

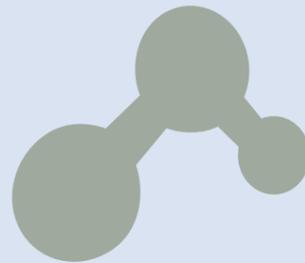
Anilox Cleaning

Flexo Industry

Sustainable cleaning solutions

Liquids for all needs

The Flexo Wash cleaning systems are built to clean with sustainable cleaning solutions and to consume as little cleaning liquid as possible. In all our machines the liquid is always filtrated and recirculated to be reused. The Flexo Wash solutions are of high durability and formulated for easy handling, trouble-free operation, and long service intervals. This makes sustainable cleaning liquids an affordable alternative to solvents, thus providing a safer cleaning of press parts and a cleaner environment. The solutions are developed to meet today's demands of high print quality and productivity. This is only possible to obtain if you make sure that your aniloxes, printing plates, and other press parts are kept clean.



Automatic cleaning equipment is only as good as the liquid you use, which is why we do not compromise the quality, durability, and sustainability of our cleaning liquids. You need to use the right cleaning liquid, for the specific type of ink, in your cleaning machine to get the optimal cleaning results.

Own consumables brand

Our own Flexo Wash consumables brand CleanSolution offers many types of liquid that all solve specific or the same problems. Additionally, we offer filters, brushes, sponges, and manual cleaning equipment.

Our experts guide you towards better cleaning

We are always ready to guide you towards better and more efficient cleaning of your aniloxes, plates, parts, screens etc.

Our experts are ready to guide

you to the right liquids for you based on your specific combination of inks or varnishes. We can develop a test report, which specifies different cleaning results from our test lab using different liquids to clean your inks.

Each ink type or combination of several inks requires a different specialized cleaning liquid. Here you will find our recommended products to clean each different type of ink.

However, we always recommend you to contact us for an in-depth evaluation of your specific needs. We can provide the liquid that works best with our cleaning systems, but we also provide cleaning liquids for all other cleaning machine brands.

We work together with you

Flexo Wash provides you with easy ordering or re-ordering of liquids,

reliable on time delivery, and experts and service people always ready to guide or problem solve any issues that may occur.

Eco-friendly cleaning solutions

Flexo Wash continues to develop cleaning solutions with the focus on minimizing the environmental impact and you will find both low VOC and VOC-free cleaning solutions in the Flexo Wash product portfolio as well as food packaging compliant solutions certified by ISEGA.

Furthermore, Flexo Wash also offers cleaning solutions with a low COD (chemical oxygen demand), which reduces the oxygen demand in the wastewater.



Anilox Liquid Cleaning

If the anilox roll is the heart of the flexo printing process and critical to maintaining a well-run operation, proper cleaning, along with care and maintenance of your anilox inventory is equally essential to your business. The absence of good cleaning practices will always lead to inconsistent print results and increased downtime.

Our Solution

- Fully automatic cleaning
- Clean after 10-20 minutes
- No wear or tear on the aniloxes



Anilox Liquid Cleaning

Quick & gentle washing process

The FW Anilox Cleaners work with environmentally friendly cleaning liquid, which is specially made for deep cleaning of aniloxes used with all types of ink.

The water from the high-pressure rinse is automatically led directly to the drain (depending on local legislations), to a tank for re-use or to one of our water reuse units.



Case Story

One of Columbia's leading manufacturing suppliers of flexible packaging, Flex Pack SAS, has installed Flexo Wash technology at its plant in Bogota to help improve the quality of work being produced on its two flexo printing presses. Founded in 2001 and still owned and managed by Carlos Alberto González and his wife Maribel Jácome, the company is vertically integrated offering a variety of services in-house from extrusion to rolling, printing, and valve inserting. Currently around 90% of all output is printed, and then supplied to markets as diverse as food and beverage, household goods, and medical supplies.

It was with the advent of its second printing press in 2018 that Flex Pack realised the need to improve its overall production efficiency. Following a visit to Labelexpo in Chicago and a meeting with the Flexo Wash team, the decision was made to invest in a PW82WR Plate Washer and two FW992XL Anilox Washers. According to Mr González, the machines have transformed Flex Pack's capability to reduce cleaning times and brought a degree of automation to the production process. "Not only are we saving time, but we are enjoying the benefits of completely clean plates and anilox rolls that have not suffered any of the customary damage that manual cleaning can bring," he explained.

