Fuji Photo Film (Europe) GmbH
Graphic Arts Department
Phone +49 (2 11) 50 89- 4 39
Fax +49 (2 11) 50 89- 1 59
twerner@fujifilmeurope.de

Status Report

To: **A. Nowak / Colenta**

From: T. Werner / FDUS

Date: 23. July 2004

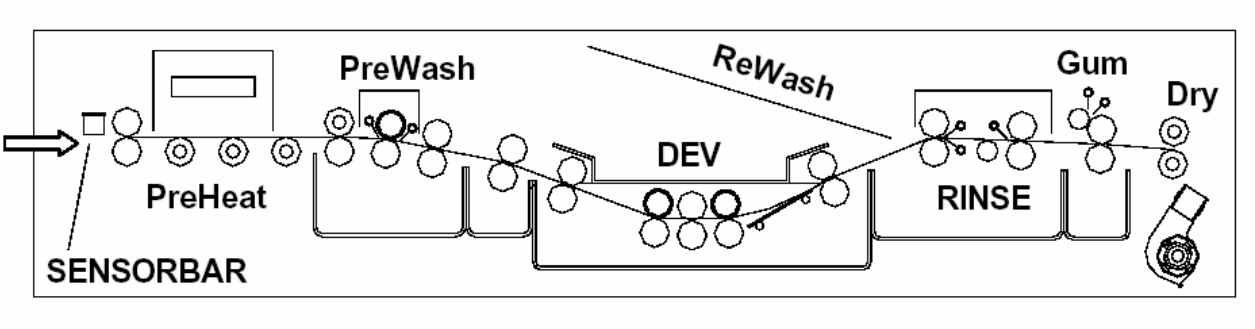
Subject: **Status Report of the Polymer Processor Colenta ILP 68 / 85 FP**

General
The Colenta ILP 68 FP-series is a new model in the Colenta CtP range, designed to meet the requirements of the "medium" violet (polymer) market. This report descripes the design of the Colenta ILP 68 / 85 FP polymer processor in combination with the ECRM Mako 2 platesetter at the customer Druckerei Steckborn in Switzerland on the 17th March 2004.

Equipment

Platesetter:	ECRM Mako2
Processor:	Colenta ILP 68 FP
Plate:	Fujifilm Brillia LP-NV

Processor
The Colenta FP series is supplied with the following processing sections (see picture below)



PreHeat section → PreWash section → Developer section → Rinse section → Gum section → Dry section

PreHeat section: Pre-heating of the plate is achieved by using 6 ceramic heater elements (2,4 kW) which are covered by a metal top cover. These ceramic elements are separated into two controlled areas (inside and outside right). Temperatures in both areas are independently controlled from the processor CPU to pre-programmed settings and monitored in the display electronics.

⇦ In addition, a 3 position switch is provided for selecting the required pre-heat temperature in accordance with the plate-thickness being used.
(0.15, 0.20 or 0.30mm - each thickness requires a different pre-heat temperature level).
The temperature of each pre-heat setting is pre-programmable.

Fans are installed within the pre-heat section to provide even airflow and prevent overheating. It is assumed that the chassis temperature to be lower than 50°C.

The entry and exit of the pre-heat section is equipped with heat-resistant silicon rollers which transport the plate and heat-resistant rollers to support the plate whilst inside the pre-heat section. The working life of the heater elements is specified at app. 6 years (at 8 hours working time, 200 days a year).

Pre-Wash section: Pre-heat is followed by Pre-Wash, this section is equipped with two top spraybars front and back and a single bristle brush in between. A roller pair guide the plate to the brush where the “wash-off” is carried out. The next transport roller set (located at the end of the section) squeegee the water from the plate before passing the plate to the next stage. The bristle brush is driven from a separate motor in order to control the rotational speed independently from the processor speed.
As standard the processor is equipped for connection to a mains water system. A solenoid valve, controlled by pulse time programming sequences, regulates the flow of water as required.
A top cover is fitted to protect the plate against water droplets splashing from the brush into the rinse section. The amount of water used per plate is around 2,5 litre. (at 2 bar water pressure) Maximum pressure should not be higher than 10 bar.

