

DANE WASH, IN-LINE,
FOR EFFICIENT , ENVIROMENTLY
FRIENDLY, SAFE SCREEN CLEANING
AND RECLAIMING



DW 125 - Compact



DW 380 - Professional





DW 125

Unique technical solutions which have been tested under genuine operations conditions for years have led to this second-to-none screen washer/screen reclaiming unit. The DW 125 has been designed as an in-line washing unit in which continuously-wet vertically rotating brushes connected with a high-pressure unit ensure the most efficient and environment-friendly screen-printing frame-cleaning possible. The machine cleans screen frames in continuous operations and is equipped with a safe frame-feeding system which permanently keeps the frame in the right position in relation to the rotating brushes and the high-pressure nozzles.

The machine itself is made of stainless steel, and all of the components exposed are made of corrosion-resistant materials. The system ensures a minimum of chemical consumption.

Features:

- Fast return on investment
- Savings on personnel
- Minimized service and maintenance
- Minimized consumption electricity
- Minimized consumption of chemicals
- Minimized consumption water
- Minimized consumption exhaust

INTERCHANGE
EQUIPMENT INC.

DANE WASH ENVIROMENTLY FRIENDLY RECLAIMING UNIT

The DANE WASH DW-A 125 has been developed by Grönlund Works in Copenhagen, Demark. It is a field proven machine with more than 15 years in production and use in printing shops worldwide. It has been constantly upgraded to comply with the latest environmental and health regulations.

The DW-A 125 Screen reclaiming machine has been developed with focus on the enviroment, health and safety aspects in close cooperation with environmental health and safety inspectors in Denmark as well as with leading suppliers of solvent and chemicals worldwide. It is the most advanced Screen reclaiming unit on the market today. It is safe to say that Denmark has the most stringent regulations when it comes to environmental protection.

Some important features of DW-A 125:

- Thanks to the combination of nozzles and multiple counter rotating vertical brushes a more thorough cleaning is obtained than by hand or any other machine where only nozzles are used. This allows the use of slow evaporating and more environmentally friendly solvents and chemicals.
- The advantage of using slow evaporating solvents in a closed loop process system minimizes any uncontrolled losses of chemicals to the environment.
- The DW-A 125 significantly reduces the use of solvents and chemicals compared to manual screen cleaning.
- The complete cleaning and reclaiming process take place inside the machine and no "wet room" or protective gear is needed for the personnel.
- Minimum ventilation required and thereby minimum escapes of solvents thru evaporation.
- Both the ink and stencil removal are closed loop processes and no chemicals are disposed of thru drainage.
- The complete cycle is PLC controlled and each process is only when a frame is activated present; savings in maitenance, chemicals, water and electricity.
- The DW125 is delivered with a barrel pump for safe deposit of used solvent and chem into drums for recycling or neutralization.



DANE Wash 125

Automatic In-Line Screen Reclaiming Unit

1. INK REMOVING

The solvent tank holds 200 liter (53 gallons). A re-circulating pump, pumps the solvent up to 4 nozzle bars with self-cleaning nozzles, which are directed to spray solvent onto the brushes. The pump is of high volume low-pressure design to avoid “misting” and excessive evaporation of the solvent. There is one fixed vertical bush and one counter rotating brushes for effective removal of any new or old ink residues from the screen and the printing frame. A special frame transport system with vertical “niprollers” ensure that each frame is individually and positively held and safely transported through the machine. The re-circulated solvent passes two easy accessible filter trays along side the ink removal section. As the screen leaves the ink removal section it enters a dry brushing section where excessive solvents are brushed off the frame before it enters the stencil stripping section.

2. STENCIL STRIPPING

The stencil stripping tank holds 136 liter (36 gallons) ready to use, stencil stripping chemicals. The re-circulating pump pumps the chemical up to 4 nozzle bars with self-cleaning nozzles, which are directed to spray the stripping chemical onto the brushes. There is one counter rotating brush and one fixed brush for effective removal of the stencil. There is a separate tank for stencil stripping concentrate and with a special dosage pump, a set amount of fresh chemicals are pumped into the nozzle system for each frame. The re-circulated stripping chemicals pass an easy accessible filter tray along side the stencil stripping section

3. HIGH PRESSURE WASHOUT

After removal of the stencil, the frame now enters the high pressure wash out section where one high-pressure nozzle moves up and down as the frame passes by. The high-pressure pump has a capacity of 9 liter/minute (2.5 gallons/minute) and draws the water from an 80 liter (20 gallon) buffer tank. The high-pressure pump has automatic shut down and is only activated when a frame is present. This results in huge savings in water, electricity and maintenance. The wastewater passes through an easy accessible filter tray along the side of the section.