Asked why he had chosen a European manufacturer he responded: "Flexo Wash is the acknowledged market leader, and we had many excellent references from existing users in Columbia. We were impressed with the delivery time offered as we needed a quick installation, and they were very supportive throughout the transaction, which allowed us to buy the best technology available."

Speaking for Flexo Wash Wilson Ramos, Area Sales Manager for South America concluded: "We were delighted to meet Flex Pack at the expo in Chicago and have the opportunity of demonstrating what a difference our technology could make to their business. They were quick to recognise how a relatively small investment in automated cleaning would make a big improvement to the performance of their major investment in a new printing press."

Since installation of the Flexo Wash technology, Flex Pack has seen a noticeable improvement in print quality and production efficiency, and as a bonus has been able to re-deploy the staff who previously were dedicated to cleaning plates and anilox rolls to more productive tasks. "This makes for an improved situation all round – better quality cleaning means better quality print – machine washing gives the plates and aniloxes a longer working life – and the staff enjoy more fulfilling opportunities than performing manual wash-ups."

With the variety of products produced in-house, from two- and three-layer laminates to bags with zippers or valves, two- and three-cell flat bags, and flow pack bags with or without degassing valves, Flex Pack's staff of 70 is kept very busy. Recent years has seen the company enjoy a sustained period of growth and profit which it has re-invested in new technology and the generation of employment in the area. This has enabled the company to become self-sufficient and remove the need to outsource work. The result is a better end product for the customer with controlled quality, and a successful enterprise for its owners and all its employees.

"This makes for an improved situation all round – better quality cleaning means better quality print – machine washing gives the (...) aniloxes a longer working life – and the staff enjoy more fulfilling opportunities than performing manual wash-ups"

Anilox Liquid Cleaning

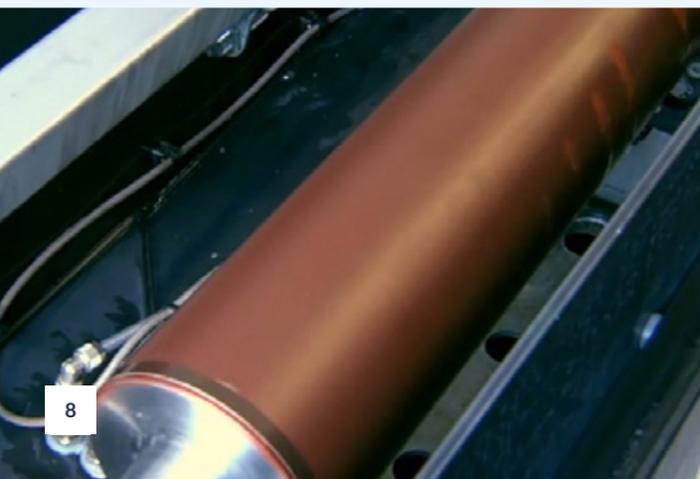
Quick & gentle washing process

The Flexo Wash system is based on liquid and high-pressure water. Therefore, the system is effective even for high-line aniloxes. The quick and gentle cleaning process leaves the aniloxes deep cleaned and ready for immediate use after just 10-20 minutes cleaning. The gentle cleaning process not only ensures cleaning without causing any wear or tear to the anilox, but also allows you to clean your aniloxes over and over again. This makes it possible to keep your aniloxes totally clean at all times ensuring a high and consistent print quality and a long lifetime of the aniloxes.



Before

After



1. It is possible to clean even very large and heavy aniloxes in our biggest anilox cleaning units - max cleaning length is up to 3900 mm (153,5")
2. Both liquid tank and filter are easy accessible giving the operator a comfortable workspace for both filter & liquid change, maintenance and trouble shooting.
3. Semi-automatic liquid filling. The filling will automatically stop, when the tank is full.
4. Pull-out liquid tank for easy maintenance.
5. The high-pressure cleaning provides an effective and daily deep cleaning of all cells.
6. The process indicator lamp lights green when the cleaning cycle is in progress.
7. The control system gives you the opportunity to see and manage cleaning time, temperature etc. Furthermore, it is possible to have several cleaning programmes with different settings set up and managed from the control system.

Anilox Liquid Cleaning

Which machine should I choose?

The Flexo Wash Anilox Cleaners comes in many different models which each can be modified by combining the standard unit with one or more of the various options.

All FW Anilox Cleaners are equipped with an innovative control system, which enables easy change of the various program settings e.g., washing time, rotation speed, and temperature. It is also possible to enter an alarm log.



