

INDUSTRY BRIEF

# Textile

Limp-material handling and contact-rich apparel work, automated by one cell that reconfigures in software per part.

Fabric is limp, deformable, and notoriously hard to automate. It drapes, clings, stretches, and wrinkles, so rigid grippers and fixed jigs rarely hold. Lines run high mix and short seasonal runs, with frequent SKU changeovers. Most of the work stays manual and labor-intensive, which is why so much of it is offshored. Ply separation, edge alignment, feeding seams, and inspection resist conventional automation.

Relling pairs vision with force control, so a cell senses each layer and adapts grip as cloth shifts, drapes, and clings. The same hardware reconfigures in software for a new fabric, trim, or SKU instead of retooling. It learns a library of handling skills rather than one fixed motion. Every cell is qualified at Relling HQ before shipping.

## 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

<p><b>A</b></p> <p><b>Limp material</b></p> <p>Cloth drapes, stretches, and clings to itself and tooling; grip and path adapt continuously instead of relying on fixed jigs or rigid fixtures.</p>	<p><b>B</b></p> <p><b>Ply separation</b></p> <p>Single layers must lift cleanly from a stack without dragging the ply beneath, demanding fine force sensing and tactile feedback per pickup.</p>	<p><b>C</b></p> <p><b>High mix</b></p> <p>Seasonal collections and broad SKU counts mean constant changeover across fabrics, weights, colors, and trims with short runs between them.</p>	<p><b>D</b></p> <p><b>Fabric variability</b></p> <p>Weight, weave, stretch, and finish shift lot to lot, so handling parameters must tune to the material in front of the cell, not a spec sheet.</p>	<p><b>E</b></p> <p><b>Contact-rich work</b></p> <p>Feeding seams, aligning edges, and seating trims demand sustained, controlled contact and dexterity that rigid pick-and-place cannot deliver.</p>
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## 02 Why now

### THE CASE FOR MOVING NOW

**Reshoring the soft-goods line**

Apparel and soft goods are reshoring and nearshoring as supply chains shorten, but domestic labor is scarce and costly. Cells close the gap on work that never justified fixed automation, making local production viable at high mix.

**Labor scarcity bites now**

Sewing and finishing depend on skilled manual labor that is aging out and hard to rehire. A cell that learns handling skills absorbs the contact-rich tasks turnover leaves unstaffed, holding throughput steady through churn.

**Closing the soft-goods gap**

Limp-material handling has resisted automation for decades, leaving textiles among the least automated sectors. Vision plus force finally makes ply separation and fabric handling tractable, opening tasks fixed tooling never could.

### OEMS WE WORK WITH



### 03 What we automate in textile

TASKS ON THE LINE

- |   |  |
|---|--|
| <p><b>A Ply pickup</b><br/>Separate and lift a single fabric layer from a stacked, clinging bundle.</p> <hr/> <p><b>C Edge alignment</b><br/>Match and align panel edges before a seam is run.</p> <hr/> <p><b>E Trim attach</b><br/>Position labels, tags, and trims for fastening or sewing.</p> <hr/> <p><b>G Defect inspection</b><br/>Check fabric and seams for defects, shade, and weave faults.</p> | <p><b>B Seam feeding</b><br/>Present and guide fabric edges into a sewing or seaming station.</p> <hr/> <p><b>D Folding</b><br/>Fold finished panels and garments to a consistent, repeatable shape.</p> <hr/> <p><b>F Cut-part loading</b><br/>Load cut panels from a stack onto a workstation or fixture.</p> <hr/> <p><b>H Packing</b><br/>Fold, bag, bundle, and palletize finished garments for shipment.</p> |
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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

