



TD-106-1 Rev No. 5  Form No.		<b>PRODUCT STANDARD</b> <b>SWITCHGEAR</b> <b>HYDERABAD</b>		<b>Product</b> <b>STD NO.</b>	<b>SG 80001</b>																
				Rev No 00																	
				Page 1 of 3																	
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.		<b><u>Vacuum Pump for PSA Oxygen plant (Material code: SG9780001000)</u></b>																			
		<p><b>1. Introduction:</b></p> <p>Purchase specification is intended supply Air cooled oil lubricated Rotary Vane Vacuum pump integrated with 3 phase motor for Medical grade PSA Oxygen plant.</p> <p>Oil lubricated Rotary Vane Vacuum pump operate according to rotary vane principle. The rotor is eccentrically positioned in the cylinder with machine slots which house the sliding vanes. During normal operation the centrifugal action pushes the vanes towards the cylinder wall. The gas then sucked in through the pump inlet and mixed with sealing oil compressed and discharge through the exhaust opening located between the pumps housing and oil sump. The sealing oil is then fed into the pump by differential pressure of the pump module and oil sump. The exhausted gas and oil vapour passes through a demister and the gas and oil vapour are separated. The discharged gas then continued through the exhaust filter and condensed oil droplets return to lower part of the oil sump ready for recirculation.</p> <p><b>2. Scope of Supply:</b></p> <ul style="list-style-type: none"> <li>Air cooled vacuum pump along with motor with following technical specification –</li> </ul> <table border="0"> <tr> <td><b>Nominal Capacity (M3/hr):</b></td> <td>200 (Minimum 180 M3/hr)</td> </tr> <tr> <td><b>Ultimate Vacuum (mbar abs):</b></td> <td>better than – (0.6) Kg/cm<sup>2</sup>g</td> </tr> <tr> <td><b>Motor Power (kW):</b></td> <td>5.5 / 6.6 (IE2, IP55)</td> </tr> <tr> <td><b>Motor Speed (RPM):</b></td> <td>1440/1700</td> </tr> <tr> <td><b>Noise Level (dB A):</b></td> <td>Less than 80 at 1.5 Meter distance</td> </tr> <tr> <td><b>Inlet / Outlet connection:</b></td> <td>2" / 2"</td> </tr> <tr> <td><b>Oil Filling:</b></td> <td>5 Ltrs</td> </tr> <tr> <td><b>Cooling Method:</b></td> <td>Air Cooled</td> </tr> <tr> <td><b>Weight (Kg):</b></td> <td>Around 140</td> </tr> </table> <ul style="list-style-type: none"> <li>1" Auto vent valve with 230V AC solenoid operated - 1 no. loose supply.</li> <li>5 Ltrs of oil to be supplied along with Vacuum pump.</li> <li>Minimum 5mtr of 2" metallic flexible hose with flanged, ASME B16.5, class150</li> </ul>				<b>Nominal Capacity (M3/hr):</b>	200 (Minimum 180 M3/hr)	<b>Ultimate Vacuum (mbar abs):</b>	better than – (0.6) Kg/cm <sup>2</sup> g	<b>Motor Power (kW):</b>	5.5 / 6.6 (IE2, IP55)	<b>Motor Speed (RPM):</b>	1440/1700	<b>Noise Level (dB A):</b>	Less than 80 at 1.5 Meter distance	<b>Inlet / Outlet connection:</b>	2" / 2"	<b>Oil Filling:</b>	5 Ltrs	<b>Cooling Method:</b>	Air Cooled
<b>Nominal Capacity (M3/hr):</b>	200 (Minimum 180 M3/hr)																				
<b>Ultimate Vacuum (mbar abs):</b>	better than – (0.6) Kg/cm <sup>2</sup> g																				
<b>Motor Power (kW):</b>	5.5 / 6.6 (IE2, IP55)																				
<b>Motor Speed (RPM):</b>	1440/1700																				
<b>Noise Level (dB A):</b>	Less than 80 at 1.5 Meter distance																				
<b>Inlet / Outlet connection:</b>	2" / 2"																				
<b>Oil Filling:</b>	5 Ltrs																				
<b>Cooling Method:</b>	Air Cooled																				
<b>Weight (Kg):</b>	Around 140																				
<b>Revisions:</b>  <b>Refer to record of revisions:</b>		<b>Prepared:</b> K. SANGEETHA	<b>Approved:</b> RAVI J	<b>Date:</b> 05.05.2021																	

TD-106-1 Rev No. 5	Form No.		<h1 style="text-align: center;">PRODUCT STANDARD</h1> <h2 style="text-align: center;">SWITCHGEAR</h2> <h3 style="text-align: center;">HYDERABAD</h3>		<b>Product STD NO.</b>	<b>SG 80001</b>
					Rev No 00	
					Page 2 of 3	
<div style="display: flex;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding: 5px; font-size: 0.8em;">           COPYRIGHT AND CONFIDENTIAL            The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED,            It must not be used directly or indirectly in any way detrimental to the interest of the company.         </div> <div style="flex-grow: 1; padding: 10px;"> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>Above equipment should be supplied with all accessories for full installation and operation in ready to use condition with our existing PSA setup.</li> <li>The equipment should comply with applicable safety standard. System shall have adequate and reliable safety interlocks/ devices to avoid damage to the equipment and/or avoid unsafe condition for the operator due the malfunctioning or mistakes. Rigid and stable structure to support all components and unit to be equipped with anti-vibration pads to absorb vibration.</li> <li>List of recommended spares, if any shall be provided by manufacturer.</li> </ol> <p><b>3. Quality assurance Inspection and Testing Requirement:</b></p> <ol style="list-style-type: none"> <li>QP to be furnished by manufacturer as per their standard practices (Optional).</li> <li>Test report / certificates to be furnished by the manufacturer.</li> <li>COC to be furnished by the manufacturer (for catalogue items)</li> </ol> <p><b>4. Painting, Conservation and Packing:</b></p> <p>Cleaning, painting conservations and packing shall be as per manufacturer standard practices. Finish Paint colour – preferably Epoxy Siemens Grey.</p> <p><b>5. Warranty:</b></p> <p>The equipment is provided with warranty against faulty / defective material / workmanship/ manufacturing defects for 18 months from the date of dispatch or 12 months from the date of commissioning whichever is earlier.</p> <p><b>6. Documents Required:</b></p> <p>Following documents and drawings shall be furnished by manufacturer:</p> <ul style="list-style-type: none"> <li>• Make and Model and Schematic Arrangement drawing</li> <li>• GA drawings including weight and dimensions.</li> <li>• Technical Datasheet</li> <li>• Foundation skid details.</li> <li>• Bill of Materials</li> <li>• O&amp;M manuals with cross section dimensional drawings, QAP, datasheet, performance certificates, test certificates, catalogue, List of spares, Lubrication schedule etc.</li> <li>• Erection Manuals</li> <li>• List of Recommended spares for 2 years of trouble free operation.</li> </ul> </div> </div>						
<b>Revisions:</b>  <b>Refer to record of revisions:</b>			<b>Prepared:</b> K. SANGEETHA	<b>Approved:</b> RAVI J	<b>Date:</b> 05.05.2021	

**Date:**  
**05.05.2021**