Dev - section: At the entrance and exit of the “dip” system a roller pair transport the plates through the developer section. Inside the developer section a metal guide is installed which supports the movement of the plate. One brush is installed in front of the centre drive rollers and another brush behind it. Both brushes are independently adjustable for both pressure and speed (max. 36 rpm) requirements. The first brush is turning in the same direction as the plate , the other one is turning against the direction of the plate.
In addition, the developer section is equipped with a positive displacement bellows replenisher pump, developer heater and chiller as standard.
A “fill” pump is available as an option.

NOTE: One motor is used to drive drive the transport rollers, a second motor is in use to drive the brush in the PreWash section and the 2 brushes used in the Developer section.

Capacity of the developer bath:
Colenta ILP 68 FP → 40 litre (incl. hoses and filter)
Colenta ILP 85 FP → 48 litre (incl. hoses and filter)

The minimum plate length which can be used in this processor type is 325 mm.
Transport speed through the developer section is 421 mm (115 cm/min at 21 sec. d-t-n time) Circulation and heating of the developer is provided by a pump (40 litre per hour) which circulates the developer through an inline flow heater, through the chiller and back into to the tank.
. The inlet for fresh developer replenishment is located just behind the developer heater

Rinse section: The rinse section is equipped with two transport rollers, two top spray bars and a bottom spray bar. A roller pair is installed to guide the plate through the section. There is no bristle scrub installed. Wash water is sprayed onto the plate surface and controlled via a valve which is opened and closed automatically. This is the same system as used in the pre-wash section, the amount of water used per plate is around 2,5 litre. (at 2 bar water pressure). The maximum pressure should not be higher than 10 bar.

Gum section: The gum section is a simple but effective construction, incorporating a small steel roller placed on top of a transport roller pair applying a thin gum layer to the plate. There is no reservoir in the gum tank as the gum is contained in a loop from a storage bottle via the spray bar onto the plate. A single hole in the middle of the spray bar controls the required amount of gum for protecting the plate. Cleaning of the gum section is made easy by simply selecting the automatic cleaning mode from the operator menu

Drying section: Warm air (adjustable in temperature) is blown by fans on to the plate surface

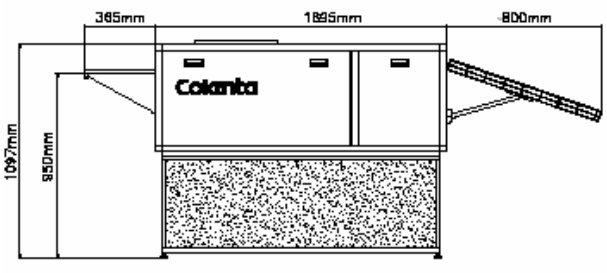
Status of single section	Note
Infeed Section	
Optical Sensorbar, for touchless measuring the incoming plate sufarce.	
Pre-heat Section	
pre-heat for different plate thicknesses # in offline operation, selected by a switch next to the operator display # in online operation, the correspondending signal can be supplied from the platesetter (electronical interface)	
Temperature of touchable covers (near pre-heat) must be lower than 50°C	Has to be guaranteed by Colenta
Pre-wash Section	
Max. mains tap water pressure (pre-wash and rinse) should be appr. 3 bar	
Separate motor* for bristle in pre-wash (independent speed control)	
Spray bars are removable; water flow easily adjustable by valves mounted on side of chassis; with 2 mm holes	
Developer Section	
Dev. repl. is pumped by bellow pump to the dev. section (due to accuracy)	
Flow cover for developer surface (oxidation protection)	
A separate motor is used to drive brushes in developer section (independent speed control)	
Processor speed: microprocessor controlled, pre-programable from 16 to 90 sec.	
The developer is equipped with an inline chiller unit – this to prevent overheating of the developer, the developer temp. itself is pre-programable from 22 to 35 °C	
The brushes installed in the dev. are adjustable regarding preassure and speed	
Replenishment for the Developer: # depending on the actuall amount of m² plate feed to the processor (ml / sqm) # during standby - (ml / h) # during sleep mode – (ml/h) the processor software is equipped with an intelligent sleep mode which has to be used over night, during the weekend and periodes were the processor is not in use. During the sleep mode, the developer temperature is under control. CPU stores sleep time – depending on that a calculated amount of developer will be spend automatically when switching back the processor to workmode. NOTE: all three above mentioned values are pre-programable	
Level sensor for the Developer (low level)	
Anticristaization cycles are available to prevent deposits on the rollers	
Rinse Section	
Main tap water system for pre-wash and rinse as a standard. External circulation: optional	
Finisher Section	
Gum cleaning program is optional.	
Gum rollers are removable for cleaning	
Transport System:	
Type of drive system : chain drive	
One roller adjustment for all kind of plate-thiknesses (0,15 – 0,20 and 0,30 mm)	
Plate counter (reset able) Total counter (not reset able) for service	 Should be available
Manual mode, to allow to start different functions by hand	
Others	
Top cover can be open for easy access to the assembly (protected by interlock)	
Electrical / mechanical interfaces available on request	
CE – Approval	By Colenta
ISO 9001-2004	By Colenta
Top control panel for dev. temp (+/- 0.5°C stability possible), repl. quantity, process speed, brush speeds adjustment.	
Remote Windows control software available (option)	
Re-Wash facility inclued as a standard	

