

OPTIONS

SLIP-ON FIREFIGHTING UNITS

2.0 Electric Primer on Pump

2.0 Waterous High-Pressure Pump

The pump shall be a Waterous High-Pressure pump. This single-stage high-performance centrifugal pump shall have a double-hubbed corrosion-resistant bronze impeller with replaceable bronze wear rings and high-strength anodized aluminum alloy volute and body. The pump shall have a two-gear speed increaser with hardened steel gears and anti-friction bearings. The High-Pressure pump shall have a 2" inlet and 1.5" discharge, and the pump shall be rated 110GPM at 100PSI and 50GPM at 400 PSI, when powered with a 26hp Briggs & Stratton Diesel engine. Pump shall be provided with an electric primer.

2.0 Waterous High-Volume Pump

The pump shall be a Waterous High-Volume pump. This single-stage high-performance centrifugal pump shall have a double-hubbed corrosion-resistant bronze impeller with replaceable bronze wear rings and high-strength anodized aluminum alloy volute and body. The pump shall have a two-gear speed increaser with hardened steel gears and anti-friction bearings. The High-Volume pump shall have a 3" inlet and 2" discharge, and the pump shall be rated 300GPM at 50PSI and 100GPM at 190PSI, when powered with a 26hp Briggs & Stratton Diesel engine. Pump shall be provided with an electric primer.

2.0 CF-126 Diesel Pump & Engine

The pump shall be a CFE #24193 high pressure centrifugal pump powered by a Briggs & Stratton Vanguard in-line 3 cylinder, water-cooled, overhead valve delivering a maximum output of 26.5 hp @ 3600 RPM, 58.1 cubic inches displacement, 4-cycle, diesel fueled. The body and head shall be made of high-strength aluminum alloy, anodized for superior corrosion resistance. The impeller shall be made of high-strength, corrosion resistant bronze, fully enclosed, double-hubbed to balance hydraulic thrust, mechanically-balanced to eliminate vibration. Municipal panel shall be included. The pump shall be rated 125 GPM at 110 PSI and 43 GPM at 325 PSI. Pump shall be provided with an electric primer. All external areas of the pump shall be powder coated. Pump shall be manufactured by Cascade Fire Equipment.

2.1 Engine - Diesel

A 26hp Briggs & Stratton Vanguard Engine shall power the pump. This engine shall be an in-line 3-cylinder water-cooled overhead valve delivering a maximum output of 26.5hp at 2600RPM, 58.1 cubic inches displacement, 4-cycle, diesel fueled. The body and head shall be made of high-strength aluminum alloy, anodized for superior corrosion resistance. The Impeller shall be made of high-strength, corrosion resistant bronze, fully enclosed, double-hubbed to balance hydraulic thrust and mechanically balanced to eliminate vibration. Engine shall be mounted on a separate 3/4" thick platform, constructed of same material as the tank. Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform.

2.0 BB-4 Pump

The pump shall be a BB-4 four-stage centrifugal pump. The pump head shall have 2" NPSH suction and 1.5" NH discharge. The volute and the body shall be high strength aluminum alloy, hard coat anodized for corrosion resistance. The impeller shall be of a fully enclosed all bronze construction with double hubs to balance hydraulic thrust and reduce vibration. The bronze wear ring and carbon/ceramic mechanical seal shall be longwearing and easily replaced. All external areas of the pump shall be

powder coated. The pump shall be rated 110 GPM at 50 PSI and 15GPM at 400 PSI, when powered with an 18hp engine. Pump shall be provided with an exhaust primer.

2.0A BB-4 Pump – 23 hp

The pump shall be a BB-4 four-stage centrifugal pump. The pump head shall have 2” NPSH suction and 1.5” NPSH discharge. The volute and the body shall be high strength aluminum alloy, hard coat anodized for corrosion resistance. The impeller shall be of a fully enclosed all bronze construction with double hubs to balance hydraulic thrust and reduce vibration. The bronze wear ring and carbon/ceramic mechanical seal shall be longwearing and easily replaced. All external areas of the pump shall be powder coated. The pump shall be rated 75 GPM at 200 PSI and 15GPM at 400 PSI, when powered with an 23hp engine. Pump shall be provided with an exhaust primer.

