DESCRIPTION

NEVER USED, NEVER ASSEMBLED – This MMD Rock Crushing Plant has been stored in an indoor warehouse and stored with regular care and maintenance. The plant includes and is designed around an MMD 1000 Series, 6-Ring Sizer sitting on rails for ease of maintenance. It is also designed to allow the end user to add an additional MMD sizer on the same the rail system for continual operations during maintenance. This MMD Plant includes the following equipment

- MMD 1000 Series, 3T, 6-Ring Sizer
- Fully Outfitted, Air-Conditioned Control Cabin
- Allen-Bradley Rockwell PCC 3000 Control Panel and PLCs
- Primary Feeder Bin
- Static Grizzly
- Primary Feeder and Discharge Chutes
- All Steel Structures Including:
 - Structure for Primary Bin and Chute
 - Tower and Platform for the Control Room
 - Tower and Platform for a Rock Breaker (rock breaker not included in this package)
- 2 Davit Cranes
- Spare Parts including Gearboxes, Motors and MORE

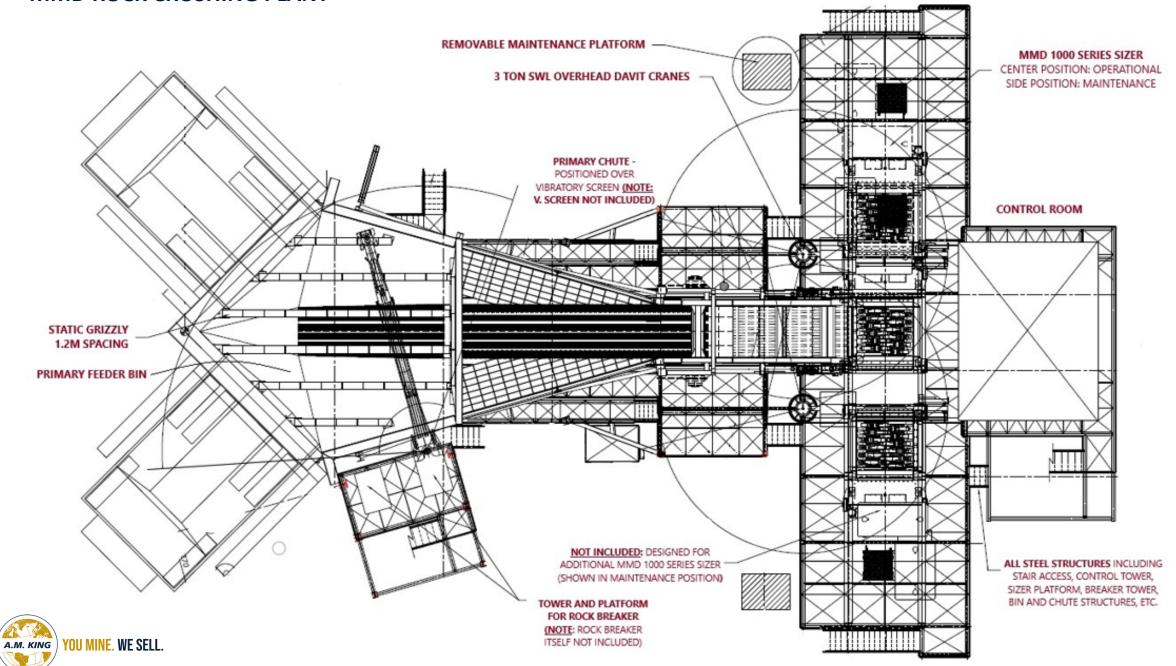
I.D.	18C-AR03		
ОЕМ	MMD		
YOM	2013		
Location	Indoor Warehouse Dunkirk, France		
Condition	NEVER USED		
Packaging	Original Packaging		

PRIMARY	SPECIFICATIONS
Feed Material	0 – 1000mm
Discharge Material	0 – 300mm
Design Flow Rate	2050 t/h
Nominal Flow Rate	1780 t/h
Peak Flow Rate	2300 t/h





MMD ROCK CRUSHING PLANT OVERVIEW



MMD SIZER

One (1) Primary 6-Ring Sizer is included in this package with a carriage and rail system to easily move the Sizer from operational position into maintenance position. The rail system includes an additional carriage and rail space to add a second Sizer for continuous crushing operations while one machine is in standby.

The Sizer is mechanically controlled by its Gearbox which is mechanically protected by a Fluid Coupling and Shaft Rotating monitoring sensor. The Gearbox also has its own dedicated cooling and filtration system consisting of an Oil Pump, Duplex Filter and Oil Cooler. The Oil Cooler in automatic mode is controlled by the Gearbox oil temperature transmitter. The Oil Pump motor will run continuously whilst the main Sizer motor is running. The differential of the pressure is monitored by the PLC on either side of the Duplex filter utilizing two Pressure Transmitters on each Sizer

Primary Sizer has its own dedicated automated lubrication system. This system basically consists of a grease pump (which starts when the Sizer is called to Start) and a grease tank with a level probe which is used for monitoring the grease tank level by the PLC located with the PLC master control panel (PCC-3000).

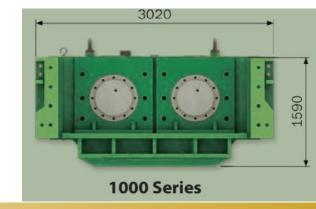
MAIN COMPONENTS INCLUDE:

- Primary 6-Ring Sizer
- Complete R400 60:1 Gearbox / Drive Assembly
- Voith 650 TSVC Fluid Coupling Set with under-speed sensor
- High Voltage Induction Motor (400kW, 6600v 50Hz, 3 Phase)
- Oil Pump and Oil Air Cooler with motors
- Grease Pump and Grease Tanks with motors
- Trolly / Wheel Carriage with motor for Mobile Rail System
- Various sensors to monitor speed, temperature, levels, etc.
- Includes installation, operations and maintenance manuals as well as many drawings of various types.

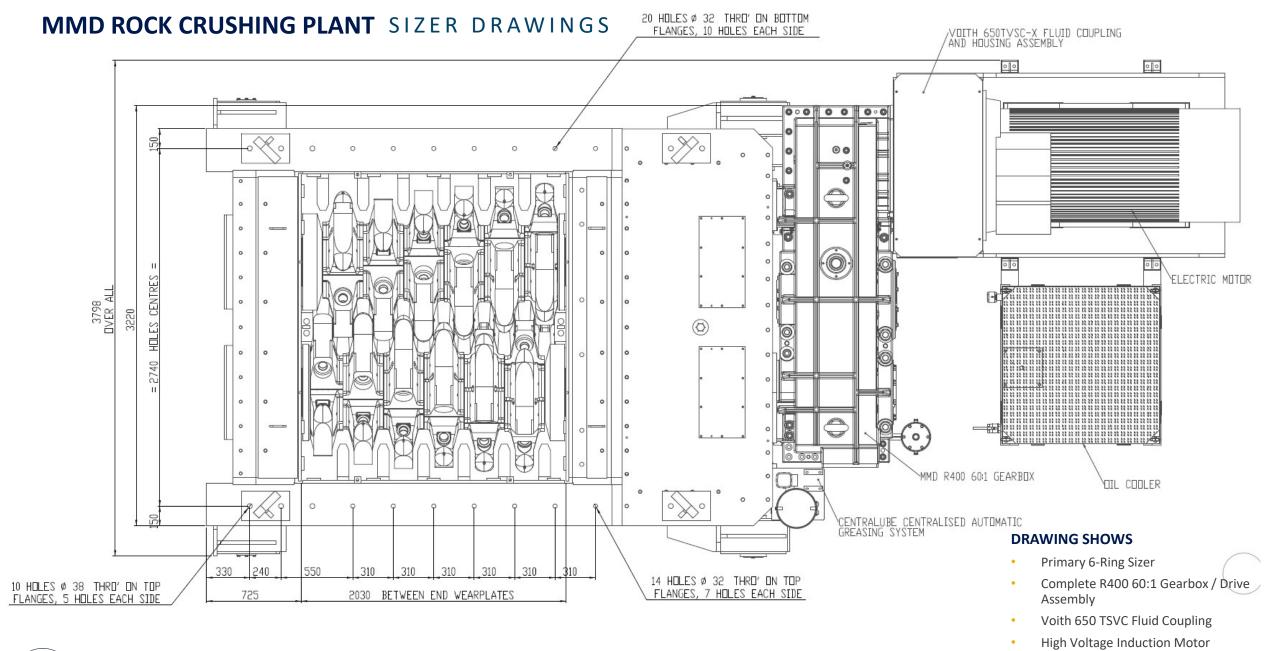
SPARE PARTS

- Gearbox / Drive Assembly
- 2 Voith 650 TSVC Fluid Couplings, and multiple associated
 Voith parts, e.g., sensors, fusible plugs, thermal switch, fitting tools, and hardware
- (2) High Voltage Induction Motor (400kW, 6600v 50Hz, 3 Phase)
- Multiple Low Voltage Induction Motors, Pumps, Fans, etc.

SIZER	SPECIFICATIONS				
SERIAL NO. SIZER	S100-0049				
SERIAL NO. GEARBOX	S1794600-020				
SERIAL NO. COUPLER	7559456				
CONDITION	NEVER USED				
SERIES	1000				
RINGS	6				
TEETH PER RING	3				
SPEED	25 rpm 1.5 m/s Installed below crushing rolls, full width				
ROLL TIP SPEED					
BREAKER BAR					
DRIVE SYSTEM TYPE	Electrical via Fluid Couplings				
DRIVE POWER / VOLTAGE	400kw / 6.6kV				
REDUCER IN /OUT RATIO	60 / 1 rpm				
REDUCER TORQUE	156 kN				
COUPLING	VOITH 650 TVSC fluid coupling / 450 kW				
LUBRICATION SYSTEM	Auto Grease Supply for crusher bearings				







Auto Oil System

Auto Grease System



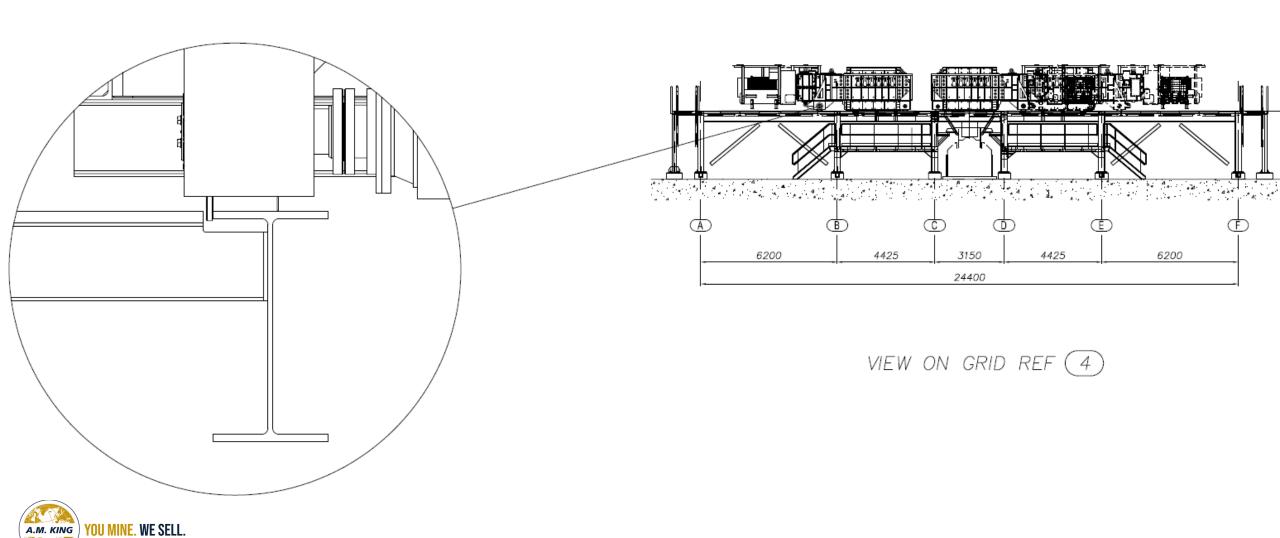
MMD ROCK CRUSHING PLANT SIZER DRAWINGS 8070,50 DVERALL 4064.5 © © :: © [] 0 0 000 000 3040 DVER SIDEPLATES 2350 BETWEEN SIDE WEARPLATES = 1000 CRS = The Three-Stage Breaking Action BREAKER BAR SHOWN IN LOWEST POSITION = 3200 = Initially, the material is gripped At the second stage, material is Any lumps of material that still RAIL CRS by the leading faces of opposed broken in tension by being subremain oversize are broken as rotor teeth. These subject the jected to a three point loading, the rotors chop through the fixed teeth of the breaker bar, thereby A.M. KING YOU MINE. WE SELL. rock to multiple point loading, inapplied between the front tooth ducing stress into the material to achieving a three dimensional faces on one rotor and rear tooth

exploit any natural weaknesses.

faces on the other rotor.

controlled product size.

SIZER CARRIAGE AND RAIL SYSTEM



PRIMARY FEEDER BIN AND CHUTES

DESCRIPTION

The feed bin is designed to receive feed directly from 100 ton+ dumper trucks with valley angles 60° to the horizontal. The dumping spots are arranged at 90° to each other. The is made from 15mm steel walls and includes a cover plate to bridge the gap between feed bin and retaining wall.

The bin is fitted with static grizzly bars (1.2m spacing) parallel to an MMD D7 apron feeder length. The supporting structure of the bin is designed to consider the rocks overload and the rock breaker impact force on the static grizzly bars.

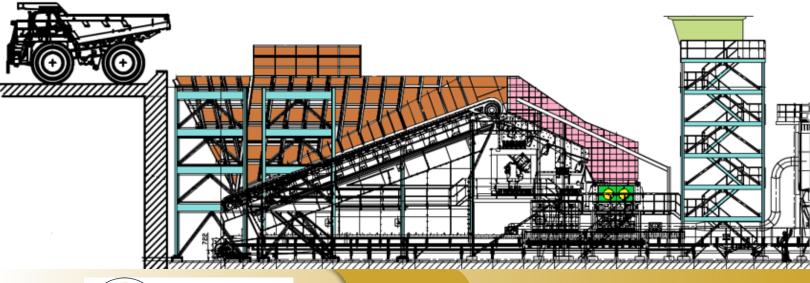
Sections of the bin that are subject to impact by falling material from the dumpers are lined with railway tracks spaced at an appropriate distance such that the ore itself forms a protective layer between the tracks. The tracks should be welded to the bin on-site.

