

TANK CLEANING SERVICES



TECHNICAL CAPABILITY IN CLEANING OF HYDROCARBON TANKS



Introduction



Tank cleaning is an essential activity to assure the integrity of storage tanks and vessels. It promotes safety and prevents product contamination

We offer Two Solutions

- Automated Tank Cleaning (no Man-entry)
- Manual Tank Cleaning(involves man-entry into confined space.)

Automated Tank Cleaning



Our proposed Automated Tank Cleaning Equipment is the Alfa Laval Gamajet; a compact state-of-the-art technology in advance tank cleaning of crude oil tanks and vessels.

Manufactured by ALFA LAVAL INC. GAMAJET, EXTON, PENNSYLVANIA 19341, USA.

The Unit blasts away residue and contaminants in conjunction with impact thereby obtaining 100% cleaning every time it operates thus, maximizing mechanical force.

It does not permit personnel entry (non-human entry) into the tank

Efficient and effective cleaning of the tank.

Unit is user friendly with minimal or zero environmental impact on the environment.

Does not only de-sludge the crude oil tanks and vessels but also processes the recovered sludge to produce sellable oil.

Proven track record of very high oil recovery efficiency of 99%.

Benefits of the Automated Tank Cleaning Gamajet Equipment



100% decrease in confined Space Entry

70-80% decrease in Wash fluid (cleaning agent)/waste water

75-85% decrease in Time Spent during desludging and cleaning

20% increase in productivity

100% satisfaction with cleaning effectiveness

This Unit is environmentally friendly

High oil recovery efficiency----- 99%

Mobilization/Demobilization period of less than 5hours

Has the capacity not only to de-sludge and clean tanks/vessels but also recovers sellable oil

Main Components

Steam and Inert Gas
Generator :The main purpose
of Steam and Inert Gas
Generator is to provide the
steam and inert gas required
during cleaning process



System Technical Parameters

No.	Item	Technical Parameters	Quantity
1	Distribution box	30KW	1
2	Soft water unit	MS-100C	2
3	Boiler	EI-1000FS(BK)	1
4	Cooling Unit	Volume : 3m ³	1
5	Chemical Feed Unit	CPI-70L	1
6	Vertical Type Pump	Model : HS50/160-3/2; Flow rate : 5m ³ /h Head of delivery : 30 m	1
7	Multiple-Stage Centrifugal Pump	Model : LVG604; Flow rate : 6 m ³ /h ; Head of delivery : 48 m	1
8	Axial Flow Fan	Model : BT35-11; Flow rate : 2050 m ³ /h, pressure : 380Pa	1
9	High Pressure Centrifugal Blower	Model : FB9-19NO4A; Flow rate : 1558m ³ /h Pressure : 3384Pa	1

360 degrees High Pressure Wash Heads

High Pressure Wash Heads are self- driven high pressure mechanism. They are used to wash tank's interior surfaces at high temperature (up to 800C) after the sludge has been extracted.

perform high quality cleaning of roof, walls and floor. The quality of cleaning allows immediate welding jobs



Central Control Unit




The Central Control Unit is composed of Solid State Positive Pressure anti-Explosion Control System, Power Supply & Distribution as well as Heating & Cooling System.

