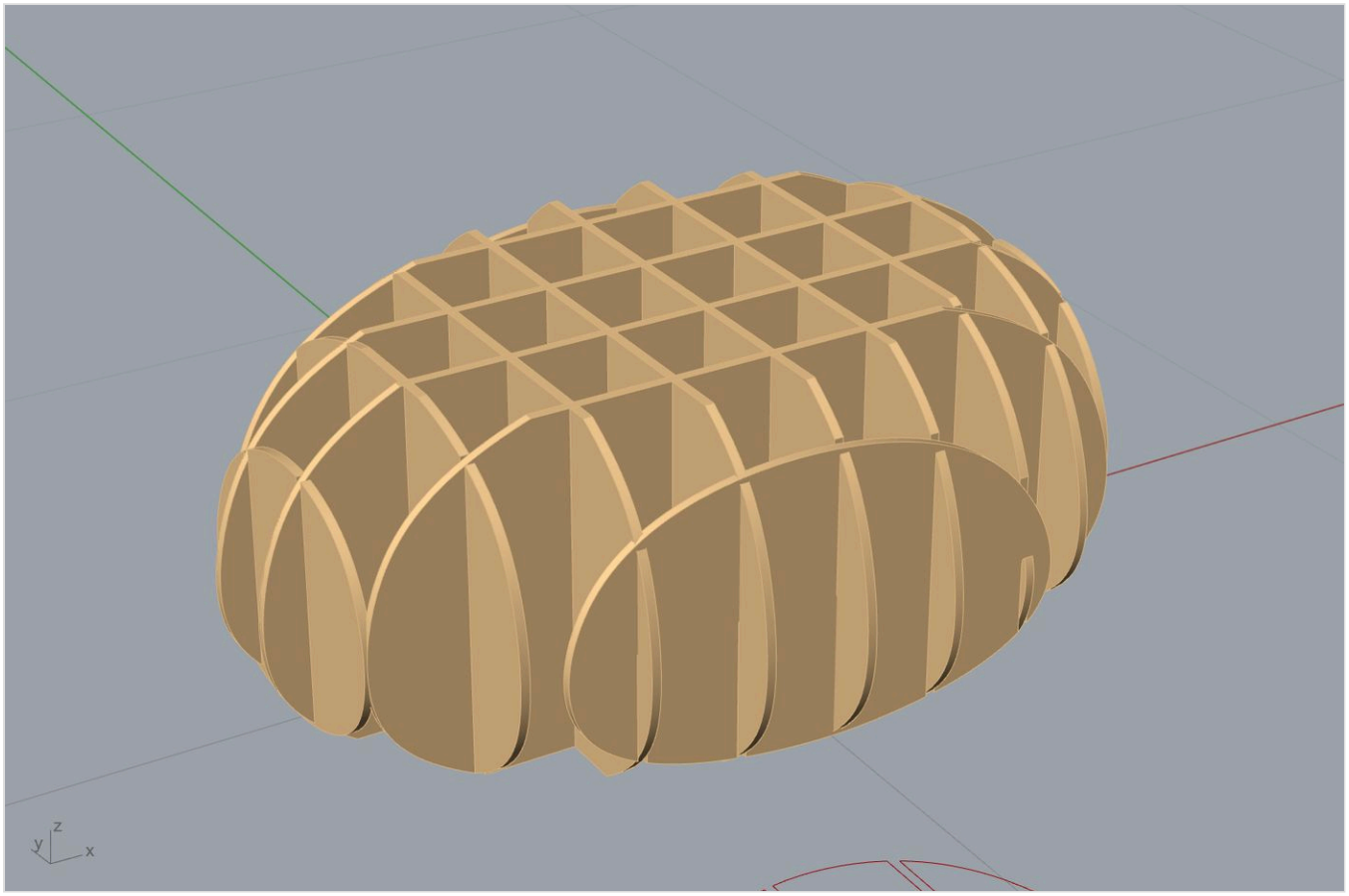
DIGITAL FABRICATION

WAFFLE STRUCTURE

Interlocking slotted ribs from any solid, laid flat and labelled for the laser



FREE | RHINO 7 · RHINO 8 | NATIVE COMPONENTS ONLY | VERSION 1.0 · NOVEMBER 2026

Any closed solid is sliced by ribs in two directions. At every crossing each rib gets a half-height slot (X ribs from one side, Y ribs from the other) with a clearance for the sheet. All parts are laid flat in a grid and engraved with their name, ready for cutting.

Free to use in your own projects, commercial ones included. Please do not resell or re-upload the files: share the link instead.

HOW TO USE

1. Open the file: a sample form appears with its waffle.
2. Right-click 'Form' > Set one Brep and pick your closed solid.
3. Set the number of ribs in X and Y and the sheet thickness.
4. Set slot clearance, layout gap, parts per row and label height.
5. Read 'Cutting list', bake 'Cut curves' (cut) and 'Engrave curves' (engrave).

BAKE

Cut curves | Engrave curves

GOOD TO KNOW

- Do a test cut for the clearance: it depends on the machine and the material.

