



PRODUCT PROFILE

MITSUBISHI HEAVY INDUSTRIES, LTD.

Head Offices

■ Marunouchi

3-2-3 Marunouchi, Chiyoda-ku, Tokyo, 100-8332, Japan

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■ Yokohama

3-3-1 Minatomirai, Nishi-ku, Yokohama-shi, Kanagawa, 220-8401, Japan

www.mhi.com

Our online media

SPECTRA 

spectra.mhi.com

Mitsubishi Heavy Industries (MHI) Group is one of the world's leading industrial groups, spanning energy, smart infrastructure, industrial machinery, aerospace, and defense.

MHI Group combines cutting-edge technology with deep experience to deliver innovative, integrated solutions that help to realize a carbon neutral world, improve the quality of life and ensure a safer world.

OUR PRINCIPLES

- We deliver reliable and innovative solutions that make a lasting difference to customers and communities worldwide.
- We act with integrity and fairness, always respecting others.
- We constantly strive for excellence in our operations and technology, building on a wide global outlook and deep local insights.

TAGLINE

MOVE THE WORLD FORWARD

Our tagline embodies our commitment to move the world forward together with customers, partners, and society.

MOVE THE WORLD FORWARD MITSUBISHI
HEAVY
INDUSTRIES
GROUP



MISSION NET ZERO

Mitsubishi Heavy Industries Group will contribute to the realization of net zero for society as a whole.

With a perspective gained from 130 years of history and tradition on land, at sea, in the sky and in space, we address social issues and take on challenges for the future.

1880 – 1945

Building a Transportation Infrastructure from Roots in Shipbuilding

MHI's *monozukuri* began with the lease of Nagasaki Shipyard from the Ministry of Industry. Even as the company built Japan's first steel steamship and battleships, it applied the technologies and knowledge cultivated in those endeavors to begin production of automobiles and aircraft, thereby expanding its range of business as

a comprehensive manufacturer of transportation equipment. As global tensions rose, the company entered into an age in which its technologies—more advanced than those of most countries at that time—would be diverted to military use.



1884 Founding. Leased the government-owned Nagasaki Shipyard and started a shipbuilding business.



1918 Built the Mitsubishi Model A passenger car



1931 Manufactured Japan's first domestically produced tank, the Type 89 medium tank



1942 Built the world's largest battleship, the MUSASHI



1887 Launched Japan's first steel steamship, the YUGAO MARU



1908 Built the TENYO MARU, Japan's first large passenger liner, with a shipbuilding industry record gross tonnage over 10,000 tons



1929 Launched the ASAMA MARU passenger ship



1939 Produced the Zero Carrier Fighter

1946 – 1963

Supporting Post-war Recovery with Consumer Products

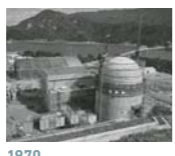
After the war, in accordance with national policy, MHI shifted its emphasis from military hardware to the development and manufacture of scooters, air conditioners, and many other types of consumer products. In 1950, in line with the GHQ's policy of dissolving large industrial groups (*zaibatsu*), MHI was divided into three independent companies. As a result, the scale of products grew more diverse, and the three companies fell into competition. However, this technology race would provide the foundation for the leading company in heavy industry.



1946 Shifted to consumer products after the war and built the iconic "Silver Pigeon" scooter



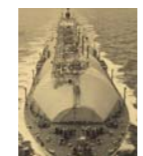
1968 Completed the first domestically produced 500 MW supercritical pressure boiler, Chubu Electric Power Chita Thermal Power Station Unit 3 (1,700 t/h)



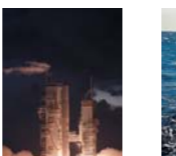
1970 Started operations of the PWR nuclear power plant at Kansai Electric Power Mihama Unit 1



1978 First flight of the MU-300 business jet



1983 Delivered the first Moss spherical tank type LNG carrier



1989 Delivered the world's deepest diving submersible research vehicle, the SHINKAI 6500



1963 First flight of the MU-2 twin-engine turboprop utility aircraft



1968 Built Japan's first container ship, the HAKONE MARU



1970 Opened the Shonan Monorail, Japan's first suspended monorail system for commuter use



1971 Delivered the No. 1 Fertilizer Plant to Iraq



1975 Successfully launched the first N-I Launch Vehicle



1985 Delivered the world's largest combined cycle power plant, Tohoku Electric Power Higashi Niigata Plant Unit 3, No. 2 Series (545 MW)



1990 Completed Japan's largest luxury cruise ship, the CRYSTAL HARMONY

1964 – 1990

Merging of Three Heavy Industry Companies Leads to Large-scale Development

In 1964, the same year Tokyo hosted the Summer Olympics, the three principal heavy industry companies reunited, creating today's form of MHI Group. Its products expanded to encompass the fields of land, sea and air, and included oil-drilling rigs, power plants, tankers and bridges. In addition, the successful lift-off of the H-I launch vehicle occurred during this period, and the Group's participation in full-fledged space development began.