2.1 Hale HP 550 “Minuteman” Portable Pump

The Hale HP550 portable pump is a fully self-contained, high performance unit designed to provide continuous performance of 250 GPM at 150 PSI from a ten-foot draft. When connected to the tank, the HP 550 can provide over 500 GPM at 90 PSI.

- Engine
Honda 3 cylinder vertical crankshaft, 4 stroke. An electronic ignition system. The engine rated power is 50hp at 6000 RPM using 86 octane unleaded gas.
- Pump
All aluminum pump case with horizontal 4” NST male threaded suction and twin 2.5” NST male discharge valves with hose bleeders. Self-adjusting, no maintenance mechanical seal.

Please see additional HP 550 specification sheet for further information. Engine shall be mounted on a separate 3/4” thick platform, constructed of same material as the tank. Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform.

2.1 Pump and Engine – Lightweight Model

The pump shall be a CFE #24019 positive displacement pump. A 6.5hp Briggs & Stratton Vanguard Engine shall power the pump. The engine shall be a one-cylinder, four-cycle, air-cooled engine with manual recoil and an electric starter. The bronze pump housing shall have compound celcon impellers and a discharge of 11GPM at 50 PSI, 9 GPM at 150 PSI and 8 GPM at 200 PSI. Engine shall be mounted on a separate 3/4” thick platform, constructed of same material as the tank. Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform.

2.1 Mini-Striker Pump and Engine

The pump shall be a Wildfire Mini-Striker pump. Pump shall be a close-coupled single stage centrifugal pump with lightweight aluminum alloy pump parts. Pump parts shall be anodized for corrosion resistance. Engine shall be mounted on a separate 3/4” thick platform, constructed of same material as the tank. Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform. At 25 psi, GPM is 51; At 50 psi, GPM is 32.

2.1 Cascade Mini-Pump and Engine

The pump shall be a Cascade Mini-pump. Pump shall be a close-coupled single stage centrifugal pump with lightweight aluminum alloy pump parts. Pump parts shall be anodized for corrosion resistance. Pump shall be powered by a small and lightweight 4-stroke Honda engine that meets the current emissions standards of the US EPA. The Mini-Pump shall have a US Forest Service approved spark arrestor, inlet and outlet protective caps, and be capable of pumping foam and retardant solutions. Engine shall be mounted on a separate 3/4” thick platform, constructed of same material as the tank.

Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform. At 25 psi, GPM is 51; At 50 psi, GPM is 32.

2.1 CF 6.5 hp Super-Mini

The pump shall be a Cascade Centrifugal pump. Pump shall be a close-coupled single stage centrifugal pump with lightweight aluminum alloy pump parts. Pump parts shall be anodized for corrosion resistance. Pump shall be powered by a small and lightweight 6.5hp Briggs and Stratton engine that meets the current emissions standards of the US EPA. The pump shall have a US Forest Service approved spark arrestor, inlet and outlet protective caps, and be capable of pumping foam and retardant solutions. Engine shall be mounted on a separate 3/4" thick platform, constructed of same material as the tank. Engine platform shall be attached to unit with stainless steel studs, flat washers and nuts, which do not require access to underside of platform. At 25 psi, GPM is 90; At 50 psi, GPM is 86, at 100 psi, GPM is 38.

2.0 23 hp Pump

The pump shall be a CFE #24192 single stage centrifugal pump. The pump head shall have 2" NPSH suction and 1.5" NH discharge. The volute and the body shall be high strength aluminum alloy, hard coat anodized for corrosion resistance. The impeller shall be of a fully enclosed all bronze construction with double hubs to balance hydraulic thrust and reduce vibration. The bronze wear ring and carbon/ceramic mechanical seal shall be longwearing and easily replaced. All external areas of the pump shall be powder coated. The pump shall be rated 132 GPM at 100 PSI and 47GPM at 300 PSI, when powered with a 23 hp engine. Pump shall be provided with an electric primer.

2.3 Liquid Level Gauge

A liquid level device will be installed. The sensor shall be removable and located as near as possible to the center of the water tank. The receiving device shall be incorporated into the control panel.

2.3 Water Gauge

An Intelli-Tank liquid level system for water will be installed. This sensor shall be removable and located at the rear of the water tank. The receiving device shall be incorporated into the control panel.

2.3 Water and Foam Gauges

Two Intelli-Tank liquid level systems (one for foam and one for water) will be installed. Each sensor shall be removable and located at the rear of its corresponding tank. The receiving devices shall be incorporated into the control panel.

