

## Portals Mill Asset register: Version 4



**Overton Mill, Overton, Hampshire, RG25 3JG.**

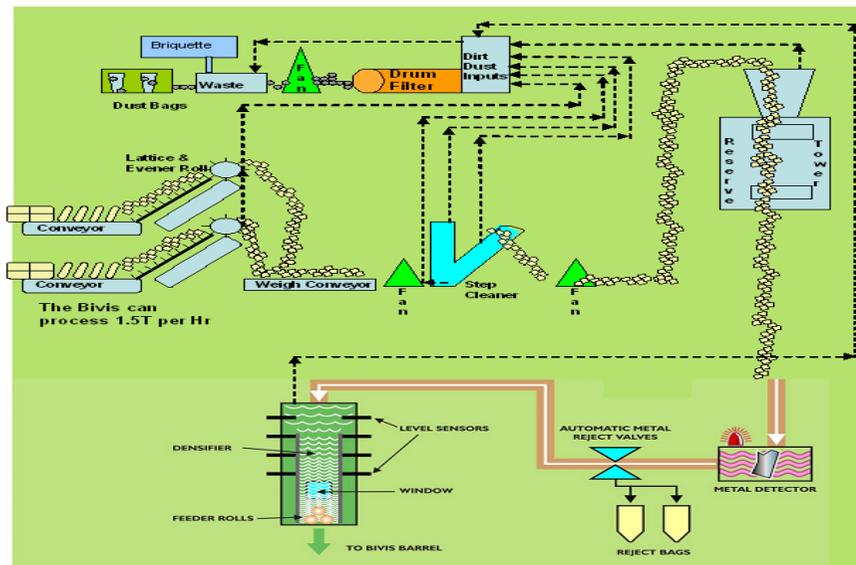
Portals opened Overton Mill, near to Laverstoke, in 1922. Paper making ceased at Laverstoke Mill in 1963, having transferred to the nearby and more modern Overton Mill. In 1972, Portals acquired Bathford Mill, near Bath in Somerset, which had been producing paper since 1809. In 1995, Portals were themselves acquired by De La Rue, the banknote printers, and the name ceased to be used. In 2018, De La Rue divested itself of its paper making activities,

and the name Portals was again used for the newly independent business. There has been significant investment within the mill over the last 15 years any holds specialist machinery associated with banknote manufacturing.

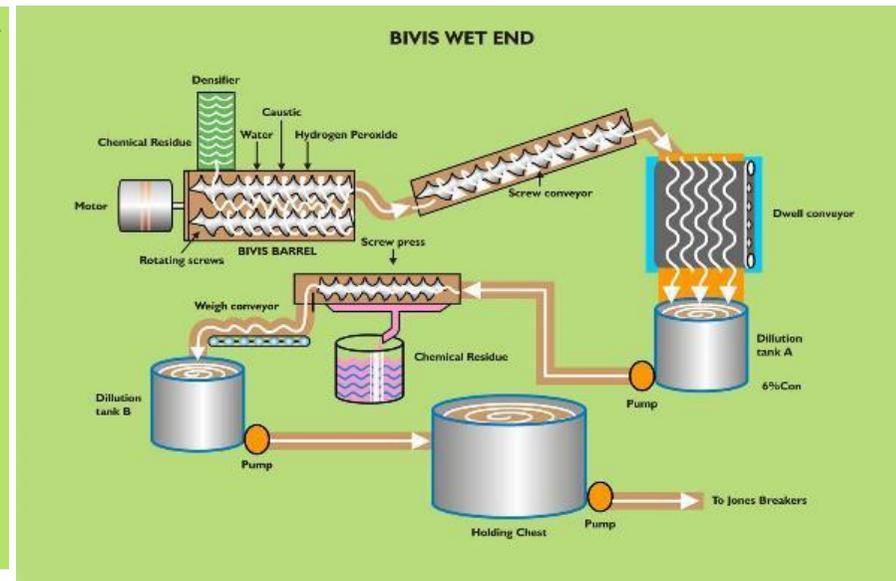
## Pulp stock preparation

### Bivis

Block Diagram of the Bivis Dry End



BIVIS WET END



Simply defined, a Bivis machine is a processing machine consisting of two identical co-rotating intermeshing self-wiping screw profiles operating within a closed barrel. Cletral developed pulping process jointly with research institutes and leading paper companies, applying proven twin-screw extrusion

technology used in the plastics, chemical, food and feed industries since the mid 1950's. Clextral BIVIS machines provide continuous, automated processing for:

- Cotton Defibering or Fiber Cutting
- Chemical Impregnation
- Bleaching
- Washing

The BIVIS or TSM (Twin Screw Machine) process is completely different compared to conventional defibering processes. Fibres separation or fibres cutting are achieved by compression and shearing forces thanks to reverse threads screw components called reverse sections. Several shearing modules are required for an efficient fibres separation. Using a combination of reverse screw sections with varying geometries, the BIVIS machine efficiently processes wood chips, non-wood fibres, textile fibres, recycled fibres, virtually any cellulose raw material, to achieve optimum fibre separation or fibre cutting depending on the raw materials.

The highly efficient BIVIS system uses a fraction of the energy required by traditional processing equipment. Chemical impregnation Various chemical treatments may be performed by TSM machine. Cooking, Chemical Treatment and Chlorine Free Bleaching Treatment of cellulosic material with chemicals and bleaching agents is easily and efficiently accomplished by the BIVIS machine.

The high consistency of the material, plus the combined actions of temperature and pressure, accelerate the chemical reactions. Liquids or gases may be injected into the barrel at specific areas. The highly efficient BIVIS process greatly reduces the volume of chemicals required and dramatically lowers the volume of effluent to be treated.

#### **Fibre Handling**

Bales are fed into two conveyors, where they are broken up and transferred onto weigh conveyors. The comber is then sent through the cyclones for cleaning where heavy objects are disregarded in the rejects bins and lighter dust is also separated in the dust extraction systems. Metallic objects are detected and rejected as this would seriously damage the Bivis screws. The raw material is then fed through a densifier which aids in controlling the flow into the Bivis barrel. Water, caustic, and hydrogen peroxide are added to the raw material as it passes through the barrel between two rotating screws with intermittent windows, gaps which activate a shortening of the fibres. The fibres from the Bivis barrel are then fed into a dwell conveyor (a slow-moving belt allowing the chemicals to work the fibres.) it can take up to 30mins for the stock to travel the dwell process. This is necessary because of the short time the fibres spend in the Bivis barrel. Excess chemicals are squeezed out at the screw press and diluted to around 4% consistency before being sent to the Stock Chest.

ID	Section	Assets	Description	Year	Supplier	Model	Photo
001	BALE OPENER No1	Metallic Feeding Conveyor	Designed to receive textile fibres or Cotton in a closed bale shape (Approx. 300kgs per bale), for the feeding of bale opening type feeders or other machines requiring this type of conveyor.	2008	LAROCHE	Type 7250	
002	BALE OPENER No1	Hopper Feeder	These machines are designed to open and meter fibrous material and consists of; -One reserve chamber -One bottom conveyor -One Spiked conveyor -One evener Roll -One Doffing Roller	2008	LAROCHE	3204-00035-304-STB	
003	BALE OPENER No2	Metallic Feeding Conveyor	Designed to receive textile fibres or Cotton in a closed bale shape (Approx. 300kgs per bale), for the feeding of bale opening type feeders or other machines requiring this type of conveyor.	approx. 1991	LAROCHE	Type 7250	

							
004	BALE OPENER No2	Hopper Feeder	<p>These machines are designed to open and meter fibrous material and consists of;</p> <ul style="list-style-type: none"> <li>-One reserve chamber</li> <li>-One bottom conveyor</li> <li>-One Spiked conveyor</li> <li>-One evener Roll</li> <li>-One Doffing Roller</li> </ul>	approx. 1991	LAROCHE	3204-00035-304-STB	
005	BIVIS BALE FEED SYSTEM	Blending Conveyor	Enclosed Fibre conveyor with Motor and Gearbox Incl. Weigh scales (Avery-Weigh Tronix P970)	2008	LAROCHE	7150-00061-001	

006	BIVIS BALE FEED SYSTEM	Dry Fibre pick-up Fan	Belt Driven Fan Incl. Motor Brook Compton 11kW/400V/1500rpm	2008	NEU Engineering Ltd	Unknown	
007	BIVIS BALE FEED SYSTEM	Dry Fibre pick-up Fan Slam shut valve	Pneumatic cylinder operated via solenoid valve.	2008	Firefly	GIV350PS-1	
008	BIVIS BALE FEED SYSTEM	CO2 Fire suppressant system (Standalone)	Fire Control Panel with associated 2 off C)2 Bottles (50Kg ea.) Installed by Churches	2008	Churches Fire	Advanced ExGo	

009	Dry fibre step cleaner	Dry Fibre Step Cleaner with Condenser	Step Cleaner with Condenser and 3 off Blowers (each Blower is fitted with an IR spark detection sensor). The condenser is used to separate transport air from fibrous material and deliver Fibre into the Step Cleaner for opening and Cleaning of the Natural fibres through beater drums/rollers.	2010	LAROCHE	Condenser - FC1400 with VT450 Blowers. Step Cleaner 2000	
010	Fibre transfer	Blower	4KW 3000 tr/Mn 50HZ	2010	LAROCHE	VT360	
011	Reserve tower	Reserve Chimney	Used for buffering of fibre prior to the densifier Tower. Includes; - Supply Fan NEU - incl. motor 7.5kW/1450rpm - Condenser - Reserve Silo - Delivery Rollers - Opener Roller - CO2 bottles (Top and Bottom of reserve Silo) - Level control (Photo electric sensor)	2010	LAROCHE	7402-00402-001	

							
012	Metal detector	Metal detector	Used to remove any conductive material from Fibrous material. Includes; - High speed 3-way valve - Collection bag - Control Panel	2010	Metron	05 Powerline Detector Texreject valve	
013	Slam shut valve	Slam shut valve	Firefly slam shut valve	2010	Firefly	GIV250PS-2	

							
014	Drum filter	Drum Filter	Filters coarse particles fibre and dust from air. Includes <ul style="list-style-type: none"> <li>- Pre filter</li> <li>- Drum Filter with rotating and traversing suction nozzles.</li> <li>- De-dusting fan</li> <li>- Waste Fan</li> <li>- CO2 fire suppressant system</li> </ul>	2010	LAROCHE	TFB-4 with Pre filter	

015	Dry fibre system	Briquette	Briquettes fine waste particles. Includes - Cyclone - DUST ROTARY AIRLOCK - Briquette Unit - Waste Collection Bin	2011	POR	Junior P3 50mm Briquettes 5.5KW	
016	Dry fibre system	Fibre Compactor	The separator and compactor for fibrous material. Conical endless screw with scrapper brushes	2011	LAROCHE	FKC-3	
017	Dry fibre system	Cyclone and Blower Fan	For separation and transfer of dry dust and short fibres from air. Includes - Collection sack	2011	LAROCHE	ZSA	

018	Dry fibre system	Separator	Separates recovered fibre and fine dust particles. Includes - Blower Fan	2011	INTEGRADED AIR	Perforated plate 3mm perforations	
019	Densifier tower	Densifier	Densifies and feeds raw material into Bivis Barrel. Includes - TOWER - TOWER OSCILLATOR - TOWER ROLLERS - DUST EXTRACT FAN - SUPPLY FAN - CO2 Fire suppressant - X-Flow (X-Ray generator) - SFGDCM	2008	LAROCHE	7650-0005-004	

020	Main unit	Main Motor and Drive	1.2 MW Motor and variable speed drive + Spare Motor	2008	ABB	ACS 800 - 690V HXR560LK6	
021	Main unit	Gear Box	Includes - Couplings - Lubrication oil system (Tank, Tank heater, Level sensor, and Duty stand-by pumps)	2011	LUFKIN	3PHS37 1200-450 2.663 ratio Rated for 1.2 MW Motor	
022	Main unit	Screw Sets	3 off Screw Sets  each screw set Consists of: 4 off Reversing Sections 1°) 5RH18 length 100mm 2°) 5RH18 length 100mm 3°) 5RH14 length 140mm 4°) 5RH12 length 140mm	Various Years	Cletral	N/A	

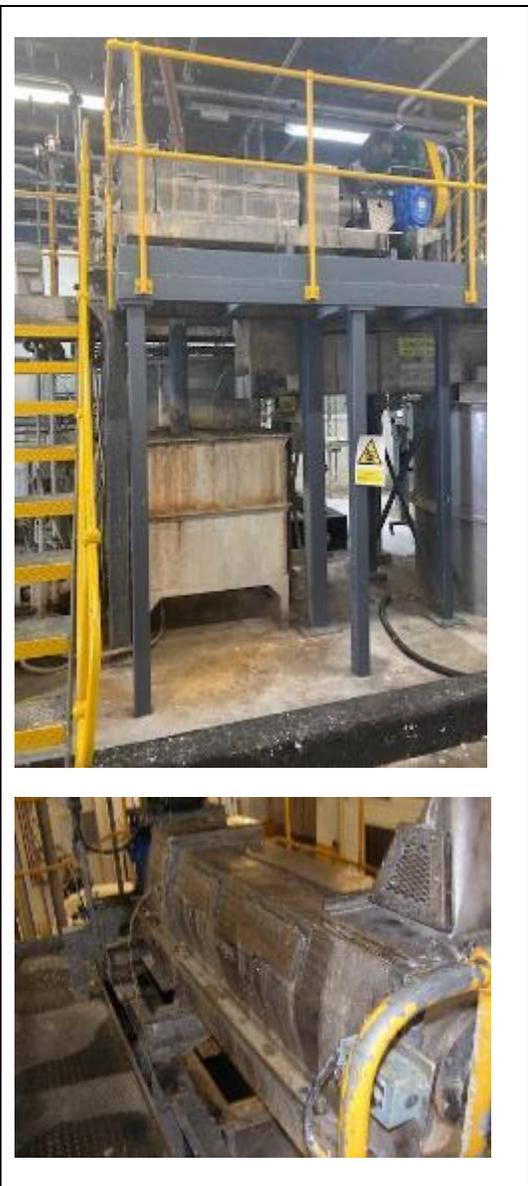
023	Main unit	Barrel	<p>Main housing of Screw Set. Able to produce 1.8 t/hr throughput (B/dt) includes</p> <ul style="list-style-type: none"> <li>- Opening Hydraulic Unit</li> <li>- Spare Barrell Unit</li> </ul> <p>Twin Screw Machine with hydraulic lubricating station and Hydraulic Slewing Power Pack  Power Rating 1000 kW  Speed 1200 rpm  Screw Shaft Speed 320rpm</p>	1993	Cletral	KRO 200 CB No 2010	
024	Chemical systems	Peroxide Dosing Tank	<p>Stainless Steel  Includes</p> <ul style="list-style-type: none"> <li>- Level Probes</li> </ul> <p>Suitable for Hydrogen Peroxide at 17.5%</p>	Unknown	Unknown	Unknown	
025	Chemical systems	Chemical Dosing Pump	<p>Peroxide Pump Motor and Accumulator</p> <p><u>Motor</u>  0.55 KW  Speed 1500 TR/MIN</p> <p><u>Pump</u>  80 l/hr  20 bar</p>	Unknown	CLETRAL	DKM super KL camp 150/25	

026	Chemical systems	Water Tank	Water tank and Level Transmitter (Rosemount DP Cell) Plastic Construction	Unknown	Unknown	Unknown	
027	Chemical systems	Water Dosing Pump	Water Pump Motor and Accumulator <u>Motor</u> 1.5 KW Speed 1500 TR/MIN <u>Pump</u> 2500 l/hr 10 bar	Unknown	CLEXTRAL	DKM Super MDPV50	

028	Chemical systems	Caustic Soda Tank	<p>Stainless Steel Caustic Soda Holding Tank</p> <p>Includes:</p> <ul style="list-style-type: none"> <li>- Agitator Top Entry - LIGHTNIN LP25 18015/54</li> <li>- Caustic concentration measurement (Metso Concentration TCU 3313)</li> <li>- Make-up Tank with Valves and flow meter for water and Caustic batch fill additions.</li> </ul>	Unknown	Unknown	Unknown	
029	Chemical systems	Chemical Dosing Pump	<p>Caustic Soda Pump Motor and Accumulator</p> <p><u>Motor</u> 0.55 KW Speed 1500 TR/MIN</p> <p><u>Pump</u> 80 l/hr 20 bar</p>	Unknown	CLEXTRAL	DKM super KL camp 150/25	

030	Chemical systems	Water Dosing Pump	<p>Water Pump Motor and Accumulator</p> <p><u>Motor</u> 5.5 KW Speed 1500 TR/MIN</p> <p><u>Pump</u> 2500 l/hr 10 bar</p>	Unknown	CLEXTRAL	DKM GD60-2 PP100	
031	Wet fibre system	Wet Fibre Screw Auger	<p>Screw Auger and Steam extraction fan.</p> <p>Consist of 2 off screws and motors. (lower and Upper) both motor gearbox 2.2kW/400V/55rpm</p>	approx. 1991	Unknown	Unknown	

032	Wet fibre system	Wet Fibre Dwell Conveyor	Chemical Dwell Conveyor. Includes, <ul style="list-style-type: none"> <li>- Conveyor and Housing</li> <li>- Evener Roll</li> <li>- Doffer Roll</li> </ul>	1991	Dickinson Engineering UK	Unknown	
033	Wet fibre system	High Consistency supply tank	Tank and supply system. Includes; <ul style="list-style-type: none"> <li>- Tank Stainless Steel 316</li> <li>- Agitator (SCABA 60VVG - SEW Motor/Gearbox - 7.5kW/400V/2870rpm)</li> <li>- Level Transmitter (Rosemount DP Cell)</li> <li>- Level Control Valve (Fisher V150 - 100mm)</li> <li>- Pump with 7.5kW/1500rpm Motor Brook Compton</li> </ul>	approx. 1991	Unknown	Unknown	

034	Wet fibre system	Screw Press	<p>36 bdmtpd for cotton linters furnish.          Inlet Consistency 4-5%.          Outlet Consistency 30%          Net Weight 850 Kg          Power Consumption approx. 10kWh/bdmt          Operating Speed at 36 bdmtpd - 70 rpm          Inlet Pressure 0-30 kPa</p> <p>Includes;</p> <ul style="list-style-type: none"> <li>- Local Control Panel</li> <li>- Drive Unit for SP23, Incl. motor bracket, V-belt, coupling and guard.</li> <li>- Drive Motor, 22kW/1500rpm/50Hz/400V, B3 Mounting</li> <li>- Filtrate Tank</li> <li>- Filtrate Level Control</li> <li>- Filtrate Pump</li> <li>- Wet Weigh Conveyor</li> <li>- Inclined Screen</li> <li>- Inclined Screen Pump</li> </ul>	2008	KVAERNER Thune Voith Paper	SP23	
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035	Wet fibre system	High Consistency supply tank	<p>Tank and supply system. Includes;</p> <ul style="list-style-type: none"> <li>- Tank (1600mm diameter x 1700mm H)</li> <li>- Agitator (SCABA 80VVP-c top entry with 15kW/400V SEW motor with 900mm Impeller + ABB ACS550 15kW 38A 400V VSD)</li> <li>- Level Transmitter (Rosemount DP Cell)</li> <li>- Level Control Valve (Fisher 100mm)</li> <li>- Consistency measurement Transmitter (Valmet MCA)</li> <li>- Discharge Pump (Complete with motor and VSD 37kW/400V/1480rpm)</li> </ul>	2010	Puma Engineering & Construction	N/A	
036	Stock chest & distribution	Tank and Supply system	<p>Includes</p> <ul style="list-style-type: none"> <li>- Tank 100m<sup>3</sup> 316SST</li> <li>- Agitator (SCABA 100SRKT) with 90kW VSD and motor 400V</li> <li>- Duty stand-by output pumps with 15kW motors</li> </ul>	approx. 1992	Unknown	Unknown	

037	Controls	GEM 80 PLC.	500 series GEM 80 controller 3 off Remote IO Racks Various Analogue Input and Output cards (4-20mA 24V) Various Digital Input (110VAC) and Relay Output Cards	Various Years	General Electric (GE)	GEM 500	
038	Controls	Motor Control Centre	1000A Incomer with Power Meter 8 columns back to back 68 cubicles of GEC DOL starters of various sizes.	1991	GEC Alsthom	N/A	

039	Controls	Motor Control Centre	<p>No Incomer Section. Includes 5 off VSD's 400V - ABB ACS880 90kW Agitator application - ACS550 4 off for delivery roller applications</p>	1991	Unknown	Unknown	
040	Controls	Motor Control Centre	<p>MCC for Step Cleaner and Drum Filter Lines 6 off VSD's ABB ACS550/580 400V 110V Control Voltage</p>	2010	Amber Integrated Control & Automation	1010-11-MCC84	

041	Controls	Motor Control Centre	MCC for Step Cleaner and Reserve Tower Line 9 off VSD's ABB ACS 550 400V	2010	Amber Integrated Control & Automation	1010-11-MCC85	
042	Controls	Motor Control Centre	4 off ABB ACS50 400V VSD's for Main Barrel Chemical Injection Pumps, with 110V Control Voltage. Wash Water Injection Water Injection Peroxide Injection Caustic Injection	2010	Amber Integrated Control & Automation	1010-11-MCC86	

043	Facilities	Gantry Crane	<p>Fixed Position Gantry Crane with wire rope crab unit and 4 bar power feed.  SWL 12.5 Tonne  Gantry Length 12700mm  2No Goalpost Support 2700mm span  Max O/all Height 5000mm  Lift Height 3985mm  Low Voltage Pendant suspended from Crab  400V 3ph Supply required</p>	2010	Austin & McLean	N73005	
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# Dispergers

The continuous refining process takes cleaned pre-treated cotton from the Bivis process and mechanically transforms properties of the cotton to be able to be used in the manufacture of bank note paper. The first stage of this is the Dispergers, where 3 JC01 refiners with specific cones, modify the cotton from circa 8mm through to 2mm length and starts the generation of fibrils on the cotton fibres. Consistency is also controlled to ensure a consistent homogenous product is being feed through the Papillon refiners

ID	Section	Assets	Description	Year	Supplier	Model	Photo
044	DISPERGER 2 SUPPLY TANK	Stainless Steel Tank and Supply Pump	Includes -Tank - Agitator - Pump - Level Sensor - Isolation Valve - Flushing Valve - Recirculation Valve	1995-2018	PORTALS  SULZER	Tank - Stainless Steel 316L. 4.5M Height & 3.0M Diameter (1995)  Agitator -SULZER Horizontal Mix SALOMIX SLN/SLF (2018) Pump - SULZER NPP22-50. 11KW Motor (2018)	

							
045	DISPERGER 3 SUPPLY TANK	Stainless Steel Tank and Supply Pump	Includes -Tank - Agitator - Pump - Level Sensor - Isolation Valve - Flushing Valve - Recirculation Valve	1995-2018	PORTALS  SULZER	Tank - Stainless Steel 316L. 4.0M Height & 2.5M Diameter (1995) Agitator -SULZER Horizontal Mix SALOMIX SLN/SLF (2018) Pump - SULZER NPP22-50. 11KW Motor (2018)	

046	DISPERGER STOCK TANK	Stainless Steel Tank and Supply Pump	Includes -Tank - Agitator - Pump - Level Sensor - Isolation Valve - Flushing Valve - Recirculation Valve	1995-2018	PORTALS  SULZER	Tank - Stainless Steel 316L. 4.0M Height & 2.2M Diameter (1995)  Agitator -SULZER Horizontal Mix SALOMIX SLN/SLF (2018) Pump - SULZER NPP22-50. 5.5KW Motor (2018)	
047	FLUSHING TANK	Stainless Steel Tank and Supply Pump	Includes-Tank- Agitator- Pump- Level Sensor- Isolation Valve	1995-2018	PORTALS SULZER	Tank - Stainless Steel 316L. 4.0M Height & 2.0M Diameter (1995) Agitator -SCABA 60SRKT 3KW Motor 1000rpm V-Belt drive Pump - SULZER NPP22-50. 5.5KW Motor (2018)	

048	REFINERS	JC01 - Dispersers	<p>The JC01 Refiner drive equipment includes a gear, primary and secondary coupling, and a motor. The refiner is powered by an electric motor via the coupling.</p> <p>Capacity - 5-250 TPD  Power range - 315KW  Speed range - 1200RPM  Consistency range - 2-6 %  Max operating pressure 6 bar  Weight (with coupling, without Motor) 1300 kg  Length (with coupling, without Motor) 1765mm  Width (with coupling, without Motor) 850mm  Height (to top flange) 900mm</p> <p>3 x JC01 Refiners. Includes;</p> <ul style="list-style-type: none"> <li>- Plate Drive</li> <li>- Inlet Valve</li> <li>- Outlet Valve</li> <li>- By-pass Valve</li> <li>- Seal Water Valve</li> <li>- Flush Water Valve</li> <li>- Outlet Flush Water Valve</li> <li>- Inlet Pressure Transmitter</li> <li>- Outlet Pressure Transmitter</li> <li>- Inlet Temperature Transmitter</li> <li>- Outlet Temperature Transmitter</li> </ul> <p>1 x JC01 Fitted with TC3K (Attack bar) fillings  1 x JC01 Fitted with SCH fillings  1 x JC01 Fitted with LM fillings</p>	1995-2010	METSO	METSO OptiFiner RF-1	
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049	Disperger 3 MCC123	355kW VSD with Incomer	ABB ACS880-37-650A-3 355kW 650A 400V Ultra Low Harmonic ABB Panel Built VSD Intended to drive a JC-01 Disperger Main Motor	2019	ABB	ACS880-37-0650A- 3+B054+G340+H351 +H353+H358+K475+L 501 +L504+ 3L506+P902 +Q950+Q972 +Q978+R700	
050	Disperger MCC124	315A Motor Control Centre	MCC with 315A Incomer. Intended to Run Disperger Process associated Tank Agitators and Pumps. Consists of 9 off VSD's ABB ACS880-01 400V (1 off 0.55kW, 1 off 5.5kW, 3 off 11kW, 3 off 15kW and 1 off 22kW) 1 off DOL Starter 1 off Hirschman Network Switch for Profinet Integration	2019	drives	ACT069-E-200	General arrangement below

051	Disperger 1 MCC83	Disperger MCC	MCC with Incomer 400kW VSD ABB ACS800-104-0510400V (Disperger Main Motor) Including Plate Motor VSD	2010	ABB	ACS800-104-0510-3+E205+V991

052	Disperger 2 MCC	Disperger MCC	MCC with Incomer 400kW VSD ACS800-104-0510-3 400V (Disperger Main Motor) Including Plate Motor VSD	2010	ABB	ACS800-104-0510-3+E205+V991	
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## Continuous Refining



The continuous refining process takes cleaned pre-treated cotton from the Disperger process and mechanically transforms properties of the cotton to be able to be used in the manufacture of bank note paper. The process can be run from 1t/h – 2t/h.. The Papillon refiners continue the transformation process from 2mm to 1.3mm length and continuous the fibrillation process till achieved goal of 40 SR (a measure of ability of fibre to hold water), depending on through put you can run the Papillon refining process at 0.5 – 2t/h using 1,2,3 or 4 Papillon refiners.

ID	Section	Assets	Description	Year	Supplier	Model	Photos
053	Refiners	Papillion Refiners	<p>Papillion CS-type is a single gap cylindrical refiner. Refined pup enters the refiner on one side, is refined between the cylindrical plates and is discharged through the outlet on the other side. The gap between the refiner plates is adjusted with electro-mechanical adjusting device to control the specific refining energy consumption.</p> <p>Design basis:  Flow - 400-1100 l/min  Consistency - 3.0-3.3 %  Capacity - 1.0 - 2.0 bdt/h  Specific edge load, range - 2.7-1.6 J/m  Specific energy consumption (KWh/t);  At specific edge load 1.8 J/m = 420 KWh/t  Aty specific edge load 2.5 J/m = 380 KWh/t</p> <p>4 X Papillion Refiners. Includes</p> <ul style="list-style-type: none"> <li>- Plate Drive</li> <li>- Inlet Valve</li> <li>- Outlet Valve</li> <li>- By-pass Valve</li> <li>- Seal Water Valve</li> <li>- Flush Water Valves</li> <li>- Inlet Pressure Transmitter</li> <li>- Outlet Pressure Transmitter</li> <li>- Inlet Temperature Transmitter</li> <li>- Outlet Temperature Transmitter</li> </ul>	2018	ANDREX	Papillion CS450 each complete with 450KW Motors	

054	CONTINUOUS REFINING REFINER SUPPLY TANK	Stainless Steel Tank and Supply Pumps	Includes - Tank - Agitator - Pumps (A & B) - Level Sensor - Isolation Valve - Consistency Transmitter	1995-2018	PORTALS  SULZER	<p>Tank - Stainless Steel 316L. 4.0M Height &amp; 3.0M Diameter (1995)</p> <p>Agitator - SCABA 60SRKT 22KW Motor 1000rpm V-Belt drive Pump A - SCAN PUMP BE 315-0840 15KW (2010) Pump B - SULZER NPP22-50. 15KW Motor (2018)</p> <p>Consistency – Valmet MCA Inline</p>	
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055	CLEANSHEET MILL SUPPLY TANK	Stainless Steel Tank and Supply Pumps	Includes - Tank - Agitator - Pumps (A & B) - Level Sensor - Isolation Valve	1995	PORTALS  SULZER	Tank - Stainless Steel 316L. 4.0M Height & 3.0M Diameter (1995)  Agitator - SCABA 60SRKT 7.5KW Motor 1000rpm V-Belt drive Pump A - SCAN PUMP BA 150/80-32 11KW (1995) Pump B - SCAN PUMP BA 150/80-32 11KW (1995)	
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056	CLEANSHEET STOCK CHEST HOLDING TANK	Stainless Steel Tank and Supply Pumps	Includes - Tank - Agitator - Pumps (A & B) - Level Sensor - Isolation Valve	1995	PORTALS  SULZER	Tank - Stainless Steel 316L. 6.0M Height & 5.0M Diameter (1995) Agitator - SCABA 60SRKT 18.5KW Motor 1000rpm V-Belt drive Pump A - SCAN PUMP BA 150/80-32 11KW (1995) Pump B - SCAN PUMP BA 150/80-32 11KW (1995)	
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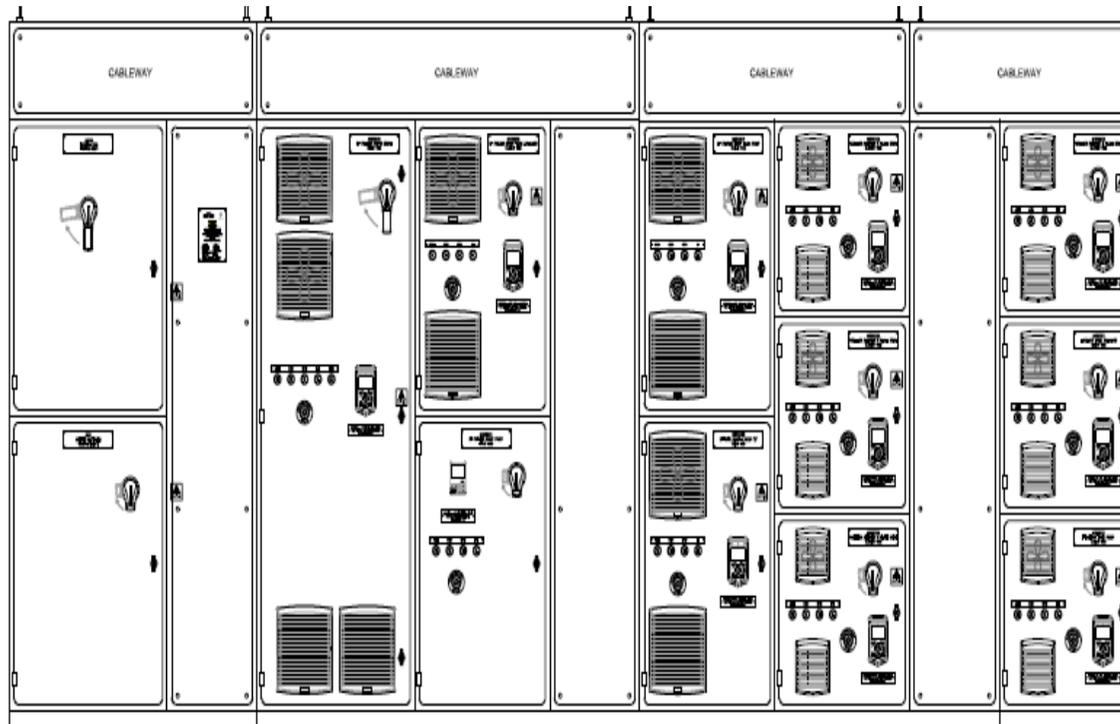
057	CONTINUOUS REFINING SF PULPER DUMP TANK	Stainless Steel Tank and Supply Pumps	Includes; - Tank - Agitator - Pumps; A= Pulper Dump Pump B= Pulper Dump Tank Pump - Level Sensor - Isolation Valve - Flushing system - Tank Level Control Loop - Consistency Dilution flow Transmitter - Consistency Transmitter - Consistency Control Valve	1995-2018	PORTALS  SULZER	Tank - Stainless Steel 316L. 4.5M Height & 3.0M Diameter (1995)  Agitator -SULZER Horizontal Mix SALOMIX SLN/SLF (2018) Pump A - SULZER NPP42-150. 30KW Motor (2018) Pump B- SULZER NPP22-50. 7.5KW Motor (2018)	
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058	High Pressure Water Pumps	High Pressure Water Pumps	Gland Water Pumps Duty/Standby ABS Pump NB80/50-20 incl. 15kW/2950 rpm motors Duplex Filter 100-micron mesh Pressure Sensor Nominal 5 bar operation.	1995	ABS	NB80/50-20	
059	Medium Pressure Ring Main Pumps	Medium Pressure Ring Main Pumps	Water Pumps Duty/Standby ABS Pump NB80/65-16 incl. 7kW/2950 rpm motors Pressure Sensor Nominal 3 bar operation.	1995	ABS	NB80/65-16	

060	CR HVAC System	HVAC System	<p>Extraction and Ventilation for Papillion Refiner Drives.  Exhaust Fan BW8 (RHF Fans) 725 R4 Incl. 4kW motor  Supply Fan BW8 (RHF Fans) 725 T2 Incl. 5 kW Motor  Control Panel  Inlet Filter  Temp and Pressure Sensor  All Associated Ducting  Incl. 3 off standalone AC Units (Mitsubishi PUAZ-ZRP100YKA 3ph 400V)</p>	2019	Integrated Air Services		
061	Papillion Refiner 1 MCC131	500kW VSD with Incomer	<p>ABB ACS880-37-0870A-3  500kW 400V 870A  Ultra Low Harmonic VSD  Intended to drive a Papillion Refiner Main Motor</p>	2018	ABB	<p>ACS880-37-0870A-3+B054+G340+H351+H353+H358+K475+L50  1+L504+3L506+P902+Q950+Q972+Q978+R700</p>	

062	Papillion Refiner 2 MCC132	500kW VSD with Incomer	ABB ACS880-37-0870A-3 500kW 400V 870A Ultra Low Harmonic VSD Intended to drive a Papillion Refiner Main Motor	2018	ABB	ACS880-37-0870A-3+B054+G340+H351+H353+H358+K475+L501+L504+3L506+P902+Q950+Q972+Q978+R700	
063	Papillion Refiner 3 MCC133	500kW VSD with Incomer	ABB ACS880-37-0870A-3 500kW 400V 870A Ultra Low Harmonic VSD Intended to drive a Papillion Refiner Main Motor	2018	ABB	ACS880-37-0870A-3+B054+G340+H351+H353+H358+K475+L501+L504+3L506+P902+Q950+Q972+Q978+R700	

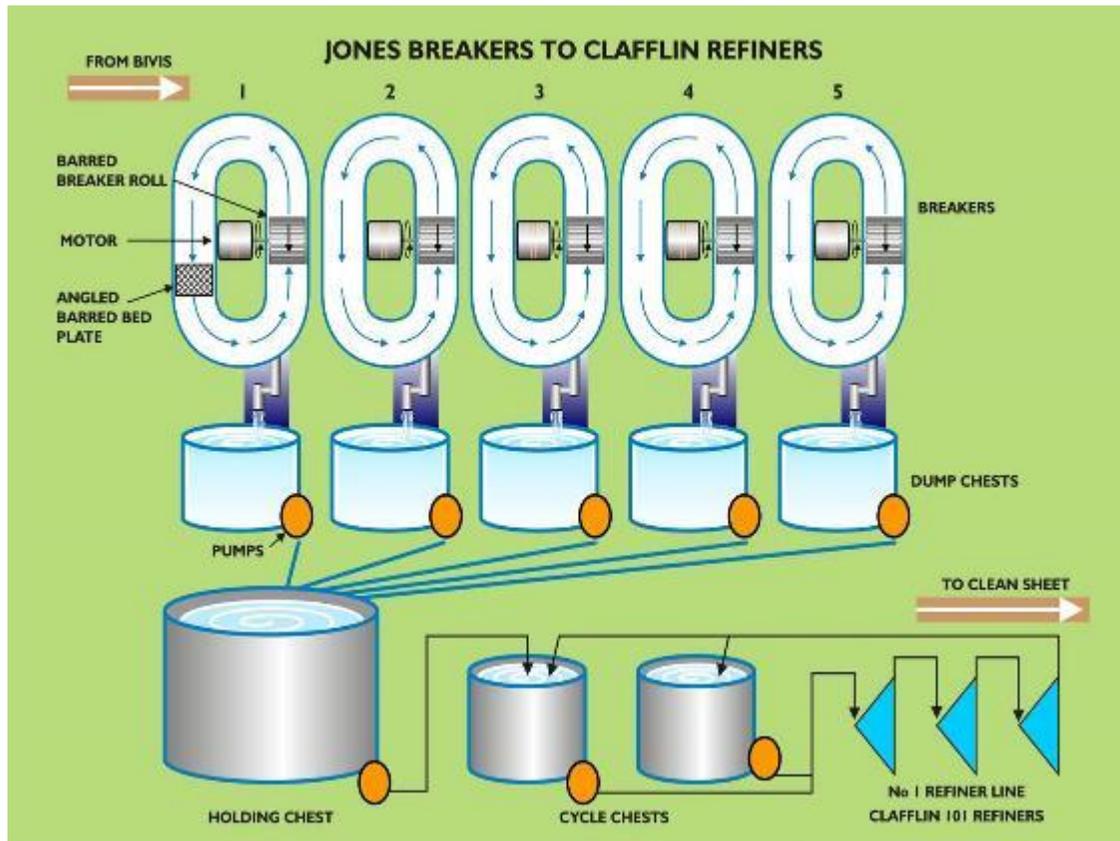
064	Papillion Refiner 4 MCC134	500kW VSD with Incomer	ABB ACS880-37-0870A-3 500kW 400V 870A Ultra Low Harmonic ABB Panel Built VSD Intended to drive a Papillion Refiner Main Motor	2018	ABB	ACS880-37-0870A-3+B054+G340+H351+H353+H358+K475+L501+L504+3L506+P902+Q950+Q972+Q978+R700	
065	Refiner MCC122	630A Motor Control Centre	MCC with 315A Incomer. Intended to Run Refiner Process associated Tank Agitators and Pumps as well as the SF Pulper. Consists of 11 off VSD's ABB ACS880-01 400V (1 off 90kW, 1 off 45kW, 1 off 18.5kW, 1 off 15kW, 1 off 7.5kW, 1 off 5.5kw, 1 off 4kW and 4 off 0.75kW) 1 off Hirschman Network Switch for Profinet Integration	2019	drives	ACT070-E-200	General arrangement below



066	CONTINUOUS REFINING PAPILLION REFINER HOIST OM237	Papillion Refiner Lifting Hoist	<p>Electric overhead travelling crane support steelwork, 5530mm span on crane rails, 3357mm height from floor to underside of beam, crane gantry length of 9600mm with cantilever to one end of 1188mm, simply supported span of 4651mm, simply supported span of 2999mm and cantilever of 765mm.</p> <p>Safe Working Load of 7 Tonnes</p>	2019	PELLOBY	ID Mark - JHL8350 Hoist - 00157U3403001	
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067	Continuous Refining UPS	UPS	Power wave 3000 TP 230V Single Phase / 10 kVA / 50min autonomy	2019	Kohler Power	Powerwave3000TP	
068	Control Panels	ABB 800xA Control Hardware	4 off Control Panels containing ABB800xA Hardware. Incl. AC800M PM866 Processor Various IO Modules and Termination Units IO is Digital IO 24V and Analog IO 4-20mA (All HART enabled) Approx. 350 IO points	2019	ABB	800xA AC800	

## Breakers and Claflin Refiners



### Breakers

The objective of using a Breaker (rather than some other process like grinding, as many wood pulp mills do) is to create longer, hydrated, fibrillated fibres. (Fibrillated fibres are abraded to the extent that many partially-broken-off fibres extend from the main fibre, increasing the fibre's surface area, and therefore it's potential for hydrogen bonding). Grinding of fibres is not desirable; therefore, the bars are not sharpened, to minimize the shear action on the

fibre. The principals that govern the actions of the beater on a fibre apply the same in a Refiner; it just happens a lot more slowly. The other main difference is the power requirement to do the work.

The roll is raised and lowered to determine the amount of pressure to be applied to the fibre. The roll automatically lowers by the compression chamber which forces the arm up which in turn lowers the roll. To optimise the production time in the breaker occasionally the locking nuts need to be raised a couple of flats

### **Clafin Refiners**

The wide-angle cone is set at approximately 60°. Stock enters at the narrow end of the Refiner, passes between the bars of the rotating cone (Rotor) and the fixed casing (Stator), exiting at the wide end. This type of wide angled Refiner promotes fibre fibrillation to develop strength properties on the paper machine.

A further action occurring during mechanical treatment of fibres is cutting of the fibres. Cutting can be affected mainly by consistency and fibre flexibility. By careful control of stock consistency, fibrillation and cutting of the fibres can be carefully manipulated. In general, the higher the fibre consistency, the greater the fibrillation, lower the consistency, the greater the potential for reduction in fibre length.

Another method of control is the flow of which the stock passes through the Refiner. The slower the flow, the more mechanical action is inflicted onto the fibre causing higher SR (fibrillation) and shorter lengths.

kW's is the final method of control. When the rotor is pushed closer to the stator, the pressure upon the fibre is greatly increased causing more fibrillation but shorter lengths. The rotor is moved in and out by the plug motor.