FW Series

The FW series is now available as .NXT units, which ensures easy handling and a sustainable solution. All FW.NXT Anilox Cleaners can be adapted to fit your specific needs by for example adding an extra traction system to clean more aniloxes per wash, or an adaptor to clean sleeves safely.

FW XL Series

The XL models are designed to hold an even larger diameter than the FW standard units. Options for extra traction systems, sleeve adaptors and heavier rolls among various other options are available. The FW XL series is now available as .NXT units, which ensures easy handling and a sustainable solution.

FW SideLoad

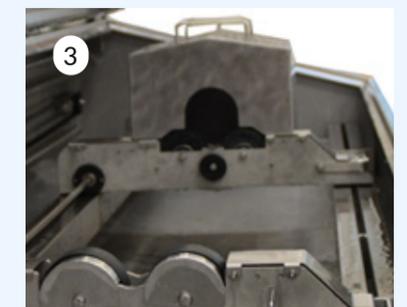
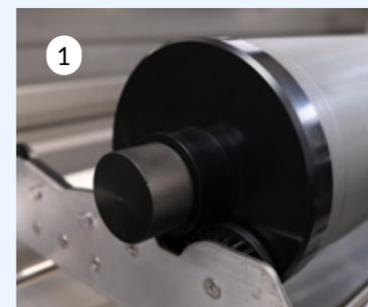
The FW SideLoad Anilox Cleaner is a unit especially designed for easy handling and cleaning of large anilox sleeves. The easy loading system from the side of the unit makes it possible to take the sleeve directly from the press to the washing machine.

	Aniloxes per wash	Max diameter	Max cleaning length	Max weight total
FW 992 XL.NXT	2	210 mm (8,2")	1600 mm (63")	2 x 25 kg (2 x 55,1lbs)
FW 2000M.NXT	1-2*	230 mm (9")	1700 mm (67")	200 kg (440lbs)
FW 2500M.NXT	1-2*	230 mm (9")	2200 mm (86,6")	200 kg (440lbs)
FW 2000-2.NXT	2-4**	300 mm (11,8")	1400 mm (55,1")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 3000-2.NXT	2-4**	300 mm (11,8")	2400 mm (94,5")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 3000.NXT	1-2*	300 mm (11,8")	2400 mm (94,5")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 3500.NXT	1-2*	300 mm (11,8")	2900 mm (114,2")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 4000.NXT	1-2*	300 mm (11,8")	3400 mm (133,9")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 4500.NXT	1-2*	300 mm (11,8")	3900 mm (153,5")	600 kg (1323lbs)/ 800 kg (1764 lbs)***
FW 3000 XL.NXT	1-2*	450 mm (17,7")	2400 mm (94,5")	800 kg (1764 lbs)/ 1500 kg (3307lbs)***
FW 3500 XL.NXT	1-2*	450 mm (17,7")	2900 mm (114,2")	800 kg (1764 lbs)/ 1500 kg (3307lbs)***
FW 4000 XL.NXT	1-2*	450 mm (17,7")	3400 mm (133,9")	800 kg (1764 lbs)/ 1500 kg (3307lbs)***
FW 4500 XL.NXT	1-2*	450 mm (17,7")	3900 mm (153,5,5")	800 kg (1764 lbs)/ 1500 kg (3307lbs)***
FW 3500 SideLoad	1-2*	300 mm (11,8")	3040 mm (119,7")	180 kg (397lbs)

* Clean up to two aniloxes per wash with option (reduces cleaning length).
 ** Clean up to four aniloxes per wash with option (reduces cleaning length).
 *** Requires option

Options and Accessories

- Adaptor for sleeves
- Gear Covers
- Double tank system for 2nd cleaning liquid
- Systems for reuse of rinse water
- Automatic liquid filling system



1: For anilox sleeves, an adaptor can be made according to the specific measures of the anilox 2: Recirculation unit for reuse of rinse water, 3: Gear covers for protection of shaft ends.