1991 –

Supporting a Sustainable Society as a Comprehensive Infrastructure Company

MHI Group has always sought high efficiency, and as the trend toward global environmental conservation gains momentum and the concept of ecology becomes commonplace, the company's gas turbine, eco-ship and other technologies and

product fields are expanding on a global scale. The Group is working to develop technologies and products that help make societies more sustainable while raising its profile worldwide as a comprehensive infrastructure company.

SPACE:



2007 Started launch services of H-IIA Launch Vehicles and successfully launched the first H-IIA after privatization



2009 Successfully launched the first H-IIB Launch Vehicle with the greatest lift capacity in Japan



2009 Successfully launched the first international space station H-II Transfer Vehicle (HTV), "KOUNOTORI"



2013 Started launch services of H-IIB Launch Vehicles, in addition to H-IIA, with capacity to handle larger satellites

SKY:



1996 First flight of the "Global Express" business jet, jointly developed with Bombardier



2000 Delivered the first mass-produced F-2 Fighter



2007 Shipped the first main wing box for the Boeing 787



2015 Conducted the maiden flight of the first MRJ flight test aircraft

LAND:



1999 Completed the Tataro Bridge, Japan's longest cable-stayed bridge



2000 Delivered a refuse incineration plant with the world's highest throughput to Singapore



2008 Implemented the world's first Integrated coal Gasification Combined Cycle (IGCC) system



2009 Started commercial operations of the Hokkaido Electric Power Company Tomari Nuclear Power Plant Reactor 3



2016 Completed one of the world's largest flue gas CO₂ capture plants for enhanced oil recovery in the United States



2020 World's most efficient power plant is synced to the grid and operating at full load, ahead of schedule -- T-Point 2 validation facility features the enhanced JAC power train--



2009 Commenced operations of Dubai Metro, at the time the world's longest automated unmanned rail system, in Dubai, UAE



2011 Completed the first mass-produced Type 10 tank



2011 Developed the MEGANINJA, a container-configured 1.5 MW gas engine power generation system that can begin generating power within 24 hours of delivery



2014 Completed the MIHARA Test Center, Japan's first comprehensive railway transportation system test facility equipped with a circular railway test track



2017 Completed the first mass-produced Type 16 mobile combat vehicle



2019 Commenced operations of Doha Metro, one of the world's largest fully automated unmanned rail systems, in Qatar



2019 Launched FB-80 series, a next-generation electric forklift with formidable operability by a feeling of unity with the operator



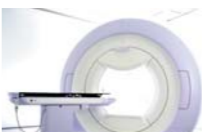
1997 Completed the world's first dry-cut gear cutting system, which uses no cutting oil



2002 Developed the world's fastest (90,000 copies/hr) newspaper offset press



2003 Developed the "wakamaru" communication robot



2004 Developed the world's first high-precision four-dimensional radiation therapy system



2006 Developed and sold the world's first mass-production machine for bonding wafers at room temperature



2015 Launched a high-efficiency centrifugal chiller with low GWP refrigerant (GWP: Global Warming Potential)



2023 Developed Japan's first Short Type Disc Harrows "KUSANAGI"

SEA:



2005 Constructed the deep-sea drilling vessel, CHIKYU, capable of drilling up to 7,000 m below the seabed



2011 Completed development of the "SAYAENDO" new-generation LNG carrier



2014 Delivered TACHIBANA-MARU, the first cargo-passenger ship equipped with a tandem-hybrid contra-rotating propeller system



2017 Equipped, OZZ-5 Underwater Vehicle for MCM



2022 Delivered the frigate, MOGAMI

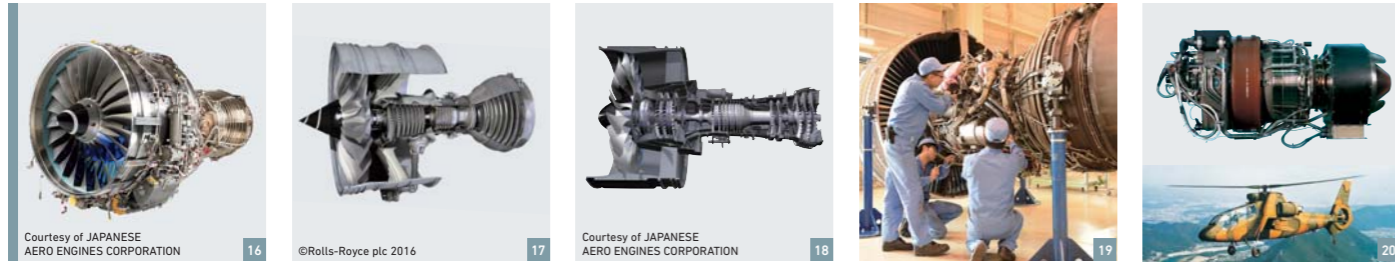
■ MITSUBISHI HEAVY INDUSTRIES, LTD.
Power Systems



