INDEX
FSA000737.2

Bale Pulpers

FSA000737.2

INDEX
FSA000737.2

APPENDIX 1 :
COMMERCIAL PART

QUOTATION
FSA000737.2

Foley Cellulose LLC
One Buckeye Drive
Perry, Florida 32348

We are pleased to submit our quotation for

STOCK PREPARATION EQUIPMENT

	PRICE	
VHi-6525G High Consistency Bale Pulper (L3 Repulper)		
VMi-3518B Medium Consistency Bale Pulper (Layboy Repulper)		
Installation advisory services, testing, startup and training		
Engineering evaluation of "Air Seals"		
Options:		
Spare parts VHi-6525G		
Spare parts VMi-3518B		
*Subject to change based on below options		
Potential Deductions:**		
No Shaft Seal on L3 Pulper		
No Shaft Seal on Layboy Pulper		
FCA at Seller Location (Option B)		
****Potential shaft seal deductions to be defined at kick-off or by date defined at kick-off.**		

TERMS OF DELIVERY The prices of the equipment are DAP Perry (as defined under Incoterms 2010) excluding any state, federal or local taxes and fees.

The Buyer is responsible for the customs clearance. The delays in customs clearance process not caused by Seller's actions shall extend the delivery time respectively and additional transportation demurrage or other extra costs caused by the delay, if any, shall be paid by the Purchaser.

Option B: FCA at Seller locations, with Buyer responsible for freight costs. Buyer may utilize a third-party logistics provider of Buyer's choosing at no additional expense. In such occurrence, no freight will be charged by Seller. Seller will be responsible for loading and securing all loads prior to departure from their facilities.

PRICE CONDITION The above prices are firm for the indicated time of delivery.

The Prices are calculated at exchange rate 1 EUR = 1.14 USD and Valmet reserves the right to adjust the USD prices, if the exchange rate fluctuation exceeds 1%.

TIME OF DELIVERY The delivery time is 30 weeks from the receipt of the order.

'TERMS OF PAYMENT The prices of this quotation are based on the following terms of cash payment:

10 %	Invoiced upon order
20 %	Invoiced upon receipt of certified General Arrangement and Foundation Drawings
20 %	Invoiced upon delivery os Certified Arrangement and Foundation Drawings
40 %	Invoiced upon delivery.
10 %	Invoiced upon receipt of Letter of Credit in the amount of 7% of equipment to expire upon start up and acceptance by Buyer of performance as defined in the performance guarantees, or twelve (12) months from final delivery, whichever occurs first.

*Start up date is defined to have happened when the equipment is first used for commercial operation.

Payments are due 30 days after invoiced. There will be an

interest of 12% for overdue payments.

The payment milestones will be allocated for the equipment pricing.

The payment for services shall be paid upon completion of the services.

If there are delays caused by Valmet on the services then Valmet shall be responsible for the additional days.

GENERAL TERMS

According to the Master Contract Agreement previously negotiated between Valmet Inc and Georgia Pacific.

VALIDITY OF THE QUOTATION

The quotation is valid for a period of 30 days.

We trust that our quotation would be of interest to you and we look forward to further discussions at your convenience.

Sincerely,

VALMET, INC.
Craig Fauler
Technology Manager - Stock Preparation
2425 Commerce Avenue, Suite 100
Duluth, GA 30096
770-558-0174 cell
craig.fauler@valmet.com

INDEX
FSA000737.2

APPENDIX 2 :
TECHNICAL PART

SPECIFICATION
FSA000737.2

APPENDIX 2 .1.1: Technical specification for High consistency pulper - VHi-6525G

DESIGN DATA

Dimensioning data	Value
Furnish	Southern Softwood
Production	160 bdstpd 145 bdmtpd
Pulping consistency	15 %
Pulping sequence	
Filling time	10 min
Slushing time	10 min
Discharge time	10 min
Discharge consistency	4 %
Energy consumption	44 kWh/t

TECHNICAL DATA

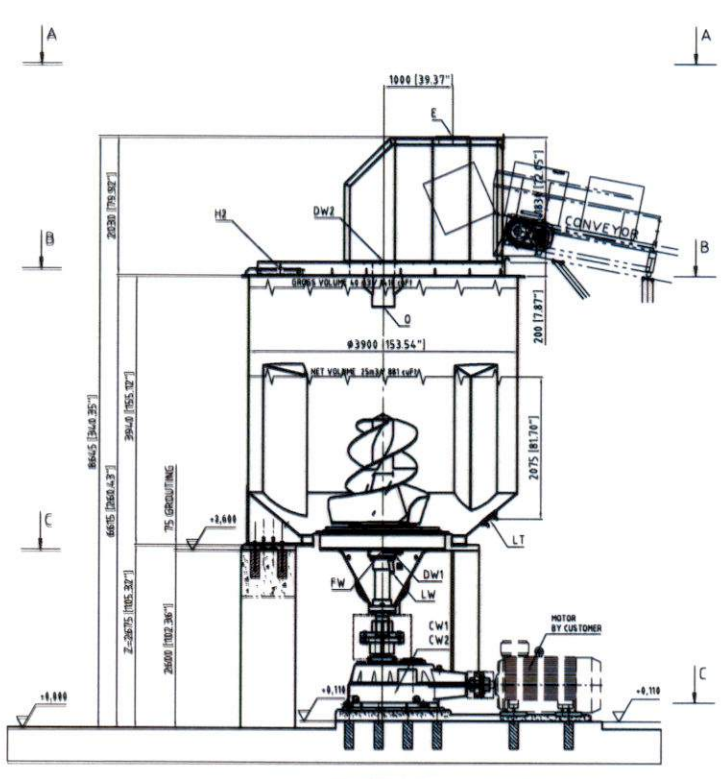
Technical data	Data
High consistency pulper	
Trade name	OptiSlush Vertical
Model	VHi-6525G
Position	Bale
Operational mode	Batch
Rotor diameter	Ø 1650 mm
Screen plate perforation	Ø 12 mm
Vat volume, net/gross	25 / 40 m^3
Main motor	600 HP / 1200 rpm

