

**ABB
Drying**

**HAGERSTOWN FIBER
HAGERSTOWN, MARYLAND
FLAKT DRYER/COOLER TYPE FCMC
GENERAL SPECIFICATION**

Doc.: 22288
Ref.: 21-8866
Date: 95.09.28
Page: 1 of 10
Rev.: B

DISTRIBUTION: Project Mgr., SEIND (Dept. TCD, TCT1, TCTP)
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PROJECT: HAGERSTOWN FIBER, HAGERSTOWN, MARYLAND

DELIVERY DATE: July 1995

F.O.B. POINT: Hagerstown, Maryland

I TECHNICAL DATA

Product	Sorted Office Waste
Kind of pulp	Mixed Fibers
Type of wet end	Twin Wire Press (Andritz Sprout Bauer)
Production - Design	460 BDSTPD
Dryness of pulp sheet entering Dryer	49% B.D.
Dryness of pulp sheet leaving Cooler	87% B.D.
Water evaporation	34,170 lbs/hr
Exhaust and Make-up air quantities, D.A.	128,600 lbs/hr
Steam pressure	150 psig
Steam quantity (flow)	51,920 lbs/hr
Elevation of site	660 ft.
Operating speed, normal	293 fpm
Speed range (min/max)	50/400 fpm
Design speed	293 fpm
Basis weight, for design 100% B.D.	614 lbs/3000 ft ²
Width of pulp sheet entering	132 inches
Width of pulp sheet leaving	128 inches
Width of pulp sheet trimmed	128 inches

Encls: Project Sub Number List
Motor List

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COOLER

Temperature of pulp sheet entering 163.5°F
Temperature of pulp sheet leaving 110°F
Supply air quantity, dry air (Approx.) 305,000 lbs/hr.
Exhaust air to machine room, dryer air (Approx.) . . 305,000 lbs/hr.
Supply air temperature 75°F
Exhaust air temperature leaving 89°F

MAKE-UP HEAT RECOVERY

Exhaust & make-up air quantities, dry air 128,600 lbs/hr
Exhaust air temperature Dry/Wet 268°F/162°F
Exhaust air water content 0.28 lb/lb
Exhaust air temperature leaving H.R. Dry/Wet 190°F/160°F
Supply air temperature entering H.R. 75°F
Supply air temperature entering dryer 191°F

DIRECT AIR TO WATER HEAT RECOVERY

Air flow 128,600 lbs/hr
Air inlet temperature 190°F
Air inlet water content 0.28 lb/lb DA
Water inlet flow 762 USGPM
Water inlet temperature 85°F
Water outlet temperature 139°F
Air outlet temperature 137°F

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II DESIGN DATA

Mechanical

Drive Arrangement (viewed from wet end), right

Dimensions

Deck pitch	300 mm
No. of decks	14 + 1
No. of sections (of 1.75 m)	13
A-Dimension	3,700 mm
Length (outside of turning roll tower beams)	89' - 6 7/16"
Width	25' - 7 1/4"
Width including walkways	32' - 5 5/8"
Height (from top of bottom beam)	23' - 9 5/16"

STEAM COILS

No. of coils	28
No. of coils in 1 bank	1
Type of coils	QLB 38 X 14 X 3 X 2 cu-tubes
.	QLB 38 X 11 X 3 X 2 cu-tubes
.	QLB 38 X 10 X 3 X 2 cu-tubes
Size of coils	38 x 14
.	38 x 11
.	38 x 10
Type of connections	Welded

CIRCULATION FANS

No. of fans	43
No. of fans in intermediate sections	3
No. of fans in end sections	2
Type and size	AXIAD FC 100-50-4 CD 40°
R.P.M.	1730

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COOLER FANS

No. of fans: 4

Type and Size (Direct Drive): Axipal, 071-6-1760-30°

HP/RPM: 15/1760

Capacity: 28,883 m³/hr. (17,000 CFM) at 2.2" WG static pressure.

VARIABLE SPEED DRIVE

TURNING ROLL DRIVE M1 (Located at outlet end)

Power consumption at:	111 RPM	4.99 BHP
Motor rating at:	111 RPM	20 HP
Gear Reducer Output:		111 RPM
Machine speed:		400 fpm

OUTLET NIP M2

Power consumption at:	111 RPM	4.99 BHP
Motor rating:	111 RPM	20 HP
Gear Reducer Output:		111 RPM
Machine speed:		400 fpm

TAPE DRIVE M3 (Located at outlet end)

Power consumption at:	111 RPM	9.10 BHP
Motor rating at:	111 RPM	20 HP
Gear Reducer Output:		111 RPM
Machine speed:		400 fpm

Gear reducers type: In-line

Supplied by: ABB Drying

Coupling type: Falk-Steelflex

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Sheaves:

Belts:

Sprockets: ANSI Standards

Chains: ANSI Standards

Gear Reducers: Falk, 1060 FC2

Pumps: ITT-AC 3x2x13-731 Plus

Bolts & Nuts
according to: ANSI

Piping flanges
according to: ANSI

Bearings: SKF

Supplied by: ABB Drying

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II DESIGN DATA (cont'd)

