

ENGINEERING THE FUTURE OF GEARLESS MOBILITY

*In an industry where mechanical designs have remained largely unchanged for decades, Tectronics Techworld Pvt. Ltd. has built its reputation on proving that even a “mature” technology can be reimaged. From pioneering compact, silent, and energy-efficient gearless elevator machines to securing a global footprint across Europe, the Middle East, and Asia, the company has positioned itself as both an engineering innovator and a reliability benchmark. In this exclusive conversation with Homes & Buildings Magazine, **NAYAN MOVALIYA**, Director, shares how Tectronics is merging precision engineering with sustainability, customer-driven design, and a value-led corporate culture—while setting its sights on redefining vertical mobility for the decade ahead.*



NAYAN MOVALIYA
Director, Tectronics
Techworld Pvt. Ltd.

Q Tectronics has been an early adopter of gearless elevator machines—celebrated for their compact size, silent operation, and energy efficiency. What drove that early shift, and how have you kept innovation alive in a mechanically mature industry?

Our early transition to gearless technology was fuelled by a clear, future-focused vision—to make mobility solutions more efficient, sustainable, and space-conscious. Traditional geared systems were bulky, noisy, and energy-intensive. The gearless platform allowed us to deliver quieter, smoother, and space-saving machines, aligning perfectly with the needs of modern urban infrastructure.

But adoption was just the first step. We’ve continued to evolve through torque control precision, rotor design advancements, thermal resilience improvements, and smart drive compatibility. Even in an industry considered “mature,” we see

endless opportunities to rethink, refine, and reimagine core engineering.

Q Your patented RTG 32P series has gained industry attention for performance and reliability across diverse applications. What’s the R&D philosophy behind it, and how do you balance customisation with scalable manufacturing?

The RTG 32P emerged from applied innovation—developed not in isolation, but in constant dialogue with OEMs and installers. Our R&D process blends simulation-led modelling with real-world performance feedback.

We work on modular base platforms for rotors, stators, and brakes, enabling customisation without disrupting large-scale manufacturing. Every design undergoes rapid prototyping, rigorous field testing, and continuous iteration, ensuring that we can respond to project-specific needs while maintaining production efficiency at scale. This balance between flexibility and standardisation is key to our success.

Q Offering a five-year warranty on core products is rare in industrial manufacturing. What quality systems enable Tectronics to make that promise?

A five-year warranty rests on uncompromising quality control and engineering rigour. We follow a multi-layer QA framework—from incoming material checks to in-line inspections at every assembly stage, dynamic balancing, and full-load tests before dispatch.

We deploy ISO-certified processes and statistical failure prediction models to ensure reliability. Lifetime stress simulations in our R&D labs further validate product durability. This discipline in engineering gives us—and our customers—long-term confidence.

Q Sustainability is a global engineering mandate. How is Tectronics aligning its design, materials, and manufacturing to meet environmental benchmarks, and how do you measure impact?

We’ve embedded Design for Sustainability into our product philosophy. Our gearless machines are optimised for energy efficiency, and we apply Life Cycle Assessment (LCA) to reduce envi-

ronmental impact at every stage.

We prioritise RoHS-compliant, recyclable materials, source from ISO 14001-certified vendors, and optimise material usage through advanced simulations. On the manufacturing side, we use solar and hybrid energy, implement lean waste-reduction processes, and embrace circular economy principles.

Our progress is tracked through carbon footprint accounting (Scope 1, 2, and 3) and KPIs such as energy consumption per unit produced. We're also aligning with UN SDGs, particularly Goals 9 and 12, with net-zero ambitions in sight.

Q Your portfolio covers machines from 300 kg to 3000 kg load capacity. How do you engineer for both lightweight residential and heavy-duty industrial applications?

Designing for such a broad spectrum demands precise application-specific engineering.

