Triflo International ES 500

Maintenance & Operation Manual for Triflo ES 500

**** Before Setting Up or Starting Unit make sure all Safety and Environmental Rules and Regulations are in Compliance and all personal have the required Personal Protection Equipment.

**** Before entering any tanks be sure all Confined Space Procedures, Training, PPE and Equipment are in place and in compliance.

****The ES 500 is manufactured in an Explosion Proof and a Non Explosion Proof Version.

NEVER USE THE NON-XP VERSION IN A CLASSIFIED AREA.

****High voltage is present, follow De-energize and Lock Out/Tag Out procedures before maintaining or working on any equipment.

Set Up

1. Shore and Level Tank.
2. Mark where Underground Utilities are located.
3. Connect Ground Lug to Customers Source or Stake Ground Rod in accordance to applicable Local Electrical Codes and/or NEC.
4. Connection of Main Line Electrical:
    - 4.1 Should only be performed by trained electricians within compliance of applicable Local Electrical Codes and/or the NEC
    - 4.2 Connect only to an opened circuit disconnect panel (fused or breaker) with over amperage protection. Refer to: 8. Electrical Power
    - 4.3 Follow all Lock Out /Tag Out, Connection of Power in a Hazardous Location and De-energizing Procedures

5 Setting Up Tank:
- 5.1 Assemble walk-ways, hand rails and slides
- 5.2 Remove shipping tie downs from shakers
- 5.3 Open Mud Gun Valve Handles (G-1, G-2 & G-3)
- 5.4 Close and tighten dump gates
- 5.5 Connect discharge line from Charge Pump back to Storage or Active Mud Tank
- 5.6 Connect a hose to the Inlet of Scalping Shaker from the delivery pump

6 Solids Control Equipment on ES 500:
- 6.1 146 Scalping Shakers (primary flow or first stage) over first tank compartment. Screen sizes can range from 10-40 mesh (2000-420um)
- 6.2 10-4” De-silter with 146 Shaker (removes fine sands to coarse silts) over second tank compartment. Screen sizes can range from 80-120 mesh (177-125um)
- 6.3 30-2” Clay Ejector with 146 Shaker (removes coarse to fine silts) over third compartment. Screen sizes can range from 140-325 mesh (105-44um)

7 Pumps:
- 7.1 10-4” Mud Cleaner 4x3 250 Mechanical Seal 40hp 460V 3ph 60Hz 1780rpm 11” Impeller.

7.2 30-2" Clay Ejector 4x3 250 Mechanical Seal 40hp 460V 3ph 60Hz 1780rpm 11" Impeller.

7.3 Charge 4x3 250 Mechanical Seal 30hp 460V 3ph 60Hz 1780rpm 10.375"Impeller.

8 Electrical Power:

8.1 480V, 3ph, 60Hz, 150Amp Mainline Breaker, 100kW Generator Power.

8.2 380-415V 3ph, 50Hz, 175Amp Mainline Breaker, 125kW Generator Power.

8.3 Minimal Wire Size for 60 Hz 1/0awg 3c w/ Ground and Neutral and for 50Hz 2/0 3c w/ Ground and Neutral, larger if length from generator or power source it Main Control Panel is longer than 50'.

9 Checking Rotation:

9.1 If this is the first time to start the ES 500 on a new power source, check phase sequence on control panel. Red light an indication of incorrect rotation and will disable the panel from any operations. Refer to: Set Up 4. Connection of Main Line Electrical. Open circuit, de-energize power source, lock out tag out, and switch any two of the main line wires.

9.2 Green light is an indication of correct rotation.

9.3 The correct rotation is also checked by removing the counter weight covers on the vibratory motor. The counter weights should rotate with top side of weight toward the discharge end.

9.4 The impellers are threaded on pump shafts, so the wrong rotation could un-thread impeller from the shaft and cause severe damage. Motor should be decoupled from pump and checked individually for correct rotation.

