

OILFIELD SERVICE EQUIPMENT

SUPERIOR DESIGN AND RELIABILITY REDUCED FOOTPRINT AND INCREASED EFFICIENCY SAFETY ORIENTED





1400 First Avenue, Harvey, LA 70058 Office: 1-504-828-6377 www.rdgulf.com



JOIN FORCES. SUCCEED TOGETHER

R and D Enterprises of Gulf Region, Inc.

Equipment & Services

2 & 4-Pack Transport Racks & Manifold Racks Standard Tote Tanks & Sight Glass Tote Tanks Compartmentalized Storage Tanks (CST) Single Compartment Circulation Tanks Quad Pack Delivery System (QPDS) Single Tote Agitator System (STAS) Bulk Bag Transporters (BBT) Offshore Baskets Pallet Boxes & More...

NDT Inspection & Testing Rigging Gear / Sling Inspection & Testing



ONSHORE AND OFFSHORE USE Patented Equipment



TOTE TANKS - OVERVIEW



FEATURES

- Certified Tanks Under UN
- Completely Stainless Steel Construction
- Full Integration with our Patented Tote Tank Transporter Racks
- Sweep 90° Discharge
- 2" Full Port OpeningValve
- 20 Degree Male Discharge Nipple with End Cap
- Reinforced Pad Eyes (see photos at right)
- 3" NPT 5-in-1 Combination Pressure/Vacuum/Fusible Vent
- Patented Anti-Sling Safety Top Standardon ALL Totes
- Quick Release TopCover
- Forklift Pockets
- Bottom Ends Blocked to Prevent Oversized Forklift Damage
- Extended Legs for Easy HoseConnection





Reinforced Pad Eyes
Single Eye For Added Strength



TOTE TANKS - SIGHT GLASS TOTE TANKS



Sight gauges were introduced to tote tanks in the early 1980's and for the past few decades have had problems with shipping, stacking, and handling of sight gauged totes.

This internal design allows for all of the benefits of a tote tank sight gauge while avoiding the pitfalls of other models with external devices.

FEATURES

- UN/DOT compliant
- Heavy duty, 10 gauge 304 or 316 stainless steel construction
- Sloped bottom for virtually 100% discharge
- Top manway with EPDM gasket and bolted clamp ring
- Top fill fitting with fusible cap and lanyard
- Sight glass gauge with integral shut-off valves
- Bottom discharge with lockable, stainless steel ball valve
- Heavy duty lifting lugs/stackable leg positioners
- Patented





TOTE TANKS - SAFETY AND TECHNOLOGY



Bottom Ends Blocked to Prevent Oversized Forklift Damage

klift

• Our totes have 9" legs and 3 1/2" lifting pad eyes above tank.

R and D Offers the Latest Updates in OurTote Tanks

- The overall height of a 550 gallon tote tank is 77".
- A 550 gallon tote weighs around 795 lbs.
- The fill volume is 8.46 gallons perinch.
- The totes are 48" on the valve side and 42" across the front.
- All totes have 2" discharge valve, 3" fill cap on a 22" top.
- Forklift Pockets For Added Safety



STAINLESS STEEL SAFETY TOPS

All totes are outfitted with an anti lid pull off safetycover.

Eliminates any sling from having contact with the tote tanklid.

- Stainless Material to Hold Shape
- No Additional Clamping or Hold Assembly
- Prevents Sling From Pulling Off Tote Tank Lid
- Fits Flush on top of Tote
- Universal Fit on all Tote Tanks
- Patented



TOTE TANKS – COMPETITIVE ADVANTAGE

See the Difference?



