

DRILLING FLUID EQUIPMENT



Company Profile



DRILLING FLUID EQUIPMENT

Drilling Fluid Equipment (DFE) is a first choice supplier of oil exploration fluid handling equipment throughout the Asia-Pacific region.

DFE offers a range of specialist services, making use of current technology to provide clients with a range of competitive and efficient services. Recent years have seen DFE's range of services diversify into the area of industrial waste treatment.

The services provided by DFE range from feasibility studies through to detail design, construction, installation and commissioning.

DFE has involvement in projects both on and offshore in areas world-wide. These include New Zealand, Australia, Singapore, Philippines, Thailand, China, North America and Russia.



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Drilling Fluid Equipment Limited



DRILLING FLUID EQUIPMENT

Location

Our head office and workshop premises are sited at 224 Connett Road East New Plymouth, off Highway 45 giving easy access to road, rail, air and port facilities.

Personalised Service

Personal service to our clients is the hallmark of this company. As such we are very interested in furthering our association and we invite you to telephone, fax or call at our premises to see what we have to offer.

Standards

All work is carried out to the clients specifications and instructions to a standard or code of practice relevant to the particular contract, e.g

ASME VIII Boiler code

BS PD 5500

ASME B31.1

ASME B31.3

AS1210

API 650

or to the relevant standard requested by the client.

We also have in our employment welders qualified to:

ASME IX

BS EN 287-1

AS/NZS 3992

and NZS 4711 for Carbon and Stainless Steels

NZS 4703 for Stainless Steel

and the Dairy Industry.

Quality Management

DFE's fabrication company **AMTEC ENGINEERING LTD** has in place the following standards:



- API & Telarc ISO 9001 Registered Supplier
 - APIQR Q1-0275 / API Spec Q1
 - APIQR TS-0069 / ISO TS 29001:2003
 - AP1QR 0542 / ISO9001:2000
- In-house CBIP qualified QA personnel



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DRILLING FLUID EQUIPMENT

DFE Mud Coolers Barracuda & Blue Fin

DFE Mud Coolers have been designed to provide a safe and efficient process for cooling drilling fluids on high pressure/ high temperature well sites for water based and oil based muds.

Their high efficiency heat exchanger, lowers operating costs and reduces the operational risk.

Benefits

- Lowering of flash point for site safety when using oil based fluids
- Greater accuracy with "downhole" measurement when using MWD devices
- MWD and logging tools can go to a greater depth and with increased endurance due to reduced thermal stresses
- Reduced usage of additives and increased life of elastomers
- Reduced long term maintenance cost



DFE Mud Coolers offer an economical design in dimension and weight, with ease of site operation and servicing in mind.

The Barracuda & Bluefin features:

- Units can operate in parallel or series to suit drilling mud circulation rates and temperature drop requirements
- Condition monitoring by pressure gauges and mechanical thermometers of all flow streams
- Rugged skid mount and frame, certified for offshore lift (SGS Gp - Societe Generale de Surveillance)
- A Titanium or 316 heat exchanger to resist corrosion
- Large plate cavity to prevent clogging
- Simple site operation and easy on-site installation through quick release hose connection
- All fabrication is to ASME and API standards
- Compact design allows for ease of transport by truck, or by container and minimises required deck space for installation



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DRILLING FLUID EQUIPMENT

DFE SCR-01 Linear Motion Shaker

Drilling Fluid Equipment's philosophy when designing the DFE SCR-01 Shaker was to offer the market a simple, ruggedly constructed, dependable, low profile, (low weir height) shale shaker, that performs equal to or better than competitive shakers.

Vibrating motion is via two opposing sealed motors with adjustable counterweights, mounted directly on the screen basket. Amplitude adjustment can be made by simply altering the counterweight throw, from 0 to 5.1 "G's", giving the DFE SCR-01 one of the highest screen impact forces of any shaker available.

Screen tension is achieved through stainless steel quick release tension bolts, with brass locking nuts, no more broken or seized bolts even when processing aggressive salt based fluids.