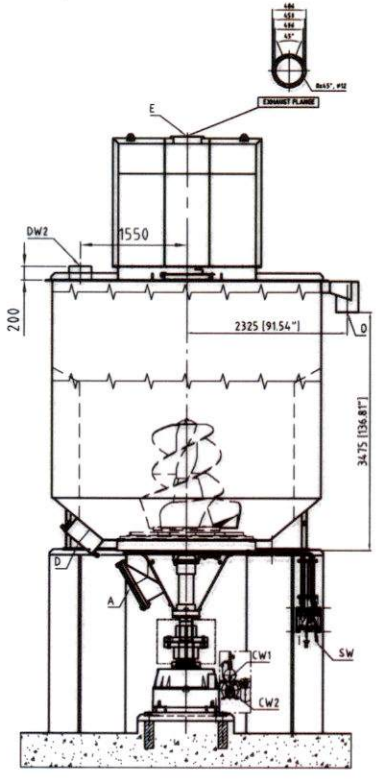
Materials	
Rotor unit, stock contacted parts	EN1.4404 (AISI 316L)
Rotor	EN1.4462
Screen plate	EN1.4462
Vat, stock contacted parts	EN1.4404 (AISI 316L)
Cover and hood	EN1.4404 (AISI 316L)
Rotor unit stiffeners and support parts	Mild steel
Vat stiffeners and support parts	EN1.4404 (AISI 316L)
Cover and hood stiffeners and support parts	EN1.4404 (AISI 316L)

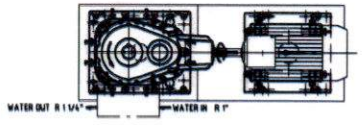
EQUIPMENT SCOPE

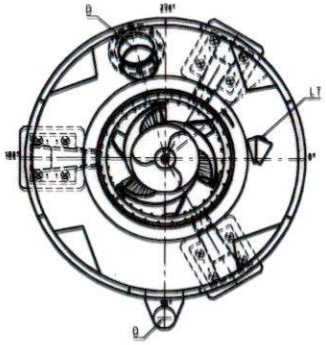
S = Supplier / Purch = Purchaser

Vertical pulper	Technical data	Incl. [total]	Note
High consistency pulper		1	
Rotor unit		S	
	Rotor screw with toothed edges. Lower part rotor with wear protected vanes(leading edge)		
	Extraction box with discharge and dilution connections		
	Screen plate		
	Gear drive with couplings, guards and Pressure lubrication unit including: oil pump & motor, filter with visual contamination indicator,oil pressure relief valve, oil pressure transmitter, oil manometer and thermometer and thermostatic valve.		
	Burgman 2-way mechanical seal or no seal	TBD	LP-D-VMi-65/180 -DE
	Seal water flow monitoring unit		
Vat assembly		S	
	Vat with flow dividers		
	Cover and hood with inspection and service doors and splash curtain		
	Additional inspection hatch		
	Drain, dilution and overflow connections		
	Flange for level control instrument		
	Delivered in 2 sections		
Bale splitting beam		S	
Foundation bolts		S	
Frequency converter		Purch	
Main motor		Purch	

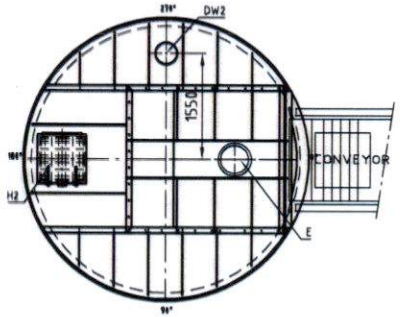




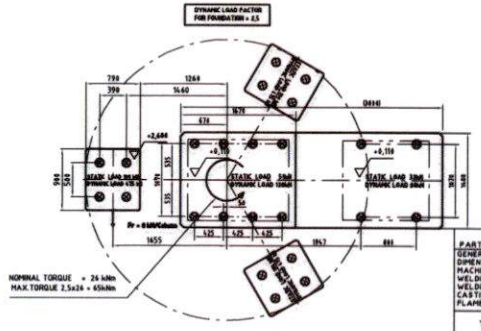




B - B



A - A



C - C

CONNECTION	
A = ACCEPT (BLIND FLANGE)	DN600 / ANSI 24"
CW1 = COOLING WATER IN	R 1"
CW2 = COOLING WATER OUT	R 1 1/4"
D = DRAIN	DN500 / ANSI 20"
DW1 = DILUTION WATER	DN150 / ANSI 6"
DW2 = DILUTION WATER	DN300 / ANSI 12"
E = EXHAUST	ø400 / ø16"
FW = FLUSHING WATER	R 1"
H2 = INSPECTION HATCH	600x600 /24"x24"
LT = FLANGE FOR LEVEL INSTRUMENT	DN80
LW = LEAKING WATER	HOSE ø 2"
O = OVERFLOW	ø300 / ø12"
SW = SEALING WATER	HOSE ø 10 - R 1/4"

FLANGE CONNECTIONS ACCORDING TO
PN10 ISO DIN2642 / ANSI B16.5 CLASS 150 lb

EMPTY WEIGHT	16000 kg / 35260 lbs
TOTAL WITH WATER	57000 kg /125600 lbs
VAT NET VOLUME	25 m3 / 881 cuft
VAT GROSS VOLUME	40 m3 /1410 cuft
SHIPPING VOLUME TOTAL	97,0 m3 / 3429 cuft
- ROTOR UNIT	13,2 m3 / 470 cuft
- GEAR DRIVE	4,6 m3 / 162 cuft
- PULPER VAT	69,0 m3 /2430 cuft
- PULPER HOOD	10,2 m3 / 358 cuft

WEIGHTS:	
ROTOR UNIT	4500 kg/ 9920 lbs
GEAR DRIVE	5100 kg/11240 lbs
PULPER VAT	5100 kg/11240 lbs
PULPER COVER+HOOD	1250 kg/ 2750 lbs

