

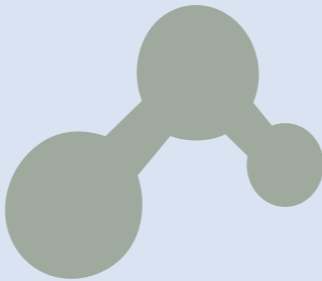
# Parts Washing

Flexo & Gravure 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

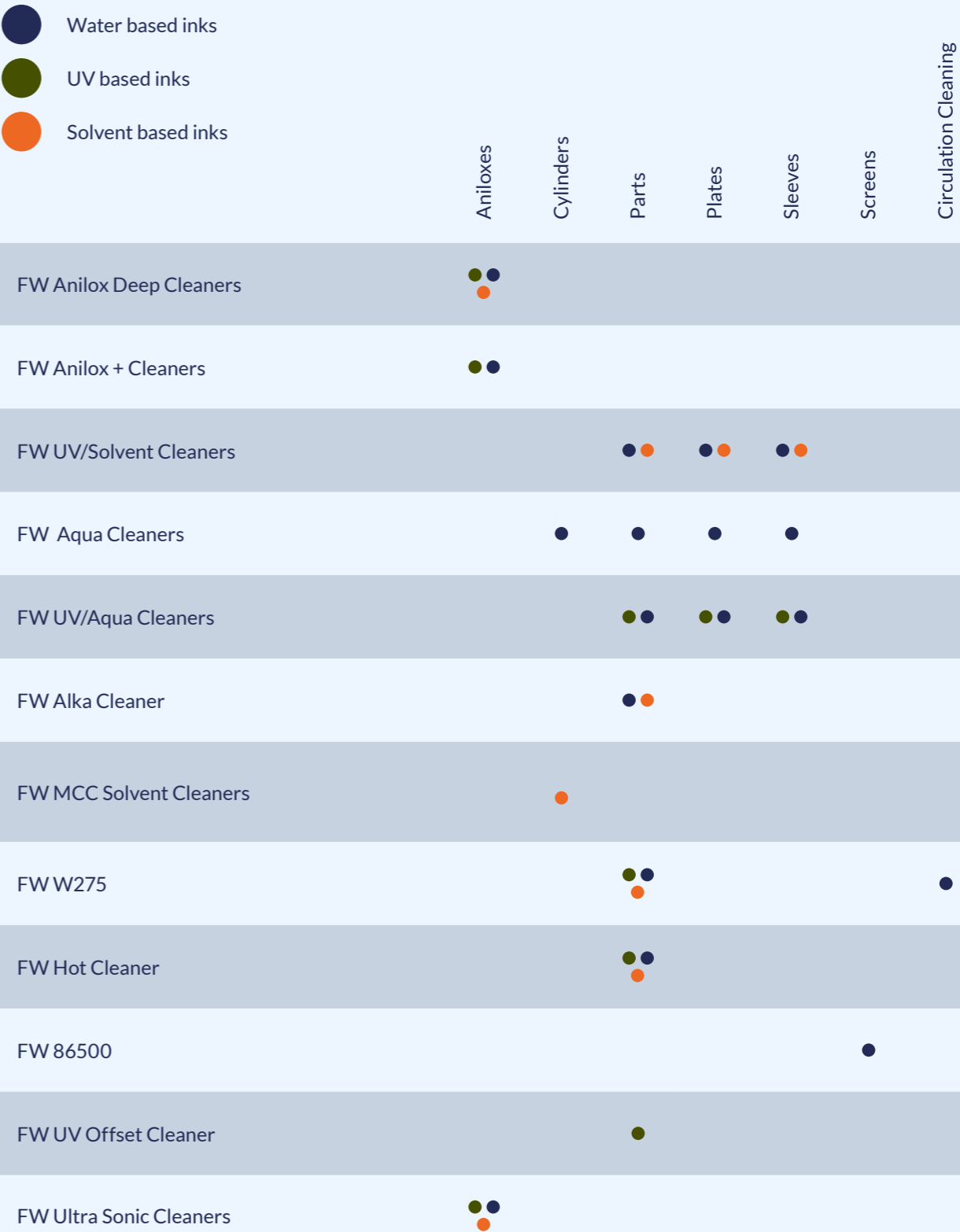
Flexo Wash provides you with easy ordering or re-ordering of liquids,

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.



# Parts Washing

Press parts can be tricky to clean. There are three different automatic cleaning methods and what works best for your printing business depends heavily on your workflow and types of ink you use. Here is how you decide between cleaning with solvents, cleaning with non-flammable liquids and cleaning with alkaline liquids.

## Our Solution

- Custom-built system enabling focused cleaning of challenging areas
- Fully automatic cleaning closed-loop process
- Ergonomically friendly grids and trolleys
- Clean all press parts in one single machine
- Low operation costs and environmentally friendly cleaning



# Parts Washing

## The Flexo Wash Way

The Parts Washers from Flexo Wash have a wash and rinse system with two separate tanks (or one tank and one open-rinse). This offers an automatic two-stage cleaning process, where the first stage is for cleaning and the second stage is for rinsing. The parts are cleaned by various high-pressure nozzles, spraying, cleaning, and rinse liquid from below and above.

### Washing

The parts are placed in the adequate holders/grids in the machine and the lid is closed by a two-hand control. Activate the washing process by pressing START.

### Draining

The draining takes approx. 5 minutes and is designed to ensure that as much liquid as possible comes back through an automatic drain valve to the tank to be reused.

### Rinsing

The parts are rinsed leaving them ready for immediate use.

### Re-use

The cleaning liquid is filtrated and recirculated to be reused to to minimize liquid consumption.

# Case Story

There is only one word to describe Franklin Web's plant, 'enormous!' The Australian company is spread across 100,000 square metres of factory space in Sunshine, Victoria, made up of six buildings, covering a site of some 40 acres. But back in 1935 when Len Taylor opened his print shop in Franklin Street, Sunshine, it wasn't that way.

Taylor started his company in a business climate that was still feeling the pain of the Great Depression. Through hard work and a dedication to quality and service, Franklin Web attracted and retained customers, and one of his sons, Phillip undertook a lithographic printing apprenticeship to become the right-hand-man of the business.

