

Title: **Tender Technical Evaluation  
Strategy for the supply of LV  
motors at Lethabo Power  
Station**

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## **CONTENTS**

	<b>Page</b>
<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. SUPPORTING CLAUSES .....</b>	<b>3</b>
2.1 SCOPE .....	3
2.1.1 Purpose .....	3
2.1.2 Applicability .....	3
2.2 NORMATIVE/INFORMATIVE REFERENCES .....	3
2.2.1 Normative .....	3
2.2.2 Informative .....	3
2.3 DEFINITIONS .....	3
2.3.1 Classification .....	4
2.4 ABBREVIATIONS .....	4
2.5 ROLES AND RESPONSIBILITIES .....	4
2.6 PROCESS FOR MONITORING .....	4
2.7 RELATED/SUPPORTING DOCUMENTS .....	4
<b>3. TENDER TECHNICAL EVALUATION STRATEGY .....</b>	<b>4</b>
3.1 TECHNICAL EVALUATION METHOD .....	4
3.2 TECHNICAL EVALUATION THRESHOLD .....	5
3.3 TET MEMBERS .....	5
3.4 MANDATORY TECHNICAL EVALUATION CRITERIA .....	6
3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA .....	7
3.6 TET MEMBER RESPONSIBILITIES .....	8
3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS .....	9
3.7.1 Risks .....	9
3.7.2 Exceptions / Conditions .....	9
<b>4. AUTHORISATION .....</b>	<b>10</b>
<b>5. REVISIONS .....</b>	<b>10</b>
<b>6. DEVELOPMENT TEAM .....</b>	<b>10</b>
<b>7. ACKNOWLEDGMENTS .....</b>	<b>10</b>
<b>APPENDIX A: LIST OF LV MOTORS .....</b>	<b>11</b>

## **LIST OF TABLES**

Table 1: TET Members .....	5
Table 3: Mandatory Technical Evaluation Criteria .....	6
Table 4: Qualitative Technical Evaluation Criteria .....	7
Table 5: TET Member Responsibilities .....	8
Table 6: Acceptable Technical Risks .....	9
Table 7: Unacceptable Technical Risks .....	9
Table 8: Acceptable Technical Exceptions / Conditions .....	9
Table 9: Unacceptable Technical Exceptions / Conditions .....	9

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## **1. INTRODUCTION**

Lethabo Power Station comprises six 618 MW Production Units, located 13 km northeast of Sasolburg in the Free State Province, South Africa. The power station operational functions require procurement of operational spares utilized in the primary function of energy production.

The scope is limited to the procurement of LV AC and DC motors as stock items to be used at Lethabo Power Station.

## **2. SUPPORTING CLAUSES**

### **2.1 SCOPE**

This document provides the tender technical evaluation strategy for the supply of specific LV motors at Lethabo Power Station.

#### **2.1.1 Purpose**

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and TET member responsibilities for tender technical evaluation. The technical evaluation strategy serves as a basis for the tender technical evaluation process.

#### **2.1.2 Applicability**

This document applies to Lethabo Power Station only.

### **2.2 NORMATIVE/INFORMATIVE REFERENCES**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

#### **2.2.1 Normative**

- [1] 240-48929482: Tender Technical Evaluation Procedure
- [2] ISO 9001 Quality Management Systems
- [3] 32-1034 Eskom Procurement Policy

#### **2.2.2 Informative**

Not applicable

### **2.3 DEFINITIONS**

Definition	Description
Contractor/Tenderer/Bidder	Refers to the corporation appointed to supply the motors
Employer	Refers to Eskom Lethabo Power Station

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Definition	Description
Specification	The document/s forming part of the contract in which the methods of executing the various items of work to be done is described, as well as the nature and quality of the materials to be supplied and it includes technical schedules and drawings attached thereto as well as all samples and patterns

### 2.3.1 Classification

**Controlled Disclosure:** Controlled Disclosure to external parties (either enforced by law, or discretionary).

## 2.4 ABBREVIATIONS

Abbreviation	Description
AC	Alternating Current
DC	Direct Current
LV	Low Voltage
OEM	Original Equipment manufacturer
TET	Technical Evaluation Team

## 2.5 ROLES AND RESPONSIBILITIES

As per Tender Technical Evaluation Procedure [1].

## 2.6 PROCESS FOR MONITORING

N/A

## 2.7 RELATED/SUPPORTING DOCUMENTS

N/A

## 3. TENDER TECHNICAL EVALUATION STRATEGY

### 3.1 TECHNICAL EVALUATION METHOD

The basic steps for a technical evaluation must be followed as per the Tender Technical Evaluation Procedure [1].

A two stage Technical Evaluation Strategy is set out.

#### Stage 1:

Mandatory Technical Evaluation Criteria (gatekeepers) are 'must meet' criteria. These criteria shall not be weighted or point scored, but shall be assessed on a Yes/No basis as to whether or not the criteria are met. An assessment of 'No' against any criterion shall technically disqualify the tenderer and the tenderer shall not be further evaluated against Qualitative Criteria.

#### Stage 2:

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Qualitative Technical Evaluation Criteria are weighted evaluation criteria used to identify the highest technically ranked tenderer after determining that all the Mandatory Evaluation Criteria have been met. The Qualitative Evaluation Criteria are weighted to reflect the relevant importance of each criterion.

A weighted scorecard approach is used to evaluate the technical compliance of the tenders against the specifications.