CAPACITY / PROCESSING SPEED

The frames are processed at a speed of 125 mm/min (5 inches/min)



SPECIFICATIONS

Available for frames with an outside dimension

30" up to 98" height. Length: endless

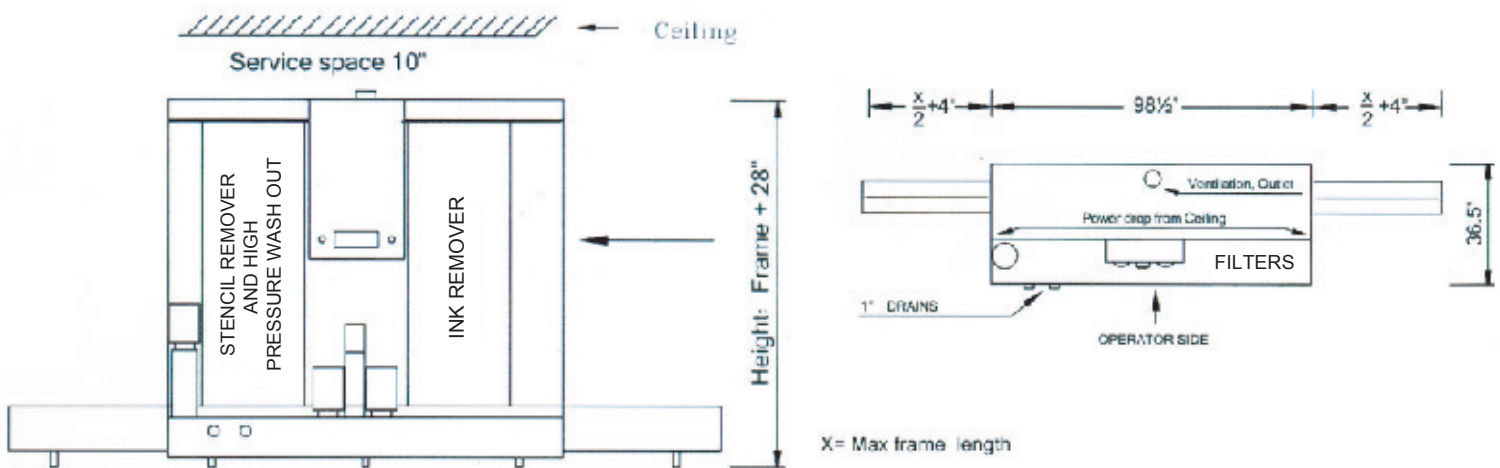
Frame profile: 1 3/4", Others on request.

In and outlets are tailor-made to customer's frame length.

Reservoirs:

Ink Remover Tank (solvents)	53 Gallons
Stencil Remover Tank	36 Gallons
High Pressure Pump Tank (tap water)	20 Gallons
Stencil Stripper Concentrate Tank	7.5 Gallons

Working speed:	125 mm (5")per minute continuous
Service functions:	Total frame counter. Resettable frame counter (for check of chemistry)
Ventilation:	External ventilator needs to be installed for proper evacuation. Duct Ø5" Adjustable exhaust valve needs to be installed.
Exhaust volume:	170-700 ft3/min
Water consumption:	1.8 Gallons /min. intermittent (from pump tank (tap water) 'h' connection, 2.5 Bar.
Electrical connections:	208/230V, 3-Phase, 30 Amp, 50/60 cycle
Fuse size:	16 Amp
Power consumption:	4 kWh
Water drain:	One 1" floor drain
Ventilation, water, electric, and drain installations to be made by customer	



DANE WASH IN-LINE, DW 380



DW 380

Interchange introduces the all-new DW 380 in-line screen-reclaiming unit. Based on the field proven DW 320, which has served the market reliably with clean screens for over a decade, the new DW 380 offers higher capacity, shorter processing time with maintained immaculate cleaning results.

The DW 380 is easy to operate and service thanks to its on-board Omron PLC and large color display panel which shows an instant update of all functions, parameters, tank volumes, number of screens and mesh area processed, as well as the size and position of screen frames in the machine.

Efficient, quiet and with special chemical and energy/saving features, the DANE-WASH DW 380 is of the latest design to meet with the most stringent regulations for water and environmental protection.