But it was in 1980 that business really kicked off with the installation of a Toshiba 16pp web press, and today, Franklin Web is one of the major suppliers of catalogues to Australian retailers, and a huge percentage of its production makes up the 8 billion catalogues that are distributed every year to Australian letterboxes.

The company has continued to grow and now has some of the most impressive presses in the country. "As a printer, we're constantly looking at ways to optimise performance on our presses," said Taylor. "We aim for 80% utilisation at 80% of top speed, and to achieve that we need to prevent ink build-up on the guards, which really affects uptime."

Another major problem on the presses was the formation of ink droplets, which at running speeds of 15 m/sec can cause the web to break. With four printing units running 24/7 this can involve substantial downtime. On analysis, Franklin Web found that 50 % of its stoppages were due to ink droplets and also took the initiative of investing in a second set of guards that are changed every week.

The whole project began to take shape when Franklin Web's Business Service Manager, Bill Van Den

Dungen, contacted Flexo Wash's Australasian agent Ruvan Weeraratne of Jet Technologies. He explained: "Flexo Wash has been in press cleaning equipment since 1991 and manufactures a variety of models for anilox rolls, cylinders, sleeves, and ink trays." Knowing that the company's wide-web products could be customised to fit all parts from different press manufacturers, he invited Flexo Wash's Area Sales Manager, Mette Laursen, to visit the customer.

"While we make a range of different sizes, we felt Franklin required a larger than normal unit to allow it to handle any extra washing of parts that may be required in the future. After measuring the area and the number of guards on presses, we devised the right unit to suit Franklin's needs," she explained. The washing unit from Flexo Wash allows Franklin between 8-10 washes before having to change the exhausted wash fluid. It cleans finger guards and all the other parts that Franklin was previously cleaning by hand, in the preventive maintenance programme.

The Flexo Wash technology now automates the cleaning process and delivers substantial savings.

"Before we installed the Flexo Wash we were manually cleaning the guards and trays fitted on every machine during a routine shutdown. After investigation, we found the operators then had no real-time to spend setting the rollers in the roller train, which is what really was required of them," Business Service Manager Bill Van Den Dungen explains.

### Terrific difference with great results

Concluding for Franklin Web, Owner Phillip Taylor commented:

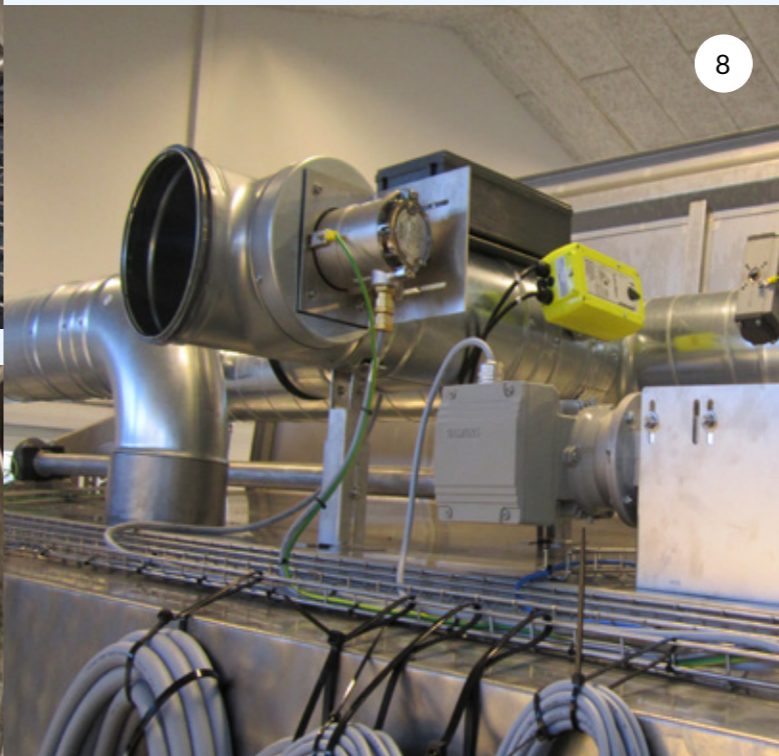
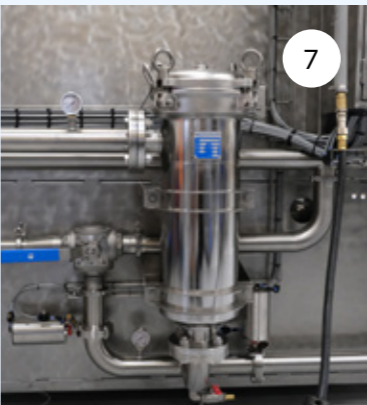
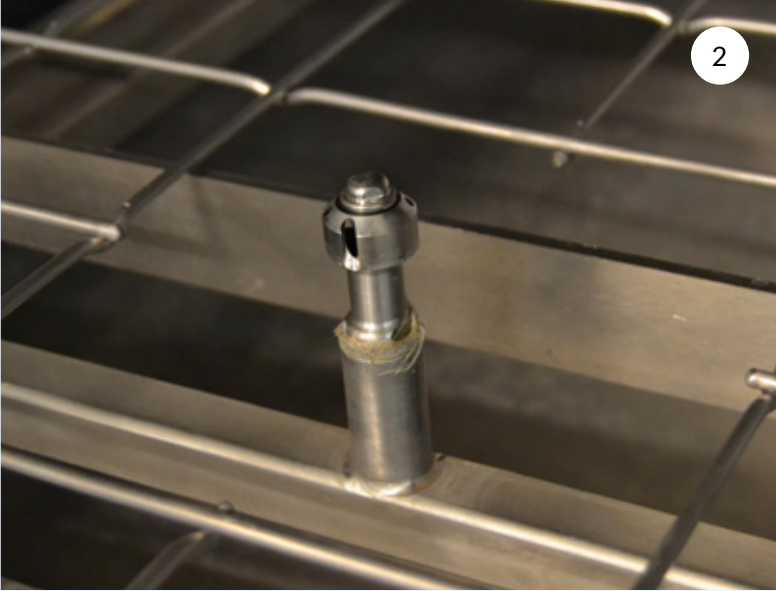
"The unit has made a terrific difference to the cleaning regime and has achieved great results. We work in an exciting and dynamic market, and even after 37 years I still get a buzz out of seeing catalogues streaming off the presses and being despatched all over Australia."

