AIRMAN®



Hokuetsu Industries Co., Ltd.

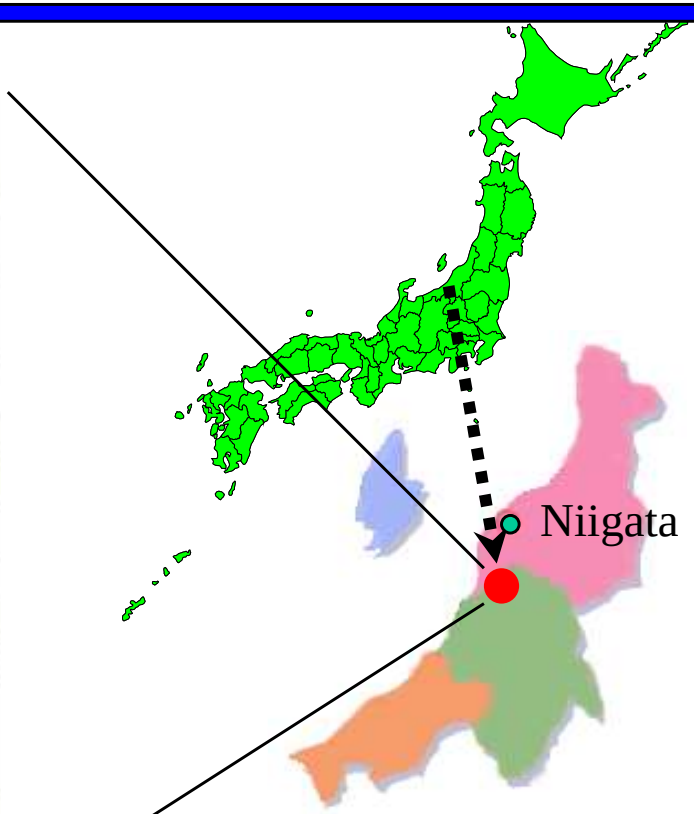
Location

AIRMAN®

To Niigata



To Tokyo

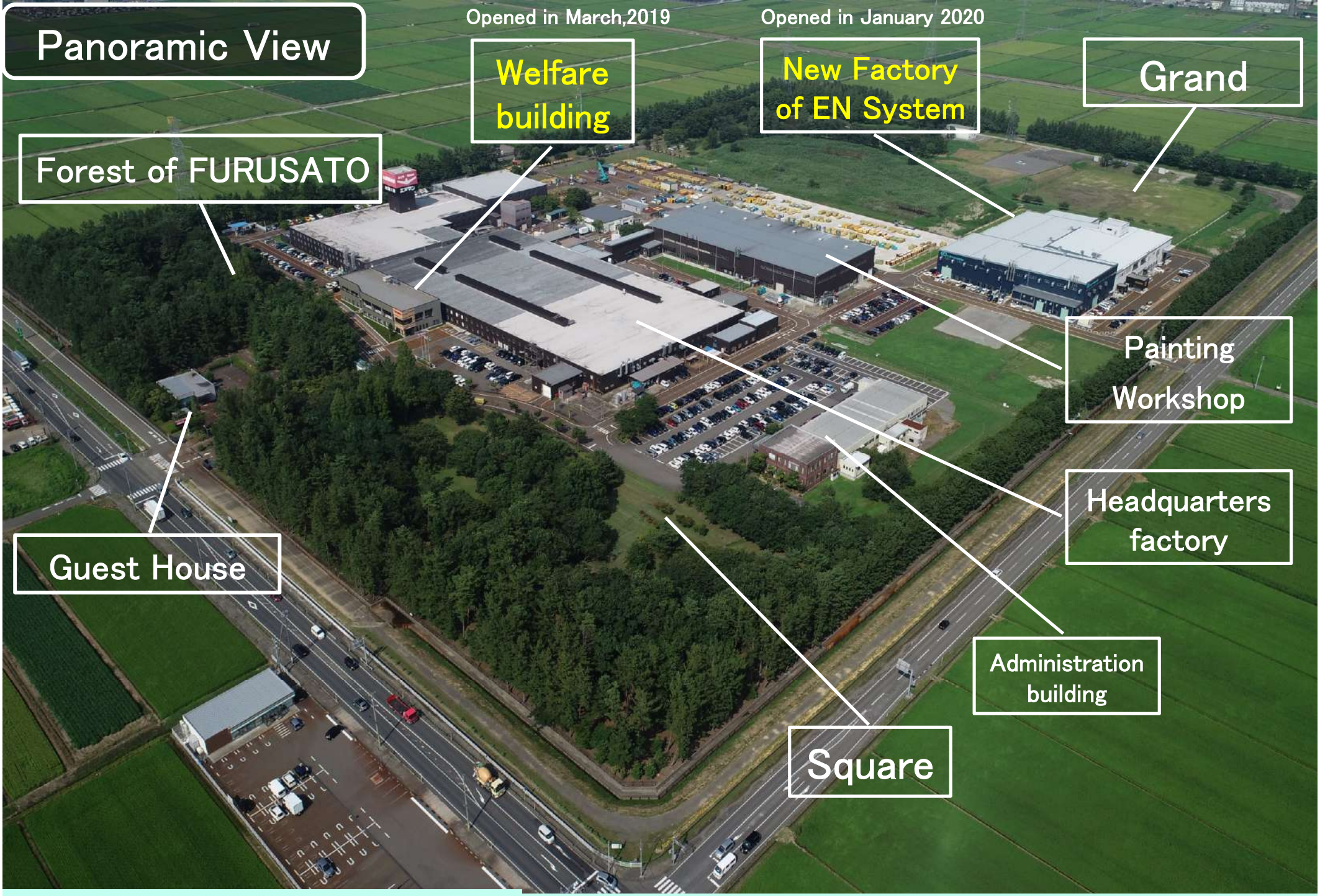


Niigata Prefecture:

○Coastline: 331km (205mile)

○Size of land: 12,584km^2 (4,859mile^2) (No. 5 in Japan)

○Population: 2.26mil. (No. 15 in Japan)



Site area 238,343㎡
(Approx.400m × 600m)