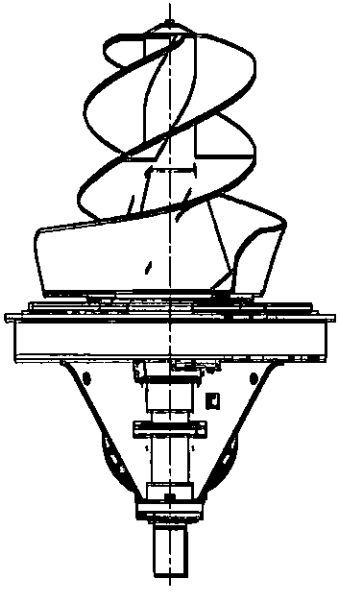
PART	DESCRIPTION	DIMENSIONS	MATERIAL	DRAWING/IDENTIFICATION NO	QTY
GENERAL TOLERANCES. DIMENSIONS WITHOUT INDIVIDUAL TOLERANCE INDICATIONS: MACHINING: ISO 2768-mK (SFS-EN 22768-1, SFS-EN 22768-2) WELDING: ISO 13920-BE (SFS-EN ISO 13920) WELDING QUALITY LEVEL C (SFS-EN ISO 5817) CASTING: ISO 8062-DCTG 11 (SFS-EN ISO 8062-3) FLAME CUTTING: ISO 9013-331 (SFS-EN ISO 9013)					

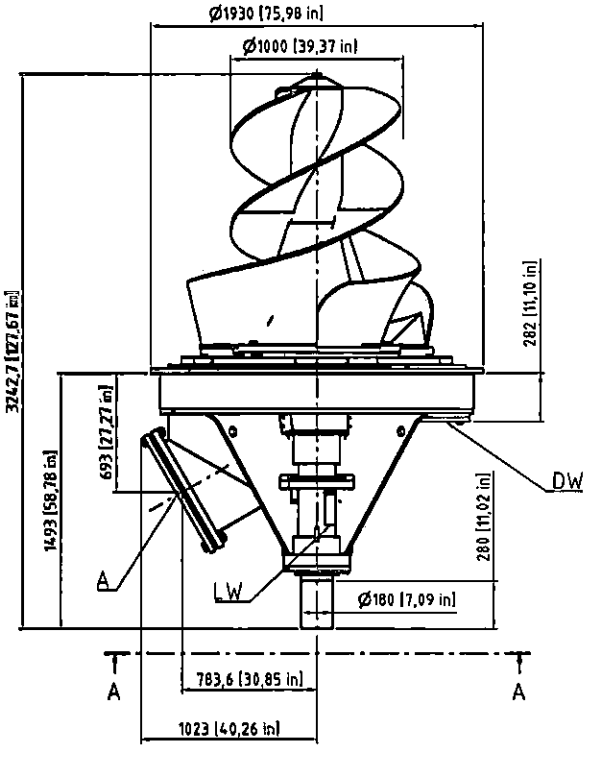
Valmet	PROJECTION	SCALE 1:50	WEIGHT kg 16000
PRODUCT OptiSlush Vertical		VHi-6525G	
DIMENSIONAL DRAWING			
REF. STOD142587	SUPERS.	A2	
WORK	FILE STOD142590	AutoCAD	

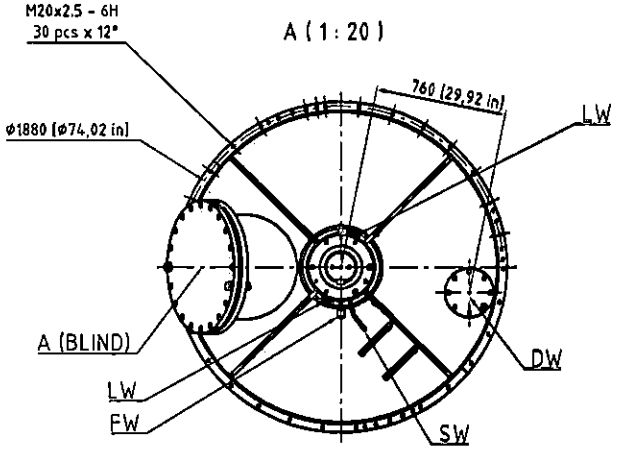
DESD VLKHELO	DATE 20.12.2012	
CHKD VLKHELO	DATE 20.12.2012	
APPD VLKHELO	DATE 20.12.2012	
DRAWING ID STOD142590 . 00		SHEET 1/1

VHi-6525G

DATE	BASE	CHKD	REVISION	CHKD/BY

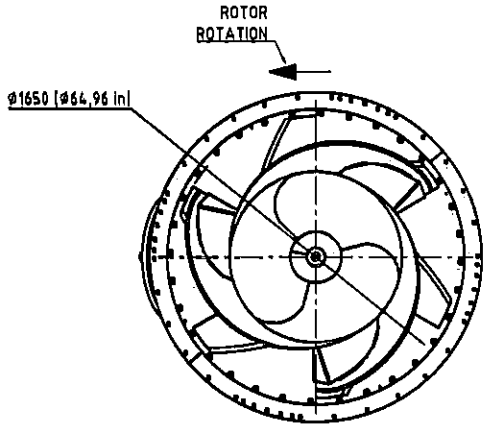


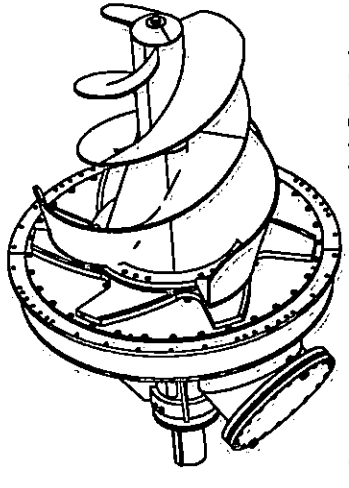




A = ACCEPT	BLIND (DN600)	
DW = DILUTION WATER	DN150	(DIA6" ANSI B16.5 CLASS150)
FW = FLUSHING WATER	R 1"	
LW = LEAKING WATER	HOSE Ø 2"	
SW = SEALING WATER	HOSE Ø10 - R1/4"	
WATER TO SEAL	0.08dm³/s , 2bar	(1,3 GPM, 28 PSI)
TOTAL WEIGHT	4500 kg	(9 920 lbs)
SHIPPING VOLUME	17,0 m³	(607 cuft)

