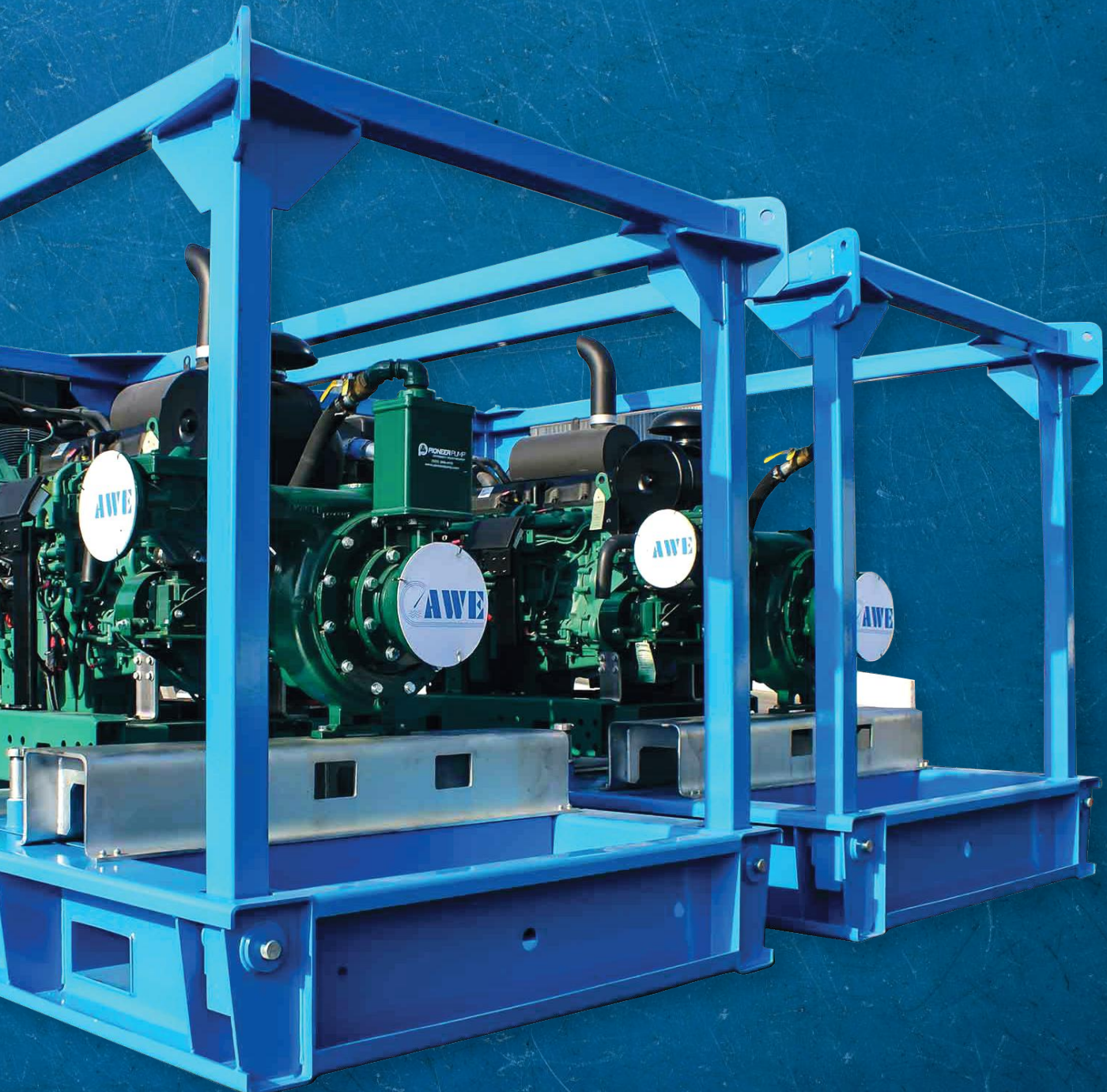


Asia Waterjet Equipment

CENTRIFUGAL PUMPS



WHO WE ARE

AWE was formed almost 30 years ago out of a passion for solving cutting and cleaning problems in challenging environments whether they be hazardous areas, difficult to clean applications or difficult to pump product.

Today, we continue to deliver solutions that save our clients from unnecessary downtime, operator costs and reducing turnaround times.

Our mission today is to bring safer and more efficient solutions to the markets we serve in the Middle East and Asia.

