Introduction of Hi-efficiency Turbo Blower

Contribute to Energy Reduction in Wastewater System

新明和工業株式会社

ShinMaywa

VISION WITH INSIGHT

Company Profile

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Company Name	ShinMaywa Industries, Ltd.
Established	Feburuary 1, 1920
Founded	November 5, 1949
President	Tatsuyuki Isogawa
Employees	6,040 (consol.) / 3,136(non-consol.) （As of March 31, 2023）

Global Network

① ShinMaywa (California), Ltd.

② ShinMaywa (America), Ltd.

③ ShinMaywa Mexico S.A. de C.V.

④ ShinMaywa (Bangkok) Co., Ltd.

⑤ Thai ShinMaywa Co., Ltd.

⑥ ShinMaywa Aerobridge Malaysia Sdn. Bhd.

⑦ ShinMaywa (Asia) Pte. Ltd.

⑧ Chongqing Endurance & ShinMaywa Industries, Ltd.

⑨ TurboMAX Co., Ltd.

⑩ Shangdong TurboMAX Environment Technology Co., Ltd.

⑪ TurboMAX (ChangZhou) Technology Co., Ltd.

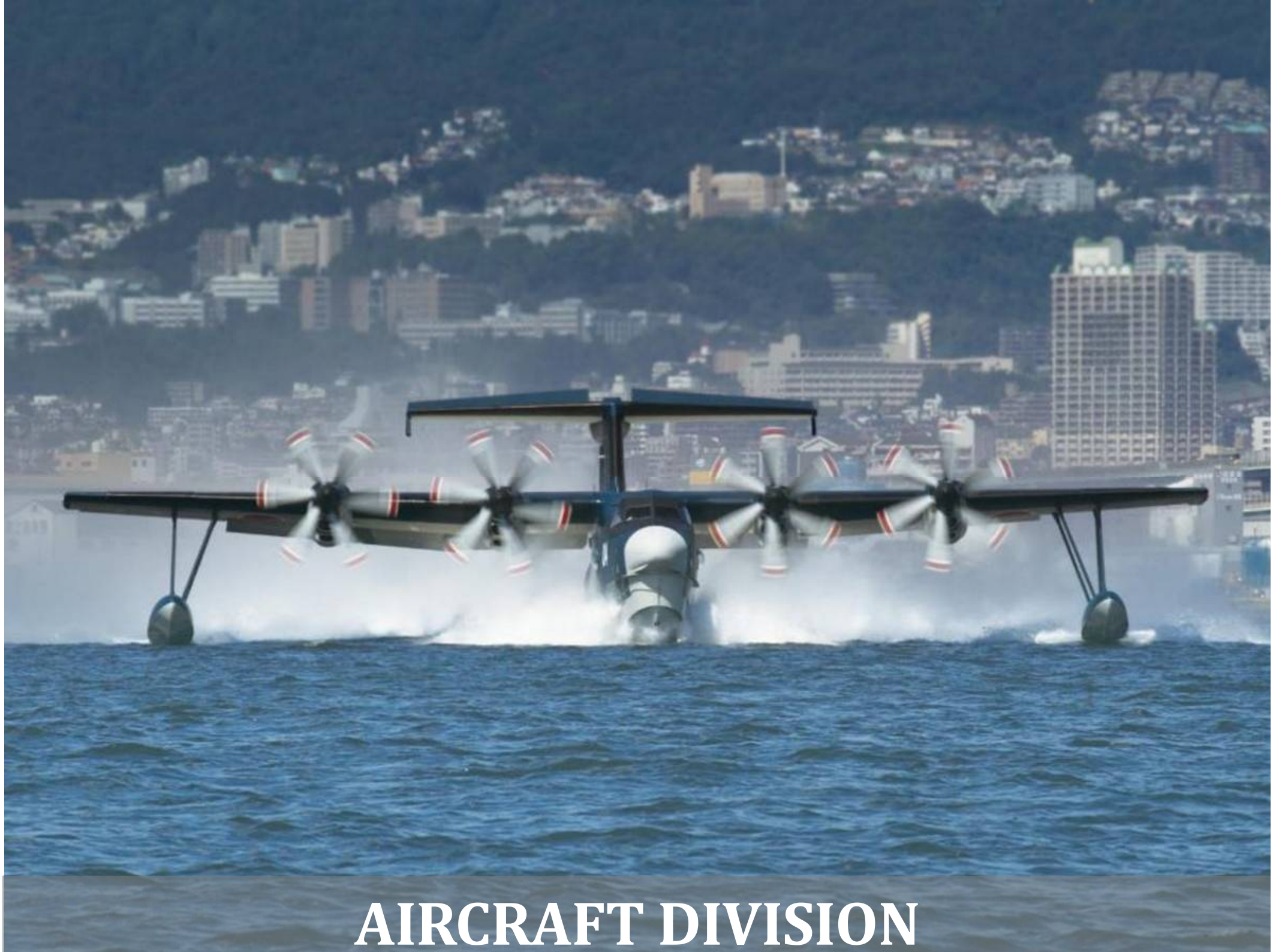
⑫ TurboMAX India Private Limited

⑬ ShinMaywa (Shanghai) Trading Co., Ltd.

⑭ ShinMaywa (Shanghai) High-Tech Machinery Co., Ltd.

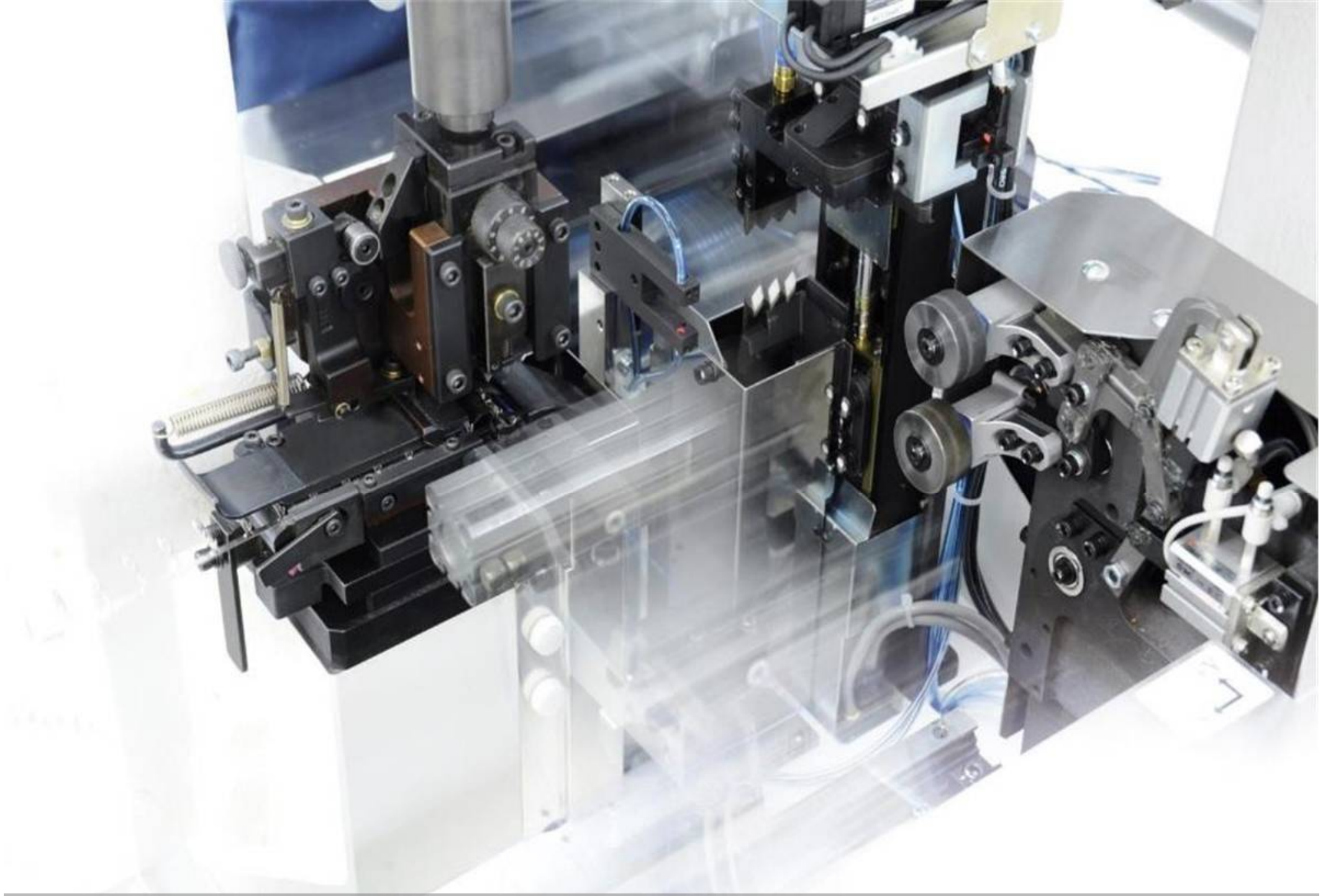
⑮ Taiwan ShinMaywa Industries Co., Ltd.