R and D Tote (left) – Competition (right)

R and D	Competition		
Double-Walled Reinforced Pad Eyes	Thin, inexpensive pad-eyes		
All of our totes have a 20 degree discharge nipple to allow easy hoseattachment	Screw Off ElbowIncreases Chance of Leaking		
Quick-release-lever hold downring NO TOOLS REQUIRED	Old, Time-Consuming Nut and Bolt HoldDownRing		



TOTE TANKS - COMPETITIVE ADVANTAGE

Descriptions	R and D	Competition	Advantages	
Welded sweep 90 degree discharge valve	Yes	No	Avoids leaks by elimination of three connection points	
Full port 2" valve	Yes	No	Allows fluid to drain at twice the rate	
20 Degree male discharge valve	Yes	No	Much easier for crew to attach hoses	
Reinforced padeyes	Yes	No	Double wall stainless steel for added strength in stressed areas	
	163	NO		
Pressure/Vacuum vent port	Yes	No	Allows for easier fluid filling and draining	
Anti sling safety top	Yes	No	Fill port protection and slings no longer get caught	
Quick release top opening ring	Yes	No	No tools required, quick access	
Forklift pockets	Yes	No	Much safer tote transport, tote won't topple off forklift during transport	
Ends blocked for proper forklifts	Yes	No	Stops damage from oversized forklift drivers	
Extended legs	Yes	No	Easier to connect hoses for discharge	



TOTE TANK CONSIGNMENT PROGRAM - ADVANTAGES

R and D Enterprises offers a tote tank consignment program to benefit your needs. We take pride in our equipment safety and customer service, all while saving you time and money. Our tote tanks superior design construction and reliability are second to none.

Advantages :

- Reduced daily rate
- Daily inventory recorded
- No cleaning expense after each use
- No product disposal after each use
- Reuse same tote for next job with same product
- No trucking back and forth to disposal and cleaning facility
- R and D Port Fourchon personnel available 24/7



- Tote tank, safety top, offshore certified sling and shackles
- Daily visual inspections
- Free small parts replacement (lid gasket, camlock gasket, vent gasket, lanyard wire, duplex sleeves, safety clips, rings, cotter pins and decals)
- All tote tank inspections and testing (pressure testing, ultrasonic wall thickness testing, liquid penetrant testing, load testing)
- Sling inspection and pull testing
- All tote tanks & slings paper and/or electronic certifications (data plates & tags on all equipment as well)
- Trucking deliveries and pick ups within Port Fourchon at no charge



Lifting Incidents



BSEE's role in overseeing offshore energy operations is to ensure compliance with regulations, and to incentivize safer performance.

Lifting incidents are consistently the most frequently reported offshore incidents. Historically, about 22% of the total number of reported incidents are classified as crane or lifting incidents.

Contractor lifting injuries made up 86% of total reported lifting injuries, and since May of 2020, every lifting incident has involved a contract worker.

Since lifting incidents represent the potential for injury and significant environmental and/ or safety impact, BSEE Director Angelle issued a challenge to a selected group of engineers, inspectors, and supervisors within BSEE's district, regional, and HQ offices to identify potential immediate and longer-term mitigation measures for reducing the occurrences and severity of future lifting incidents by a target goal of 50% by 2021.

This Safe

Lifting Initiative Team identified that most of the lifting incidents had a human component contributing to the event. Findings from the *ABS Group* Crane Safety Assessment (2015) reported that 60 to 80% of the mishaps involved human errors.

The Safe Lifting Initiative Team will employ the Safety and Environmental Management Systems (SEMS) methodology to shift the focus of:

RLI50%B21

LET'S REDUCE LIFTING INCIDENTS 50% BY 2021

- BSEE, from evaluating and documenting the compliance state of an operator to assessing the safety performance of the operator.
- Industry, from merely having procedures to consistently following their procedures.

effectiveness of the operators' pre-work planning, specifically the safety discussions conducted before starting work, stands out as opportunities where work practices will likely improve safety performance.

The quality and

Opportunities for BSEE include obtaining better data on lifting incident causal factors and regulatory clarification around crane inspections.

In October 2020, BSEE began reaching out to operators requesting collaboration in achieving BSEE's 50% reduction goal by challenging their organizations, both employees and contractors, to identify opportunities to improve mechanical lifting operations.



REDUCE CRANE LIFTS - ENHANCE SAFETY

The following R and D Products not only increase efficiency, but also enhance safety by reducing time-consuming and potentially hazardous crane lifts.