9.5 If an electric motor is changed on pumps, it is always safe practice not to couple pump with motor until rotation has been checked.

9.6 Electrical Motors rotate clockwise looking at fan end, counter clockwise from shaft end. (Unless pump discharge flange is reversed in which case the reverse rotation would be necessary)

9.7 Pumps will have an arrow to indicate direction of rotation on body of pump.

Start Up Procedures

****Make sure that no personal or material is close to moving parts (rotating shafts or vibrating decks).

**** NEVER START PUMPS WITHOUT FLUIDS PRESENT.

The Lack of fluid will Damage Mechanical Seals in Pumps. The Pump's Volute should be flooded before start up. All Electrical Motors on the ES 500 are controlled from Main Control Panel: Refer to Flow Diagram Figure 2

10 Start Up Sequence:

10.1 Main Breaker/ ON

10.2 Lights/ON/ Electrical Panel

10.3 Open Suction Valves (S-1, S-2 & S-3)

10.4 Discharge Valves (D-1 & D-2)

10.5 Make sure Charge Hose is connected (both ends) one to (C-3) the other back to Reserve or Active Mud Tank

10.6 Open Mud Gun Line Valves (G-1, G-2 & G-3)

10.7 Open 10-4" and 30-2" Valves half open (P-1 & P-2)

10.8 Scalping Shaker/ ON/ Electrical Panel

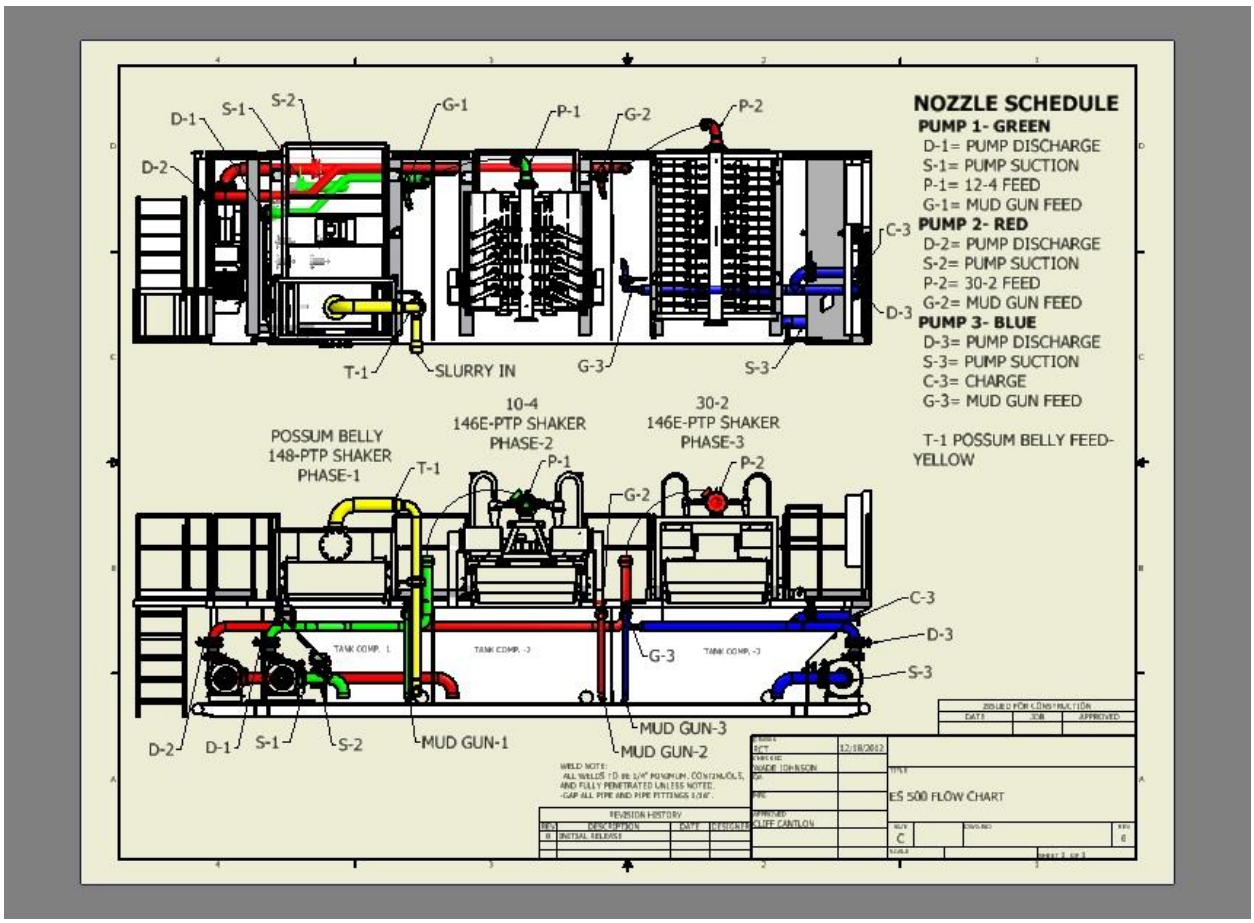
10.9 10-4" De-Silting Shaker/ ON/ Electrical Panel