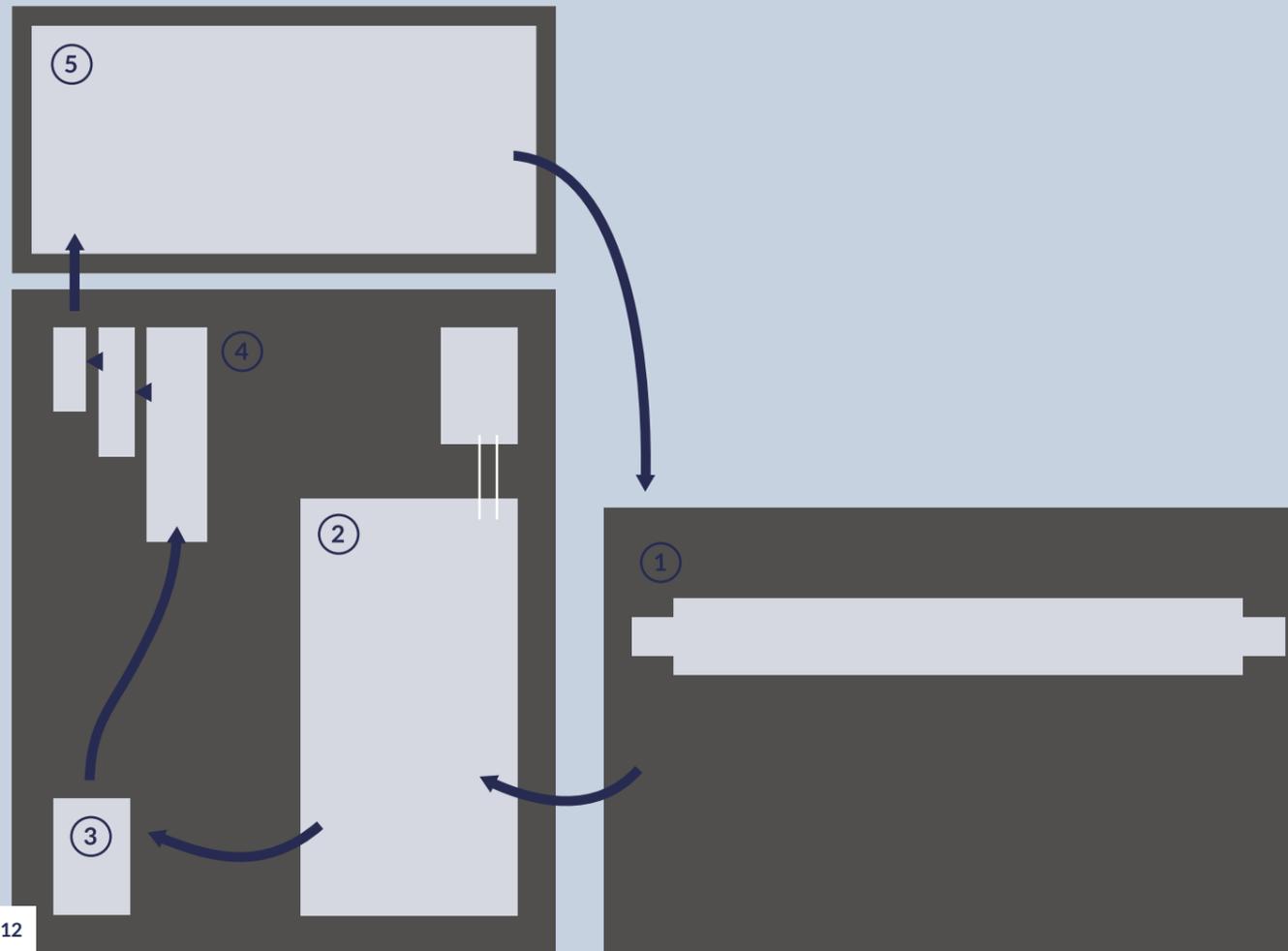
Reuse of rinse water

with the Recirculation system

The FW Recirculation System is designed for re-use of the rinse water in a closed-loop system. The system is controlled by several sensors constantly measuring the pH and liquid levels. The process runs independently of the washing unit.

The process of the Recirculation system will ensure that the rinse water can be reused in the FW cleaning unit, reducing the amount of wastewater to a minimum. In this way, you will still have high-quality cleaning.

1. The rinse water runs from the Anilox Cleaning machine to the mixing tank.
2. In the mixing tank the water is automatically treated with phosphoric acid and FW Antifoam.
3. A pump pumps the rinse water from the mixing tank to the filters.
4. The rinse water is passed through high-performance filters, removing solids and dried ink. The 3 filters removes solids and ink particles.
5. The filtered and treated water is pumped to the holding tank from where the water is reused for rinsing in the anilox cleaner.



Recirculation benefits

The Recirculation System elevates your anilox cleaning to an even more sustainable solution. In re-using the rinse water in your cleaning cycle, you achieve several benefits:

- You reduce your water consumption which saves you both money and is better for the environment.
- The system allows you to have approx. 75 washes from a tank of 140 liters of water (depending on water quality, ink type etc.).
- You can put the Anilox Cleaner anywhere as the Recirculation System eliminates the need for freshwater supply and draining.
- The system ensures a completely hands-free operation as the closed-loop system is fully automatic.