The scoring method will be as follows:

<b>SCORE</b>	<b>PERCENTAGE</b>	<b>DESCRIPTION</b>
5	100	<b>COMPLIANT</b> <ul style="list-style-type: none"><li>• Meet technical requirement(s) AND;</li><li>• No foreseen technical risk(s) in meeting technical requirements.</li></ul>
4	80	<b>COMPLIANT WITH ASSOCIATED QUALIFICATIONS</b> <ul style="list-style-type: none"><li>• Meet technical requirement(s) with;</li><li>• Acceptable technical risk(s) AND/OR;</li><li>• Acceptable exceptions AND/OR;</li><li>• Acceptable conditions.</li></ul>
2	40	<b>NON-COMPLIANT</b> <ul style="list-style-type: none"><li>• Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR;</li><li>• Unacceptable exceptions AND/OR;</li><li>• Unacceptable conditions.</li></ul>
0	0	<b>TOTALLY DEFICIENT OR NON-RESPONSIVE</b>

The evaluation method will be used to evaluate each of the equipment offered separately.

### **3.2 TECHNICAL EVALUATION THRESHOLD**

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%.

### **3.3 TET MEMBERS**

**Table 1: TET Members**

<b>TET number</b>	<b>TET Member Name</b>	<b>Designation</b>
TET 1	Leon Spies	Senior Engineer (Electrical Engineering)
TET 2	Ernest Molefi	Engineer (Electrical Engineering)
TET 3	Maki Letshwenyo	Electrical Maintenance
TET 4	Thabiso Dlamini	Electrical Maintenance

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### **3.4 MANDATORY TECHNICAL EVALUATION CRITERIA**

**Table 2: Mandatory Technical Evaluation Criteria**

	<b>Mandatory Technical Criteria Description</b>	<b>Reference to Technical Specification / Tender Returnable</b>	<b>Motivation for use of Criteria</b>
1	Technical Schedule A & B	The bidder completes and submits: 1) Technical Schedule B and 2) the deviation schedule applicable for each of the equipment offered.	Reduction of risk to the Employer.
2	Bidder is predominantly a motor manufacturer, motor distributor or electrical equipment distributor	The bidder completes and submits Appendix A with proof as required	Value-adding contract

### 3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA

**Table 3: Qualitative Technical Evaluation Criteria**

Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
1	Technical Schedule A & B	Technical Schedule AB and the deviation schedule applicable for each of the equipment offered	50%	5 = Compliant, 4 = Compliant with qualifications 2 = Non-compliant, 0 = Non responsive
2	Equipment drawings and data sheets	Bidder provides OEM drawings and datasheets for each equipment type offered	10%	5 = Compliant, 4 = Compliant with qualifications 2 = Non-compliant, 0 = Non responsive
3	Equipment lead times	Bidder indicates the required lead times on the AB Schedule	10%	5 = Compliant, 0 = Non responsive
4	Equipment Warranties	Bidder indicates the offered warranties on the AB Schedule	10%	5 = Compliant, 0 = Non responsive
5	OEM or Agreement letter	Bidder complies with the OEM or Agreement letter requirement as indicated on the AB Schedule	10%	5 = OEM, 4= Agreement letter 0 = Non-compliant, 0 = Non responsive
6	Testing facilities	Bidder has the capability the test the offered equipment	10%	5 = Compliant, 0 = Non-compliant
			<b>TOTAL: 100%</b>	

### **3.6 TET MEMBER RESPONSIBILITIES**

**Table 4: TET Member Responsibilities**

<b>Mandatory Criteria Number</b>	<b>TET 1</b>	<b>TET 2</b>	<b>TET 3</b>	<b>TET 4</b>
1	X	X	X	X
2	X	X	X	X
<b>Qualitative Criteria Number</b>	<b>TET 1</b>	<b>TET 2</b>	<b>TET 3</b>	<b>TET</b>
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X
5	X	X	X	X
6	X	X	X	X

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### **3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS**

#### **3.7.1 Risks**

**Table 5: Acceptable Technical Risks**

<b>Risk</b>	<b>Description</b>
1.	None

**Table 6: Unacceptable Technical Risks**

<b>Risk</b>	<b>Description</b>
1.	Failing to submit the Mandatory technical gatekeeper criteria as listed in Table 2: Mandatory Technical Evaluation Criteria

#### **3.7.2 Exceptions / Conditions**

**Table 7: Acceptable Technical Exceptions / Conditions**

<b>Risk</b>	<b>Description</b>
1.	Deviations from the specified motor efficiency where the required efficiency cannot be met with the required frame size
2.	Testing facility capability if an alternative testing facility is proposed

**Table 8: Unacceptable Technical Exceptions / Conditions**

<b>Risk</b>	<b>Description</b>
1.	Deviations to any part of the technical specifications without providing alternate solutions
2.	

