

SPM SINGLE TRIPLEX PUMP SKID (10,000 PSI – DNV CERTIFIED)

DESCRIPTION

The SPM Single Triplex Pump Skid (10,000 PSI) is a robust, high-pressure pumping unit designed for the transfer of acid, cement slurry, and various other liquids in demanding oilfield operations. Capable of handling pressures up to 10,000 PSI, it is ideally suited for both onshore and offshore oil wells.

This unit is DNV certified and designed in compliance with ADNOC standards, ensuring safe and reliable performance in critical environments. The skid is built with a custom heavy-duty crash frame, featuring forklift pockets, certified pad eyes, and lifting slings for easy and secure transportation.

For safe operation in hazardous areas, the unit is equipped with an ATEX-approved spark arrestor and a Chalwyn valve, making it suitable for use in Zone 2-rated areas. A platform-mounted control panel enables efficient operation, monitoring, and maintenance, while the epoxy-coated structure ensures durability and corrosion resistance in harsh conditions.

150 BBL DNV SPECIFICATION

General

Engines

Type Detroit Diesel Series 60 (14.1 Ltr)

Capability 630 bhp [474 kW] at 2,300 rpm, dry manifold

Safety Attachments One Chalwyn Valve, One Spark Arrestor – ATEX approved

Engine Emissions Compliance EPA Tier III Approved. • EURO Stage III Approved.

Transmission Allison Transmission 4700 OFS Series

Triplex Pump

Type SPM® TWS 600S Heavy Duty (HD)PUMP

Pressure rating 10,000 PSI

Maximum brake horsepower input 600 BHP

Maximum rod load capacity 106,029 LBf

Plunger size 3.5 Inch

Displace Per Rev 0.75 Gal/Rev

Drive Mechanism

Power take-offs Parker Chelsea 267

Hydraulic pumps One Veljan Denison hydraulic vane pump

Centrifugal pumps One 6 x 5 x 14 Forum pump or equivalent

Hydraulic pumps One Veljan Denison hydraulic motor

Hose Parker

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|---------------------------------|---|
| Control Panel Gauges | <ul style="list-style-type: none"> ✓ Engine RPM ✓ MD Totco Pressure gauges 0-15k PSI with over pressure protection ✓ Beka Digital flow rate and totalizer display ✓ Engine Oil ✓ Transmission oil Pressure ✓ Transmission lock-up pressure ✓ Triplex Oil Pressure ✓ Engineer Coolenet Temperature ✓ Transmission Oil Temperature ✓ Triplex Oil Temperature ✓ Air Pressure ✓ C-Pump Hydraulic Pressure |
| Safety | |
| Emergency Kill switch | 1 Qty |
| Spark arrestor | Atex Chawlyn SS spark arrestor x 1 |
| Over-pressure Shutdown | MD Tocto Pressure gauges 0-15k PSI with over-pressure protection |
| Air cut off | Atex Chawlyn Overspeed air cut-off valve |
| Battery cutoff switch/plug | 1 Qty |
| Certification | |
| Crush Frame | DNV 2.7-1 Certified |
| Quality Management | ISO 9001 Certified |
| Certificate of Conformity [COC] | <ul style="list-style-type: none"> ✓ Complete unit ✓ Diesel Engine ✓ Transmission ✓ Centrifugal Pump ✓ PTO ✓ Slings |
| Third-party Inspection | |
| Zone II | <ul style="list-style-type: none"> ✓ Diesel Engine ✓ Explosion-proof lights |
| MPI | <ul style="list-style-type: none"> ✓ Complete weld joints ✓ Lifting Pad eyes |
| UT | <ul style="list-style-type: none"> ✓ Diesel Tank ✓ Hydraulic Tank ✓ Air Tank ✓ Lub Tank ✓ Triplex pump oil Tank |
| Pressure Test | <ul style="list-style-type: none"> ✓ Hose ✓ Triplex |
| Dimensions | |
| Length | 6.058 m [19 ft 10.5 in] |
| Width | 2.438 m [8 ft] |
| Height | 2.728 m [8 ft 11.40 in] |

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|--------------------|---|
| Weight (dry) | 15,000 kg [33,069 lb] |
| Ambient rating | -20 to 60 degC [-4 to 140 degF] |
| Painting | |
| Sandblasting | Off-white metal standard SA 2 ½ or equivalent |
| Painting Exterior | |
| Base coat | Epoxy primer – 1 Coat |
| Intermediate Coat | As per client RAL – 1 Coat |
| Top Coat | As per client RAL – 2 Coat |
| Painting Interior | Epoxy Primer – 1 Coat |
| Components & Parts | As per client RAL |
| Skid Label | |
| Nameplate | Unit Name plate [20cm x 20cm] |
| Company Logo | As per client requirements |
| Weight | Marked on two place lifting frame in English and metric |
| Dimension | Marked on two place side frames in English and metric |
| Unit number | Welded to the base of the structure |

APPLICATION

1. Cement Pumping Applications

Triplex pumps are essential in **primary and remedial cementing operations**. Their role includes:

- ✓ **Primary Cementing:** Pumping cement slurry into the annular space between the well casing and borehole to:
 - Secure the casing
 - Provide zonal isolation
 - Protect against the formation of fluid migration
- ✓ **Squeeze Cementing:** Used in **remedial operations** to seal off zones or repair casing leaks.

Why Triplex Pumps?

- ✓ High-pressure capability (up to 10,000+ PSI) to ensure slurry reaches target depth
- ✓ Precise flow control to match displacement schedules
- ✓ Reliability under continuous and high-load operation

2. Acid Pumping Applications

In **well stimulation**, especially in carbonate formations, **acid pumping** is performed to improve reservoir permeability by dissolving formation damage.

Triplex pumps are used for:

- ✓ **Matrix acidizing:** Injecting acid at pressures below fracture pressure
- ✓ **Acid fracturing:** Pumping acid above fracture pressure to etch flow paths in the rock

Why Triplex Pumps?

- ✓ Chemical-resistant design for handling corrosive acids (HCl, HF)
- ✓ Controlled flow rate to ensure safe and effective stimulation
- ✓ High pressure to penetrate deep into the formation

ADVANTAGES

- ✓ **Durability:** Handles abrasive slurries and corrosive fluids
- ✓ **Precision:** Flow rate control ensures treatment effectiveness
- ✓ **Safety:** Designed with pressure relief and lubrication systems
- ✓ **Modularity:** Can be skid-mounted with control systems for remote or mobile operations