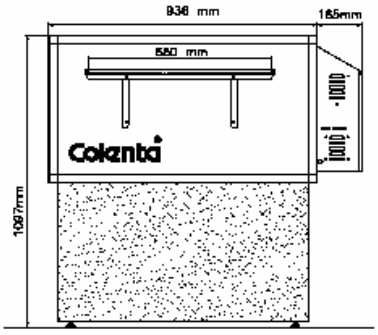
Pictures Colenta ILP-Series

Technical Specifications

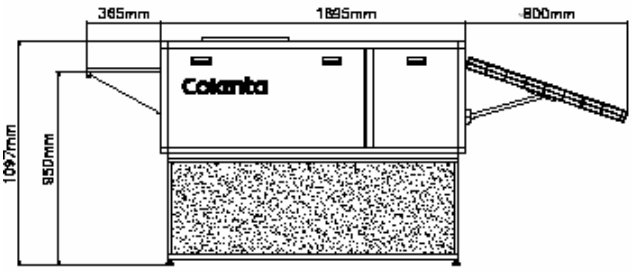
	Colenta ILP 68 FP	**Colenta ILP 85 FP**
Plate width	680 mm	850 mm
Dev tank capacity	40 litre	48 litre
Dimensions (L x W x H) without tables	1695 x 1001 x 1132 mm	1695 x 1271 x 1097mm
Power supply	3N ~ 400V / 230V, 50/60 Hz 7 Kw, 13 A	3N ~ 400V / 230V, 50/60 Hz 8,1 Kw, 16 A
Net weight	350 kg	385 kg
BTU	10600	11500

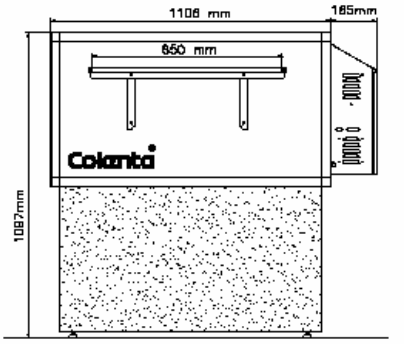
Footprint





Colenta ILP 68





Colenta ILP 85

Notes
Today two installations are placed in combination with Fujifilm Brillia LP-NV plates in Europe.

The following table provide the processor settings of the current existing installation with an ECRM Mako2 platesetter, Colenta RDM 7-4 processor and the Fujifilm Brillia LP-NV plate at the customer in Switzerland.

Subject	Description / Setting
Plate setter	ECRM Mako2
Processor	Colenta RDM 7-4/S1/USO
Developer	Fujifilm LP-DS (rtu)
Dev. Replenisher	Fujifilm LP-DRC (rtu)
Finisher	Fujifilm FN-6E (1:1)
Developer temp.	28 °C
Dwell time	21 sec
Repl. amount	80 ml/m2
Repl. amount	45 ml / h (Standby Mode) 20 ml / h (Sleep Mode)
Brush speed	150 rpm
Tank content	40 ltr.
Gum content	10 ltr.
Dryer temp	50 °C
Pre-heat temp	104 °C
Pre-wash	> 500 ml / m2
Rinse	> 500 ml / m2

Based on information of Add Image , Switzerland, the installation of the Colenta processor, in combination with the Fujifilm Brillia LP-NV plate, was completed without trouble. Small processing marks within the FOGRA test chart which were visible from the start-up and were removed by small modifications and adjustment. Afterwards a 50% tint (all over the plate) shows no scrub marks.