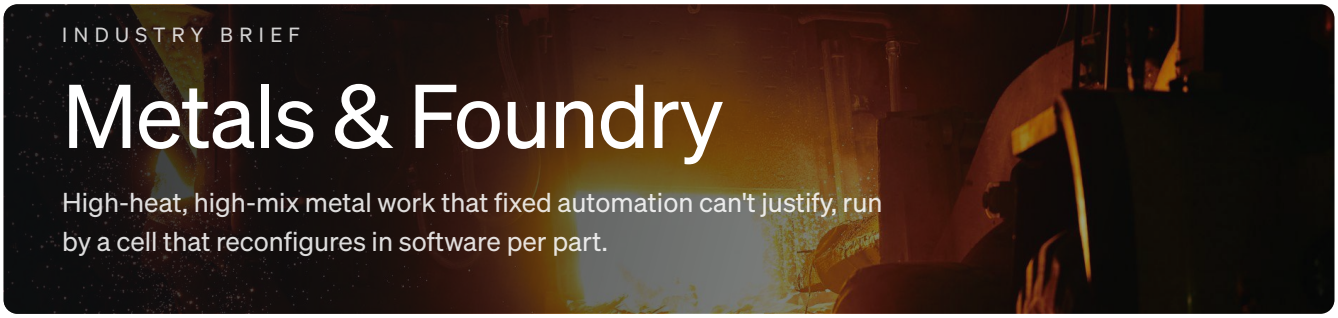

INDUSTRY BRIEF

Metals & Foundry

High-heat, high-mix metal work that fixed automation can't justify, run by a cell that reconfigures in software per part.

Casting, forging, machining, and fabrication remain hot, heavy, and hazardous. Molten metal gets poured, parts come off near red-hot, and grinding throws abrasive dust all shift. Most metal shops run high-mix, low-volume: dozens of part numbers, frequent changeovers, small batches. The skilled tradespeople who tend furnaces, cut gates, and read a casting by hand are retiring, and the loading, deburring, and finishing tasks they own resist fixed automation.

A Relling cell tends furnaces, presses, and CNC machines, then handles the downstream finishing: pulling castings, quenching, cutting gates and risers, grinding, and deburring. One cell learns a library of these skills and reconfigures in software when the part changes, so a low-volume job earns automation it never could before. 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

High heat

Furnaces, molten pours, and parts that come off near red-hot put operators in sustained thermal and burn-exposure zones that machines tolerate far better.

B

Heavy parts

Castings, forgings, and billets routinely run tens to hundreds of pounds, driving lift-assist needs and a steady toll of back and shoulder injuries.

C

Abrasive environment

Grinding, blasting, and machining generate metal dust, sand, and coolant mist that foul sensors and wear hard on people and equipment alike.

D

Ergonomic strain

Deburring, grinding, and overhead loading mean repetitive force, vibration, and awkward postures that accumulate into chronic musculoskeletal injury over years.

E

High-mix job shops

Dozens of part numbers, frequent changeovers, and small batches make dedicated tooling uneconomic, leaving most of this work stubbornly manual.

02 Why now

THE CASE FOR MOVING NOW

Nobody wants the hot jobs

Furnace tending, pouring, and grinding are exactly the dangerous, hot, dirty jobs shops can no longer staff. Turnover is high and rising, and every unfilled shift is capacity left on the floor.

The trade is retiring out

Skilled foundry hands, grinders, and machinists are aging out faster than they can be replaced, taking decades of part-by-part judgment with them and leaving a widening gap on the line.

Heavy industry is reshoring

Casting, forging, and fabrication work is moving back onshore under supply-chain and defense pressure, but only shops that can run high-mix without proportional headcount will hold the new volume.

OEMS WE WORK WITH

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

03 What we automate in metals & foundry

TASKS ON THE LINE

A — Furnace tending
Load charge and extract hot parts from furnaces, presses, and quench stations safely.

B — Casting removal
Pull castings from molds, shake out, and transfer hot parts to quench.

C — Gate & riser cutting
Cut gates, risers, and sprues from castings and stage them for finishing.

D — Grinding & deburring
Grind parting lines, knock down burrs, and blend surfaces to spec on mixed parts.

E — Deflashing
Remove flash from forgings and castings along seams and trim edges consistently.

F — Blast tending
Load and unload sand and shot-blast cabinets, cycling parts through surface cleaning.

G — Weld prep & tacking
Stage, fixture, and tack-weld fabrication assemblies ahead of final welding.

H — Inspection & marking
Gauge dimensions, check surfaces, then mark, sort, and palletize finished heavy 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	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