

## Technical Specifications

DESCRIPTIONS/SPECIFICATIONS		<u>STATEMENT OF COMPLIANCE</u> (State "Comply or not Comply" for each item description and specifications and attach your company shop/drawing and or brochures / and or Literatures)
PR No. 16-02-08-030: 1 Lot Supply, Delivery, Installation and Commissioning of 3 Units Modular Type Booster Motor-Pump Assembly and Accessories.		
<b>A. BALULANG BOOSTER</b>		
<i>A.1 Bulua Line:</i>		
<b>1. Pump</b>	<b>One (1) Unit Submersible Pump (same brand as existing)</b> Capacity : 360 m <sup>3</sup> /hr (1,584 GPM) TDH : 91 meters No. of Stages : 2 stages (minimum) Efficiency : 70% (minimum)	
	<u><b>Material Construction:</b></u> Intermediate Bowls : Cast iron Impellers : Silicon Bronze Bowl Shaft : Stainless Motor Coupling : Stainless steel Motor Mounting Bolts : Stainless Cable Guard : Stainless Suction Screen : Stainless Suitable for 200Hp, 8" Motor Diameter	
<b>2. Motor</b>	<b>One (1) Unit Submersible Deep well Motor (same brand as existing)</b> Power Rating : 200Hp Voltage Ratings : 460 VAC, 60Hz, 3450 rpm	
	<u><b>Construction Type</b></u> Stator Shell : 300 Stainless Steel Series Stator Ends : Carbon steel Bushing : Bronze Shaft Mechanical seal : Sand Fighter Seal System Mechanical seal rubber Components: Nitrile UL Insulation Class Rating: Class F	

	<p><b>Motor Ambient temp</b> : 75 Deg. C</p>	
	<p><b><u>Design Features</u></b> : Double Flange NEMA mounting design</p> <p>: high capacity kings burry type water lubricated thrust bearing</p> <p>: external sand slinger on shaft</p> <p>: copper bar rotor</p> <p>:Variable Frequency Drive (VFD) approved</p>	
<p><b>3. VFD Controller</b></p>	<p><b>One (1) Unit Variable Frequency Drive Controller with Double Door Panel board</b></p> <p><b>Dimension</b> : Same brand as existing</p> <p><b>Power Rating</b> : 200Hp</p> <p><b>Mains Voltage</b> : 380-480 VAC (+/- 10%)</p> <p><b>Supply Frequency</b> : 60 Hz (+4/-6 %)</p> <p><b>Filter</b> : Built-in RFI Filter</p> <p><b>Max. Ambient Temp.</b> : 50 deg. C</p> <p><b>Displays (LCP)</b> : Graphical Local Control Panel w/ Four (4) functional groups;</p> <ol style="list-style-type: none"> <li>1. Graphical display w/ status lines</li> <li>2. Menu Bar &amp; indicator lights-LED's (selecting mode, changing parameters, &amp; switching between display functions)</li> <li>3. Navigation Keys &amp; Indicator lights (LED's)</li> <li>4. Graphical Keys &amp; Indicator Lights (LED's)</li> </ol> <p><b>Protective Features</b> : Shall have input surge protections</p> <p>: shall have circuitry to detect phase imbalance &amp; phase loss</p> <p>: dry run protection</p> <p>: low flow detection</p> <p>: sleep mode</p> <p>: real time clock</p> <p>: password protection</p> <p>: overload protection</p> <p><b>Additional Components:</b> Transient Voltage Surge Suppressor</p>	
<p><b>4. 1 Set</b></p>	<p><b>Pressure Transmitter</b></p> <p><b>Output Signal</b> : 4-20mA</p> <p><b>Measuring Range</b> : 0-16 bars</p> <p><b>Ambient Temp.</b> : -40 to + 85 deg. C</p> <p><b>Enclosure</b> : IP67</p>	

