

## Technical Review Special Edition: New Products and Technologies

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Welcome to the special edition of the MHI Technical Review featuring our new products and technologies.

Mitsubishi Heavy Industries, Ltd. (MHI), with the aim of growing as an enterprise that helps the world develop at the same time, is unwaveringly propelling organizational reforms through persistent enhancement and refurbishment of its technologies, management reforms and by adapting to changes and diversity. Following the concentration and reorganization of our businesses into four domains, we consolidated five research centers into a single R&D organization – the Research & Innovation Center – in April last year. Furthermore, in April this year, we launched the Shared Technology Framework comprised of the newly established Engineering Headquarters, Marketing & Innovation Headquarters and Value Chain Headquarters, as well as the existing ICT Solution Department, Research & Innovation Center and Technology Strategy Office. With this framework, we allow the advantages of fundamental core technologies to permeate across the entire group and have a new structure with enhanced flexibility to address technological innovation and new ventures.

Based on this, MHI looks to respond more swiftly and dynamically to the rapidly changing needs of society and to develop next-generation technologies and products by fully utilizing our comprehensive and proven technological capabilities. We provide them to society and aim to contribute to its continuous development through innovation.

As recent examples of this initiative, this special edition introduces 30 new products and technologies.

Among new products, a highly versatile geothermal power plant, an automatic production system for machining aircraft parts, the "DIASCOPE" IoT cloud data service, the MVR-Fx high-precision double-column machining center, an absolute linear MP scale, the "EVOL100-400B/M" high-speed corrugated board box making machine, a next-generation multi-door type of platform screen door and a highly-durable lining steel pipe for seawater are introduced.

As for new technologies, we discuss a technological development of a special marine vessel, a combustion stability improvement of the LE-9 engine for the booster stage of the H3 launch vehicle, a mouse habitat unit for individual rearing used in ISS, a box pickling tanks for hot rolled strip, microfabrication using a DUV laser, high-efficiency super skiving cutting of gears, an

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operator assist system for plant test-runs, high-efficiency measurement technology for the thickness of a boiler heat transfer tube, an exchange method of a fast reactor core internal equipment and a powered exoskeleton for heavy work.

Also covered are a quick repair method for composite structures developed for aircraft, a forming technology for double-curved surfaces, high-quality direct-compounding technology for fibers and plastics, a design technique that applies multi-body dynamics and optimization techniques by nonlinear response surface, a pretreatment technology for SWRO desalination plants, a jet fuel production system from woody biomass, a seismic evaluation method of free standing racks, a measurement method for the verification of a multi-stage axial compressor with improved performance, a heavy-oil-fired burner development technology upgrade, a simultaneous measuring technique in a flow field using thermographic phosphor, and a filter concentration method for tracing iron in boiler feedwater.

We deeply appreciate your ongoing support and understanding in our quest.