TRANSPORT RACKS

MANIFOLD RACKS

COMPARTMENTALIZED STORAGE TANK (CST)

BULK BAG TRANSPORTER



TRANSPORT RACKS - OVERVIEW

4-PACK RACK



2-PACK RACK



FEATURES

75% Less Lifts - Stackable

Totes do not need to be removed for filling/draining

Prevents tote damage with a safety cage - Full drip pan

Holds twice the fluid volume compared to an MPT, using the same deck space



TRANSPORT RACKS - SAVE SPACE AND ELIMINATE DECK CLUTTER



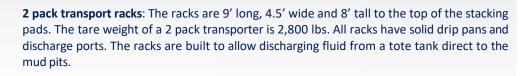


FEATURES

- Single Lift for Multiple Totes
- Safer and more efficient Reduce Lifts by 50% to 75%
- FULL Integration with CST
- Prevents Damage to Tote with SafetyCage
- Full Drip Pan
- Holds Twice the Fluid Volume Compared to an MPT Using Same Deck Space
- Allows Combination of Fluid Transportation
- Load Tested and Weld Certified
- High Quality
- Fork Lift Accessible
- Can be loaded with Totes by forklift or crane
- DNV certified available
- Patented







The tote does not have to be taken out of the rack to discharge the tote fluid. The 4-pack racks are designed to hold a maximum of 42,000 lbs. All racks have double doors on two ends to provide easy loading with a forklift or spotting a tote in the rack from a crane. The racks can be stacked which allows more deck space to be utilized on the rig.

Dimensions and Specs

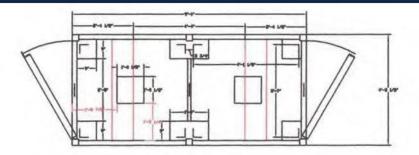
4 pack transport racks: The racks are 9' long, 8' wide and 8' tall to the top of the stacking pads. The tare weight of a 4 pack transporter is 4,200 lbs. All racks have solid drip pans and discharge ports. **The** racks are built to allow discharging fluid from a tote tank direct to the mud pits.

TRANSPORT RACKS - SAVE SPACE AND ELIMINATE DECK CLUTTER



MECHANICAL DRAWING

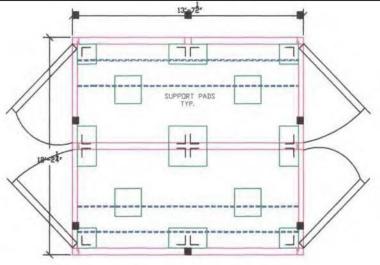
2-PACK RACK



Two, inward-swingdoors



4-PACK RACK



Four, inward-swingdoors

TRANSPORT RACKS - SAVE SPACE AND ELIMINATE DECK CLUTTER

DRIP PAN DRAIN SYSTEM



New Drain System: You spoke and we listened. All racks have integrated stainless drip-pans with a 2" camlock/discharge to allow for easy cleanup after spills.

FALL PROTECTION AVAILABLE ON SELECT RACKS







MANIFOLD RACKS - OVERVIEW





FEATURES

- Rack gates for safe & quick access to load/unload tote tanks
- Stainless Manifold Pipe Plumbing
- Full Integration with CST
- Use in place of MPT's to minimize footprint and reduce crane lifts by 50%
- Load Tested and Weld Certified
- Fall protection available on select racks
- Stackable
- Fork Lift Accessible
- Patented







MANIFOLD RACKS - OVERVIEW





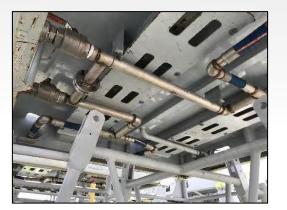
FEATURES

- NEW Updated Chemical-Resistant200psi Teflon-Lined Connections
- Discharges 2 to 4 Totes out of 3" Discharge Line
- Totes are easily Connected to Internal
 Manifold
- Allows Fluids to be Segregated (No Contamination)





