

## B2X-23

# Portable Pump Specification

### SPECIFICATION DOCUMENT

#### **Pump Performance and Rating:**

The pump/engine shall perform to the standards of ISO 9 and NFPA 1906 medium pressure rating of 50 GPM. Typical pump performance from 5 foot draft under standard NFPA conditions shall be 100 GPM @ 150 PSI, 215 GPM @ 100 PSI, 265 GPM @ 75 PSI, and 285 GPM @ 50 PSI.

The pump shall provide a maximum pressure of 200 PSI and a maximum flow of 300 GPM. It shall be capable of operating to a maximum pressure of 400 PSI and be capable of passing a hydrostatic test of 300 PSI for 10 minutes per NFPA 1906 specifications – NO EXCEPTIONS.

#### **Pump Suction/Discharge Ports:**

The pump intake shall be a 3" Female NPT/4" Victaulic combination and be an integral part of the pump intake cover.

The pump discharge shall be a 2-1/2" Female NPT/3" Victaulic combination and be an integral part of the pump body.

Adapter kits shall be provided to allow for a 2-1/2" or 3" Male NH pump intake and any of the following discharge options: 2-1/2" Male NH, 1-1/2" Male NH gated wye, or 1-1/2" Male NPSH gated wye. Other pump intake and discharge threaded adapters shall be available upon request.

#### **Pump:**

The pump shall be a 2-stage centrifugal pump with the pump body, diffusers, and impellers made of an anodized corrosive resistance aluminum. The impeller must be aluminum to match the pump body and diffusers in order to prevent galvanic corrosion from taking place between pump components – NO EXCEPTIONS. The impellers shall be 4.00 inches in diameter.

The pump shaft shall be stainless steel supported by two maintenance free bearings and shall not be co-linear to the engine's drive shaft. A sealed roller bearing shall be located externally from the pump and a sintered bronze bushing shall be located within the pump cover. In addition, the pump seal shall be a mechanical rotary seal, shall be externally pressurized and shall incorporate a blister-resistant carbon seal face, silicon carbide seat, and fully integrated drive bushing – NO EXCEPTIONS.

The pump shall be coupled to a vertical belt driven speed increaser with a quick release clamp capable of being removed by hand and without any additional tools – NO EXCEPTIONS. The quick release clamp system shall allow for the entire pump assembly, pump body with all its internal and external components, to be removable and capable of being service at a location away from the gasoline engine and fire apparatus upon which it was part of. It shall also allow for the swapping out of the same or different performance pump assemblies within a minute's time – NO EXCEPTIONS.

The vertical belt driven speed increaser shall be a low maintenance timing belt and pulley system – NO EXCEPTIONS. The belt shall be a high quality timing belt and the drive pulley shall mount directly on the engine drive shaft through a means of a keyed tapered locking device. The increaser shall be a 1 to 1.88 ratio. In addition, a dampening device shall be provided between the pump shaft and pump shaft pulley.

Both the pump and vertical speed increaser shall be painted red.



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## Engine:

The engine shall be a 4 cycle Briggs and Stratton horizontal drive Vanguard series V-twin overhead cam air cooled gasoline engine. The engine rating shall be 23 HP at 3600 RPM with a maximum torque of 32.75 lb-ft at 2600 rpm. The engine shall have a 2.97 bore, 2.76 inches of stroke, and a displacement of 38.26 cubic inches. The engine must be capable of running at 4000 RPM's and shall meet current EPA and CARB emission standards.

The electrical system of the engine shall be 12 VDC. It shall be manual recoil start with the option of electric start. It shall also be provided with a 16 AMP regulating alternator.

## Muffler:

The engine muffler system shall be dual low tone mufflers if a hand primer is provided or a single vertical side mounted muffler if an exhaust primer or electric primer is provided. The muffler system shall be equipped with a forestry approved spark arrestor.

## Fuel Tank:

The unit shall have the ability of offering a fuel tank with a manual shut off valve that is an integral part of the pump/engine unit and meet current EPA evaporative emission standards. The integral fuel tank shall have a 4 quart fuel capacity with provisions for connecting a 6.6 gallon remote tank – NO EXCEPTIONS.

If a fuel tank is not an integral part of the unit, the unit shall provide the ability for the engine fuel pump to connect to a remote tank.

## Priming:

The pump shall provide the following mounted pump priming options: a guzzler type hand primer, an exhaust venturi primer, or a 12VDC electric primer.

The guzzler hand primer shall have a composite body with aluminum handle and reinforced buna-n diaphragm and flapper valves. It shall have a lift of 12 feet with the capability of approximately 16 feet when a foot valve is used on the pump suction hose. The hand primer shall be capable of handling a maximum pressure of 15 PSI and weigh 1.7 pounds. It shall be mounted horizontally and below the unit's center of gravity to avoid toppling the unit while priming. It shall also be placed in a location within the perimeter of the carrying frame of the unit where a pump operator can easily swing the primer handle.

The exhaust primer shall be an integral part of the muffler and shall be capable of pulling a minimum of 17 in-Hg vacuum. The venturi primer shall be of complete brass construction and pressurized via a manual swing lever and plug located on the opposite side of the muffler – NO EXCEPTIONS. The lever shall be steel and the plug bronze.

The electric primer shall be a 12 VDC piston type vacuum pump with 3/8 female NPT intake and discharge ports – NO EXCEPTIONS. The body of the electric primer shall be a corrosive resistant aluminum with bronze sleeves and a composite piston. It shall pull a maximum current of 105 amps and have a vacuum of 22 in-Hg. The primer shall weigh 8.1 pounds. The electric primer shall be mounted within the perimeter of the carrying frame and be provided with a chrome momentary toggle switch mounted on the pump control panel.

Any priming system offered must be connected to the pump through a ¼ turn ball type shut-off valve to prevent the priming system from being pressurized when the pump is attached to a pressurized water source.

## Frame:

The pump/engine unit shall be mounted on a black powder coated carry frame. The frame shall have two U-shaped carry handles that are an integral part of the base tubular frame – NO EXCEPTIONS.

The frame shall house the battery kit for the unit when electric start and/or electric priming option are a part of the portable pump unit.



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## **Control Panel:**

The pump shall have the capability of being supplied with the Briggs and Stratton standard engine controls or with an engine mounted control panel.

The engine mount control panel shall be mounted on the starter side of the engine at an angle easily seen when the operator is in a standing position – NO EXCEPTIONS. It shall have the following features and controls: chrome On/Off toggle and vernier throttle with red emergency throttle idle push button. It shall provide the option for a push button engine start, red LED low oil pressure warning indicator and priming momentary chrome toggle switch if provided with a battery kit and electric primer. All electrical components shall be weather resistant.

The engine choke shall be the standard Briggs and Stratton push/pull ring.

## **Pump Discharge Gauge:**

The pump shall be provided with a liquid filled dual unit 0-600 PSI/0-4000 kilopascals pump discharge pressure gauge. The gauge shall mount on an auxiliary port located on the 1-1/2" NPSH discharge check valve.



# **WATERAX**

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