Features:

- Fast return on investment
- Savings on personnel
- Minimized service and maintenance
- Minimized consumption electricity
- Minimized consumption of chemicals
- Minimized consumption water
- Minimized consumption exhaust

DANE WASH 380 SCREEN RECLAIMING UNIT

4- STEP PROCESS

1. INK REMOVING

The solvent tank holds 385 liter (100 gallons). A re-circulating pump, pumps the solvent up to 4 nozzle bars with self-cleaning nozzles, which are directed to spray solvent onto the brushes. The pump is of high volume low-pressure design to avoid “misting” and excessive evaporation of the solvent. There are two pairs of counter rotating brushes for effective removal of any new or old ink residues from the screen and the printing frame. A special frame transport system with vertical “niprollers” ensures that each frame is individually and positively held and safely transported through the machine. The re-circulated solvent passes two easy accessible filter trays along side the ink removal section. As the screen leaves the ink removal section it enters a dry brushing section where excessive solvents are brushed off the frame before it enters the stencil stripping section.

2. STENCIL STRIPPING

The stencil stripping tank holds 245 liter (65 gallons) ready to use, stencil stripping chemicals. The re-circulating pump pumps the chemical up to 4 nozzle bars with self-cleaning nozzles, which are directed to spray the stripping chemical onto the brushes. There are 2 pairs of counter rotating brushes for effective removal of the stencil. There is a separate tank for stencil stripping concentrate and with a special dosage pump, a set amount of fresh chemicals are pumped into the nozzle system for each frame. The re-circulated stripping chemicals pass an easy accessible filter tray along side the stencil stripping section

3. HIGH PRESSURE WASHOUT

After removal of the stencil, the frame now enters the high pressure wash out section where two high-pressure nozzles (one on each side) move up and down as the frame passes by. The high -pressure pump has a capacity of 18 liter/minute (5 gallons/minute) and draws the water from a 160 liter (43 gallon) buffer tank. The high-pressure pump has automatic shut down and is only activated when a frame is present. This results in huge savings in water, electricity and maintenance. The wastewater passes through an easy accessible filter tray along the side of the section.

4. DRY BRUSHING

Finally, the clean frame passes through a pair of soft dry brushes, which effectively removes any excessive water and water droplets

CAPACITY / PROCESSING SPEED

The frames are processed at a speed of 380mm/min (15 inches/min).



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DANE WASH ENVIROMENTLY FRIENDLY RECLAIMING UNIT

The DANE WASH, DW-A 380 has been developed by Grönlund Works in Copenhagen, Demark. It is a field proven machine with more than 15 years in production and use in printing shops worldwide. It has been constantly upgraded to comply with the latest environmental and health regulations.

The DW-A 380 Screen reclaiming machine has been developed with focus on the enviroment, health and safety aspects in close cooperation with environmental health and safety inspectors in Denmark as well as with leading suppliers of solvent and chemicals worldwide. It is the most advanced Screen reclaiming unit on the market today. It is safe to say that Denmark has the most stringent regulations when it comes to environmental protection.

Some important features of DW-A 380:

- Thanks to the combination of nozzles and multiple counter rotating vertical brushes a more thorough cleaning is obtained than by hand or any other machine where only nozzles are used. This allows the use of slow evaporating and more environmentally friendly solvents and chemicals.
- The advantage of using slow evaporating solvents in a closed loop process system minimizes any uncontrolled releases of solvents or chemicals to the environment.
- The DW-A 380 significantly reduces the use of solvents and chemicals compared to manual screen cleaning.
- The complete cleaning and reclaiming process take place inside the machine and no "wet room" or protective gear is needed for the personnel.
- Minimum ventilation required and thereby minimum escapes of solvents thru evaporation.
- Both the ink and stencil removal are a closed loop processes and no chemicals or waste is disposed of thru drainage.
- The complete cycle is PLC controlled and each process is only activated when a frame is present; savings in maitenance, chemicals, water and electricity.
- The DW-A 380 is delivered with a barrel pump for safe deposit of used solvent and chemicals into drums for recycling or neutralization.
- The PLC, with a large display, automatically monitors tank volume and area of mesh and frames that have been processed for timely maintenance and record keeping data for optimized cleaning result with minimum use of chemicals.



Dane Wash In-Line, DW 380

SPECIFICATIONS

Available for frames with an outside dimension of
30" up to 98" height. Length: endless
Frame profile: 1 3/4", others on request
In and outlets are tailor-made to customer's max frame length.