■ MITSUBISHI HEAVY INDUSTRIES MARINE MACHINERY & EQUIPMENT CO., LTD.
Marine Machinery



■ MITSUBISHI HEAVY INDUSTRIES AERO ENGINES, LTD.
Aero Engines



ENERGY SYSTEMS

1. Gas Turbine Combined Cycle (GTCC) Power Plant/Tohoku Electric Power Co., Inc. Joetsu Thermal Power Station Unit 1 (Japan)
2. Steam Power Plant/JERA Co., Inc. Hitachinaka Thermal Power Station No. 1, No. 2 (Japan)
3. Geothermal Power Plant/Reykjavik Energy Hellisheidi Geothermal Power Plant (Iceland)
4. Flue Gas Desulfurization Plant/Kozienice Power Plant (Poland)
5. M501J Gas Turbine
6. Aero-derivative Gas Turbine FT8® MOBILEPAC®
7. LP Steam Turbine Rotor with 54-Inch Blades for Nuclear Power Plant
8. 1,028 MVA Turbine Generator
9. Hydrogen Gas Turbine
10. Control Systems and Upgrades
11. Organic Rankine Cycle (ORC) Power System
12. MET Turbocharger
13. Auxiliary Boiler
14. Fin Stabilizers
15. Steering Gear
16. V2500 Series (Turbofan)
17. Trent Series (Turbofan)
18. PW1000G Series (Turbofan)
19. MRO: Maintenance, Repair and Overhaul
20. TS1 (Turboshaft) Engine, Output Power: 884 SHP [Observation Helicopter OH-1]

■ MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION
Compressors



NUCLEAR ENERGY SYSTEMS

■ MITSUBISHI HEAVY INDUSTRIES, LTD.
Nuclear Energy Systems



21. Cracked Gas Compressors and Steam Turbines for Ethylene Plant
22. Main Gas Compressor Trains for FPSO
23. Product Gas Compressors and Steam Turbines for PDH Plant
24. Rotor of Steam Turbines

NUCLEAR ENERGY SYSTEMS

1. Pressurized Water Reactor (PWR)/Kansai Electric Power Co., Inc. Takahama Nuclear Power Station Nos. 1-4 (Japan)
2. Rokkasho Reprocessing Plant
3. Advanced Light Water Reactor "SRZ-1200"
4. Small Reactors (Multi-purpose Power Source)
5. Fast Reactor (Power Generation Reactor)
6. High Temperature Gas-Cooled Reactor (for Hydrogen Production)
7. International Thermonuclear Experimental Reactor (Nuclear Fusion Reactor)
8. Reactor Vessel
9. Steam Generator
10. Reactor Internals
11. Reactor Coolant Pump
12. Cask
13. Nuclear Fuel
14. EX ROVR, The Autonomous, Explosion-proof, Plant Inspection Robot

PLANTS & INFRASTRUCTURE SYSTEMS

■ MITSUBISHI SHIPBUILDING CO., LTD.

Commercial Ships



■ MITSUBISHI HEAVY INDUSTRIES ENVIRONMENTAL & CHEMICAL ENGINEERING CO., LTD.

Environmental Systems



■ PRIMETALS TECHNOLOGIES, LIMITED

Metals Machinery



PLANTS & INFRASTRUCTURE SYSTEMS

1. Ferry (LNG-fueled Vessel), SUNFLOWER KURENAI
2. Cargo-passenger Ship, SALVIA MARU
3. RO/RO Ship, FUJIKI
4. RO/RO Ship, HIMAWARI 8
5. Marine Resources Survey Ship, HAKUREI
6. Patrol Vessel, ASAZUKI
7. LNG Fuel Gas Supply System (LNG-FGSS)
8. SOx Scrubber Systems for Small to Medium Output Engine
9. Power Prediction and Lines Selection System
10. 3D Engineering System of Ships Mates
11. Waste-to-Energy Plant (Nagasaki, Japan)
12. Waste-to-Energy Plant (TuasOne, Singapore)
13. Sewage Sludge Carbonization Plant (Tokyo, Japan)
14. Industrial Waste-to-Energy Plant (Mie Chuo Kaihatsu Energy Plaza)
15. MEROS-Off-gas Cleaning System for Sinter Plants
16. CPT-Circular Pelletizing Plant
17. MIDREX Iron-ore Direct-reduction Plant
18. LD Converter to produce steel
19. Slab Caster
20. Electric Arc Furnace
21. Arvedi ESP (Endless strip production)
22. Hot Strip Mill
23. HYPER UC-Mill
24. Continuous Annealing Line
25. Wire Rod Mill

ENGINEERING SOLUTIONS

■ MITSUBISHI HEAVY INDUSTRIES, LTD.