"Before we installed the Flexo Wash we were manually cleaning the guards and trays fitted on every machine during a routine shutdown."

# Parts Washing

## How does it work?

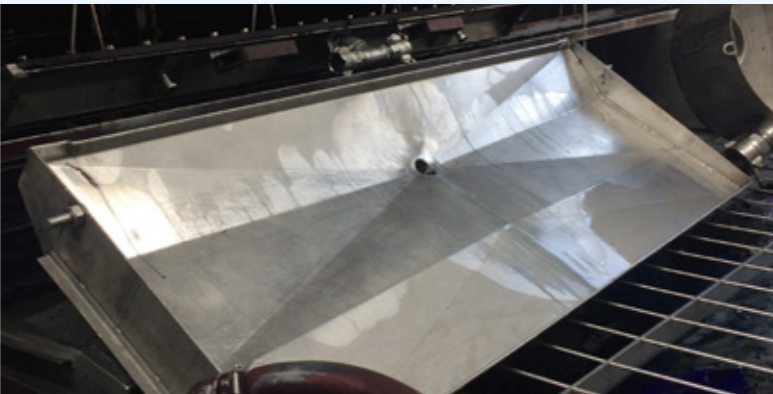
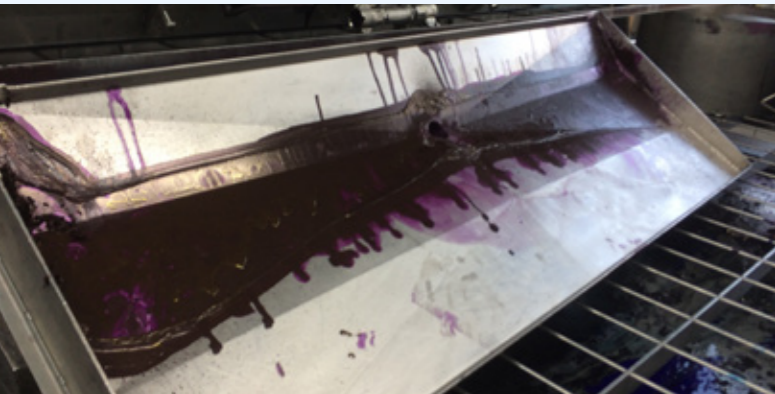
The fully automatic washing units are designed for easy handling of press parts. It is possible to wash doctor blade chambers, ink trays, buckets and other removable press parts used with all types of inks, varnishes etc. The units can be equipped with a trolley, which makes the handling even easier.



1. The trolleys with slide-in grids make it possible easily to transport the parts from the printing machine to the parts washer. This means less heavy lifting, easier handling, and more efficient processes.
2. High-performance rotating nozzles for bucket cleaning can be placed below the grid (optional). The bucket is placed upside down over the nozzle, which cleans the inside during the wash cycle.
3. The large pump ensures a consistent flow from the wash tank of liquid into the washroom during the cleaning cycle.
4. For washing of standard ink buckets, a rotating holder with brushes can be installed (optional). When placed on the holder the bucket is washed from the inside and outside at once.
5. The hose cleaning valves and quick connections make it possible to clean 2 or 4 hoses during the wash cycle (optional).
6. The wash and rinse nozzles are placed on a moveable spray bar, which moves from one side to the other when rinsing and washing the parts with high-pressure liquid.
7. The large stainless steel filter house is placed on the machine, easily accessible for maintenance and filter change.
8. When the washing machine is connected to exhaust, an air treatment system or an RTO, regulation of fresh air with solvent concentrated air is a necessity. With an LEL sensor and regulator, the solvent concentration in the air is monitored and kept at an acceptable level for the system.

Before

After



# Moving Nozzles

## Save energy - choose moving nozzles

With fixed nozzles you typically see 4-5 times the number of nozzles in a machine compared to a machine with moving nozzles. More nozzles mean larger requirements on the power of the pump. Typically pumps in a cleaning machine with fixed nozzles would be 50-70% larger, however the larger pump does not compensate sufficiently, and the nozzles pressure is therefore lower than in a machine with moving nozzles. A larger

pump in the cleaning machine with fixed nozzles consequently also consumes exponentially more energy.

When it comes to moving nozzles the key factor that is going to give you all the advantages are the dynamic. Think of when you are washing your car, when you start spraying water onto it nothing happens until you start moving your spray. The same goes for the moving nozzles. The magic happens

when you introduce movement to the liquid spraying.

As a printer you may have a lot of different parts, some of them with very specific cleaning challenges relating to dimensions and design. A custom build wash layout of the cleaning space in the cleaning machine where the nozzles are angled specifically for all surfaces on your parts ensure optimal cleaning, where the moving nozzles can really work their magic.

### Nozzle Quantity

Machines with moving nozzles require a lower quantity of nozzles.

A larger number of nozzles are required to compensate for the lack of movement.

### Nozzle pressure

Higher nozzle pressure due to better pump efficiency.

Lower nozzle pressure due to lack of pump efficiency.

### Energy consumption

Moving nozzles result in better pump efficiency and lower energy consumption.

Larger requirements on the pumps result in higher energy consumption.

### Cleaning Effectiveness

Effective cleaning with optimum utilization of solvents.

Risk of do-over jobs due to inconsistent cleaning results.

### Operational Costs

Higher cleaning efficiency results in lower operational costs.

Higher energy consumption and do-over jobs mean higher operational costs.

### Maintenance

Limited number of nozzles to clean and maintain.

Large number of nozzles to clean and maintain.