10.10 30-2" Clay Ejector Shaker/ ON/ Electrical Panel

10.11 Inlet Valve 7/8 Closed Valve (T-1)

10.12 Pump supplying slurry / ON/

10.13 Control Flow on the Primary Scalping Shaker by Adjusting Valve (T-1)
10.14 When the level in Primary Scalping Compartment One is 75% full engage 10-4" Pump / ON/ Electrical Panel, regulate the pressure with Valve (P-1) to 22-25psi
10.15 When the level in 10-4" Compartment 2 is 75% full, engage 30-2" Pump / ON/ Electrical Panel, regulate the pressure with valve (P-2) to 25psi.
10.16 When the level in 30-2" Compartment 3 is 75% full, engage Charge Pump / ON/ Electrical Panel, regulate and maintain tanks level with valve (C-3).



Processing

Compartments are numbered in the sequence that the fluids or slurry enters the tank. Compartment 1 is the inlet under scalping shaker, number 2 under 10-4" M/C, number 3 is outlet under 30-2" Clay Ejector. When all pumps and shakers are running, the weirs between each compartment should let the slurry flow back from the third into the second and then back into the first. This will help further assist in the removal solids and enhance performance.
If the inlet and the outlet flow rate are near equal, the fluctuation in the flow balance is observed in the first compartment, under Scalping Shaker.

Tank Levels

11 Control of Tank Levels:

11.1 Tanks' Level are all equal and fluid level is rising, cut back on the incoming fluid, Valve (T-1) and or open up the discharge Valve (C-3).

11.2 Level in Compartment One is low, incoming fluid to slow and compartment Three is also low and is dropping, cut back on outlet Valve (C-3) to match flow rate.

11.3 Level in Compartment One is low and fluid in Compartment Two is flowing over weir wall open up Valve (T-1) slightly, try to maintain 50-75% tank level.

11.4 Level in Compartment One is rising, Compartment Two is low and before Compartment One is flowing fluid back into Compartment Two. Turn off Supply pump or Close Valve (T-1) Check the following:

- 11.4.1 Motor to (Pump-1) is NOT running: Refer to Trouble Shooting Electrical.
- 11.4.2 The Valve (P-1) on 10-4" is open, Pressure Gauge on 10-4" Manifold is NOT reading 22-25psi and Pump for 10-4" is running.
- 11.4.3 The pump might have an airlock; turn10-4" Pump/OFF/ Electrical Panel, wait until shaft stops spinning and try to re-start 10-4" Pump/ON/Electrical Panel.
- 11.4.4 If fluid level in the first compartment is over ¾ and still rising go through this procedure again.

