

High Pressure Washer for Canvas 「Blower Suction type Super Cleaner」

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We have so far had more than 100 installations for the canvas cleaning devices, since in the beginning a scan jet shower device, and in 2003 delivered the high pressure cleaning device “combi cleaner” for the first time in Japan, then in 2007 delivered the first domestic-made super cleaner.

The conventional high pressure washing equipment has the eco - wash function that is performed during machine operation, and in the high pressure washing category there has historically been an upper limitation of two high pressure nozzles (orifice diameter 0.2 mm) not giving the negative influences to the paper quality.

It has however recently become possible to increase to between 5 and 12 nozzles using high pressure nozzle diameter of 0.2 mm, by changing the cleaning head shape and applying an ideal nozzle formation.

We will then introduce the features and case studies of the latest Blower suction type Super Cleaner.

Development and high efficiency of vertical separator, washer, and fiber recovery “ Vertical Z ”

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TAIZEN CO.,LTD.

Taizen received a Japan TAPPI Sasaki prize in 1999 for our product “Taizen Pulp Washer”, and we received this year's Sasaki prize for “TaizenVerticalZ”, it was our second Sasaki prize.

We have been developing washers from horizontal type to vertical type, and it has resulted in the greatest step up. Especially for fiber recovery from low consistency and large quantity of white water or waste water. We introduced “TaizenVerticalZ” in this paper in 2011, but this time we will introduce new features for “TaizenVerticalZ”.

We appreciate the support from “TaizenVerticalZ” users, and appreciate the opportunity to introduce this paper to the paper manufacturing industry again.

MaxiTrasher System and Continuous Detrash System

-Suggestion of the latest contaminants removal method for lower quality waste paper-

Keiji Yasuda

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The paper mills in Japan using waste paper as main raw material have been required urgent counter-action against the lower quality waste paper grade since China enforced the law in 2017 prohibiting the unsorted waste paper imports. The countries in South-East Asia also need to prepare the same action since the unsorted waste paper refused by China have been sent distributed to South-East Asia nowadays.

In this paper the MaxiTrasher system that was released recently and the Continuous Detrash system that was developed from the MaxiTrasher technologies are introduced. The both systems would be an effective solution against the lower quality waste paper.

Pulping and Detrashing technology for the solution of contaminants treatment

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Voith IHI Paper Technology Co., Ltd.

The role of Pulper is not only to defiberize the raw material but also to separate raw material into fibers and contaminants. Nowadays the property of raw material is changing and the role of pulper for contaminants separation is getting more important. High-Con Pulper has no slushing function and so most of contaminants are rejected without cutting into small pieces. It has good effect for outlet quality, but Low-Con Pulper can use much smaller perforation diameter of screen plate and it enables better quality than High-Con pulper outlet.

To treat wet-strength raw material, High-Con pulper needs longer pulping zone even normal raw material does not, and it requires more installation space. In Low-Con pulper, defibered material goes through the screen plate quickly and flakes remains in the vat. This means that capacity and installed power are mainly used for non-defibered material and the size of machine can be more minimized than High-Con pulper.

The latest detrashing system consists of Junkomat, IntensaMaXX and ScreenDrum. They are operated by automatic sequence and it is possible to adjust their operating

condition based on the contaminants property. Less dilution water is required in the system and so their sizes and motors can be minimized because the volume to handle is less than diluted one.

Now and for future, the ratio of contaminants in raw material seems to be unstable. For future pulper and detraging system, more flexible function will be required based on their features.

New counter measurement against the Fabric defect combined with Dryer Section Deposits Prevention and high recovery ,high pressure cleaner

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As the recycle pulp is increased, the amount and adhesive deposit is also increased in the system. Particularly, the adhesive deposits lead to serious problems in paper-making machine which cause sheet breaks or defects in a finished paper. Paper-making machine adopts Maintech Dry-part surface prevision(DSP)technology and the high pressure cleaner to this problem on the Fabric, but this combination which the cleaner removes Maintech DSP coating on the fabric turned out to be unsatisfactory. On top of that Besides remaining water of some cleaners sometimes leads to water mark and spot on the paper.

So Maintech and IBS together have developed “Fabrikeeper” that is the combined technology of DSP and IBS cleaner “Fabricare” .

This report introduces the concept of “Fabrikeeper”and examples applied in the paper machines.

Selection and development of trapping tools for effective pest management

Tomohiro Ohba

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Using the insect trapping tools is a basic measure for pest management. The use of the trapping tool has the purpose of killing insects and investigating (monitoring). For effective pest management, it is necessary to understand the features of various models, and to select an appropriate model according to the use purpose and place of installation of the insect trapping tool. In this report, I explain the features of each model together with our product development.

Adhesive type insect trap is a trapping tool that captures insects with adhesive paper. This model is suitable for investigation (monitoring) of insects. There are also large size models that can trap many insects. Our adhesive type insect trap ESCO 641 is equipped with a generator of induced sound waves, it can also use odor-attached adhesive papers (641 Kobae sheets) and real time monitoring equipment (EMS-Q). ESCO 641 is a model that enhances trapping performance and investigation function. Suction type insect trap is a trapping tool that captures insects by suction with the fan. This model can trap many insects. Our suction type insect trap ESCO AIR 640 can strongly capture insects with a wind speed of 13 m / s.

We developed a new insect trap ESCO LED 641 using LED as the attracting light source. This model not only saves power by using LED but also enhances the trapping performance by edge effect, flicker function, induced sound wave and strong adhesive sheet. It has 1.2 to 3.5 times capture performance than conventional products, and it is excellent also in capture speed and capture performance in bright places.

How the paper industry in Japan has technologically responded to the paradigm shifts of the Japanese society

Part5 : Key-technology, Information Revolution and the Summary of the Series

Kiyoaki Iida

Since 1960, the industries manufacturing goods in Japan made better use of the solid state technology that was newly developed, improved productivity and upgraded product quality, and led the world in manufacturing sectors. The progress of the solid state technology, however, stagnated in the 1990s. The technology spread to other countries which, then, chased Japan. Exactly at that time, the information technology that would be a key technology of the next generation was invented, in which Japan was behind by a couple of steps.

The industrial society that started from around 1800 kept increasing its GDP by almost the same rate per year, exponentially in other words. The information society beginning from 2000, on the other hand, has reduced the energy consumption per unit production exponentially every year. That will be a hope of being a sustainable society.

The content of this series is summarized in the last part.

Surface Modifications of Cellulose Nanocrystals and Their Applications

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Cellulose/chitin nanowhiskers (NWs) obtained by acid hydrolysis of native cellulose and chitin have been investigated as rod-like charged colloidal systems. Due to their high mechanical properties, they are also promising as reinforcing fillers of nanocomposites. The author presents a brief overview about preparation of various types of cellulose/chitin NWs by different acid treatments, control of their dispersibility by introduction of surface charge groups or steric hindrance by surface-grafted polymers, and resultant changes in viscosity behaviors and liquid crystal formation. More recent topics, i.e. hybridization with metal nanoparticles and production of novel dry fine CNW powders are also presented.