- Standard Manifold Rack tare weight = 4500 lbs.
- Dimensions are 9'Lx8'Wx8'H
- DNV Manifold Rack tare weight = 6000 lbs.
- Dimensions are 9'6"Lx8'6"Wx8'3"H
- 42,000 lbs. GrossWeight

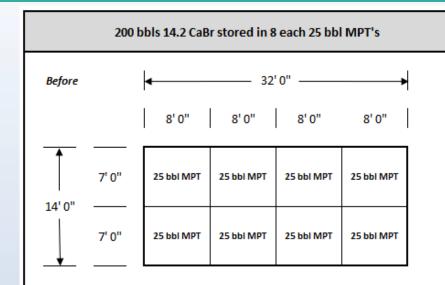




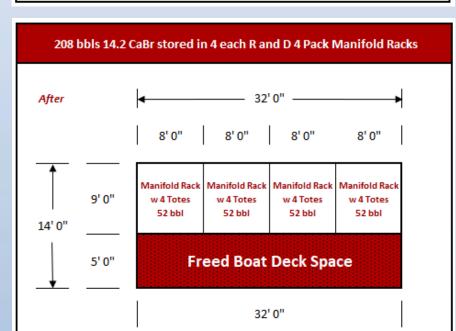
Note internal manifold hoserouting



MANIFOLD RACKS (52 BBL) vs MPT (25 BBL)



8' x 7' : average dimensions of 25 bbl MPT's



Example where R and D's 4-Pack Manifold Racks with Totes provided Safety and Efficiency Enhancements vs 25 BBL MPT's, while freeing up valuable Deck Space.

R and D's 4-Pack Manifold Racks vs 25 bbl MPT's

<u>4-Pack Manifold Rack</u> 9'L x 8'W x 8'H ; Tare Weight = 4,500 lbs ; Max Gross Weight = 42,000 lbs

<u>Standard 550 gal Tote</u> Tare Weight = 800 lbs each

<u>4-Pack Manifold Rack with 4 ea. 550 gal Totes:</u> 52 bbl ; 2,200 Gallons Tare Weight = 7,700 lbs

Total Weight of 1 Rack and 4 Totes filled with 14.2 CaBr = 38,940 lbs per 52 bbls Total Weight of 4 Racks and 16 Totes filled with 14.2 CaBr = 155,760 lbs per 208 bbls

Some Racks are Stackable when FULL = 104 bbl in an 8' x 9' Footprint *Request Stackable in advance of ordering. Please check rig/boat floor weight load limit

25 bbl MPT's :

Average dimensions of 25 bbl MPT = 8' x 7' Average Tare Weight 4500 lbs Average 25 bbl MPT filled with 14.2 CaBr = 19,410 lbs per 25 bbls (x2 = 38,820) Average of 8 each 25 bbl MPT filled with 14.2 CaBr = 155,280 lbs per 200 bbls

MANIFOLD RACKS (52 BBL) vs MPT (25 BBL)

Comparisons			Difference		
4 Pack Manifold Racks with Totes	25 bbl MPT's			Enhancements	
208 bbls		200 bbls		8 more bbls	
Footprint : 32' x 9' = 288 sq ft		ootprint : 32' x 14' = 448 sq ft		160 sq ft Freed Space	
Total Weight : 155,760 lbs		Total Weight : 155,280 lbs		Negligible	
Cost : ≈ \$100 each per day for 52 bbls		Ave Cost : \$? each per day for 50 bbls			
Cost : ≈ \$400 Total per day for 208 bbls		Ave Cost : \$? Total per day for 200 bbls			
Crane Lifts to move 52 bbls : 1		ane Lifts to move 50 bbls : 2		50% less crane lifts	
Total Crane Lifts to move 208 bbls : 16		Total Crane Lifts to move 200 bbls : 32		Land to Boat, Boat to Rig, Rig back to Boat, Boat to Land : Less crane lifts in Total : 16	
* R and D can store unused product between wells free of charge, saving cleaning cost of 8 MPT's between well completions.					

* At the end of use, R and D will pick up and deliver totes to cleaning service of your choice, reducing transportation cost.

* Use with R and D Sight Glass Totes, and eliminate tying off and climbing on top of MPT's to strap remaining liquid volumes.