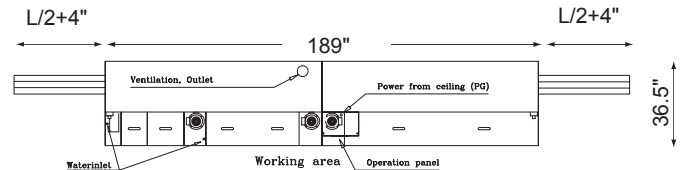
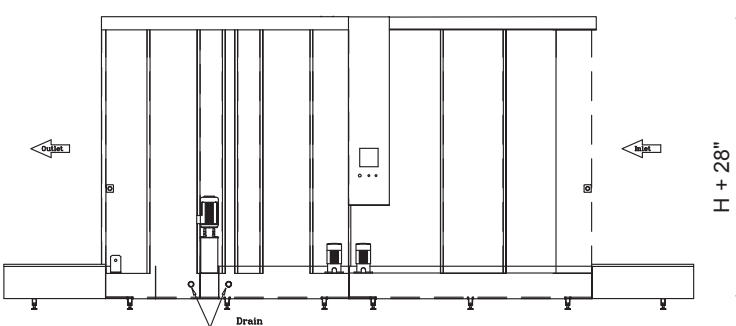
Reservoirs:

Ink Remover Tank (solvents)	100 Gallons
Stencil Remover Tank	65 Gallons
High Pressure Pump Water Tank	43 Gallons

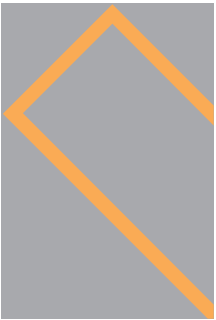
Working speed:	15" per minute, continuous.
Service functions:	Total frame counter. Resettable frame counter (for check of chemistry).
Ventilation:	External ventilator needs to be installed for proper evacuation. Duct \varnothing 5" Adjustable exhaust valve needs to be installed.
Exhaust volume:	170-700 cfm
Water consumption:	1.8 Gallons /min. intermittent (from water tank).
Electrical connections:	3 x 208/230 3-Phase 50/60 cycle, 40 Amp

Water drain: One 1" floor drain

Ventilation, water, electric, and drain installations to be made by customer

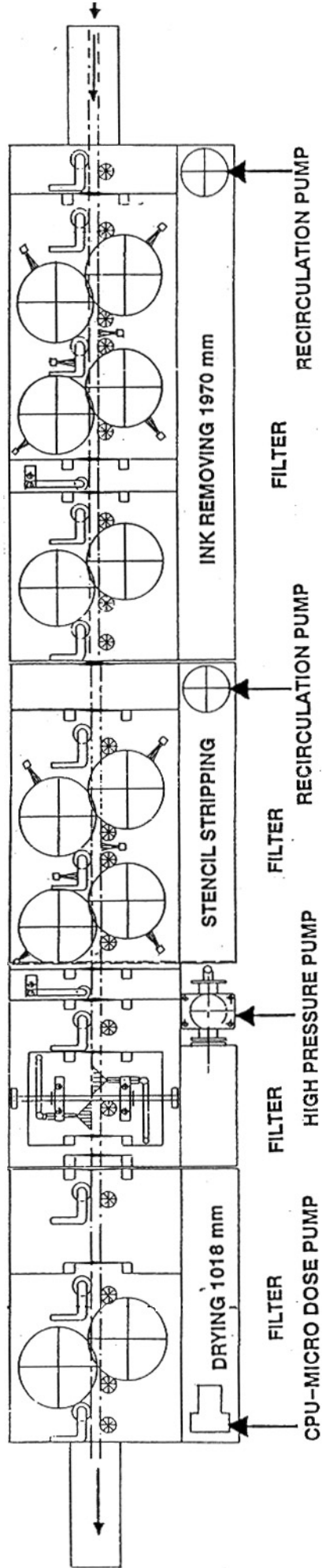


L = Max length of frames



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DW 380 SCREEN WASH/RECLAIMING SYSTEM



DW 380, DETAILS

Inlet Photocell for automatic start of the screen reclaiming process when a printing frame is inserted into the machine. This photocell also activates the vertical holding/drive roller to securely take hold of the printing frame. The length of each frame will be automatically scanned by this photocell to feed information to the PLC.



Energy Saving Functions. Each of the three process stations are automatically activated by the presence of a frame and, as soon as the last frame has been processed, each station switches off, one by one, and the DW will enter standby mode. All stations are re-activated, one by one, as soon as a new printing frame enters. This features saves electricity, chemicals and reduces wear and maintenance.