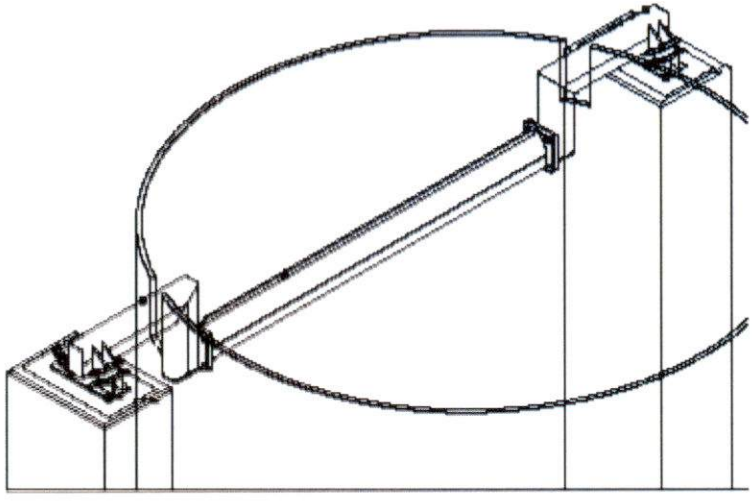
COLORING:
-Frame and bearing unit: RAL 7011
-Covers: RAL 1021

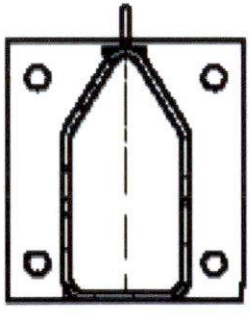




PART	DESCRIPTION	DIMENSIONS	MATERIAL	DRAWING/IDENTIFICATION NO.
GENERAL TOLERANCES: DIMENSIONS WITHOUT INDIVIDUAL TOLERANCE INDICATIONS: MACHINING: ISO 2768-mK (BFS-EN 22768-1, BFS-EN 22768-2) WELDING: ISO 13920-BF (BFS-EN ISO 13920) WELDING QUALITY LEVEL C (BFS-EN ISO 5817) CASTING: ISO 8062-CT10 (BFS-EN ISO 8062-3) FLAME CUTTING: ISO 9013-331 (BFS-EN ISO 9013)				
Valmet	PROJECTION	SCALE 1:20	WEIGHT kg 4500	EN /
PRODUCT OptiSlush Vertical		VH-65	DRAWN VLKHAHE	DATE 121203
DIMENSIONAL DRAWING ROTOR UNIT			CHKD VLKHELO	DATE 121203
REF. STON004853	SUPERS.	A2	APPD VLKHELO	DATE 121203
WORK	FILE	Inventor	DRAWING NO. STON004853 . 00	SHEET 1/1

Bale Breaker Beam





Section of the beam

- To avoid bearing failures, a bale breaker beam is used with bales.
- The beam extends the useful life of the bearing unit.

Valmet

Valmet

SPECIFICATION
FSA000737.2

APPENDIX 2 .1.2: Technical specification for Bale pulper - VMi-3518G

DESIGN DATA

Dimensioning data	Value
Furnish	Southern Softwood
Production	84 bdstpd 76 bdmtpd
Pulping consistency	6 %
Slushing time	15 min
Energy consumption	40 kWh/t

TECHNICAL DATA

Technical data	Data
Bale pulper	
Trade name	OptiSlush Bale
Model	VMi-3518B
Position	Softwood stock pulping
Operational mode	Continuous
Rotor diameter	Ø 900 mm
Screen plate perforation	Ø 20 mm
Vat volume, net/gross	18 / 23 m^3
Main motor	200 hp / 1200 rpm

Materials	
Rotor unit, stock contacted parts	EN1.4404 (AISI 316L)
Rotor	CF-8M, SA-351 or CA-15, ASTM A 743 (castings)
Screen plate	EN1.4404 (AISI 316L)
Vat, stock contacted parts	EN1.4404 (AISI 316L)
Cover and hood	EN1.4404 (AISI 316L)
Rotor unit stiffeners and support parts	Mild steel
Vat stiffeners and support parts	Mild steel
Cover and hood stiffeners and support parts	EN1.4301 (AISI 304)

