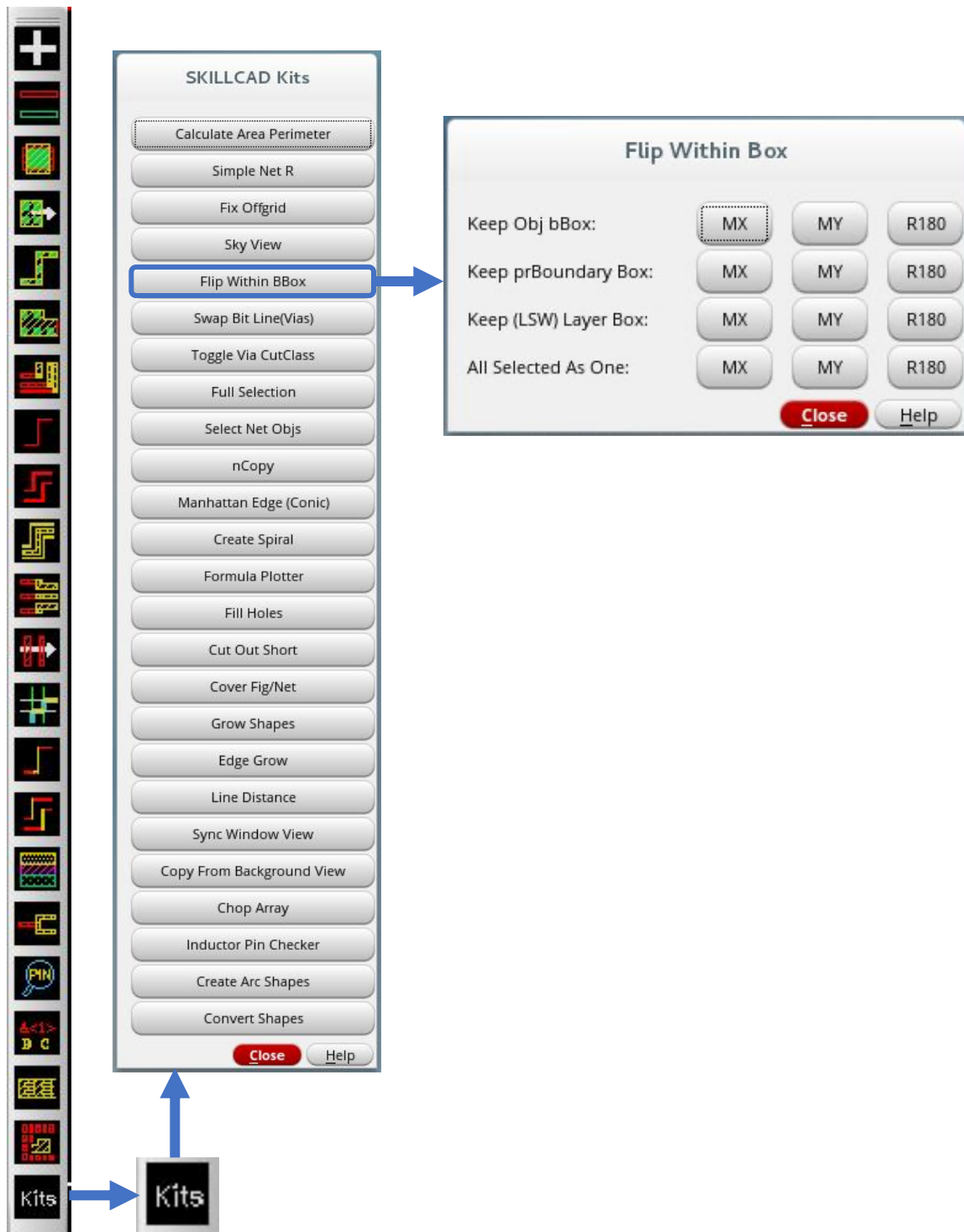
SKILLCAD Kits, Fix Off Grid



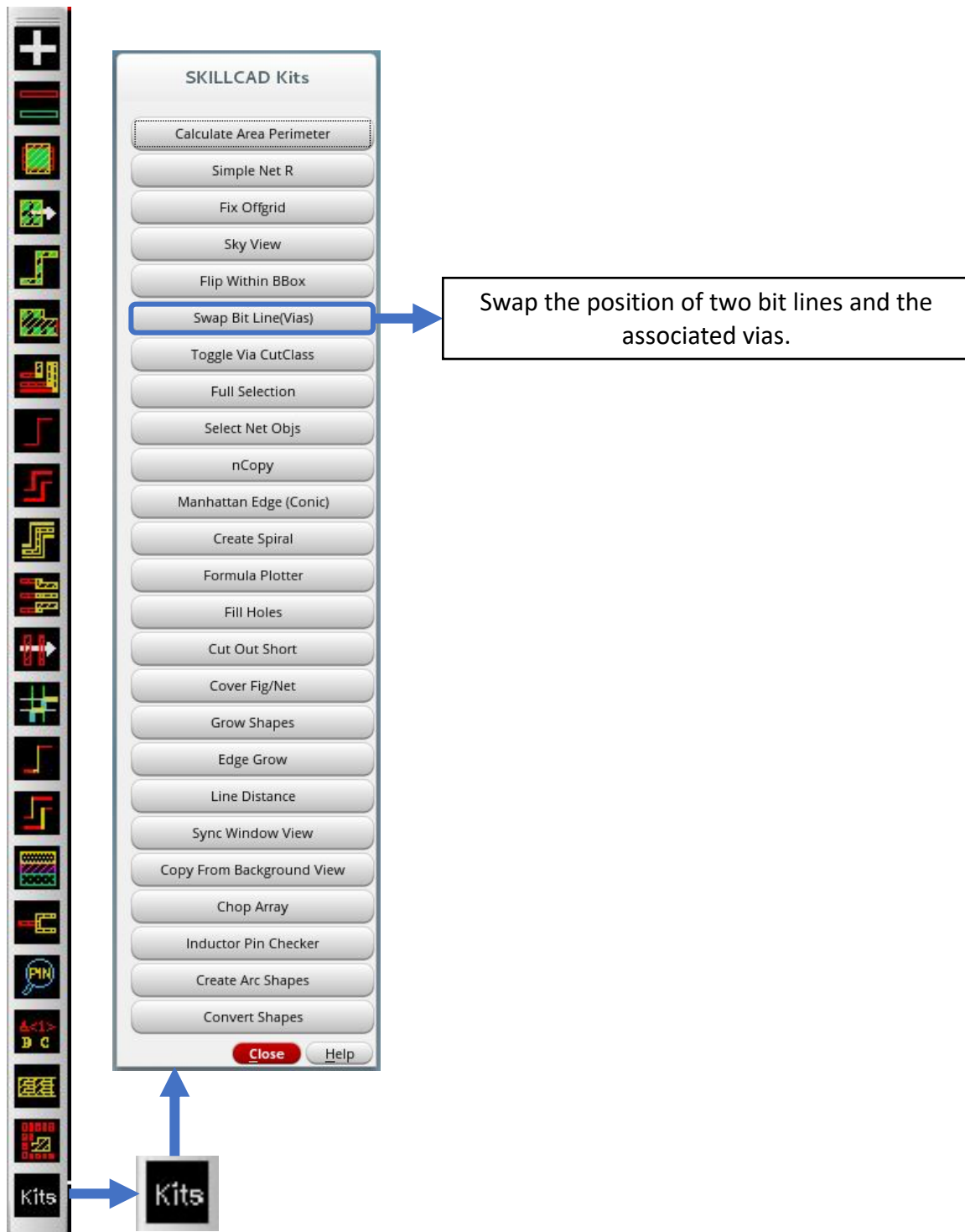
SKILLCAD Kits, Sky View



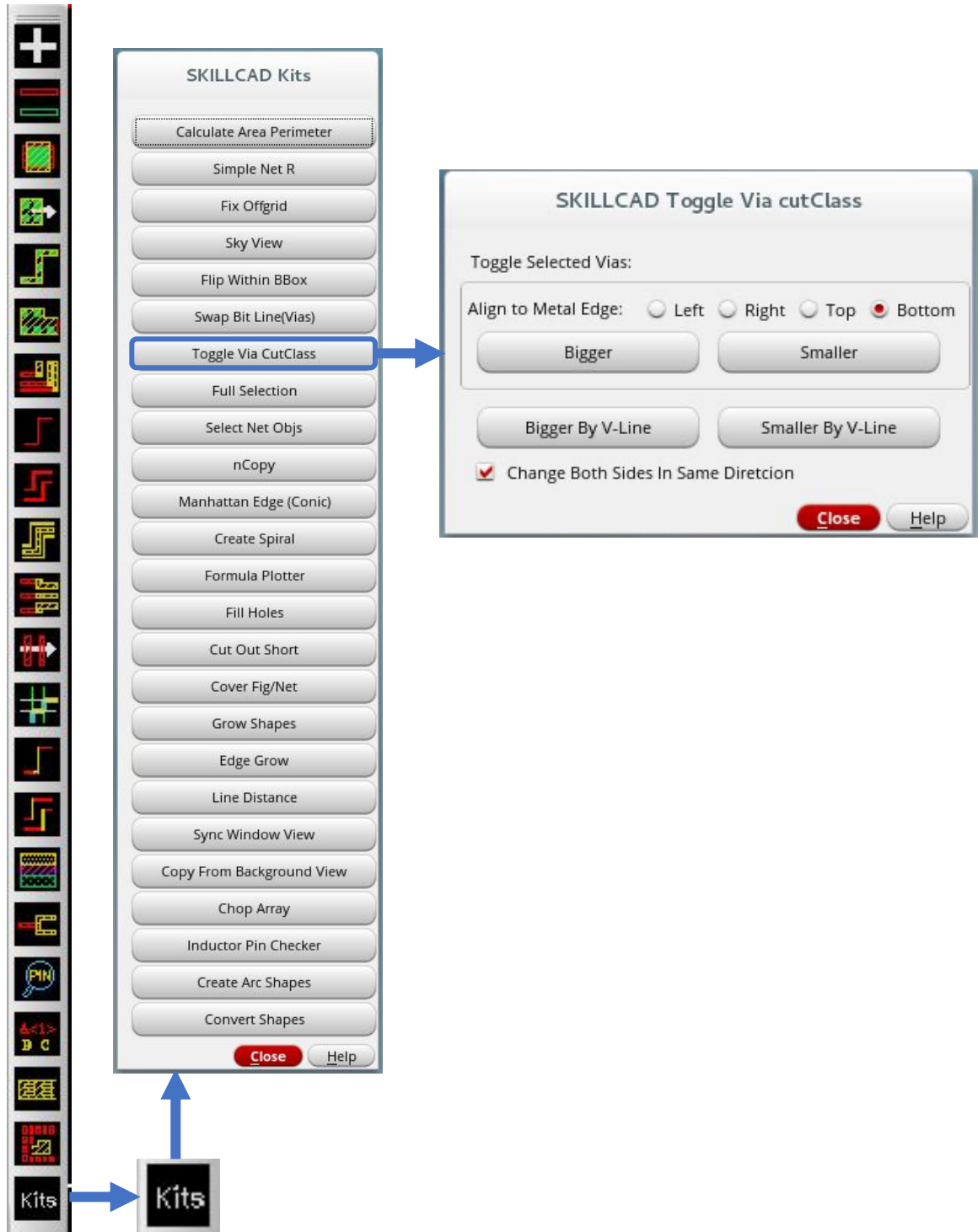
SKILLCAD Kits, Flip Within A Bounding Box