11.5 Levels in Compartment One & Two are rising and before fluid starts to flow back into Compartment Three shut down the supply pump and or shut (Valve T-1). Check the following:

- 11.5.1 If the Motor to (Pump-2) is NOT running: Refer to Trouble Shooting Electrical.
- 11.5.2 Valve (P-2) on 30-2" is open, Manifold is NOT reading 22-25psi, and (Pump 2) pump is on. The pump might have an airlock.
- 11.5.3 Try to purge air out of (Pump 2) by restarting, turn 30-2" Pump/OFF/ Electrical Panel, wait until shaft stops spinning and try to re-start 30-2" Pump/ON/Electrical Panel.
- 11.5.4 If fluid level in the first compartment is over ¾ and still rising go through this procedure again.

11.6 Levels in All Compartments are on the rise and before unit overflows close Valve (T-1) and check the following.

- 11.6.1 Motor to Pump 3 is running try opening outlet Valve (C-3)
- 11.6.2 Fluid level has not lowered and Valve (C-3) is open, pump might have an airlock; turn Charge Pump/OFF/ Electrical Panel, wait until shaft stops spinning and try to re-start Charge Pump.
- 11.6.3 If the Motor to (Pump-3) is NOT running: Refer to Trouble Shooting Electrical.

11.7 In all the above cases where pump motors are running and there is not an airlock problem. Pump tank levels down and check for suction side restrictions.

- 11.7.1 Make sure there is flow back to Customer's reserve tank before re-opening Valve (T-1)

11.8 Level in Compartment Three is dropping an all pumps and equipment operating at correct pressures and flows, choke back on Valve (C-3).

Shutdown Sequence

During the shutdown sequence the tank levels for each compartment will start to lower as the inlet fluids are shut off. It is recommended to stop each pump when the suction plumbing is seen. This will make start up easier, avoid airlock and keep fluids in the pumps volutes, protecting the mechanical seal from running dry. If this shut down is the last before a move, then turn off pumps immediately when the suction side plumbing looses prime.

12 Shut Down Sequence:

12.1 Supply or Pit Pump, Turn off customers supply pump.

12.2 Close Valve (T-1)
12.3 10-4" Cleaner Pump, Turn/OFF/ Electrical Panel
12.4 Close Valve (G-1)
12.5 30-2" Clay Ejector Pump, Turn/OFF/ Electrical Panel
12.6 Close Valve (G-2)
12.7 Charge Pump, Turn /OFF/ Electrical Panel
12.8 Close Valve (C-3)
12.9 Close Valve (G-3)
12.10 While Shakers are still running clean off screen panels. Use water and soft brush. Any solids left on screened panel will cause blinding when placed back into service.
12.10.1 Scalping Shaker, Clean, Turn /OFF/ Electrical Panel
12.10.2 Mud Cleaner Shaker 10-4,Clean, Turn /OFF/ Electrical Panel
12.10.3 30-2" Clay Ejector, Clean, Turn /OFF/ Electrical Panel
12.11 Close Suction Valves (S-1, S-2)
12.12 Close Discharge Valves (D-1, D-2, D-3 & C-3)
12.13 Lights/OFF/ Electrical Panel
12.14 Main Breaker/OFF/ Customers Power Supply