# The ATEX Room

## Certifications and requirements

### Zone 0 = Category I

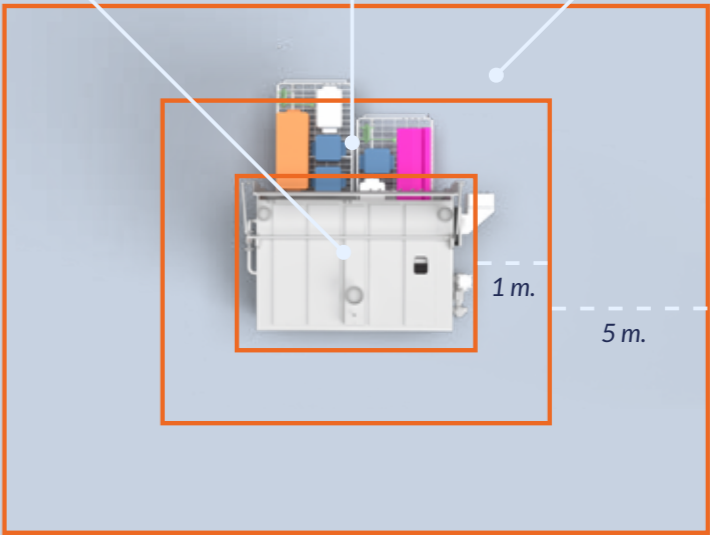
Explosive atmosphere is continuously present for long periods. Inside the washing unit and tanks the unit will have ATEX zone 0

### Zone 1 = Category II

Between 10 and 100 hours of explosive atmosphere per year. Around the unit will be ATEX zone 1.

### Zone 2 = Category III

Less than 10 hours of explosive atmosphere per year. Zone 2 is often referred to as the remotely hazardous area.



## How do I build an ATEX-room?

You need an ATEX-room when you clean with solvents in an electric ATEX washing unit. The machine will be built to work with solvents, and it will be made EEX-proof according to the ATEX standard, but how do you build an ATEX-room for the unit?

When you have purchased an electric ATEX washing machine for parts cleaning of demanding ink types, the unit is prepared during production to handle the strong solvents and thoroughly checked before it is sent to your facilities.

The Parts Washers from Flexo Wash have a Wash & Rinse system with two separate tanks, which offers an automatic two-stage cleaning process, where the first

stage is for cleaning and the second stage is for rinsing. The parts are cleaned by various high-pressure nozzles, spraying cleaning and rinse solvent from below and above.

After the washing and rinsing cycle is done the unit needs to stabilize. Depending on the size and the configuration of the machine, it takes approx. 5-10 minutes for the solvents to stabilize inside the machine. After stabilization, the ventilation begins, and it takes approximately 10-15 minutes depending on the LEL (lower explosion level) ventilation settings. A shorter stabilization time means a longer ventilation time and vice versa.

The polluted air from the

washing machine will be led to an RTO (Regenerative thermal oxidizer) or alternatively to the open air. After the stabilization is over the lid can now be re-opened, and the clean parts can be removed.

One thing is the requirements for the machine itself, another the requirements for the machine location and the ATEX-room to follow the rules and regulations and avoid risking explosions or fires.

Ask your FW sales representative if you need guidance when designing and preparing your ATEX room.

# Parts Washing

## Different needs, different techniques

Different needs require different techniques. Therefore, the Flexo Wash EasyLoad, and FrontLoad parts washers can all be built to clean with solvents, alkaline liquids, or eco-friendly cleaning liquids and distillable eco-friendly liquids.

All methods give nice cleaning results and will reduce downtime and ease the handling of parts cleaning. But which is the best solution for you and your needs?

Follow the question guide on the next page to see which system might be the right choice for you.

## Benefits of cleaning with ...

- Non-flammable liquids

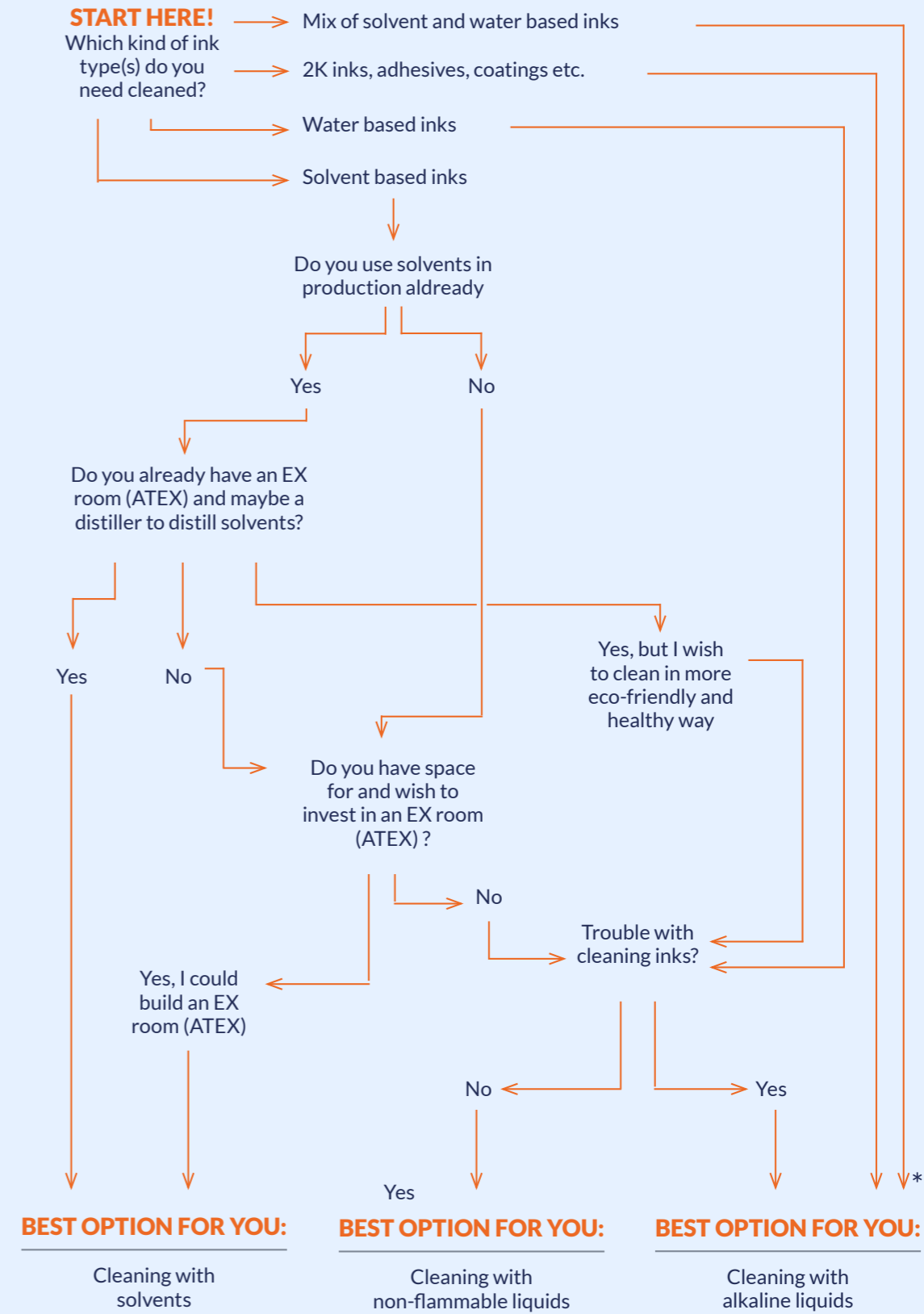
- Safer & easier handling
  - Non-corrosive & non-evaporating
  - Eco-friendly alternative which improves working conditions
- Alkaline liquids