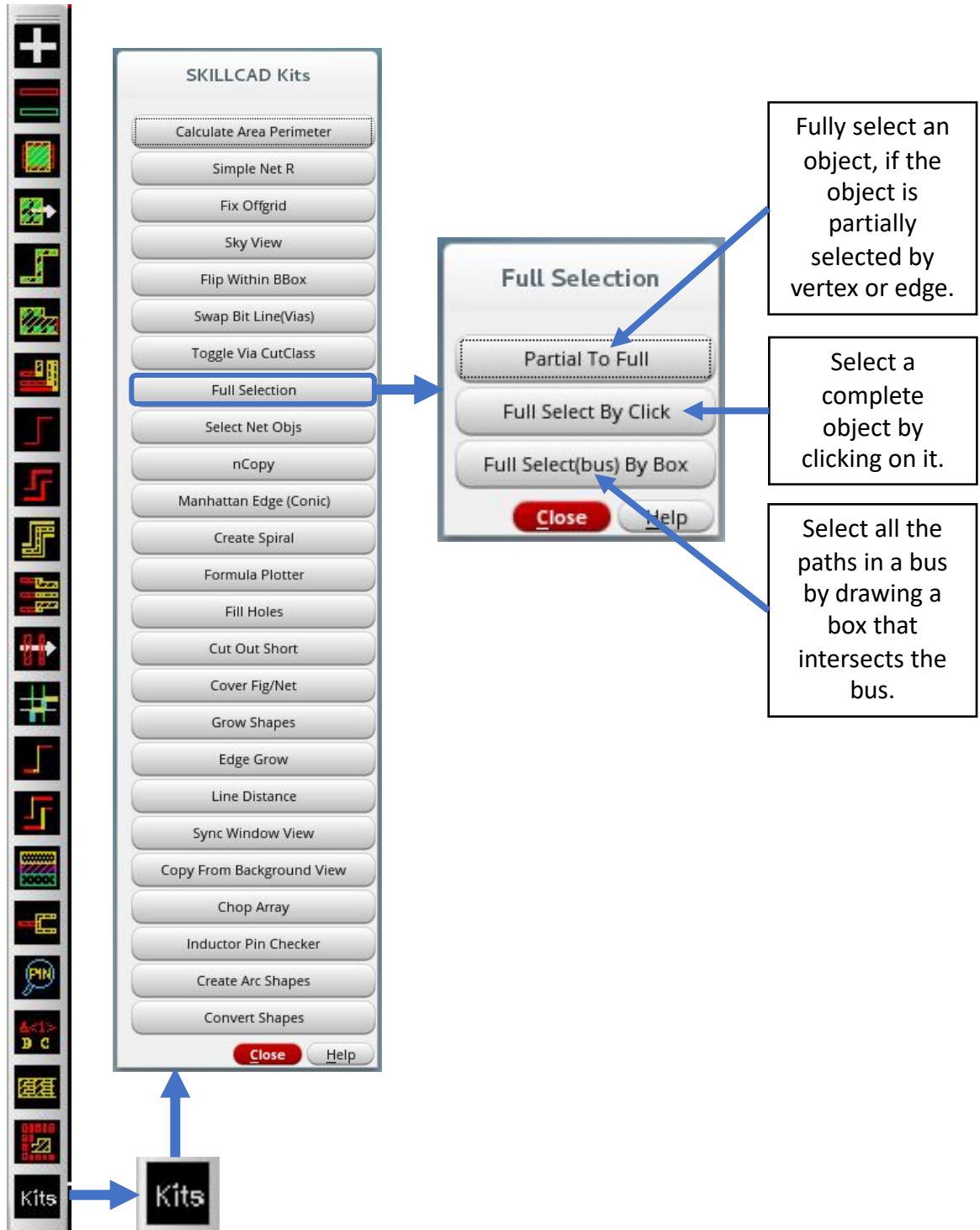
SKILLCAD Kits, Swap Bit Lines



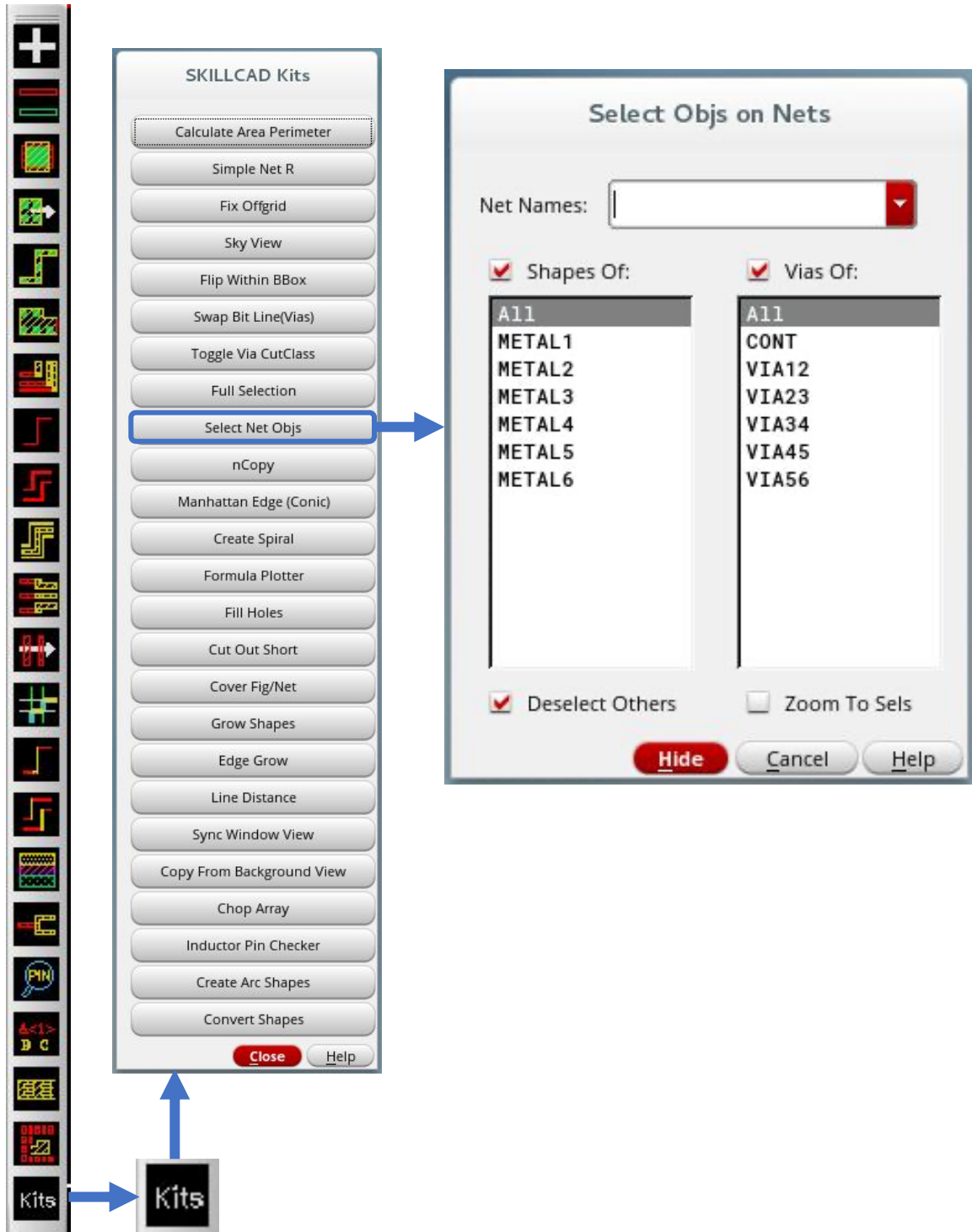
SKILLCAD Kits, Toggle Via Cut Class



SKILLCAD Kits, Full Selection



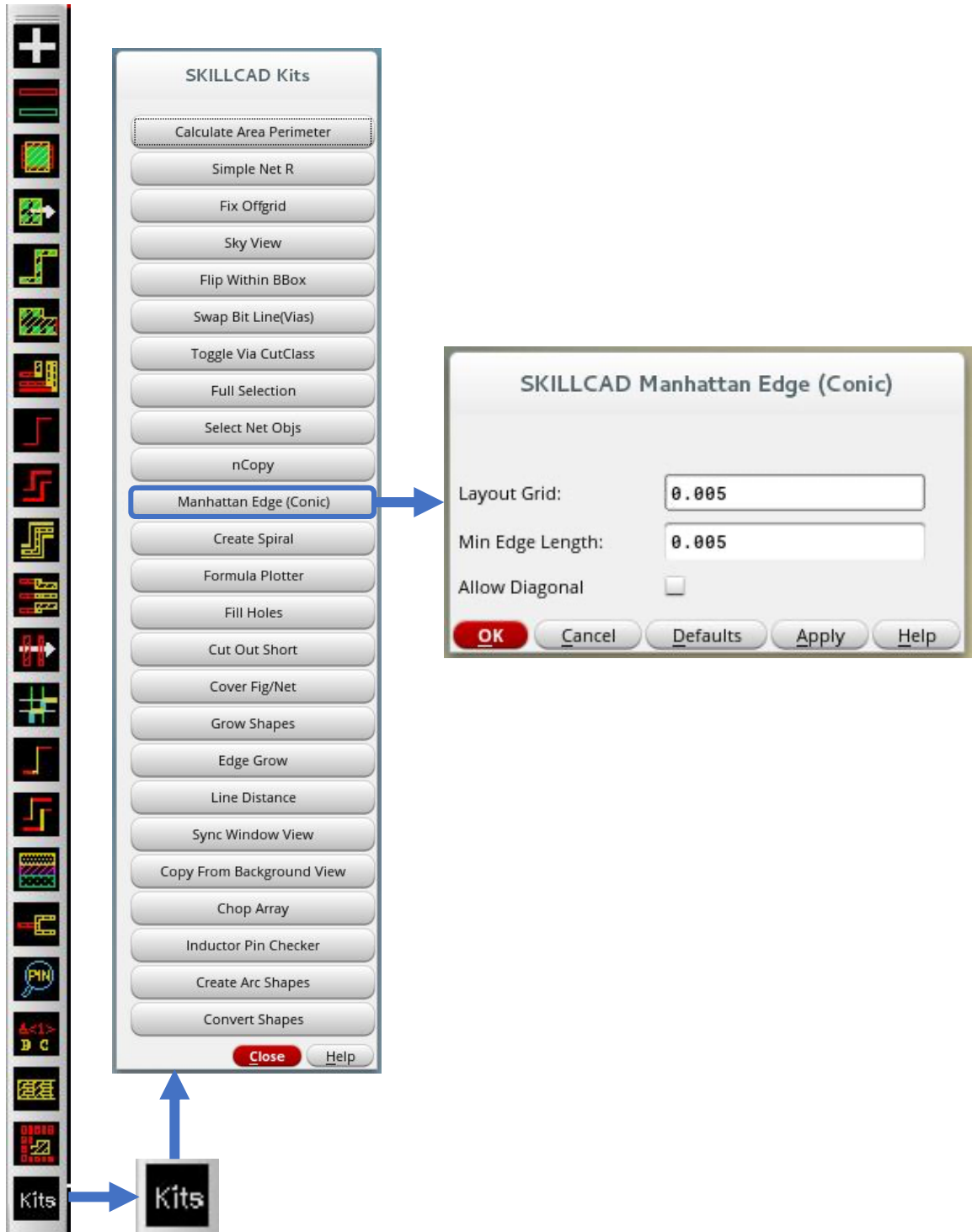
SKILLCAD Kits, Select Objects On Nets



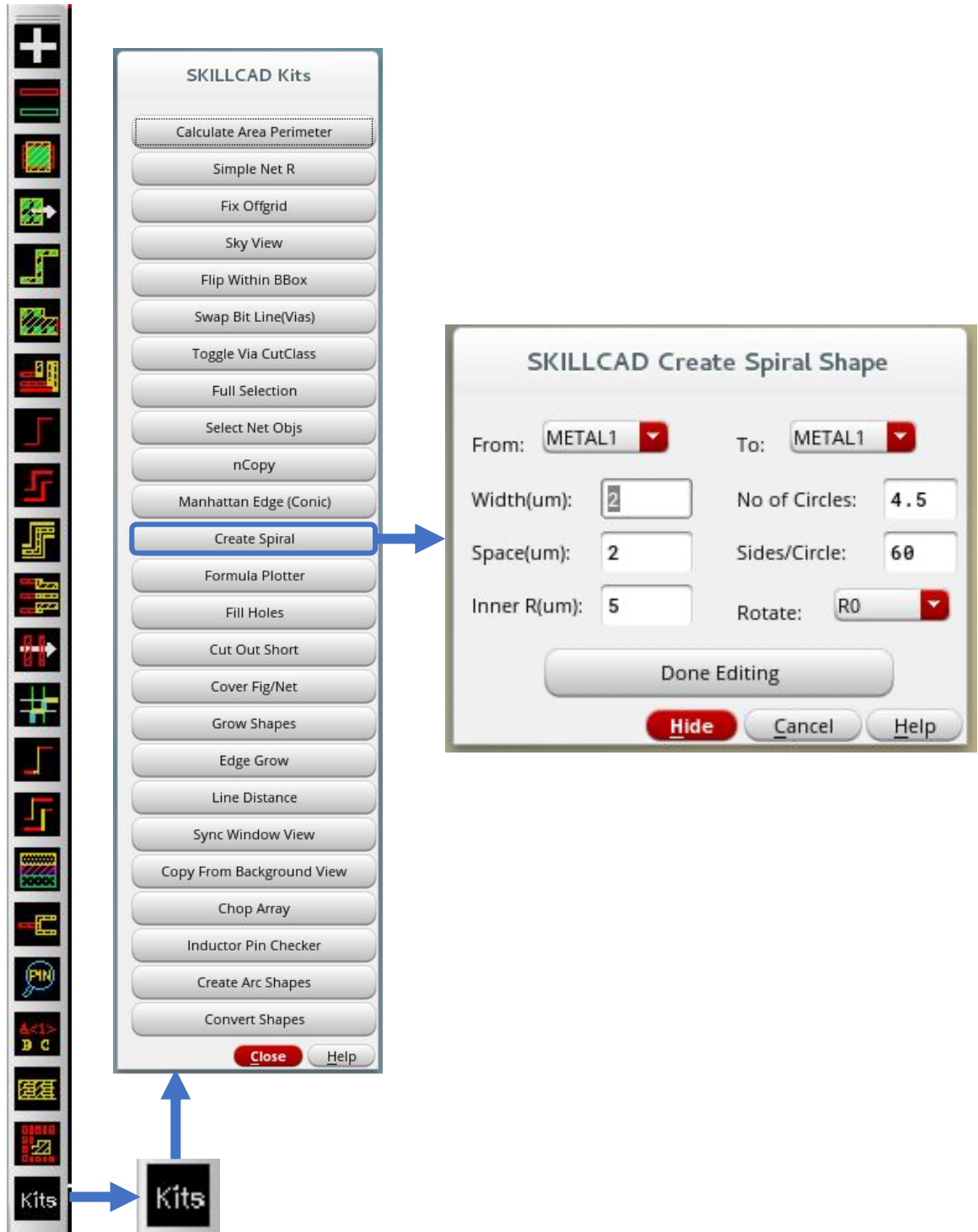
SKILLCAD Kits, Making Multiple Copies



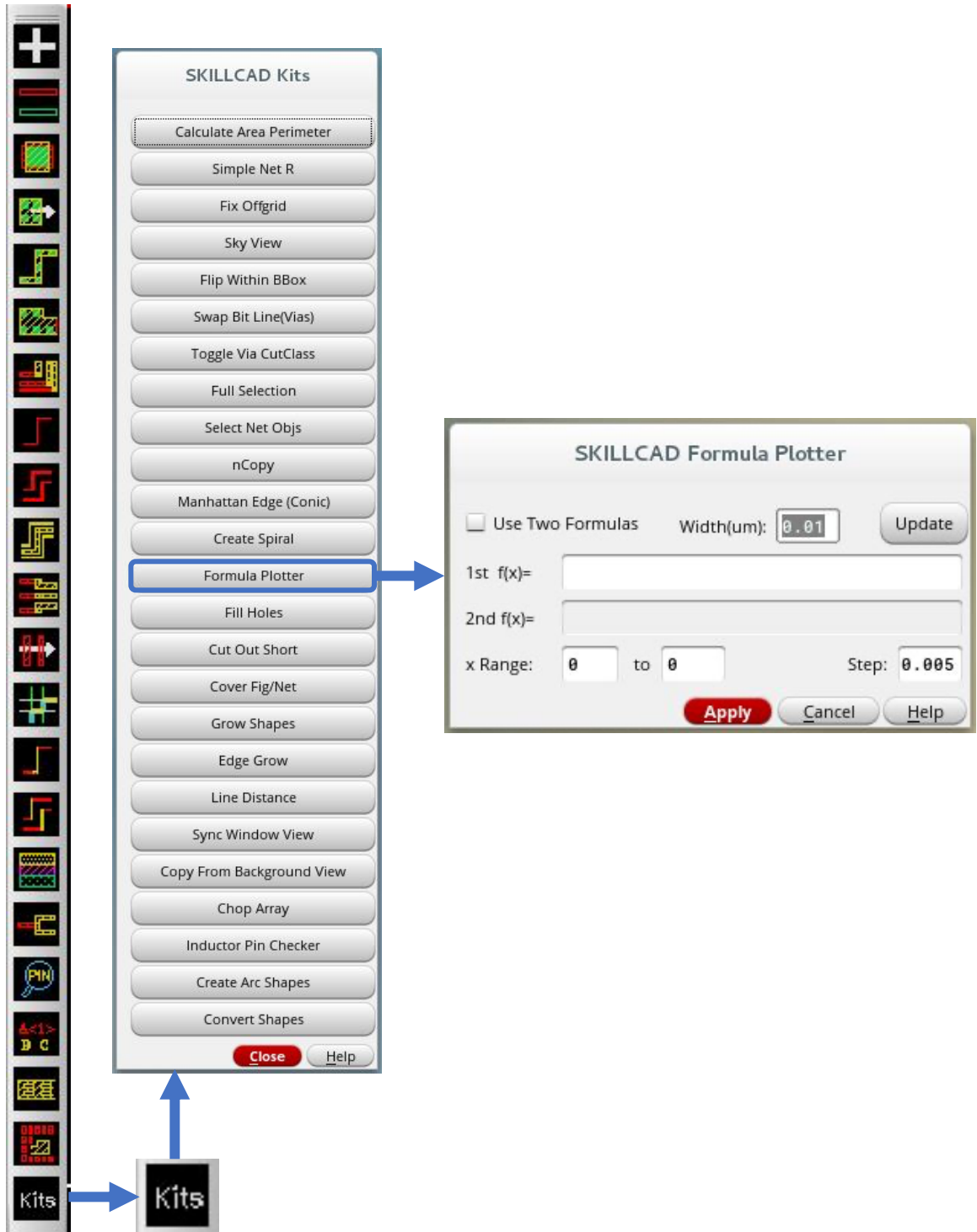
SKILLCAD Kits, Creating A Manhattan Edge Shape