ID	Section	Assets	Description	Year	Supplier	Model	Photo
069	Breakers	Jones Breakers	<p>4 x Breakers. each breaker is an oval tub divided down the middle by the midfeather, a vertical partition. A 17-tonne roll fitted with bars across its width revolves above a barred bedplate which acts on the stock and circulates it around the midfeather. a head of stock is maintained by the backfall, the trough floor sloping from the backfall to the front of the roll to help circulation. the tub is designed to hold approximately 1000kg of material suspended in 15,500 litres of water to give a consistency of 4.5% - 5.0%. each breaker includes;</p> <ul style="list-style-type: none"> <li>- lubrication/oil pump</li> <li>- water supply control loop</li> <li>- bearing vibration system (covers all breakers)</li> <li>- 17 tonne roll</li> <li>- roll loading arm</li> <li>- loading control loop up to 360kW</li> <li>- bedplate</li> <li>- dump valve/drain valve</li> <li>- drive</li> <li>- motor</li> <li>- tub</li> <li>- 2 x Drum Washers to wash contaminated Material</li> </ul>	1985	<p>Parsons Peeble</p> <p>GEC</p> <p>Allen-Bradley</p>	<p>Motor - 185kw/3.3KV/1 483RPM/41A - Type D3155</p> <p>Starter - GEC HMC1072 Vacuum Contactor</p> <p>Vibration system - Allen-Bradley XM System</p>	 



070	Pulp storage	Concrete Tanks internally Tiled	<p>5 x Concrete Tiled Chest with each having the Capacity of 1 tonne of 4.0% Consistency. Each asset has the following available;</p> <ul style="list-style-type: none"> <li>- 5 x Pumps 18.5kW/1500rpm</li> <li>- 5 x Agitators 22kW/1500rpm</li> <li>- 5 x Chest Level Sensor</li> <li>- 5 x Inlet Isolation Valve</li> </ul>	1985	Various	<p>1 x Ahlstron NPP31-100 V-Belt drive Flow Control Valve &amp; 1 x Flush Valve</p>	
071	Pulp storage	Concrete Tanks internally Tiled	<p>4 x Concrete Tiled Chest with each having the Capacity of 1 tonne of 4.0% Consistency. Each asset has the following available;</p> <ul style="list-style-type: none"> <li>- 2 x Pumps</li> <li>- 4 x Agitator</li> <li>- 4 x Chest Level Sensor</li> <li>- 4 x Inlet Isolation Valve</li> <li>- 2 x BTG Optical Transmitters</li> <li>- 2 x Consistency Control Valves</li> <li>- 2 x Pressure Control Valves</li> </ul>	1985	Various	<p>4 x Agitator - Lightnin 2VS L2.5 V-Belt Drive 22 KW Motor</p> <p>2 x Pumps 1&amp;2 - SCAN BE 320-1040 18.5kW Motor V-Belt drive</p> <p>Consistency Sensor - BTG Pulptec OCT-2300</p>	

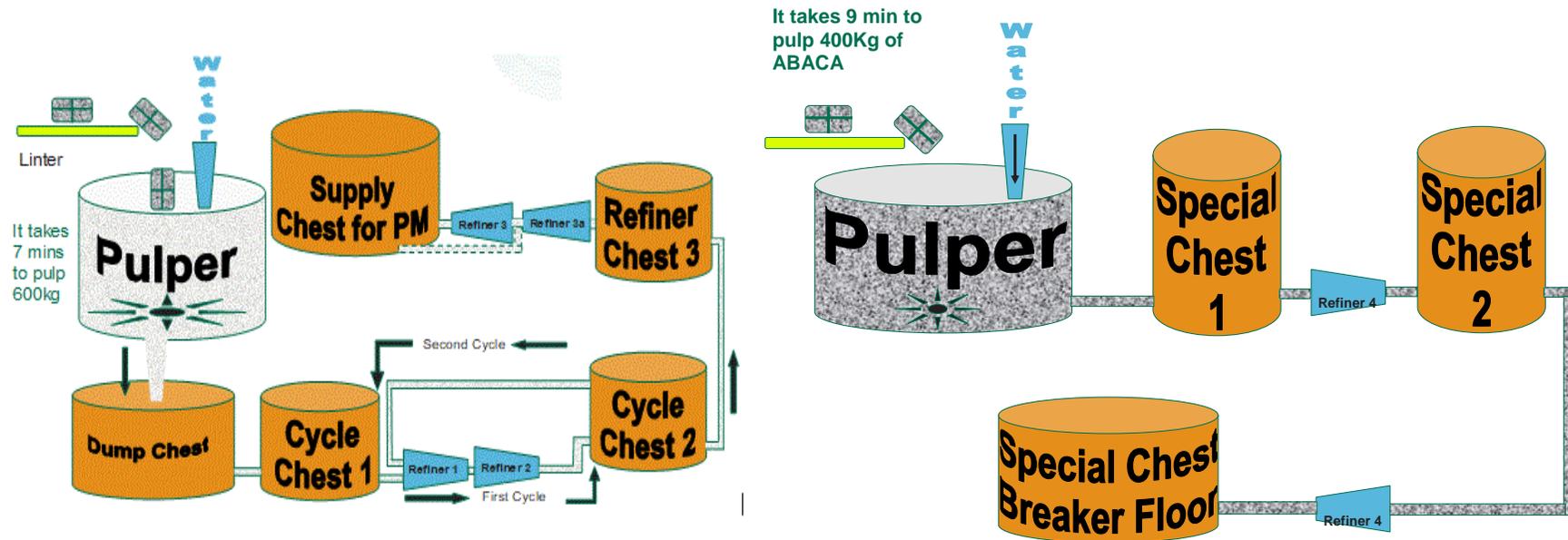
072	Claflin's	Refiners	Claflin 101 Refiner Design basis:Flow - 1200 l/minConsistency - 3.0 %Capacity - 26 bdt/h6 X Refiners. Each includes- Electric Plate drive- Inlet Valve- Outlet Valve- Bypass Valve- Inlet Pressure Transmitter- Outlet Pressure Transmitter- Flow control valveAll fitted with BB Refiner Filling	1985	Bolton Emmerson	6 x Motors - 3.3KV induction Motors 185KW / 1483rpm5 X Gearbox Westfalia Lunen Type S1N1/N2 1465/400RPM r 3.651 x Gearbox Hansen Transmission Ltd Type 6110 BB	
073	Tank Cleaning	Chest Cleaning System	2 x Grundfos muliti stage pumps	1985	Grundfos	Type CR32-9-2-A-FA-VH00V 300M3/hr @ 13.1 bar 18.5KW Motors	

074	Controls	ABB Control System	2 Off Control Panels contain associated ABB 800xA AC800 Hardware Incl. Various 110VAC Digital Input Modules, 24V 4-20mA Analog IO Modules	2005	ABB	AC800 S800 IO	
075	Lifting	Overhead Hoist	<p>OMJ257 Overhead Runway Beam 25" x 12"uB x 94" OAL Comprising of 2 spans 27'8", 1 span @ 33' 2" and 1 cantilever @5' SWL = 20 Tons (i.e. 2 x 10 Tons)</p> <p>OMJ 180, 181 2 x 10Tonne 430L 4/1 Morros 400 Series Low headroom Electric travelling Electric wire rope mechanically and electrically interlocks for lift</p> <p>OMJ258 Overhead Runway Beam, 18" x 17 1/2 uB X 90" OAL comprising of 2 spans @ 27'8" @ 33'2" SWL = 5 Tonne</p>	1985	Portals	<p>Includes</p> <ul style="list-style-type: none"> <li>- Track</li> <li>- Breaker Lifting Beam OMJ257</li> <li>- Motor Lifting Beam OMJ258</li> </ul>	

076	Fire suppression system	Control Room Fire Extinguishing System	Control Panel with 2 off Suppression bottles	2020	Bryland	K11031M2 System1 off HFC227EA 46Kg bottle1 off IG-55 140L 300 bar bottles	
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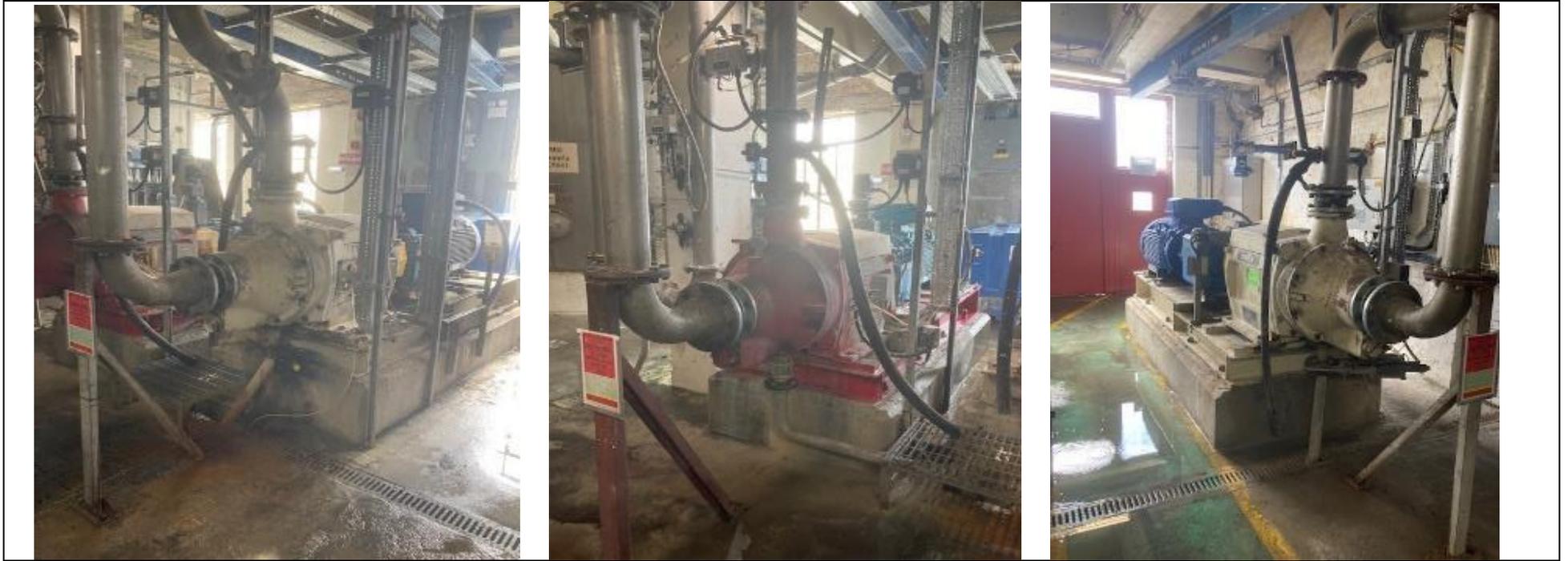
# Linter Plant

The Linter plant is used to prepare pre sheeted pulp material. Pulp is produced at a rate of approximately 0.75 tons per hour through a series of refiners. The pre-Pulp material is supplied in the form of bales which are loaded onto a Conveyor belted system for immersion into a large pulper for 7 to 9 minutes depending on the fibre type.



ID	Section	Assets	Description	Year	Supplier	Model	Photo
077	REFINERS	4 x JCO1 Refiners	<p>The JCO1 Refiner drive equipment includes a gear, primary and secondary coupling, and a motor. The refiner is powered by an electric motor via the coupling.</p> <p>Capacity - 5-250 TPD  Power range - 160KW  Speed range - 1405RPM  Fender Gearbox Type: M410  60/391 n1/n2 = 1500/737.46  Consistency range - 2-6 %  Max operating pressure 6 bar  Weight (with coupling, without Motor) 1300 kg  Length (with coupling, without Motor) 1765mm  Width (with coupling, without Motor) 850mm  Height (to top flange) 900mm</p> <p>4 x JCO1 Refiners. Includes</p> <ul style="list-style-type: none"> <li>- Plate Drive</li> <li>- Inlet Valve</li> <li>- Outlet Valve</li> <li>- By-pass Valve</li> <li>- Seal Water Valve</li> <li>- Gearbox</li> <li>- Flow Tube</li> <li>- Flow Control Valve</li> <li>- Flush Water Valve</li> </ul>				

			<ul style="list-style-type: none"><li>- Outlet Flush Water Valve</li><li>- Inlet Pressure Transmitter</li><li>- Outlet Pressure Transmitter</li></ul>				
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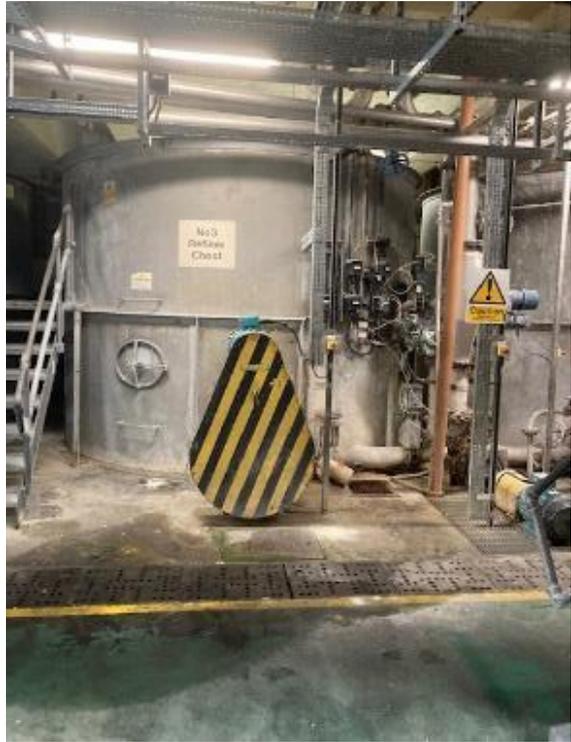
078	Pulper and Feed System	Low Consistency Pulper and Feed System	<p>Pulper Type: - Pulper Level Control with filling volume - 9m<sup>3</sup>- Rotor diameter: 900mm- Rotor Speed: 250rpm- Motor Power: 100KW- Motor Speed: 1000rpm- Retention Time: 10 min- Batch Time: 20min- Filling Time: 3min- Slushing Time: 10min- Discharge Time: 4min</p> <p>The Feed System &amp; Hydraulic Tank &amp; Pump: Pulp Bale Feed Conveyor System, with integrated semi-automatic de-wire station and out-feed chain conveyor. Operator platform with necessary hand railing and kick guards. Max Bale Length - 850mm Max Bale Width - 850mm Max Bale Height - 550mm Max Bale Weight - 300kgs Wire Pattern - 2 x 2 direction Wire Gauge - 14swg Sheet Removal - Top and Bottom Bale Throughput - Nominal 25 Seconds Includes the following;- Vat- Level Sensor- Main flow Isolation Valve- Water Flow Transmitter- Flush, Control, Supply &amp; Outlet Valves- Consistency Transmitter - Feeder System- Pulper Dump Pump: Ahlstan NPP31-100,</p>	1996	Sunds Defibrator	JP-209V-B Preflo Pulp	
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15KW Motor, 4.5%  
Consistency, 11m head @  
1450 l/min



079	Chest & Distribution	Stainless Steel Tank and Supply Pump	<p>Includes</p> <ul style="list-style-type: none"> <li>- Tank: 4.0m Height x 3.7m Diameter</li> <li>- Agitator: 18.5KW, V-Belt drive</li> <li>- Pump: 11KW Motor,</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Flushing Valve</li> <li>- Recirculation Valve</li> </ul>	Unknown	<p>Agitator: Walmsley (Bury) Ltd</p> <p>Pump: Serlachius</p>	<p>Agitator: Unknown</p> <p>Pump: 150/126</p>	
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080	Chest & Distribution	Stainless Steel Tank and Supply Pump	<p>Includes;</p> <ul style="list-style-type: none"> <li>- 2 x Tank: 2.8m Height x 2.9m Diameter</li> <li>- 2 x Agitator: 1 x 18.5KW, V-Belt Drive &amp; 1 x 15KW, V-Belt Drive,</li> <li>- 1 x Pump: 11KW Motor</li> <li>- 2 x Level Sensor</li> <li>- 2 x Isolation Valve</li> <li>- 2 x Flushing Valve</li> <li>- 1 x Recirculation Valve</li> </ul>	Unknown	<p>Agitators: lightning</p> <p>Pump: Serlachius</p>	<p>Agitators: 2V6-25</p> <p>Pump: DAO - 126</p>	
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081	Chest & Distribution	Stainless Steel Tank and Supply Pump	<p>Includes</p> <ul style="list-style-type: none"> <li>- Tank: 4.0m Height x 2.9m Diameter</li> <li>- Agitator: 22KW, V-Belt drive</li> <li>- Pump: 11KWMotor</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Flushing Valve</li> <li>- Consistency Transmitter</li> </ul>	Unknown	<p>Agitators: lightning</p> <p>Pump: Serlachius</p>	<p>Agitators: 2V5-25</p> <p>Pump:150/150</p>	
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082	Chest & Distribution	Stainless Steel Tank and Supply Pump	Includes- Tank: 4.0m Height x 3.4m Diameter Agitator: 18.5KW, V-Belt Drive- Pump: 15KW Motor	Unknown	Agitator: Walmsley (Bury) Ltd Pump: Serlachius	Agitator: Unknown Pump: DC-80/320	
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083	Chest & Distribution	Water Pump	Includes: - Pumps	Unkno wn	Grundf os	MG100LC2-28FT130-H3	
084	Chest & Distribution	Seal Water Pump	Includes: - Pump	Unkno wn	Grundf os	Multistage Pump	

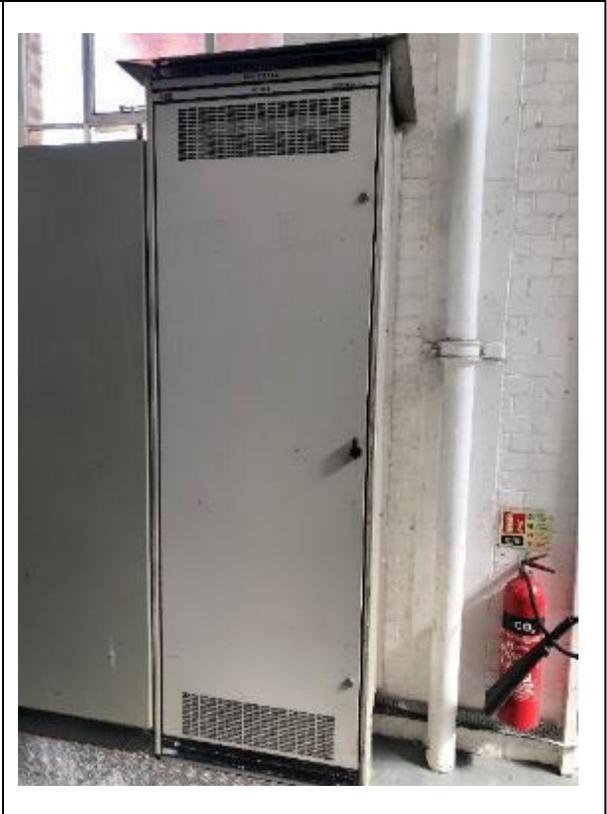
085	Chest & Distribution	Stainless Steel Tank and Supply Pump	<p>Includes;</p> <ul style="list-style-type: none"> <li>- 2 x Tank: 3.3m Height x 2.8m diameter</li> <li>- 2 x Agitator: 2 x 30KW Motor, V-Belt Drive</li> <li>- 1 x Pump: 7.5KW Motor</li> <li>- 2 x Level Sensor</li> <li>- 2 x Isolation Valve</li> <li>- 2 x Flushing Valve</li> <li>- 1 x Recirculation Valve</li> </ul>	Unknown	<p>Agitator: SCABA</p> <p>Pump: ABA</p>	<p>Agitator: 805KPT</p> <p>Pump: BA-150/80-26</p>	
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086	Chest & Distribution	Stainless Steel Tank and Supply Pump	<p>Includes</p> <ul style="list-style-type: none"> <li>-Tank: 3.0 Heigh x 3.2m Diameter</li> <li>- Agitator: 18.5KW, V-Belt Drive</li> <li>- Pump: 18.5KW Motor</li> </ul>	Unkown	<p>Agitators: lightning</p> <p>Pump: Serlachius</p>	<p>Agitators: 2V5-25</p> <p>Pump:200/100</p>	
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087	Cotton Processing Line	Pump	<p>Sulzer Pump Head + 70m Flow = 10 l/s</p> <p>ABB Motor 22kW/3000rpm</p>	2008	<p>ABB</p> <p>Sulzer</p>	<p>Motor 22kW/3000rpm</p> <p>Pump Head + 70m Flow = 10 l/s</p>	
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088	Cotton Processing Line	Motor Control Centre	GEC Motor Control Centre for 3 off Refiner Main motors and Plate motor. Main Motor Starter Rating 315A Plate Motor Starter Rating 2A 110V Control Voltage Incomer 1000A	1990's	GEC	1000A	
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089	Cotton Processing Line	Motor Control Centre	<p>GEC Motor Control Centre with 630A Incomer</p> <p>Contains all starters for running Linter Plant associated pumps and Agitators as well as 1 off Refiner Main Motor and Plate Motor.</p> <p>110V Control Voltage</p>	1990's	GEC	630A	
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090	Cotton Processing Line	ABB Controller and IO Hardware	ABB AC450 Process Controller and associated S400 and S800 series IO. Digital Inputs rated at 110VAC and Analog rated at 4-20mA Incl. 1 off 800xA Operator Workstation	Various	ABB	AC450	
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# Pulp Storage

Standalone system

ID	Section	Assets	Description	Year	Supplier	Model	Photo
091	Spare storage	Tank	100m <sup>3</sup> Tanks suitable for pulp and or Water Stainless Steel 316	2019	LA Fabrications	N/A	

# Pulping System

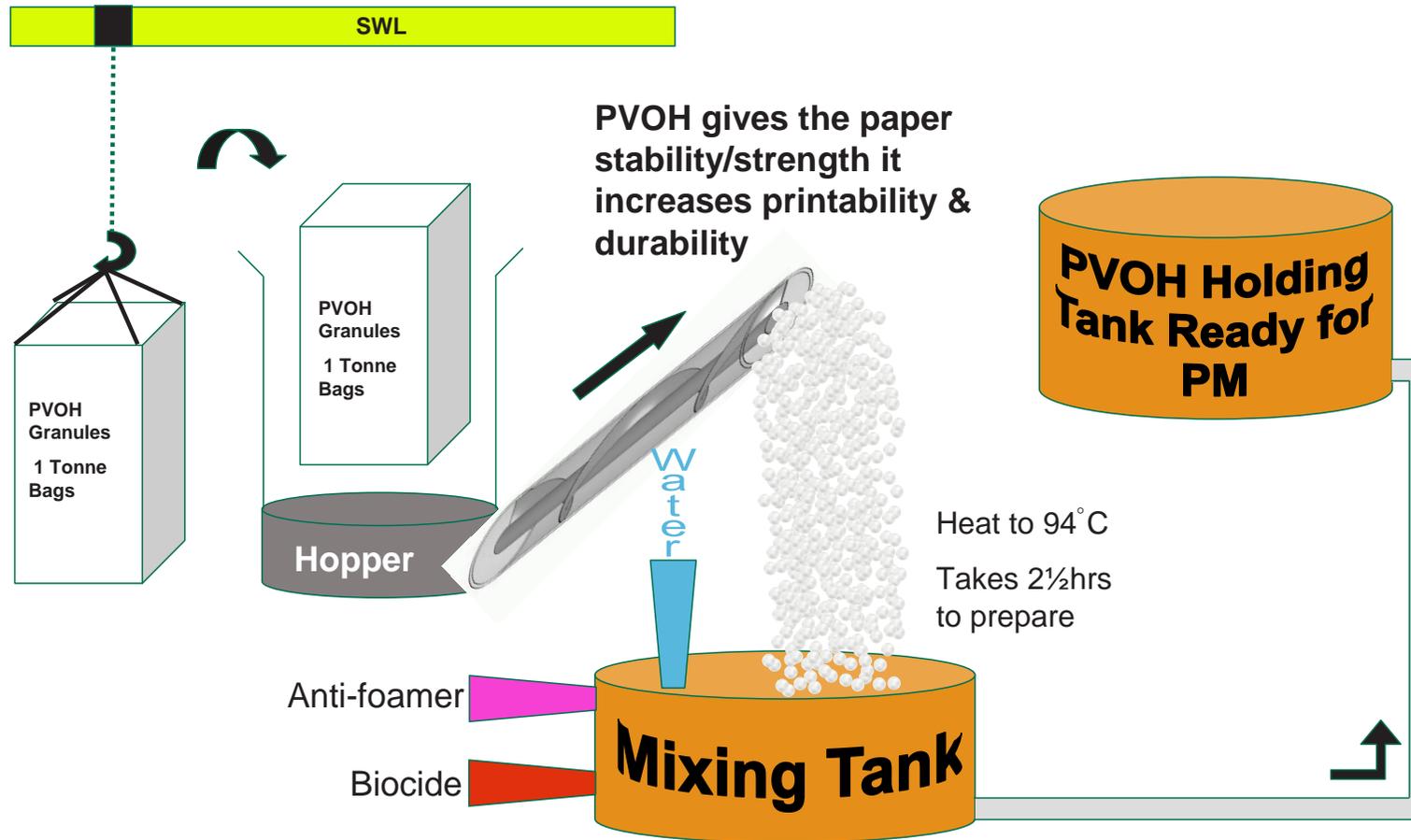
Standalone system

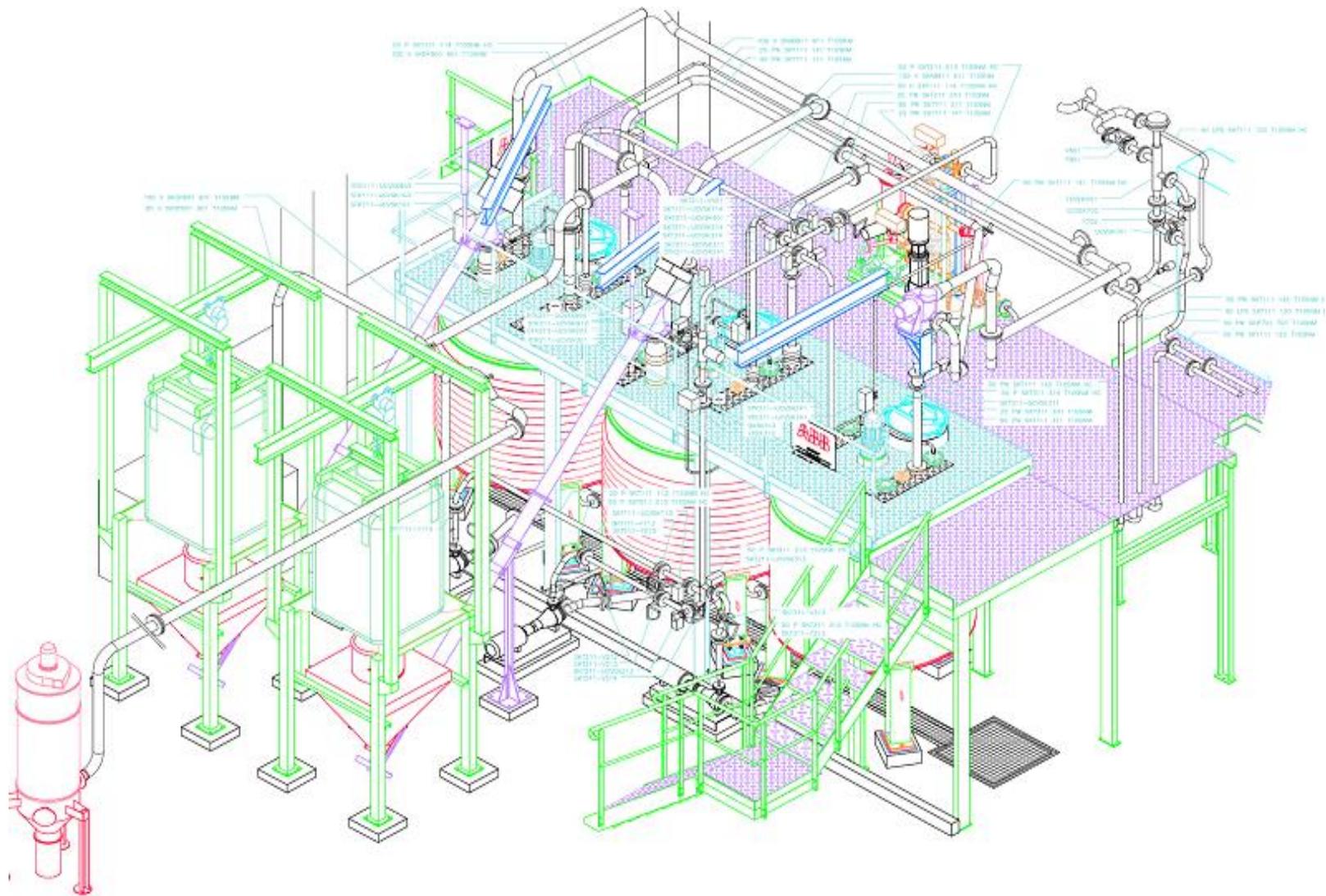
ID	Section	Assets	Description	Year	Supplier	Model	Photo
092	SF PULPER	High Consistency Pulper	<p>The ANDRITZ FibreSolve FSV pulper can be operated in either batch mode or continuously, depending on the installation and furnish requirements of the process. The design of the FSV rotor and extraction chamber provides high capacity utilising small vat volumes with low power consumption. The mixing vanes creates good circulation in the vat which allows consistencies up to 9%. Cleaning vanes keep the screen plate clear and promote pulp submergence. The FibreSolve FSC is best for Virgin Pulp, Broke and Special grades. The Vat:Capacity - 0-48 bdt/d                      Net Volume vat - 12m3                      Optimum pulping Consistency - 5.0%                      Rotor Speed - 416rpm                      Rotation direction - Clockwise                      Installed Power 90/1000 KW/rpm - Pulper                      Level Control- Pump- Level</p>	2018	ANDRITZ	Andritz FibreSolve FSV1-12 Pulper Pulp Handling System "Feed System" built for portals requirements	

		<p>Sensor- Main flow Isolation Valve- Water Flow Transmitter- Control Valve- Supply Valve- Outlet Valve- Transmitter Flush Valve- Consistency Transmitter The Feed System &amp; Hydraulic Tank &amp; Pump:Pulp Bale Feed Conveyor System, with integrated semi-automatic de-wire station and out-feed chain conveyor. Operator platform with necessary hand railing and kick guards. The whole system designed to suit new ANDIRITZ pulper as above.</p> <p>Max Bale Length - 850mm  Max Bale Width - 850mm  Max Bale Height - 550mm  Max Bale Weight - 300kgs  Wire Pattern - 2 x 2 direction  Wire Gauge - 14swg  Sheet Removal - Top and Bottom  Bale Throughput - Nominal 25 Seconds  Loading - Manual  Clamp Truck</p>				
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# PVOH Plant

The plant is designed to allow the loading, feed, and cooking of PVOH. The system allows batch cooking of circa 5 Tonnes of material per Mixing tank and comes with an additional holding tank. Mixing is done by weigh system (Load Cells- weigh raw materials and water) and direct steam injection for cooking. The DCS is designed to have pre-set recipes depending on the grades used and Solids required. All tanks can be used independently or used as a group for bulk making and storage.

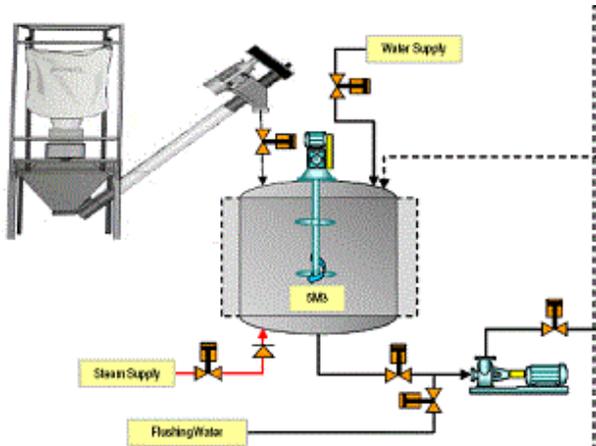
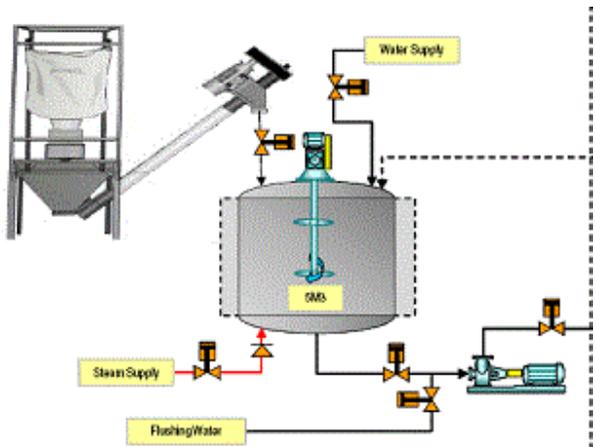


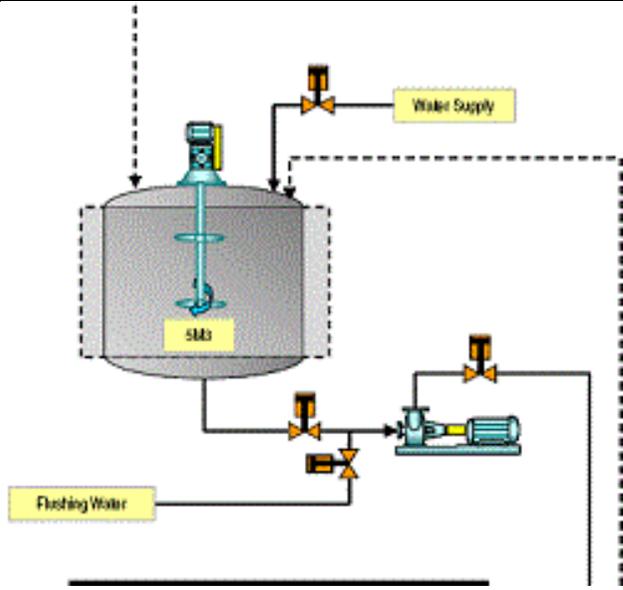


ID	Section	Assets	Description	Year	Supplier	Model	Photo
093	Hoist and lifting beams		Hoist 1600kg SVL10 + bag lifting beam 1mx1m	2011	ABB CELLIER	SWL Verlinde	
094	Hopper and Screw feeder	Stainless steel tank and feed pipes	Includes -Hopper - Screw feeder x2 TXE2L012006A23 , Serial No X00F22895 ( ---> Rotating direction) Level - Level sensor x2 FTM50-AGG2A4A12AA - Dedusting filter - Blower	2011	ABB CELLIER	Screw feeder – WAM  Level Sensor - Endrerst + Hauser	

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095	Mixing tank 1	Stainless steel tank and supply pump	<p>Includes</p> <ul style="list-style-type: none"> <li>- Tank: Stainless Steel 5cubic meters . 1.6 M Height &amp; 2.0M Diameter (2009) with inspection hatch located at the top</li> <li>- Agitator (Vertical) FZAF5688-K4-(90);</li> <li>MOTOR - ABB M2QA90L4AV1</li> <li>- Pump: 1669541 (2011)</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Flushing Valve</li> <li>- Recirculation Valve</li> <li>- Steam injection</li> </ul>	2009-2011	ABB CELLIER	<p>Agitator – SIEMENS</p> <p>Pump - KSB</p>	
096	Mixing tank 2	Stainless steel tank and supply pump	<p>Includes</p> <ul style="list-style-type: none"> <li>- Tank - Stainless Steel 5cubic meters . 1.6 M Height &amp; 2.0M Diameter (2009) with inspection hatch located at the top</li> <li>- Agitator (Vertical) FZAF5688-K4-(90);</li> <li>MOTOR - ABB M2QA90L4AV1</li> <li>- Pump - 1669541 (2011)</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Flushing Valve</li> <li>- Recirculation Valve</li> <li>- Steam injection</li> </ul>	2009-2011	ABB CELLIER	<p>Agitator - SIEMENS</p> <p>Pump - KSB</p>	

097	Holding tank	Stainless steel tank and supply pump	<p>Includes</p> <ul style="list-style-type: none"> <li>-Tank: Stainless Steel 5cubic meters . 1.6 M Height &amp; 2.0M Diameter (2009) with inspection hatch located at the top</li> <li>- Agitator (Vertical) FZAF5688-K4-(90);</li> <li>MOTOR - ABB M2QA90L4AV1</li> <li>- Pump: 1669541 (2011)</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Flushing Valve</li> <li>- Recirculation Valve</li> <li>-Heating Jacket</li> </ul>	2009-2011	<p>PORTALS</p> <p>ABB CELLIER</p>	<p>Agitator - SIEMENS</p> <p>Pump - KSB</p>	
098	Inline - refractometer	Stainless steel	HPC Adapter with HP Water Prism Purge PAK System	2011	ELECTRON MACHINE CORPORATION	MPR E-SCAN	

099	Soft water system		Includes -Tank - 2 x Pumps 2.2KW - Level Transmitter	2009	HRYDROVAR	Pump –	 
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100	SWECO FILTER	Sweco Filter	Includes - Filter housing: Type SWU14505450 TR (0.18 kW)/ serial no 420230 - Filter mesh	2008	SWECO	SWECO 2SIR533	
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101	Filter cell	Filter cell	Includes - Filter Unit: F200 LHP. 0.18kW	2011	ABB CELLIER	Filter cell - ABB France F200 LHP. 0.18kW	
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# Anti-Soil Treatment System

ID	Section	Assets	Description	Year	Supplier	Model	Photos
102	AST Tank A & B	Stainless Steel Tank and associated Equipment	Includes; - Tank x 2 - Agitator (Vertical) - Duty/Standby Pumps - Level Sensor - Isolation Valve - Flushing Valve - Pressure Sensors - High Level switch - Tank Trace Heating Jacket	2011	ABB CELLIER	Agitator - Siemens FZAF588B-(112)  Pump - MonoE13K 545 rpm at 3 bar nominal.  Level - Rosemount DP Level  Pressure - IFM  HLS - E+H Liquiphant M  Heating - Thermon TC1-1-120	

103	AST Chemical holding Tank	Stainless Steel Tank and associated Equipment	Includes; -Tank - Agitator (Vertical) - Pumps - Level Sensor - Isolation Valve - Spray Ball and Flushing Valve - Flow Meter - Pressure Sensor - Tank High Level Switch	2011	DW Fabrications	Agitator – Lightnin ECL M5L-150 Pump – Mono E13K 545rpm at 3 bar with Mech Seal Pot Flow - ABB Magflow Meter Level Switch - Liquiphant M	
104	Chemical dosing rigs	IBC Stands for Chemical Storage/Dos ing	Includes - Framework for standing 1000 kg IBC's - Glycerine Pump - Glycerine Mass Flow Meter - Biocide Dosing Pumps Duty/Standby - Defoamer Dosing Pumps Duty/Standby - Defoamer Mass Flow Meter - Chemical Dosing Control Panel	2011	Portals	Gyc Pump - Motovario H 032 AR Glyc Mass Flow - ABB FCM2000- MC21 Biocide Pump - Watson Marlow MG0427 Defoam Pump - Watson Marlow MG0427  Defoam Mass Flow - E+H Promass 80	 

105	WEIGHING System	IBC Stand and Weigh Scale System	Includes: - Framework for 100kg IBC - Weigh Scales - Hoist and Agitator - Agitator Control Panel	2011	Portals	Scale - Avery Weigh-Tronix H530	
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106	Filter cell	Filter cell	Includes - Filter Unit: F200 LHP. 0.18kW	2011	ABB CELLIER	Filter cell - ABB France F200 LHP. 0.18kW	
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## Fibre Recycling Plant

Consisting of a Broke Plant and Spoil Store, the original plant was installed in 1984 and consisted of a reel splitter, 3 pulpers and screening systems designed to repulp all bank note paper, manufactured at Overton with high wet strength resins. This then formed part of the blend on the paper machines for manufacturing into paper product again.

The mini bailers were added to the spoil store in 1998 for sheet trim recovery from the finishing converting lines.

There have been several upgrades additions to the plant since the 1980's to introduce new technologies and efficiencies in pulp production.

The Fibre Recycling Plant has the capacity to process 80 tonnes per week.

ID	Section	Assets	Description	Year	Supplier	Model	Photo
107	Pulping	Helico Pulp and Feed conveyor	<p>2 x Helico high consistency pulpers and independent Feed conveyors with flat belt conveyor and safety pull cord system. Includes;</p> <ul style="list-style-type: none"> <li>- Pulper and lid with pneumatic piston</li> <li>- Extraction Fan</li> <li>- Temperature Controls and stem injection point</li> <li>- Level Controls</li> <li>- Pulper Dump Pump, 11kW motor, inlet and outlet valve</li> <li>- Chemical Dosing system - citric acid and hydrogen peroxide</li> <li>- Pulper Motor 110kW, 3300A, Frame D3155D</li> <li>- Pulper Lubrication system</li> <li>- Pulper rotor mechanism No.2R</li> </ul>	1984	<p>Lamort</p> <p>Motor: Parsons Peebles</p> <p>Pump: Serlachius</p>	<p>Helico 5m3</p> <p>Motor: D3155D</p> <p>Pump: DAO-125</p>	



108	Pulping	Tornado Pulper	<p>4m3 Tornado Pulper including</p> <ul style="list-style-type: none"> <li>- Vat</li> <li>- Extraction Fan</li> <li>- Temperature Control</li> <li>- Dump Pump</li> <li>- Chemical Dosing System</li> <li>- Drain Valve</li> <li>- Pulper Lid</li> <li>- Pulper Motor 110kW, 3300A</li> <li>- Lubrication System</li> </ul>	1984	Bolton Emmerson	Unknown	
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109	Cleaning	Screens	<p>4 x CH3 Screens</p> <ul style="list-style-type: none"> <li>- 22kW motor, 1500rpm</li> <li>- screen basket 2-4mm perforations</li> <li>- v-belt drive c/w 190mm and 350mm pulleys</li> <li>- supply pump c/w 15kW motor and V-belt drive</li> </ul>	<p>CH3 screen: 1984</p> <p>Pump: Unknown</p>	<p>CH3 Screen : Lamort</p> <p>Pump: Serlachius</p>	<p>Screen: CH3</p> <p>Pump: DC-100/300</p>	
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110	PLATINUM SCREEN	PLATINUM SCREEN	1 x Platinum Screen including: - drive motor 22kW, frame size: M3BP 200MLB - Pressure transmitter - Inlet and outlet valves	2009	METSO	PROFS 25LC	

111	Cleaning	Vibrating screen	<p>2 x Vibrating screens with a useful surface area of 1m<sup>2</sup>, stock consistency 1.5% max, water pressure of showers: 3bar, water consumption of showers: 5m<sup>3</sup>/hr, drive motor: 4kW @ 1500rpm . Each includes</p> <ul style="list-style-type: none"> <li>- Screen Tank</li> <li>- Tank Level Control</li> <li>- Tank Cleaning System</li> <li>- Screen Sprays</li> <li>- Screen Pump</li> </ul>	1984	Lamort  Pump:	MD10  Pump:	
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112	Cleaning	Drum Thickener	<p>Drum Thickener Finckh machine no. 227 with cylinder in honeycomb design, cylinder diameter: 1250mm, cylinder length: 3000mm, includes;</p> <ul style="list-style-type: none"> <li>- Thickener Drive: Mitre gearmotor with positioner p=6,9kW for f= 87Hz and n= 20 rpm, Flender N-Eupex coupling</li> <li>- Breaking Screw</li> <li>- Couch Roll: mild steel construction, 13.5mm rubber cover, 440mmØ, hardness 160-180 P+J</li> <li>- Shower Pump</li> <li>- Transfer Tank &amp; Agitator</li> <li>- Transfer Tank Pump</li> <li>- Transfer Tank Consistency Control</li> <li>- Transfer Tank Cleaning system and Level Control</li> <li>- Shower Pump Tank</li> <li>- Shower Pump Level Control</li> <li>- Drum Thickener Cylinder</li> <li>- Drum Thickener Roll</li> <li>- Drum Thickener Roll Doctor Unit</li> <li>- Drum Thickener Shower Spray with 2.5mm nozzles, water consumption: 170lpm, water pressure: 3-4bar</li> </ul>	1984	Finckh	EW 1230	
113	Pulp Storage	Concrete Tanks internally Tiled	<p>9 x Concreate Tiled Chest with each having the Capacity of 1 tonne of 4.0% Consistency. Each asset has the following available;</p> <ul style="list-style-type: none"> <li>- 9 x Pump 7kW drive motor, v-belt drive</li> <li>- 9 x Agitator 7kW drive motor, v-belt drive</li> <li>- 9 x Chest Level Sensor</li> <li>- Drain Valve</li> </ul>		<p>Agitator: Lightnin  Pump: Serlachius  Pump: Ahlstrom</p>	<p>Agitator: IVS-10  Agitator: IVS-10  Agitator: IVS-10  Agitator: IVS-10</p> <p>Pump: DC-100/300/H  Pump: App21-80  Pump: DC-100/300/H  Pump: DC-100/300</p>	

						1 x Ahlstrom NPP31-100V- Belt drive15KW MotorFlow Control Valve & 1 x Flush Valve	
114	Water Supply	Sealing water pumps	2 x Sealing water pumps	1988	Ahlstrom	DE-50-32-200	

115	Mini Balers	4 off Mini Trim Balers	<p>The mini balers are the systems for compacting trim into bales allowing it to be stored in cages ready for recycling/dumping.</p> <p>Mini Trim Baler          Incl. Local Control Panel, Separator, Filter Fan Unit &amp; Trim Bailer</p>	1998	Middleton Engineering	HB101	
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116	Green Line Bailer	Bailer	<p>The green line is used for the removal of trim that will not be recycled back into the papermaking machines.</p> <p>Bailer Incl. chute, hydraulic ram, bailer, and local control panel</p>	unknown	Powell Bailing Systems	PA 0154	
117	Reel Splitter	Reel Splitter & Gantry Crane	<p>3 Tonne SWL Gantry Crane for Reel Splitter approx. 3m x 3m travel. Splitter Knife, Front and Back conveyors, Hydraulic pack, and associated guarding.</p> <p>Max dia reel = 1.3m Max width reel = 2.9m</p>	unknown	unknown	Demag 3995/83	

							
118	Guillotine 1 (In Spoil Stores)	Guillotine	The guillotine is used for the removal of threads from sheeted paper. This is carried out, primarily, to maximize the return of recyclable paper furnishing the paper making machines. Guillotine 137 MCS 2 N 193 m/s stopping performance 440mm separation 34mm piece diameter	Unknown	Whollenburg Hannover	MCS-2 TV 137 SN: 3418-001 20A supply	

119	Finishing Guillotine	Guillotine	<p>The guillotine is used for the removal of threads from sheeted paper. This is carried out, primarily, to maximize the return of recyclable paper furnishing the paper making machines Curtain Separation 420mm  Test Piece Diameter 38mm  Max Stopping Performance 175 m/sec  400V 20A</p>	Unknown	Whollenburg Hannover	132 TIC SN:3045-006	
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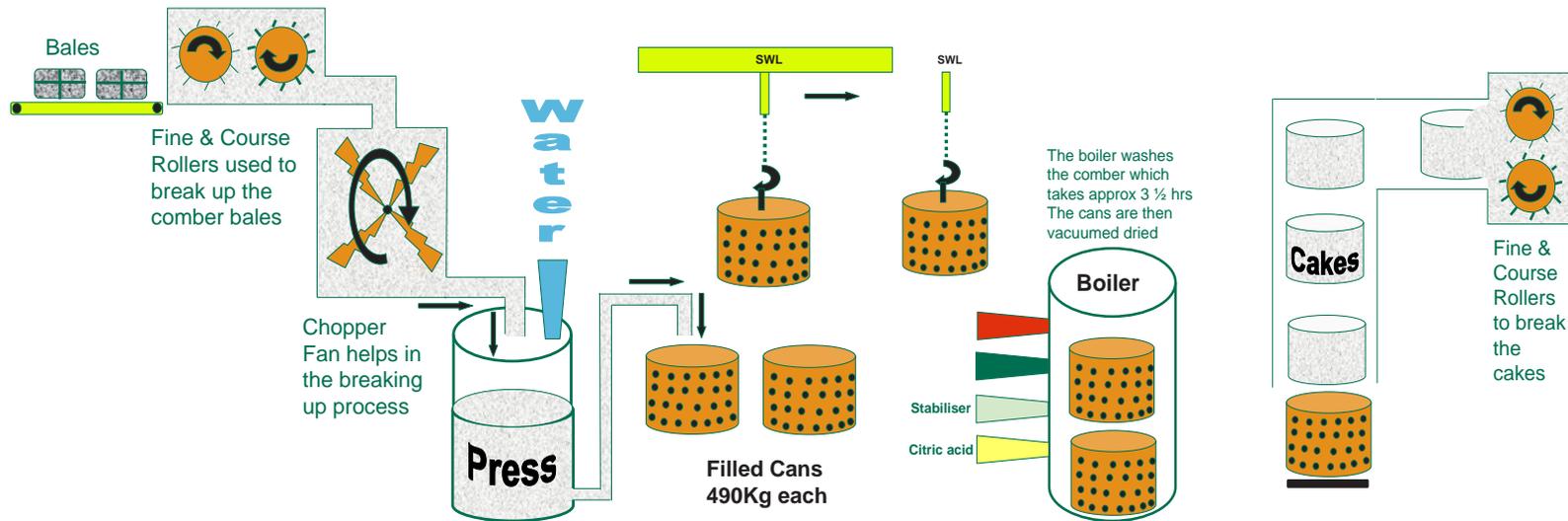
# HT Boiler Floor

Utilising the HT Boilers is the other method of processing the cotton comber before it is sent to the Jones Breakers. This method is slower than the Bivis and is not a continuous process as the cans require pressing, cooking then extracting, all of which can take up to 3.5hrs to produce 1 tonne. **Press Section** The bales of comber are loaded onto the conveyor to be broke up by the coarse and fine rollers; the stock is then further processed and separated by a chopper fan. An empty can is placed in the Press section and is filled to a weight of 490Kg. A lid is fixed in place and the can is transferred into the Boiler by crane; two cans can be processed in the Boilers.