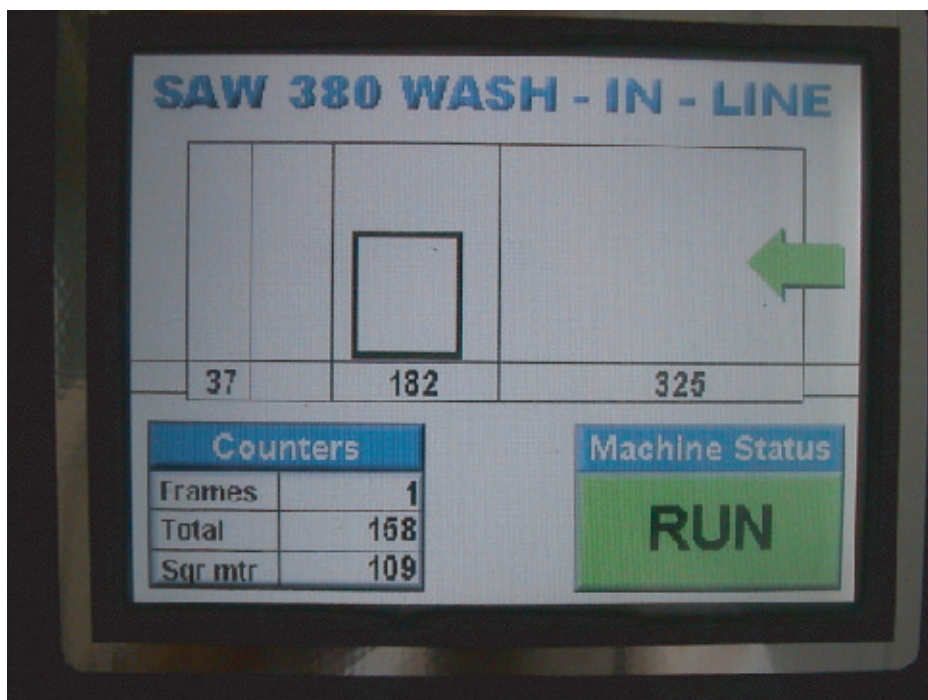
Surveillance Photocell at top of inlet combined with an ultra-sonic sensor for automatic sensing of frame height and size. This information is transmitted to the PLC which, i.e., regulates the movement of the high-pressure water nozzles to the actual frame size processed. This means more effective cleaning and huge savings in water consumption. Large, bright LCD's inform the operator of machine status and if a frame is ready for pick-up at the outlet of the DW.



Operator-Friendly Control Panel with touch panel and large color display show machine status in all process stations.



Large Color Screen Display shows machine status. Each function can be separately set and monitored. Actual status of tank volume is constantly monitored and shown in the display as well as the position and size of frames being processed. Each frame is automatically measured as to its size in square meters or square feet to accurately calculate the actual screen area that has been processed from the last refill of chemical.



Danfoss Heavy-Duty Recirculation Pumps for ink cleaning solvents and chemicals for stencil removal. Note the pressure gauge for the solvent Recirculation system. The pressure is metered to 0,9 bar to avoid the formation of solvent “misting” and prevents the solvent from excessive evaporation and solvent loss through the exhaust ventilation – another Svecia cost-saving feature.

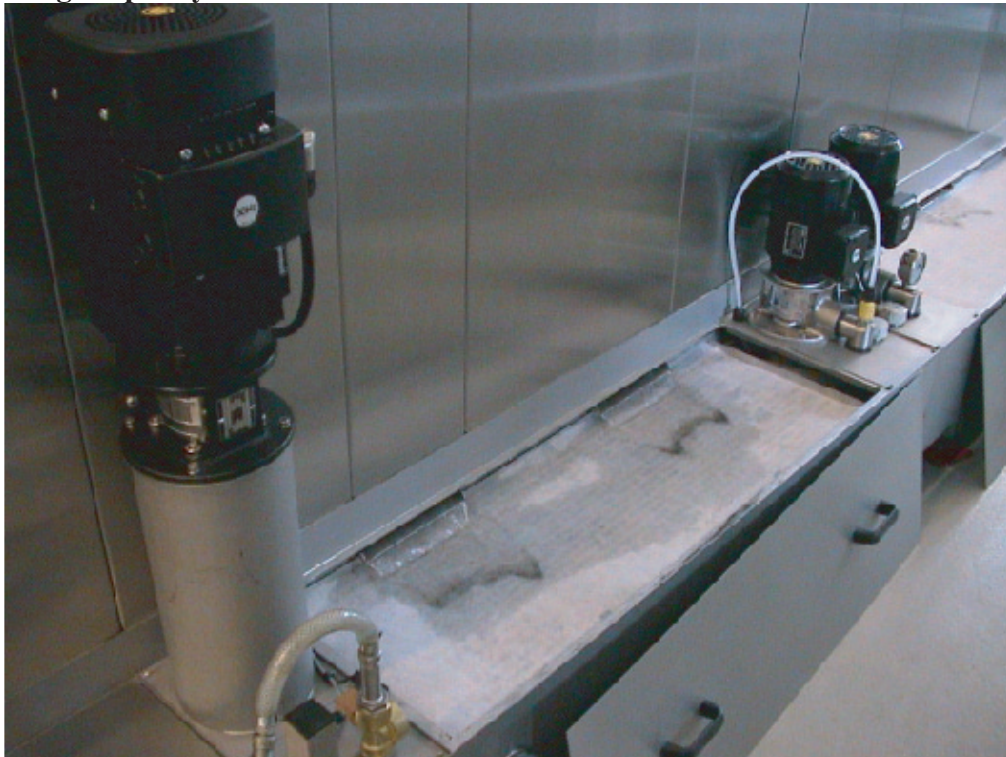


Note the tank volume meters and the special feed hose for fresh chemicals to be induced directly into the pump for the stencil removal nozzles.