⑯ KOREA VACUUM LIMITED



AIRCRAFT DIVISION

SPECIAL PURPOSE VEHICLE DIVISION



INDUSTRIAL MACHINERY DIVISION

PARKING DIVISION

FLUID DIVISION

Wide Range of Product for Wastewater System

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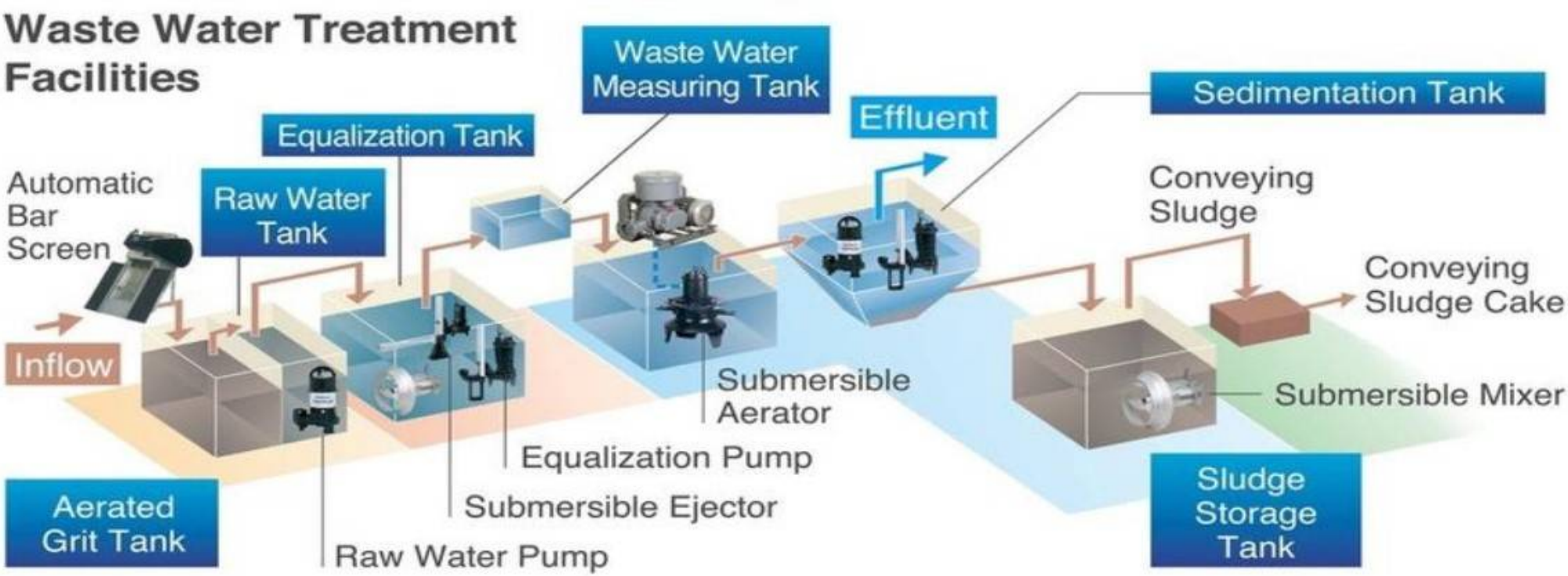
- Supply of equipment for wastewater treatment systems
- Submersible pumps, air blowers, submersible mixers, submersible aerators, Screens: the main equipment in the wastewater treatment system



