SITETEC
HDD EQUIPMENT

Molenvliet 28
3961 MV Wijk bij Duurstede
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Unit Manual

R1000E recycling unit

First of all we like to thank you for purchasing this recycling unit and hope it will be of complete satisfaction to you. This product is built to perform, easy to maintain and is user friendly. To insure a long lifetime of this quality product we would like your attention for this maintenance- and operating manual. Please keep it near the mixing unit at all times so it can be of help.

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OPERATING MANUAL

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1.1 MOBILISATION

In most cases a 40 ton crane will be enough to mobilize this recycling unit.
Prior to lifting the recycling unit a few checks must be made:

1. Check if all stored articles inside the recycling unit are securely tied down
2. Make sure the shaker is completely turned down.
3. Install the walk around before lifting the unit.
4. Open all suction valves.

When all this is done, you can hook up the lifting chains.

NEVER:

1. Stand or walk underneath the load
2. Use chains that are too short, to light, or have uneven lengths
3. Use uncertified lifting equipment

Use a rope, tied to the unit to steer and/or turn the unit when it is lifted.

1.2 PLACING THE RECYCLING UNIT ON SITE

Before you place your recycling unit on its site location:

1. Place a sheet of 8x4 meters of oil resistant plastic foil on the location of the recycling unit
2. Place 4 drag line boards each at least 6 meter long with approx. 0.5 mtr. Space between another horizontally, well supported by solid soil, on top of the plastic foil. If you decide not to use the plastic foil
3. Always use drag line boards or something similar placed horizontally to give the recycling unit its full support. Place the recycling unit as close to the mud mix tank and mud pit as possible.
4. You can decide to dig a solid collecting pit aside the unit, under the outlet of the shakers.

For the right location of the R1000EL you have several options:

1. Entry or exit side.
2. On top of the mix unit with use of the twist lock corner block connectors.
3. On top of the storage container ST2500E use of the twist lock corner block connectors.

When all this is done you can hook on the lifting chains.

Now the connections have to be made:

1. mud-in: 6” Perrot
2. mud outlet : 2x 4” Perrot
3. power supply 400 volt 50 Hertz
4. power outlet to pitpump

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Installed power:
1x 45 kW Circulation pump
2x 1.6 kW Vibration motors
4x 220 volt light
1x 7 kW Transfer pump
1x 7 kW Pitpump

1.3 OVERALL CHECK OF THE RECYCLING UNIT

Before you can start recycling there are several checks to be made:

1. Re-tighten vibrator bolts, up to 350 Nm after the first 8 hours of running the unit.
2. Check for debris in the recycling tank
3. Put 2 pump strokes of high quality bearing grease on all nipples on the AMTEQ pumps.
4. Check if all electrical cables and wires are still in good condition, repair if necessary.
5. Check, overall, for any damaged or loose parts and repair if needed.
6. Check all guards.
7. Check the tank for cracks.
8. Check shaker screens for cracks, holes and/or bold spots. Replace if necessary.
9. Check screen tension on all shakers.
10. Check air pressure in air bladders must by between 5.5 and 6 bar.

1.4 CAPACITY PARAMETERS

This unit is capable of cleaning 1000 ltr/min Drill fluid with:

1. 20% solids (sand content)
2. 60/80 sec viscosity
3. 7 Ph
4. 1.2 (Gram/Cc)
5. none polymers
6. none chemicals

NOTE:
If one of these parameters is higher, you have to keep in mind that this will have a negative effect on the capacity of the unit.
Adding fresh water is a simple and good solution. To trim down specific weight, viscosity or sand content.