Green area 90.240㎡
Green coverage 41%

Building area 30,607 ㎡
(Approx. 1/10 of site area)

New factory of
EN System

Operated in
January 2020





Welfare
building

Opened in
March, 2019


Mt.Yahiko
634.0m
Mt.Taho
633.8m
Mt.Kakuda
481.7m

General (1)

AIRMAN®

- **Name:** HOKUETSU INDUSTRIES CO., LTD.
- **Brand:** AIRMAN®
- **Date of Foundation:** May 15, 1938





General (2)

AIRMAN®

- **Business lines:** Manufacture and Sales of Air Compressors, Generators, Scissors Lifters, Mini-excavators
- **Paid-up capital:** ¥ 3.4 billion
- **Turnover:** ¥ 32.9 billion (As of March 31, 2021)
- **Number of employees:** 709persons (As of March 31, 2021)
- **Listed on:** Tokyo Stock Exchange Market

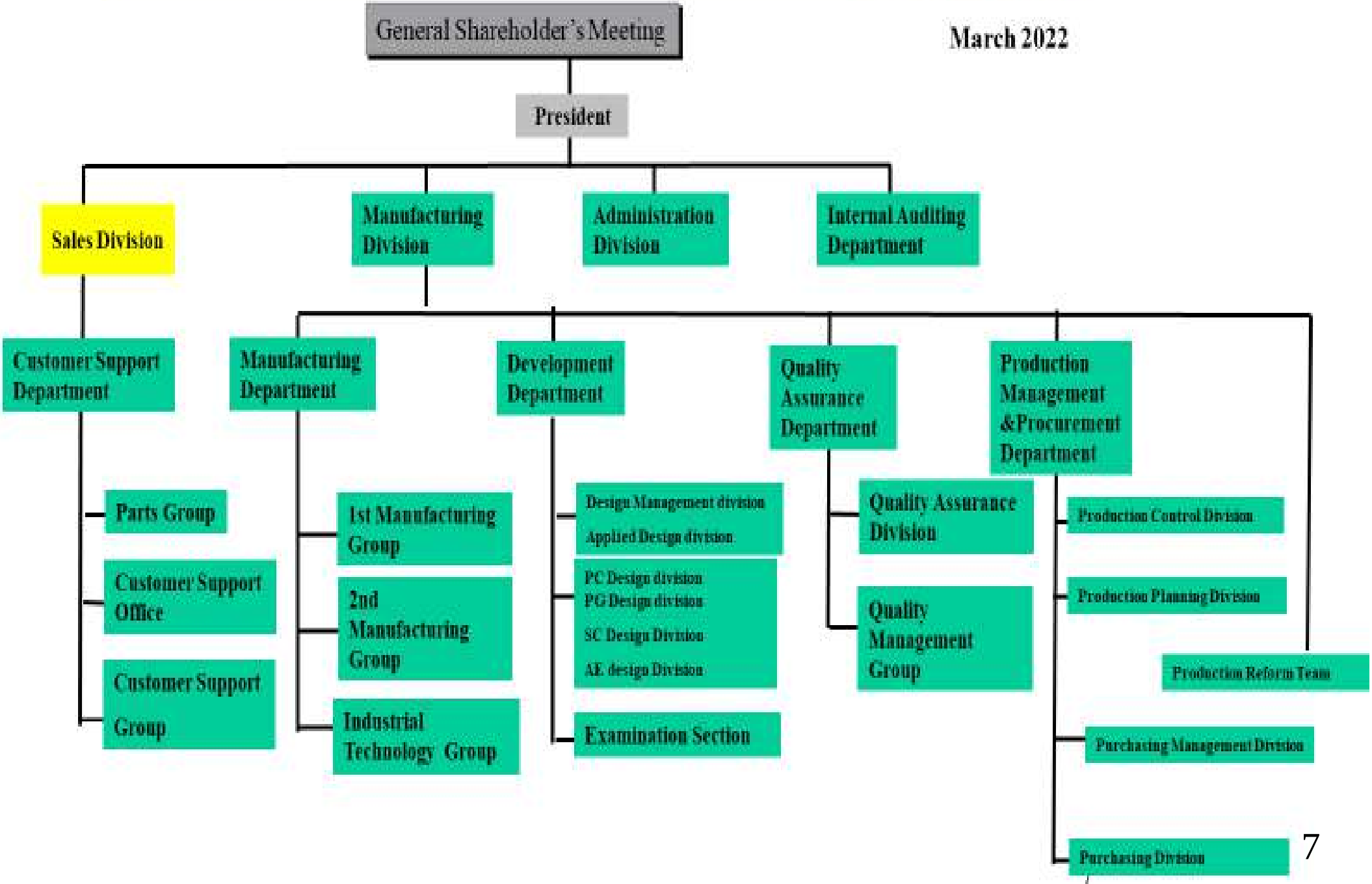


New Profile Rotor

Factory Organization

AIRMAN®

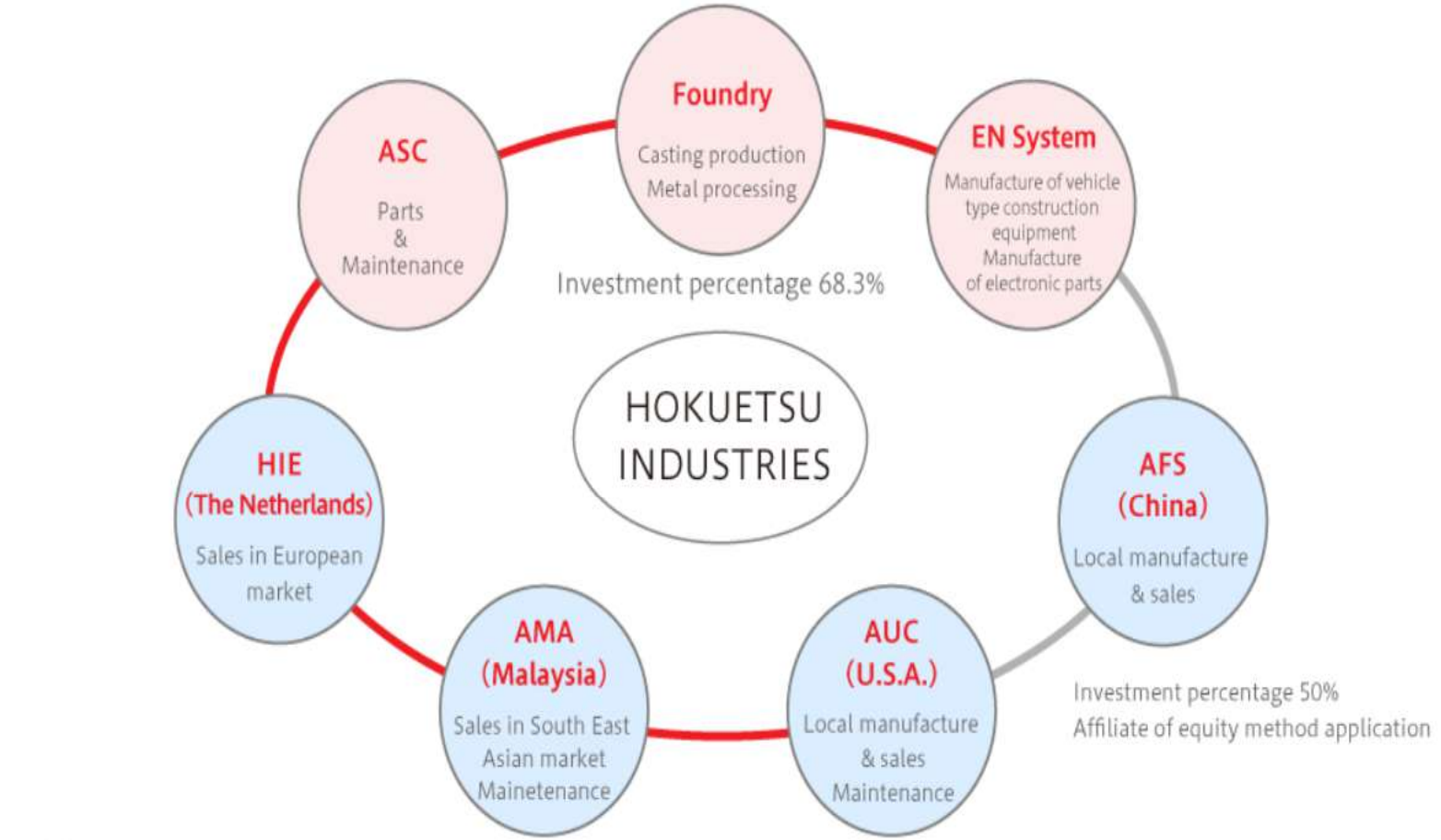
March 2022



Hokuetsu Group Profile

AIRMAN®

■ Hokuetsu Group Profile



HIE : HOKUETSU INDUSTRIES EUROPE B.V.
AFS : 上海復盛埃爾曼機電有限公司
(AIRMAN-FUSHENG SHANGHAI ELECTROMECHANICAL CO.,LTD.)
AMA: AIRMAN ASIA SDN.BHD.
AUC : AIRMAN USA CORPORATION

History (1)

AIRMAN®

- **1938** Founded on May 15, and started manufacturing and sale of compressors (Paid-up capital: ¥15,000.-)
- **1952** Brand was named AIRMAN®
- **1968** Succeeded in developing Screw Compressors based on our own technology (Internationally Patented)
- **1971** Began to sell diesel engine Generators
- **1980** Listed on Niigata Stock Exchange Market
- **1981** Began to sell Mini-excavators
- **1989** Started to jointly develop mini-excavators with Hitachi Construction Machinery Co., Ltd.

History (2)

AIRMAN®

- **1991** Established Hokuetsu Industries Europe in Amsterdam, the Netherlands