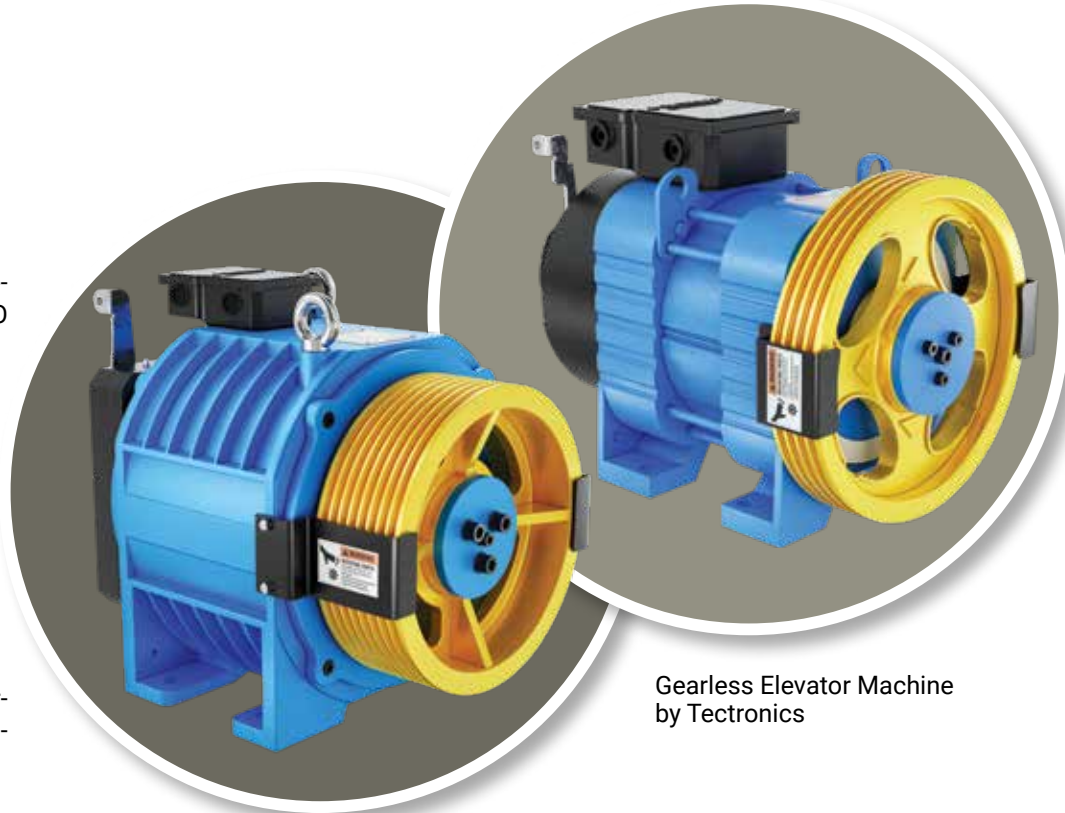
For low-load residential use, we focus on silent operation, compact form factors, and energy efficiency. For heavy-duty industrial systems, we prioritise torque delivery, thermal resilience, and reinforced structural integrity.

Each product undergoes digital stress simulations, heat behaviour modelling, and vibration analysis. Material choices and component configurations are tailored to load class, duty cycle, and geographic installation conditions.

Q Your export strategy is visibly strong. What have been the key enablers and challenges in meeting certifications, building partnerships, and managing customer expectations globally?

Exporting is both a privilege and a challenge. Certifications—CE marking, EN 81-20/50 compliance, and local safety codes—require constant vigilance.

Our strengths lie in modular product design, agile supply chains, and building local service ecosystems in partner markets. Challenges like voltage variations, cultural service expectations, and after-sales speed have been met with global training programs and real-time diagnostics to ensure we remain close to our customers, wherever they are.



Gearless Elevator Machine by Tectronics

Q Can you share an example where customer feedback led to a meaningful product innovation now part of your standard line-up?

One standout example came from an OEM partner in Delhi. They faced repeated delays and added labour because the base C-channel had to be cut during installation of our machines.

We redesigned the machine base to eliminate all on-site C-channel modifications. This change saved time, improved standardisation, and is now a permanent feature in our products. It's a textbook case of customer-driven innovation.

Q After-sales service can define brand trust in the elevator industry. How does Tectronics approach lifecycle support?

Our after-sales service is one of our strongest differentiators. We operate one of the largest organised field service teams in our segment, backed by trained engineers, certified technicians, and dedicated customer care managers.

Our 5-year warranty isn't just a marketing statement—it's backed by free-of-cost service and replacements for manufacturing issues during the warranty period.

We use digital tracking, remote diagnostics, and are integrating IoT monitoring for predictive maintenance. For us, after-sales is not an obligation—it's a responsibility.

Q Looking ahead to 2030, what's the vision for Tectronics in terms of leadership, sustainability, and shaping the next chapter of vertical mobility?

Our ambition is to be recognised globally as a leader in gearless elevator technology—driving innovation, sustainability, and reliability.

We're expanding into key international markets, pushing energy efficiency, and reducing lifecycle carbon emissions. By combining smarter engineering, stronger global partnerships, and sustainable manufacturing, we aim to help define the next era of vertical transportation—intelligent, user-centric, and environmentally responsible.

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