**Boiling Process** The boiling process will normally take around 3.5hrs depending on the quality of the stock. The chemicals are injected through the centre of the cans at various stages where they impregnate into the comber.

**Cake Extraction** After 3.5hrs the cans are removed and placed in the waiting area ready to be processed further by removing the cake from the can. The cans are placed in the cake extractor where their lids are removed, and a ram pushes the cake from the tin. The cake pusher pushes the cake onto the cake breaker where the cake is pulled apart and sent to the Breakers.

**Cotton Fibres after HT Boiling Process** The fibre is still very long. It still contains its ribbon like feature. Smooth edges with no fibrillation as no mechanical action has been carried out



ID	Section	Assets	Description	Year	Supplier	Model	Photo
120	HT Boiler Floor	Bail Opener	<p>Designed to receive textile fibres or Cotton in a closed bale shape (Approx. 300kgs per bale), for the feeding of bale opening type feeders or other machines requiring this type of conveyor.</p> <p>Consists of:</p> <ul style="list-style-type: none"> <li>- Tubular Steel Feed Table (Temafa 0502) 4m x 2m</li> <li>- Bale Opener/Hopper (Temafa Meissner Morgner &amp; co)</li> <li>- Weighing Platform Conveyor (Pfister Type EFW) nominal output 3000Kg/hr</li> </ul>	1983	Temafa Meissner Morgner & co		

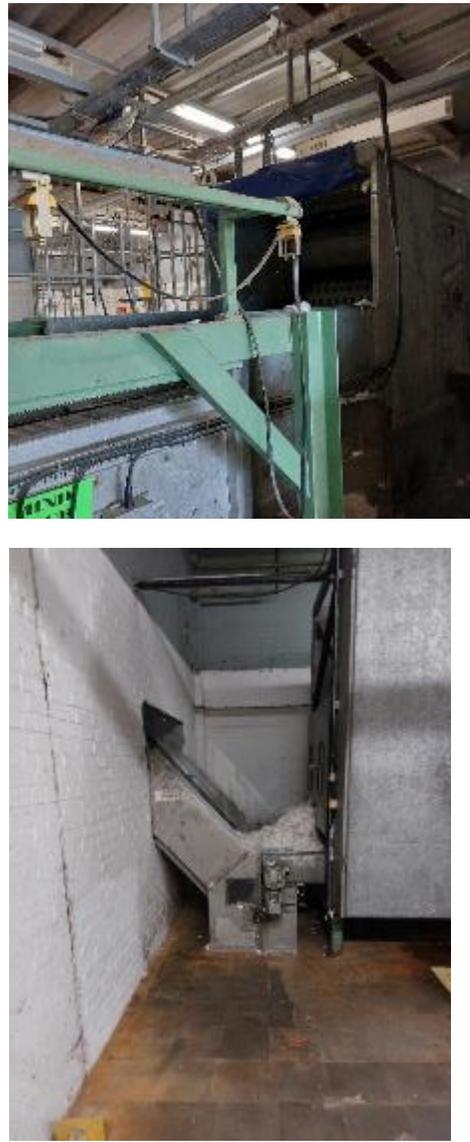
121	HT Boiler Floor	Cake Press System	<p>Automatic System presses Fibrous material delivered from a bail opener into cages for insertion in to Rag Boilers.</p> <ul style="list-style-type: none"> <li>- 2 x Press System with Condenser, Framework, Pressing Rams, Hydraulic System and Electrical Control Panel, with PLC.</li> <li>- 17 Cake tins also included</li> </ul>	1983	Gualchiera ni	PRC/60	 
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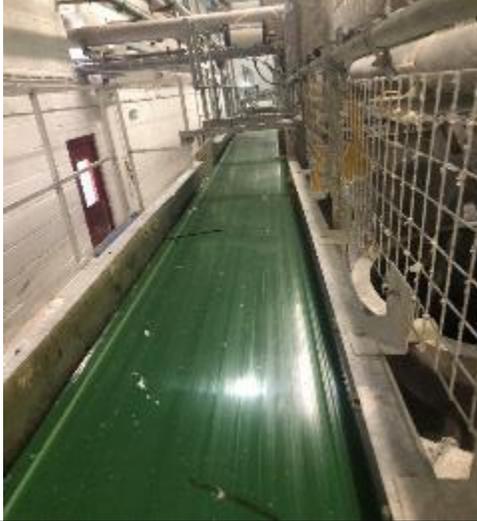
							
122	HT Boiler Floor	Thies Boiler Hoist	Universal Crane for use with Rag Boilers. SWL 3 Tonne Bridge Span 3920mm Travel Speeds 30 & 7.5 m/min Hoisting Speeds 5.5 & 2.75 m/min 31.25m length beams	1985	British Monorail Ltd	31528 UUC	

123	HT Boiler Floor	5 off HT Rag Boilers	Rag Boiler Including <ul style="list-style-type: none"> <li>- Dyeing Kier</li> <li>- Chemical Additions Tanks for batch mix of Caustic, peroxide and water with local control panel.</li> <li>- Pocket Tank</li> <li>- Dosing Screw</li> <li>- Salt Funnel</li> <li>- ZG- Pump</li> <li>- Dosing Cylinder</li> <li>- Inlet and Drain Valves</li> <li>- Steam Inlet Valve and coil</li> <li>- Safety Valve</li> <li>- Pressure Pump</li> <li>- Sample Device</li> <li>- Boiler Control Panel with PLC and HMI.</li> </ul> Incl. recipe management system.	1984	Thies	ECO Bloc S II	
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124	HT Boiler Floor	Cake Extractor	Automatic system to extract and open material from cages after the Rag Boiler process.	1983	Gualchiera ni	Extractor MC Machine Opener EAC Machine	
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125	HT Boiler floor	Conveyor Feed system	<p>Long conveyor for transporting material to selected pre-selected locations. includes</p> <ul style="list-style-type: none"> <li>- long conveyor drive gearbox/motor</li> <li>- long conveyor drive roll</li> <li>- long conveyor nde roll</li> <li>- long conveyor carrying rolls</li> <li>- long conveyor</li> <li>- 4 x Selection gates</li> </ul>	Unknown			
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# Additive delivery

ID	Section	Assets	Description	Year	Supplier	Model	Photo
126	West Breaker Floor Colour Kitchen	West Breaker Floor Colour Kitchen	Colour kitchen consisting of: - 3 no mix tanks (red, blue, yellow) - 3 no. air driven agitators - 3 no. air pumps - 1 no. weigh scale - 3 no. pneumatic regulator and isolation valves	Unknown	Air Pump: Husk  Agitator: GAST  Tank: Portals	Air Pump: 205  Agitator: 4AM-NRV- 228  Tank: 0.8m diameter x 1m tall with hinged lid and drain spout.	

127	Water Softener Plant	Water Softener Plant	Water softener delivery system consists of: - mix tank - mix tank agitator - mix tank level control - screw press - supply pump	Unknown	Unknown	Unknown	
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128	CMC Delivery System	CMC Delivery System	CMC delivery system consists of: - mix tank - mix tank agitator - mix tank level control - screw press - supply pump	Unknown	Unknown	Unknown	

129	PM1 Colour Kitchen	PM1 Colour Kitchen	PM1 colour system consists of: - 5 no. tank - 5 no. dosing pump - 5 no. level transmitter - 5 no. flow control valve - 5. pressure maintaining valve - 5. pressure relief valve - 5 dilution water valve (on/off) - 1 control panel	2018	Dosing pump: Grundfoss  Tank: Portals	Dosing Pump: DDA 200  Tank: 316L, 800mm tall x 400mm diameter	
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130	PM1 TiO2 delivery system	PM1 TiO2 delivery system	PM1 TiO2 dosing system consists of: <ul style="list-style-type: none"> <li>- 2 no. tank</li> <li>- 2 no. dosing pump</li> <li>- level transmitter</li> <li>- flow control valve</li> <li>- pressure maintaining valve</li> <li>- pressure relief valve</li> <li>- dilution water valve (on/off)</li> <li>- control panel</li> </ul>	2018	Dosing pump: Grundfoss  Tank: Portals	Dosing Pump: DME  Tank: 316L, 800mm tall x 400mm diameter	
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131	PM2 Colour Kitchen	PM2 Colour Kitchen	PM2 colour kitchen consists of: - 3 no. colour tanks (red, yellow, blue) - 3 no. supply pumps - 3 no. flow transmitters - 3 no. flow control valves - 3 no. pressure transmitters - 3 no. supply tank level transmitters - 1 additive tank - 1 additive supply pump - 1 additive level transmitter		Agitator: Trans Kem  Supply pump:  Additive supply pump:  Colour Tank: Portals	Agitator: TKPMVT c/w 0.55kW motor  Supply pump:  Additive supply pump:  Colour Tank:	 
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132	PM2 Anatase Delivery System	PM2 Anatase Delivery System	PM2 Anatase delivery system consists of: - 1 no. colour tanks (red, yellow, blue) - 1 no. supply pumps - 1 no. flow transmitters - 1 no. flow control valves - 1 no. pressure transmitters		Agitator: Trans Kem  Supply pump:  Additive supply pump:  Colour Tank: Portals	Agitator: TKPMVT c/w 0.55kW motor  Supply pump:  Additive supply pump:  Colour Tank:	
133	PM3 Colour Kitchen	PM3 Colour Kitchen	PM3 colour kitchen consists of: - 3 no. colour tanks (red, yellow, blue) - 3 no. supply pumps - 3 no. agitators - 3 no. flow transmitters - 3 no. flow control valves - 3 no. pressure transmitters - 3 no. supply tank level transmitters - 1 additive tank - 1 additive supply pump - 1 additive level transmitter	1996	Agitator: Trans Kem  Supply pump:  Additive supply pump:  Colour Tank: Portals	Agitator: TKPMVT c/w 0.55kW motor  Supply pump:  Additive supply pump:  Colour Tank:	

134	PM3 Rutile Delivery System	PM3 Rutile Delivery System	PM3 rutile delivery system consists of: - 1 no. colour tanks (red, yellow, blue) - 1 no. supply pumps - 1 no. flow transmitters - 1 no. flow control valves - 1 no. pressure transmitters	1996	Agitator: Trans Kem  Supply pump:  Colour Tank: Portals	Agitator: TKPMVT c/w 0.55kW motor  Supply pump:  Colour Tank:	
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135	PM3 Anatase Delivery System	PM3 Anatase Delivery System	PM3 Anatase delivery system consists of: - 1 no. colour tanks (red, yellow, blue) - 1 no. supply pumps - 1 no. flow transmitters - 1 no. flow control valves - 1 no. pressure transmitters	1996	Agitator: Trans Kem  Supply pump:  Colour Tank: Portals	Agitator: TKPMVT c/w 0.55kW motor  Supply pump:  Colour Tank:	
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# TiO2 Bulk system

ID	Section	Assets	Description	Year	Supplier	Model	Photo
136	1T Bulk Bag & Discharge System	1T Bulk Bag & Discharge System	Bulk bag handling and discharge system consisting of : <ul style="list-style-type: none"> <li>- 1T bulk bag handling frame</li> <li>- 1T cantilever lifting beam with electric hoist</li> <li>- 1T bulk bag spreader beam</li> <li>- inclined auger with gearbox</li> <li>- tele-tube</li> <li>- cincher</li> <li>- flow flexers</li> <li>- hopper with electric agitator and penumatic vibrator</li> <li>- filtration system</li> </ul>	2018	Flexicon	BFC-C-X	

							
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137	Mix Tank	Mix Tank	<p>The mix tank consists of the following:</p> <ul style="list-style-type: none"> <li>- tank</li> <li>- disperser</li> <li>- lid</li> <li>- bund</li> <li>- 3 no. load cells</li> </ul>	2018	<p>Tank: Greaves</p> <p>Tank: Greaves</p> <p>Load Cells: TTS</p>	<p>Tank: 500L storage capacity, supported on 3 no. legs</p> <p>Disperser: HSD-15DD, 11kW, top mounted.</p> <p>Load cells: type BM24R</p>	 <p>The photograph shows a tall, cylindrical stainless steel mix tank mounted on a three-legged metal frame. A disperser is attached to the top of the tank. Various pipes, valves, and electrical conduits are connected to the tank. The equipment is situated in a clean, industrial environment with a white wall and a dark door in the background.</p>
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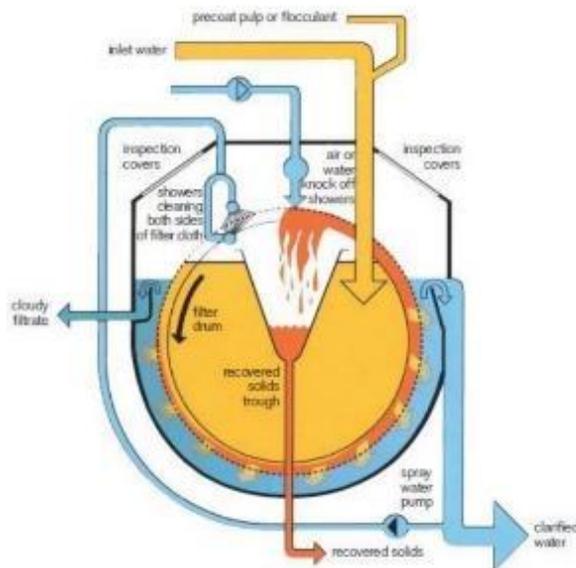
138	Holding tank	Holding tank	Holding tank consists of: <ul style="list-style-type: none"> <li>- tank</li> <li>- agitator 2.2kW</li> <li>- level transmitter</li> <li>- manway</li> <li>- bund</li> </ul>	2018	Tank: Greaves  Agitator: Greaves	Tank: 1500L storage capacity  Agitator: GFLH 370s top entry	
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139	Ringmain Pumps	Ringmain Pumps	<p>The ring main pumps consist of:</p> <ul style="list-style-type: none"> <li>- 2 no pumps with 3kW drive motor</li> <li>- flushing valves and associated piping</li> <li>- bund</li> <li>- ringmain piping approx 500m long x 20mm id.</li> </ul>	2018	Pump: Mono	Pumps: Epsilon E14BS	
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# ALGAS & DAF

## Algas

The method of fibre recovery for each paper machine is in the form of a **Drum Filter, (OEM = Algas)**. The Algas drum filter recovers fibre from the excess water on the papermachine, the fibre is returned to the papermachine via the machine hog pit. The remaining “clear” water is sent for further clarification in order to maximise potential areas for re-use in the mill. The method of water clarification at stock preparation is in the form of **Dissolve Air Floatation (DAF)**, (OEM = KWI). The Algas Microfilter is designed to operate as an independent and continuous cleaning process. The water to be cleaned enters the inlet box at one end of the filter and passes into the open end of the corrugated drum. Easily changeable filter segments mounted on the drum can be fitted with filter cloths in a range of mesh sizes down to 10 micron, depending on the application. Inside the slowly rotating drum the suspended solids build up a mat on the filter cloth, further improving the filtration efficiency of the medium. On reaching the top of the drum the deposits are released by air or water sprays, into the internal recovery trough. This is followed by self-cleaning showers to clean the cloths prior to the next filtering cycle. Algas Microfilters can be supplied with an Auto Control system to provide optimal performance, or controlled by the mill DCS system



## DAF

### Water Recovery (based on Drum Filter and DAF)

The bi-product of the fibre recovery is cleaner water; circa 100ppm to 40ppm contamination.

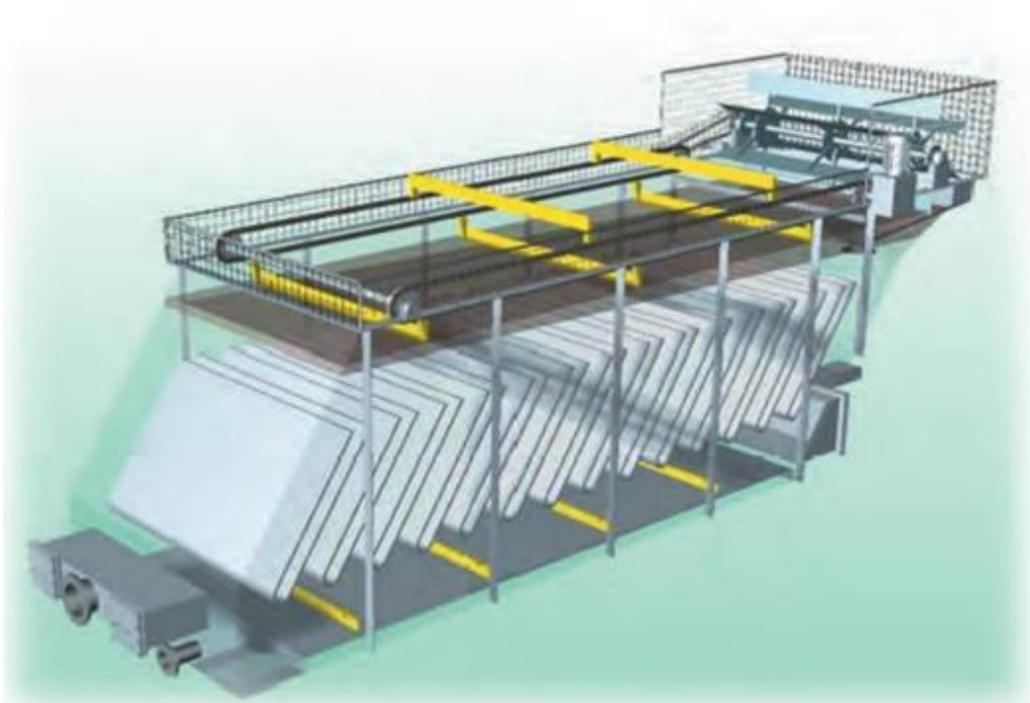
The water recovered from the Drum Filter will be warm, it may still contain chemistry and security features, and therefore a secondary filtration system is to be installed.

The proposed secondary filtration is a Dissolved Air Flootation System (DAF).

The DAF system will remove 90% of the remaining solids, which will then be suitable to be reused in Stock Preparation and the Paper Machines.

### Dissolved Air Flootation

KWI propose a Megacell



ID	Section	Assets	Description	Year	Supplier	Model
140	Dissolved Air Reactor	Dissolved Air Reactor	DAF system consisting of: - DAF vessel - paddle wheel assembly - surface scraper - discharge pump - air dissolved reactor (ADR) - ADR pump - ADR pneumatic control panel	2018	DAF: KWI  Discharge Pump: Sulzer  ADR: KWI  ADR Pump: Sulzer  Paddle gearmotor: SEW Eurodrive  Scraper gearmotor: SEW Eurodrive	DAF: Megacell MCH-20  Discharge Pump: A31-125, c/w 15kW drive motor  ADR: ADR80 360L capacity  ADR Pump: A22-50 c/w 30kW drive motor  Paddle gearmotor: KA47/T R37 DR63M4/TF/C  Scraper gearmotor: KA47/T/DRS71M6/TF/C



141	Algas	PM2 & PM3 Algas Units	<p>2 x Algas microfilters fitted with 200µm meshes and consisting of:</p> <ul style="list-style-type: none"> <li>- Algas unit</li> <li>- 3 no. automatic cleaning showers</li> <li>- Algas main drive gearbox</li> <li>- shower pump</li> <li>- feed tank</li> <li>- feed tank pump</li> <li>- feed tank agitator</li> <li>- level transmitter</li> <li>- 2 no. Valmet consistency transmitters</li> <li>- recovered fibre tank</li> <li>- recovered fibre tank pump</li> <li>- recovered fibre tank agitator</li> <li>- turbidity meter</li> </ul>	2018	<p>Algas units: Cellowod Machinery AB</p> <p>Recovered fibre tank agitator: Sulzer</p> <p>Recovered fibre tank pump: Sulzer</p> <p>Recovered fibre tank: Portals</p> <p>Feed tank agitator: Sulzer</p> <p>Feed tank pump: Sulzer</p> <p>Feed tank: Portals</p>	<p>Algas units: AMF45HPW filter</p> <p>Recovered fibre tank agitator: SVVT-40 c/w 1.5kW drive motor and SEW Eurodrive gearmotor KAF47DRN90L4/TF</p> <p>Recovered fibre tank pump: A22-40 c/w 4kW drive motor</p> <p>Recovered fibre tank agitator: 1.28m diameter x 3m tall</p> <p>Feed tank agitator: SVVT-40 c/w 1.5kW drive motor and SEW Eurodrive gearmotor KAF47DRN90L4/TF</p> <p>Feed tank pump: A22-65 c/w 11kW drive motor</p> <p>Feed tank: 1.28m diameter x 3m tall</p>
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# PM1



### **History**

PM1 was built in 1983 and underwent a major, £14m upgraded in 2020 with a complete new wet end, press section, drives and control. This included the installation of a combination press section and former Ply.

The machine is capable to manufacture paper from 70 GSM to 110GSM double-ply and 100GSM single ply paper at speed range of 20m/min to 60m/min, drives and presses are rated up to 100m/m.

### **Brief Technical Overview**

PM1 is a two-ply Cylinder mould vat machine with an adjustable (expanding/contracting) VAT and a Former. Dry Deckle width 2.2 to 2.65M. Machine output is cc15T/day with a max Main flow of 9000l/min.

Drives are located on the left side of the machine. The soleplate distance is 3430mm.

Forming fabric suction roll, electric tensioner, and guider.

1 roll combination vacuum press section with top and bottom felt.

Main drier bank 14 cylinders in 2 separate in drive sections with cog driven Cylinders. Drying section is equipped with an auto lube system. Vacuum assisted condensate removal system.

Size bath system equipped with duty and standby pump and filter system. Temperature controlled, hot water circulation, jacketed bath with size delivery and recirculation system.

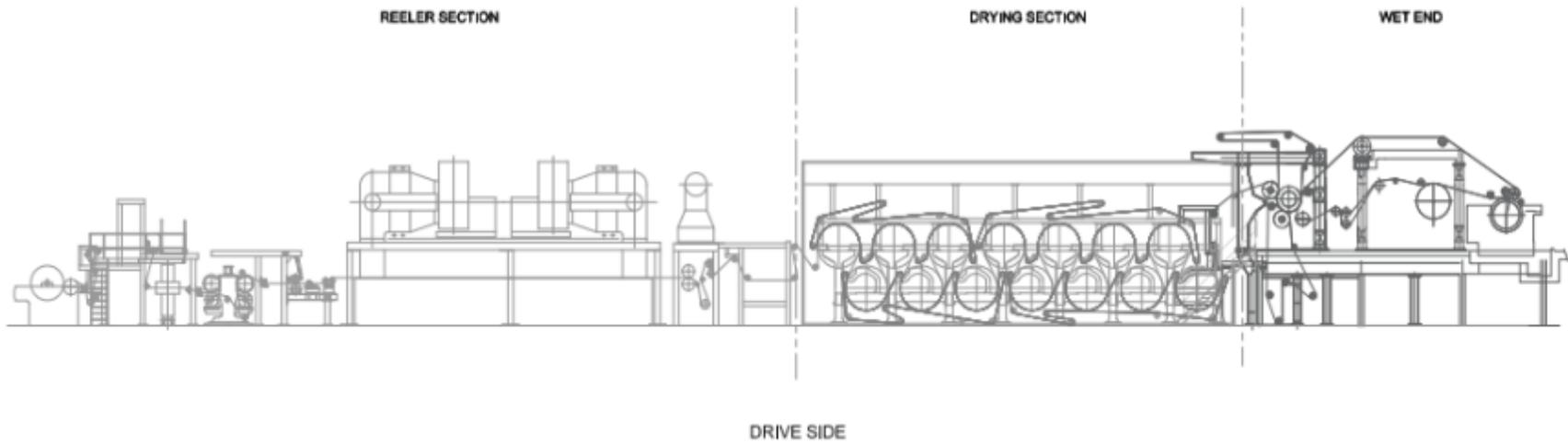
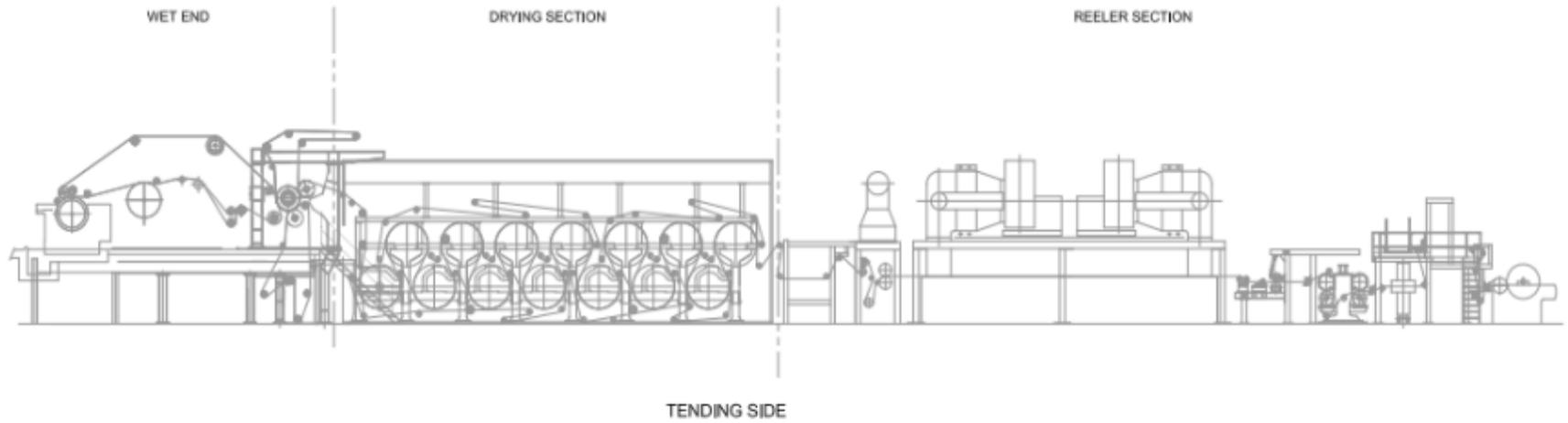
Spooner air float driers linked to moisture controls with top and bottom side adjustments. Current typical Moisture range is 4-7%.

Paper guider into 2 soft nip calendar section.

Abb gauge

Drum reeler 1250mm with a max weight of 3T. Built in scale at the end of the line.

Sheehan rope feed from main drier to drum reeler with automated Ink marking system.



ID	Section	Assets	Description	Year	Supplier	Model	Photo
142	lubrication system	oil lubrication system	includes - bearing oil distribution pump - - bearing oil distribution tank - bearing oil distribution pump control console	2012	Denco	28 outlet oil lubricator unit (14 per side). Dropsa twin pump system, 150l pump station. complete with heater, cooler. siemens plc to control flow to 28 points, motors , heater, cooler, switches.	
143	lubrication system	grease lubrication system	includes - grease lube pump - - grease lube blocks - grease lube end of line pressure switches	2008	Bijur delimon	Bijur delimon bm-b automatic greasing station. dual line grease lubrication station serving pm1 machine type of lubricant : oils and greases up to and including nlg2 system type : dual line (electrical changeover)	

144	stock approach	blend chest	includes; - tank - agitator: 30kw motor, v-belt drive - pump: 7.5kw motor - level sensor - consistency transmitter - consistency control valve - flow transmitter - flow control valve - isolation valve: 50mm v100 valve - level transmitter: Cerabar m pmc51 0-280mbar	1983	tank - portals  agitator - Lightnin  consistency transmitter - btg	4250x3300 stainless steel round 40500ltr  2vs - 40 serial no:- 1136584  mek2000	
145	stock approach	cotton holding chest	includes; - tank - agitator: 30kw motor, v-belt drive - pump: 7.5kw motor - level sensor - consistency transmitter - consistency control valve - flow transmitter - flow control valve - isolation valve: 50mm v100 valve serial no:-sc324695 - level transmitter: cerabar m pmc51 0-280mbar	2020	Bellmer Sulzer Sulzer	stainless steel round  slf 80 serial no:- 100212676	

146	stock approach	machine chest	includes - tank - agitator: 30kw motor, v-belt drive - pump: 7.5kw motor - level sensor - consistency transmitter - consistency control valve - flow transmitter - flow control valve - isolation valve: 50mm v100 valve serial no:-sc324695 - level transmitter: Cerabar m pmc51 0-280mbar	1983	Lightnin Serlachius	model 1vs-10 serial no:- l136571 dc 100/300/m serial no:- 17202	
147	stock approach	west linter chest	includes - agitator: 30kw motor, v-belt drive - pump: 7.5kw motor	1983	not available	concrete tank in drainer floor	

148	vat & stock approach	vat fan pump	includes - vat fan pump - vat pump air bleed valves	1983 2020	Serlachius	u350 serial no:-28386	
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149	vat & stock approach	cleaners	<p>includes;</p> <ul style="list-style-type: none"> <li>- primary cleaner pump</li> <li>- primary cleaner cones</li> <li>- primary cleaner accepts pressure transmitter</li> <li>- secondary cleaner pump</li> <li>- secondary cleaner pump head tank</li> <li>- secondary cleaner pump head tank level transmitter</li> <li>- secondary cleaner pump head tank level control</li> <li>- secondary cleaner cones</li> <li>- tertiary cleaner pump</li> <li>- tertiary cleaner pump head tank</li> <li>- tertiary cleaner pump head tank level transmitter</li> <li>- tertiary cleaner pump head tank level control valve</li> <li>- tertiary cleaner cones tertiary cleaner purge valve</li> <li>- lightweight cleaner pump</li> <li>- lightweight cleaner pump head tank</li> <li>- lightweight cleaner pump head tank level transmitter</li> <li>- lightweight cleaner pump head tank level control valve</li> <li>- lightweight cleaner cones</li> <li>- lightweight cleaner purge valve</li> <li>- excess water tank</li> <li>- excess water pump</li> <li>- excess water tank level transmitter</li> <li>- excess water level control valve</li> <li>- screen supply tank</li> <li>- screen pump</li> <li>- flushing pump</li> <li>- dilution pump</li> </ul>	1983	<p>Voith centrifugal cleaner  Endress &amp; Hauser  Endress &amp; Hauser  Voith  Foxboro  fisher/Rosemount  centrifugal cleaner  Voith  centrifugal cleaner  Voith  Foxboro  fisher/Rosemount  Serlachius  Foxboro  Saunders  Voith  Haden  Voith</p>	<p>I330 gIII 15/20 serial no:- 15434  ks 160/6e &amp; 6r  Cerabar pmp23 0-3bar  Cerabar pmp23 0-3bar  Iglv 12.5/15 serial no:- 15431  13fa 0-760mmwg u ball 3"  ks 160/6e &amp; 6r  I250 gIII 12.5/15 serial no:-15432  13fa 0-760mmwg u ball 2"  ks 160/6e &amp; 6r  valve stafsjo slide t mvu 2.1/2in.  Iglv 12.5/15 serial no:- 15433  stainless steel  13fa 0-760mmwg u ball 2"  cleaner. Reject mat size 200  valve butterfly kv fig990 3in. disc  stainless steel  de-80-50-200 serial no:- 28980  13fa 0-1150mmwg es63 2.5"  stainless steel  I250 gIII 10/12.5 serial no:-15429  type 50-250 serial no:- 6647010  I250 gIII 12.5/15 serial no:-15430</p>	
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150	vat & stock approach	screens	includes; - primary screen - secondary screen - tertiary screen - primary screen feed pressure transmitter - 3rd stage screen rejects purge valve: stafsjo slide t mvu 2.1/2in. - primary screen accepts pressure transmitter - primary screen accepts pressure control valve - primary screen rejects flow transmitter	1983	finckh finckh finckh  endress & hauser fisher/rosemont abb	finckh model k100I serial no:-11 217 with screen 0.30 mm. slot width form a finckh vertical screen model o.serial no:-1188 with basket slot width 0.30mm form b vertical screen model o.serial no:- with basket (half screen) slot width 0.30mm.form b  pmp23 0-3bar v150 200mm fev121 100mm	 
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			<ul style="list-style-type: none"> <li>- draught ph measurment</li> <li>- draught level transmitter</li> <li>- draught level control valve</li> </ul>		<p>rosemount fisher/rosemount</p>	<p>3051  0-1000mmwg v150 250mm</p>	
153	thread systems	thread system	<p>includes;</p> <ul style="list-style-type: none"> <li>- thread oscillator</li> <li>- thread oscillator controls console</li> <li>- oscillator framework</li> <li>- unwind framework</li> <li>- unwind cooling system</li> <li>- unwind controls</li> <li>- x 36 powered unwinds</li> </ul> <p>System for the insertion of threads, both powered and unpowered. As well as monitoring for thread break and bobbin runout. Complete with Ink marking sytem. Including Drives and PLC with HMI.</p>	2020	konia	bespoke	
154	former stock approach	former fan pump	<p>includes;</p> <ul style="list-style-type: none"> <li>- fan pump</li> <li>- fan pump thick stock transmitter</li> <li>- fan pump thickstock flow control valve</li> <li>- former excess water pump</li> </ul>	1983	<p>sulzer abb metso</p>	<p>app33 125 serial no - 100210679 fev121 80mm segment/v 65mm</p>	

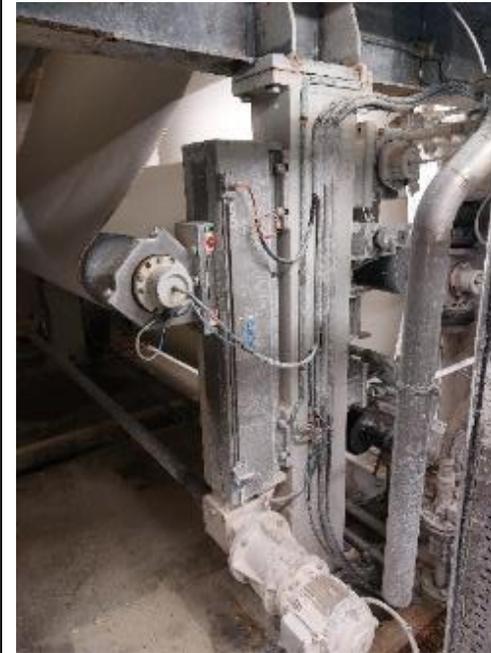
155	former silo	former silo	includes; - silo - silo level transmitter - silo control valve - silo isolation valve - silo drain valve - control isolation valve - temprature tranmitter	1983	endress & hauser metso metso stafsjo or lohse  endress & hauser	stainless steel m pmc51 0-136mbar segment/v 80mm segment/v 80mm slide valve with pneumatic operating cylinder  tmt181a	
156	former screen	former screen	includes; - former screen - former screen drain valve - former screen rejects flow transmitter - former screen rejects flow control valve - former screen feed pressure transmitter - former screen accepts pressure transmitter - former screen accepts pressure control valve	2020	bellmer lohse abb metso endress & hauser endress & hauser metso	bellmer tvsk00+ slide valve with pneumatic operating cylinder abb kent fet121 50mm metso segment/v 25mm endress & hauser pmp23 0-3bar endress & hauser pmp23 0-3bar metso segment/v 100mm	

157	former	former	includes: - former cylinder - former sprays: - former spray oscillator - former cylinder spray valve - former frame - former manifold - loading motor & jacks - platform - extraction legs - saveall tray - saveall tray level transmitter - saveall level control valve - manifold inlet pressure transmitter - manifold outlet pressure transmitter - manifold return flow transmitter - manifold return flow control valve - mainflow transmitter	2020	bellmer bellmer albany   endress & hauser  rosemount endress & hauser abb metso abb	bellmer 46l/s flow short former 2700mm 100m/min stainless steel 2019 emo iii spray oscillator  lip gear maper 550038  m pmc51 0-136mbar  2090pg 0-1bar pmp23 0-1bar fev121 40mm segment/v 40mm fev121 100mm	
158	fabric section	fabric section	includes; - couch roll, relief system & adjusters: 340mm diameter - x 4 fabric lead roll: 293mm diameter - pre-suction roll - 610mm diameter  - fabric drive roll. - 445mm diameter - fabric stretch roll 293mm diameter - fabric guide roll 293mm diameter - fabric bow roll. - 165mm diameter. - pitting roll. - 214mm diameter. - couch lifting arm motor/gearbox - couch lifting arms & jacks - fabric suction box assembly and lifting motor/gearbox	2020	bellmer	rubber 200 p&j with 22312 cck/w33/c3 & 22209e/w33/c3 rubber 0-2 p&j with 22312 cck/w33/c3 & 22209e/w33/c3 rubber versatec 10 +3p&j with 23984 cck/w33/c3 & 23236/w33/c3 & 24028 cc/w33-c3 & 30208 diameter. rubber 15 +3 pkt n. p&j with 22224ek/w33/c3 rubber 0-2 p&j with 22312 cck/w33/c3 & 22209e/w33/c3 rubber 0-2 p&j with 22312 cck/w33/c3 &	

			<ul style="list-style-type: none"> <li>- fabric guider and bellows</li> <li>- wire dst doctor roll</li> <li>- wire dst doctor oscillator roll</li> <li>- wire roll wash spray</li> <li>- wire roll wash spray valve</li> <li>- edge trim jets and knock off shower sprays</li> <li>- cross cutter</li> <li>- sheet knock off shower spray and valve</li> <li>- fabric tenstion motor/gearbox</li> <li>- fabric tention system</li> <li>- fabric tention reader</li> <li>- fabric oscillating spray bar</li> <li>- fabric drive roll shower bar</li> <li>- fabric drive roll edge shower bars</li> <li>-fabric drive roll loading motor/gearbox</li> <li>- fabric drive roll loading jacks</li> <li>- fabric air feed-up system</li> </ul>			<p>22209e/w33/c3  rubber nbr-70-sha  rubber 0-2 pktn. p&amp;j with  22312 cck/w33/c3 &amp;  22209e/w33/c3</p>	
159	press section	rolls	<p>includes;</p> <ul style="list-style-type: none"> <li>- suction roll: 860 diameter</li> <li>- top felt bow roll: 160 diameter</li> <li>- x 2 top felt roll: 240 diameter</li> <li>- top felt guide roll: 240 diameter</li> <li>- top felt stretch roll: 240 diameter.</li> <li>- first press roll: 570 diameter</li> <li>- x 4 bottom felt roll: 240 diameter</li> <li>- bottom felt guide roll: 240 diameter</li> <li>- bottom felt stretch roll: 240 diameter</li> <li>- bottom felt bow roll: 160 diameter</li> </ul>	2020	bellmer	<p>quantum poly 10 +3p&amp;j  with 23984 cck/w33/c3 &amp;  22336/w33/c3 &amp; 24028  cc/w33-c3 &amp; 30208  2343 + hard chrome  0,050  rubber 0-2 pktn. p&amp;j  with 22312 cck/w33/c3 &amp;  22209e/w33/c3  rubber 0-2 pktn. p&amp;j  with 22312 cck/w33/c3 &amp;  22209e/w33/c3  rubber 0-2 pktn. p&amp;j  with 22312 cck/w33/c3 &amp;  22209e/w33/c3</p>	

- second press roll: 600 diameter  
- hold down roll: 101 diameter.  
- driven bow roll: 150 diameter  
- x 2 driven lead roll: 240 diameter

rubber 20zp1, 94+3  
20+3 pkt n. p&j with  
23236 cck/w33/c3  
rubber 0-2 pktn. p&j  
with 22312 cck/w33/c3 &  
22209e/w33/c3  
rubber 0-2 pktn. p&j  
with 22312 cck/w33/c3 &  
22209e/w33/c3  
rubber 0-2 pktn. p&j  
with 22312 cck/w33/c3 &  
22209e/w33/c3  
2343 + hard chrome  
0,050  
keramik storoc stowe  
with 23236 cck/w33/c3  
  
rubber nbr 65 sha  
with 22312 cck/w33/c3 &  
22209e/w33/c3



160	press section	pumps	includes; - low pressure shower pump - low pressure shower pump pressure transmitter - hp shower pump - hp shower pump filters - hp shower pump pressure transmitter - chemical cleaning rig - wet end pressure washer pump	1983	serlachius endress & hauser lowar albany endress & hauser endress & hauser	de 80-50-200 pmp23 0-10bar sv5508f450t serial no:- 102704231 2000 vhp showers complete basket assembly with 150 micron pmp23 0-10bar	
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161	press section	press section	<p>includes;</p> <ul style="list-style-type: none"> <li>- framework</li> <li>- platforms</li> <li>- air paper feed system</li> <li>- top press felt stretch gear motor/gearbox</li> <li>- top press felt tension reader</li> <li>- top press felt stretch gear</li> <li>- x 2 felt roll doctor</li> <li>- x 2 felt roll doctor oscillator</li> <li>- x 2 press felt guiders</li>   <li>- top press felt guider bellows</li> <li>- top felt hp cleaning shower valve</li> <li>- top felt hp cleaning oscillating spray bar</li> <li>- top felt hp cleaning oscillating spray oscillator</li> <li>- top felt lubrication &amp; wash valve</li> <li>- top felt wash spray bar</li> <li>- top felt roll lubrication shower</li> <li>- top felt chemical cleaning shower</li> <li>- press roll lube valve</li> <li>- x 2 press roll loading bellows</li> <li>- x 2 press roll loading</li> <li>- press roll doctor air oscillator</li> <li>- press doctor shower</li> <li>- bottom felt guider controller</li> <li>- bottom felt stretch gear motor/gearbox</li> <li>- bottom felt stretch gear</li> <li>- bottom felt stretch gear reader</li> <li>- bottom felt hp cleaning shower valve</li> <li>- bottom felt oscillating spray bar</li> <li>- bottom felt oscillating spray bar oscillator</li> <li>- bottom felt lubrication shower &amp; wash valve</li> </ul>	1983	<p>thune</p> <p>albany worcester</p> <p>worcester</p>	<p>guider controller complete with chrome plated palm (sigurd sorum) drawing a4/6762b.kantkontroller s6-c7s-2v/888</p> <p>emo iii spray oscillator ball valve</p> <p>ball valve</p>	 
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- bottom felt wash spray bar  
- saveall tray and heater pump