Supply Records in VIETNAM

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Shinmaywa has been supplying the products in Wastewater field in Vietnam for nearly 20 years.

Government Project

No.	Location	Name of WWTP	Start year	Capacity (m3/day)	Funds
1	Ha Noi	Kim Lien	2005	3,700	JPN ODA
2	Ha Noi	Truc Bach	2005	2,500	JPN ODA
3	Da Nang	Son Tra	2006	15,900	WB ODA
4	Ha Noi	Bac Thang Long	2009	42,000	JPN ODA
5	Ho Chi Min	Binh Hung	2009	141,000	JPN ODA
6	Binh Duong	Thu Dau Mot	2013	17,650	JPN ODA
7	Ha Noi	Ho Tay	2014	22,800	PPP (BT)
8	Khanh Hoa	Nha Trang	2014	40,000	WB ODA
9	Ha Nam	Phu Ly	2015	2,500	Local govt
10	Bac Ninh	Tu Son	2015	33,000	PPP (BT)
11	Ho Chi Minh	Tham Luong-Ben Cat	2017	250,000	PPP (BT)
12	Hue	Hue WWTP	2018	30,000	JPN ODA
13	Quang Nam	Hoi An	2018	2,000	JPN ODA
14	Danang	Lien Chieu WWTP	2019	60,000	WB ODA
15	Danang	Phu Loc WWTP	2019	120,000	WB ODA
16	Danang	Ngu Hanh Son WWTP	2020	40,000	WB ODA
17	Danang	Son Tra WWTP	2020	40,000	WB ODA
18	Ha Noi	Yen Xa WWTP	2022	270,000	JPN ODA

Industrial Zone Project

No.	Name of Industrial Zone	Capacity of WWT (m3/d)	Year
1	Ascendas Protrade Singapore Tech Park	10,000	2017
2	Ba Thien II Industrial Zone	10,000	2014
3	Bau Bang / My Phuoc 5	16,000	2017
4	Chau Duc	45,000	2015
5	Da Nang Hi-tech Park	4,500	2017
6	Dat Do 1	16,000	2017
7	Dong Nam	15,000	2014
8	Dong Xuyen	3,000	2009
9	Giang Dien	12,000	2010/ 2016/ 2018
10	Hiep Phuoc	18,000	2017
11	Hoa Lac Hi-Tech Park	42,000	2007
12	Mai Son Industrial Zone	—	2017/ 2018
13	My Phuoc (1~3)	32,000	2017/ 2018
14	My Xuan B1 -CONAC	5,000	2012
15	Saigon Hi-TechPark	5,000	2017
16	Thang Long Industrial Park	3,000	2016
17	Thang Long Industrial Park (Vinh Phuc)	—	2018
18	Thang Long Industrial Park II Corporation	6,000	2016/ 2018
19	Viet Huong 2	2,000	2014/ 2018
20	VSIP Bac Ninh Industrial Zone	24,000	2016
21	VSIP Nghe An Industrial Zone	—	2016/ 2017
22	VSIP Quang Ngai	6,000	2014/ 2018
23	VSIP-1	—	2014/ 2016
24	Yen Binh Industrial Zone	25,000	2016/ 2017
25	Yen Phong Industrial Zone	1st: 28,000 / 2nd: 12,000	2010/ 2012/ 2014/ 2016
26	Pho Noi A Industrial Zone	6,000	2015