SKILLCAD Kits, Creating A Spiral Shape



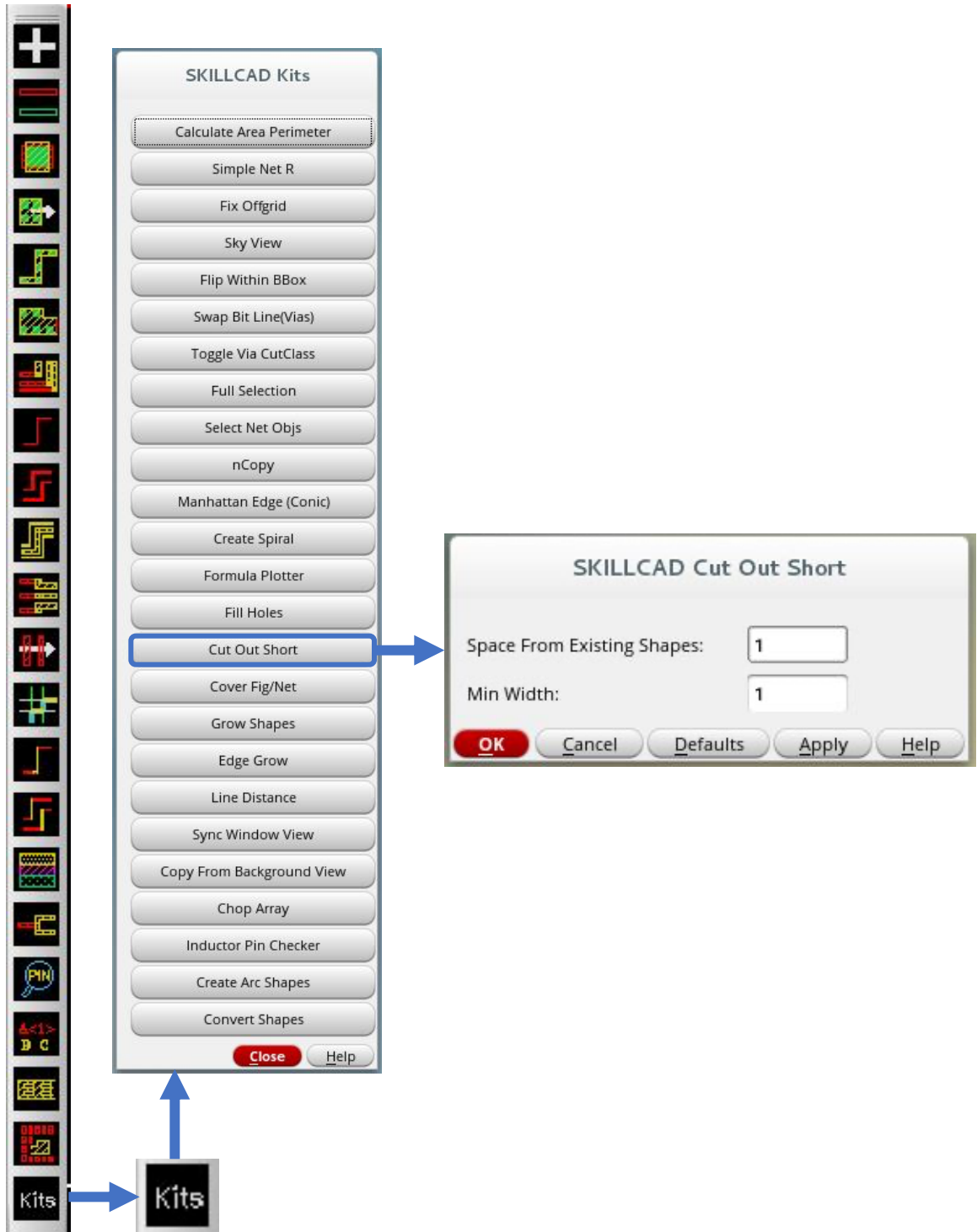
SKILLCAD Kits, Creating Shapes By Equations



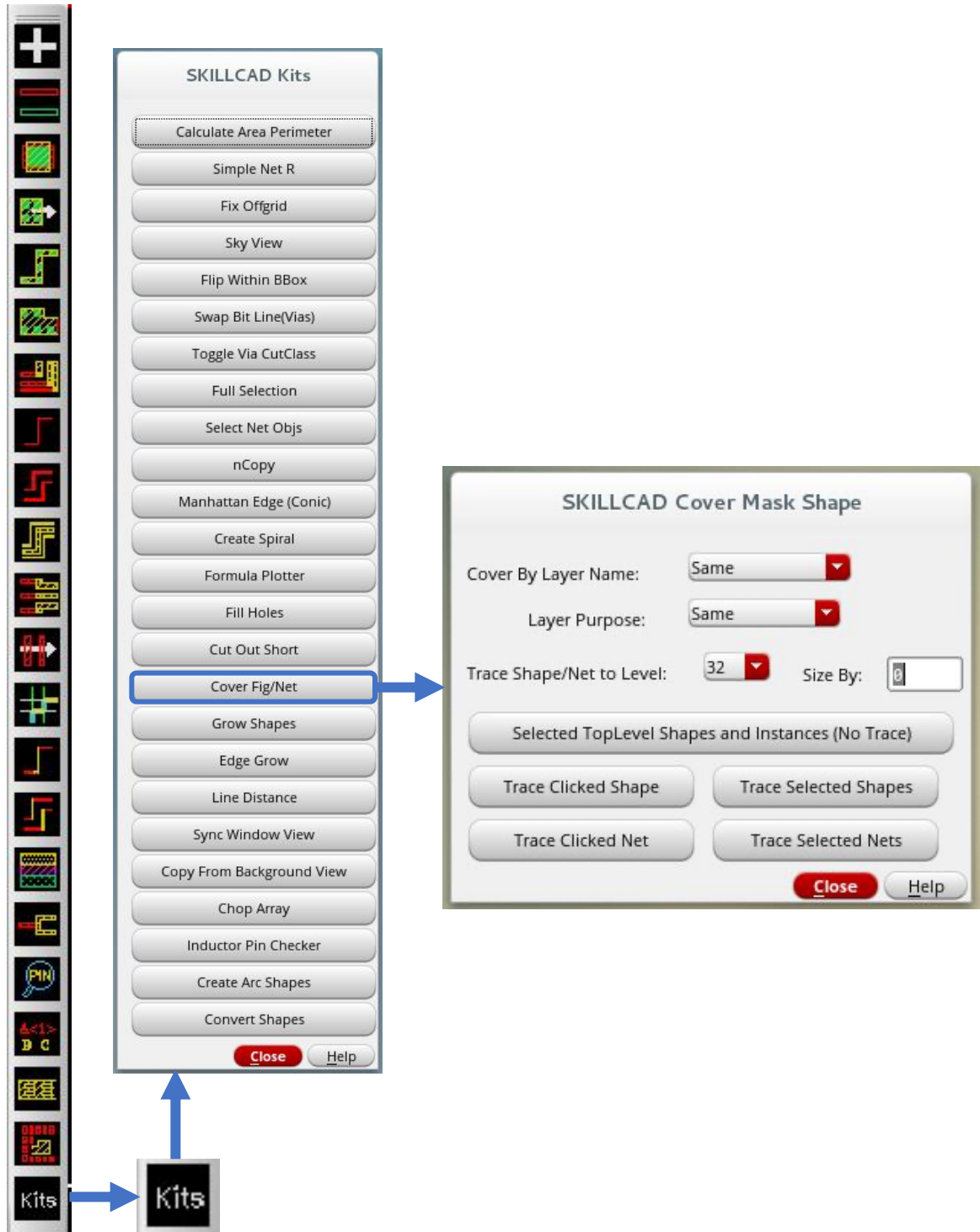
SKILLCAD Kits, Filling Holes In Shapes



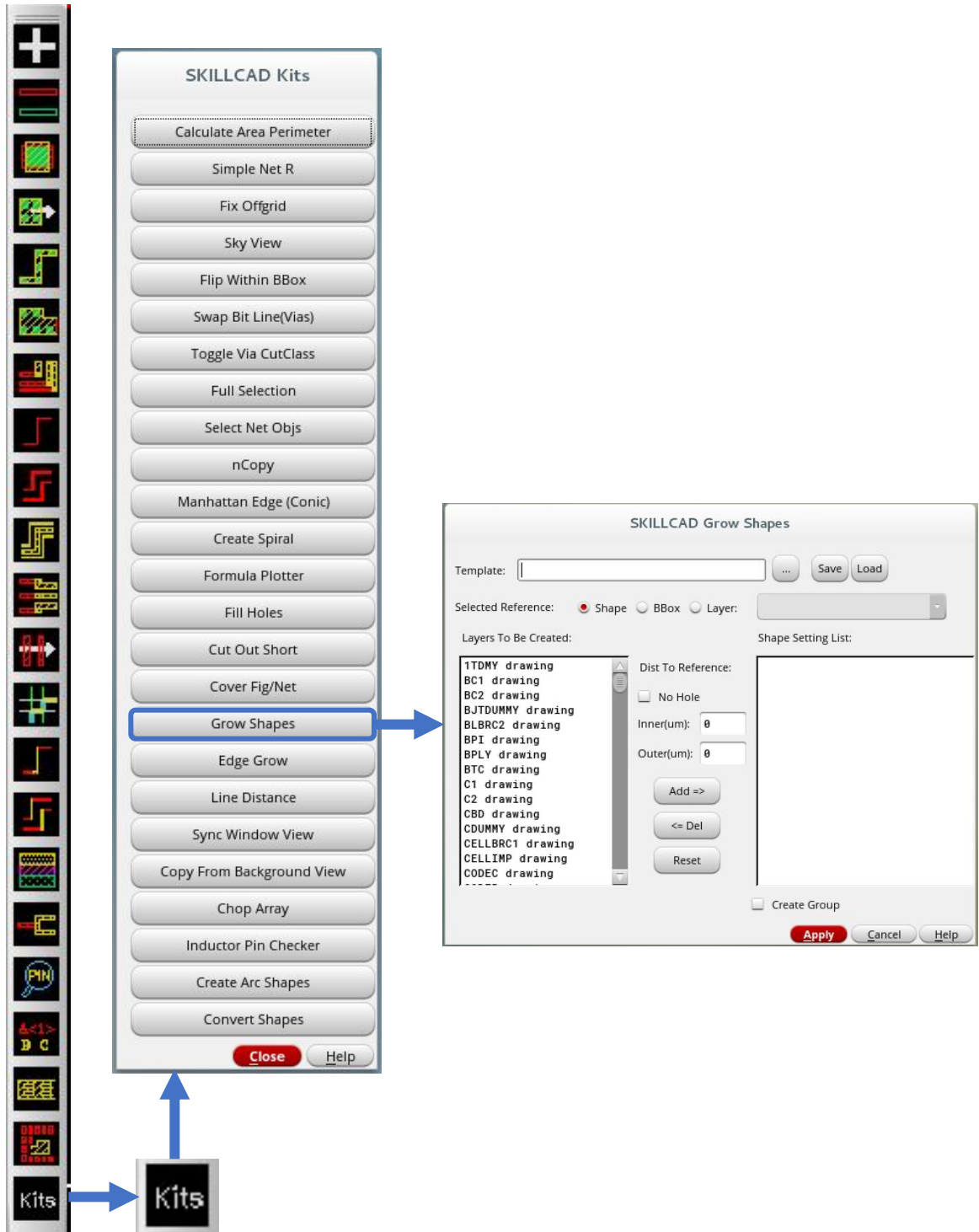
SKILLCAD Kits, Cutting Out Overlapping Shapes



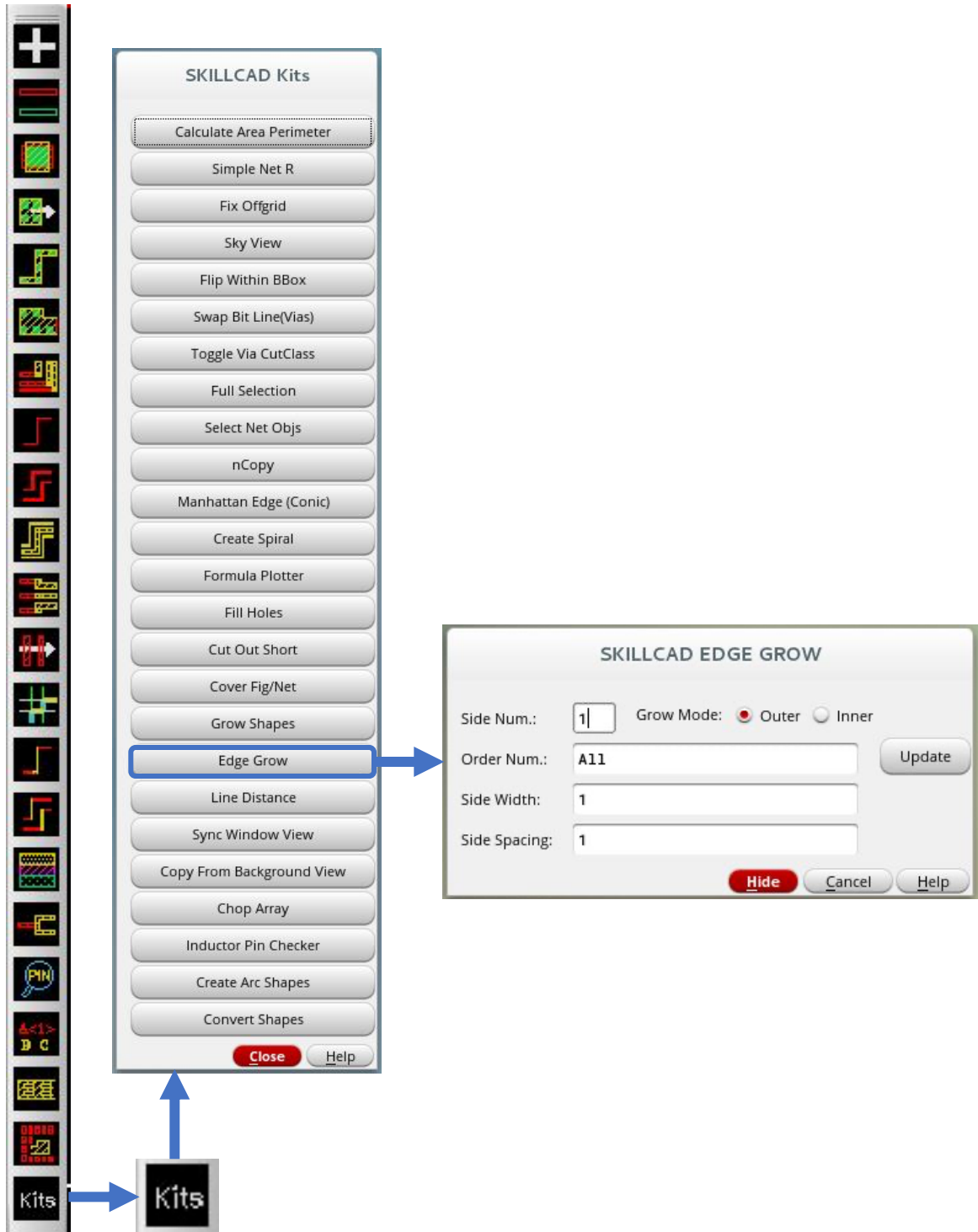
SKILLCAD Kits, Cover Mask Shape



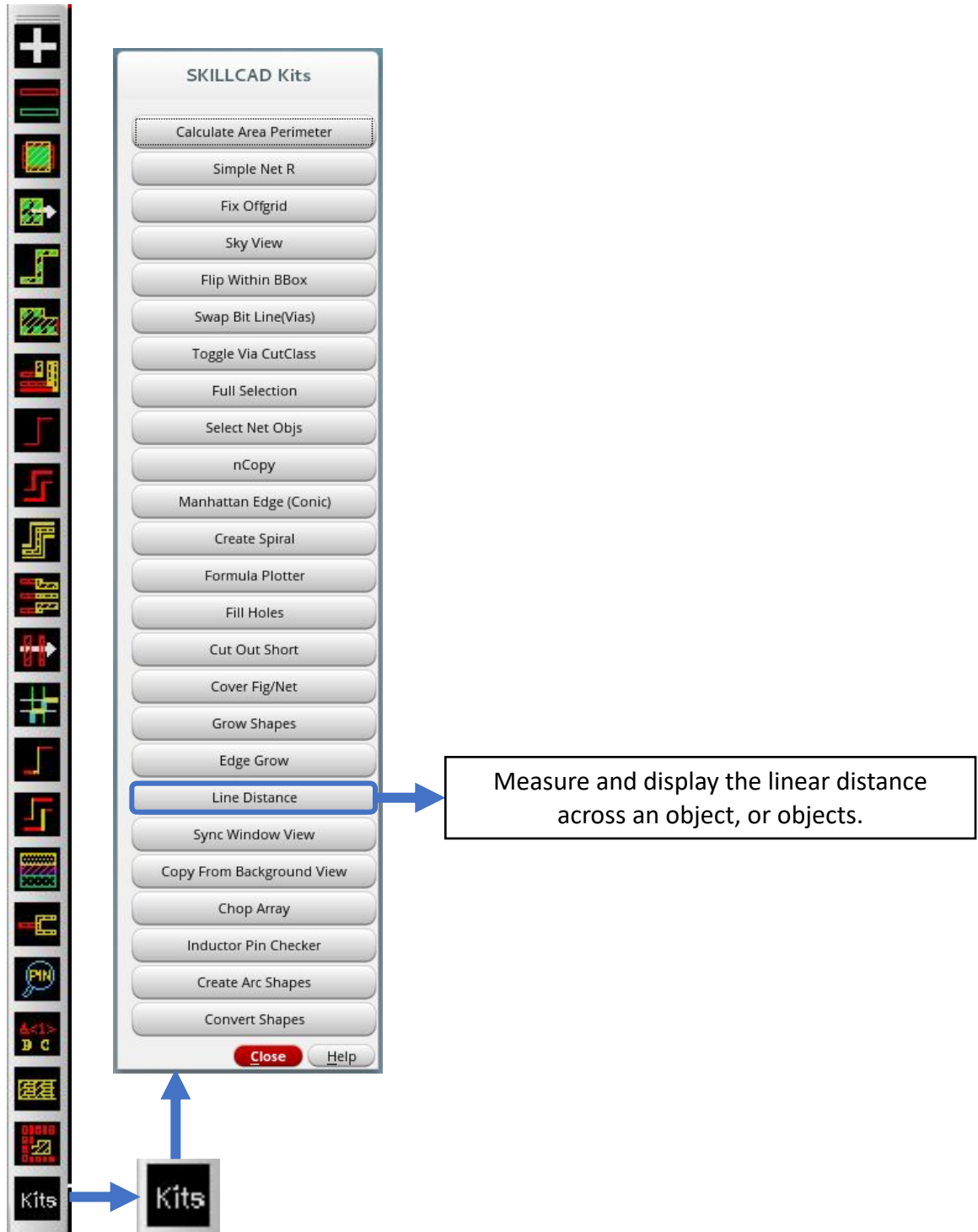
SKILLCAD Kits, Growing Shapes From Existing Shapes