Double High Capacity Filters in the ink removal station constantly filter the recirculated cleaning solvent and keeps it free from particles and debris such as ink flakes, masking tape, etc. Inexpensive, easy to change disposable filter mats.



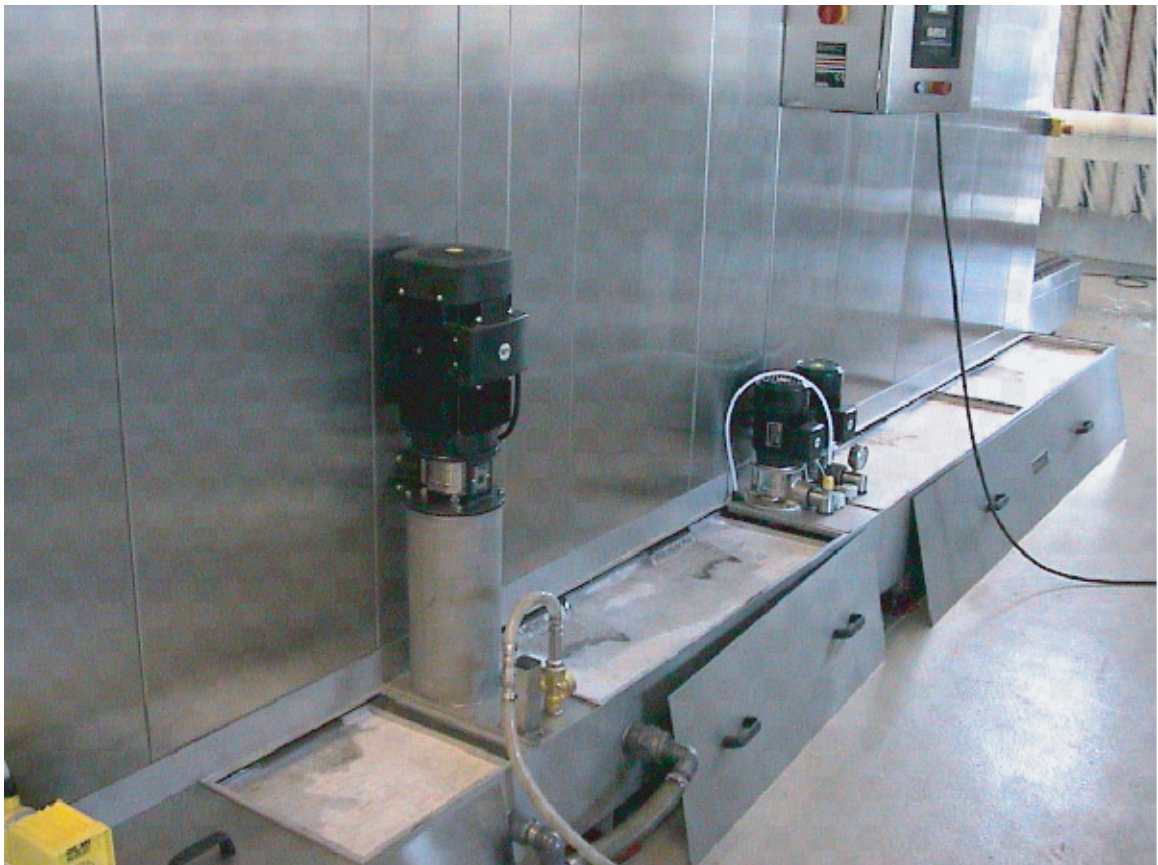
Large capacity filters in the stencil removal section.



High Pressure Pump, high capacity, draws water from water tank, independent of variations in water supply and water pressure.

Large, easy to change disposable filter catches any foreign materials such as pieces of masking tape, ink flakes, etc.

Combined drainage from high-pressure section and stencil removal section results in almost "0" concentration in wastewater. Tests have proven that the wastewater from the DW can be compared to kitchen household wastewater.



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Dosage Pump for stencil removal chemicals. The dosage pump injects fresh chemicals directly into the nozzle system in the stencil removal section for optimum results. Separate water inlet with water meter for exact mixture of water and concentrate (1:50) into holding tank.