CO₂ Capture Plants



Compact CO₂ Capture Systems



Chemical Plants



Transportation Systems



■ MITSUBISHI HEAVY INDUSTRIES TRANSPORTATION AND CONSTRUCTION ENGINEERING, LTD.

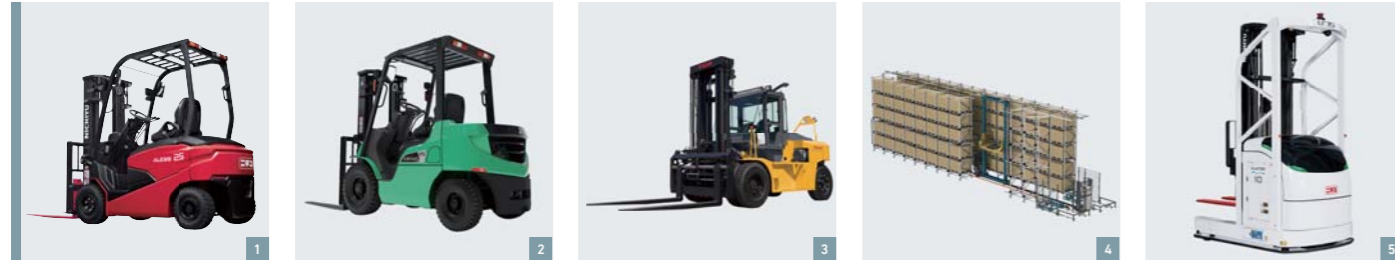
Transportation Systems/Transportation Equipment



ENGINEERING SOLUTIONS

1. CO₂ Capture Plant for EOR (U.S.)
2. CO₂ Capture Plant (Qatar)
3. Compact CO₂ Capture System, CO₂ MPACT™ (Hiroshima, Japan)
4. Ammonia and Methanol Co-production Plant (Tatarstan, Russia)
5. Ammonia/Urea Plant (Malaysia)
6. Methanol Plant (Trinidad and Tobago)
7. Polyethylene Plant (Mexico)
8. Acrylic Acid Plant (Bashkortostan, Russia)
9. LNG Receiving Terminal (Niigata, Japan)
10. Automated Guideway Transit (Tokyo Yurikamome)
11. Automated Guideway Transit (Macau LRT)
12. Airport Automated Mover (Tampa International Airport, U.S.)
13. Operation & Maintenance Service (Dubai Metro)
14. Urban Transportation System (Doha Metro)
15. High-speed Rail (Taiwan)
16. Light Rail Vehicle (Hiroshima Electric Railway)
17. Suspended-type Monorail (Chiba Urban Monorail)
18. Catenary Wiring Vehicle for Shinkansen
19. Air Brake Systems (Oil-Free Air Compressor/Brake Control Unit/Pneumatic Brake Caliper/Tread Brake Unit)
20. Variable Opening Type Platform Door
21. Passenger Boarding Bridge
22. Refrigerated Warehouse (Kyoto, Japan)

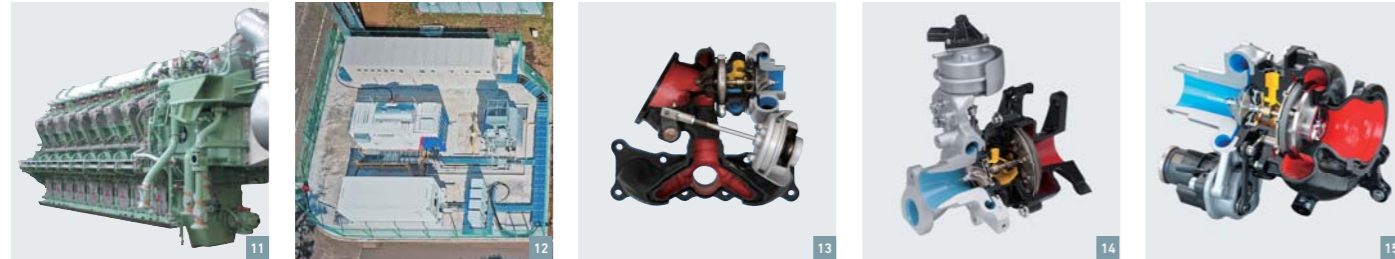
■ MITSUBISHI LOGISNEXT CO., LTD.
Material Handling Equipment



■ MITSUBISHI HEAVY INDUSTRIES ENGINE & TURBOCHARGER, LTD.
Engine & Energy



Turbochargers



■ MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.
Air-Conditioning & Refrigeration