We are also proud to be partners with some of the leaders of their industry segments like Pioneer Pumps on single stage centrifugal and & Discflo Corporation, a leading innovation on hard to pump applications.

When the pressure is on, you can count on us!

CONTENT

- Single Stage Centrifugal - Pioneer Pump
- Discpack Pump – Discflo Corporation
- Multistage pump
- Chemical cleaning pump
- Mud pump

APPLICATIONS SUPPORTED

Construction and Municipalities

- Ground water control / dewatering
- District cooling/ Utility network flushing
- Sewage over-pumping

Energy and Industrial

- Oil and Gas Frack Feed pumps
- Pipeline pigging pumps
- Pipeline flushing and testing
- Chemical Cleaning/ flushing



SINGLE STAGE CENTRIFUGAL - PIONEER PUMP

Leading-edge hydraulic engineering makes Pioneer centrifugal pumps the highest performing pumps on the market. Their pumps provide better flow, higher head, greater efficiency, and unparalleled service designed to meet your unique challenges.

Type of Pumps

- Automatic self priming pumps
- Standard centrifugal pumps
- Wet self priming pump



Performance:

- Flow range 4 to 5000 m³/h
- Head maximum of 210 m
- Maximum suction Lift 6m
- Size 4 inch to 30 inch

Application:

- Dewatering
- Water Transfer

Features:

- Fully automatic dry priming, vacuum assisted pump
- In-build mechanically driven Diaphragm Style Vacuum Pump
- Air removal capacity of 50CFM
- Maximum solid handling 3 inches



Performance:

- Flow range 4 to 5000 m³/h
- Head maximum of 210 m
- Size 4 inch to 30 inch

Application:

- Booster Pump
- Water Transfer

Features:

- Maximum solid handling 3 inches
- Oil lubricated mechanical seal Designed for indefinite dry running
- Ductile Iron or Duplex material options
- Option of Oil & grease lubricated bearings



Performance:

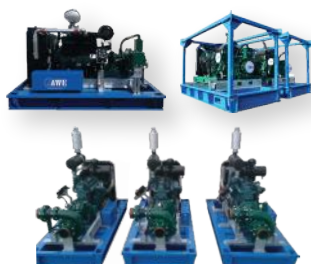
- Flow range 4 to 800 m³/h
- Head maximum of 60 m
- Size 4 inch to 30 inch

Application:

- * Booster Pump
- * Water Transfer
- * All fluid handling

Features:

- Maximum solid handling 1.25 inches
- Oil lubricated mechanical seal Designed for indefinite dry running
- Ductile Iron or Duplex material options
- Option of Oil & grease lubricated bearings



PACKAGE CONFIGURATIONS

Configuration:

- Electric Driven
- Diesel engine driven

Package options:

- Complete skid mounted Diesel engine driven pumps
- Heavy duty & robust Skid
- Option of trailer mounted arrangement
- Option of crash frame
- Option of canopy



DISCPACK PUMP - DISCFLO CORPORATION

Discflo's pumps have been solving problems in the Oil & Gas + Petrochemical, offshore and onshore service, subsea operations, tank transfer, environmental clean-up operations, crude oil processing and pumping oil / water emulsions industry for over 36 years. The powerful combination of superior abrasion resistance, gas entrained pumping ability, and non-emulsifying laminar flow make the disc pump the ideal choice for some of the toughest applications.



NON PULSATING, LAMINAR FLOW

HARNESSING THE POWER OF BOUNDARY LAYER VISCOUS DRAG

The **non-impingement** and **laminar flow** pumping of the disc pump is similar to flow through an ordinary pipe. The layers of fluid at the walls are stationary (relative to the rotating discs), creating a protective boundary layer. Viscous drag pulls layers into flows of smooth laminar streams.

NO CLOSE TOLERANCES

The disc pump is not a centrifugal pump, positive displacement, gear or lobe pump. Unique in design, the disc pump bridges the performance gaps of conventional pumps and is capable of out-performing all of them in many applications.

Non Pulsating, Laminar Flow

NO RADIAL LOADS

The disc pump uses a new and patented technology that isn't available in any other pump. The technology of the disc pump harnesses the natural power of the boundary layer and viscous drag.