Recirculation Unit

- Secures high-quality cleaning with reused water
- Reuse of rinse water reduces water consumption significantly
- Hands-free fully automatic and environmentally friendly.



Anilox Laser Cleaning

Get a waste-free, completely safe, and automatic anilox cleaner that will give you a more sustainable cleaning solution. The FW LASER Anilox Cleaners can be installed without requiring water supply, drain or safety equipment.

Our Solution

- Waste-free and completely safe
- Only requires air and power
- Sustainable cleaning method



Anilox Laser Cleaning

The Flexo Wash Way

The FW Laser Anilox Cleaners are developed with newest laser technology and software systems. It is a waste-free and sustainable cleaning method with no liquid handling or consumption.

Loading

Place the aniloxes as is on the traction stations. Choose the anilox from the database where all the properties are defined (diameter, length, lines)



Extraction

The extraction system removes all dust and fumes, making sure no nano particles will enter the room. The cleaning programme stops automatically when the cleaning and extraction process is finalized.



Cleaning

The high-frequency laser will clean the anilox with a precise defined pulse which ensures an even distribution of energy.



Case Story

The Danish manufacturer of paper bags and carriers, Scanbag A/S, has installed a laser anilox cleaner from Flexo Wash for its production plant in Skive. The FW 2000 model, which was introduced in 2018, is the first laser model in the company's anilox cleaning range that dates back 25 years and involves more than 3,000 installations.

With anilox cleaning being such a fundamental part of the flexo printing process, the new laser technology is ideal for 100% cleaning without damage to the

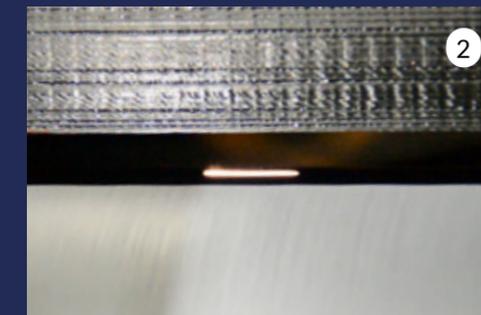
expensive rolls, with the guarantee of consistent print quality and reduced downtime.

Speaking for Scanbag, printer Søren Bligaard stated: "We are very satisfied with the cleaning results and the easy handling of the aniloxes. We tested another system, but it damaged the rolls. With the Flexo Wash system we have no issues at all."

The new Flexo Wash laser cleaner sits well with the company's ethos of quality, safety and focus on the environment.

"We are very satisfied with the cleaning results and the easy handling of the aniloxes. We tested another system, but it damaged the rolls. With the Flexo Wash we have no issues at all."