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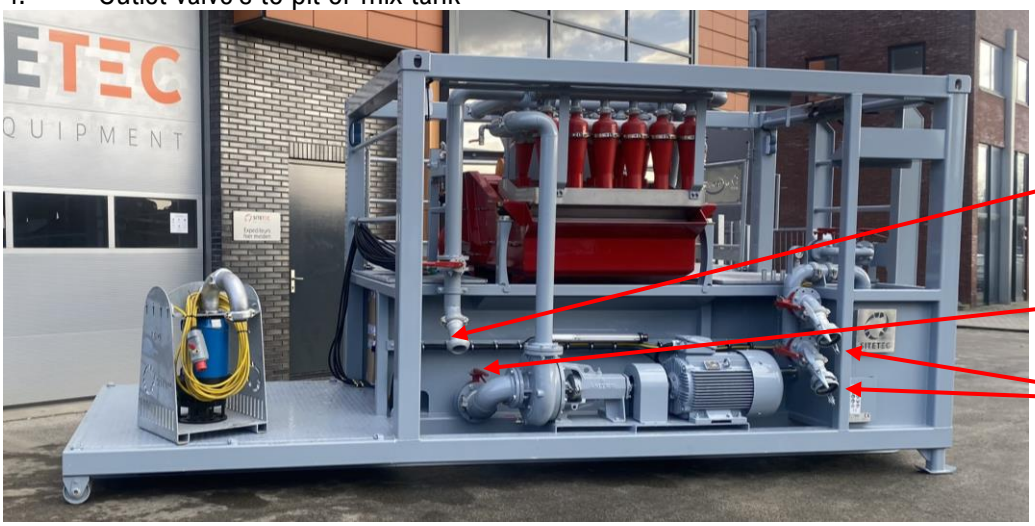
2.1 VALVE SCHEDULE

1. Drill fluid inlet valve
2. Tank drain valves
3. Suction valve pump
4. Outlet valve's to pit or mix tank



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2.2 CHECK BEFORE STARTING THE RECYCLING UNIT

Before starting the recycling unit you must do a quick check of all components of the unit:

1. Check the pumps: - fluid levels
   - debris plugging suction pipes inside the tank
2. Check if the suction valves are open.

2.3 STARTING THE RECYCLING UNIT

First make your self-acquainted with the valve schedule.

1. To start the recycling unit, start the shakers by pushing the green buttons on the control panel.
2. Check if the shakers are running steady.
3. Now you can start filling up the tank with dirty mud out of the mud pit trough the inlet valve nr.1.
4. Fill the tank up to 90% and then close the inlet valve nr.1 and start the AMTEQ circulation pumps.
5. Check if you have pressure on the pressure gauge on the manifolds above the shakers, if not, stop the pumps, wait about 10 seconds and start the up again. The pressure of the pump should now reach 2.5 - 3 bars.
6. After 5 min of recirculating in the unit you can open the outlet valves.
7. Now slowly open the inlet valve nr.1 again
8. If pitpump is plugged in, this will be controlled automatically by the floater switch.

NOTE:
If solids dropping from the shaker stay to wet, try to increase the shaker angle. Keep in mind the steeper the angle the more screen wear you will have.

2.4 OPERATING THE RECYCLING UNIT

When the recycling unit is in service the responsible mud man has to keep checking all items discussed in chapter 1.3 and 2.1 on a regular basis. Check for any leaks and check if any hydro cyclones are plugged.
And check the air pressure in the air bladders of the shakers must by between 5.5 and 6 bar.

Extra to that is checking sand-contents of the mud going into the unit and out of the unit: unacceptable sand contents in the mud going to your mixing unit, often means you have a torn screen or a plugged hydro cyclone. Maybe the capacity (solids and/or flow) that the pit pump is pumping is too much. Or the sand content is higher than 20%.

You must try to feed the unit with a constant flow of dirty mud, that way the unit will perform the best. Not more than 1000 ltr/min.

Do not continue running your recycling unit, until the problems are solved!!

The mixing system, mud pump and mud line will be seriously damaged by this!!

2.5 WORKING ON THE RECYCLING UNIT AND EXCHANGING PARTS

Before you start working on the unit, stop all items.
Before you start working on the pumps close all valves.
Before you start working disconnect power supply cable.

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REPLACING A SCREEN

Stop the pump, the shaker and the transfer pump.

To replace a screen,

1. Loosen all shaker screen tensioning bolts and pull out the screen, make sure you wear work gloves, new and used screens may have sharp edges.
2. When the screen has been removed clean out the shaker bed using a pressure washer.
3. Check if all u-rubber are on their place.
4. Carefully shove-in the new screen and push it in completely.
5. Make sure all rubbers are still in place.

NOTE:

It is very important that the foam stripping underneath the screen will seal on the shaker bed. Push the clamps into the shaker bed and tighten all bolts equally.

REPLACING A HYDROCYCLONE

Stop the pumps and the shakers.

To replace a hydro cyclone:

1. Undo the 4 bolts and/or the 2" victaulic clamps
2. Check if any debris plugs the in-and outlet, if not place the new cyclone on the flange and hold it onto the manifold with one or two bolts.
3. Now carefully place the victaulic rubber and grease the clamp on the inside it before mounting.
4. Place the remaining bolts and tighten them. A desilter hydro cyclone is the same only the bolts are another 2" victaulic clamp.