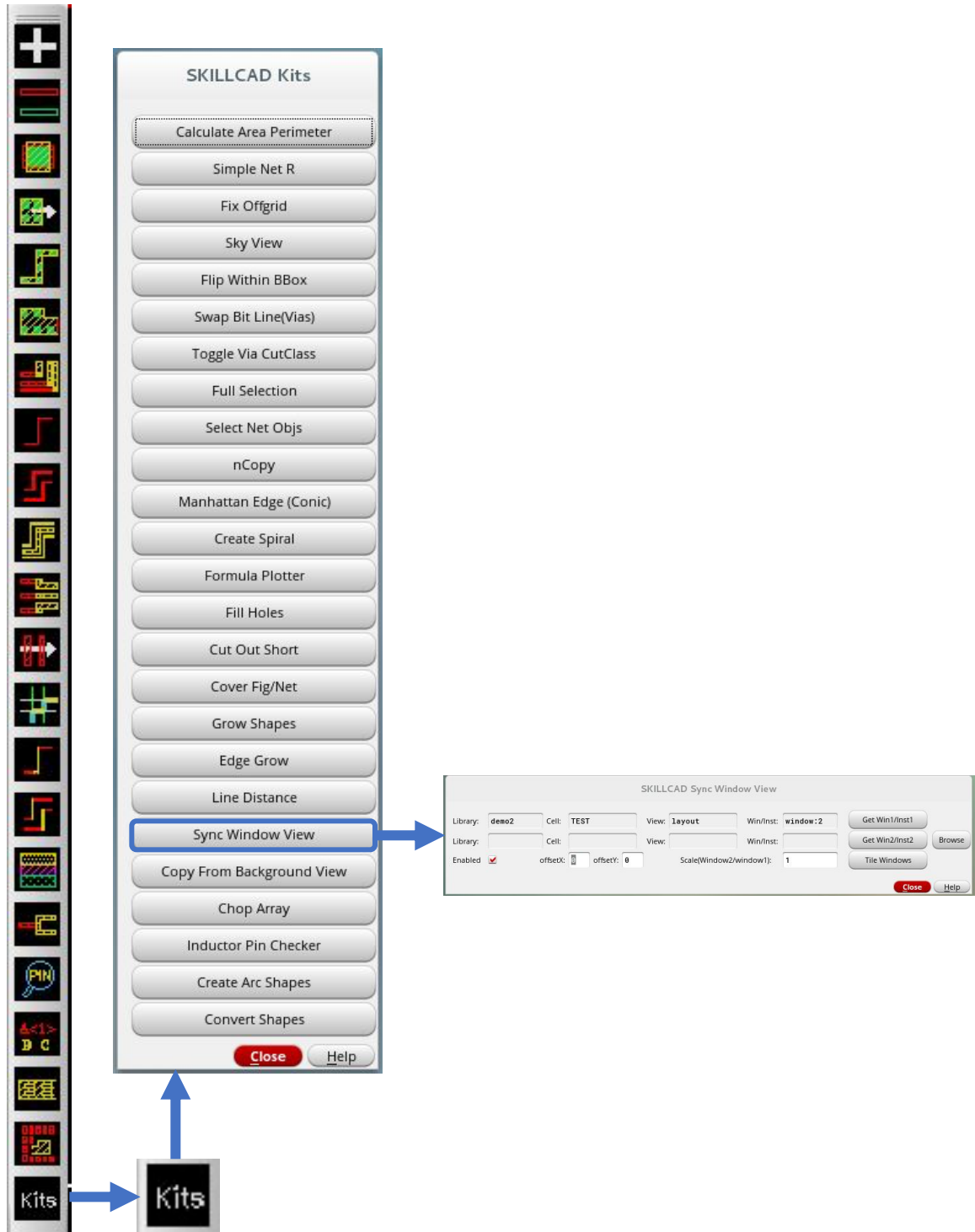
SKILLCAD Kits, Growing Shapes From Existing Edges



SKILLCAD Kits, Measuring Linear Distance



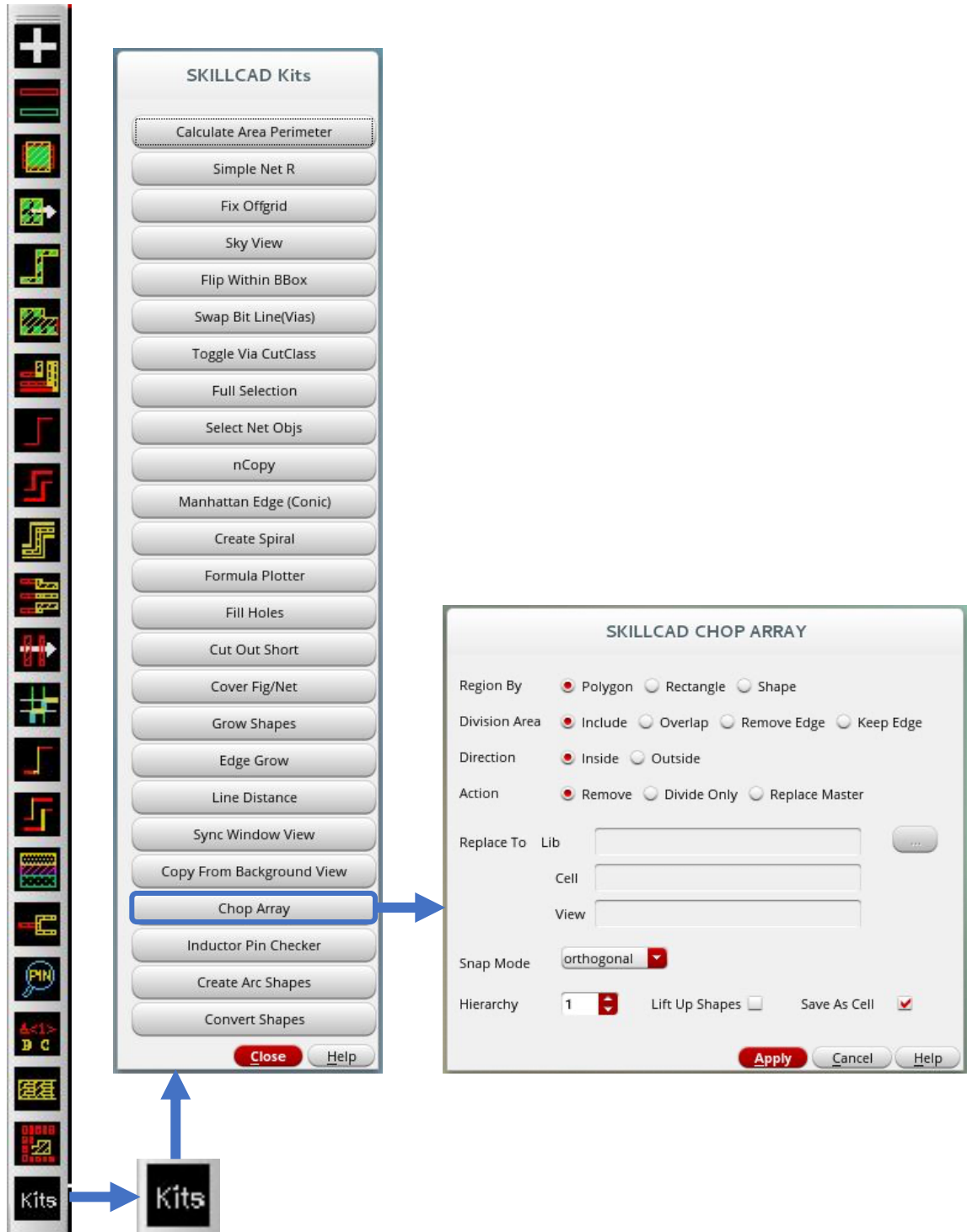
SKILLCAD Kits, Syncing Window Views



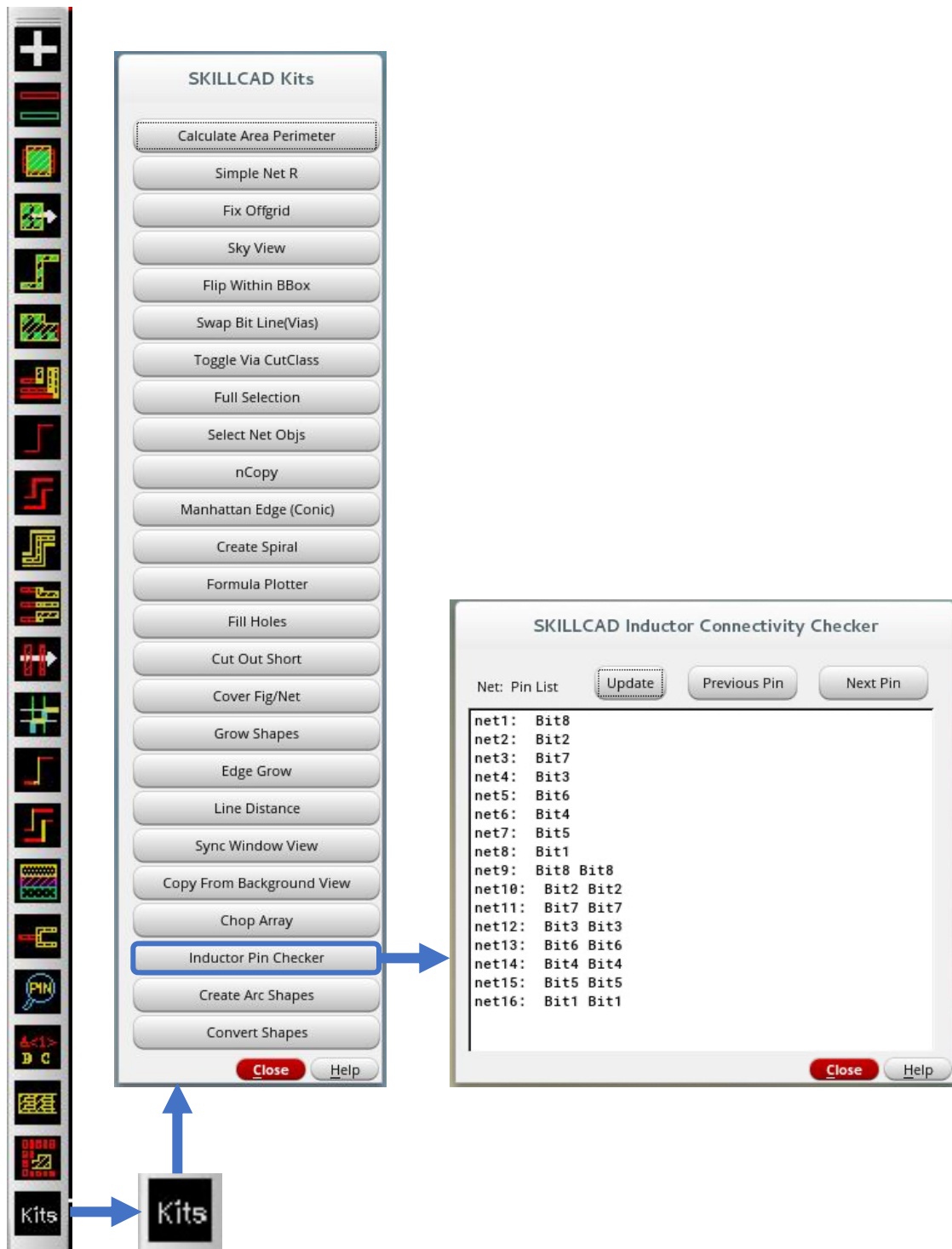
SKILLCAD Kits, Copying From A Background View



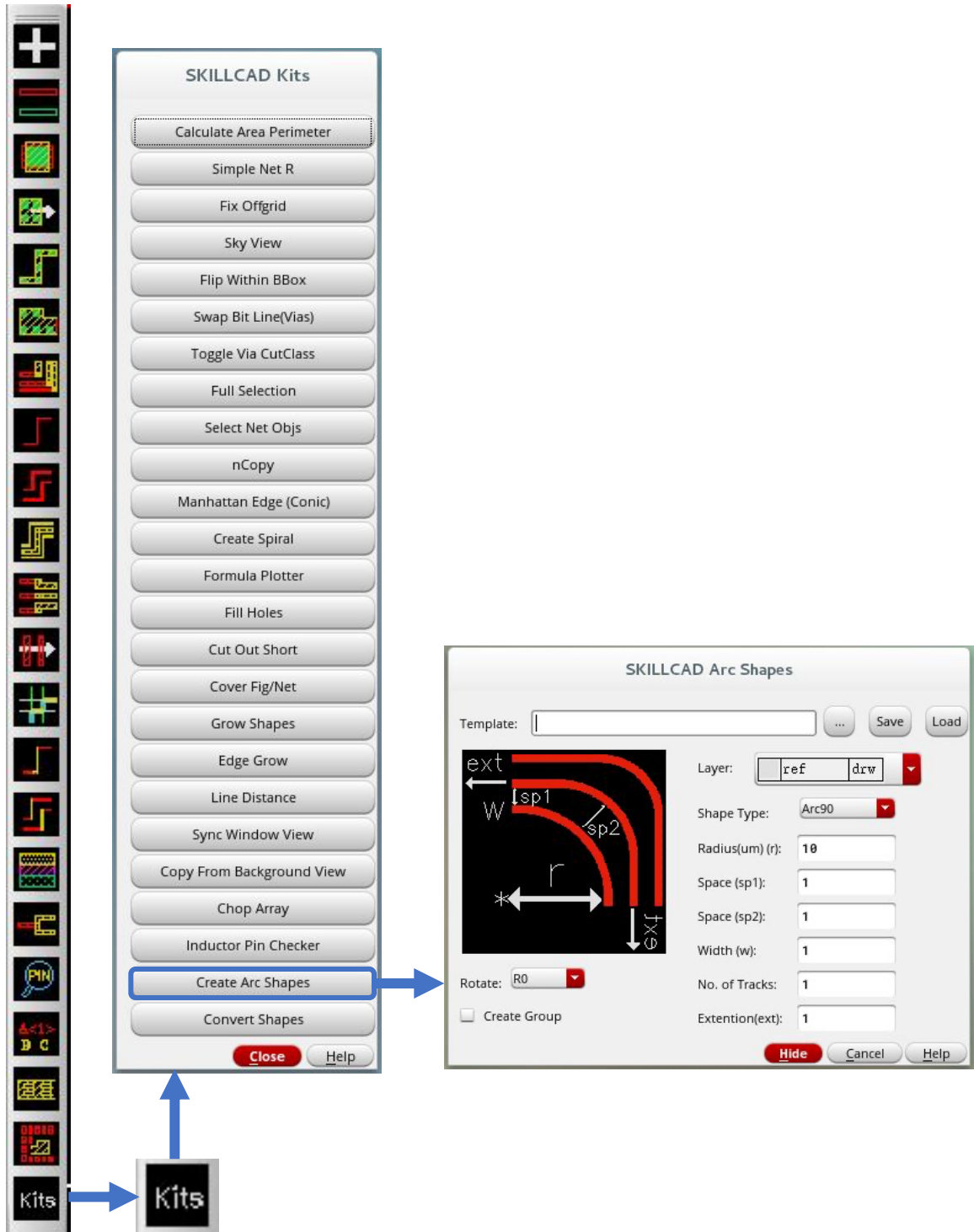
SKILLCAD Kits, Chopping An Existing Array