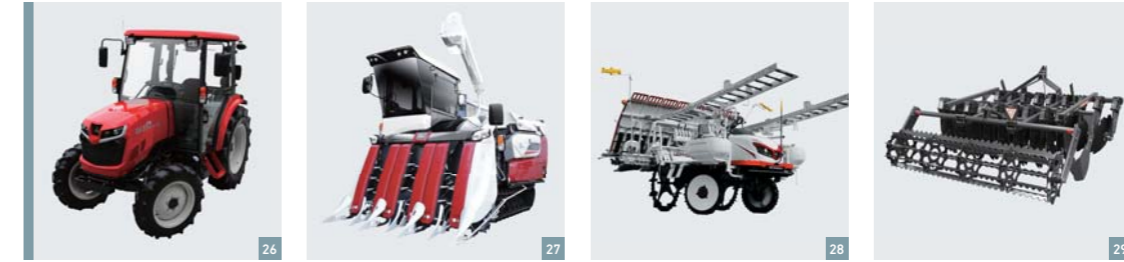
Automotive Air Conditioners



LOGISTICS, THERMAL & DRIVE SYSTEMS

1. Counter Balanced Trucks
2. Small-sized Engine-powered Forklift
3. Large-sized Engine-powered Forklift
4. Storage System
5. Laser-guided AGF
6. Diesel Engine Generator Set, MGS
7. Gas Engine Cogeneration System
8. Gas Engine
9. Marine Diesel Engine
10. Small Diesel Engine
11. Gas Engine
12. Triple Hybrid Stand-alone Power Supply System, EBL0X
13. Turbocharger for Gasoline Engine Integrated with Sheet-metal Exhaust Manifold
14. Variable Geometry (VG) Turbocharger for Diesel Engine
15. Variable Geometry (VG) Turbocharger for Gasoline Engine
16. Residential Air-conditioner
17. Inverter Packaged Air-conditioner
18. Multi-split Type Air-conditioner
19. Air-sourced Heat Pump Chiller, MSV
20. Commercial Use CO₂ for Air-to-Water Heat Pump, Q-ton and Tank
21. Variable Speed Drive Centrifugal Chiller, ETI-Z
22. Plug-in Hybrid Transport Refrigeration Unit, TE30
23. Electric Scroll Compressor
24. Belt-type Scroll Compressor
25. HVAC Module (Heating, Ventilation and Air-conditioning)

■ MITSUBISHI MAHINDRA AGRICULTURAL MACHINERY CO., LTD.
Agricultural Machinery



MACHINERY SYSTEMS

■ MITSUBISHI HEAVY INDUSTRIES MACHINERY SYSTEMS, LTD.
Machinery Systems



26. Tractor GA552 27. Combine Harvester V6120A 28. Rice Planter LE80AD 29. Short Type Disc Harrows, KUSANAGI

MACHINERY SYSTEMS

1. 2. Cultural/Sports Facility (Saitama Super Arena)
3. Full-scale Aero-acoustic Wind Tunnel
4. Mechanical Parking System
5. Industrial Chimney
6. Penstock
7. Car Crash Simulator
8. Aseptic Filler
9. Intelligent Transport System
10. Accelerator
11. Box Making Machine, EVOL
12. Newspaper Offset Press, DIAMONDSTAR
13. Tire Inspection Machine

INTEGRATED DEFENSE & SPACE SYSTEMS

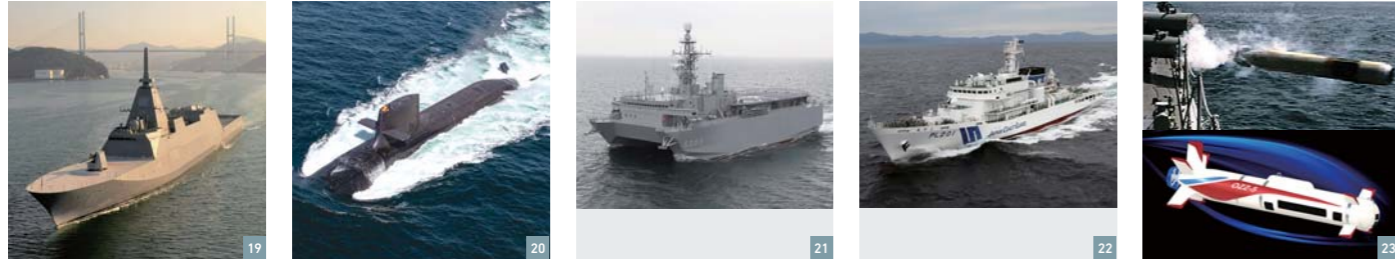
■ MITSUBISHI HEAVY INDUSTRIES, LTD.
Aircraft & Missile Systems



Land Systems



■ MITSUBISHI HEAVY INDUSTRIES, LTD. ■ MITSUBISHI HEAVY INDUSTRIES MARITIME SYSTEMS CO., LTD.
Naval Ship & Maritime Systems