#### **4. AUTHORISATION**

This document has been seen and accepted by:

<b>Name</b>	<b>Designation</b>
Leon Spies	Senior Engineer (Electrical Engineering)
Ernest Molefi	Engineer (Electrical Engineering)
Maki Letshwenyo	Electrical Maintenance
Thabiso Dlamini	Electrical Maintenance

#### **5. REVISIONS ELECTRICAL MAINTENANCE**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
November 2022	0	L. Spies	First Draft

#### **6. DEVELOPMENT TEAM**

The following people were involved in the development of this document:

- Leon Spies

#### **7. ACKNOWLEDGMENTS**

- TET Members
- David Kunene

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## APPENDIX A: LIST OF LV MOTORS

0139577	MOTOR, ELECTRIC: POWER: 1.5 KW; SPEED: 1420 RPM; FRAME: MF90L4; CURRENT: 6-3.5 A; POTENTIAL: 220/380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 24 X LG 50 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: SC; TYPE: SYNCHRONOUS; REFERENCE NO: 73241-E00; 835807, UNK; MF90L4, UNK; COS 0.82; OA 06 01 OC OC Y N; CONNECTION DELTA/STAR; 50HZ; TYPE: MAGNETIC; TORQUE; 15 NEWTON METER; ASH STACKER TRIPPER CAR MOTOR; TYPE BINDER; 3 PHASE; 380V; 50HZ; 0.15A
0139607	MOTOR, ELECTRIC: POWER: 37 KW; SPEED: 1468 RPM; FRAME: D225S; CURRENT: 75 A; POTENTIAL: 380 VAC; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 60 X LG 140 MM; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; SUPPL P/N: LA6220-4CA-ZEEA; CONNECTION DELTA; 50HZ
0139958	MOTOR, ELECTRIC: POWER: 75 KW; SPEED: 1480 RPM; FRAME: D280SD; CURRENT: 143 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 80 X LG 180 MM; CONNECTION LOCATION: LEFT; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: D280SD, UNK; W7735-1(NC-2), UNK; 8 X 18MM HOLES ON 500MM PCD; FOR TURBINE LUBRICATION PUMPS; OA 06 01 OC OD Y N; CONNECTION DELTA; 50HZ; IC0141
0139960	MOTOR, ELECTRIC: POWER: 22 KW; SPEED: 2910 RPM; FRAME: DX180MD; CURRENT: 43 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP54; SHAFT SIZE: DIA 48 X LG 112 MM; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: DX180MD, UNK; WDXD7732-1, UNK; 8 X 17MM HOLES ON 275 PCD, FOR AUX LUB OIL PUMP, NC-2, CONNECTION DELTA, 50HZ
0139961	MOTOR, ELECTRIC: POWER: 18 KW; SPEED: 1450 RPM; FRAME: DX180M; CURRENT: 37.6 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 48 X LG 110 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; GEC; IC 0141; CONNECTION DELTA; 50HZ
0139970	MOTOR, ELECTRIC: POWER: 45 KW; SPEED: 1475 RPM; FRAME: D225DM; CURRENT: 87 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 60 X LG 145 MM; CONNECTION LOCATION: LH SIDE NDE; POLES: 4; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; HIGH EFFICIENCY; BEARINGS DE NU313 AND NDE 6312; USED ON CONDENSATE TRANSFER PUMP C; CONNECTION DELTA; 50HZ; IC0141; COMPLETE SCHEDULE B FORM AND PROVIDE A DATA SHEET
0139982	MOTOR, ELECTRIC: POWER: 90 KW; SPEED: 1475 RPM; FRAME: D280MQ; CURRENT: 175 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 80 X LG 145 MM; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: D280MQ, UNK; W7737-1, UNK; 4 X 21MM DIA, MTG CENTERS 420MM X 450MM, BASE TO SHAFT CENTRES, FOR JACKING OIL PUMP, OA 06 01 OC OR Y N, CONNECTION DELTA, 50HZ, IC0141
0139983	MOTOR, ELECTRIC: POWER: 3 KW; SPEED: 2791 RPM; FRAME: DX112MD; CURRENT: 6.1 A; POTENTIAL: 380 VAC; MOUNTING: V1 FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 28 X LG 62 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: DX112MD, UNK; VDXD5141/1, UNK
0139985	MOTOR, ELECTRIC: POWER: 15 KW; SPEED: 1445 RPM; FRAME: DX160LD; CURRENT: 29.8 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 42 X LG 110 MM; CONNECTION LOCATION: LEFT; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: WDXD7742/2, UNK; BEARINGS DE AND NDE 6309Z; SHAFT MACHINED KEYWAY; MOUNTING HOLES AND PITCH 4 X 18MM; PITCH 300MM; FOR BOILER FEED PUMP; CONNECTION DELTA; 50HZ; IC0141
0139986	MOTOR, ELECTRIC: POWER: 7.5 KW; SPEED: 2910 RPM; FRAME: DX160MD; CURRENT: 16 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE B5; SHAFT SIZE: DIA 42 X LG 110 MM; INSULATION CLASS: F; PHASE: 3; TYPE: INDUCTION; REFERENCE NO: DX160MD, UNK; WDXD7736-1, UNK; SHAFT MACHINED KEYWAY, MTG HOLES 4 X 18MM, PITCH MTG HOLES FLANGE 275MM, FOR TURBINE TRIP SYSTEM, NC-2, CONNECTION DELTA, 50HZ
0139987	MOTOR, ELECTRIC: POWER: 11 KW; SPEED: 1445 RPM; FRAME: DX160MD; CURRENT: 22.3 A; POTENTIAL: 380 VAC; MOUNTING: V1 FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 42 X LG 110 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; SUPPL P/N: AKS RM71 D001; CONN STAR DELTA; BEARINGS DE AND NDE 6309Z; SHAFT MACH KEYWAY; MTG HOLES 4 X 18MM; PITCH 300MM; FOR BOILER FEED PUMP; NC-2; IC0141

