MAGNETISiM

Defining Winding: Round

GUI Overview

TAB MENU

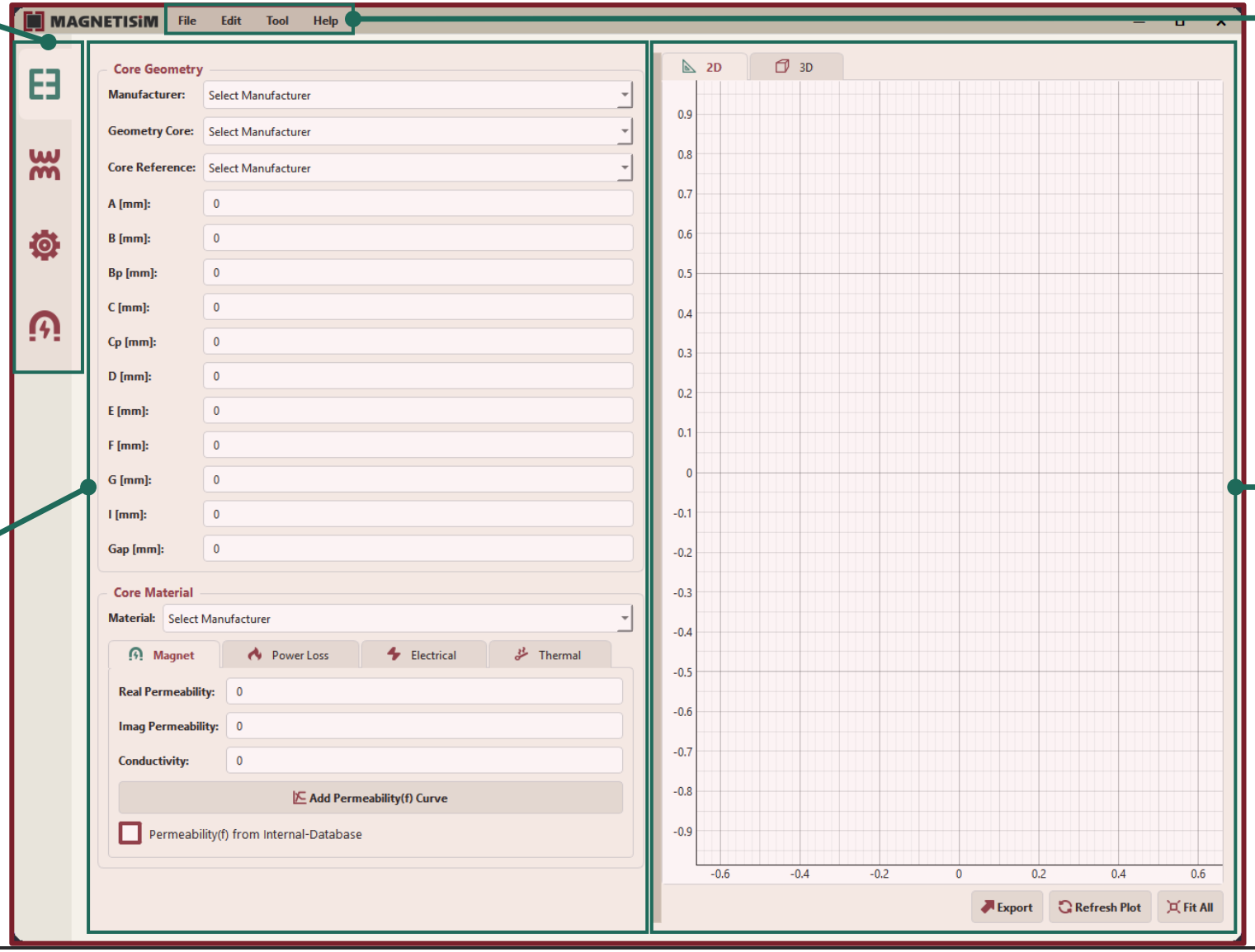
Core Geometry Tab (Ctrl+1)

Winding Geometry Tab (Ctrl+2)

Sim Config Tab (Ctrl+3)

Magnet Tab (Ctrl+4)