INTEGRATED DEFENSE & SPACE SYSTEMS

1. F-2 Fighter
2. F-15J Jet Fighter
3. SH-60K Maritime Patrol Helicopter (JMSDF)
4. Air-to-Air Missile(AAM-5B)
5. Surface-to-Air Missile System (PATRIOT PAC-3 (MSE))
6. SM-3 Block 2A Flight Test
7. Type 12 Surface-to-Ship Missile System (12SSM)
8. Launch of H-IIA Launch Vehicle
9. Launch Complex for Japan Aerospace Exploration Agency (JAXA)
10. HTV-X (Under Development)
11. LE-9 LOX/LH2 Engine, Thrust: 1471kN (Vacuum) for H3 Launch Vehicle First Stage
12. Cell Biology Experiment Facility-Left (CBEF-L) for "KIBO" Module on International Space Station (ISS)
13. Space Propulsion Systems/Monopropellant Thrusters
14. Type 10 Main Battle Tank
15. Type 16 Mobile Combat Vehicle
16. Heavy Wheeled Recovery Vehicle
17. Forklift with Radiation Shielded Cabin
18. 6NMU Engine
19. Frigate, MOGAMI
20. Submarine, TAIGEI
21. Ocean Surveillance Ship, AKI
22. Patrol Vessel, MIYAKO
23. Torpedo/Unmanned Underwater Vehicle (Fr-Jp Joint Research Project)

