

## 1. SCHEDULE OF PRICES:

All prices **exclude Vat** and additional items listed (with prices) shall be clearly labelled as optional or essential.

Item	Qty	Price per item	Price
<p><b>1. Replace two air cooled condensers(1/2Cu36-3-10-2100) (18) Condenser Coil-ACC015</b></p> <ul style="list-style-type: none"> <li>• two air cooled packaged condenser, condenser coil:1/2 CU 36-3-10-2100(18),</li> <li>• The air-cooled packaged condenser supplied with 3 x 500mm diameter condenser fan fitted on each unit, Fan capacity to be 0,55Kw, 380 volts, 1330/1030rpm, IP54, 50 HZ, VDK 4I.6S,03105331.</li> <li>• The dimension of each air-cooled packaged Condenser unit shall be Size (1000x1203x2160)</li> <li>• Air cooled packaged condenser similar or equivalent to the above specification will be acceptable.</li> </ul>	2		
<p><b>2. Replace two Air cooled packaged condensers (½ CU 36-4-10-236018), Condenser coil ACC025</b></p> <ul style="list-style-type: none"> <li>• Replace two air cooled packaged condenser, Condenser coil: ½ CU 36-4-10-2360(18),</li> <li>• The air-cooled packaged condenser with 4 x 500mm diameter condenser fan fitted on each unit, Fan capacity to be 0,55Kw, 380 volts, 1330/1030rpm, IP54, 50 HZ VDK 4I.6S,03105331.</li> <li>• The dimension of each air-cooled packaged Condenser unit shall be Size (1000x2420x1203)</li> <li>• Air cooled packaged condenser similar or equivalent to the above specification will be acceptable.</li> </ul>	2		

<b>3.Refrigeration gas system</b>			
Flush the existing old gas and re-gas.	1		
Detect the system gas leak and repair all leaks.	1		
Connection of refrigeration gas pipeline to all new system including air-cooled condensers, compressors, switches and valves.	1		
<b>4.Compressors</b>			
<p>Supply and install 8 air conditioning hermetic reciprocating compressors with the following operating parameters</p> <ul style="list-style-type: none"> <li>• Gross weight: 71.5 kg</li> <li>• Volume: 107.333liters</li> <li>• Operating technique: Reciprocating compressor</li> <li>• Capacitor control: Fixed speed</li> <li>• Compressor power supply: 380 -400 V 50HZ</li> <li>• Connection type: Roto lock</li> <li>• Cylinder:4</li> <li>• Diameter:352mm</li> <li>• Discharge:125mm</li> <li>• Discharge connection pipe:3/4in / 20 mm.</li> <li>• Discharge connection size :1 1/4 in / 70 mm.</li> <li>• Factory Hp(bar):25bar</li> <li>• Factory LP (bar):25bar</li> <li>• Frequency:50 HZ</li> <li>• Glass Torque (Nm):50Nm</li> <li>• GP LP torque (Nm):15Nm</li> <li>• High side TS Max150degrees C</li> <li>• High side Volume:1,2L</li> <li>• High value of nominal voltage at 50HZ:400V</li> <li>• IP Protection class: IP54 (With cable gland)</li> </ul> <p>Compressors similar to the existing Maneurop MT144HV4VE hermetic reciprocation compressor or equivalent will be acceptable.</p>	8		
<b>5.Switches and Valves</b>			
<ul style="list-style-type: none"> <li>• Supply and replace four HP/LP switch hermetic filter drier – MWP500PSIG/35BAR,7/8” Temperature Range: -40 to +160degreesF OR -40 TO +70 degrees C. similar or equivalent will be acceptable.</li> </ul>	4		

<ul style="list-style-type: none"> <li>Supply and replace four low ambient pressure controllers – (Ambient temp 80 °C/176 °F for max 120 min, Ambient temp range(max) 65 °C, Max working pressure 510psig, ambient temperature range(min) -40 °C, Contact ratings 10A at 400V, Differential(bar):3bar, Differential (psi):43psi, Regulation range(bar)(max):32bar, Regulation range(bar)(min):8bar, Insulation:400V, Pollution degree:3, Rated impulse voltage:4kv, Short circuit prot., fuse:16A.</li> </ul>	4		
Supply and replace four expansion valves – (10Ft, VIF6A) Alco TER-26), similar or equivalent will be acceptable.	4		
Supply and replace four H/S valve 7/8 sweab, similar or equivalent will be acceptable.	4		
Supply and replace four filter air pressure switches compatible with the existing DPS 200, similar or equivalent will be acceptable.	4		
<b>6. Supply Air Blower fans system and Electrical heating elements</b>			
Supply and replace the two existing motors, - 1440RPM 5,5 KW, 4 Pole 380V and replace 2 x pillow bearing 3/8in ID, 3x V-belt on the perimeter zone. The replacement motors must be compatible to meet the specified supply air quantity requirements of 62,6m <sup>3</sup> /s	2		
Repair and balance two blower fans in the perimeter zone. Fan speed 610 rpm, the repairs must enable the system to meet the air quantity requirements of 62,6m <sup>3</sup> /s	2		
Repair Drive details, Motor pulley:2 off SPA-106-2gr, motor bush:38mm, Fan pulley:2 off SPA-250-2GR., Fan bush:35mm, Belts:4Xspa-1250, Bearings:4 off UCP-207 similar or equivalent will be acceptable.	2		
Replace/repair 8x pressure switch 17BAR, Regulation range. LP:0,9-7Bar, HB 8-32Bar, Max working pressure: 17 bar/245 psig 35 bar/510 psig	8		
Repair motorized dampers to meet the requirement of the supply air	2		
Repair all electrical heating elements on the supply air ducting	4		
<b>7. Electrical Panel</b>			
Supply and replace circuit breaker with capacity icu100ka at400v, 2.5A-4A X6 Icu:100Ka.	6		