3.3 Hose Reel – EF4000

A single "mini" hose reel shall be mounted on the tank top platform. Reel to be equipped with 100' of 3/4" booster hose in 100' lengths, coupled with 1" Barway couplings and complete with a combination fog/straight stream shut-off nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000 psi and temperatures from -80°F to +185°F. The base support shall be of all welded steel construction. Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Reel shall be provided with a pinion brake and a removable auxiliary hand crank for rewinding hose. Reel shall be mounted to tank on 1" x 3" x 22 polypropylene and brass, no underside nuts or bolts.

3.3 Hose Reel - Standard

A single hose reel shall be mounted on the tank top platform. Reel to be equipped with 200' of 3/4" booster hose in 100' lengths, coupled with 1" Barway couplings and complete with nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000

psi and temperatures from -80°F to +185°F. The base support shall be of all welded steel construction. Overall height not to exceed 24", overall length not to exceed 26" (including joint) and width not to exceed 24". Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Reel shall be provided with a pinion brake and a removable auxiliary hand crank for rewinding hose. Reel shall be mounted to tank on 1" x 3" x 22 polypropylene and brass, no underside nuts or bolts.

3.3 Hose Reel – Aluminum

A single hose reel shall be mounted on the tank top platform. The side wheels shall be polished aluminum to reduce the potential for corrosion. Reel to be equipped with 200' of 3/4" booster hose, coupled with 1" Barway couplings and complete with nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000 psi and temperatures from -80°F to +185°F. The base support shall be of all welded aluminum construction. Overall height will not exceed 30", overall length not to exceed 18 3/4" and width not to exceed 28 3/4". Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Reel shall be provided with a pinion brake and a removable auxiliary hand crank for rewinding hose reel shall be mounted to tank on 1" x 3" x 5" polypropylene and heli-coils, no underside nuts or bolts.

3.3 Hose Reel – Electric

A single Hannay hose reel shall be mounted on the tank top platform. Reel shall have electric rewind capability, powered by a 1/3 HP motor through a chain and sprocket drive. Reel to be equipped with 200' of 3/4" booster hose, coupled with 1" Barway couplings and complete with nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000 psi and temperatures from -80°F to +185°F. The base support shall be of all welded aluminum construction. Overall height will not exceed 30", overall length not to exceed 18 3/4" and width not to exceed 28 3/4". Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Reel shall be provided with a pinion brake and a removable auxiliary hand crank for rewinding hose reel shall be mounted to tank on 1" x 3" x 5" polypropylene and heli-coils, no underside nuts or bolts.

3.3 Hose Reel – Aluminum Electric

A single Hannay hose reel shall be mounted on the tank top platform. The side wheels shall be polished aluminum to reduce the potential for corrosion. Reel shall have electric rewind capability, powered by a 1/3 HP motor through a chain and sprocket drive. Reel to be equipped with 200' of 3/4" booster hose, coupled with 1" Barway couplings and complete with nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000 psi and temperatures from -80°F to +185°F. The base support shall be of all welded aluminum construction. Overall height will not exceed 30", overall length not to exceed 18 3/4" and width not to exceed 28 3/4". Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Reel shall be provided with a pinion brake and a removable auxiliary hand crank for rewinding hose. Reel shall be mounted to tank on 1" x 3" x 5" polypropylene and heli-coils - no underside nuts or bolts.

3.3 Dual Hose Reels – Aluminum Electric

Two Hannay hose reels shall be mounted on the two side utility boxes. The side wheels shall be polished aluminum to reduce the potential for corrosion. Each reel shall have electric rewind capability, powered by a 1/3 HP motor through a chain and sprocket drive. Reels to be equipped with 200' of 3/4" booster hose, coupled with 1" Barway couplings and complete with nozzle. Rotary joint to be 1" full-flow replaceable and suitable for repacking; designed to operate at pressures up to 1000 psi and temperatures from -80°F to +185°F. The base support shall be of all welded aluminum construction. Overall height will not exceed 30", overall length not to exceed 18 3/4" and width not to exceed 28 3/4". Water service provided through 1" full-flow valve with flexible, high-pressure hose fitted and secured with reusable couplings. Each reel shall be provided with a pinion brake and a removable auxiliary hand

crank for rewinding hose. Reels shall be mounted on 1" x 3" x 5" polypropylene and heli-coils without using underside nuts or bolts.