READ AMTEQ INSTRUCTION MANUAL TO REPLACE PARTS ON THE AMTEQ PUMPS

3.1 12 HOUR SHIFT MAINTENANCE

The maintenance on the recycling unit for a 12 hour shift is running through all the points discussed in chapter 1.3 thru 2.3.

3.2 24 HOUR SHIFT MAINTENANCE

The maintenance on the recycling unit for a 24 hour shift is running through all the points discussed in chapter 1.3 thru 2.3 at every change of shifts (2x in 24 hours).

3.3 WEEKLY MAINTENANCE

For weekly maintenance on the recycling unit the following activities are recommended:

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1. Check the unit as described in chapter 2.3 - 3.2.
2. Check the unit overall as described in chapter 1.3 and 2.1
3. Clean the unit
4. Grease all grease nipples on the AMTEQ pumps: see AMTEQ instruction manual before working on the pumps

3.4 MONTHLY MAINTENANCE

For monthly maintenance on the recycling unit the following activities are recommended:

1. Follow all the points described in weekly maintenance.
2. Remove guards from flexible tire drive couplings and check tire.
3. Mount guards if the condition of the tire is o.k.
4. Check impeller, seal plates and impeller housings for wear: see AMTEQ instruction manual before working on the pumps

3.5 3 MONTH MAINTENANCE

For 3 month maintenance on the recycling unit the following activities are recommended:

Follow all the points described in monthly maintenance

1. Check shaker airbladders, replace if cracked or leaking
2. Fill airbladders with nitrogen or air to a pressure of 5.5 - 6.0 bar
3. Check shaker tensioning bolts, replace any worn bolt assembly
4. Check shaker screen support rubbers, replace if worn
5. Check shaker motor mounting bolts.
6. Check inside of cone manifolds.

4.1 DEMOBILISATION

A 40 ton crane will be enough to demobilize this recycling unit.
Prior to lifting the recycling unit a few handlings must be made:

1. Drain the tank with the drain valve NR.2
2. Undo all hoses and open all (drain) valves on the pump
3. Clean the whole unit including the tank
4. Uncouple all hoses and cables
5. Lower the shaker angle

When all this is done you can hook up the lifting chain.

NEVER:

1. Stand or walk underneath the load
2. Use chains that are too short, to light or have uneven lengths
3. Use uncertified lifting equipment

Use a rope, tied to the unit to steer and/or turn the unit while it is lifted.

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4.2 LONG-TERM STORAGE

Long-term storage is when the recycling unit is out of use (on or off site) for more than 3-4 weeks.
If this is so, there are a few preparations to be made to make sure the recycling unit can be in operation as soon as it is needed.

Preparations on the pumps:

1. Drain mud from the tank and AMTEQ pump
2. Flush the AMTEQ pumps with clean water: take off the discharge piping
3. Open all valves
4. Grease all pumps
5. Clean the entire unit

5.1 PARTS SUPPLY AND RECOMMENDED PARTS STOCKLIST

For optimal use, we recommend to use genuine SiteTec parts only. We recommend to have the following wear parts on stock. When ordering parts always mention unit type and serial number.

WEAR PARTS RECYCLING UNIT	POS
SiteTec cone 5" complete	1
SiteTec cone 4" complete	2
Screen 48"x 36" mesh 24	3
Screen 48"x 36" mesh 120	4
Screen 48"x 36" mesh 145	5
Mud pump 6"x5"x14" with 13"imp	6
Housing for 6"x5"x14"	7
13" Impeller for 6"x5"x14"	8
Stuffingbox for mechanical seal	9
Mechanical seal	10
Graphite packing	11
Ceramic Shaft Sleeve	12
Housing gasket	13
Flexible power coupling F80	14
SiteTec shaker airbladder	15
SiteTec shakerbolt assy	16
Vibrator motor	17

5.2 PARTS & SERVICE contact:

Telephone: +31343 595 400
E-mail: info@sitetec.nl

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5.3 MAINTENANCE SCHEDULE

		Weekly	250 hour	500 hour
1	Grease nipples			
2	Clean entire unit			
3	Check the bolts of the vibrator motor			
4	Check pressure in airbladders			
5	Check electrical cables and connections			