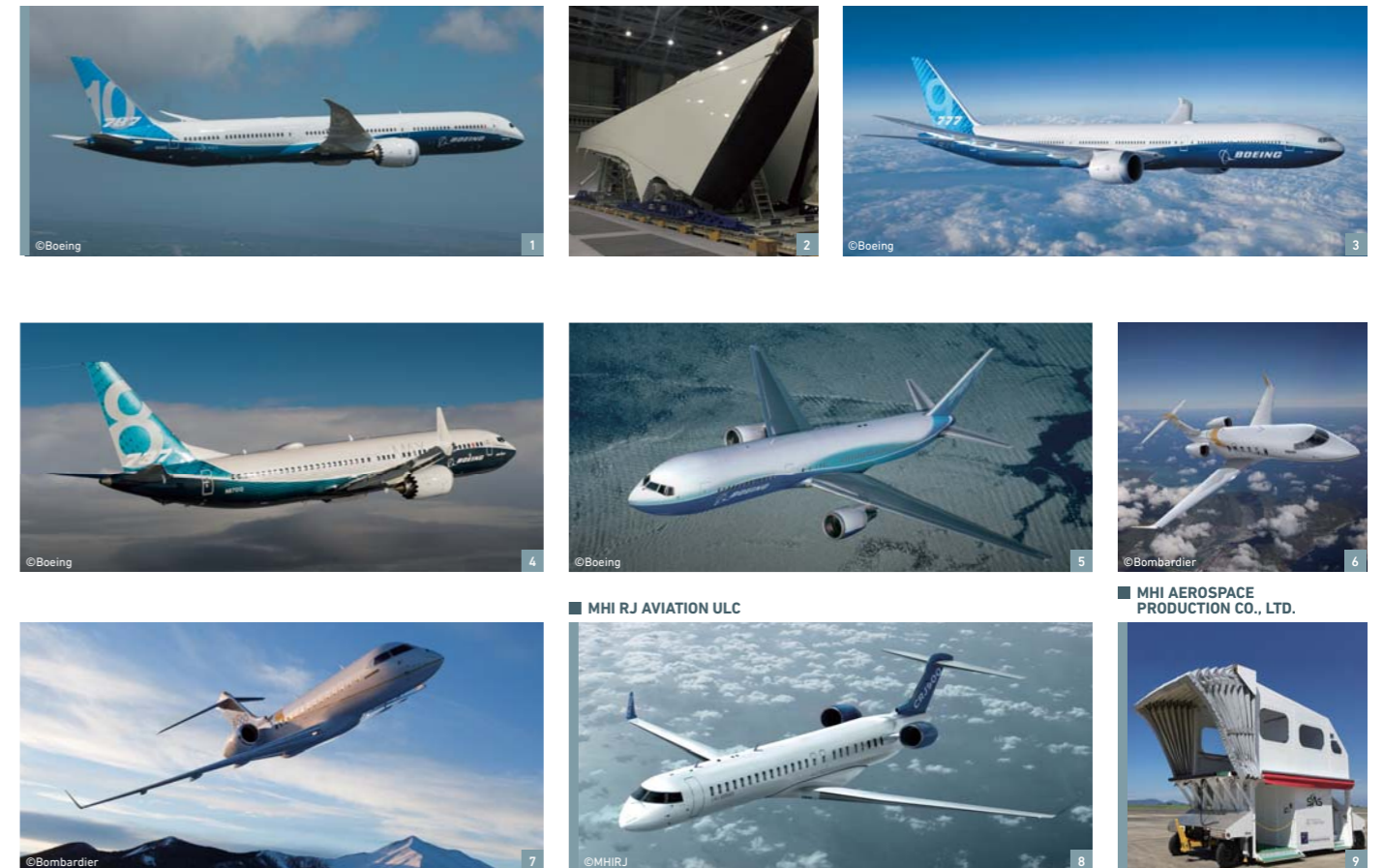
INTEGRATED DEFENSE & SPACE SYSTEMS/COMMERCIAL AVIATION SYSTEMS

■ MITSUBISHI HEAVY INDUSTRIES, LTD.
Advanced System Programs



COMMERCIAL AVIATION SYSTEMS

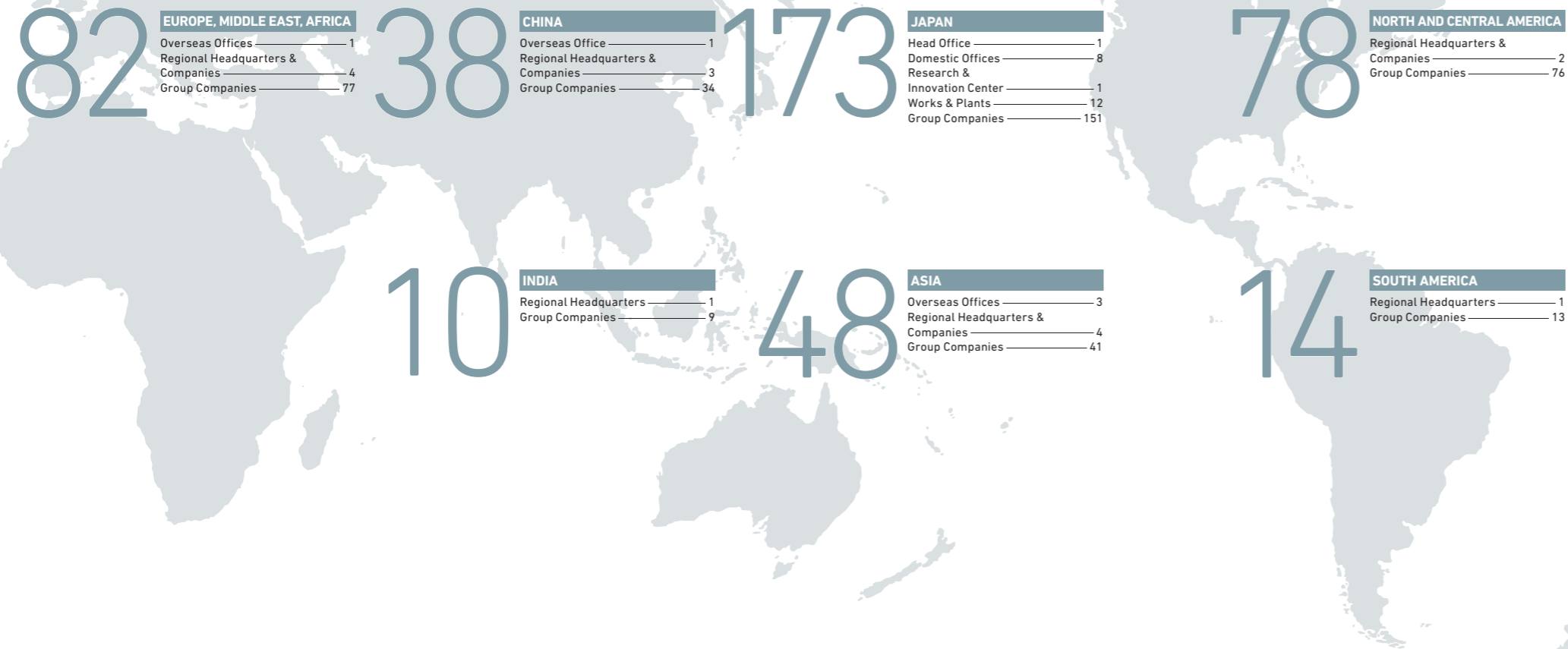
■ MITSUBISHI HEAVY INDUSTRIES, LTD.



