(E) EWHA MACHINERY CO LTD

CE & ISO9001 Certificated

Ewha Machinery Co., Ltd. was established in 1977 by designing industrial air handling system and manufacturing related products.

As our technology has recognized with Consistent industrial air handling system to large-scale textile, chemical factories and automotive factories, we have expanded to plant area, and developed textile dryer to contribute to the development of domestic textile industries.

Based on the accumulated technology, we succeeded in making coater dryer for the first time in Korea in 1985.

We have built our unique dryer know-how from video tape line to LCD film line.



Moreover, we are concentrating on the innovation of Air-conditioning technology like development of environmentally friendly fan.

Ewha Machinery Co., Ltd. will continuously strive to develop related industries based on our long tradition and accumulated technology.

Thank you.



Company Profile

- Company name EWHA MACHINERY Co., Ltd.
- Founded 14th the March, 1977
- Headquarters(Plant) 135, Emtibeui 1-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Korea (5,000 m²)
- President LEE, Kwang-Taick
- Number of employees 30





Business area

- * DRYER PARTS
- * AIR-HANDLING PARTS
- * FAN & BLOWER PARTS
- * HEAT EXCHNAGER & WASTE HEAT COLLECTION APPARATUS PARTS
- * ETC manufacturing & facilities PART (DUCT, DUST COLLECTOR & facilities construction)

Certification and patents

- * ISO9001 (Certification is obtained in 1998)
- * CE (Certification is obtained in 2005)
- * Acquisition of INNOBIZ Certification (2008)

'INNOBIZ'is a compound word of 'Innovation' and 'Business' which represents a Small and Medium Business (SMB) fully equipped with competitive technology innovation supported by superior technology

Major customers

- HiRANO TECSEED
- TAEKWANG
- WOONGJIN CHEMICAL
- HYUNDAI-MOTOR
- HYUNDAI ENGINEERING
- KOREA ELECTRIC POWER
 - CORPORATION
- OCI (DC Chemical)
- LG DISPLAY
- DAEHAN SYNTHETIC FIBER
- CJ CHEILJEDANG
- SAMNAM PETROCHEMICAL
- KUMHO PETROCHEMICAL

- HYOSUNG EASTMAN
- HUVIS
- LG Chem
- SAMYANG
- SKC
- SK-CHEMICAL
- POSCO



Company History

- 1977. 03. : Ewha Machinery & Facilities Co., Ltd.is established (3-ga 5 Yangpyeong-dong, Yeongdeungpo-gu, Seoul)
- 1978. 08. : Construction (Facilities) license is obtained (Seoul No.12-81)
- 1978. 11. : Registered at Korea Association of Machinery Industry
- 1983. 11. : Headquarters and factory is newly built and transferred(267-2 Samjeong-dong, Bucheon, Gyeonggi-do)
- 1985. 12. : Company name is changed : Ewha Machinery Co., Ltd.
- 1990. 02. : Registered at Korea International Trade Association
- 1990. 03 : Exports by OEM of World Wide Company in USA (to USA, UK, Australia, Japan, Taiwan and etc.)
- 1991. 09. : Entered into Incheon Gyeonggi Cooperative of Machinery Industry
- 1993. 11. : Selected as a promising small and medium company (Kookmin Bank)
- 1994. 10. : Entered into R&D agreement with KAIST (Production of fermented microorganism medicine)
- 1994. 11. : Registered at participation in tender of Public Procurement Service

- 1997. 01. : Registered at participation in tender of KEPCO
- 1998. 02. : Registered at Hyundai Group integrated purchase network
- 1998. 05. : ISO 9001 certification license is obtained
- 2001. 03. : Mixed-flow fan is developed and patent is obtained
- 2002. 07. : Selected as a promising company in Gyeonggi-do (Governor of Gyeonggi-do)
- 2004. 08. : Report certification of activities of Korea Engineering (No. 01-187)
- 2005. 11. : CE certification license is obtained
- 2006. 10. : Obtains certification of CLEAN business place
- 2008. 05. : INNO-BIZ certification certificate is obtained
- 2011. 06. : Selected as a promising small and medium company (Kookmin Bank)
- 2012. 01. : Participation in Capital from HIRANO TECSEED CO.,LTD. in Japan - January, 2012
- 2014. 12. : Relocating and Building of headquarters factory to the current address.(5000 m²)



Organization of Ewha Machinery



FILM DRYER



Drying material width: 2800mm (Roll support type)





Standard Type

Oven Chamber and Heating chamber are separated and installed Connect oven and heating chamber by duct to recycle and exhaust air Oven chamber is installed in a clean room, and heating chamber is installed in non-cleaned room

Mount On Type

Heating chamber is installed on oven chamber

Since the space for installation is not much required compared to standard type, it is the best condition for narrow space for installation

Cylinder Type

Cylinder open type. Cleaning is convenient

• Door Type

Door open type. Appropriate to maintain cleanness.