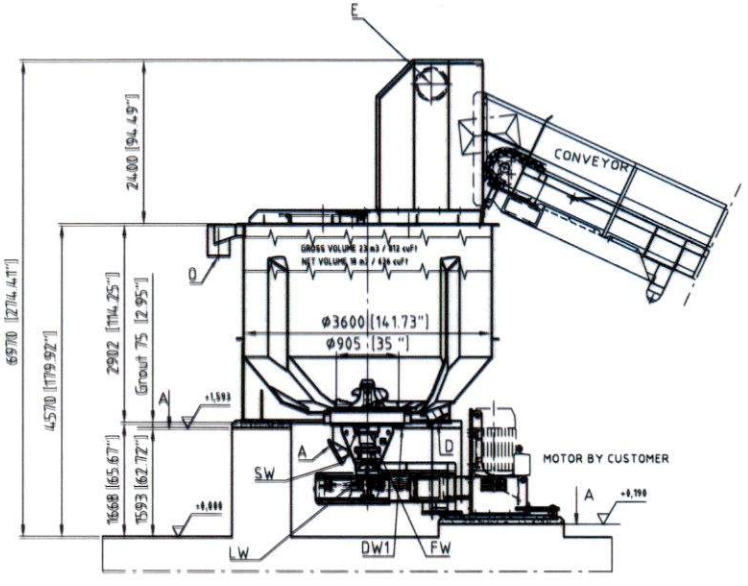
EQUIPMENT SCOPE

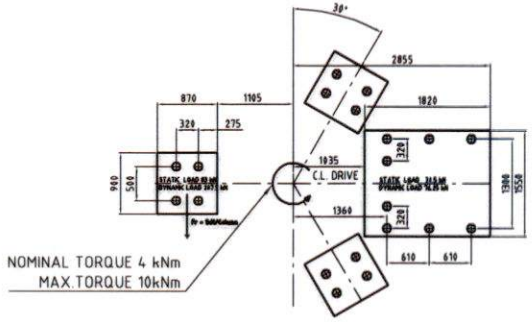
S = Supplier / Purch = Purchaser

Pos. E1201 Vertical pulper	Technical data	Incl. [total]	Note
Bale pulper		1	
Rotor unit with		S	
	Rotor		
	Extraction box with discharge and dilution connections		
	Screen plate		
	V-belt drive with guard and additional pulley at loose side of belts		**For Belt Drive Option**
	Mechanical / Cord Packing / No Seal	TBD	See spares options
	Seal water flow monitoring unit		
Vat assembly		S	
	Vat with flow dividers		
	Cover and hood with inspection and service doors and splash curtain		
	Additional inspection hatch		
	Drain, dilution and overflow connections		
	Flange for level control instrument		
	Delivered in 4 sections		
Bale splitting beam		S	
Foundation bolts		S	
Main motor		Purch	

SECTION A - A

DYNAMIC LOAD
FACTOR 2,5





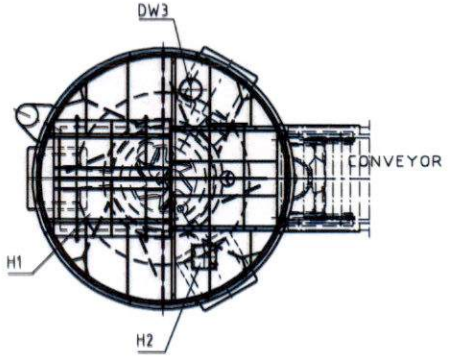
CONNECTIONS		
A	= ACCEPT	DN250 / ANSI 10"
D	= DRAIN	DN200 / ANSI 8"
DW1	= DILUTION WATER	DN80 / ANSI 3"
DW3	= DILUTION WATER	DN300 / ANSI 12"
E	= EXHAUST	ø400 / ø16"
FW	= FLUSHING WATER	R 3/4 "
H1	= SERVICE HATCH	1500x1500 / 59"x59"
H2	= INSPECTION HATCH	300x300 /12"x12"
O	= OVERFLOW	ø300 / ø12"
LW	= LEAKING WATER	2xHOSE ø 2 "
SW	= SEALING WATER	HOSE 10 - R 1/4"

FLANGE CONNECTIONS ACCORDING TO
PN10 ISO DIN2501 / ANSI B16.5 CLASS 150 lb

EMPTY WEIGHT	9550 kg / 21054 lbs
TOTAL WITH WATER	27550 kg / 60737 lbs

VAT NET VOLUME	18 m3 / 636 ft3
VAT GROSS VOLUME	23 m3 / 812 ft3

SHIPPING VOLUME TOTAL	57.1 m3 / 2016 ft3
- ROTOR UNIT	4.2 m3/ 149 ft3
- BELT DRIVE	8.3 m3/ 293 ft3
- PULPER VAT	39.0 m3/ 1377 ft3
- PULPER HOOD	5.6 m3/ 198 ft3

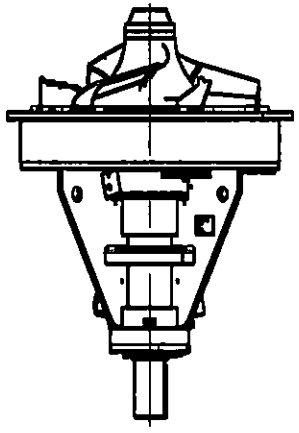


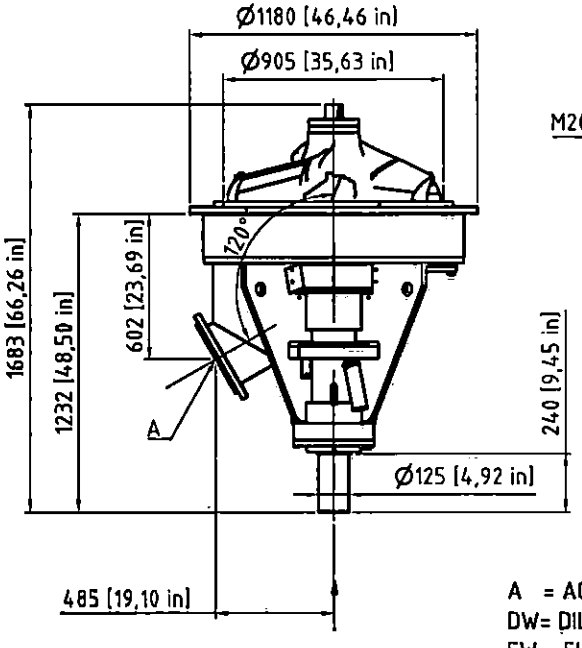
WEIGHTS:
ROTOR UNIT 1800 kg/3968 lbs
BELT DRIVE 3050 kg/6724 lbs
PULPER VAT 2950 kg/6504 lbs
PULPER COVER+HOOD 920 kg/2028 lbs

PART	DESCRIPTION	DIMENSIONS	MATERIAL	DRAWING/IDENTIFICATION NO	QTY
GENERAL TOLERANCES DIMENSIONS WITHOUT INDIVIDUAL TOLERANCE INDICATIONS: MACHINING: ISO 2768-mK (SFS-EN 22768-1, SFS-EN 22768-2) WELDING: ISO 13920-BF (SFS-EN ISO 13920) WELDING QUALITY LEVEL C (SFS-EN ISO 5817) CASTING: ISO 8062-DCTG 11 (SFS-EN ISO 8062-3) FLAME CUTTING: ISO 9013-331 (SFS-EN ISO 9013)					