SKILLCAD Kits, Checking Inductor Connectivity



SKILLCAD Kits, Creating Arc Shapes



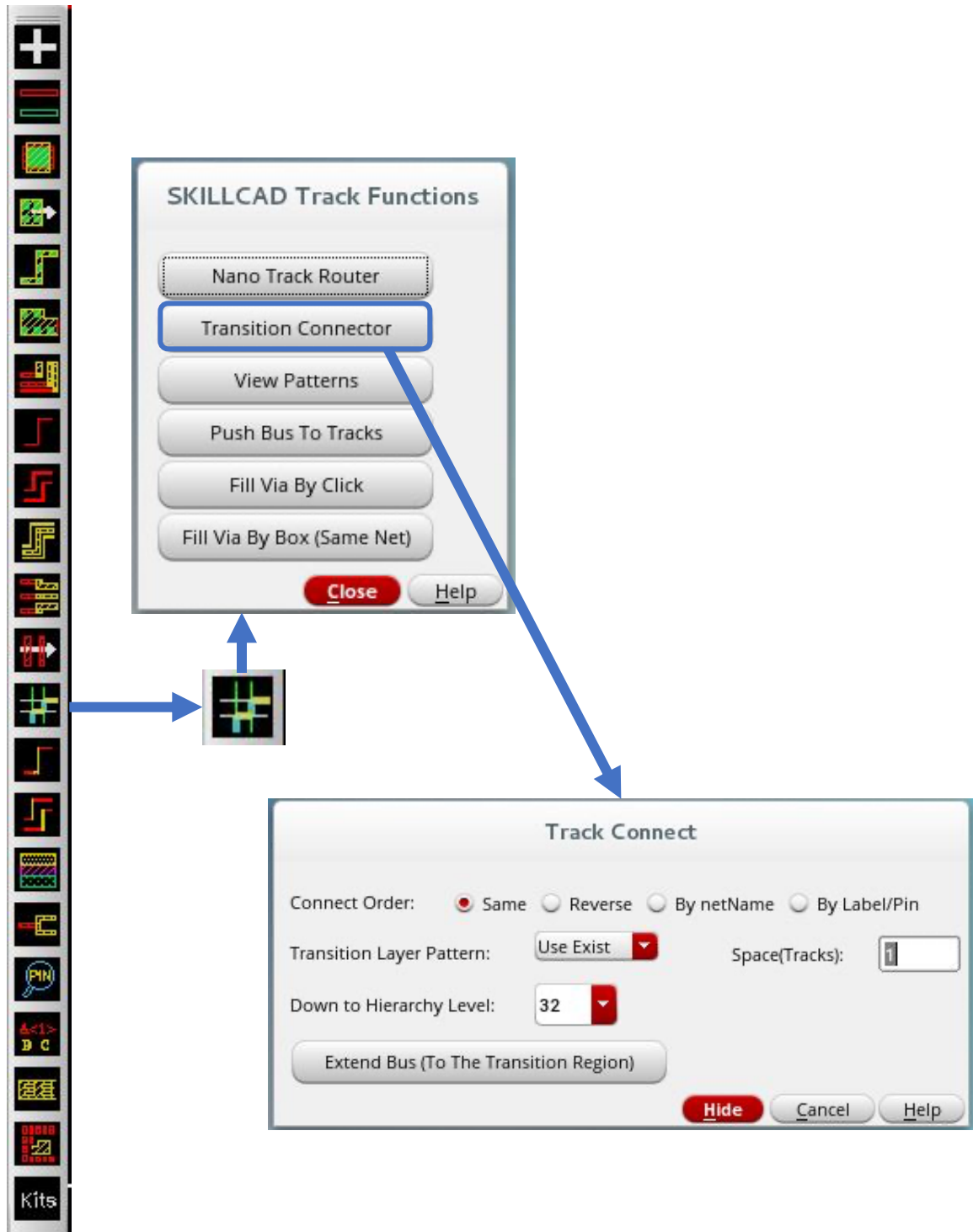
SKILLCAD Kits, Converting Objects



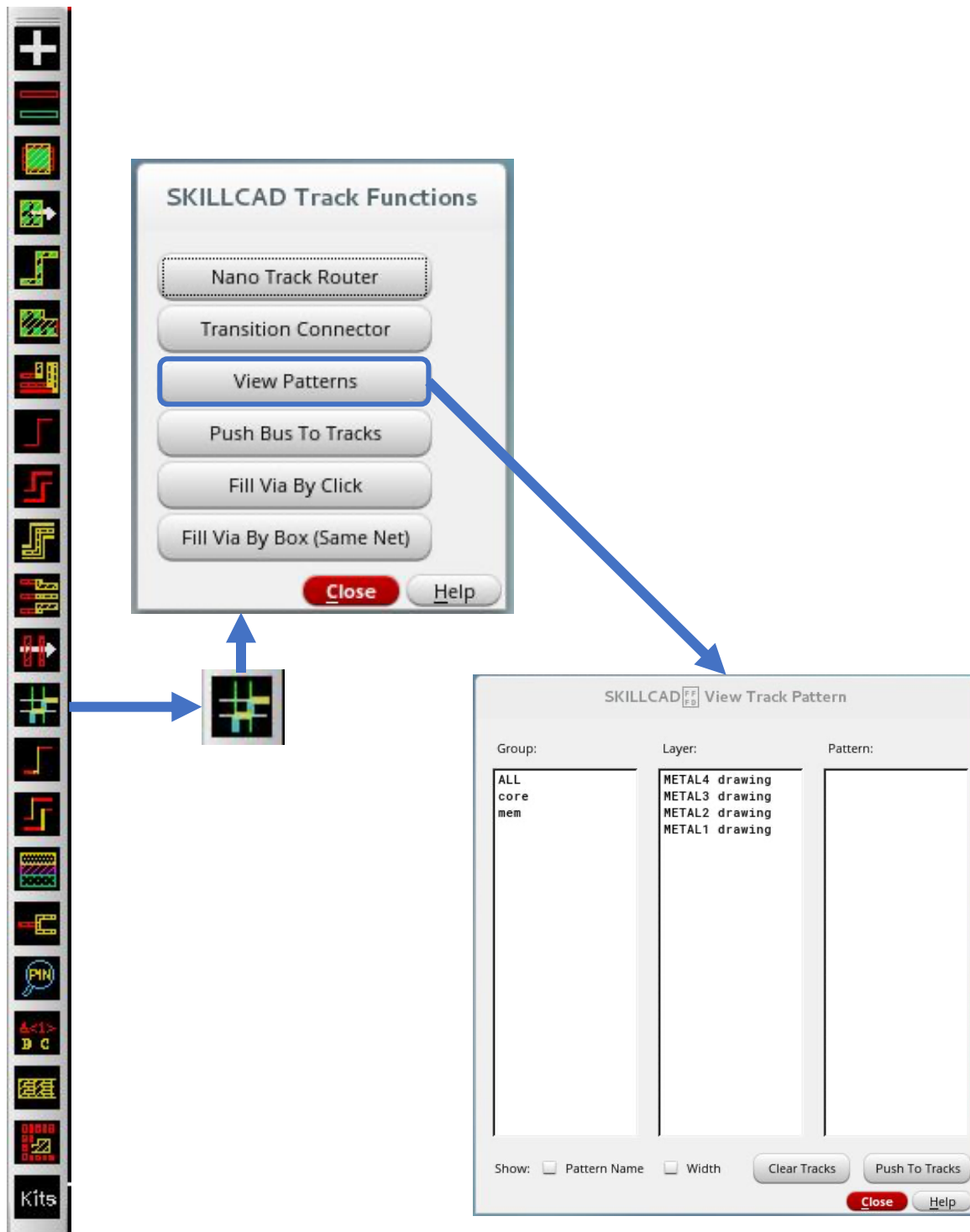
SKILLCAD Track Functions



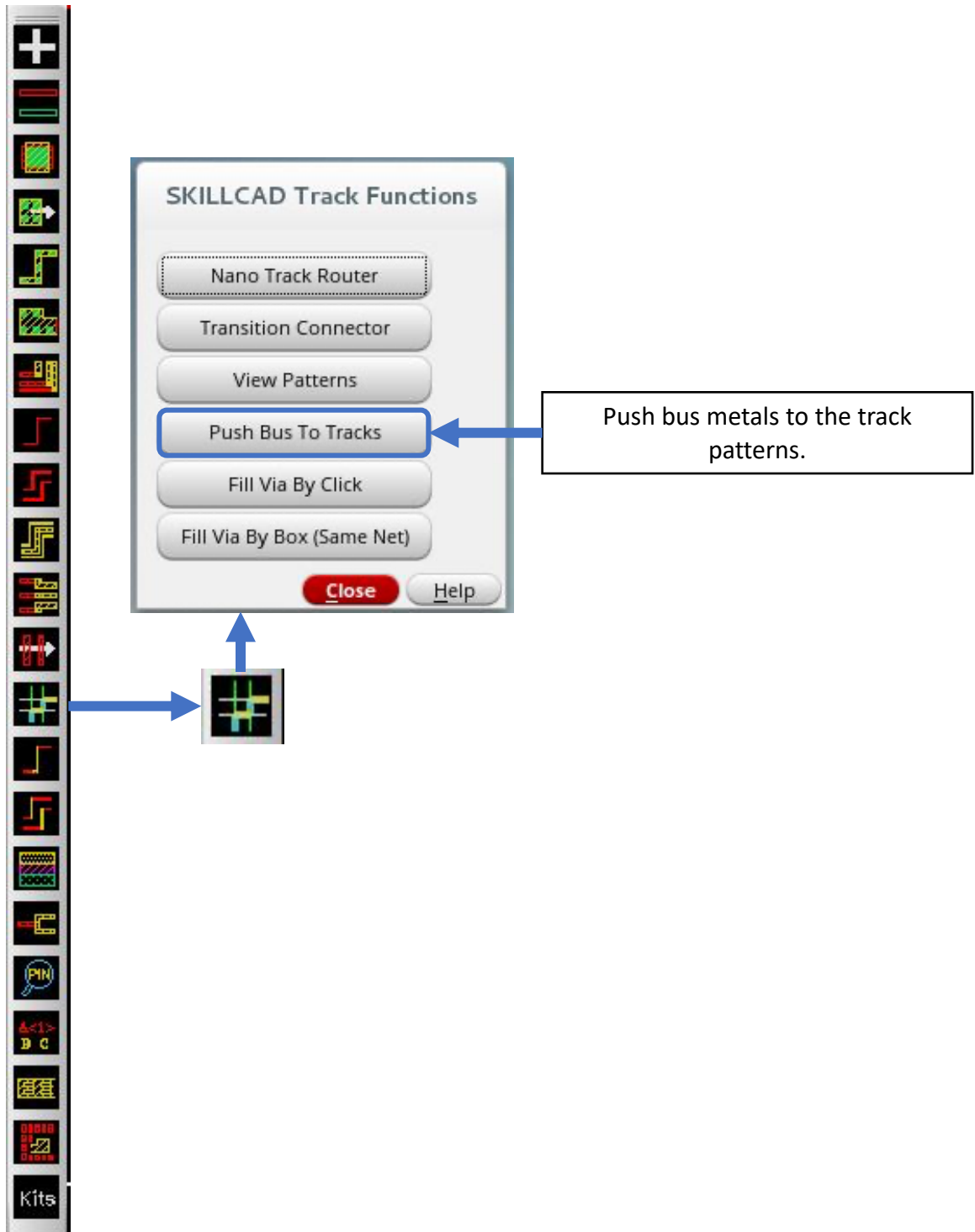
SKILLCAD Track Transition Connector



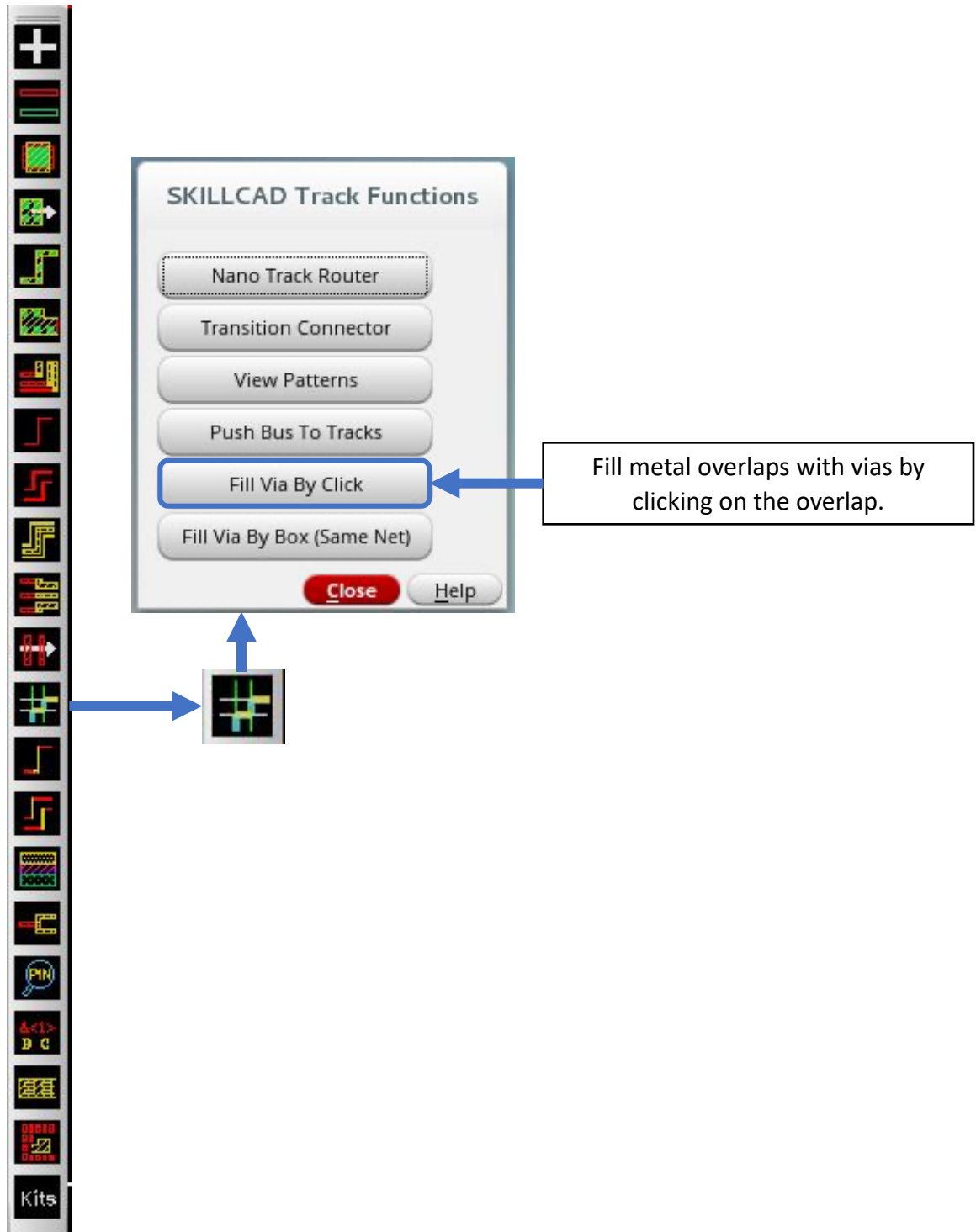
SKILLCAD View Track Patterns



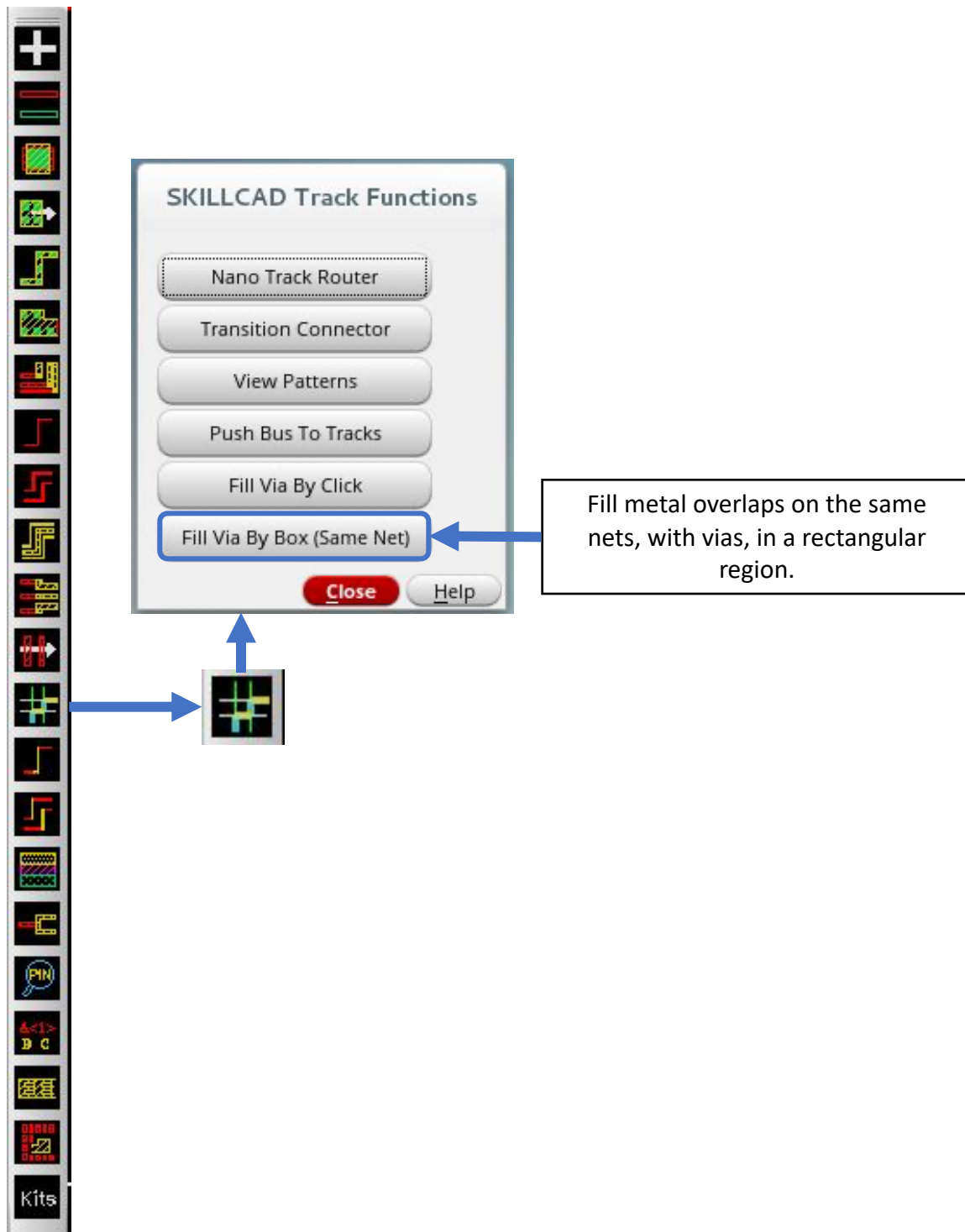
SKILLCAD Pushing Bus Metals To The Track Patterns



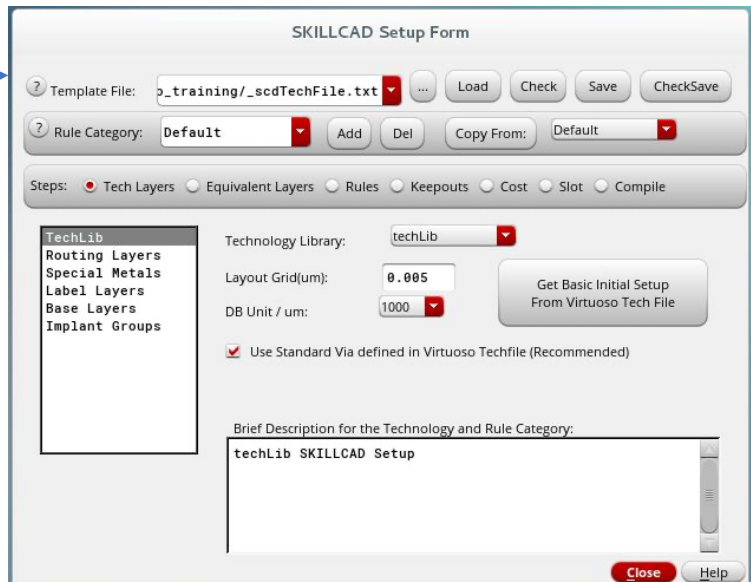
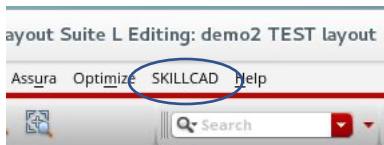
SKILLCAD Click To Fill Metal Overlaps With Vias



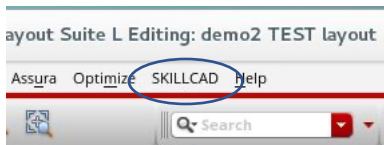
SKILLCAD Fill Metal Overlaps On Same Net, With Vias



SKILLCAD Setup Technology Library



SKILLCAD Setup Routing Layers



SKILLCAD Setup Form

Template File: Load Check Save CheckSave

Rule Category: Add Del Copy From:

Steps: ☒ Tech Layers ☐ Equivalent Layers ☐ Rules ☐ Keepouts ☐ Cost ☐ Slot ☐ Compile

TechLib

- Routing Layers
- Special Metals
- Label Layers
- Base Layers
- Implant Groups

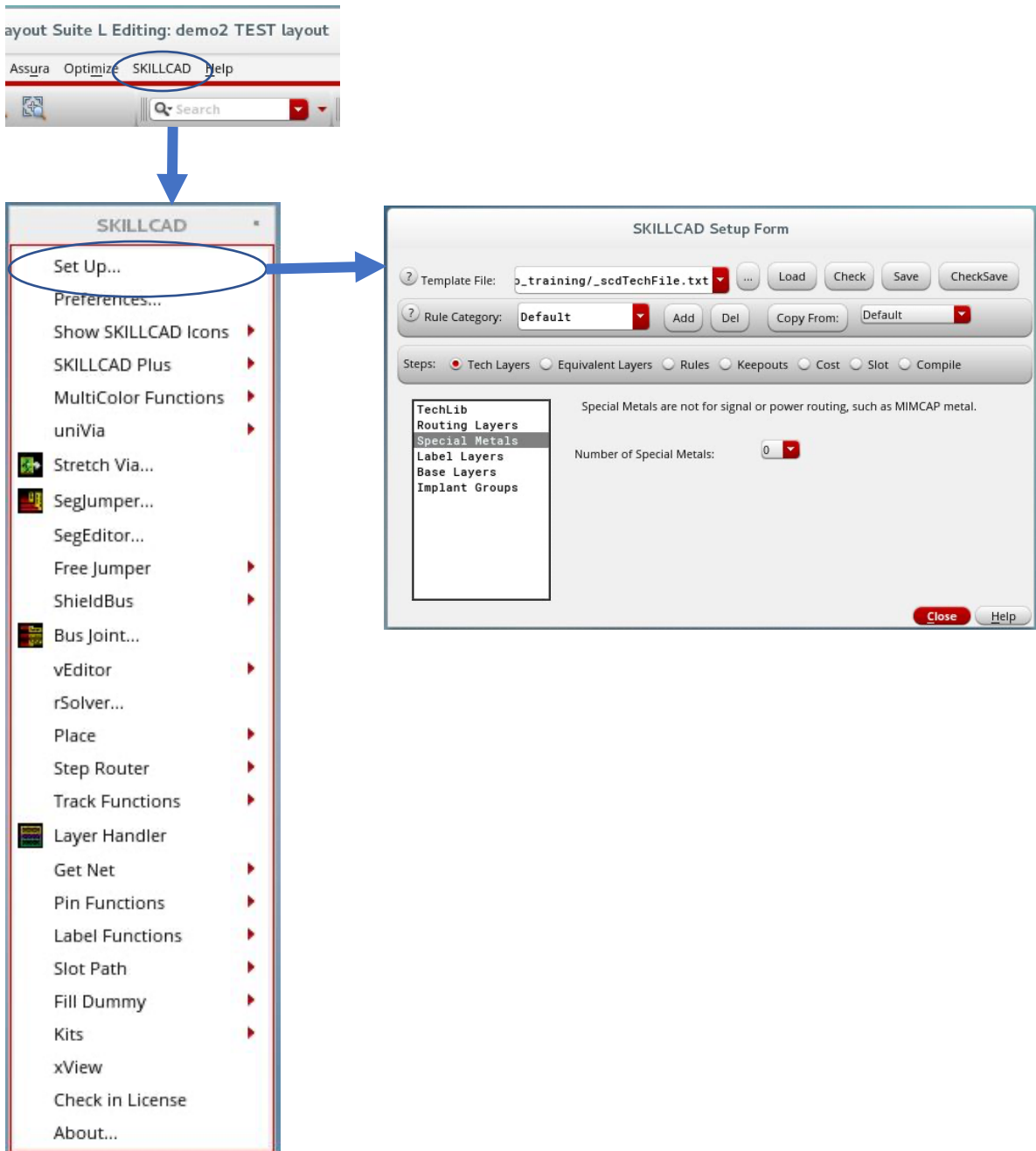
Specify Metal/Via layers, the thickness and the dielectric constant of the oxide at each level .

| | Number of Routing Layers: | Thickness(um) | Dielectric Const |
|------------------------------|---------------------------|---------------|------------------|
| metal6 | METAL6 drawing | 0.6 | 3.9 |
| via5 | VIA56 drawing | 0.6 | 3.9 |
| metal5 | METAL5 drawing | 0.6 | 3.9 |
| via4 | VIA45 drawing | 0.6 | 3.9 |
| metal4 | METAL4 drawing | 0.6 | 3.9 |
| via3 | VIA34 drawing | 0.6 | 3.9 |
| metal3 | METAL3 drawing | 0.6 | 3.9 |
| via2 | VIA23 drawing | 0.6 | 3.9 |
| metal2 | METAL2 drawing | 0.6 | 3.9 |