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0140002	MOTOR, ELECTRIC: POWER: 18.5 KW; SPEED: 1450 RPM; FRAME: D180M; CURRENT: 36 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IPW55; SHAFT SIZE: DIA 48 X LG 110 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: 191X2, UNK; D180M, UNK; BEARINGS DE AND NDE 6209Z C3; SHAFT MACH KEYWAY; LG105MM; C OF SHAFT TO BASE 175MM; MTG HOLES 4 X 14MM; C TO C OF MTG HOLES PARR TO SHAFT 240MM; R/ANGLES 270M; CONNECTION: STAR DELTA; 50HZ
0140059	MOTOR, ELECTRIC: POWER: 55 KW; SPEED: 2955 R/MIN; FRAME: 250S/M; CURRENT: 103 A; POTENTIAL: 380 V AC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 60 X LG 140 MM; CONNECTION LOCATION: TOP; POLES: 2; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: CI; SERVICE FACTOR: 1; TEMPERATURE CLASS: F; DIRECTION: BI-DIRECTIONAL; SPECIFICATION: IEC; TYPE: INDUCTION; SUPPL P/N: LA6253-2AA-AAAA; 55 KW; BLHOLE CENTRES 350 MM X 400 MM; 350 MM PARALLEL TO SHAFT AXIS; CENTRE OF SHAFT TO MOUNTING SURFACE 245 MM; CONNECTION DELTA; 50 HZ; COMPLETE SCHEDULE B FORM AND PROVIDE THE DATASHEET
0140067	MOTOR, ELECTRIC: POWER: 3 KW; SPEED: 1415 RPM; FRAME: IEC 100L; CURRENT: 6.8 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP54; SHAFT SIZE: DIA 28 X LG 60 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: B; PHASE: 3; SPECIFICATION: IEC 100L; VDE 0530; REFERENCE NO: 5E87-4340-01001, UNK; SUPPL P/N: K84/50/0584; TTW054132; ROT KL16; IC1B; COS 0.81; TAPROGGE; SHAFT MACH KEYWEY; C OF SHAFT TO BASE 98 MM; MTG 4 HOLES 12 X 15 MM; C TO C MTG HOLES PARR TO SHAFT 140 MM; R/ANGLES 165 MM; CONNECTION DELTA; 50HZ
0140068	MOTOR, ELECTRIC: POWER: 15 KW; SPEED: 1450 RPM; FRAME: RD885; CURRENT: 50.4 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 42 X LG 110 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: ETS160L4, UNK; RD885, UNK; COS 0.88; CONNECTION DELTA; 50HZ
0140191	MOTOR, ELECTRIC: POWER: 0.37 KW; SPEED: 1445 RPM; FRAME: KDY71D; CURRENT: 1.4 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE B5; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 14 X LG 30 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: 20VBD003, UNK; SUPPL P/N: 13005; AKDY6060/28; DIC0141; SHAFT MACHINED KEYWAY; HOLES 4 X 9MM; PITCH 130MM; OPL 11594; ITEM 22A; USED ON 45M CLARIFIER ON THE WATER TREATMENT PLANT; OA 06 01 OC OC Y N; CONNECTION STAR; 50HZ; IC0141
0140206	MOTOR, ELECTRIC: POWER: 37 KW; SPEED: 1480 RPM; FRAME: D225S; CURRENT: 74 A; POTENTIAL: 380 VAC; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 60 X LG 140 MM; CONNECTION LOCATION: LEFT; INSULATION CLASS: F; PHASE: 3; MODEL NO: FA2255VA, UNK; UNELEC; FOR BFPT BARRING GEAR; CONNECTION DELTA; 50HZ; IC0141
0140207	MOTOR, ELECTRIC: POWER: 11 KW; SPEED: 2890 RPM; FRAME: D160MD; CURRENT: 23 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP54; SHAFT SIZE: DIA 43 X LG 115 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; GEC; CONNECTION DELTA
0140217	MOTOR, ELECTRIC: POWER: 0.55 KW; SPEED: 2820 RPM; FRAME: KDY71; CURRENT: 1.5 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 14 X LG 30 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: B6198/1, UNK; GEC; TEMP RISE 80 DEG C; SEAL AIR GIRTH GEAR; CONNECTION STAR; 50HZ; IC014; COMPLETE SCHEDULE B FORM AND PROVIDE A DATASHEET
0140225	MOTOR, ELECTRIC: POWER: 22 KW; SPEED: 1445 RPM; FRAME: DX180D; CURRENT: 43 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE B5; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 48 X LG 120 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; GEC, UNIQUE OTEM NO 01NU20D001, CONNECTION DELTA, 50HZ; IC0141
0140228	MOTOR, ELECTRIC: POWER: 5.5 KW; SPEED: 1454 RPM; FRAME: DX132MD; CURRENT: 12.2 A; POTENTIAL: 380 VAC; MOUNTING: V1 FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 38 X LG 90 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: STEEL; DIRECTION: ANTI CLOCKWISE; GEC, 5KW, CONN STAR DELTA, FOR BFPT CIRCULATING FLUID PUMP, 50HZ