SCR-01 Shakers in use

SHAKER SPECIFICATION

Overall Dimensions:

Height: 1540mm (60.6")

Width: 1660mm (65.4")

Length: 2960 (116.9")

Overall Weight: 1740 Kgs (3835 lbs)

Motor Size: 0.98 Kw x 2 Motors - 1.2 HP x 2 Motors

Screening Area: 2.6m²/28ft²

Electrical Specifications

Explosion Proof

Class 1 - Division 1

Groups C and D

Class 2 - Division 1

Groups E, F and G



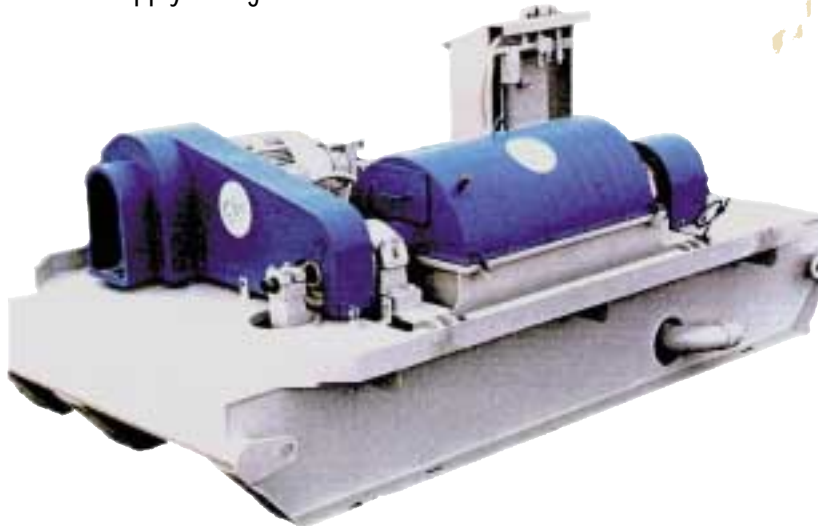
DRILLING FLUID EQUIPMENT

DFE 600 X 960 High Volume Centrifuge

Drilling Fluid Equipment's High Volume Centrifuge is a ruggedly constructed, low maintenance skid mounted decanter, designed specifically for operation in harsh environments and remote locations.

The DFE 600 x 960 High Volume Centrifuge is unique from competitive equipment in that the rotating bowl assembly is mounted separately from the skid via wedge type vibration isolators. This feature eliminates bowl frequency vibrations being transmitted to the electrical switchgear, hydraulic system and mounting platform.

The unit comes complete with either variable speed skid mounted electric feed pumps, or an integral hydraulic driven variable speed pump, controlled at the machine. The hydraulic pump system is well suited to installation where minimal space requirements are necessary, or where the location of the feed supply changes.



CENTRIFUGE SPECIFICATION

Overall Dimensions:
Height: 1550mm (61")
Width: 2300mm (90")
Length 3780 (149")

Electrical Specifications
Explosion Proof
Class 1 - Division 1 Groups C and D
Class 2 - Division 1 Groups E, F and G

Overall Weight: 3750 Kgs (8270 lbs)
Motor Horsepower: various

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Centrifuge Equipment Design, Fabrication and Application

Centrifuge applications for Dewatering, industrial site clean-up waste treatment of various types of industrial oil and water based drilling mud residues, timber treatment chemicals, acid spills, dairy and piggery sludges. Clients include Ensign, Century Drilling and Parker Drilling.



Apache Australia, design, build Stainless steel centrifuge combined with oil sand cleaning system for offshore production platform.



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DRILLING FLUID EQUIPMENT

DFE Vacuum Degasser

The DFE Vacuum Degasser is based on field proven technology that has been the industry standard for 30 years.

The DFE Degasser removes potentially dangerous gas from drilling fluids by exposing the fluid to a vacuum, the gas is then safely vented.

The DFE degasser is available in various sizes and flow rates to suit rig or well requirements.