| via1 | VIA12 drawing | 0.6 | 3.9 |
| metal1 | METAL1 drawing | 0.6 | 3.9 |
| metal1 to Substrate Distance | | 0.6 | 3.9 |

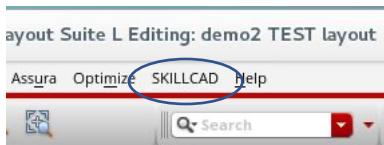
Contact:

Close Help

SKILLCAD Setup Special Metals



SKILLCAD Setup LVS Labels, Pin Layers

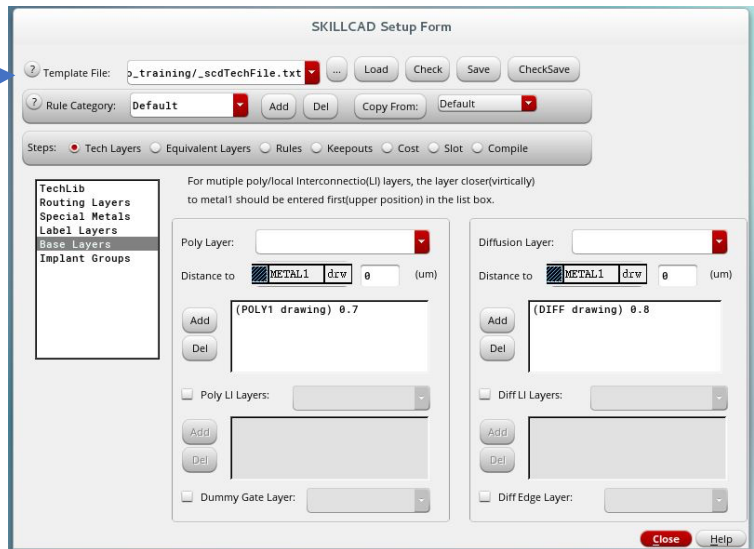
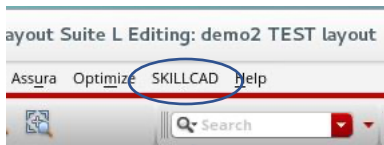


A screenshot of the SKILLCAD Setup Form. The form is titled 'SKILLCAD Setup Form' and contains the following sections:

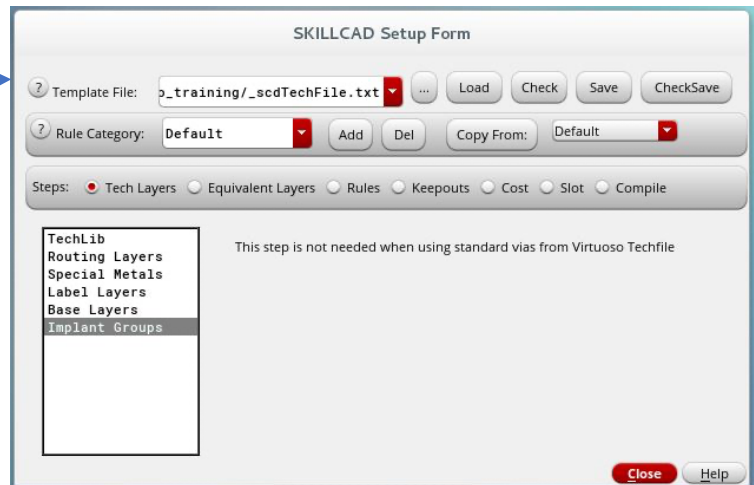
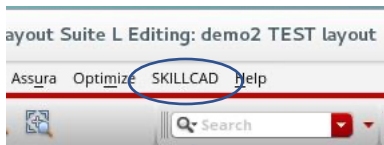
- Template File:** A dropdown menu showing 'p_training/_scdTechFile.txt' with buttons for Load, Check, Save, and CheckSave.
- Rule Category:** A dropdown menu showing 'Default' with buttons for Add, Del, Copy From, and a default dropdown.
- Steps:** A row of radio buttons for Tech Layers (selected), Equivalent Layers, Rules, Keepouts, Cost, Slot, and Compile.
- General Purpose Label Layer:** A dropdown menu showing 'TEXT drawing'.
- Default Pin Label Type:** Radio buttons for Text Display (selected) and Label.
- LVS Label Layer:** A dropdown menu showing 'pin'.
- Shape Pin Layer:** A dropdown menu showing 'pin'.
- Apply:** A button to apply the settings.
- Metal Layers:** A table with columns for drawing and pin layer for METAL1 through METAL6.

| Metal Layer | drawing | pin |
|-------------|------------|------------|
| METAL1 | METAL1 pin | METAL1 pin |
| METAL2 | METAL2 pin | METAL2 pin |
| METAL3 | METAL3 pin | METAL3 pin |
| METAL4 | METAL4 pin | METAL4 pin |
| METAL5 | METAL5 pin | METAL5 pin |
| METAL6 | METAL6 pin | METAL6 pin |
- Close:** A red button to close the form.
- Help:** A button to get help.