COMMERCIAL AVIATION SYSTEMS

1. Boeing 787 (MHI: Composite Main Wings)
2. Boeing 787 Composite Main Wings before Shipping
3. Boeing 777X (MHI: Aft Fuselage Panels, Tail Fuselage, Passenger Entry Doors & Bulk Cargo Doors)
4. Boeing 737 (MHI: Inboard Flaps)
5. Boeing 767 (MHI: Aft Fuselage Panels & Cargo Doors)
6. Bombardier Challenger 300/350 (MHI: Wings)
7. Bombardier Global 5000/6000 (MHI: Wings, Center Fuselage & Center Wing)
8. CRJ
9. Passenger Steps with Elevator

Accelerating the expansion of our global network to reach new levels of growth and development



NAGASAKI SHIPYARD & MACHINERY WORKS
 ■ Energy Systems
 ■ Plants & Infrastructure Systems
 ■ Integrated Defense & Space Systems



SHIMONOSEKI SHIPYARD & MACHINERY WORKS
 ■ Plants & Infrastructure Systems
 ■ Machinery Systems
 ■ Integrated Defense & Space Systems
 ■ Commercial Aviation Systems



HIROSHIMA MACHINERY WORKS
 ■ Energy Systems
 ■ Plants & Infrastructure Systems
 ■ Machinery Systems
 ■ Commercial Aviation Systems



MIHARA MACHINERY WORKS
 ■ Engineering Solutions
 ■ Machinery Systems



KOBE SHIPYARD & MACHINERY WORKS
 ■ Nuclear Energy Systems
 ■ Logistics, Thermal & Drive Systems
 ■ Machinery Systems
 ■ Integrated Defense & Space Systems
 ■ Commercial Aviation Systems



TAKASAGO MACHINERY WORKS
 ■ Energy Systems
 ■ Nuclear Energy Systems



NAGOYA AEROSPACE SYSTEMS WORKS
 ■ Energy Systems
 ■ Commercial Aviation Systems



NAGOYA GUIDANCE & PROPULSION SYSTEMS WORKS
 ■ Energy Systems
 ■ Integrated Defense & Space Systems



YOKOHAMA DOCKYARD & MACHINERY WORKS
 ■ Energy Systems
 ■ Integrated Defense & Space Systems



SAGAMIHARA MACHINERY WORKS
 ■ Logistics, Thermal & Drive Systems
 ■ Integrated Defense & Space Systems



HITACHI WORKS
 ■ Energy Systems



KURE WORKS
 ■ Energy Systems

DOMESTIC OFFICES

- Hokkaido Office
- Tohoku Office
- Hokuriku Office
- Chubu Office
- Kansai Office
- Chugoku Office
- Shikoku Office
- Kyushu Office

OVERSEAS OFFICES

- Middle East Office
- Taipei Office
- Hanoi Liaison Office
- Ho Chi Minh City Liaison Office
- Kuala Lumpur Office

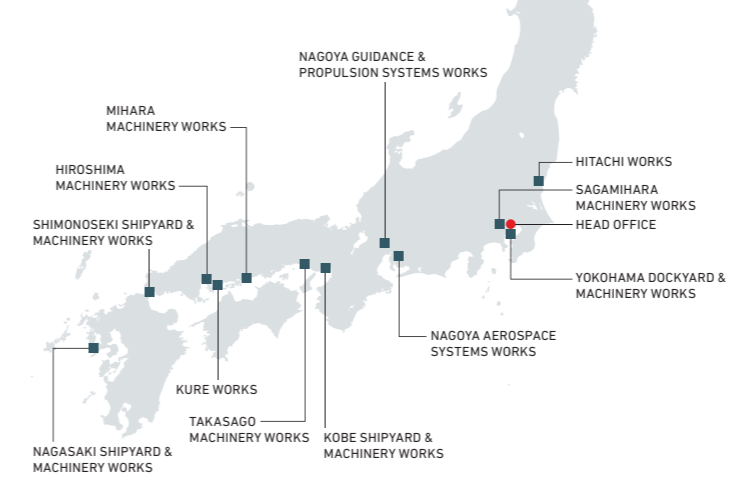
REGIONAL HEADQUARTERS

- Mitsubishi Heavy Industries America, Inc.
- Mitsubishi Industrias Pesadas do Brasil Ltda.
- Mitsubishi Heavy Industries EMEA, Ltd.
- Mitsubishi Heavy Industries (China) Co., Ltd.
- Mitsubishi Heavy Industries India Private Ltd.
- Mitsubishi Heavy Industries Asia Pacific Pte. Ltd.

REGIONAL COMPANIES

- Mitsubishi Heavy Industries Mexicana, S.A. de C.V.
- Mitsubishi Heavy Industries France S.A.S.
- MHI Russia LLC
- MHI Technologies S.A.E
- Mitsubishi Heavy Industries (Shanghai) Co., Ltd.
- Mitsubishi Heavy Industries, (Hong Kong) Ltd.
- Mitsubishi Heavy Industries (Thailand) Ltd.
- PT Mitsubishi Heavy Industries Indonesia
- Mitsubishi Heavy Industries Australia, Pty. Ltd.

DOMESTIC WORKS & PLANTS



MHI Group location totals include consolidated, non-consolidated and affiliated companies (as of March 31, 2023). The domestic offices, overseas offices, and domestic works and plants listed are facilities of Mitsubishi Heavy Industries, Ltd.