Sections of the hopper not subject to impact from the dumpers will be lined with abrasion resistant replaceable plates. Wear liners are a 25mm thickness. Liners will be bolted to the bin on-site.

MAIN COMPONENTS INCLUDE:

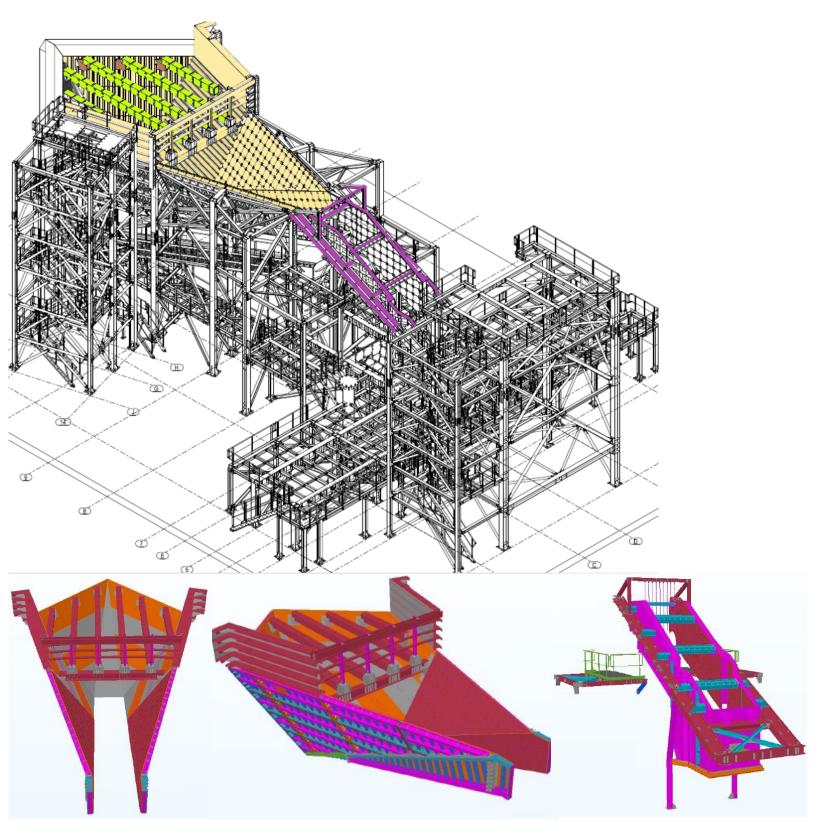
- Precut steel pieces ready for on-site assembly of the bin, feed chute and discharge chute.
- Precut Vertical Skirt Plates
- Static Grizzly I-Beam Bars
- Impact Rails
- Wear Steel Plating
- Support Structure

PRIMARY BIN	SPECIFICATIONS				
FORM	Diamond Shaped				
DUMPER CONFIG	Two Dump Ramps at 90°				
STATIC GRIZZLY	1.2m Spacing				
ASSEMBLY	Welded / Bolted On-Site				
L/H/W	19000 / 7500 / 10600 mm				
VALLEY ANGLES	60° to horizontal				
WALL THICKNESS	15mm / mild steel				
HIGH IMPACT LINER	Rail Tracks welded to high impact location of bin				
OTHER LINER	25mm HB360 Steel Bolted Plates				



A.M. KING
YOU MINE. WE SELL.

PRIMARY FEEDER BIN AND CHUTES OVERVIEW





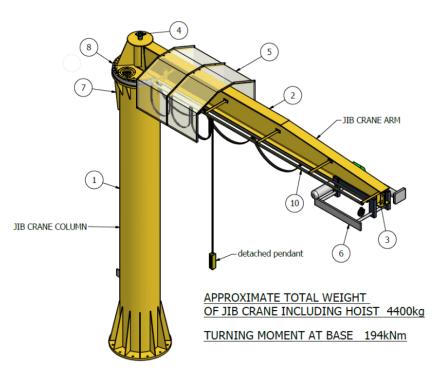
2 DAVIT CRANES

DESCRIPTION

The MMD Plant Package includes (2) 3-Ton, SWL Davit Cranes with a 6-meter diameter. The cranes were designed to be mounted on each of end of the MMD 6-Ring Sizer platform.

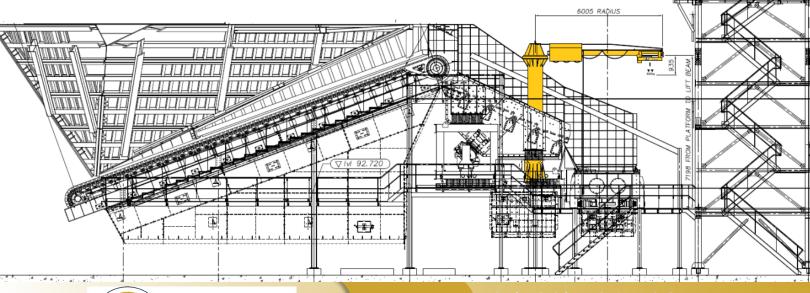
The two primary purposes for the cranes:

- Perform lifting tasks during maintenance of the MMD 6-Ring Sizer
- Clearing the feeder shoot of oversized ore blocking the path of the feeder chute



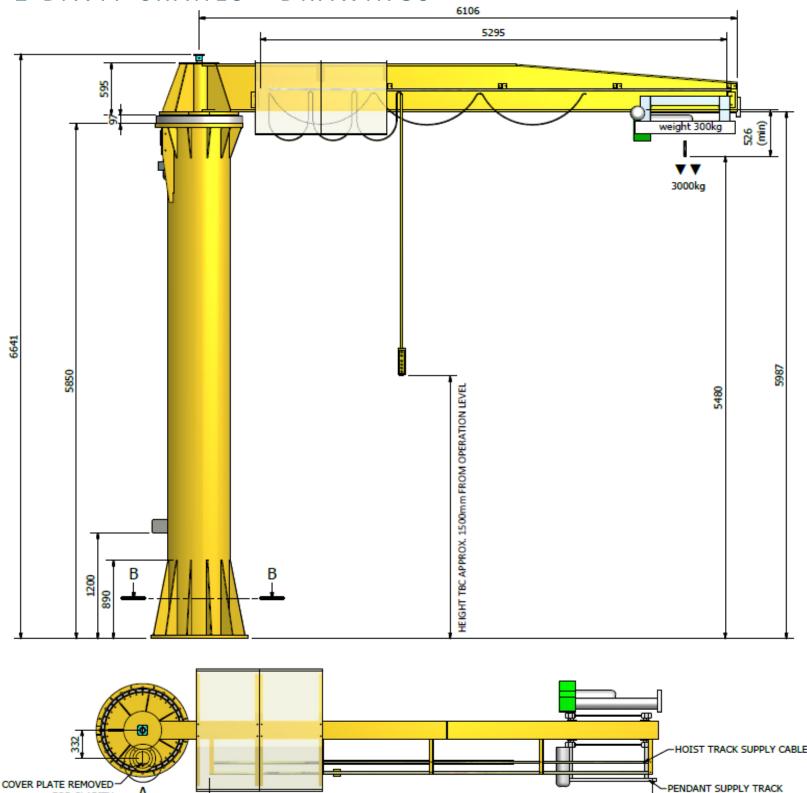
DAVIT CRANES	SPECIFICATIONS				
OEM	Street Crane (UK) Ltd.				
NUMBER OF CRANES	2				
CAPACITY	3 t / SWL				
BRIDGE SPAN / RUNWAY LENGTH	6000 mm radius / 270° motorized slewing				
RUNWAY ELEVATION	5000mm above platform				
DESIGN CODE	DIN 15018 for Jib				
DESIGN CLASS	M4 for Hoist				
HOISTING SPEED (high / low)	4 / 1 m / min				
НООК ТҮРЕ	Trapezoidal with safety catch				
INSTALLED POWER	3 kW				
CONTROL EQUIPMENT	Pendant Controller				

		PARTS LIS	ST
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	D7027 COLUMN ASSEMBLY	
2	1	D7027 ARM ASSEMBLY	
3	4	D7027 ENDSTOP	
4	4 1 D7027 SLIP RING ASSEMBLY		
5	2	D7027 CANOPY COVER	
6	1	D7027 SH3005 HOIST	
7	1	SLEW DRIVE MOTOR	
8	1	SLEW RING	NBC:- SIG 976 2 20 01 AA LM
9	1	DRIVE PINION	REF:- FRD 52 53 BORE 50mm (M8Z17)
10	1	D7027 FLECTRIC SUPPLY	





2 DAVIT CRANES - DRAWINGS





FOR CLARITY

CONTROL ROOM

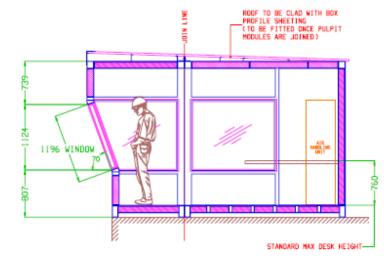
DESCRIPTION

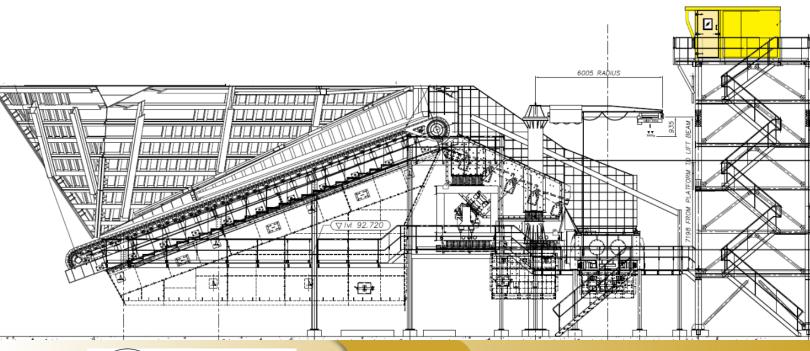
This Control Room is the Master Control Station (MSC) that overlooks the MMD Plant through accessible sloped window. The Control Room ships in two (2) sections to be assembled on site.

MAIN COMPONENTS INCLUDE:

- 2 modular sections with room and floor in place
- Electrical wiring, outlets, panels and switches
- Lighting
- Air Conditioning Unit and Ventilation System including:
 - 1 x Internal FCU/Compressor/Control Panel Package
 - 1 x Outdoor Air-Cooled condenser
- Windows clear laminated safety glass toughened to BSEN 12150
- Windows are set in aluminum frames and lined with acoustically absorptive foam
- External access door is heavy duty, self closing, and classed as a double sealing.
- Assembly and illustration and operation manuals included.

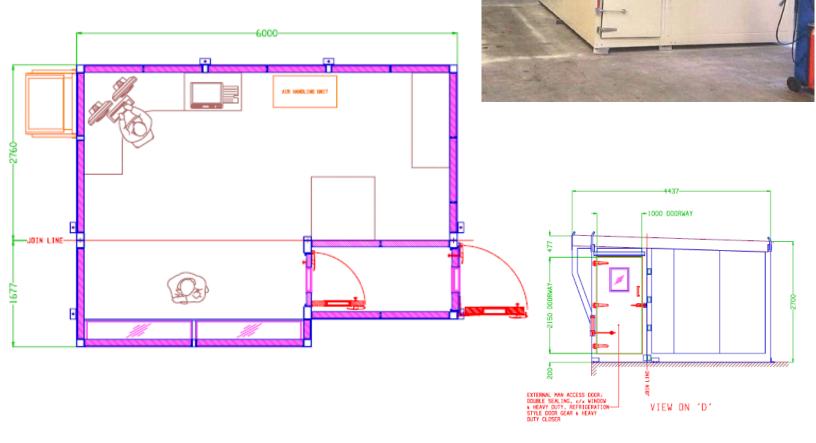


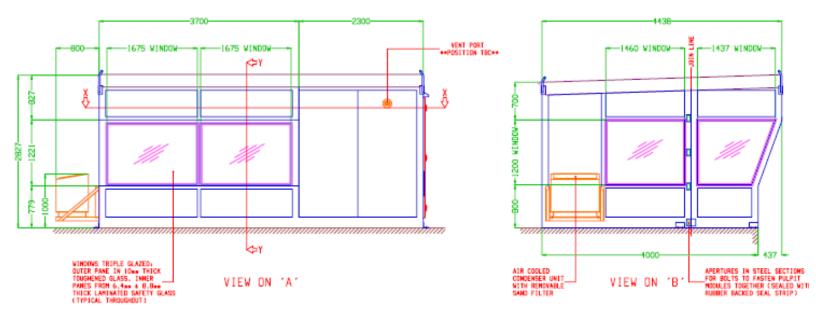






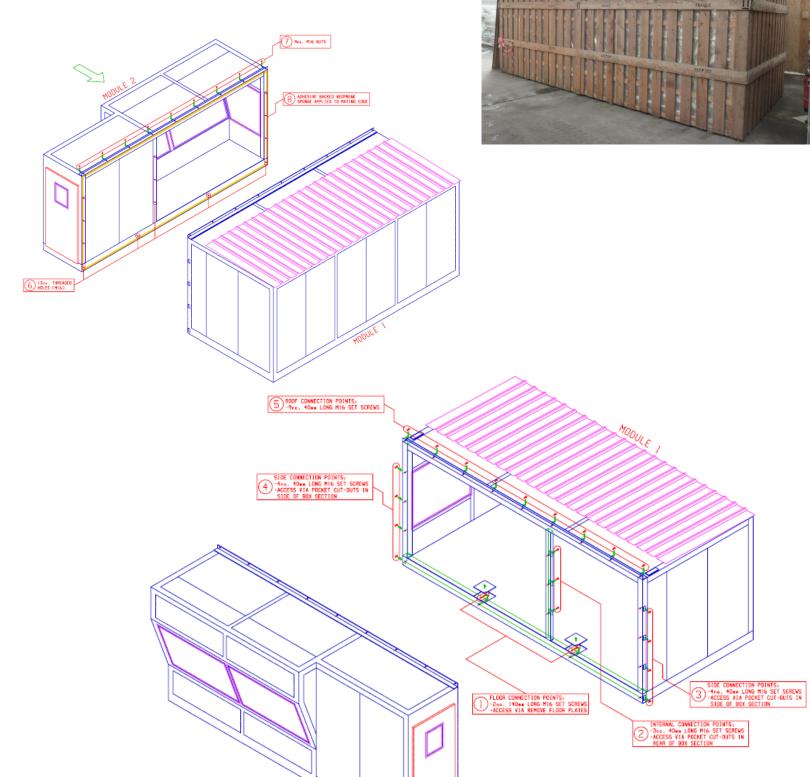
CONTROL ROOM - DRAWINGS







CONTROL ROOM- DRAWINGS

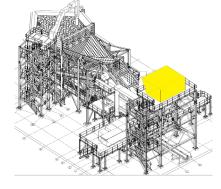




CONTROL ROOM- ELECTRICAL PANEL

DESCRIPTION

All pre-installed electrical infrastructure for the Control Room is manufactured by Schneider – Acti 9 system.