- **1993** Established ASC Inc.
- **1994** Awarded ISO9001
- **2000** The Oil-less compressor SAW series was awarded “Excellent Energy Saving Machine” from Japan Machinery Industries Federation

  Listed on Second Division of The Tokyo Stock Exchange
- **2001** Established Foundry Inc.
- **2003** Established EN System Co., Ltd.

  Established AIRMAN-FUSHENG Joint Venture company in China

History (3)

AIRMAN®

- 2004 Began to sell the dual spec compressor which is first in the world
- 2005 Awarded ISO 14001
- 2006 The main office registration to Tsubame-City
  Began to sell 6.1m Mobile Elevating Work Platform
- 2007 Begin to sell Oil fence one type dynamo SDG-F series
  Begin to sell Outdoor establishment type air-cooling oil free compressor SMD75
- 2008 The 70th anniversary founding
  Began to sell 8m and 9.9m high place work car

History (4)

AIRMAN®

- **2013** Established AIRMAN ASIA SDN. BHD.
- **2014** Listed on First Division of The Tokyo Stock Exchange
  Established AIRMAN USA Corporation
- **2015** Began to sell leak-guard generator series
- **2016** Began to sell ABLE generator series
  Began to sell outdoor installation, inverter control, oil free screw compressor SMAD22VD first in the world

History (5)

AIRMAN®

- **2017** Launched a new series of scissors lift from 4.m to 9.9m.
- **2018** Celebrated its 80Th anniversary
  Started providing IoT solution with Good Smile Service PLUS
- **2019** Completed construction of the welfare building (Mar.22)
  Completed construction of the new building of Osaka branch (Nov.27)
  Completed the construction of EN System Co.,LTD. Tsubame factory (Dec.3)
- **2022** Completed construction of the new building of Nishi Kanto branch (April.11)

Subsidiaries

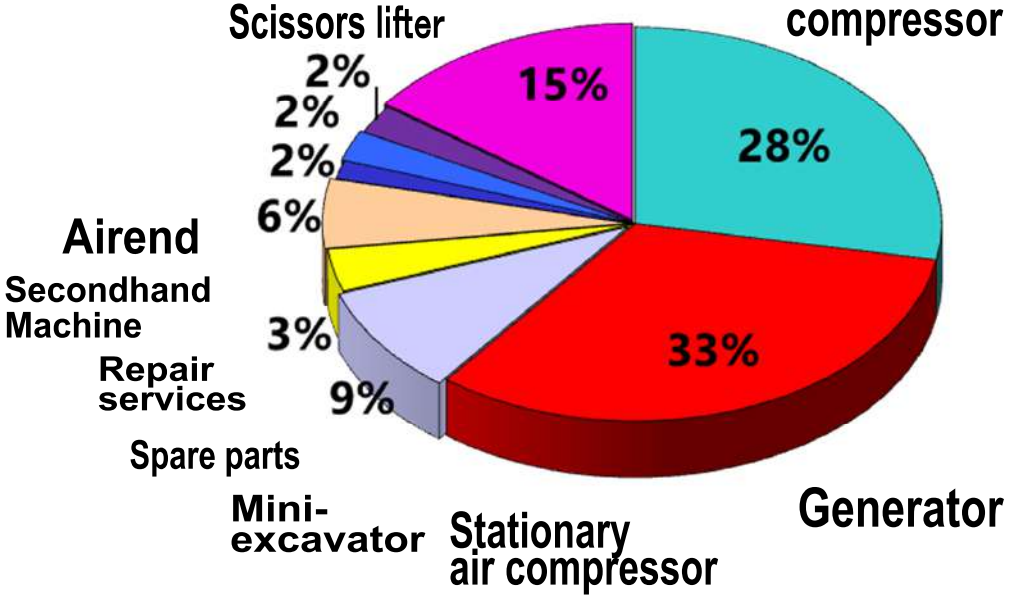
AIRMAN®



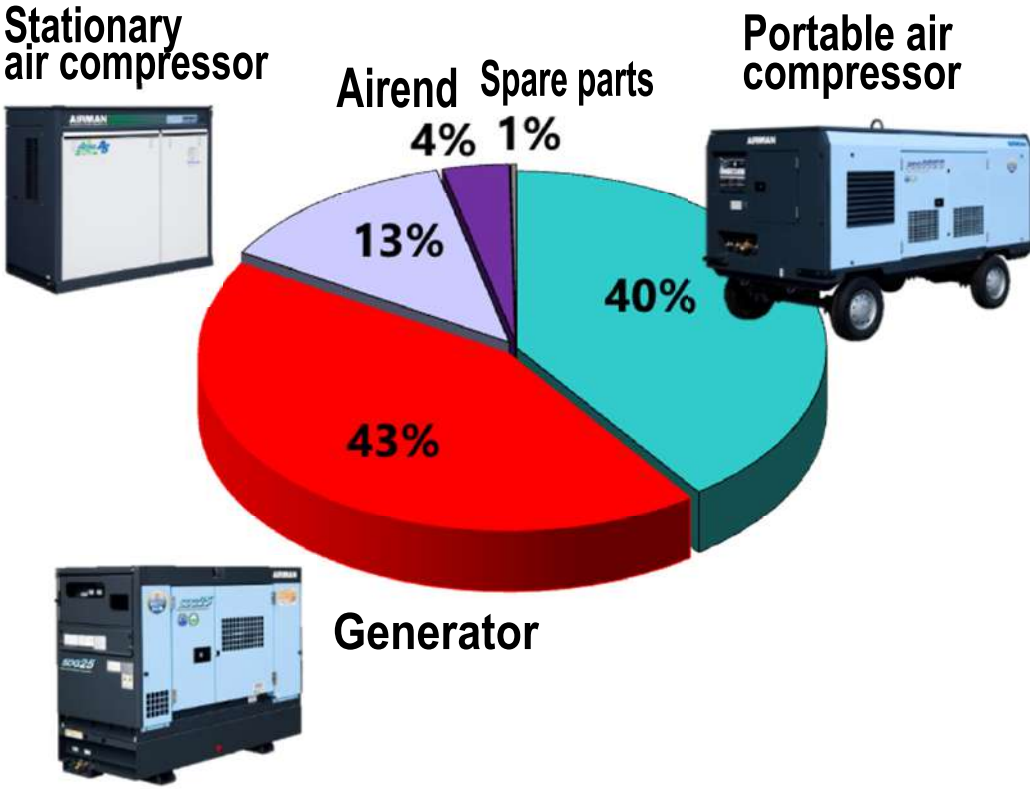
Sales and Production by Products

AIRMAN®

Percentage of sales amount by products (3/'21)