- Non-flammable
  - Powerful cleaner for 2K inks, adhesives, coatings etc.
  - Very effective on combinations of water and solvent based inks
- Solvents

- Very effective with solvent based inks
  - Easy accessible when solvents are used in production and cleaning already
  - Distillable

Test your needs:

## Which system is right for me?



# Parts Washing

## Which machine should I choose?

Factors like ink types, thickness of ink layers, installation space etc. determine which kind of Parts Washer you should choose. Below you will find brief info of each type of cleaning method - for more info ask your FW sales representative.

### Standard Parts Washer

Designed to clean with non-flammable and eco-friendly cleaning liquids.

### ALKA Parts Washer

Designed to clean with alkaline liquid and made with safety features and components that ensure safe working conditions.

### ATEX Parts Washer

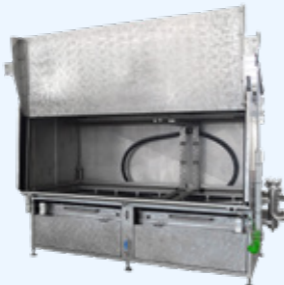
Designed to clean with solvents and are made EEX-proof according to the ATEX standard. It is made with a fully electrical system with ATEX-approved electrical control system and pumps.



#### PK FrontLoad

With the FrontLoad units you will get highly intensive cleaning from several angles. The machines are controlled by a PLC control system. The standard unit comes with two trolleys, which makes it easy to move the parts directly from the printing press to the grid.

Available as standard, ALKA, and ATEX Electric



#### PK EasyLoad

With the EasyLoad units you will get a very effective and cost-efficient parts washer for various wide web press parts. The machines are controlled by a microprocessor. The standard unit comes with one large trolley, which makes it easy to move the parts directly from the printing press to the grid.

Available as standard, ALKA, and ATEX Electric



#### PK SideLoad

If you want to place your Parts Washer in an ATEX certified container or have limited space possibilities a SideLoad might be the right choice for you.

Available as ATEX Electric

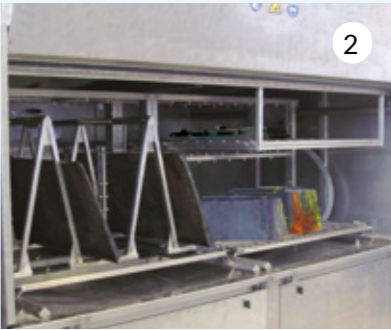
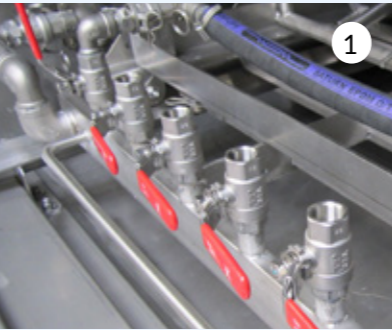
	Wash area (LxWxH) per trolley:	Trolleys included	Standard	ALKA	ATEX Elec.	XL*	XXL**
PK EasyLoad 240	2150 x 1030 x 700 mm (84,6" x 40.5" x 27.6")	1	X	X	X		
PK EasyLoad 280	2550 x 1030 x 700 mm (100.4" x 40.5" x 27.6")	1	X	X	X		
PK SideLoad 200	2000 x 1000 x 700 mm (79" x 39" x 27.6")	1			X		
PK SideLoad 300	3000 x 1000 x 700 mm (91" x 39" x 27.6")	1			X		
PK FrontLoad 250	1800 x 950 x 700 mm (70.9" x 37.4" x 27.6")	2	X	X	X	X	X
PK FrontLoad 300	1800 x 1200 x 700 mm (70.9" x 47.2" x 27.6")	2	X	X	X	X	X
PK FrontLoad 350	1800 x 1450 x 700 mm (70.9" x 57.1" x 27.6")	2	X	X	X	X	X

\* Adds 300 mm (11.8") in length of wash area per trolley.

\*\* Adds 800 mm (31.5") in length of wash area per trolley.

### Options and Accessories

- Trolley with slide-in grid for easy handling of parts
- High performance rotating nozzles for ink buckets
- Flexible jets to focus spray on difficult to clean items
- Two-story wash area
- Racks for ink trays, buckets, and doctor blades
- Cleaning of hoses
- Extra tank, pump, and nozzles for 2. cleaning liquid
- Distillation systems and integration between parts washer, tanks, and distiller
- Wastewater treatment unit
- Automatic liquid filling system



1: Cleaning of hoses 2: Racks for ink trays and doctor blades, 3. Distillation systems and integration between parts washer, tanks, and distiller.