ELECTRICAL SPECS

- Explosion Proof
- Class 1 - Division 1
Groups C & D
- Glass II - Division 1
Groups E, F & G

PROCESS RATES

- Available in
- 600 GPM
 - 800 GPM
 - 1000 GPM
 - 1200 GPM



DFE Poorboy Degasser

The DFE Poorboy Degasser

Proven Field Technology

Process rates to suit individual rig or well requirements.

Designed and built to international oil industry standards





DRILLING FLUID EQUIPMENT

Industrial Waste Treatment



Waste water treatment

- Automatic pH control systems
- Suspended particulate removal
- Coagulation and Flocculation systems
- Chemical dosing systems

Waste treatment

- Sludge dewatering systems
- Oil water solids separation systems
- Timber treatment chemical recovery systems (CCA recovery)

Each waste treatment application presents unique problems that require innovative solutions. DFE is happy to discuss any process water or waste water treatment problems you may have.

Current waste treatment projects

Mercury Energy Tunnel Project (Auckland) – *Water clarification and automatic pH control system*

Apache Energy (Stag platform N/W Shelf Aus) – *Oil water sludge separation*



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Mud Tank Systems Design and Fabrication



Sedco-Forex International Drilling SMART 1 Slimdrill Rig

Design and construction of a utilised single skid transportable mud tank system with high ground clearance.

Package is complete with fluid mixing, transfer and solids control equipment.

Package includes DFE designed SCR-01 Linear Motion Shaker and DFE 600 x 960 Centrifuge.

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DRILLING FLUID EQUIPMENT

Mud Tank Systems Design and Fabrication



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DRILLING FLUID EQUIPMENT

Mud Tank Systems Design and Fabrication

Oil Drilling and Exporation Limited

Land Rig

Design and construction of a two tank mud system, complete with mixing, agitation and solids control.

Package included 2xDfE SCR-01 Shakers, Centrifuge, Desilter, Poorboy Degasser and vacuum degasser

Leighton Engineering



Mini Mud Systems

Designed to support directional drilling industry





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Premium Screens for the Oil and Gas Drilling Industry

DFE offers a complete line of OEM replacement screens for all shale shakers in the oil field drilling industry. Whether your vibratory shaker is linear, elliptical, or a circular motion machine, DFE can provide a quality screen for you.

When you are faced with screening challenges offshore or onshore DFE has technicians, who are trained and experienced in all aspects of solids control. They will work with you to provide the best possible solution, to meet your specific solids removal needs.

The RDX, available for every shaker, provides outstanding screen life for heavy loading applications. HDX offers a higher capacity screen with an improved longevity over other suppliers screens.

DFE supplied panels give screen technology which can eliminate costly equipment upgrades to meet the faster drilling and circulation rates required in today's challenging drilling operations. The RDX and HDX panels are designed to last longer, handle higher flow rates, resist blinding, and remove fine solids which minimise screen changes and downtime.

The RDX mesh screen is a strong triple layer screen whose design includes wire diameters over 75% thicker than conventional screens, and 30% thicker than other suppliers "premium" screens. These thicker wires are more resistant to the wear and tear and ensure longer screen life.

The HDX screen is a rectangular weave with an aspect ratio (the length to width ratio of its opening) specifically designed to provide maximum flow capacity without sacrificing integrity of its opening size.

The HDX weave has the inherent qualities of a multi-layer rectangular mesh screen. This advantage of resisting particle blinding avoids the associated cost of fluid loss over screens that "blind off."

DFE also provides a world wide support network





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Liquid Mud Plants



Design, build and erect project for ReoChem's Mud Blending Plant, consisting of 13 tanks and vessels located at Dampier, Western Australia.



Design, build and erection of M I Drilling Mud Storage Comple, Taranaki, New Zealand



Design, supervision and technical support for Baroid Australia Pty Ltd Drilling Mud Plant for offshore supply. Located in South Australia.

