



Parts rarely arrive ready to handle. They come dumped in totes, overlapping in bins, stacked at random angles, or moving past on a stream. Traditional automation forces structure onto this mess with vibratory bowls, custom nests, and tray loaders, each one tooled for a single part and brittle when the part changes. The result is expensive, slow to retool, and idle whenever the mix shifts.

Relling picks straight from the clutter. A 3D vision system resolves each part's pose in a crowded bin, the cell plans a collision-free grasp and retraction, and the same cell reconfigures in software when the part changes. No new feeders, no rebuilt nests. Each part program is qualified against representative bins at Relling HQ before the cell ships, then tuned on-site within the install window.

AT A GLANCE

Footprint	~2 × 2 m
Payload	12.5 kg
Reach	1.3 m
Placement	±0.05 mm
Power	Single-phase
Install	≤ 2 weeks

## 01 The work we take on

### THE TASK PROFILE

- A**

**3D pose estimation**

Structured-light and stereo vision recover full six-degree pose for each candidate part, even when surfaces are shiny, dark, or partially occluded by neighbors.
- B**

**Clutter & overlap**

The cell reasons about overlapping and entangled parts, selecting the most accessible pick and re-imaging after disturbance rather than assuming a clean layout.
- C**

**Grasp planning**

Grasp candidates are generated per part geometry, ranking stable holds for fingers, suction, or magnetic tooling against reachability and bin-wall clearance.
- D**

**Collision-free retraction**

Pick and lift paths are planned to clear bin walls, fixtures, and remaining parts, so a deep or angled pick exits without snagging or scattering the pile.
- E**

**Mixed parts**

One cell handles several part types in the same bin, classifying each by type before picking and routing it to the correct downstream destination.

## 02 Why now

### THE CASE FOR MOVING NOW

- Retire the part-feeding tooling**

Vibratory bowls, nests, and tray loaders each serve one part and demand weeks of mechanical retooling when the part changes. Picking straight from the bin removes that tooling entirely, along with its lead time, floor space, and recurring change cost.
- Cut the labor at the bin**

Hand-feeding, sorting, and singulating parts is repetitive, ergonomically hard, and increasingly unstaffed. A vision-guided cell absorbs that work directly, holding throughput steady across shifts without the headcount these stations have always required.
- Built for high mix**

When part numbers turn over constantly, fixed feeding never amortizes. A cell that reconfigures in software picks today's part and the next one from the same bin, qualified at HQ and tuned on-site, so new parts come online in software rather than steel.

### OEMS WE WORK WITH



### 03 What the service covers

TASKS ON THE LINE

- |  |   |
|--|---|
| <p><b>A Random bin picking</b><br/>Pick unsorted parts from a deep tote at arbitrary pose and orientation.</p> | <p><b>B Singulation</b><br/>Separate one part at a time from a bulk pile or moving stream.</p>            |
| <p><b>C Kit picking</b><br/>Pull a defined set of parts from multiple bins to build a kit.</p>                 | <p><b>D Machine tending</b><br/>Feed parts from a bin directly into a CNC, press, or molding machine.</p> |
| <p><b>E Assembly feed</b><br/>Present singulated parts at known pose to a downstream assembly station.</p>     | <p><b>F Type sorting</b><br/>Sort a mixed bin into separate destinations by part type or SKU.</p>         |
| <p><b>G Reject sorting</b><br/>Identify and divert defective or off-spec parts from a moving stream.</p>       | <p><b>H Order picking</b><br/>Pick items per order from mixed bins for packing or fulfillment.</p>        |

WHAT A CELL HOLDS

**≤ 2 wk**

Install to running on your floor, not months of integration

**±0.05 mm**

In-hand placement for fit- and safety-critical parts

**100%**

Inspection on every part — checked, not sampled

Representative configuration. Final specs are issued with the proposal.

### 04 Working with us

FROM YOUR PART TO A QUALIFIED CELL, IN ~TWO WEEKS ON-SITE

A · SCOPE & PO

**We start with your part**

We work from your part, volumes, takt, and the line you'd deploy on. A short scoping engagement confirms fit, defines acceptance criteria, and puts a fixed scope and price in writing — capital purchase and robotics-as-a-service, side by side.

C · ON-SITE CONFIGURATION

**It arrives pre-built**

The qualified cell shows up ready. On-site work is tuning, not assembly: under two weeks to integrate with your line, MES/ERP, and safety, followed by a supervised run on real product.

B · PRE-BUILD AT RELING HQ

**We build & qualify it first**

We build the cell on our own production floor and run it against your parts until it meets the acceptance criteria. The trial-and-error happens here, not on your line — so what ships is already proven.

D · ACCEPTANCE & FIRST UNIT

**Proven, then handed over**

We run supervised until your safety engineer signs off and the cell hits its numbers. Your technicians operate it day to day; maintenance and software updates are covered.

### 05 Let's talk

We started Relling to help this country make more of what it needs. If you have a task that's hard to staff or hard to automate, send it over — we'll tell you straight whether a cell fits, and scope it if it does.

Talk to us: [jai.relan@rellingsystems.com](mailto:jai.relan@rellingsystems.com) · [rellingsystems.com](http://rellingsystems.com)

EXCEPTIONAL ENGINEERING, TEAM FROM