# TrolleyWash

## Easy cleaning of printing trolley station

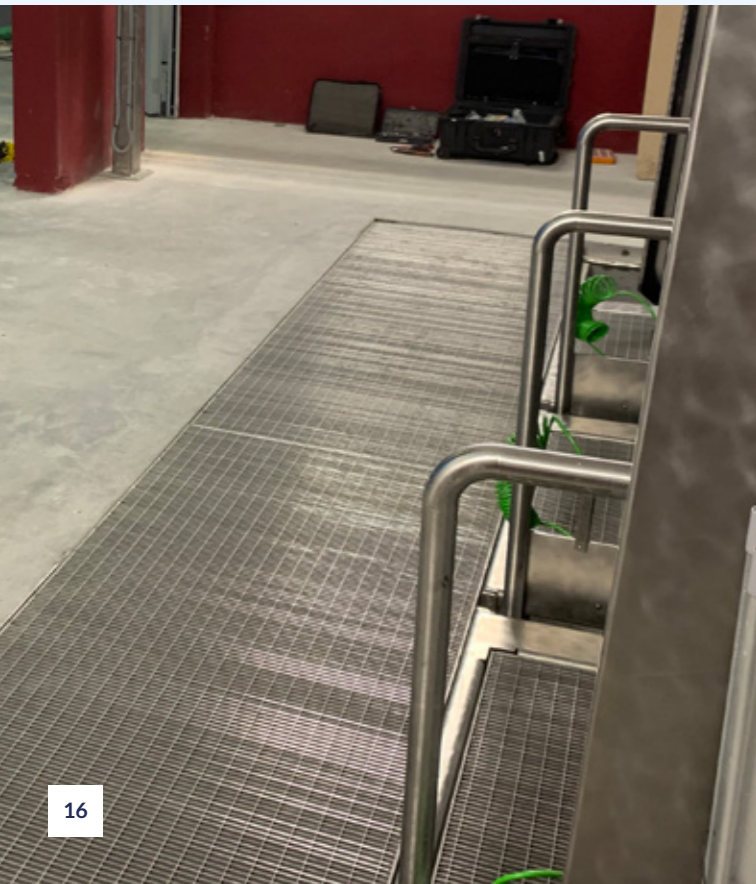
Printing trolley stations get really dirty and are very difficult to clean. With the PK Trolley Wash units you will get a very effective and cost-efficient automatic washing machine for cleaning different types of printing trolley stations.

The printing trolley station is pushed directly into the washing machine. The machines are controlled by a PLC unit, where it is easy to modify the different parameters such as wash-time, drain-time, and stabilization time.

### Our Solution

- Custom-built system enabling focused cleaning of challenging areas
- Fully automatic cleaning closed-loop process
- Ergonomically friendly grids and trolleys
- Clean all press parts in one single machine
- Low operation costs and environmentally friendly cleaning

	Wash area (LxWxH) per washroom:	Wash capabilities	Standard	Alkaline	ATEX Electric
PK 350 WR XL	2100 x 850 x 1100 mm (82,7" x 33,5" x 43,3")	3 trolleys			X
PK 350 WR XXL	2400 x 930 x 1300 mm (94,5" x 36,6" x 51,2")	3 trolleys			X



# Bucket Wash

## Quick & easy operation

The quick and easy wash operation allows press operators to focus on press make-ready functions, thus reducing the changeover time and the labour involved with manual washing.

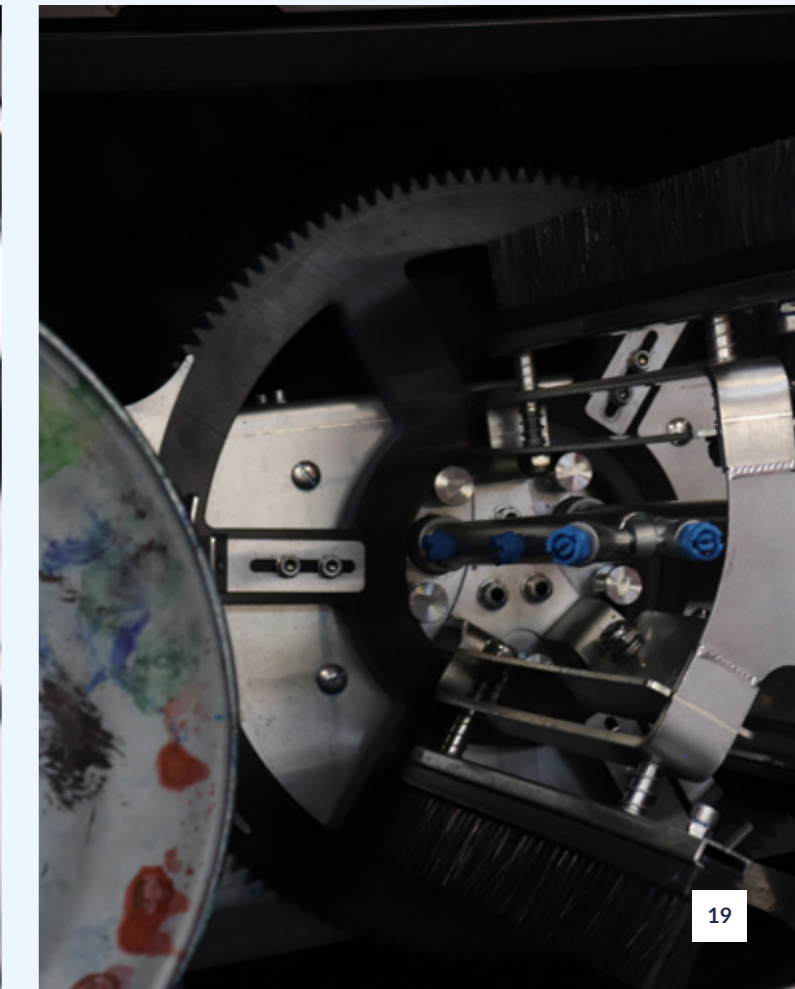
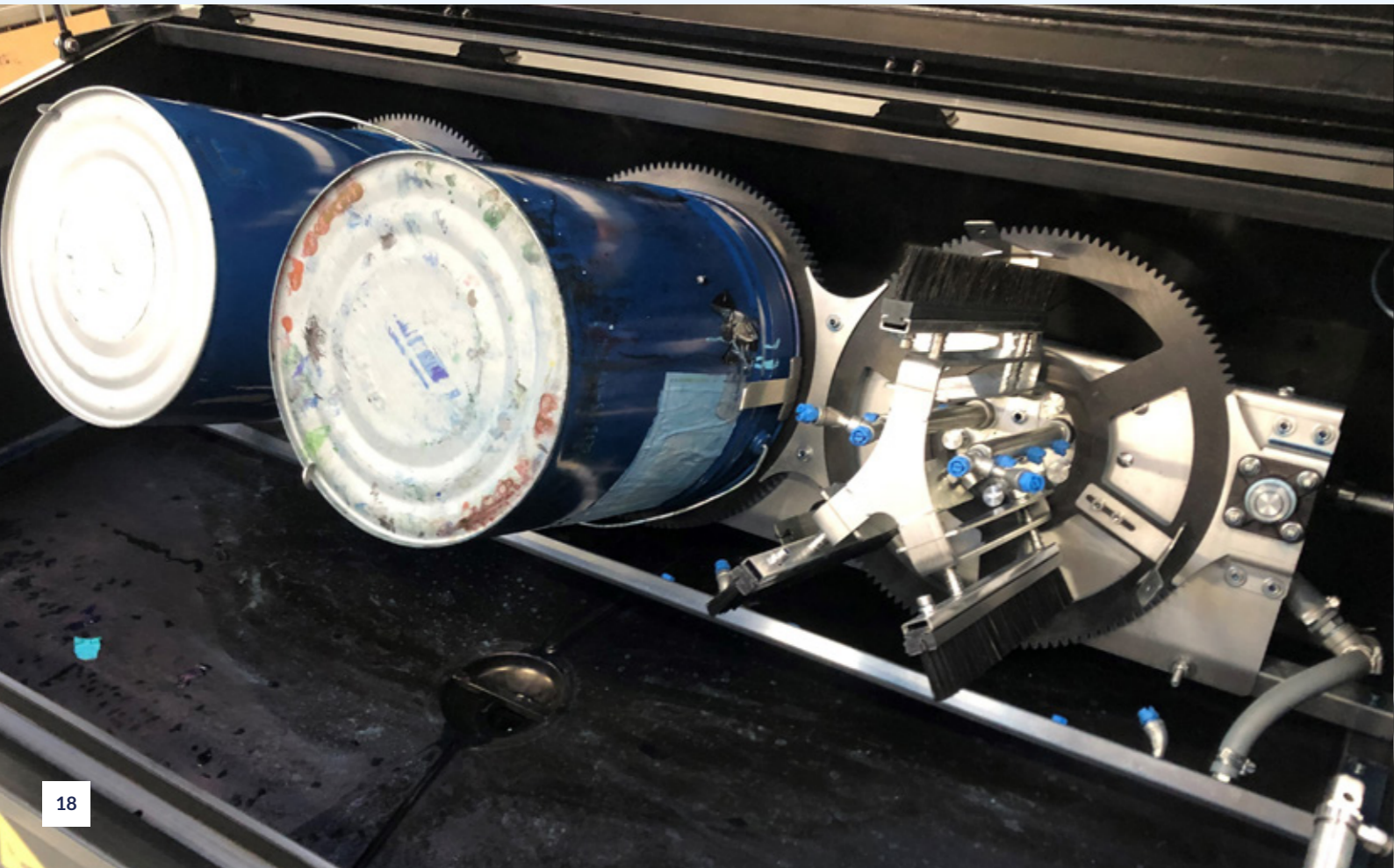
### Benefits of automated bucket washing