3.3 Hose Reel – Manual

Reel is constructed of welded steel. Reel is light in weight and have proven very durable. The ball bearing rotary joints are constructed from steel, carburized and hardened for long troublefree use. The joints are zinc-plated for corrosion resistance. The double row of ball bearings give the joint a rated working pressure of 600 PSI. Hose Reel designed to handle 200' for 3/4" Booster Hose. The brake is fully adjustable and is anchored to a preloaded compression spring, which will greatly smooth out the drag when unreeling the hose.

3.4 Hose Guides – Single

Reel to be provided with a single chromed roller guide to ease the hose deployment and reduce wear and damage to the hose.

3.4 Hose Guides – Dual

Reel to be provided with dual chromed roller guides to ease the hose deployment and reduce wear and damage to the hose.

4.1 Foam-Flo Proportioning Unit

A Foam-Flo (class A) foam-metering device shall be plumbed into the hose line in accordance with the manufacturer's installation instructions. This device shall utilize a small amount of water from discharge side of the pump, pick up foam concentrate from the foam supply, and feed the foam solution into the suction side of the pump. For ease of operation, a single selector valve controls flow (with OFF setting) and the percentage of foam metered into the pump, from .01% to 1%. Foam solution shall be available to all outlets. Operation shall require selection of only one control, for ease of training and function.

A separate 5, 10, or 15 gallon internal foam cell shall be provided. It shall be constructed of the same materials as the rest of the water tank. The gallonage shall not reduce the rated capacity of the water tank. The foam cell shall have a separate fill tower and screen, constructed in the same manner as the water tank fill tower. The cover for the foam cell shall have a positive acting latch and a vent to seal the foam from the atmosphere but allow air to enter cell as foam concentrate is removed. Foam cell shall also have a vertical translucent strip foam level gauge in the tank rear wall. Foam cell shall have a 3/4" drain plug.

4.1 Hydro-Flo Foam System

The Hydro-Flo foam system shall be installed as an intricate component of the slip-on with a separate control panel that matches the standard panel. It shall be installed in accordance with the manufacturers instructions. This mechanical device shall not have any electronics and will function as a pressure pump with two pistons operating on a common shaft. The device must be capable of accurately metering from 0.1% to 1.0% continuously. The foam-metering device must be plumbed into the manifold so as not to allow foam to enter the main water tank under any circumstances.

A separate 15-gallon internal foam cell shall be provided. It shall be constructed of the same materials as the rest of the water tank. The gallonage shall not reduce the rated capacity of the water tank. The foam cell shall have a separate fill tower and screen, constructed in the same manner as the water tank fill tower. The cover for the foam cell shall have a positive acting latch and a vent to seal the foam from the atmosphere but allow air to enter cell as foam concentrate is removed. Foam cell shall also have a vertical translucent strip foam level gauge in the tank rear wall. Foam cell shall have a 3/4" drain plug.

4.1 FoamPro® Foam System

The FoamPro® 1601 foam system shall be installed as an intricate component of the slip-on with a separate control panel that matches the standard panel. It shall be installed in accordance with the manufacturers instructions.

The system shall be equipped with an electronic, fully automatic, variable-speed, direct-injection discharge side foam proportioning system.

The system shall be capable of handling Class A foam concentrate. The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows and pressures.

The system shall be equipped with a control module suitable for installation on the pump panel. Incorporated within the motor driver, shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output.

A separate 15-gallon internal foam cell shall be provided. It shall be constructed of the same materials as the rest of the water tank. The gallons shall not reduce the rated capacity of the water tank. The foam cell shall have a separate fill tower and screen, constructed in the same manner as the water tank fill tower. The cover for the foam cell shall have a positive acting latch and a vent to seal the foam from the atmosphere but allow air to enter cell as foam concentrate is removed. Foam cell shall also have a vertical translucent strip foam level gauge in the tank rear wall. Foam cell shall have a 3/4" drain plug.

4.1 FoamPro® 2001 Dual Tank Foam System

The apparatus shall be equipped with an electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrates and most Class B foam concentrates. The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows and pressures. System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards. The system shall be equipped with a digital electronic control display suitable for installation on the pump panel. Incorporated within the control display shall be a microprocessor that receives input from the system flowmeter(s), while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A 12 or 24-volt electric motor drive positive displacement foam concentrate pump, rated up to 2.5 gpm (9.5 L/min) @ 150 psi with operating pressures up to 400 psi (27.6 BAR), shall be installed in a suitable, accessible location. The system will draw a maximum of 40 amps @ 12 VDC or 21 amps @ 24 VDC. A pump motor electronic driver (mounted to the base of the pump) shall receive signals from the computer control display and power the 1/2 hp (0.40 Kw) electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate preset by the pump operator is injected into the water stream.