Nozzle Technology

* Float & Power Float Nozzle



Raise film and convey by using air

No scratch is found on the film,

equally dry the upper and lower part of film

* Coanda Nozzle



Upper air stream can be designed for the best dryness Use this to intentionally minimize the dryness of oil coating to prevent forming film



Nozzle Technology

* Jet Nozzle



* Punching Nozzle



High temperature and high speed air is sent to film for fast and powerful dryness Use guide roll on the bottom side

Use this to dry coating solvent which has diluent or is liquid Used for first part of dryer not completely hardened film Use this when high temperature and high speed air is not necessary



HEATSETTER DRYER





Dryness : Moisture ratio before dryness 40%-3% Moisture ratio after dryness 0%-0.4% Heat source : Steam, electric, heat transfer medium Dryness method : Continuous dryness Dryness temperature : 40°C-200°C Drying duration : 30 min Drying capability : 20 ton/hr - 120 ton / hr

Tunnel ventilation type : Complete automation system. Used for large- scale facilities Continuous operation is available

Cart type :

Manual system for small quantity and multi-product Low cost for facilities

Application

- Fabric
- -Yarn
- Fibers

Polypropylene, Rayon, Nylon, Olefin, Polyester, Acetate, Acrylic, Lyocell



MIXED FLOW FAN

* FEATURE

Higher efficiency and lower noise than axial fan.

Smaller size than centrifugal fan.

Easy installation.

Since there is no significant change in axial power according to operation condition, operation is stable.

* APPLICATION

Tunnel, ventilation of factory, and air-conditioning facilities







* PERFORMANCE

Appropriate for great air volume.

Appropriate for low noise and high efficiency.

Shows strong points of centrifugal and axial fan.



AIR FOIL FAN

* FEATURE

The best efficiency and lowest noise.

The axial power has limited load.

This can handle gas containing some dusts.

* APPLICATION

Construction ventilation, ventilation for boiler, drying apparatus, cement factories, general industries, airconditioning, etc







* PERFORMANCE

The change in air volume by variation of resistance is moderate.

Stable operation is available.

This can be used for wide changes of air volume.

The power has limited load around the best efficiency point.



TURBO FAN

* FEATURE

Appropriate for high-speed and high pressure.

High efficiency and low depreciation of efficiency against change of air volume.

Easy to change the number of rotations.

Solid structure and easy handling.

* APPLICATION

Ventilation for boiler, chemical industry, air conveyance equipment, food industry, paper manufacturing industry, cooling device, cleaning machine, cement industry, air-conditioning



* PERFORMANCE

Little change of air volume and stable operation against the change of resistance.

If using a motor larger than axial power, it can be operated at any point.

Use this against wide variation of air volume.

Since total enclosed operation is possible, mobilization is easy.



SIROCCO FAN

•FEATURE

More air volume and low pressure.

Most appropriate at $12 \sim 60 \text{ mmAq}$.

Size is smaller compared to other centrifugal fan.

Base is simple due to small installation space.

Low noise due to lower rotation and speed.

Operation is smooth and inspection is easy.

* APPLICATION

Heating and cooling, and ventilation for general buildings, factories, ships and vehicles





* PERFORMANCE

The change of air volume is large against the change of pressure.

If air volume is increased, the efficiency is lowered.

If room is too much on the designed pressure, load is increased during actual operation

If wind pressure is decreased, the operation status is unstable.



AXIAL FAN

* FEATURE

High efficiency.

Appropriate for high-speed rotation.

Easy handling due to small size.

Since ventilation is made to axial-direction, piping is simple.

Installation is easy.





* APPLICATION

Ventilation for construction, ship, cooling for various apparatus, ventilation for mine tunnel



* PERFORMANCE

AXAIL FAN is operated within 55~90% of air volume, and the maximum

static pressure efficiency of industrial axial fan is about 85%



RADIL FAN

* FEATURE

Appropriate for the place where handling high pressure gas,

Appropriate for the place where handling corrosive gas.

Appropriate for the place where handling gas containing dust.

Solid structure and easy handling.

* APPLICATION

500

50

200 40-

Furnace hot wind, cement industry, steel manufacturing industry, chemical industry, air conveyance equipment

100

 $Q(m^3/min)$

200

300



* PERFORMANCE

Appropriate when wide air volume change needed at constant pressure.

The change of air volume is large against the variation of resistance.

If room is excessively obtained in designed pressure, the load on electric motor may be excessive Therefore, damper should be used for the adjustment.



DUCT IN LINE FAN

* FEATURE

Install anywhere due to lower noise

Simple structure, and easy repair and cleaning.

MOTOR SHAFT DIRECT operation type and V-BELT operation type.

This is appropriate for modern-type building due to its beautiful outlook



* APPLICATION

Heating and cooling machine, loop fan, heater pump, clean room, apartment parking lot.



* PERFORMANCE

The characteristic curve shares the pressure of centrifugal fan and the range of air volume of axial fan.

Lower over load ratio due to limit load feature.

Higher efficiency than centrifugal impeller and significantly lower operation noise than axial type impeller



EWHA's Fan & Blower



Fan & Blower for chemical & steel factory





For painting booth of automobile factory







For tunnel





For high temperature



DOOR OPEN TYPE





CE Certificated fan & blower



Installed in Czech Republic & SLOVAKIA FACTORY





MIXED FLOW FAN

Since 2001, has supplied The KOREA ELECTRIC POWER CORPORATION



ACCESSORY



Square & Cylindricality Silencer

Butterfly damper

Louvre Damper

Sealing Damper



(E) EWHA MACHINERY CO LTD

THANK YOU. EWHA MACHINERY CO LTD

CE & ISO9001 Certificated

OVERSEAS SALES CONTACT



logosway@hanmail.net

RN1201.(Victoria B/D) 327, Teheran-ro, Gangnam-gu, Seoul. KOREA 135-709 TEL : +822 501 4860/61 FAX: +822 501 4862