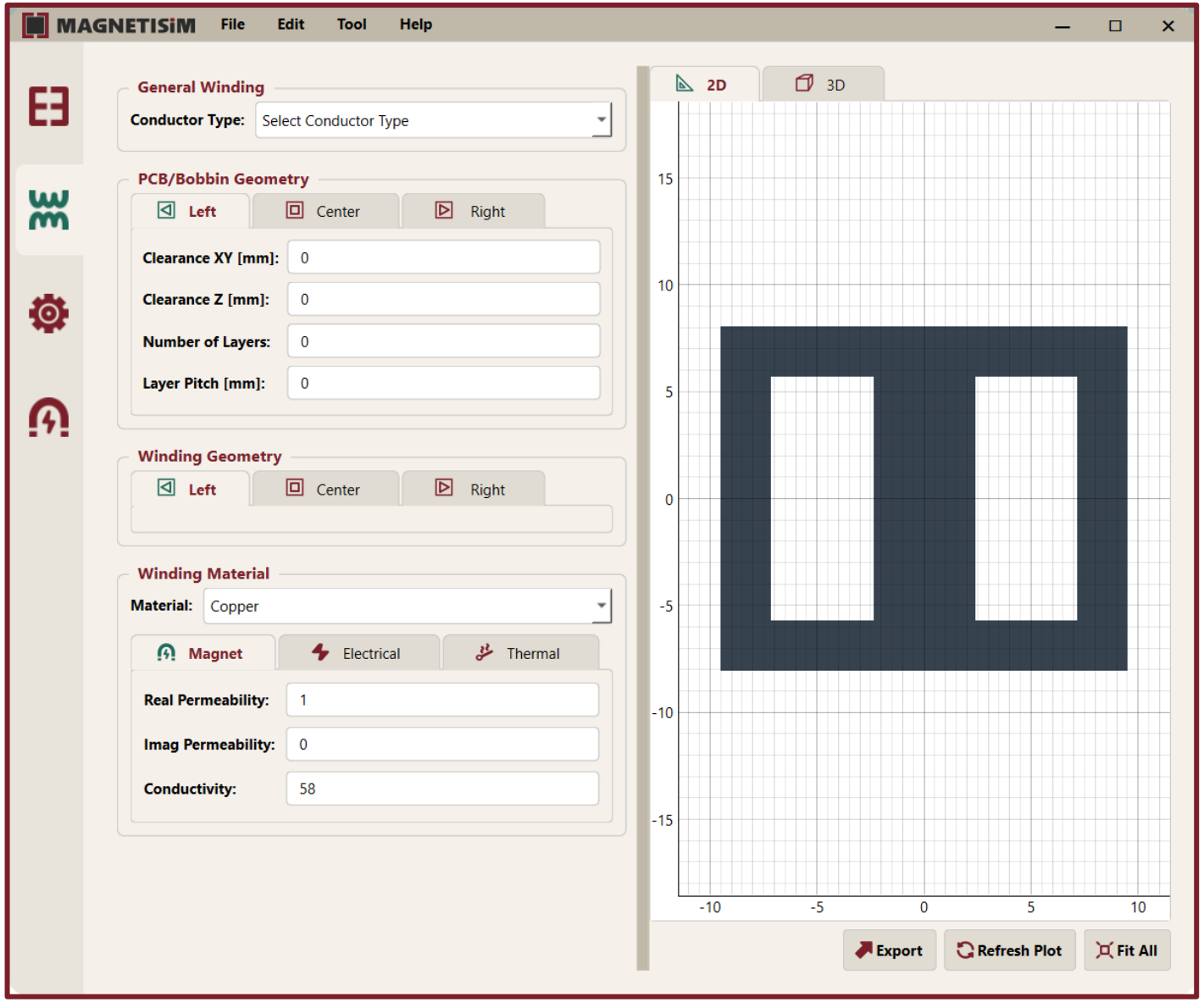
INPUT FRAME



BAR TOOL

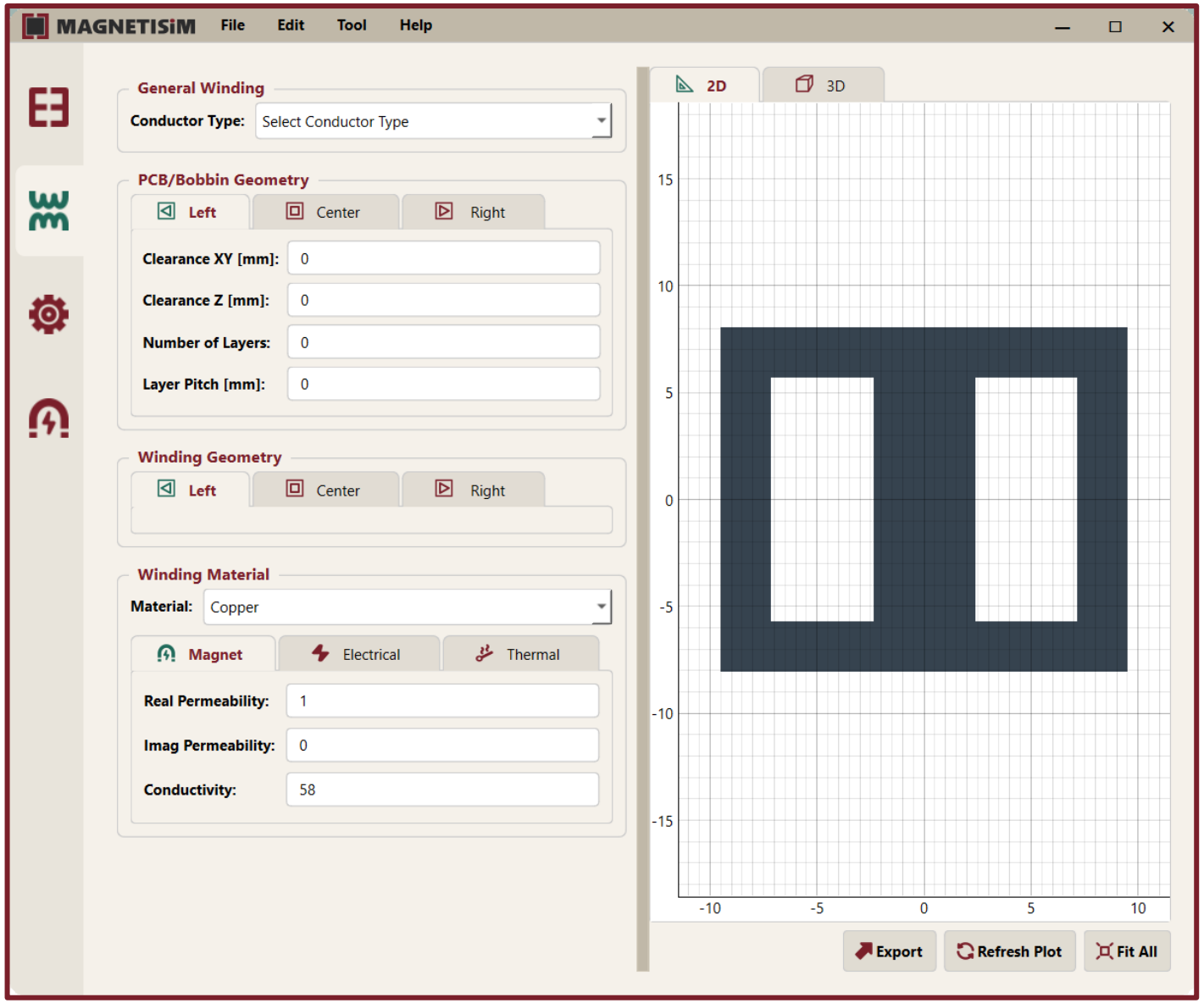
MODELER WINDOW

Winding Geometry Selection – PCB



Before configuring the winding details, make sure your core geometry is properly selected and visualized in the modeler window.

