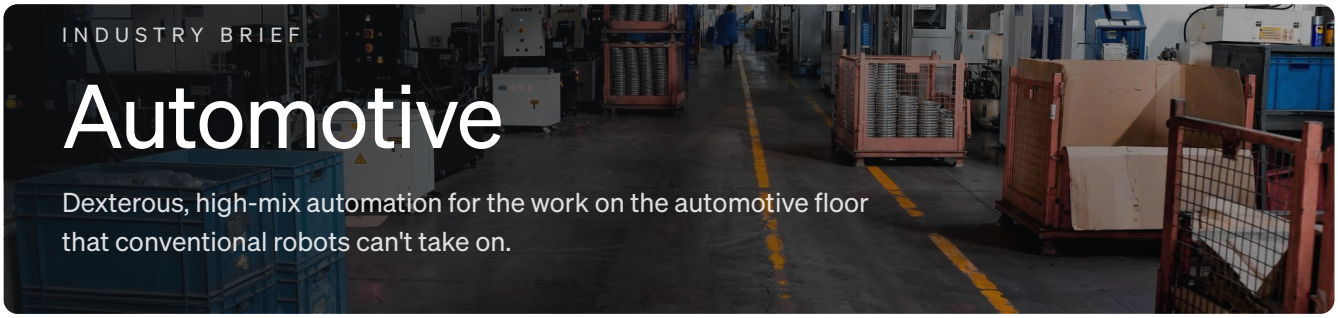

INDUSTRY BRIEF

Automotive

Dexterous, high-mix automation for the work on the automotive floor that conventional robots can't take on.

Automotive lines run on variety. Trim levels, model years, running changes, and short-run programs mean the work on your floor is rarely the same twice — and the tasks that resist automation are exactly the ones that wear people down: fiddly, two-handed, contact-rich work held to tight tolerances, often on parts that flex and deform.

Relling builds frontier-AI workcells for that work. A single cell learns a library of skills and reconfigures in software rather than being rebuilt for every part, so it absorbs the high-mix, low-volume production that fixed automation can't justify. Every cell is qualified on our own floor before it ships, then tuned to your parts on yours.

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

Dexterous manipulation

Two-handed, in-hand, fine-motor work — routing harnesses, seating clips, mating connectors, and handling flexible parts with feel, not just position.

B

High-mix, low-volume

Many part numbers, frequent changeovers, and short runs. A new part is a reconfiguration in software, not a retool of the line.

C

Contact-rich assembly

Press-fits, insertions, and alignment that depend on force and compliance — the work that defeats position-only robots.

D

Soft & deformable materials

Foams, gaskets, wiring, trim, and fabric that rigid grippers and fixed tooling can't reliably grasp or place.

E

Judgment-based inspection

Defect detection and verification that adapts part-to-part in real time, with closed-loop vision checking the cell's own work.

02 Why now

THE CASE FOR MOVING NOW

The bench is thin

Skilled machine-tenders and assemblers are retiring faster than they're replaced. Second and third shifts go unfilled, and the tribal knowledge walks out with them.

Mix keeps climbing

More variants, shorter runs, and faster program changes make a fixed, single-part line impossible to justify — but leave exactly the variability people burn out on.

Escapes are costly

A missed defect on a fit- or safety-critical part becomes a sort, a containment, and a customer PPM hit. Sampling can't catch what 100% inspection does.

OEMS WE WORK WITH

BECKHOFF · Rockwell Automation · SIEMENS · UR · FANUC · KUKA · ABB · YASKAWA

03 What we automate in automotive

TASKS ON THE LINE

A — Machine tending
Load and unload presses, CNCs, and injection cells around the clock.

B — Pick & place / part feeding
Bins to fixtures with closed-loop vision, no hard tooling changeovers.

C — Adhesive & sealant dispensing
Consistent beads, gaskets, and NVH foam at line rate.

D — Fastening & assembly
Screwdriving, press-fits, and clip insertion, torque-verified.

E — Inspection & metrology
Vision checks weld, seal, and dimensional quality, part by part.

F — Kitting & sequencing
Line-side kits built in sequence, ready for the operator.

G — Palletizing & handling
Stack finished assemblies, totes, and dunnage without strain.

H — Cleaning & deburring
Surface finishing and edge work on contact-rich parts.

WHAT A CELL HOLDS

≤ 2 wk	±0.05 mm	100%
Install to running on your floor, not months of integration	In-hand placement for fit- and safety-critical parts	End-of-line inspection — 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.

B · PRE-BUILD AT RELLING 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.

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.

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

SPACEX · NASA · BOEING · TESLA · RIVIAN · ANYSIGNAL · coinbase