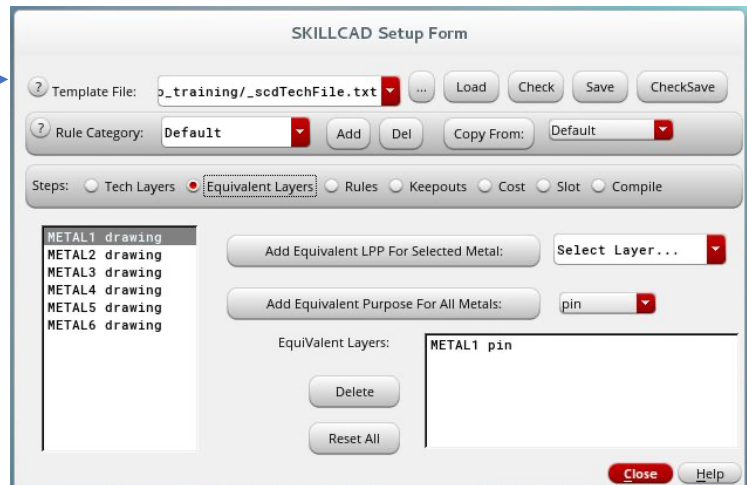
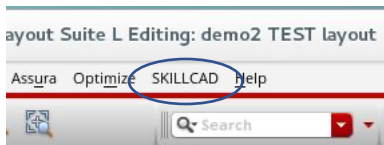
SKILLCAD Setup Base Layers



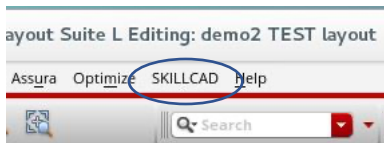
SKILLCAD Setup Implant Groups



SKILLCAD Setup Equivalent Layers



SKILLCAD Setup General Metal/Via Rules

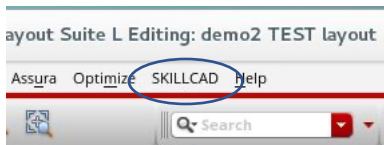


A screenshot of the SKILLCAD Setup Form. The form has a title bar 'SKILLCAD Setup Form'. It contains several sections:

- Template File:** A text field with the value 'p_training/_scdTechFile.txt' and buttons 'Load', 'Check', 'Save', and 'CheckSave'.
- Rule Category:** A dropdown menu set to 'Default' with buttons 'Add', 'Del', 'Copy From:', and a dropdown set to 'Default'.
- Steps:** A row of radio buttons for 'Tech Layers', 'Equivalent Layers', 'Rules' (selected), 'Keepouts', 'Cost', 'Slot', and 'Compile'.
- General** section: A list of rules on the left, including '---METALS---', 'METAL1 drawing', 'METAL2 drawing', 'METAL3 drawing', 'METAL4 drawing', 'METAL5 drawing', 'METAL6 drawing', '---Cont/Vias---', 'CONT drawing', 'VIA12 drawing', 'VIA23 drawing', 'VIA34 drawing', 'VIA45 drawing', 'VIA56 drawing', '-----', and 'wireConfig'. On the right are input fields for 'Max Cap Coupling Distance(um): 2', 'Max Levels of Cap Combination: 2', 'Max Via Stack Levels: 6', and 'Min. Distance for Non-Stack Vias(um): 0'. There is a checkbox 'Do Not Use VXL API to Calculate Via Parameters' which is checked.
- Default Environmental Options:** A section with radio buttons for 'Default Metal Enc Via Mode: viaDef' and 'minRule' (selected), and 'Default Via Space Mode: Distribute' and 'Minimum' (selected). There are checkboxes for 'Float Pin', 'Align Via Metal to Path', 'Use Squarish Via Array', and 'Use PathSeg(Wire)'. A 'Min Via No' field is set to '2'.
- Extract Net Ignore:** A section with a 'Cell View Lib:' dropdown and a list box containing file paths: '/home/pengwei/skillcad_demo/video_tra...', '/home/pengwei/skillcad_demo/video_tra...', and '/home/pengwei/skillcad_demo/video_tra...'. There are 'Add', 'Del', and '...' buttons.
- Dummy Fill Template:** A section with a text field and a list box containing the same file paths. There are 'Add', 'Del', and '...' buttons.

 At the bottom right are 'Close' and 'Help' buttons.

SKILLCAD Setup Individual Metal Layer Rules



SKILLCAD Setup Form

Template File: Load Check Save CheckSave

Rule Category: **Default** Add Del Copy From: **Default**

Steps: ☐ Tech Layers ☐ Equivalent Layers ☒ Rules ☐ Keepouts ☐ Cost ☐ Slot ☐ Compile

General

---METALS---

METAL1 drawing

METAL2 drawing

METAL3 drawing

METAL4 drawing

METAL5 drawing

METAL6 drawing

---Cont/Vias---

CONT drawing

VIA12 drawing

VIA23 drawing

VIA34 drawing

VIA45 drawing

VIA56 drawing

wireConfig

Minimum Width(um):

Minimum Area(um^2):

Resistance(ohm/sq):

☐ Advanced EM Rule:

Current Density(mA/um):

"METAL1 drawing" Spacing Rules: ☐ Use Multiple Colors

Num Of Colors: Color Characters:

When Width >= Space: Add Del

Path End to other Metal Space: Del

Wire Pattern File: Create Add Del

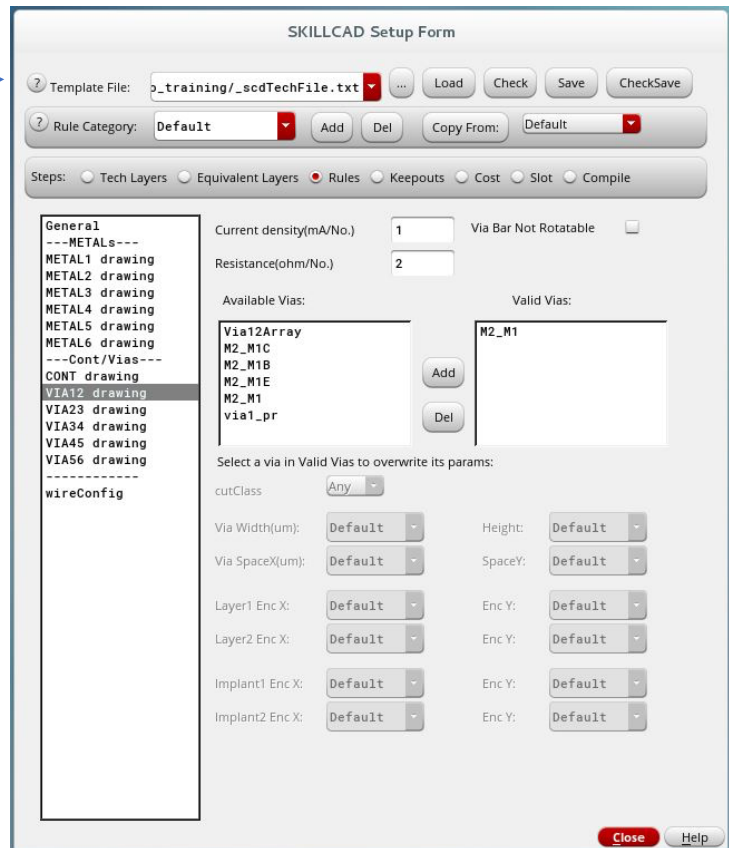
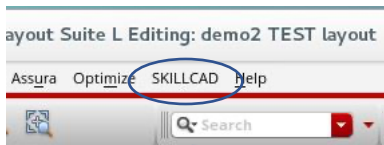
Copy Rules From:

METAL1 drawing

Copy

Close Help

SKILLCAD Setup Contact And Via Rules



SKILLCAD Setup Wire Configuration Rules (Nano Router)

The image shows the SKILLCAD interface. At the top, the menu bar includes 'Assura', 'Optimize', 'SKILLCAD', and 'Help'. The 'SKILLCAD' menu is open, showing a list of options. 'Set Up...' is circled in blue, and a blue arrow points from it to the 'SKILLCAD Setup Form' dialog box.

SKILLCAD Setup Form

Template File: Load Check Save CheckSave

Rule Category: Add Del Copy From:

Steps: ☐ Tech Layers ☐ Equivalent Layers ☒ Rules ☐ Keepouts ☐ Cost ☐ Slot ☐ Compile

☒ No Wire Config Rules * Wire Config are the same for All Rule Categories

S-Expression File: Load

Define Track Pattern Definitions/Examples

Extract ViaConfigDefs From Layout Draw ViaConfigDefs To Layout

Define Layer Width Dump Track Rules To Text

Save WireConfig To: Save

(File Name Only. Saved At the same dir of the above "Template File")

Close Help

General

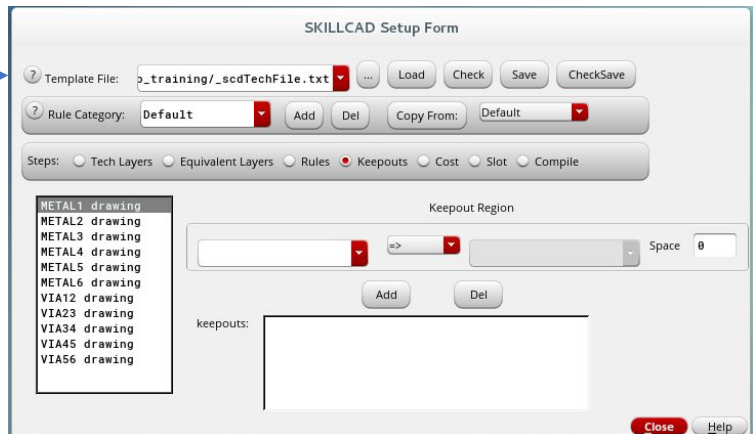
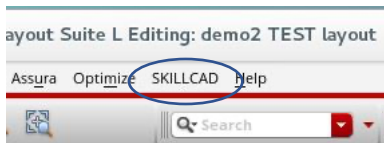
```

---METALS---
METAL1 drawing
METAL2 drawing
METAL3 drawing
METAL4 drawing
METAL5 drawing
METAL6 drawing
---Cont/Vias---
CONT drawing
VIA12 drawing
VIA23 drawing
VIA34 drawing
VIA45 drawing
VIA56 drawing

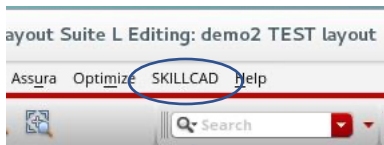
```

wireConfig

SKILLCAD Setup Metal And Via Keepout Regions



SKILLCAD Define Metal Direction And Via Costs



SKILLCAD Setup Form

Template File: Load Check Save CheckSave

Rule Category: **Default** Add Del Copy From: **Default**

Steps: ☐ Tech Layers ☐ Equivalent Layers ☐ Rules ☐ Keepouts ☒ Cost ☐ Slot ☐ Compile

| Routing Layer | Swap Dir | X Dir Cost | Y Dir Cost | 45 Degree Cost |
|---------------|--|--------------------------------------|--------------------------------------|---|
| METAL1 drw | <input checked="" type="radio"/> x <input type="radio"/> y | 1 <input type="checkbox"/> Forbidden | 3 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |
| METAL2 drw | <input type="radio"/> x <input checked="" type="radio"/> y | 3 <input type="checkbox"/> Forbidden | 1 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |
| METAL3 drw | <input checked="" type="radio"/> x <input type="radio"/> y | 1 <input type="checkbox"/> Forbidden | 3 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |
| METAL4 drw | <input type="radio"/> x <input checked="" type="radio"/> y | 3 <input type="checkbox"/> Forbidden | 1 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |
| METAL5 drw | <input checked="" type="radio"/> x <input type="radio"/> y | 2 <input type="checkbox"/> Forbidden | 4 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |
| METAL6 drw | <input type="radio"/> x <input checked="" type="radio"/> y | 4 <input type="checkbox"/> Forbidden | 2 <input type="checkbox"/> Forbidden | 1 <input checked="" type="checkbox"/> Forbidden |

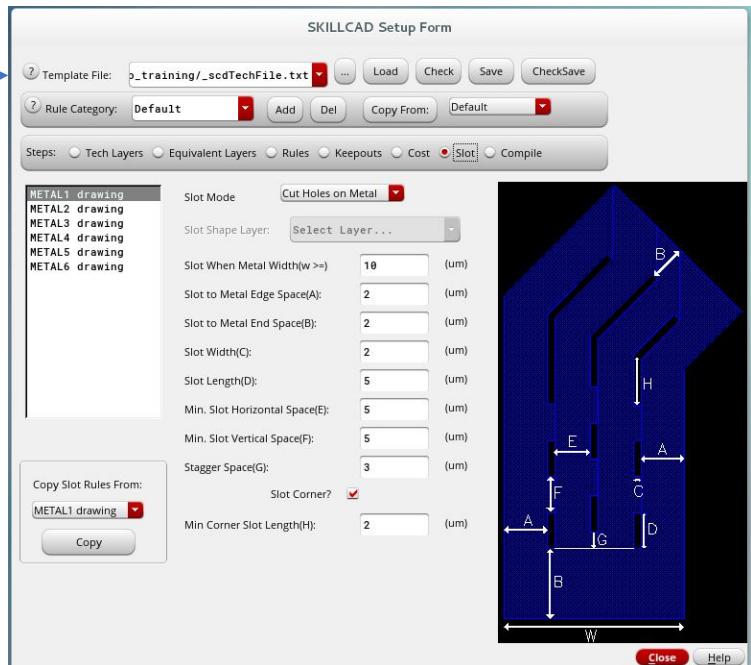
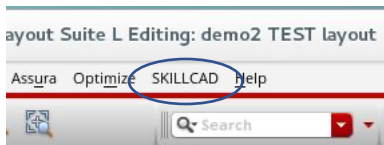
| Via Layer | Cost |
|-----------|------|
| VIA12 drw | 8 |
| VIA23 drw | 8 |
| VIA34 drw | 12 |
| VIA45 drw | 15 |
| VIA56 drw | 20 |

Recommendations for a good route result:

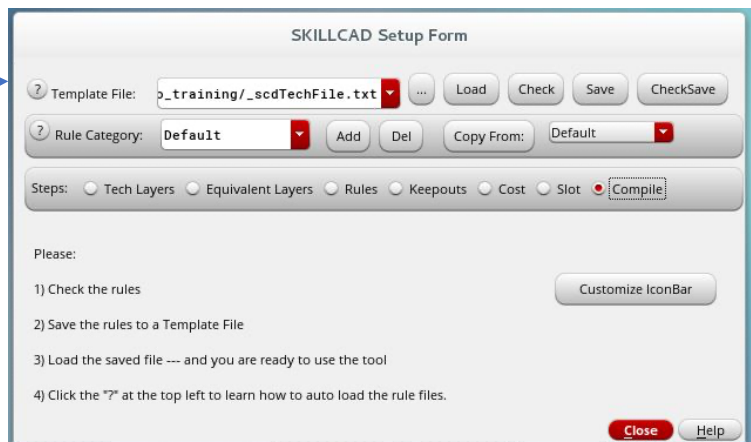
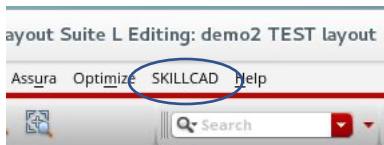
1. Set the cost of non-preferred direction 1-2 times bigger than that of preferred direction.
2. Set the cost of a via layer 1-2 times bigger than cost of non-preferred direction of the via metals.
3. Avoid setting layer cost to 0.