Outlet Photocell signals when frame is ready for removal. Also activates red light signal at inlet to alert operator. The ready frame is held in vertical position until removed. No need for frame support bars; the frame can be removed in any direction.



INSTRUCTION MANUAL

DANE AUTOMATIC

WASH-IN-LINE

SAMPLE



CE

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Appendixes

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Appendix I – Nozzle tube Placement

Keyboard functions

The DW -380 machine status is displayed on an LCD screen unit.

All buttons are diagram buttons activated by soft pushes. It is impossible to key-in from the LCD screen unit. This is only for viewing. Figure 9 shows the control panel with the keyboard.

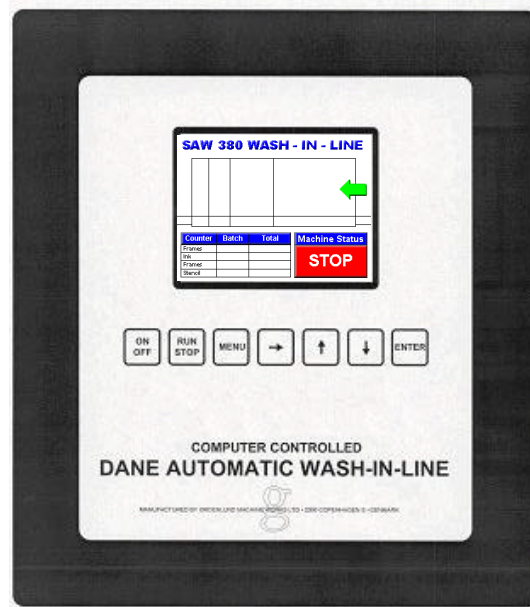


Figure 9 Operating panel for DW -380

The seven buttons are described in the order in which they appear on the keyboard. There are two more buttons on the current box, 1 emergency stop button and 1 reset button. See the explanations at the end of this chapter.

[ON - OFF] Switches On and Off the programmed control and the CPU

[RUN - STOP] Starts and stops the washing program

[MENU] Selects the "Main Menu" and exits the "submenus"

[?] Option (not programmed)

[?] For upward selection in menus

[?] For downward selection in menus

[ENTER] For selection of "submenus" and "select/not select"

Emergency stop and Reset

? Pushing the button activates emergency stop, and the button will remain activated until pulled out. The button is for use **only** in case of emergency and/or injury to personnel. When emergency stop button is activated, all power consuming devices on the machine will be deactivated. Before the machine can be restarted, the button must be pulled out.

? When the machine is ready to start, push the "Reset" button - followed by [ON-OFF] and [RUN-STOP]

Menu system

DW -380 is operated from menus selected in the display (LCD display unit). For normal operation it will not be necessary to go by the menu system, only for adjustment of operating parameters, displaying the status of all units and for manual control of units. The SAW-A menu contents are sketched in appendix A.

All menus are designed alike, i.e. pop-up windows with the "Main Menu" and following "submenus". It is possible in all menus to choose between several items by using ????. A square in the RH side will move up or down through the items listed. The status for each item is indicated with either an "X" or a "V". To select, push [ENTER], and the value will be changed. A red "X" means OFF and a green "V" indicates ON.

In Figure 10, an example for the submenu "Device Set-up" is displayed and the highlighted item is "Ink Pump". The column named "Use" indicates the status for each device. In below example "Transport motor", "Brush motor" and "High pressure pump" are turned OFF.

Device Setup	Use
Transport Motor	✘
Brush Motor	✘
Ink Pump	✔
Stencil Pump	✔
Dosing Pump	✔
High Pressure Nozzle Motor	✔
High Pressure Pump	✘
Water Valve	✔

Figure 10 DW -380 Example of a "submenu"

You can always skip a menu/submenu by pushing [MENU], and the program will return to "Operating panel" as shown in Figure 9.

There is one "Main Menu" and six "submenus out of which two of these are "sub-submenus". In the following all menus will be explained.

When the machine is working some information will constantly be available in the “Main Display”. In Figure 11 an example of “Main Display” is explained.