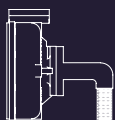
NON PULSATING, LAMINAR FLOW

Through viscous drag, the fluid is pulled through the pump without impingement. The boundary layer attracts and drags successive layers of fluid molecules into layered flows of parallel streams. This is the simple principle of viscous drag and in the disc pump it is a powerful dynamic force that "pulls" the fluid through the pump in a smooth laminar, non-turbulent flow.

With no impingement device to damage your product and a boundary layer of protection for the pump, the disc pump effectively eliminates the root cause of clogging, cavitation, excessive wear and product damage that plague the performance of conventional pumps. Discflo is more reliable and efficient in handling tough application and a lot more cost effective. It simply lasts longer, requires fewer (if any) repairs and doesn't damage your product.



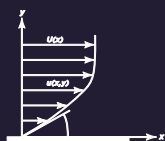
DISCFLO ADVANTAGES



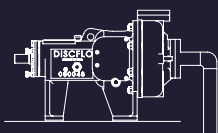
NO PULSATION



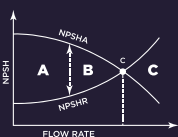
LONGER SEAL LIFE



LAMINAR FLOW



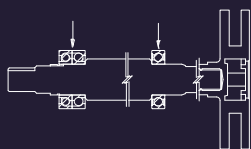
**HIGH SUCTION
LIFE CAPABILITY**



VERY LOW NPSH



**EXCELLENT
MEAN TIME TO
REPAIR (MTTR)**



NO RADIAL LOAD



**EXCELLENT MEAN
TIME BETWEEN
FAILURE (MTBF)**

Non-impingement pumping, laminar, pulsation-free flow offers the best protection for shear-sensitive products and ensures pump longevity.

No close tolerances or loss of performance due to wear

Open design prevents clogging, so pump can handle large or stringy solids, as well as fluids with varying solids content, size or viscosity.

Low NPSHr—about a third to a half less than a comparably sized centrifugal pump

Increasing efficiency as fluid viscosity increases due to the viscous drag pumping principle

Low wear even in abrasive service due to the laminar flow and non-impingement pumping

Exceptional reliability due to rugged construction and solids handling capability

Very few spare parts required (less than 5% of company revenue comes from parts sales)

Runs Dry Indefinitely, Provided seal must be protected

Hydraulic flow capacities: 1-8000 GPM

Differential pressures: Up to 433 psi

Discpac diameters: 1.75"– 24"

Working pressures: Up to 2500 psi

Operating temperatures: Up to 1000°F

Viscosities: Up to 700,000 + cP

Solids size (max): 8"

Pump speeds: 3600 + rpm

MULTISTAGE PUMP



Performance:

- Size: 3 inches to 12 inches
- Flow: up to 1000 m³/h
- Pressure: up to 130bar

Features:

- Wide range of material options
- Power Take-off for engaging/dis-engaging
- Heavy duty & robust Skid
- Unique Self-priming arrangement negating need for extra priming pumps at site.
- Capable of suction lift up to 6m.
- Option of trailer mounted arrangement

Applications:

- Pipeline flooding to push cleaning or inspection pigs through the pipelines
- Pipeline testing
- Pipeline flushing



CHEMICAL CLEANING PUMP

- Chemical cleaning is often used as a method to flush chemicals or acids in the tanks.
- Normally water is mixed with these chemicals/acids, flushed and pumped out from the tank.
- Flushing liquid is a mixer of chemical and water and may be toxic.
- Chemical cleaning pumps are offered in a range of material depending on the liquid composition

Features

- End suction centrifugal pump
- Flow up to 600 m³/h
- Head up to 16 bar
- Material options from stainless steel to Hastelloy
- Driven by Electric Motor or Diesel engine
- Option of skid mounted or trailer mounted



MUD PUMP

Centrifugal mud pump used to circulate the Mud + Water mixer in oilfield drilling rigs. Rugged construction & Heavy-duty modular design provides high reliability and flexibility in Drilling Application. Pump is designed to run over a broad range of performance and deliver outstanding suction lift. Exceptional hydraulic designs combined with outstanding quality assures less service and downtime, leading to increased production and profits.

Ductile iron volutes and hardened stainless-steel impellers are designed for long life even when pumping abrasive liquids.

Specialized self-lubricating Mechanical seal design with dry run capability for longer life.

Features

- End suction centrifugal pump
- Flow up to 600 m³/h
- Head up to 16 bar
- Driven by Electric Motor or Diesel engine
- Option of skid mounted or trailer mounted



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CENTRIFUGAL PUMPS

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