



DRAGON®

Electric Mobile Frac Unit



*picture may not represent listed specification

GENERAL UNIT DESCRIPTION

Dragon 4-Axle trailer with an 3300HP Electric Motor driving a Dragon DP4000Q Power End and Dragon XL Stainless Steel Fluid End

- Dragon 4-Axle Trailer with rear Drop
- Dragon DP4000Q Quintuplex
- Dragon Stainless Steel Fluid End
- 3300HP Electric Motor
- 2461 KW Power Cube

POWER CUBE

The Power Cube is an integrated system designed to supply power to oil and gas fracking process equipment. The Power Cube benefits are a space saving design able to be exposed to the weather and multiple environmental conditions. The Power Cube is composed of multiple components packaged in an ergonomic single enclosure that allow for power transformation and conversion. The entire cubicle will be mounted on a common skid. The electrical components will be interconnected reducing the need for external cabling of the components. There will be access through dust and waterproof cable glands into the cabinet for connecting to the driven equipment. The main driven equipment will be an electric motor as the prime mover of the process equipment.

POWER CUBE Cont'd

The cube will be a self-contained power center and encompass the main motor drive, auxiliary equipment loads, power transformer, and disconnect. The entire cube will be suitable for mobile transport and shock mounted.

POWER CUBE MAIN COMPONENTS SECTION

Transformer – A uniquely designed transformer that encompasses multiple taps and voltages specific to the application. The transformer will be aluminum wound. with the following:

- 4800 kVA
- 13.8 kV Primary
- 720 VAC Secondary 1
- 480 VAC Secondary 2

Motor Control Center – The motor control center will be IP66 rated and suitable for outdoor duty. The starters will be incorporated into the power cube for the purposes of providing a single source power cube application and space savings. In addition to the motorized incoming MCC breaker, a customer utility breaker and receptacle has been added for low voltage customer testing.

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Motor Control Center Cont'd

- Lube Oiler Motor
- AC Motor Cooling Fans
- Spare
- 10 kVA – 480/208/120 VAC

Power Converter – The power cube will contain a uniquely designed variable frequency drive power converter to drive the main process motor. The drive will be a liquid cooled design that will be enclosed in an IP66 section of the power cube. The means to expel heat from the cabinet will be through small radiator style heat exchangers cooled by the below described cooling section. The radiator heat exchanger is a means of cooling the cabinets internal volume and air and is unique to the design and eliminates the need for an external air conditioner.

Cooling Section – The cooling section will be an electric motor operated recirculating pump that pumps cooling liquid through the cabinets radiators, drive system, reactors, and rectifiers. The liquid is then cooled across a fan cooled radiator and circulated.

AC MOTOR

- 3300 HP
- 690 VAC
- 40.3 Hz
- 2515 Amps
- 2200 RPM Max Speed
- .9 power factor
- 6 Pole
- 21,665 ft lbs nominal torque @ 800 RPM
- 32,496 ft lbs max torque
- Horizontal mount
- Single shaft extension
- Insulation Class H
- Connection: Wye
- VPI Form wound
- Ingress Protection IP44 (Open)

AC MOTOR Cont'd

- Strip Heaters installed
- (6) 100 Platinum RTD'd installed on windings (2 per phase)
- 100 ohm Platinum RTD per bearing
- (2) Cooling blower rated 25 hp, 3600 rpm, 460 volt, 3600 CFM, XP motor, 3 phase, 40c ambient, stainless steel construction.
- Motor is designed and provided with a side mount junction box
- XP Lockout device
- XP blower pressure

TRAILER

Dragon manufactured support structure composed of a quad axle with rear lift axle skeletal chassis, fabricated from T-1 steel plate.

- King Pin Mounting Height: 49"
- Axles: 22,500 lb., 77.5" Track, Universal Oil Seals and Bearings, Open Brake Cams, Auto Slack Adjusters
- Brakes: 16.5" x 7" Q Brakes with 30/30 Springs
- ABS: Bendix 4S/2M
- Tires: 255/70R22.5
- Landing Gear: Jost, 2-Speed, 50,000 lb. Capacity
- Bumper: Oilfield Style with Tow Eye
- Electrical: Sealed Modular System with Sealed Beam LED Lights
- Rearmost Lift Axle
- Suspension Includes Dump Valve

TRAILER DIMENSIONS

- Capacity: 116,000 lb.
Overall Length: 51'
- Height: 14'
- Overall Width: 8' 6"

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PUMP

Quintuplex positive displacement pump is mounted on the rear of the unit.

- Pump: Dragon DP4000Q Pump and Fluid End
- Fluid End: Valve Over Valve
- Rated Power: 4,000 HP
- Stroke: 8"
- 275,000 Rod Load
- Gear Box Ratio: 6.963:1
- Maximum Pressure: Dependent on Fluid End Size
- Lube Oil (*Power End*): ISO 220 Recommended
- Grease Lube (*Fluid End*): 00 Grease Recommended

Pump is Driven from a drive line that is attached to the Electric Motor. A drip tray is installed below the fluid end, which includes a 3/4" drain plug located on both ends for water to drain. There is also a 3" collar with a removable plug for clean- out underneath the drip pan.

SUCTION MANIFOLD

The suction manifold includes a 6" charge line to the pump that is equipped with 2-6" flapper valves with 6" 206 connections located on the rear of the trailer for ease of hook up. The 6" connections have removable caps attached to the manifold by a chain.

PLUNGER LUBE SYSTEM

The pump's fluid end is lubricated via a 24V grease system that is enclosed in protected housing with a view through the front. Grease is distributed through an independent hose for each cylinder from the system pump. System is activated when the rotation of the drive line is above present minimum rpm.

POWER END LUBE SYSTEM

The power end lubrication pump system has 3 circuits kidney loop pump, dedicated gearbox pump and power end pump. A cooler is installed to prevent overheating of the oil. The thermostatic valve controls the flow through the cooler, which allows the oil to bypass the cooler until the minimum oil temperature is reached. The system is also equipped with a relief valve that optimizes the flow of oil to the power end. Lube tank is equipped with a manual shut off valve for maintenance purposes.

- Sight Glass
- Five High Flow Filters (*25 Micron*)
- Temperature and Pressure Sensor (*Displayed on Pump Control Data Screen*)

ELECTRONICS

Dragon Controls

STORAGE

Top hinged lid tool box, located on the passenger side of the trailer.

DOCUMENTATION

Each unit is provided complete with two (2) sets of data and equipment manuals for the purchased components, as available from and supplied by the component manufacturer. Documents will be supplied as manuals and (1) set in electronic form, where applicable.

PAINT

Paint color specification to be supplied by customer, (2) color maximum. Additional colors are available for an additional charge.

OPTIONS

- Multi-Pump System
- Data Tracs Data Acquisition System