Acti 9

The safest, simplest and most efficient system for power distribution solutions

Protection devices

- > Miniature circuit breaker
- > Residual current circuit breaker
- > Vigi" residual current devices
- > Surge arrester

Protection monitoring and supervision

- > Indication and tripping auxiliaries
- > Remote control auxiliaries
- > Automatic recloser auxiliaries





MMD ROCK CRUSHING PLANT CONTROL PANEL / PLC

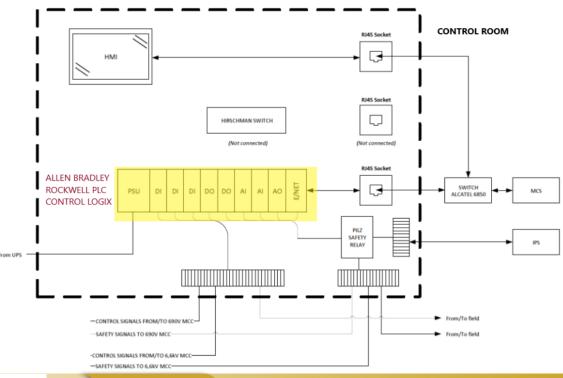
This MMD Sizer and Plant includes and is controlled by the PCC-3000 Control Panel and PLC (located within Control Panel PCC-3000) The PLC (Programmable Logic Controller) & HMI (Human Machine Interface) package is designed to operate as a fully automated control system for the Primary Sizer Package.

The PLC Control Panel (PCC-3000) has a door mounted isolator, Allen Bradley Panelview plus HMI, Emergency Stop, and Reset Pushbutton mounted on the doors. The panel is also ventilated via a door mounted Fan and Filter controlled by an internally mounted thermostat.

Mounted on the backplate in the PLC Control Panel there is a PLC rack (Allen Bradley Control Logix), 240V/24Vdc power supply unit and a 240VAC socket outlet for programming purposes, Ethernet switch, control relays and terminals.

The PLC Control Panel comprises of a 1756-L61 CPU (2MB memory), a 1756-ENET/B Ethernet communications module, various 1756-IF6I 4-20mA Isolated Analogue Input modules, various 1756OF6CI 4-20mA Isolated Analogue Output modules, 1756-IB16 24Vdc Digital Input modules and 1756-OB16E 24Vdc Digital Output modules. The scan time of the PLC ladder logic is estimated to be no more than 5msec. When required, the PLC will communicate with the HMI via a rack mounted EtherNet module.

PLC	DETAILS				
OEM	ALLEN BRADLEY				
YOM	2013				
SOFTWARE	RSLogix 5000				
Location	Indoor Warehouse Dunkirk, France				
Condition	NEVER USED				
Packaging	Original Packaging				





STEEL SUPPORT STRUCTURE

NEVER USED, NEVER ASSEMBLED – MMD Rock Crushing Plant steel structures include

- Structure for Primary Bin and Chute
- Tower and Platform for the Control Room
- Tower and Platform for a Rock Breaker (rock breaker not included in this package)
- Platform form and structures around the Sizer
- Rail Structures for Sizer Carriages
- Mobile Maintenance Towers and Platforms
- Walkway grating
- Stairs and Railing

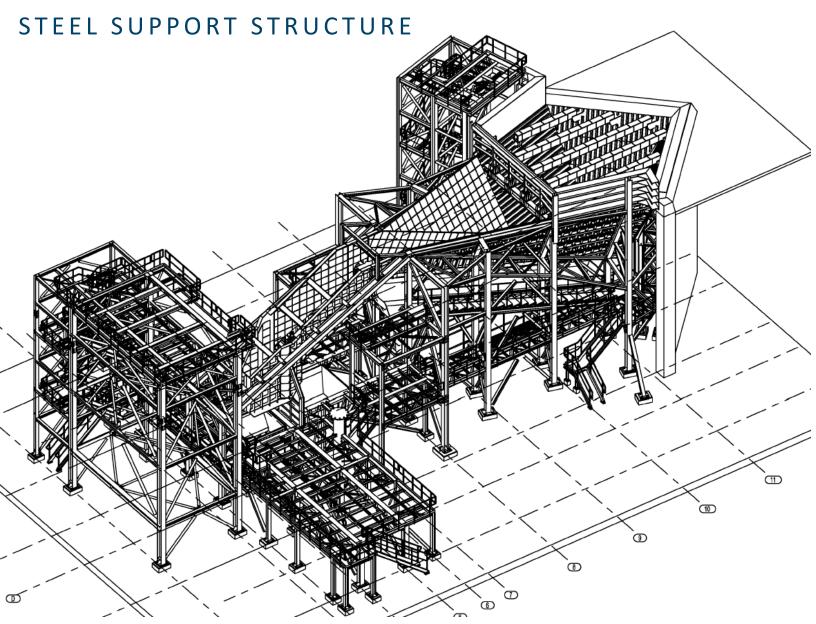
A.M. KING





info@amking.com

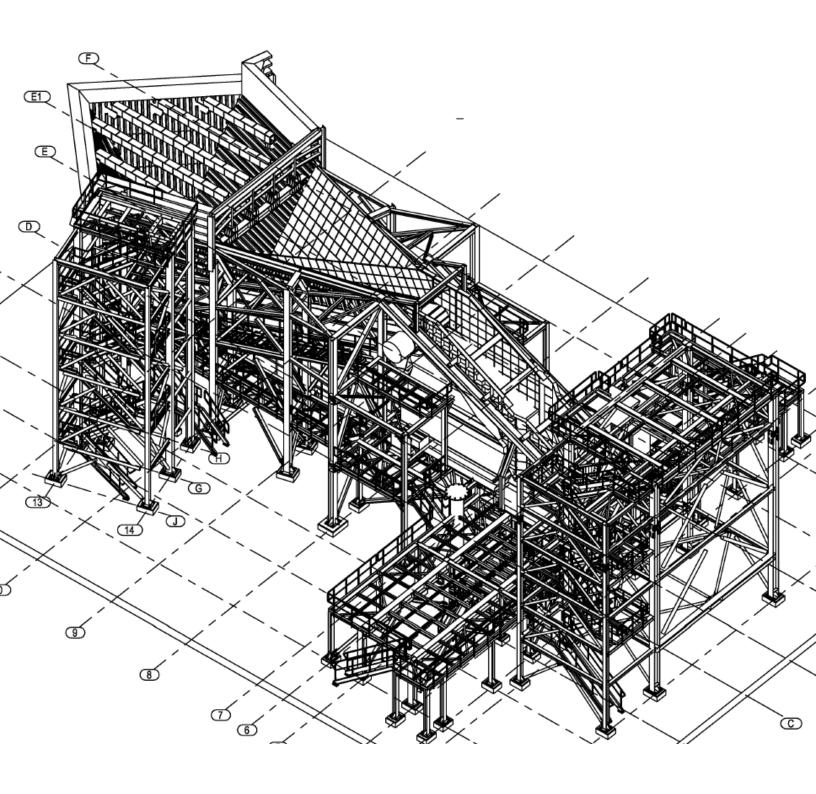






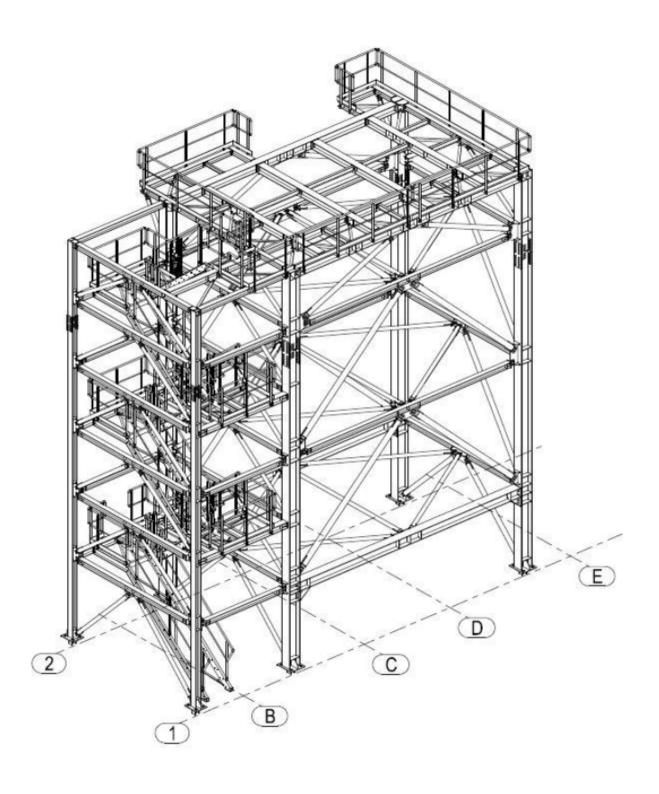


STEEL SUPPORT STRUCTURE



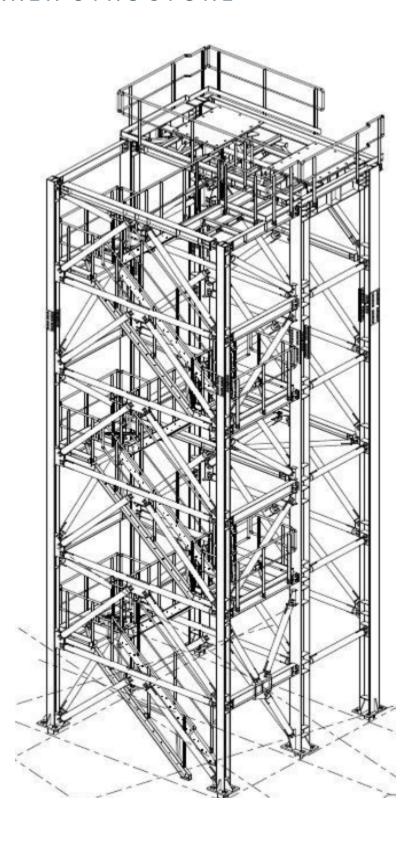


CONTROL ROOM
TOWER STRUCTURE





ROCK BREAKER STRUCTURE





APPENDIXES ATTACHED

- APPENDIX A Pictures
- APPENDIX B Equipment Data Sheets
- APPENDIX C Motor Data Sheets



APPENDIX A MMD EQUIPMENT PICTURES



PICTURES















PICTURES















PICTURES









APPENDIX B MMD EQUIPMENT DATA SHEETS



PROCESS DATA PACKAGE

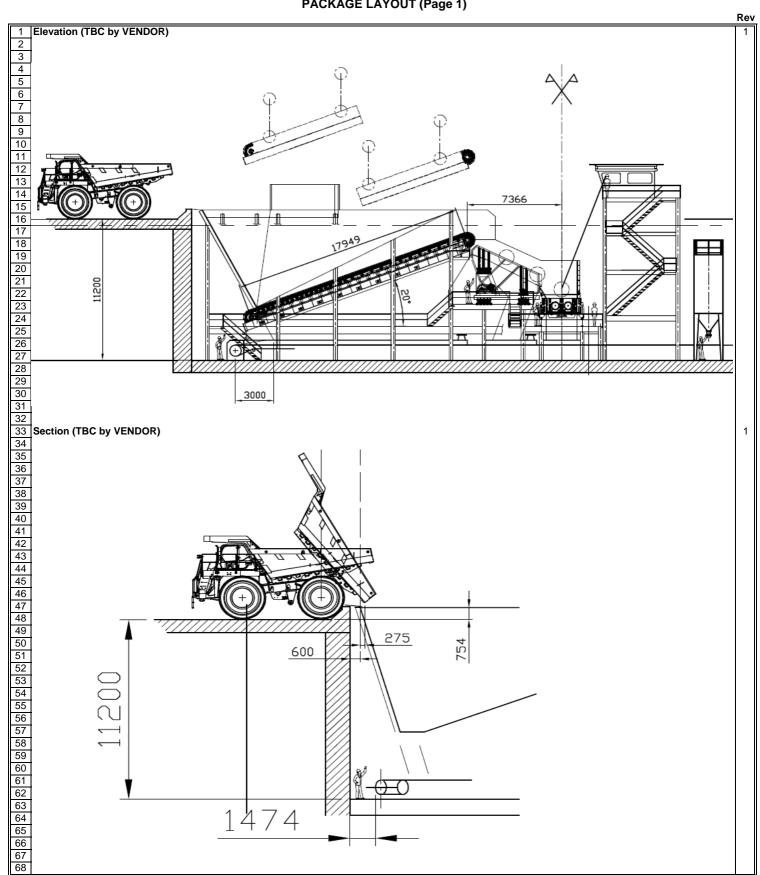
		PROC	ESS DATA	PACKAGE			Rev
1							
2	ENVIRONMENTAL CONDITIONS						+
3	Installation	-		Outdoor			
4	Climate	-		Desert and dusty environmer	nt		
5	Temperature Average	°C	35				
6	Min	°C	5				
7	Max	°C	47	80°C in direct sunshine expo	sure		
8	PROCESS DATA						_
9	PROCESS DATA			Dry Cryshing process			_
10 11	Process type Installation	-		Dry Crushing process Outdoor - desert and dusty e	nvironmont		+
12	Installation	-		Outdoor - desert and dusty e	nvironment		-
13	Working time per year	days / year	365				+
14	Working time per day	hours / day	24				+
15	Availability (for equipment)	%	98	Excluding scheduled mainter	nance		+
16	Availability (for package)	%	95	Guaranteed - Excluding sche		ance	1
17	Maintenance time per year	hours / year		TBC			
18		j					T
19	ORE PROPERTIES						
20	Ore Type			IMFOUT IMCA25	Uranium ore s	sandstone - classified sandy	ore
21	Bond Impact Work index (1)	kWh/t	>	6.65 - 7.72 8,84			
22	Bond abrasion index	g	>	0.048 - 0.179 0,214	Medium abras	siveness - 0.179 for lifetime	
23	Al I I						\perp
24	Absolute specific gravity	(-)	2,1 - 2,40				4
25	Bulk density	t/m³	1.4 - 1.6	1.4 for equipment design, 1,6	for power des	sign	_
26	Moisture	%W	3	ROM moisture			\perp
27	Fusing risk	-	No No				4
28 29	Building-up and sticking risk Angle of repose (to horizontal)	•	36 - 40				+
30	Angle of repose (to nonzontal)		30 - 40				+
31							+
	CRUSHING PROCESS						+
33	Nominal Flow rate	t/h	1780	Guaranteed - Including 3% w	t ROM moistu	re	+
34	Design Flow rate	t/h	2050				+
35	Peak Flow rate	t/h	2300	Occasional surge on apron feeder			
36							
	FEED MATERIAL (ROM) - SIZE DISTRIBUTION (2)			M ORE FEED SIZE RANGE ESTIMATE - SQUARE HOLE MESH			
38				AXIMUM (mm)		IINIMUM (mm)	
39			F100	1200 (1000x1000x1200)*	F100	1200 (1000x1000x1200)*	
40			F98	1000	F97	900	
41			F80	650	F80	350	
42			F50	400	F50	75	
43			F30 F20	250	F30 F20	30 20	_
44 45			F20 F10	100 10	F20 F10	20 8	+
45			F10 F4	<1	F10 F6	8 <1	+
47				*Maximum block size	. 0	``	+-
48							+
	DISCHARGE MATERIAL SIZE DISTRIBUTION (4)		OF	II RE DISCHARGE RANGE EST	IMATE - SQU	ARE HOLE MESH	1
50				AXIMUM (mm)		IINIMUM (mm)	1
51			P100	350	P100	350	1
52			P99	300 (200x300x450)*	P99	300 (200x300x450)*	
53			P80	170	P80	110	
54			P50	100	P50	41	
55			P30	50	P30	24	
56			P20	29	P20	17	\perp
57			P10	3	P10	5	4
58				*P99=300 Guaranteed			4
59	Valley and for shute design	0	60	Minimous from tour			+
60	Valley angle for chute design		60	Minimum from horizontal			+
61 62							+
63							+
	Particular notes		<u> </u>	IL			