162	couch pit	couch pit	includes; - pit - agitator - x 2 pump - outlet pressure transmitter - level transmitter - return flow transmitter - deluge shower flow transmitter - consistency control transmitter - consistency control valve - level control valve - drain valve - pump isolation valve - pump flush valve		portals sulzer endress & hauser rosemount abb abbvalmet mca metso metso metso metso stafsjo or lohse stafsjo or lohse stafsjo or lohse	stainless steel slf-80 serial no - 100212975 pmp23 0-2bar 3051lt2 0-165mbar fet321 80mm fet321 50mm segment/v 25mm segment/v 50mm segment/v 50mm slide valve with pneumatic operating cylinder slide valve with pneumatic operating cylinder slide valve with pneumatic operating cylinder	
163		vacuum system	includes; - vacuum seal water booster pump - vacuum pump sealwater pressure transmitter - crystal water softener system - vacuum water tank - mould vacuum fan - mould vacuum sperator - mould vacuum ducting - mould vacuum break - mould vacuum control - mould vacuum transmitter		endress & hauser	pmp23 0-2bar  stainless steel hatemat tank stainless steel airco cbl-511-609 serial no:-5300239-001	

164	vat suction slice	vat suction slice fan	includes; - suction slice fan - suction slice Seperator - suction slice - suction slice vacuum transmitter - suction slice fan spray water valve		woodcock & wilson nash  endress & hauser	30kw 3000rpm 66m3/hr 6931/5 -1-0 bar  cerabar pmp23 -1-0bar	
165	Vacuum System	Suction Vacuum System	includes; - suction roll z1 & 3 Seperator - suction roll z1 & 3 vacuum pump - suction roll z1 & 3 vacuum pump seal water valve - suction roll z1 & 3 Seperator pump - suction roll z1 & 3 vacuum transmitter - suction roll z2 Seperator - suction roll z2 vacuum pump - suction roll z2 vacuum pump seal water valve - suction roll z2 Seperator pump - press suction roll air bleed valve - press suction roll vacuum isolation valve - suction roll z1 & 3 post Seperators - suction roll z2 post Seperators - suction roll z2 vacuum transmitter	2019	Nash Nash  Nash Endress & Hauser Nash Nash  Nash  Nash Nash Endress & Hauser	STAINLESS STEEL T1316 904 M2/4 Serial No:- BS190584  1" KROGH Cerabar PMP23 -1-0bar STAINLESS STEEL T1317 4530200AK100 Serial No:- BS1901139001  1" KROGH  STAINLESS STEEL STAINLESS STEEL Cerabar PMP23 -1-0bar	

							
166	Vacuum System	Felt Vacuum System	includes; - felt conditioning boxes vacuum pump - top felt conditioning box vacuum transmitter - bottom felt conditioning box vacuum transmitter - top felt condition box Seperator pump - bottom felt condition box Seperator pump - top felt condition box Seperator - bottom felt condition box Seperator - felt condition box post Separators - top felt condition box no1 & 2 - bottom felt felt condition box no1 & 2 - top/bottom felt conditioning box vacuum pump spray water valve	2019	Nash Endress & Hauser  Scan Pump Scan Pump Nash Nash Nash Bellmer Bellmer Bellmer	cl2001 pmp23 -1-0bar  nb 65/40-26 serial no:- 7614 8803-10 nb 65/40-26 serial no:- 7614 8803-11 stainless steel stainless steel stainless steel stainless steel stainless steel	

							
167	Vacuum System	Pre-Suction Roll Vacuum System	includes - pre suction roll vacuum pump - pre suction roll vacuum pump seal water valve - pre suction roll vacuum separator tank - pre suction roll separator pump - pre suction roll vacuum pump post separator - pre suction roll vacuum transmitter	2019	Nash Nash Nash Endress & Hauser Nash Nash	cl2002 45302002ak100 serial no:-bs1901140001 stainless steel t1312 1" krogh pmp23 -1-0bar stainless steel t1318 cl1001 45201001ak400 serial no:-bs1901135001	
168	Vacuum System	Pre-Former Vacuum System	includes - pre former inverted vacuum box separator - pre former inverted vacuum box vacuum pump - pre former inverted vacuum box vacuum pump seal water valve - pre former inverted vacuum box separator pump - pre former inverted vacuum box post separator - pre former inverted vacuum box - pre former inverted vacuum box transmitter	2019	Nash  Nash Nash Bellmer Endress & Hauser	3" KROGH   PMP23 -1-0bar	

169	Former inverted vacuum box		<p>Includes;</p> <ul style="list-style-type: none"> <li>- former inverted vacuum box no1 separator</li> <li>- former inverted vacuum box no1 vacuum pump</li> <li>- former inverted vacuum box no1 transmitter</li> <li>- former inverted vacuum box no1</li> <li>- former inverted vacuum box no1 Separator pump</li> <li>- former inverted vacuum box no1 post Separator</li> <li>- former inverted vacuum box no1 seal water</li> <li>- former inverted vacuum box no2 fan</li> <li>- former inverted vacuum box no2 Separator</li> <li>- former inverted vacuum box no2</li> <li>- former inverted vacuum box no2 transmitter</li> <li>- former inverted vacuum box no2 seal water</li> </ul>	2019	<p>nash nash</p> <p>bellmer nash</p> <p>woodcock &amp; wilson nash bellmer endress &amp; hauser</p>	<p>stainless steel t1311 cl401 serial no:-e13638</p> <p>stainless steel 3" krogh</p> <p>7.5kw 3000rpm 5m3/hr stainless steel ss bm6 stainless steel pmp23 -1-0bar</p>	 
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170	Drying Section	Dryer No 1 & No 2 Cylinders No 3 Cylinder No 4 Cylinder - No 14	Includes; - x 2 Cylinders: 1524mm Diameter ceramic coated - x 1 Cylinder: 1524mm Diameter ceramic coated - x 11 Cylinders: 1524mm Diameter - Drier Hood and Access Door - Drier FRAMEWORK - Drier Hood Heater Battery - Drier Hood Exhaust Fan - Drier Hood Make-up Fresh air Fan - x 2 Drier Section Sheehan Rope System - x 4 drying cylinder oscillating doctors - x 4 drying cylinder doctors - x 2 Drier Section Sheehan Rope System - Drier Control Desk - Steam Pressure Transmitter	1953	Ed Warburton	- skf spherical roller bearings 23044.cck.w33 with sleeve h.3044 with 2.5in johnson nozzle steam trunnion - skf spherical roller bearings 23044.cck.w33 with sleeve h.3044 with 2.5in johnson nozzle steam trunnion - skf spherical roller bearings 23044.cck.w33 with sleeve h.3044 with 2.5in johnson nozzle steam trunnion  sky comp .050in x 3in x 113in ref Id8826 & Id9780 (kf35a holder) electro mechanical gear motor unit with eccentric	

			<ul style="list-style-type: none"> <li>- Steam Pressure Control Valve</li> <li>- Steam Flow to Drier Transmitter</li> </ul>			<p>cam .37kw 900rpm' class h'flange mounted bcp or gec. 1.35amps ip54 peter rayner type g/box gm2t 0.37kw 13rpm d80ad</p>	
171	Drying Section	Dry Wire Rolls	<p>Includes;</p> <ul style="list-style-type: none"> <li>- x 11 STEEL Bottom Dry Wire Rolls: 8.0" DIA</li> <li>- x 3 STEEL Bottom Dry Wire Stretch Roll: 8.5" DIA</li> <li>- x 1 Steel Bottom DRY WIRE GUIDE ROLL: 8.0" DIA</li> <li>- x 11 STEEL Top Dry Wire Rolls: 8.0" DIA</li> <li>- x 1 STEEL Top Dry Wire Stretch Roll: 8.0" DIA</li> <li>- x 1 Steel Top DRY WIRE GUIDE ROLL: 8.0" DIA</li> <li>- x 9 STEEL Bottom Dry Wire Rolls: 8" DIA</li> <li>- x 1 STEEL Bottom Dry Wire Stretch Roll: 8.0" DIA</li> <li>- x 1 Steel Bottom DRY WIRE GUIDE ROLL: 8.0"</li> <li>- x 9 STEEL Top Dry Wire Rolls: 8".0 DIA</li> <li>- x 1 STEEL Top Dry Wire Stretch</li> </ul>	Unknown	Thune	<p>wire roll steel or glass epoxy cover with skf 6309/c3 &amp; nu2212 bearings with 70x85x8 oil seal</p> <p>kantkontroller s6-c7s-2v/888</p>	

			<p>Roll: 8.0"</p> <ul style="list-style-type: none"> <li>- x 1 Steel Top DRY WIRE GUIDE</li> </ul> <p>ROLL: 8.0"</p> <ul style="list-style-type: none"> <li>- x 1 Paper Lead Roll STEEL</li> <li>- x 2 Dry wire Section Bottom Guider</li> <li>- x 2 Dry wire section Top Guider</li> <li>- 1st Dy wire Transmitter</li> </ul>			
172	Drying Section	Condensate System	<p>includes;</p> <ul style="list-style-type: none"> <li>- condensate tank</li> <li>- condensate tank level</li> <li>- condensate tank level control valve</li> <li>- x 2 condensate pumps</li> <li>- condensate vacuum pump</li> <li>- condensate vacuum pump post Seperator</li> <li>- condensate pit sub pump</li> <li>- condensate horizontal calorifier</li> <li>- condensate horizontal calorifier temperture control</li> <li>- condensate horizontal calorifier temperture control valve</li> </ul>	Unknown	<p>steel tank</p> <p>Nab 40/32-20 Serial No:- 3614 8142-11</p>	

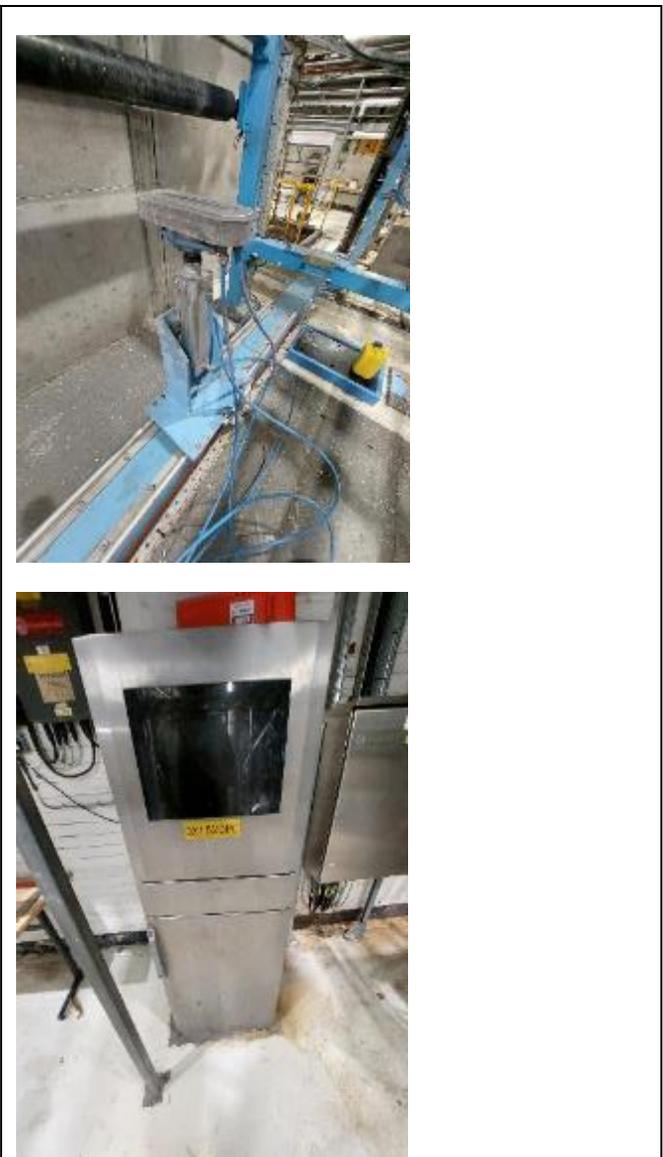
173	Drying Section	Drying Section Air Vent System	includes; - drying hood heater battery - drying hood heater battery steam control - drying hood heater battery steam control valve - drier hood exhaust fan - fresh air fan - fresh air fan ducting - fresh air fan intake filters - drier hood exhaust fan ducting - drier pocket vents & ducting	unknown	Fisher	1676mm x 1066mm x 300mm. test pressure 400 p.s.i carbon steel with aluminium fins bs 4504 table 10  757eb 1.5"  motor 22.0kw 1420rpm d180l foot motor 11.0kw(15hp) 1420rpm d160m	
174	Sizing	Size System	includes; - storage tank - agitator  - level transmitter - size storage tank level control valve - size storage tank level local indicator - size tank low level alarm switch - dilution water tank- cooper - dilution water temperature control - size bath jacket header tank - size dilution water tank header tank - size kitchen virtical water clarifier  - size kitchen horizontal calorifier  - size bath hot water pump - size bath hydraulic lift	various	Mono	stainless steel heated jacket f.g.m.1 geared propeller mixer/agitator no.105/g 0.75kw ip55 1440rpm vertical flange mounted 415v 3ph ser.no.23851 shaft 1.1/4in.diameter. s.s.x1730mm.long tube bundle for 2500 litre hot water calorifier tank drg.no. p.m. 015176 item19 heat transfer ser. no. hw34043.type/size sc2500l heat exchanger (complete) type-cf450(/)h ser no.hx 21330 pressure 150 p.s.i.  pump unit 1 hp complete	

			<ul style="list-style-type: none"> <li>- size bath</li> <li>- size circulating pump</li> <li>- size return pump</li> <li>- size bath temperature transmitter</li> <li>- size bath temperature control valve</li> <li>- size bath solids control loop dilution valve</li> <li>- refractometer cleaning pump</li> <li>- size circulating pump filters</li> <li>- size bath level transmitter</li> <li>- size bath level control valve</li> </ul>			<p>3ph 415v hydraulic power-pack part no 3120003 for lift type eu 20.16 (2000kg)</p> <p>sab12h1b5/h1 sab12h1b5/h1103</p> <p>filter element albany st.st 20 mesh</p>	
175	Sizing	Size Section Rolls	<p>Includes;</p> <ul style="list-style-type: none"> <li>- x 4 paper lead rolls</li> <li>- "s" wrap roll</li> <li>- whittler fixed bow roll</li> <li>- dip roll</li> <li>- top size press roll</li>   <li>- bottom size press roll</li>   <li>- size press spreader bar</li> </ul>	Unknown	Unknown	<p>156mm diameter steel with rhp pillow block mp40 rubber with skf 511-609 stainless steel 100mm diameter with skf 22209cck &amp; h309 sleeve 270mm diameter stainless steel with bearing 22209cckw64 (solid oil) micromate 2870mm x 460mm parallel at 0-5 p&amp;j with skf 22226ck w33 bearings rubber 2870mm x 460mm with 0.030" camber at 30-35 p&amp;j with skf 22226ck w33 bearings</p>	

176	Sizing	Size Control	<p>Includes;</p> <ul style="list-style-type: none"> <li>- Control Desk</li> <li>- Size Bath Platforms and Steps</li> <li>- Size Bath Guards</li> <li>- Size Press Loading Bellows</li> <li>- Size Press Roll Nip Bar</li> <li>- Size dip Roll Jacks</li> <li>- Size Bath Wash Down Hose</li> <li>- Size bath Hood Extract Fan</li> <li>- Size Press Oscillating Doctor</li> </ul>	Unknown	Unknown	<p>bellows airide firestone no.21c</p> <p>jack.duff norton.te2625-200-b</p> <p>fan type :- 800 bda (hd) heavy duty as serial no.:- 2080/0288-01</p> <p>doctor blade carbon fibre joh clouth with modified flat profile retaining washers end loading to fit kf3fa holder no. ld8973</p>	
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177	Paper Drying	Air Float Dryer	<p>includes;</p> <ul style="list-style-type: none"> <li>- air float dryer</li> <li>- a.f.d. control desk</li> <li>- a.f.d. lifting jack no 1 &amp; 2</li> <li>- a.f.d. exhaust fan</li> <li>- air float dryer exhaust fan control damper 1 &amp; 2</li> <li>- air float dryer steam flowmeter</li> <li>- a.f.d. zone fan no 1 &amp; 2</li>   <li>- x 2 heater battery</li> <li>- x 2 temp transmitter</li> <li>- x 2 temp control valve</li> <li>- x 2 top &amp; bottom pressure chambers</li> <li>- nozzles</li> <li>-top &amp; bottom control dampers</li> <li>- fife guider hydraulic power pack &amp; controls</li> <li>- fife guider carriage</li> <li>- x 2 web guider rolls</li> </ul>	1983	spooner drier	<p>28131 air heater battery.34000cfm, at 85c rise to 110c.steam 22psi test pressure 200 psig.size 119 5/8in. x 42 5/8in x 17ins.spooner</p> <p>fife hydraulic/pneumatic power pack p25 1f 22ta.model pr4-15</p> <p>erhardt &amp; leimer sr.20.steering roller assembly</p> <ul style="list-style-type: none"> <li>- 2 aluminium path rollers. - 200 diameter. with ina rae40 npp fa106 radiameterl insert ball bearing</li> </ul>	
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178	Calender Section	Calendering	<p>includes;</p> <ul style="list-style-type: none"> <li>- x 2 calender hydraulic pumps</li> <li>- oil tank</li> <li>- oil tank heater</li> <li>- x 3 whittler fixed bow roll</li> <li>- steel calender roll</li>   <li>- x 2 swimming calender roll</li> <li>- x 2 paper lead roll</li> <li>- steel calender roll</li>   <li>- 1st calender doctor</li> <li>- 1st doctor oscillator calender</li>   <li>- 2nd calender doctor</li> <li>- 2nd calender doctor oscillator</li>   <li>- calender section guards &amp; nip guards</li> <li>- calender control desk</li> <li>- 1st calender loading cylinders</li> <li>- 2nd calender loading cylinders</li> <li>- calender section framework</li> <li>- calender sheehan rope system</li> </ul>	Unknown	Various	<p>commercial hydraulic pump type :-302-9310.038 serial no:-06927099</p> <p>steel tank hunt &amp; moscrop</p> <p>grimwood n 3141 b 9kw 110 diameter hard chrome plated</p> <p>508 diameter.(calender)</p> <p>steel.with skf.spherical roller 22314.cck.w33. 405.diameter.(calender)</p> <p>150 diameter. steel</p> <p>508 diameter.(calender)</p> <p>steel.with skf.spherical roller 22314.cck.w33. kfa35a winterburn</p> <p>loading doctor epoflex 1.5mmx3"x111"</p> <p>electro mechanical gear motor unit with eccentric cam .37kw 900rpm'class h'flange mounted bcp or gec. 1.35amps ip54 peter rayner type g/box gm2t 0.37kw 13rpm d80ad</p> <p>kfa35a winterburn</p> <p>loading doctor epoflex 1.5mmx3"x111"</p> <p>electro mechanical gear motor unit with eccentric cam .37kw 900rpm'class h'flange mounted bcp or gec. 1.35amps ip54 peter rayner type g/box gm2t 0.37kw 13rpm d80ad</p>	
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179	web measuring and monitoring	porosity measurement system	porosity measurement system - measuring system incl. online measuring sensor and software application pc	approx 2010	Avatron Systems Oy	Micro Perm	
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180	web measuring and monitoring	security paper inspection system (spi)	Vision System for Thread monitoring bank not threads.	2020	Stemmer Imaging	Bespoke	
181	web measuring and monitoring	ink marker system	Ink Markers and mounting bars for marking paper webs	Unknown	Unknown	Unknown	

182	web measuring and monitoring	abb network platform	Network Platform Frame and Sensors Including Frame and Electronics Basis Weight Sensor Moisture Sensor Colour Sensor Optipak Sensor Caliper Sensor Ash Sensor	Upgraded 2020	abb	abb network platform frame and sensors	
183	web measuring and monitoring	thread gear assembly bme	System for the insertion of threads, both powered and unpowered. As well as monitoring for thread break and bobbin runout. Complete with Ink marking sytem. Including Drives and PLC with HMI.	2020	konia	bespoke	

184	web measuring and monitoring	d.r.u. abb control desk	Rittal Cabinet Enclosure for Dual Monitor Operator Workplace. Including 800xA workplace PC and managed Network Switch.	2020	abb	bespoke	
185	Paper Reel up	Drum Reel Up	<p>includes;</p> <ul style="list-style-type: none"> <li>- x 3 paper lead rolls</li> <li>- tension roll</li> <li>- whittler fixed bow roll</li> <li>- paper lead roll</li> <li>- whittler fixed bow roll</li> <li>- reel drum</li> </ul> <ul style="list-style-type: none"> <li>- mini bend bar</li> <li>- reel unloading system</li> <li>- drum reeler transfer carriage</li> <li>- splice knife &amp; catcher</li> <li>- drum reel up main carriage</li> <li>- drum reel up control desk</li> <li>- drum reel up framework</li> <li>- drum reel up platforms &amp; steps</li> <li>- tension roll control system</li> <li>- drum reel up sheehan rope system</li> <li>- drum reel up sheehan rope system tension system</li> <li>- core cutter &amp; extractor</li> </ul>	Unknown	warburton	<p>150 diameter steel. with bearing pillow block rhp mp40</p> <p>150 diameter steel. with bearing pillow block rhp mp40</p> <p>110 diameter. steel.</p> <p>240 diameter steel</p> <p>130 diameter. steel.</p> <p>24" diameter steel with skf.plummer block.sna.517.ta.22217.ck .+h317 free skf.plummer block.sna.517.ta.22217.ck .+h317.+ frb. 12.5150. 2 rings.fixed tidland mini bend bar cylinder.pneumatic rodless.origa</p>	

						parkland tc20 tube cutting machine 9813	
186	silk system	Silk System	Includes; - x 2 Pumps - x 2 Silk Tanks - x 2 Silk Tank Agitators - Silk Band Headbox - MCC for Silks Pumps/Agitators	2013	Peristatic  JOSHUA GREAVES	peristaltic pump spx40 440.1203.k28.  joshua greaves fgm 1	
187	chemical dosing	OPTILUX SUPPLY	Includes; - Pump - Flow Transmitter - Control Valve - Pump local Starter	Various	Various	Includes; - Pump - Flow Transmitter - Control Valve - Pump local Starter	
188	Item removed						

189	security feature supply and storage	M-Feature System	Includes: - Mixing Tank - Mixing Tank Agitator - Holding Tank - Holding Tank Agitator - Pump - Control system	1996	lightnin  lightnin mono	lightnin lq 75  lightnin lq 75 cac12h1r3/h1138	
190	dcs/controls	Controls	ABB 800xA DCS Control Panels. (4 off)	2020	ABB	800xA System V6.0 AC800M Processors S800 IO Modules.	
191	hoists & lifting gear	wet end crane (om178)	Includes; - Wet End Crane - Drum Reel Up Crane	Unknown	Unknown	Unknown	

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192	sectional drive system	abb multi-drive system and associate motors and indrives	<p>multidrive sectional drive system</p> <p>nominal running speed from 45 m/min to 100 m/min</p> <p>400v ip54 system with abb acs880 drives</p> <p>supply section</p> <p>abb m3bp 160 mlc 4 11.9kw 1395rpm with acs880-107-0044a-3</p> <p>abb m3bp 160 mla 4 5kw 1776rpm with acs880-107-0018a-3</p> <p>abb m3bp 160 mlc 4 13kw 1700rpm with acs880-107-0044a-3</p> <p>abb m3bp 180 mlb 4 17kw 1712rpm with acs880-107-0044a-3</p> <p>abb m3bp 180 mlb 4 16kw 1722rpm with acs880-107-0044a-3</p> <p>abb m3bp 160 mlc 4 15kw 1813rpm with acs880-107-0044a-3</p> <p>gear motor by bellmer 2kw with acs880-107-008a0-3</p> <p>abb m3bp 160 mlb 4 7.7kw 1549rpm with acs880-107-0025a-3</p> <p>flender gearbox helical foot mounted z250a ratio 18.22:1 no.488 805 b</p> <p>abb m3bp 160 mlb 4 7.7kw 1549rpm with acs880-107-0025a-3</p> <p>flender gearbox helical foot mounted z250a ratio 18.22:1 no.488 803 b</p> <p>abb m3bp 160 mlb 4 7.7kw 1549rpm with acs880-107-0025a-3</p> <p>flender gearbox helical foot mounted d250a ratio 23.036:1</p> <p>abb m3bp 180 mlb 4 13.3kw 1443rpm with acs880-107-0044a-3</p> <p>flender gearbox helical foot mounted d250a ratio 23.036:1</p>	2020	ABB	Bespoke	
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			<p>abb m3bp 180 mlb 4 13.3kw 1443rpm with acs880-107-0044a-3 flender gearbox helical foot mounted d250a ratio 23.036:1</p> <p>abb m3bp 160 mlb 4 11kw 1202rpm with acs880-107-0025a-3 flender gearbox helical foot mounted d250a ratio 23.036:1</p> <p>abb m3bp 280 smc 4 41.3kw 1500rpm with acs880-107</p> <p>abb m3bp 280 smc 4 41.3kw 1500rpm with acs880-107</p> <p>abb m3bp 355 sma 4 200kw 1500rpm with acs880-107</p> <p>abb m3bp 280 smc 6 55kw 1000rpm with acs880-107</p> <p>sectional drive control panel containing</p> <ul style="list-style-type: none"> <li>- ac800m processor and localised s800 io</li> <li>- ac500 safet plc and localised io</li> <li>- jogging pendants</li> <li>- process panels for local drive control</li> </ul>				
193	MCC1 sub1640	Motor Control Centre	<p>Motor Control Centre for Pumps, Fans, Agitators and Supply Distribution Consisting of 2000A 415Vac Supply Section</p>	unknow n	GEC	Bespoke	

194	MCC130 sub1652	mcc130	Motor Control Centre for Pumps, Fans, Agitators and Supply Distribution Consisting of 2000A 415Vac Supply Section VSDs ABB ACS880 DOL Starters ABB UMC100	2020	Halcyon Drives	Bespoke	 The image contains two photographs of a motor control center (MCC). The top photograph shows a long row of white electrical cabinets with various components like switches, meters, and control panels. The bottom photograph shows a similar view from a different angle, highlighting the depth of the cabinets and the organized layout of the equipment.
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# PM2



## History

PM2 was built in 1988 and Upgraded in 2000 with combination press section and 3rd nip.

The machine is capable to manufacture paper from 70 GSM to 110GSM double-ply and 100GSM single ply paper at speed range of 20m/min to 100m/min.

## Brief Technical Overview

PM2 is a two-ply Cylinder mould vat machine with an adjustable (expanding/contracting) VAT and a Former. Former ply is equipped with suction box transfer and Cross directional dilution system. Machine output is cc24T/day with a max Main flow of 12000l/min

Drives are located on the left side of the machine. The soleplate distance is 3430mm.

Forming fabric suction roll, pneumatic tensioner, and guider.

3 roll combination vacuum press section with top and bottom felt. Pm2 has additional 3rd plain nip press with top felt acting as a smoothing press.

Main drier bank 14 cylinders in 2 separate in drive sections with cog driven Cylinders. Drying section is equipped with an auto lube system.

Size press and bath with double storage tank dump system. Space under each dump tank is for 1 IBC with built in scale system.

Spooner air float driers linked to moisture controls with top and bottom side adjustments. Current typical Moisture range is 4-7%.

Paper guider into 2 soft nip calendar section.

Abb gauge

Drum Reeler 1.3M with a max weight of 3T. Built in scale at the end of the line.

Sheehan rope feed from main drier to Drum Reeler with automated Ink marking system.

**KEY**

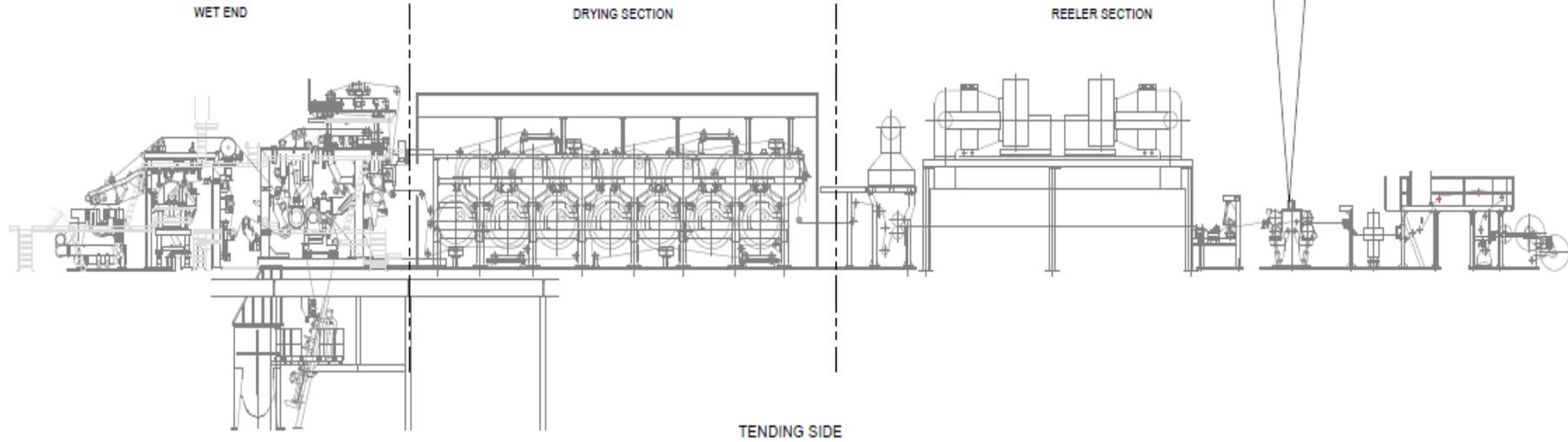
- GUARDING INSTALLED PARALLEL TO MACHINE CENTRELINE
- GUARDING INSTALLED IN/ON MACHINE FRAME
- GUARDING INSTALLED PERPENDICULAR TO MACHINE CENTRELINE OR ACROSS MACHINE
- GUARDING INSTALLED OVER DRIVE COUPLERS

**GUARD NUMBERING KEY**

- GUARD No.
- PAPER MACHINE No.
- PAPER MACHINE SECTION
- WE = WET END
- DS = DRYING SECTION
- RE = REELER SECTION

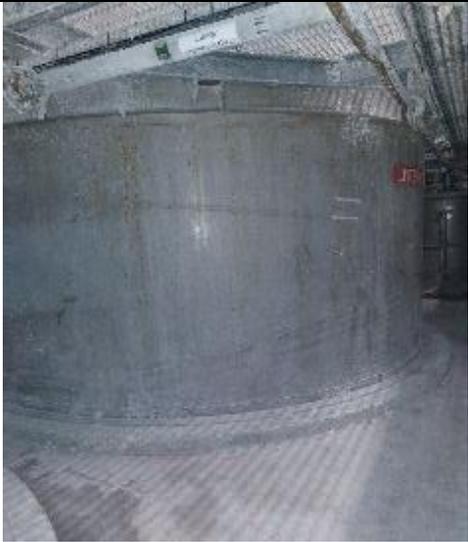
REV	DESCRIPTION	DATE	BY
1	REVISED	04/03/09	...
2	...	04/03/09	...
3	...	04/03/09	...

LAST No.'s USED	DATE
WE2083	25/06/09
DS2120	25/06/09
RE2042	20/03/09



ID	Section	Assets	Description	Year	Supplier	Model	Photo
195	lubrication system	oil lubrication system	includes - bearing oil distribution pump - oil tank - pump - control console	1988	Centralube	Centralube dp60 Centralube 30uk	
196	lubrication system	grease lubrication system	includes - 3 x grease lube pumps: 1= delimon, 2=delimon, 3= delimon - 3 x control system - 2 x pressure switch	2008	Denco	Denco bmb01a02oc00	

197	Vat stock approach	Cotton/cumber chest	includes - tank - agitator: 30kw motor, v-belt drive - pump:3kw motor - isolation valve - consistency regulator - consistency control valve - flow control valve	1988	tank - portals pump - scan pump agitator - Lightnin	tank - stainless steel 4250 dia x 3150 pump - ba 150/80-26 agitator - 2vs-40 Lightnin agitator	
198	Vat stock approach	linter chest	includes - tank - agitator: 30kw motor, v-belt drive - pump: 3kw motor - isolation valve - consistency regulator - consistency control valve - flow control valve	1988	tank - portals pump - scan pump agitator - Lightnin	tank - stainless steel 4250 dia x 3150 pump - ba 150/80-26 agitator -	

							
199	vat stock approach	buffer chest	includes - tank - agitator: 4kw motor, v-belt drive - level control	1988	tank - portals agitator - Lightnin	tank - stainless steel 4250 dia x 3150 agitator -	

200	vat stock approach	blend chest	includes - tank - agitator: 18.5kw motor, v-belt drive - pump: 5.5kw motor - isolation valve - flow control valve - level control	1988	tank - portals pump - scan pump agitator - Lightnin	tank - stainless steel 4250 dia x 3150 pump - ba 150/80-26 agitator - 2vs-25	
201	vat stock approach	Water Dilution	Dilution pump	1988	scan pump	nb 150/125-32	

202	vat stock approach	Vat cleaner pumps	includes - x 4 vat cleaner pumps - cleaner assemblies	1988	4 x scan pump	1 x nb 150/125-40, 1 x nb 150/125-32, 1 x nb 125/100-40 & 1 x nb 100/80-32	
203	vat stock approach	vat screens	includes -x 2 primary screens - x1 secondary screen - x 1 tertiary screen - x 1 tertiary screen pump - x 1 tertiary screen tank and level control	1988	finckh " " scan pump portals	vertical screen model k80l with 0.3mm screen vertical screen model k42l with 0.3mm screen vertical screen model h 04 with 0.3mm screen fb 80/80-26	

							
204	vat stock approach	vat pump	includes - pump	1988	scan pump	ba 250/250-32	

205	vat stock approach	stock dilution water tank	includes - water tank and level control - pump	1988	tank: pump: scan pump	tank: pump: nb 100/65-20	
206	vat stock approach	excess backwater tank	includes - water tank - pump	1988	tank: pump: scan pump	tank: pump: nb 100/80-32	
207	vat stock approach	flushing pumps	includes x 2 pumps	1988	scan pumps	nb 80/50-26	

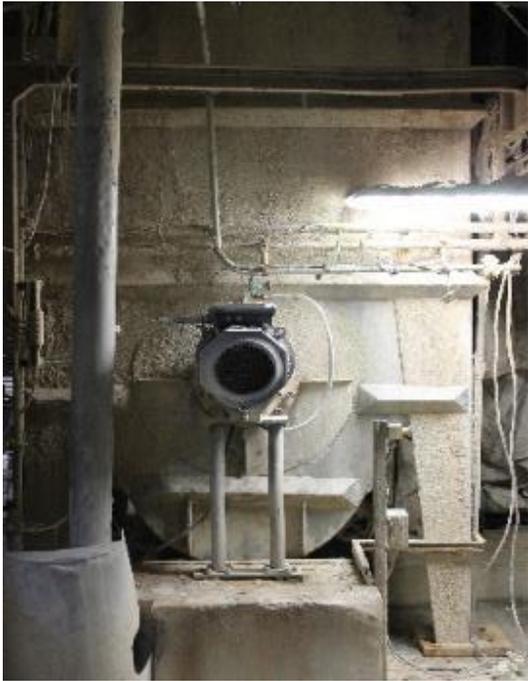
208	vat stock approach	vat headbox	includes: - vat headbox - headbox level control	1988	e.d. warburton/ portals	
209	vat stock approach	vat silo	includes - vat silo level control - vat silo	1988	e.d. warburton/ portals	

210	refining	refiner system	includes <ul style="list-style-type: none"> <li>- sunds refiner</li> <li>- drive motor</li> <li>- trim motor</li> <li>- gearbox</li> <li>- flow control valve</li> <li>- x 2 cooling fans</li> </ul>	1988	sunds	jc01	
211	vat stock approach	vat	includes <ul style="list-style-type: none"> <li>- flexible vat hydraulic pump &amp; system</li> <li>- flexible vat</li> <li>- vat control desk</li> <li>- vat controls</li> <li>- evener roll</li> <li>- mould spray kadant emo iii</li> <li>- vat curtain</li> <li>- vat level control</li> <li>- vat main flow control</li> <li>- vat main flow return control</li> </ul>	1988	parker peter brotherhood/portals	pv046r1 kiii n pws	

212	former stock appr	former approach	includes <ul style="list-style-type: none"> <li>- former vat pump</li> <li>- former dilution pump</li> <li>- former 1st stage primary cleaner pump</li> <li>- former 1st stage secondary cleaner pump</li> <li>- former 2nd stage cleaner pump</li> <li>- former secondary screen pump</li> <li>- former profile dilution pump</li> <li>- former secondary screen</li> <li>- former cleaner assembly</li> <li>- former primary accepts level control</li> <li>- former primary rejects level control</li> <li>- former primary screen control</li> <li>- former secondary screen control</li> <li>- former silo</li> <li>- former secondary screen tank</li> <li>- former silo level control</li> <li>- former headbox level control</li> <li>- former thick stock flow control - actuator</li> </ul>	1988	scan pump " " " " " sulzer finckh "	nb 150/125-26 nb 100/80-32 nb 125/100-40 nb 125/100-32 nb 100/80-32 fb 80/80-26 app 33-100 vertical screen model k60l with 0.25mm vertical screen model h 04 with 0.25mm	
213	former	former	includes: <ul style="list-style-type: none"> <li>- former cylinder</li> <li>- former sprays:</li> <li>- former controls</li> <li>- former main flow return control</li> <li>- former lip</li> <li>- former dilution control</li> </ul>	1989	peter brotherhood thermo fibertek u.k. ltd.  tasowheel systems oy	emo iii  lda2010	

214	fabric section	fabric section	<p>includes</p> <ul style="list-style-type: none"> <li>- couch lifting winch</li> <li>- couch roll: 400mm dia tannite 200 p &amp; j</li> <li>- x 4 fabric roll: 303mm dia black diamond 0 -1 p &amp; j</li> <li>- fabric/formax suction roll:</li> <li>- fabric drive roll: 465mm dia fabmate 15 p &amp; j</li> <li>- fabric stretch roll: 303mm dia black diamond 0 -1 p &amp; j</li> <li>- fabric guide roll: 303mm dia black diamond 0 -1 p &amp; j</li> <li>- fabric bow roll: 150mm dia rubber sleeve</li> <li>- x 3 pitting rolls: 177.8mm dia fabmate 10 - 15 p &amp; j</li> <li>- fabric releif roll: 177.8mm dia fabmate 10 - 15 p &amp; j</li> <li>- formax/fabric guider: guider thune type:-175/250-80.bore with chrome plated palm (spade) (ref:58v100) c/w rod (ref:56v102) for thune formex guider controller</li> <li>- formax/fabric tension control system</li> <li>- edge trim jets</li> <li>- cross cutter - tail jet with deckle adjusters</li> <li>- x 3 fabric roll doctors</li> <li>- x 2 formax/fabric sprays</li> </ul>	1988	<p>flender e.d. warburton</p> <p>thune</p> <p>e.d. warburton</p> <p>the reiss engineering co. ltd. winterburn thermo fibertek u.k. ltd.</p>	<p>ccua 250 ratio 66.79:1 bearing skf 22312 ekc3, sleeve skf ahx 2312, bearing skf 22209e, locknut km11, tabwasher mb11 &amp; withdraw nut km13</p> <p>guider thune type:-175/250- 80.bore</p> <p>sp0466-0 (91029a) kf35a 1.5mmx3x116" emo iii</p>	
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					fibertek u.k. ltd.	t 45kw sv 3003f55 thune guider c.i. 125/170-80 (special) spherical bore 175mm dia with controller complete with chrome plated palm  shcp2380 shcp2383 shcp2388	
216	hog pit	waste paper collection	includes: - pit - pit agitator - pit pump - pit consistency control - pit shower - pit level control - pit deluge flow control - pit flow control	1988 2018	sulzer scan pump	slf100 fb 80/80-26	

217	vacuum section	fabric suction roll vacuum pump	includes: - fabric suction roll vacuum pump - top & bottom felt vacuum box pump - bottom felt vacuum box preseparator pump - pick-up & holding zone vacuum pump - 2nd press zone vacuum pump. - 2nd press zone preseparator pump - 3rd press felt vacuum pump - former no 1 inverted vacuum box pump - former no 2 inverted vacuum box fan - fabric inverted vacuum box fan - mould vacuum fan - former mould vacuum fan - suction slice vacuum fan - pick-up zone preseparator pump - holding zone preseparator pump - suction slice - x 3 fabric inverted vacuum box - x 5 felt vacuum box - x 2 vacuum seal pumps, with level control - vacuum separator tank pump - x 2 vacuum seal water pit with level control and pumps	1988	nash nash nash nash nash nash nash nash nash nash stockbridge airco fan type.cblm65 0 fan no.w9569-1 nash nash woodcock & wilson w9569-2 scan pump	cl2002 cl3002 krogh 1.25" 904m2 cl3002 krogh 1.25" sc7 cl401 motor 11kw da160ma cblm 650 30kw 2950rpm krogh 1.25" krogh 1.25" 30kw 2940rpm nb 150/125-26	
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218	drier section	dryer no 1 & 2 cylinders no 3 & 4 cylinders no 5 cylinder no 6 - no 14 cylinders	includes - drier hood and access door - drier framework - x 2 cylinders: 1523.4mm dia x 2870mm/3454mm teflon - x 2 cylinders: 1523.6mm dia x 2870mm/3454mm - x 1 cylinder: 1523.7mm dia x 2870mm/3454mm - x 9 cylinders: 1523.8mm dia x 2870mm/3454mm - steam control loop - drier hood heater battery - drier hood exhaust fan - drier hood make-up fresh air fan - x 2 drier section sheehan rope system - x 3 drying cylinder oscillating doctors - x 9 drying cylinder doctors	installed 1988 but cylinders built in 1953	winterburn "	skf 23044.cck.w33. c4.+h.3044 with steam trunnion nozzle complete. johnson 2.5in- 3600 sbpq  kf35a 0.05x3x113" "	
219	drier section	dry wire rolls	includes - x 10 steel bottom dry wire rolls: 8.5" dia x 3430/3125mm - x 3 steel bottom dry wire stretch roll: 8.5" dia x 3430/3125mm - x 1 steel bottom dry wire guide roll: 8.5" dia x 3430/3125mm - x 12 steel top dry wire rolls: 8.5" dia x 3430/3125mm - x 1 steel top dry wire stretch roll: 8.5" dia x 3430/3125mm - x 1 steel top dry wire guide roll: 8.5" dia x 3430/3125mm - x 9 steel bottom dry wire rolls: 8" dia x 3430/3125mm - x 1 steel bottom dry wire stretch roll: 8.5" dia x 3430/3125mm - x 1 steel bottom dry wire guide roll: 8.5" dia x 3430/3125mm - x 4 steel top dry wire rolls: 8".5 dia x 3430/3125mm - x 1 steel top dry wire stretch roll: 8.5" dia x	1988	e.d. warburton	skf 22311.cck ahx.2311 v ring seal v70s withdraw nut km12	

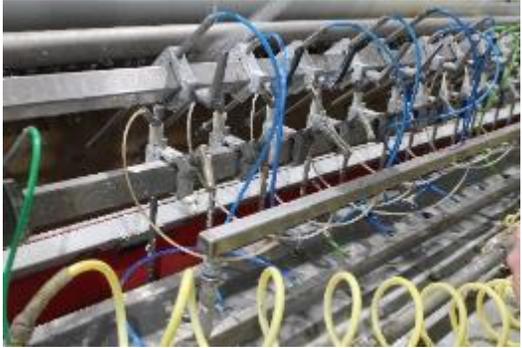
			<p>3430/3125mm</p> <ul style="list-style-type: none"> <li>- x 1 steel top dry wire guide roll: 8.5" dia x 3430/3125mm</li> <li>- x 1 paper lead roll steel + teflon sleeve: 203.22mm x3950/3350mm</li> <li>- x 2 dry wire section bottom guider</li> <li>- x 2 dry wire section top guider</li> </ul>				
220	drier section	condensate	<p>includes:</p> <ul style="list-style-type: none"> <li>- x 2 pumps</li> <li>- condensate vacuum pump</li> <li>- condensate level control</li> <li>- vertical condensate vessel</li> <li>- condensate horizontal heat exchanger</li> </ul>	1988	scan pump	nb 50/32-26	