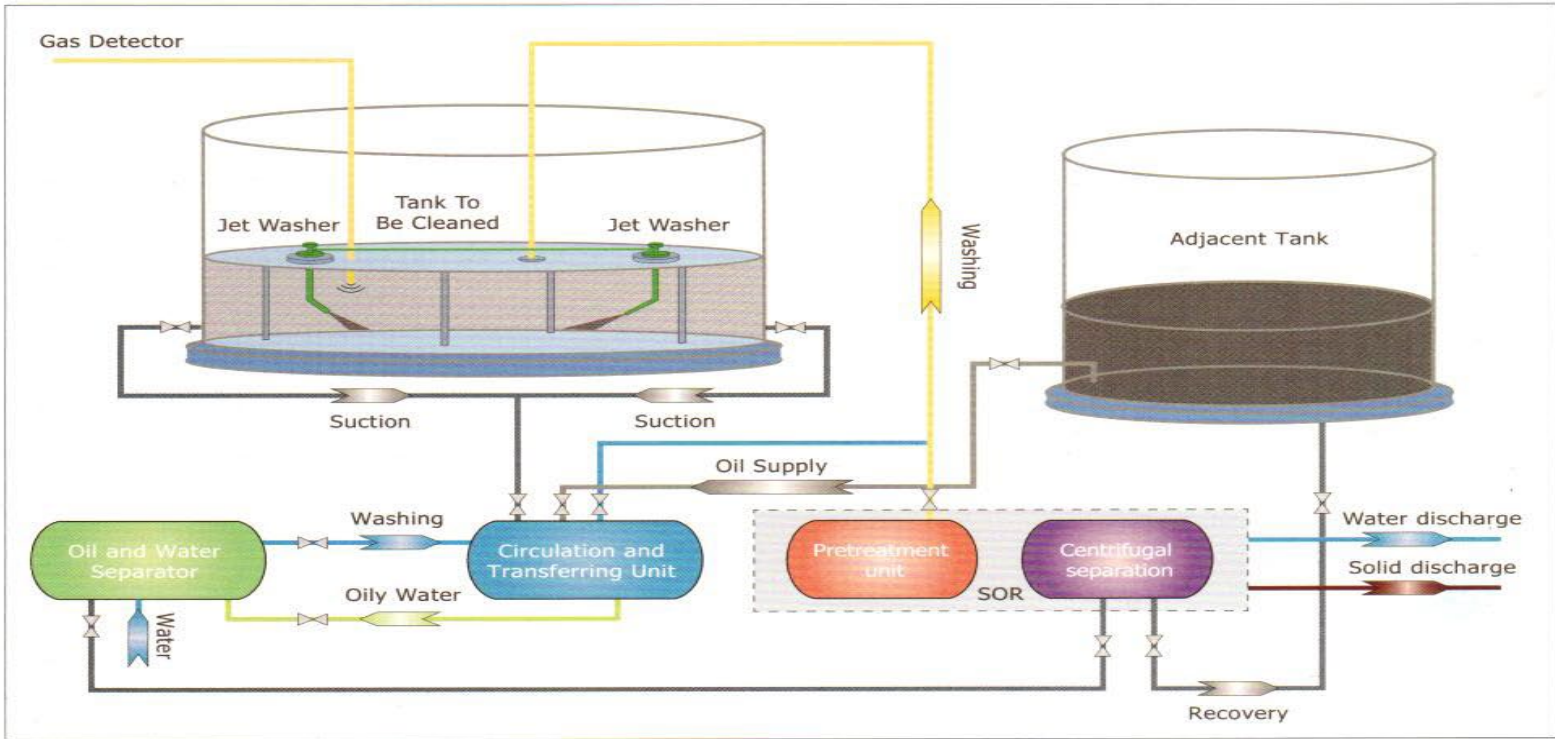
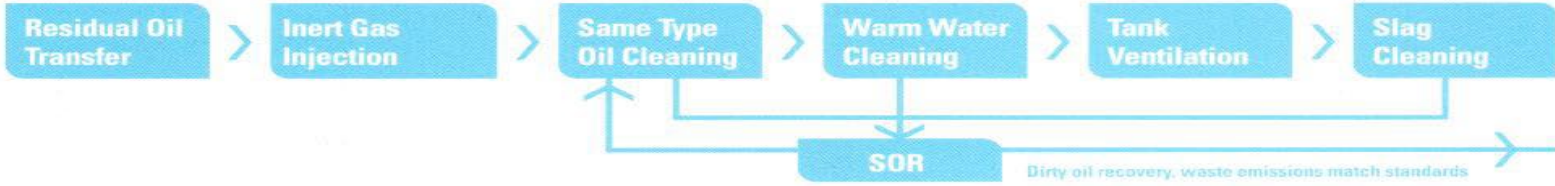
It also has Gas Detection and Alarming System, Central Monitoring and Security Communication System as well as Start Up and Shut-down Sequence System.

The main purpose is using 4 paths of two hazardous gases and 1 path of Inert Gas to realize online monitoring and real-time record of hazardous gas content within operation space, as well as real-time monitoring and alarming remind.

It can realize the function of monitoring remote image, equipment running data, and key equipment parts. The Central Control Unit also helps to provide dry Air for pneumatic equipment and distributing same for auxiliary equipment in connection with site power supply.

Description	Air Compressor Unit			
Picture				
No.	Item	Technical Parameters	Quantity	
1	Power Distribution	200kw	1	
2	Explosion Proof Air Compressor	MLGF-3.6x7G	1	
3	Drier	HM-30	1	
4	Air Container	C-1.0/0.8	1	
5	Electrical Cabinet	200kw	1	

 **Technical Process**



How it Works



Inert gas is injected into the tank to be dislodged and cleaned to reduce the oxygen level to below 8%(to prevent oxidizing conditions)

The gas concentration in the Tank is continuously monitored by real-time Suction-Type Gas Detector operating from the Central Control Unit to ensure safe operation.

Then, the Selected Liquefier is then heated by an on-board Heat Exchanger to a temperature of about 80 oC and pressurized to a pressure of 100psi -150 psi (depending on UTM Integrity Inspection Result of the Tank).

The heated and pressurized liquefier is thereafter transferred to high pressure Wash Heads mounted on tripod with a definite flow rate at 120gpm (455lpm) by Circulation and Transfer Unit and injected into the crude oil tank.

Wash Heads rotate in both horizontal and vertical planes by power of pressurized liquid and does not require any monitoring.

The sludge in the crude oil tanks/vessels are crushed, blasting away residue and contaminants which finally dissolved out. The liquefied sludge is then transferred out by a special pump to a main compartment for further processing and phase separation

As more sludge is been extracted, the Cleaning Liquefier is being continuously recycled at the same temperature, pressure and flow rate throughout the entire process.

This procedure continues until all the sludge and sediments in the tank have been carefully removed.

several wash heads can be used simultaneously to speed up cleaning process

Advantages



It does not permit personnel entry into the tank to cause efficient and effective sludge removal to ensure employees' physical and mental health. Thus, the operation is environmentally friendly

It does not only efficiently remove the sludge, but also treats the recovered sludge to produce high quality sellable oil.

The Unit has very high oil recovery efficiency very close to 100%

Final disposed waste reduction can reach 90%

Standardize site operation to avoid secondary pollution low solid phase TPH rate

Cleaned Tanks can meet Hot Work standard soon after cleaning

Ensures uniform cleaning quality and better overall effect

Less affected by tank environment and weather

Mounted on Skids for easy mobilization and demobilization ,rig-up and maintenance

The equipment has an emergency device to avoid the potential of compromising safety hazards due to human error

All the electrical equipment adopts explosion –proof design and all parts comply with International Safety and Quality Standards

The Unit uses Automatic six-points six channels Suction-Type Gas Detector that can detect the concentration of two gases (oxygen, combustible gas) in the tank at the same time to ensure the accuracy of the gas value

The Unit is highly automated to reduce human error with good comprehensive performance

THANK YOU