AUXILIARY EQUIPMENT INCLUDED

ABB

CUSTOMER

MCC		X
Wet & Dry End Control Panels	X	
Nip Roll Control Panel	X	
Steam Control Valve		X
Condensate Collecting System	X	
Wet Bulb Measure Equipment		X
Dry Bulb Measure Equipment		X
Spare Parts - See page 10 of 10	X	
Automatic Start-Stop of Circ. Fans		X
Variable Speed Drive		X
Load Cell Control: ABB PFTC 101 + PFRA 101	X	
Load Cell Type: ABB PFTL 101A	X	
Load Cell Location: Inlet End		
Hydraulic Cylinder: (Sheet Guiding System Only)	X	
Air Cylinders: (Outlet Nip, Blow Box Lifting)	X	
Solenoid Valves		X
Limit Switches		X
Stairs	X	

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II DESIGN DATA (cont'd)

AUXILIARY EQUIPMENT INCLUDED

ABB

CUSTOMER

Condensate Control Valve		X
Piping and Fittings for Blow Box Lifting Cylinders		X

PNEUMATIC EQUIPMENT

Air Cylinders	Type & Make:	ABB Standard
Solenoid Valves	Type & Make:	Hagerstown Fiber Standard
Lubricator	Type & Make:	Hagerstown Fiber Standard
Pressure Regulator	Type & Make:	Hagerstown Fiber Standard
Gauges	Type & Make:	Hagerstown Fiber Standard
Valves	Type & Make:	ABB Standard

III ENERGY SUPPLY

ELECTRICAL

Power	480 V	60 Hz
Control	120 V	60 Hz

COMPRESSED AIR

Mill air	70 psig
Instrument air	Not applicable
Air filtered	NO
Lubricated	NO

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III ENERGY SUPPLY (continued)

HEATING

Steam pressure N/A

Steam temperature N/A

IV PAINTING

ABB Drying paint specifications (Re.: A94-2303-85)

V DRAWINGS

Language on Customer Drawings: English

Language on Manufacturing Drawings: English

Language on Signs: English

Dimensions in imperial (Customer approval and information drawings)

Distribution of Customer Drawings:

- Drawings for review: One (1) reproducible, three (3) prints and one (1) CAD diskette to SBCCS Constructors, Decatur, GA.

- Certified drawings: One (1) reproducible, five (5) prints and one (1) CAD diskette to SBCCS Constructors, Decatur, GA.

VI OFFICIAL CODES

Pressure Vessel: ASME Boiler and Pressure Vessel Code

Building:

Electrical:

Others:

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VII SHOP INSPECTION AND CERTIFICATES

ABB Drying Inspectors: As specified on Purchase Orders
Customer and/or His Representative: Open to inspection

VIII MANUFACTURING BY CUSTOMER

All motors, drives, controls and instrumentation if not otherwise specified.

IX ERECTION

ABB Drying to supervise only.

X OTHER DOCUMENTS etc.

Operating Manual, Language: English
Spare Parts Manual, Language: English
Check Out List By: Project Manager
Number of Manuals: 6

XI CRATING

Domestic: For smaller items and loose items only, and as required for transport by truck.
Export:
Container: Contact Traffic Department.

SPECIFICATION OF SPARE PARTS

<u>Qty.</u>	<u>Description</u>
One (1)	Nomex Threading Tape (full length)
One (1)	Cylinder for Lifting Mechanism c/w Seal Kit
Two (2)	Overrunning Clutches
One (1)	Universal Joint for Drive Shaft
One (1)	Industrial sewing machine for threading tape

OPTIONAL SPARE PARTS (Purchased under a separate P.O. No.)

One (1)	Nomex Threading Tape (full length)
One (1)	Steam coil 1.4 m wide
One (1)	Steam coil 1.0 m wide
Two (2)	Steam coil screen 1.4 m wide
Two (2)	Steam coil screen 1.0 m wide
One (1)	Circulation fan wheel
One (1)	Circulation fan housing
One (1)	Turning roll tape pulley assembly
One (1)	Turning roll
One (1)	Pull roll
One (1)	Nip roll (rubber covered)
One (1)	Sheet guide roll (corrector)
One (1)	Lead in roll (guide)

<u>SUB NO.</u>	<u>DESCRIPTION</u>
1000A	DRYER GENERAL
1001A	DRYER FOUNDATIONS
1003A	BOTTOM BEAMS
1004A	FAN TOWERS & FRAME WORK
1005A	BLOW BOXES
1006A	STEAM COILS & SCREENS
1007A	STEAM & CONDENSATE PIPING
1008A	BLOW BOX LIFTING MECHANISM
1009A	SUPPLY PLENUM
1010A	TURNING ROLLS & TAPE PULLEYS
1011A	TURNING ROLL & TAPE DRIVES
1013A	CIRCULATION FANS
1015A	ROOF PANELS
1016A	EXHAUST PLENUM
1017A	SIDE PANELS & DOORS
1020A	EXTERNAL ROLLS
1021A	INLET SUPPORT
1022A	OUTLET SUPPORT
1023A	END PANELS & DOORS
1027A	CONDENSATE HANDLING SYSTEM
1028A	VACUUM CLEANING SYSTEM
1030A	FIELD MATERIAL
1032A	STAIRS & WALKWAYS
1036A	MARKING DETAILS
1038A	LIGHTING