	<b>Material</b> : enclosure & wetted parts are acid resistant stainless steel (AISI 316L) <b>Burst Pressure</b> : >6 x FS (max. 2000 bar)	
<b>5. 1 Lot</b>	Stainless Steel Pipe 14"Øx 12 ft long for Flow Sleeve Inducer for Horizontal installation complete with stainless steel mating flange, fabricated rollers and other fabricated bell reducers to adopt to the existing piping line, and with sets of bolts, nuts, flat and lock washers.	
<b>6. 1 Lot</b>	Horizontal Check Valve with counter weight, 10"Ø complete with sets of bolts, nuts, flat and lock washers.	
<b>7. 2 Pcs</b>	Gate Valve flange type, rising stem, 10"Ø complete with counter flanges, sets of bolts, flat and lock washers.	
<b>8. 1 Lot</b>	Supply of Pressure Gauge, 4"Ø, liquid filled & Pressure switch 0-200 psi rating.	
<b>9. 1 Lot</b>	Supply of labor, tools, equipment for the complete installation of pump, motor, controller, gate valves and check valve and restoration of pipe support (gate valves and check valve same brand as existing).	
<b>10. 1 Lot</b>	Supply of appropriate length of cable wire including connectors.	
<b>A.2 Carmen Line:</b>		
<b>1. Pump</b>	<b>One (1) Unit Submersible Pump (same brand as existing)</b> <b>Capacity</b> : 338 m3/hr (1,488 GPM) <b>TDH</b> : 50meters <b>No. of Stages</b> : 2 stages (minimum) <b>Efficiency</b> : 70% (minimum)	
	<u><b>Material Construction</b></u> <b>Intermediate Bowls</b> : Cast iron <b>Impellers</b> : Silicon Bronze <b>Bowl Shaft</b> : Stainless <b>Motor Coupling</b> : Stainless steel <b>Motor Mounting Bolts</b> : Stainless <b>Cable Guard</b> : Stainless <b>Suction Screen</b> : Stainless <b>Suitable for 100Hp, 8" Motor Diameter</b>	
<b>2. Motor</b>	<b>One (1) Unit Submersible Deep well Motor (same brand as existing)</b> <b>Power Rating</b> : 100Hp <b>Voltage Ratings</b> : 460 VAC, 60Hz, 3450 rpm	
	<u><b>Construction Type</b></u> <b>Component</b> : 300 Stainless Steel Shell	

	<p><b>UL insulation class rating:</b> Class F</p> <p><b>Motor Ambient temp</b> : 75 Deg. C</p> <p><b>Design Features</b> : Double Flange NEMA standard design : high capacity kings burry type water lubricated thrust bearing : external sand slinger on shaft : copper bar rotor : Variable Frequency Drive (VFD) approved</p>	
<p><b>3. VFD Controller</b></p>	<p><b>One (1) Unit Variable Frequency Drive Controller with Double Door Panel board</b></p> <p><b>Dimension</b> : Same as existing</p> <p><b>Power Rating</b> : 100Hp</p> <p><b>Mains Voltage</b> : 380-480 VAC (+/- 10%)</p> <p><b>Filter</b> : Built-in RFI Filter</p> <p><b>Max. Ambient Temp.</b> : 50 deg. C</p> <p><b>Displays (LCP)</b> : Graphical Local Control Panel w/ Four (4) functional groups;</p> <ol style="list-style-type: none"> <li>1. Graphical display w/ status lines</li> <li>2. Menu Bar &amp; indicator lights-LED's (selecting mode, changing parameters, &amp; switching between display functions)</li> <li>3. Navigation Keys &amp; Indicator lights (LED's)</li> <li>4. Graphical Keys &amp; Indicator Lights (LED's)</li> </ol> <p><b>Protective Features</b> : Shall have input surge protections : shall have circuitry to detect phase imbalance &amp; phase loss : dry run protection : low flow detection : sleep mode : real time clock : password protection : overload protection</p> <p><b>Additional Components:</b> Transient Voltage Surge Suppressor</p>	
<p><b>4. 1 Set</b></p>	<p><b>Pressure transmitter</b></p> <p><b>Output Signal</b> : 4-20mA</p> <p><b>Measuring Range</b> : 0-16 bars</p> <p><b>Ambient Temp.</b> : -40 to + 85 deg. C</p> <p><b>Enclosure</b> : IP67</p> <p><b>Material</b> : enclosure &amp; wetted parts are acid resistant stainless steel (AISI 316L)</p>	