Valmet	PROJECTION	SCALE 1:50	WEIGHT kg	EN /
PRODUCT OptiSlush Bale			VMI-35188	DES VLKSBHE 031031
DIMENSIONAL DRAWING				CHKD VLKSBHE 040617
				APPD VLKHELO 040617
REF. 1-9850189	SUPERS.		A2	DRAWING ID STOD019617 . 01 SHEET 1/1
WORK	FILE STOD019617		AutoCAD	

DATE	ZONE	CHD	REVISION	CHK/APP
2019-08-22	VLKMAHE	VLKTAMA	UPDATED	01





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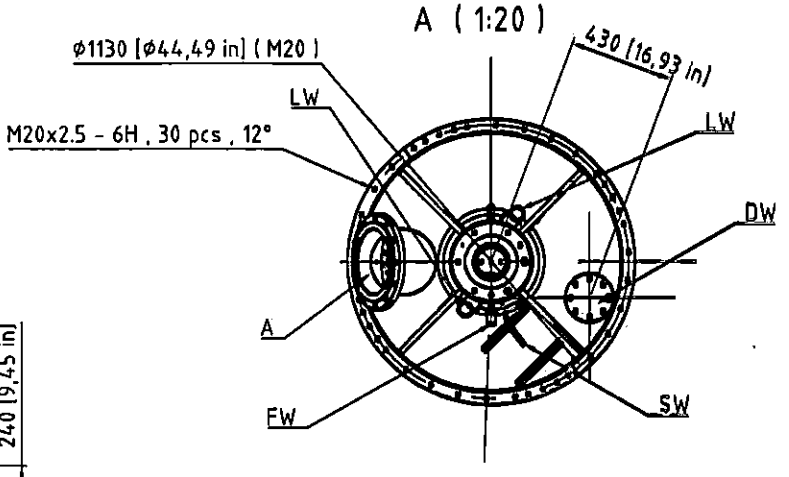
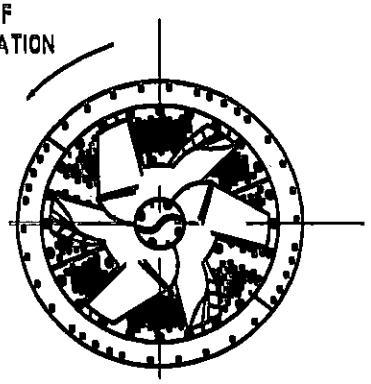


DIRECTION OF
ROTOR ROTATION



A = ACCEPT	DN250 DIN2642 NP10 (DIA10" ANSI B16.5 CLASS150)
DW= DILUTION WATER	DN80 (DIA3" ANSI B16.5 CLASS150)
FW = FLUSHING WATER	R 3/4"
LW = LEAKING WATER	HOSE Ø 2"
SW = SEALING WATER	HOSE Ø 10 - R1/4"
WATER TO SEAL	0,08dm³/s , 2bar (1,3 GPM , 28 PSI)
TOTAL WEIGHT	1760 kg (4390 lbs)
SHIPPING VOLUME	4,0 m³ (141 cuft)

COLORING:
-Frame and bearing unit: Valmet dark grey -RAL 7011
-Covers : Valmet yellow -RAL 1021

PART	DESCRIPTION	DIMENSIONS	MATERIAL	DRAWING/IDENTIFICATION NO	QTY

GENERAL TOLERANCES.
DIMENSIONS WITHOUT INDIVIDUAL TOLERANCE INDICATIONS:
MACHINING: ISO 2768-mK (SFS-EN 22768-1, SFS-EN 22768-2)
WELDING: ISO 13920-BF (SFS-EN ISO 13920)
WELDING QUALITY LEVEL C (SFS-EN ISO 5817)
CASTING: ISO 8062-DCTG 11 (SFS-EN ISO 8062-3)
FLAME CUTTING: ISO 9013-331 (SFS-EN ISO 9013)

EN / FI

Valmet | PROJECTION | SCALE 1:20 | WEIGHT kg 1760

PRODUCT OptiSlush Bale VMI-35xxB/G | DRAWN VLKMAHE | DATE 070302

DIMENSIONAL DRAWING MITTAPIIRUSTUS | CHKD | DATE

ROTOR UNIT | APPD | DATE

REF. STON000005 | SUPERS. | A3 | DRAWING NO STON000034 . 00 | SHEET 1/1

WORK | FILE | Inventor

DATE	MARK	BY	REVISION	CHANGE

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SPECIFICATION
FSA000737.2
Osprey

APPENDIX 2 .2: Spare parts OPTION

Spare parts for Bale pulper VHi-6525G (OPTION)

Item	Quantity	Unit
BALE PULPER VHi-6525G		
MECHANICAL SEAL	1	PCE
SET OF O-RINGS	1	SET
FLEXIBLE ELEMENT KIT	1	PCE

~~Spare parts for Bale pulper VMi-3518G~~

~~Item~~	~~Quantity~~	~~Unit~~
~~**BALE PULPER VMi-3518G**~~		
~~MECHANICAL SEAL~~	~~1~~	~~PCE~~
~~SET OF O-RINGS~~	~~1~~	~~SET~~
~~FLEXIBLE ELEMENT KIT~~	~~1~~	~~PCE~~

