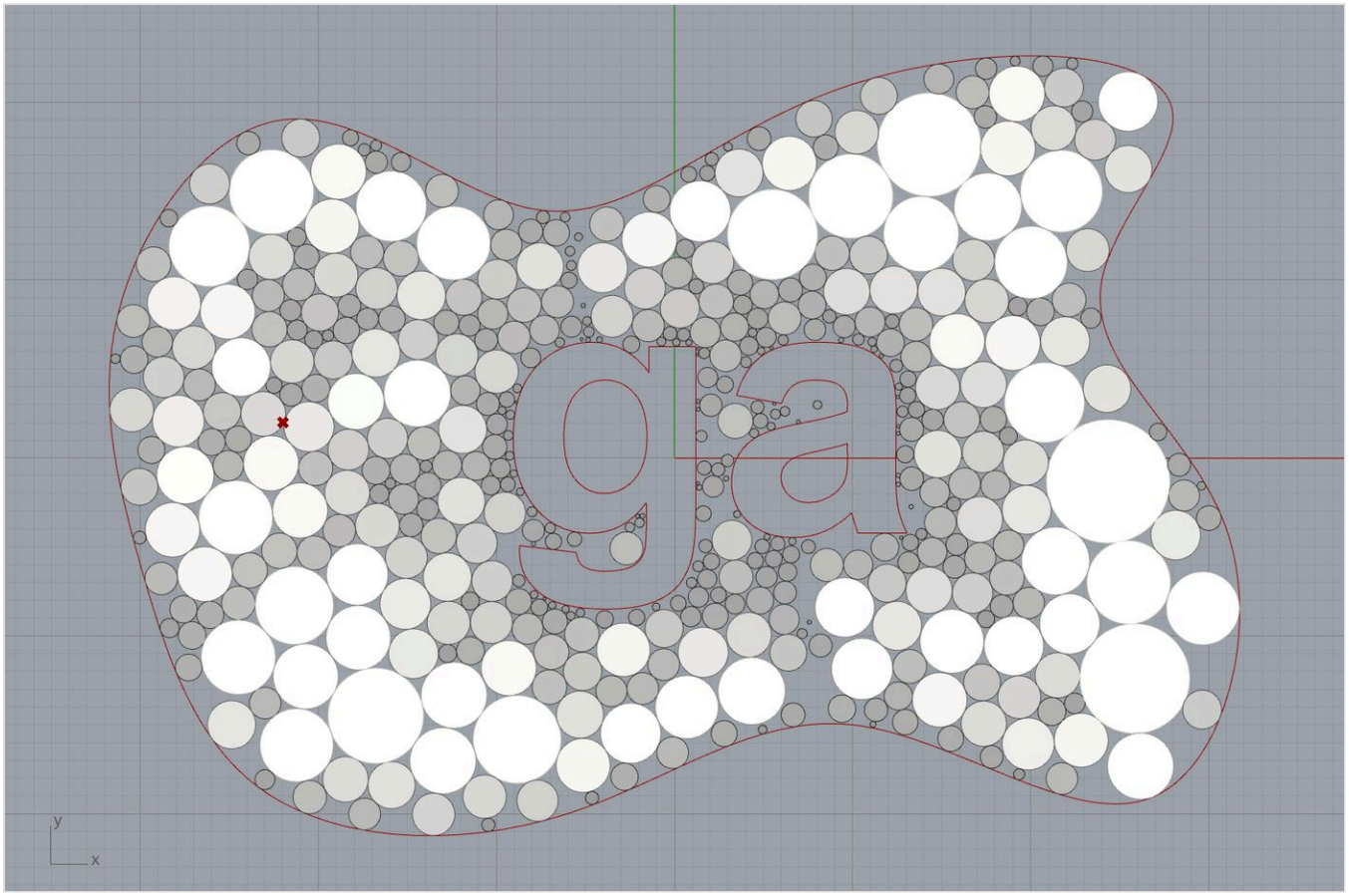
GRAPHICS AND PATTERN

CIRCLE PACKING

Tangent circles like a foam, around parametric text, with Kangaroo



FREE | RHINO 7 · RHINO 8 | NATIVE + KANGAROO2 (INCLUDED) | VERSION 1.0 · NOVEMBER 2026

Circles fill a boundary like bubbles in a foam: every circle touches its neighbours, they are small near the text and the attractor and grow further away, and none is cut by the text or the edge. The text is live: change the words, the font, the height or the rotation.

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: the letters 'ga' surrounded by circles appear.
2. Edit 'Text' and 'Font' (any installed font), move 'Text centre', set height and rotation.
3. Optionally set your own 'Boundary' curve and move the 'Attractor'.
4. Set count, seed, sizes near and far and the gap.
5. Bake 'Circles'.

BAKE

Circles

GOOD TO KNOW

- Kangaroo runs a fixed number of iterations (deterministic): the same inputs give the same pattern.
- Uses Kangaroo2, included with Rhino 7 and 8.