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HDD Mud Systems

DFE Ltd has applied its experience and technology to design mud cleaning and mixing systems for the directional drilling industry. System capacities vary from 1200-2000 US Gallons to suit rig requirements. Several of the systems currently operating in Australia were custom built to suit clients specific needs. DFE Cleaning systems of 1500 and 1800 US Gallons are available also



DFE-2000 Mud Mixing & Cleaning System

The DFE-2000 incorporates the DFE-SCR-01 Linear Motion Shaker, a 3"x 5" cone desilter, 1x centrifugal pump, a 3" high shear mix hopper & eductor, and a turbine bladed agitator. Total capacity = 2000 US Gals. Circulating capacity is 200-240 US GPM. Full system specifications are available on application.



DFE-1200 Mud Mixing & Cleaning System

The DFE-1200 incorporates the DFE-SCR-01 Linear Motion Shaker, 1x centrifugal pump, optional 2 or 3x 5" cone desilter, optional 3" high shear mix hopper and eductor. Total capacity = 1250 US Gals. Circulating Capacity is 100-150 US GPM (or to suit client requirements).





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Process Equipment Design and Fabrication Process

DFE SCR-O1 Mud Cleaner “THE MUD DOCTOR”

The unique manifold design minimises the pressure drop across the hydrocyclones, thereby maximising solids removal, and reducing the volume of mud discharged with the captured solids from the cone. Processing capacities available are 600, 800, 900 and 1,200gpm.

With 28ft² of screen area the DFE MUD DOCTOR has one of the largest screen decks on the market.

Screen are available in 50 mesh through 325 mesh with special application screens up to 450 mesh available on request. The MUD DOCTOR is a valuable asset for any operator looking to reduce their mud and maintenance costs through controlling drill solids.



Desilters



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Process Equipment Design and Fabrication Process



Ngatoro Gas Production
Station design and build



Cutting Bottle



Hydraulic Power Unit

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Stainless Steel IBC

Certified for UN Tank Code 31A and UN Packaging Groups Class II and III.
Further codes are pending.

IBC Specifications and Compliances

Characteristics

Range of Approval

Description	1500 Ltr Stainless Steel IBC
Nominal Capacity	1500 Ltr (400 US Gals)
Actual Capacity	1575 Ltr (416 US Gals)
Empty Mass	265 Kgs (584 lbs)
Maximum Permissible Gross Mass	2360 Kgs (5203 lbs)
Maximum Product Weight	1.5 SG (12.5 ppg)
Type of Substance	Liquids, Solids
UN Packaging Group	11 & 111
UN Code	31A
Packaging Goup	A
Stacking Height	Maximum of one IBC to be stacked upon bottom IBC
Construction	Welded
Materials of Manufacture	Body: ASTM A240 - Grade 304L Fitting: ASTM A240 - Grade 304L Seals and couplings to customer requirements



For transport of bulk hazardous and
non-hazardous liquids



ISO/IMDG Offshore Chemical Containers

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Engineering and Technical Support from Associate Company Amtec Engineering Limited

They can provide a range of services tailored to meet the client's needs, including:

- Project Management
- Process Design
- Engineering
- Estimating and Cost Control
- Procurement and Supply
- Construction Management & Supervision
- QA/QC Control
- Asset Evaluation
- Skid Mounted Equipment
- Instrument Design and Manufacture
- Coded Welding
- Machining
- Fabrication in Stainless and Carbon Steel
- Construction and Operation of Experimental or Pilot Plants
- Plant Commissioning and Operator Training

Both companies have extensive involvement in the following industries:

- Dairy & Meat Producers
- Chemical
- Forestry and Timber
- Petrochemical
- Pollution Control
- Power Generation
- Oil and Gas Exploration
- Water and Waste Water Treatment
- Defence Technology



- API & Telarc ISO 9001 Registered Supplier
- APIQR Q1-0275 / API Spec Q1
- APIQR TS-0069 / ISO TS 29001:2003
- AP1QR 0542 / ISO9001:2000

In-house CBIP qualified QA personnel

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