221	sizing section	size storage tank	<p>includes</p> <ul style="list-style-type: none"> <li>- storage tank</li> <li>- tank agitator</li> <li>- return pump</li> <li>- x 2 circulating pumps</li> <li>- size bath hot water pump</li> <li>- size bath lifting table</li> <li>- size bath</li> <li>- control desk</li> <li>- doctor shower pump</li> <li>- temperature control</li> <li>- density control: microprocessor refractometer with colour display</li> <li>- in-line refractometer</li> </ul> <p>horizontal calorifier</p> <ul style="list-style-type: none"> <li>- size bath hood extraction</li> <li>- oscillating doctor</li> <li>- x 2 lead rolls: chrome plate on copper + teflon sleeve 152mm dia x 3050/3620mm</li> <li>- top "s" wrap roll: alum 285mm dia x 2790/3610mm</li> <li>- whittler fixed bow roll: chrome 100mm dia</li> <li>- dip roll: 254.7mm dia stainless steel</li> <li>- top size press roll: microrok 0-1 prj 460mm dia x 2870/3850</li> </ul> <p>- bottom size press roll: micromatt 20-25 prj 460mm dia x 2870/405</p>	1988	<p>mono mono</p> <p>grundfos</p> <p>electron machine co</p> <p>winterburn</p>	<p>sac12h1b5/h1 sac12h1b5/h1</p> <p>cr2-130</p> <p>mpr e-scan eos</p> <p>800 bda kf35a rhp allow block mp40</p> <p>skf 511-609 12209 cck with h316</p> <p>bearing 22209cckw64 (solid oil) skf 22226 cck and skf 3126 km25 locknut mb25 tab washer</p>	
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222	air float dryer	paper drying	includes: - x 2 cooling fans - x 2 heater batteries - x 2 air make-up pre-heater batteries - x 2 temperature control - exhaust fan - canopy - lifting system - web fife guider - x 2 web guider roll	1988	erhardt & leimer sr.20.steerin g roller assy. aluminium path roller 2000 dia.	ccua 250 cavex  ina rae 40 npp fa106	
223	calender	calender hydraulics	includes - x 3 pumps - x 2 calendar roll doctors - tank and oil heater - sheehan rope system - control desk - x 2 whittler fixed bow roll - swimming calender roll - x 2 calender steel roll	1988	pemco winterburn  whittler hunt & moscrop drive roll hunt & moscrop drive roll	p1500-b096- axza07-1sp- sp12-1 kf35a 1.5mmx3x111"  110 diameter 508 diameter skf.spherical roller 22314.cck.w33	

224	dry paper monitoring systems	measuring	<p>includes</p> <ul style="list-style-type: none"> <li>- abb quality control system - operator qcs workstation</li> <li>- abb quality control system - aspect server</li> <li>- abb quality control system - frame &amp; scanning gauge</li> <li>- abb quality control system - frame &amp; sensors - blower fan &amp; water softener system</li> <li>- abb quality control system - frame &amp; sensors - basis weight sensor</li> <li>- abb quality control system - frame &amp; sensors - calliper sensor</li> <li>- abb quality control system - frame &amp; sensors - colour sensor</li> <li>- abb quality control system - frame &amp; sensors - moisture sensor</li> <li>- abb quality control system - frame &amp; sensors - ash sensor</li> <li>- abb quality control system - frame &amp; sensors - optipak sensor</li> <li>-abb quality control system - qcs - controller</li> <li>-abb quality control system - cd weight (dilution) - controller</li> <li>-abb quality control system - cd weight (dilution) – io</li> </ul>	various years	abb	<p>system 800xa ver. 2.1 qcs system 800xa ver. +5.1 smart platform 1200</p> <p>stlp3 gt4230 cl4250 hemi + stlxr3 - 2c {unknown} ac450 ac800m s800 series io modules</p>	
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225	dry paper monitoring systems	measuring	porosity measurement system - measuring system incl. online measuring sensor and software application pc	approx 2010	avatron systems oy	micro perm	
226	dry paper monitoring systems	measuring	<p>thread gear assembly (bme) incl. thread bar assbly for unpowered bobbins and control panel. integrates to the sahm powered thread unwind system.</p> <p>the primary functions of the bme system are to:</p> <ul style="list-style-type: none"> <li>a) monitor the insertion of security threads into banknote paper.</li> <li>b) mark with ink any web on a reel of paper where thread is not being inserted while paper production is in progress.</li> <li>c) log the length of paper with missing thread by thread, web and reel for each part of each job.</li> <li>d) produce reports of missing thread by job, part, reel, web and thread.</li> </ul> <p>the bme system can only detect thread break and thread run out situations. It cannot detect if thread is being inserted the correct way round or not.</p>	2005	siemens automation solutions & portals	{bespoke}	

							
227	dry paper monitoring systems	measuring	<p>Powered bobbin unwind unit yarn tensioned - 2 way control unit</p> <p>The bitensor is a yarn tension controlled unrolling unit which keeps the tension of the unrolling material constant for 36 off bobbins.</p> <p>including inverters and control panel.</p>	2005	sahm	bitensor	

228	dry paper monitoring systems	measuring	<p>isis system vision system for inspection of security threads in a given area and inspection for correct orientation.</p>	2008	perceptive solutions	{bespoke}	
229	Wet & dry paper monitoring system	measuring	<p>S.P.I.system  2 stage (wet and dry) Thread inspection system with added square measurement and online sheet inspection capabilities. Added UV inspection capabilities on Wet end.</p>	2018	stemmer imaging	{bespoke}	 

230	dry paper monitoring systems	measuring	ink marker system receives signals from vision systems and then ink marks the associated paper web accordingly. incl. plc control panel , encoder, and ink marking equipment.	2018	concept controls / kc controls / portals	{bespoke}	
231	dry paper monitoring systems	measuring	wet end control desk	1988	schneider electric	foxboro i/a series miw - various components	
232	dry paper monitoring systems	measuring	dry end control desk	1988	schneider electric	foxboro i/a series miw - various components	

233	Drives & Indrives	paper slitting and reeling	<p>includes</p> <ul style="list-style-type: none"> <li>- x 9 paper lead roll: steel 6" diameter</li> <li>- x 2 fixed bow roll: 1 x 110 diameter &amp; 1 x 130 diameter</li> <li>- adjustable bow roll: 13 diameter</li> <li>- drum reel-up: hard chrome plated 24" dia</li> </ul> <ul style="list-style-type: none"> <li>- unload system</li> <li>- control desk</li> <li>- inspection lights</li> <li>- reeler splicing system</li> <li>- tension control system</li> <li>- slitting knife block and knives</li> <li>- reel weighing platform</li> <li>- core cutter and extractor</li> </ul>	1989	<p>whittler</p> <p>e.d. warburton</p> <p>fender</p>	<p>rhp.pillow block.mp.40.</p> <p>skf.plummer block.sna.517.ta .22217.ck.+h31 7 free</p> <p>skf.plummer block.sna.517.ta .22217.ck.+h31 7.+ frb. 12.5150. 2 rings.fixed ccua 250 ratio 791:1</p>	
234	Drives & Indrives	machine drives	mould helper drive	1988	bull	225s 15kw	See Pictures Below Drives and Indrives
235	Drives & Indrives	machine drives	mould helper indrive	1988	flender	d181a ratio 66.79:1	

							
236	Drives & Indrives	machine drives	evener roll drive	unknown	a.c.brook	a.c.brook motor da90ls 2.2kw 2 pole 2820rpm	<i>See Pictures Below Drives and Indrives</i>
237	Drives & Indrives	machine drives	evener roll indrive	unknown	flender	pujol "i" series helical inline gearbox. ratio 28.26:1 c/w flange mounted a.c.brook motor da90ls 2.2kw 2 pole 2820rpm	
238	Drives & Indrives	machine drives	former drive	1988	bull	180s 5kw	<i>See Pictures Below Drives and Indrives</i>
239	Drives & Indrives	machine drives	former indrive	1988	flender	d141a ratio 77.1:1	

							
240	Drives & Indrives	machine drives	fabric drive	1988	bull	180s 30kw	<i>See Pictures Below Drives and Indrives</i>
241	Drives & Indrives	machine drives	fabric indrive	1988	flender	d141a ratio 23.97:1	
242	Drives & Indrives	machine drives	suction pick-up roll drive	1988	bull	160s 20kw	<i>See Pictures Below Drives and Indrives</i>
243	Drives & Indrives	machine drives	suction pick-up roll indrive	1988	flender	d162a ratio 39.89:1	

							
244	Drives & Indrives	machine drives	press roll drive	1988	bull	160s 20kw	<i>See Pictures Below Drives and Indrives</i>
245	Drives & Indrives	machine drives	press roll indrive	1988	flender	d161a ratio 34.75:1	
246	Drives & Indrives	machine drives	1st drier drive	1988	bull	180l 5kw	<i>See Pictures Below Drives and Indrives</i>

247	Drives & Indrives	machine drives	1st drier indrive	1988	flender	d141a ratio 23.97:1	
248	Drives & Indrives	machine drives	2nd drier drive	1988	bull	180l 9kw	<i>See Pictures Below Drives and Indrives</i>
249	Drives & Indrives	machine drives	2nd drier indrive	1988	flender	d141a ratio 23.97:1	
250	Drives & Indrives	machine drives	size press drive	1988	bull	180l 9kw	<i>See Pictures Below Drives and Indrives</i>
251	Drives & Indrives	machine drives	size press indrive	1988	flender	d141a ratio 23.48:1	

							
252	Drives & Indrives	machine drives	3rd press drive	1988	bull	180s 5kw	<i>See Pictures Below Drives and Indrives</i>
253	Drives & Indrives	machine drives	3rd press indrive	1988	flender	d161a ratio 34.75:1	

							
	Drives & Indrives	machine drives	1st calender drive	1988	bull	225s 15kw	<i>See Pictures Below Drives and Indrives</i>
254	Drives & Indrives	machine drives	1st calender indrive	1988	flender	d141a ratio 30.64:1	
255	Drives & Indrives	machine drives	2nd calender drive	1988	bull	225s 15kw	<i>See Pictures Below Drives and Indrives</i>
256	Drives & Indrives	machine drives	2nd calender indrive	1988	flender	d141a ratio 30.64:1	

							
257	Drives & Indrives	machine drives	drum reeler drive	1988	bull	180l 9kw	<i>See Pictures Below Drives and Indrives</i>
258	Drives & Indrives	machine drives	drum reeler indrive	1988	flender	d141a ratio 40.8:1	
259	Drives & Indrives	machine drives	A.F.D zone fan 1 drive	1988	bull	180m 68kw	<i>See Pictures Below Drives and Indrives</i>

260	Drives & Indrives	machine drives	A.F.D. zone fan 2 drive	1988	bull	180m 68kw	<i>See Pictures Below Drives and Indrives</i>
261	Drives & Indrives	machine drives	refiner drive	1988	bull	250m 182kw	<i>See Pictures Below Drives and Indrives</i>
262	Drives & Indrives	machine drives	fabric suction roll drive	1988	bull	225s 15kw	<i>See Pictures Below Drives and Indrives</i>
263	Drives & Indrives	machine drives	fabric suction roll indrive	1988	flender	d162a ratio 33.86:1	<i>See Pictures Below Drives and Indrives</i>
264	Drives & Indrives	machine drives	vat pump drive	1988	alpak 11	da250 sa 55kw	<i>See Pictures Below Drives and Indrives</i>
265	Drives & Indrives	machine drives	suction slice fan drive	1988	brook hanson	wdf200lg 30kw	<i>See Pictures Below Drives and Indrives</i>
266	Drives & Indrives	machine drives	fabric suction roll drive top cooling fan	1988	no information	no information	<i>See Fabric Suction roll Indrive Photo</i>
267	drives & in drives	machine drives	fabric suction roll drive end cooling fan	1988	no information	no information	<i>See Fabric Suction roll Indrive Photo</i>
268	Drives & Indrives	machine drives	1st press top cooling fan	1988	no information	no information	<i>See 1<sup>st</sup> press Indrive Photo</i>
269	Drives & Indrives	machine drives	1st press end cooling fan	1988	no information	no information	<i>See 1<sup>st</sup> press Indrive Photo</i>
270	Drives & Indrives	machine drives	2nd press top cooling fan	1988	no information	no information	<i>See 2nd press Indrive Photo</i>
271	drives & indrives	machine drives	2nd press end cooling fan	1988	no information	no information	<i>See 2nd press Indrive Photo</i>
272	drives & indrives	machine drives	3rd press drive blower motor no 1	1988	no information	no information	<i>See 3rd press Indrive Photo</i>
273	drives & indrives	machine drives	3rd press drive blower motor no 2	1988	no information	no information	<i>See 3rd press Indrive Photo</i>



274	main feeder/switch	machine supply and controls	mcc28 1600a / 415v 110vac control voltage	1993	gec	various size starters
275	main feeder/switch	machine supply and controls	mcc59 415v / 1600a ip54 110vac control voltage	2000	sitchgear & instrumentation ltd	various size starters

276	main feeder/switch	machine supply and controls	mcc30 drive suite - 415 v 1250a 18 off vsd mcc for sectional drives including: - hmi (ssd ts810) - local hmi's (ts8006) - plc (s7-300) - drive controllers (eurotherm link rack l5300 series) - sectional drives (parked ssd 590l 110a+enc) - 1 off 594l 450a avfb - 1 off 690pe + 6055-link - 1 off 690pd + 6055-link	1999 + retrofit addons/u pgrades in various years	parker ssd	see description	
277	main feeder/switch	machine supply and controls	emergency stops system for sectional drives incl. panel with hmi, logic solver and distributed io.	approx. 2010	Pilz	pmi 509 pnoz m1p	
278	chemical and additives	soft water	includes - soft water system - x 2 soft water pumps - soft water salt conveyor	unknown	Nalco Grundfos	cr 45-2-2	
279	chemical and additives	Nadavin supply	includes - tank - tank level control - pump	unknown	mono	saa 12h1r5	

							
280	chemical and additives	Reactopaque supply	includes - pump - controls	2000	mono	saa 12h1r5	
281	security feature supply and storage	silk system	includes - x 2 pumps - x 2 silk tanks - x 2 silk tank agitators - silk band headbox	unknown	peristaltic Joshua greaves	peristaltic pump spx40 440.1203.k28.  Joshua greaves fgm 1	

282	security feature supply and storage	m-feature system	includes: - mixing tank - mixing tank agitator - holding tank - holding tank agitator - pump - control system	1996	Lightnin  Lightnin mono	Lightnin Iq 75  Lightnin Iq 75 cac12h1r3/h1138	
283	Item removed						
284	DCS/controls	Foxboro ia control	Foxboro ia computer system  including: - operator and engineering workstations - controllers (fcp270ft & fcp270 types) - managed switches - un-managed switches - 100 series io modules - 200 series io modules	various	schneider electric	various types fp270ft & fcp270 i-sw16p hp type: j9663a 100 series fbms 200 series fbms	

							
285	hoists & lifting gear	lifting gear	includes - wet end crane om202 - drum reel-up crane - colour kitchen hoist	unknown	demac	10 tonne	
286	hoists & lifting gear	lifting gear	includes - reel lift and beams	2006	scm	8000kg goods lift no bc4326	

							
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# PM3



## History

P3 was built in 1995.

The machine is capable to manufacture paper from 70 GSM to 110GSM double ply and 100GSM single ply paper at speed range of 20m/min to 100m/min.

## Brief Technical Overview

PM3 is a two-ply Cylinder mould vat machine with an adjustable (expanding/contracting) VAT and a Former. Dry Deckle width 2.2 to 2.65M. Machine output is cc32T/day with a max Main flow of 10500l/min.

Drives are located on the right side of the machine. The soleplate distance is average 3430mm.

Forming fabric suction roll, pneumatic tensioner, and guider.

2 roll combination vacuum press section with top and bottom felt.

Main drier bank 14 cylinders in 2 separate in drive sections with cog driven Cylinders. Drying section is equipped with an auto lube system. Vacuum assisted condensate removal system. Pocket Ventilation.

Size bath system equipped with duty and standby pump and filter system. Temperature controlled, hot water circulation, jacketed bath with size delivery and recirculation system.

Spooner air float driers linked to moisture controls with top and bottom side adjustments. Current typical Moisture range is 4-7%.

Paper guider into 2 soft nip calendar section.

Abb gauge

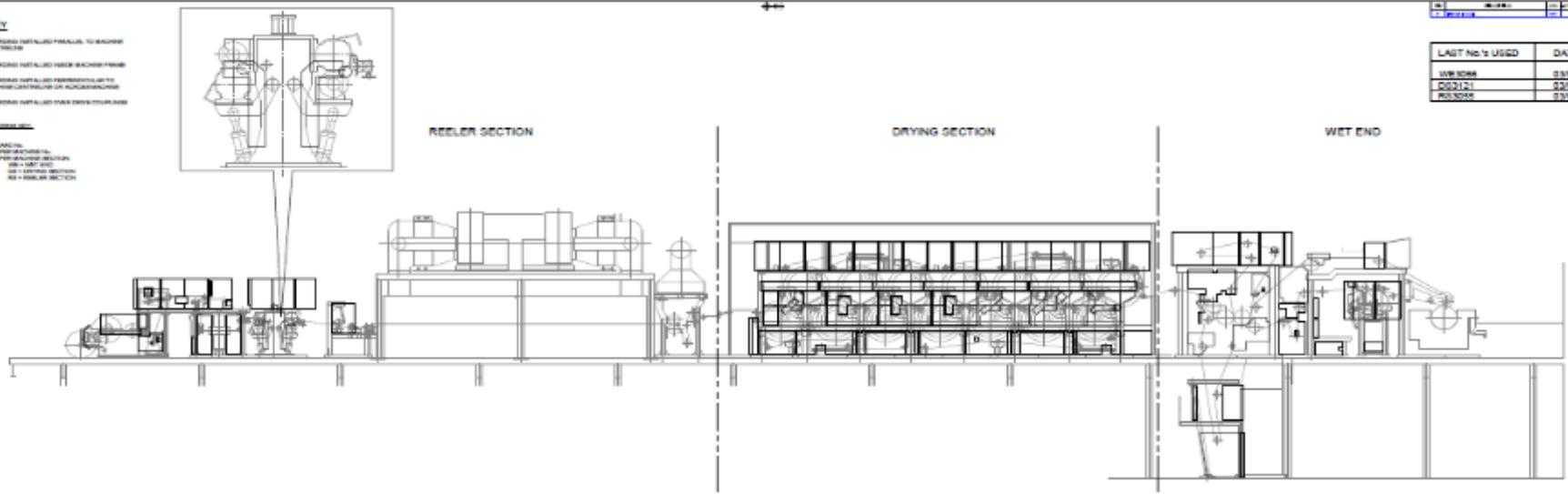
Drum reeler 1250mm with a max weight of 3T. Built in scale at the end of the line.

Sheehan rope feed from main drier to drum reeler with automated Ink marking system.

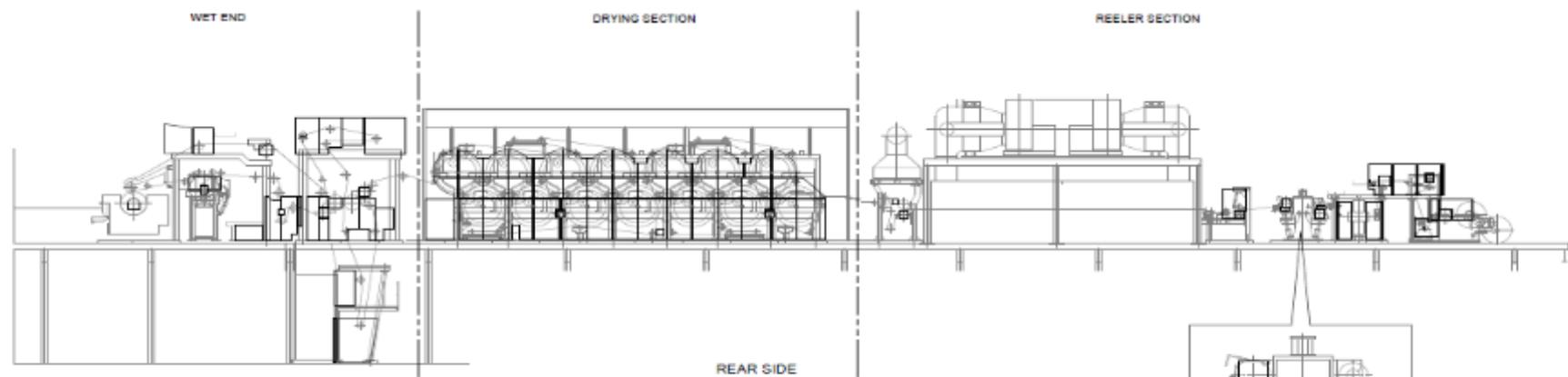
- KEY**
- REELING PARTS PERMANENT TO MACHINE
  - REELING PARTS TO BE REACHED FROM REAR
  - REELING PARTS PERMANENT TO MACHINE CONTROLLED BY REELER
  - REELING PARTS PERMANENT TO MACHINE

- LEGEND**
- GUARDING
  - REELER SECTION
  - DRYING SECTION
  - WET END

LAST No.' USED	DATE
WV 2006	03/02/08
CG2121	03/04/08
WV 2006	03/02/08



TENDING SIDE



REAR SIDE

	DE LA RUE - OVERTON MILL 15-781-2800	17433
	DE LA RUE - OVERTON MILL 15-781-2800	17433

ID	Section	Assets	Description	Year	Supplier	Model	Photo
287	Lubrication System	Oil System	<p>includes</p> <ul style="list-style-type: none"> <li>- bearing oil distribution pump -</li> <li>- bearing oil distribution tank</li> <li>- bearing oil distribution pump control console</li> </ul>	1995	denco		
288	Lubrication System	Grease System	<p>includes</p> <ul style="list-style-type: none"> <li>- 2 x grease lube pump</li> <li>- grease lube blocks</li> <li>- grease lube end of line pressure switchies</li> <li>- 2 x grease lubrication control console</li> <li>- 2 x grease lubrication system top up pump</li> </ul>	1995	bijur delimon	bm-b 01a02oc00 serial no:-0000047850 400bar lubrication system lumatic	

289	Stock Storage	STOCK CHEST	includes <ul style="list-style-type: none"> <li>- tank</li> <li>- agitator: 11kw motor, v-belt drive</li> <li>- pump: 4kw motor</li> <li>- level sensor</li> <li>- consistency transmitter</li> <li>- consistency control valve</li> <li>- flow transmitter</li> <li>- flow control valve</li> <li>- isolation valve</li> <li>- level transmitter</li> </ul>	1995	parsons skillforce scaba scanpump  btg	stainless steel 4250 dia x 2350 h 30553litres scaba 60srkt-m1 314296e serial no - 94.3039-02-01 scanpump ba 150/150- 26 serial no - 4614.1098-10  mek2300	
290	Stoack Storage	BLEND CHEST	Includes <ul style="list-style-type: none"> <li>- Tank</li> <li>- Agitator: 7.5KW Motor, V-Belt Drive</li> <li>- Pump: 7.5KW Motor</li> <li>- Level Sensor</li> <li>- Isolation Valve</li> <li>- Level Transmitter</li> </ul>	1995	Parsons Skillforce Scaba Scanpump	stainless steel 4250 DIA x 2350 h 30553litres SCABA 60SRKT-M1 314296E Serial No - 94.3039-01-01 Scanpump BA 150/80- 26 Serial No - 94614.1098-13	

291	Stock Storage	BUFFER CHEST	Includes: - Tank - Agitator: 7.5KW Motor, V-Belt Drive - Pump: 7.5KW Motor - Consistency Transmitter - Consistency Control Valve - Consistency Regulator - Flow Transmitter - Flow Control Valve - Isolation Valve - Level Transmitter - Pressure	1995	Parsons Skillforce SCABA Scanpump BTG	STAINLESS STEEL 4250 DIA x 2350 h 30553litres SCABA 60SRKT-M1 314296E Serial No - 94.3039-02-01 Scanpump FB 80/80-26 Serial No - 9614 1098-14 MEK2300	
292	stock approach	linter supply	Includes: -Pump -Flow transmitter -Flow Meter -Flow Control Valve - Consistency Transmitter - Consistency Control Valve	1995	Scanpump BTG	Scanpump BA 150/80-32 Serial No - 4614.1098-11  2300	

293	stock approach	pm3 broke supply	Includes: -2x Flow transmitter -2x Flow Meter -2x Flow Control Valve	1995			
294	stock approach	pm3 specials supply	Includes: -Pump -Flow Meter -Flow Transmitter -Flow Control Valve - Consistency Transmitter	1995	Scanpump  BTG	Scanpump BA 150/80-32 Serial No - 4614.1098-11  2300	

295	VAT	Silo	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Silo</li> <li>-Flow Meter</li> <li>-Level Transmitter</li> <li>-Silo Platform</li> <li>-Temperature probe</li> <li>-Temperature Control Valve</li> </ul>	1995	Parsons Skillforce	Stainless Steel	
296	Refining System	Refiner	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Refiner</li> <li>-Trim Loading Gearbox</li> <li>-Consistency Control Valve</li> <li>-Consistency Transmitter</li> <li>-Flow transmitter</li> <li>-Recirculation Flow Transmitter</li> <li>-Flow Transmitter</li> <li>-Flow Meter</li> <li>-Pressure Control Valve</li> <li>-Inlet Pressure Transmitter</li> <li>-Outlet Pressure Transmitter</li> </ul>	1995	Sunds BTG	Sunds JYLHA JC-01 with LF FILLINGS  MEK2300	

297	pm3 vat primary cleaner "a"	cleaner voith	Includes: -Pump -Celaner Cone Platform -Cleaner Cones -Inlet pressure Transmitter -Outlet pressure Transmitter	1995	Scanpump	Scanpump NB 200/150-40 Serial No - 9614 1098-15	
298	pm3 vat primary cleaner "b"	cleaner voith	Includes: -Pump -Celaner Cone Platform -Cleaner Cones -Inlet pressure Transmitter -Outlet pressure Transmitter -Tank Level Transmitter -2xTank Level Control valve -Tank Supply Pressure -Accepts Pressure	1995	Scanpump	Scanpump NB 200/150-40 Serial No - 9614 1098-16 	
299	pm3 vat secondary cleaner	cleaner voith	Includes: -Pump -Celaner Cone Platform -Cleaner Cones -Cleaner Tank -Inlet pressure Transmitter -Outlet pressure Transmitter -Tank Level Transmitter -2xTank Level Control valve -Tank Supply Pressure -Accepts Pressure	1995	Scanpump	Scanpump NB 125/100-40 Serial No - 9614 1098-17	

300	pm3 vat tertiary cleaner	cleaner voith	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Celaner Cone Platform</li> <li>-Cleaner Cones</li> <li>-Cleaner Tank</li> <li>-Inlet pressure Transmitter</li> <li>-Outlet pressure Transmitter</li> <li>-Tank Level Transmitter</li> <li>-2xTank Level Control valve</li> <li>-Tank Supply Pressure</li> <li>-Accepts Pressure</li> <li>-Cleaner Rejectomat</li> </ul>	1995	Scanpump	Scanpump BA 150/80-32 Serial No - 9614 1098-18	
301	pm3 vat dilution pump	pm3 vat dilution pump	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> </ul>	1995	Scanpump	Scanpump NB 150/125-32 Serial No -9614 1098-20	

302	pm3 vat fan pump	pm3 vat fan pump	Includes: -Fan Pump -Thinkstock PH -Flow Meter -Flow Transmitter	1995	Scanpump	Scanpump BA 250/250-32 Serial No -9614 1098-21v	
303	pm3 vat primary screen "a"	pm3 vat primary screen "a"	Includes: -Screen -Accepts Flow Transmitter -Reject Flow Transmitter Pressure Control Valve -Supply Pressure -Accepts Pressure	1995	Finckh	FINCKH HICO 111 HS serial no -240 with Basket 0.20mm slots	
304	pm3 vat primary screen "b"	pm3 vat primary screen "b"	Includes: -Screen -Accepts Flow Transmitter -Reject Flow Transmitter -Pressure Control Valve -Supply Pressure -Accepts Pressure	1995	Finckh	FINCKH HICO 111 HS serial no -241 with Basket 0.20mm slots	



							
307	pm3 backwater tank		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Tank</li> <li>-Tank Level</li> <li>-Level Control Valve</li> </ul>	1995	Scanpump	Scanpump NB 100/65-32 Serial No - 9614 1098-31	

308	pm3 vat headbox		<p>Includes:</p> <ul style="list-style-type: none"> <li>-VAT Headbox</li> <li>-Headbox Level</li> <li>-Level Control Valve</li> <li>-Flow Control Valve</li> <li>-Flow Transmitter</li> <li>-Flow Meter</li> </ul>	1995	Warburton	Stainless Steel	
309	pm3 dilution		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Tank</li> <li>-Tank Level</li> <li>-2xLevel Control Valve</li> <li>-Pressure Transmitter</li> <li>-Pressure Control Valve</li> </ul>	1995	Scanpump	Scanpump NB 100/65-26 Serial No - 9614 1098-32	

310	pm3 flexible vat		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Evener Roll</li> <li>-Hydraulic Pump</li> <li>-Flexible VAT</li> <li>-Hydraulic Tank</li> <li>-Control Desk</li> <li>-VAT Controls</li> <li>-VAT Manifold</li> <li>-VAT Curtain</li> <li>-VAT Baffle</li> <li>-VAT Platforms</li> </ul>	1995	Parker Warburton	<p>evener roll 127mm. dia x 2854mm face length, with holes. tube wall thickness 10mm. stainless steel 316l with vesconite hilube bearings parker pv046r1 kiii n pws</p>	 
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311	PM3 VAT CONTROL SYSTEMS		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Mainflow Transmitter</li> <li>-Mainflow Flow Meter</li> <li>-Recirculation Flow Transmitter</li> <li>-Recirculation Flow Meter</li> <li>-Recirculation Control Valve</li> <li>-Recirculation Flow Control Valve</li> <li>-Level Transmitter</li> <li>-Level Control Valve</li> <li>-Overflow Meter</li> <li>-Flow Transmitter</li> <li>-Flow Meter</li> <li>-Level Transmitter</li> <li>-Level Control Valve</li> <li>-Thickstock PH Measurement</li> </ul>	1995	ROSEMOUNT	ROSEMOUNT 54pH /ORP04 54pH /ORP04	
312	PM3 MOULD SPRAY		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Mould Spray Bar</li> <li>-Spray Oscillator</li> </ul>	2010			
313	PM3 THREAD SYSTEMS		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Powered Unwind Unit with 36 Unwinders</li> <li>-Unwind Controls</li> <li>-Thread Oscillator</li> <li>-Thread Oscillator Control Console</li> <li>-Thread Gear Assembly BME</li> <li>-Thread Gear Assembly Framework</li> </ul>	2005	SAHM	SAHM Serial No 910087 yarn tension controlled 2 way unrolling unit	

314	PM3 FORMER VAT/FAN PUMP		Includes: -Pump	1995	Scanpump	Scanpump NB 125/100- 26 Serial No - 9614 1098-28	
315	PM3 FORMER DILUTION		Includes: -Pump	1995	Scanpump	Scanpump NB 125/100- 26 Serial No - 9614 1098-28	
316	PM3 FORMER PRIMARY "A" CLEANER		Includes: -Pump -Cleaner Cones -Supply Pressure -Accepts Pressure	1995	Scanpump	Scanpump NB 125/100- 40 Serial No - 9614 1098-24	

317	PM3 FORMER PRIMARY "B" CLEANER		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Cleaner Cones</li> <li>-Supply Pressure</li> <li>-Accepts Pressure</li> <li>-Supply Tank</li> <li>-Tank Level</li> </ul>	1995	Scanpump	Scanpump NB 125/100-40 Serial No -9614 1098-25	
318	PM3 FORMER SECONDARY CLEANER		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Cleaner Cones</li> <li>-Supply Pressure</li> <li>-Accepts Pressure</li> <li>-Supply Tank</li> <li>-Supply Tank Level</li> <li>-Tank Levels</li> <li>-Cleaner Rejectomat</li> </ul>	1995	Scanpump	Scanpump NB 100/65-32 Serial No -9614 1098-26	

319	PM3 FORMER PRIMARY SCREEN		Includes: -Primary Screen -Rejects Flow Transmitter -Rejects Flow Meter -Accepts Control Valve -Screen Accept Pressure Transmitter -Screen Supply Pressure Transmitter	1995	Finckh	FINCKH HICO 11 HS serial no -244 with Basket 0.15mm slots	
320	PM3 FORMER SECONDARY SCREEN		Includes: -Secondary Screen -Supply Tank -Tank Platform -Tank Level -Tank Level Control Valve -Pump -Screen Supply Flowmeter -Supply Pressure Transmitter -Accepts Pressure Transmitter	1995	Finckh Parsons Skillforce  Scanpump	FINCKH HICO 1 EHS serial no -245 with Basket 0.15mm slots Stainless Steel  Scanpump BA 150/80- 32 Serial No - 4614.1098-30	
321	PM3 FORMER PROFILE DILUTION		Includes: -Pump	2003	Sulzer	APP 33-100	

							
322	PM3 FORMER SILO		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Former Silo</li> <li>-Platform</li> <li>-Level Transmitter</li> <li>-Temperature Transmitter</li> <li>-Temperature Control Valve</li> <li>-Level Control Valve</li> </ul>	1995	Parsons Skillforce	Stainless Steel	

323	PM3 FORMER HEADBOX		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Former Headbox</li> <li>-Level Control</li> <li>-Flow Transmitter</li> <li>-Flow Meter</li> <li>-Flow Control Valve</li> </ul>	1995	Parsons Skillforce	Stainless Steel	
324	PM3 FORMER		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Former Cylinder</li> <li>-Former</li> <li>-Cylinder Spray Bar</li> <li>-Former Framework</li> <li>-Former Manifold</li> <li>-Former Loading System</li> <li>-Platform</li> <li>-Extraction System</li> <li>-Saveall Tray</li> <li>-Former Lip</li> <li>-Extraction Console</li> </ul>	1995	Warburton		







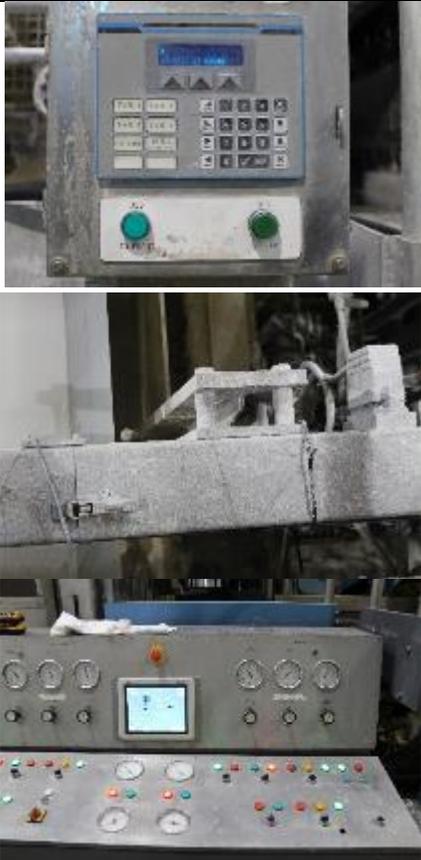
328

Includes:  
-Oscillating Doctor Spray Bar  
-Fabric Suction Roll Oscillating Spray

1995

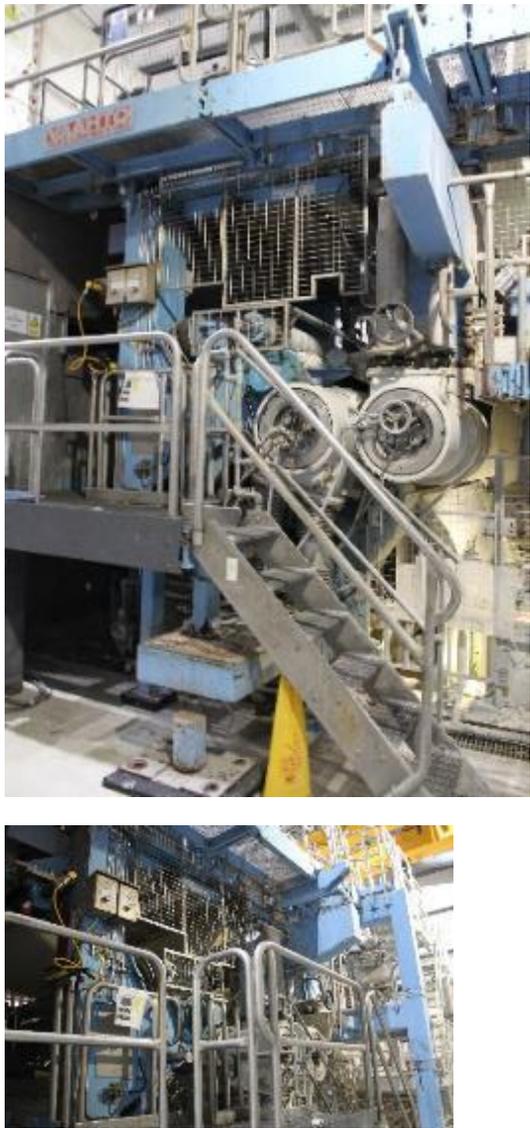
Vaahto



329	PM3 FABRIC SECTION CONTROLS		Includes: - Suction Roll Internal Shower Valve - High Pressure Shower Valve - Fabric HP Shower Valve - Cross Cutter Control Valve	1995	Vaahto		
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330	PM3 PRESS SECTION ROLLS		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Suction Pick up Roll</li> <li>-Suction Press Rooll</li> <li>-Wet Felt Roll</li> <li>-Wet Felt Roll</li> <li>-Wet Felt Stretch Roll</li> <li>-Wet Felt Guide Roll</li> <li>-Press Bow Roll</li> <li>-Press Bow Roll</li> <li>-Press Bow Roll</li> <li>-Wet Felt Guide Roll</li> <li>-Wet Felt Stretch Roll</li> <li>-Wet Felt Roll</li> <li>-Wet Felt Roll</li> <li>-2nd Smoothing Press Roll</li> <li>-Adjustable Hold Down Roll</li> <li>-Adjustable Lead Roll</li> <li>-Adjustable Bow Roll</li> </ul>	1995	<p>Vaahto FIN BOW</p>	<p>SUCTION PICK-UP ROLL - 640 DIA.with FAG 23984, FAG 23236B, FAG 24028 S PRESS SUCTION ROLL - 710 DIA.with FAG 23984, FAG 23236B &amp; FAG 24028S VAAHTO FELT ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO FELT ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO STRETCH ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO GUIDE ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO CURVED ROLL - 160 DIA. VAAHTO CURVED ROLL - 160 DIA. VAAHTO CURVED ROLL - 160 DIA. VAAHTO GUIDE ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO STRETCH ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO FELT ROLL - 250 DIA.with SKF 22312 EK C3 + SKF 22209 E VAAHTO FELT ROLL - 250 DIA.with SKF 22312</p>	 <p>The top photograph shows a close-up of a large industrial roll with a complex support structure, including a hand crank and various adjustment mechanisms. The bottom photograph shows a similar roll from a different angle, highlighting the metal frame and the roll itself. Both images are set in a blue-painted industrial environment.</p>
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						<p>EK C3 + SKF 22209 E VAAHTO 2nd PRESS ROLL - 600 DIA.with SKF 22226K W33 + AHX 3126 SLEEVE VAAHTO HOLD DOWN ROLL VAAHTO ADJUSTABLE LEAD ROLL FIN BOW CURVED ROLL - 135mm DIA</p>	
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331	PM3 PRESS SECTION	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Press Section Framework</li> <li>-Guards</li> <li>-Platforms</li> <li>-Control Desk</li> <li>-Saveall Trays</li> <li>-Saveall Trays Steam Supply</li> <li>-Hold Down Roll Adjuters</li> <li>-Suction Roll Leading Bellows</li> <li>-2nd Press Oscillation Doctor</li> <li>-2nd Preass Oscillating Doctor Gearbox</li>   <li>-2nd Press Oscillation Doctor Lubrication Shower</li> <li>-Top Press Felt Stretch Motor/Gearbox</li> <li>-Top Press Felt Stretch Gear</li> <li>-Top Press Felt Roll Doctor</li> <li>-Top Press felt Guider</li>   <li>-Top Press felt Guider Bellows</li> <li>-Top Press felt HP Cleaning Oscillation Spray Bar</li> <li>-Top Press felt HP Cleaning Oscillation Spray Bar Oscillator</li> <li>-Top Felt Vacuum Box Lubrication Shower</li> <li>-Top Felt Guide Roll DoctorLubrication</li> <li>-Top Felt Chemical Cleaning Spray bar</li> <li>-Bottom Press Felt Stretch Motor/Gearbox</li> <li>-Bottom Press Felt Stretch Gear</li> <li>-2xBottomPress Felt Roll Doctor</li> <li>-Bottom Press felt Guider</li>   <li>-Bottom Press felt Guider Bellows</li> <li>-Bottom Press felt HP Cleaning Oscillation Spray Bar</li> <li>-Bottom Press felt HP Cleaning Oscillation Spray Bar Oscillator</li> <li>-Bottom Felt Vacuum Box Lubrication Shower</li> <li>-Bottom Felt Guide Roll DoctorLubrication</li> <li>-Bottom Felt Chemical Cleaning Spray bar</li> </ul>	1995	<p>Vaaho</p> <p>Bonetti Bonfirm KUMERA</p> <p>Bonetti Bonfirm Thune</p> <p>Thune</p> <p>Bonetti Bonfirm Thune</p> <p>Thune</p>	<p>Bonetti Bonfirm super x3100mm KUMERA MOTOR/GEARBOX. DASM 1080 GEARBOX C/W 0.37KW, 1000RPM MOTOR. IEC24F165</p> <p>K35A x3130mm THUNE GUIDER CONTROLLER COMPLETE WITH CHROME PLATED PALM (SIGURD SORUM) DRAWING A4/6762B.KANTKONTR OLLER S6-C7S-2V/888 GUIDER THUNE TYPE 125/170-80. BORE</p> <p>K35A x3130mm HUNE GUIDER CONTROLLER</p>	
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						<p>COMPLETE WITH CHROME PLATED PALM (SIGURD SORUM) DRAWING A4/6762B.KANTKONTR OLLER S6-C7S-2V/888 GUIDER THUNE TYPE 125/170-80. BORE</p>	
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			<p>Includes:</p> <ul style="list-style-type: none"> <li>-Bottom Press felt HP Cleaning Oscillation Spray Bar</li> <li>-Bottom Press felt HP Cleaning Oscillation Spray Bar Oscillator</li> <li>-Bottom Felt Vacuum Box Lubrication Shower</li> <li>-Bottom Felt Guide Roll DoctorLubrication</li> <li>-Bottom Felt Chemical Cleaning Spray bar</li> <li>-High Pressure Cleaning Gun Pump</li> <li>-High Pressure Cleaning Gun Pump Tank</li> </ul>				
332	PM3 PRESS SECTION CONTROLS		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Suction Pick Up Roll Cleaning Shower Valve</li> <li>-Suction Pick Up Roll Internal Shower Valve</li> <li>-Top Felt HP Cleaning Shower Valve</li> <li>-Suction Press Roll Cleaning Shower Valve</li> <li>-Bottom Felt Hp Cleaning Shower Valve</li> <li>-Bottom Felt Shower Valve</li> </ul>	1995			
333	PM3 HOG PIT		<p>Includes:</p> <ul style="list-style-type: none"> <li>-2x Agitator</li> <li>-Pump</li> <li>-Consistency Regulator</li> <li>-Hog Pit</li> <li>-Knock Off Shower Flow Meter</li> <li>-Knock Off shower Flow Transmitter</li> <li>-Knock Off Shower Valve</li> <li>-Hog Pit Level</li> <li>-Hog Pit Return Flow Meter</li> <li>-Hog Pit Return Flow Transmitter</li> <li>-Hog Pit Return Flow Control Valve</li> <li>-Shower Valve</li> <li>-Broke Chute Cleaning Shower Valve</li> </ul>	1995	Scaba Scanpump BTG Parsons Skillforce	SCABA 60SRKT-M1 314296E Scanpump FB 100/100- 32 Serial No - 4614 1098-35 2300 Stainless Steel	

334	PM3 HIGH PRESSURE PUMPS		Includes: -2x Pump	1995	Scanpump	Scanpump NB 80/50-26	
335	PM3 MEDIUM PRESSURE PUMP		Includes: -Pump -Tank -Tank Level -Tank Level Control Valve -Pressure Transmitter	1995	Scanpump Parsons Skillforce	Scanpump NB 80/65-16 Serial No - 4614.1098-43 Stainless Steel	
336	PM3 VERY HIGH PRESSURE PUMP		Includes: -Pump -Inlet Pressure Transmitter -Outlet Pressure Transmitter - Variable Speed Drive and Pressure Transducer	2003	LOWARA  LOWARA	PUMP LOWARA SV6006  Lowara Hydrovar VSD	