- Reuse your buckets
- Lower expenses on buckets
- Reduce the environmental impact
- Limited labor involved and minimal maintenance
- The Bucket Wash lets you clean 3 buckets in 15-20 minutes.

### TWO-STAGE CLEANING PROCESS

The Bucket Washers from Flexo Wash have a Wash and Rinse system with two separate tanks (or one tank and one open-rinse) which offers an automatic two-stage cleaning process, where the first stage is for washing and the second stage is for rinsing. The buckets are cleaned by a rotating brush, spraying, cleaning, and rinse liquid from below, above, and inside the bucket.

Wash capabilities		Min. diameter	Max. diameter	Min. height	Max. height
Bucket Wash	3 buckets	310 mm (12,2")	360 mm (14.1 in)	370 mm (14.5")	430 mm (16.9 in)



# Distillation

Distillers make it possible to reduce the solvent waste to an absolute minimum and is a very economical instrument to reduce costs in the printing and coating industry.

Flexo Wash offers a complete system where the parts washer, the inline wash system in the printing press(es), and the distillation system is connected and work as a closed loop. Our distillers are fully automatic and perform a high output during operation.

## Our Solution

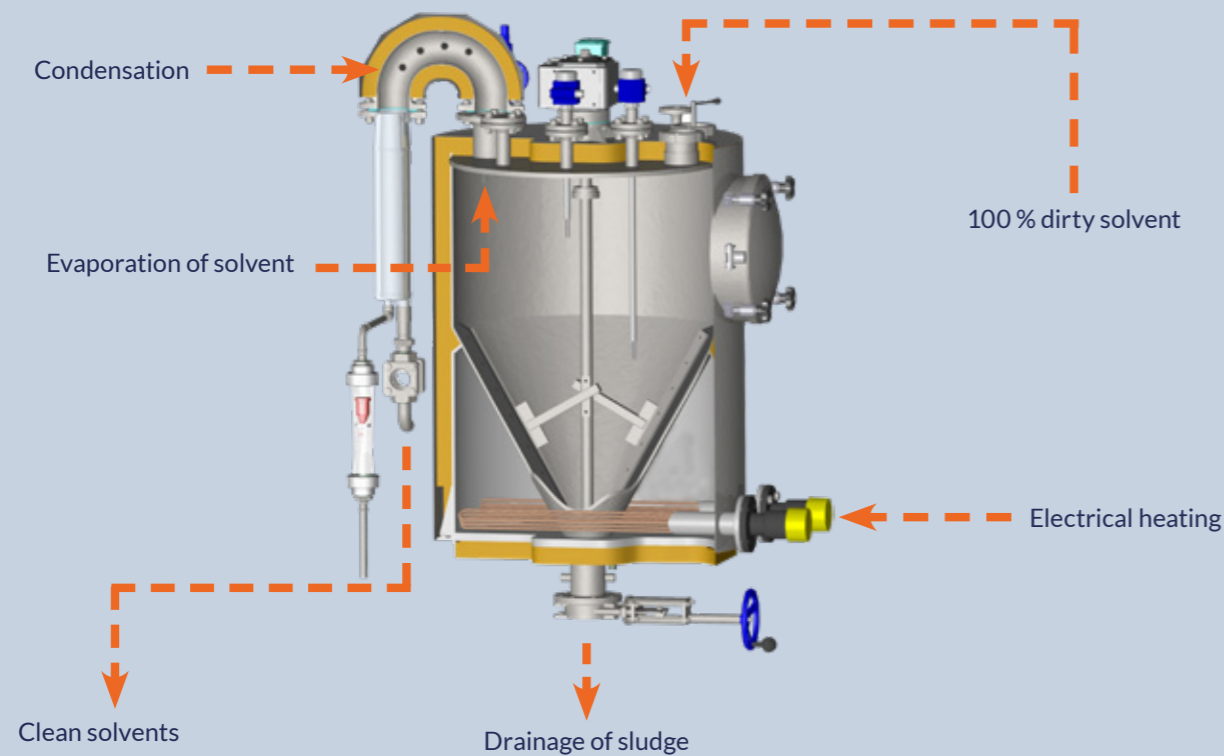
- Reuse your solvents
- Tanks for clean and dirty solvent
- Water cooled condenser
- Fully automatic distillation process
- High reclaim percentage