64 Particular notes

- Note 1 : Based on Hazen Research studies report- 22 Aug 2007
- 66 Note 2: The crusher must be capable of processing the largest blocks.
- 67 Note 3 : Deleted
 68 Note 4 : Discharge refers to the discharge of the package, i.e. the combined flow from the grizzly undersize and the sizer.

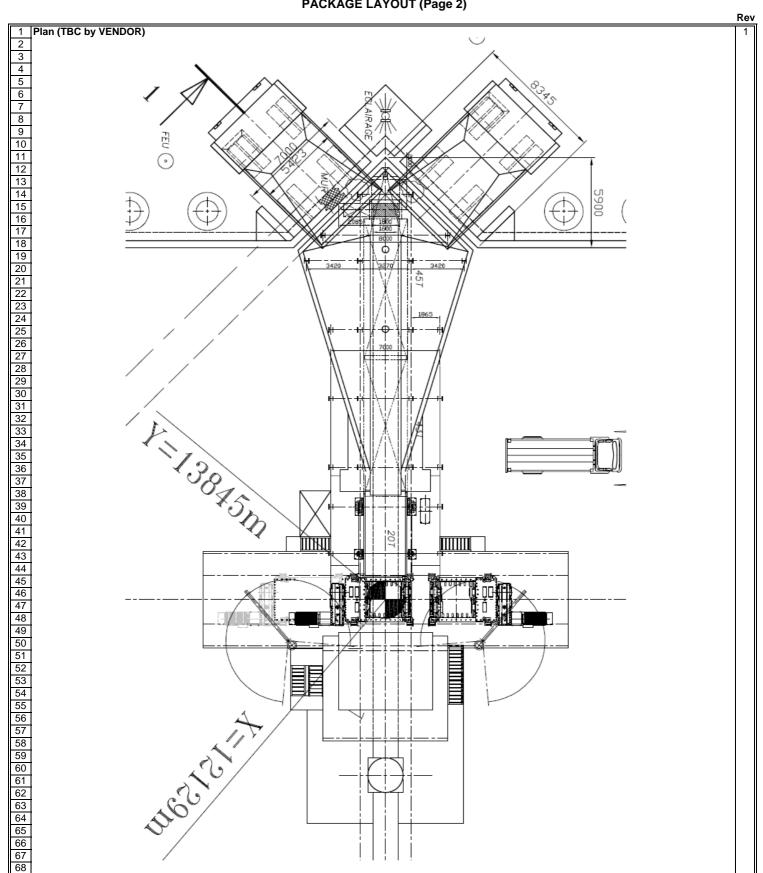
PRIMARY CRUSHING SIZER **PACKAGE**

PACKAGE LAYOUT (Page 1)



PRIMARY CRUSHING SIZER **PACKAGE**

PACKAGE LAYOUT (Page 2)



PRIMARY CRUSHING SIZER PACKAGE

TECHNICAL DATA PRIMARY FEED BIN

2 Valley angles		TECHNICAL DATA PRIMARY FEED BIN Rev							
Dimensions Dimensions shaped, inclined integrated aprox feeder extractor,			Item	0210-BN-3300					
4 Dumper configuration - Two dumping ramps at 80°									
Select griztry	3		-	Diamond shaped, inclined intergrated apron feeder extractor.					
Supporting structure	4	Dumper configuration		Two dumping ramps at 90°					
Construction . Welded / botted on-site .		Static grizzly		Included - grizzly bars 1.2m spacing					
8 General assembly drawing	6	Supporting structure		Included - static grizzly overload taken into account					
10	0				+				
10	0	General assembly drawing	-	Q3649	+				
11 Length / height / width	10	Dimensions		1	+				
22 Valley angles		Length / height / width	mm	19000 / 7500 / 10600 - to be confirmed	1				
13 Wall thickness / material -	12	Valley andes			+				
14	13	Wall thickness / material			+				
15 Wear Liners	14	vvaii tiiottiess / material		Totality filled steet.	+				
Liner type					+-				
			_	Railway tracks welded to the hopper where material impact is expected	+-				
Liner material . HS360 steel				Liner plates bolted to the hopper elsewhere	+				
Railway track liner spacing			_		+				
	19		mm						
Heaviest for installation	20	Liner thickness			\top				
22 Weights	21			·					
Neavest for installation I Oit TBC	22	Weights	<u> </u>						
Heaviest for maintenance t 10 TBC	23	Heaviest for installation	t	10t TBC					
Total Weight t TBC TBC TBC TBC TBC TBC TBC TBC	24	Heaviest for maintenance	t	10t TBC					
26	25	Total Weight	t	TBC					
28	26								
29	27								
30	28								
31 32 33 34 35 36 37 38 39 39 39 39 39 39 39	29								
32 33 34 35 36 37 38 39 39 39 39 39 39 39	30								
33 34 35 36 37 38 39 39 39 39 39 39 39	31								
36	32								
36	33				_				
36	34				4				
37 38 39 39 30 30 30 30 30 30	35				4				
38 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 66 57 60 61 62 63 64 65 66 67	30				_				
39	3/				+				
40	30				-				
41 42 43 44 44 45 46 47 48 49 50 51 51 52 53 52 54 55 55 55 56 55 57 58 58 59 60 60 61 60 62 61 63 64 64 65 65 66 66 67	40			-	+				
42 43 44 44 45 46 46 46 47 48 49 49 49 49 49 49 49 49 49 49 49 49 49 49 40 <td< td=""><td>40</td><td></td><td></td><td></td><td>+-</td></td<>	40				+-				
43 44 45 46 47 48 48 49 50 51 51 51 52 53 53 54 54 55 55 56 56 57 58 59 60 60 61 62 63 64 65 65 66 66 67 67	42				+				
44 45 46 47 48 49 49 49 50 51 51 52 52 52 53 54 55 53 54 55 55 56 56 56 57 58 59 60 61 60 61 62 63 64 65 66 66 66 66 66 66 66 66 66 66 66 66 67 <	43				+-				
46 47 48 49 50 50 51 52 53 54 54 55 55 56 57 58 59 60 61 61 62 62 63 64 65 66 66 66 67 67	44				+				
46 47 48 49 50 50 51 52 53 54 54 55 55 56 57 58 59 60 61 61 62 62 63 64 65 66 66 66 67 67	45			<u> </u>	+				
47 48 ————————————————————————————————————	46			<u> </u>	+				
48 49 50 50 51 55 51 52 53 52 53 54 55 54 55 56 57 56 57 56 57 58 59 56 59 60 61 61 61 62 62 62 63 64 65 66 66 66 66 66 66 66 66 67 67 67 68 69 60 <td< td=""><td>47</td><td></td><td>†</td><td></td><td>+</td></td<>	47		†		+				
49 ————————————————————————————————————	48				\top				
50 51 51 52 53 53 54 55 56 57 58 59 60 60 61 62 63 64 64 65 66 66 67 67	49				+				
51 52 53 54 55 55 56 57 58 59 60 60 61 61 62 63 63 64 65 66 66 66 67 67	50				+				
52 53 54 55 55 56 57 58 59 59 60 61 61 62 63 64 64 65 65 66 66 67	51				\top				
53 ————————————————————————————————————	52								
54 ————————————————————————————————————	53	_							
55 56 57 58 59 60 60 61 62 62 63 64 64 65 66 66 67 67	54								
56 6 57 58 59 60 60 60 61 62 62 63 63 64 64 65 66 66 67 67	55								
58 59 60 60 61 61 62 62 63 63 64 64 65 66 66 67	56								
59	57								
60 61 61 62 63 64 65 66 66 67	58								
61 62 63 64 65 66 66 67 67	59				ota				
62	60				4				
63	61				\perp				
64 65 66 67 67 67 68 68 68 68 68 68 68 68 68 68 68 68 68	62				\perp				
65	63				\perp				
66 67	64				4				
67	65				4				
68	66				4				
08	67			-	4				
	68								

PRIMARY CRUSHING SIZER PACKAGE

TECHNICAL DATA PRIMARY SIZER

TECHNICAL DATA PRIMARY SIZER						
1 Primary Sizers A	Item	0210-CR-3000-A				
2						
3 General		MAND / Freedow d				
4 Manufacturer and origin country 5 Type / Equipment model	-	MMD / England	-			
5 Type / Equipment model 6 Tramp release	-	Double roller sizer / MMD 1000 Reverse rotation of rolls	+			
7 General assembly drawing		\$100-0030	+			
8		0100 0000	+			
9 Dimensions			+			
10 Internal crushing chamber dimensions (length / width /	/ height) mm	2030 x 2350 x 1185	1			
11 External dimensions (length / width / height)	mm	7921 x 3798 x 1615	1			
12						
13 Main Shafts						
14 Speed	rpm	25rpm				
15 Roll tip speed	m/s	1,5 approx	_			
16 Length / Diameter 17 Bearing type / designation	mm	2030 x 1200	+			
=	-	SKF self alligning double row spherical roller bearings	+			
18 Bearing seals19 Nominal center distance	- mm	Labyrinth type 1000	-			
20 Main Shaft Teeth	mm	1000	+			
21 Arrangement on shaft		Rings	+-			
22 Number per ring / number of rings / total number	-	3 / 6 / 18	+			
23 Attachment configuration	-	Each tip is welded on a cap (bolted onto the ring)	+			
24 Replacable	-	Yes	\top			
25 Breaker Bar						
26 Arrangement	-	Below the crushing rolls, middle of the casing, full width				
27 Liner	-	Breaking caps bolted onto a beam				
28 Replacable	-	Yes				
29						
30 Drive System						
31 Type	-	Electrical via fluid couplings				
32 Power / Voltage	-	400kw / 6.6kV (reverse running, with flexible power cables and plugs)	1			
33 Reducer	_	Cour possible shoth D400 / MMD	_			
34 Type - Manufacturer 35 Number of stages		Spur, parallel shaft - R400 / MMD				
36 Input / Output Speed / Ratio	rpm	60 / 1	+-			
37 Nominal Torque Rating	Nm	156kN	+			
38 Service factor	-	6	+			
39 Life Time Calculation	_	100,000 for gearbox	_			
40 Lubrication	-	Splash lubrication				
41 Thermal capacity	kW	550	1			
42 Coupling	-					
43 Type / Manufacturer	-	Fluid / Voith 650 TVSC				
44 Maximum admissible Power	kW	450	1			
45 Service Factor	-	3				
46						
47 Lubrication System			+			
48 Duty	-	Grease supply for crusher bearings	+			
49 External / automatic system 50 Pump Power	- -	Automatic	+			
50 Pump Power 51 Lubrication flow	kW L/s	0,37kW 2.8169 x 10-5	1			
52 System Capacity	L/S	2.8169 X 10-5 30	1			
53 System Capacity	L		+			
54 Translation System			+			
55 Electrical / manual		Electrical (2 x 1.1 kW)	1			
56 Rails	-	Yes	\top			
57						
58 Materials						
59 Frame	-	Steel				
60 Main shafts	-	High strength alloy steel - heat treated				
61 Teeth	-	Hardened tempered steel				
62 Internal wear liners	-	Steel HB>360				
63			\perp			
64 Weights		FOLTO (for each provide about)	1			
65 Heaviest for installation (specify)	t ·	50t TBC (for casing with shafts)	1			
66 Heaviest for maintenance (specify)	t ·	11t Shaft assemblies	1			
67 Total Weight 68	t	76t	1			
00						