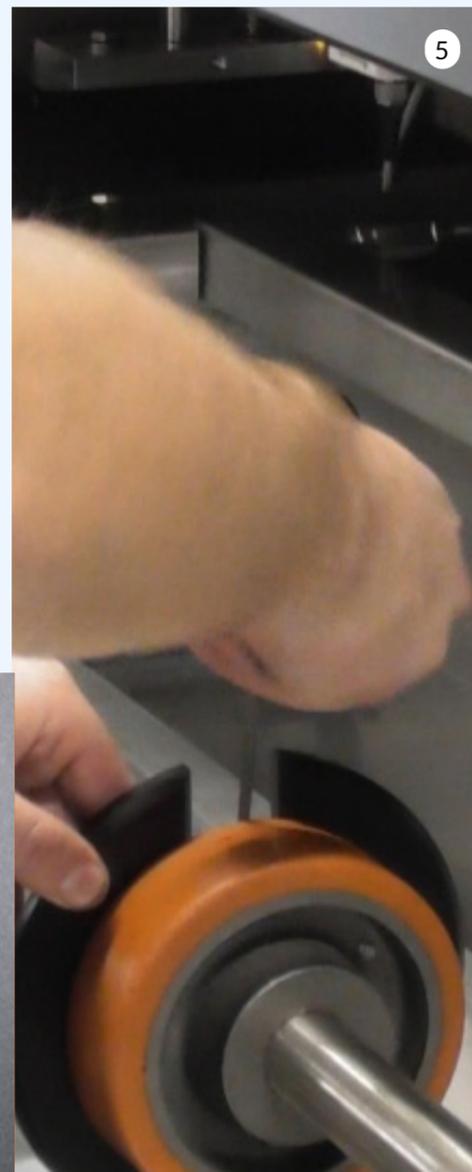
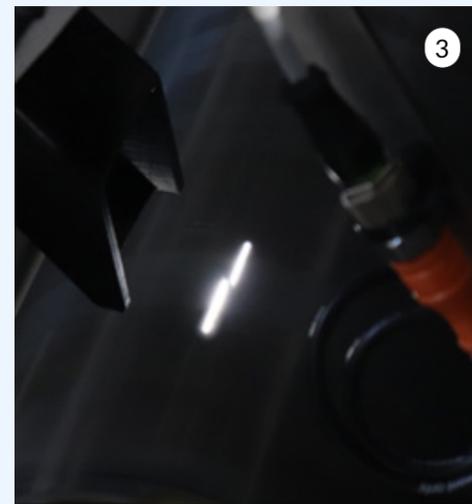
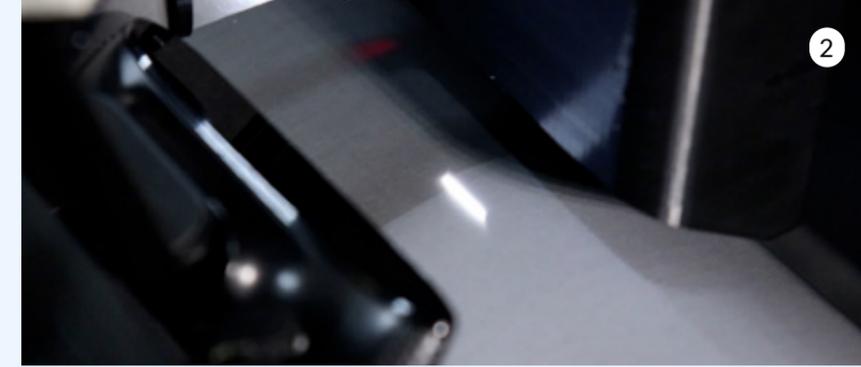
1: Loading, 2: Cleaning, 3: Extraction through a 3-filter configuration.



Anilox Laser Cleaning

How does it work?

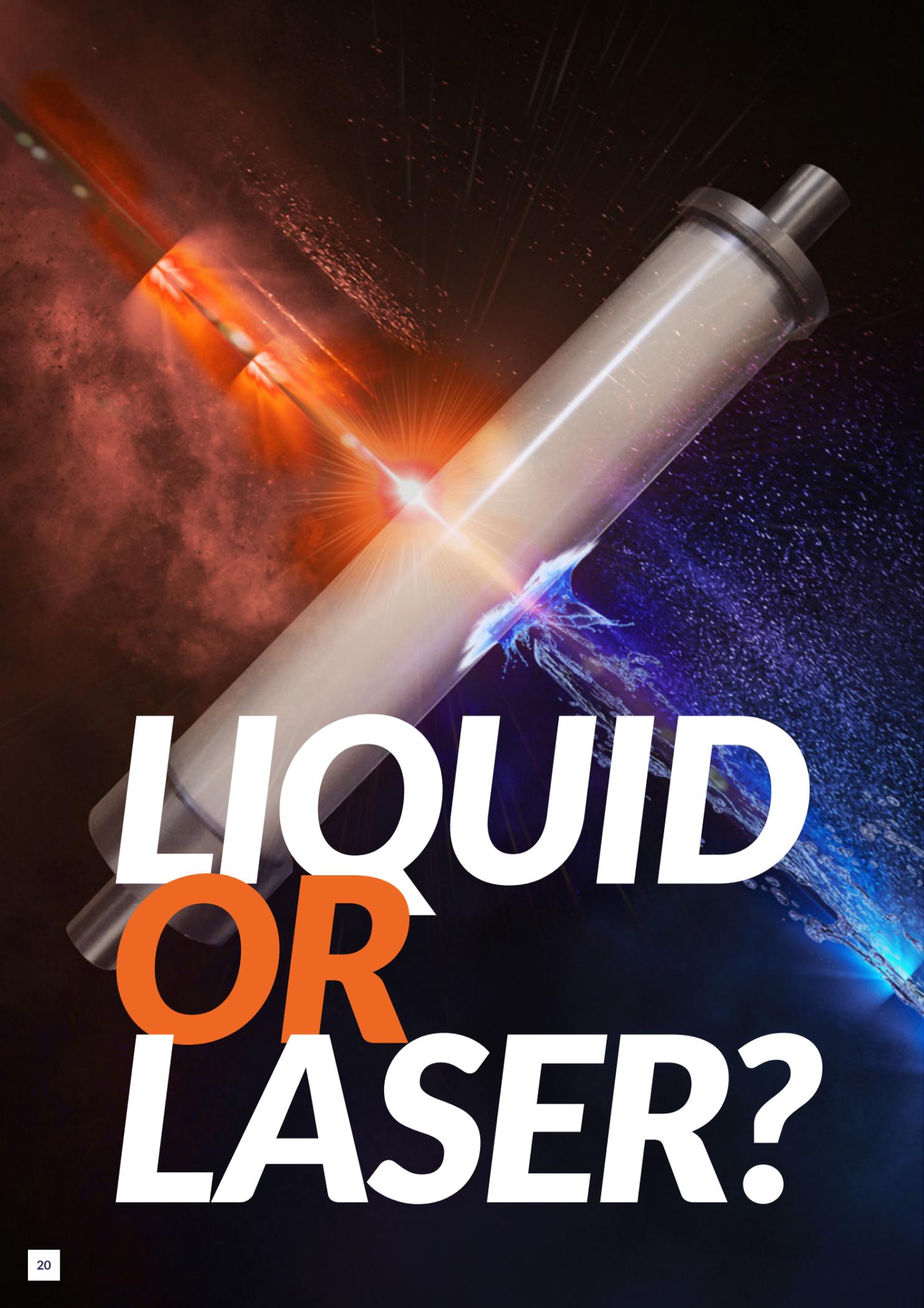
Get a waste-free, completely safe and automatic anilox cleaner that will give you a sustainable cleaning solution. The FW LASER Anilox Cleaner only requires air and power.



