

OUR SERVICES

ID/OD ELECTROPOLISHING

$ra < 0.25$

$ra < 0.38$

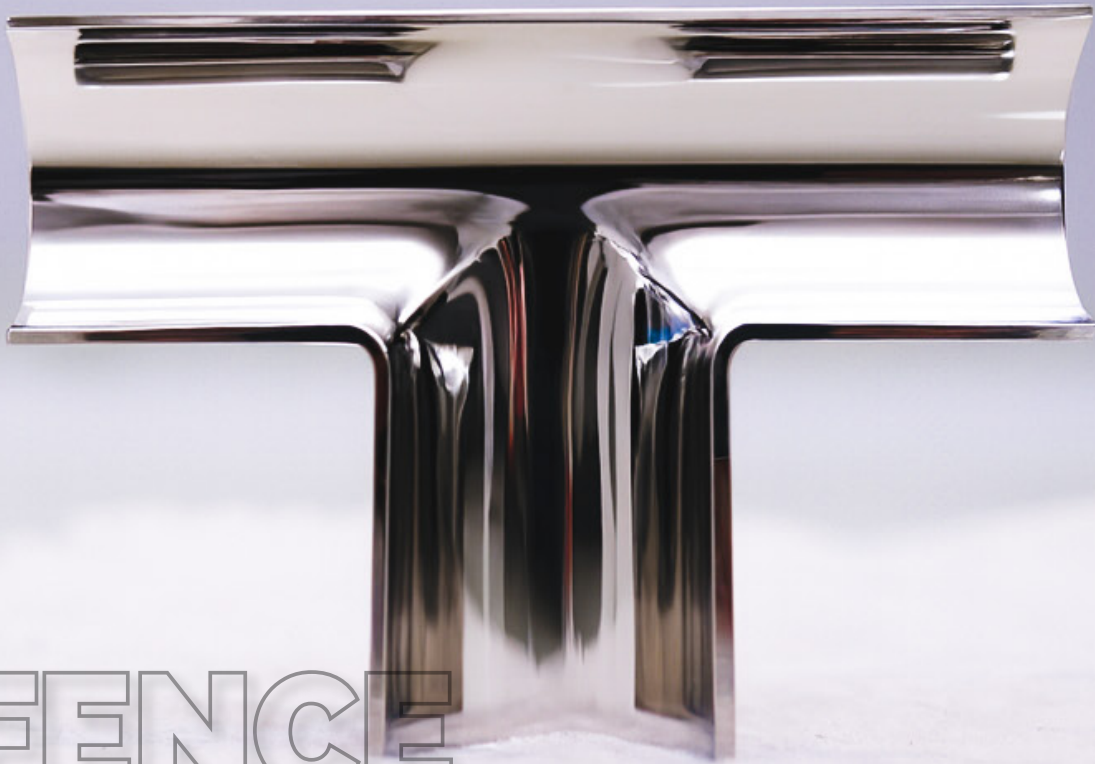
Special Finish on Request

rensa

EDGE 

DEFINING THE FUTURE OF ELECTROPOLISHING

Delivering more than
just Electropolishing,
We deliver **Confidence.**



DEFENCE
AEROSPACE
NUCLEAR POWER

RENSA EDGE

INTRODUCTION

Rensa: A Legacy of Precision
For over two decades, Rensa has been at the forefront of stainless steel tubes and fittings for the world’s most critical industries. With brands like Rensa (ISO/3A/BS standards), BioPure (ASME BPE certified), and Rensa Max (semiconductor solutions), we have built trust through uncompromising quality, innovation, and global reach.

UNDERSTANDING RENSA EDGE

Rensa Edge represents more than just a service — it’s a vision. The infinity symbol (∞) embedded within our identity reflects the limitless applications of Electropolishing: from Defense to Nuclear, from Aerospace to the industries of tomorrow.

Just as infinity has no end, Rensa Edge pushes beyond limits to deliver surfaces that are smoother, purer, and stronger — every time.

WHY CHOOSE RENSA EDGE

At **Rensa Edge**, electropolishing is not just a process — it’s a commitment to perfection at the microscopic level. Backed by Rensa’s legacy of precision engineering, we deliver surfaces that meet the toughest requirements of Defence, Nuclear Power, and Aerospace. Our expertise ensures consistency, compliance with international standards, and reliability where failure is not an option. Choosing Rensa means choosing infinite electropolishing possibilities, powered by experience, technology, and trust.