<u>Summary</u>: R and D's 4-Pack Manifold Racks with Totes use considerably less space to store the same volume as 25 bbl MPT's. R and D's racks also provide safety and efficiency enhancements, as well as reduce costs, by requiring 50% less crane lifts to load and off-load the boat, and/or rig; saving costly man-hours associated with crane operations and potential down time. R and D's agreement to store un-used or residual product between wells can provide savings by eliminating MPT cleaning costs, as well as transportation cost.



COMPARTMENTALIZED STORAGE TANK (CST) - OVERVIEW



FEATURES

Partitioned Fluid Storage Small Footprint 200-300 BBLCapacity

Easy Refill System

Reduce Crane Lifts



- Built with 4 or 6 storage compartments.
- Designed for the storage of bulk chemicals for drilling fluids.
 Package Includes: CST, RACKS, TOTE TANKS, HOSES and ACCESSORIES.
- 200 BBL CST capacity or 250 BBL with 4-totes on top CST.
- Our tote tanks combined allows for a quick-drain into the CST.
- Coast Guard Certified storage vessel.
- PATENTED
- Dimensions: 10' W x 18' L x 10' H
- •Tare Weight: 28,000 lbs. Gross Weight: 150,000 lbs. or 175,000 lbs. available.

COMPARTMENTALIZED STORAGE TANK (CST) – ADVANTAGES





ADVANTAGES

Saves Deck Space

- $\cdot 8'$ x 16' foot print holds 200 BBL of volume (10' x 18' with stairs and walkway).
- •Takes the place of 15 totes (550 gallon) of volume in the same foot print.
- ·Eliminated deck clutter of Totes or MPT's

Reduces Crane Lifts

- •Allows for 4 totes to be drained together and put right back on the boat.
- •Avoids having to handle tote tanks multiple times before it is emptied.

Chemical Storage

- •Each intake and discharge port is labeled and color coded.
- •Up to six different drilling and completion fluid additives can be stored in one convenient location.
- •All hoses use 2" cam lock fittings.
- •Every tank has an inspection plate for measuring volume.
- •Tanks are sloped on the bottom to drain to a minimal dead volume.
- •Valves are protected by drip pan.

Health, Safety, and Environmental

- Intake and discharge valves have full drip pans to prevent spills and slip hazards.
- Tanks can be cleaned from the top without putting personnel in confined space.
- •Built with OSHA approved stairs and walkway.
- •By reducing the number of lifts needed for moving tote tanks, the risk to rig personnel is reduced.



4-PACK TRANSPORT RACK ATOP CST ON RIG



ADDITIONAL INFORMATION

The tank measures 10' wide by 18' long. This accounts for the 2' stairway and drip pan in the front of the tank. The overall height with handrails and landing rack is 15' high. The tank weighs 28,000 lbs. with walkway, stairs, handrails and landing rack installed. Holds 200 BBL of fluid. The tank can hold up to a 14.5 lbs. fluid. There are from 1 to 6 compartments depending on configuration within the storage tank. **There are 2-pack or 4-pack transport racks with associated 13 BBL totes to refill tank.**



This is an additional 104 BBL of fluid; allowing the CST to become a 300 BBL package.

All compartments are color coded and lettered. The tote tanks are designated per assigned compartment.

DISCHARGE VALVES & DRIP PAN



Discharge valves have full drip pans to prevent spills and slip hazards.