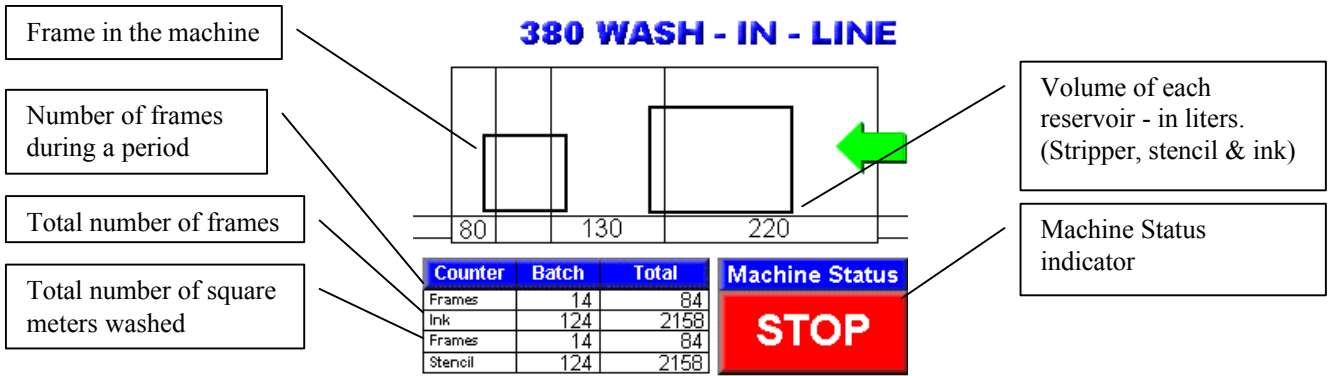


Figure 11 "Main Display" window with examples

Main Menu

Press the [MENU] button in the operating panel and the display will show the “Main Menu” window as in Figure 12. It is impossible to change any values in the “Main Menu”, only to choose between the four “submenus”. In the “Main Menu” an inverted bar can be toggled up and down using ?? ????. When the menu decided is highlighted, press [ENTER] to select the “submenu”.

Main Menu
Setup
Monitor
Test
Utility

Figure 12 "Main Menu" window

Submenus

In the following sections each submenu is described in the order they appear.

Device Set-up

The “Device Set-up” dialog box displays the status of each device. All devices are listed in the LH side of the window and the status of each device is shown in the right column called “Use”.

To activate the “Device Set-up” menu, press [MENU], place the inverted bar by using the buttons [?] [?] on “Set-up” followed by pressing [ENTER]. The “Device Set-up” dialog box will then appear in the display. See Figure 13.

SPAREPART LIST

Appendix C

Electronic Parts:

Unit description	Our number.	
OMRON PLC PA216 30W POWER UNIT	10649	1
OMRON PLC EPROM UNIT F. CPU	10659	1
OMRON PLC SOFTSTARTER G3J 1.1KW	10661	1
OMRON PLC INVERTER 0.2KW	10639	1
OMRON PLC FILTER UNIT F. INVERTER	10640	1
OMRON PLC 8 NPN OUTPUT OD211	10644	1
OMRON PLC CPU Model CQM1-45	10645	1
OMRON PLC 16 RELAY UNIT OC222	10646	1
OMRON PLC 24V SAFETY RELAY	10663	1
OMRON Motor-protection unit - 0.63A	9403	1
OMRON Motor-protection unit - 1A	9404	2
OMRON Motor-protection unit - 4A	9407	1
OMRON Motor-protection unit - 6.3A	9408	1
Blocking sensor	4673	1
In-/Outlet sensor	4683	2
Transport Motor (Stöber)	10057	1
Brush Motor small (WEG)	10059	1
High Pressure Motor +Gear/Enc.	10456	1
INK & STENCIL PUMPS (50Hz)	10095	2
INK & STENCIL PUMPS (60Hz)	10097	2
High Pressure Pump (50Hz)	10103	1
High Pressure Pump (60Hz)	10106	1
Dosematic Pump	10286	1
SAW Display with rear light/no plugs	3997	1
Pure & Water Valve magnet	2678	1

SERVICE DIAGRAM**Appendix E**

The diagram is worked out for machines running 8 hours per day, 5 days a week. If the machine is running more, other circumstances prevail. See the special service specifications under respective chapters.

SERVICE	DAY	WEEK	MONTH	½ YEAR
Replacement of filters in reservoirs	X			
Cleaning in and outlet pipes	X			
Control of level sensors	X			
Inspection stencil level	X			
Inspection of liquid condition in reservoirs	X			
Lubrication and adjustment of chains (see page 9 for chain-service)		X		
Control sludge level in reservoirs, clean if level exceeds 2". (5 cm)		X		
Check liquid levels in ink- and stencil-reservoirs. *		X		
Brush condition			X	
Condition check on level indicator device for high-pressure section			X	
Emergency stop check			X	
Control sludge level in the machine (remove side panels and clean if necessary)			X	
High-pressure section			X	
Service and cleaning of distributing system (see page 11)			X	
Empty and clean the stencil reservoir			X	
Check ventilation system				X
Check water connections				X

*Replace ink-remover solvent when heavily contaminated with ink or if the cleaning result fails to appear.

NB! After service, always check the machine for hand tools, rags and components left behind.

Agent reference

For product support, contact the local agent or authorised service operator:

