

AUTOMATIC TANK CLEANING



Automatic Tank Cleaning (ATC) System

The ATC System is a closed loop system that clean tanks with Tank Cleaning Machines (TCM) positioned inside tank and rinse dirty washwater with a Washwater Recycling Unit (WRU) before it is pumped with integrated pumps back to TCMs . The closed loop is a continuous process.

ATC Unit



Voltage = 400V
Hertz = 50Hz

ATC unit w/Slant Plate Settler SPS

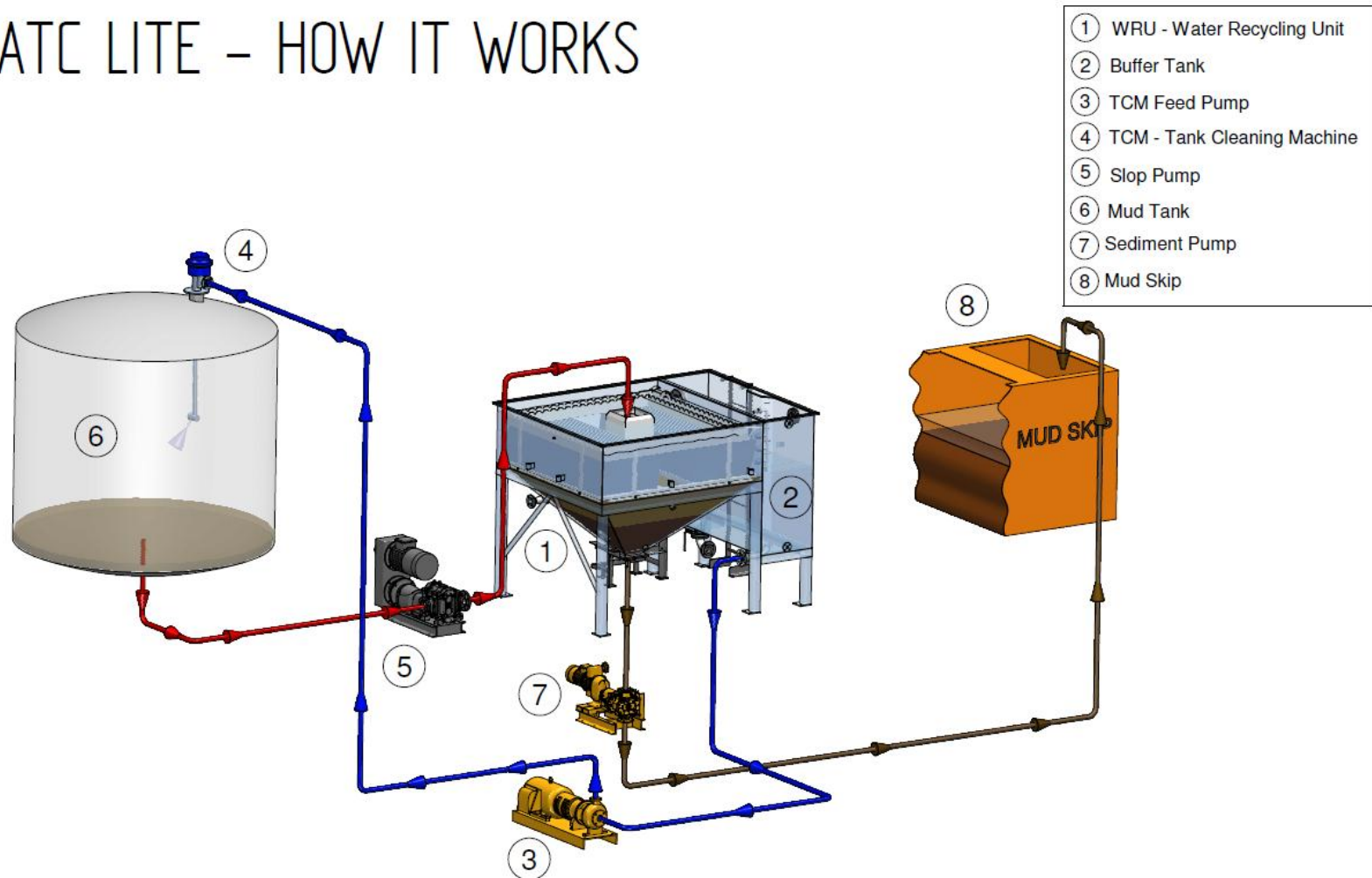
- Water Capacity: 6.5 m³
- Maximum slop processing capacity: 33m³/h
- Weight: 4500kg (dry)
- Dimensions: LxWxH
3213x2435x2583 (mm)
- Lifting: By crane or forklift for installation
- Supplier: Shiptronics AS

ATC Unit – Utility Schedule

Utility Schedule /Consumption Data		
ATC Unit No.	ATC Land and boat unit	
Description	Automatic Tank Cleaning (ATC) Unit	
Voltage / Hz	400V / 50 Hz	
Maximum total power consumption	Maximum 25.1 KW	3 x 40 Amp
<i>Maximum consumption per unit:</i> Tank Cleaning Machine (TCM) supply pump (Calpeda)	Maximum 15 KW	Maximum flow rate: 36m3/h@8bar
<i>Maximum consumption per unit:</i> Sediment pump (Bellin)	Maximum 4.0 KW	Maximum flow rate: 10m3/h (Flow rate is adjustable 2-10 m3/h)
<i>Maximum consumption per unit:</i> Slop pump (Bellin)	Maximum 5.5 KW	Maximum flow rate: 30m3/h (Flow rate is adjustable 10-33 m3/h 20-100%)
Air consumption (Introduced into sediment pump outlet)	200 l/min @ 2 bar	
Total cleaning water capacity	6500 liter	
<i>Maximum capacity per unit:</i> Lamella settler water capacity	4500 liter	
<i>Maximum capacity per unit:</i> Buffer tank water capacity	Maximum 2000liter	
Slop processing rate	Maximum 33 m3/h (without expansion pack)	
Dry weight	4500 Kg	
Dimensions	L x H x W = 3213 mm x 2583 mm x 2435 mm (Small version: 2200 x 2400 x 2200)	

How does it work?

ATC LITE – HOW IT WORKS



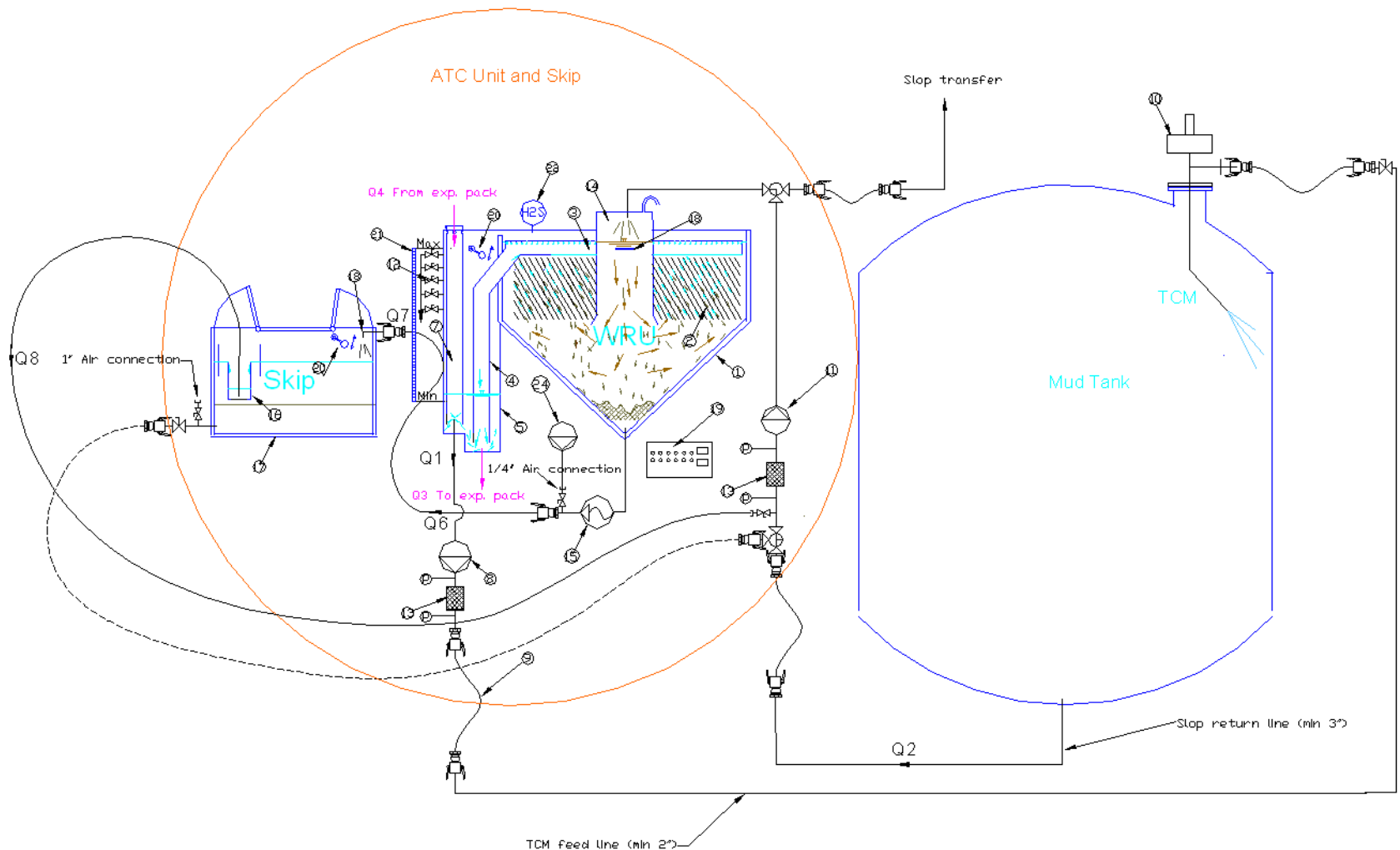
CONFIDENTIAL

How does it work?

Explanations to flowdiagram; Loop between mud tank(6) and Water Recycling Tank(1):

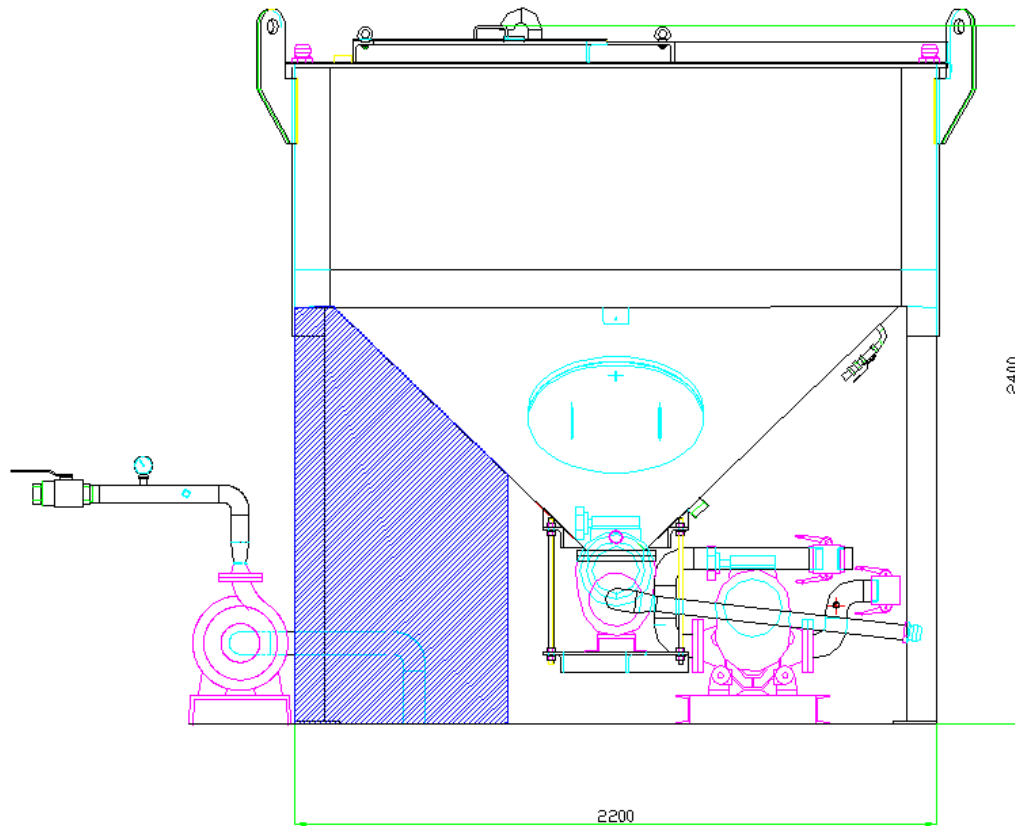
- WRU(1) is filled initially w 6,5 m3 washwater. A pump(3) transfer from the buffer tank(2) to TCM(4) in mud tank(6) which cleans tank internals.
- Under the mud tank(6) is a slop pump(5) which transport dirty washwater back to WRU(1).
- The dirty washwater is routed through a strainer and a system which reduces turbulens (not shown) before it is further processed inside the WRU(1). Solids settle in WRU tank(1) and are pumped with sediment pump(7) into Mud Skip(8).
- Lamella sedimentation (not shown) in upper part of WRU tank(1) helps remove smaller particles. The WRU tank(1) which is constantly full assure clean washwater overflow into buffer tank (2) and recirculated.

ATC Land & Boat unit – Flow diagram (without expansion pack)

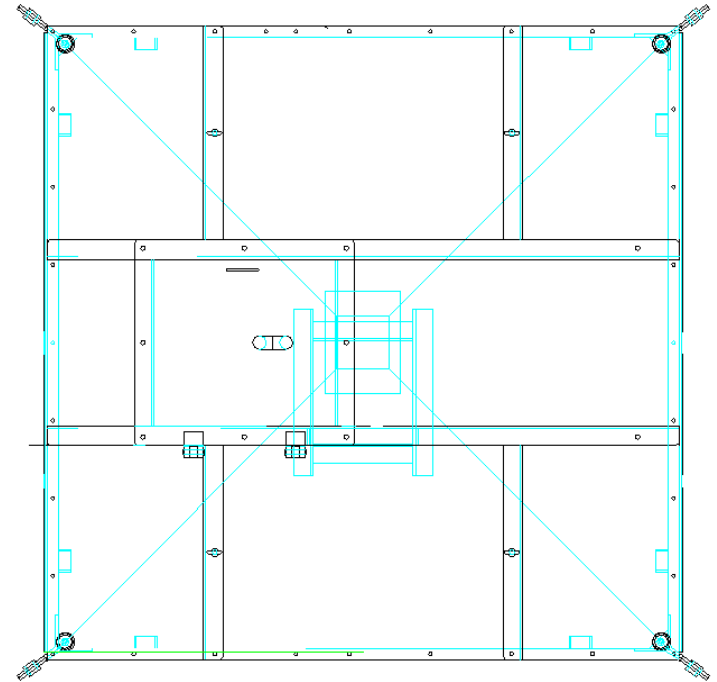


1. WRU, 2. Slant plates, 3. Collection gutter for separated water, 4. Outlet tube from Settler, 5. Buffer tank, 7. Guide tube 2 (not in use), 8. Tank cleaning machine feed pump, 9. Hose w/ Cam-Lock couplings, 10. Tank cleaning machine (TCM), 11. Slop pump, 13. Strainer, 14. WRU slop inlet tube, 15. Sediment pump, 16. Weir bucket, 17. Sludge tank, 19. Control panel,

ATC Boat unit – Drawing



Side view



Top view

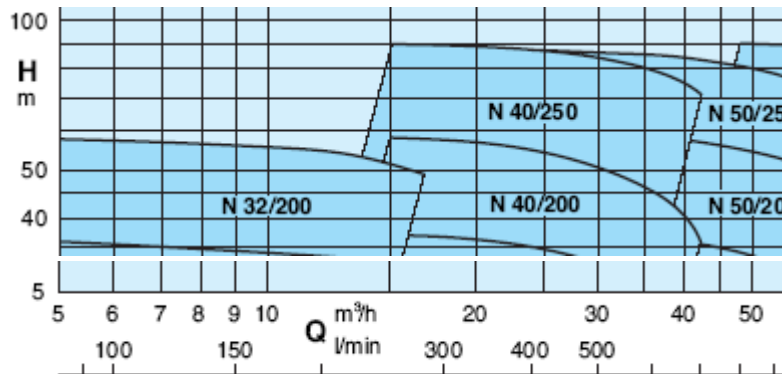
ATC Land & Boat unit – TCM feed pump

TCM Feed Pump



Pump Data:

- Type: Single stage centrifugal
- Capacity: 36 m³/h (enough for 1-3 TCMs)
- Pressure: 8-9 bar (@50Hz)
- Motor: Standard w/coupling, IP55 15Kw, 2 pole, 2900 RPM, 400V, 50Hz
- Connections: Inlet: connected to Settler / Outlet: equipped with valve and 2" Cam Lock male
- Supplier: Calpeda

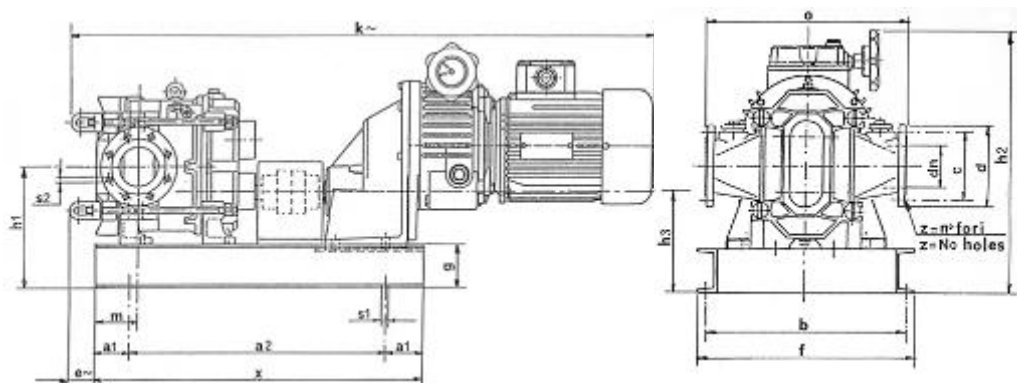


ATC Land & Boat unit – Slop pump



Slop Pump Data:

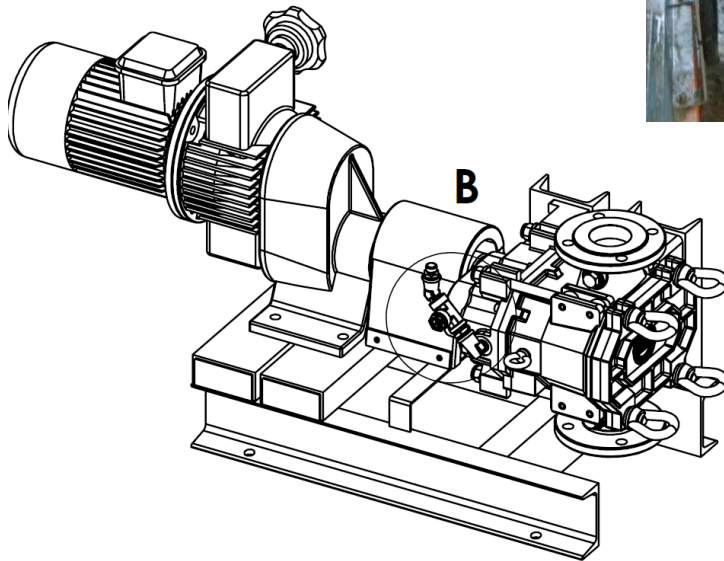
- Type: Lobe (3-style)
- Capacity: 6-30 m³/h
- Max Pressure: 3 bar
- Max: 40% solids
- Suction: >80% vacuum
- Motor: Electrical, 4pol, 400V, 50Hz, 5.5KW, IP 55
- Variable gear: 100-500rpm
- Reversible
- Supplier: Bellin



TIPO	DIMENSIONI PRINCIPALI / main dimensions														FLANGE / flanges					Motovariatore	kw	
type	a1	a2	b	e	f	g	h1	h2	h3	k	m	o	s1	x	c	d	dn	s2	z	variator		
PL-500	100	800	490	101	530	100	269,5	611	220	1606	80	375	17	1000	145	185	65	18	4	S - 100/1	5,5 - 7,5 - 9 - 11	