Winterization

13 Because of so many variables the suggestion will reflect only generic conditions.
13.1 Light freeze lasting no more than 6 hours and unit is not operational.
13.1.1 Shut Down system as outlined in Section 12 Shut Down Sequence.
13.1.2 Suction Plumbing Valves (S-1, S-2 & S-3) are closed.
13.1.3 Open the ½" ball valves located on the pumps' case lower front, open, slightly open Valves (D-1, D-2 & D-3).
13.1.4 If this is an Environmentally Sensitive Area or Zero Discharge, thread in hose barbs, with hose long enough to reach past the end of skid and gravity drain to bucket or pan.
13.2 Light freeze under operating conditions, blanket all exposed headers, casings and plumbing.
13.3 Heavy freeze lasting for long durations and unit is not operational.
13.3.1 Empty all fluids and any solids from tank.
13.3.2 Shut Down system as outlined in Section 12 Shut Down Sequence.
13.3.3 Suction Plumbing Valves (S-1, S-2 & S-3) are closed.
13.3.4 Open the ½" ball valves located on the pumps' case lower front, open, slightly open Valves (D-1, D-2 & D-3).
13.3.5 If this is an Environmentally Sensitive Area or Zero Discharge, thread in hose barbs, with hose long enough to reach past the end of skid and gravity drain to bucket or pan.
13.3.6 Leave dump gates open slightly so not to accumulate water.
13.3.7 Cover to protect from elements all pumps, motors and electrical systems.
13.4 Heavy freeze under operating conditions, blanket with heat trace all exposed headers, casings, troughs and plumbing.
13.5 In extreme cold weather tarp in unit with source of heat.

****The conductive heat source must comply with all Zone or Classified Area Restrictions.

Screen Change

The screens used on the ES 500 are Pretensioned Panels (PTP) and are held in place by polyurethane wedges. Strike with mallet on "Flag" end toward the angled retainer to loosen and the opposite end to tighten.

**** Power down and Lock Out/Tag Out Starter before Performing any Maintenance or Screen Changes

**** Heavy Leather Gloves, Safety Glasses, Ear Protection and Head Protection are needed.

14 146E Scalping Shaker has three PTP Screens per Shaker deck. The screens location dictates the numerical sequence. The direction of flow where cuttings or slurry first enters onto deck is 1st screen, middle is 2nd and the screen at the end is 3rd. In order to change the 1st, screen numbers 2 and 3 need to be removed completely.

15 Removal of 146E PTP Screen Panels:

- 15.1 Remove the lock wedge as described in opening paragraph.
- 15.2 Remove panels toward end of discharge.
- 15.3 When the panels are removed, clean and inspect rubber seals on shaker deck

16 Installation of 146E PTP Screen Panels:

- 16.1 Clean and inspect rubber seal on shaker deck as well as bottom of panel.
- 16.2 Feed the panels from discharge end of shaker basket, toward the #1 position, then panels 2 & 3. Push back and center panel in basket, make sure that panels 1 & 3 have cleared over holding hooks and panels are tight to the back.
- 16.3 Place locking wedge blocks under retainers and strike firmly on the end, toward retainer. Alternate side to side to insure proper seal and even pressure.

Screen Selection

17 Screen to the flow or cut point, if screens are discharging wet, correct by the following:

- 17.1 Too much flow. Adjust the liquid or slurry by lowering the flow.
- 17.2 Slurry Solid Content is high, dilute, bring solids to liquid ratio to a manageable level.
- 17.3 Correct the underflow from hydro-cyclones by adjusting Apex nut and Bushing
- 17.4 Check for screen blinding (solids stuck in the screen opening or fibers wrapping and/or matting) Try using a smaller opening if blinding is apparent by going up to the next mesh size.
- 17.5 Last choice, screen to lower mesh, this will let more solids through that section and may interfere with the downstream equipment.
- 17.6 Suggested screen selection for each shaker:
  - 17.6.1 146E Scalping Shaker Suggested Screen Mesh: 10-60 mesh.
  - 17.6.2 10-4” 146E Shaker Suggested Screen Mesh: 80-120 mesh
  - 17.6.3 30-2” 146E Shaker Suggested Screen Mesh: 140-325 mesh

Equipment Operation

18 146E Scalping Shaker: Removes large debris to coarse sand, before fluids enter system.

- 18.1 All Slurry, Fluids and Water entering system must flow over the Scalping Shaker via Possum Belly.

20.2 The Possum Belly function is to de-accelerate and evenly spread the incoming flow onto the Shaker.

20.3 Scalping Shaker removes large debris to coarse sand.

20.4 Valve to control flow (T-1) is in place to help prevent flooding of shaker, but also controls tank levels.

20.5 The Supply pumps and hoses should have the capabilities for decreasing flows (even complete close down) by the use of the (T-1) butterfly valve without damage to pumps, hoses or plumbing.