Supply and replace triple single breaker 16 Amps MN116Z 444702 0,230 vac X5	5		
Supply and Replace Input 400Vac, Output 110Vac,50/60Hz stepdown transformer.	1		
Supply and Replace 80Amps,3phase contactor,2NO,2NC with auxiliaries with 230vac coil voltage x6.	6		
Supply and Replace step down transformer input voltage 0-230V ac output 0-24Vac rating100VA	1		
Supply and Replace relay 10A,250Vac,24vac coil voltage, coil current :53mA, coil resistance 190ohmsX25.	25		
Supply and Replace contactor:3pole,4kw,9A,24Vcoil X6	6		
Supply and Replace contactor - 3P (3 NO) - AC-3 - <= 440 V 32 A - 24 V AC coil X6.	6		
Supply and Replace contactor 400vac,32Amps,220coilvoltage with1n/o and 1n/c X5.	5		
<b>8.PLC Control System and drive</b>			
Supply, install and program drive,18,5kw which control the speed of the extractor fan motor with the same or compatible drive and wiring.	1		
Supply, install and program PLC control system for the complete operation of the spray booth, including all application modes for spray painting mode, pre- heating mode, and baking mode	1		
<b>9.Cooling Coil perimeter blower unit</b>			
Repair and flush Air on coil evaporator:1/2 CX 6-3-8-3850(2x27) similar or equivalent will be acceptable.	1		
Repair and flush Air off coil evaporator:1/2 CX 6-4-10-3850(2x36) similar or equivalent will be acceptable.	1		
Restoration of Saturated suction temperature :8 degrees C	1		
Restoration of Saturated condensing temperature :50 degrees C	1		
Clean any residues of melted coil insulation from other parts of the device or replace such parts.	4		
Check for cracks, breaks or deep erosion. Arc hoods and chutes should be repaired or replaced if damaged or deeply eroded.	1		

<b>10.Filters perimeter</b>			
Supply and replace 12 x 600 x 600 x 50(x2) filters	2		
Supply and replace 61cmx61cmx18 filters in the perimeter zone.	1		
<b>11.Extractor Fan</b>			
Supply, replace and repair motor rated output:18,5kw, speed:1470r/min, supply:380/3/50, frame size:180M, Enclosure: IP55, REARING:6311-C3, NDE Bearing:6211-Z-C3 the replacement motor must be compatible to meet the exhaust air quantity of 57m <sup>3</sup> /s	1		
Repair and balance fan, series BC90, size 800C/1.0, impeller diameter:800mm, Fan speed:1177r/min, cass:2, op. temp:20degrees C, Max temp:40degrees C, de bearing SNL22210, NDE Bearing SNL C2210, the repairs must enable the system to meet the exhaust air quantity of 57m <sup>3</sup> /s	1		
Belt drive Fan pulley: diameter200-4SPA Bore:45mm, Motor Pulley diameter160-4SPA Bore48mm, Vee-belts:13N (2800) qty per set4, Tension Force 35N, Belt deflection:18mm	1		
<b>12 Test and commission</b>			
Provision to be made for all required documentation under 18.1	1		
Issue a COC for the Electrical work that was done.	1		
Test, commission and hand over to production.	1		
The electrical installation and issuing of certificate of compliance shall bein accordance with SANS 10142-1.	1		
<ul style="list-style-type: none"> <li>• Make and supply 2 sets of hardcopy drawings and 1 set of pdfdrawings in a USB memory stick.</li> <li>• The drawing shall have the components symbols recognized inelectrical and mechanical engineering.</li> <li>• The drawing shall have the legends and notes.</li> </ul> <p>The drawing shall show the component's rating, sizes, capacity, e.gamperage, voltage, capacitance, etc.</p>	1		
Test and commission.	1		
The entire air-condition system shall be fully functional on handover.	1		

<b>13. Training</b>			
Training must be provided on the operation and maintenance of the entire air conditioning unit	1		
<b>Sub-Total (excl. VAT)</b>			<b>R</b>

<b>Vat (15%)</b>			<b>R</b>
------------------	--	--	----------

<b>Grand -Total (incl. VAT)</b>			<b>R</b>
---------------------------------	--	--	----------

**Name:** Khethu Nzuz    **Designation:** Engineering Technician    **Signature and date:**  12/06/2024  
**Name:** Max Dladla    **Designation:** Engineering Technician    **Signature and date:**  12/06/2024  
**Name:** Mhlonipheni Nxumalo    **Designation:** Executive Manager    **Signature and date:**  12/06/2024