



Electronics & Semiconductor

Delicate, micron-tolerance, ESD-sensitive work on high-mix lines where product cycles turn over faster than fixed automation can be paid back.

Electronics and semiconductor lines run on tight tolerances and fragile parts: flex cables that kink, connectors that mate to microns, boards that crack under the wrong force. Add ESD discipline, cleanroom constraints, and product cycles that turn over in months, and you get work that resists fixed automation. The tasks are dexterous and contact-rich, the mix is high, and hand labor stays expensive and hard to staff.

Relling deploys a single workcell that learns a library of skills and reconfigures in software per part, so one cell covers many SKUs and absorbs NPI changes without retooling. Force-aware, vision-guided manipulation handles fragile and miniaturized parts at controlled contact. Install-to-running is two weeks or less. Every cell is qualified at Relling HQ before it ships, then tuned on-site to your line.

AT A GLANCE

Footprint	~2 x 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**

Micron tolerances

Component placement, connector mating, and insertion run at tolerances measured in microns, where small position or force errors scrap the part.
- B**

ESD-sensitive

Boards and bare die carry static-discharge risk; handling demands grounded, controlled contact and tooling that will not damage sensitive devices.
- C**

Fragile and flex parts

Thin boards, flex cables, ribbon connectors, and bare wafers flex, crack, or chip under the wrong force vector or grip.
- D**

High mix, fast NPI

Many SKUs and new-product cycles measured in weeks demand reconfiguration per part without the retooling cost of fixed automation.
- E**

Cleanroom and miniaturization

Shrinking geometries and cleanroom or controlled-environment constraints raise the bar on precision, particle control, and repeatable contact.

02 Why now

THE CASE FOR MOVING NOW

- Reshoring raises the stakes**

CHIPS-driven reshoring is standing up domestic board and semiconductor capacity faster than skilled hand-assembly labor can be hired, making flexible automation the only path to qualify new high-mix lines on schedule.
- Labor is scarce and costly**

Precise, ESD-disciplined manual work is hard to staff and harder to retain, and turnover on delicate tasks drives defect rates and scrap on parts that are expensive to lose.
- Miniaturization punishes error**

As geometries shrink, tolerances and contact forces leave no margin; a single mishandled board or die carries high unit cost, so consistent force-controlled handling protects yield directly.

OEMS WE WORK WITH



03 What we automate in electronics & semiconductor

TASKS ON THE LINE

- A PCB handling**
Move bare and populated boards between magazines, conveyors, and fixtures without flex or edge contact.
- B Connector and cable mating**
Align and seat fine-pitch connectors and ribbon cables with force feedback to confirm a full seat.
- C Component placement**
Place and insert connectors, modules, and odd-form parts that pick-and-place machines cannot handle.
- D Enclosure fastening**
Drive and torque screws to spec on housings and shields, verifying seating and thread engagement.
- E Conformal coat and dispense**
Apply conformal coating, adhesive, or thermal compound along controlled paths at consistent bead and volume.
- F Wafer and tray handling**
Transfer wafers, JEDEC trays, and carriers between cassettes and tools under cleanroom-grade contact control.
- G Test load and unload**
Load and unload boards and modules into functional and burn-in fixtures, confirming contact before cycle start.
- H Inspection and labeling**
Present parts for optical inspection, then apply, scan, and verify labels and serialized barcodes.

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 · rellingsystems.com

EXCEPTIONAL ENGINEERING, TEAM FROM