20.6 Select a screen mesh in accordance with the desired flow and cake dryness.

20.7 Vibratory Motor on the 146E creates a High Speed Unbalanced Elliptical Motion.

20.8 Counter Weights inside of covers of Vibratory Motor are preset at Factory for the best frequency, aptitude and longevity. If these counter weights are adjusted, it will directly void warranty.

20.9 Maintenance and Electrical Schematics Vibratory Motor: Refer to Manual Vimarc Section.

20.10 Maintenance of 146E Shaker Deck: Refer to Manual146E Shaker Section.

21 10-4" De-Silter: Consists of 10 four inch Hydro-Cyclones attached to a common manifold with individual outlets and valves. The underflow from cone is collected in a trough which is directed onto a 4'x 6' drying shaker. The overflow is plumbed into individual tubes collected into a common trough and is deposited into the tank below: Figure 21

21.1 After starting 10-4" pump make sure the de-silting hydro-cyclones manifold pressure is up to 22-25psi. Adjust the 6" Valve (P-1) to the adequate pressure, this Valve is located at the front of 10-4" manifold
Check each Four Inch Hydro Cyclone and spray pattern coming out of underflow. If there is a heavy spray coming out of the cones underflow, tighten Apex Nut until spray has diminished.

21.2 Check the manifold for excessive or inadequate pressure

21.3 If spray pattern is unchanged, a piece of debris might have lodged in the Vortex Finder of hydro-cyclone. Close independent valve for that cone, disconnect the Victaulic Clamp at the connection to Victaulic BF Valve, rotate port around for visual inspection and check the inside of cone. Rotate back to original position and reinstall gasket and clamp. Open valve, check spray

21.4 If no change, check the Apex Bushing by removing Apex Nut completely, remove Apex Bushing inspect for any debris or a clogged opening. Clean, reinstall Apex Bushing (flat side up and bevel side down) re-thread Apex Nut

21.5 Whenever the Apex Nut and Bushing are removed check cone bottom for excessive wear. A dip above or very little shoulder where Apex Bushing seals into cone bottom is an indication of wear.

21.6 If hydro-cyclone is reverberating or no solids/fluids are coming out, there is something stuck in the bottom of cone and solids are building up. Try turning the individual valve for that cone closed and then open to see if that improves

performance, if still shaking, close valve for that cone, take off Apex Nut completely, pull out Apex bushing and try fluctuating valve (open, closed, open, closed).

21.7 If debris is not dislodged, the cone bottom must be cleaned, by sticking a thin rod into the bottom. In case solids are still packed in the bottom of cone, the bottom section will need to be disassembled and the solid cleaned out. Shut valve for that cone, remove Stainless Steel Band, locate at the connection between Vortex Finder and Cone Bottom, and take off Cone Bottom, clean solids from inside. Reinstall cone bottom, band, open valve and check for leaks. If pressure is good, cone is not plugged; no excessive wear and no solids are coming out. Check bottom of cone for vacuum, if vacuum is present there are no solids to discharge.

21.8 The 4" cone assembly has the capability of fine tuning, by lifting the Siphon Rod up or down to control the vacuum break which will in turn affect the vacuum inside the cone. Up will lessen and down will increase vacuum. The Siphon Rod is located on the on the opposite side of hydro-cyclones overflow tubing, ("Candy Cane")

22 30-2” Clay Ejector: Consists of 30 two inch Hydro-Cyclones attached to a common manifold with individual outlets and valves. The underflow from cone is collected in a trough which is directed onto a 146 drying shaker. The overflow is plumbed into individual tubes collected into a common trough and is deposited into the tank below.

22.1 After starting 30-2” pump make sure the Clay Ejector hydro-cyclones manifold pressure is up to 22-25psi. Adjust the 6” Valve (P-2) to the adequate pressure. This Valve is located at the front of 30-2” manifold.

