



# 120 BBL BLENDER TRAILER MOUNTED TIER IV



\*picture may not represent listed specification

## **GENERAL UNIT DESCRIPTION**

Trailer mounted Blender suitable for oil/gas fracturing operations, designed for continuous and homogeneous blending of frac fluids, which include base fluids, gels, proppant, dry and liquid chemical additives. The unit has a maximum discharge rate of 120 BPM.

- Heavy Duty Tri-Axle Trailer
- (1) Tier IV Diesel Engine CAT C18 (800HP)  
- CAT CX35 Transmission
- (1) Tier IV Diesel Engine - CAT C18 (755HP)
- Hydraulic System
- Mixing System
- Suction and Discharge Pumps
- Proppant Loading Augers
- Control Systems and Instrumentation
- (4) Liquid Add Chemical Systems (Standard)
- (1) Dry Add Chemical System (Standard)

## **TRAILER**

The support structure for the unit is a Dragon Manufactured, Heavy Duty, Tri-Axle Trailer with fifth wheel towing arrangement that includes the following features:

- Trailer: Heavy Duty Twin Beam Construction
- Length: 44' (13.41m)
- Height: 13'6" (4.1m)
- Width: 8'6" (2.6m)
- Air Ride Suspension/ABS Brakes
- Steel Wheels
- Two-Speed Landing Legs
- Air/Electric Tractor/Trailer Connections

## **DIESEL ENGINE FOR HYDRAULIC SYSTEM**

CAT C18 diesel engine rated for 755HP at 2100 RPM, equipped with the following:

- EPA Rating: Tier IV
- Air Kill Flapper for Emergency Engine Shutdown
- Oil Pan with Easy Access to the Drain Valve

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## **DIESEL ENGINE FOR HYDRAULIC SYSTEM**

*Cont'd.*

- 24-VDC Alternator with Dedicated Battery System
- Shutdown System for Low Oil Pressure, High Water Temperature and Engine Over Speed
- Electric Start System

## **DIESEL FOR ENGINE DISCHARGE PUMP**

CAT C18 diesel engine rated for 800HP at 2100 RPM, equipped with the following:

- EPA Rating: Tier IV
- CAT CX35 Automatic Transmission
- Heavy Duty Air Filter with Inlets Equipped with Rain Guards
- Cooling System with Thermostats
- Air Kill Flapper for Emergency Engine Shutdown
- 24-VDC Alternator with Dedicated Battery System
- Shutdown System for Low Oil Pressure, High Water Temperature and Engine Over Speed
- Electric Start System

## **HYDRAULIC SYSTEM**

Combination closed and open loop system. Hydraulic pumps and other components are from reputable manufacturers with world-wide availability. The system operates with the following equipment:

- (1) Hydraulically Driven Suction Centrifugal Pump (12"x12")
- (3) Sand Auger Drive Motors
- Blender Tub Agitator Motor
- Hydraulic Auger Positioning System Cylinder
- 160 Gallon Hydraulic Reservoir
  - Strainers/Return Filtration
  - Sight Glass for Oil Level
  - Hydraulic Oil Cooler
- Base System Designed for Additional Hydraulic Options

## **LIQUID ADD SYSTEM**

- Equipped with (4) Liquid Add Chemical Systems with Micro Motion Flow Meters (*Standard*)
- Up to (8) Can Be Included as an Additional Option

## **DRY ADD SYSTEM**

- (1) Stainless Steel Dry Add Chemical System with a 2" Auger (*Standard*)
- (1) Additional Stainless Steel Dry Add Chemical System Can Be Included as an Option

## **MIXING SYSTEM**

The mixing system consists of the following:

- Suction Pump and Manifold
- Discharge Pump and Manifold
- Blender Tub
- Sand Augers
- Cross-Over Plumbing

## **SUCTION PUMP AND MANIFOLD**

The hydraulically driven centrifugal pump is capable of pumping base fluids in excess of 120 BPM from the supply tank to the blender tub. Mounted on the suction side of this pump, the suction manifold has twelve 4" 206 winged input connections, with butterfly valves and (1) 8" input connection, and includes a 10" magnetic flow meter. A hydraulically operated valve is installed before the blender tub. Suction pump can pull from curbside or roadside.

## **DISCHARGE PUMP AND MANIFOLD**

The variety of options of discharge pumps are capable of pumping from the blender tub proppant laden slurries at rates of 125 BPM. The suction side of this pump is connected to the blender tub, while the discharge side of the pump feeds the discharge manifold. The discharge manifold has (12) 4" 206 winged input connections with butterfly valves and an 8" discharge connection that includes a 10" high-signal magnetic flow meter. An 18" removable blank is included for installing the customer supplied densitometer. Pump can discharge from curbside or roadside.

## **BLENDER TUB**

The 16 barrel capacity mix tub ensures complete and consistent blending of high density slurries. Tub is complete with the following:

- Agitator
- Directional Nozzles
- Hydraulic Inlet Valve
- 4" Air-Actuated Bottom Drain Valve

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## SAND AUGERS

Three standard sand augers are installed at the rear of the unit from the hopper to the blender tub, and designed to be hydraulically raised and lowered. Each auger includes hydraulic slide gates at the hopper.

- (2) 12" Auger at 39lb/rev (*Full Flight*)
- (1) 12" Auger at 22lb/rev (*Half Flight*)

## CONTROL SYSTEM

The control system is accessible by ladder, with safety railing and grating. The control panel is marked with the following controls and gauges installed:

- Engine Start, Stop, Throttle and Display Modules
- Engine RPM, Oil Pressure and Coolant Temperature Gauges
- Proppant Auger Speed Controls with Forward and Reverse Switches and Flow/Total Displays
- Liquid Chemical Pump Speed Controls with Flow/Total Displays
- Dry Chemical Feeder Speed Controls with Flow/Total Displays
- Tub Paddle Speed Control
- E-Stop and Light Switches
- Air and Hydraulic Pressure Gauges
- Discharge Bypass, Suction Bypass and Pneumatic Tub Drain Switches

## ADDITIONAL EQUIPMENT

- Greaseable Points are Remote to a Common Rail
- Auger and Tub Paddle Attached to Auto Greaser

## PAINT

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

## OPTIONS

- Arctic Package
- Up to (8) Liquid Add Chemical Systems Variable Speed Pumps
- Up to (2) Dry Add Chemical Systems with Feed Augers (0-120 RPM)
- Customer Specified Control System
- Auger Size Options Available
- Up to (4) 107 Gallon Stainless Steel Chemical Containers with Transfer Pumps

PROCESS FLOW DIAGRAM

