# Saga Prefecture

### Nishimura Works Co., Ltd.　(Ogi City)

Producing compact and energy saving dryer for waste liquid treatment

### Toa Koki Co., Ltd.　(Kashima City)

Producing "cylinder liner" by casting technology

### Mori Iron Works Co., Ltd.　(Kashima City)

Developed "fine blanking press" by exploring press technology

# Producing compact and energy saving dryer for waste liquid treatment

## Nishimura Works Co.,Ltd.

**286-4 Kakihise, Ushizu-cho, Ogi City,**
**Saga Prefecture**

**Established in 1945**
**TEL +81-952-66-0001**

http://www2.saganet.ne.jp/nisimura

Hitoshi Nishimura
President

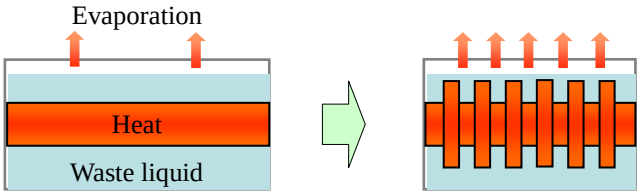
Has 100% share in the world for its compact energy saving "dryer for waste liquid treatment" that uses both sides of the hollow disc as heating surface.

### Started with the needs of waste liquid treatment by regional company

Waste liquid treatment is an important area for the environmental protection in various production industries including food manufacture. The information that "The waste liquid of distilled spirit cannot be discharged into the sea any more." gained at a cross-industrial social event in Saga Prefecture was the trigger for the industry-academic joint development. As the result of the development, the CD dryer has been developed.

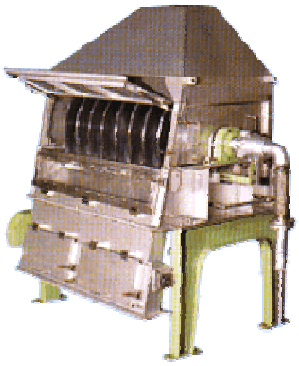
### Enhanced performance of drying by disc heating surface

The CD (compact disc) dryer that Nishimura Works Co., ltd developed is a dryer for waste liquid treatment that indirectly heats and dries the liquid by thermal conduction from heat source. Compared to the traditional cylindrical drum dryer that use the surface of the outer circumference, it is highly efficient, compact, and superior in energy saving, because both sides of the hollow disc can be used for thermal conduction.




Conventional type (cylindrical drum dryer)

CD dryer



### Used in many areas and expanded to the world

It gained wide variety of users from food and beverage manufacturers to automobile and semiconductor manufacturers, and is used for the industrial waste liquid treatment in many fields. It occupies 100% share in the world for the CD dryer.

# Producing "cylinder liner" by casting technology

# Toa Koki Co., Ltd.

**1430-30 Yamaura-tei,**
**Kashima City,**
**Saga Prefecture**

**Established in 1944**
**TEL +81-954-63-3236**

**http://www.toakoki.co.jp**

Hiroo Yoshida
Chairman

Producing cylinder liners and cylinder covers that are the parts of diesel engines for large ships such as tankers and container vessels. Has 70% share in Japan and 40% share in the world for large cylinders with 600 mm or more internal diameter.

## Specializing in cylinder liner for ships

The company was established for producing engine parts for munitions factory. It later started to produce engine parts for ships. The production rate of cylinder liner, that receives piston in engine, had gradually increased and the company gradually became the maker specializing in cylinder liner for diesel engines for ships.

## "Toa of liners"

The company started business with the companies in Switzerland and Denmark that design engines of large ships in the world and have licenses and is gaining good reputation. It is known as "Toa of liners" in the world and has 70% share in Japan and 40% share in the world for large cylinders with 600 mm or more internal diameter.

## Its advantage is casting technology

For good casting technology, the controls on melting and casting temperature and on coagulation that differs depending on wall thickness are important. Skills of the company's many specialists make the control possible.

Casting


Completed cylinder liners

# Developed "fine blanking press" by exploring press technology

# Mori Iron Works Co., Ltd.

**2078 Ide, Kashima City,**
**Saga Prefecture**

**Established in 1922**
**TEL +81-954-63-3141**

http://www.moriiron.com

Takakazu Mori
President

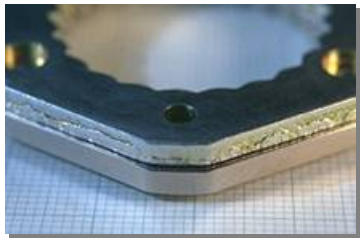
Developed "fine blanking press" that does not require secondary machining and with which three-dimensional composite processing is possible. Have 70% share in Japan with careful customer services.

## Parts machining was uneconomical and difficult with conventional press technology

The company became a maker specializing in press from 1971 after producing and selling fertilizer and agricultural machines. Because the cut surface produced by conventional press technology was not smooth, secondary machining was necessary and it was the factor of increase in working hours and costs.
In addition, to cope with parts processing and die parts production that were getting complicated, the press technology that enables three-dimensional composite processing by one machine was desired.

### "Fine blanking press" solved the problems

"Fine blanking press" was developed by the company in 1981.
Clean-cut surface was realized by one die cutting. Secondary machining became unnecessary. Together with making the product cost cheaper, the strength of the product was also enhanced. Furthermore, three-dimensional composite processing including "upset", "half die cutting", and "bending" became possible, and thus the existed problems were solved all together.



Surface produced by conventional method (Top)
Smooth surface produced by FB method (Bottom)

### Has 70% share in Japan for the press. The company is working actively in the world by good technology and careful customer services

The company's start in this area was late, but the company steadily expanded its share by flexibly and carefully coping with clients' needs. It has become the top maker in Japan that occupies 70% share for this press machine.
It is exported to 20 countries overseas in Asia, Europe, and North America, mainly for automobile and electronics parts industries. In addition, it has recently established sales bases in Korea, China, and Thailand. Thus, the company is expanding its realm in the world by good technology and customer services.