PRIMARY CRUSHING SIZER **PACKAGE**

TECHNICAL DATA PRIMARY CRUSHING LIFTING EQUIPMENT Rev							
	Primary Crushing Davit Crane 1 and 2	Item	0210-CN-1030 and 0210-CN-1040	1			
2	General						
4	Manufacturer and origin Country	-	Street Crane / UK				
5	Type / Model	-	2x 3t SWL Davit cranes	1			
6	71						
	Crane						
8	Number of cranes	-	2	1			
9 10	Crane capacity:	t	3t SWL - Suitable for lifting caps onto the Sizer maintenance spot Suitable for lifting blocks (1000x1000x1200mm) out of the sizer feed chi	1 ur 1			
11	Bridge Span / Runway Length:	mm	6000mm radius / 270° motorized slewing	1			
12	Runway elevation / Max lifting height:	mm	5000mm above platform/10000 above ground level (to be confirmed)	1			
13	Hook lift	mm	From ground to 5000mm above operating platform (to be confirmed)	1			
14	Operating floor elevation:	mm	+5000mm (to be confirmed)	1			
15 16	Design code : Design class:		DIN 15018 for jib M4 for hoist				
17	Design class.	-	INIA TOLLIOSE	-			
	Hoist						
19	Hoisting speed (high / low speed)	m/min	4 / 1 TBC	1			
20	Installed power	kW	3	1			
21 22	Hook type (single / double / w/safety latch)	-	Trapezoidal with safety catch	1			
23	Drum type (grooved / V-grooved) Rope drum diameter	- mm	TBC TBC	-			
24	. Spo drain diameter	111111	1	1			
25	Rope						
26	Rope type	-	TBC				
27	Rope length / diameter	mm	TBC				
28 29	Rope breaking load Rope safety factor	kN -	TBC TBC				
30	Rope salety factor	-	IDC	-			
	Translation trolley						
32	Translation speed (high / low speed)	m/min	14 / 7 TBC	1			
33	Power	kW	0,5	1			
34	Matarinal alauring			1			
36	Motorized slewing Slewing speed	m/min	TBC	1			
37	Power	kW	0,5	1			
38							
	Control Equipment						
40	Remote control	-	Pendant Control	1			
41 42	Max/min lifting height limit switch	-	TBC	-			
43							
44							
45							
46							
47 48							
49							
50				1			
51							
52							
53 54				-			
55			+				
56				-			
57				l			
58							
59				-			
60 61				-			
62				-			
63				1			
64							
65							
66				-			
67 68			+	-			
			1	+			
69							
				1			

APPENDIX C MMD ENGINES MOTOR DATA SHEETS



Rev		DATA SHEET HIGH VOLT.	AGE INDU	CTION MO	TOR					
	1	ITEM: Sizer Drive Motors	QUANTITY	/ :	1	MR				
- 1	2	General specification:	Standards,	codes:	IEC					
- 1	3	Supplier: MMD	Manufactur		ABB					
	4		•							
	5	5 ENVIRONMENTAL CONDITIONS								
	6	Installation (indoor/outdoor) / Ambient Type: Dusty and Corrosive)							
	7	Ambient Design Temperature	Max:	4	7 °C	Min:	5		°C	
[8	Altitude (if > 1000m)/Relative Humidity	a.s.l.:	<100	0 m		70		%	
	9	Area Classification	Tropic-Pr							
	10	Hazardous area (Zone)/ Gas Group/Temperature	According	to packa	ge requirem	ents				
ļ	11									
ļ	12	DRIVEN MA	ACHINE DA	TA						
-		Manufacturer/Machine Type (fan, pump, compressor,)			Sizer					
- 1		Maxi shaft power / Shaft power at operating point			400 kW		400k		554Nm	
- 1		Coupling type / To be designed for restarting	11	FI	uid Coupling			No		
- 1		Thrust (vertical) Up/Down	Up		кд	Down		10 500	kg	
-		Driven Machine Inertia (WR2) Brake torque curve / Required starting brake torque	2554Nm) kg.m2	
\dashv			2554Nm		1	No	33:	20	N.m	
ŀ	19 20	Open valve starting	Yes		<u> </u>	NO				
ŀ	21	MOTOR GENERAL	CHARACT	FERISTICS	2					
ŀ		Rated Output/ Poles number	CIIANACI	LINIOTIC	400 kW	N°-		4		
		Voltage/Frequency/Phases	6600	1	/ 50		N°:	3		
ı		Service condition (S1,S2,)			S1					
ı		Power supply Neutral Status / PE conductor	Impedanc	e Earthed	Neutral (IT)		Limited)	to 10A		
- 1		Mounting (IM1001,3001,3011,1011,)			,	(-	IM 20			
		Protection degree: Enclosure / terminal box	IP:	55		IP:	55			
		Protection Ex(n), Ex(d), Ex(e), Ex(p): Motor / terminal box								
1	29	Gas group (IIB,) / Temperature class (T3,)								
		Enclosure cooling (fan cooled, air to air, air to water ,)					Fan Coo	led		
		Starting Method (loaded, unloaded / DOL, soft start,)	Loa	ded	DOL	Soft start		VSI	D 🗆	
		Starting voltage (full, reduced x%) / Max. voltage drop at starting	± 10%	6 is tolerar	nce limit on v	oltage	10		%	
I		Nb of consecutive starts within 1 hour	Cold	3		Hot	2			
ı		Min.Insulation Class (B,F,)/Max Temperature Rise		F		L	В			
_		Direction of Rotation (looking at motor coupling)	CW		CCW		Bidirection	onnal		
_		Position of Main terminal box		215		OP	2.05			
- 1		Main terminal Box Short Circuit Withstand Current/Time	T	31.5	kA		0.25		S	
ŀ		Cable Type and Size on main terminal box Position / Qty of auxiliary terminal boxes	Туре	TOP		Size N°:			mm ²	
-	40	Terminal boxes provided with cable glands	Main	101	Yes	Metallic	No F			
\dashv	41	Terminal boxes provided with cable glands	Auxiliary		Yes 🔳	Metallic		┽		
ŀ		Painting (Mfr standard,/ color)	Adamary		Manufactur					
ı		Vibration Limit								
ı		Noise Level at 1 m					83 tol -	+3	dB(A)	
	45									
	46	ACCESSOR	YEQUIPME	ENT						
- 1	47	Winding temperature detectors								
	48	Type / Quantity	P.	T100 - 3wi	res	N°:	6			
	49	Set for alarm / shut down (see note 1)			130 °C				160 °C	
		Bearing temperature detectors								
ļ	51	Type / Quantity	P.	T100 - 3wi		N°:	2			
ı	52	Set for alarm / shut down (see note 1)			85 °C				90 °C	
_		Vibration detector			2014	110				
- 1	54	Type / Quantity			SPM /-	N°:				
ŀ	55	Set for alarm / shut down (see note 1)			mm/s				mm/s	
ŀ		CT for differential protection		NI /	Λ.					
-	57 58	Type / ratio / Qty supplied by / installed by		N/	1					
-		Anticondensation heaters (Nb / power / voltage)				400W	2	30	V	
ŀ		Maximum sheath temperature			N/A			-	°C	
ŀ		Drain plug		Yes	1 11/7	No 🔳				
ŀ	62					_				
-	63									

Doc No A4102 Rev D Sec Ref 9806J-0210-SP-4314-00111 Date 9 April 2013

Primary Sizers Tag No's: 210-CR-3000-A & 210-CR-3000-B Motor Tag No's: 210-CR-3000-A-M & 210-CR-3000-B-M

	68	MOTOR MAN	UFACTURER'S	DATA				
	69	Manufacturer type / Frame Size / -	Squ	irrel Cage	M3BM 450LA 4			
	70	Winding Connection (star, delta)/Nb terminals brought out		Star		N°:		
		Full Load Speed				•	1496	rpn
Г	72	Full Load Current/Locked Rotor Current		44	Α		9.7	9
	73	No load current				•	19	
1	74	Starting Time (% of Voltage) at full load	100%:	1.6	s	80%:	3.2	
Г	75	Permanent permissible earth fault current				•	N/A	-
	76	Allowable Locked Rotor withstand Time	Cold:	30	s	Hot:	22	
Г	77	Thermal Time Constant	Cooling:	540 min	S	Heating:	100 m in	
1	78	Efficiency	4/4	95.90% 3/4		95.40% 2/4	ı	949
T	79	Power Factor	4/4	0.83 3/4		0.78 2/4		0.6
П	80	Locked Rotor Power Factor		•		•	N/A	
	81	Full load Torque					2554	N.n
	82	Locked/Pull Up/Breakdown Torque	L	130% PU		210% BD)	1309
	83	Stator resistance at 20°C / reactance		N/A	ohm		N/A	ohr
	84	Full load rotor resistance at 20°C / reactance		N/A	ohm		N/A	ohr
	85	Locked rotor resistance at 20°C / reactance		N/A	ohm		N/A	ohr
	86	Reactance: Sub-transient (X"d) / Transient (X'd)		N/A			N/A	
	87	Reactance: Zero sequence (X0) / Steady state (Xd)		N/A			N/A	
	88	Magnetizing reactance (Xm) / X/R ratio		N/A			N/A	
	89	Open circuit time constant				•	N/A	
_ T	90	Rotor Motor Inertia (WR2)					20	kg.m
1	91	Bearing Type(Drive End/Non Drive End)	DE:	Ball		NDE:	Ball	
	92	Lubrication Type/Interval					N/A	hour
	93	Air flow for purging (Ex(n) - ATEX)	Requested		m3/h	Installed syste	m	m3/
	94	Air flow for pressurisation (Ex(p))	Requested		m3/h	Installed syste	m	m3/
	95	Material of frame / rotor / internal or external Fan		Cast Iron		Al		Stee
1	96	Ground lug size				'	M12	mm
	97	Motor Weight (Stator/Rotor/Overall)	S:	3200kg R:		958 kg O:		4227 k
_ T	98	Certifying authority / certificate Nr						
	99					•		
1	100							
1	101							
1	102							
1	103							
1	104							
	105							

Classifying code or document type

ABB Ltd Machines

Performance Data



Department/Author Print date Date of issue Our ref. Lang.

N Blackley En 02.07.13 AL01-290065/290083/290089

Customer ref. Saving Ident Rev./Changed by PO's 007655,007656,007713 1/1

Driven equipment: 053 Crusher

Driven equipment: 053 Crusher	Driven equipment: 053 Crusher								
Motor type code		M3BM 450LA 4							
Motor type			Squirrel cage motor						
Mounting designation		IM 2001							
Protected by enclosure			IP 65						
Method of cooling		IC 411							
Insulation		Class F							
Standards		IEC							
Ambient temperature, max.		47 °C							
Altitude, max.			1000 m.a.s.l.						
Duty type			S1						
Temp. rise			Class B						
Connection of stator winding			Star						
Rated output			400 kW						
Voltage			6600 V ±10 %						
Frequency			50 Hz						
Speed			1496 rpm						
Current			44 A						
Relat. starting current		9.7							
Relat. starting torque		1.3							
Relat. maximum torque		4.2							
No load current		19 A							
Rated torque			2554 Nm						
Load characteristics	Load %	Current A	,	Power Factor					
	100	44	95.9	0.83					
	75	35	95.4	0.78					
	50	28	94.0	0.68					
Direction of rotation			Bi-directional						
Sound pressure level: (sinus sup	oly, no load)		83 dB(A), tol. + 3 dB(A)	A), 1 m					
Weight of rotor			958 kg						
Total weight of motor			4227 kg	_					
Inertia rotor / load			Approx. 20 kgm ² / 10 kgm ²	•					
Bearings			Standard ball bearings	<u> </u>					
Maximum stalling time			22.0 s (warm)						
Starting time			1.6 s (U=100%)						
			2.5 s (U=90 %)						
Number of consec. starts		3/3 (cold/warm)							
Maximum number of starts		1000 / year							
Warm-up time constant			100 min						
Cool-down time constant		540 min							

All motor data is subject to tolerances in accordance with IEC.

Efficiency based on typical additional load losses acc. measurements.

Classifying code or document type

ABB Ltd Machines

Performance Data



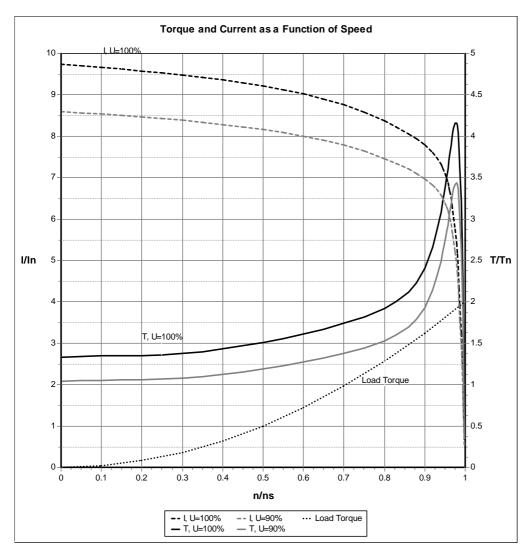
Department/Author Date of issue Lang. Print date Our ref.