22.2 .Check each cone for consistent spray pattern coming out of underflow. If there is a heavy spray coming out of the cones underflow (bottom of cone) check the manifold for excessive or inadequate pressure.

22.3 If spray pattern is unchanged, a piece of debris might have lodged in the Vortex Finder of hydro-cyclone. Close independent valve for that cone, disconnect the Victaulic Clamp at the connection to Victaulic BF Valve, rotate port around for visual inspection and check the inside of cone. Rotate back to original position and reinstall gasket and clamp. Open valve, check spray

22.4 If no change check the cone bottom by removing completely. The bottom section of the 2” cone is threaded onto the Vortex Finder. Un-thread cone bottom remove and inspect for any debris, the opening in the bottom is .200”. So even a fleck of rust or harden slurry would inhibit flow and improper separation.

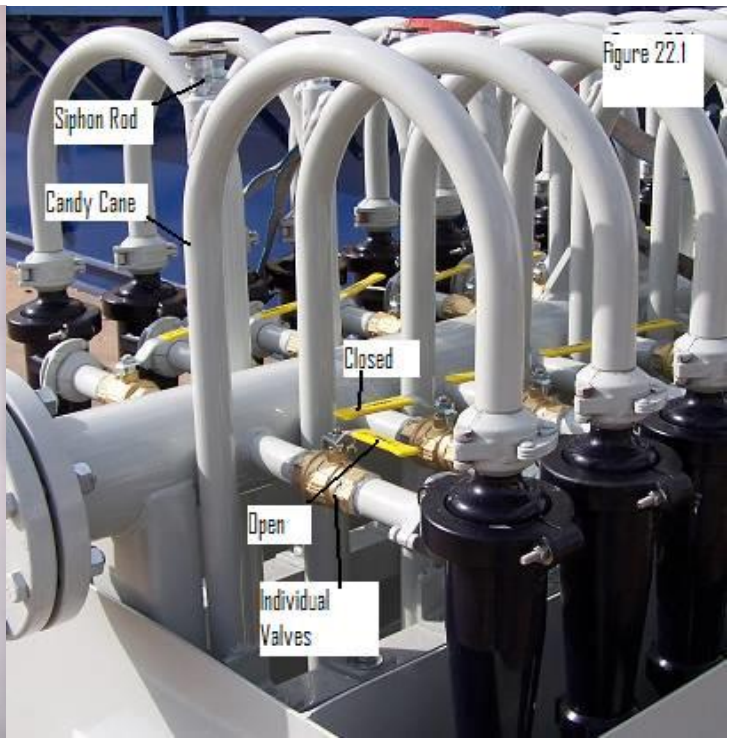
22.5 Whenever the cone bottom is removed check for excessive wear. A dip or indention in cone bottom will affect performance.

22.6 If hydro-cyclone is reverberating or there is no flow, something is stuck in the bottom of cone and solids are building up. Try turning the individual valve for that cone closed and then open to see if that improves performance, if still shaking, close valve for that cone, take off cone bottom completely and try fluctuating valve (open, closed, open, closed, open). Dislodge any solids build up by gently tapping the unthreaded cone bottom on hard surface.

22.7 Reinstall cone bottom, open valve and check for leaks.

22.8 If pressure is good, cone is not plugged; no Excessive wear and no solids are coming out. Check bottom of cone for vacuum, if vacuum is present there are no solids to discharge.

22.9 The 2” cone assembly has the capability of fine tuning, by lifting the Siphon Rod up or down to control the vacuum break which will in turn affect the vacuum inside the cone. Up will lessen and down will increase vacuum. The Siphon Rod is located on the on the opposite side of hydro-cyclones overflow tubing, (“Candy Cane”)



Equipment Maintenance

23 Lubrication and Maintenance: Listed below is a short overview of the required maintenance. All components will have a separate manual which will cover maintenance, lubrication, parts breakdown, schematics and trouble shooting.