CONSOLIDATE COMPARTMENTS

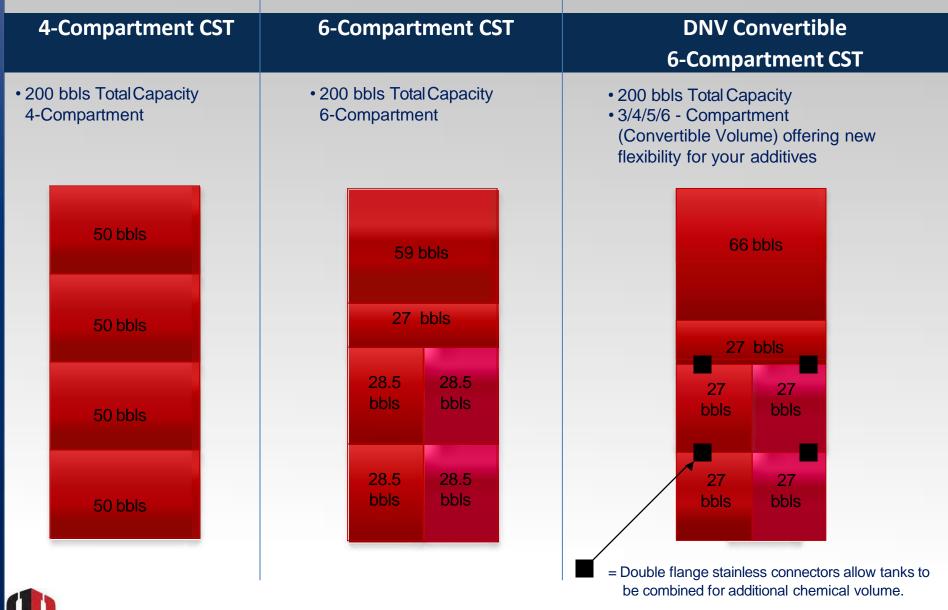


Discharge valves can be modified to consolidate compartments

INVENTORY STRAPPING POINT



Every tank has an inventory port for measuring volume.





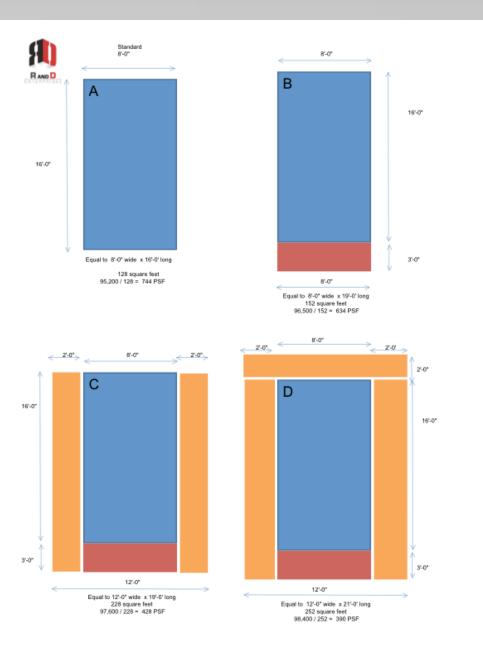
Note: 300 bbl capacity is possible with our full CST package: 8 totes carrying fluid plus the CST tank itself

CST can be equipped with load distribution "wings" to lower the stress on the deck









Subject: R&D CST Tanks

I have been involved in several operations in which we've used CST including drill ships, floaters and platform rigs. We see substantial benefits with regard to safety, cleanliness and volume tracking.

Without question, our drilling fluid specialists appreciate the ability to dump 2-3 totes of any one liquid additive at one time thereby reducing the number of times the crane needs to be dedicated to this task.

In addition to that,

- The tanks make it much easier and safe to strap and keep good volume accounting.
- The drip pans help maintain the area clean and free from clutter.
- Hoses and fittings come with the package, there is no need to help acquire this separately

As an account manager the focus is on process safety. This demonstrates an effort to mitigate risks for what is usually a messy, repetitive process.



(Fluids Provider) Project Coordinator

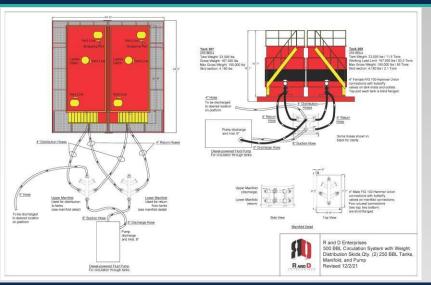
Custom Dual-Stairs Available (Optional)



