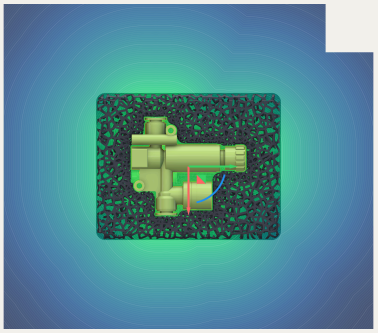
02 / HOLDING FIXTURES GENERATED FROM PART 3D DATA

Nidus

The part builds its own nest.

Nidus generates holding fixtures from a part's 3D data and produces them by 3D printing. No molds, no machining: part-specific nest fixtures delivered through a fully digital workflow, starting from your data.



FEATURES

Projected along one pull direction

The part's 3D shape is projected along a single pull direction and every overhang is removed, so people and robots alike can place and pick without interference.

Surface contact, not points

The part rests on a broad contact area, so no local pressure builds up and scratches and deformation are avoided. A different holding principle from generic pin-and-block fixtures.

Rigid & Elastomeric

Rigid where positioning accuracy matters, elastomeric for parts sensitive to scratches or clamping loads. Lattices with elasticity graded by a field extracted from the part are also possible.

FIG. 1 / OVERHANG REMOVAL ALONG PULL

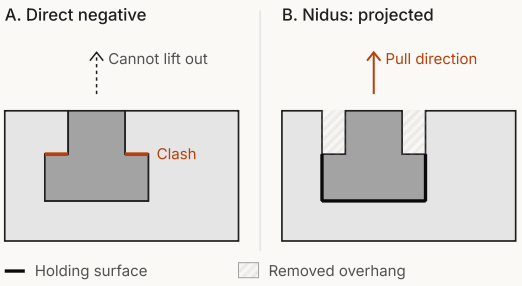
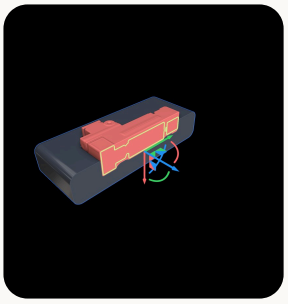


FIG. 2 / FIELD FROM THE PART → ELASTICITY



1. Distance field

Distance from the part surface is computed across the fixture.

2. Map to elasticity

Beam diameter and density follow the distance: soft at the contact face, load-bearing at the perimeter.

3. Lattice generation

A grip optimized for each part, printed as one piece.

SPECIFICATION

Input	Part 3D data; captured by reverse engineering if unavailable
Material	Rigid / Elastomeric / graded-elasticity lattice
Process	3D printing (no molds or machining)
Applications	Feed/discharge nests, inspection fixtures, holding for assembly and painting, transport trays
Lead time	Quoted per project, based on geometry and quantity

PROCESS

01
Receive 3D data
Or capture the geometry by reverse engineering

02
Confirm requirements
Pull direction, holding surfaces, material (Rigid / Elastomeric)

03
Nidus generation & review
Review the result in 3D and adjust as needed

04
Manufacturing & delivery
3D printed and verified with the actual part

Send us your part's 3D data and review the Nidus result.

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