

# TRITON

## LONG RANGE SOURCE PUMPING SYSTEM

### NBF200

- High Capacity Mobile Pumping System
- Access to Any Open Water Source at up to 150 Feet Horizontal and 50 Feet Vertical
- 3000, 4000, 5000, 6000, 10000 GPM Models Available
- Configurations: Skid, Trailer, or Rail Mounted



### Description

The Triton pumping system is a single, integrated, diesel powered mobile unit capable of pumping up to 10,000 gpm.

Triton utilizes two hydraulically driven, floating Satellite Pumps to supply water to any Boost Pump located remotely. The Satellite Pumps are stored in the rear of the module for transport but can be located at distances up to 150 ft from the Boost Pump when deployed. In addition, the Satellite Pumps can provide up to 124 ft of vertical lift. This operational functionality increases tactical flexibility of pumping operations in two primary areas;

- The Triton can be placed up to 150 ft from a water source allowing the operator accessibility to more open water sources than with standard pumps which have suction limitations of typically 15 ft in horizontal distance.
- Floating Satellite Pumps can supply up to 124 ft of vertical lift allowing the operator accessibility to open water sources previously not available to standard suction pumps which can only draw up to 10 ft of vertical lift.

Triton design allows the Satellite Pumps to supply water directly to pumping devices, other than Triton, located within reach of its 150 ft hoses.

Triton has been designed to facilitate periodic maintenance requirements. Light maintenance is facilitated by locating all fluid fill and drain connection positions through access doors. All air filters and fluids level check locations have been remotely located so that they are accessible at operator access doors. Heavy maintenance is easily accomplished via removal of enclosure skins, allowing personnel to access all interior equipment. All main engine and pump assemblies are removable from the enclosure via crane from the top of unit, and through the roof should heavy maintenance require such operations. An onboard lighting system for 24 VDC has been provided to illuminate the entire interior and exterior of unit during maintenance.

### Triton Platform and Transport

Triton is covered by a weather resistant enclosure, which incorporates structural lifting points and tie-downs to facilitate movement from one location to another via crane, rail, truck, or marine vessel. Triton is designed in 3 standard configurations: skid, trailer or rail mounted. It can be quickly deployed and retrieved by an appropriate towing roll-on/roll-off or hook lift vehicle. If a trailer option is chosen, the running gear will be single axle and dual wheel with dual landing gear jack stands included to support the trailer in a four point stable stance during operation.

### Triton Controls

National Foam Big Flow control systems offer optimal simplicity to operators while ensuring Maximum Control which equates to Maximum Safety. All controls are common for all National Foam Big Flow pumps - Neptune, Triton, and Dominator - therefore NF is able to link control panels for easy relay pumping operations.

All control panels utilize state of the art touchscreen HMI's loaded with National Foam's 2018 proprietary Big Flow Control architecture. The control programming unites automotive J1939 data associated with engine operation and National's Hydraulic Power and Water Pressure Management systems to link capabilities into a very unique, efficient and effective user interface.

The Functionality offered by this system gives operators the power to set system parameters tailored to any pre-plan for the satellite pump system from one simple easy to use interface. Engine, Hydraulic Power and Pump speed ramping functions, inlet pressure set points, discharge pressure set points and multi-unit relay pumping control is available when using wireless optional features which actively ensures that pumps stay on track and within safe parameters while operating in a synchronized fashion.

Pre-planned maintenance alerts are also built-in to notify owners to conduct engine and system maintenance according to schedule, thereby helping to enhance the unit readiness and overall life span.

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Commonality of Controls and interfaces across all National Foam Big Flow pumps ensures that operators are confident while operating any type of National Foam Big Flow Pumping Equipment because of the familiar feel and use of common controls. This feature offers companies that ability to take advantage of knowledge continuity and flexibility amongst teams of operators.

Wireless & Remote Operation offers users the ability to control or monitor any National Foam Pumping Unit via a remote location through a cloned HMI screen located on a laptop or other compatible device which is identical to the screen located at the pumping unit. These controls can be either wireless, hardwired via serial connections or both. This gives users 3 levels of the redundancy needed for emergency equipment protecting critical assets.

Data Recording and event logging allow users to recall events for maintenance and future preplan adjustment. Data outputs to Microsoft Excel format for easy of manipulation graphing and evaluation.

### Technical Specification

The Triton pumping system shall be capable of delivering up to 10,000 gpm of water through one or two flexible

pipelines. Triton shall be equipped with one or two submersible Satellite Pumps for a total individual output of up to 5,000 gpm each, hydraulically driven and individually deployed, to provide water to the suction side of any boost pump at a minimum of 10 psig. The Satellite pumps shall have sufficient head to deliver specified quantity of water to main fire pump from a remote distance of 150 ft and an elevation difference of up to 124 ft below the suction of the main pump depending on the pump model and set-up.