R and D personnel available to assist with rig set up and installation



CIRCULATING STORAGE TANK SYSTEM – OVERVIEW





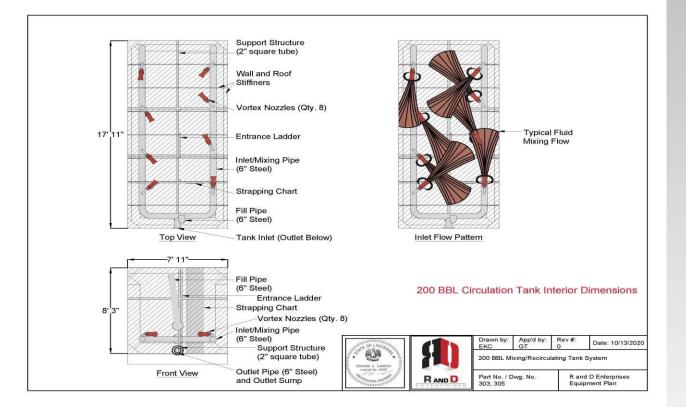
FEATURES

Single Compartment Fluid Storage Tank Circulation Optional 200-900 BBLCapacity

- 200 or 250 BBL Single compartment tank.
- Designed for mixing of fluids.
- Interior is equipped with 6" pipping and vortex nozzles .
- Combined tanks option for more volume.
- Optional weight distribution skids available.
- Dual manifold system is available for distribution of fluid.
- Can also be used for storage if mixing is not required.
- Pump and motor separate from unit.
- System can be modified per customers needs.
- Patented



CIRCULATION TANK SYSTEM – Interior







BULK BAG TRANSPORTER - OVERVIEW





FEATURES



Holds FOUR 4000# Bags

Smooth-Side Compartment Eliminates Damage to Bags



Forklift Pockets, No Crane Required

Stackable When Empty For Easy Removal

Significantly Reduces Lifts





Options for Lift: Use Slings or Two Choices of Forklift Pickup

Helps Eliminate Expensive Spills and Cleanup

Stabilizing Attachment Points Single lift for 16,000 lbs. of material

Load Tested and Weld Certified, Patented



QUAD PACK DELIVERY SYSTEM (QPDS) - OVERVIEW



Customized for the Oilfield Cementing totes Only requires rig air to operate Superior Design

Easier to use & safer

FEATURES



R and D Products offers a delivery system for high viscosity polymer slurries which can be applied but not limited to completion and/or drilling applications.

The QPDS is comprised of up to three hydraulically powered self-contained mixing units, airdriven motors, transfer pumps, transfer hoses, and a working apparatus with stairs for storage and safe easy access to the upper areas of the tanks. All components are housed and transferred via our stackable patented quad-packracks, reducing crane lifts.

The QPDS only needs access to rig air to operate the system and bulk delivery of product takes up less space than industry alternatives while minimizing waste and product loss.

The quad-pack racks can be double stacked with empty totes to conserve valuable rig space.

Application: Cross-Linked Polymers, Gravel Pack Screens, Sweeps, Pills, Displacement Spacers, HP/HT Wells

Effective in deepwater wells, offshore platforms, barges, and remote locations.



QUAD PACK DELIVERY SYSTEM (QPDS) - HIGHLIGHTS

Hoses connected to diaphragm pump



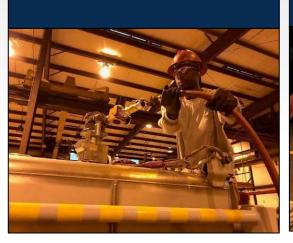


Pumps and Drive Units

Accessing the stairs Storage for pumps and dr<u>ive units</u>



One Man Set-Up







QUAD PACK DELIVERY SYSTEM (QPDS) - HIGHLIGHTS

Drive Units Under 50 lbs.