****Before working on any machinery make sure that Lock Out/ Tag Out procedures are followed.

23.1 Pumps: are greased for the first year. After the first year the bearing should be greased or changed to an oil bath. Grease with a high quality EP #2 (Exxon Unirex N2) grease as manufacture specifications. *It is the techs opinion that five shot per zert every other month in a 24 hour operation and change to oil bath after the first year.

23.2 Electrical Motors: Are greased for the first year. 27g of Polynex EM103 Exxon or equivalent should used after that time period. Greased as per manufactures specifications: Refer to Electrical Motor Manual.

23.3 Vimarc Vibratory Motors: The vibratory motors are greased for the life of the motor. Refer to Vimarc Manual.

23.3.1 The bolts that hold motor to motor mount should be re-torqued after the first two weeks and re-checked every 3 weeks to 285 foot pounds

23.3.2 If a tapping noise is noticed, re-torque all motor mount bolts.

23.3.3 Side plate bolts should also be check and re-torque at the same intervals. They are located where the motor mount mates to the side of shaker basket.

23.3.4 For torque sequence and value: Refer to Triflo 146E Manual

Electrical:

24 This is a brief trouble shooting guideline and description of the Electrical components refer to the individual equipment manuals for schematics, full load amperage, high/low voltage connections, hertz deviation,

****De-energize the entire system and disconnect power before any attempt to open panel or work on any electrical systems or wiring. Only a Trained Electrician operating in compliance with the NEC, Local Electrical Codes, Hazardous Location (if applicable) and Lock Out/ Tag Out Procedures and with approval of Site Specific (supervisor) per Location.

24.1 Pump Motors have the following electrical components: Breaker, Contactor, Overload, OFF/ON Hand Operators and Run Lights. This equipment is located in the Central Control Panel: Refer to Electrical Schematics ES 500.

- 24.1.1 If an overload should trip right at the start up of motor it might be because of a rapid start/stop/start, causing a spike of amperage draw. Reset button on overload and try to start motor.
- 24.1.2 A breaker that trips in the middle of a run situation needs further investigation.
- 24.1.3 If a breaker should trip upon start-up, this is an indication of a possible direct short in motor, wiring or arked contactor. Shut off all Electricity until the problem is resolved.
- 24.1.4 All Pump Motors are wired to Manufactures Delta configuration for High Voltage: Refer to Motor Manual
- 24.1.5 The most important part of any motor is the name plate. Check the data on the plate before any connection.

24.2 Shakers have the following electrical components: Breaker, Contactor, Overload and OFF/ON Hand Operators. This equipment is located in the Central Control Panel: Refer to Electrical Schematics ES 500

- 24.2.1 If the overload should trip right at the start up of the vibratory motor it might be caused by a rapid start/stop/start causing a spike of amperage draw. Reset button on overload and try to start motor.

- 24.2.2 A breaker that trips in the middle of a run situation needs further investigation. Some times a small piece of wire may break off inside the junction box, located on the top of vibratory motor and moves around. A wire may break causing a single phase condition. Do not re-set breaker without further investigation.
- 24.2.3 Vibratory Motors are wired to Manufactures delta configuration for high Voltage: Refer to Vimarc Motor Manual
- 24.2.4 The most important part of any motor is the name plate. Check the data on the plate before making any connection.

24.3 Lighting Circuits have the following electrical components: Breaker, Contactor and OFF/ON Hand Operators:

Agitation

25 Each Compartment has a mud gun (slurry jet) that is located a few inches off the bottom. The jets are directed to cause a whirlpool affect keeping solids in suspension. These “mud guns” are jetted with the same fluid that is being pumped away for that compartment.

25.1 Compartment One jet is supplied by pump 1 and is controlled by Valve (G-1)

25.2 Compartment Two jet is supplied by pump 2 and is controlled by Valve (G-2)

25.3 Compartment Three jet is supplied by pump 3 and is controlled by Valve (G-3)