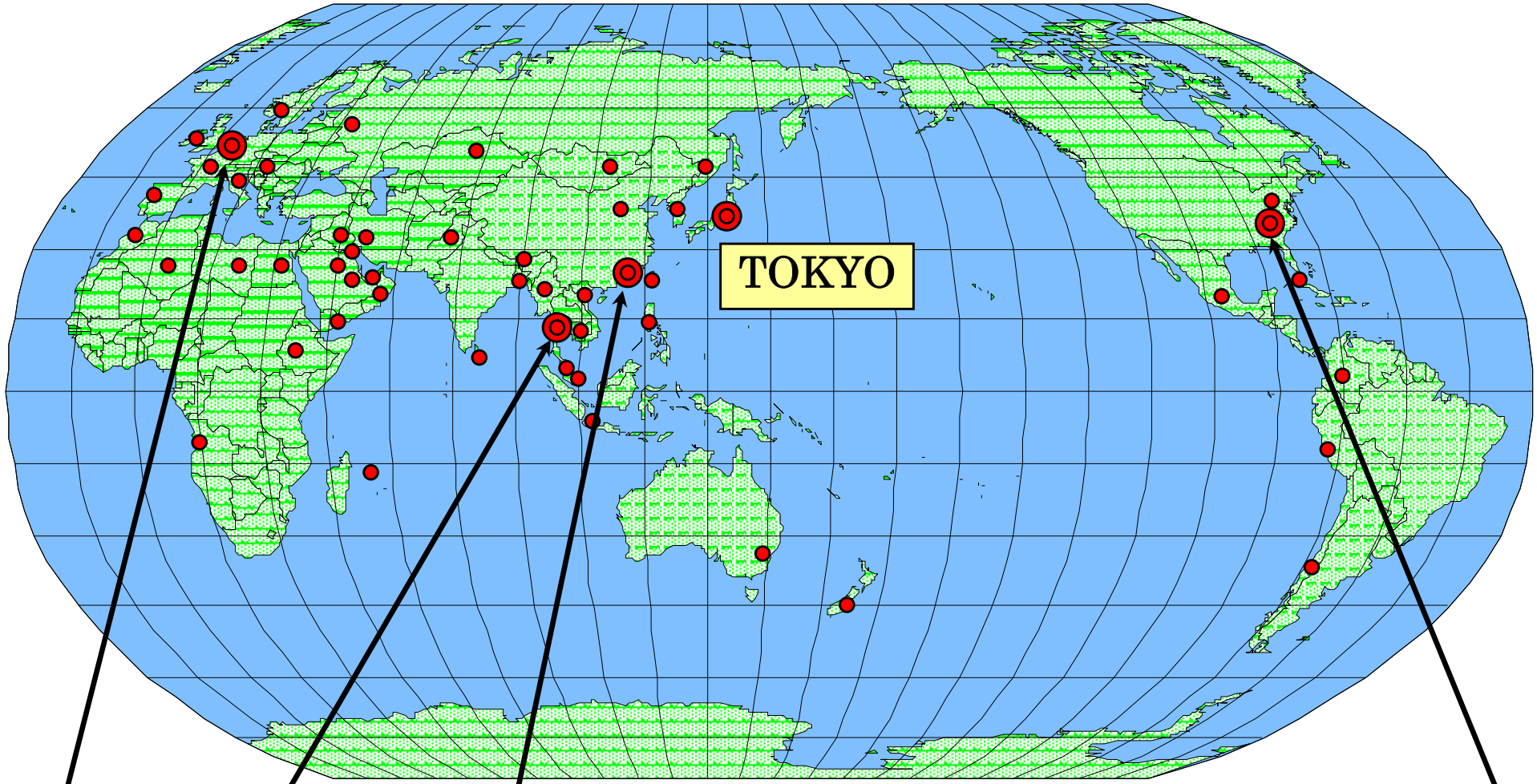


Percentage of production amount by products (3/'21)



Worldwide

AIRMAN®



Shanghai AIRMAN-Fusheng

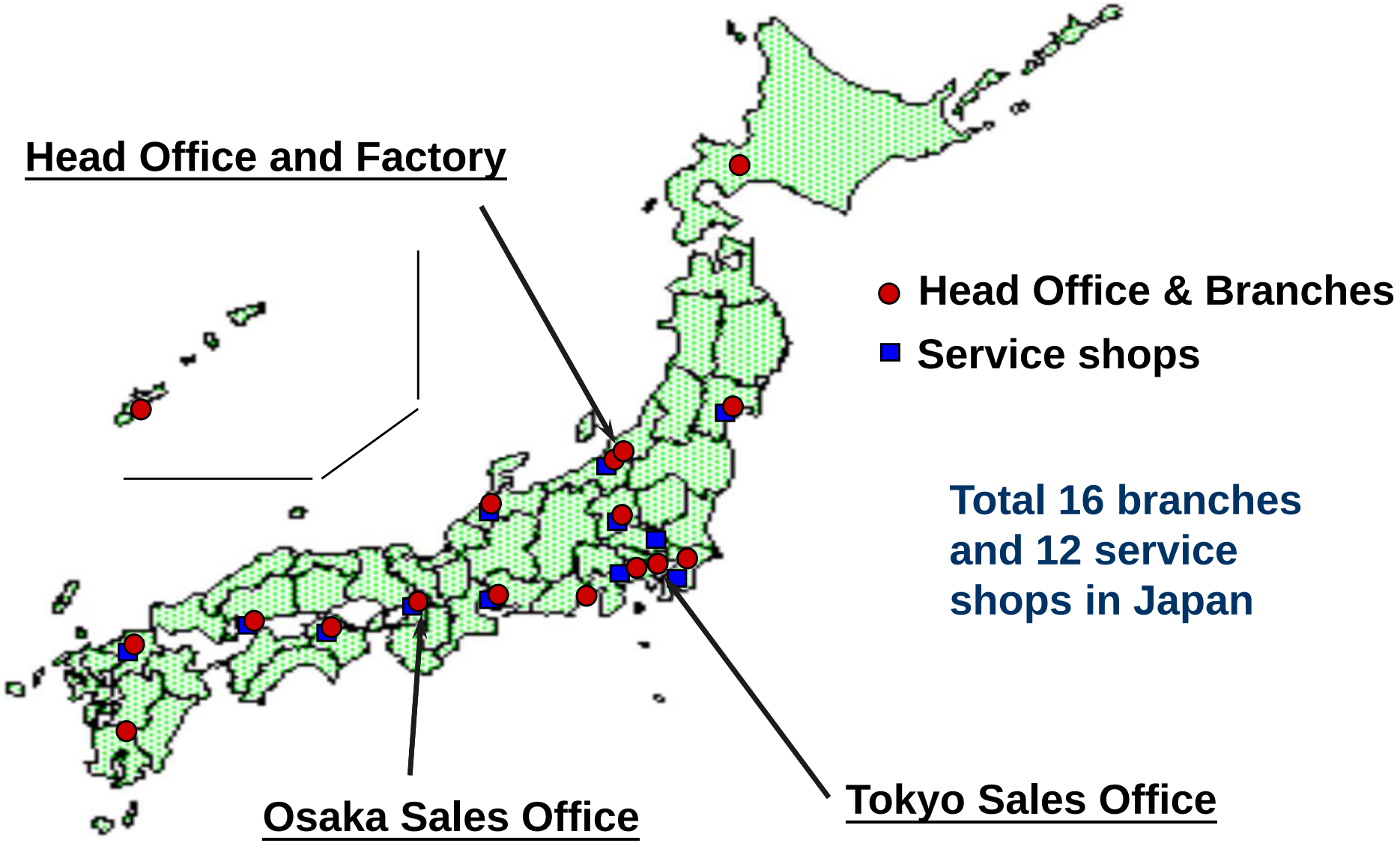
AMA (AIRMAN ASIA SDN.BHD.)

AUC (AIRMAN USA Corporation)

HIE (HOKUETSU INDUSTRIES EUROPE B.V.)