ATC Land & Boat unit – Sediment pump

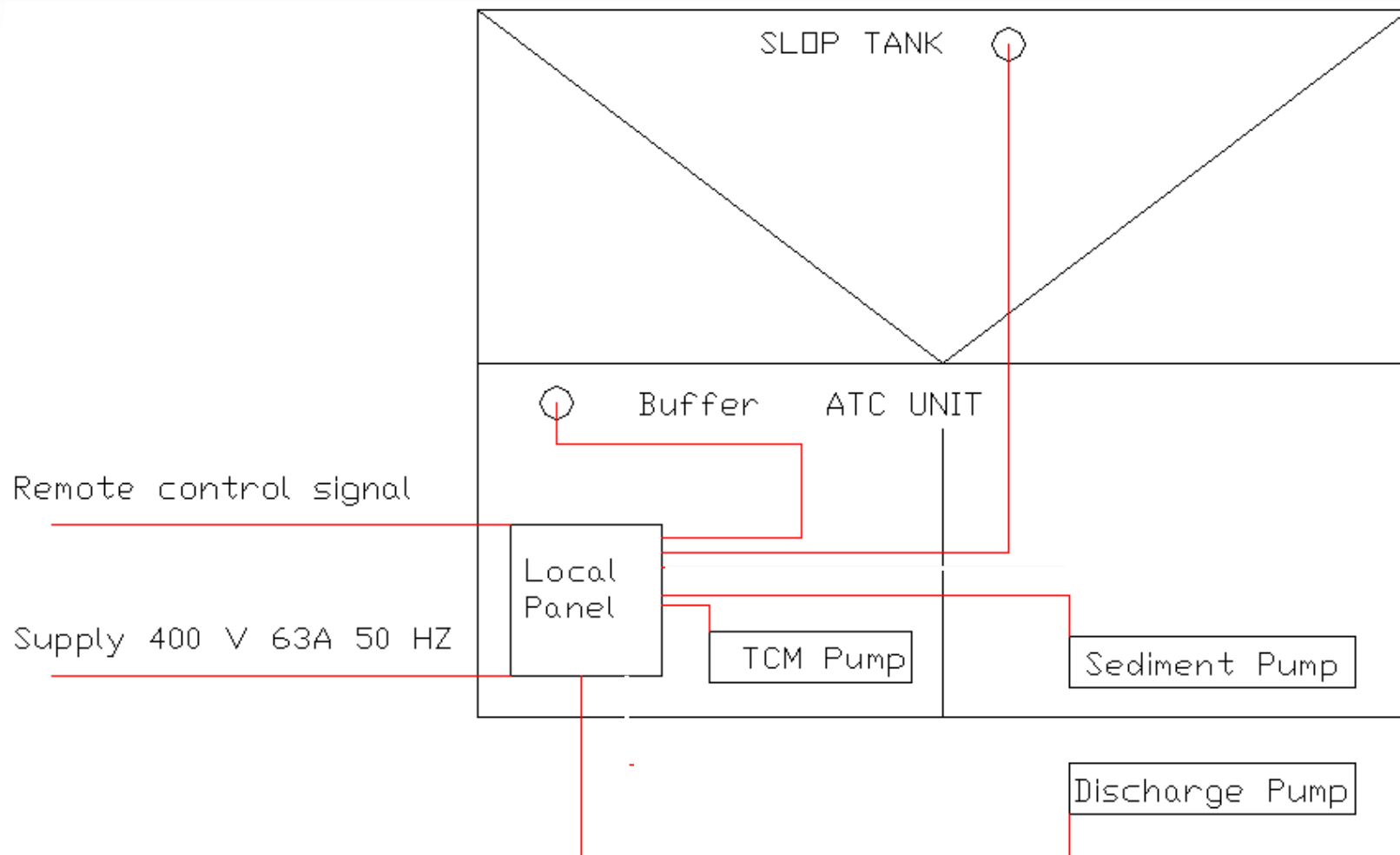


Sediment Pump Data:

- Type: Lobe (3-style)
- Capacity: 2-10 m³/h
- Max Pressure: 3 bar
- >50% solids
- Vertical inlet
- Suction: >80% vacuum
- Motor: Electrical, 4pol, 400V, 50Hz, 4KW, IP 55
- Variable gear: 40-200rpm
- Reversible
- Supplier: Bellin



ATC Land & Boat unit – Electrical system



ATC Land & Boat unit – Sludge skip

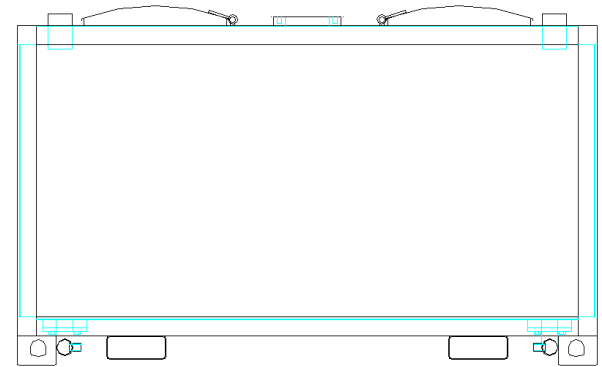
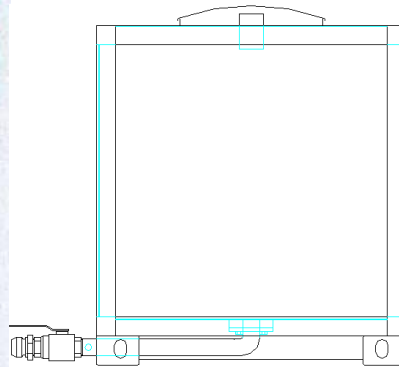
Mud skip (MIS new standard type w/two hatches)

- Capacity: 4 m³
- Max weight 10000Kg (full)
- Dimensions: LxWxH 2212x1852x1528 (mm).
- Two contra weight assisted hatches, one in each end
- Lifting: Fork lift or by crane
- Supplier: M-I Swaco



Special ATC skip

- Capacity: 4 m³
- Dimensions: LxWxH 2445x1300x1300 (mm).
- Openings/connections: Two circular hatches, one in each end. One hatch for TCM. Two bottom suction with blow line. Two slop inlet
- Lifting: Fork lift
- Supplier: M-I Swaco



ATC Land & Boat unit – Sludge skip

Special ATC skip w/slop pump connection, diffuser connection and TCM flange