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PROJECT SUB NUMBER LIST

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SUB NO. DESCRIPTION

1041A	TURNING ROLL TOWERS
1051A	PULP SHEET GUIDE
1053A	EXTERNAL TAPE THREADING
1054A	END SECTIONS
1056A	THREADING TAPE
1075A	INSTRUCTIONS & MANUALS
1077A	DRYER DRIVES
1079A	ELECTRICAL EQUIPMENT & CONTROLS
1082A	PRESSDUCTORS
1090A	SPARE PARTS
1096A	ERECTION MONORAILS AND LIFTING JIGS
1113A	COOLER FANS
1200A	HEAT RECOVERY GENERAL ARRANGEMENT
1201A	FOUNDATIONS & BUILDING OPENINGS
1202A	AIR TO AIR HEAT EXCHANGER
1207A	SPRAY PIPING
1209A	AIR TO WATER HEAT EXCHANGER
1213A	SUPPLY AND EXHAUST FANS
1224A	DUCTWORK
1225A	DAMPERS
1230A	FIELD MATERIAL



ABB Industrial Drying

DATE 10 1M 1Y
30MAR95

DWG. NO.
A94-2303-69

REV.
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HAGERSTOWN FIBER
HAGERSTOWN, MARYLAND
FLAKT DRYER/COOLER TYPE FCMC
MOTOR LIST

PURCHASER:-
SBCCS CONSTRUCTORS
JOINT VENTURE

EQUIP. NO. 59-00-100-001

ABB REF.
21-8866

SUB
1077A

CUST. REF.
9506

SCALE
NONE

QTY	EQUIPMENT	COLD BHP	HOT BHP	MOTOR HP REQ'D	NOMINAL RPM	NOTES	SUPPLIED BY
43	Dryer Circulation Fan Motor Equip. No's: 59-00-101-040 thru 59-00-143-040	15.8	9.8	15	1800	TEFC, squirrel cage AC motor with cooling disc and extended shaft for direct drive. Horizontal foot mount, slide base not required. 1.15 service factor. Refer to ABB Drying specifications for special requirements.	Others
1	Dryer Supply Fan Motor Equip. No: 59-00-080-040	52.7	41.5	75	1800	TEFC, squirrel cage AC motor. Horizontal mounting for V-belt drive, slide base required. 1.15 service factor.	Others
1	Dryer Exhaust Fan Motor Equip. No: 59-00-085-040	85.2	67.7	125	1800	TEFC, squirrel cage AC motor. Horizontal mounting for V-belt drive, slide base required. 1.15 service factor.	Others
4	Cooler Fan Motors Equip. No's: 59-00-150-040 thru 59-00-153-040	13.8		15	1800	ODP, squirrel cage AC motor. Horizontal foot mounting for direct drive, slide base not required. 1.15 service factor.	Others
1	Condensate Pump Motor Equip. No: 59-00-175-040			20	1800	TEFC, squirrel cage AC motor for direct drive. Horizontal foot mounting for direct coupling drive, slide base not required. 1.15 service factor.	Others
1	Sheet Guide Power Unit Motor			1/2	1800	Fractional horsepower, AC motor, vertical face mounting for direct drive.	ABB
1	Turning Roll Drive, M1 Equip. No: 59-00-075-040	17.5			400 FPM	Variable speed motor, horizontally mounted. Speed range: 100 to 400 fpm.	Others
1	Pull Roll Drive, M2 Equip. No: 59-00-100-040	16.7			400 FPM	Variable speed motor horizontally mounted. Speed range: 100 to 400 fpm.	Others
1	Tape Drive, M3 Equip. No: 59-00-070-040	18.5			400 FPM	Variable speed motor horizontally mounted. Speed range: 100 to 400 fpm.	Others
1	Vacuum Cleaning Exhauster Motor			15	1800	TEFC, squirrel cage AC motor Horizontal foot mounting for v-belt drive, slide base required. 1.15 service factor.	Others

B	COLD & HOT BHP COLUMN ADDED, "ON HOLD" REMOVED FROM EXHAUST & COND. PUMP MOTORS.	30MAR95	1MAR95	05APR95	06APR95			
		J.N.	FC	GS	5P			
A	DRYER SUPPLY & EXHAUST FAN MOTORS PUT "ON HOLD", COOLER FAN MOTORS WAS 10 HP, 100 FPM WAS 50 FPM, EQ. No'S ADDED.	20JAN95	20JAN95		20JAN95			
		ME	FC		FAX			
-	INITIAL VERSION	07NOV94	09JAN95		07NOV94			
		FCC	FC		3P/1R			
SYM	REVISION	DATE DRAWN	CHK'D	APP'D	CUST.	FAB.	ERECT.	