The pumping system shall be entirely self-contained, mounted on a common frame of sufficient strength to allow lifting by crane or roll-on/roll-off vehicle. Fuel oil, lubricating oil, and hydraulic oil tanks shall be incorporated into the design of the frame. Equipment shall be protected by a weather resistant enclosure, provided with access doors to permit ease of operation and maintenance of all equipment items.

Electric power shall be 24VDC, supplied by batteries, one set per engine, mounted on the module. An external connection to the VAC network shall be provided for power to the engine heaters and battery charger. Exterior 24VDC LED scene and operator panel lighting is provided for nighttime operations.

### Technical Data

#### Satellite Pumps:

- One or Two 5000 gpm centrifugal pumps for a total output ranging from 3000 to 10,000 gpm.
- 8 in or 10 in. Storz discharge connection
- Flooded suction
- SS Impeller
- Aluminum body
- Mounted on wheeled cart with strainer and flotation device
- Hydraulic motor driven
- Integral heat exchanger
- Integral flotation device

#### Satellite Pump Driving Engine:

- One Diesel Engine - Tier IV.
- Turbocharged
- Radiator cooled
- Electric start
- Industrial grade silencer
- Block heater
- Safety guards
- 24 VDC

#### Pumping Unit Enclosure:

- Framing - Mechanical structural steel
- Roof - Removable panels for easy access to all mechanical equipment. Access shall be designed to facilitate heavy maintenance up to and including major component removal
- Side/Rear Walls - Lockable painted, louvered steel doors to allow for complete access to all equipment on three sides as well as to offer optimum airflow for engine cooling
- Built-in satellite pump storage with bifold deployment ramp
- On-board hose storage/tool storage
- Undercarriage - Structurally enhanced flatrack
  - Main beams - steel box channel
  - Side rails - steel
  - Cross members - steel
- Complete with rollers and lift arm "A" frame for loading and deployment when appropriate
- Complete with DOT/NFPA compliant trailer package when appropriate



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### Fuel Tank:

- 8 hour supply at max RPM integral to trailer manufactured to UL requirements

### Control Panels:

Emergency shutdowns located on the Control Panel and on the sides of the unit. Control Panel shall be located inside main Nema 4 enclosure protected from the elements and shall be lit for low light conditions.

### Measuring and control devices including:

- Hydraulic hose retrieval controls
- Satellite Pump retrieval system controls
- Exterior/interior lighting controls
- Fuel Level
- Hydraulic oil pressure gauges for suction, discharge and charge pressure

### Touch screen controls including:

- Engines' controls:
  - Startup and shutdown
  - Required RPM
- Engines' parameters display (examples):
  - Actual RPM
  - Load %
  - Torque %
  - Power
  - Turbo boost pressure
  - Intake manifold temperature
  - Voltage
  - Oil pressure
  - Coolant temperature
  - Fuel rate
  - Fuel consumption
  - Operation time
- Engines' alarms (examples):
  - High coolant temperature
  - High exhaust temperature
  - High fuel pressure
  - High inlet air temperature
  - Low coolant level
  - Low oil pressure
  - Overspeed
  - Low fuel level

### • Satellite Pump hydraulic actuation parameters displays:

- Supply pressure
- Return pressure
- Charge pressure
- Individual left and right controls
- Data parking and download

### • Alarms for:

- Low battery voltage
- Hydraulic filter change
- Low hydraulic charge pressure
- Maintenance interval alerts

### • Operational Presets:

- Recipe functionality for saving groups of operator preferred setpoints

### Lighting:

- 360° LED scene lighting
- Interior LED maintenance lighting
- Control Panel lighting

### Hydraulics:

- Lightweight high performance welded ribbon hose
- Leakproof face seal hose connections
- Environmentally friendly oils
- Hydrostatic power adjustment

### Weight:

- Approximately 15,000 lbs. May vary depending on size and configuration of system.

### Dimensions:

- Skid/Rail Mounted\*:
  - 186" L x 96" W x 97" H
- Trailer Mounted\*:
  - 276" L x 96" W x 111" H

\* Dimensions may vary upon final equipment specification.

### Options

- Colors other than red
- Custom suction and discharge connections and configurations, including grooved connections for large diameter hose and special hose threads
- Corporate logos installed
- On-board storage for additional hose and accessories
- Wireless control
- Remote data monitoring
- Data mapping
- Maintenance alerts
- Trailer DOT/NFPA compliant
- Hook arm
- Skid mounted
- Silencers
- Hose couplings
- Alternate fuels (NG)





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**Triton Satellite Pumps**



**Triton Setup Illustration**