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0140231	MOTOR, ELECTRIC: POWER: 7.5 KW; SPEED: 970 RPM; FRAME: DX160M; CURRENT: 17 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP65; SHAFT SIZE: DIA 42 X LG 110 MM; CONNECTION LOCATION: LH SIDE NDE; POLES: 6; INSULATION CLASS: H; PHASE: 3; CASING MATERIAL: CI; SERVICE FACTOR: S1; TEMPERATURE CLASS: B RISE; DIRECTION: BI DIRECTIONAL; SPECIFICATION: SANS IEC 60034/1804; TYPE: INDUCTION; WINDING CONNECTION DELTA; SECONDARY AIR HEATER MAIN DRIVE; 50 HZ; IC0141; DUAL SHAFT MOTOR; NDE SHAFT END TO PROTRUDE BY 110MM; SHAFT KEY WAY: DEPTH 8MM; LENGTH 80MM X WIDTH 12MM; NDE SHAFT DIAMETER: DIA 42 X LG 110MM; FOR IT TO BE ROTATED OR TURNED WITH A SPANNER; GREASABLE MOTOR BEARINGS; BEARINGS LUBRICATED WITH EXTREME HEAT RESISTANT GREASE -10 TO 230 DEG C; COMPLETE ATTACHED SCHEDULE B FORM; SUBMIT MOTOR DRAWINGS FOR APPROVAL AND PROVIDE A DATASHEET
0140410	MOTOR, ELECTRIC: POWER: 1.5 KW; SPEED: 1430 RPM; FRAME: D90L; CURRENT: 3.8 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE B5; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 24 X LG 50 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; LH AND RH FAN; FOR LUB OIL PUMP; TYPE 90L387; FLANGE PITCH 165; CONNECTION: DELTA; 50HZ; IC0141
0140411	MOTOR, ELECTRIC: POWER: 1.5 KW; SPEED: 1430 RPM; FRAME: 90L1184; CURRENT: 3.8 A; POTENTIAL: 380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 25 X LG 54 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; TYPE: DELTA CONNECTION; SUPPL P/N: 90L1184; GEC; IP44; 3.9AMPS; COS 0.78; INSUL B; 50HZ; BASE MOUNTING; HIGH EFFICIENCY MOTOR
0140465	MOTOR, ELECTRIC: POWER: 30 KW; SPEED: 1465 RPM; FRAME: D200L; CURRENT: 60 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 55 X LG 120 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: D200L, UNK; GEC; IC0141; CONNECTION: DELTA; 50HZ; COMPLETE SCHEDULE B FORM AND PROVIDE A DATASHEET
0140695	MOTOR, ELECTRIC: POWER: 15 KW; SPEED: 1445 RPM; FRAME: DX160L; CURRENT: 29.8 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 42 X LG 110 MM; CONNECTION LOCATION: LH; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; SUPPL P/N: 197930/2; CONNECTION DELTA, 50HZ
0140709	MOTOR, ELECTRIC: POWER: 0.75 KW; SPEED: 1750 R/MIN; FRAME: D80D; CURRENT: 5 A; POTENTIAL: 180 V DC; MOUNTING: B35; ENCLOSURE RATING: TEFC; SHAFT SIZE: DIA 19 X LG 40 MM; CONNECTION LOCATION: TOP; POLES: 4; INSULATION CLASS: F; PHASE: 1; CASING MATERIAL: CI; SERVICE FACTOR: CONTINUOUS; TEMPERATURE CLASS: 80K; DIRECTION: BI DIRECTIONAL; TYPE: 1; SUPPL P/N: PM; REFERENCE NO: 0,75KW; PERMANENT MAGNET; 1.6HZ; USED ON THE LIME SILO DRIVES; OA 06 01 OC OR Y N
0140929	MOTOR, ELECTRIC: POWER: 0.18 KW; SPEED: 1370 RPM; FRAME: RFO1847; CURRENT: 1.2-0.7 A; POTENTIAL: 220/380 VAC; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 11 X LG 23 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: B; PHASE: 3; SPECIFICATION: VDE0530/72; REFERENCE NO: 54411/C01, UNK; ANTRIEBSTEchnik; KI B; COS 0.07; FOR CLEANOUT CONVEYOR DRIVE; SHAFTMACH KEYWAY; MTG HOLES 4 X 9 MM; PITCH 115; CONNECTION DELTA/STAR; 50HZ; COMPLETE SCHEDULE B FORM AND PROVIDE THE DATASHEET
0141798	MOTOR, ELECTRIC: POWER: 4 KW; SPEED: 1440 RPM; FRAME: D112MD; CURRENT: 16.5-8.6 A; POTENTIAL: 220/380 VAC; MOUNTING: FLANGE; FOOT; ENCLOSURE RATING: IPW55; TEFC; SHAFT SIZE: DIA 28 X LG 52 MM; CONNECTION LOCATION: LH; INSULATION CLASS: E; PHASE: 3; CASING MATERIAL: STEEL; DIRECTION: ANTI CLOCKWISE; TYPE: SQUIRREL CAGE; REFERENCE NO: F112ME14, UNK; SUPPL P/N: 41-30-016; CONNECTION DELTA/STAR, 50HZ, IC0141
0141890	MOTOR, ELECTRIC: POWER: 7.5 KW; SPEED: 1435 RPM; FRAME: DX132MD; CURRENT: 16.6 A; POTENTIAL: 380 V; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 38 X LG 80 MM; CONNECTION LOCATION: LEFT; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; REFERENCE NO: ADZD8050/7, UNK; GEC; BEARINGS DE AND NDE 6208Z; SHAFT MACH KEYWAY; CONNECTION DELTA; 50HZ; IC0141
0178921	MOTOR, ELECTRIC: POWER: 160 KW; SPEED: 1490 RPM; FRAME: D315M; CURRENT: 278 A; POTENTIAL: 380 VAC; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 85 X LG 170 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: D315M, UNK; CONNECTION: DELTA; 50HZ; IC0141
0178925	MOTOR, ELECTRIC: POWER: 150 KW; SPEED: 1482 RPM; FRAME: D315M; CURRENT: 295 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 85 X LG 165 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; CONNECTION: DELTA; 50HZ