Technical Capabilities includes:

- Processing size range (tubes, fittings, complex geometries)
- Surface finish achieved (Ra values, ASTM / AMS / MIL standards compliance)
- In-house testing, FAT, and rensa certification

WHAT IS ELECTROPOLISHING

Electropolishing is an advanced electrochemical process that removes a thin layer of material from a metal surface, leaving it ultra-smooth, clean, and corrosion-resistant. Unlike mechanical polishing, which can leave scratches or embedded particles, electropolishing delivers a mirror-like finish with improved fatigue strength, enhanced corrosion resistance, and superior cleanliness. It is the preferred finishing solution for components where precision and performance define safety — from reactor piping to aerospace systems.

“At the edge of technology, precision isn’t optional—it’s the standard.”

AEROSPACE

Application areas	Why surface finish (EP) matters
Engine externals (SS clamps, brackets, cases), APU hardware	Removes burrs/notches → higher fatigue life; improved corrosion resistance.
Landing gear SS components & fasteners	Reduced galling/fretting; better lubricant retention with controlled micro-texture.
Fuel, bleed-air & hydraulic SS tubing	Lower pressure drop & noise; cleaner ID, less particulate release (FOD control).
ECS/oxygen system stainless parts	Ultra-clean, low-outgassing surfaces for cabin/crew safety.
Spacecraft ground-support & propellant handling skids (SS)	Cleanability for oxygen/cryogenic service; fewer ignition sites from inclusions.
Avionics racks, sensor housings, EMI hardware (SS)	Corrosion control and stable contact resistance.
Satellite structures: SS brackets/booms (where used)	Reduced micro-cracks; lower particulate generation for cleanroom assembly.

Application areas	Why surface finish (EP) matters
Submarine sea-water piping, manifolds, valves	Fights chloride pitting/crevice corrosion; smoother ID reduces biofouling and drag losses.
Torpedo/missile fuel & pneumatic lines	Lower friction/pressure drop; burr-free bores reduce leak paths & particle shedding.
Naval shafting guards, housings, fairings	Higher corrosion resistance and easier inspection/cleaning.
Weapons barrels, breech components (SS/Alloy inserts)	Smoother bores = better wear, accuracy, and cleanability; fewer micro-cracks.
Hydraulic & actuation tubing on armored vehicles/airframes	Less turbulence, extended seal life; mitigates fretting & galling.
Radar/communications enclosures & stainless HW	Reduced corrosion at crevices; better EM gasket contact surfaces.
Launch/ground-support SS skids, frames	Faster decon after salt-spray/chem exposure; improved paint/coat adhesion post-EP.
Heat-exchanger SS tube sheets & headers	Lower fouling; easier boroscope inspection.
Food/water systems on vessels/bases (hygiene)	Low-roughing, easy sanitization; fewer microbial harborage sites.

Application areas	Why surface finish (EP) matters
Primary circuit SS piping, headers, manifolds	Ra $\leq 0.25 \mu\text{m}$ reduces crud deposition and stress-corrosion sites; easier decon.
Reactor coolant pump seal flush & letdown lines	Smooth ID lowers erosion/cavitation, stabilizes flows.
Fuel handling equipment, racks, baskets (SS)	Minimizes activation sites, particulates, and trapped contamination.
Borated water systems (PWR chemistry)	Prevents boron entrapment in micro-pits/crevices; quicker chemical decon and rinse-out.
CVCS/chemical volume control & sampling lines	Low-roughness surfaces reduce cobalt, iron oxide, and lithium/borate hold-up.
Steam generator auxiliary SS components	Less fouling, improved inspectability, reduced dose rates from activated crud.
Decontamination skids, high-purity DI loops	Very low TOC/particle release from EP surfaces; faster hot/cold shutdown cleanups.
Containment penetrations, valve bodies/bonnets	Better passivity; lower risk of crevice corrosion under insulation.
Waste processing/evaporation SS hardware	Fewer deposits; easier long-term maintenance.

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EDGE 

DEFINING THE FUTURE OF ELECTROPOLISHING

our other brands



rensa
Positively Smooth

 Biopure™
by rensa

rensa



BEYOND THE LIMITS OF PURITY

Rahul Ferroment & Engg. Pvt. Ltd

Office: 609, Sanket Heights, Sun Pharma Road,
Vadodara, Gujarat-390020, India
+91 8347000368 Email: marketing@rensatubes.com

Works: Plot No 13 & 14, Jhagadia GIDC, Bharuch,
Gujarat- 393110, India



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CATALOGUES