339	PM3 SUCTION SLICE VACUUM SYSTEM		<p>Included:</p> <ul style="list-style-type: none"> <li>-Suction slice Vacuum Fan</li> <li>-Suction Slice</li> <li>-Pre Separator</li> <li>-Pre Separator Pump</li> <li>-Control Loop</li> </ul>	2003	<p>WOODCOCK &amp; WILSON</p> <p>Nash Nash</p>	<p>SUCTION SLICE VACUUM FAN W9569-2</p> <p>NASH KROGH 3" Serial No1386</p>	
340	PM3 FORMER INVERTED VACUUM BOXES		<p>Included:</p> <ul style="list-style-type: none"> <li>-Pump</li> <li>-Post Separators</li> <li>-Pre separator Pump</li> <li>-Preseparator</li> <li>-Control Loop</li> <li>-2x Inverted Vacuum Box</li> <li>-Inverted Vacuum Box Fan</li> <li>-Inverted Vacuum Box Pre Separator</li> <li>-Inverted Vacuum Box Pre Separator Pump</li> </ul>	1995	<p>Nash</p> <p>ALLDAYS PEACOCK Nash Nash</p>	<p>NASH SC3 Serial No12616</p> <p>NASH KROGH 3" Serial No95E10965</p> <p>ALLDAYS PEACOCK 7.5kw 2890RPM Serial No RW3054</p> <p>NASH KROGH 1" Serial No 11459</p>	 

341	PM3 FABRIC SUCTION ROLL VACUUM SYSTEM		Included: -Pump -Post Seperator -Pre separator Pump -Pre separator -Control Loop	1995	Nash	NASH CL3002 Serial No ME08534  NASH KROGH 1" Serial No	
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342	PM3 SUCTION PICK-UP ROLL VACUUM SYSTEM		<p>Included:</p> <ul style="list-style-type: none"> <li>-Holding zone Vacuum Pump</li> <li>-Post Separatos</li> <li>-Preseparator Pump</li> <li>-Holding zone Preseparator</li> <li>-Holding zone Preseparator Pump</li> <li>-Pick Up Control Loop</li> <li>-Holding Zone Vacuum Control Loop</li> </ul>	1995	Nash	<p>NASH 904M2 Serial No 0270083</p> <p>NASH KROGH 1" Serial No 11456</p> <p>NASH KROGH 1" Serial No 11457</p>	
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343	PM3 SUCTION PRESS ROLL VACUUM SYSTEM		Includes: -2nd Press Vacuum Pump -Pre Separator -Pre Separator Pump -Control Loop	1995	Nash	NASH CL3002 Serial No 95E0489  NASH KROGH 1" Serial No 11453	
344	PM3 TOP FELT VACUUM SYSTEM		Includes: -Preseparator Pump -Vacuum Boxes -Preseparator -Control Loop	1995	Nash	NASH KROGH 1.25" Serial No 15925	
345	PM3 BOTTOM FELT VACUUM SYSTEM		Includes: -Vacuum Pump Preseparator Pump -Vacuum Boxes -Preseparator -Control Loop	1995	Nash	NASH SC7 Serial No ME010736 NASH KROGH 1" Serial No 11454	

346	PM3 EDGE TRIM VACUUM PUMP (PRE-FORMER)		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Vacuum Pump</li> <li>-Pre Seperator</li> <li>-Post Seperator</li> <li>-Vacuum Box</li> <li>-Control Loop</li> </ul>	1995	Nash	NASH SC3 Serial No 95E0773	
347	PM3 DRIER SECTION		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Drier Hood</li> <li>-Drier Hood Door</li> <li>-Lifting Motor</li> <li>-Guards</li> <li>-Platforms</li> <li>-Va Sensors</li> <li>-Framework</li> <li>-Lighting</li> <li>-Sheehan Rope System</li> <li>-Bottom Guider</li>   <li>-Bottom Guider Bellows</li> <li>-Top Guider</li>   <li>-Top Guider Bellows</li> <li>-5x Drier Cylinder Oscillating Doctor</li> <li>-5x Drier Cylinder Oscillating Doctor Oscillator</li>   <li>-7x Cylinder Doctor</li> <li>-Top Dry Wire Tenison System</li> <li>-Drier Control Desk</li> </ul>	1995	<p>Warburton</p> <p>Thune</p> <p>Thune</p> <p>Thune</p> <p>Thermo</p> <p>Fibertek</p> <p>PETER</p> <p>RAYNER</p> <p>Thermo</p> <p>Fibertek</p>	<p>THUNE GUIDER CONTROLLER COMPLETE WITH CHROME PLATED PALM (SIGURD SORUM) DRAWING</p> <p>A4/6762B.KANTKONTR OLLER S6-C7S-2V/888 GUIDER THUNE TYPE 125/170-80. BORE THUNE GUIDER CONTROLLER COMPLETE WITH CHROME PLATED PALM (SIGURD SORUM) DRAWING</p>	

						<p>A4/6762B.KANTKONTR  OLLER S6-C7S-2V/888  GUIDER THUNE TYPE  125/170-80. BORE  Loading K35 x 2970mm  GEAR MOTOR UNIT  WITH ECCENTRIC CAM  .37KW 900RPM'CLASS  H'FLANGE MOUNTED  BCP OR GEC. 1.35AMPS  TYPE G/BOX GM2T  0.37KW 13RPM D80AD  Loading K35 x 2970mm</p>	
348	PM3 DRYING SECTION CYLINDERS		<p>Included:  -2x Teflon coated Drying Cylinder</p> <p>-12x Drying Cylinder</p>	1995	Warburton	<p>WARBURTON HOLGATE  60" DIA. DRYING  CYLINDER with "SKF"  SPHERICAL ROLLER  BEARING - REF  No.23044 CCK/W33/C4  + OH 3044H and  TEFLON SLEEVE WITH  2.5IN JOHNSON NOZZLE  STEAM TRUNNION  WARBURTON HOLGATE  60" DIA. DRYING  CYLINDER with "SKF"  SPHERICAL ROLLER  BEARING - REF</p>	

						No.23044 CCK/W33/C4 + OH 3044H WITH 2.5IN JOHNSON NOZZLE STEAM TRUNNION	
349	PM3 DRIER SECTION ROLLS		Included: -2x Paper Lead Roll -19x Top Wire Roll  -2xTop Wire Stretch Roll  -2xTop Wire Guide Roll  -19x Bottom Wire Roll  -2xBottom Wire Stretch Roll  -2xBottom Wire Guide Roll	1995	Warburton	WARBURTON HOLGATE 8" DIA. INLET LEAD ROLLwith RHP MP40 WARBURTON HOLGATE 8.5" DIA. DRY FELT ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311 EK+ AHX 2311 & DEEP GROOVE BALL BRG.- REF.No.6 WARBURTON HOLGATE 8.5" DIA. DRY STRETCH ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311 EK+ AHX 2311 & DEEP GROOVE BALL BRG.- REF.No.6209 WARBURTON HOLGATE 8.5" DIA. GUIDE ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311 EK+ AHX 2311 & DEEP GROOVE BALL BRG.- REF.No.6209 WARBURTON HOLGATE 8.5" DIA. DRY FELT ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311 EK+ AHX	

						<p>2311 &amp; DEEP GROOVE BALL BRG.- REF.No.6  WARBURTON HOLGATE  8.5" DIA. DRY STRETCH ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311  EK+ AHX 2311 &amp; DEEP GROOVE BALL BRG.- REF.No.6209  WARBURTON HOLGATE  8.5" DIA. GUIDE ROLL with "SKF" SPHERICAL ROLLER BRG. - REF No.22311 EK+ AHX  2311 &amp; DEEP GROOVE BALL BRG.- REF.No.6209</p>	
350	PM3 DRYER STEAM & CONDENSATE		<p>Included:  -2x Condensate Pump  -Condensate Vacuum Pump  -Condensate Vertical Receiver  -Level Transmitter  -Vacuum Control Valve  -Heat exchanger  -Temperature transmitter  -Steam Pipework</p>	1995	Scanpump Nash	<p>Scanpump NB 65/40-26  NASH AHC120 Serial No ME08632</p>	

351	PM3 DRYER AIR VENT SYSTEM		<p>Included:</p> <ul style="list-style-type: none"> <li>-Drying hood heater Battery</li> <li>-Drier hood exhaust fan</li> <li>-Ducting</li> <li>-Pocket Vents</li> <li>-PV Fan</li> <li>-Fresh Air Damper System</li> <li>-Exhaust Air Damper System</li> </ul>	1995	Airco Fan Systems	<p>AIRCO 1000 BDA 11kw 1460rpm Serial No 2080/00194.01</p> <p>FAN SYSTEMS 30kw 1470rpm Serial No 4250-1</p>	
352	Drying Section	Controls	<p>Included:</p> <ul style="list-style-type: none"> <li>-Steam flow Meter</li> <li>-Header Pressure Control Valve</li> <li>-Pressure Transmitter</li> <li>-14xPressure Transmitter</li> <li>-14xPressure Control Valve</li> </ul>	1995	MASONEILAN  ROSEMOUNT MASONEILAN	<p>CAMFLEX 2 cv500 6"</p> <p>1151GP-6-S-22-W5-NA- B1-CM CAMFLEX 2 cv50 2"</p>	
353	Size System	Storage	<p>Included:</p> <ul style="list-style-type: none"> <li>-Storage Tank</li> <li>-Agitator</li>   <li>-Platform</li> <li>-Level Transmitter</li> <li>-Level Indicator</li> <li>-Temperature Transmitter</li> <li>-Temperature Control Valve</li> </ul>	1995	JOSHUA GREAVES & SONS LTD	<p>F.G.M.1 GEARED PROPELLER MIXER/AGITATOR NO.105/G 0.75KW IP55 1440RPM VERTICAL FLANGE MOUNTED 415V 3PH SER.NO.23851</p>	

354	Size System	Pumps	<p>Included:</p> <ul style="list-style-type: none"> <li>-Size Return Pump</li> <li>-2x Circulating Pump</li> <li>-2x Pressure Transmitter</li> <li>-2x Circulating Pump Filters</li> </ul>	1995	<p>Mono</p> <p>Albany</p>	<p>Mono SAC12H1B5/H1593</p> <p>Mono SAB12H1B5/H1593</p> <p>FILTER ELEMENT ALBANY ST.ST 20 MESH</p>	
355	Size System	Bath	<p>Included:</p> <ul style="list-style-type: none"> <li>-Lifting table platform</li> <li>-Lift Hydraulic Power Pack &amp; Controls</li> <li>-Size Bath</li> <li>-Level transmitter</li> <li>-Flowmeter</li> <li>-Control Valve</li> <li>-Density Transmitter</li> <li>-Size Density control valve</li> <li>-Refractometer Cleaning Pump</li> <li>-Hood Extract Fan</li> <li>-Fan Ducting</li> <li>-Size Press Framework</li> <li>-Press Roll Loading Bellows</li> <li>-Dip Roll Jacks</li> <li>-Dip Roll Jack Air Motor</li> <li>-Size Press Roll Nip Bar</li> <li>-Spreader Bar</li> <li>-Size Bath Guards</li> <li>-Platform &amp; Steps</li> <li>-Control Desk</li> </ul>	1995	<p>Warburton EASILIFT</p> <p>Airco</p>	<p>Easilift Hydraulic power pack 2.2kw</p> <p>AIRCO 800mm LCA FAN 5.5kw 1450rpm Serial No 1718/00295-03</p>	

356	Size System	Water Dilution System	<p>Included:</p> <ul style="list-style-type: none"> <li>-Dilution tank</li> <li>-Dilution Header Tank</li> <li>-Dilution Header Tank Level transmitter</li> <li>-Dilution Header Tank Control Valve</li> <li>-Water vertical Calorifier</li> </ul>	1995			
357	Size System	Hot Water System	<p>Included:</p> <ul style="list-style-type: none"> <li>-Hot Water pump</li> <li>-Header Tank</li> <li>-Level transmitter</li> <li>-Temperature transmitter</li> <li>-Temperature control valve</li> <li>-Size Kitchen horizontal calorifier</li> </ul>	2016	Grundfos	TP40-C0/2A	

358	Size System	Rolls	<p>Included:</p> <ul style="list-style-type: none"> <li>-Lead Roll</li> <li>-Bottom S Wrap Roll</li>   <li>-Fixed Bow Roll</li> <li>-Dip Roll</li>   <li>-Bottom Size Press Roll</li>   <li>-Top Size Press Roll</li> </ul>	1995	Warburton	<p>WARBURTON HOLGATE 6" DIA. LEAD ROLL with RHP MP40</p> <p>WARBURTON HOLGATE BOTTOM 'S' WRAP ROLL - 22" DIA.with "SKF" PLUMMER BLOCK - REF No.SNH 511 TA 22211 EK+ H311 + (2) FRB 9.5/100 (FIXED) "SKF" PLUMMER BLOCK - REF No.SNH 511 TA 22211 EK+ H311 + (FREE)</p> <p>WITTLER 100 DIA. FIXED BOW ROLL</p> <p>WARBURTON HOLGATE 254.7 DIA. DIP ROLL with "SKF" BALL BEARING - REF No.22209 EK W64 (OIL FILLED)+ H309 SLEEVE</p> <p>WARBURTON HOLGATE 460 DIA. BOTTOM SIZE PRESS ROLL with "SKF" SPHERICAL ROLLER BEARING - REF No.22226 EK+ AHX 3126</p> <p>WARBURTON HOLGATE 460 DIA. TOP SIZE PRESS ROLL with "SKF" SPHERICAL ROLLER BEARING - REF No.22226 EK+ AHX 3126</p>	
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361	PM3 NIP ROLLS	Nip Rolls	<p>Includes:</p> <ul style="list-style-type: none"> <li>-Bottom nip rolls</li>   <li>-Top nip rolls</li>   <li>-2x nip roll loading cylinder</li> </ul>	1995	Warburton	<p>WARBURTON HOLGATE  375 DIA. BOTTOM NIP  DRIVE ROLL with "SKF"  PLUMMER BLOCK - REF  No.SNH 616 TA 21316  CCK + H316 + (2) FRB  14.5/170 (FIXED)  "SKF" PLUMMER  BLOCK- REF No.SNH  616 TA 21316 CCK +  H316 (FREE)  WARBURTON HOLGATE  300 DIA. TOP NIP ROLL  with "SKF" SPHERICAL  ROLLER BEARING - REF  No.22311 EK+ AHX  2311  "SKF" DEEP GROOVE  BALL BEARING -  REF.No.6209</p>	
362	PM3 CALENDER HYDRAULIC SYSTEM		<p>Includes:</p> <ul style="list-style-type: none"> <li>-3x hydraulic pump</li> <li>-3x Oil tank</li> <li>-Oil tank heater</li> <li>-Temperature Transmitter</li> <li>-Cooling Valve</li> </ul>	1995	Jefferson HUNT & MOSCROP	<p>JEFFERSON P3100B 386  SPL 2A05 C32 SPL ZA07-  1M</p>	

363	PM3 CALENDER SECTION ROLLS		<p>Includes:</p> <ul style="list-style-type: none"> <li>-2x Lead roll</li> <li>-3x Fixed bow roll</li> <li>-2x Swimming calender roll</li> <li>-2x Steel calender roll</li> <li>-3x Lead roll</li> </ul>	1995	<p>Warburton Wittler HUNT &amp; MOSCROP HUNT &amp; MOSCROP Warburton</p>	<p>6" DIA. LEAD ROLL with RHP MP40 WITTLER 110 DIA. FIXED BOW ROLL HUNT &amp; MOSCROP 405 DIA. SWIMMING ROLL HUNT &amp; MOSCROP 508 DIA. DRIVE ROLL 6" DIA. LEAD ROLL with RHP MP40</p>	
364	PM3 CALENDER SECTION AUXILIARIES		<p>Includes:</p> <ul style="list-style-type: none"> <li>-2x Calender Oscillating gearbox</li> <li>-2x Doctor</li> <li>-Control Desk</li> <li>-Guards</li> <li>-Platforms</li> <li>-Framework</li> <li>-2x Loading ylinders</li> <li>-Sheehan Rope</li> <li>-Sheehan Rope drive gearbox</li> <li>-Sheehan Rope local isolation</li> </ul>	1995	<p>PETER RAYNER  Thermo Fibertek</p>	<p>GEAR MOTOR UNIT WITH ECCENTRIC CAM .37KW 900RPM'CLASS H'FLANGE MOUNTED BCP OR GEC. 1.35AMPS TYPE G/BOX GM2T 0.37KW 13RPM D80AD Loading K35 x 2840mm</p>	

365	PM3 WEB MEASURING AND MONITORING SYSTEMS	Vision System - Paper Quality	Vision System to detect both sides of paper - Dirt - Creasing - Thread position, orientation and oscillation and pattern match - Hole detection - Water mark detection	approx 2014	ISRA	Bespoke	
366	PM3 WEB MEASURING AND MONITORING SYSTEMS	Vision System - Thread Inspection	Vision system to detect Thread Position and orientation within bank note paper. Includes Cameras, Computers, and Lights.	Upgraded 2015	Stemmer Imaging	Bespoke	
367	PM3 WEB MEASURING AND MONITORING SYSTEMS	Ink Markers	Ink marker sets with pneumatic control. 7 sets of 2 ink markers. Adjustable positions on bar.	Unknown	Unknown	Unknown	
368	PM3 WEB MEASURING AND	Waterleaf Porosity	Waterleaf porosity measurement system	1995	Scanlog	Scanlog Porolog 2000	

	MONITORING SYSTEMS	Measurement System					
369	PM3 WEB MEASURING AND MONITORING SYSTEMS	ABB Scanning Gauge	ABB Smart Platform Frame and Sensors Including Frame and Electronics Basis Weight Sensor Moisture Sensor Colour Sensor Optipak Sensor Caliper Sensor Ash Sensor IR Sensor Incl associated ancillaries - Water cooling system, Blower fan and feed transformer (240/220V)	1995	ABB	Smart Platform	

370	PM3 REELING SECTION		<p>Includes:</p> <ul style="list-style-type: none"> <li>-DRU unload motor</li> <li>-DRU Inspection lights</li> <li>-DRUM reeler transfer carrige</li> <li>-DRU splicing system</li> <li>-DRU main carrige</li> <li>-DRU control desk</li> <li>-Tension roll control system</li> <li>-Reel up guarding</li> <li>-Drum Reel up framework</li> <li>-Drum reel up platforms &amp; steps</li> <li>-Drum Reel up sheehan rope system</li> <li>-Drum reel up sheehan rope tension &amp; drive</li> <li>-Core extractor</li> </ul>	1995	<p>Flender</p> <p>Warburton</p>	<p>FLENDER CDUA 250 892.5:1 Serial No 410.411.159</p>	
371	PM3 REELING SECTION ROLLS		<p>Inlcudes:</p> <ul style="list-style-type: none"> <li>-10x Paper Lead Roll</li> <li>-Tension Roll</li> <li>-Adjustable bow roll</li> <li>-Slitter roll</li> <li>-Fixed Bow roll</li> <li>-Rell drum</li> <li>-Mini bend bars</li> </ul>	1995	<p>Warburton</p> <p>WHITTLER Portals</p> <p>WHITTLER Warburton</p> <p>Warburton</p>	<p>6" DIA. LEAD ROLL with RHP MP40</p> <p>WHITTLER 130 DIA. VAR-BOW ROLL</p> <p>WHITTLER 110 FIXED BOW ROLL</p> <p>BAR MINI BEND REELER 128MM DIA</p>	

372	PM3 ABB - DCS CONTROL		ABB Advant Operator Workstations (3 off) ABB AC450 Controller (3 off) ABB MP280 Controller (1 off) ABB AC800M controller (1 off) ABB IO Panels containing S400 and S800 IO (Digital IO 110Vac, analog IO 4-20mA) ABB Engineering Workplace for Control Builder A ABB 800xA Host Server and Server Rack ABB 800xA Operator Workplace (2 off)	Various Years	ABB	Bespoke	
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					<p>18.5KW 984RPM with ABB ACS880-107 VSD FLENDER D162A 33.86:1 Serial No 410.947.06</p> <p>ABB MBTA160L6 11KW 970RPM with ABB ACS880-107 VSD FLENDER D142A 19.1:1 Serial No 417.947.07</p> <p>ABB MBTA160L6 11KW 970RPM with ABB ACS880-107 VSD FLENDER D142A 27.48:1 Serial No 417.947.09</p> <p>ABB M2AA132MB6 5.5KW 960RPM with ABB ACS880-107 VSD FLENDER D101A 20.22:1 Serial No 417.947.10</p> <p>ABB M2BA 200MA 18.5KW 984RPM with ABB ACS880-107 VSD FLENDER D142A 27.48:1 Serial No 417.947.11</p> <p>ABB MBTA160L 11KW 970RPM with ABB ACS880-107 VSD FLENDER D142A</p>	
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						33.45:1 Serial No 410.601-2561-05	
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374	PM3 SECTION INDRIVES	Stand alone Machine VSDs ABB Multidrive System	Includes: -Incomer and ACU -Incomer isolator -Refiner drive -Vat fan pump drive -Former Fan pump drive -2x air float dryer zone fan driv -Evener roll drive -Evener roll indrive -Silk pumps drive	ABB VSD Upgrade 2018	ABB	ACS880-107 Multidrive System	
375	PM3 MCC41		Includes: -MCC incomer 2000A -123x Starters -14x Spares -16xPanel -2x Supply -Remote I/O ABB S400 for starter control	1995	GEC	Bespoke	
376	PM3 MAIN FEEDER & SWITCH AUX		Includes: Distribution System 2 off Incomers from separate Transformers 2 off Feeders to MCC's Multiple Feeders for Fuse boards.	1995	GEC	Bespoke	
377	PM3 BIOCIDE SKID		Includes: -Biocide skid -Biocide skid local start				

							
378	PM3 SIZE AGENT (HERCAT) SYSTEM		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Size agent skid</li> <li>-Size agent Tank</li> <li>-Size agent dosing pump</li> <li>-Size agent control panel</li> <li>-Size agent flow transmitter</li> <li>-Size agent pressure transmitter</li> </ul>	2016	Portals	<p>Stainless Steel Watson Marlow Dosing Pump</p> <p>ABB Magnetic Flow Meter</p> <p>IFM Pressure sensor for Tank Level Measurement</p>	

379	PM3 FELT CLEANING SYSTEM		Includes: -Felt cleaning skid -Felt cleaning skid spraybars	Unknown	Unknown	Unknown	
380	Item removed						
381	PM3 SOFT WATER SYSTEM		Includes: -2x Softwater pump -Ringmain pressure transmitter -2x softwater resin tank -Soft water filter tank -Soft water unit platform -Soft Water btine tank -Salt conveyor -Salt conveyor local starter -Water hardness testing unit	1995	Grundfos	Grundfos CR60-30	

							
382	PM3 WET STRENGHT RESIN SYSTEMS		Includes: -Wet strength resin flowmeter -Wet strength resin flow transmitter -Wet strength resin control loop valve	1995	SOMAS	KVT - A6 - AKT - B11	

							
383	PM3 CMC SYSTEM		Includes: -CMC flowmeter -CMC flowtransmitter -CMC control loop valve	1995	SOMAS	KVT - A6 - AKT - B11	

384	PM3 ASHLESS OPACIFIER SYSTEM		Includes: -Tank&bund -Pump -Local starter -Flowmeter -Flowtransmitter -Flow control valve	1998	Mono	Mono SAA 12H1R5	
385	PM3 SILK SYSTEM		Includes: -2x Silk supply tank -2x Silk supply tank agitator -2x Silk supply tank level transmitter -2x Silk supply tank level control valve -2x silk supply pump -Silks flowmeter -Silks flow transmitter -Silks flow control valve	1995	Mono	Mono SAC12H1B5/H1593	

386	PM3 "M" FEATURE		<p>Includes:</p> <ul style="list-style-type: none"> <li>-M feature mixing tank</li> <li>-M feature holding tank</li> <li>-2x tank agitators</li> <li>-2x pumps</li> <li>-Pump change over panel</li> <li>-2x local isolators</li> <li>-Flowmeter</li> <li>-Flowtransmitter</li> <li>-Flow control loop valve</li> <li>-2 tank level transmitters</li> <li>-2x pressure transmitters</li> <li>-2x level control valves</li> </ul>	1999	LIGHTNIN MONO	Plastic  LQ75 PUMP EPSILON E14BS80RRA M FEATURE 165@50HZ 2 BAR	 
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387	PM3 MCC AHU		<p>Includes:</p> <ul style="list-style-type: none"> <li>-MCC air handling unit</li> <li>-Fan</li> <li>-Cooling coil</li> <li>-Ducting</li> <li>-Filters</li> <li>-Control Valve</li> <li>-Air Temperature transmitter</li> </ul>	1995	GREENBANK		
388	PM3 MACHINE HOUSE AHU		<p>Includes:</p> <ul style="list-style-type: none"> <li>- Air handling unit</li> <li>-Fan</li> <li>-Cooling coil</li> <li>-Ducting</li> <li>-Filters</li> <li>-Control Valve</li> <li>-2x Air Temperature transmitter</li> <li>-Air heater battery</li> <li>-Temp Heater Battery</li> <li>-AHU lights</li> </ul>	1995	GREENBANK	37KW 64800M3/hr	
389	PM3 DRIVE SUITE AHU		<p>Includes:</p> <ul style="list-style-type: none"> <li>-Drive Suite Fan</li> <li>-Air handling unit</li> <li>Ducting</li> <li>-Fliters</li> <li>-Cooling coil</li> <li>-Control valve</li> <li>-Transmitter</li> </ul>	1995	GREENBANK		

390	PM3 FRESH AIR MAKE-UP		Includes: -Frash air fan -Ducting -Temperature transmitter -Make up fan air handling unit -Ducting -Filter -Make up fan	1995	GREENBANK	5.5KW 20000M3/hr	
391	PM3 MACHINE HOUSE VENT FANS		Includes: -4x Exhaust fans	1995	GREENBANK	0.32KW 5450M3/hr	

392	PM3 HOIST & LIFTING GEAR		Includes: -2x Cranes -36x Lifting beams -Suction Pick up roll lift bracket -Suction roll lifting bracket -Press roll lifting bracket	1995	KONE		 The top photograph shows a yellow overhead crane with a hook and chain assembly, positioned in a large industrial building with a high ceiling and metal truss structure. The bottom photograph shows a similar yellow overhead crane from a different angle, highlighting the horizontal beam and the suspension mechanism.
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# PM8



## History

*Built 1975.* Conventional Walmsley design uniflow vat, single ply; no former, Voith Inline Soft Nip calendar installed 2000. QCS upgrade 2002. Converted to single pass backwater usage; Fabric and Press cleaning showers upgraded to EMO 3's 2007, Upgraded thick stock system to increase volume: variable speed blend chest pump, refiner motor 160kW with variable speed, pipework and thick stock controller upgraded, drainage rate transmitter and closed loop controls 2011. Upgrade to thin stock approach 2015 (3 stage cleaning system) flat low angle fabric section with 2 x flat vacuum boxes, single bottom felted plain press with dead weight smoothing roll, 12 1975 new drying cylinders, conventional cascade condensate system Two drive (Cog wheels) sections; 1 top and 1 bottom dry-wires. Compact surface size bath (1m immersion dip) with single horizontal impregnation doctored nip press, Vits air float drier with two section variable speed circulation fans, Drum reel up with manual feed, full width reeler bar

The machine is capable to manufacture paper from 70 GSM to 100GSM single ply at speed range of 20m/min to 60m/min. with trim width of 2.1M using steam pressure of 30psi max 0.3 tones an hour

## Brief Technical Overview

Uniflow vat at 2.39M width Walmsley with adjustable throat.

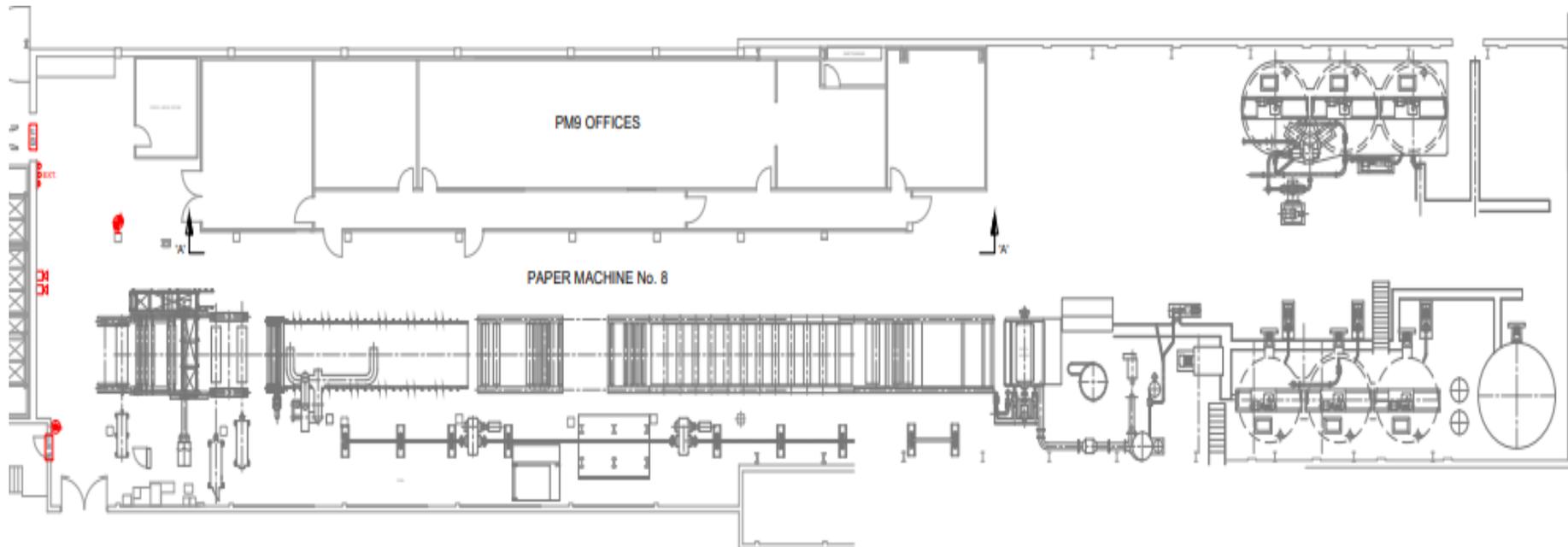
Dry deckle is 1.6 to 2.1M.

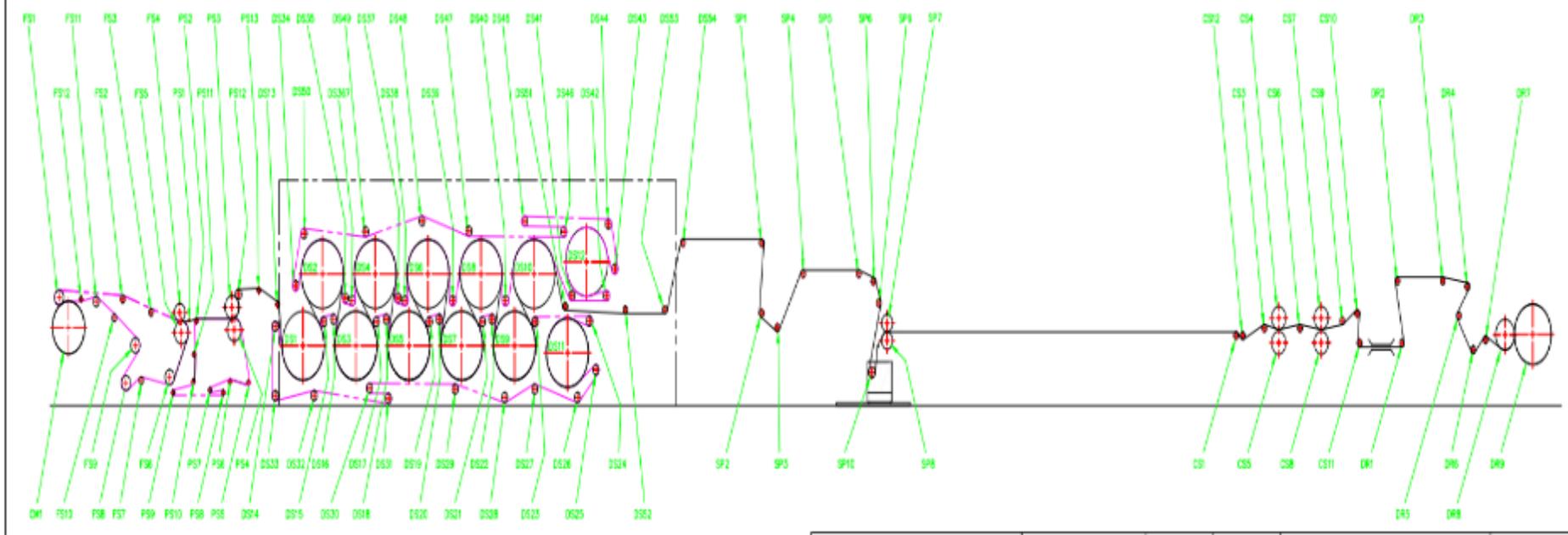
Paper guider into 2 soft nip calendar section.

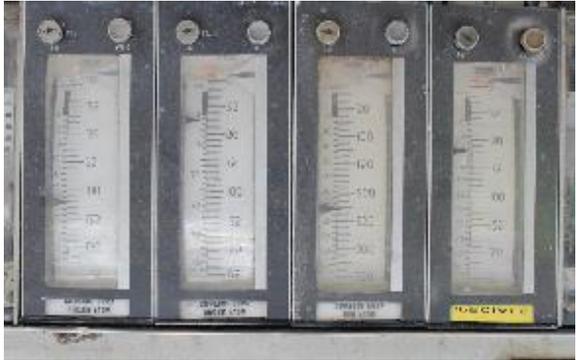
Abb gauge

Drum reeler 85" with a max weight of 1.5T. Built in scale at the end of the line.

Sheehan rope feed from main drier to drum reeler with automated Ink marking system.





ID	Section	Assets	Description	Make	Model	Photo
393	Lubrication Pumps	Lubrication Pumps	Oil Distribution Pump Scavenger Pump Circulation Pump Grease Lube pump Grease Top Up Pump	CENTRALUBE CENTRALUBE LUMATIC DROPSA LUMATIC AIR OPERATED	DP60  30UK  A065  5-1 RATIO	
394	Vat Stock Approach	Broke Control	Broke Control Flow Control			

395		Linen	Linen flow Control Linen Supply control Rag Chest with Agitator Pump Level Control Consistency Control	LIGHTNING  SERLACHIUS	2VS-15  DC-80/260/H	
396		Rag Chest	Cotton Comber Flow Control Broke Flow Control Rag Chest Agitator Rag Holding Chest Agitator	LIGHTNING LIGHTNING	2VS-15 2VS-15	

397		Blend Chest	Blend Chest Agitator Blend Chest Pump Blend Chest Consistency Regulator	LIGHTNING SERLACHIUS	2VS-15 DC-80/260/M	 
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398		Screen	Primary Screen  0.33mm Slotted Screen	WATFORD	SP800	
399		1 <sup>st</sup> stage Primary cleaner	Primary Cleaner pump 1 <sup>st</sup> stage Cleaner Assemblies	SERLACHIUS	DC-100/360/M	

400		2 <sup>nd</sup> Stage Cleaner	2 <sup>nd</sup> stage Primary Cleaner Pump 2 <sup>nd</sup> stage Cleaner Assemblies	SERLACHIUS	DC-100/300/M	
401		3 <sup>rd</sup> Stage Cleaner	3 <sup>rd</sup> Stage Cleaner Pump 3 <sup>rd</sup> Stage Cleaner Assemblies	WEIR MONOGLIDE	SND2	

402		Headbox	Headbox Level Control Thickstock Flow Control			
403		Excess Water	Excess Water Tank Built in with Silo Excess Water Level Control Backwater Pump Flushing Pump Sealing Water Pump			

404		Refiner	DD Refiner  Tailings Refiner Refiner sock Flow Control	BELOIT  REFINER ESCHER	14IN DOUBLE D REFINER fitted with 12" discs WYSS TYPE R1	
405		Auxiliary	Control Desk			

406	VAT & CYL Moulds	Mould	Cylinder Mould Mould Spray	Portals		
407		VAT	VAT VAT level control Draught Level Control VAT Mainflow Control Vat Manifold Return Control Loop Vat Overflow Control Loop			
408	Fabric Section	Rolls	Couch Roll  Pitting Roll 2x Fabric Roll 2x Press Roll Fabric Guid Roll Fabric stretch Roll Bow Roll Brake Back Roll Couch Arm Assembly		roll 92 1/2" X 12" 200-250 P & J RUBBER with SKF230226 CCK/W33	

409		Auxiliary	Press Oscillation Doctor Formex/Fabric Sprays Formex/Fabric Shower Pump  Guider	WORTHINGTON SIMPSON	16WMV16	
410	Press Section	Rolls	Hold Down Roll 5x Wet Felt Roll Top&Bottom Felt Press Roll Wet Felt stretch Roll Wet Felt Bow Roll Smoothing Roll Carrying Roll			
411		Auxiliaries	Oscillating Doctor Felt Guider Felt Sprays Gun Pump Gun Spray Pump			

412	Vacuum Section	Pumps	2x Vacuum pump	SIEMENS	2BA 3315-3A	
413		Auxiliaries	Hatamet Water Softener Vacuum Separator Tank Pump			

414	Drier Section	Rolls	<p>2x Dryer Cylinder</p> <p>10x Dryer Cylinder</p> <p>6x Paper Lead Roll 33x Wire Roll Wire Stretch Roll</p> <p>2x Stretch roll</p>	<p>STEEL 54"x96" CYLINDER STEEL 54"x96" CYLINDER</p> <p>WIRE ROLL STEEL WIRE ROLL STEEL WIRE ROLL STEEL</p>	<p>Teflon Sleeved</p> <p>8" DIA</p> <p>8" DIA</p> <p>8" DIA</p>	
415		Auxiliaries	<p>2x Dry Wire Guide roll 2x Cylinder Oscillating Doctor Drier Feed Tape system Drier Hood Exhaust Fan</p> <p>2x Condensate Pump</p>	<p>WIRE ROLL STEEL</p> <p>GIRDILSTONE</p>	<p>8" DIA</p> <p>1 1/2" T2 EE5 (MOTOT/PUMP UNIT)</p>	
416	Size Kitchen	Rolls	<p>4x Paper Lead Roll</p> <p>Dip Roll</p> <p>Top Size Press Roll Bottom Size Press Roll</p>	<p>WARBURTON HOLGATE 254.7 DIA. DIP ROLL</p>	<p>"SKF" BALL BEARING</p>	

417		Sizing	<p>Storage Tank &amp; heater</p> <p>2x Size Return and Recirc Pump</p> <p>Size Bath Hot Water Pump</p> <p>Size Bath</p> <p>Size Temperature Control</p> <p>Dilution Water Heater system</p> <p>Hood Extractor Fan</p> <p>Oscillation Doctor</p>	<p>MONO</p> <p>GRUNDFOS</p>	<p>SAB</p> <p>12H1R5/H1103</p> <p>UP 40/50 F250</p>	
418	Air Float Dryer		<p>2x AFD zone Fan</p> <p>2x Heater Battery</p> <p>Zone Temperature Control</p> <p>Exhaust fan</p>	<p>HEATER</p> <p>BATTERY UNIT</p>	<p>211/16/3F/ET1/</p> <p>FE70 85.1/4IN X</p> <p>22IN X 12IN</p>	
419		Guiding	<p>2x Web Guider Roll</p>	<p>ERHARDT &amp;</p> <p>LEIMER SR20</p> <p>STEERING</p> <p>ROLLER</p>	<p>200mm</p> <p>DIAASSEMBLY</p> <p>with INA RAE 40</p> <p>NNP FA106</p>	

420	Calender section	Hydraulic components	3x Hydraulic Pump Oil Tank & Heater Hydraulic Controls			
421		Rolls	2x Calender Doctor 3 x Whittler Fixed Bow Roll 2x Swimming 2x Steel Calender Roll 2x Paper Lead roll			
422		Auxiliaries	Sheehan Rope system			

423	Web Measuring/Monitoring system	Pumps	Accuray cooling 2x Pump Accuray Soft Water Circulation Pump	GRUNDFOS	CR2-20-AVA	
424		Systems	Alarm Annunciator System Web break Detection ABB measuring system Thread Gear Assmebly Moud Count Sheet Length Monitor M feature head Accuray			

425	Reeling Equipment	Rolls	5x Paper Lead Roll Tension Roll Bow Roll Reel Drum Mini Bend bar			
426		Auxiliaries	Tension Roll Control System Splice System DRU Sheehan Rope system			
427	Drives & Indrives		Main Motor Drive& Indrive Line Shaft 4x Indrive and Indrive Belt Shifter 3x Drive and Indrive System 4x Drive			

428	Main Feeder Switch		2x Mcc Fuseboards			
429	Chemical/Colour	Chemical	PH/Melamine Control Nadavin System Reactopaque System CMC Flow Control			

430		Colour	Colour Additive Headbox Level Control			 A photograph showing several large, cylindrical industrial tanks in a mill setting. The tanks are made of metal and have various pipes and valves attached. One tank in the foreground has a yellow label with a warning symbol. The background shows a brick wall and more industrial equipment.
431		Security features	Silk System Silk Tank Silk Agitator Silk Pump M Feature Mixing Tank M Feature Agitator M Feature Holding Tank M Feature Holding Tank Agitator M Feature Pump M feature Control			 A photograph showing several large, cylindrical industrial tanks in a mill setting. The tanks are painted blue and have various pipes and valves attached. One tank in the foreground has a control panel with gauges and buttons. The background shows a brick wall and more industrial equipment.

# PILOT MACHINE



History

The Pilot Machine was built in 1988. Capable to manufacture paper at 80 gsm, twin ply former gsm ranges from 12 GSM to 20GSM. Twin ply paper at speed range of 30m/min to 70m/min. Unique VAT design with infinitely adjustable flexible vat circle, mould design with internal vacuum compartments (VECM) and vat level weir control. The thin stock approach is traditional unifold vat design with white water silo. There are NO hydro cyclone cleaners or pressure screens.

Design is vat, former, fabric and press section only. No drying or sizing capability

#### **Brief Technical Overview**

The Pilot machine is a two-ply Cylinder mould vat machine with forming fabric section consisting of drilled holes uhle boxes and a twin felted plain rolls wet press. Cleaning showers. The vat has a unique Portals design Vacuum Expanding Cylinder Mould (VECM) with 3 vacuum compartments (think Roto former design) and a draught level weir box. The vat internal width is 1.2m ; the mould has a face width of 1.0m ( wet deckle) . A variable speed evener roll in the Vat approach flow. Vat circle is made of PVDF material and is infinitely adjustable to suit drainage rates Couch roll is hollow tube type with soft rubber covering width of 1.25M and diameter of 400mm

The thin stock approach is traditional unifold vat design with white water silo, fan pump main flow to vat inlet and vat overflow. There are no cleaners or screens Vat main flow 0-10,000 lpm. Former main flow 0- 1500 lpm

Former section is 1.0 m wide design, With an adjustable throat. Former cylinder is 1.0m dia metre and 1.25m wide. Thin stock approach is white water silo with fan pump. Optimal Main flow (VAT) of 5000l/min and 750l/min (Former) . Sheet transfer on former is via vacuum box

Former body and explosion chamber are formed by fully machined sections, fitted with tube bank consisting of 23 – 12mm bore tubes. The tubes and manifold are polycarbonate and the removable top plate is manufactured from the same material for inspection purposes.

The machine has Wet end section only.

Drives are located on the right side of the machine. The machine is installed on structural frame and bearing centres are ca 1.56m.