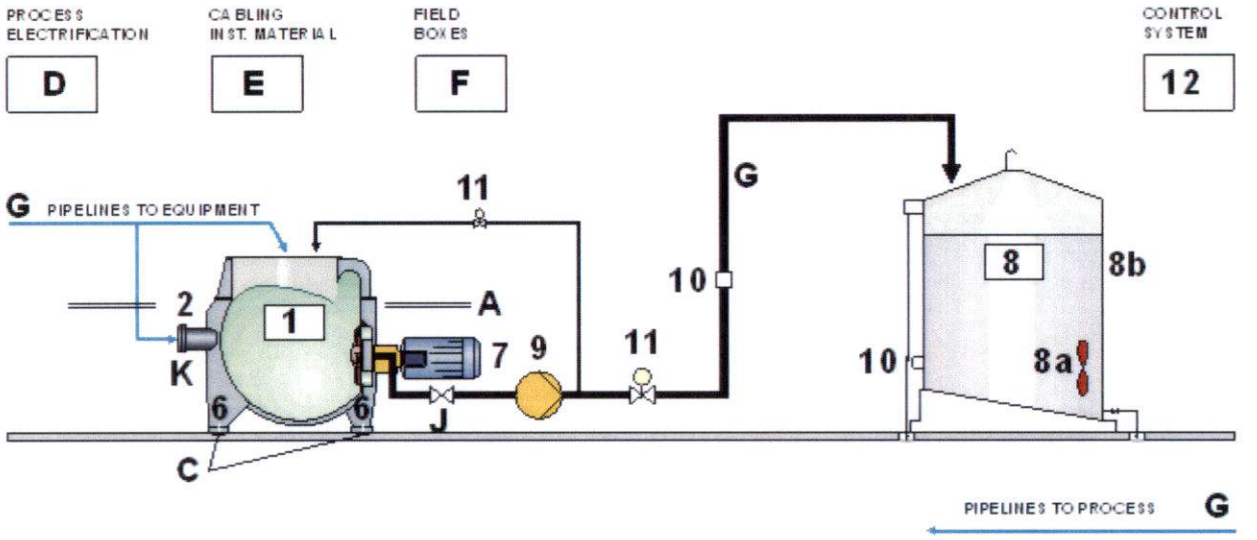
Spare parts for Bale pulper VMi-3518B (OPTION)

Item	Quantity	Unit
BALE PULPER VMi-3518B		
SHAFT SLEEVE	1	PCE
BRAIDED PACKING	1	SET
SET OF O-RINGS	1	SET
SET OF V-BELTS	1	SET

SPECIFICATION
FSA000737.2
Osprey

APPENDIX 2 .3: Delivery limits

Application: This document is valid for stock preparation.



Note! Picture only for reference

ENG / Basic = Basic engineering, prepares initial data for detail engineering
ENG / Detail = Detail engineering, prepares workshop documents for purchasing/manufacturing/installation
MAT = Material, S=Supplier
INST = Installation
! = Valmet internal marking for revised scope

Item	Symbol	ENG / Basic	ENG / Detail	MAT	INST	Note
Equipment						
Main process equipment	1	S	S	S	Purchaser	*)
Equipment side flange connection at the delivery limit	2	S	S	S	Purchaser	*)
Machine integrated motors (special motors)	3	S	-	S	Purchaser	*)
Machine integrated instruments, boxes and internal wiring	4	S	-	S	Purchaser	*)
Gear or belt drive for main equipment	5	S	S	S	Purchaser	*)
Foundation bolts for main equipment	6	S	S	S	Purchaser	*)
Standard motors	7	S	Purchaser	Purchaser	Purchaser	*)
Tanks and towers	8	S	Purchaser	Purchaser	Purchaser	
Tank and tower agitators	8a	Purchaser	Purchaser	Purchaser	Purchaser	
Insulation	8b	Purchaser	Purchaser	Purchaser	Purchaser	
Process pumps	9	Purchaser	Purchaser	Purchaser	Purchaser	
Field instruments	10	S	Purchaser	Purchaser	Purchaser	
On-Off valves and control valves	11	S	Purchaser	Purchaser	Purchaser	
Control system	12	S	Purchaser	Purchaser	Purchaser	

Item	Symbol	ENG / Basic	ENG / Detail	MAT	INST	Note
Other equipment and items						
Walkways, ladders, stairs, support structures	A	Purchaser	Purchaser	Purchaser	Purchaser	
Lifting rails, cranes, hoist equipment	B	Purchaser	Purchaser	Purchaser	Purchaser	
Foundation and embedded steel	C	Purchaser	Purchaser	Purchaser	Purchaser	
Hatches, openings, doors	-	Purchaser	Purchaser	Purchaser	Purchaser	
Process electrification	D	Purchaser	Purchaser	Purchaser	Purchaser	
Cabling, installation material	E	Purchaser	Purchaser	Purchaser	Purchaser	
Field boxes	F	Purchaser	Purchaser	Purchaser	Purchaser	
Piping						
Process piping	G	Purchaser	Purchaser	Purchaser	Purchaser	
Clamps (primary)	H	Purchaser	Purchaser	Purchaser	Purchaser	
Brackets (secondary)	I	Purchaser	Purchaser	Purchaser	Purchaser	
Hand valves	J	Purchaser	Purchaser	Purchaser	Purchaser	
Counter flange at the delivery limit	K	Purchaser	Purchaser	Purchaser	Purchaser	

***) As per Valmet scope of supply**

SPECIFICATION
FSA000737.2

APPENDIX 2 .4: Basic engineering for machine units

1. GENERAL ENGINEERING LIMITS

The engineering covers the stock preparation equipment, which are included in Valmet's delivery.

2. DESIGN AREAS AND OBJECTS

The areas and objects of the engineering are according to scope list of delivery.

3. DELIVERY OF DOCUMENTATION

Valmet standard numbering system and drafting methods will be used in engineering documentation
- Equipment manuals, three (3) sets paper copies, delivered in binders and CD-disc.
- Basic engineering documentation language: English
- Machine manuals: English
- Preliminary and Certified documents delivered by e-mail (electronic PDF-files)

The following engineering documents (x) included in engineering supplied by Valmet.
The delivery of document packages is given in full weeks from the effective date of the contract. The drawings and documents must be dispatched by the Supplier on the Friday of the designated delivery week at the latest.

The delivery weeks shown are indicative. The actual schedule must be discussed and agreed in first project meeting.

Customer shall give the comments for preliminary documents within two weeks from delivery of each of document package

Document schedule
P = Preliminary document
C = Certified document

Mechanical engineering	Technical data	Incl. [total]	P	C	Note
Main process equipment		S	W4	W12	1)
	customer assembly / dimensional drawings (including foundation requirements, service space, pipe connections, drive information)				
	pulper lay-out drawings				

1) main motor dimension drawings and data sheet are needed three (3) weeks before certified drawing.