Air Driven Units with Gear Reduction

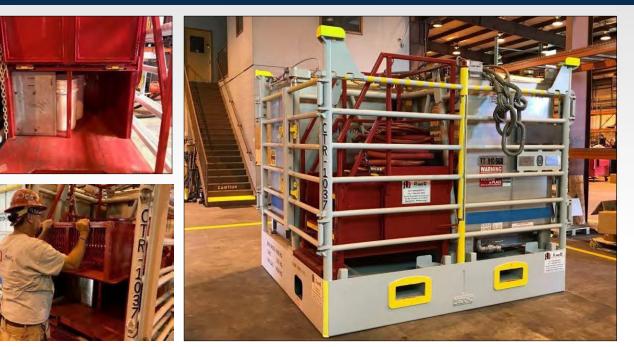


Easy and Safe Drive Unit Installation





EASY STORAGE AFTER UTILIZATION





QUAD PACK DELIVERY SYSTEM (QPDS) - TECH SPECS

Two configurations available:

Two mixing units for polymer and one sight -glass tote for carrier fluid

Three mixing units for polymer

The working apparatus "stair system" has a storage compartment for storage of the motors and diaphragm pumps.

A pressurized pneumatic source "rig air" [110 to 130 psi (7.9 to 9.0 bar)] is connected to the hydraulic motor which is engaged to mix the polymer with carrier fluid by use of the transfer pumps and/or to agitate the slurry for delivery to the trip tank or cementunit.



Top View (motors engaged with rig air)

Dimensions and Design

The quad-pack racks are 9'6"L x 8'6"W x 8'3"H and the tare weight of the QPDS is approximately 10,200lbs (without polymer and/or carrier fluid). The quad-pack racks and transfer pumps have solid drip pans. The quad-pack racks are stackable with empty totes and have latched doors for each compartment.

- The stairs have a storage compartment for the 100% air driven pumps and motors (shown right).
- The drive motors are under 50 lbs., allowing for safe lifts. All units are load tested, weld certified, and fork lift accessible. Published patent on quad-pack rack, working platform, and sight-glass totes. Patent application in progress onprocess.



QPDS Parts (hoses, motors, regulator, mixing paddles & polypropylene diaphragm) pumps





QUAD PACK DELIVERY SYSTEM (QPDS) – Dual Manifold



Dual Manifold Rack Option

- Two 3" Full port inlet/outlet valves
- Manifold connects to each tote slot inside rack
- Transfer fluid through built in manifold system
- Air manifold for air hoses organization





SINGLE TOTE AGITATOR SYSTEM (STAS)

Smaller version of the QPDS

SATS Package Includes:

One – 550 Gal Stainless Steel Tote with Agitator and Motor. One – 2-Pack DNV Tote Transport Rack with Sling, Stairs, Pumps, Hoses, Valves & Back-up Motor.

Dimensions and Design

The racks are 9'6"L x 4'9-1/4"W x 7'7"H and the tare weight of the STAS is approximately 5,925lbs (without polymer and/or carrier fluid). The racks and transfer pumps have solid drip pans.





R and D can provide labor to dump 5 gal buckets of HEC/ Spacer/Sweep into 550 gal Tote :

• Per hour charge for labor, pumps, parts, maintenance, and machinery use with a

2hr minimum during regular operating hours, Monday thru Friday from 7am to 4pm.

- Per hour up-charge for after hours and weekends with a 4hr minimum.
- Customer to coordinate logistics and trucking fees of HEC to R and D Fourchon.
- R and D will require a minimum 12hrs notice on all labor orders.

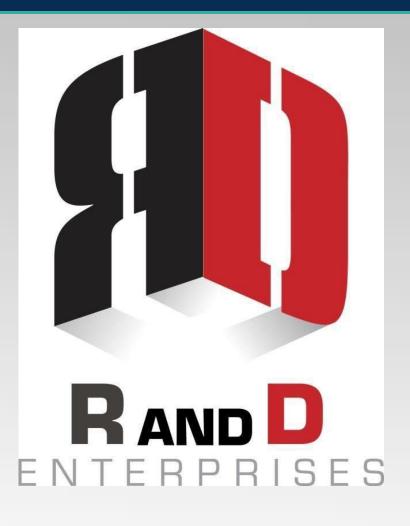




CUSTOMER HISTORY



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THANK YOU FOR YOUR BUSINESS!



R AND D E N T E R P R I S E S





JOIN FORCES. SUCCEED TOGETHER.