ID	Section	Assets	Description	Year	Supplier	Model	Photo
432	vat stock approach	stock chest	includes; - tank - agitator: - isolation valve - consistency regulator - consistency control valve - flow control valve	1988	tank - kenneth forbes (plastics) ltd  agitator - lightning	tank: 3mm thick reinforced polypropylene sheet with integral synthetic bonding system, externally reinforced with glass fibre laminate. 2438mm dia x 4724mm h. working capacity: 18,200 litres  agitator: 1vs with alpak d132s 5.5kw motor	

433	vat stock approach	stock chest	includes; - tank - agitator: - pump: - isolation valve - consistency regulator - consistency control valve - flow control valve	1988	tank - kenneth forbes (plastics) ltd  pump - scan pump agitator - lightnin	tank: 3mm thick reinforced polypropylene sheet with integral synthetic bonding system, externally reinforced with glass fibre laminate. 2438mm dia x 4724mm h working capacity: 18,200 litres pump: api hs50-20 with crompton d112m 4kw motor agitator: 1vs with alpak d132s 5.5kw motor	
434	vat stock approach	thick stock headbox  tank has perished and fractured	includes; - tank - isolation valve  - consistency regulator - consistency control valve - flow control valve	1988	tank - kenneth forbes (plastics) ltd  btg  fisher	tank:natural (white) copolmer polypropylene 572 m dia x 991mm h with internal height weirs and overflow compartments. working capacity: 228 litres btg mff 2000 ssw fisher control valve	

							
435	vat stock approach	vat pump	includes; - pump	1988	scan pump	api ma250/200-40 with crompton d7r6k 37kw motor	

435	vat stock approach	vat silo	includes; - water tank and level control	1988	tank:kenneth forbes (plastics) ltd	tank: natural (white) copolmer polypropylene 1524mm dia x 2276 h	
436	vat stock approach	former silo	includes; - water tank and level control	1988	tank: portals / edw	tank: ss. height 950mm dia x1500 mm pneumatic dp level cell	

437	vat stock approach	former fan pump	includes; - pump	1988	scanpump	nb125/100/20 with gec 160m 7kw motor	
438	vat stock approach	hp spray pump	includes; - pump	1988	worthington simpson	unknown	
439	vat stock approach	shower pump	includes; - pump	1988	sumflo	p-1prc	

440	vat stock approach	silk pump	includes; - pump -portable pump	unknow n	mono	mono cd40 a6 with crompton d100l 1.1kw motor mono cd80 r3 with gec d132s 6.5kw motor	
441	vat stock approach	refining system	includes; - refiner - flow control valve	1979	andritz - escher wyss	r2 with crompton 1929jt186 100hp motor	

442	vat stock approach	vat vacuum expanding cylinder ( vecm)	includes; - internal suction boxes - vacuum seperators - vacuum drop leg tank - natural draiange chamber ajustable height weir box - flexible vat hydraulic pump & system - flexible vat - vat control desk - vat controls - evener roll - mould spray kadant emo iii - vat curtain - vat level control - vat main flow control - vat main flow return control	1988	parker peter brotherhood/portals	vat width: 1250mm vat mould cylinder: face width 990 mm dia x 1000mm face width vat mould cylinder bearings centres	
443		former	includes: - former cylinder - former sprays: - former controls - former headbox - former main flow return control - former lip - fully adjustable throat with profile control micrometer pots - former couch arms with raise lower/ relief airides -x2 vacuum uhle bioxes ( dry line and lift off)	1988	e.d. warburton/portals	former slice width: 1000mm former length:150mm cylinder face width width: 1200mm cylinder dia: 1000mm cylinder bearing centres:	

444		fabric section	<p>includes;</p> <ul style="list-style-type: none"> <li>- vat couch arms with raise/ lower and relief airrides</li> <li>- vat couch roll</li> <li>- x 5 fabric roll: 130mm dia black diamond 0 -1 p &amp; j</li> <li>- x2 fabric/formax suction boxes with drilled holes face width of 1000mm</li> <li>- fabric drive roll: 230 mm dia fabmate 15 p &amp; j</li> <li>- fabric stretch roll: 130mm dia black diamond 0 -1 p &amp; j</li> <li>- fabric guide roll: 130 mm dia black diamond 0 -1 p &amp; j</li> <li>- fabric bow roll: 150mm dia rubber sleeve</li> <li>- x 2 pitting rolls: 75 mm dia fabmate 10 - 15 p &amp; j</li> <li>- formax/fabric guider:</li> <li>- formax/fabric tension control system</li> <li>- x fabric roll doctors</li> <li>- 1 formax/fabric sprays</li> </ul>	1988		<p>vat couch roll - hfss tube 12" x 1/4" covered with 400mm dia x 1250 face rubber with anti friction bearings</p> <p>guide roll assembly jud 200 srw</p>	
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445		press section	<p>includes;</p> <ul style="list-style-type: none"> <li>-twin felted single plain nip press</li> <li>-top felt section with doctored press roll</li> <li>-bottom felt section</li> <li>-- wet felt roll : 180mm dia black diamond 0 -1 p &amp; j</li> <li>- wet felt guide roll: 180mm dia black diamond 0 -1 p &amp; j</li> <li>- x 4 wet felt roll: 180 mm dia black diamond 0 -1 p &amp; j</li> <li>- x 2 wet felt stretch roll: 180mm dia black diamond 0 -1 p &amp; j</li> <li>- - adjustable hold down roll: 108mm diameter</li> <li>- adjustable lead roll: 203.2mm diameter</li> <li>- adjustable hold down roll: 102mm diameter</li> <li>- - - high pressure pump</li> <li>- x shower pumps</li> <li>- x 2 press felt guiders</li>   <li>- press felt sprays</li> <li>- press felt hp cleaning shower</li> <li>- press felt spray</li> <li>- top felt; flat uhle box with drilled holes</li> <li>bottom felt; flat uhle box with drilled holes</li> <li>-x2 press felt guiders with retek spade</li> </ul>	1988			
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446		vacuum system	includes; - x 2 vacuum pumps - x 4 vacuum pumps - x 2 seperator tanks - seperator tank - seperator pump - vacuum seperator tank - vacuum seperator tank pump - vacuum seal water pump	1988	nash nash nash  monobloc  worthington simpson scanpump	nash cl701 with ed250w 45kw motor nash mhc120-83e with crompton d132sh 7.5kw motor nash e/2183  monobloc 3/4 worthington simpson 32 wr 160 nb100/65/20 with crompton d112m 4kw motor	
447		pulper	includes; pulper  motor	unknow n	black clawson  electric motors	model: p72 / 21" impellor dia: 9.5" 1200/1400 rpm. tank: dia x h electric motors d180l 22kw	

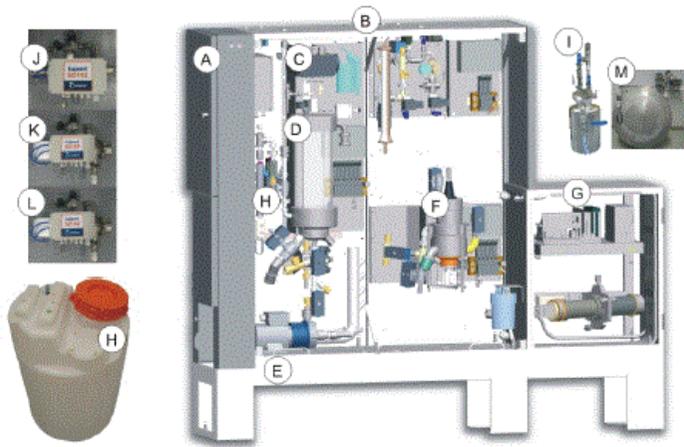
448		wet lap rewing section	includes; reel up roll air loading trasfer arms aith slides	1988	portals / edw		
449	machine drives	machine sectional drives	includes 4 sections; - mould drive - former drive - forming fabric drive - press section drive	1988	s.s.d	mcc 39	

450	motor control cabinet	motor and pump starters	includes main incomer various motor control panels	1988	gec trimline	mcc . no information available as of 16/8/22	
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# KAJAANI MAP



The kajaani MAP is a modular analyzer that can be expanded according to customer needs by adding further measurements. The analyzer adjusts the consistency of incoming pulp samples to a set value and performs the selected measurements: freeness, fiber properties, shives. If necessary, up to 20 sample lines can be connected to one analyzer by using one trunk inlet line. The analyzer can also be used to measure manual samples. Laboratory samples can also be taken from the automatically extracted samples.



ID	Section	Assets	Description	Year	Supplier	Model
451	Pulp Mill	MAP01	<p>The analyzer consists of a device cabinet and a stand (option). Main parts of the cabinet:</p> <ul style="list-style-type: none"> <li>– Electronics unit (A), located at the left-hand end of the cabinet.</li> <li>– Measurement unit (B), contains the consistency measurement (C) and a sample processing unit (D)</li> </ul> <p>Water, instrument air, and sample lines are connected to the measurement unit through inlets on top of the cabinet. All cable connections are made to the electronics unit.</p> <p>Install the analyzer either on a metal stand (E) or on a concrete platform of corresponding height.</p> <p><b>1.3. Analyzer's modules (option)</b></p> <p>The analyzer's functions can be expanded by additional modules:</p> <ul style="list-style-type: none"> <li>– Freeness module (F)</li> <li>– Fiber-Shive module (G)</li> <li>– Ejector-type cleaning module + cleaning chemical tank (H)</li> <li>– Flow-type cleaning module (I)</li> <li>– kajaaniSD102 sampler for medium-consistency and screened pulps (J)</li> <li>– kajaaniSD103 sampler (K) for high-consistency and unscreened pulps.</li> <li>– kajaaniSD104 sampler (L) for high-consistency, unscreened, shive-containing pulps.</li> <li>– Low-pressure sampling module (M). This additional module is used in combination with a sampler</li> </ul>	2005	METSO	K01952 V1.1 EN
452	Papermaking	MAP02	<p>The analyzer consists of a device cabinet and a stand (option). Main parts of the cabinet:</p> <ul style="list-style-type: none"> <li>– Electronics unit (A), located at the left-hand end of the cabinet.</li> <li>– Measurement unit (B), contains the consistency measurement (C) and a sample processing unit (D)</li> </ul> <p>Water, instrument air, and sample lines are connected to the measurement unit through inlets on top of the cabinet. All cable connections are made to the electronics unit.</p> <p>Install the analyzer either on a metal stand (E) or on a concrete platform of corresponding height.</p> <p><b>1.3. Analyzer's modules (option)</b></p> <p>The analyzer's functions can be expanded by additional modules:</p>	2005	METSO	

			<ul style="list-style-type: none"><li>- Freeness module (<b>F</b>)</li><li>- Fiber-Shive module (<b>G</b>)</li><li>- Ejector-type cleaning module + cleaning chemical tank (<b>H</b>)</li><li>- Flow-type cleaning module (<b>I</b>)</li><li>- kajaaniSD102 sampler for medium-consistency and screened pulps (<b>J</b>)</li><li>- kajaaniSD103 sampler (<b>K</b>) for high-consistency and unscreened pulps.</li><li>- kajaaniSD104 sampler (<b>L</b>) for high-consistency, unscreened, shive-containing pulps.</li><li>- Low-pressure sampling module (<b>M</b>). This additional module is used in combination with a sampler</li></ul>			
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# KAJAANI PULP EXPERT



Kajaani Pulp Expert is an automatic on-line analyzer for measuring characteristics of mechanical, chemical and recycled pulps.

Kajaani Pulp Expert's user interface consist software (PePages) of, touch screen and a keyboard with built mouse. Kajaani Pulp Expert software (PePages) starts automatically after login to Windows XP. PePages can be operated either via touch screen or keyboard. Most functions can be selected from menus and the rest from sub windows.

ID	Section	Assets	Description	Year	Supplier	Model
453	Pulp Mill	PEX	<p>The main parts of analyzer are placed inside the enclosure. Lower space contains sample handling and filtrate container. Upper space contains sheet former and sheet handling. Main parts are following:</p> <ul style="list-style-type: none"> <li>-Sample cans (3 pcs)</li> <li>-Automatic sampling valve</li> <li>-Sample container</li> <li>-Sample scale</li> <li>-Sample pump</li> <li>-Sheet former</li> <li>-Dryer station</li> <li>-Wet sheet transfer arm</li> <li>-Sheet scale</li> <li>-Dry sheet transfer arm</li> <li>-Pulper</li> <li>-Filtrate container</li> <li>-Tensile unit</li> <li>-Shive module</li> <li>-Keyboard on front side</li> <li>-Display on front side</li> <li>-Computer</li> </ul>	2005	METSO	PULP Expert

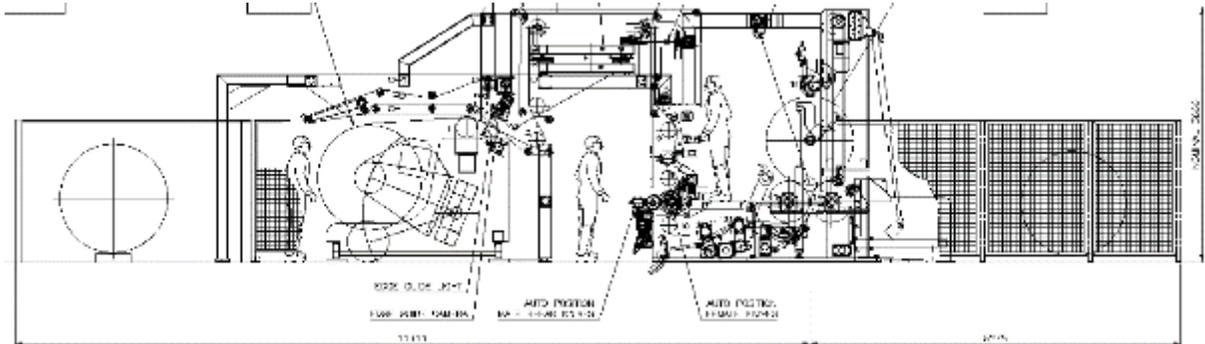
## Coating and Converting

### Atlas Slitting Machine



Atlas converting TDW, built in 2006, rated to 415V, 315amps, hydraulic pressure of 155Bar and pneumatic pressure of 6bar. Built to slit banknote paper from 80-200gsm with tension of 8PLI to 1500m/min normal running speed is 1000 Rpm with capability to slit up to seven webs across. Driven unwind which can process max roll diameter of 1500mm with width of 2800mm.

Rewind rider roll assembly capable of handling roll diameter of 1830mm with width of 2800mm. 10 automatic knives and five guider tracking system. Unload bucket with conveyor system



ID	Section	Assets	Description	Year	Make	Model
454	Approach	Reel transport system	Traverse linear rail system to transport reels into unwind. Controlled by motor and chain system.	2006	Atlas	TDW



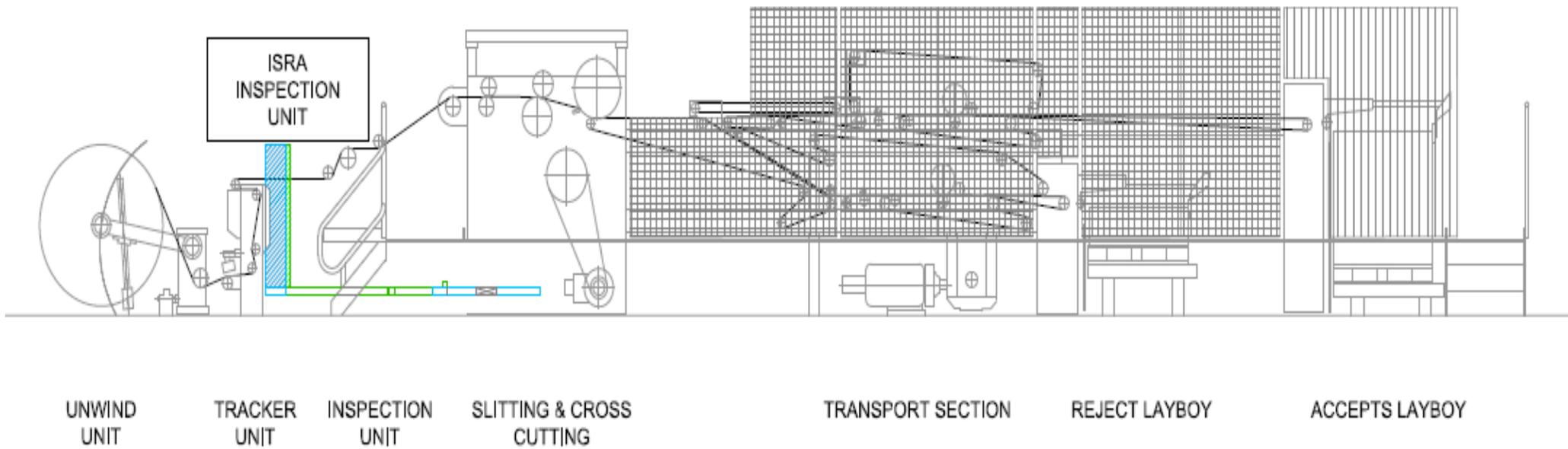
455	Unwind	Unwind	<p>Driven unwind which can process max roll diameter of 1500mm with width of 2800mm. The Unwind Assembly consists of the Unwind Stand Assembly, Unwind Beam, Unwind Arms, and Hydraulic Actuators</p> <p>Each Unwind Arm is fitted with a chuck and an electric or pneumatic Unwind Brake.</p> <p>Includes edge guiding system</p>	2006	Atlas	TDW	
456	Edge guide system	Edge guide system	Edge guide system with offset pivot guider	2006	Perceptive solutions & fife guider		
457	Slitting	Automatic knife system	<p>10 Automatic Tidland male and female knife system. Able to log recipes and control via operator control panel external to the machine. Also includes OPG camera system for online monitoring</p>	2006	Tidland fife		

458	Rewind	Rider roll	Rider roll rewind position. Driven unwind which can process max roll diameter of 1500mm with width of 2800mm. Rewind rider roll assembly capable of handling roll diameter of 1830mm with width of 2800mm.	2006	Atlas	TDW	
459	Unloading	Unload bucket and conveyor system	Automatic unload bucket to transfer finished webs to transport conveyor. Transport conveyor with slats transfers web to end where a kicker arm pushes individual webs out of the machine to be collected by operator with truck	2006	Atlas	TDW	
460	Power and controls	Power and controls	Siemens Simovert drives 415V with Siemens S7 300 series PLC.	2006	Siemens	Simovert drives and S7 300 series PLC	

## Querschneider Sheeter (Strecker)



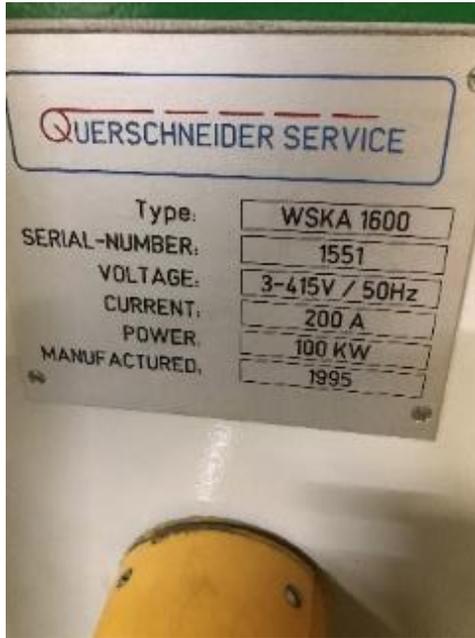
Querschneider Sheeter Type WSKA 1600 Serial no 1551, 415V, 200A, 100Kw, Year 1995 Comes with a Norcan 600-DK series cut to register system, rotary notcher system, ISRA 2017 inspection system, dead knife with PIV gearbox, reject gate and best layboy. Recently upgraded safety control system. Drives on: LH/ Under machine, operator controls: RH, Power cabinets: RH



ID	Section	Assets	Description	Year	Make	Model	Photos
461	Unwind	unwind stand	lifting arms with pneumatic chucks, reel aligning carriage, electrohydraulic edge guiding water cooled brake system with web tension control	1995	Querschneider		
462	Slitting & cross cutting	Notching	inline rotary notch with male and female punch and die. DM900 controller with Pacific scientific SC750 series drives and motor for accurate position and speed.	1995	JF machines ltd / Pacific scientific	Sc750 series	

463	Slitting & cross cutting	Slitting	working pressure of 3bar. Top and bottom knife inline slitter	1995	Querschneider	
464	Slitting & cross cutting	cut to register	Cut to register system allows set up of a sheeter by using watermark. It provides Length setting and display, Automatic reject on splice or flaw or other errors, tracking of flaws of good and bad sheets, batch counting and tabbing, end of batch sequencing, speed and cuts per minute display, slowdown and stop on reel expiry, register control with automatic knife reference calculation, automatic knife positioning at start up, reject on large errors, remote chop position, trimming by pushbuttons. Automatic gain adjustment. Variable gain adjustment for tolerance of +/- 3MM. Can cut to length or register. Uses PIV gearbox for course adjustments and differential gearbox for fine tuning of paper seed and length. PIV gearbox uses toothed chain and automatic tensioning device, type A4-st-q-forn. designed for 240V, 50-60Hz.	1995	Norcan	600 series 

465	Slitting & cross cutting	Rotary knife	Deadknife cross cutter. Knife is fixed speed (follows machine speed) and has safety clutch. Scissor type knife cut	1995	Querschneider		
467	Transport section	Transport	transport tapes carrying paper away from knife cut and into best layboy or reject.	1995	Querschneider		
468	Rejects layboy	Rejects layboy	reject gate which is controlled via Norcan cut to register system and ISRA signal. Rejected sheets go onto collector lift table which automatically lowers. Rejected sheets can be removed manually through side of machine.	1995	Querschneider		

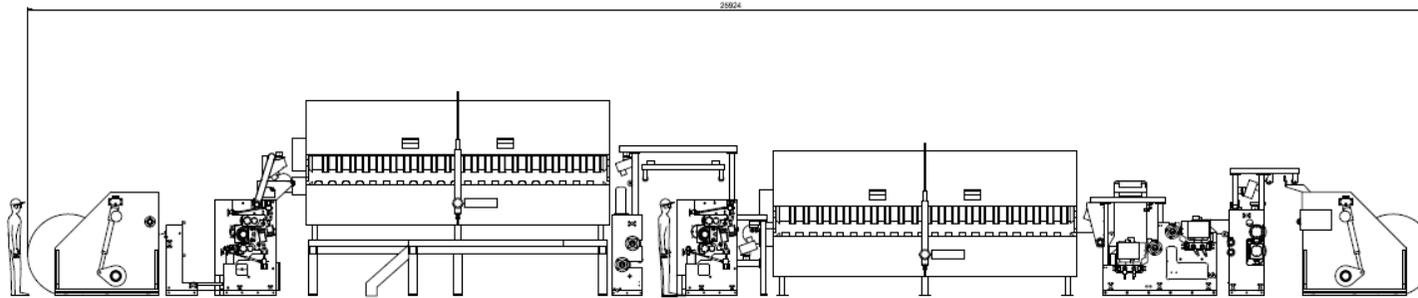
469	accepts Layboy	accepts Layboy	Best layboy at end of machine and collect stacks of sheets. Stacks can be processed manually via flowline system or other. Fully guarded system and upgraded to meet latest PUWER and Machinery directive regulations	1995	Querschneider	
470	power and controls	power and controls	415V, 200A, 100Kw. Siemens S5 PLC with Siemens simoreg drives. Recently upgraded (2022) PILZ safety control system	1995	Querschneider	

## Gravure Coating machine no.3



Emerson & Renwick coating machine, built in 2006 with upgrade to unwind tracker in 2020. Web width min 450mm, max 950mm, max speed of 170m/min, tension range of 50N – 500N, capable of process banknote paper to 85-90gsm. Dry coating weight range of 2-3 gsm per side with solids content range of 15-40%. Unwind diameter of min 300m, max 1250mm with maximum weight of 1100kg. The purpose of the equipment is to apply a surface coating to a paper substrate. The coating is water based. Coating can be applied to one or both sides of the substrate in a single pass through the machine. The proposed coating process is offset differential gravure with the facility to coat

in forward and reverse directions. Coating will be applied and dried sequentially to both sides of the web with the web path through coater number 2 configured for application to the bottom side passing to the dryer. Drives on: LH side, Operator controls on: RH, Main power cabinets on: LH



ID	Section	Assets	Description	Year	Make	Model	Photos
471	Approach	Reel load Crane	Transfers reel from floor to unwind	2006	Emerson & Renwick (various)		
472	Unwind	Unwind unit	Single position unit, non- continuous operation during web changes. Web support, tension control system and web guiding system	2006	Emerson & Renwick (various)		

473	Unwind	Web guiding system	Watermark guiding system designed to guide web through machine to within 0.5mm accuracy	2020	E&L	OL91	
474	Coating	Coating station	Designed for forwards and reverse gravure process. Gravure, Applicator and backing rollers. Applicator has Changeable sleeves and has backing roll cleaning system	2006	Emerson & Renwick (various)		

475	Drying system		<p>The two, single zone, air-float dryers supplied are designed to dry the water-based coating applied to a continuous web of currency paper. The drying is achieved by heated air in a 'non-contact' process in each of the similar dryers.</p>	2006	Spooner	
476	Cooling system	Cooling no.1	<p>To provide moisture back into paper. Diameter is 150mm, made from a single shell mild steel tube coated in neoprene 70o, with a face width of 1050mm.</p>	2006	Emerson & Renwick (various)	

477	Cooling system	Cooling no.2	To provide moisture back into paper. Diameter is 300mm, single design for mono-flow cooling with mild steel tube and ends, hard chrome plated 150 microns thick 0.4 Ra, face width is 1050mm.	2006	Emerson & Renwick (various)	
478	Nip Calendar		Applies a pressure of between 50 – 200PLI across the sheet width on both sides. Three independent Kadant doctor blade assemblies are installed at each of the three rollers positions for removal of loose particulate.	2006	Emerson & Renwick (various)	

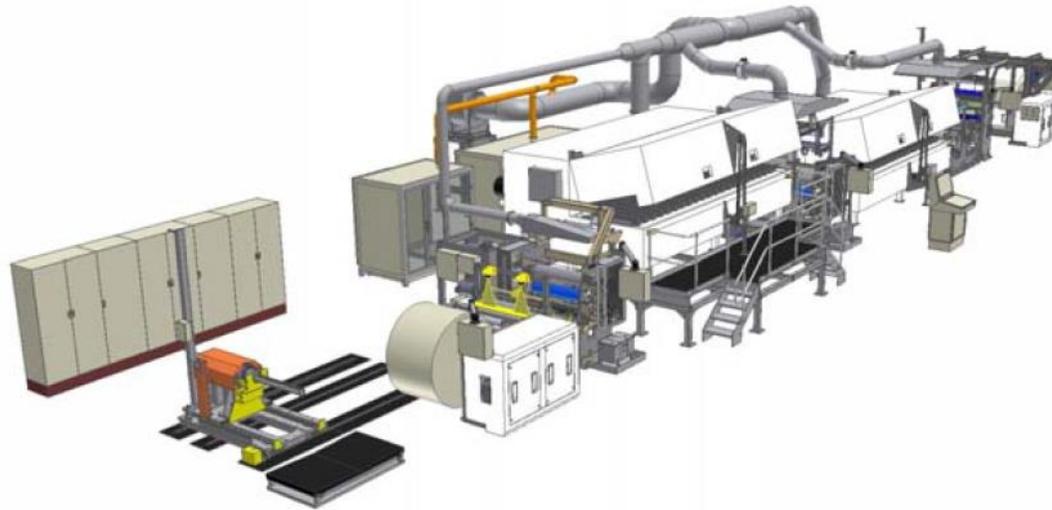
479	Rewind		Single position unit, non- continuous operation during web changes. Web support, tension control system and web guiding system	2006	Emerson & Renwick (various) Fife tidland guiding	SYMAT 300A	
480	Reel unload truck assembly		Unloads web from rewind to floor level	2006			
481	Power and controls		Siemens Motor gearboxes with SSD parker 690 series drives and siemens S7 300 series PLC's. 415V 400A	2006	Siemens & SSD	S7 300 seriesies690 series (older version)	

482	Coating Kitchen and delivery system		Mixing and side tanks used to mix Neorez, cross linker and De foaming. Pumps. Side tank is able to hold a maximum volume of 200 litres and is banded to hold a volume of 110% of the total possible volume. Dosing system used to provide continuous feed to machine	2006	Emerson & Renwick (various)		
483	Ink marking	Domino printer	Ink marking Domino A420i printer	2020	Domino	A420i	

## Gravure Coating machine no.4



Emerson & Renwick coating machine, built in 2015 at a cost of £3.2m. Web width min 450mm, max 950mm, max speed of 190m/min, tension range of 70N – 700N, capable of process banknote paper to 80-120gsm. Dry coating weight range of 2-4gsm per side with solids content range of 20%. Unwind diameter of min 300m, max1500mm with maximum weight of 1250kg. The purpose of the tandem coating line is to apply a surface coating on to a paper substrate. The coating can be applied to one or both sides of the substrate in one single pass through the machine; the coating is a water based solution. Coating will be applied and dried sequentially to both sides of the web with the web path through coater number 2 configured for application to the bottom side passing to the dryer. Drives on: RH side  
Operator controls on: LH Main power cabinets on: RH



ID	Section	Assets	Description	Year	Make	Model	Photos
484	Approach	Scissor lift	Used to transfer material reel from floor level to transfer shaft of reel truck	2015	Emerson & Renwick (various)		
485	Approach	Reel load truck assembly	Transfers reel from scissor lift to unwind	2015	Emerson & Renwick (various)	.....	

486	Unwind	Unwind unit	Single position unit, non- continuous operation during web changes. Web support, tension control system and web guiding system	2015	Emerson & Renwick (various)		
487	Unwind	Web guiding system	Watermark guiding system designed to guide web through machine to within 0.5mm accuracy	2015	E&L	Type DR 3111	

488	Coating	Coating station	Designed for forwards and reverse gravure process. Gravure, Applicator and backing rollers. Applicator has Changeable sleeves and has backing roll cleaning system	2015	Emerson & Renwick (various)	
489	Drying system	Drying	The two, single zone, air-float dryers supplied are designed to dry the water-based coating applied to a continuous web of currency paper. The drying is achieved by heated air in a 'non-contact' process in each of the similar dryers.	2015	Spooner	

490	Cooling system	Cooling no.1	To provide moisture back into paper. Diameter is 150mm, made from a single shell mild steel tube coated in neoprene 70o, with a face width of 1050mm.	2015	Emerson & Renwick (various)	
491	Cooling system	Cooling no.2	To provide moisture back into paper. Diameter is 300mm, single design for mono-flow cooling with mild steel tube and ends, hard chrome plated 150 microns thick 0.4 Ra, face width is 1050mm.	2015	Emerson & Renwick (various)	

492	Double Nip Calendar		Applies a pressure of between 50 – 200PLI across the sheet width on both sides. Three independent Kadant doctor blade assemblies are installed at each of the three rollers positions for removal of loose particulate.	2015	Emerson & Renwick (various)		
493	Rewind		Single position unit, non- continuous operation during web changes. Web support, tension control system and web guiding system	2015	Emerson & Renwick (various)		
494	Reel unload truck assembly		Single position unit, non- continuous operation during web changes. Web support, tension control system and web guiding system	2015	Emerson & Renwick (various)		

495	Power and controls		Siemens Motor gearboxes with SSD parker 690 series drives and siemens S7 300 series PLC's. 415V 400A	2015	Emerson & Renwick (various)	
496	Coating Kitchen and delivery system		Mixing and side tanks used to mix Neorez, cross linker and De foaming. Pumps. Side tank is able to hold a maximum volume of 200 litres and is bunded to hold a volume of 110% of the total possible volume. Dosing system used to provide continuous feed to machine	2015	Emerson & Renwick (various)	 

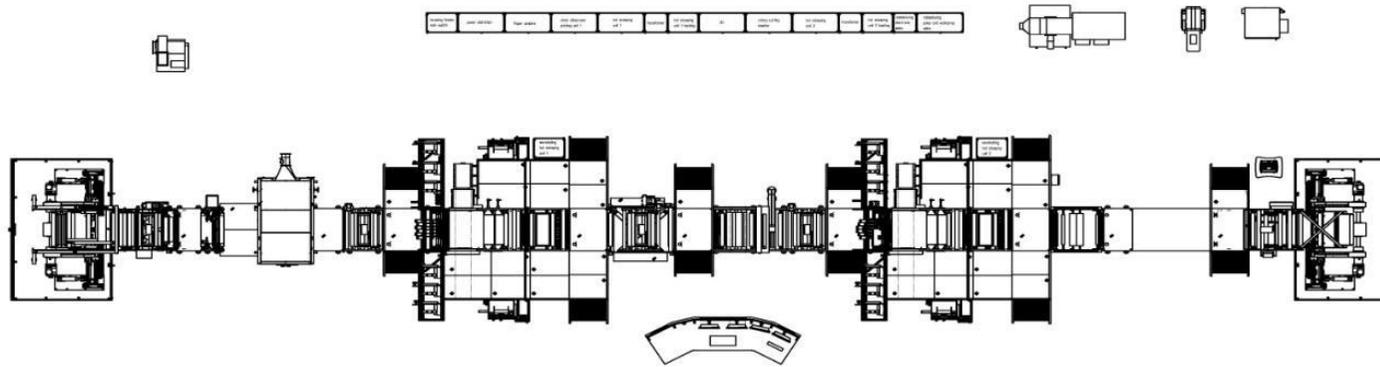
497	Ink marking	Domino printer	Ink marking Domino A420i printer	2015	Domino	A420i	
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## Kurz Hot stamping Euro Capable Foiling machine



Installed in 2016 at a total cost of £8.2m. Full ECB capability including secure window by hole punch technology, E-Feature, twin foil, screen printing and all auxiliaries. The MHS 840 SW2 hot stamping machine is used to apply up to six foil bands onto a substrate web in the hot stamping process on each of its two foiling stations (total of 12 foil). The material to be stamped (substrate) is a paper web that may be coated or uncoated. The substrate web is stamped with the aid of a heated stamping roller and the corresponding counter-rollers in four counter-roller units that are arranged under the hot stamping roller. The hot stamping roller has independently adjustable heating zones. The heat-up temperature of the heating zones of the hot stamping roller is monitored and regulated. An in-register perforation can be additionally punched in the

substrate web. The long-wave mean value of the water mark is used as a reference value for register control. The foils can be controlled in register with the punched perforation by means of 6 pulling units. Weight: approx. 53 t, Space requirements (L x W x H): approx. 38 m x 8 m x 6 m. Compressed air: 6 bar. Power supply: 400 V 3~ + N + PE, Power consumption: max. 630 A, nominal approx. 260 A. Water flow rate/consumption: approx. 440 l/min. Operator; RH, Cabinets: LH, Motors: LH



ID	Section	Assets	Description	Year	Make	Model	Photos
498	Unwind	HSM substrate unwinder	The substrate unwinder with an attached web guide, illuminated cutting device and parkland edge trimmer. Trim fan to take away slit paper.	2014	HSM / Parkland / E&L		

499	Register mark printer	Register mark printer	register mark printer (Bühler) with mark measuring system.	2014	Buehler Printer	.....	
500	Printing unit	Printing unit	prints the substrate in a screen-printing process with water-based ink and to subsequently dry it in the attached drying unit. The printing unit is designed such that substrate with a width of up to 840 mm can be printed and dried. Uses a squeegee to insert ink with automatic ink level control	2014	spgprint		
501	Dryer	Dryer	The dryer is used for drying the printed/coated substrate and is a part of a print production line. Within the production line the print unit transport printed/coated substrate trough the dryer. After the drying cycle in the dryer the substrate is transported back to the print unit. The printed substrate must be dried before the next print can be made. The dryer is installed on top of the print unit to reduce the footprint of the print production line. Fed by gas and heated through gas burner heaters. gas pressure of 100mBar	2014	spgprint		

502	Web turning station	Web turning station	The purpose of the web guides is to guide the substrate web in the correct track position through the entire system and correct deviations.	2014	Kurz		
503	Web guide	Web guide	four sidelay stations across the machine With OL81 and DO81 camera system The paper web will be scanned with 2 CCD cameras in the back-light mode and will be guided by a pivoting frame DR 3111 following the water marks or paper edges. Web width 400 - 860 mm. Area of watermarks 380 - 857 mm. Visual range of cameras 360 – 900 mm Visual range per camera 270 mm Distance CCD/web 495 mm Length of light field 1233 mm / 977mm Resolution 0,05 mm / Pixel. Accuracy +/- 0,10 mm. Lenze type 50 mm. Web speed 100 - 200 m/min. Paper weight 65 – 120 g/m <sup>2</sup> . Guiding criterion Watermark or paper edge	2014	Erhardt + Leimer	OL81 707870	
504	Cutting unit	Cutting unit	The purpose of the punch is to punch precisely positioned windows out of the substrate. The punch position is controlled by the Eltromat inserter controller, which is integrated in the downstream hot stamping station. The long-wave mean value of the water mark or register mark is used as a reference value for register control. The punched-out substrate blanks are extracted by an integrated extraction system. The cutting section is able to cut plain and speciality papers up to a width of 900mm. (euro capable)	2014	Winkler & Dünnebier Hunkeler		

505	Cutting unit	Web cleaning	The purpose of the web cleaning system that follows the punch is to remove any punch residue that may still remain on the substrate web (that was not extracted in the punch).	2014	KELVA		
506	Hot Stamp stations	Hot Stamp station x 2	<p>Two hot stamp stations to allow ability to add foils to both sides of paper if required. Register control capable via eltromat registrar 20 system can detect tears and faults in foil guide as well as splices. Foil unwind system with Hot stamp cylinder</p> <p>The foil bands are applied onto the substrate web. The substrate web with the applied foil bands is fed through between the hot stamping roller and counter-rollers and stamped.</p> <p>Each of the four counter-roller units consists of four support rollers and two counter-rollers for the stamping tracks. Cooling rolls for cooling foils after stamping. Foil backing rewind system for removal of film. of The hot stamping roller has independently adjustable heating zones.</p> <p>Powered via slip ring motor and Baumuller drives Compressed air:6 bar Power supply:400 V AC + N + PE Power consumption:80 A rated current Water consumption:70 l/min</p>	2014	KURZ /Eltromat		
507	Remoistening system	Remoistening system	<p>The purpose of the remoistening system is to remoisten the substrate, dried in the previous processes, to the required moisture level.</p> <p>400 V/3 Ph/PE, 50 Hz 8.6 A, 5.3 kVA Water supply Fresh water demand 250 l/h Water quality max. 12° dH Water pressure 3-6 bar Air pressure 6 bar Humidity of air 30 ... 70 % rel. humidity of air (continuous) 30 ... 95 % rel. humidity of air (short-time) Max. machine speed 15 m/s Paper grammage 30-150 g/m<sup>2</sup> Process water quantity 2-5.5 % absolute humidity</p>	2014	WEKO	RFS-3 1B 2R 2M S7-300	

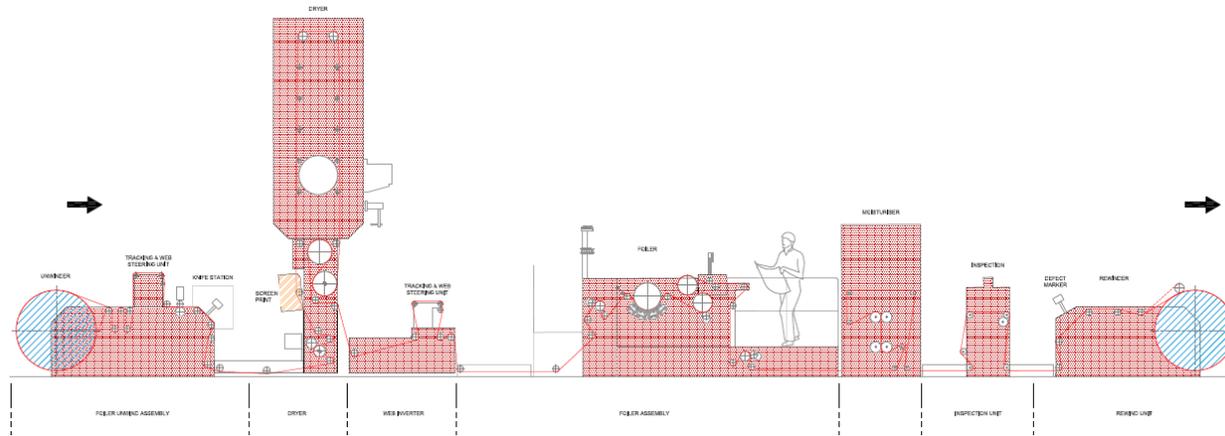
508	Rewinder	HSM substrate rewinder	The substrate rewinder is designed to accept the stamped substrate with a width of up to 860 mm and a maximum reel diameter of 1600 mm. Core pneumatic chucks on electrically driven arms on Lateral adjustment ball screw. Diameter sensor to monitor web completion.	2014	HSM		
509	Inspection	Camera inspection system	The Bankstar OV system is designed to detect foil and printing defects (foil and print quality) and the CD and MD position measurement (registration). The defective sheets are marked using output signal provided by the system	2014	ISRA	Bankstar	
510	Marking	Marking printer	Printer designed to print ink lines with number in the middle. Printer prints ink onto paper to allow next process to reject sheets of paper with ink on. Print signal is sent via Kurz machine as timing is controlled via encoder. Uses i-tech module and specified ink. Also able to print bar code if required.	2014	Domino	A420i	

511	Power and controls	Power and controls	Power supply:400 V 3~ + N + PE .Power consumption: max. 630 A, nominal approx. 260 A. Baumuller BM5xxx series inverters and Baumnuller motors with Beckhoff PLC's.	2014	Baumuller / Beckhoff	BM5xxx series	
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## Kurz Hot Stamping Foiling machine



Designed in 1999 and installed in 2002 and then with a £1.6m upgrade in 2015 with MD foiling capability and ISRA inspection system. The MHS 840/6 P-R foiling machine is used to apply up to six foil bands onto a substrate web in the hot stamping process and can apply iridescent ink to the paper via a screen. The material to be stamped (substrate) is a paper web that may be coated or uncoated. The substrate web is stamped with the aid of a heated stamping roller and the corresponding counter-rollers in four counter-roller units that are arranged under the hot stamping roller. The heat-up temperature of the heating zones of the hot stamping roller is monitored and regulated. web width up to: 840mm, speed max: 150m/min, Compressed air: 6 bar. Power supply:400 V 3~ + N + PE Power consumption: 190kw. Operator; RH Cabinets: RH Motors: LH



ID	Section	Assets	Description	Year	Make	Model	Photos
512	Unwinder	HSM substrate unwinder	The substrate unwinder with an attached web guide, illuminated cutting device and parkland edge trimmer. Trim fan to take away slit paper. 20kw with max roll of 1300mm, web width of 840mm, max 250Newtons and max weight of 800kg. Controlled with Lenze drive and siemens motor	2002	HSM / Parkland / E&L		
513	Printing unit	Printing unit	The purpose of the printing unit is to print the substrate in a screen-printing process with water-based ink and to subsequently dry it in the attached drying unit. The printing unit is designed such that substrate with a width of up to 840 mm can be printed and dried. Uses a squeegee to insert ink with automatic ink level control.	2002	Stork		

514	Dryer	Dryer	<p>The dryer is used for drying the printed/coated substrate and is a part of a print production line. Within the production line the print unit transport printed/coated substrate trough the dryer. After the drying cycle in the dryer the substrate is transported back to the print unit. The printed substrate must be dried before the next print can be made. The dryer is installed on top of the print unit to reduce the footprint of the print production line. Fed by gas and heated through gas burner heaters. gas pressure of 100mBar</p>	2002	Stork		
515	Web turning station	Web turning station	<p>The purpose of the web guides is to guide the substrate web in the correct track position through the entire system and correct deviations.</p>	2002	Kurz		
516	Web guide	Web guide	<p>Norcan UV sidelay control station with type NA2-10923 and E&amp;L sidelay guider.</p>	2002	Norcan		

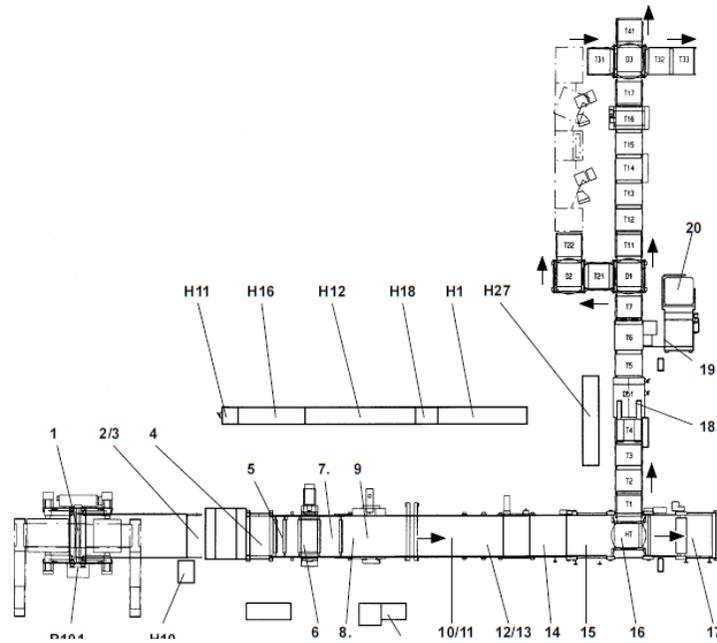
517	Hot Stamp station	Hot Stamp station x 1	<p>1x hot stamp stations to allow ability to add foils to both sides of paper if required. Register control capable via eltromat registrar 20 system.</p> <p>Sensors detect and monitor tears in the substrate web as well as faults in the foil guide. Sensors monitor the foil bands for tears and for splices</p> <p>The substrate web with the applied foil bands is fed through between the hot stamping roller and counter-rollers and stamped. Each of the four counter-roller units consists of four support rollers and two counter-rollers for the stamping tracks. After stamping, the substrate web with the stamping foil is routed over the cooling rollers and cooled. The polyester carrier of the foil is routed over deflection rollers, monitored for foil tears by sensors and wound onto the winding reel of the corresponding foil rewinder.</p> <p>powered via slip ring motor and Baumuller drives Compressed air:6 bar Power supply:400 V AC + N + PE</p>	2002	KURZ /Eltromat		
518	Remoistening system	Remoistening system	<p>The purpose of the remoistening system is to remoisten the substrate, dried in the previous processes, to the required moisture level.Voltage 400 V/3 Ph/PEFrequency 50 HzRated power 1.8 kVAWater supply Fresh water demand 250 l/h</p>	2002	WEKO	ZA-RFS111 Q4000/1	