N Blackley En 02.07.13 AL01-290065/290083/290089

Customer ref. Saving Ident Rev./Changed by Pages PO's 007655,007656,007713 2/2

Motor type code: M3BM 450LA 4

Rated output	400 kW	Power Factor	0.83
Voltage	6600 V ±10 %	Rated torque	2554 Nm
Frequency	50 Hz	Relat. starting current	9.7
Speed	1496 rpm	Relat. starting torque	1.3
Current	44 A	Relat. maximum torque	4.2



CLIEN	ECT:		Document No A4102 Rev B Sec Ref 9806J-0210-Sp-4314-00111							
		HOAL OURDINED. MARRIES LOUIS (F	·							
MEC	CHAN	NICAL SUPPLIER: MMD Mineral Sizing (Europe) Ltd Contract No 33267	MOTOR ITEM EQUIPMENT TAG NUMBER CONSUMER TYPE SERIAL N°							

		Primary Sizer 210-CR-3000-A &	210-AC-3020-A-M & M 1							
		210-CR-3000-B	210-AC-3020-B-M							
	_	22/44/2042	Updated TSU comments CML							
	C B	22/11/2012 06/09/2012	Updated TSU comments CML Updated TSU comments CML							
	D	02/07/2013	Updated TSU comments CML							
RI	ΕV	DATE STATU	S WRITTEN CHECKED APPROVED							
	1	ITEM: 210-AC-3020-A-M & 210-AC-3020-B-M	QUANTITY: 2 MR							
	3	General specificatior 9806J-0440-JSS-1691-001 Supplier: MMD	Standards, codes: IEC Manufacturer: Leroy Somer							
	4	Supplier. Minib	Manuacturer. Lerby Somer							
	5	ENVIRONME	NTAL CONDITIONS							
~	6	Installation (indoor/outdoor) / Ambient Type: Dusty and Corrosiv								
当	7	Ambient Design Temperature	Max: 47 °C Min: 5°C							
ъРГ	8	Altitude (if > 1000m)/Relative Humidity	a.s.l.: <1000 m 70%							
SUF	9	Area Classification Hazardous area (Zone)/ Gas Group/Temperature	Tropic-Proofed According to package requirements							
当	11		MACHINE DATA							
景	12	Manufacturer/Machine Type (fan, pump, compressor,)	Cooler Fan							
NAC		Maxi shaft power / Shaft power at operating point	1.1 kW 1.0 kW							
Z		Coupling type / To be designed for restarting Thrust (vertical) Up/Down	Yes No							
IVE		Driven Machine Inertia (WR2)	Up kg Down kg N/A kg.m2							
DR	17	Brake torque curve / Required starting brake torque	N.m							
ВУ	18	, , ,	<u> </u>							
8	19		AL CHARACTERISTICS							
SER		Rated power/ Poles number	1.1 kW N°: 4 690 V 50 Hz N°: 3							
HAS		Voltage/Frequency/Phases Service condition (S1,S2,)	690 V 50 Hz N°: 3 S1							
TED BY PURCH		Mounting (IM1001,3001,3011,1011,)	IMB5 (IM3001)							
		Protection degree: Enclosure / terminal box	IP: 55 IP: 55							
		Protection Ex(n), Ex(d), Ex(e): Motor / terminal box								
		Gas group (IIB,) / Temperature class (T3,)								
ΞTΕ		Enclosure cooling (fan cooled, air to air, air to water,)	Fan Cooled							
PLETE	28	Starting Method (loaded, unloaded / DOL, soft start, VSD,)	Loaded DOL ■ Soft start □ VSD □							
OMPLETE	28 29									
E COMPLETE	28 29 30 31	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise	Loaded DOL ■ Soft start □ VSD □ 15 % Cold 3 Hot 2 F B							
) BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER	28 29 30 31 32	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling)	Loaded DOL ■ Soft start USD □ 15 % Cold 3 Hot 2 F B B CW □ Bidirectionnal ■							
TO BE COMPLETE	28 29 30 31 32 33	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box	Loaded DOL ■ Soft start USD □ Cold 3 Hot 2 F B B CW □ CCW □ Bidirectionnal ■ Main TOP Auxiliary TOP							
TO BE COMPLETE	28 29 30 31 32 33 34	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling)	Loaded DOL Soft start VSD □ 15 % Cold 3 Hot 2 F B B CW □ CCW □ Bidirectionnal ■ Main TOP Auxiliary TOP Type: XLPE Arm Size(mm²) Diam. mm							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands	Loaded DOL Soft start VSD □ 15 % Cold 3 Hot 2 F B B CW □ Bidirectionnal ■ Main TOP Auxiliary TOP Type: XLPE Arm Size(mm²) Diam. mm							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color)	Loaded DOL Soft start VSD □ Cold 3 Hot 2 F B B B CW □ CCW □ Bidirectionnal ■ Main TOP Auxiliary TOP Type: XLPE Arm Size(mm²) Diam. mm Type: XLPE Arm Size(mm²) Diam. mm Yes Metallic No □ Manufacturer Standard Manufacturer Standard No □							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37 38	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color)	Loaded DOL Soft start VSD □ Cold 3 Hot 2 F B B CW Bidirectionnal B Main TOP Auxiliary TOP Type: XLPE Arm Size(mm²) Diam. mm Type: XLPE Arm Size(mm²) Diam. mm Yes Metallic No □							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37 38	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m	Loaded							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37 38 39	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m	Loaded							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out	Loaded DOL							
TO BE COMPLETE	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45 46 47 48	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45 46 47 48 49	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 46 47 48 49 50	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 46 47 47 48 49 50 51	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2)	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End)	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size /- Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End)	Loaded DOL							
OT	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size /- Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval	Loaded DOL							
BE COMPLETED BY MANUFACTURER TO	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 50 51 52 53 54 55 56 57 58	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors	Loaded DOL							
OT	28 29 30 31 32 33 34 40 41 42 43 44 45 50 51 52 53 54 55 56 60	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size	Loaded DOL							
BE COMPLETED BY MANUFACTURER TO	28 29 30 31 32 33 34 40 41 42 43 44 45 50 51 52 53 54 55 56 60 61	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size Motor Weight	Loaded DOL							
BE COMPLETED BY MANUFACTURER TO	28 29 30 31 32 33 34 40 41 42 43 44 45 50 51 52 53 54 55 56 60 61	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size Motor Weight	Loaded DOL							
BE COMPLETED BY MANUFACTURER TO	28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 50 51 52 53 54 55 56 57 58 59 60 61 62 63	Starting Method (loaded, unloaded / DOL, soft start,VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour Min.Insulation Class (B,F,)/Max Temperature Rise Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box Cable Type, Size and Overall Diameter on Main terminal box Cable Type, Size and Overall Diameter on Aux terminal box Terminal boxes provided with cable glands Painting (Mfr standard, / color) Noise Level at 1 m MOTOR MANI Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size Motor Weight	Loaded DOL							

	IECT:		Document No A4102 Rev B					
CLIEN			Sec Ref 9806J-0210-Sp-4314-00111					
MEC	CHAN	NICAL SUPPLIER: MMD Mineral Sizing (Europe) Ltd						
		Contract No 33267	EQUIPMENT TAG NUMBER CONSUMER TYPE SERIAL N°					
		Primary Sizer 210-CR-3000-A &	210-PU-3010-A-M & M 1					
		210-CR-3000-B	210-PU-3010-B-M					
	С	22/11/2012	Updated TSU comments CML					
	В	06/09/2012	Updated TSU comments CML					
	D	02/07/2013	Updated TSU comments CML					
RI	EV	DATE STATUS	WRITTEN CHECKED APPROVED					
	1	ITEM: 210-PU-3010-A-M & 210-PU-3010-B-M	QUANTITY: 2 MR					
	2	General specification 9806J-0440-JSS-1691-001	Standards, codes: IEC					
	3	Supplier: MMD	Manufacturer: Leroy Somer					
	<u>4</u> 5	FNIVIDONIME	IENTAL CONDITIONS					
		Installation (indoor/outdoor) / Ambient Type: Dusty and Corrosiv						
ER		Ambient Design Temperature	Max: 47 °C Min: 5°C					
'nП	8	Altitude (if > 1000m)/Relative Humidity	a.s.l.: <1000 m 70%					
J.	9 10	Area Classification Hazardous area (Zone)/ Gas Group/Temperature	Tropic-Proofed According to package requirements					
ÿ	11		N MACHINE DATA					
三	12	Manufacturer/Machine Type (fan, pump, compressor,)	Cooler pump					
AAC		Maxi shaft power / Shaft power at operating point	2.2 kW 2.0 kW					
Z		Coupling type / To be designed for restarting Thrust (vertical) Up/Down	Yes No □ Up kg Down kg					
IVE		Driven Machine Inertia (WR2)	N/A kg.m2					
PR	17	Brake torque curve / Required starting brake torque	N.m					
ВУ	18 19	MOTOR CENER	DAL CHARACTERISTICS					
<u> </u>		Rated power/ Poles number	RAL CHARACTERISTICS 2.2 kW N°: 6					
SE	21	Voltage/Frequency/Phases	690 V 50 Hz N°: 3					
¥.		Service condition (S1,S2,)	S1					
BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER		Mounting (IM1001,3001,3011,1011,) Protection degree: Enclosure / terminal box	IMB5 (IM3001) IP: 55 IP: 55					
		Protection Ex(n), Ex(d), Ex(e): Motor / terminal box	IF. 35 IF. 35					
) B		Gas group (IIB,) / Temperature class (T3,)						
臣		Enclosure cooling (fan cooled, air to air, air to water,)	Fan Cooled					
)는	28 29	Starting Method (loaded, unloaded / DOL, soft start, VSD,) Starting voltage (full, reduced x%) / Max. voltage drop at starting	Loaded DOL ■ Soft start VSD					
IMC		Nb of consecutive starts within 1 hour	Cold 3 Hot 2					
Ö		Min.Insulation Class (B,F,)/Max Temperature Rise	FB					
) BI		Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box	CW ☐ CCW ☐ Bidirectionnal ■ Main TOP Auxiliary TOP					
10		Cable Type, Size and Overall Diameter on Main terminal box	Type : XLPE Arm Size(mm²) Diam. mm					
	35	Cable Type, Size and Overall Diameter on Aux terminal box	Type : XLPE Arm Size(mm²) Diam. mm					
		Terminal boxes provided with cable glands Painting (Mfr standard / color)	Yes Metallic No					
		0 \ , ,	Manufacturer Standard					
		INOISE LEVELAT I M	<85 dB(A)					
	39	Noise Level at 1 m	<85 dB(A)					
	40	MOTOR MANU	NUFACTURER'S DATA					
	40 41	MOTOR MANU Manufacturer type / Frame Size / -	NUFACTURER'S DATA Squirrel Cage FLSC 132 S					
	40 41 42	MOTOR MANU Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out	NUFACTURER'S DATA Squirrel Cage					
	40 41 42 43 44	MOTOR MANU Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current	NUFACTURER'S DATA					
KER	40 41 42 43 44 45	MOTOR MANU Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load	NUFACTURER'S DATA Squirrel Cage					
TURER	40 41 42 43 44 45 46	MOTOR MANU Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time	NUFACTURER'S DATA Squirrel Cage					
ACTURER	40 41 42 43 44 45 46	MOTOR MANU Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load	NUFACTURER'S DATA Squirrel Cage					
UFACTURER	40 41 42 43 44 45 46 47 48	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor	NUFACTURER'S DATA					
MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50	Motor Manumanus Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor	NUFACTURER'S DATA Squirrel Cage FLSC 132 S STAR N°: 6 959 rpm 0.6 A A 5.3 lst / ln 100%:					
3Y MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor	NUFACTURER'S DATA Squirrel Cage					
ED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2)	NUFACTURER'S DATA Squirrel Cage					
ETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End)	NUFACTURER'S DATA Squirrel Cage					
APLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2)	NUFACTURER'S DATA Squirrel Cage					
SOMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100	NUFACTURER'S DATA Squirrel Cage					
SE COMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval	NUFACTURER'S DATA Squirrel Cage					
TO BE COMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59	Motor Manumanus Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors	NUFACTURER'S DATA Squirrel Cage					
TO BE COMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100	NUFACTURER'S DATA Squirrel Cage					
TO BE COMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 50 51 52 53 54 55 56 60 61 62	Motor Manumanus Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size	NUFACTURER'S DATA Squirrel Cage					
TO BE COMPLETED BY MANUFACTURER	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 60 61 62 63	Motor Manu Manufacturer type / Frame Size / - Winding Connection (star, delta)/Nb terminals brought out Full Load Speed Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load Allowable Locked Rotor withstand Time Thermal Time Constant Efficiency Power Factor Locked Rotor Power Factor Full load Torque Locked/Pull Up/Breakdown Torque Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End) Lubrication Type/Interval Windings Temperature Sensors PT100 Temperature setting of winding sensors Ground lug size Motor Weight	NUFACTURER'S DATA Squirrel Cage					

PROJ			Document No A4102 Rev B						
CLIEN			Sec Ref 9806J-0210-Sp-4314-00111						
MEC	CHAN	NICAL SUPPLIER: MMD Mineral Sizing (Europe) Ltd	MOTOR ITEM						
		Contract No 33267	EQUIPMENT TAG NUMBER CONSUMER TYPE SERIAL N°						
		Primary Sizer 210-CR-3000-A &	210-PU-3030-A-M & M 1						
		Sizer 210-CR-3000-B	210-PU-3030-B-M						
	С	22/11/2012	Updated TSU comments CML						
	В	06/09/2012	Updated TSU comments CML						
	D	02/07/2013	Updated TSU comments CML						
RI	EV	DATE STATUS	WRITTEN CHECKED APPROVED						
	1	ITEM: 210-PU-3030-A-M & 210-PU-3030-B-M	QUANTITY: 2 MR						
	2	General specificatior 9806J-0440-JSS-1691-001	Standards, codes: IEC						
		Supplier: MMD	Manufacturer: Leroy Somer						
	4	ENVIRONME	NTAL CONDITIONS						
	5	Installation (indoor/outdoor) / Ambient Type: Dusty and Corrosiv	NTAL CONDITIONS						
ER		Ambient Design Temperature	Max: 47 °C Min: 5°C						
PLI	8	Altitude (if > 1000m)/Relative Humidity	a.s.l.: <1000 m 70%						
J.	9	Area Classification	Tropic-Proofed						
旦	10	Hazardous area (Zone)/ Gas Group/Temperature	According to package requirements MACHINE DATA						
⋚		Manufacturer/Machine Type (fan, pump, compressor,)	Lubrication Pump						
IAC	13	Maxi shaft power / Shaft power at operating point	0.37 kW 0.3 kW						
≥ Z		Coupling type / To be designed for restarting	Yes No						
٧E		Thrust (vertical) Up/Down Driven Machine Inertia (WR2)	Up kg Down kg N/A kg.m2						
DRI		Brake torque curve / Required starting brake torque	N.m						
ВУ	18								
∞ ~	19		AL CHARACTERISTICS						
SEF		Rated power/ Poles number Voltage/Frequency/Phases	0.37 kW N°: 4 690 V 50 Hz N°: 3						
HA	22	Service condition (S1,S2,)	S1						
BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER	23	Mounting (IM1001,3001,3011,1011,)	IMV18						
		Protection degree: Enclosure / terminal box	IP: 55 IP: 55						
ВУ		Protection Ex(n), Ex(d), Ex(e): Motor / terminal box Gas group (IIB,) / Temperature class (T3,)							
ED		Enclosure cooling (fan cooled, air to air, air to water,)	Fan Cooled						
	28	Starting Method (loaded, unloaded / DOL, soft start, VSD,)	Loaded DOL ■ Soft start □ VSD □						
MP		Starting voltage (full, reduced x%) / Max. voltage drop at starting Nb of consecutive starts within 1 hour	Cold 3 Hot 2						
S		Min.Insulation Class (B,F,)/Max Temperature Rise	F B						
BE		Direction of Rotation (looking at motor coupling)	CW Bidirectionnal						
2		Position of Main / Auxiliary terminal box	Main TOP Auxiliary TOP						
	~-	Cable Type, Size and Overall Diameter on Main terminal box	Type : XLPE Arm Size(mm²) Diam. mm Type : XLPE Arm Size(mm²) Diam. mm						
		Terminal boxes provided with cable glands	Type: XLPE Arm Size(mm²) Diam. mm Yes ■ Metallic No □						
	37	Painting (Mfr standard, / color)	Manufacturer Standard						
		Noise Level at 1 m	<85 dB(A)						
	39 40	MOTOR MANI	JFACTURER'S DATA						
		Manufacturer type / Frame Size / -	Squirrel Cage FLSC 80 L						
	42	Winding Connection (star, delta)/Nb terminals brought out	STAR N°: 6						
		Full Load Speed	1415 rpm						
œ		Rated Current / No load current / Locked Rotor Current Starting Time (% of Voltage) at full load	0.6 A A 4.9 lst / ln 100%: s 80%: s						
BE COMPLETED BY MANUFACTURER	46	Allowable Locked Rotor withstand Time	Cold: 7 s Hot: 5 s						
JT.		Thermal Time Constant	Cooling: 45 min Heating: 20 min						
FA(Efficiency Power Factor	4/4 69.40% 3/4 67.40% 2/4 66.40% 4/4 0.69 3/4 0.58 2/4 0.55						
N		Locked Rotor Power Factor	0.09 3/4 0.38 2/4 0.35						
M	51	Full load Torque	2.5 N.m						
ΒY		Locked/Pull Up/Breakdown Torque	L 2.10% PU 1.60% BD 2.30%						
Œ,		Rotor Motor Inertia (WR2) Bearing Type (Drive End/Non Drive End)	0.0013 kg.m2 DE: 6204 ZZ C3 NDE: 6203 ZZ C3						
LET		Lubrication Type/Interval	N/A hours						
MP	56	Windings Temperature Sensors PT100	Yes						
8	57	Temperature petting of winding concern	Alarm Tripping						
BE	58 59	Temperature setting of winding sensors	N/A °C see Note 1 N/A °C see Note 1						
5		Ground lug size	M5						
, i	61	Motor Weight	15 kg						
	62 63	Certifying authority / certificate Nr	<u> </u>						
		Note 1 - Leroy Somers have confirmed that these are resistant m	easurement probes which are wired to a an external measuring						
	l	instrument so there is no tripping temperature							