Location

AIRMAN®



Production System

AIRMAN®

Many kinds Small Quantities

One-Piece-At-a-Time Production by Renban

Casting,Machine Shop

Supplied Parts Line

AE Assemble

Painting

005 004 003 002 Renban 001

Total Ass'y Line



Supplied Parts Line

Supplied Parts Line

Painting

Frame Line

Sheet Metal Line

Receiver Tank Line

Just in Time

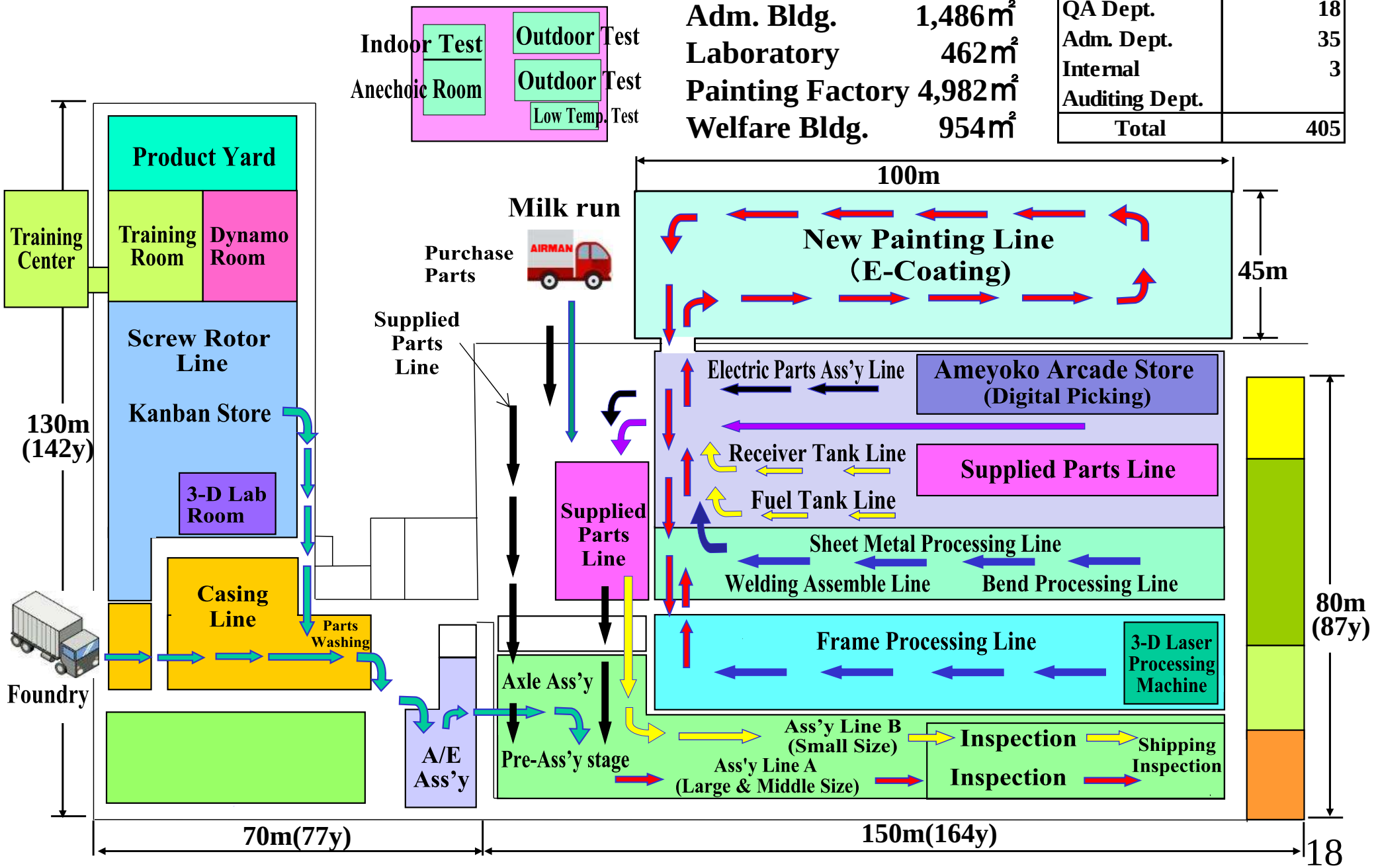
Total Ass'y Line

Factory Layout

Land	238,343 ㎡
Building	
Factory	13,127㎡
Adm. Bldg.	1,486㎡
Laboratory	462㎡
Painting Factory	4,982㎡
Welfare Bldg.	954㎡

March, 2022

Dept.	Workers
Production Dept.	349
QA Dept.	18
Adm. Dept.	35
Internal Auditing Dept.	3
Total	405



Foundry Inc.

AIRMAN®

Foundry Factory

(Auto-Casting Line)

FC, FCD,CV Cast iron,

Cast iron with low temp. expansion,

Other high strength casting





Casting Samples



Sand Mold



Shell Mold

Machining Line (Foundry Inc.)

AIRMAN®

Ooseki Factory

Machining of parts such as V pulley, gears, etc. (Approx. 400 items)





Factory Facilities

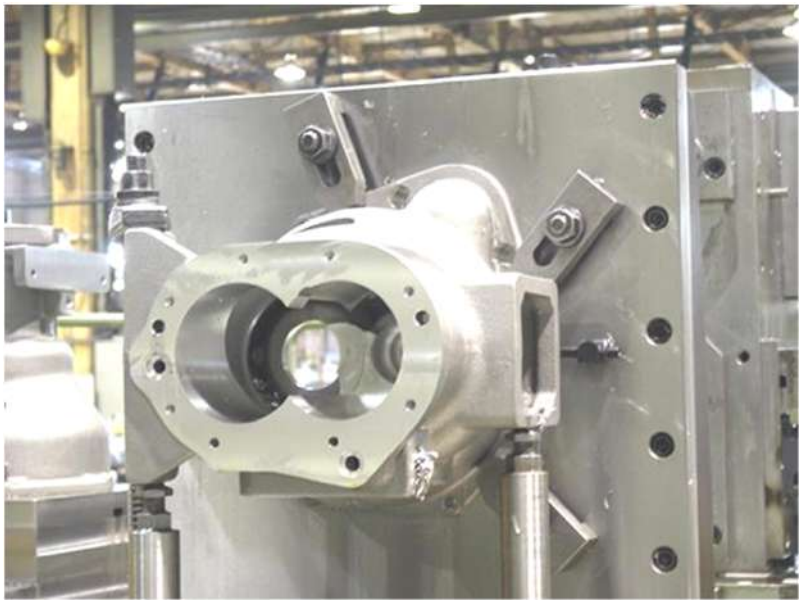


Machining Center

AIRMAN®

Casing Machining Line

24 hours operation by FMS



Compressor Parts (Cylinder)