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0178926	MOTOR, ELECTRIC: POWER: 110 KW; SPEED: 1479 RPM; FRAME: D280M; CURRENT: 210 A; POTENTIAL: 380 VAC; MOUNTING: FOOT; ENCLOSURE RATING: IPW35; SHAFT SIZE: DIA 80 X LG 170 MM; CONNECTION LOCATION: LH; INSULATION CLASS: F; PHASE: 3; BASE DIMENSION 460 MM BROAD X 420 MM LENGTH; HOLES 25 MM DIA; CONNECTION DELTA; 50HZ
0178940	MOTOR, ELECTRIC: POWER: 75 KW; SPEED: 1480 RPM; CURRENT: 140-81 A; POTENTIAL: 380/660 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP54; SHAFT SIZE: DIA 80 X LG 140 MM; INSULATION CLASS: F; PHASE: 3; SPECIFICATION: VDE0530; COS 0.86, KL16, IP, CONNECTION DELTA/STAR, 50/60HZ
0178962	MOTOR, ELECTRIC: POWER: 75 KW; SPEED: 2985 RPM; FRAME: D250M; CURRENT: 134 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP66; SHAFT SIZE: DIA 60 X LG 140 MM; CONNECTION LOCATION: LH SIDE NDE; INSULATION CLASS: H; PHASE: 3; SERVICE FACTOR: S1; SEAL AIR FAN DRIVE; FOR FULL SPECIFICATION REFER TO LETHABO INVENTORY DEPARTMENT; CONNECTION DELTA; COMPLETE SCHEDULE B FORM AND PROVIDE A DATASHEET
0179035	MOTOR, ELECTRIC: POWER: 10/15 KW; SPEED: 970-1465 RPM; FRAME: DX180L; CURRENT: 30.4-22.3 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 50 X LG 110 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; REFERENCE NO: DX180L, UNK; CONNECTION: DELTA/STAR; 50HZ; IC0141
0179057	MOTOR, ELECTRIC: POWER: 25/37 KW; SPEED: 990-1486 RPM; FRAME: D250S; CURRENT: 75-52 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 70 X LG 130 MM; CONNECTION LOCATION: SHIFTABLE; INSULATION CLASS: F; PHASE: 3; CONNECTION STAR/STAR/DELTA; 50HZ; IC0141
0179058	MOTOR, ELECTRIC: POWER: 90 KW; SPEED: 1480 RPM; FRAME: D250S; CURRENT: 174 A; POTENTIAL: 380 V; TYPE: AC
0179061	MOTOR, ELECTRIC: POWER: 90 KW; SPEED: 2972 RPM; FRAME: D280MD; CURRENT: 146 A; POTENTIAL: 380 VAC; MOUNTING: V1 FLANGE; ENCLOSURE RATING: IP66; SHAFT SIZE: DIA 65 X LG 140 MM; CONNECTION LOCATION: LEFT; CLASSIFICATION: FIRE RESISTANT; POLES: 2; INSULATION CLASS: H; PHASE: 3; SERVICE FACTOR: S1; DIRECTION: LH/RH; SPECIFICATION: ISO 60034-7; TYPE: INDUCTION; CMG FLUID; EFFICIENCY AT FULL LOAD AT LEAST 95.3 PCT; FULL LOAD TORQUE 289NM; CLASS B TEMPERATURE RISE; BEARINGS DE/NDE 6314; LUBRICATION DE OMEGA 87 SYNTHETIC GREASE; NDE HABOT H9022; EQUIPPED WITH INPRO SEAL VBX TO MECHANICALLY ISOLTE THE DE BEARING AND APPLY LUBRICATION TO DE BEARING; COOLING IC411 WITH COVER; WEIGHT 645KG; STARTING METHOD DIRECT ON LINE; COUPLING METHOD DIRECT GEAR COUPLING; MUST NOT INCREASE THE THD OF THE SUPPLY CURRENT BY MORE THEN 1 PCT AT THE POINT OF COMMON COUPLING; WINDING TEMP MEASUREMENT ONE PT100 RTD/PHASE WITH SEPARATE AUX TERMINAL BOX; GREASE RELIEF THRU-FLUSHING GREASE RELIEF VALVE INCORPORATING V-RING SEAL TO BE INSTALLED ON THE NDE OF THE MOTOR TO ENABLE GREASING WITHOUT STOPPING; EXCESSIVE GREASE TO EXIT THROUGH THE THRU FLUSHING VALVE TO BE OUTSIDE OF CASING; FOR DE BEARING REFER TO PROTECTION ABOVE; VIBRATION DETECTION VIBRATION SENSOR POSITIONING RODS TO BE INSTALLED ON THE DE AND NDE BEARINGS; FLANGE: 8 HOLES WITH 19MM DIAMETER ON 500MM PDC; EQUALLY SPACED; FLANGE OD 550MM; SPIGOT 450 000MM; -0.097MM; LIFTING FACILITY 2 SIDE MOUNTED EYE BOLTS; PLEASE NOTE PROTECTION RATING; LETHABO POWER STATION REPRESENTATIVE WILL WITNESS THE MOTOR ACCEPTANCE TEST RESULTS; IN ADDITION TO ABOVE SHALL CONFORM TO GGS 0802 REV 4; AND ALL COMPLETED DOCUMENTS AS REQUESTED BY GG 0802 REV 4 SHALL ACCOMPANY UPON DELIVERY; CONNECTION DELTA; 50HZ
0179072	MOTOR, ELECTRIC: POWER: 75 KW; SPEED: 2960 RPM; CURRENT: 138 A
0179078	MOTOR, ELECTRIC: POWER: 150/160 KW; SPEED: 1485 RPM; FRAME: D315M; CURRENT: 274 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 85 X LG 170 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: F; PHASE: 3; MOUNTING HOLES 4 X 27MM, CONNECTION DELTA, 50HZ, IC0141
0189960	MOTOR, ELECTRIC: POWER: 2.2 KW; SPEED: 1420 R/MIN; FRAME: 100L; CURRENT: 5.3 A; POTENTIAL: 380 V AC; MOUNTING: FLANGE B5; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 28 X LG 60 MM; CONNECTION LOCATION: TOP; CLASSIFICATION: NON SPARKING; INSULATION CLASS: H; PHASE: 3; SERVICE FACTOR: S1; GEC; DE OIL SEAL SPESIFICATION DIN 3760 NB-BZFED; COS 0.8; COOLING IC 144; BEARINGS DE 6206 ZZ C3; NDE 6206 ZZ C3; FOR USE ON A ZONE 2 WITH EXN II T3 ENDORSED ON NAMEPLATE; TO BE FITTED WITH TEMPERATURE DETECTOR; CONNECTION: STAR