PROJ	OJECT: Document No A4102 Rev B				
CLIEN	NT:		Sec Ref 9806J-0210-Sp-4314-00111		
MEC	CHAN	IICAL SUPPLIER: MMD Mineral Sizing (Europe) Ltd	MOTOR ITEM		
		Contract No 33267	EQUIPMENT TAG NUMBER CONSUMER TYPE SERIAL N°		
		Primary Sizer 210-CR-3000-A &	210-ZM-3090 A & M 1 & 2		
		210-CR-3000-B	210-ZM-3090 B		
	^	00/44/0040	Undered TOU comments ONU		
	C B	22/11/2012 06/09/2012	Updated TSU comments CML Updated TSU comments CML		
	A	28/10/2011	original issue JWW		
RI	EV	DATE STATUS	WRITTEN CHECKED APPROVED		
			T		
	2	ITEM: Wheel Carriage Motors	QUANTITY: 4 MR Standards, codes: IEC		
	3	General specificatior 9806J-0440-JSS-1691-001 Supplier: MMD	Manufacturer: Leroy Somer		
	4		•		
	5		TAL CONDITIONS		
22	6 7	Installation (indoor/outdoor) / Ambient Type: Dusty and Corrosive Ambient Design Temperature	Max: 47 °C Min: 5°C		
Ľ		Altitude (if > 1000m)/Relative Humidity	a.s.l.: <1000 m 70%		
JP.		Area Classification	Tropic-Proofed		
S		Hazardous area (Zone)/ Gas Group/Temperature	According to package requirements		
Ĭ	11		IACHINE DATA		
Ş		Manufacturer/Machine Type (fan, pump, compressor,) Maxi shaft power / Shaft power at operating point	Wheel Carriage 1.1 kW 1.0 kW		
/W		Coupling type / To be designed for restarting	Yes No		
Æ.		Thrust (vertical) Up/Down	Up kg Down kg		
NS.		Driven Machine Inertia (WR2)	N/A kg.m2		
ΥD	17 18	Brake torque curve / Required starting brake torque	N.m		
& B	19	MOTOR GENERA	L CHARACTERISTICS		
H		Rated power/ Poles number	1.1 kW N°: 4		
BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER		Voltage/Frequency/Phases	690 V 50 Hz N°: 3		
		Service condition (S1,S2,) Mounting (IM1001,3001,3011,1011,)	S1 IMB5 (IM3001)		
		Protection degree: Enclosure / terminal box	IP: 55 IP: 55		
		Protection Ex(n), Ex(d), Ex(e): Motor / terminal box			
:DE		Gas group (IIB,) / Temperature class (T3,)	5 0 1 1		
	27 28	Enclosure cooling (fan cooled, air to air, air to water,) Starting Method (loaded, unloaded / DOL, soft start,VSD,)	Fan Cooled Loaded DOL ■ Soft start □ VSD □		
P		Starting voltage (full, reduced x%) / Max. voltage drop at starting	15 %		
NO.		Nb of consecutive starts within 1 hour	Cold 3 Hot 2		
Щ		Min.Insulation Class (B,F,)/Max Temperature Rise	F B B CW ☐ Bidirectionnal ■		
TO B		Direction of Rotation (looking at motor coupling) Position of Main / Auxiliary terminal box	CW GCW Bidirectionnal Main TOP Auxiliary TOP		
H		Cable Type, Size and Overall Diameter on Main terminal box	Type : XLPE Arm Size(mm²) Diam. mm		
		Cable Type, Size and Overall Diameter on Aux terminal box	Type : XLPE Arm Size(mm²) Diam. mm		
		Terminal boxes provided with cable glands	Yes Metallic No ☐ Manufacturer Standard		
		Painting (Mfr standard, / color) Noise Level at 1 m	Manufacturer Standard <85 dB(A)		
	39				
	40		FACTURER'S DATA		
		Manufacturer type / Frame Size / -	Squirrel Cage		
		Winding Connection (star, delta)/Nb terminals brought out Full Load Speed	STAR N°: 6 1455 rpm		
	44	Rated Current / No load current / Locked Rotor Current	1.5 A A 7.0 lst / ln		
ER	45	Starting Time (% of Voltage) at full load	100%: s 80%: s		
J.		Allowable Locked Rotor withstand Time Thermal Time Constant	Cold: 7 s Hot: 5 s Cooling: 55 min Heating: 25 min		
₹C1		Efficiency	4/4 85.00% 3/4 82.60% 2/4 81.30%		
UF/	49	Power Factor	4/4 0.72 3/4 0.6 2/4 0.56		
IAN		Locked Rotor Power Factor	0.74		
∠	51 52	Full load Torque Locked/Pull Up/Breakdown Torque	7.2 N.m L 2.70% PU 1.40% BD 3.10%		
D B		Rotor Motor Inertia (WR2)	0.0032 kg.m2		
BE COMPLETED BY MANUFACTURER	54	Bearing Type (Drive End/Non Drive End)	DE: 6205 ZZ C3 NDE: 6204 ZZ C3		
PLE		Lubrication Type/Interval	N/A hours		
MC	56 57	Windings Temperature Sensors PT100	Yes		
ŏ	58	Temperature setting of winding sensors	N/A °C see Note 1 N/A °C see Note 1		
) BE	59		, in the second		
7		Ground lug size	M5		
		Motor Weight Certifying authority / certificate Nr	21 kg		
	63				
	64	Note 1 - Leroy Somers have confirmed that these are resistant me	easurement probes which are wired to a an external measuring		
		instrument so there is no tripping temperature			

PROJ	ROJECT : Document No A4102 Rev F								
CLIEN	NT:					Sec Ref 9)-Sp-431	4-00111
MEC	CHAN	NICAL SUPPLIER:	O(1 /			MOTOR			
			Contract No 33267	EQUI	PMENT TAG NUI	MBER	CONSUM	IER TYPE	SERIAL N°
			Jib Crane 210-CN-1030 &		210-CN-103		N	1	2
			210-CN-1040		210-CN-104	0			
								T	I
	F	01/04/2014	Upda	ted Motor [Details & TSU	comments	RE		
R	EV	DATE	STATUS				WRITTEN	CHECKED	APPROVED
	1 .	ITEM.	III O III i M	OLIANITI	T) (lup.		
		ITEM: General specification	Jib Crane Hoist Motors 9806J-0440-JSS-1691-001	QUANTI Standard	ds, codes:	∠ IEC	MR		
		Supplier:	MMD	Manufac	•	Misia			
	4	• •							
	5	Installation (indeer/s	ENVIRONMEN		ITIONS		ı		
E	6 7	Ambient Design Ter	outdoor) / Ambient Type: Dusty and Corrosiv	e Max:	47	°C	Min:		5°C
ቯ		Altitude (if > 1000m		a.s.l.:	<1000	m			70%
Ϊ́		Area Classification		Tropic-l					
ij ij		Hazardous area (Zo	one)/ Gas Group/Temperature		ng to packag	e requiren	ents		
皇	11 12	Manufacturer/Mach	DRIVEN MA ine Type (fan, pump, compressor,)	ACHINE DA		Crane Hoist			
IAC			Shaft power at operating point			2.5 kW			2.2 kW
≥ Z			pe designed for restarting				Yes [No 🗌
NE		Thrust (vertical) Up/		Up	3000	kg	Down	3000	kg
RI	16 17	Driven Machine Ine	rtia (WR2) / Required starting brake torque					-	kg.m2 N.m
3	18	Diake torque curve	7 Required starting brake torque				l		14.111
∞	19		MOTOR GENERAL	_ CHARAC	TERISTICS				
ΣËΚ		Rated power/ Poles		44	20 1/	2.5kW,		INIO.	4
₽	21	Voltage/Frequency/ Service condition (S		40	00 V	50 S4	HZ	N°:	3
Š	23	Mounting (IM1001,3	3001,3011,1011,)			IM	B3		
P			Enclosure / terminal box	IP:	55		IP:	55	
B∀			(d), Ex(e): Motor / terminal box						
TO BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER			Temperature class (T3,) fan cooled, air to air, air to water,)			Fan C	ooled		
E			aded, unloaded / DOL, soft start, VSD,)	L	oaded		Soft star	t 🗌	VSD
Æ	29	Starting voltage (ful	I, reduced x%) / Max. voltage drop at starting					15	%
ő		Nb of consecutive s	tarts within 1 hour s (B,F,)/Max Temperature Rise	Cold	3 F		Hot	2 B	
Щ			n (looking at motor coupling)	CW	<u></u>	CCW		Bidirecti	onnal
OE		Position of Main / A		Main	TOP		Auxiliary		oa
-	34	Cable Type, Size ar	nd Overall Diameter on Main terminal box		LPE Arm	Size(mm²)		Diam. mr	
			nd Overall Diameter on Aux terminal box vided with cable glands	Type : X Yes	LPE Arm Metallic	Size(mm²)	No [Diam. mr	n
		Painting (Mfr standa		165		rer Standa			
	38	Noise Level at 1 m	, , , , , , , ,					<85	dB(A)
	39								
	40	Manufacturer type /	MOTOR MANUF	ACTURER	Squirrel			100	
			n (star, delta)/Nb terminals brought out		Squiitei	DELTA	N°:	6	
	43	Full Load Speed	, ,						1430 rpm
œ			load current / Locked Rotor Current	6	A	5.9		6	
REI	45 46	Starting Time (% of Allowable Locked R	voitage) at full load	100%: Cold:			80%: Hot:		S S
12		Thermal Time Cons		Cooling:		s min	Heating:		min
-AC	48	Efficiency		4/4	72.10%	3/4		2/4	%
Ì		Power Factor	F .	4/4	0.78	3/4		2/4	
MAI		Locked Rotor Powe Full load Torque	r Factor					16.7	N.m
BE COMPLETED BY MANUFACTURER		Locked/Pull Up/Brea	akdown Torque	L	160.00%	PU	220.00%	10	220.00%
:D [53	Rotor Motor Inertia	(WR2)						kg.m2
ETE			e End/Non Drive End)	DE:			NDE:		NI/A 5
1PL.	56	Lubrication Type/Int Windings Temperat	ure Sensors PT100	Yes	No No	1 set of 3	\Box	2 sets o	N/A hours
Ö	57	go romporat		,.00 L	Alarm	. 55. 51 0		Trippir	
EC	58	Temperature setting	g of winding sensors			°C			°C
	59	Oracia di licero di							
2		Ground lug size Motor Weight							25kg
		Certifying authority	/ certificate Nr						Zong
	63								
	64								