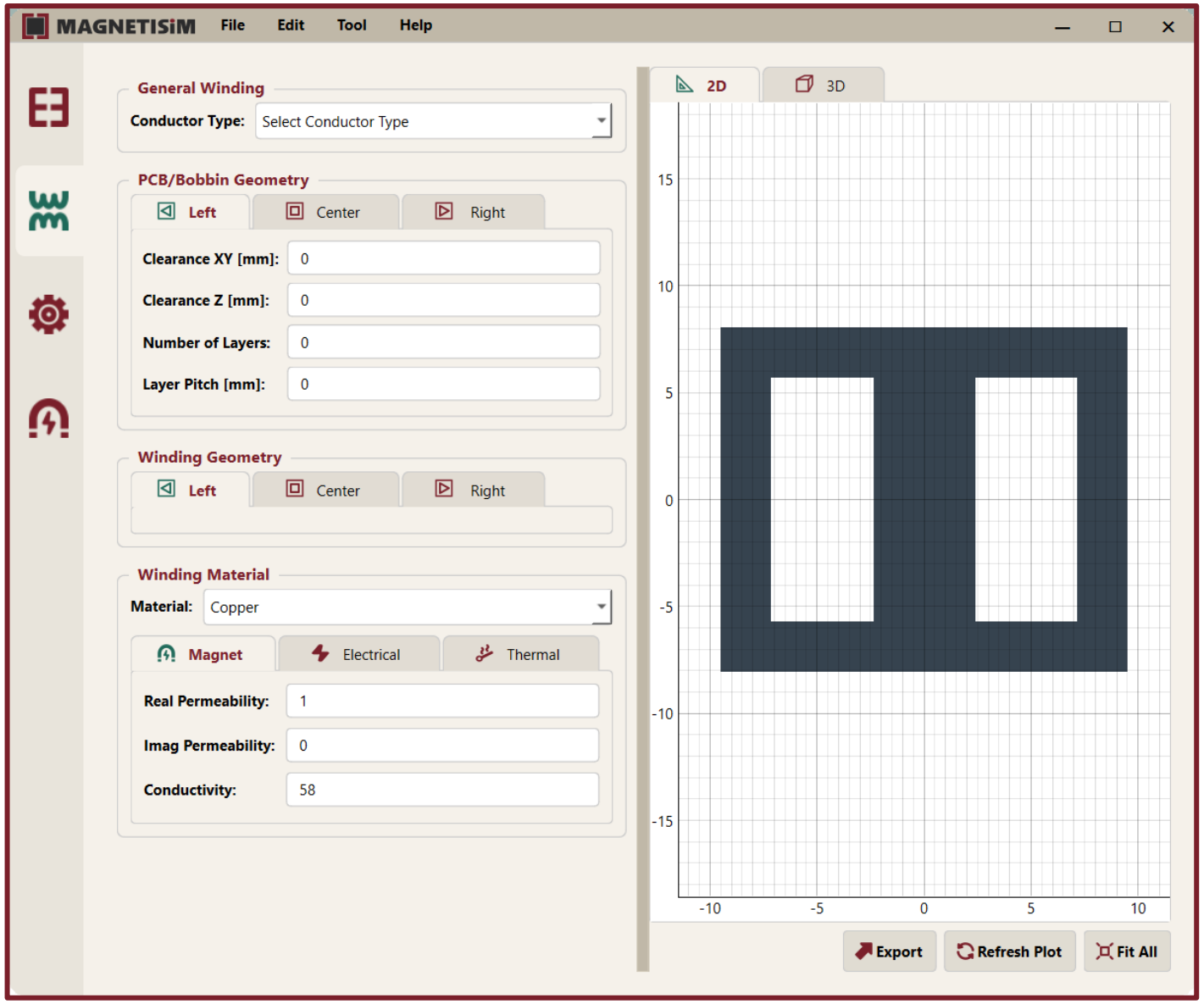
PCB/Bobbin Geometry



Once in the **Winding Geometry tab**, the first step is to configure the overall boundaries of your board in the **PCB/Bobbin Geometry section**.

- **Clearance XY** - This sets the horizontal safety margin or distance between the PCB traces and the core walls.
- **Clearance Z** - This defines the vertical safety distance.
- **Number of Layers** - Here you specify the total number of conductive copper layers your PCB design will have.
- **Layer Pitch** - This dictates the vertical separation between each of those PCB layers.