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0212382	MOTOR, ELECTRIC: POWER: 55 KW; SPEED: 1480 RPM; FRAME: D250S; CURRENT: 107 A; POTENTIAL: 380 VAC; MOUNTING: FRAME; ENCLOSURE RATING: TBFV; SHAFT SIZE: OD 70 MM; CONNECTION LOCATION: TOP; INSULATION CLASS: IP55; PHASE: 3; CONNECTION DELTA, 50HZ
0223225	MOTOR, ELECTRIC: POWER: 30 KW; SPEED: 2950 RPM; FRAME: 200L-2; CURRENT: 54 A; POTENTIAL: 380 VAC; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: 54 MM; CONNECTION LOCATION: LH; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: S1; SUPPL P/N: 06-00AW12080; CABLE C2130; WAG; CONNECTION DELTA; 50 HZ
0223446	MOTOR, ELECTRIC: POWER: 75 KW; SPEED: 1480 RPM; FRAME: D250M; CURRENT: 143 A; POTENTIAL: 380 VAC; MOUNTING: B3 FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 70 X LG 135 MM; INSULATION CLASS: F; PHASE: 3; FOR USE ON BUCKET ELEVATOR, CONNECTION DELTA
0226210	MOTOR, ELECTRIC: POWER: 110 KW; SPEED: 1500 RPM; FRAME: 280M; CURRENT: 174 A; POTENTIAL: 380 VAC; MOUNTING: V1 FLANGE; ENCLOSURE RATING: IP66; SHAFT SIZE: DIA 80 X LG 170 MM; CONNECTION LOCATION: LEFT FLANGE; POLES: 4; INSULATION CLASS: H CL B TEMPERATURE RISE; PHASE: 3; SERVICE FACTOR: S1; DIRECTION: LH/RH; SPECIFICATION: ISO 60034-6; TYPE: INDUCTION; CPP PUMP DRIVE; EFFICIENCY AT FULL LOAD AT LEAST 95.9 PCT; FULL LOAD TORQUE 704NM; BEARINGS THE BEST BEARING DESIGN PROPOSAL FROM ALL SUPPLIERS WILL BE EVALUATED DURING EXECUTION OF TECHNICAL EVALUATION; LUBRICATION MUST BE COMPATIBLE WITH HABOT H9022; COOLING IC411; WITH COVER TO BE EQUIPPED WITH AT LEAST 2 LIFTING LUGS; MOUNTING ISO 60034-7; MOUNTING CODE I; WEIGHT 787KG; STARTING METHOD DIRECT ON LINE; COUPLING METHOD DIRECT TYRE COUPLING; FENNA-FLEX; TOTAL HARMONIC DISTORTION MUST NOT INCREASE THE THD OF THE SUPPLY CURRENT BY MORE THAN 1 PCT AT POINT OF COMMON COUPLING; WINDING TEMPERATURE MEASUREMENT ONE PT100 RTD/PHASE WITH SEPARATE AUX TERMINAL BOX; GREASE RELIEF THRU-FLUSHING GREASE RELIEF VALVE INCORPORATING V RING SEAL TO BE INSTALLED ON DE AND NDE OF MOTOR TO ENABLE GREASING WITHOUT STOPPING; EXCESSIVE GREASE TO EXIT MOTOR THROUGH THE THRU FLUSHING VALVE TO THE OUTSIDE CASING; VIBRATION DETECTION SENSOR POSITIONING RODS TO BE INSTALLED ON DE AND NDE BEARINGS; FLANGE 8 HOLES; DIAMETER 19 MM ON 500 MM PCD; EQUALLY SPACED; FLANGE OD 550 MM; SPIGOT 450000 MM; -0.097 MM; LIFTING FACILITY AT LEAST 2 SIDE MOUNTED EYE BOLTS; CONDITIONS A LETHABO POWER STATION REPRESENTATIVE WILL WITNESS ACCEPTANCE TEST RESULTS; IN ADDITION TO ABOVE MOTORS SHALL CONFORM TO GGS 0802 REV 4; GENERATION SPECIFICATION; POWER STATION ELECTRIC MOTORS PROCUREMENT AND ALL COMPLETED DOCUMENTS AS REQUESTED BY GGS 0802 REV 4 SHALL ACCOMPANY MOTOR UPON DELIVERY; CONNECTION DELTA; 0.92 SERVICE FACTOR; 50HZ
0251361	MOTOR, ELECTRIC: POWER: 90 KW; SPEED: 1480 RPM; FRAME: 280S; CURRENT: 174 A; POTENTIAL: 380 V; MOUNTING: B3 BASE; ENCLOSURE RATING: IP55; SHAFT SIZE: 80 MM; CONNECTION LOCATION: RH; INSULATION CLASS: F; PHASE: 3; SERVICE FACTOR: 0.84; DIRECTION: CLOCK WISE; TYPE: HIGH EFFICIENCY; SHAFT SIZE LG 172 MM
0252312	MOTOR, ELECTRIC: POWER: 0.25 KW; SPEED: 1320 RPM; FRAME: 71WEG; CURRENT: 0.799-1.38 A; POTENTIAL: 380 V; MOUNTING: BASE; FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: 14 MM; CONNECTION LOCATION: LH; POLES: 3; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: STL; SERVICE FACTOR: S1; DIRECTION: BI DIRECTIONAL; FOR USE ON STACKER LINK CONVEYER LUB OIL
0255868	MOTOR, ELECTRIC: POWER: 11 KW; SPEED: 2945 RPM; FRAME: H(A/R/C)D/E 164(255/211/100)42/122; CURRENT: 23 A; POTENTIAL: 380 VAC; MOUNTING: B3; ENCLOSURE RATING: IP55; SHAFT SIZE: DIA 42 X LG 122 MM; CONNECTION LOCATION: TOP; POLES: 2; INSULATION CLASS: F; PHASE: 3; DIRECTION: CLOCKWISE; TYPE: SO3 PLANT COOLING FAN; MUST COME WITH NDE BEARING 6209, DIE BEARING 6309
0500091	MOTOR, ELECTRIC: POWER: 90 KW; SPEED: 1475 RPM; FRAME: D280SQ; CURRENT: 175 A; POTENTIAL: 380 V; MOUNTING: B34 BASE/FLANGE; ENCLOSURE RATING: IP65; CONNECTION LOCATION: LH; POLES: 4; INSULATION CLASS: H; PHASE: 3; CASING MATERIAL: CI; DIRECTION: CLOCK WISE; SPECIFICATION: SANS IEC 60034; TYPE: INDUCTION; FOR USE ON T7 UNDER SILO HYDRAULIC PUMP DRIVE CABLE ENTRY FACING NDE, MUST BE ON LEFT HAND
0502271	MOTOR, ELECTRIC: POWER: 45 KW; SPEED: 1475 RPM; FRAME: 225M; CURRENT: 86 A; POTENTIAL: 380 V; MOUNTING: B3; ENCLOSURE RATING: IP55; CONNECTION LOCATION: TOP LH; POLES: 4; INSULATION CLASS: F; PHASE: 3; DIRECTION: CLOCK WISE; MANUF P/N: 1LA62234A70; FOR USE ON ASH PLANT LINE FILLING PUMP FOR MAIN IRRIGATION PUMPS; CABLE ENTRY FACING NDE ON TOP OF MOTOR WITH ENTRY FROM THE LEFT