Close Help

SKILLCAD Setup Metal Slotting Parameters



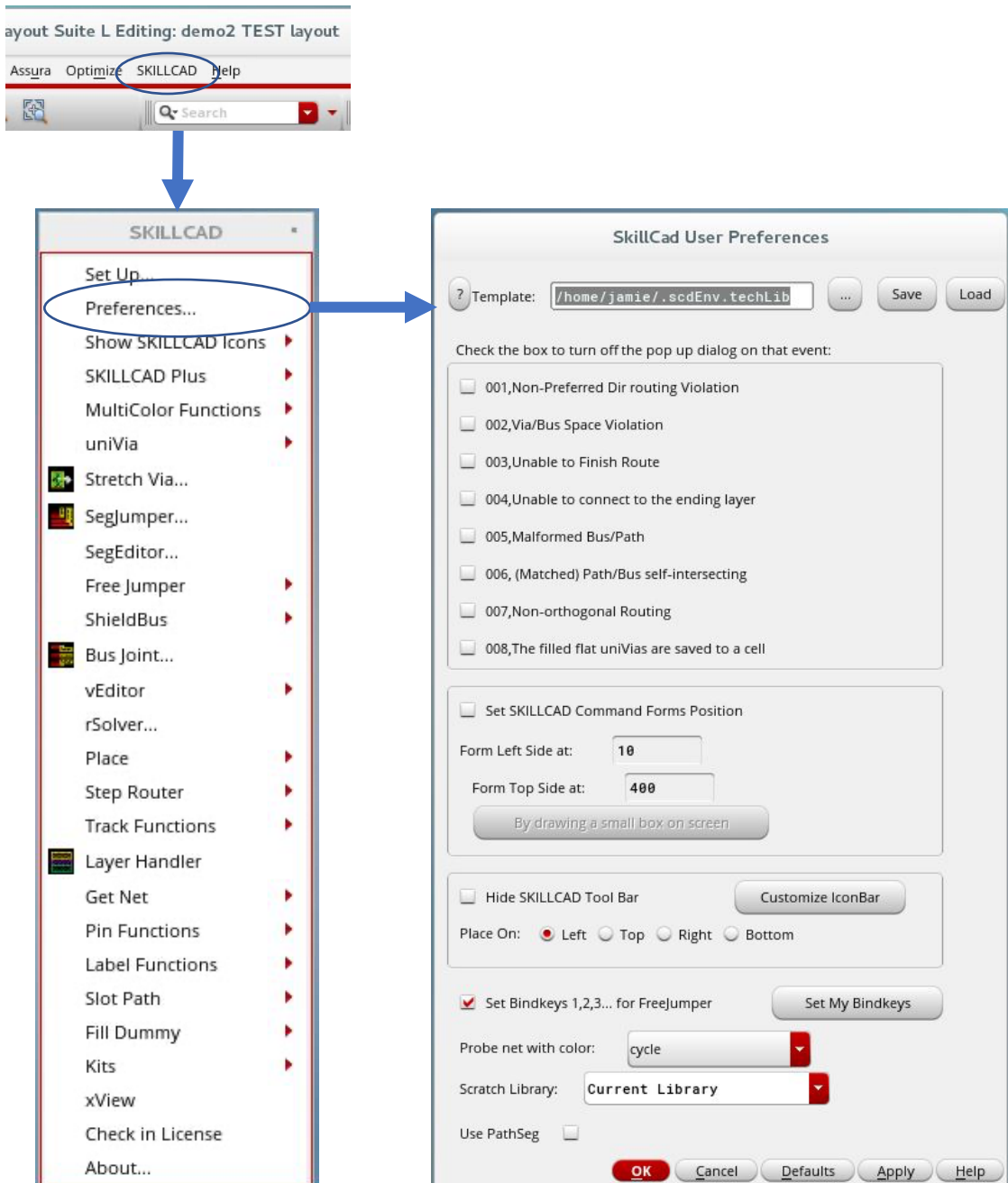
SKILLCAD Compiling The Setup File



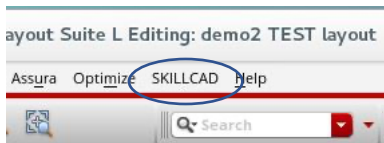
SKILLCAD Customizing The Icon Bar



SKILLCAD Setting Up User Preferences

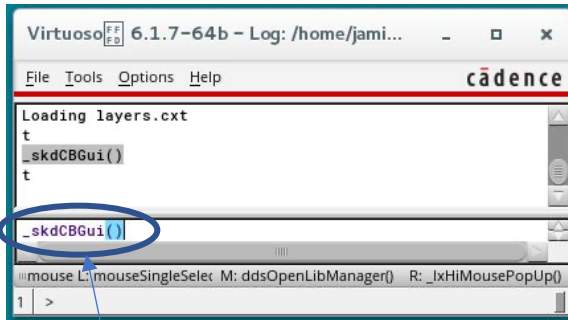


SKILLCAD Complete Setup



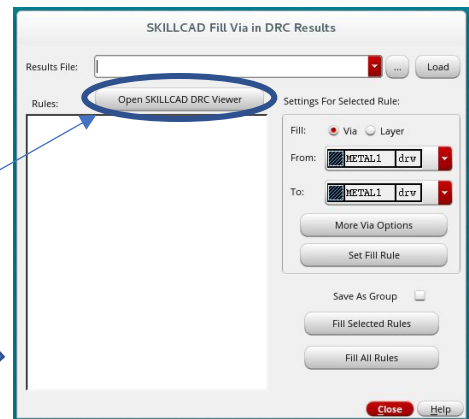
A screenshot of the SKILLCAD Setup Form. The form has a title bar 'SKILLCAD Setup Form'. It contains several sections: 'Template File' with a dropdown menu showing 'p_training/_scdTechFile.txt' and buttons 'Load', 'Check', 'Save', and 'CheckSave'; 'Rule Category' with a dropdown menu showing 'Default' and buttons 'Add', 'Del', and 'Copy From'; 'Steps' with radio buttons for 'Tech Layers', 'Equivalent Layers', 'Rules', 'Keepouts', 'Cost', 'Slot', and 'Compile'; 'Technology Library' with a dropdown menu showing 'techLib'; 'Layout Grid(um)' with a text box showing '0.005'; 'DB Unit / um' with a dropdown menu showing '1000'; a button 'Get Basic Initial Setup From Virtuoso Tech File'; a checkbox 'Use Standard Via defined in Virtuoso Techfile (Recommended)'; and a text area 'Brief Description for the Technology and Rule Category:' with the text 'techLib SKILLCAD Setup'. At the bottom right are 'Close' and 'Help' buttons.

SKILLCAD DRC Viewer

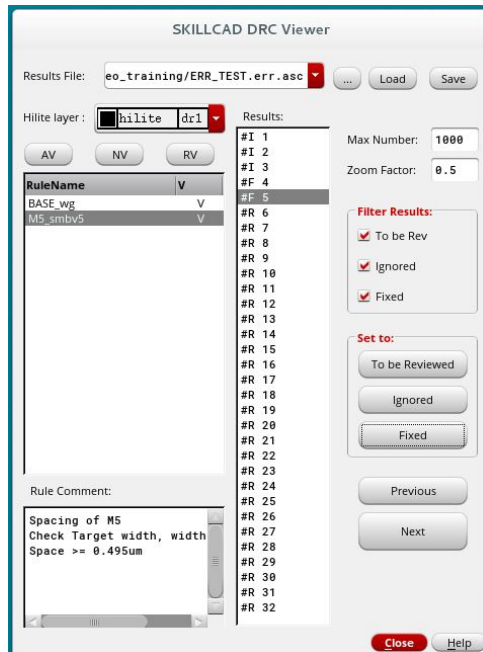


Type `_skdCBGui()` on the command line in the CIW.

This brings up the SKILLCAD Fill Via in DRC Results form.

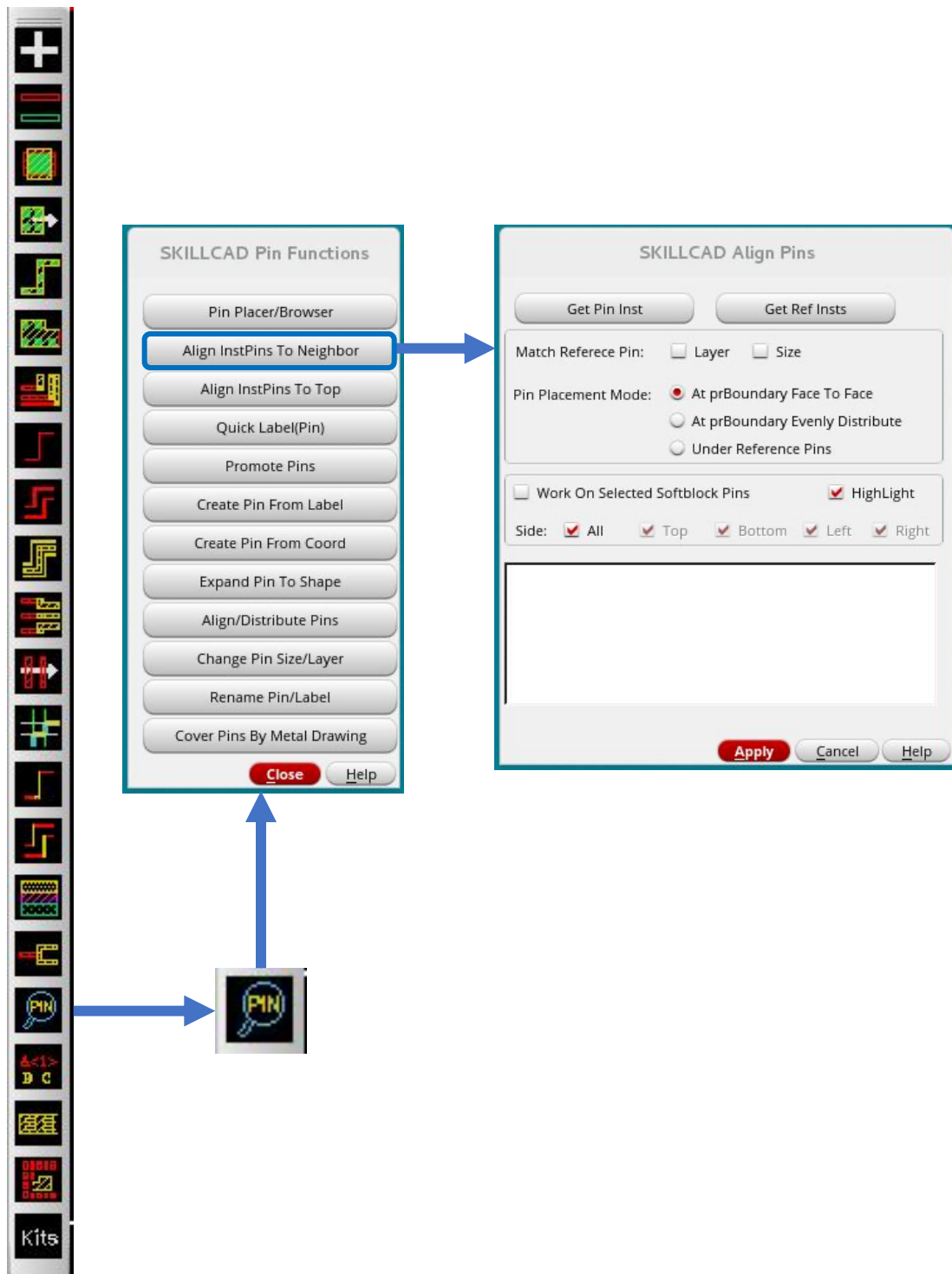


Click on Open SKILLCAD DRC Viewer.

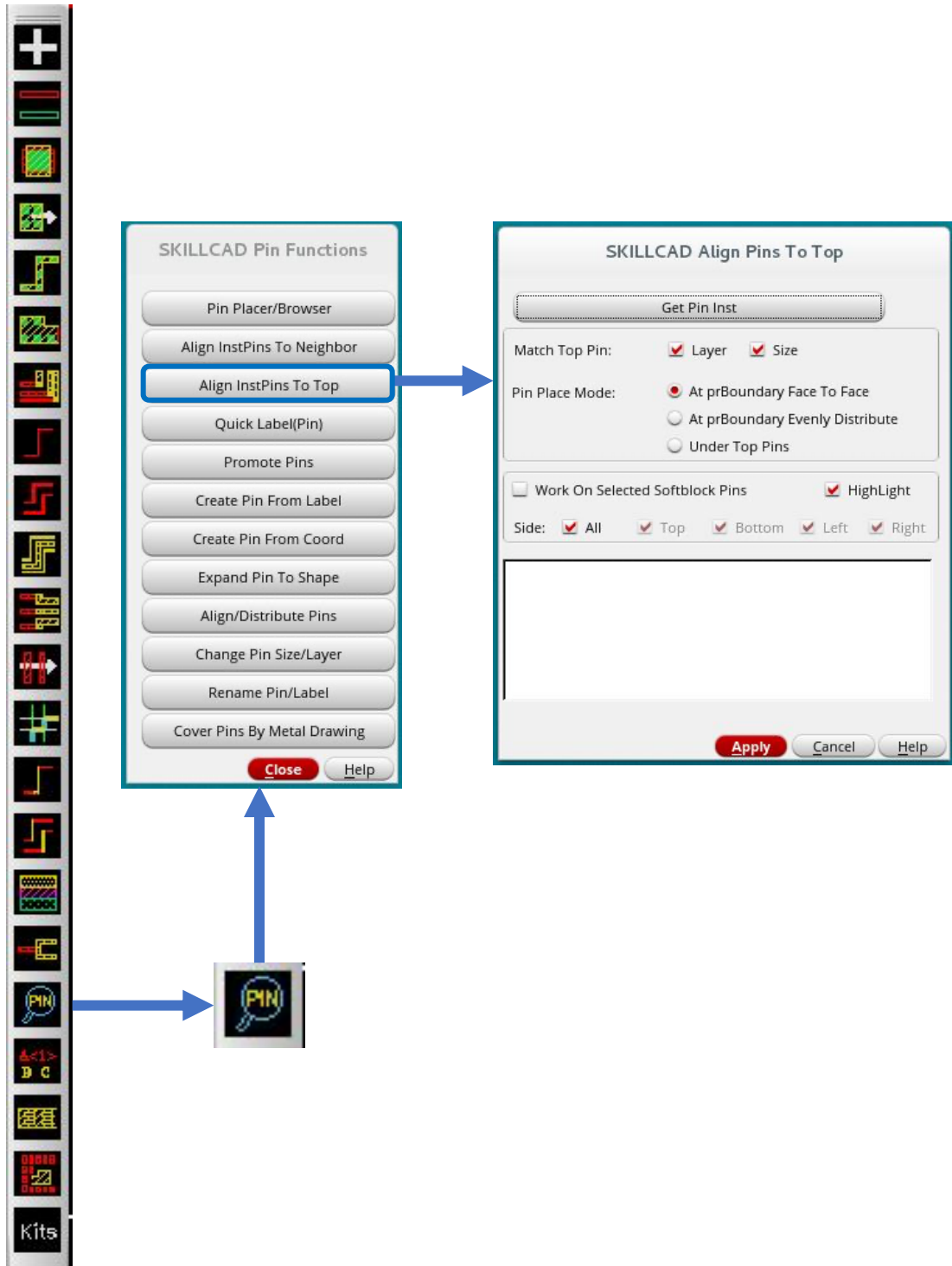


This brings up the SKILLCAD DRC Viewer form.

SKILLCAD Align Instance Pins to Neighbor



SKILLCAD Align Instance Pins to Top




How To Use The SKILLCAD Index Guide

The SKILLCAD Index Guide was developed to help designers to know what SKILLCAD Commands are available and where to find the commands on the SKILLCAD tool bar or menu. It also contains a brief description of the commands, indicates which commands are most often used by layout designers, and which commands should work completely or partially in advanced nodes (N10, N7, N5, etc.). The most useful commands are highlighted in yellow, and the commands that can be used in advanced nodes are designated with an Asterisk (*). Each indexed and linked command also calls a page containing links for all the available training materials for that command (PDF, Word Document or PowerPoint Presentation, and video). These are the same training materials available from the SKILLCAD Topical Guide. A link on the first page of the Index Guide will call the Topical Guide. Both guides are available to help a designer know how to use the SKILLCAD functions.

To use the Index Guide, just click on the SKILLCAD command in the index pages. The command link will call the page showing where the command is found on the SKILLCAD tool bar or menu, and what the next level menu or form contains. This page also contains links to the training materials and video. In a few cases, a command will be listed in the index pages, but is not yet linked to another page. This is usually a new command that does not yet have training materials. The index section on SKILLCAD Setup contains training materials for setting up the technology file, used by the SKILLCAD tools.

Example: Select Bus Connect(BusJoint) in the guide. This will take you to the page showing how to access the command, as well as links to the training materials.

| | | |
|---|---|--|
|  | V-Editor | |
| | BusTap | Create taps on bus by V-Line |
| | Bus Connect(BusJoint) * | Connect bus by order, net names |
| | Bridge * | Change layers for part of bus/net |
| | Distribute Bus | Evenly distribute bus in a range |
| | Align BusEnd * | Stretch/Align bus end with right path end spacing rule |
| | Bus continue | Continue connections |
| | BreakBus | Split bus with right path end spacing rule |
| | changeLayer | Change Metal layer and meanwhile update connected vias |
| | Detour | Make turns on bus |