	<b>Burst Pressure</b> : >6 x FS (max. 2000 bar)	
<b>5. 1 Lot</b>	Supply of Stainless Steel Pipe 14"Øx 12 ft long for Flow Inducer Sleeve for Horizontal installation complete with stainless steel matting flange, fabricated rollers and other fabricated bell reducers to adopt to the existing piping line, and sets of bolts, nuts, flat and lock washers.	
<b>6. 1 Lot</b>	Horizontal Check Valve with counter weight, 8"Øcomplete with sets of bolts, nuts, flat and lock washers.	
<b>7. 2 Pcs</b>	Gate Valve flange type, rising stem , 8"Øcomplete with counter flanges, sets of bolts, flat and lock washers.	
<b>8. 1 Lot</b>	Supply of Pressure Gauge, 4" Ø, liquid filled & Pressure switch 0-200 psi rating.	
<b>9. 1 Lot</b>	Supply of labor, tools, equipment for the complete installation of pump, motor, controller, gate valves and check valve and restoration of pipe support (gate valves and check valve same as existing).	
<b>10. 1 Lot</b>	Supply of appropriate length of cable wire including connectors.	
<b>B. BUGO BOOSTER</b>		
<b>1. Pump</b>	<p><b>One (1) Unit Submersible Pump (same brand as existing)</b></p> <p><b>Capacity</b> : 378 cu. m./hr.</p> <p><b>DH</b> : 63 m.</p> <p><b>No. of Stages</b> : 2 stages (minimum)</p> <p><b>Efficiency</b> : 70% (minimum)</p> <p><b><u>Material Construction:</u></b></p> <p><b>Intermediate Bowls</b> : Cast iron</p> <p><b>Impellers</b> : Silicon Bronze</p> <p><b>Bowl Shaft</b> : Stainless</p> <p><b>Motor Coupling</b> : Stainless steel</p> <p><b>Motor Mounting Bolts</b> : Stainless</p> <p><b>Cable Guard</b> : Stainless</p> <p><b>Suction Screen</b> : Stainless</p> <p><b>Suitable for 150Hp, 8" Motor Diameter.</b></p>	
<b>2. Motor</b>	<p><b>One (1) Unit Submersible Deep well Motor (same brand as existing)</b></p> <p><b>Power Rating</b> : 150Hp</p> <p><b>Voltage Ratings</b> : 460 VAC, 60Hz, 3450 rpm</p> <p><b><u>Construction type</u></b></p> <p><b>Component</b> : 300 Stainless Steel Shell</p> <p><b>UL insulation class rating:</b> Class F</p>	

	<p><b>Motor Ambient temp.</b> : 75 Deg. C</p> <p><b>Shaft Mechanical Seal</b> : Sand Fighter Seal System</p> <p><b>Design Features:</b> : Double Flange NEMA standard design  : high capacity kings burry type water lubricated thrust bearing  : external sand slinger on shaft  : copper bar rotor  : Variable Frequency Drive (VFD) approved</p>	
<p><b>3. VFD Controller</b></p>	<p><b>One (1) Unit Variable Frequency Drive Controller with Double Door Panel board</b></p> <p><b>Dimension</b> : same as existing</p> <p><b>Power Rating</b> : 150Hp</p> <p><b>Mains Voltage</b> : 380-480 VAC (+/- 10%)</p> <p><b>Supply Frequency</b> : 60 Hz (+4/-6 %)</p> <p><b>Filter</b> : Built-in RFI Filter</p> <p><b>Max. Ambient Temp.</b> : 50 deg. C</p> <p><b>Displays (LCP)</b> : Graphical Local Control Panel w/ Four (4) functional groups;</p> <ol style="list-style-type: none"> <li>1. Graphical display w/ status lines</li> <li>2. Menu Bar &amp; indicator lights-LED's (selecting mode, changing parameters, &amp; switching between display functions)</li> <li>3. Navigation Keys &amp; Indicator lights (LED's)</li> <li>4. Graphical Keys &amp; Indicator Lights (LED's)</li> </ol> <p><b>Protective Features</b> : Shall have input surge protections  : shall have circuitry to detect phase imbalance &amp; phase loss  : dry run protection  : low flow detection  : sleep mode  : real time clock  : password protection  : overload protection</p> <p><b>Additional Components:</b> Transient Voltage Surge Suppressor</p>	
<p><b>4. 1 Set</b></p>	<p><b>Pressure transmitter</b></p> <p><b>Output Signal</b> : 4-20mA</p> <p><b>Measuring Range</b> : 0-16 bars</p> <p><b>Ambient Temp.</b> : -40 to + 85 deg. C</p> <p><b>Enclosure</b> : IP67</p> <p><b>Material</b> : enclosure &amp; wetted parts are acid</p>	

	resistant stainless steel (AISI 316L) <b>Burst Pressure</b> : >6 x FS (max. 2000 bar)	
<b>5. 1 Lot</b>	Supply of Stainless Steel Pipe 14"Øx 12 ft long for Flow Sleeve Inducer complete with Stainless Steel matting flange, fabricated rollers and other fabricated bell reducers to adopt to existing pipe and complete with sets of bolts, nuts, flat and lock washers.	
<b>6. 1 Lot</b>	Horizontal Check Valve with counter weight, 10"Øcomplete with sets of bolts, nuts, flat and lock washers.	
<b>7. 2 Pcs</b>	Gate Valve flange type, rising stem, 10"Øcomplete with counter flanges, sets of bolts, flat and lock washers.	
<b>8. 1 Lot</b>	Supply of Pressure Gauge, 4"Ø, liquid filled & Pressure switch 0-200 psi rating.	
<b>9. 1 Lot</b>	Supply of labor, tools, equipment for the complete installation of pump, motor, controller, gate valves and check valve and restoration of pipe support (gate valves and check valve same as existing).	
<b>10. 1 Lot</b>	Supply of appropriate length of cable wires.	