Before

After

1. When loading the anilox simply place it on the traction system - no adaptor is needed.
2. Class 1 laser system which is safe under all conditions of normal use - no need for safety goggles or other safety equipment.
3. By choosing the LaserX or LaserX2 you can get shorter cleaning time with same high degree of safety.
4. Database over with anilox inventory that contains data regarding cleaning and alarms. The data is available directly on screen but can also be accessed via LAN connections.
5. The movable traction stations make it possible to clean aniloxes of various length in the same unit.
6. Before and after: The laser cleaning system provides high-quality cleaning results.
7. The easy accessible filter consists of two different combination filters. Both a filter mat, a HEPA and an active carbon filter are integrated ensuring that all particles are collected within the unit by the extraction system.



LIQUID OR LASER?

Interview

Liquid or laser cleaning of aniloxes?

Flexo Wash offers two ways to clean your expensive and delicate aniloxes:

- Cleaning with liquid and high-pressure water
- Cleaning with laser technology

Both give perfect cleaning results and will reduce your downtime and expenses from printing with dirty aniloxes. But which is best for you and your needs?

Below you will find an interview conducted by Area Sales Manager, Mette Laursen with our American colleagues Ryan Potter (Vice President, Flexo Wash LLC) and Patrick Potter (President, Flexo Wash LLC) giving an insight into the answer to this question.

Patrick and Ryan, today many printers in the label and flexible packaging industry use the very well known system of cleaning with liquid. But many of these printers maybe have an anilox cleaner that needs replacement. So, Patrick and Ryan, how should they choose this?

Patrick: Sure, Mette, it's a great question and one that we get pretty frequently. It really comes down to how they work in their production process today. By offering both liquid and laser cleaning, it allows them to step back and look at their current process to determine what is the best method of cleaning.

Ryan: And a lot of factors goes into that: How many jobs is the converter running per day? Are they changing over aniloxes pretty frequently, and how many aniloxes are they trying to clean during that particular shift? Do they have a large anilox inventory? Do they have spare aniloxes that they can put in? All of these factors feed into a decision because time is really one of the most important factors when you are deciding between liquid and laser anilox cleaning. And then there is also some other questions around any type of corporate mandates, or concerns around not having access to a drain or water with liquid cleaning. So, we try to step back with each customer, and discuss their particular circumstances to determine the best method of cleaning.

So, Ryan, what are the advantages of laser cleaning? What about all the talks about laser cleaning destroying aniloxes?

One of the main advantages of laser cleaning is that its a simple and easy operation. The operator will just open the door, he can either scan the anilox with an RFID chip or barcode reader, or he can input the anilox ID-number. At that point the machine will know all the specifications necessary for the proper cleaning, and he closes the lid, hits start and the machine will run.

In regards to damage - Flexo Wash spent a lot of time not only developing the best anilox cleaner, but also the safest laser anilox cleaner. There is many safety functions to prevent the anilox from being damaged during the cleaning proces.