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INPUTS

PARAMETER	RANGE	DEFAULT
Text height	2.00 – 40.00	15.00
Text rotation (deg)	-180 – 180	0
Count	30 – 1500	400
Seed	0 – 100	7
Size near attractor / holes	0.10 – 1.00	0.25
Size far away	0.10 – 1.00	1.00
Gap	0.00 – 1.00	0.00
Max iterations	100 – 20000	4000

GEOMETRY YOU CAN REPLACE

Boundary · Curve | Text · Text | Font · Text | Text centre · Point | Attractor · Point

RESULTS AT DEFAULT VALUES

ITERATIONS

```
4000
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INSIDE THE DEFINITION

STAGES, LEFT TO RIGHT AND TOP TO BOTTOM

1 INPUT

2 TEXT native Text On Surface (flat), outlines joined and centred on 'Text centre'

3 DOMAIN boundary minus holes, each hole joined to the boundary by a thin slit: ONE closed curve

4 SEEDS 4x candidates, weighted pick: dense where circles are small

5 MESH Delaunay of seeds + edge points, triangles outside the domain removed

6 KANGAROO TangentIncircles: incircles of adjacent triangles touch; edge points slide on the domain curve

7 EDGE BUBBLES re-fitted tangent to the boundary / text, as large as the nearest neighbour allows

8 CIRCLES inner + edge bubbles, shrunk to touch the edges; centres outside dropped

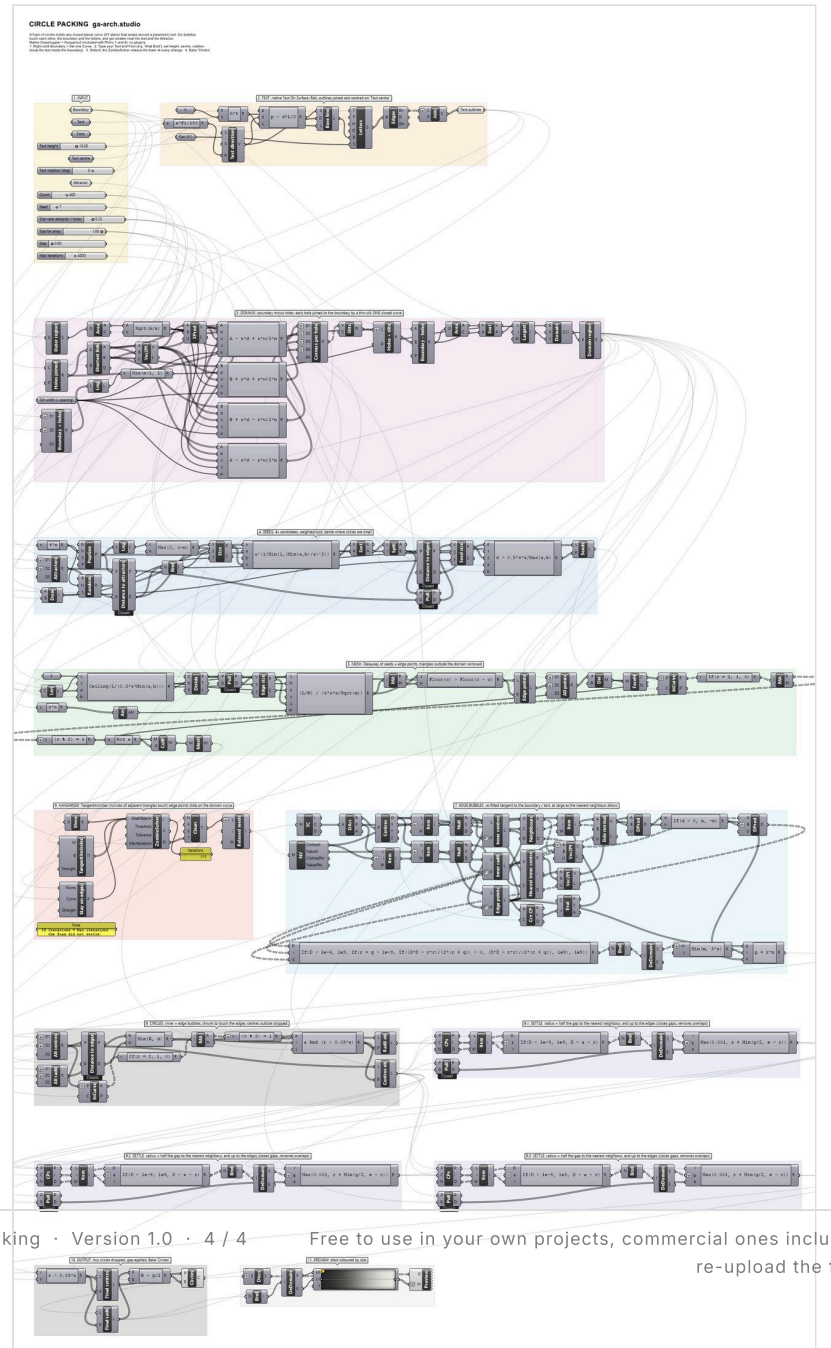
9.1 SETTLE radius + half the gap to the nearest neighbour, and up to the edges (closes gaps, removes overlaps)

9.2 SETTLE radius + half the gap to the nearest neighbour, and up to the edges (closes gaps, removes overlaps)

9.3 SETTLE radius + half the gap to the nearest neighbour, and up to the edges (closes gaps, removes overlaps)

10 OUTPUT tiny circles dropped, gap applied. Bake 'Circles'

11 PREVIEW discs coloured by size



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