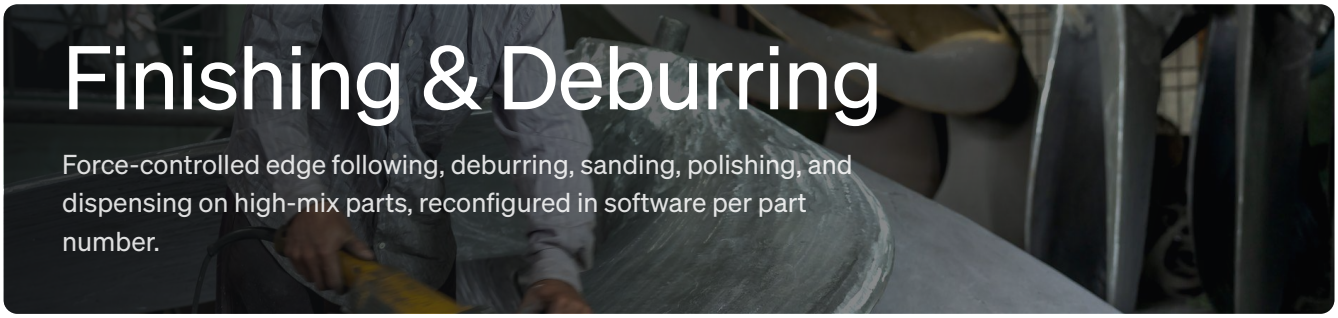

Finishing & Deburring

Force-controlled edge following, deburring, sanding, polishing, and dispensing on high-mix parts, reconfigured in software per part number.

Finishing is the work nobody wants. Deburring, sanding, and grinding throw airborne dust and silica, run loud, and grind down wrists and shoulders over a shift. The jobs repeat endlessly yet never quite the same: castings shift, welds vary, edges land off-nominal. Fixed-path automation can't cope, because a programmed toolpath assumes an edge that the real part rarely matches.

Relling runs finishing under closed-loop force control with vision-guided edge following, so the tool tracks the actual edge and holds pressure as geometry varies part to part. One cell carries deburring, sanding, and polishing skills and reconfigures in software for the next part number, no retooling. Every cell is qualified against your parts at Relling HQ before it ships.

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

Force control

Closed-loop force feedback holds constant tool pressure against the surface, compensating for part variation, tool wear, and fixture slop without gouging or skipping.

B

Edge following

Vision and contact sensing locate the real edge each cycle, tracking weld lines, casting parting lines, and trimmed contours that drift from nominal CAD.

C

Media management

Tracks abrasive and pad wear, compensates feed and pressure as media degrades, and signals changeover before finish quality drifts out of spec.

D

Dust containment

Integrates extraction and shrouding at the tool, keeping silica and metallic dust out of the air and off operators across the cell.

E

Consistent finish

Repeatable feed, pressure, and dwell deliver uniform surface quality and edge break part after part, independent of operator fatigue or shift.

02 Why now

THE CASE FOR MOVING NOW

Off the dirtiest jobs

Finishing is loud, dusty, and injury-prone, and it is the hardest station to staff. Automating it pulls people out of airborne silica and metal dust and away from the repetitive grinding that drives shoulder and wrist injury.

Finish that holds spec

Hand finishing drifts with operator skill, fatigue, and shift. Force-controlled cells apply the same pressure, feed, and dwell every cycle, so edge break and surface quality stay inside spec instead of varying part to part.

Safety the floor can audit

Dust, silica, and noise carry real regulatory and health exposure. Enclosed cells with tool-level extraction contain the hazard and log what they did, turning an OSHA liability into a controlled, repeatable, documented process.

OEMS WE WORK WITH

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

03 What the service covers

TASKS ON THE LINE

A — Edge deburring
Remove sharp edges and raised burrs from machined, stamped, and laser-cut part perimeters.

B — Weld grinding
Grind down and blend weld beads flush to surrounding base material and contour.

C — Surface sanding
Sand flats and contoured faces to uniform roughness ahead of paint or coating.

D — Polishing & buffing
Polish and buff metal and composite surfaces to specified gloss or finish standard.

E — Flash & gate removal
Trim molding flash and cut gate stubs from cast and molded parts.

F — Edge blending
Blend ground, cut, and machined transitions into smooth uninterrupted surface profiles.

G — Adhesive dispensing
Lay controlled beads of sealant or adhesive along edges, seams, and grooves.

H — Parting-line cleanup
Dress casting and forging parting lines flush and remove residual mold witness marks.

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	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.

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