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INPUTS

PARAMETER	RANGE	DEFAULT
Ribs X	2 – 30	9
Ribs Y	2 – 30	6
Sheet thickness (m)	0.002 – 0.030	0.012
Slot clearance (m)	0.0000 – 0.0020	0.0002
Layout gap (m)	0.005 – 0.200	0.060
Parts per row	1 – 20	5
Label height (m)	0.005 – 0.100	0.030

GEOMETRY YOU CAN REPLACE

Form · Brep

RESULTS AT DEFAULT VALUES

CUTTING LIST

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Parts: 15  (X 9, Y 6)
Cut length: 62.97 m
Sheet: 12.0 mm
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INSIDE THE DEFINITION

STAGES, LEFT TO RIGHT AND TOP TO BOTTOM

1 INPUT

2 FRAME bounding box of the form

3 RIBS positions centred in each bay, one plane per rib

4 SECTIONS the form cut on every rib plane

5 SLOTS at every crossing: half height. X ribs cut from the top, Y ribs from the bottom

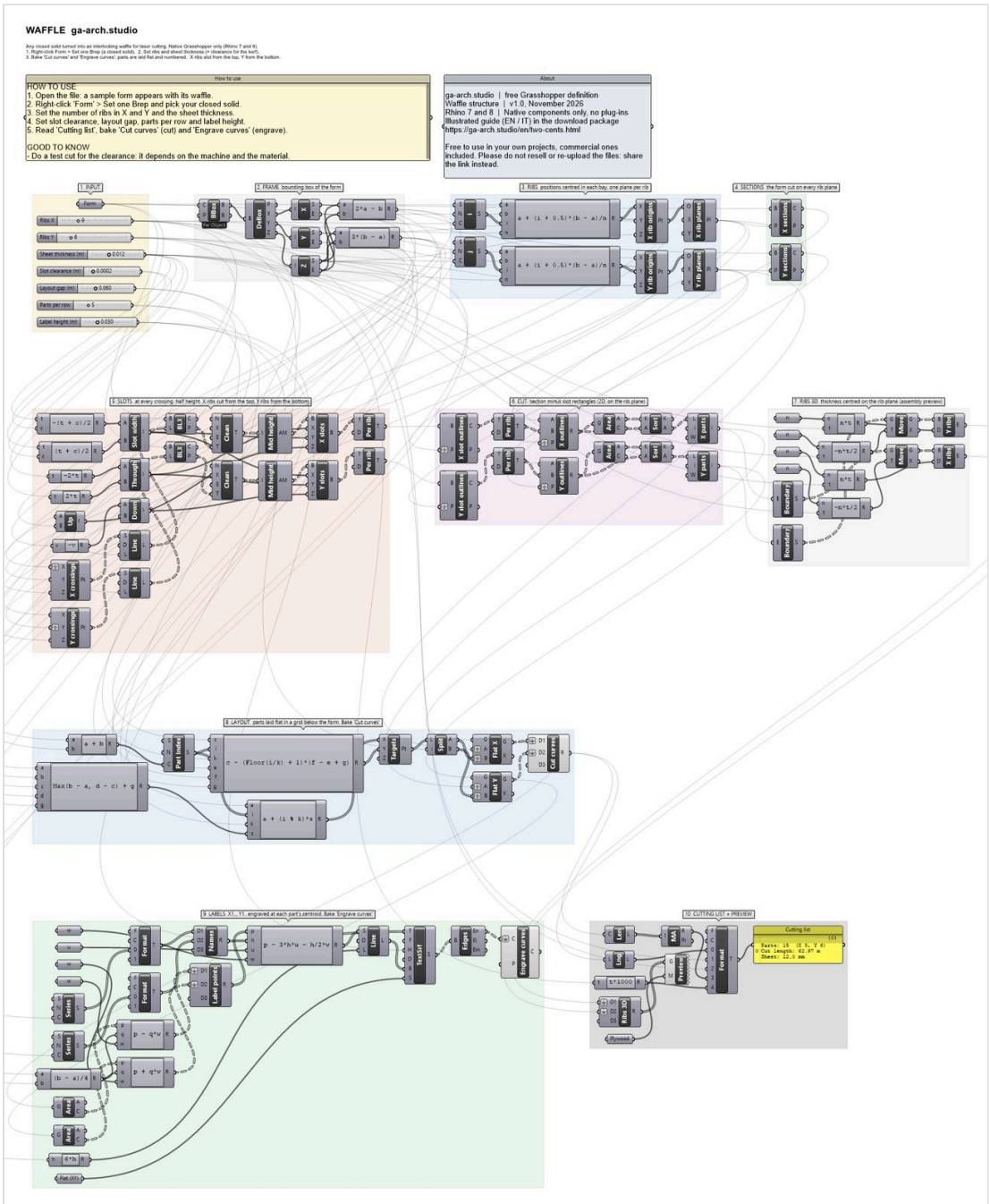
6 CUT section minus slot rectangles (2D, on the rib plane)

7 RIBS 3D thickness centred on the rib plane (assembly preview)

8 LAYOUT parts laid flat in a grid below the form. Bake 'Cut curves'

9 LABELS X1.., Y1.. engraved at each part's centroid. Bake 'Engrave curves'

10 CUTTING LIST + PREVIEW



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