	JECT :			Document No A4102 Rev F Sec Ref 9806J-0210-Sp-4314-00111								
CLIE				<u> </u>						-4314	-00111	
ME	CHAI	NICAL SUPPLIER:					OTOR					
			Contract No 33267	EQ	UIPMENT TAG		ER	CONS	SUMER T	YPE	SERIAL	N°
			Jib Crane 210-CN-1030 &		210-CN-				M		1	
			210-CN-1040		210-CN-	1040						
		1		<u> </u>					$\overline{}$	Т		
	F	01/04/2014	Upda	ated Moto	r Details & T	SU co	mments	l	RE			
R	EV	DATE	STATUS					WRITT	EN CHE	CKED	APPROV	ED
	1 4	ITEM:	lib Crana Traval Matera	QUAN	ITITV:		2	MR				
	2		Jib Crane Travel Motors 9806J-0440-JSS-1691-001		ards, codes:		IEC					
	3	Supplier:	MMD		acturer:		Misia					
	4											
l.,	5 6	Installation (indoor/c	ENVIRONMEN outdoor) / Ambient Type: Dusty and Corrosiv		NDITIONS							
Ë	7	Ambient Design Ter		Max:		47 °C	:	Min:			5°C	
ЪГ	8	Altitude (if > 1000m)		a.s.l.:	<10	000	m				70%	
SUF	9	Area Classification			c-Proofed							
	10	Hazardous area (Zo	ne)/ Gas Group/Temperature DRIVEN M.		ding to pac	kage	requiren	nents				
톳		Manufacturer/Machi	ne Type (fan, pump, compressor,)	TOTAL I	DAIA	Crar	ne Travel					
JAK		Maxi shaft power / S	Shaft power at operating point				0.18 kW				0.18	kW
Z	14		be designed for restarting	11-			1	Yes			No L	
N N		Thrust (vertical) Up/ Driven Machine Ine		Up			кд	Down		N/A	ka	kg m2
DR	17		/ Required starting brake torque							-		V.m
ВҮ	18	·	· · · · · · · · · · · · · · · · · · ·	•								
TO BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER	19 20	Rated power/ Poles	MOTOR GENERAL	L CHARA	CTERISTIC	S	0.18 kW	NIO.			1	
SEI	21	Voltage/Frequency/			400	V	50		Hz N°:	•	3	
Ä	22	Service condition (S				- 1	S4					
JRC		Mounting (IM1001,3					IM	B5				
3	24		Enclosure / terminal box	IP:	55			IP:	55			
ВУ			(d), Ex(e): Motor / terminal box Temperature class (T3,)	 								
ĘD.	27		an cooled, air to air, air to water,)				Fan C	ooled				
9	28		aded, unloaded / DOL, soft start,VSD,)	<u> </u>	Loaded	D	OL 🔳	Soft s	tart [_	VSD [
MP	29 30	Starting voltage (full Nb of consecutive s	, reduced x%) / Max. voltage drop at starting	Cold	3			Hot	2	15	%	
8			(B,F,)/Max Temperature Rise	Colu	F			ΠΟΙ		В		
BE			n (looking at motor coupling)	CW			CCW			irectio	nnal	ł
2		Position of Main / A		Main	TOP	- 10	: (2)		ary TO			
			nd Overall Diameter on Main terminal box and Overall Diameter on Aux terminal box		XLPE Arm		ize(mm²) ize(mm²)			n. mm n. mm		
			vided with cable glands	Yes	Metal		120(111111)	No				
	37	Painting (Mfr standa			Manufa	acture	r Standa					
	38	Noise Level at 1 m		 						<85	dB	8(A)
	40		MOTOR MANUF	FACTURE	R'S DATA							
	41	Manufacturer type /	Frame Size / -		Squi							71
			(star, delta)/Nb terminals brought out	<u> </u>	DEL	.TA		N°:		6	4040 =	
		Full Load Speed Rated Current / No.	load current / Locked Rotor Current	0.58		Α	0.5	,	Α	4	1340 r	/ In
ER		Starting Time (% of		100%:		· ·		80%:		•		s
l.R		Allowable Locked R		Cold:				Hot:				s
Ş	47	Thermal Time Cons Efficiency	tant	Coolin 4/4	-	<mark>0%</mark> 3/		Heatin	ng: % 2/4		r	min %
UF/		Power Factor		4/4		.66 3/			2/4			/0
A		Locked Rotor Powe	r Factor									
≥ ≻		Full load Torque		<u> </u>	4500	00/15		100.0	00/100		1.2 N	
) B		Locked/Pull Up/Brea Rotor Motor Inertia		L	150.0	0% P	U	160.00	0% BD		170.0	0% m2
BE COMPLETED BY MANUFACTURER			End/Non Drive End)	DE:				NDE:			ĸy.	
٦Ľ	55	Lubrication Type/Int	erval								N/A ho	urs
МĚ		Windings Temperat	ure Sensors PT100	Yes	☐ No		set of 3			ets of		
S	57 58	Temperature setting	of winding sensors	-	Alarm		°C			rippin	g	°C
BE	59	romporature setting	, or minding conducts					I				
2		Ground lug size										
		Motor Weight Certifying authority	Coartificate Nr.	<u> </u>				1			5.6	6kg
	63	Certifying authority /	CETHICALE IVI									
	64											
	65]		1								

	JECT :			Document No A4102 Rev F Sec Ref 9806J-0210-Sp-4314-00111								
CLIEN											14-00	111
MEC	CHAI	NICAL SUPPLIER:	MMD Mineral Sizing (Europe) Ltd Contract No 33267	E/	OL LIDI	MENT TAG				l IMER TYPE	: 01	ERIAL N°
			Jib Crane 210-CN-1030 &			210-CN-1		DEK	CONSU	WERTTPE	1	ERIAL IN
			210-CN-1040			210-CN-1 210-CN-1			M			3
			210-011-10-0			210-014-1	040					
											T	
	1	0.1/0.1/0.1.1								_		
	F	01/04/2014 DATE	·	ated Moto	or De	etails & TS	SU c	omments			- D A F	PROVED
KI	EV	DATE	STATUS						WRITE	N CHECKE	LU AP	PROVED
	1	ITEM:	Jib Crane Slew Motors	QUAN	VTIT,	Y:		2	MR			
	2		9806J-0440-JSS-1691-001			, codes:		IEC	60034			
	3	Supplier:	MMD	Manu	factu	ırer:		TEC				
	<u>4</u> 5		ENVIRONMEN'	TAL CO	NDIT	TIONS						
~	6	Installation (indoor/o	outdoor) / Ambient Type: Dusty and Corrosiv			10110						
믬	7	Ambient Design Ter		Max:			47 °		Min:			,C
JPP	8	Altitude (if > 1000m)	/Relative Humidity	a.s.l.:		<10	00	m			70%	<u>/</u> 6
ะรเ	9	Area Classification Hazardous area (70	ne)/ Gas Group/Temperature	Tropic-Proofed According to package requirements								
NE NE	11	Tidzardodo aroa (20	DRIVEN MA	ACHINE	DAT	<u>г</u> (С. раск	ugo	roquiron	101110			
H)			ine Type (fan, pump, compressor,)				Cr	ane Slew				
MA			Shaft power at operating point be designed for restarting					0.75 kW	Yes [_	No	0.7 kW
EN		Thrust (vertical) Up/		Up				ka	Down		INO	 kg
RIV	16	Driven Machine Ine	rtia (WR2)	- GP				9	120	N/	A	kg.m2
Y DI		Brake torque curve	/ Required starting brake torque								-	N.m
BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER	18 19		MOTOR GENERAL	CHADA	ACTI	EDISTICS						
R 8		Rated power/ Poles		L CHARA	1011	EKISTICS	•	0.75 kW	N°:			4
\SE	21	Voltage/Frequency/	Phases		400		٧	50		lz N°:		3
CH/	22	Service condition (S						S1				
UR(Mounting (IM1001,3	3001,3011,1011,) Enclosure / terminal box	IP:		55		IM	IP:	55		
ΥP			(d), Ex(e): Motor / terminal box			- 33				- 33		
) B			Temperature class (T3,)									
Ī			an cooled, air to air, air to water,)					Fan C			1	
٦LE			aded, unloaded / DOL, soft start, VSD,) I, reduced x%) / Max. voltage drop at starting		Loa	aded	ĮD.	OL 🗌	Soft sta		VS 5	<mark>Б</mark> []
OMF		Nb of consecutive s		Cold		3			Hot	2	<u></u>	/0
\mathcal{S}			s (B,F,)/Max Temperature Rise			F			<u> </u>	В		
BE			n (looking at motor coupling)	CW Main		TOP	<u> </u>	CCW	Auxiliar	Bidired	tionn	al 📕
10		Position of Main / Al	nd Overall Diameter on Main terminal box		: XL	PE Arm	S	ize(mm²)		Diam. n		
	35	Cable Type, Size ar	nd Overall Diameter on Aux terminal box	Туре	: XLI	PE Arm		ize(mm²)		Diam. n		
			vided with cable glands	Yes		Metalli			No [
		Painting (Mfr standa Noise Level at 1 m	ird, / color)			Manuta	cture	er Standa	ard	<8	5	dB(A)
	39	Noise Level at 1 III									<u> </u>	ub(A)
	40		MOTOR MANUF	ACTUR	ER'S	DATA						
		Manufacturer type /				Squir			Ta io	8		
		Winding Connection Full Load Speed	n (star, delta)/Nb terminals brought out		—	STA	ıĸ		N°:		<u>6</u>	380 rpm
			load current / Locked Rotor Current	1.93			Α	1.5		A 5.		Ist / In
ίER	45	Starting Time (% of	Voltage) at full load	100%					80%:			S
I,F		Allowable Locked R Thermal Time Cons		Cold: Coolir					Hot: Heating			S
AC-		Efficiency	tanı	4/4	ıy.	72.10	<mark>%</mark> 3			% 2/4		min %
UF,		Power Factor		4/4			78 3			2/4		
IAN		Locked Rotor Powe	r Factor									-
COMPLETED BY MANUFACTURER		Full load Torque Locked/Pull Up/Brea	akdowa Torauo	1		220.00	0/ □	01.1	160.009	5.		N.m 240.00%
D B		Rotor Motor Inertia		L		220.00	70 F	U	160.00	/ ₀ DU		kg.m2
E	54	Bearing Type (Drive	End/Non Drive End)	DE:		62042	ZZ		NDE:	6204Z		
PLE				177-		Ne	1.	ant -/ 0		0 - 1		/A hours
IMC	56 57	Windings Temperat	ure Sensors PTTUU	Yes	<u>Ш</u>	No Alarm	<u> 1</u>	set of 3		2 sets Tripp		
ŏ		Temperature setting	of winding sensors			, walli		°C		iiipt	<u>y</u>	°C
) BE	59		-									
T0		Ground lug size										11 01-
		Motor Weight Certifying authority	certificate Nr									11.9kg
	63	. ,gs							·			
	64											
1	65	İ	· ·	l								l.

	IECT:			Document No A4102 Rev F Sec Ref 9806J-0210-Sp-4314-00111					
CLIEN		IIOAL OLIDDLIED.	MAD Mineral Cirina (Frances) Ltd			MOTOF		J-Sp-4314	4-00111
MEC	JHAI	NICAL SUPPLIER:	MMD Mineral Sizing (Europe) Ltd Contract No 33267	FC	QUIPMENT TAG N			IER TYPE	SERIAL N°
			Jib Crane 210-CN-1030 &		210-CN-10		CONSON	ILKTIFL	SERIAL IV
			210-CN-1040		210-CN-10		M		4
			210 011 1040		210 011 10		<u> </u>		
	2	04/04/0044	I I a da		D-4-il- 0 TO		D.F		
В	B EV	01/04/2014 DATE	Upda STATUS	ated Moto	or Details & TSI	J comments		CHECKED	APPROVED
IXI	LV	DATE	SIAIOS				WIXITILIN	CHECKEL	AFFROVED
	1	ITEM:	Jib Crane Travel Motors	QUAN	ITITY:	2	MR		
	2		9806J-0440-JSS-1691-001		ards, codes:	IEC			
	3 4	Supplier:	MMD	Manut	facturer:	Misia	1		
	5		ENVIRONMEN	TAL CO	NDITIONS				
2	6		outdoor) / Ambient Type: Dusty and Corrosiv						
Ę	7 8	Ambient Design Ter Altitude (if > 1000m		Max: a.s.l.:		7 °C	Min:		5°C 70%
귤	9	Area Classification	/Relative Humbing		c-Proofed	0 m	Ц		70%
Ш S	10		one)/ Gas Group/Temperature	Accor	rding to packa	ge requiren	nents		
Ĭ	11		DRIVEN MA	ACHINE	DATA				
Ą			ine Type (fan, pump, compressor,) Shaft power at operating point			Crane Travel 0.18kW			0.18 kW
Ň			be designed for restarting			U. IOKVV	Yes [No \square
NE VE	15	Thrust (vertical) Up/	/Down	Up		kg	Down	_	kg
NS.		Driven Machine Ine					T	N/A	kg.m2
] <u>}</u>	17 18	Brake torque curve	/ Required starting brake torque					-	N.m
∞ ⊞	19		MOTOR GENERAL	L CHARA	ACTERISTICS				
BE COMPLETED BY PURCHASER & BY DRIVEN MACHINE SUPPLIER		Rated power/ Poles				0.18 kW			4
IAS	21	Voltage/Frequency/			400	√ 50 S4		N°:	3
Ş	22	Service condition (S Mounting (IM1001,3				S4	B5		
Ϋ́			Enclosure / terminal box	IP:	55		IP:	55	
37.1			x(d), Ex(e): Motor / terminal box						
9 0			Temperature class (T3,) fan cooled, air to air, air to water,)			Ean C	Cooled		
Ë			aded, unloaded / DOL, soft start, VSD,)		Loaded	DOL I	Soft star	t 🗆	VSD
₽	29	Starting voltage (full	I, reduced x%) / Max. voltage drop at starting					15	%
Ö		Nb of consecutive s	tarts within 1 hour s (B,F,)/Max Temperature Rise	Cold	3 F		Hot	2 B	
Ж (n (looking at motor coupling)	CW		CCW		Bidirecti	onnal I
TO E	33	Position of Main / A	uxiliary terminal box	Main	TOP		Auxiliary		
—	34	Cable Type, Size ar	nd Overall Diameter on Main terminal box	Type :	XLPE Arm	Size(mm²)		Diam. mr	
			nd Overall Diameter on Aux terminal box vided with cable glands	Yes	XLPE Arm Metallic	Size(mm²)	No 🗆	Diam. mr	n
		Painting (Mfr standa		103		turer Stand			
		Noise Level at 1 m						<85	dB(A)
	39 40		MOTOR MANUF	ACTUBE	EDIC DATA				
		Manufacturer type /		ACTURE	Squirre	el			71
	42	Winding Connection	n (star, delta)/Nb terminals brought out		DELT		N°:	6	
	43	Full Load Speed	load current / Locked Rotor Current	0.50		Λ <u></u>			1340 rpm
유		Starting Time (% of		0.58 100%:		A 0.5	80%:	4	Ist / In s
URE		Allowable Locked R		Cold:		S	Hot:		s
CT		Thermal Time Cons	tant	Coolin			Heating:	10/4	min
JFA		Efficiency Power Factor		4/4 4/4	56.00%	6 3/4 6 3/4	%	2/4	%
N N N		Locked Rotor Power	r Factor	7/7	0.0	0 0/4		2/7	
Ž		Full load Torque						1	1.2 N.m
COMPLETED BY MANUFACTURER	52	Locked/Pull Up/Brea Rotor Motor Inertia	akdown Torque	L	150.00%	6 PU	160.00%	JBD	170.00%
臣			e End/Non Drive End)	DE:			NDE:		kg.m2
ĬĘ.	55	Lubrication Type/Int	erval		_				N/A hours
MF		Windings Temperat	ure Sensors PT100	Yes	□ No ■	1 set of 3		2 sets o	
S	57 58	Temperature setting	of winding sensors		Alarm	°C		Trippir	ng °C
BE	59		,						
70		Ground lug size				-			
		Motor Weight Certifying authority /	/ certificate Nr						5.6kg
	63		55104.0 111				1		
	64								
1	65			1					