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0600910	MOTOR, ELECTRIC: POWER: 110 KW; SPEED: 1485 RPM; FRAME: 280S/M; CURRENT: 202 A; POTENTIAL: 380 V; MOUNTING: FLANGE; ENCLOSURE RATING: IP55; SHAFT SIZE: OD 65 MM; CONNECTION LOCATION: LEFT HAND SIDE; POLES: 4; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: CI; TEMPERATURE CLASS: 40 DEG C; TYPE: INDUCTION; REFERENCE NO: 1LA42844YA71Z; APPLICATION: ANION SUPPLY PUMP
0600911	MOTOR, ELECTRIC: POWER: 30 KW; SPEED: 1470 RPM; FRAME: 200L; CURRENT: 57.2 A; POTENTIAL: 380 V; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: OD 55 MM; CONNECTION LOCATION: LEFT HAND SIDE; POLES: 4; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: CI; SERVICE FACTOR: 1; TEMPERATURE CLASS: 2 DEG C; TYPE: INDUCTION; REFERENCE NO: 4754/6862; APPLICATION: RAW WATER BOOSTER
0600953	MOTOR, ELECTRIC: POWER: 22 KW; SPEED: 1460 RPM; FRAME: 180L; CURRENT: 44.5 A; POTENTIAL: 380 V; MOUNTING: FOOT; ENCLOSURE RATING: IP55; SHAFT SIZE: OD 48 MM; CONNECTION LOCATION: LEFT HAND SIDE; POLES: 4; INSULATION CLASS: F; PHASE: 3; CASING MATERIAL: CI; SERVICE FACTOR: 1; TEMPERATURE CLASS: T2; TYPE: INDUCTION; REFERENCE NO: K4/73545; APPLICATION: ECP PUMP MOTOR
0177253	CLUTCH: TYPE: BELT DRIVE; BORE: 28 MM; MODEL NO: 132TCD4/3KW, UNK; CODE F1.N2; ENCLOSURE IP55; C/W 3KW MOTOR TO SUIT 400/3/50 SUPPLY; OUTPUT SHAFT DIA 28MM AND FLANGE 250MM; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).

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