Danang City:
Son Tra XLNT / Phu Loc XLNT / Ngu Hanh Son XLNT / Hoa Xuan XLNT
Hoa Khanh IZ, Lien Chieu IZ, Hi-tech park/ Khanh Son leachate treatment system

Supply Records in DANANG

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Phu Loc WWTP
Air Blower ARS150 30KW x 12 units

Khanh Son Garbage Treatment Plant
Dry Pit type Pump x 14 units

Supply Records in DANANG

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Hoa Xuan WWTP
Air Blower ARS200 75KW x 6 units (2018)

Hoa Xuan WWTP
Maintenance Works

Contribute to Energy Saving

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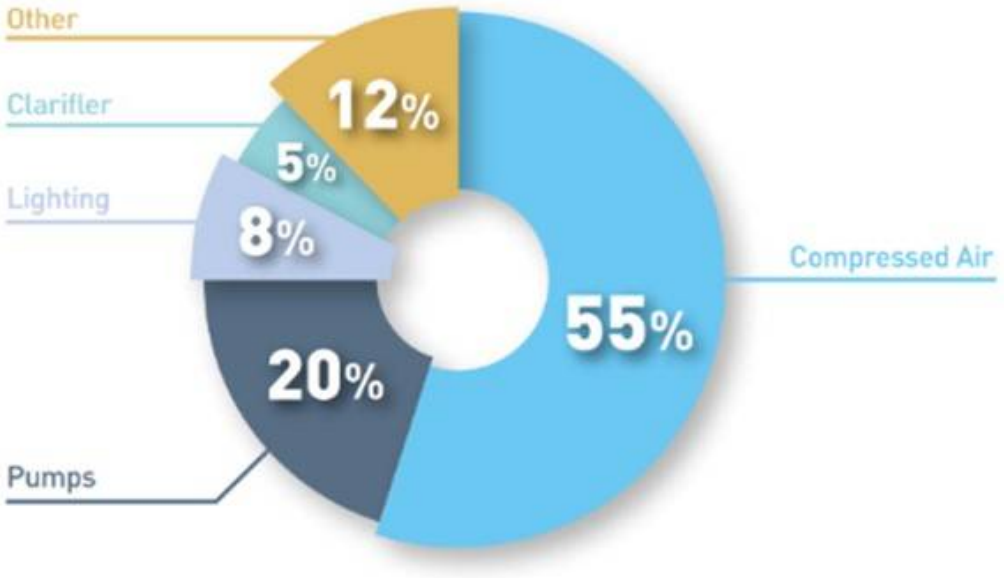
In the Wastewater Treatment System, the aeration process uses ***"50-60%"*** *of the total energy consumption.*



Power Consumption Ratio at Typical Wastewater Treatment Plant

ShinMaywa offers: ***Hi-efficiency Turbo Blower***

We will contribute to save the energy consumption for the aeration process in Wastewater Treatment System.

TURBO BLOWER ~ Core technologies ~

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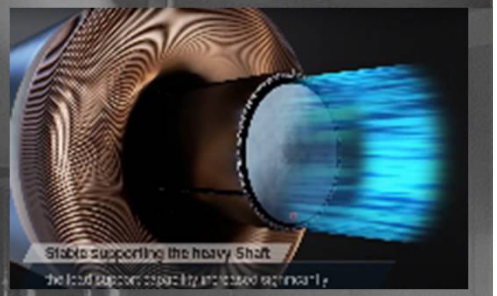
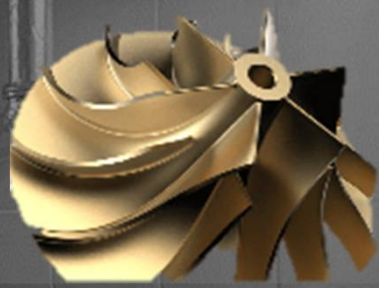
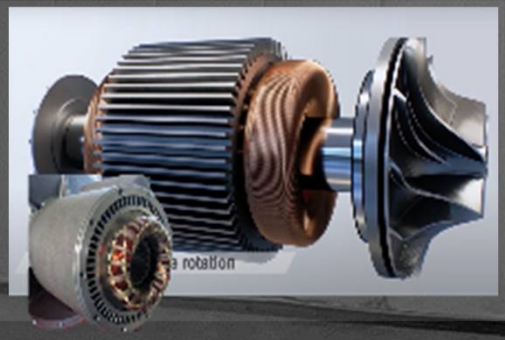
Air-foil bearing
Nano Silver
Triple Treatment Bearing
[NSTB+]