FMS Machining Center



Hokuetsu Head Factory

AIRMAN®

Screw Rotor Line
Heart part of compressor



New Rotor Grinding Machine
(Introduced in 2004)



Completed Rotors
(Set of Male and Female)



A Rotor processing automation line
(Introduced in 2007)

Sheet Metal Processing Line

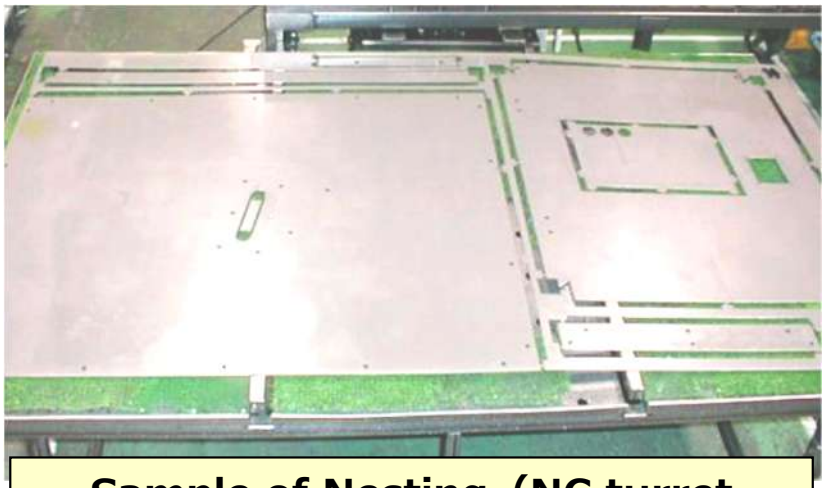
Process of automatic cutting, bending, shearing and welding



Fiber laser cutting machine (Operated in 2015)



Panel vendor（Operated in 2006）



Sample of Nesting（NC turret punch）



Welding Line

Frame Processing Line

Automatic cutting, shearing, bending, robot welding



Left Laser Processing Machine (Operated in 2005)

•Below Automatic robot welding line



For Large-sized frame･large leak-guard

Automatic robot welding line



Small-sized frame

Automatic robot welding line (operated in 2015)

Hokuetsu Head Factory (Receiver Tank Line)

AIRMAN®

Manufacturing and inspection Of Pressure vessel(Receiver tank)



Left Automatic Hydraulic Pressure Test Of Small Pressure vessel

Automation from robot welding to hydraulic pressure test.



Left Hydraulic Pressure Test Of Class-2 pressure vessel

Increased inspection efficiency by connecting pressure vessels.

The AIREND structure line

Thorough quality control by a cell structure.







Operated in 2017

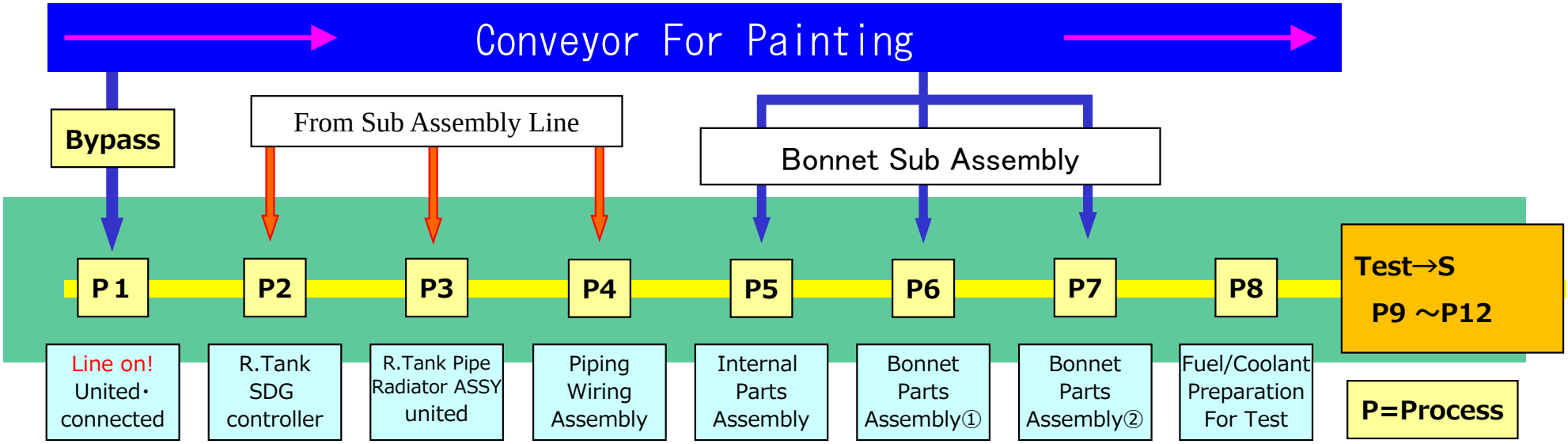
- Assembling indoor to avoid contamination
- Automatic transport by conveyor
- Quality control by work navigation

Head Factory(Total Assembly Line ①)

AIRMAN®

One-Piece-At-A-Time Production by mixed flow production line

⇒ **Mixed flow synchronized RENBAN production system**





<Stable work environment for Quality Control>

・Timely supply of unit parts, picking parts and painted parts from sub line.

・Smoothed working load on main line

・Process sharing for each work element

・Introducing of support facilities

Total Assembly line • Support Facility→The Introduction of Operation Navigation

Display the procession and key point of each important process that we can carry out reliable instruction even there are various models to produce.