When two types of foam concentrates are to be used, a dual tank switch over system consisting of the following options will be installed to provide rapid changeover of foam concentrate reservoirs. The digital computer control display shall interface with the options listed, provide dual foam calibration, and display separate totals for each foam concentrate used.

5.1 Hose Tray

A hose tray 9" wide X 11" high X 48' long and capable of holding 200' of 1½" double jacketed fire hose will be incorporated on top of the slip-on tank. The tray will be constructed from .125 gauge aluminum diamond plate with a lid that is hinged the full length of the tray. The bottom of the tray will be lined with

Turtle Tile. The tray will be supplied with a 1½" stainless steel line that has a swivel outlet and is controlled with a 1½" valve.

6.1 Hydrant Fill

A hydrant fill will be constructed from stainless steel flange and piping with a suction valve with chrome female swivel and plug. There will be a stainless steel diffuser extending approximately 7" into the tank and designed to allow the water to enter the tank without damaging any tank components.

7.1 Monitor

A Monitor will be installed. This Monitor is designed specifically for water tankers and pumpers where a discharge of 350 GPM or less is required. The unit has a 360° horizontal travel and 140° horizontal movement. Locking knobs allow for the Monitor to be locked in any position. The 1½" waterway is epoxy coated inside and out for protection from corrosion and wear. Discharge threads are 1½" NH Male thread. The Monitor weighs 20lbs and measures 18"H x 11"W. Includes 1 ½" Shut-Off Valve and Stainless Steel Plumbing.

7.1 Elkhart Sidewinder Monitor

The SIDEWINDER remote-controlled monitor was designed for wildland firefighting operations. It is mounted on the bumper or another suitable location on the vehicle. A weather-tight remote joystick control box inside the cab allows the operator to perform four functions: (1) Turn water off or on, (2) rotate monitor left or right (3) elevate or depress monitor and (4) change the nozzle pattern, wide fog to straight stream.

This is a very compact monitor with dimensions of 8.6"wide, 8.4"deep and 11.1"high. It weighs only 15.9 lbs and operates from 12 or 24 volt DC power. The inlet is 2" NPT female and outlet is 1½" NH male. All motors are completely enclosed and sealed, and all wiring harnesses have waterproof connectors.

8.1 Storage Boxes

Aluminum/Diamond Plate Storage Boxes built to customer specifications. Diamond Plate must be drawn on Cadkey prior to being cut on CNC router and CNC punch to ensure total accuracy in the dimension requirements provided by customer. Boxes shall be constructed from 1/8" marine grade diamond plate. The boxes shall also include:

- Stainless steel piano hinge
- Stainless steel T-handle locks
- Corner braces depending on size of box
- Automotive grade weather stripping
- Rain master doors which overlap the weather stripping
- Cross break on doors for increased strength

Aluminum/Diamond Plate storage boxes shall include a 5 year manufacturer's warranty.

8.2 Compartment Lights

LED rope lights in storage box compartments.

9.1 Spare Tire Bracket

Spare tire bracket shall be provided with corresponding space for spare tire storage.

10.1 Front Bumper with Brush Guard

Heavy duty Front Bumper built to customer specifications.

11.1 Forklift Capabilities

Slip-On shall be constructed with Forklift Capabilities designed to customer specifications.

12.1 Equipment Basket

Aluminum Equipment Basket built to customer specifications.

13.1 Aluminum Flatbed

Aluminum Flatbed with headache rack built to customer specifications. The Flatbed shall be all welded, using no rivets. The deck shall be constructed from 1/8" marine grade diamond plate. The flatbed shall also include:

- Cab contoured head board with vertical bars
 - LED lighted rear tail apron with bumper
 - 6" exterior frame rails
 - Channel long sills
 - Channel cross members on 12" centers
 - 2" receiver hitch
 - PVC suction hose storage box
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Additional discharge:

- Auxiliary overboard 1" discharge valve, (M), NH or NPSH, with chrome cap and retainer chain, to supply additional hose line.