High-precision &
high-efficient impeller



Over 40,000min^{-1}
Speed PMS Motor



Stable and reliable optimized
controlled operation

Case Study in JAPAN

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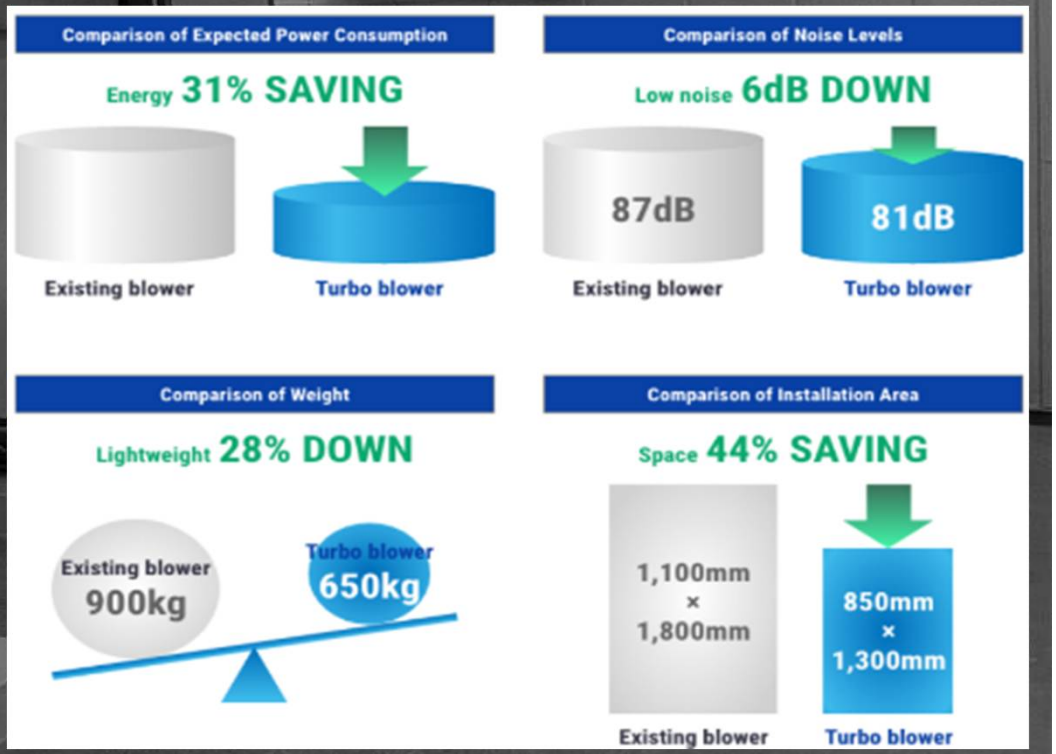
EXISTING BLOWER (ROOTS BLOWER)	TURBO BLOWER (MODEL: MAX100-C60S1)
2 UNITS	1 UNITS
53.5 m3/min x 60kPa	
90kW (45kW x 2 UNITS)	75kW
817,600 kWh / YEAR	565,020 kWh / YEAR
▲252,580 kWh/YEAR (31% SAVING)	



In 2023, in the aeration process of Japan's wastewater treatment plant, the turbo blowers supplied by our company contributed to a reduction of *30,000 tons of CO2 emissions over the course of one year.**

*The estimated reduction in power consumption is based on the replacement of approximately 650 turbo blowers supplied by our company as of the end of 2022 with roots blowers. Assumptions include a CO2 conversion factor of 0.434 kg-CO2/kWh, continuous operation for 24 hours a day, 365 days a year, blower operating efficiency of 80%, and an operating load factor of 100%.