# Distillation

## How does it work?

When investing in a Flexo Wash Distiller we will take care of all connections between distiller, tanks, and Flexo Wash parts washer. We will guide you through all the requirements of the installation and prepare an installation layout to give you concrete measurements before deciding which DI unit best fits your needs and space requirements.



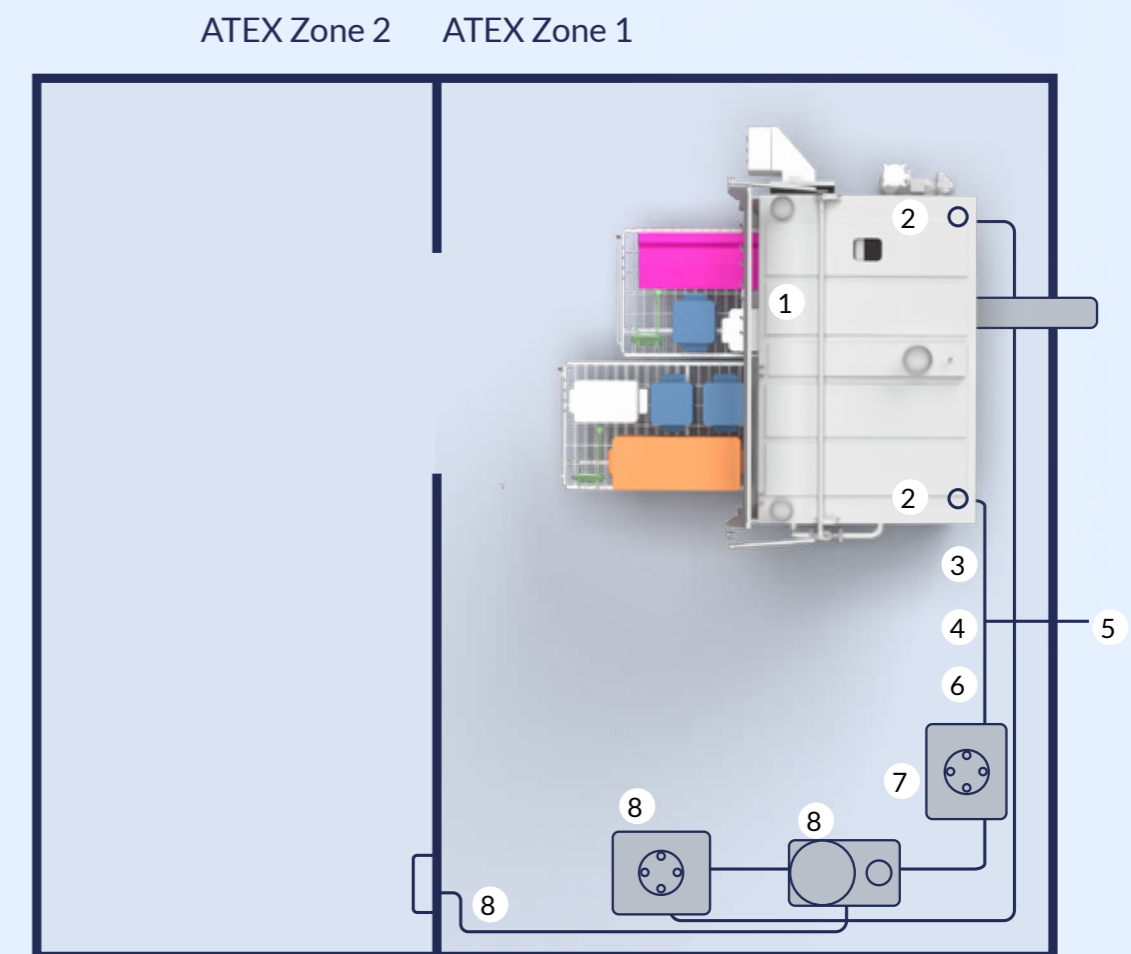
### 3-STEP PROCESS

All distillers run by a fully automatic 3-step process:  
The solvent is automatically filled into the distiller from the dirty solvent tank. The process works continuously until all solvent has been distilled. During the continuous distillation process the distilled solvents automatically run into the clean solvent tank.

## Complete installation

### Example layout

1. ATEX Parts Washer
2. Fresh air inlet for ventilation (from room, no connections)
3. Connection for clean solvent. Must be connected to PK 350 FL Filling system.
4. 3-way valve to select which solvent reservoir to fill from.
5. Connection to tank with clean solvent from solvent recovery system.
6. Connection from PK 350 FL to dirty solvent tank. Must be connected to PK 350 FL empty system.
7. Clean solvent tank
8. Distiller
9. Dirty solvent tank
10. Connection distiller control



# Distillation

## Which distiller should I choose?

When choosing the right model of distiller, various factors come into play. Concerning the capacity of the distiller, it is essential to know which solvents are being distilled. Furthermore, many aspects will influence the capacity, such as: Ink type in the solvent, level of contamination, the temperature limit of the specific solvent to distillate.

	Total vessel volume	Approx. distillation rate
DI 1200	140 L (37 gal)	20-40 L/hour (5-10 GPH)
DI 2400	160 L (42 gal)	40-60 L/hour (10-16 GPH)
DI 3300	300 L (132 gal)	60-80 L/hour (16-21 GPH)
DI 5500	500 L (132 Gal)	90-140 L/hour (24-37 GPH)



| Notes

| Notes

# CONTACT

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