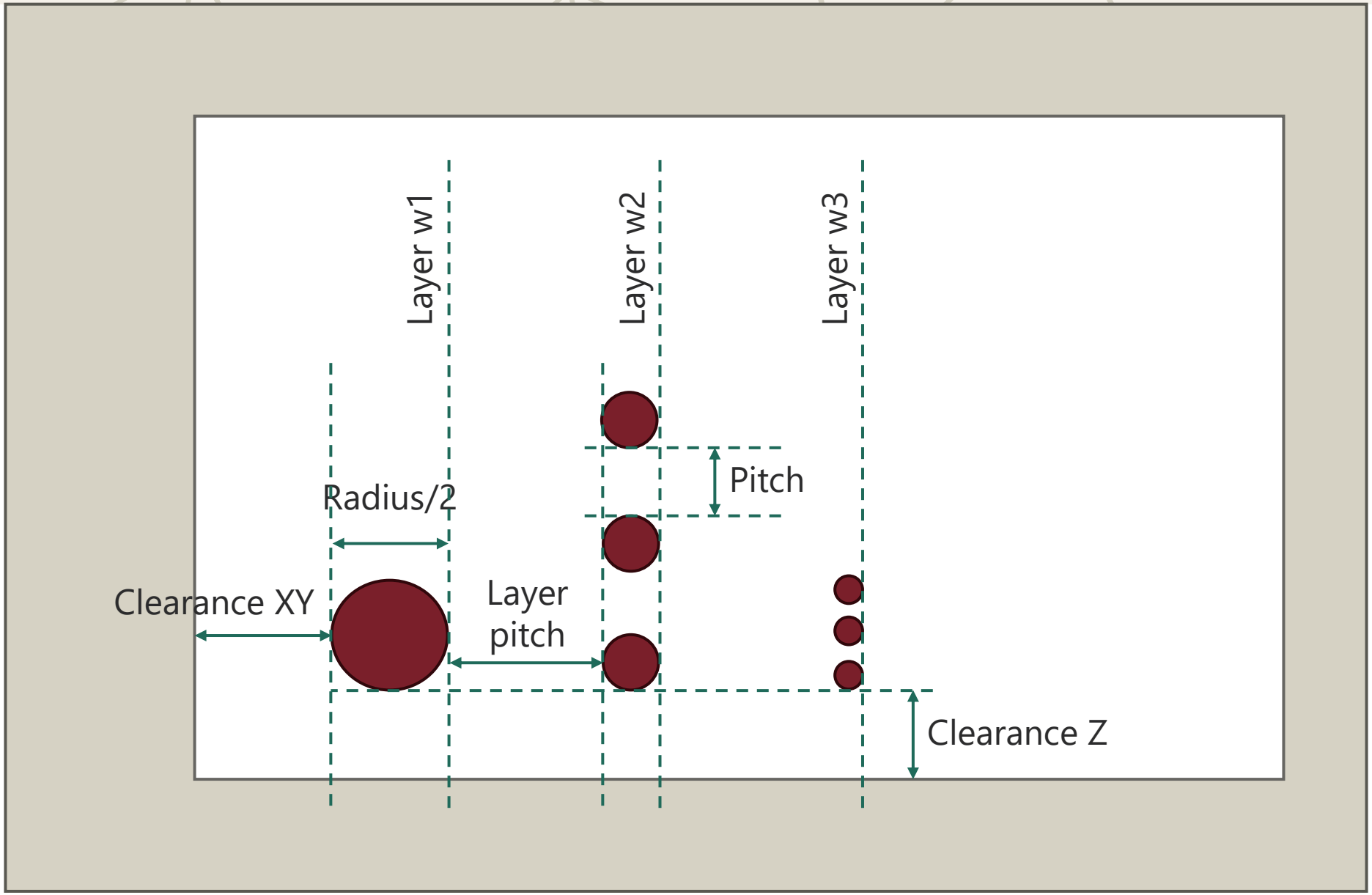
Winding Geometry



After defining the board structure, move to the **Winding Geometry section** to specify the physical dimensions of the tracks.