What about waste stream when it comes to laser?

Ryan: With the laser anilox cleaner there is no waste stream. The only consumables there are, are filters for the vacuum system. What about liquid cleaning, what are the advantages here? And what about the talks about liquid cleaning only being daily cleaning and not deep cleaning? Actually, liquid cleaning has been around for nearly 25 years, and with over 4000 installations around the world, we know that it is the safest and the most effective means of cleaning your aniloxes.

It is good for daily deep cleaning. when the machine is working probably as it's intended to, you will be able to regain the full cell volume in a quick and efficient cleaning method. Liquid cleaning also offers in addition to time, the flexibility of the number of aniloxes you can clean. So, for a wide web converter or printer they can clean maybe one or two per 15-20 minute wash cycle, whereas a narrow web printer can clean between 1-9 aniloxes per cycle. So, it offers a great deal of flexibility.

For anyone that has a concern about the waste stream, we have so many different ways to work with them on that concern, to treat the effluent to make sure that it works with any of their corporate mandates or environmental questions.

Thank you Patrick and Ryan. So, you say that it very much depends on the customer which system to choose?

Absolutely, Mette. Clean is clean, and it's best to let the customer decide what method to use to achieve that.

Anilox Laser Cleaning

Which machine should I choose?

Factors like cleaning speed, how many aniloxes you wish to clean per cleaning cycle etc. determine which laser unit you should choose. On the pages you will find a brief introduction to the different units and their specifications - for more info ask your FW sales representative.

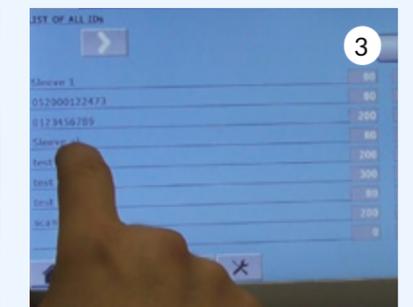
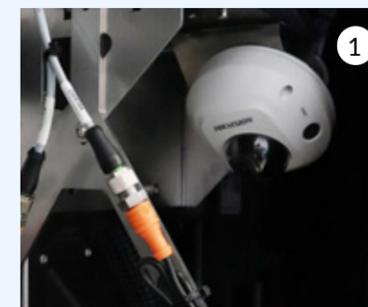


	Aniloxes per wash	Max diameter	Max cleaning length	Max weight per aniloxes:
FW 2000 Laser	1 - 4*	230 mm (9")	1730 mm (68")	200 kg (440lbs)
FW 3000 Laser	1 - 4*	300 mm (11.8")	2730 mm (107,5")	800 kg (1763,7lbs)
FW 4000 Laser	1 - 4*	300 mm (11,8")	3730 mm (146,9")	800 kg (1763,7lbs)
FW 2000 LaserX	1 - 4*	230 mm (9")	1730 mm (68")	200 kg (440lbs)
FW 3000 LaserX	1 - 4*	300 mm (11.8")	2730 mm (107,5")	800 kg (1764 lbs)
FW 4000 LaserX	1 - 4*	300 mm (11,8")	3730 mm (146,9")	800 kg (1764 lbs)
FW 2000 LaserX2	1 - 4*	230 mm (9")	1730 mm (68")	200 kg (440lbs)
FW 3000 LaserX2	1 - 4*	300 mm (11.8")	2730 mm (107,5")	800 kg (1764 lbs)
FW 4000 LaserX2	1 - 4*	300 mm (11,8")	3730 mm (146,9")	800 kg (1764 lbs)

* Depending on configuration. Total maximum cleaning length reduces by 50 mm for each anilox

Options and Accessories

- Q-cam
- Barcode Reader
- Automatic anilox identification (RFID) possible



1: Camera - watch the cleaning process in real-time on the display. 2: Easy access to the anilox details in the database either by Barcode Reader or Automatic anilox identification (RFID). 3: Cleaning data on each anilox is registered in the database.

FW Laser

Our safe & high-quality laser system gives you waste-free anilox cleaner that will ensure you a more sustainable cleaning solution without compromising the cleaning result.

FW LaserX

All the same qualities as the standard laser but with improved technology, making it possible to clean twice as fast, but with the same high quality and degree of safety.

FW LaserX2

The ultimate high-capacity laser cleaning system with all the same qualities as the two others, but with a cleaning speed that reduces the cleaning time to only 25% of what the standard laser cleaner uses.

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