519	Camera inspection system	Camera inspection system	The Bankstar OV system is designed to detect foil and printing defects (foil and print quality) and the CD and MD position measurement (registration). The defective sheets are marked using output signal provided by the system. Installed in 2016	2012	ISRA		
520	Marking printer	Marking printer	Printer designed to print ink lines with number in the middle. Printer prints ink onto paper to allow next process to reject sheets of paper with ink on. Print signal is sent via Kurz machine as timing is controlled via encoder. Uses i-tech module and specified ink. Also able to print bar code if required.	2020	Domino	A420i	
521	HSM substrate rewinder	HSM substrate rewinder	The substrate rewinder is designed to accept the stamped substrate with a width of up to 860 mm and a maximum reel diameter of 1300 mm. Core pneumatic chucks on electrically driven arms on Lateral adjustment ball screw.. Diameter sensor to monitor web completion. 20kw with max roll of 1300mm, web width of 840mm, max 4000Newtons and max weight of 800kg. Controlled with Lenze drive and siemens motor	2002	HSM		
522	Power and controls	Power and controls	Power supply: 400 V 3~ + N + PE Baumuller inverters with Baumuller omega PLC.	2002	Baumuller		

## Bielomatik no.1 machine



P25-85-21 Paper converting machine, built in 1998. Can process banknote paper into 500 sheet reams. Has a cut length of 400-850mm. Cutting angle tolerance of 0.2mm over 100mm. Web width 430-850mm. Permitted grammage 58 - 120g/m<sup>2</sup> with reel diameter of 550-1524mm. Max speed of 350m/min. Includes automatic deadknife, rotary and static notchers, board feeder with ream labelling machine. Quality check line with GTS counters. inline heat shrinkwrapper and two Baumunn unloaders (one loose). 415v, 3ph +PE, 50hz, 250A, 165KVA, 6bar air supply. Operator; RH Cabinets: LH Motors: LH



ID	Section	Assets	Description	Year	Make	Model	Photo
523	Unwind	Unwind	two lifting arms allowing preparation of new web during machine operation via gluing unit for manual make ready position. Built in splice to allow faster changeover. Reel change speed max. 60 cuts per min. Adjustable on display in order to regulate paper waste. Pneumatic tension control system with single sided disc brake with hydraulic brake system. Reel discharge and tear monitoring by light scanner. 2 x hydraulic clamping chucks for 5" with locating chucks. Double-sided decurler with motorised remote control	1998	Bielomatik	P25-85-21	

524	Guiding	E&L guider	upgrade to E&L in 2021. OL91 model with pivot guiding frame. Accuracy to with 05mm and capable of watermark or edge tracking.	2021	Erdhart & Leimer OL91	
525	Inspection	Isra inspection system	The Bankstar OV system is designed to detect foil and printing defects (foil and print quality) and the CD and MD position measurement (registration). The defective sheets are marked using output signal provided by the system. 350m/min 0.10mm CD and 0.10mm MD	2012	ISRA	

526	Notching	inline Rotary Notcher	<p>The unit is driven separately by a frequency-controlled three-phase servomotor with notching control. The punch length is calculated from bug mark to bug mark and transmitted to the drive. Notching by punch length to synchro-punch size is designed so that the circumferential speed of the punching tool and the paper web speed are the same during punching. Units subject to change.</p> <p>Side adjustment of the complete unit to right or left over the web width by push-button. Adjustment range: web width max. 900 mm, min. 430 mm</p> <p>Punch tolerance range: max. 2 mm. exchangeable notch tools for different sizes. includes Kelva extraction unit</p>	1998	Bielomatik	P25-85-21	
527	Slitting	Slitting	<p>Inline slitter with changeable slitting knives. The slitting assembly group is used for format cutting and side trimming in the running direction of a paper reel still in rough format. The narrow trimming strips (edge trims) which occur at the outer edges of the paper web are sucked away by a fan, shredded, and fed into a waste collector</p>	1998	Bielomatik	P25-85-21	
528	Cutting	Rotary Knife	<p>The Cross cutter is a deadknife set up and is used to paper web to sheet size</p> <p>Desirable length is set at operator station and system automatically cuts to within a tolerance based on watermark position. About to cut in Format or trend mode. The knife unit is driven directly by a frequency-controlled servomotor. Skip-cam available to allow higher sheet length.</p>	1998	Bielomatik	P25-85-21	

529	convertin g	converting	two best reams available at 500 sheet reams. Two overlapping sections allow continuous processing of reams as they alternate. Reams have side joggers to allow square reams to be produced. One reject section to stacker to allow spoil sheets to be rejected and collected.	1998	Bielomatik	P25-85-21	
530	Notching	static notcher	recently upgraded in 2020 by Konia. Allow front notch to be applied to paper reams. Changeable tools and has built in extraction system.	2020	Konia	NES-01	

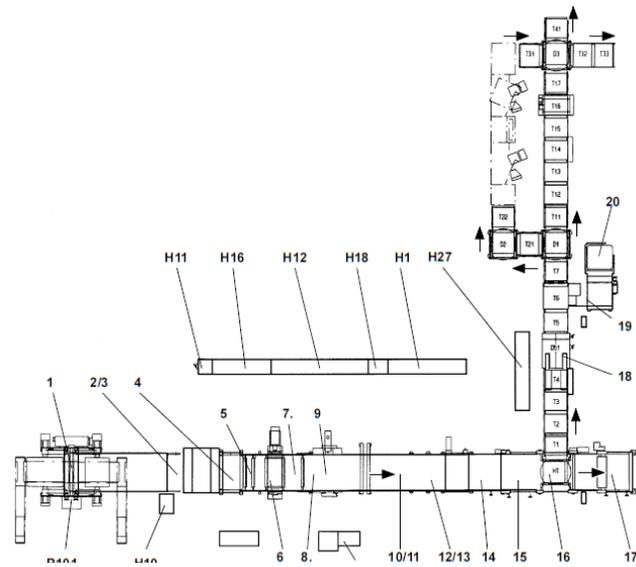
531	Labelling	Ream labelling	Allows labels to be applied to finished ream. Mabeg board feeder applies boards to top and bottom of ream before label is applied	1998	Bielomatik	P25-85-21	
532	inspection	Quality inspection	quality inspection line built in to allow reams to be diverted so can be manually checked. GTS 500 counter installed to allow checking of finished sheets.		GTS		
533	Wrapping	Shrinkwrap per	Inline shrinkwrapper with heat shrink tunnel. Use side seals to seal wrap and has option of heat tunnel to shrink-wrap product. Eurotherm Drives Ltd. Allen Bradley SLC 503 PLC	1998	EDL	1200/150 ILASS	

534	unloader	Unloader	<p>2x unloaders to allow reams to be stacked into pallets ready for collection by operator. Automatic recognition of the height of paper stack on pallet and execution of a fully automatic unloading procedure. horizontal drive table by electric motor. table clamping of paper stack over the total length ensuring optimum rest. operation by means of control panel.400v 3pahse and neutral, 50Hz, 13A, 5KW. pressure 6 bar. paper format max 90cm x 180cm. stacking height of paper on pallet 180cm. machine size of LXWXH 5650 x 3100x3450mm</p>		Baumunn	
535	power and controls	power and controls	<p>415v, 3ph +PE, 50hz, 250A, 165KVA. Siemens S5 PLC range with AMK/ Lenze Drives and Siemens SMP rack for controlling watermark position and knife calculation.</p>		Bielomatik P25-85-21	

## Bielomatik no.2 machine



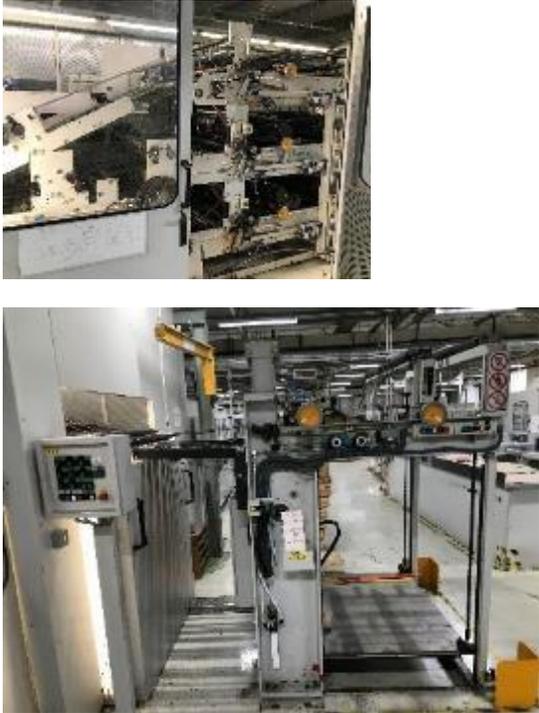
Paper converting machine, built in 1999. £1.4m upgrade carried out in 2017. Upgrade of controls, motors, knife, notcher, gates, overlapping transport section and Safety control system. Can process banknote paper into 500 sheet reams. Has a cut length of 400-850mm. Cutting angle tolerance of 0.2mm over 100mm. Web width 430-850mm. Permitted grammage 58 - 120g/m<sup>2</sup> with reel diameter of 550-1524mm. Max speed of 350m/min. Includes automatic deadknife, rotary and static notchers, board feeder with ream labelling machine. Quality check line with GTS counters. inline heat shrinkwrapper and two Baumunn unloaders (one loose). 415v, 3ph +PE, 50hz, 250A, 165KVA, 6bar air supply. Operator; RH Cabinets: LH Motors: LH



ID	Section	Assets	Description	Year	Make	Model	Photo
536	Unwind	Unwind	two lifting arms allowing preparation of new web during machine operation via gluing unit for manual make ready position. Built in splice to allow faster changeover. Reel change speed max. 60 cuts per min. Adjustable on display to regulate paper waste. Pneumatic tension control system with single sided disc brake with hydraulic brake system. Reel discharge and tear monitoring by light scanner. 2 x hydraulic clamping chucks for 5" with locating chucks. Double-sided decurler with motorised remote control	1998	Bielomati k	P25-85-22	

537	Guiding	Tracker & guider	Norcan tracker installed in 2010. The camera frame contains one or more linescan cameras together with illumination. The control desk contains the video processing logic, plant interface and a touch screen PC containing a frame grabber for image acquisition and processing of up to 4 cameras. The system is capable of detecting tracking dots or bars, the edge of the web or a printed black line. Adjustment of all parameters is through the Touch Screen user interface and can be protected from inadvertent changes by a system lock input. UV_ uses fife guider for pivoting frame with DP20 controller.	2010	Norcan		
538	Inspection	Isra inspection system	The Bankstar OV system is designed to detect foil and printing defects (foil and print quality) and the CD and MD position measurement (registration). The defective sheets are marked using output signal provided by the system. 350m/min 0.10mm CD and 0.10mm MD	2013	ISRA		
539	Notching	inline Rotary notcher	The unit is driven separately by a frequency-controlled three-phase servomotor with notching control. The punch length is calculated from bug mark to bug mark and transmitted to the drive. Notching by punch length to synchro-punch size is designed so that the circumferential speed of the punching tool and the paper web speed are the same during punching. Units subject to change. Side adjustment of the complete unit to right or left over the web width by push-button. Adjustment range: web width max. 900 mm, min. 430 mm Punch tolerance range: max. 2 mm. exchangeable notch tools for different sizes. includes Kelva extraction unit	1998 (upgrade in 2016)	Bielomatik	P25-85-22	

540	Slitting	Slitting	<p>Inline slitter with changeable slitting knives. The slitting assembly group is used for format cutting and side trimming in the running direction of a paper reel still in rough format. The narrow trimming strips (edge trims) which occur at the outer edges of the paper web are sucked away by a fan, shredded and fed into a waste collector</p>	1998	Bielomatik	P25-85-22	
541	Cutting	Rotary Knife	<p>(knife motor and controls upgraded) The Cross cutter is a deadknife set up and is used to paper web to sheet size. Desirable length is set at operator station and system automatically cuts to within a tolerance based on watermark position. About to cut in Format or trend mode. The knife unit is driven directly by a frequency-controlled servomotor. Skip-cam was modified / removed during trial to improve knife cut so is now not usable. Control of the cross cutter at each cut and use of the complete tolerance range from +/- 3 mm from watermark to cut edge.</p>	1998 (upgrade in 2016)	Bielomatik	P25-85-22	

542	convertin g	converting	two best reams available at 500 sheet reams. Two overlapping sections allow continuous processing of reams as they alternate. Reams have side joggers to allow square reams to be produced. One reject section to stacker to allow spoil sheets to be rejected and collected. Overlap section was upgraded in 2016 to motor driven belts with pneumatic tension control. Sample gates also upgraded to latest design form Bielomatik.	1998 (upgrade in 2016)	Bielomati k	P25-85-22	
543	Notching	static notcher	recently upgraded in 2020 by Konia. Allow front notch to be applied to paper reams. Changeable tools and has built in extraction system.	2020	Konia	NES-01	

544	Labelling	Ream labelling	Allows labels to be applied to finished ream. Upgraded in 2016 to modern printer with HMI. Mabeg board feeder applies boards to top and bottom of ream before label is applied	1998 (upgrade in 2016)	Bielomatik /Hermes / Mabeg	P25-85-22 Map 80	
545	inspection	Quality inspection	quality inspection line built in to allow reams to be diverted so can be manually checked. GTS 500 counter installed to allow checking of finished sheets.		GTS		
546	Wrapping	Shrinkwrapper	Inline shrinkwrapper with heat shrink tunnel. Use side seals to seal wrap and has option of heat tunnel to shrink-wrap product. Eurotherm Drives Ltd. Allen Bradley SLC 503 PLC		EDL	1200/150 ILASS	

547	unloader	Unloader	<p>2x unloaders to allow reams to be stacked into pallets ready for collection by operator. Automatic recognition of the height of paper stack on pallet and execution of a fully automatic unloading procedure. horizontal drive table by electric motor. table clamping of paper stack over the total length ensuring optimum rest. operation by means of control panel.400v 3pahse and neutral, 50Hz, 13A, 5KW. pressure 6 bar. paper format max 90cm x 180cm. stacking height of paper on pallet 180cm. machine size of LXWXH 5650 x 3100x3450mm</p>		Baumunn		
548	Chiller	Chiller	Chilled water system for upgraded servo motors and drives.	2016	Rittal	SK3336.731	
549	power and controls	power and controls	415v, 3ph +PE, 50hz, 250A, 165KVA. Siemens S7 400 series PLC and 2x Siemens S5 PLC (unwind and transport sections) AMK Drives (upgraded in 2016) Lenze Drives.	1998 (upgrade in 2016)	Bielomati k	P25-85-22	

# Standalone equipment

Various equipment used to prepare paper for packing

ID	Section	Assets	Description	Year	Make	Model	Photos
550	Counting	<b>GTS counter</b>	4 X quality inspection Double head counters which count sheets to 500 sheets. Has stamper and two counting discs for counting each corner. Air float table for easy handling of paper to allow reams to be diverted so can be manually checked. GTS 500 counter installed to allow checking of finished sheets. high volume vacuum pump. control panel and visual warning indicator. max sheet size of 900mm deep x 1000 long. min sheet size 80mm deep x 420mm long. pile height up to 200mm. table height 800-900mm, machine height max 1900mm, width 1300mm, length,1680mm, weight 750kg. 230vAC 50/60hz 2.5kw		GTS		
551	unloaders	Unloader	3x unloaders to allow reams to be stacked into pallets ready for collection by operator. Automatic recognition of the height of paper stack on pallet and execution of a fully automatic unloading procedure. horizontal drive table by electric motor. table clamping of paper stack over the total length ensuring optimum rest. operation by means of control panel.400v 3pahse and neutral, 50Hz, 13A, 5KW. pressure 6 bar. paper format max 90cm x 180cm. stacking height of paper on pallet 180cm. machine size of LXWXH 5650 x 3100x3450mm		Baumann	BA6S	

552	Wrapping	Shrinkwrapper	Manually feed reams into conveyor system which then automatically wraps ream and feeds into heat shrink tunnel. Use side seals to seal wrap and has option of heat tunnel to shrink-wrap product. Eurotherm Drives Ltd. Allen Bradley SLC 503 PLC. 400v, 50hz, 3 phase, 54 amps FLC		EDL	ILASS 1200	
553	Wrapping	stretch wrapper	Wraps pallets with wrap. 360 turntable and lift wrap to allow automatic 360 wrapping of product.		M.J Mallis	PR 202	

554	stack turner	stack turner	Able to rotate pallets. 415v, 3 pahse,50hz, 4Kw, 8.4A, 2000kg		premier pallet inverters	
555	Ink preparation	Ink preparation (foilers)	<p>Technijet rotary screen wash system. The System comes as Standard for 725mm repeat screens with a maximum screen wash length of 1500mm</p> <p>High pressure pump units operate through an automatic Start / Stop control.</p> <p>A hand held loading tool for inserting Screens into the system. Connect a water supply to minimum 3/4" connection. Minimum requirement 42 litres / minute maximum pressure 8 bar. Only clean water should be used to protect the high pressure system.</p> <p>3.5. Connect an electrical supply cable to main wash unit, Supply Voltage 3 x 415V + N 50HZ 30 amps</p>	2016	Technijet	

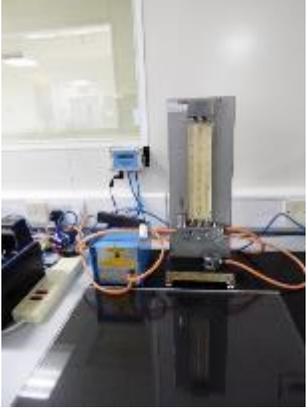
556	Ink preparation	Ink preparation (foilers)	Ink shaker is used for shaking and mixing paint canisters and has the capability of shaking paint canisters of sizes 1-25litre This fully automatic unit features programmable shaking times and programmable clamping pressure	2016	Merris	
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# QC Test Equipment

Assume test equipment is for paper unless stated otherwise.

ID	Area	Machine	Description	Year	Make	Model	Photos
557	QC Lab 1	Bekk Smoothness Tester	Paper Smoothness		Buchel	58-05-00-0002 (V3.2a)	
558	QC Lab 1	Bending Resistance Tester	Stiffness		Lorentzen & Wettre	160 987248	

ID	Area	Machine	Description	Year	Make	Model	Photos
559	QC Lab 1	Bendtsen Reference Standard			Bendtsen	Capillary Tube	
560	QC Lab 1	Bendtsen Roughness & Porosity Tester - Digital	Roughness & Porosity		Büchel BV	K513 (V3.7)	
561	QC Lab 1	Tester for Bendtsen units					

ID	Area	Machine	Description	Year	Make	Model	Photos
562	QC Lab 1	Bendtsen Roughness and Porosity Tester	Roughness & Porosity		Andersson & Sorensen	6	
563	QC Lab 1	Bendtsen Roughness and Porosity Tester	Roughness & Porosity		Andersson & Sorensen	6	
564	QC Lab 1	Bendtsen Roughness and Porosity Tester	Roughness & Porosity		Andersson & Sorensen	6	As above
565	QC Lab 1	Bendtsen Roughness and Porosity Tester	Roughness & Porosity		Andersson & Sorensen	6	As above
566	QC Lab 1	Bendtsen Roughness and Porosity Tester	Roughness & Porosity		Andersson & Sorensen	6	As above
567	QC Lab 1	Bendtsen Roughness Head	Roughness & Porosity		Andersson & Sorensen	N/A	Incl above
568	QC Lab 1	Bendtsen Roughness Head	Roughness & Porosity		Messmer	N/A	Incl above

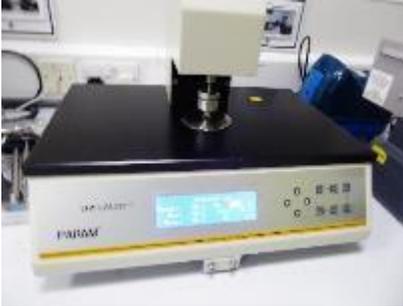
ID	Area	Machine	Description	Year	Make	Model	Photos
569	QC Lab 1	Bendtsen Roughness Head	Roughness & Porosity		Andersson & Sorensen	N/A	Incl above
570	QC Lab 1	Bendtsen Roughness Head	Roughness & Porosity		Messmer	N/A	Incl above
571	QC Lab 1	Bendtsen Roughness Head	Roughness & Porosity		Messmer	N/A	Incl above
572	QC Lab 1	Burst Tester	Burst		Buchel	13-60-00-0002 (EC 35 v2.3)	
573	QC Lab 1	Cobb Tester & Roller	Cobb		Buchel	61-05-00-0002 Ring 100 cm <sup>2</sup>	
574	QC Lab 1	Cobb Tester & Roller	Cobb		Lorentzen & Wettre	100 cm <sup>2</sup> (92502)	As Above

ID	Area	Machine	Description	Year	Make	Model	Photos
575	QC Lab 1	Crumple Porosity Crumpling Device	Crumple Porosity		Bowyer Engineering	N/A	
576	QC Lab 1	Crumple Porosity Crumpling Device	Crumple Porosity		Bowyer Engineering	N/A	

ID	Area	Machine	Description	Year	Make	Model	Photos
577	QC Lab 1	Crumple Porosity Crumpling Device	Crumple Porosity		Bowyer Engineering	BEL/91/100(1)	
578	QC Lab 1	Crumple Porosity Loading Device - 12.5 kg	Crumple Porosity		Bowyer Engineering	12.50 kg	Incl above
579	QC Lab 1	Crumple Porosity Loading Device - 12.5 kg	Crumple Porosity		Bowyer Engineering	12.50 kg	Incl above
580	QC Lab 1	Crumple Porosity Loading Device - 12.5 kg	Crumple Porosity		Bowyer Engineering	12.50 kg	Incl above
581	QC Lab 1	Crumple Porosity Setting Weight	Crumple Porosity		Bowyer Engineering	10kg nominal mass	

ID	Area	Machine	Description	Year	Make	Model	Photos
582	QC Lab 1	Dead Weight Micrometer	Thickness		Messmer	50kPa - 171	
583	QC Lab 1	Dead Weight Micrometer	Thickness		Messmer	50kPa - 172	

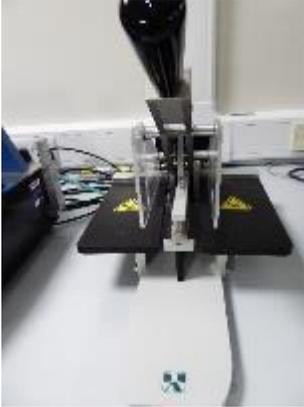
ID	Area	Machine	Description	Year	Make	Model	Photos
584	QC Lab 1	Dead Weight Micrometer	Thickness		Buchel	100kPa - 49-50-00-0002	
585	QC Lab 1	Dead Weight Micrometer	Thickness		Buchel	100kPa	

ID	Area	Machine	Description	Year	Make	Model	Photos
586	QC Lab 1	Thickness	Thickness (50kPa)		<a href="http://www.labthink.com">www.labthink.com</a>	Param / Labthink CHY-C2A thickness tester	
587	QC Lab 1	Thickness	Thickness (100kPa)		<a href="http://www.labthink.com">www.labthink.com</a>	Labthink C640 Thickness tester	
588	QC Lab 1	Digital Calliper	Digital Calliper		Mitutoyo	CD-6"	
589	QC Lab 1	Digital Calliper	Digital Calliper		Brown & Sharp TESA SA	Eagle Classic	
590	QC Lab 1	Digital Length Scale	Digital Length Scale		Messerli Prometra	ES-1000 (0-1 m x 0.01 mm)	
591	QC Lab 1	Digital Length Scale	Digital Length Scale		Messerli Prometra	ES-1000 (0-1 m x 0.01 mm)	
592	QC Lab 1	Digital Thermometer	Temperature		Hanna Instruments	HI 8757 K Type	

ID	Area	Machine	Description	Year	Make	Model	Photos
593	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	
594	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	
595	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
596	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
597	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
598	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above

ID	Area	Machine	Description	Year	Make	Model	Photos
599	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
600	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
601	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
602	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
603	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
604	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above
605	QC Lab 1	Double Fold Tester	Double Folds		M C TEC (FRANK)	Schopper Twin Head Folding Device	As above

ID	Area	Machine	Description	Year	Make	Model	Photos
606	QC Lab 1	Elrepho SE 070 L&W inc pc	Opacity		Lorentzen & Wettre	Elrepho Spectrometer SE 70	

ID	Area	Machine	Description	Year	Make	Model	Photos
607	QC Lab 1	Emco Internal Bond Tester incl cutter	Paper delamination		Emco	IBT Internal Bond Tester	 
608	Item removed						

ID	Area	Machine	Description	Year	Make	Model	Photos
609	QC Furnace Room	Furnace Oven	Oven		Carbolite	CWF 1100	
610	QC Furnace Room	Oven			Gallenkamp		
611	QC Lab 1	Gauge Blocks for Micrometer 0.15			Mitutoyo	0.15 mm	
612	QC Lab 1	Gauge Blocks for Micrometer 0.25			Mitutoyo	0.25 mm	
613	QC Lab 1	Gauge Blocks for Micrometer 0.5			Mitutoyo	0.5 mm	

ID	Area	Machine	Description	Year	Make	Model	Photos
614	QC Lab 1	Gurley Densometer and Timer	Porosity		Lorentzen & Wettre	121D: 6-2	 

ID	Area	Machine	Description	Year	Make	Model	Photos
615	QC Lab 1	Densometer			Genuine Gurley	4340 or 4348 (tbc) Automatic Densometer	
616	QC Lab 1	Hygrometer	Relative Humidity		Rotronic	Hygrolog HL NT2 DP + HC2-S Sensor	
617	QC Lab 1	Hygrometer	Relative Humidity		Rotronic	Hygrolog HL NT2 DP + HC2-S Sensor	
618	QC Lab 1	Hygrometer			Rotronic	Hygrolog HL NT2 DP + HC2-S Sensor	
619	QC Lab 1	Opacimeter Unit	Opacity		Diffusion Systems Ltd	EEL	

ID	Area	Machine	Description	Year	Make	Model	Photos
620	QC Lab 1	Opacimeter Unit	Opacity		Diffusion Systems Ltd	EEL	As above
621	QC Lab 1	Opacimeter Unit	TBC exists (not on calibration log - in cupboard tbc)		Diffusion Systems Ltd	EEL	As above
622	QC Lab 1	Light Table	Light Box (raise/lower table ~4m)		VeriVerde	~4m Dual Paper Viewer	
623	QC Furnace Room	pH Meter	pH		Thermo Scientific	Orion 3 Star	
624	QC Lab 1	Sample Cutter - 15mm width Tensile & Double Fold			Frank - PTI	F95.81504 15mm - Tensile & Double Fold	
625	QC Lab 1	Sample Cutter - 15 mm width Tensile & Double Fold			Unknown	15mm width- Tensile and Double Fold	

ID	Area	Machine	Description	Year	Make	Model	Photos
626	QC Lab 1	Sample Cutter - Bending Resistance			Lorentzen & Wettre	16D 10 -1 - Bending Resistance	
627	QC Lab 1	Sample Cutter - Grammage			Messmer Buchel	22-25-00-0002	
628	QC Lab 1	Sample Cutter - Taber Stiffness			Teledyne Taber	104-11- Stiffness	
629	QC Lab 1	Sample cutter - guillotine					
630	QC Lab 1	Sample Template			DLR	Tear	
631	QC Lab 1	Sample Template			DLR	Tear	
632	QC Lab 1	Sample Template			DLR	Tear	
633	QC Lab 1	Sample Template			DLR	Tear	

ID	Area	Machine	Description	Year	Make	Model	Photos
634	QC Lab 1	Sample Template - Crumple Porosity			Unknown	N/A	
635	QC Lab 1	Sample Template - Crumple Porosity			Unknown	N/A	
636	QC Lab 1	Sample Template - Grammage			Unknown	100 cm <sup>2</sup> (circular)	
637	QC Lab 1	Sample Template - Thread Crumple Degrade Test			Unknown	N/A	
638	QC Lab 1	Sample Template - Thread Crumple Test			Unknown	N/A	
639	QC Lab 1	Sample Template 10x10			Progressive Manufacturing	GSM	
640	QC Lab 1	Sample Template 10x10			Progressive Manufacturing	GSM	
641	QC Lab 1	Sample Template 10x10			Progressive Manufacturing	GSM	
642	QC Lab 1	Sample Template 10x10			Progressive Manufacturing	GSM	
643	QC Lab 1	Sample Template 6.7x6.7			Progressive Manufacturing	8 X Crumple	
644	QC Lab 1	Sample Template 6.7x6.7			Progressive Manufacturing	8 X Crumple	
645	QC Lab 1	Sample Template 6.7x6.7			Progressive Manufacturing	8 X Crumple	
646	QC Lab 1	Sample Template 6.7x6.7			Progressive Manufacturing	8 X Crumple	
647	QC Lab 1	Sample Template 7x7			Progressive Manufacturing	Thread Crumple / Degrade	

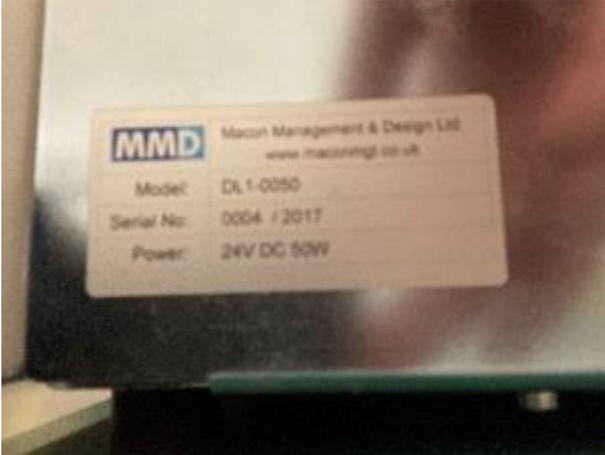
ID	Area	Machine	Description	Year	Make	Model	Photos
648	QC Lab 1	Sample Template 7x7			Progressive Manufacturing	Thread Crumple / Degrade	
649	QC Lab 1	Sample Template 7x7			Progressive Manufacturing	Thread Crumple / Degrade	
650	QC Lab 1	Sample Template 7x7			Progressive Manufacturing	Thread Crumple / Degrade	
651	QC Lab 1	Scale			A&D	GX600	
652	QC Lab 1	Scale			A&D	GX600	

ID	Area	Machine	Description	Year	Make	Model	Photos
653	QC Lab 1	Scale	Avery Weigh Scale		Avery	ZQ375	
654	QC Lab 1	Shredder	<p>Paper Shredder:</p> <ul style="list-style-type: none"> <li>- Cut's 29-40 sheets</li> <li>- Security Level 4</li> <li>- Shred size 2x15mm</li> <li>- Cross Cut</li> <li>- Feed opening: 460mm</li> <li>- Waste capacity 230 litres</li> <li>- Electrical consumption: 2200W (3-phase)</li> <li>- Dimensions (HxWxD): 1700x740x765mm</li> <li>- Weight: 256kg</li> </ul>		Ideal	Cross Cut 4605	

ID	Area	Machine	Description	Year	Make	Model	Photos
655	QC Lab 1	Silks Auto Tester	Silks camera inspection		Norcan		
656	QC Lab 1	Spectrophotometer incl pc	Colour measurement		X Rite	Colour i5	
657	QC Lab 1	Colour measurement			MacBeth	CE-3000	Out of service

ID	Area	Machine	Description	Year	Make	Model	Photos
658	QC Lab 1	Stiffness Tester - Taber	Stiffness		Teledyne Taber	150-B	
659	QC Lab 1	Tear Tester - Single Tear (Tear 1)	Tear inc cutter		Lorentzen & Wettre	009 979726 Digital	

ID	Area	Machine	Description	Year	Make	Model	Photos
660		Tear Tester - Single Tear (Tear 2)	Tear		Lorentzen & Wettre	009 979726 Digital	
661	QC Lab 1	Test Piece for QCD MAG 200	part of QCD		G&D	218 955 021	
662	QC Lab 1	QCD MAG 200	Thread Magnetics		G&D	MAG 200	

ID	Area	Machine	Description	Year	Make	Model	Photos
663	QC Lab 1	MRT - Macon	Thread Magnetics		DLR / MMD (Macon Management & Design Ltd)		 

ID	Area	Machine	Description	Year	Make	Model	Photos
664	QC Lab 1	Testometric	Tensile		Testometric	M250-2.5kN AT	
665	QC Lab 1	UV Dullness			KBA	QMD-UEFO	

ID	Area	Machine	Description	Year	Make	Model	Photos
666	QC Lab 1	Degrader			Bowyer Engineering Ltd		
667	QC Lab 1	Degrader			Bowyer Engineering Ltd		
668		Crumple Porosity	Crumple Porosity		IGT Amsterdam	0.422.C.7	Not located

ID	Area	Machine	Description	Year	Make	Model	Photos
669	QC Lab 2	Crumple Porosity Crumpling Device	Crumple Porosity		Bowyer Engineering		 
670	QC Lab 2	Crumple Porosity Loading Device - 12.5 kg	Crumple Porosity		Bowyer Engineering	12.50 kg	Incl above
671	QC Lab 2	Crumple Porosity Sample Template	Crumple Porosity		Unknown	6.7 cm x 6.7 cm	
672	QC Lab 2	Digital Thermometer Immersion Probe			VWR	EU 620-0918	Small Handheld
673	QC Lab 2	Digital Thermometer Immersion Probe			VWR	EU 620-0918	Small Handheld

ID	Area	Machine	Description	Year	Make	Model	Photos
674	QC Lab 2	Hot Plate Stirrer			VWR		
675	QC Lab 2	Hot Plate Stirrer			VWR		

ID	Area	Machine	Description	Year	Make	Model	Photos
676	QC Lab 2	Hot Plate Stirrer			VWR		
677	QC Lab 2	Digital Thermometer Surface Probe			Unknown	6802II	Small handheld
678	QC Lab 2	Digital Thermometer TX110			Ebro	TX110	?
688	QC Lab 2	Drainage, Freeness and Retention			Mutek	DFR-05	

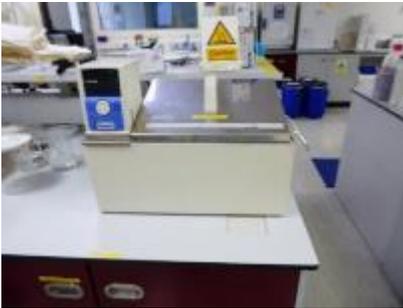
ID	Area	Machine	Description	Year	Make	Model	Photos
680	QC Lab 2	Particle Charge Detector			Mutek	PCD-03	
681	QC Lab 2	pH Meter			Thermo Scientific	Orion 3 Star	

ID	Area	Machine	Description	Year	Make	Model	Photos
682	QC Lab 2	Refractometer	*NOTE – Subject to return/swap deal with new unit		Bellingham & Stanley	RFM 840 code 26-840	 

ID	Area	Machine	Description	Year	Make	Model	Photos
683	QC Lab 2 (Store)	UV Light cabinet			VeriVerde	CAC 60	 
684	QC Lab 2	Sheet Former			Labtech		

ID	Area	Machine	Description	Year	Make	Model	Photos
685	QC Lab 2	Mixer / Stirrer			Lorentzen & Wettre	Code 260 Type: 987290 No. 118	 
686	QC Lab 2	Light Table	Light Box (raise/lower table ~3m)		VeriVerde	Dual Paper Viewer	

ID	Area	Machine	Description	Year	Make	Model	Photos
687	QC Furnace Room	Wear and Abrasion Tester			Fritsch	Analysette 3 PRO	
688	QC Lab 2	Zeta Potential System			Mutek	SZP-10	

ID	Area	Machine	Description	Year	Make	Model	Photos
689	QC Lab 2	Water bath			Grant		
690	QC Lab 2	Fume cupboards (x2)		~2018			 

ID	Area	Machine	Description	Year	Make	Model	Photos
691	QC Lab 2	Oven			Gallenkamp		
692	QC Lab 2	Oven			Thermo Scientific		
693	QC Lab 2	Oven			Thermo Scientific		

ID	Area	Machine	Description	Year	Make	Model	Photos
694	QC Lab 2	Incubator			Lovibond		
695	QC Lab 2	Dissolved Oxygen Meter			Thermo Scientific	Orion Star A213	

ID	Area	Machine	Description	Year	Make	Model	Photos
696	QC Lab 3	TSO Tester	L&W TSO Tester is an ultrasonic instrument for measuring Tensile Stiffness Index (TSI) and the Tensile Stiffness Orientation (TSO) properties on sheets and cross machine paper samples.		Lorentze & Wettre	L&W TSO Tester (Code 150)	
697	QC Visual Inspection Room	Light Table incl UV (Inclined)			VeriVerde		
698	QC Visual Inspection Room	Light Box incl UV (Flat)			VeriVerde		

ID	Area	Machine	Description	Year	Make	Model	Photos
699	QC Furnace Room	De-ionised water	30 litres an hour of type III (RO) water		Elga	Purelab option DV35	
700	QC Lab 2	De-ionised water	QC lab 2		Elga		

ID	Area	Machine	Description	Year	Make	Model	Photos
701	Stock Prep QC Lab	Schopper Riegler Freeness Tester			Messmer Buchel	Code 014	
702	Stock Prep QC Lab	pH Meter			Thermo Scientific	Orion 3 Star	

ID	Area	Machine	Description	Year	Make	Model	Photos
703	Stock Prep QC Lab	Hot Plate Stirrer			Stuart		
704	Stock Prep QC Lab	Weigh scales			Fisher Scientific	SG-602	

ID	Area	Machine	Description	Year	Make	Model	Photos
705	Stock Prep QC Lab	Oven			Thermo Scientific		

ID	Area	Machine	Description	Year	Make	Model	Photos
706	South Building Lab	AMC Semi automatic sheet former with controller			AMC (Adirondack machine corporation)		

ID	Area	Machine	Description	Year	Make	Model	Photos
707	South Building Lab	AMC 8" x 8" former hand sheet maker			AMC (Adirondack machine corporation)		
708	South Building Lab	Mesmer hand sheet blotter			Messmer		

ID	Area	Machine	Description	Year	Make	Model	Photos
709	QC Furnace Room	Abrasion tester	Wear & durability tester		Taber	5135 Abraser	

ID	Area	Machine	Description	Year	Make	Model	Photos
710	QC Furnace Room	Planetary Ball Mill			Retsch	PM100	
711	QC Furnace Room	Soiling test				Bespoke ?	

ID	Area	Machine	Description	Year	Make	Model	Photos
712	Portals West Chem Lab	Spectrophotometer (Short Form Absorbance Measurement)		2007	Cecil	Aurius CE2021 (2000 Series)	

ID	Area	Machine	Description	Year	Make	Model	Photos
713	Portals West Chem Lab	Portable Spectrophotometer			Hach Lange GmbH	DR1900	 

ID	Area	Machine	Description	Year	Make	Model	Photos
714	Portals West Chem Lab	Oven		2019	Thermoscientific	Hetatherm OMH 60-S	 

ID	Area	Machine	Description	Year	Make	Model	Photos
715	Portals West Chem Lab	Water bath ?		1993	phs		

ID	Area	Machine	Description	Year	Make	Model	Photos
716	Portals West Chem Lab	Hot Plate Stirrer			VWR	VMS-C7 Advanced	 

ID	Area	Machine	Description	Year	Make	Model	Photos
717	Portals West Chem Lab	Hand Held Digital Thermometer			VWR	620-0916	
718	Portals West Chem Lab	Pipette			VWR	Accurpette	

ID	Area	Machine	Description	Year	Make	Model	Photos
719	Portals West Chem Lab	Water flowmeter & Logger			Omni Instruments		
720	Portals West Chem Lab	Fume Cupboard x 3			Morgan & Grundy (now APMG)		 

ID	Area	Machine	Description	Year	Make	Model	Photos
721	Portals West Chem Lab	Valley Beater			Messmer		 

ID	Area	Machine	Description	Year	Make	Model	Photos
722	Portals West Chem Lab	Schopper Riegler Freeness Tester					
723	Portals West Chem Lab	Moisturemeter	? all parts ? working ?		Mitubishi	MCI CA-05	

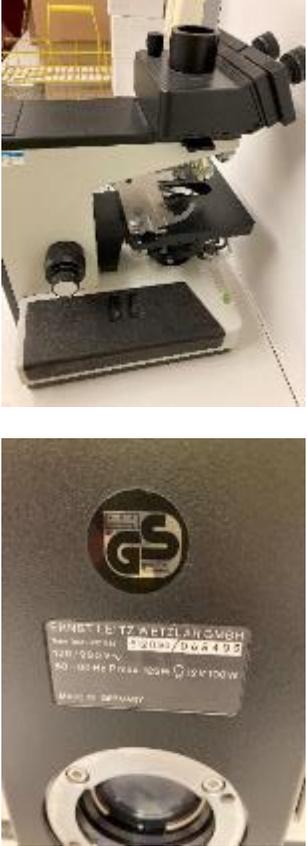
ID	Area	Machine	Description	Year	Make	Model	Photos
724	Portals West Chem Lab	Hand Sheet Former (Manual)					
725	Portals West Chem Lab	Scales			Sartorius 1264MP		

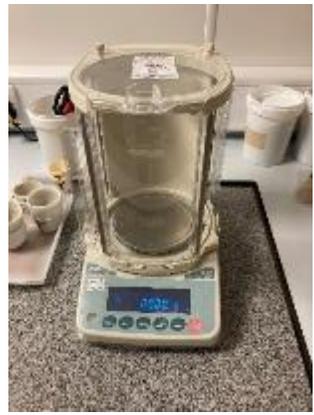
ID	Area	Machine	Description	Year	Make	Model	Photos
726	QC Lab 2	Spectrophotometer			Merck Spectroquant	Nova 60	
727	QC Lab 2	Thermoreactor			Spectroquant	TR620	

ID	Area	Machine	Description	Year	Make	Model	Photos
728	QC Lab 2	Turbidity			Hanna	Turbidity LP2000	
729	QC Lab 2	Viscosity Tester			Thermo Scientific	Haake Viscotester C	

ID	Area	Machine	Description	Year	Make	Model	Photos
730	QC Lab 2	Lab Sizer					
731	QC Lab 2	Scales			Sartorius		

ID	Area	Machine	Description	Year	Make	Model	Photos
732	QC Lab 2	Scales			A&D	HR-120	

ID	Area	Machine	Description	Year	Make	Model	Photos
733	QC Lab 2 (Store)	Microscope	Microscope		Ernst Leitz Wetzlar GmbH	Type: 020- 437.035	

ID	Area	Machine	Description	Year	Make	Model	Photos
734	QC Furnace Room	Scales			A&D	FX-500i	
735	QC Furnace Room	Hot Plate Stirrer			VWR	VHP-C4	

ID	Area	Machine	Description	Year	Make	Model	Photos
736	QC Furnace Room	Hot Plate Stirrer			VWR	VHP-C4	
737	QC Furnace Room	Hot Plate Stirrer			Fisher Scientific	Isotemp	

ID	Area	Machine	Description	Year	Make	Model	Photos
738	QC Furnace Room	Hot Plate Stirrer			Fisher Scientific		
739	QC Furnace Room	Hot Plate Stirrer			Fisher Scientific	Isotemp	

ID	Area	Machine	Description	Year	Make	Model	Photos
740	QC Furnace Room	Hot Plat SIRRer			IKA	C MAG HP-7	
741	QC Furnace Room	Scales	Weigh Scales		Sartorius	M-Prove	

ID	Area	Machine	Description	Year	Make	Model	Photos
742	QC Furnace Room	Heating Mantle x 6	Heating Mantle 6 units		Barnstead Electrothermal		
743	QC Furnace Room	Heating Mantle	Heating mantle single unit		Fisher Scientific		

ID	Area	Machine	Description	Year	Make	Model	Photos
744	QC Furnace Room	Heating Mantle	Heating mantle single unit		Fisher Scientific		