- **Distribution** - Distribution of the turns (Vertical or Horizontal).
- **Nturns** - The number of turns per layers.
- **Copper Radius** - The horizontal width of the copper trace.
- **Pitch** - The spacing between adjacent turns on the exact same layer.

Round Distribution parameters



Example

PCB/Bobbin Geometry

Left | Center | Right

Clearance XY [mm]:	1
Clearance Z [mm]:	1
Number of Layers:	3
Layer Pitch [mm]:	0.3

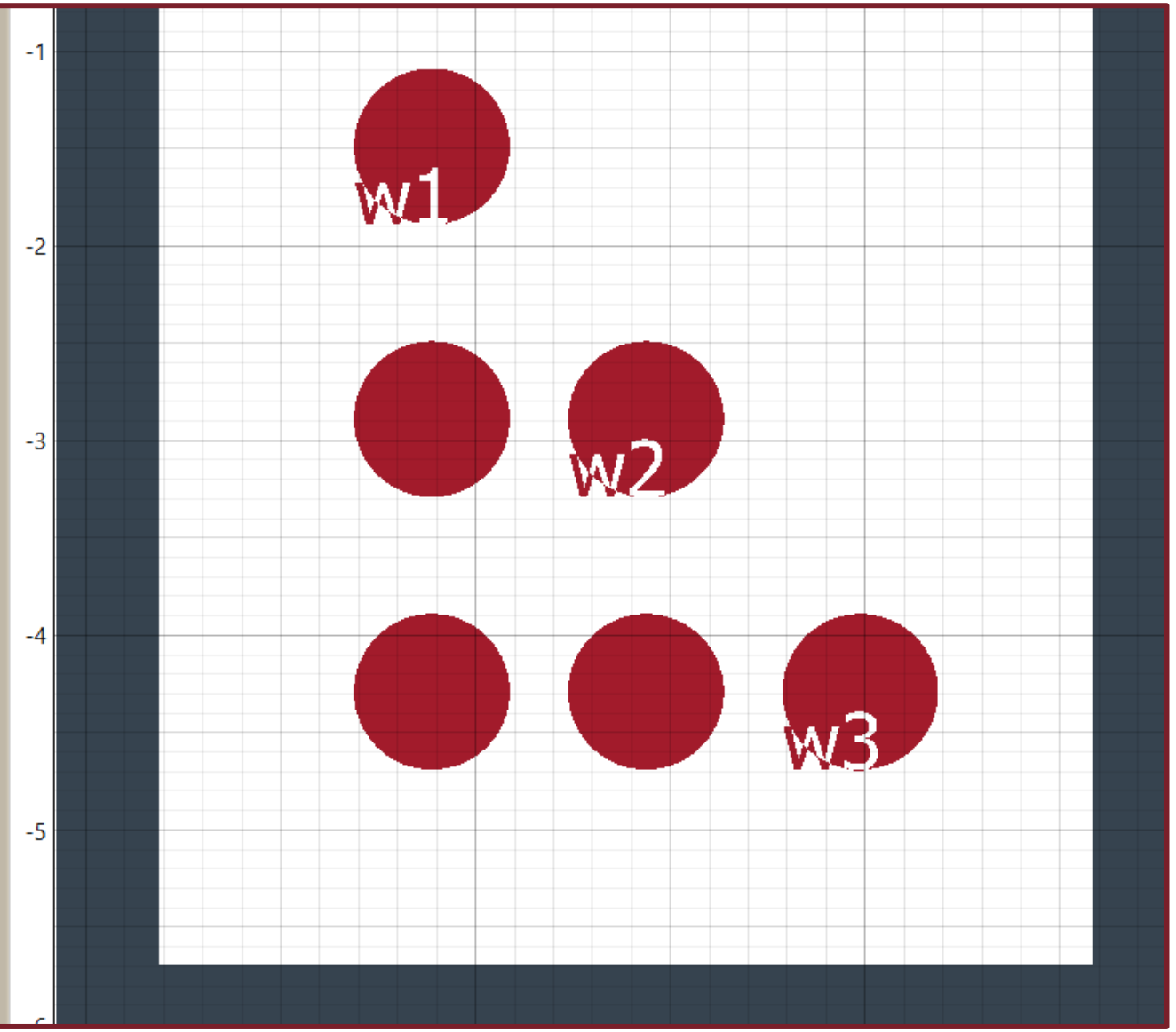
Winding Geometry

Left | Center | Right

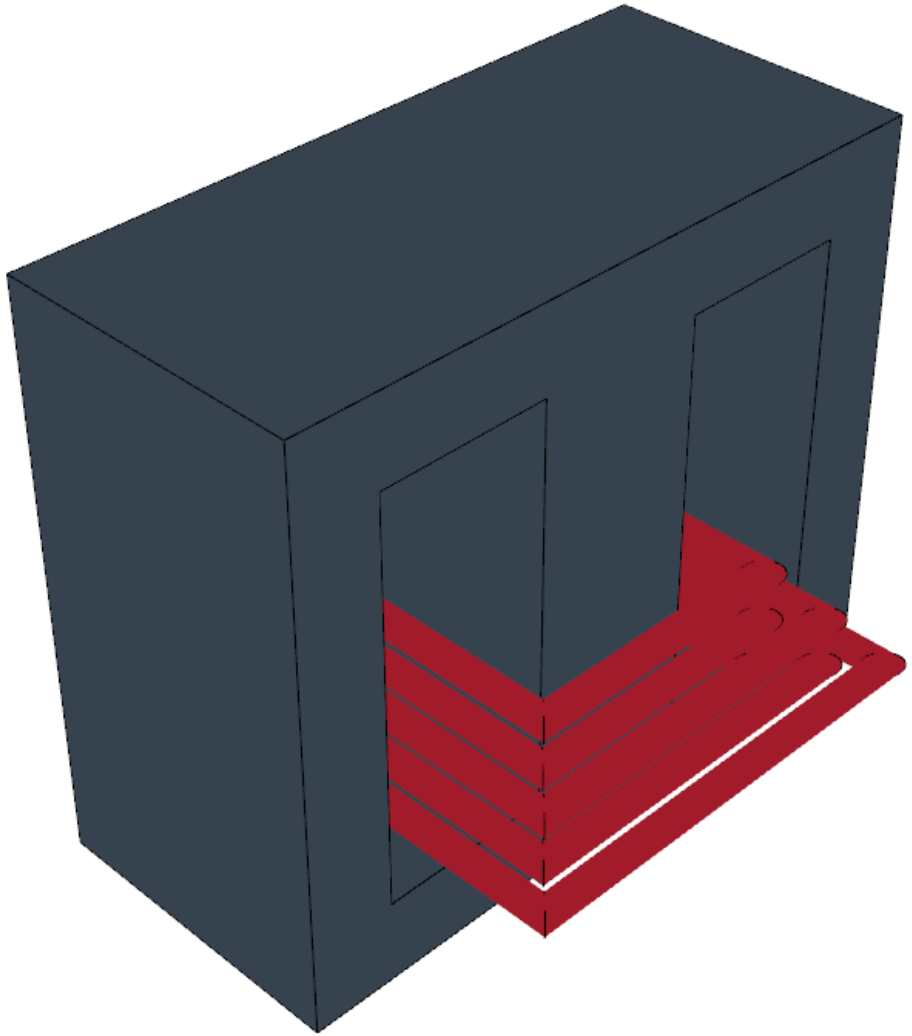
Distribution:	V
Nturns:	3,2,1
Copper Radius [mm]:	0.4
Pitch [mm]:	0.6

