



Big Flow
Flood Relief

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At a time when flooding appears to be an ever increasing factor in large parts of the world with the resultant devastating impact it can have on life and property, the ability to quickly and effectively move large volumes of water in response to such a disaster is becoming more and more essential.



The National Foam Big Flow Flood Relief system is a fully integrated system capable of pumping large volumes of water away from areas such as flooded residential, industrial and downtown centers and from flooded critical infrastructure including rail, metro and road transport tunnels.

Incorporating the flexibility of a Big Flow system as part of a recovery plan, readily available for deployment to commence clear up operations following flooding caused by natural disasters like hurricane, earthquake or storm, is an investment that is increasingly becoming worthy of

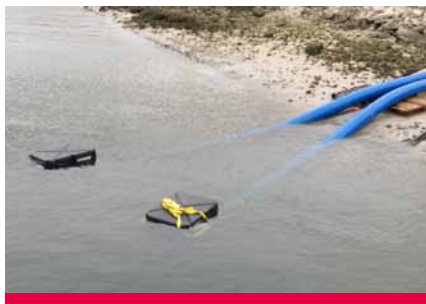
consideration following the impact of the likes of Hurricanes Sandy and Katrina, the Sendai earthquake and resultant Tsunami in Japan and some of the worst flooding parts of Europe have witnessed for many years.

The Big Flow Flood Relief package comprises a Neptune Satellite & Boost Pump system; a self-contained, integral, pumping module providing both satellite and a boost pumping system, along with Super Aquaduct large diameter water hoses complete with hose fittings and hardware and a variety of deployment and retrieval systems to provide everything required

to successfully pump out large volumes of water over distance, all from a single manufacturer.

Typically, a single system can move up to 5,000 US gpm of water over distances of up to 5 miles. Due to the modular design of the system, more than one system can work together to move more water over longer distances. The vertical lift possible from one system is over 50 feet, with water then being pumped 100 feet to the booster pump.

A single system can pump 5,000 US gpm over 5 miles



System components

Neptune Satellite and Boost Pumping Systems

The Neptune, self-contained, integrated system provides a single module containing two off hydraulically driven floating Satellite pumps, a powered boost pump, powered hose reels and cable winches for assistance with deployment and retrieval of the satellite pumps and touch screen electronic management systems for both the engines and boost pump.

All components are housed in a steel enclosure with removable roof panels for ease of access for maintenance and lockable, removable side and rear walls to allow for full access to all equipment on three sides for ease of operation. Neptune is available in three pumping capacities of 3,000, 5,000 and 6,000 US GPM (at 150psi).



The Neptune module can be transported in a number of ways using suitable vehicles. Options include dedicated Roll On – Roll

Off Vehicle, tractor trailer configuration, dedicated Trailer (Conventional) or a dedicated Flat Bed Truck.

Satellite pumping system

The floating satellite pumps supplied as part of the Neptune module are rated at 2,500 USGPM at 90 feet TDH and provide high capacity flow at low pressure to the main Boost pump on the Neptune module.

The units are mounted on wheeled carts complete with strainer and floatation device with the hydraulic system for both being driven by a 322 BHP at 1,900rpm Caterpillar C9 engine. The Satellite pumps are designed

to float in deep water although they can perform in shallow water providing the base of the pump is sufficiently immersed in water and, assuming, there is enough water available to pump.

The hydraulic supply line to the Satellite pump is 150 Ft. long and 8-inch hose is used to deliver water to the main pump on board the Neptune module where it

is boosted to a higher pressure enabling the flood water to be carried away large distances, typically up to 5 miles.

The Satellite pumps can be used to feed other pump apparatus, such as fire service vehicles, besides the Boost pump on the Neptune module if required.



Boost pump

The powered Boost pump contained in the Neptune module is a Peerless 10AE20, 5,000 USGPM @346 TDH and utilises the positive intake pressure provided by the Satellite pumps to boost the pressure and move the water over long distances. The Boost pump is powered by a Caterpillar Acert C18 630 BHP @ 1,900rpm diesel engine. The Neptune module has an integrated fuel tank capable of providing more than 5 hours running time for the system.

The Neptune module has 2 x 8-inch connections on the inlet side of the pump to take water from the Satellite pumps and 1 x 12-inch connection on the discharge side of the pump.

The Satellite and Boost pumping Systems can be controlled independently of each other from the same control panel screen mounted on the Neptune module.



Hose deployment and retrieval system

There are a number of options for a suitable system to quickly and safely deploy the large diameter hose to be used to remove flood water from an affected area to safe area for disposal. Choices include Reel or Box systems. Hydraulically Powered Reel Skids are available as single, twin or triple reel configurations and are powered by a diesel driven hydraulic pump. The units are designed to be mounted on trucks or trailer and can deploy or retrieve hose at 2.5 miles/h (4.2 km/h). The on-board power unit has a diesel fuel capacity of 10 gallons (38 liters) allowing over 6 hours of operation before re-fuelling is required.

A twin hose reel system will carry around 2,000ft of 12" hose including couplings depending on reel configuration. Each reel system is fitted with a cable remote control box to allow reel operators to locate on any side of the carrying vehicle during deployment or retrieval operations. A single hose reel can hold up to 2 lengths of 500 foot, 12 inch diameter (150 meter) hose with couplings. A twin hose reel system will

carry around 2,000 feet (600 meters) of 12 inch hose with couplings and a typical 40 foot flat bed trailer can hold 3 hose reels in total. Hose Flaking Boxes (100m and 200m capacity sizes) allow rapid deployment of hose allowing for manual re-packing. Each hose flaking box is designed for sideways hose flaking and is designed for safe stacking.



Super Aquaduct hose and accessories

Super Aquaduct Hose is an extruded through the weave polyurethane elastomer construction hose with an Operating Pressure of 175psi (1.2MPa) and a Burst Pressure of 400psi (2.75MPa). Super Aquaduct has an uncharged weight of 3.3lb. ft (5.5 kg/m) and the hose can be coupled with a variety of coupling options. Large diameter hose is used for primary water transfer in Big Flow Flood Relief Systems due to its hydraulic efficiency.



Additional equipment

The National Foam Big Flow Flood Relief System provides the capability to take large volumes of water from a flooded area using the system Satellite pumps, feed that water through the system Boost pump and dispose of that water at a safe distance and without causing any further damage to life or property through large diameter hose. In certain circumstances, other, existing Boost pump capability may be at hand,

such as emergency fire service vehicles, and a system incorporating a Boost pump such as Neptune may not be required.

In this case National Foam also designed and can supply the Triton Satellite pumping system which provides two floating Satellite pumps plus supporting hydraulic system in a self-contained trailer module. The Triton pumping system has a 15 meter vertical lift.

Similarly, National Foam can also provide Boost pumps in the form of the National Foam Dominator series of pumps capable of flows up to 6,000 US gpm. The Dominator pump has a 6 meter vertical lift.

Both the Triton and Dominator can be provided to compliment the main Flood Relief package or supplied to augment existing equipment at hand.



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Further information

Full, supporting technical data sheets and information on each of the component parts of the National Foam Flood Relief System package are available for download from the National Foam web site:

www.nationalfoam.com



Future protection

Investing in National Foam Flood Relief systems affords you the opportunity to return lives and property to a sense of normality in a timely fashion when it most matters.