Process engineering	Technical data	Incl. [total]	P	C	Note
Basic process engineering		S	W4	W8	
	standard P&I diagram including process data, utility consumption data				
	standard process description				

Automation engineering	Technical data	Incl. [total]	P	C	Note
Automation basic engineering for process equipment		S	-	W12	
	instrument location on machine unit		-		
	control and junction lay-out drawings		-		
	internal wiring diagrams		-		
	loop list		-		
	motor list		W4		
	instrumentation device list		-		
	function diagrams (for DCS)		-		
	sequence diagrams (for DCS)		-		
	device manuals		-		

Other documentation	Technical data	Incl. [total]	P	C	Note
Main equipment		S	-	W24	Exworks week
	operating and maintenance manuals				

Engineering programs	Technical data		Note
	Microsoft Word		
	Microsoft Excel		
	Microsoft Project		
	AutoCAD		
	Inventor		
	Adobe Acrobat		

APPENDIX 2 .5: Site services

2	Valmet's resources	h/d d/w	Total days
2.1	Installation supervision resources	1 x 8 h/d 5 d/w	8 days
2.2	Commissioning, training and start-up resources	1 x 8 h/d 5 d/w	7 days

The amount of supervision is based on the length of the site stage. If the execution of the site stage changes significantly, Valmet has the right to charge for additional costs caused by the change. If the amount of supervision is less than estimated, the Purchaser has the right to use the extra days for separately agreed expert services during the warranty period.

The Purchaser accepts Valmet's working hour reports weekly. The use of services will be followed up mutually according to the hour reports.

Training will be hands on training during the start-up. Suppliers operation and maintenance manuals will be used as a training material.

If the total amount of days / weeks is exceeded, additional services will be charged separately as specified in the contract.

Overtime reduces available service days by two hours for each overtime hour. Overtime work is always based on the Purchaser's specific order. The statutory working hours of Valmet personnel are based on Finnish labour law. The Purchaser shall provide Valmet with information concerning local laws and regulations. If overtime is needed, the maximum daily working time is capped at 13 hours per person. Consecutive days of work cannot exceed 12 days in any two-week period, which is followed by two days of rest.

SPECIFICATION
FSA000737.2

APPENDIX 2 .6: Standards and requirements

1. STANDARDS

STANDARDS	
Flange standard	ANSI
The paintwork is performed according to the following standards	
Determination of film thickness	EN ISO 2808
Types of surface and surface preparation	EN ISO 12944-4
Execution and supervision of paint work	EN ISO 12944-7
Development of specifications for new work and maintenance	EN ISO 12944-8
Protective paint systems	EN ISO 12944-5
Mechanical pre-treatment methods and quality levels	SFS 8145
Corrosion protection of metal constructions by means of protective paint system.	SFS 5873
Paints and varnishes. Corrosion protection of steel structures by protective paint systems. Measurement of, and acceptance criteria for, the thickness of dry film on rough surfaces	EN ISO 19840

2. STANDARD PAINTING SYSTEM

Valmet uses only paint combinations and methods tested in real life environment. The painting practice for stock preparation specifies the painting systems and methods that fulfill the warranty given for the delivery project.

2.1 COLORS

Valmet's painting system and the standard color combination are presented in tables below. All changes to the Valmet's painting system are affecting to the delivery price and will be discussed and priced separately.

2.1.1 Main color

Color	Code
Valmet white	RAL 9003

2.1.2 Standard colors for components and parts

Color		Code
Valmet dark grey	Gears	RAL7015
Valmet dark grey	Bearing units	RAL7015
Valmet dark grey	Walkways with railings and supports	RAL7015
Valmet dark grey	Pulper rotor units	RAL7015
Valmet dark grey	HC-cleaner supports	RAL7015
Safety color	Covers and guards	RAL1021
Safety color	Tools and lifting devises	RAL1021
Valmet white	Refiner top-cover plate	RAL9003

Purchased serially manufactured components (electric motors, gears, valves, bearing housings, cabinets and boxes, etc.) are always painted with manufacturers standard colors.

2.2 PAINT COMBINATIONS

In the stock preparation the main paint combination is EPPUR 240/3. The polyurethane top coat ensures color and gloss stability and helps to keep machine clean. In lightly stressed areas such as control cabinets a lighter paint system is sufficient.

Equipment made of galvanized steel sheet, Aluzink steel sheet, aluminum, copper, stainless/acid-proof steel sheet and heat-resisting steel sheet is principally delivered unpainted.

SURFACE PREPARATION	
Surface preparation is done according	EN ISO 12944-4 Sa 2 ½ (blast-cleaning method)

PAINT SYSTEM	
Protective paint system is done according	EN ISO 12944-5/A4.15 (EPPUR 240/3)
Primer: Two-component epoxy primer, dry film thickness:	100 µm
Middle coat: Two-component low-solvent and modified epoxy paint, dry film thickness:	80 µm
Top coat: Two-component semi-gloss acrylic polyurethane paint, dry film thickness:	60 µm
Total dry film thickness (NDFT):	240 µm

Purchased serially manufactured components (electric motors, gears, valves, bearing housings, cabinets and boxes etc.) are always painted with manufacturers standard paint system.

3. SEALING WATER AND COOLING WATER REQUIREMENTS

SEALING WATER REQUIREMENTS	
Water temperature	< 30°C
Outlet water temperature	< 60°C (140°F)
Pressure	8 - 10 bar (116 - 145 PSI) (minimum of 1 - 2 bar above process pressure)
Iron	< 0.2 mg/l
Largest particle size (filtration grade)	50 µm
Total hardness (CaCO3)	< 180 mg/l
Solids content	< 10 mg/l, must not contain ash or similar fine material
Silicate	< 10 mg/l
Permanganate number max	30 mg/l

COOLING WATER REQUIREMENTS	
Temperature	+10°C...+25°C (+50°F...+77°F)
Pressure	4 - 10 bar (60 - 145 PSI)
pH	6.5...7.5
Chloride content	< 40 mg/l
Largest particle size	150 µm