【Example 1】
Detector navigation to ensure the coupling assembly is tightened.



【 Example 2】
Detection navigation of pipe tightening



【 Example 3】
Interlock navigation of Refueling water system



【 Example 4】
Inspection navigation of shipping

We also take full advantage of operation navigation in other lines and processes.

Tool Polishing Room

- Controlled the room temp. at 20℃



CNC High precision Grinding machine （Operated in 2009）



Grinding Cutter Plate



Rotor

3-D Measurement Machine

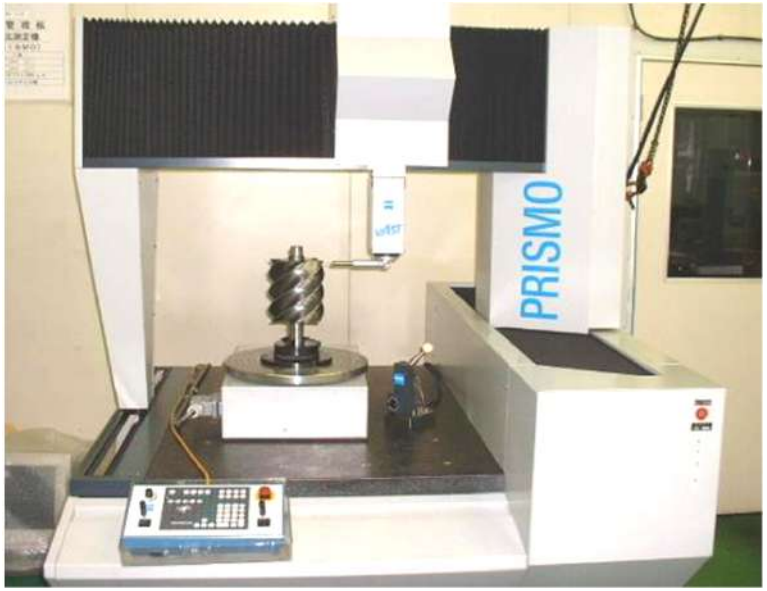
Measurement Tolerance 2.7μm

Measurement Tolerance 4.2μm



Precision Measurement Machine

Measurement Tolerance 0.2μm



The Testing stands

- Measure basic performance of a compressor and a dynamo







By three test stands (45kW, 170kW, 320kW), I adapt myself to a product and it is reasonable and measures performance

Low Temp. Testing Room



When the ambient temp. is 32℃ (90F), it is possible to refrigerate up to -25℃ (-13F) to have a performance test.

Anechoic Room

To measure a noise level without being affected by outside noises.



ISO9001, 14001 Certified factory

AIRMAN®

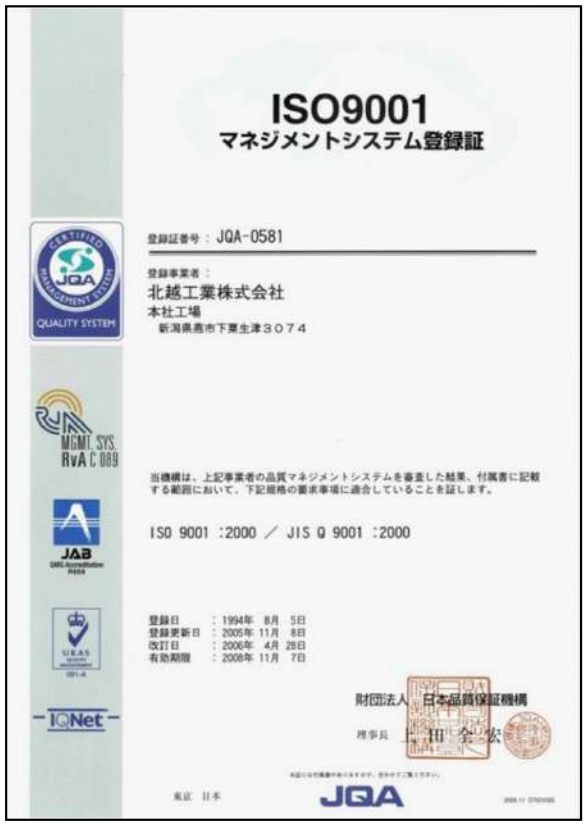
ISO9001

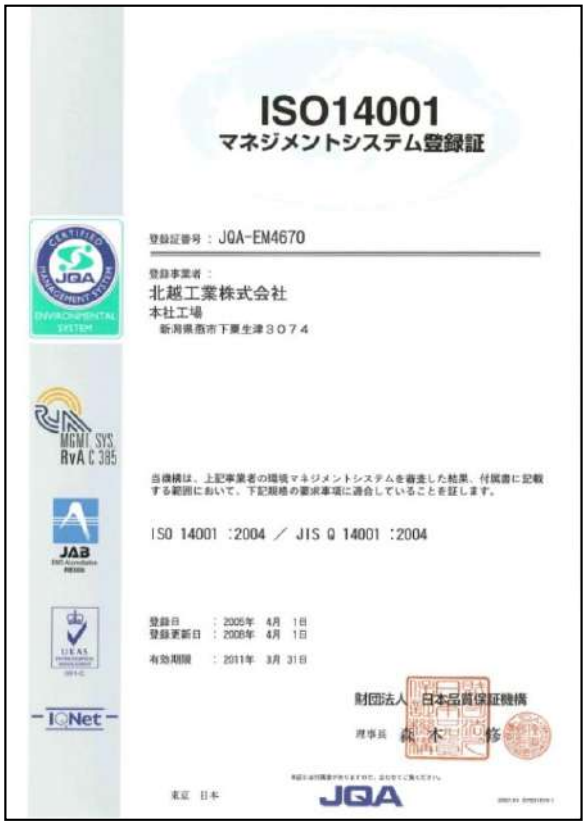
JQA-0581

CertificateNumber FM29990

1994(H 6) Awarded ISO9001(BSI, JQA at the same time)
2005(H17) Awarded ISO14001
Won MILES Award by Society Of Japanese Value Engineering







Thank you very much!!!