Winding Material

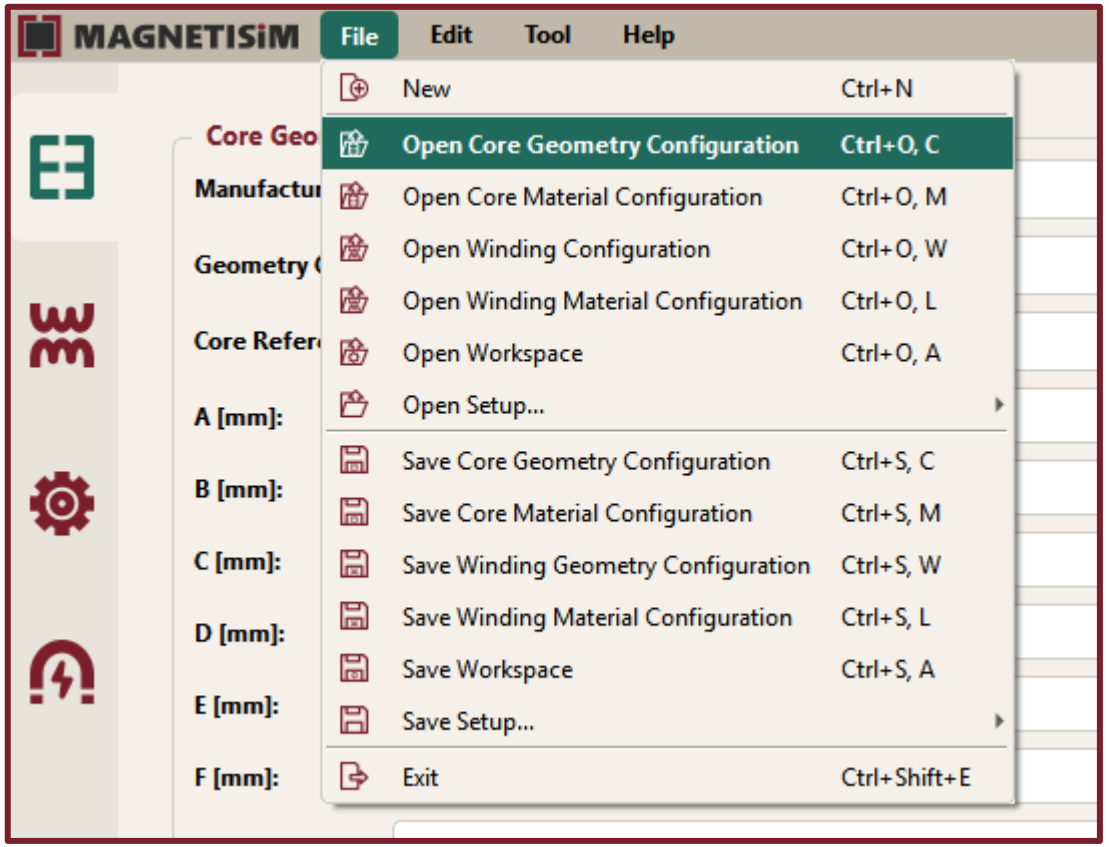
Material: Copper



3D View of the example



Winding: Round – .json

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{
    "ConductorType": "Round",
    "ClearanceXY_Left": 1.0,
    "ClearanceXY_Center": 0.0,
    "ClearanceXY_Right": 1.0,
    "ClearanceZ_Left": 2.0,
    "ClearanceZ_Center": 10.0,
    "ClearanceZ_Right": 1.0,
    "Nlayers_Left": 3,
    "Nlayers_Center": 3,
    "Nlayers_Right": 1,
    "LayerPitch_Left": [
        # per layers,
    ],
    "LayerPitch_Center": [
        # per layers,
    ],
    "LayerPitch_Right": [
        # per layers,
    ],
    "Distribution_Left": "V",
    "Distribution_Center": "V",
    "Distribution_Right": "V",
    "Nturns_Left": [
        # per layers,
    ],
    "Nturns_Center": [
        # per layers,
    ],
    "Nturns_Right": [
        # per layers,
    ],
..... Continue→
```

```
 "CopperRadius_Left": [
        # per layers,
    ],
    "CopperRadius_Center": [
        # per layers,
    ],
    "CopperRadius_Right": [
        # per layers,
    ],
    "Pitch_Left": [
        # per layers,
    ],
    "Pitch_Center": [
        # per layers,
    ],
    "Pitch_Right": [
        # per layers,
    ],
    "Edge_Left": [
        # per layers,
    ],
    "Edge_Center": [
        # per layers,
    ],
    "Edge_Right": [
        # per layers,
    ]
}
```

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